MOUNT KLAPPAN ANTHRACITE PROJECT

GEOLOGICAL REPORT

1988

GEOLOGICAL REPORT

GULF CANADA RESOURCES LIMITED

COAL DIVISION

GULF CANADA RESOURCES LIMITED

Mount Klappan Anthracite Project
Geological Report

1988

Coal Project Licence Numbers
7130, 7145, 7147-7149
7151-7153, 7162, 7168-7171
7173-7177, 7384-7387
7389-7390, 7392, 7424-7426
7527, 7529, 7756-7757
7726-7730, 8047-8048

Cassiar Land District

NTS Map Number 104 H

Latitudes Between 57° 06' and 57° 23'
Longitudes Between 128° 37' and 129° 15'

Gulf Canada Resources Limited

April, 1989

748

PREFACE

The Mount Klappan Anthracite Project is located in northwest British Columbia and is wholly owned and operated by Gulf Canada Resources Limited.

The 1988 Geological Report provides a current assessment of the geology, coal quality, and resource potential of the Lost-Fox Area in the central region of the Mount Klappan property and of the peripheral Skeena and Summit areas.

Table of Contents

MOUNT KLAPPAN ANTHRACITE PROPERTY

1988 GEOLOGICAL REPORT

TABLE OF CONTENTS - Cont'd

TABLE OF CONTENTS - Cont'd

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GULF CANADA RESOURCES INC. - COAL DIVISION

DEC 10/84 WASHABILITY REPORT 1 PAGE -

DATA SOURCE - KPNLRDDH84008 SEAM - 1 SAMPLE ID - 26 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 50.80 X 6.35 RELATIVE WEIGHT % - 55.36 ASH % -

S.G.TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	C.V. (MJ|KG)	CUM. C.V.
1.40	5.86	4.52	5.86	4.52	94.14	24.82		
1.45	9.18	5.48	15.04	5.11	84.96	26.91		
1.50	39.97	11.14	55.01	9.49	44.99	40.93		
1.60	13.07	18.46	68.08	11.21	31.92	50.13		
1.70	10.92	26.71	79.00	13.35	21.00	62.30		
1.80	1.33	32.89	80.33	13.68	19.67	64.29		
1.90	6.80	44.54	87.13	16.09	12.87	74.73		
2.60	12.87	74.73	100.00	23.63				

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 6.35 X 0.50 RELATIVE WEIGHT % - 34.68 ASH % -

S.G.TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	C.V. (MJ|KG)	CUM. C.V.
1.40	30.20	3.12	30.20	3.12	69.80	18.41		
1.45	21.29	5.85	51.49	4.25	48.51	23.93		
1.50	15.87	9.91	67.36	5.58	32.64	30.74		
1.60	17.43	14.57	84.79	7.43	15.21	49.28		
1.70	5.26	23.79	90.05	8.39	9.95	62.75		
1.80	1.74	32.95	91.79	8.85	8.21	69.07		
1.90	0.90	41.05	92.69	9.16	7.31	72.52		
2.00	0.46	44.99	93.15	9.34	6.85	74.37		
2.60	6.85	74.37	100.00	13.80				

TABLE OF CONTENTS - Cont'd

LIST OF FIGURES

LIST OF TABLES

LIST OF APPENDICES

- Appendices Within Text -

- Appendices External to Text -

APPENDIX I

Trench Data and Coal Quality, Measured Sections, and 1:50 000 Maps

	Drawing No.
1988 Lost-Fox Trench Data and Coal Quality (26 in total)	
Summary Sheet	
Sample Summary Sheet	
Data Source Summary	
Seam Detail Sheet (1:40 scale)	
Descriptive Log	
Coal Quality Analyses (where available)	
1988 Summit Trench Data and Coal Quality (2 in total)	
Summary Sheet	
Sample Summary Sheet	
Data Source Summary	
Seam Detail Sheet (1:40 scale)	
Descriptive Log	
Coal Quality Analyses (where available)	
1988 Measured Sections (4 in total)	
Summary Sheet	
Data Source Summary	
Descriptive Log	
Strip Log (1:200 scale)	
1988 1:50 000 Map Sheets	
1981-1988 Measured Section Location Map	KPN88002
1988 Geology Map	KPN88003
1988 Coal Licence Map	KPN88004
Lost-Fox Fossil Map	KPN88005
1984-1988 Fossil Location Map	KPN88006
1988 Coal Resource Map	KPN88007
Klappan Sequence Biostratigraphy and Marker Horizons	

APPENDIX II

1988 Lost Fox Geology Maps and Cross-Sections

	Drawing No.
Volume I	
1:2 000 Maps:	
Sheet C-4	KLAP:(205057) 851083016.MAP
Sheet C-5	KLAP:(205057) 851083015.MAP
Sheet C-6	KLAP:(205057) 851083014.MAP
Sheet D-4	KLAP:(205057) 851083002.MAP
Sheet D-5	KLAP:(205057) 851083003.MAP
Sheet D-6	KLAP:(205057) 851083006.MAP
Sheet E-4	KLAP:(205057) 851083001.MAP
Sheet E-5	KLAP:(205057) 851083004.MAP
Sheet E-6	KLAP:(205057) 851083005.MAP
Sheet E-7	KLAP:(205057) 851083011.MAP
Sheet F-5	KLAP:(205057) 851083008.MAP
Sheet F-6	KLAP:(205057) 851083009.MAP
1:2 000 Cross-Sections:	
1000N	KLAP:(205057) 880693100.XS
1100N	KLAP:(205057) 880693110.XS
1200N	KLAP:(205057) 880693120.XS
1300N	KLAP:(205057) 880693130.XS

APPENDIX II

cont'd

	Drawing No.
Volume I	
1:2 000 Cross-Sections (cont'd):	
1400N	KLAP:(205057) 880693140.XS
1500N	KLAP:(205057) 880693150.XS
1600N	KLAP:(205057) 880693160.XS
1700N	KLAP:(205057) 880693170.XS
1800N	KLAP:(205057) 880693180.XS
1900N	KLAP:(205057) 880693190.XS
2000N	KLAP:(205057) 880693200.XS
2100N	KLAP:(205057) 880693210.XS
2200N	KLAP:(205057) 880693220.XS
2300N	KLAP:(205057) 880693230.XS
2400N	KLAP:(205057) 880693240.XS
2500N	KLAP:(205057) 880693250.XS
2600N	KLAP:(205057) 880693260.XS
2700N	KLAP:(205057) 880693270.XS
2800N	KLAP:(205057) 880693280.XS
2900N	KLAP:(205057) 880693290.XS
3000N	KLAP:(205057) 880693300.XS
3100N	KLAP:(205057) 880693310.XS
3200N	KLAP:(205057) 880693320.XS

APPENDIX II

cont'd

Drawing No.

Volume I

1:2 000 Cross-Sections (cont'd):

3300N	KLAP:(205057) 880693330.XS
3400N	KLAP:(205057) 880693340.XS
3500N	KLAP:(205057) 880693350.XS
3600N	KLAP:(205057) 880693360.XS
3700N	KLAP:(205057) 880693370.XS
3800N	KLAP:(205057) 880693380.XS
3900N	KLAP:(205057) 880693390.XS
4000N	KLAP:(205057) 880693400.XS

APPENDIX III

1988 Summit Geology Maps and Cross-Sections

	Drawing No.
1:5 000 Maps:	
J-10	KPNSA-01
J-11	KPNSA-02
J-12	KPNSA-03
K-9	KPNSA-04
K-10	KPNSA-05
K-11	KPNSA-06
K-12	KPNSA-07
K-13	KPNSA-08
L-10	KPNSA-09
L-11	KPNSA-10
L-12	KPNSA-11
L-13	KPNSA-12
M-11	KPNSA-13
M-12	KPNSA-14
M-13	KPNSA-15
M-14	KPNSA-16
1:10 000 Maps:	
104 H/6 A, 104 H/7 D	KPN88SA-17
104 H/6 B	KPN88SA-18
104 H/6 H	KPN88SA-19

APPENDIX III

cont'd

	Drawing No.
1:5 000 Cross-Sections:	
13 500 N (east and west)	KPN88SA-20
13 000 N (east and west)	KPN88SA-21
12 500 N (east and west)	KPN88SA-22
12 000 N (east and west)	KPN88SA-23
11 500 N (east and west)	KPN88SA-24
11 000 N (east and west)	KPN88SA-25
10 500 N (east and west)	KPN88SA-26
10 000 N (east and west)	KPN88SA-27
9 500 N (east and west)	KPN88SA-28
9 000 N (east and west)	KPN88SA-29
7 000 N (east and west)	KPN88SA-30
6 000 N (east and west)	KPN88SA-31
5 500 N (east and west)	KPN88SA-32
1:10 000 Cross-Sections:	
17 000 N (east and west)	KPN88SA-33
15 000 N (east and west)	KPN88SA-34
13 000 N (east and west)	KPN88SA-35
11 000 N (west)	KPN88SA-36

APPENDIX IV

1988 Diamond Drill Hole Data

	Drawing No.
1988 Diamond Drill Holes (29 holes)	
Data Source Summary	
1:2000 Schematic Profile	
Coal Seam Data Sheets	
Descriptive Log	
Stratigraphic Log	
Geophysical Logs	
1:10 000 Drill Hole Location Map	KPN88001

Volume I

KPNLRDDH88001

to

KPNLRDDH88014

Volume II

KPNLRDDH88015

to

KPNLRDDH88029

APPENDIX V

1988 Diamond Drill Hole

Coal Quality Data

1988 Diamond Drill Hole Coal Quality (29 holes)

Data Source Summary

1:2000 Schematic Profile

Sample Summaries

Coal Seam Data Sheet

Coal Quality Data

Volume I

KPNLRDDH88001

to

KPNLRDDH88014

Volume II

KPNLRDDH88015

to

KPNLRDDH88029

1.0 SUMMARY

Gulf Canada Resources Limited's Mount Klappan Anthracite Project is located in the Bowser Basin of northwest British Columbia, 290 kilometres north of Smithers, and 150 kilometres northeast of Stewart, British Columbia. The property is composed of 152 crown coal licences totalling 40 186 hectares of land.

The Mount Klappan property has been a major part of Gulf's coal exploration activities since 1981. Several areas with economic coal potential have been defined during the exploration programs undertaken since the acquisition of the property.

The Mount Klappan property is underlain by sediments ranging in age from Upper Jurassic to Lower Cretaceous. These sediments appear to have been deformed by two non-coaxial stress regimes. The dominant structural grain is defined by NW-SE trending folds which are commonly tight and overturned. Secondary NE-SW trending folds are broader and superimposed on the primary fold sets. Thrust and minor normal faulting are associated with both phases of deformation.

The strata within and surrounding the property have been subdivided into four sequences: the Spatsizi, Klappan, Malloch, and Devils Claw, in ascending order. The Klappan Sequence is the main coal-bearing unit and is presently interpreted to attain a thickness of up to 1 100 metres.

The Mount Klappan property has been subdivided into three project blocks: the Lost-Fox Area, the Hobbit-Broatch Area and the Summit-Nass-Skeena Area. This report pertains primarily to the Lost-Fox Area,

where the majority of the exploration activity has taken place, but also includes discussion of 1988 exploration in the Summit-Nass-Skeena Area. No exploration took place in 1988 in the Hobbit-Broatch Area.

Combined exploration activity on the Mount Klappan property during 1988 comprised 29 diamond drill holes totalling 4 756 metres, 29 mechanical trenches totalling 306 metres and 3 hand trenches totalling 17 metres. Geological mapping was completed in the Lost-Fox Area at scales of 1:2 000 and 1:5 000. Mapping in the Summit Area was at scales of 1:5 000 and 1:10 000.

Exploration diamond drilling in the Lost-Fox Area has delineated more than 40 unique coal and carbonaceous horizons within approximately 750 metres of Klappan Sequence section. Twenty-one of these horizons average thicker than 1.0 metres with individual true thicknesses ranging to more than 8 metres.

The in-situ anthracite resource potential on the Mount Klappan property totals almost 6 billion tonnes, of which 111.4 million tonnes have been "measured" in the Lost-Fox Area. Table 1.1 below outlines the categorization of the in-situ resources. These resource estimates do not imply mineability or economic viability. They represent estimated in-place anthracite resources only.

Table 1.1
ANTHRACITE RESOURCE SUMMARY
(million tonnes)

	Mount Klappan Property	Lost-Fox Area
Measured	123.5	111.4
Indicated	136.2	111.7
Inferred	525.4	123.9
Speculative	5195.2	711.5
Total	5980.3 mt	1058.5 mt

The anthracite can be cleaned to simultaneously produce a variety of sized products, ranging from 6% ash premium coals to briquetting coals of 25% ash or greater. All products are characterized by low sulphur values (usually 0.5%), high calorific values, and trace contents of chlorine.

2.0 RECOMMENDATIONS

Through exploration efforts to date, a resource suitable to support full-scale mining has been defined in the Lost-Fox Area. Further work at Mount Klappan should be directed toward two objectives: the commencement of mining in the defined area, and the inventory of the resource base in the extensive areas of the property that have not been fully explored.

1. Structure activity in the Lost-Fox Area to directly assist the mine start-up effort. This may include detailed geological analysis in specified areas, a rotary drilling program transecting the primary areas of interest on close spacing, and bulk sampling of other seams making a major contribution to the pit reserves, besides seams H and I.

2. Extend drilling, and stratigraphic and sedimentological investigation to the east of the Lost-Fox Area to establish a connection with Hobbit-Broatch. The seams of high quality in both areas are suspected to lie in roughly the same stratigraphic position, but a definitive link has not yet been established.

3. Further refine the geological interpretation of the West Ridge Area and delineate the extension of seams into the region south of Mount Klappan and west of Tahtsedle Creek. A trend of thickening and improving quality in some seams appears in the West Ridge Area and may be laterally continuous.

4. Continue refinement and maintain value of the local stratigraphic model by tracing the lateral variability in the character of established marker horizons within drill-core, and by delineating new markers where possible.

5. Continue definition of regional stratigraphy and sedimentology in the Mount Klappan Area, based on the foundation of work done on the property, to enable assessment of regional resource potential.

3.0 INTRODUCTION

3.1 Mount Klappan Anthracite Project

3.1.1 Location

The Mount Klappan coal licences are situated in northwest British Columbia approximately 930 kilometres north of Vancouver, 150 kilometres northeast of Stewart and 530 kilometres northwest of Prince George (Figure 3.1).

The licences lie at the north end of the Skeena Mountains between 57° 06' and 57° 23' north latitude, and 128° 37' and 129° 15' west longitude. The nearest community is Iskut (population 500), located 100 kilometres northwest of the property on the Stewart-Cassiar Highway (Hwy 37).

3.1.2 Access

The Mount Klappan property straddles the partially completed British Columbia Railway line between Prince George and Dease Lake (Figure 3.2). Steel ends 80 kilometres south of the property, but with the exception of a 24 kilometre stretch north of the Kluatantan River, the railway subgrade continues northward through and beyond the property to the vicinity of Dease Lake.

Road access to the property from Highway 37 is via the Ealue Lake Road, which connects with the British Columbia Railway subgrade. Road distances from Terrace and Stewart to

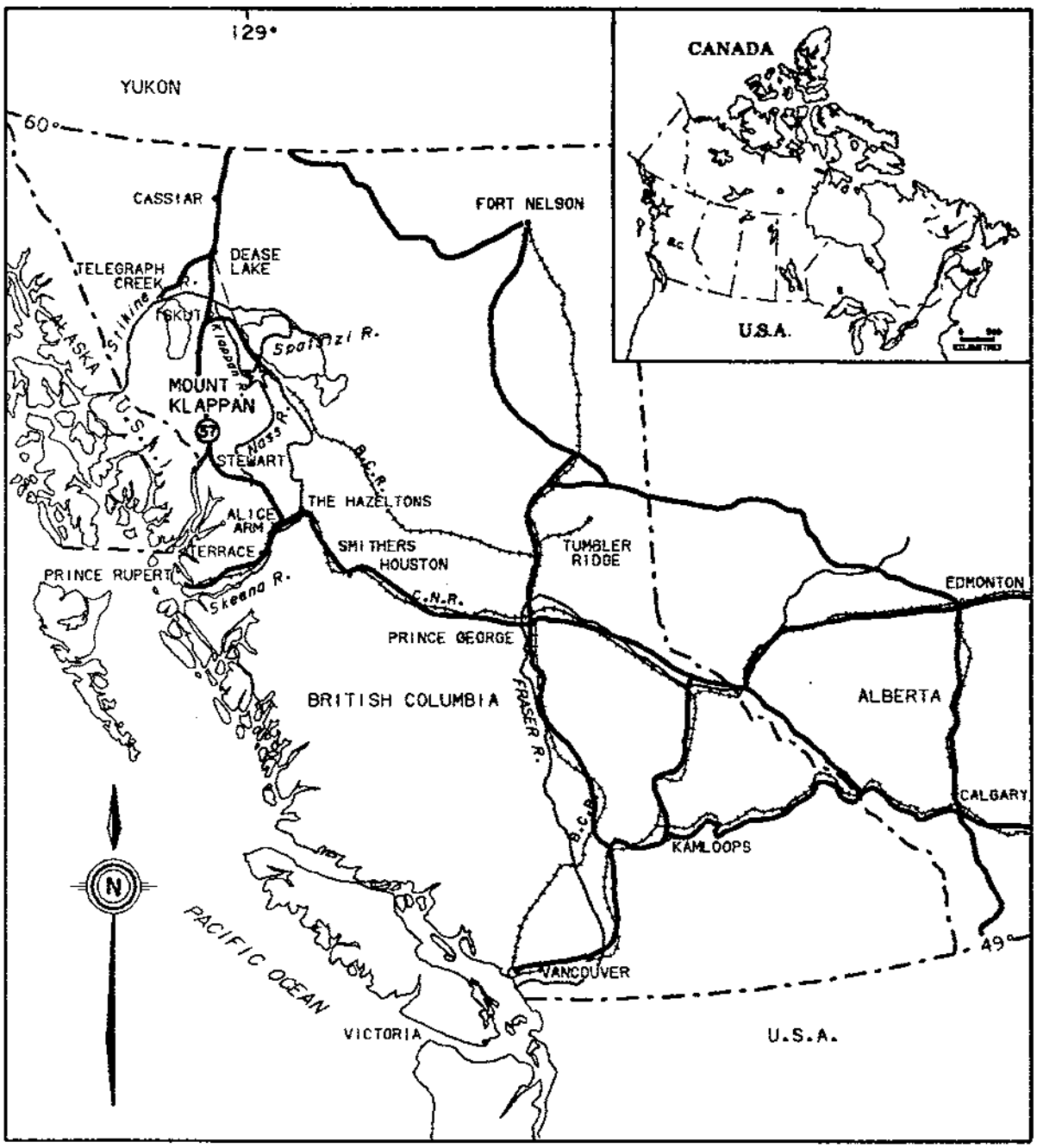


FIGURE 3-1

MOUNT KLAPPAN ANTHRACITE PROJECT

LOCATION MAP

GULF CANADA RESOURCES LTD.

GULF CANADA RESOURCES LTD.
24/04/89
KLAP1:[205057]840564005.LOC

the property are 575 kilometres and 426 kilometres, respectively.

The 1 000 metre Summit Airstrip located on the subgrade in the central region of the property (Figure 3.2) provides access by fixed wing aircraft.

3.1.3 Property Description

The Mount Klappan property comprises 152 coal licences totalling 40 186 hectares of land (Figure 3.3 and Appendix A) as of January 1, 1989. The property has been divided into blocks for ease of reference, logistical planning, and reporting. The central Lost-Fox block includes an area of 8 757.5 hectares contained within 33 whole licences and 2 partial licences. (The diagonal boundary between the Lost-Fox Area and the Summit Area transects licences 7171 and 7173. See Figure 3.3, Figure 3.4 and Appendix A.) The Summit block also contains 33 whole licences and the remaining portion of the same 2 partial licences, with a total area of 8 822.5 hectares. The Nass block contains 46 licences totalling 12 926 hectares, the Skeena block contains 12 licences of 3 375 hectares total area, and the Hobbit-Broatch block contains 26 licences comprising 6 305 hectares. The licences were acquired in five separate applications between 1981 and 1985.

3.1.4 Ownership

Gulf holds sole title to the coal licences comprising the Mount Klappan property.

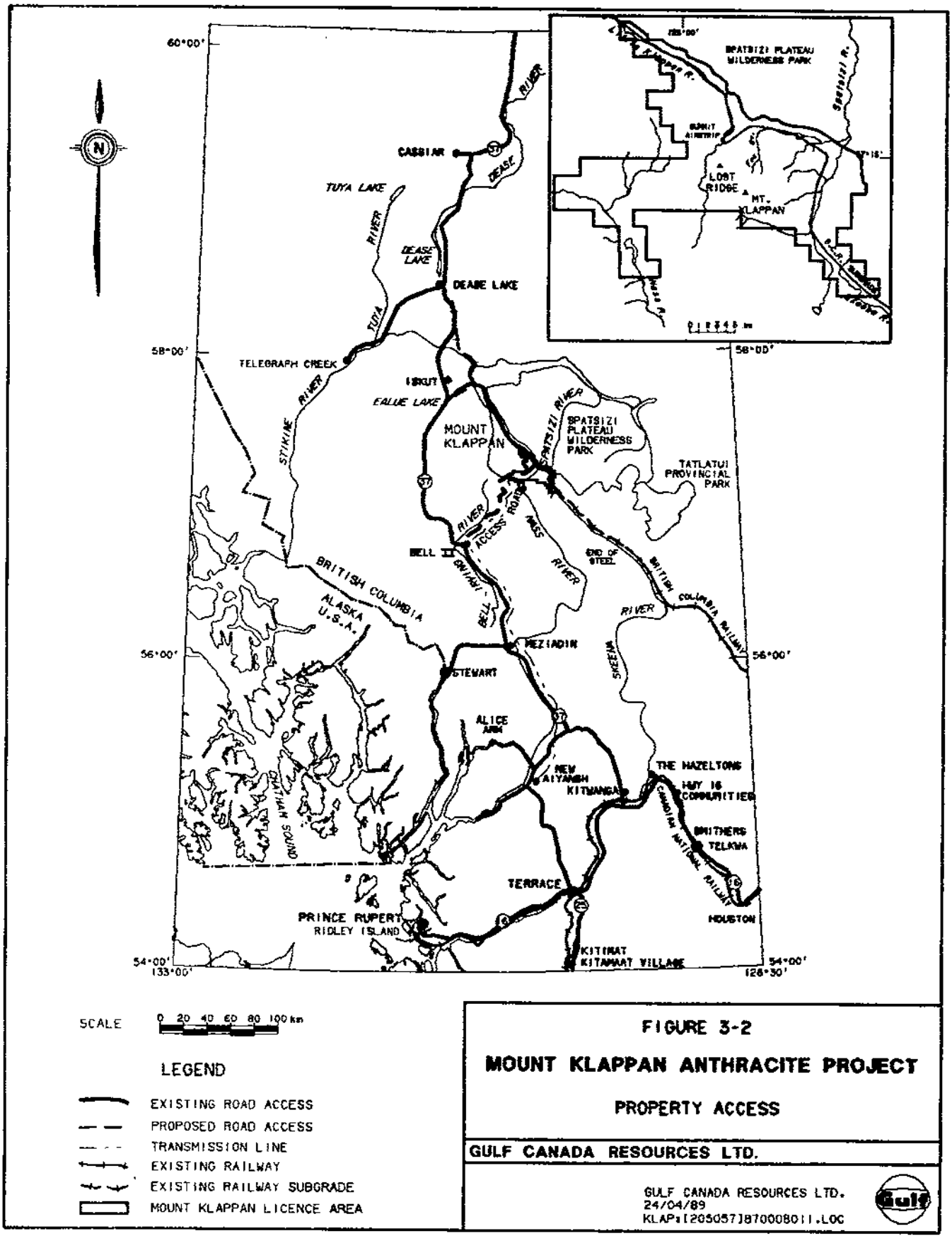


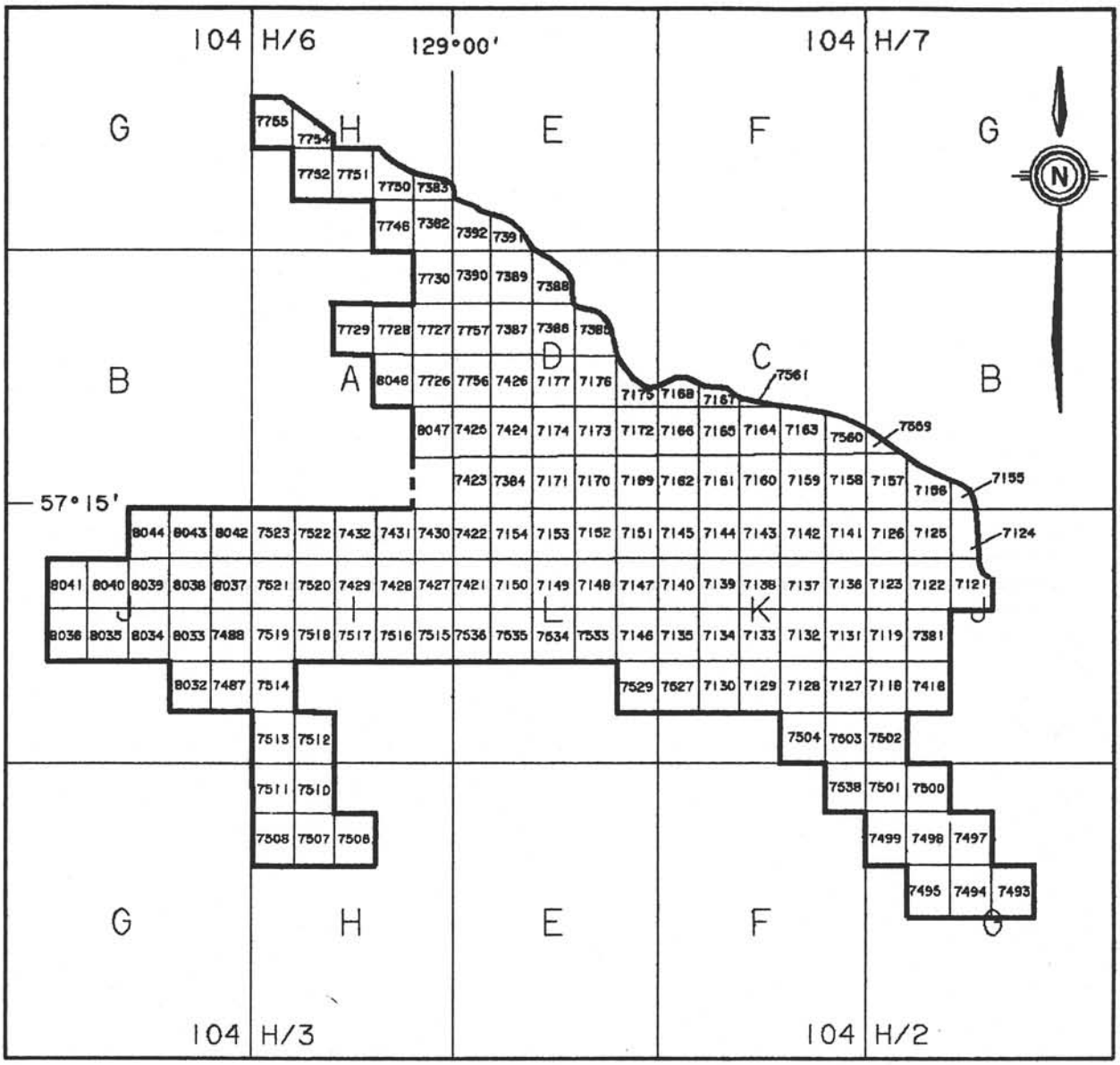
FIGURE 3-2

MOUNT KLAPPAN ANTHRACITE PROJECT

PROPERTY ACCESS

GULF CANADA RESOURCES LTD.

GULF CANADA RESOURCES LTD.
24/04/89
KLAP:[205057]8700080I1.LOC



SCALE

0 1 2 3 4 5 km

LEGEND

LICENCE AREA

7386 LICENCE NUMBER

UNDER APPLICATION

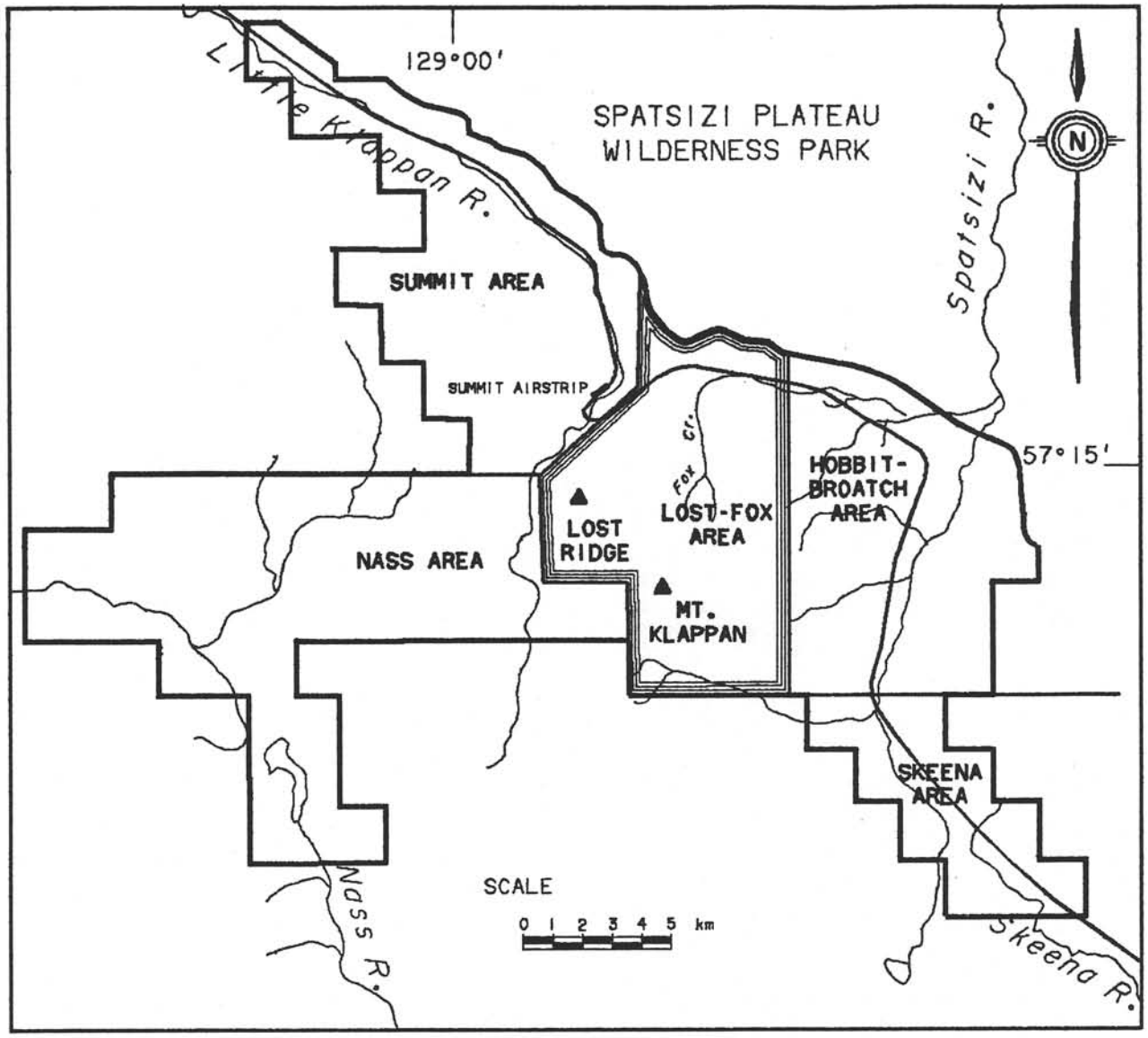
FIGURE 3-3

MOUNT KLAPPAN ANTHRACITE PROJECT

1988 LICENCES

GULF CANADA CORPORATION

GULF CANADA CORPORATION
24/04/89
KLAP:[205057]831024020.LOC



SCALE

0 1 2 3 4 5 km

LEGEND

BRITISH COLUMBIA RAILWAY SUBGRADE

LICENCE AREA

FIGURE 3-4

MOUNT KLAPPAN ANTHRACITE PROJECT

LOST-FOX
1988 EXPLORATION AREAS

GULF CANADA CORPORATION

GULF CANADA CORPORATION
24/04/89
KLAP:[205057]841165015.LOC

3.1.5 Property Geography and Biophysical Environment

The Mount Klappan property is located at the headwaters of the Little Klappan, Klappan, Nass, Skeena and Spatsizi Rivers (Figure 3.2), at the northern end of the Skeena Mountains physiographic region. Here, mountainous terrain is transected by broad northwest to southeast trending river valleys. Elevations on the property range from 991 metres in the Klappan River Valley to over 2000 metres on Mount Klappan and the adjacent ridge tops. Tree line in the area is at approximately 1500 metres with alpine tundra at higher elevations, and scattered coniferous forests, grasses, shrubs, meadows, and bogs in the valley bottoms.

The area falls within the Northern and Central Plateau and Mountain Climatic Zone. Precipitation averages 300 to 400 mm per year with the mean daily temperatures comparable to Fort Nelson and Prince George.

4.0 EXPLORATION HISTORY

4.1 Mount Klappan Property

4.1.1 Summary of Exploration 1981 - 1987

Gulf Canada Resources Limited has been involved in coal exploration in northwestern British Columbia since 1981. The various exploration activities undertaken are outlined in Table 4.1.

A total of 12 separate progress reports have been submitted to the British Columbia Ministry of Energy, Mines and Petroleum Resources prior to this report:

Mount Klappan Coal Project - Geological Report	1981
Mount Klappan Coal Project - Geological Report	1982
Mount Klappan Coal Project - Geological Report	1983
Mount Klappan Coal Project - Lost-Fox Area	1984
Mount Klappan Coal Project - Hobbit-Broatch Area	1984
Mount Klappan Coal Project - Summit-Nass-Skeena Area	1984
Mount Klappan Coal Project - Lost-Fox Area	1985
Mount Klappan Coal Project - Summit-Nass Area	1985
Mount Klappan Anthracite Project - Lost-Fox Area	1986
Mount Klappan Anthracite Project - Summit-Nass-Skeena Area	1986
Mount Klappan Anthracite Project - Lost-Fox Area	1987
Mount Klappan Anthracite Project - Summit-Nass-Skeena Area	1987

Table 4.1

MOUNT KLAPPAN ANTHRACITE PROJECT
EXPLORATION SUMMARY 1981 TO 1987

	1981	1982	1983	1984	1985	1986	1987	Total
Adits								
Number	--	--	1	--	--	1	--	2
Tonnes	--	--	39.2	--	--	30	--	69.2
Diamond Drill Holes								
Number (HQ)	--	7	3	8	34	38	34	124
Total Metres	--	1 223	603	1 507	6 164	5 550	4 931	19 978
Number (AIX)	--	--	6	--	--	--	--	6
Total Metres	--	--	126	--	--	--	--	126
Rotary Drill Holes								
Number	--	--	--	17	6	--	--	23
Total Metres	--	--	--	897	620	--	--	1 517
Hand Trenching								
Number	24	51	93	95	45	36	13	357
Total Metres	89	289	527	416	178	95	58	1 652
Mechanical Trenches (Seam Tracing)								
Number	--	--	--	128	--	--	53	181
Total Metres	--	--	--	1 041	--	--	700	1 741
Measured Sections								
Number	--	--	--	13	19	6	25	63
Total Metres	--	--	--	2 736	3 347	745	1 951	8 779
Geological Mapping Scales	1:10 000	1:10 000	1: 5 000 1:10 000	1: 2 500 1: 5 000 1:10 000	1: 2 500 1: 5 000 1:10 000	1: 2 000 1: 5 000 1:10 000	1: 2 000 1: 5 000 1:10 000	

4.2 Lost-Fox Area

4.2.1 Summary of Exploration 1981 - 1987

Between 1981 and 1987, the assessment of exploration results has indicated that the resource of principal interest at Mount Klappan lies within the Lost-Fox Area. In recent years, therefore, the most intense exploration activities (drilling, mechanical trenching and adit driveage) have concentrated in this area, while other areas (notably Hobbit-Broatch) have maintained a lower profile. Table 4.2 details activity in the Lost-Fox Area for the 1981-1987 period. Table 4.3 covers the Summit, Nass and Skeena Areas, and Table 4.4 reports on exploration for the Hobbit-Broatch area up to 1984 only, as there has been no significant activity there since.

Table 4.2

LOST-FOX AREA
EXPLORATION SUMMARY 1981 TO 1987

	1981	1982	1983	1984	1985	1986	1987	Total
Adits								
Number	--	--	1	--	--	1	--	2
Tonnes	--	--	39.2	--	--	30	--	69.2
Diamond Drill Holes								
Number (HQ)	--	1	2	4	34	38	34	113
Total Metres	--	244	411	1 017	6 164	5 550	4 931	18 317
Number (AIX)	--	--	6	--	--	--	--	6
Total Metres	--	--	126	--	--	--	--	126
Rotary Drill Holes								
Number	--	--	--	17	6	--	--	23
Total Metres	--	--	--	897	620	--	--	1 517
Hand Trenching								
Number	9	14	49	55	33	18	5	183
Total Metres	27	86	265	260	130	58	29	855
Mechanical Trenches								
Number	--	--	--	88	--	--	53	141
Total Metres	--	--	--	808	--	--	700	1 508
Measured Sections								
Number	--	--	--	5	5	2	15	27
Total Metres	--	--	--	1 368	308	93	985	2 754
Geological Mapping								
Scales	1:10 000	1:10 000	1: 5 000 1:10 000	1: 2 500 1: 5 000	1: 2 500 1: 5 000	1: 2 000 1: 5 000	1: 2 000 1: 5 000	

Table 4.3

SUMMIT-NASS-SKEENA AREA EXPLORATION SUMMARY 1981-1987

	1981	1982	1983	1984	1985	1986	1987	Total
Summit Area								
Hand Trenches								
Number	2	2	26	18	10	7	8	73
Length (m)	13	25	189	90	39	16	29	401
Diamond Drill Holes								
Number	--	1	1	--	--	--	--	2
Length (m)	--	193	130	--	--	--	--	323
Measured Sections								
Number	--	--	--	5	--	--	10	15
Length (m)	--	--	--	337	--	--	966	1303
Nass Area								
Hand Trenches								
Number	--	2	16	13	2	10	--	43
Length (m)	--	9	56	46	9	21	--	141
Measured Sections								
Number	--	--	--	1	--	2	--	3
Length (m)	--	--	--	20	--	205	--	225
Skeena Area								
Hand Trenches								
Number	--	--	--	1	--	1	--	2
Length (m)	--	--	--	4	--	2	--	6

Table 4.4

HOBBIT-BROATCH AREA

EXPLORATION SUMMARY 1981 TO 1984

	1981	1982	1983	1984	Total
Diamond Drill Holes					
Number (HQ)		5		4	9
Total Metres		849		490	1339
Hand Trenching					
Number	13	32	2	8	55
Total Metres	49	164	17	22	252
Mechanical Trenches					
Number				40	40
Total Metres				490	490
Geological Mapping					
Scales	1:10 000	1:10 000	1:10 000 1: 5 000	1:5 000 1:2 500	

5.0 1988 EXPLORATION PROGRAM

5.1 Programs Objectives

Again in 1988, most of the exploration effort was expended in the Lost-Fox Area. Lesser objectives were set for the Summit and Skeena Areas, with no activity in the Nass or Hobbit-Broatch licence blocks.

5.1.1 Lost-Fox Objectives

1. To tighten the spacing of geological control points in the proposed mining area (map sheets D-5 and E-5, see Appendix II), thereby improving the definition of moderately to distinctly complex structures delineated by previous drilling programs.

2. To confirm and expand coal quality data to aid in determining future coal products.

3. To continue seam tracing on the south slope of Lost Ridge by mechanical trenching, in order to refine surface control.

4. To build upon the established geological interpretation for the West Ridge (west Lost Ridge) area through geological mapping and limited diamond drilling.

5. To augment the paleontology data base via continued sample collection and analysis.

5.1.2 Summit Objectives

1. To improve geological resolution and correct possible mis-mapping of surface geology north of Mount Klappan though a review of mapped occurrences using newly prepared 1:5 000 orthophoto topographic control.

2. To continue mapping in new areas as time permits.

5.1.3 Skeena Objectives

1. To assess, by section measurement and description, and stratigraphic interpretation, the potential for exposure of coal-bearing strata south of Mount Klappan, and in the Skeena River valley.

2. To refine, if possible, the boundary criteria distinguishing the highest, coal-bearing Klappan Sequence from the lowest overlying Malloch Sequence (see 1987 Lost-Fox Geological Report).

5.2 Summary of Exploration

The 1988 summer exploration program began on June 4 and ended September 2. The drilling program spanned the period from June 11 to July 14 and resulted in the completion of 29 diamond drill holes. All exploration activity is summarized on Table 5.1. A breakdown of this work on a licence-by-licence basis is provided in Appendix B.

Table 5.1

MOUNT KLAPPAN ANTHRACITE PROJECT
EXPLORATION SUMMARY 1981 TO 1988

	LOST-FOX 1988	SUMMIT 1988	SKEENA 1988	MOUNT KLAPPAN 1981-1987	TOTAL
Adits					
Number	--	--	--	2	2
Tonnes	--	--	--	69.2	69.2
Diamond Drill Holes					
Number (HQ)	29	--	--	124	153
Total Metres	4756	--	--	19978	24734
Number (IAX)	--	--	--	6	6
Total Metres	--	--	--	126	126
Rotary Drill Holes					
Number	--	--	--	23	23
Total Metres	--	--	--	1517	1517
Mechanical Trenches (Seam Tracing)					
Number	29	--	--	181	210
Total Metres	306	--	--	1741	2047
Hand Trenches					
Number	1	2	--	357	360
Total Metres	7	10	--	1652	1669
Measured Sections					
Number	1	--	--	63	64
Total Metres	39	--	--	8779	8818
Geological Mapping Scales	1:2 000 1:5 000	1:5 000 1:10 000	-- --	1:2 000 1:2 500 1:5 000 1:10 000	

The Didene Creek Camp provided lodging and working space for up to 38 Gulf and support personnel during the program. Geological, drilling and support crews were transported daily from camp by four-wheel-drive vehicles and by a Bell 206B helicopter. Drill rigs were skidded from site to site using D-7 Caterpillar tractors, and were serviced in part by helicopter.

A four-wheel-drive ambulance was on standby at all times for use in case of a medical emergency.

Scheduled and charter fixed-wing aircraft service linked the Summit Airstrip to Smithers, B.C. and provided convenient air transportation for personnel and cargo throughout the exploration program.

5.3 Geological Mapping

Mapping of surface exposures during the 1988 exploration program was intended primarily to refine the geological model established in the Lost-Fox Area and to help further develop the models for the Summit Area, the Skeena Area, and west Lost Ridge. A dozen permanent, temporary and student Gulf geologists were deployed in teams of two. To ensure accurate data point location, data was collected using 1:2 000 scale orthophotos developed from air photography contracted by Gulf in 1985. For interpretation, the data was transferred to a set of 1:2 000 scale topographic base maps generated from the same digitized data base as the orthophotos. (The procedure in all areas was the same, except that in the Summit exploration block work was done at a 1:5 000 scale.)

Mapping by feature recognition from the orthophotos was calibrated quantitatively through surveyed location of all diamond drill sites and some trenches. In 1988, the available surveyed locations of trenches, and the apparent trench sites as visible on orthophotos, were compared with the trench locations on the 1987 set of geological maps. A number of discrepancies were noted, due to cumulative drafting error or mistaken trench identification, and all of these were corrected for the 1988 maps using the best currently available data.

Geological maps and cross-sections for the Lost-Fox area are provided at 1:2 000 scale in Appendix II. A 1:50 000 scale regional geology map is included in Appendix I. Geological maps and cross-sections for the Summit Area are contained in Appendix III.

5.4 Mechanical and Hand Trenching

Twenty-nine mechanical and three hand trenches were completed in 1988. (See Table 5.1). A model 426 Caterpillar backhoe loader was utilized for mechanical trenching on the south and north sides of Lost Ridge. Mechanical trenching was necessary to trace seams and obtain bedrock measurements in areas with thick overburden and little or no outcrop. Trenches were excavated by hand in areas inaccessible to the backhoe.

Some mechanically dug trenches were too deep to be entered safely and were used only to establish the presence and rough thickness of coal. All other trenches were logged by Gulf geologists and then backfilled. Descriptive logs and lithological log diagrams are in Appendix I.

5.5 Diamond Drilling

The 1988 diamond drilling program was designed to increase the density of subsurface structural control points in and around the proposed mine area. A significant amount of infill drilling was therefore undertaken on the south slope of Lost Ridge. As stratigraphy in these areas had previously been well established, there was no purely exploratory drilling, and all holes were targeted for the base of seam H, the lowest seam making a major contribution to the mineable resource.

All drill core was lithologically and structurally logged, and all significant coal intersections were sampled for coal quality analysis. The analytical results are provided in Appendix V.

Two Longyear 44 drill rigs were skidded to and from hole locations using D-7 Caterpillar tractors. Crews consisting of a driller and a helper worked on a 2 shift, 24 hour per day basis. Shift changes were accomplished via helicopter or by road where possible.

All drill sites were located using both chain and compass and detailed orthophotos. Following drilling the hole locations were surveyed (see Appendix E, this volume). A drill hole location map and all diamond drill hole data are contained in Appendices I and IV.

5.6 Geophysical Logging

Each diamond drill hole was geophysically logged after reaching TD (total depth). Due to poor downhole conditions that are typical of the Mount Klappan area, the logging tools were run through the drill rods, limiting the suite of measurable geophysical parameters to Natural Gamma, Neutron-Neutron and Gamma-Gamma Density. The logging equipment was repositioned from site to site by helicopter. Prints of the geophysical logs at a scale of 1:100 are included in Appendix IV.

5.7 Additional Geological Studies

Ongoing studies, subsidiary to the main thrust of exploration at Mount Klappan, continue to contribute to the general and detailed understanding of regional and local geology. The investigations that took place at the margins of the Klappan property in the Summit and Skeena Areas, have already been mentioned, and are discussed in greater detail below. Other activity, outside the property, undertook to assess the coal potential of peripheral areas of the Mount Klappan depositional basin near Evans Creek, southeast of Mount Klappan. The results of this activity are discussed in a separate report.

Preparation of a formal treatment of the stratigraphy of the Mount Klappan area and surrounding region is ongoing. The paper "The Stratigraphy of the Klappan Coalfield", Northern Bowser Basin, Northwestern British Columbia" was submitted to the Bulletin of Canadian Petroleum Geology in March of 1988 and was

returned for revision in October. The revision is continuing and has resulted in the generation of a related publication entitled "Stratigraphy at the Mount Klappan Anthracite Project, Bowser Basin, British Columbia", which is to appear in the proceedings of the 12th District 6 Meeting of the C.I.M. held in Fernie, B.C. in September 1988.

As an extension of the statistical treatment of bentonite chemistry completed in 1986, all bentonite horizons encountered in drill core since 1986 have been sampled, and mineralogically and chemically analyzed. The results of these analyses have not yet been incorporated into the statistical data base, but are held on file for a future refinement of the model and review of the conclusions of the initial study.

The collection of floral and faunal fossils was augmented again in 1988, the sites of occurrence were catalogued, and the stratigraphic implications are under consideration. Work on a Ph.D. thesis discussing biostratigraphy at Mount Klappan continues at the University of Calgary. An undergraduate thesis on stratigraphic correlation between the Lost-Fox Area and the Summit Area was completed in the Spring of 1988 at the University of Alberta.

5.8 Data Management

Throughout the 1988 exploration program an IBM AT computer was utilized for cost accounting and budget control. During the field season, it also served as an on-site data storage system from which outcrop, trench and drill hole data were uploaded to

Gulf's mainframe System 2000 Coal data base resident on an AMDAHL V8 computer in Calgary. Coal quality data is also stored in the data base. System 2000 data base management and Act I software provided the tools for data entry, retrieval and manipulation on the main frame computer.

5.9 Reclamation

The 1988 drilling program resulted in minimal additional disturbance in the Lost-Fox Area. The two Caterpillars and skid mounted rigs made use of the existing trails to minimize surface disturbance. Each of the 29 sites was cleared of equipment and garbage upon completion of drilling. Trenches were backfilled promptly to minimize slumping and erosion.

In accordance with government regulations a report was completed and submitted along with Form 6/7 regarding reclamation activities during 1987.

5.10 Exploration and Camp Permits

Approvals for the 1987 exploration program on the Mount Klappan property were received following the submission of Coal Exploration Form 6/7 to the Government of British Columbia. The following permits/approvals were issued to Gulf with respect to the Mount Klappan Coal Project 1987 exploration program:

Name	B.C. Ministry
Reclamation Permit C-160	E.M.P.R.

Free Use Permit 14097	Forests
Waste Management PR-7332 + PA-7717	Environment
Water Management A61-20	Environment
Class B Burning Permit B130734	Forests
Inspection Report C-160	E.M.P.R.

5.11 Project Management and Major Contractors

The Mount Klappan Anthracite Project was managed by E. Swanbergson, Co-ordinator, Coal Geology, Gulf Canada Resources Limited.

The following professional and technical personnel contributed to the 1988 Mount Klappan exploration program:

J. Innis	Senior Geologist
G. Seve	Senior Geologist
L. Savoie	Geologist
B. Van den Bussche	Geologist
S. Lee	Geologist
A. Ledda	Geologist
G. Parry	Geologist
J. Wallace	Geologist
K. Fujita	Coal Preparation Engineer
A. Sali	Administrator
D. Janert	Administrative Analyst
A. Penman	Camp Manager
C.D. Ireland	Secretary
R. Aiello	Bookkeeper
V. Matthews	Geological Assistant

K. Etmanski	Geological Assistant
D. Willis	Geological Assistant
L. Kraus	Geological Assistant
G. Murray	Geological Assistant
W. Hearn	Geological Assistant
R. Quock	Data Entry Technician
L. Louie	Core Photographer

A condensed list of those companies that provided services and/or supplies to the exploration program is presented below:

Birtley Coal & Mineral Testing	Calgary, Alberta
Canadian Airlines International	Calgary, Alberta
Canadian Freightways Ltd.	Calgary, Alberta
Central Mountain Air Serv. Ltd.	Smithers, B.C.
Century Geophysical Corp. of Canada	Calgary, Alberta
I.C.G. Liquid Gas Ltd.	Terrace, B.C.
J. T. Thomas Diamond Drilling Ltd.	Smithers, B.C.
Loring Laboratories	Calgary, Alberta
Northern Mountain Helicopters Inc.	Prince George, B.C.
Northmount Camp Services Ltd.	Vancouver, B.C.
Orthoshop	Calgary, Alberta
Petro Canada	Terrace, B.C.
Starr Industries Ltd.	Fort St. John, B.C.
Terrace Totem Ford	Terrace, B.C.
Tronnes Surveys Limited	Calgary, Alberta
Westcan Electronic Services Ltd.	Calgary, Alberta

6.0 GEOLOGY

6.1 Introduction

The Mount Klappan property is underlain by uppermost Jurassic to Lower Cretaceous marine to non-marine sediments deposited within the Bowser Basin of northcentral British Columbia. The strata have been subjected to a major regional tectonic stress directed northeast - southwest which results in folding and faulting trending generally NW-SE. A subordinate stress field has generated features oriented east - west. (see 1:50 000 Regional Geology Map; Appendix I).

Since 1981, Gulf geologists have developed a regional stratigraphy for the unnamed sediments of the Bowser Basin. Four units comprise the entire succession, ascending from the lowermost Spatsizi Sequence, through the Klappan Sequence, and the Malloch Sequence to the Devils Claw Sequence. In the process of formalizing these units, some name changes were required to conform with formal procedures (Spatsizi to Eaglenest and Malloch to Gunanoot)(Innis, in press), but until final publication of the formal stratigraphy is accomplished, the original names will be referred to here, to maintain consistency with the reports of previous years.

The coal seams of the Mount Klappan Anthracite Project occur primarily in the Klappan Sequence, with minor seams in the lowest Malloch Sequence. Coal seams range to upward of 8 metres in maximum true thickness in the Lost-Fox Area and are usually laterally continuous over broad areas, although some seams thin locally.

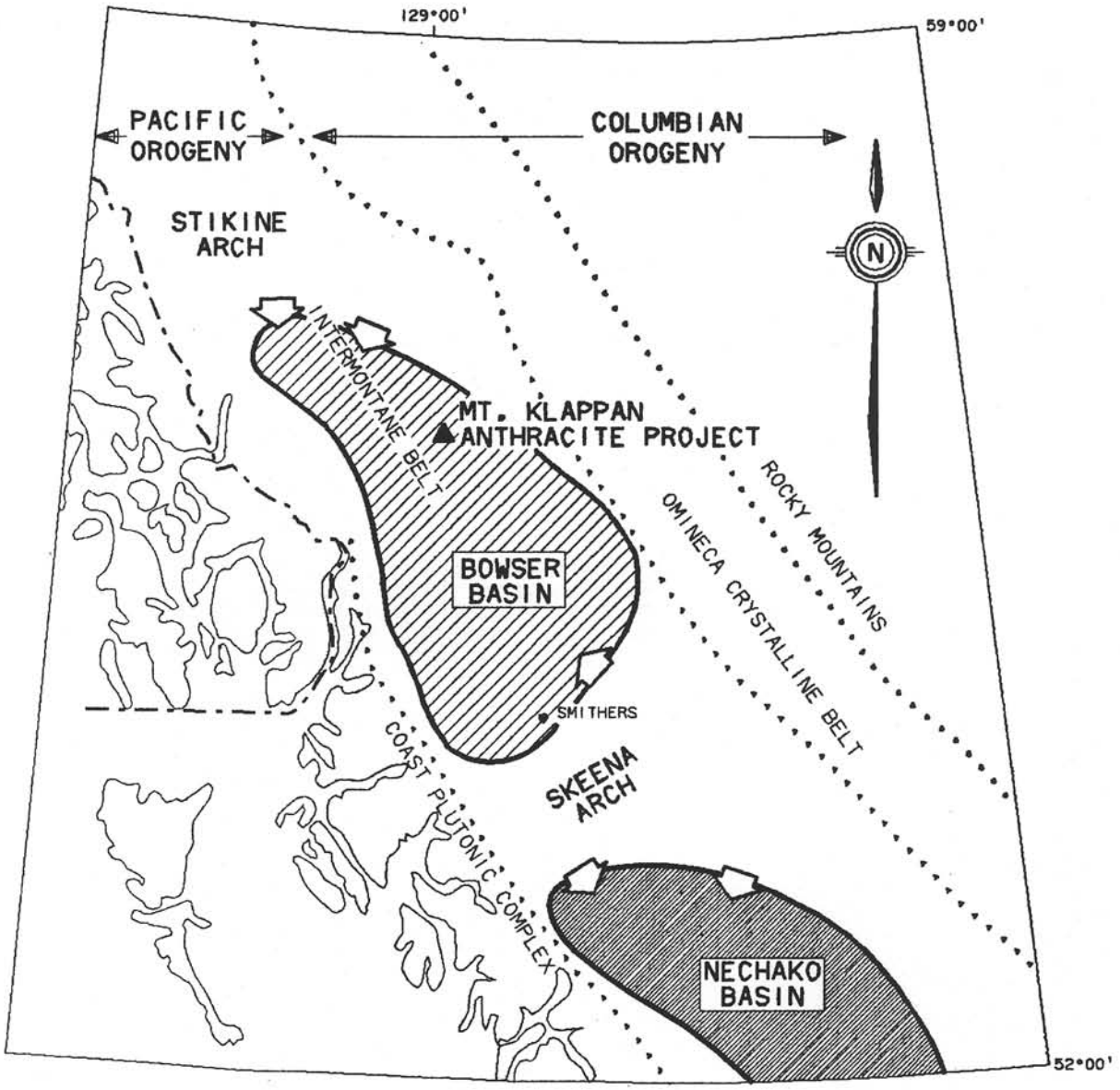
6.2 Regional Geologic Setting

The coal measures of the Mount Klappan property are contained within sediments deposited in the Bowser Basin, which formed in the Middle Jurassic as a successor basin to the volcanogenic Hazelton Trough (Tipper and Richards 1976). The Bowser Basin is bounded to the north and south by the Stikine and Skeena Arches, respectively, and to the east by the Columbia Orogen (Omineca Crystalline Belt). The western margin is thought to have been open to the sea at the time of Bowser sediment deposition (Figure 6.1).

Paleocurrent measurements indicate a centripetal flow into the Bowser Basin from highlands to the north, northeast, and south. Sediment originated within the Atlin Terrane (high chert; low volcanic content) to the north and northeast of the Basin, and in the remnant volcanic arc assemblage of the Stikine Terrane, (high volcanic; low chert content) south of the Basin.

The many stratigraphic subdivisions of southern and northern Bowser Basin sediments are summarized in Table 6.1

Structural deformation of Bowser Basin sediments resulted from intermittent tectonic stresses at the western cratonic margin from Cretaceous to recent time. This deformation includes extensive, shallow decollement, recumbent folds, and local thrust faults extending a few kilometres along strike (Eisbacher, 1974b).



SCALE

0 100 200 km

LEGEND

BOWSER BASIN

NECHAKO BASIN

(AFTER TIPPER AND RICHARDS, 1976)

FIGURE 6-1

MOUNT KLAPPAN ANTHRACITE PROJECT

JURASSIC-CRETACEOUS BOWSER BASIN

GULF CANADA CORPORATION

GULF CANADA CORPORATION
24/04/89
KLAP:[205057]831024026.LOC

		MALLOCH, 1914	BUCKHAM & LATOUR, 1950		SOUTHER & ARMSTRONG, 1966	EISBACHER, 1974c		TIPPER & RICHARDS, 1976	RICHARDS & GILCHRIST, 1979	BUSTIN & MOFFAT, 1983	KOO, 1986	INNIS, et al. in prep.
		SOUTHERN GROUNDHOG COALFIELD	GROUNDHOG COALFIELD		NORTHERN BRITISH COLUMBIA	NORTHERN BOWSER BASIN		SOUTHERN BOWSER	SOUTHERN GROUNDHOG COALFIELD	GROUNDHOG COALFIELD	KLAPPAN COALFIELD	KLAPPAN COALFIELD
CRETACEOUS	UPPER				SUSTUT-SIFTON ASSEMBLAGE	SUSTUT-SIFTON ASSEMBLAGE		SUSTUT GROUP				
	LOWER	SKEENA SERIES	HAZELTON GROUP	UPPER PART	BOWSER ASSEMBLAGE	BOWSER ASSEMBLAGE	?	SKEENA GROUP	GUNANOOT ASSEMBLAGE	DEVILS CLAW UNIT	UNIT 5	DEVILS CLAW SEQUENCE
							JENKINS CREEK FACIES			McEVOY UNIT	UNIT 4	MALLOCH SEQUENCE
											UNIT 3	
							GUNANOOT-GROUNDHOG FACIES				UNIT 2U	KLAPPAN SEQUENCE
JURASSIC	UPPER	HAZELTON GROUP		LOWER PART				UNCONFORMITY		CURRIER / PRUDENTIAL	UNIT 2L	
							DUTI RIVER SLAMGEESH FACIES	BOWSER LAKE GROUP			UNIT 1	SPATSIZI SEQUENCE
	MIDDLE				TAKLA-HAZELTON ASSEMBLAGE	TAKLA-HAZELTON ASSEMBLAGE		HAZELTON GROUP		JACKSON UNIT		
	LOWER							UNCONFORMITY				
TRIASSIC	UPPER							TAKLA GROUP				
	MIDDLE											

TABLE 6.1

MOUNT KLAPPAN ANTHRACITE PROJECT

REGIONAL STRATIGRAPHY TABLE OF FORMATIONS

GULF CANADA RESOURCES LTD.

GULF CANADA RESOURCES LTD.
24/04/89
KLAP:[205057]851092003.CHT

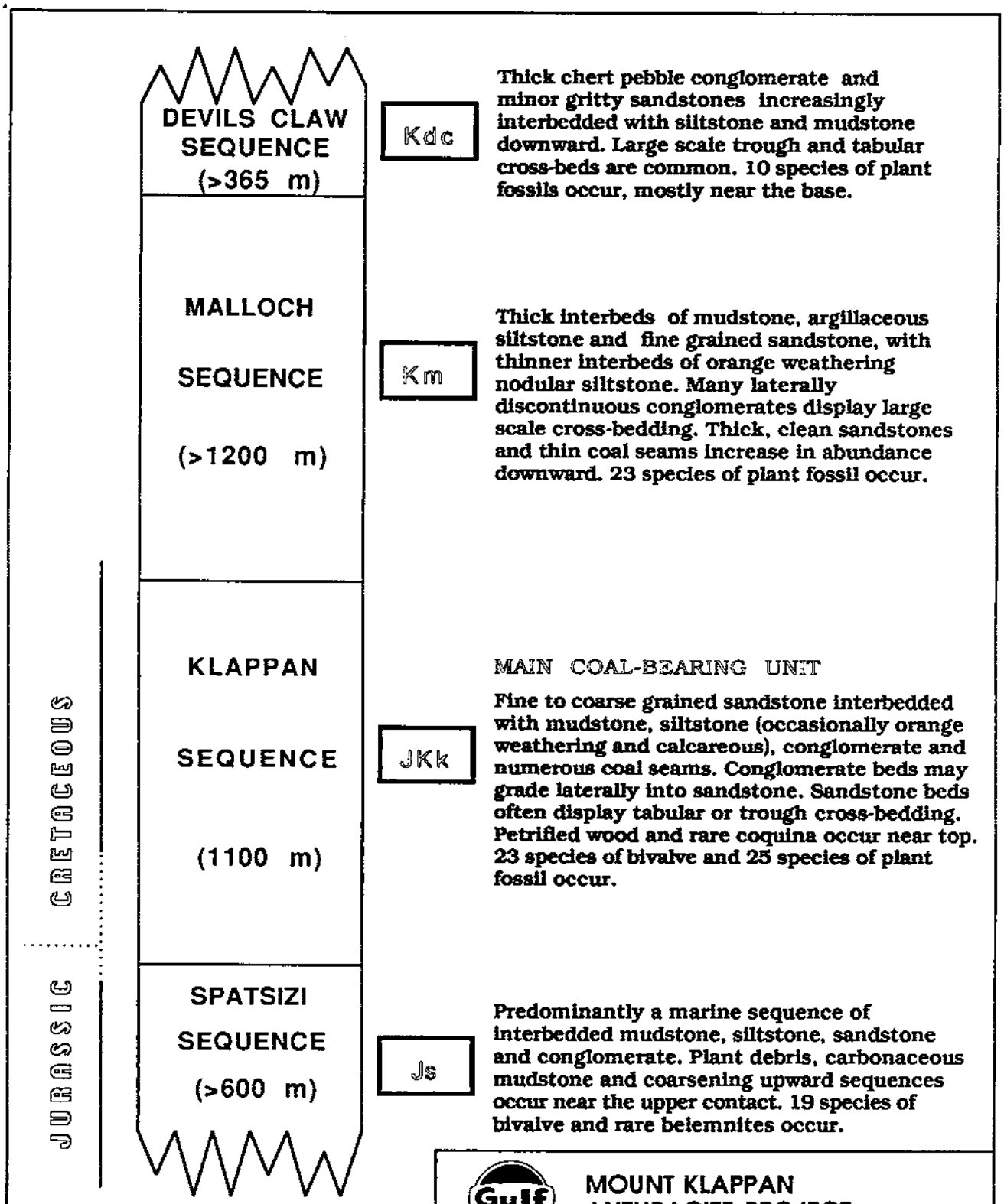
The general northwest-southeast structural grain may result directly from the collision of the remnant volcanic arc and cratonic margin creating northeast-southwest compression. Later movement of the former volcanic arc terrain northwards along interlaced right lateral high angle faults (Eisbacher, 1981) may account for the secondary north-south compression producing superimposed broad, open NE to SW trending folds.

Strike-slip and some dip-slip faulting occurred following the cessation of compression.

6.3 Mount Klappan Property Geology

6.3.1 Stratigraphy

Based on age-dating of collected species of plant macrofossils and fauna, the sediments underlying the Mount Klappan property range from uppermost Jurassic to Lower Cretaceous in age (Section 6.3.3). The four gradational sequences named above are all included in this time range, and together comprise approximately 3 600 metres of section representing a gradual marine regression. Table 6.2 outlines the sedimentological character of each sequence.


DEVILS CLAW SEQUENCE (>365 m)
Kdc
Thick chert pebble conglomerate and minor gritty sandstones increasingly interbedded with siltstone and mudstone downward. Large scale trough and tabular cross-beds are common. 10 species of plant fossils occur, mostly near the base.
MALLOCH SEQUENCE (>1200 m)
Km
Thick interbeds of mudstone, argillaceous siltstone and fine grained sandstone, with thinner interbeds of orange weathering nodular siltstone. Many laterally discontinuous conglomerates display large scale cross-bedding. Thick, clean sandstones and thin coal seams increase in abundance downward. 23 species of plant fossil occur.
KLAPPAN SEQUENCE (1100 m)
JKk
MAIN COAL-BEARING UNIT
Fine to coarse grained sandstone interbedded with mudstone, siltstone (occasionally orange weathering and calcareous), conglomerate and numerous coal seams. Conglomerate beds may grade laterally into sandstone. Sandstone beds often display tabular or trough cross-bedding. Petrified wood and rare coquina occur near top. 23 species of bivalve and 25 species of plant fossil occur.
SPATSIZI SEQUENCE (>600 m)
Js
Predominantly a marine sequence of interbedded mudstone, siltstone, sandstone and conglomerate. Plant debris, carbonaceous mudstone and coarsening upward sequences occur near the upper contact. 19 species of bivalve and rare belemnites occur.
CRETACEOUS
JURASSIC
Gulf
MOUNT KLAPPAN ANTHRACITE PROJECT
Table 6.2
STRATIGRAPHIC UNITS

6.3.1.1 Spatsizi Sequence

The Spatsizi Sequence is the lowest stratigraphic unit within the Mount Klappan property. Approximately 600 metres of this section has been measured and although the base has not been observed the stratigraphic thickness is estimated to be in excess of 1 200 metres. Interbedded mudstones, siltstones and sandstones dominate, with thin coal seams and massive conglomerates occurring in the upper portion. The sediments reflect an overall marine character that is altered by increasing coastal environmental influences and a coarsening upward trend toward the transitional upper contact with the Klappan Sequence.

The Spatsizi Sequence is exposed in the western and eastern Summit Area and in the northern Nass Area of the Mount Klappan property.

6.3.1.2 Klappan Sequence

The Klappan Sequence, the main coal-bearing unit, conformably overlies the Spatsizi Sequence and underlies most of the property. It represents an upward transition from shallow marine to non-marine conditions within a coastal plain environment. The Klappan, as a whole, is composed of a cyclic repetition of 20 to 35 metre thick sequences of interlaminated siltstone and mudstone, with some fine to

to more rarely coarse-grained sandstone, punctuated by coal seams. An environment of marine coastal coal swamps and shoreline deposits, transected by numerous migrating fluvial systems, is envisaged for the Klappan.

Toward the middle of the sequence there is an apparent stabilization of the shoreline position. Grain size increases to include laterally discontinuous conglomerates as well as coarser sandstones, and associated features such as ripple mark and planar and trough cross-bedding suggest a more fluvial environment. Coal seams become thicker through the central portion of the Klappan Sequence, and seams H through K (with the exception of J) are the best developed and most continuous in section.

The internal stratigraphy of the Klappan Sequence is based on extensive drilling and surface mapping in the Lost-Fox area, where the central 600 metres of the sequence have been defined, and on mapping and trenching in peripheral areas. An estimated 400 metres of the lowest Klappan Formation occur in the Summit area and approximately 100 metres of the highest Klappan, transitional into the Malloch, lie on the north slope of Mount Klappan. The total estimated thickness of the Klappan Sequence is therefore 1100 metres.

6.3.1.3 Malloch Sequence

The Malloch Sequence conformably overlies the Klappan Sequence and outcrops in the south-central, western and south-eastern areas of the property. Sandstones and interbedded siltstones and mudstones, again in repetitive cycles, form the dominant lithologies. Thin, carbonaceous to coaly horizons occur near the base of the Malloch, and thick conglomerate lenses become an important element near the top. The Malloch has been interpreted as the product of a prograding fluvial system with meandering fluvial deposits below and braid-plain to distal alluvial sediments above. (The conglomerates are thought to represent the remnants of active channel deposition.)

Approximately 250 metres of the lowest Malloch strata cap Mount Klappan in the southern Lost-Fox area. The total thickness of the Malloch, as expressed in alpine exposures between the property and Mount Gunanoot, may be as much as 1200 metres.

6.3.1.4 Devils Claw Sequence

The Devils Claw Sequence is the youngest of the four units and does not outcrop on the Mount Klappan property. It has a gradational and conformable contact with the underlying Malloch Sequence and outcrops southeast of the property beyond

the Skeena Area. Approximately 400 metres of the lowermost Devils Claw are exposed. The top of the sequence is generally eroded. The Devils Claw is dominated by thick, laterally extensive conglomerate units separated by sandstones, siltstones and minor mudstones. This succession has been interpreted to represent a prograding, completely terrestrial, alluvial fan system.

6.3.2 Structure

Deformation of sediments in the northern Bowser Basin is the result of two non-coaxial stress regimes. The dominant structural features regionally are the Beirnes Synclinorium and the parallel Nass River Anticlinorium which trend northwest to southeast. These major folds and all associated structures result from the primary northeast - southwest compression. Immediately south of the Mount Klappan property the synclinorium axis can be observed in the competent Devils Claw strata as bisecting a broad, open, upright feature that plunges gently to the southeast. The axial planes of smaller folds flanking the synclinorium dip toward the synclinorium axis. The adjacent major anticlinorium is not so clearly discerned as it is defined by folding in the less competent Malloch strata.

Mount Klappan structure is principally comprised of south-westwardly inclined folds and thrust faults that are products of the primary stress field. The secondary deformation includes low amplitude, long wavelength folds

trending northeast-southwest. These are superimposed on the primary folds, producing a series of plunge reversals averaging 8 to 10 degrees to the northwest and southeast.

Cleavage is associated with both fold patterns. The primary cleavage is pervasive, well developed in all fine grained lithologies, and either axial plane divergent or convergent, trending generally at 135 degrees. The secondary cleavage can also be convergent or divergent and trends between 030 to 110 degrees.

Non-compressional structures are also a feature of the Mount Klappan area. High angle normal faults trending north-south and large scale fracture zones trending east-west have been noted regionally. These may have resulted from re-activation, during relaxation, of zones of weakness formed during compression, or they may be related to a separate deformational event.

6.3.3 Flora Macrofossils and Fossil Fauna

During the 1988 field season 198 specimens of floral and faunal fossils from 145 sites on the Mount Klappan property were identified from outcrop and drill core, bringing the total collection since 1984 to 1 618 specimens from 948 sites. The 27 species of fossil fauna and 28 species of plant macrofossils identified have contributed to the delineation of age, paleoenvironment and stratigraphy. Appendix I includes a 1984 to 1988 Fossil Location map documenting all traverse collection sites, and a more

detailed map of the Lost-Fox Area where the density of collection sites is greater. A complete listing of fossils identified in 1988, with stratigraphic and geographic positions, appears in Appendix C.

The Klappan and Malloch Sequences have been dated as Lower Cretaceous as a result of similarities in flora macrofossil species with fossil collections from other western Canadian formations of Lower Cretaceous age (Table 6.3). Age dating becomes ambiguous near the Klappan/Spatsizi contact, where limited Lower Cretaceous plant species and abundant Jurassic-Cretaceous marine fauna co-exist. Confidence in a Cretaceous age for the Klappan increases, however, through the middle and upper strata of the sequence where there is a marked increase in floral species diversity and abundance (Table 6.4). The Jurassic/Cretaceous contact is, therefore, placed near the Spatsizi/Klappan contact.

As the fossil data base has grown and stratigraphic control has improved, it has become apparent that no individual species can be used as a true index fossil, however, collections of species do aid in stratigraphic delineation and correlation. The Spatsizi Sequence is characterized by an abundance of marine bivalves, belemnites and ammonites and contains very few in-situ plant fossils. Fossil flora is much more abundant in the Klappan Sequence, especially the middle Klappan (seams "H" to "M"), although the high frequency of occurrence of fossils here may be influenced by the concentration of exploration in the middle Klappan. Twenty five of the 28 fossil plants identified on

KLAPPAN - MALLOCH - DEVILS CLAW FORMATION
PLANT MACROFOSSILS

	FORMATIONS	CLADOPHLEBIS VIRGINIENSIS	SPHENOPTERIS BRULENSIS	EQUISETITES LYELLI	BAIERA FURCATA	BAIERA GRACILIS	GINKGO LEPIDA	GINKGO NANA	GINKGO PLURIPARTITA	CZEKANOWSKIA RIGIDA	PTEROPHYLLUM RECTANGULARE	PTEROPHYLLUM PLICATUM	NILSSONIA BRONGNIARTI	NILSSONIA CANADENSIS	NILSSONIA TENUICAULIS	NILSSONIA SCHAUMBERGENSIS	CTENIS BOREALIS	NILSSONIA NIGRACOLLENSIS	PITYOPHYLLUM NORDENSKIOLDII	PODOZAMITES LANCEOLATUS	SAGENOPTERIS WILLIAMSII	PTILOPHYLLUM MONTANENSE	ELATIDES CURVIFOLIA	ATHROTAXITES BERRYI	CONIOPTERIS BERRYI
LOWER CRETACEOUS	ALBIAN																								
		BLAIRMORE FM (UPPER FLORA)	●	●													? ●								
		PASAYTEN GP	◎													? ●									
		KINGSVALE GP											●												
		CROWSNEST FM																							
		COMMOTION FM																							
	APTIAN	BLAIRMORE GP (LOWER FLORA)	◎	●	●				●	◎					●				◍	●	◍	◍	◎	◎	●
		LUSCAR FM	◎	●	◍					◎		◎	●		●				◎	◎	◎	◎	◎	◎	●
		BULLHEAD GP (GETHING FM)	◍				●	●		●		◎	●		◍				◍	◎	●	●	◍	◎	●
		USLIKA FM	◍																						
		HAZELTON GP (SKEENA BEDS)					●		●	●		●			●				●			◎	●	●	
		JACKASS MOUNTAIN GP	◍									●										●	●		
		SPENCE BRIDGE GP																					●		
	NEOCOMIAN - BARREMIAN	KOOTENAY FM	◎		◎	●	●	◍	◎	◍	◎				●		◎	◎	●	◎	◎	●				
		NIKANASSIN FM			●	?			●	◍	◍							◍	●	●						
		HAZELTON GP (HAZELTON AREA)	◎		◎	●			◎		◎			●			●		●	◎	●	◍				
		HAZELTON GP (GROUNDHOG AREA)	◎						●	●					●	◍		◎		●						
		TANTALUS FM	●											●		●			●							●

* PARTIAL SPECIES LISTS ARE GIVEN FOR ALL FORMATIONS. ONLY THOSE SPECIES COMMON TO BOTH MT. KLAPPAN AND OTHER FORMATIONS ARE INCLUDED.

TABLES INDICATES A LOWER CRETACEOUS AGE FOR COAL-BEARING STRATA OF MT. KLAPPAN BY FLORISTIC COMPARISONS WITH OTHER WESTERN CANADIAN LOWER CRETACEOUS FORMATIONS WITH SIMILAR COLLECTIONS.

● 1 - 2 DOCUMENTED OCCURENCES

◍ 3 - 4 DOCUMENTED OCCURENCES

◎ 5 OR MORE DOCUMENTED OCCURENCES

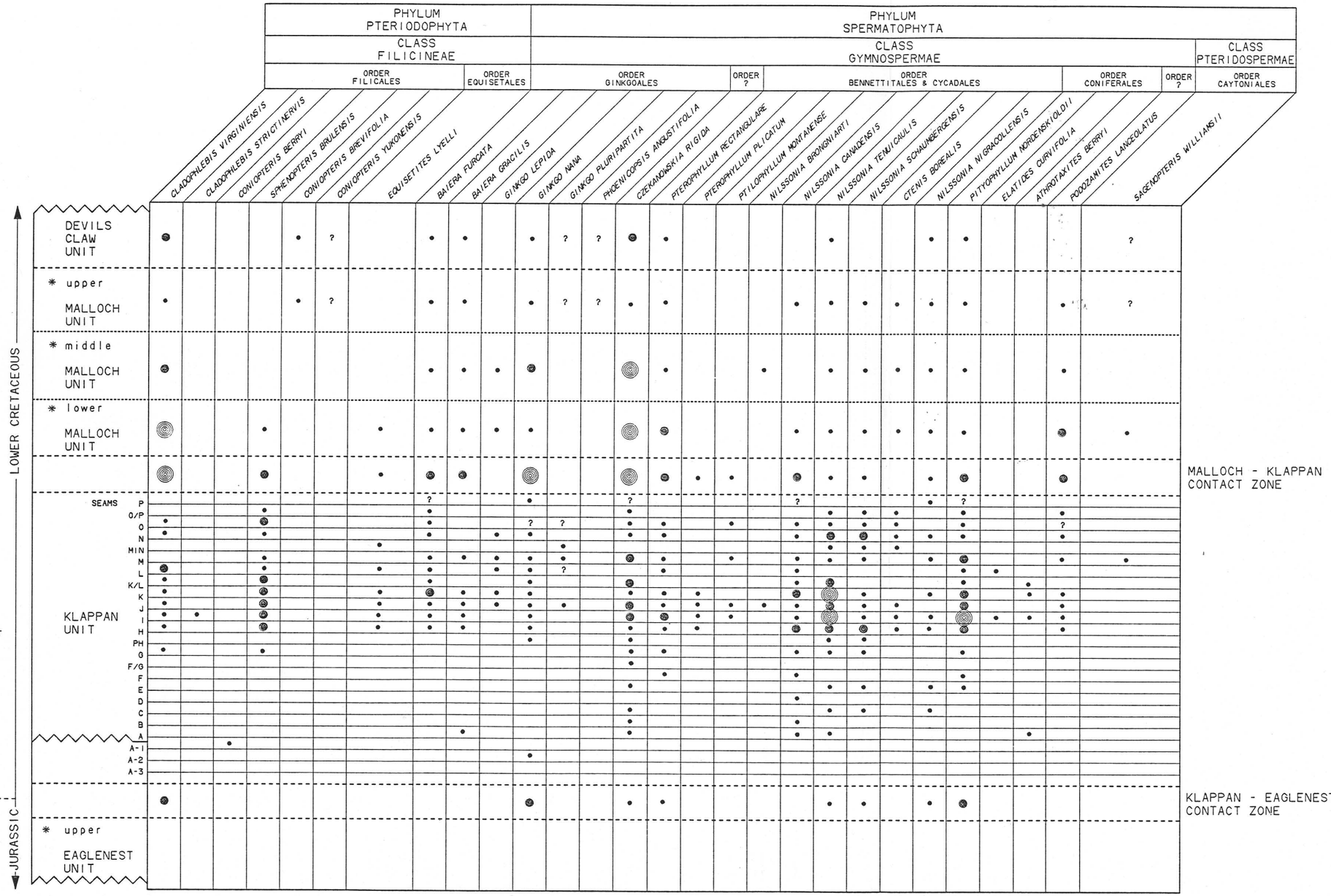
(BASED ON DATA FROM BELL, 1956)

TABLE 6-3

MOUNT KLAPPAN ANTHRACITE PROJECT

AGES OF MOUNT KLAPPAN PLANT MACROFOSSILS IN OTHER WESTERN CANADIAN FORMATIONS

GULF CANADA RESOURCES LTD.
12/20/88
KLAP:[205057]851022001.CHT



* UNIT SUBDIVISIONS ARE GENERAL AND NOT FORMALLY DEFINED.

TABLE 6-4

MOUNT KLAPPAN ANTHRACITE PROJECT

STRATIGRAPHIC POSITION
OF PLANT MACROFOSSILS

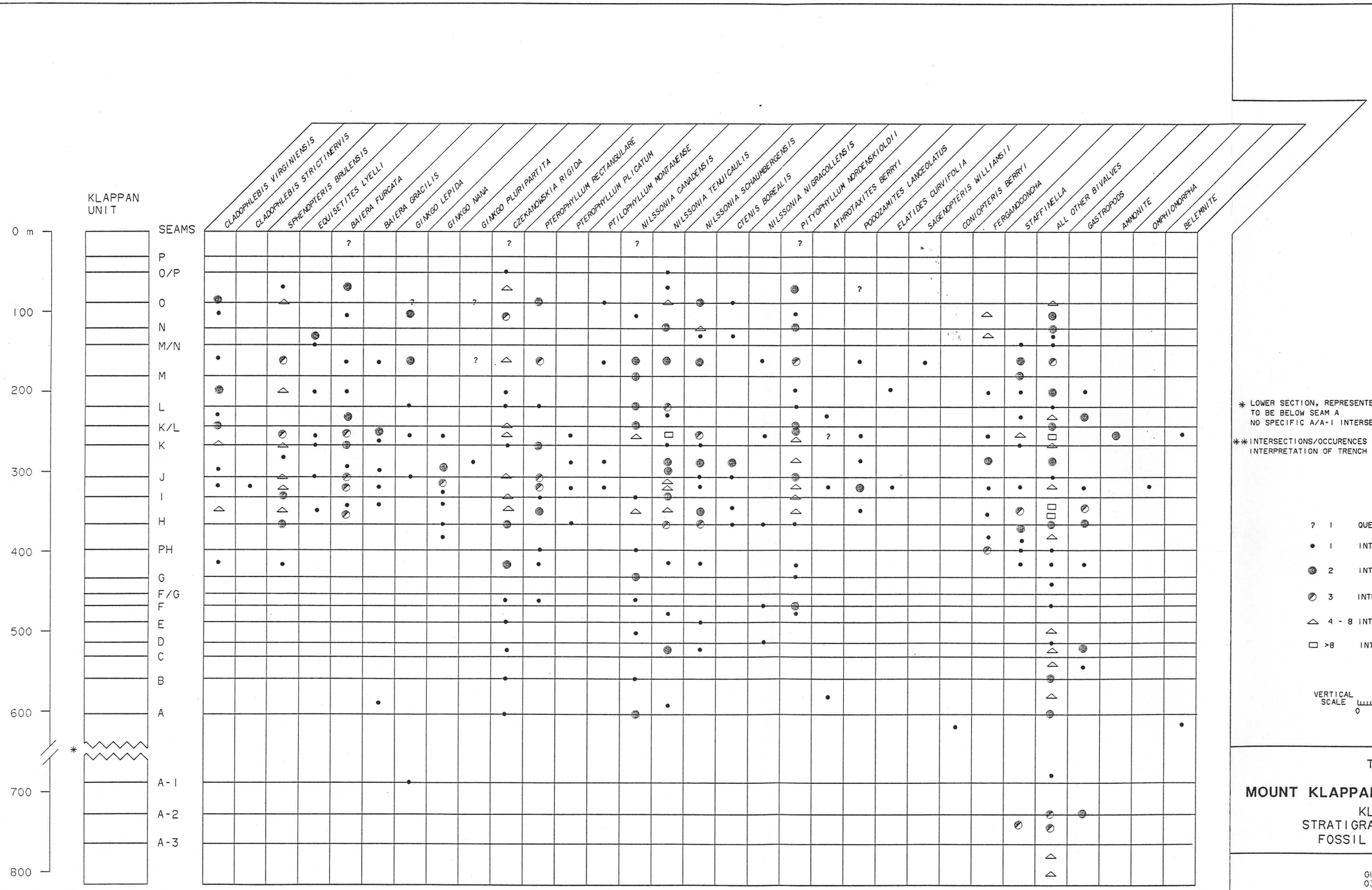
GULF CANADA CORPORATION
20/12/88
KLAP:[205057]851005001.CHT

the property have been found in the Klappan. Numerous bivalves are present, mostly in the lower Klappan, along with gastropods and belemnites. The marine bivalve Staffinella is found throughout the middle Klappan, with the fresh water bivalve Ferganoconcha extending through the middle and upper Klappan. A generalized biostratigraphy and marker horizons chart for the Klappan Sequence is located in Appendix I.

Twenty four of the total of 28 floral species identified on the property have been found in the Malloch Sequence. No additional species were discovered in 1988. Neither can new paleontological developments be reported for the Devils Claw Sequence in 1988; past work indicates a lack of marine fauna as in the Malloch Sequence, and only rare flora in the Devils Claw. Tables 6.4 and 6.5 illustrate the stratigraphic position of the species documented on the Klappan property.

6.4 Lost-Fox Area Geology

The results of the 1988 exploration program on the Mount Klappan property have not prompted reinterpretation of the essential elements of the Lost-Fox area geology, but there has been cause for a few modifications. Dominant in the Lost-Fox area are several overturned anticline-syncline pairs, roughly parallel with each other, and trending northwest-southeast. Within Appendix II, cross-section 3000N illustrates the major Lost Ridge fold pair at 1500W, and a series of other folds between the baseline and 2000E. Low angle thrust and normal faulting is also prominent.



* LOWER SECTION, REPRESENTED BY DDH86026, TENTATIVELY INTERPRETTED TO BE BELOW SEAM A
NO SPECIFIC A/A-1 INTERSEAM IS IMPLIED (MAY BE AS MUCH AS 150-200m)

** INTERSECTIONS/OCCURENCES BASED ON 1986, 1987 AND 1988 DRILLING AND INTERPRETATION OF TRENCH SEAMS

?	1	QUESTIONABLE INTERSECTION
•	1	INTERSECTION/OCCURENCES
◍	2	INTERSECTION/OCCURENCES
◐	3	INTERSECTION/OCCURENCES
△	4 - 8	INTERSECTION/OCCURENCES
□	>8	INTERSECTION/OCCURENCES

VERTICAL SCALE 0 100 200 300 m

TABLE 6-5

MOUNT KLAPPAN ANTHRACITE PROJECT

KLAPPAN UNIT
STRATIGRAPHIC POSITION OF
FOSSIL FLORA AND FAUNA

GULF CANADA RESOURCES LTD.
03/01/89
KLAP:[205057]870006002.CHT

6.4.1 Central Lost-Fox Geology

The faults in the core of the Lost Ridge syncline at 1000W on section 2000N, first interpreted in 1986, retain their original shape and effect. The faults between 2000W and 2500W on 2000N, one thrust and one steeply normal, have both undergone revision due to accumulation of new data in 1988.

Surface seam tracing using trenches excavated in 1987 and 1988, led to the mapping of seam G, flat lying at shallow depth over an area approximately central to map D-5 (Appendix II). Drill hole 88-017 intersected what has been interpreted as seam G above seam I, and subsequent reinterpretation of DDH85-024 also indicates the thrust placement of seam G over seam I. The northerly extension of the major thrust (see 1300W on section 2200W) has therefore been redirected to account for this feature, as well as thrust repetition in several holes further south (86-016, 86-021, 86-025).

A normal fault of moderate displacement (80m) in the same area (2500W on section 2000N in the Lost-Fox Area 1987 Geological Report) was invoked in 1986, primarily to explain the apparent loss of section between seams J and N in DDH86-025 and between seams K/L and N in DDH86-027 (see 1987 report). The drilling of DDH88-003 produced a section extending from above seam J to above seam M that was a atypical in general character, but showed no evidence of faulting, and had several similarities to the section in DDH86-025 and -027. The present interpretation, therefore,

is that there is no faulting in the area, and the pecularities of lithologic succession above seam J, formerly thought to indicate faulting in DDH86-025 and -027, have now been accepted as part of normal variation.

As the above normal fault was eliminated from the west-central Lost Ridge area, another major normal fault was introduced within the overturned limb of the Lost Ridge anticline-syncline pair (1200W on section 2000N). Surface seam tracing east of the anticlinal axis (between sections 2800N and 1700N at 1200W, (see maps D-5 and E-5) has defined the traces of seams I, J and K steeply inclined in the overturned limb of the fold. Further to the west drill holes 88-006 and 88-008 appear to intersect seam J and the seam J to K section, also steeply overturned. To account for the appearance of the same section twice in the overturned limb of the anticline, a very steep normal fault of 430 m maximum displacement (see section 1900N) has been included in the interpretation. This feature accommodates the present mapping of seam distribution but its geological evolution is not easily rationalized. Seam identification on either side of the fault will be verified as further data is collected, and the overall implications of the feature will be reviewed.

And finally, mapping along Fox Creek and the drilling of DDH88-023 provided additional control on the distribution of the highest seams in section as strata plunge from the Lost Ridge area, south across Fox Creek. These findings verified the seam traces mapped in 1987 with only modest adjustment.

6.4.2 East Lost-Fox Geology

Only 7 drill holes were added in 1988 to the pattern in the east Lost-Fox area (east of Lost Ridge and below the haul road, see map E-5). Of these, several were drilled on tight spacing with pre-existing holes and intersected strata as anticipated (88-011, 88-013, 88-015, 88-020 and 88-026).

DDH88-028 provided a slightly different exposure of strata in its area (see map E-6) and promoted the re-evaluation of seam interpretation in 4 holes from 1987 (87-023, 87-026, 87-028, and 87-029). As these holes were all that provided local geological control, the re-evaluation caused a significant reshaping of folding interpreted in 1987. The folds are now somewhat less intense, but still represent the intersection of 2 fold sets trending at different angles (see map E-6).

DDH88-029 and trenching in this vicinity confirmed the traces of seams N, O and P which have been problematic up to this time. A fault trending through drill holes 85-010 and 86-012 has been extended through 88-029.

6.4.3 West Lost-Fox Geology

One of the objectives of 1988 drilling was to forge a geological connection between the central Lost Ridge area and the west Lost Ridge area which lies beyond (west of) a normal fault of very large displacement (675 m, see maps C-4 and C-5). The westward extension of drilling from the central

ridge (DDH88-003, 88-005 and 88-022) defines the southward dip of the moderately inclined strata striking southwest through drill holes 86-029, 86-031 and 87-011 (maps D-5 and D-4). DDH88-007 intersects some very disturbed section and may mark the eastern fringe of a fault zone.

Across the fault to the west, DDH88-002 and 88-004 support the indications of 87-013 and 87-015 (map C-4). All of these holes intersect the western upright limb of a major overturned, southerly plunging anticline. The 1988 holes, however, suggest that the plunge of the anticline is substantially shallower than interpreted following 1987 drilling.

The upright limb of the anticline contains very similar strata at a comparable attitude to the strata immediately east of the fault. Between these two areas, however, the overturned limb of the anticline takes the strata very steeply into the subsurface (see 3500W on section 2900N). The gently dipping beds intersected by 87-011 and 88-005 are a relatively short distance east of the overturned limb. There is no evidence of a tight syncline east of the anticline to bring these beds back to the surface, and therefore the normal fault is invoked. South and west of the anticline (map C-4), there is a syncline which appears to be directing the package of seams (H through K/L) around the south perimeter of Mount Klappan.

6.5 Skeena Area Geology

Strictly speaking, no work was done within the Skeena area of the Mount Klappan property, but several sections were measured immediately south of the property which have significant impact on the geology of the Skeena area. Strata suspected to be low in the Malloch Sequence, and near the Malloch/Klappan boundary, were described from locations on Ellis Ridge (OTC88-006), south of Tahtsedle Creek (OTC88-007 and OTC88-008) and in the vicinity of Jack Creek (OTC88-010 - see Measured Section map in Appendix I for position of each of these).

The Jack Creek and Ellis Ridge sections, on either side of the Skeena River valley, consist of strata that appear to derive from the middle to lower Malloch Sequence. At Ellis Ridge, small scale coarsening upward sequences, planar and trough cross-bedding occur in a succession of argillaceous fine-grained sandstones, siltstones and mudstones. Plant and wood fragments are abundantly preserved in the finer lithologies, with some carbonaceous zones, but no coal seams. A fluvial to upper delta plain environment is interpreted, including channel and overbank deposits, consistent with the general model for the Malloch.

The Jack Creek section is a downward continuation of the extended Malloch section measured in 1987 (OTC87-030). Lithologies are comparable between this section and the Ellis Ridge section, however, coal seam development is slightly more pronounced and a few conglomerate beds are encountered, including one quite thick unit at the base of the measured section. The lowest strata have much in common with the sequence seen on the

north face of Mount Klappan. The Jack Creek section is interpreted to represent the lowest reaches of the Malloch Sequence, from a position stratigraphically lower than the Ellis Ridge section. The 1988 extension of the Jack Creek section brings the total stratigraphic thickness of Malloch Sequence rocks at this location to over 1 150 m.

At Tahtsedle Creek OTC88-008 is a downward continuation of OTC88-007 with a 30 m to 50 m intervening gap. OTC88-007 is predominantly fine-grained sandstone with interbedded siltstone and mudstone. Plant and wood fragments are plentiful, but less common than in Malloch sections elsewhere. Coaly to carbonaceous zones are rare near the top of OTC88-007. A thin bed of sandy-siltstone containing small, thin-shelled bivalves is unique to this section (see Appendix I).

Three coal seams up to 2 m in thickness occur in OTC88-008, and fine-grained sandstone, commonly cross-bedded, is an even more dominant feature in OTC88-008 than in OTC88-007. Two 10 m to 15 m units, one sandstone and one conglomerate, appear in the middle to lower portion of OTC88-008. The conglomerate grades to a coarse sandstone locally, but is found to be laterally continuous, and mineralogically and texturally similar to the conglomerates in the lowest Jack Creek section and on the north face of Mount Klappan. This bed may not be traceable between these areas with perfect confidence, but is inferred to represent a similar stratigraphic level in each area. The strata lying in the bottom of the Tahtsedle Creek valley, including several coal seams, are therefore suggested to lie very high in the Klappan Sequence, with the Klappan/Malloch boundary perhaps represented at the base of the conglomerate in OTC88-018.

6.6 Summit Area Geology

Accurate geological mapping in the Summit Area was hindered prior to 1988 by the lack of detailed small-scale base maps. Following the generation of new 1:5000 scale map coverage for the 1988 exploration season, the majority of field activity was directed toward review and remapping of data locations as required. Trench and coal spoil mapping required the most attention, although some outcrop positions also were adjusted. Repositioning of trenches led to realignment of seam traces and in turn, where the changes were substantial, to re-interpretation of structure.

Map checking produced the most changes on Map Sheet K-11 (Appendix III). Here a fold pair transecting Fiction Ridge originally interpreted as tight and overturned to the northeast, has been re-mapped as broad and open (500 W on section 11 500N) As a result, seam traces for K', L' and M' were modified.

Further adjustment in the same area involved the southward shift of the mapped trace of an anticline from a position coincident with the trend of a sandstone ridge (maps K-11 and K-12, between 1000W and 1500 W on section 11 500N), to slightly south of it. The traces of seams K' and L' now describe a closure to the southeast (map K-11) and to the northwest (map K-12) due to the interpretation of a double plunge of the anticline in both these directions. Field checking was done for the entire Summit Area with the exception of the territory covered by map sheets J-12 (some correction by orthophoto work) and K-12.

New areas on maps L-13, M-13 and M-12 were also explored. Coal seams were encountered in all three map areas and the presence of at least two distinct seams was established. The possibility that the seam beneath the conglomerate on each of the three maps is the same seam has been considered, but mapping is still tenuous in the area. Two major fold pairs were defined on map area L-13. These conform with the general structural trend and plunge variably southeast and northwest. These folds appear to be approximately aligned with folds mapped on Alvin Ridge to the southeast (see map sheet K-12). A normal fault of 80 m displacement (on a 70 degree northeast dip) also affects strata in the L-13 map area.

6.7 Coal Development

Through to the end of the 1988 exploration season, drilling on the Mount Klappan property has defined over 40 seams within a stratigraphic thickness of 750 m. Table 6.6 summarizes the characteristics of the major seams. The primary coal measures, containing the best seams, and the seams most frequently intersected by drilling, lie between seams B and O, within a stratigraphic distances of 450 m. Not every occurrence of each seam is included in the table, structurally disturbed intersections that have been substantially thickened or thinned by folding or faulting are not incorporated into the average thickness calculations.

A complete catalogue of all drilled seam intersections is presented in Table 6.7. This table serves as the source for the raw seam data used to generate Table 6.6 and used also for resource calculations.

The 33 different seams included in Table 6.6 are those that have been identified with confidence. In addition to the 582 drilled occurrences of these seams, there are an additional 32 occurrences of seams that cannot be identified with the same certainty. There are two main categories into which these unnamed seams fall: those for which the stratigraphic position is established, but which are sufficiently infrequent in occurrence that no name has yet been applied to them; and those that appear in drill holes where the section is so disturbed or unfamiliar that the stratigraphic position cannot be determined. It is estimated, however, that the 32 occurrences of unidentified seams may represent as many as 18 distinct stratigraphic horizons containing coal. The average true thickness of these unidentified seams is just over 1 m.

Of the 33 seams listed in Table 6.6, 31 average greater than 0.5 m in total thickness (coal + rock), however, 7 of these have been intersected by drilling only once. 21 seams have been drilled more than once and average more than 1.0 m in total thickness. 12 seams have been intersected more than 10 times, average more than 1.0 m in thickness and contain at least 70% coal calculated by true thickness. 7 of these 12 seams average greater than 2.0 m in true thickness.

The aggregate true thickness of coal in the coal bearing section is estimated at 65 m excluding unidentified seams. The 12 seams greater than 1.0 m comprise 29 m of coal.

Table 6.6

LOST-FOX AREA
COAL SEAM AND CARBONACEOUS ZONE SUMMARY

SEAM	NUMBER	PRINCIPAL SEAMS	COAL	COAL + ROCK	% COAL
P	3		1.28	1.33	95.99
O	16	*	0.84	1.12	74.53
N	18	*	1.18	1.40	83.66
M/N	11	*	0.77	1.03	74.60
M upper	2		1.44	1.62	88.89
M	25	*	2.18	2.86	76.34
L/M	1		0.32	0.40	80.00
L	37	*	1.76	2.26	77.75
K/L	37	*	2.11	2.87	73.62
K	54	*	2.75	3.35	81.99
J	63		0.30	0.81	36.34
J2	1		0.70	0.71	97.22
I	97	*	4.18	4.62	90.53
H/I	21		0.75	1.57	47.53
H/I2	3		1.06	1.19	89.04
H	66	*	3.01	3.81	79.04
H lower	1		1.09	1.16	93.97
H-1	1		1.07	1.31	81.68
Phantom	33		0.70	2.47	28.27
G	29		1.34	2.36	56.98
G lower	11	*	1.00	1.33	75.67
F/G	4		0.27	0.50	53.77
F	14	*	2.26	2.99	75.69
E	11	*	1.32	1.39	95.01
D	5		2.01	2.46	81.74
C	5		0.40	0.79	50.89
B	2		0.15	1.34	10.86
B lower	1		0.30	0.30	100.00
A	6		1.23	1.88	65.34
A-2	1		0.85	1.02	83.33
A-3	1		4.05	4.98	81.33
A-4	1		2.38	3.11	76.53
A-5	1		3.45	4.69	73.56
TOTAL	582	29.02	48.47	65.02	73.69
?	32		0.74	1.11	66.86

Table 6.7

LOST-FOX: SUMMARY OF DIAMOND DRILL HOLE COAL SEAMS AND CARBONACEOUS ZONES

Diamond Drill Hole	Seam	Drilled Seam Interval (m)	True Thickness Coal (m)	True Thickness Coal + Rock (m)	Comments
DDH82005	I (ovt)	54.02 - 60.30	4.26	4.98	
	J (ovt)	108.17 - 108.31	0.14	0.14	Not used for resources (< 0.50 m thick)
	K (ovt)	148.09 - 154.34	3.99	5.16	
	L (ovt)	186.89 - 193.81	2.75	5.75	
	M (ovt)	236.14 - 238.92	1.43	2.24	
DDH83001	I	29.60 - 32.68	4.96	5.51	
	H	74.73 - 79.38	3.83	4.54	
	G	133.42 - 137.43	3.00	3.93	Resource thickness. Additional coaly zone (64.03% ash) from 138.22 m to 139.19m.
	G lower	142.45 - 144.75	1.24	2.25	
	F	180.62 - 185.52	3.88	4.79	
	E	209.60 - 210.94	1.32	1.32	
DDH84005	Ph	10.67 - 12.24	0.00	1.55	Drill hole intensely folded; carb. zone.
	G	34.30 - 48.70	0.00	6.49	Carbonaceous zone.
	G	59.00 - 61.10	0.41	1.62	Not used for resources (< 50% c/c+r).
	G	83.40 - 84.78	0.78	0.78	
	G	111.40 - 114.42	0.00	2.95	Carbonaceous zone.
DDH84006	I	15.44 - 22.56	5.31	6.67	
	H/I	49.43 - 50.17	0.61	0.61	Intensely folded.
	I (ovt)	109.99 - 116.94	4.67	5.04	
	J (ovt)	154.04 - 159.35	3.20	3.56	
	K (ovt)	257.54 - 260.95	2.27	2.88	
DDH84007	J	20.53 - 23.09	0.00	2.45	Carbonaceous zone.
	I	56.87 - 62.32	5.11	5.43	
	H	103.00 - 107.18	3.26	3.98	
	Ph	124.77 - 127.86	2.45	2.98	
	G	151.53 - 151.72	0.28	0.28	Not used for resources (< 0.50 m thick).
	G lower	164.64 - 165.53	0.72	0.89	Additional coaly zone at 167.26 m - contains 0.38 m of coal.
	F	227.26 - 228.36	0.97	1.07	
	E	251.62 - 252.70	1.00	1.00	
	E (ovt)	272.00 - 282.45	3.75	3.79	Intensely folded.

Table 6.7 cont'd

LOST·FOX: SUMMARY OF DIAMOND DRILL HOLE COAL SEAMS AND CARBONACEOUS ZONES

Diamond Drill Hole	Seam	Drilled Seam Interval (m)	True Thickness Coal (m)	True Thickness Coal + Rock (m)	Comments
DDH84008	L	23.20 - 29.26	0.94	4.49	Not used for resources (< 50% c/c+r).
	K	61.40 - 65.37	3.33	3.93	
	J	93.24 - 93.39	0.14	0.14	Not used for resources (< 0.50 m thick).
	I	133.60 - 137.71	3.40	3.86	
	H/I	169.15 - 169.49	0.33	0.33	Not used for resources (< 0.50 m thick).
	H	180.18 - 189.53	5.90	6.41	
	H	218.82 - 234.37	3.67	3.84	Intensely folded.
	G	271.11 - 274.55	1.88	3.28	
	G lower	290.90 - 291.21	0.29	0.29	Not used for resources (< 0.50 m thick).
DDH85001	J (ovt)	22.10 - 22.68	0.36	0.36	Not used for resources (< 0.50 m thick).
	J	78.02 - 78.89	0.00	0.08	Carbonaceous zone.
	J (rep)	86.63 - 87.16	0.00	0.29	Carbonaceous zone.
	I	119.13 - 123.51	3.38	4.38	
	H/I	141.01 - 141.07	0.05	0.05	Not used for resources (< 0.50 m thick).
	H	158.65 - 160.98	1.74	2.15	
	Ph	175.78 - 176.00	0.22	0.22	Not used for resources (< 0.50 m thick).
	G	214.70 - 215.64	0.85	0.94	
DDH85002	J				In casing.
	I	59.45 - 62.68	3.00	3.23	Twinned hole. Refer to DDH85004 for seam
	H	101.62 - 102.97	1.09	1.35	thicknesses.
DDH85003	M (ovt)	35.71 - 42.63	3.91	5.30	
	M/N (ovt)	91.30 - 92.00	0.56	0.56	
	N (ovt)	100.20 - 102.39	1.17	1.72	
	N (upright)	170.59 - 172.29	1.08	1.44	
DDH85004	J				In casing.
	I	59.02 - 62.72	3.47	3.70	
	H	101.65 - 105.64	3.20	3.96	
	Ph	125.97 - 126.20	0.23	0.23	Not used for resources (< 0.50 m thick).
	G	160.32 - 161.69	0.94	1.37	
	G lower	162.44 - 165.35	1.49	2.86	
	F	204.19 - 206.57	1.73	2.35	
	E	223.68 - 226.75	2.04	2.23	
	E (ovt)	237.89 - 239.64	0.44	0.50	

Table 6.7 cont'd

LOST-FOX: SUMMARY OF DIAMOND DRILL HOLE COAL SEAMS AND CARBONACEOUS ZONES

Diamond Drill Hole	Seam	Drilled Seam Interval (m)	True Thickness Coal (m)	True Thickness Coal + Rock (m)	Comments
DDH85005	O (ovt)	26.90 - 30.13	0.64	0.67	
	O	51.60 - 53.25	1.11	1.33	
	N	98.55 - 99.65	0.17	0.17	Not used for resources (< 0.50 m thick).
	M (ovt)	106.13 - 111.87	2.43	3.94	Minor folding.
	M (rep)	175.69 - 175.88	0.13	0.13	Not used for resources (< 0.50 m thick).
	M (rep)	210.91 - 214.17	1.89	2.93	
	L/M	243.46 - 243.86	0.32	0.40	Not used for resources (< 0.50 m thick).
	L	255.98 - 256.63	0.41	0.61	
	K/L	310.83 - 311.56	0.62	0.66	
	K	316.12 - 322.20	2.49	3.10	
DDH85006	H	23.32 - 26.09	2.13	2.76	
	Ph	43.17 - 45.23	0.00	2.06	Carbonaceous zone.
	G	81.93 - 85.47	2.15	3.49	Resource thickness. Additional coal zone containing 67.74% ash from 85.47 to 88.08 m.
	G (rep)	111.27 - 113.25	0.00	0.75	Carbonaceous zone.
	F	153.47 - 156.95	1.94	3.10	
	E	178.13 - 179.04	0.62	0.91	
DDH85007	H/I (ovt)	16.97 - 18.44	0.00	1.27	Carbonaceous zone.
	I (ovt)	95.50 - 102.30	3.63	4.81	Twinned hole. Refer to DDH85009 for seam thicknesses.
DDH85008	Ph	19.00 - 19.36	0.07	0.36	Not used for resources (< 0.50 m thick).
	G	48.16 - 49.16	0.12	0.58	Not used for resources (< 50% c/c+r).
	F	80.87 - 81.71	0.63	0.66	
DDH85009	H/I (ovt)	24.57 - 26.24	0.00	1.22	Carbonaceous zone.
	I (ovt)	102.85 - 111.00	4.27	4.90	
	J (ovt)	166.20 - 166.23	0.02	0.02	Not used for resources (< 0.50 m thick).
	K (ovt)	204.40 - 209.51	2.70	3.27	
	L (ovt)	241.14 - 247.93	2.73	4.46	
	K	322.62 - 328.06	2.09	2.81	Intensely folded.
DDH85010	O	73.40 - 73.62	0.22	0.22	Not used for resources (< 0.50 m thick).
	N	91.66 - 92.01	0.31	0.31	Not used for resources (< 0.50 m thick).
	M	130.44 - 134.76	2.60	4.60	Resource thickness. Additional coaly zone containing 63.61% ash from 134.76 m to 135.90 m
	L	159.22 - 161.13	1.19	1.81	
	K/L	182.93 - 184.53	0.00	1.43	Carbonaceous zone.
	K	222.56 - 228.22	2.82	3.96	

Table 6.7 cont'd

LOST-FOX: SUMMARY OF DIAMOND DRILL HOLE COAL SEAMS AND CARBONACEOUS ZONES

Diamond Drill Hole	Seam	Drilled Seam Interval (m)	True Thickness Coal (m)	True Thickness Coal + Rock (m)	Comments
DDH85011	K/L				In casing.
	K	36.49 - 40.55	2.20	3.47	Resource thickness. Additional coaly zone from 42.02 to 42.74 m, with no ash analysis.
	J	70.56 - 70.94	0.00	0.37	Carbonaceous zone.
	I	101.44 - 103.34	1.22	1.75	Twinned hole. Refer to DDH87025 for seam thicknesses.
	H/I	139.23 - 144.84	0.00	5.23	Carbonaceous zone.
	H	153.42 - 154.11	0.00	0.65	Brecciated coaly claystone.
DDH85012	L	23.24 - 24.84	1.37	1.37	
	K/L	50.16 - 51.69	1.15	1.49	
	K	69.89 - 71.73	1.62	1.74	Resource thickness. Additional coaly zone containing 67.74% ash from 71.73 to 73.63 m.
	J	125.61 - 126.50	0.00	0.79	Carbonaceous zone.
	K (rep)	151.54 - 153.01	0.59	1.22	Faulted; in vicinity of major fault; not used for resources.
	J	176.01 - 176.21	0.00	0.16	Carbonaceous zone.
	H	205.78 - 209.20	2.06	3.22	
	Ph	242.57 - 255.92	0.26	11.63	Not used for resources (< 50% c/c+r).
DDH85013	K	22.90 - 23.91	0.68	0.98	
	J	50.02 - 52.93	0.00	2.84	Carbonaceous zone.
	I	91.24 - 97.53	5.33	6.16	
	H	146.55 - 150.96	2.60	4.37	
	Ph	176.56 - 176.65	0.09	0.09	Not used for resources (< 0.50 m thick).
	G	185.65 - 185.90	0.22	0.22	Not used for resources (< 0.50 m thick).
	F/G	205.81 - 206.68	0.38	0.87	
	Ph	211.17 - 211.82	0.56	0.65	
	G	235.70 - 236.11	0.18	0.39	Not used for resources (< 0.50 m thick).
	F/G	242.26 - 242.74	0.18	0.47	Not used for resources (< 0.50 m thick).
	F	271.23 - 272.18	0.86	0.94	Seam F split into two mining sections.
	F	273.20 - 275.51	1.80	2.26	
DDH85014	K	32.60 - 35.40	0.00	2.76	Carbonaceous zone.
	J	63.22 - 64.46	0.00	1.17	Carbonaceous zone.
	I	102.59 - 108.37	5.24	5.46	
	H	155.53 - 157.67	1.04	2.09	
	Ph	160.98 - 162.11	0.00	1.12	Carbonaceous zone.
	F	247.19 - 250.10	2.22	2.71	

Table 6.7 cont'd

LOST-FOX: SUMMARY OF DIAMOND DRILL HOLE COAL SEAMS AND CARBONACEOUS ZONES

Diamond Drill Hole	Seam	Drilled Seam Interval (m)	True Thickness Coal (m)	True Thickness Coal + Rock (m)	Comments
DDH85015	E (ovt)	32.54 - 34.89	0.85	0.95	
	F (ovt)	78.00 - 82.28	1.92	2.73	
	F/G (ovt)	92.37 - 92.57	0.00	0.14	Carbonaceous zone.
	G lower (ovt)	144.09 - 144.80	0.00	0.46	Carbonaceous zone.
	G	157.52 - 166.01	1.74	3.43	Intensely folded.
	G lower	176.39 - 177.71	1.18	1.30	
	G lower (ovt)	185.47 - 185.62	0.15	0.15	Not used for resources (< 0.50 m thick).
DDH85016	J	26.54 - 27.49	0.00	0.94	Carbonaceous zone.
	I	80.80 - 86.41	5.11	5.55	
	H	127.12 - 134.33	4.57	6.75	
	Ph	141.86 - 144.38	0.75	2.07	Not used for resources (< 50% c/c+r).
	G	182.72 - 183.64	0.79	0.79	
	F	205.20 - 207.59	1.77	2.13	
	E	231.45 - 233.78	2.12	2.22	
	D	263.00 - 265.51	2.30	2.41	Resource thickness. Additional coaly zone containing 79.54% ash from 261.44 to 263.00 m.
	C	285.71 - 286.08	0.34	0.34	Not used for resources (< 0.50 m thick).
	B	318.22 - 318.55	0.27	0.29	Not used for resources (< 0.50 m thick).
DDH85017	K				In casing.
	J	64.86 - 65.03	0.16	0.16	Not used for resources (< 0.50 m thick).
	I	101.36 - 106.87	4.41	5.37	
	H	152.36 - 157.10	3.79	4.67	
	Ph	184.56 - 189.06	1.55	4.41	Not used for resources (< 50% c/c+r).
	G	204.72 - 205.74	0.58	1.01	Resource thickness. Carbonaceous zone continues down to 208.53 m.
	G lower	221.21 - 222.23	0.71	0.97	
	F	241.48 - 243.47	1.56	1.93	
	E	261.48 - 263.92	2.27	2.34	Resource thickness. Additional coaly zone containing 68.98% ash from 263.92 to 265.51 m.

Table 6.7 cont'd

LOST-FOX: SUMMARY OF DIAMOND DRILL HOLE COAL SEAMS AND CARBONACEOUS ZONES

Diamond Drill Hole	Seam	Drilled Seam Interval (m)	True Thickness Coal (m)	True Thickness Coal + Rock (m)	Comments
DDH85018	J	22.42 - 22.52	0.00	0.09	Carbonaceous zone.
	I	69.48 - 71.75	2.54	2.61	
	H	109.90 - 113.78	3.23	3.63	
	Ph	132.95 - 139.12	0.00	5.59	Carbonaceous zone.
	G	158.08 - 165.50	0.00	7.35	Coal rip-up clasts in SS (seam possibly eroded).
	G lower	169.90 - 172.18	0.00	2.24	Coal rip-up clasts in SS (seam possibly eroded).
	F	212.26 - 218.60	4.89	6.02	
	E	238.76 - 239.00	0.22	0.22	Not used for resources (< 0.50 m thick).
	D	260.40 - 263.07	1.57	1.89	
	C	269.02 - 270.48	0.00	1.03	Carbonaceous zone.
DDH85019	Ph	10.51 - 12.41	0.00	1.90	Carbonaceous zone.
	G	22.21 - 27.51	0.53	1.29	Not used for resources (< 50% c/c+r).
	G lower	31.26 - 31.78	0.45	0.52	
	F/G	46.16 - 46.68	0.51	0.51	
	F	65.65 - 70.20	3.62	4.21	Resource thickness. Additional coaly zone from 63.14 to 63.67 m, with no ash anaysis.
	E	87.36 - 87.78	0.33	0.33	Not used for resources (< 0.50 m thick).
	D	121.53 - 122.29	0.36	0.43	Not used for resources (< 0.50 m thick).
	C	139.06 - 139.69	0.36	0.51	
DDH85020	F	25.59 - 28.14	0.73	2.49	Not used for resources (< 50% c/c+r).
	E	53.87 - 55.83	1.91	1.91	
	D	98.12 - 106.40	3.51	4.74	Resource thickness. Coaly zone containing 67.74% ash from 94.32 to 98.12 m.
	C	148.72 - 150.41	1.02	1.19	Resource thickness. Additional coaly zone containing 45.03% ash from 152.19 to 153.84 m.
DDH85021	I	32.18 - 33.89	1.30	1.61	
	H	40.00 - 45.70	4.70	5.55	
	Ph	73.55 - 76.18	0.00	2.57	Carbonaceous zone.
	G	99.67 - 101.60	0.00	1.82	Carbonaceous zone.
	F	124.40 - 128.11	3.14	3.43	
	E	150.22 - 152.19	1.80	1.81	

Table 6.7 cont'd

LOST-FOX: SUMMARY OF DIAMOND DRILL HOLE COAL SEAMS AND CARBONACEOUS ZONES

Diamond Drill Hole	Seam	Drilled Seam Interval (m)	True Thickness Coal (m)	True Thickness Coal + Rock (m)	Comments
DDH85022	J	15.22 - 16.36			No recovery, thickness picked from log.
	I	49.04 - 53.87	4.50	4.69	Twinned hole. See also DDH87016.
	H	90.26 - 94.20	3.21	3.85	
	Ph	111.08 - 114.58	0.00	3.48	Carbonaceous zone.
	G	158.50 - 162.68	0.00	3.93	Carbonaceous zone.
DDH85023	K (ovt)	26.93 - 32.42	3.85	4.47	
	L (ovt)	63.18 - 69.04	3.34	4.57	
	M	125.84 - 145.84	7.55	11.91	Intensely folded. *Used a local straight average
	M (ovt)	214.32 - 230.86	9.67	13.86	Intensely folded. Average thickness of 3.44m.
	M	270.74 - 290.26	11.75	16.70	Intensely folded. *Used a local straight average
DDH85024	G	12.68 - 19.68	4.28	6.45	
	H	91.08 - 95.87	4.08	4.62	
	Ph	117.31 - 123.60	0.11	6.13	Not used for resources (< 50% c/c+r).
DDH85025	J				In casing.
	I	36.40 - 40.82	4.04	4.42	
	H	75.74 - 79.47	3.25	3.72	
	Ph	98.10 - 102.64	0.00	4.47	Carbonaceous zone.
DDH85026	I	19.68 - 25.41	4.57	5.68	
	H	62.60 - 66.03	2.92	3.43	
	Ph	77.80 - 83.46	0.00	5.57	Carbonaceous zone.
DDH85027	O	44.06 - 45.44			
	N	75.26 - 77.68	1.94	2.17	
	M/N	94.32 - 95.63	0.72	1.15	Limited lateral extent.
	M upper	109.24 - 112.16	2.36	2.63	Limited lateral extent.
	M	114.88 - 116.16	1.15	1.20	
	L	127.56 - 129.29	1.42	1.62	
	K/L	147.48 - 151.69	2.47	3.22	
	K	163.80 - 164.91	0.92	1.08	
	J	191.45 - 191.98	0.01	0.39	Carbonaceous zone.
	I	216.16 - 221.55	4.67	5.03	
	H	265.98 - 268.29	2.22	2.25	

*From DDH85005: M intersected twice (3.94 + 2.93)/2 = 3.44

Table 6.7 cont'd

LOST-FOX: SUMMARY OF DIAMOND DRILL HOLE COAL SEAMS AND CARBONACEOUS ZONES

Diamond Drill Hole	Seam	Drilled Seam Interval (m)	True Thickness Coal (m)	True Thickness Coal + Rock (m)	Comments
DDH85028	I	10.80 - 15.68	4.47	4.74	
	H	56.96 - 61.18	3.39	4.08	
	Ph	69.90 - 73.83	0.00	3.70	Carbonaceous zone.
DDH85029	K/L				In casing.
	K				In casing.
	J	49.79 - 50.51	0.00	0.58	Presumed position; rock loss at this point. Not used for resources.
	K/L	75.00 - 75.53	0.43	0.43	Not used for resources (< 0.50 m thick).
DDH85030	I	20.48 - 24.69	3.73	3.98	Drilled within trial cargo pit area.
DDH85031	I	8.12 - 12.85	4.08	4.54	Drilled within trial cargo pit area.
DDH85032	I	27.54 - 33.03	4.83	5.47	Drilled within trial cargo pit area.
DDH85033	I	10.96 - 16.62	4.90	5.48	Drilled within trial cargo pit area.
DDH85034	I	30.32 - 35.52	4.83	5.14	Drilled within trial cargo pit area.
DDH86001	I	25.65 - 29.20	3.28	3.55	
	H	68.24 - 71.08	2.17	2.84	
DDH86002	H part	39.33 - 40.21	0.76	0.76	In vicinity of fault. Not used for resources.
	H	56.74 - 62.11	3.77	4.85	
	Ph	92.10 - 93.00	0.84	0.84	
DDH86003	J				In casing.
	I	40.08 - 47.34	6.80	7.25	Twinned hole. See also DDH87032.
	H	88.03 - 91.73	2.40	3.35	

Table 6.7 cont'd

LOST-FOX: SUMMARY OF DIAMOND DRILL HOLE COAL SEAMS AND CARBONACEOUS ZONES

Diamond Drill Hole	Seam	Drilled Seam Interval (m)	True Thickness Coal (m)	True Thickness Coal + Rock (m)	Comments
DDH86004	K/L ?	13.97 - 17.79	3.26	3.76	Hole is in vicinity of faulting.
	K/L ?	27.14 - 28.24	0.72	1.09	
	K/L ?	39.38 - 41.47	1.65	2.04	
	K ?	53.20 - 56.64	2.61	3.44	
	K	89.27 - 95.00	4.88	5.47	
	J	103.70 - 104.39	0.00	0.67	Carbonaceous zone.
	I	135.44 - 140.76	4.94	5.28	
	H	191.50 - 199.00	5.95	7.10	
DDH86005	J	19.20 - 20.30	0.02	0.95	Not used for resources (< 50% c/c+r).
	I	41.00 - 46.35	4.54	4.79	Twinned hole. Refer to DDH87034 for seam thicknesses.
	H	90.45 - 93.53	2.49	2.94	
DDH86006	I	28.44 - 42.43	11.15	12.06	Intensely deformed. *Used a local straight average of 5.01 m.
	H	78.50 - 84.95	5.04	5.89	
DDH86007	K				In casing.
	J	42.72 - 45.39	0.00	0.65	Carbonaceous zone.
	I	98.96 - 105.11	5.32	5.57	
	H	157.89 - 161.84	3.27	3.66	
DDH86008	I	20.92 - 24.56	3.10	3.50	
	L (rep)	48.74 - 54.35	4.03	4.86	
	H	93.65 - 100.01	4.73	5.89	
	Ph	124.33 - 129.17	4.14	4.68	
DDH86009	K/L	20.70 - 20.98			In casing.
	K	70.29 - 76.20	5.08	5.82	
	J	104.55 - 105.00	0.45	0.45	Not used for resources (< 0.50 m thick).
	I	142.13 - 148.14	5.21	5.80	
	H	189.15 - 190.50	1.32	1.32	Intensely folded: seam H split into two mining sections.
	H	193.71 - 196.08	6.84	7.69	
DDH86010	L				In casing.
	K	55.21 - 69.99	11.36	14.38	Intensely folded. Used a local average of 4.92m.
	J	94.72 - 95.83	0.99	1.08	
	I	134.68 - 140.01	4.77	5.15	
	H	171.65 - 175.62	3.14	3.91	

*Used DDH85013 and DDH84008: (6.16 + 3.86)/2 = 5.01m

Table 6.7 cont'd

LOST-FOX: SUMMARY OF DIAMOND DRILL HOLE COAL SEAMS AND CARBONACEOUS ZONES

Diamond Drill Hole	Seam	Drilled Seam Interval (m)	True Thickness Coal (m)	True Thickness Coal + Rock (m)	Comments
DDH86011	L	25.44 - 30.95	3.74	4.91	
	K/L ?	56.91 - 58.76	1.43	1.70	
DDH86012	O (ovt)	20.10 - 22.99	0.90	1.02	
	O	82.67 - 84.26	1.18	1.46	
	N	113.42 - 115.06	1.23	1.42	
DDH86013	K/L				In casing.
	K	53.56 - 58.53	3.98	4.76	
	J	89.14 - 89.76	0.52	0.61	
	I	112.92 - 121.60	6.15	6.98	
	I (ovt)	159.00 - 176.64	14.59	14.82	Intensely folded. *Used a seam thickness of 6.98 m for resources.
DDH86014	K (ovt)	40.50 - 44.50	0.15	3.26	Poor drill intersection; not used for resources.
	K/L (ovt)	53.44 - 55.19	0.61	0.97	
	L (ovt)	105.59 - 109.91	2.81	3.05	
	K/L	133.15 - 134.60	0.25	1.01	Not used for resources (< 50% c/c+r).
	K	154.29 - 156.94	2.27	2.58	Carbonaceous zone.
DDH86015	L	29.21 - 30.51	1.16	1.24	
	K/L	42.68 - 43.19	0.50	0.50	
	K	86.55 - 90.55	3.72	3.98	
DDH86016	J	47.85 - 48.20	0.00	0.28	Carbonaceous zone.
	L	75.66 - 78.30	2.29	2.29	
	K/L	144.00 - 146.77	2.42	2.74	
	K	157.12 - 159.80	2.31	2.62	
	J	172.30 - 172.81	0.00	0.49	Carbonaceous zone.
DDH86017	J				In casing.
	I	60.71 - 65.97	4.87	5.16	
	H	110.00 - 113.00	1.94	2.73	Possible faulted repeat of H.
	H	114.35 - 119.86	3.89	4.45	
DDH86018	I	2.44 - 8.72	1.62	1.62	Not a valid data point (seam partially in csg). Used a local average thickness of 3.95m.
	H	103.00 - 104.11	0.58	0.83	Bottom of seam may be faulted.
	Ph	115.50 - 120.22	1.14	3.80	

* Used a reliable intersection of I seam encountered in same drillhole.

Table 6.7 cont'd

LOST-FOX: SUMMARY OF DIAMOND DRILL HOLE COAL SEAMS AND CARBONACEOUS ZONES

Diamond Drill Hole	Seam	Drilled Seam Interval (m)	True Thickness Coal (m)	True Thickness Coal + Rock (m)	Comments
DDH86019	N				In casing.
	M/N ?	69.31 - 70.84	1.11	1.17	
	M	82.70 - 83.40	0.57	0.68	
	L	100.07 - 101.96	1.69	1.88	
	K/L	120.18 - 124.70	3.96	4.43	
	K	139.68 - 143.14	2.96	3.33	
	J	165.66 - 166.76	0.00	1.03	Carbonaceous zone.
	I	185.15 - 192.38	6.51	6.95	
DDH86020	B	24.37 - 24.77	0.37	0.37	Not used for resources (< 0.50 m thick).
	A	67.77 - 71.29	2.27	3.10	Not used for 1988 resources.
	A (part)	78.38 - 81.18	0.16	2.50	Carbonaceous zone.
DDH86021	I	28.32 - 28.55	4.09	4.55	
	K	42.80 - 44.70	1.00	1.15	
	J	72.80 - 73.70	0.10	0.81	Not used for resources (< 50% c/c+r).
	I (rep)	106.79 - 111.76	4.12	4.60	
DDH86022	M	36.20 - 38.80	1.08	1.52	
	L	64.78 - 68.24	2.00	2.39	
	K/L	88.20 - 93.80	3.54	4.30	
	K	104.90 - 106.87	1.47	1.92	
	J	120.80 - 121.20	0.00	0.38	Carbonaceous zone.
	I	140.41 - 141.56	1.14	1.14	Seam possibly faulted.
	I (ovt)	175.95 - 184.17	4.26	4.54	
DDH86023	A	24.44 - 27.87	1.01	1.14	Not used for 1988 resources.
	A	40.82 - 41.96	0.36	0.36	Not used for resources (< 0.50 m thick).
	A	55.60 - 61.36	2.11	2.77	Not used for 1988 resources.
DDH86024	A-4	46.25 - 49.76	2.38	3.11	Not used for 1988 resources.
	A-5	98.96 - 104.38	3.45	4.69	Not used for 1988 resources.
DDH86025	M ?	7.01 - 8.00	0.92	0.92	
	L ?	62.22 - 64.16	1.45	1.85	
	K ?	93.61 - 94.72	0.85	1.05	
	J ?	118.82 - 119.15	0.23	0.28	Coal at base of coasters (may not be in place). Also not used for resources (< 0.50 m thick).
	I	131.20 - 134.36	2.78	2.90	
	J (rep)	183.47 - 183.96	0.46	0.46	Not used for resources (< 0.50 m thick).
	I (rep)	216.24 - 221.72	4.49	4.74	

Table 6.7 cont'd

LOST-FOX: SUMMARY OF DIAMOND DRILL HOLE COAL SEAMS AND CARBONACEOUS ZONES

Diamond Drill Hole	Seam	Drilled Seam Interval (m)	True Thickness Coal (m)	True Thickness Coal + Rock (m)	Comments
DDH86026	A-2	36.33 - 37.74	0.85	1.02	Not used for 1988 resources.
	A-3	71.33 - 76.79	4.05	4.98	Not used for 1988 resources.
DDH86027	M ?	8.56 - 12.00	2.47	2.98	
	L ?	26.53 - 28.48	1.52	1.81	
	K/L	73.59 - 79.76	5.27	5.80	
	K	95.95 - 98.95	2.52	2.77	
	J	127.91 - 128.15	0.20	0.22	Not used for resources (< 0.50 m thick).
	I	158.60 - 159.64	0.95	0.95	Seam possibly faulted.
DDH86028	D	35.88 - 35.88	2.33	2.85	
	C	60.32 - 61.48	0.29	0.88	Not used for resources (< 50% c/c+r).
	B	93.60 - 96.00	0.02	2.38	Carbonaceous zone.
	B lower	103.40 - 103.70	0.30	0.30	Not used for resources (< 0.50 m thick).
	A	145.64 - 147.32	1.62	1.65	Not used for 1988 resources.
DDH86029	K	8.03 - 11.00	2.46	2.96	
	I	50.99 - 55.48	4.07	4.42	
	H	91.50 - 92.73	0.96	1.22	
	Ph	131.58 - 131.70	0.11	0.11	Not used for resources (< 0.50 m thick).
DDH86030	J	21.92 - 22.76	0.69	0.82	
	I	63.15 - 69.65	5.35	5.59	
	H	122.64 - 125.68	2.69	2.98	
	Ph	145.01 - 145.48	0.44	0.44	Not used for resources (< 0.50 m thick).
DDH86031	J				In casing.
	I	40.72 - 45.36	3.97	4.50	
	H	83.44 - 90.27	5.24	6.58	
	Ph	117.90 - 120.47	1.88	2.32	
	G?	124.00 - 130.44	5.34	5.78	Resource thickness. Additional coaly zone from 130.44 to 134.51 m.
DDH86032	I	8.15 - 11.33	2.96	3.16	
	H	62.12 - 67.55	3.95	4.92	

Table 6.7 cont'd

LOST-FOX: SUMMARY OF DIAMOND DRILL HOLE COAL SEAMS AND CARBONACEOUS ZONES

Diamond Drill Hole	Seam	Drilled Seam Interval (m)	True Thickness Coal (m)	True Thickness Coal + Rock (m)	Comments
DDH86033	N				In casing.
	M	55.11 - 62.51	2.69	3.55	Additional carbonaceous zone from 48.80 to 55.11 m.
	L	87.42 - 90.09	2.06	2.45	
	K/L	115.07 - 117.31	1.81	2.11	
	K	147.47 - 152.76	4.05	5.03	
DDH86034	K/L	20.03 - 24.02	3.25	3.84	
	K	48.80 - 56.10	4.93	6.50	
	J	81.88 - 82.68	0.61	0.75	
	I	119.66 - 125.13	4.82	5.09	
DDH86035	M				In casing.
	L	50.78 - 54.40	2.53	3.35	
	K/L	67.95 - 69.40	1.27	1.42	
	K	90.73 - 99.39	6.68	8.35	
	J	122.44 - 122.85	0.38	0.38	Not used for resources (< 0.50 m thick).
	I	157.51 - 158.82	1.23	1.23	
	H/I	180.33 - 181.21	0.66	0.77	
	H	197.19 - 198.51	0.99	1.16	
DDH86036	K	8.29 - 10.21	1.37	1.86	
	J	32.84 - 33.87	0.97	0.99	
	I	78.56 - 84.06	4.92	5.16	
	H/I	113.32 - 114.60	0.87	1.33	
	H	139.56 - 141.85	1.54	2.17	
DDH86037	O	17.48 - 20.03	1.75	2.50	
	N	49.12 - 49.82	0.28	0.64	Not used for resources (< 50% c/c+r).
	M	73.12 - 78.44	2.97	4.70	Resource thickness. Additional carbonaceous zone from 70.98 to 73.12 m.
	L	148.02 - 150.48	1.61	2.34	
	K/L	153.27 - 153.95	0.66	0.66	
DDH86038	A	50.75 - 53.20	0.00	2.26	Carbonaceous zone.
DDH87001	I	19.60 - 22.35	1.14	2.09	
	H	118.78 - 123.05	3.89	4.14	Seam H split into two mining sections.
	H	125.05 - 126.38	1.29	1.29	

Table 6.7 cont'd

LOST-FOX: SUMMARY OF DIAMOND DRILL HOLE COAL SEAMS AND CARBONACEOUS ZONES

Diamond Drill Hole	Seam	Drilled Seam Interval (m)	True Thickness Coal (m)	True Thickness Coal + Rock (m)	Comments
DDH87002	I	23.27 - 30.09	6.22	6.37	
	I (ovt)	48.80 - 56.45	3.51	3.87	
	I (rep)	133.26 - 141.73	7.43	7.97	
	H/I	174.95 - 177.05	0.29	2.03	Not used for resources (< 50% c/c+r).
	H	193.89 - 196.13	1.63	1.93	Seam H split into two mining sections.
	H	197.44 - 200.04	1.75	2.17	
DDH87003	I	38.90 - 44.42	5.11	5.52	
	H/I	68.43 - 70.25	1.44	1.80	
	H	90.27 - 94.27	2.85	3.55	
DDH87004	I	18.52 - 22.77	3.82	3.82	
	H/I	33.42 - 34.75	1.19	1.31	
	H/I2	52.97 - 53.49	0.52	0.52	Limited lateral extent.
	H	69.08 - 70.99	1.54	1.90	
	Ph	94.80 - 96.27	1.42	1.42	
DDH87005	K/L	19.00 - 23.74	4.05	4.43	
	K	49.66 - 54.70	4.70	5.01	Seam K split into two mining sections.
	K	55.88 - 58.93	2.65	3.05	
	J	84.08 - 89.01	0.11	4.80	Not used for resources (< 50% c/c+r).
	I	130.23 - 133.80	3.20	3.44	
	?	157.20 - 157.45	0.16	0.20	Limited lateral extent; not used for resources (< 0.50 m thick).
	H/I	163.45 - 164.24	0.00	0.74	Carbonaceous zone.
	?	168.21 - 168.50	0.15	0.28	Limited lateral extent; not used for resources (< 0.50 m thick).
	H	182.40 - 184.30	1.04	1.42	
DDH87006	I	93.75 - 97.47	0.96	1.83	
	H/I	117.94 - 120.40	2.25	2.25	
	H	145.02 - 146.46	1.28	1.28	
DDH87007	K ?	11.45 - 20.80	5.31	6.01	
	I ?	77.75 - 80.82	1.72	2.23	
	H ?	91.32 - 96.19	1.93	2.93	
	H lower ?	99.14 - 101.29	1.09	1.16	Limited lateral extent.
	Ph ?	121.35 - 122.85	1.35	1.35	
	G ?	192.62 - 195.50	2.33	2.71	Resource thickness. Additional coaly zone containing 50.59% ash from 195.50 to 197.55 m.

Table 6.7 cont'd

LOST-FOX: SUMMARY OF DIAMOND DRILL HOLE COAL SEAMS AND CARBONACEOUS ZONES

Diamond Drill Hole	Seam	Drilled Seam Interval (m)	True Thickness Coal (m)	True Thickness Coal + Rock (m)	Comments
DDH87008	I (ovt)	9.50 - 18.76	1.57	3.33	
	I	119.71 - 126.75	4.36	4.77	
	I (ovt)	165.78 - 191.67	7.08	7.43	
DDH87009	J				In casing.
	I	42.22 - 47.53	4.40	4.79	
	H/I	69.88 - 70.97	0.02	0.98	Carbonaceous zone.
	H	98.57 - 100.33	1.08	1.35	Seam H split into two mining sections.
	H	101.61 - 103.40	1.25	1.42	
	Ph	118.31 - 120.70	1.67	2.16	
DDH87010	H	28.85 - 34.39	4.30	4.68	Twinned hole. Refer to DDH87011 for resources.
DDH87011	H	28.85 - 34.39	4.37	4.97	
	Ph	68.53 - 69.10	0.34	0.51	
DDH87012	J	33.92 - 35.76	0.76	1.80	Not used for resources (< 50% c/c+r).
	I	74.45 - 76.05	1.27	1.51	
	H/I	98.52 - 101.95	0.23	3.27	Not used for resources (< 50% c/c+r).
	H	119.45 - 125.00	4.41	5.31	
DDH87013	J	14.36 - 15.36	0.88	0.94	
	I	61.83 - 67.43	4.55	4.77	
	H	97.42 - 99.06	1.35	1.35	
	Ph	128.87 - 130.45	1.30	1.36	
DDH87014	K	30.60 - 32.67	1.80	1.87	Additional coaly zone from 32.67 to 35.56 m.
	J	49.39 - 50.32	0.00	0.77	Carbonaceous zone.
	I	57.40 - 61.63	2.66	3.04	
	H/I	84.25 - 86.60	1.60	1.60	
	H/I2	104.17 ?	0.22+	0.22+	Drilling stopped within seam. Not used for resources.
DDH87015	L	8.80 - 14.72	4.01	4.84	
	K	25.51 - 27.68	1.62	1.92	
	J	45.21 - 45.72	0.33	0.39	Not used for resources (< 0.50 m thick).
	I	60.52 - 63.50	1.00	2.38	Not used for resources (< 50% c/c+r); seam may be faulted.
	H	81.80 - 85.59	2.51	3.33	
	Ph	115.24 - 117.37	0.00	1.98	Carbonaceous zone.
DDH87016	J	14.78 - 16.61	0.01	1.83	Carbonaceous zone.
	I	48.60 - 53.55	4.76	4.92	

Table 6.7 cont'd

LOST-FOX: SUMMARY OF DIAMOND DRILL HOLE COAL SEAMS AND CARBONACEOUS ZONES

Diamond Drill Hole	Seam	Drilled Seam Interval (m)	True Thickness Coal (m)	True Thickness Coal + Rock (m)	Comments
DDH87017	K	25.34 - 28.80	2.38	2.82	Resource thickness. Additional coaly zone containing 74.83% ash from 28.80 to 31.02 m.
	J	56.86 - 57.84	0.00	0.97	Carbonaceous zone.
	I	60.67 - 62.93	2.11	2.26	
	H/I	77.30 - 78.43	0.05	1.11	Not used for resources (< 50% c/c+r).
	H/I2	95.37 - 96.62	1.21	1.38	
DDH87018	?	29.18 - 30.35	1.14	1.16	Unknown strat position. Not used for resources.
	?	53.78 - 55.35	1.33	1.51	Unknown stratigraphic position. Not used for resources. Additional coaly zone containing 77.67% ash from 55.35 to 57.86 m.
DDH87019	I (fld)	114.39 - 134.92	15.41	17.50	*Intensely folded. Used a local straight average of 3.23 m.
	H/I	166.02 - 167.92	1.66	1.79	
	H/I2	178.15 - 197.97	1.44	1.66	
	H (fld)	197.64 - 200.52	1.22	1.98	Resource thickness. Additional carbonaceous zone down to 203.74 m.
DDH87020	M/N	53.34 - 56.56	1.89	3.09	
	?	65.57 - 68.06	1.06	1.40	Limited lateral extent. Not used for resources.
	M	82.46 - 86.32	2.00	3.61	
	L	95.60 - 100.70	3.54	4.38	
	K/L	147.85 - 153.68	3.43	4.64	
DDH87021	I	28.93 - 32.96	3.39	3.82	
	H	84.27 - 88.65	2.34	2.98	Seam H split into two mining sections.
	H	90.53 - 92.78	0.77	0.84	
DDH87022	P	15.23 - 15.65	0.33	0.33	Not used for resources (< 0.50 m thick).
	O	62.87 - 65.53	1.94	2.48	
	N	98.16 - 101.45	2.53	2.70	
	M/W	124.93 - 127.09	1.58	1.92	
	?	137.35 - 138.13	0.50	0.53	Limited lateral extent. Not used for resources.
DDH87023	H/I	20.47 - 22.25	1.14	1.55	
	H	104.42 - 105.10	0.41	0.53	Seam faulted. Not used for resources.
	H/I (ovt)	177.95 - 180.29	1.43	1.76	

* From DDH85001, 87017, 87014 : (4.38 + 2.26 + 3.04)/3 = 3.23 m.

Table 6.7 cont'd

LOST-FOX: SUMMARY OF DIAMOND DRILL HOLE COAL SEAMS AND CARBONACEOUS ZONES

Diamond Drill Hole	Seam	Drilled Seam Interval (m)	True Thickness Coal (m)	True Thickness Coal + Rock (m)	Comments
DDH87024	O	15.17 - 16.19	0.66	0.66	
	N	29.25 - 32.24	1.00	1.91	
	M/N	41.87 - 43.10	1.05	1.17	
	?	70.09 - 71.35	1.15	1.15	Limited lateral extent. Not used for resources.
	M	86.45 - 89.02	2.27	2.40	
	L	117.50 - 119.80	2.01	2.06	
	?	134.50 - 134.90	0.37	0.37	Not used for resources (< 0.50 m thick).
	K/L	152.00 - 155.21	1.81	2.86	
DDH87025	K/L				In casing.
	K	35.69 - 41.44	3.82	4.98	
	J	74.69 - 75.38	0.04	0.71	Not used for resources (< 50% c/c+r).
	I	102.67 - 107.97	4.33	4.59	
DDH87026	M (ovt)	18.93 - 23.05	1.39	1.61	
	M/N (ovt)	48.69 - 49.35	0.38	0.38	Not used for resources (< 0.50 m thick).
	N (ovt)	79.06 - 80.17	0.78	0.79	
	?	83.13 - 83.92	0.17	0.41	Not used for resources (< 0.50 m thick).
	M/N	115.00 - 115.39	0.00	0.12	Carbonaceous zone.
	M	138.26 - 139.97	0.85	1.25	
	L ?	172.84 - 173.78	0.62	0.85	Resource thickness. Additional carbonaceous zone from 171.87 to 172.84 m.
DDH87027	H	31.33 - 40.32	5.37	8.62	
	H-1	49.79 - 51.30	1.07	1.31	Limited lateral extent.
	Ph	67.65 - 68.87	0.97	0.97	
	G	84.20 - 85.17	0.64	0.71	
	G (ovt)	100.27 - 101.53	0.35	0.63	
DDH87028	O	31.58 - 33.10	0.79	1.49	
	N	40.90 - 41.81	0.88	0.88	
	M/N	61.55 - 62.43	0.49	0.88	
	?	76.43 - 77.00	0.55	0.55	Limited lateral extent. Not used for resources.
	M	89.74 - 91.30	1.19	1.48	
	L	108.67 - 109.50	0.68	0.73	
	?	123.47 - 123.77	0.26	0.30	Not used for resources (< 0.50 m thick).
	K/L	139.94 - 150.95	3.94	9.74	Local intense folding; used a local average of 3.89 m for resources.
	?	190.21 - 193.80	1.28	1.46	Limited lateral extent. Not used for resources.
	K	200.09 - 203.79	1.83	2.25	
	?	213.22 - 213.87	0.35	0.41	Not used for resources (< 0.50 m thick).
	?	218.55 - 219.93	0.69	0.83	Limited lateral extent. Not used for resources.

Table 6.7 cont'd

LOST-FOX: SUMMARY OF DIAMOND DRILL HOLE COAL SEAMS AND CARBONACEOUS ZONES

Diamond Drill Hole	Seam	Drilled Seam Interval (m)	True Thickness Coal (m)	True Thickness Coal + Rock (m)	Comments
DDH87029	N	20.65 - 24.28	2.98	3.29	
	M/N	49.30 - 50.81	0.74	0.85	
	M/N (ovt)	60.02 - 60.56	0.00	0.14	Carbonaceous zone.
	N (ovt)	83.15 - 84.70	0.90	1.02	
	O (ovt)	109.84 - 110.60	0.55	0.68	
	O	138.28 - 139.62	0.65	0.92	
	?	147.84 - 150.03	0.00	1.72	Carbonaceous zone.
	N	161.31 - 162.72	1.23	1.34	
	M/N	186.32 - 187.30	0.18	0.41	Not used for resources (< 0.50 m thick).
	M ?	204.73 - 206.47	1.10	1.45	
DDH87030	?	18.07 - 20.13		1.94	In casing.
	M	34.42 - 36.68	1.84	2.23	
	L	59.98 - 61.96	1.98	1.98	
	?	75.25 - 75.73	0.47	0.47	Not used for resources (< 0.50 m thick).
	K/L	86.60 - 91.62	1.77	3.50	
	?	106.82 - 108.24	0.00	1.35	Carbonaceous zone; limited lateral extent.
	?	129.20 - 129.50	0.00	0.28	Carbonaceous zone; limited lateral extent.
	K	185.12 - 189.15	2.58	3.26	
	?	208.06 - 209.70	0.00	1.11	Carbonaceous zone; limited lateral extent.
	J	216.90 - 218.06	0.00	1.06	Carbonaceous zone.
	I	241.29 - 244.57	2.61	2.87	
DDH87031	M	30.45 - 32.72	2.03	2.08	
	L	46.37 - 47.91	1.45	1.45	
	?	60.11 - 60.70	0.49	0.58	Not used for 1988 resources.
	?	66.46 - 67.25	0.50	0.70	Not used for 1988 resources.
	K/L (part)	81.71 - 82.53	0.70	0.70	Seam possibly faulted. Not used for resources.
	L (rep)	94.89 - 96.59	1.03	1.64	
	K/L (rep)	132.80 - 136.92	3.08	3.65	
	K	182.60 - 187.11	3.17	4.17	
DDH87032	J				In casing.
	I	44.46 - 50.63	5.08	5.59	
DDH87033	K	35.69 - 40.82	4.13	4.52	Seam K split into two mining sections.
	K	41.89 - 42.84	0.77	0.80	
	J	69.78 - 71.16	0.12	1.27	Not used for resources (< 50% c/c+r).
	I	113.40 - 118.97	5.07	5.56	
DDH87034	J				In casing.
	I	45.50 - 52.46	4.47	4.78	

Table 6.7 cont'd

LOST-FOX: SUMMARY OF DIAMOND DRILL HOLE COAL SEAMS AND CARBONACEOUS ZONES

Diamond Drill Hole	Seam	Drilled Seam Interval (m)	True Thickness Coal (m)	True Thickness Coal + Rock (m)	Comments
DDH88001	J	23.71 - 24.02	0.28	0.28	Not used for resources (< 0.50 m thick).
	I	66.57 - 72.26	4.83	5.15	
	H	116.85 - 120.01	2.45	2.81	
DDH88002	I	11.44 - 16.05	4.02	4.25	
DDH88003	M ?	41.11 - 48.78	5.61	7.06	
	L ?	54.54 - 57.17	1.98	2.36	
	K/L	94.54 - 101.15	5.15	6.11	
	K	115.69 - 119.01	2.93	3.10	
	J	157.23 - 157.53	0.28	0.28	Not used for resources (< 0.50 m thick).
DDH88004	J	22.29 - 23.45	0.85	0.94	
	J2	28.80 - 29.55	0.70	0.71	Limited lateral extent. Not used for resources.
	?	39.55 - 39.98	0.24	0.24	Not used for resources (< 0.50 m thick).
	?	56.25 - 56.70	0.36	0.41	Not used for resources (< 0.50 m thick).
	I	82.76 - 86.06	3.03	3.22	Seam split into two mining sections.
	I	87.00 - 91.95	4.69	4.73	
	H	138.00 - 140.10	1.63	1.78	Seam split into two mining sections.
	H	141.27 - 143.07	1.49	1.54	
DDH88005	K/L	16.82 - 18.17	0.83	0.97	
	K	30.58 - 33.52	1.35	2.58	
	J	85.46 - 86.30	0.75	0.75	
	I	119.62 - 120.20	0.54	0.54	Seam split into two mining sections.
	I	121.07 - 126.66	4.79	5.11	
DDH88006	K (ovt)	28.85 - 33.52	1.96	2.11	
	? (ovt)	126.75 - 128.00	0.57	0.57	Limited lateral extent. Not used for resources.
	K/L (ovt)	219.00 - 221.02	0.48	0.49	Not used for resources (< 0.50 m thick).
DDH88007	I ? (ovt)	51.16 - 53.36	0.72	0.87	Seam split into two mining sections.
	I ? (ovt)	54.71 - 59.19	2.92	3.12	
	H ?	75.72 - 78.66	0.50	2.60	Not used for resources (< 50% c/c+r).
	?	85.79 - 86.12	0.30	0.30	Not used for resources (< 0.50 m thick).
	Ph ?	147.59 - 147.87	0.25	0.25	Not used for resources (< 0.50 m thick).
	G ?	175.55 - 176.97	1.37	1.37	
DDH88008	J (ovt)	117.68 - 117.86	0.00	0.06	Carbonaceous zone.

Table 6.7 cont'd

LOST-FOX: SUMMARY OF DIAMOND DRILL HOLE COAL SEAMS AND CARBONACEOUS ZONES

Diamond Drill Hole	Seam	Drilled Seam Interval (m)	True Thickness Coal (m)	True Thickness Coal + Rock (m)	Comments
DDH88009	M ?	18.65 - 19.05	0.35	0.35	Not used for resources (< 0.50 m thick).
	L	57.02 - 57.97	0.69	0.86	
	K/L	79.80 - 84.09	3.62	3.98	
	K	97.42 - 99.19	1.28	1.57	
	J	125.95 - 127.88	0.00	1.66	Carbonaceous zone.
	I	146.53 - 151.18	4.01	4.40	
	H	192.32 - 194.87	1.73	2.11	
DDH88010	M	35.41 - 42.31	4.86	6.22	
	L	60.81 - 63.69	2.28	2.85	
	K/L	83.42 - 88.39	3.76	4.80	
	K	108.72 - 111.00	1.59	2.13	
	J	138.57 - 139.19	0.00	0.50	Carbonaceous zone.
	I	154.64 - 159.12	3.66	4.12	
	H	191.60 - 196.14	3.87	4.24	
DDH88011	L	31.45 - 32.72	0.71	0.79	
	?	51.69 - 56.53	1.88	2.94	Limited lateral extent. Not used for resources.
	?	65.00 - 73.32	4.88	6.61	Limited lateral extent. Not used for resources.
	K/L	77.75 - 82.79	2.80	4.27	
	K	113.41 - 120.70	6.04	6.52	
	J	137.83 - 138.56	0.31	0.66	Not used for resources (< 50% c/c+r).
	I	179.08 - 184.26	4.65	4.89	
	H	234.94 - 239.12	3.46	3.94	
DDH88012	I	4.62 - 10.26	4.46	4.92	
	K/L ?	22.91 - 27.71	3.22	4.05	
	K	30.10 - 33.12	2.27	2.75	
	J	62.30 - 62.93	0.57	0.57	
	I	95.70 - 99.58	3.47	3.60	
	I (ovt)	161.73 - 168.80	4.91	5.40	
DDH88013	L	18.80 - 21.45	2.46	2.60	
	K/L	37.62 - 38.68	0.99	1.04	
	K	95.62 - 99.16	3.06	3.39	Seam split into two mining sections.
	K	100.09 - 101.00	0.77	0.86	
	J	126.77 - 127.28	0.50	0.50	
	I	161.29 - 165.73	4.23	4.33	
	H	208.40 - 213.37	4.24	4.86	

Table 6.7 cont'd

LOST-FOX: SUMMARY OF DIAMOND DRILL HOLE COAL SEAMS AND CARBONACEOUS ZONES

Diamond Drill Hole	Seam	Drilled Seam Interval (m)	True Thickness Coal (m)	True Thickness Coal + Rock (m)	Comments
DDH88014	K	29.47 - 31.85	2.14	2.25	
	J	48.04 - 48.62	0.44	0.48	Not used for resources (< 0.50 m thick).
	I	78.51 - 81.82	2.97	3.20	
	H	118.67 - 120.95	1.80	2.17	
DDH88015	L ?	24.37 - 26.65	2.14	2.25	
	K/L ?	35.57 - 37.88	0.21	2.11	Not used for resources (< 50% c/c+r).
	K	61.08 - 65.67	3.84	4.01	
	J	97.52 - 99.26	1.31	1.69	
	I	126.73 - 134.65	3.88	4.33	
	H/I	203.59 - 204.11	0.43	0.43	Not used for resources (< 0.50 m thick).
	H	209.60 - 213.55	3.15	3.62	
DDH88016	I	35.01 - 40.29	4.70	5.19	
	H	77.91 - 83.17	3.98	5.04	
DDH88017	G	24.08 - 25.68	0.77	1.38	
	I (ovt)	58.80 - 59.65	0.10	0.12	Seam faulted. Not used for resources.
	I	79.55 - 89.03	8.07	8.29	
DDH88018	M	47.08 - 51.80	3.38	4.40	
	L	72.54 - 74.85	2.13	2.26	
	K/L	85.53 - 86.25	0.64	0.67	
	K	143.57 - 148.85	4.36	5.09	
	J	170.96 - 171.58	0.56	0.56	
	I	196.77 - 201.50	3.93	4.10	
	H/I	238.00 - 240.49	2.04	2.17	
	H	250.59 - 253.87	1.78	3.26	
DDH88019	G & G lower	18.72 - 23.69	3.46	4.17	Seams G and Gl combined into one mining section.
	G lower (ovt)	53.04 - 55.50	2.25	2.25	
	G (ovt)	57.51 - 64.81	4.74	5.23	
	G & G lower	117.84 - 123.36	3.92	4.37	Seams G and Gl combined into one mining section.
DDH88020	J	27.16 - 27.81	0.53	0.53	
	I	80.65 - 81.60	0.79	0.85	
	H	114.66 - 115.46	0.72	0.80	Seam split into two mining sections.
	H	116.75 - 118.03	1.17	1.25	
DDH88021	I	29.77 - 34.46	4.00	4.49	
	H	73.16 - 76.07	2.53	2.86	

Table 6.7 cont'd

LOST-FOX: SUMMARY OF DIAMOND DRILL HOLE COAL SEAMS AND CARBONACEOUS ZONES

Diamond Drill Hole	Seam	Drilled Seam Interval (m)	True Thickness Coal (m)	True Thickness Coal + Rock (m)	Comments
DDH88022	O ?	52.44 - 53.39	0.92	0.92	
DDH88023	?	11.35 - 12.98	1.61	1.61	Limited lateral extent. Not used for resources.
	P ?	39.39 - 41.26	1.80	1.84	
	O ?	59.35 - 61.32	1.03	1.55	
DDH88024	?	73.63 - 75.96	1.54	2.23	Limited lateral extent. Not used for resources.
	P	95.82 - 97.67	1.70	1.82	
DDH88025	?	30.11 - 31.74	1.38	1.54	Limited lateral extent. Not used for resources.
DDH88026	L ?	23.08 - 23.28	0.20	0.20	Not used for resources (< 0.50 m thick).
	K/L	35.61 - 37.22	1.28	1.51	
	K	87.50 - 88.64	0.71	1.00	
	J	104.18 - 105.85	0.91	1.56	
	I	127.33 - 132.44	4.76	4.80	
DDH88027	L ?	12.24 - 13.05	0.76	0.76	
	K/L	27.52 - 33.97	4.98	5.82	
	K	47.97 - 49.87	1.54	1.86	
	J	78.16 - 78.99	0.00	0.82	Carbonaceous zone.
	I	109.98 - 112.73	2.49	2.59	
	I (ovt)	160.30 - 169.63	5.15	5.59	
DDH88028	O ?	19.70 - 19.83	0.09	0.13	Not used for resources (< 0.50 m thick).
	N ?	33.09 - 33.94	0.15	0.18	Not used for resources (< 0.50 m thick).
	N (ovt)	66.73 - 68.96	0.73	0.79	
	O	87.29 - 87.98	0.47	0.68	
	N	93.07 - 94.19	0.91	1.11	
	M/N	113.38 - 113.91	0.53	0.53	
	?	121.43 - 121.82	0.37	0.37	Not used for resources (< 0.50 m thick).
	M upper	139.64 - 141.54	0.81	1.85	
	M	143.98 - 146.24	1.62	1.90	
	L	159.78 - 160.11	0.32	0.32	Not used for resources (< 0.50 m thick).
DDH88029	O	15.48 - 16.31	0.00	0.43	Carbonaceous zone.
	N	43.16 - 45.90	1.20	1.65	
	M	70.84 - 84.53	8.08	11.13	
	L	110.71 - 113.72	2.29	2.69	
	K/L	143.84 - 145.50	1.15	1.57	Seam split into two mining sections.
	K/L	149.84 - 152.85	2.04	2.46	

7.0 RESOURCES

7.1 Mount Klappan Property

7.1.1 Summary

The addition of the drill holes spudded in 1988 has resulted in an increase in the measured resource quantity, most of which is derived from the upgrading of inferred and speculative tonnages. 111.4 million tonnes of measured resource and 111.7 million tonnes of indicated resource have been delineated in the Lost-Fox Area. The in-situ anthracite resource in all categories at Mount Klappan totals just under 6 billion tonnes in seams greater than 0.5 metres thick measured to a maximum depth of 500 metres. Table 7.1 summarizes the resource contributions by area (see Coal Resource Map in Appendix I), and by category. These estimates do not imply mineability or economic viability. They represent estimated in-place anthracite resources only. The procedures used for resource calculations are outlined in Section 7.3. Resource categories are described in Section 7.3.3.

Table 7.1

MOUNT KLAPPAN COAL PROJECT
COAL RESOURCES (MT)

Area	Category Measured	Indicated	Inferred	Speculative
Lost-Fox	111.4	111.7	123.9	711.5
Hobbit-Broatch	12.1	24.5	369.1	761.2
Summit			32.4	1 533.1
Nass				2 189.4
Skeena				-
Total	123.5	136.2	525.4	5 195.2

Total Coal Resources Potential: 5 980.3 million tonnes

7.2 Resource Summaries

7.2.1 Lost-Fox Area

During 1988, infill drilling in structurally complex areas and stepout drilling to the southwest of the Lost-Fox Area resulted in increased tonnages in the measured and indicated resource categories. As outlined in Tables 7.2a and b, 223.12 million tonnes are within the measured and indicated categories. The in-situ anthracite resources in the Lost-Fox Area, including speculative resources, total over 1 billion tonnes. This value is from seams included in resource calculations that are greater than 0.50 m in true thickness to a maximum depth of 500 m. The details of speculative resource calculations for the Lost-Fox Area, and the other resource areas, appear in Table 7.2c. All resource data is located in Appendix D.

7.2.2 Hobbit-Broatch Area

There have been no refinements in the geological control of the resources in the Hobbit-Broatch area, the change in total resource tonnage since 1987 is a result of changes in calculation procedure. In 1988 the average Specific Gravity value (1.70) generated from Hobbit-Broatch data points was applied to resource calculations in the Hobbit-Broatch area in place of the property-wide average Specific Gravity value used in previous years. In addition, an increase in he total coal thickness applied in the Hobbit resource calculation (25% of the average of the total thicknesses between the Lost-Fox area and the Hobbit-Broatch area) resulted from the increase in the total thickness of coal in the Lost-Fox area (see Section 7.3.2).

7.2.3 Summit Area

The major effects on resource figures in the Summit area derived from the decrease in average Specific Gravity values for all seams (from 1.67 to 1.66) and the increase in property-wide total coal thickness applied (from 10.30 m to 11.43 m). Both these changes result from the addition of new seams and new seam data in the Lost-Fox area. The inferred resource decreases in the Summit area due to the reduction in Specific Gravity while the local coal thickness, measured from two drill holes in the area (see Coal Resource Map, Appendix I) remains the same. The speculative resource figure at Summit increases, for although the Specific Gravity is reduced for this calculation as well, the (property-wide average) coal thickness applied increases to a much greater extent due to the increased coal thickness in the Lost-Fox area.

7.3 Procedures and Parameters

7.3.1 Introduction

In-situ resources are defined as the in-place coal (coal and partings) that is contained in seams occurring within specified limits of thickness and depth from surface. Resources are segregated into "measured", "indicated", "inferred", and "speculative" categories based on the existence and relative spacing of coal seam exploration data points. The resource categorization follows that set out for

the Cordillera Region by Energy, Mines and Resources Canada in Report ER79-9: Coal Resources and Reserves of Canada. The parameters utilized for the 1987 Mount Klappan Coal Project are described in Section 7.3.3.

The procedures for resource calculation are described in Section 7.3.2. The limits applied in the various resource categories are described in Section 7.3.3.

7.3.2 Procedures

Diamond drill holes are the primary data points used for resource calculations in the measured, indicated and inferred categories. Individual drilled seam intersections less than 0.5 metres in true thickness, or containing over 50% rock partings were excluded. Intensely disturbed seam intersections were considered unreliable and were substituted for by a straight average of true thickness values from the nearest surrounding drilled intersections. Table 7.3 summarizes the seams and associated thicknesses used for 1988 resource calculations.

Polygon maps for each mineable seam were generated at the Calgary offices of Monenco Consultants Limited using their MEDSYSTEM[1] mine modelling software and TELLAGRAF[2] computer graphics software. On each map, three polygons were drawn around each data point, at radii of 150 m, 300 m and 1 000 m, for measured, indicated and inferred resource categories, respectively. The boundaries for each polygon were transferred onto applicable cross-sections and seam lengths within polygons were measured.

The third dimension required for coal volume calculation, after seam thickness and length along cross-sections, was the "influence" or "strike" length between cross-sections. This measurement extends from each cross-section, halfway to each adjacent section, normally a distance of 100 m.

Average specific gravity values were determined for each seam using all representative drill hole intersections. A summary of specific gravity averages appears in Table 7.4.

The following equation summarizes the resource calculation procedure:

Tonnes of Coal =
Seam Thickness (m) x Seam Length (m) x Influence (m) x Specific Gravity (t/m^3)

Speculative resources were calculated using a slightly different procedure. The area on the 1:50 000 Coal Resource Map (Appendix I) interpreted to be underlain by coal-bearing Klappan Sequence and lying within the Lost-Fox Area but outside the area covered by cross-sections was planimetered. An 11.43 m seam thickness was applied to this area, representing 25% of the average total coal thickness in the Lost-Fox (65.02 m, up from 55.96 m in 1987) and Hobbit-Broatch (26.40 m) areas. This figure was considered a conservative estimate of the average total coal thickness within the area. The average Specific Gravity for all drilled seams on the property has been calculated at 1.66 tonnes per cubic metre. The following equation summarizes the Speculative Resource calculation:

Speculative Resource Tonnes of Coal =

Planimetered Area x 11.43 x 1.66
(m^2) (m) (t/m^3)

System	Copyright by:
[1]MEDSYSTEM	Mintec Inc., Tucson, Arizona
[2]TELLAGRAF	Integrated Software Systems Corp., San Diego, California

7.3.3 Parameters

The minimum seam true thickness used for the 1988 resource calculation was 0.50 m, and the minimum coal to coal plus rock figure included was 50%. Several seams containing selectively mineable rock splits were divided into separate mining sections, and the sum of the coal thicknesses used in resource calculation. Seams were included to a maximum depth of 500 metres from surface. A list of the seam thicknesses applied in the Lost-Fox resource calculations is shown in Table 7.3.

The resource categories are defined as follows. The classification scheme is illustrated in Figure. 7.1

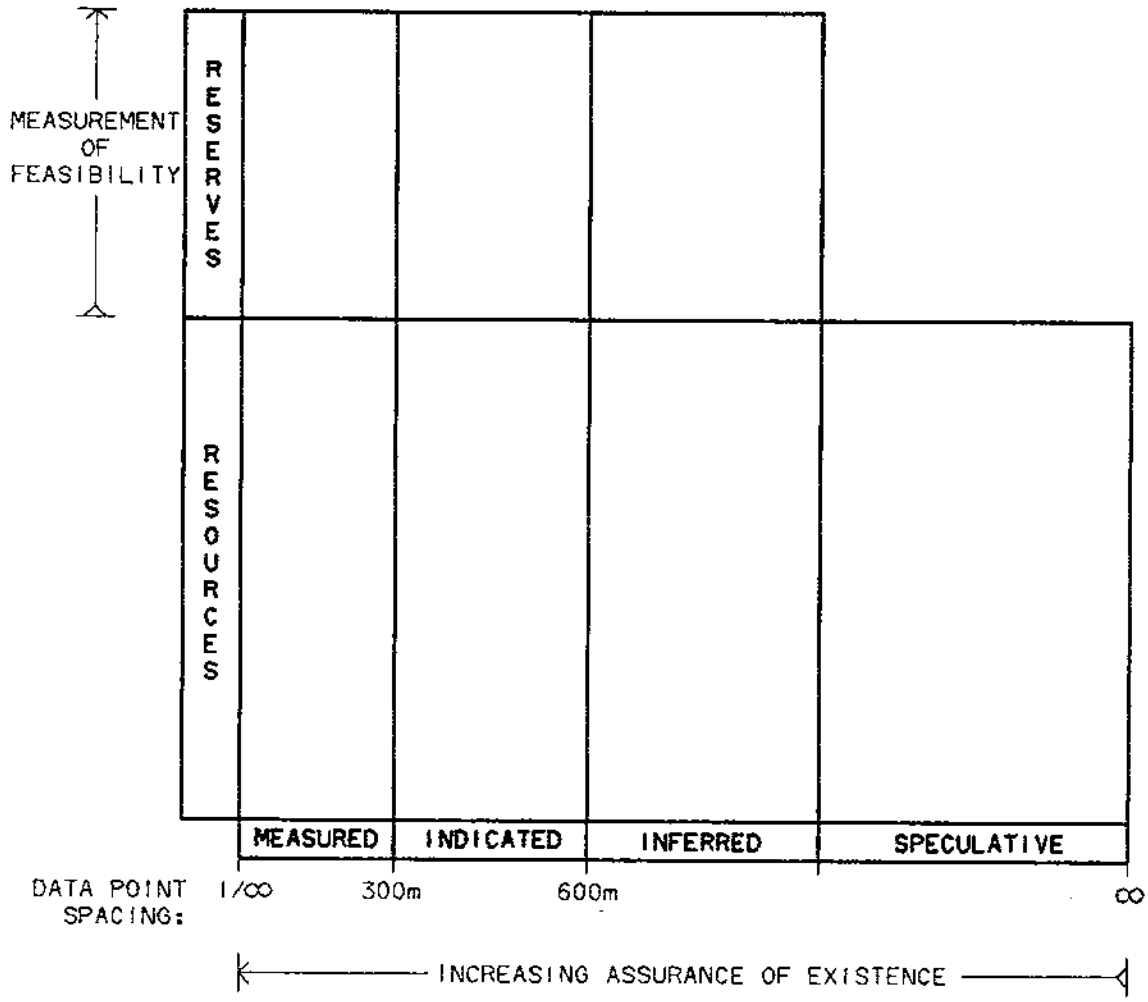


FIGURE 7-1

MOUNT KLAPPAN ANTHRACITE PROJECT

RESOURCE CLASSIFICATION SCHEME

GULF CANADA RESOURCES LTD.

GULF CANADA RESOURCES LTD.
05/11/89
KLAP:(205057)841326001.CHT

7.3.3.1 Measured Resources

Measured resources are strictly delineated by established exploration data points (drill holes). The maximum distance between data points is 300 metres. Seam trenches and outcrops have not been used as data points in these calculations as definitive seam identifications are more difficult to confirm.

7.3.3.2 Indicated Resources

Indicated resources include in-situ resources delineated using established data points and reasonable geological projections. The maximum distance between data points is 600 metres.

7.3.3.3 Inferred Resources

Inferred resources are delineated using all data that contribute to a general interpretation of the continuity of coal seams. Report ER79-9 does not state a data point spacing for this category, however, in the 1988 Mount Klappan Anthracite Project resource calculations, a maximum data point spacing of 2 000 metres was used at the inferred level. In the Hobbit-Broatch Area, inferred resources were calculated over the entire 1:2500 map area (see Coal Resource Map - Appendix I) due to the expected continuity of coal seams in that area.

7.3.3.4 Speculative Resources

Speculative resources are calculated from scattered coal occurrences, in areas of little or no exploration data, where the coal-bearing sequence is interpreted to exist. There is no maximum spacing in this category.

Speculative resources are only a rough geological estimate of the amount of coal which could be contained within the Klappan Sequence. A large portion of the speculative resource would not be mineable under current economic conditions.

8.0 COAL QUALITY

8.1 Summary

The 1988 Lost-Fox Area exploration program continued the delineation of anthracite resources in the Lost Ridge region. Coal quality information was enhanced in the defined pit areas and new data gathered on the margins of these pits. All coal quality information was obtained from diamond drill coal core.

A total of 29 diamond drill holes produced 4 756 metres of core, 206.25 metres of that as recovered coal. Laboratory analysis of the coal core can be found in Appendix V of this report.

8.2 Procedures and Parameters

8.2.1 Diamond Drilling Program

Each of the 132 coal and carbonaceous zones intersected was logged in detail prior to sampling. Sample intervals were based on the stratigraphy of the seam, including rock partings and variance in coal composition. Geophysical logs were used extensively in defining these seam characteristics. The complete analysis of the coal is outlined on the flow sheet in Figure 8.1 and average analytical results are documented in Table 8.1

Selected seam intersections from the coal core received were first crushed to pass a top size of 35 mm. Size consist was then determined according to the following:

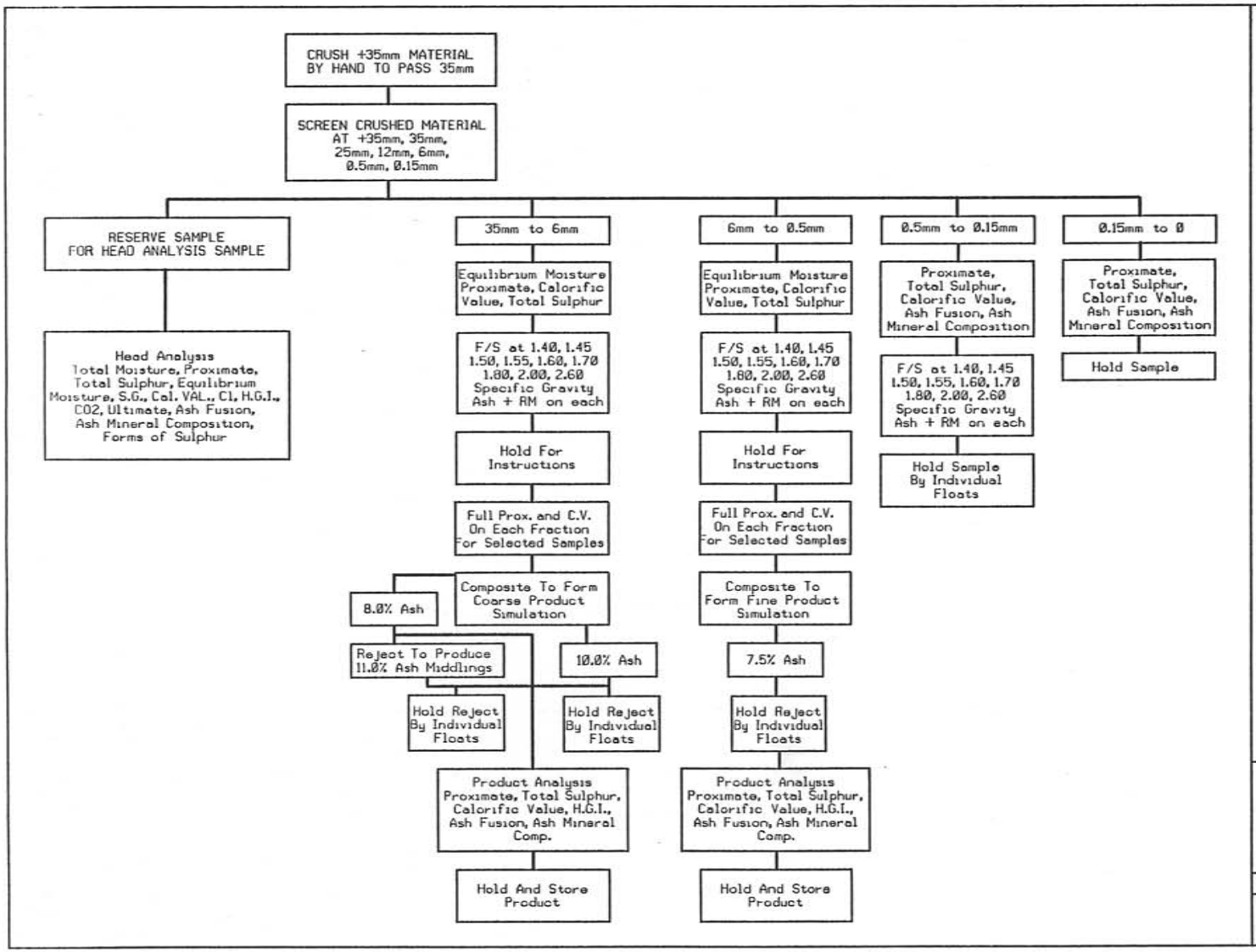


FIGURE 8-1

MOUNT KLAPPAN ANTHRACITE PROJECT

DIAMOND DRILL HOLE COAL CORE ANALYSIS FLOW SHEET

GULF CANADA RESOURCES LTD.

GULF CANADA RESOURCES LTD.
88/03/17
KLAP1:[20505]1860591001.CHT

Table 8.1
1988 AVERAGE DIAMOND DRILL CORE RAW COAL QUALITY BY SEAM

SEAM (A.D.B)	G & G lo	H/I	H	I	J	J2	K	K/L	L	M	N	P
Proximate Analysis %												
Residual Moisture	1.28	1.12	1.30	1.23	0.96	0.81	1.26	1.37	1.26	1.25	1.31	1.32
Ash	47.10	36.35	44.11	28.38	45.77	32.13	44.87	46.41	43.65	52.59	41.47	31.50
Volatile	7.07	7.11	6.66	6.17	7.13	5.55	7.90	7.18	7.62	9.52	7.71	7.40
Fixed Carbon	44.55	55.42	47.93	64.22	46.14	61.51	45.97	45.04	47.47	36.64	49.51	59.78
H.G.I.		68.0	60.35	61.77	62.00		63.43	62.25	72.25	71.0	59.0	55.0
Specific Gravity		1.57	1.59	1.51	1.61		1.57	1.61	1.61	1.60	1.59	1.55
Carbon Dioxide		1.55	0.60	0.62	0.25		0.66	1.06	0.49	1.58	1.23	1.39
Chlorine (ppm)		1736.0	693.0	796.0	960.0		732.0	855.0	286.0	43.0	170.0	504.0
Sulphur		0.42	0.48	0.39	0.55		0.52	0.50	0.35	0.49	1.79	1.01
Calorific Value												
Gross (MJ/kg)	16.53	20.86	17.61	23.93	16.73	21.61	17.16	16.48	17.71	13.31	19.08	22.80
Gross (cal/gm)	3951	4986	4209	5719	3998	5165	4101	3939	4233	3181	4560	5449
Ultimate Analysis %												
Carbon		56.05	55.81	66.60	50.53		55.69	49.24	48.65	49.65	49.71	58.92
Hydrogen		1.91	1.81	2.10	1.77		1.92	1.71	1.72	1.52	1.81	2.02
Nitrogen		0.62	0.63	0.76	0.59		0.69	0.65	0.62	0.68	0.64	0.82
Oxygen		3.28	3.50	3.42	2.86		3.72	3.71	4.51	3.57	3.27	4.41
Ash Fusion (deg C)												
Oxidizing												
Initial		1127.0	1203.0	1194.0	1239.0		1187.0	1205.0	1149.0	1187.0	1183.0	1185.0
Softening		1264.0	1265.0	1287.0	1312.0		1289.0	1281.0	1304.0	1271.0	1296.0	1259.0
Hemispherical		1290.0	1280.0	1303.0	1325.0		1301.0	1297.0	1323.0	1294.0	1310.0	1269.0
Fluidizing		1322.0	1327.0	1349.0	1405.0		1333.0	1350.0	1384.0	1349.0	1361.0	1332.0
Reducing												
Initial		1056.0	1146.0	1139.0	1155.0		1123.0	1157.0	1086.0	1090.0	1051.0	1145.0
Softening		1219.0	1211.0	1228.0	1251.0		1213.0	1208.0	1262.0	1194.0	1192.0	1190.0
Heisherical		1243.0	1225.0	1250.0	1273.0		1230.0	1229.0	1283.0	1215.0	1209.0	1200.0
Fluidizing		1317.0	1301.0	1323.0	1381.0		1297.0	1319.0	1364.0	1328.0	1327.0	1251.0
Ash Mineral Analysis %												
SiO_2		58.60	56.21	52.68	63.63		50.98	56.69	59.98	53.66	56.85	56.20
Al_2O_3		18.44	17.74	20.07	15.34		19.40	17.80	17.74	20.06	17.96	20.49
Fe_2O_3		5.27	6.26	7.45	4.57		9.27	7.84	5.75	8.50	10.73	7.88
CaO		5.78	6.24	4.85	4.70		6.05	5.11	5.32	4.00	3.32	4.09
MgO		3.48	3.92	3.98	3.49		4.07	3.43	3.14	3.44	2.79	3.14
TiO2		0.89	1.05	1.04	0.76		1.05	0.99	0.98	1.04	0.95	1.00
Na_2O		1.57	1.76	1.87	1.17		1.60	1.66	1.91	1.82	1.15	1.45
K_2O		1.17	1.59	1.34	1.80		1.57	1.38	1.14	1.52	2.13	1.80
SO_3		2.24	2.23	3.01	1.97		2.69	2.19	2.04	1.67	1.62	2.24
P_2O_5		0.60	0.82	1.48	0.89		1.18	0.68	0.89	0.64	0.85	0.77

NOTE: Table represents a straight average of diamond drill core coal quality.

35 mm x 25, 25 x 12, 12 x 6, 6 x 0.5, 0.5 x 0.15 and 0.15 mm x 0. Results of the average size consist for each seam are presented in Table 8.2.

Washability analysis of the coal core consisted of a consolidation of several sizes into the following 4 fractions: 35 x 6 mm, 6 x 0.5 mm, 0.5 x 0.15 mm, 0.15 x 0 mm. All but the fine fraction, 0.15 x 0 mm, were tested at the specific gravities of separations of: 1.40, 1.45, 1.50, 1.55, 1.60, 1.70, 1.80, 2.00, 2.60. The fine fraction will undergo froth floatation at a later date. All raw washability data is found in Appendix V.

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APPENDIX A

LEGAL DESCRIPTION AND LISTING OF LICENCES

Appendix A

MOUNT KLAPPAN ANTHRACITE PROJECT LICENCES
1988

Lost Fox Area

Licence	Effective Date	Hectares	Series	Block
7129	Sept. 1/81	281	104-H-2	K
7130	Sept. 1/81	281	104-H-2	K
7133	Sept. 1/81	281	104-H-2	K
7134	Sept. 1/81	281	104-H-2	K
7135	Sept. 1/81	281	104-H-2	K
7138	Sept. 1/81	281	104-H-2	K
7139	Sept. 1/81	281	104-H-2	K
7140	Dec. 31/82	281	104-H-2	K
7143	Dec. 31/82	281	104-H-2	K
7144	Dec. 31/82	281	104-H-2	K
7145	Dec. 31/82	281	104-H-2	K
7146	Sept. 1/81	281	104-H-2	L
7147	Dec. 31/82	281	104-H-2	L
7148	Sept. 1/81	281	104-H-2	L
7149	Sept. 1/81	281	104-H-2	L
7151	Dec. 31/82	281	104-H-2	L
7152	Dec. 31/82	281	104-H-2	L
7153	Sept. 1/81	281	104-H-2	L
7160	Dec. 31/82	281	104-H-7	C
7161	Dec. 31/82	281	104-H-7	C
7162	Dec. 31/82	281	104-H-7	C
7164	Dec. 31/82	280	104-H-7	C
7165	Dec. 31/82	280	104-H-7	C
7166	Dec. 31/82	280	104-H-7	C
7167	Sept. 1/81	75	104-H-7	C
7168	Sept. 1/81	142	104-H-7	C
7169	Dec. 31/82	281	104-H-7	D

Lost Fox Area (cont'd)

Licence	Effective Date	Hectares	Series	Block
7170	Dec. 31/82	281	104-H-7	D
7171*	Dec. 31/82	140.5	104-H-7	D
7172	Dec. 31/82	280	104-H-7	D
7173*	Dec. 31/82	140	104-H-7	D
7175	Sept. 1/81	94	104-H-7	D
7527	Oct. 21/82	281	104-H-2	K
7529	Oct. 21/82	281	104-H-2	L
7561	June 30/83	21	104-H-7	C

* Licence split between Lost-Fox and Summit-Nass-Skeena Areas

Lost-Fox Area Total Hectares = 8 757.5

Appendix A

MOUNT KLAPPAN ANTHRACITE PROJECT LICENCES
1988

SUMMIT-NASS-SKEENA AREA

Summit Area

Licence	Effective Date	Hectares	Series	Block
7171*	Dec. 31/82	140.5	104-H-7	D
7173*	Dec. 31/82	140.0	104-H-7	D
7174	Dec. 31/82	280.0	104-H-7	D
7176	Dec. 31/82	277.0	104-H-7	D
7177	Sept. 1/81	280.0	104-H-7	D
7382	Mar. 15/82	280.0	104-H-6	H
7383	Mar. 15/82	108.0	104-H-6	H
7384	Mar. 15/82	281.0	104-H-7	D
7385	Mar. 15/82	204.0	104-H-7	D
7386	Mar. 15/82	280.0	104-H-7	D
7387	Mar. 15/82	280.0	104-H-7	D
7388	Mar. 15/82	172.0	104-H-7	D
7389	Mar. 15/82	275.0	104-H-7	D
7390	Mar. 15/82	280.0	104-H-7	D
7391	Mar. 15/82	115.0	104-H-7	E
7392	Mar. 15/82	260.0	104-H-7	E
7423	Mar. 15/83	281.0	104-H-7	D
7424	Mar. 15/83	280.0	104-H-7	D
7425	Mar. 15/83	280.0	104-H-7	D
7426	Mar. 15/83	280.0	104-H-7	D
7726	Jan. 10/84	280.0	104-H-6	A
7727	Jan. 10/84	280.0	104-H-6	A
7728	Jan. 10/84	280.0	104-H-6	A
7729	Jan. 10/84	280.0	104-H-6	A
7730	Jan. 10/84	280.0	104-H-6	A

Summit Area (cont'd)

Licence	Effective Date	Hectares	Series	Block
7746	Jan. 10/84	280.0	104-H-6	H
7750	Jan. 10/84	261.0	104-H-6	H
7751	Jan. 10/84	280.0	104-H-6	H
7752	Jan. 10/84	280.0	104-H-6	H
7754	Jan. 10/84	154.0	104-H-6	H
7755	Jan. 10/84	274.0	104-H-6	H
7756	Jan. 10/84	280.0	104-H-6	D
7757	Jan. 10/84	280.0	104-H-6	D
8047	Mar. 29/85	280.0	104-H-6	A
8048	Mar. 29/85	280.0	104-H-6	A

* Licence split between Summit-Nass-Skeena and Lost-Fox Areas

Summit Area Total Hectares = 8 822.5

Nass Area

Licence	Effective Date	Hectares	Series	Block
7150	Sept. 1/81	281	104-H-2	L
7154	Sept. 1/81	281	104-H-2	L
7421	Mar. 15/83	281	104-H-2	L
7422	Mar. 15/83	281	104-H-2	L
7427	Mar. 15/83	281	104-H-3	I
7428	Mar. 15/83	281	104-H-3	I
7429	Mar. 15/83	281	104-H-3	I
7430	Mar. 15/83	281	104-H-3	I
7431	Mar. 15/83	281	104-H-3	I
7432	Mar. 15/83	281	104-H-3	I
7487	Oct. 21/82	281	104-H-3	J
7488	Oct. 21/82	281	104-H-3	J
7506	Oct. 21/82	281	104-H-3	H
7507	Oct. 21/82	281	104-H-3	H
7508	Oct. 21/82	281	104-H-3	H
7510	Oct. 21/82	281	104-H-3	H
7511	Oct. 21/82	281	104-H-3	H
7512	Oct. 21/82	281	104-H-3	I
7513	Oct. 21/82	281	104-H-3	I
7514	Oct. 21/82	281	104-H-3	I
7515	Oct. 21/82	281	104-H-3	I
7516	Oct. 21/82	281	104-H-3	I
7517	Oct. 21/82	281	104-H-3	I
7518	Oct. 21/82	281	104-H-3	I
7519	Oct. 21/82	281	104-H-3	I
7520	Oct. 21/82	281	104-H-3	I
7521	Oct. 21/82	281	104-H-3	I
7522	Oct. 21/82	281	104-H-3	I
7523	Oct. 21/82	281	104-H-3	I

Nass Area (cont'd)

Licence	Effective Date	Hectares	Series	Block
7533	Oct. 21/82	281	104-H-2	L
7534	Oct. 21/82	281	104-H-2	L
7535	Oct. 21/82	281	104-H-2	L
7536	Oct. 21/82	281	104-H-2	L
8032	Mar. 29/85	281	104-H-3	J
8033	Mar. 29/85	281	104-H-3	J
8034	Mar. 29/85	281	104-H-3	J
8035	Mar. 29/85	281	104-H-3	J
8036	Mar. 29/85	281	104-H-3	J
8037	Mar. 29/85	281	104-H-3	J
8038	Mar. 29/85	281	104-H-3	J
8039	Mar. 29/85	281	104-H-3	J
8040	Mar. 29/85	281	104-H-3	J
8041	Mar. 29/85	281	104-H-3	J
8042	Mar. 29/85	281	104-H-3	J
8043	Mar. 29/85	281	104-H-3	J
8044	Mar. 29/85	281	104-H-3	J

Nass Area Total Hectares = 12 926

Skeena Area

Licence	Effective Date	Hectares	Series	Block
7493	Oct. 21/82	282	104-H-2	G
7494	Oct. 21/82	282	104-H-2	G
7495	Oct. 21/82	282	104-H-2	G
7497	Oct. 21/82	281	104-H-2	G
7498	Oct. 21/82	281	104-H-2	G
7499	Oct. 21/82	281	104-H-2	G
7500	Oct. 21/82	281	104-H-2	G
7501	Oct. 21/82	281	104-H-2	G
7502	Oct. 21/82	281	104-H-2	J
7503	Oct. 21/82	281	104-H-3	K
7504	Oct. 21/82	281	104-H-3	K
7538	Oct. 21/82	281	104-H-2	F

Skeena Area Total Hectares = 3 375

Appendix A

MOUNT KLAPPAN ANTHRACITE PROJECT LICENCES
1988

Hobbit-Broatch Area

Licence	Effective Date	Hectares	Series	Block
7118	Sept. 1/81	281	104-H-2	J
7119	Sept. 1/81	281	104-H-2	J
7121	Sept. 1/81	224	104-H-2	J
7122	Dec. 31/82	281	104-H-2	J
7123	Dec. 31/82	281	104-H-2	J
7124	Sept. 1/81	98	104-H-2	J
7125	Dec. 31/82	281	104-H-2	J
7126	Dec. 31/82	281	104-H-2	J
7127	Sept. 1/81	281	104-H-2	K
7128	Sept. 1/81	281	104-H-2	K
7131	Sept. 1/81	281	104-H-2	K
7132	Sept. 1/81	281	104-H-2	K
7136	Dec. 31/82	281	104-H-2	K
7137	Sept. 1/84	281	104-H-2	K
7141	Dec. 31/82	281	104-H-2	K
7142	Dec. 31/82	281	104-H-2	K
7155	Sept. 1/81	61	104-H-7	B
7156	Sept. 1/81	167	104-H-7	B
7157	Sept. 1/81	265	104-H-7	B
7158	Dec. 31/82	281	104-H-7	C
7159	Dec. 31/82	281	104-H-7	C
7163	Dec. 31/82	257	104-H-7	C
7381	Mar. 18/82	281	104-H-2	J
7418	Mar. 15/83	281	104-H-2	J
7559	June 30/83	22	104-H-7	B
7560	June 30/83	153	104-H-7	C

Hobbit-Broatch Area Total Hectares = 6 305

APPENDIX B

DISTRIBUTION OF
WORK BY LICENCE

Distribution of Work by Licence

Diamond Drill Hole	Licence
KPNLRDDH88001	7151
KPNLRDDH88002	7149
KPNLRDDH88003	7148
KPNLRDDH88004	7149
KPNLRDDH88005	7148
KPNLRDDH88006	7151
KPNLRDDH88007	7148
KPNLRDDH88008	7151
KPNLRDDH88009	7147
KPNLRDDH88010	7151
KPNLRDDH88011	7145
KPNLRDDH88012	7147
KPNLRDDH88013	7145
KPNLRDDH88014	7147
KPNLRDDH88015	7151
KPNLRDDH88016	7151
KPNLRDDH88017	7151
KPNLRDDH88018	7151
KPNLRDDH88019	7152
KPNLRDDH88020	7145
KPNLRDDH88021	7151
KPNLRDDH88022	7148
KPNLRDDH88023	7145
KPNLRDDH88024	7147
KPNLRDDH88025	7147
KPNLRDDH88026	7145
KPNLRDDH88027	7147
KPNLRDDH88028	7162
KPNLRDDH88029	7151

Distribution of Work by Licence

Mechanical Trench	Licence
KPNLRTRC88001	7149
KPNLRTRC88100	7151
KPNLRTRC88101	7151
KPNLRTRC88102	7151
KPNLRTRC88103	7151
KPNLRTRC88104	7151
KPNLRTRC88105	7151
KPNLRTRC88106	7151
KPNLRTRC88107	7151
KPNLRTRC88108	7151
KPNLRTRC88109	7151
KPNLRTRC88110	7151
KPNLRTRC88111	7151
KPNLRTRC88112	7151
KPNLRTRC88113	7152
KPNLRTRC88114	7152
KPNLRTRC88115	7152
KPNLRTRC88116	7152
KPNLRTRC88117	7152
KPNLRTRC88118	7152
KPNLRTRC88119	7152
KPNLRTRC88120	7169
KPNLRTRC88121	7151
KPNLRTRC88122	7152
KPNLRTRC88123	7152
KPNLRTRC88124	7152
KPNLRTRC88124	7152
KPNLRTRC88125	7152
KPNLRTRC88126	7152
KPNLRTRC88127	7151
KPNLRTRC88128	7151

APPENDIX C

FLORAL AND FAUNAL
FOSSIL LOCATIONS

SAMPLE NUMBER	GEOGRAPHIC LOCATION	STRATIGRAPHIC LOCATION	IDENTIFICATION (IF KNOWN)
DW8800101	NW of Cub Ck, Summit South	Lower Klappan	Baiera furcata Nilssonia tenuicaulis Pityophyllum nordenskioldii Pterophyllum rectangulare Ginkgo nana
DW8800501	W of Cub Ck, Summit South	Lower Klappan	Cladophlebis virginiensis Czekanowskia rigida Pityophyllum nordenskioldii Nilssonia tenuicaulis
DW8800601	W of Cub Ck, Summit South	Lower Klappan	Bivalves (sampled)
DW8801507	Map sheet L-13, Summit South	Lower Klappan	Ferganoconcha Somapecten Acesta
GP88001	East of Big valley, Summit South	?	Black bivalve (sampled)
OTC88006	Ellis Ridge	Lower Malloch	Baiera gracilis Cladophlebis virginiensis Cladophlebis virginiensis martiniana Czekanowskia rigida
OTC88007	U. Tahtsedle Ck (occ fossil bed throughout OTC)	Lower Malloch / Upper Klappan	Cladophlebis virginiensis Podozamites sp. Petrified tree trunk Bivalves (thin shelled)
OTC88008	U. Tahtsedle Ck (occ fossil bed throughout OTC)	Lower Malloch / Upper Klappan	Petrified tree trunks Cladophlebis virginiensis
SL8800403	North side of A. berryi OTC, WLR	Below J seam	Abundant ginkgo nana Pityophyllum nordenskioldii
SL8800501	Cliff W of Southern Mohawk, WLR	Above J seam	Podozamites lanceolatus Ginkgo nana Pityophyllum nordenskioldii Ginkgo pluripartita Baiera furcata
DDH88001A	Box 11, 25m from top	1m below J seam	Ctenis borealis
DDH88001B	Box 12, 26m from top	2m below J seam	Ctenis borealis
DDH88001C	Box 31, 65m from top	2m above I seam	Sphenopteris sp. Plant fragments
DDH88001D	Box 53, 109m from top	8m above H seam	Ctenis borealis
DDH88001E	Box 54, 111m from top	6m above H seam	Nilssonia tenuicaulis Nilssonia canadensis Plant fragments

SAMPLE NO.	LOCATION	POSITION	IDENTIFICATION
DDH88001F	Box 56, 116m from top	Immediately above H seam	Pityophyllum nordenskioldii Pterophyllum plicatum Sphenopteris sp. Plant fragments
DDH88001G	Box 60, 124m from top	4m below H seam	Helminthopsis
DDH88002A	Box 4, 10m from top	1m above I seam	Nilssonia tenuicaulis Pityophyllum nordenskioldii
DDH88002B	Box 13, 30m from top	14m below I seam	Helminthopsis
DDH88002C	Box 21, 48m from top	32m below I seam	Helminthopsis
DDH88002D	Box 42, 88m from top	72m below I seam	Helminthopsis
DDH88003A	Box 25, 53m from top	4m below M? seam	Nilssonia canadensis
DDH88003B	Box 31, 67m from top	10m below L? seam	Baiera furcata
DDH88003C	Box 41, 88m from top	7m above K/L seam	Athrotaxites berryi
DDH88003D	Box 48, 102m from top	1m below K/L seam	Nilssonia tenuicaulis
DDH88003E	Box 59, 127m from top	8m below K seam	Bivalves
DDH88004A	Box 14, 33m from top	3m below J2 seam	Pityophyllum nordenskioldii
DDH88004B	Box 15, 35m from top	5m below J2 seam	Omphiomorpha
DDH88004C	Box 18, 41m from top	11m below J2 seam	Pterophyllum plicatum
DDH88004D	Box 19, 43m from top	13m below J2 seam	Pterophyllum plicatum
DDH88004E	Box 21, 49m from top	20m below J2 seam	Cladophlebis strictinervis
DDH88004F	Box 27, 60m from top	22m above I seam	Pityophyllum nordenskioldii Baiera furcata
DDH88004G	Box 46, 99m from top	7m below I seam	Abundant Helminthopsis
DDH88004H	Box 47, 101m from top	9m below I seam	Abundant Helminthopsis
DDH88004I	Box 48, 103m from top	11m below I seam	Gastropod: (1.0cm long)
DDH88004J	Box 50, 108m from top	16m below I seam	Large worm burrow: (14.0cm long)
DDH88004K	Boxes: 54,55,56, 117m from top (from 117m to 121m)	21m above H seam	Helminthopsis throughout
DDH88004L	Box 59, 126m from top	12m above H seam	Helminthopsis throughout Coalified plant leaf (Ellipsoidal in shape)
DDH88004M	Boxes: 60,61,62, 129m from top	5m above H seam	Bivalves: Ferganoconcha
DDH88004N	Box 64, 137m from top	1m above H seam	Bivalves

SAMPLE NO.	LOCATION	POSITION	IDENTIFICATION
DDH88005A	Box 6, 21m from top	4m below K/L seam	Cladophlebis virginiensis
DDH88005B	Box 20, 49m from top	17m below K seam	Nilssonia tenuicaulis Sphenopteris sp.
DDH88006A	Box 110, 224m from top	3m above K? seam	Ammonites
DDH88006B	Boxes: 112,113,114,115, 231m from top	10m above K? seam	Bivalves: Pyritized
DDH88007A	Box 41, 95m from top	16m below H? seam	Helminthopsis: (abundant)
DDH88007B	Box 44, 101m from top	22m below H? seam	Helminthopsis Bivalves, Gastropods
DDH88007C	Box 61, 135m from top	40m above G? seam	Helminthopsis
DDH88007D	Box 79, 172m from top	3m above G? seam	Helminthopsis
DDH88007E	Box 81, 175m from top	Immediately above G? seam	Helminthopsis Bivalve escape structure (10.0cm long x 20.0cm wide)
DDH88007F	Box 87, 186m from top	9m below G? seam	Bivalve shells
DDH88009A	Box 16, 37m from top	20m above L seam	Nilssonia sp.
DDH88009B	Box 64, 132m from top	4m below J seam	Bivalve impression Staffinella
DDH88009C	Box 71, 146m from top	Directly above I seam	Sphenopteris Pityophyllum nordenskioldii Nilssonia sp. Abundant plant fragments
DDH88009D	Box 73, 151m from top	Within I seam	Nilssonia canadensis Abundant plant hash
DDH88009E	Boxes: 88,89, 180m from top	29m below I seam	Bivalves, Plant hash
DDH88009F	Box 94, 193m from top	Within H seam	Nilssonia schaumbergensis
DDH99010A	Box 39, 85m from top	Within K/L seam	Pityophyllum nordenskioldii Cladophlebis virginiensis
DDH88010B	Box 63, 183m from top	Within J seam	Pityophyllum nordenskioldii Plant fragments
DDH88010C	Box 83, 179m from top	20m below I seam	Bivalves: (pyritized)
DDH88010D	Box 84, 182m from top	9m above H seam	Bivalves up to 4.0cm Plant fragments
DDH88011A	Box 48, 110m from top	3m above J seam	Cladophlebis virginiensis Fisheri

SAMPLE NO.	LOCATION	POSITION	IDENTIFICATION
DDH88011B	Box 105, 228m from top	7m above H seam	Nilssonia tenuicaulis
DDH88011C	Box 108, 234m from top	1m above H seam	Nilssonia nigracollensis
DDH88012A	Box 61, 135m from top	35m below I seam	Helminthopsis
DDH88013A	Box 9, 24m from top	2m below L seam	Nilssonia canadensis Plant fragments
DDH88013B	Box 33, 73m from top	23m above K seam	Bivalves
DDH88013C	Boxes: 35,36,37, 78m from top	18m above K seam	Nilssonia tenuicaulis Sphenopteris sp.
DDH88013D	Box 39, 86m from top	10m above K seam	Bivalves
DDH88013E	Boxes: 85,86, 184m from top	18m below I seam	Helminthopsis
DDH88013F	Box 88, 189m from top	19m above H seam	Bivalves
DDH88014A	Box 37, 82m from top	Directly below I seam	Nilssonia tenuicaulis Plant fragments
DDH88014B	Box 41, 90m from top	8m below I seam	Bivalves Helminthopsis
DDH88014C	Box 53, 115m from top	4m above H seam	Baiera furcata Plant fragments
DDH88015A	Box 9, 44m from top	6m below K/L seam	Bivalves
DDH88015B	Boxes: 10,11, 46m from top	8m below K/L seam	Bivalves Pityophyllum nordenskioldii Plant fragments
DDH88015C	Box 19, 65m from top	Floor rock of K seam	Equisetites lyelli Plant fragments
DDH88015D	Box 56, 139m from top	4m below I seam	Helminthopsis
DDH88015E	Boxes: 59,60, 139m from top	11m below I seam	Helminthopsis
DDH88015F	Box 68, 168m from top	30m below I seam	Helminthopsis
DDH88015G	Box 80, 188m from top	16m above H/I seam	Bivalves
DDH88015H	Box 85, 196m from top	8m above H/I seam	Nilssonia schaumbergensis
DDH88016A	Box 22, 50m from top	10m below I seam	Helminthopsis
DDH88016B	Box 28, 62m from top	16m above H seam	Helminthopsis
DDH88016C	Boxes: 32,33,34, 72m from top	6m above H seam	Helminthopsis
DDH88016D	Box 43, 93m from top	10m below H seam	Helminthopsis

SAMPLE NO.	LOCATION	POSITION	IDENTIFICATION
DDH88016E	Boxes: 46,47, 102m from top	19m below H seam	Bivalves
DDH88017A	Box 44, 100m from top	11m below I seam	Helminthopsis
DDH88017B	Box 58, 124m from top	35m below I seam	Helminthopsis
DDH88017C	Box 69, 145m from top	56m below I seam	Helminthopsis
DDH88018A	Box 12, 31m from top	16m above M seam	Nilssonia
DDH88018B	Box 52, 116m from top	28m above K seam	Bivalves
DDH88018C	Box 55, 122m from top	22m above K seam	Bivalves-Staffinella
DDH88018D	Boxes: 59,60, 131m from top	13m above K seam	Baiera furata Nilssonia schaumbergensis Nilssonia tenuicaulis
DDH88018E	Box 62, 135m from top	9m above K seam	Bivalves
DDH88018F	Box 64, 141m from top	3m above K seam	Nilssonia tenuicaulis Plant hash
DDH88018G	Box 100, 212m from top	11m below I seam	Helminthopsis Bivalves (1.0-2.0cm in size)
DDH88018H	Box 103, 219m from top	18m below I seam	Helminthopsis
DDH88018I	Box 105, 223m from top	15m above H/I seam	Bivalves
DDH88018J	Box 112, 237m from top	1m above H/I seam	Pityophyllum nordenskioldii Plant fragments
DDH88018K	Box 114, 240m from top	Floor rock H/I seam	Bivalve burrows
DDH88018L	Box 116, 245m from top	5m above H seam	Helminthopsis
DDH88018M	Box 121, 255m from top	1m below H seam	Nilssonia schaumbergensis Nilssonia tenuicaulis Plant fragments
DDH88020A	Box 56, 120m from top	2m below H seam	Helminthopsis
DDH88020B	Boxes: 61,62, 129m from top	11m above K seam	Helminthopsis
DDH88021A	Box 32, 69m from top	7m above H seam	Helminthopsis
DDH88021B	Box 39, 84m from top	8m below H seam	Bivalves-Staffinella
DDH88021C	Boxes: 40,41, 88m from top	12m below H seam	Helminthopsis
DDH88021D	Box 42, 90m from top	14m below H seam	Bivalve shells - Staffinella
DDH88022A	Box 5, 12m from top	40m above K seam	Bivalves

SAMPLE NO.	LOCATION	POSITION	IDENTIFICATION
DDH88022B	Box 13, 28m from top	24m above K seam	Helminthopsis
DDH88022C	Box 19, 41m from top	11m above K seam	Nilssonia tenuicaulis Plant fragments
DDH88022D	Box 22, 46m from top	6m above K seam	Helminthopsis Plant fragments
DDH88022E	Box 24, 50m from top	2m above K seam	Bivalves
DDH88023A	Box 9, 30m from top	9m above P? seam	Nilssonia sp.
DDH88024A	Box 19, 53m from top	43m above P? seam	Bivalves
DDH88024B	Box 24, 63m from top	33m above P? seam	Baiera furcata Plant fragments
DDH88024C	Box 24, 65m from top	31m above P? seam	Czekanowskia rigida Plant fragments
DDH88024D	Box 31, 81m from top	15m above P? seam	Nilssonia canadensis Pityophyllum nordenskioldii Plant fragments
DDH88024E	Box 32, 82m from top	14m above P? seam	Pityophyllum nordenskioldii Plant fragments
DDH88025A	Box 25, 58m from top	26m below ? seam	Helminthopsis
DDH88026A	Boxes: 25,26, 68m from top	19m above K seam	Bivalves-Staffinella
DDH88026B	Box 28, 75m from top	12m above K seam	Nilssonia schaumbergensis Nilssonia tenuicaulis Plant fragments
DDH88026C	Box 30, 76m from top	11m above K seam	Pterophyllum plicatum Sphenopteris sp.
DDH88026D	Box 60, 139m from top	7m below I seam	Helminthopsis
DDH88026E	Box 62, 145m from top	13m below I seam	Helminthopsis
DDH88026F	Box 64, 149m from top	17m below I seam	Helminthopsis
DDH88026G	Box 66, 153m from top	21m below I seam	Helminthopsis
DDH88026H	Box 67, 154m from top	22m below I seam	Bivalves
DDH88026I	Box 72, 164m from top	32m below I seam	Bivalves burrows
DDH88026J	Box 73, 166m from top	34m below I seam	Helminthopsis
DDH88026K	Box 76, 172m from top	40m below I seam	Helminthopsis
DDH88026L	Boxes: 84,85,86, 190m from top	58m below I seam	Helminthopsis

SAMPLE NO.	LOCATION	POSITION	IDENTIFICATION
DDH88026M	Box 89, 198m from top	66m below I seam	Helminthopsis
DDH88026N	Box 95, 209m from top	77m below I seam	Bivalve burrows Shell fragments present
DDH88027A	Box 17, 44m from top	4m above K seam	Bivalves - Death assemblage Staffinella Plant fragments
DDH88027B	Box 20, 51m from top	1m below K seam	Bivalves
DDH88027C	Box 58, 132m from top	19m below I seam	Helminthopsis
DDH88027D	Box 63, 141m from top	28m below I seam	Helminthopsis
DDH88028A	Box 49, 113m from top	Roof rock of M/N seam	Equisetites lyelli
DDH88028B	Box 50, 115m from top	1m below M/N seam	Bivalves
DDH88028C	Box 51, 117m from top	3m below M/N seam	Helminthopsis
DDH88028D	Box 52, 118m from top	4m below M/N seam	Bivalves-Staffinella
DDH88028E	Box 74, 164m from top	4m below L seam	Bivalves
DDH88029A	Box 10, 22m from top	6m below O seam	Bivalves: (up to 4.0cm) Plant fragments
DDH88029B	Box 14, 30m from top	13m above N seam	Bivalves: (up to 2.0cm)
DDH88029C	Box 56, 118m from top	4m below L seam	Pityophyllum nordenskioldii Plant fragments

APPENDIX E

SURVEY CONTROL POINTS
1988

Gulf Canada Resources Ltd.
Mount Klappan Project

UTM Coordinates and Elevations in Metres
1988 Diamond Drill Holes

Station #	Northing	Easting	Elevation
88-001	6344958.73	506938.98	1622.37
88-002	6342603.02	504523.89	1689.11
88-003	6342751.59	505627.23	1672.11
88-004	6342222.27	504450.18	1650.45
88-005	6342794.52	505390.09	1682.69
88-006	6343788.69	506730.92	1697.40
88-007	6342733.98	505143.30	1689.54
88-008	6343610.52	506854.35	1671.87
88-009	6342937.76	506557.40	1637.90
88-010	6343278.35	507071.62	1614.80
88-011	6344372.61	507948.54	1519.94
88-012	6343219.55	506484.41	1654.96
88-013	6344116.66	507700.10	1557.42
88-014	6343257.67	506380.31	1670.31
88-015	6344416.52	507651.83	1558.93
88-016	6343552.34	506348.64	1700.80
88-017	6343811.32	506440.57	1716.35
88-018	6344349.25	507385.50	1602.71
88-019	6344022.04	505694.40	1814.25
88-020	6344976.92	507600.29	1530.78
88-021	6343411.21	506647.21	1654.17
88-022	6342274.25	505620.28	1665.58
88-023	6343395.95	507899.95	1573.58
88-024	6342395.85	506335.17	1639.06
88-025	6342487.06	507089.56	1640.23
88-026	6344068.20	507973.77	1539.66
88-027	6343131.90	506605.23	1631.43
88-028	6346457.20	508436.32	1406.82
88-029	6343983.57	507393.93	1615.94

Other

Top of SE Edge of trial Waste Dump	6343916.01	505857.23	1785.97

TRONNES SURVEYS (1976) LTD.

APPENDIX F

1:500,000 SCALE MAP
OF NORTHWESTERN
BRITISH COLUMBIA

NORTHWEST BRITISH COLUMBIA

GULF CANADA CORPORATION

SCALE 1: 500,000

Kilometres 10 5 0 10 20 30 40 50 Kilometres
Miles 5 0 10 20 30 Miles

Legend

- Paved Highway
- Gravel Highway
- Gravel Road (Restricted use)
- Proposed Road
- Railway
- Existing Transmission Lines
- Proposed Transmission Lines
- Electrical Sub Stations
- Proposed Dam Site
- Proposed Pit, Mount Klappan Property
- Boundary, Park or Reserve
- Boundary, International
- Spot Elevation (feet above sea level) · 6750
- Mine (see separate list)
- Prospect
- Cities, Towns
- Contours (1000 foot interval) 2000

COAL PROPERTIES

- GULF CANADA PROPERTIES LTD.
- 33 SUNCOR INC.
- 134 DOMINION ANTHRACITE LTD.
- 45 SHELL CANADA RESOURCES INC.
- 55 D. GROOT LOGGING LTD.
- 1 ESSO RESOURCES CANADA LTD.
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- 3 JOE HIDBER

MINES

2 DUTHIE — Ag, Pb, Zn, Au, Cd, Cu
3 SILVER STANDARD — Ag, Pb, Zn, Au, Cu
4 KITSAULT — Mo
5 SCOTTIE GOLD — Au, Ag
6 GRANDUC — Cu, Ag, Au
7 BAKER — Au, Ag

Produced jointly by GULF CANADA DRAFTING DEPT. and HARDY ASSOC. (1978) LTD., MAPPING SECTION.
Revised to Sept. 1986

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REFERENCE NOTE

Mines: from The Northwest Region - B.C. Regional Economic Study, 1982.

Prospects: from Kitimat-Stikine Regional District - 1:500,000 Regional Resource Map, 1981.

Base Map: from Dept. of Energy, Mines and Resources, Surveys and Mapping Branch, current N.T.S. series maps.

KEY MAP

748

Mt. Klappan 1988
Petrographic Data
(Trenches)
Resource Data.

CONFIDENTIAL

748

Vitrinite Reflectance

GULF CANADA
Sample #08412

BASIC STATISTICS

Total Number of Observations.....	100
Mean Maximum Reflectance (Romax)...%	4.55
Standard Error of the Mean.....	.02
Coefficient of Variation.....%	4.56
Variance.....	.0429
Standard Deviation.....	.2072
Skewness.....	-.3192
Kurtosis.....	2.4159

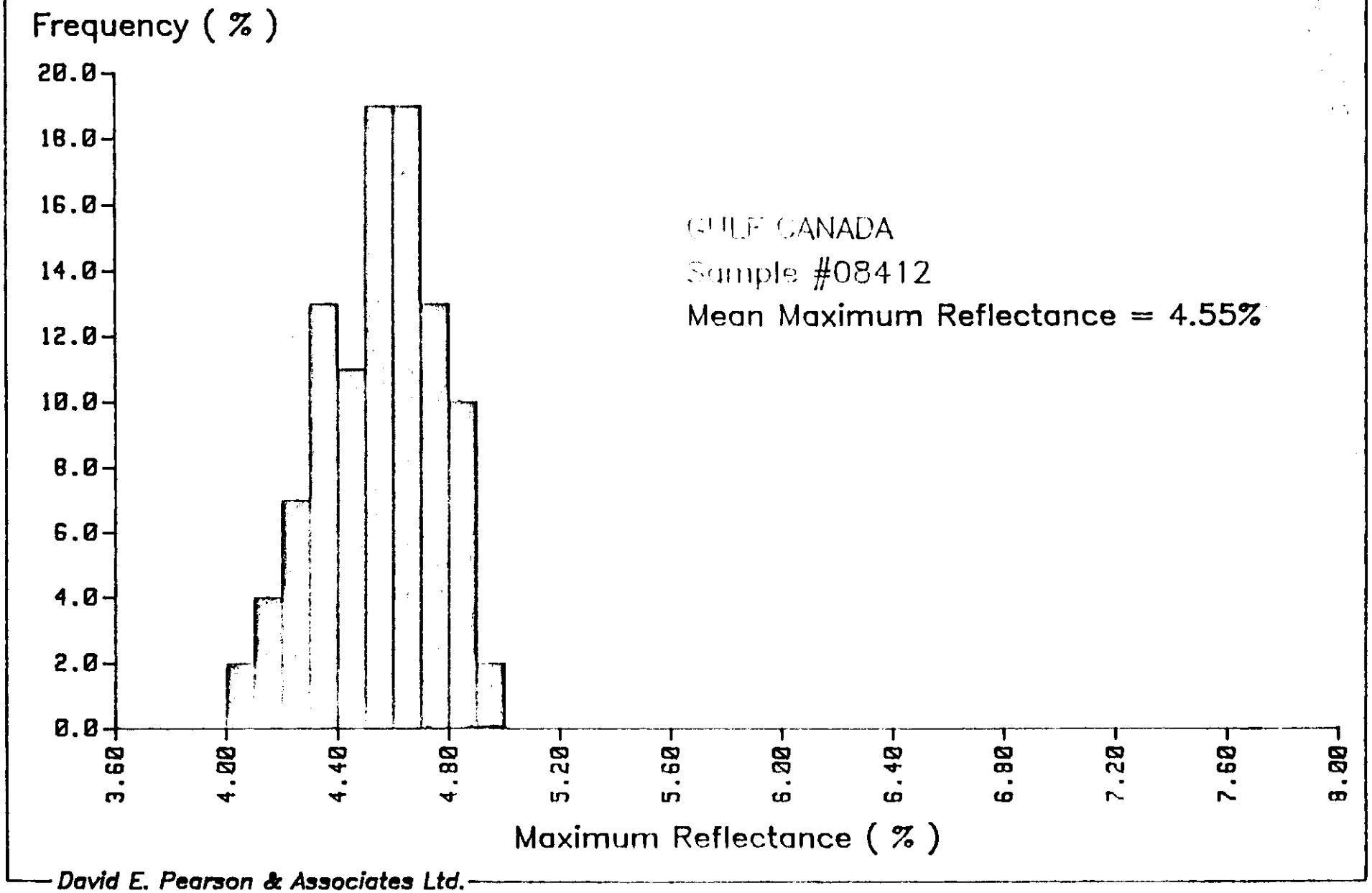
CELL STATISTICS

Cell Number	Lower Limit	Number of Observations	Frequency (%)
5	4.00	2	2.00
6	4.10	4	4.00
7	4.20	7	7.00
8	4.30	13	13.00
9	4.40	11	11.00
10	4.50	19	19.00
11	4.60	19	19.00
12	4.70	13	13.00
13	4.80	10	10.00
14	4.90	2	2.00

VITRINITE TYPE DISTRIBUTION

Vitrinite Type	Frequency (%)
V40	2.00
V41	4.00
V42	7.00
V43	13.00
V44	11.00
V45	19.00
V46	19.00
V47	13.00
V48	10.00
V49	2.00

VITRINITE HISTOGRAM



David E. Pearson & Associates Ltd.

Vitrinite Reflectance

GULF CANADA
Sample #08411

BASIC STATISTICS

Total Number of Observations	100
Mean Maximum Reflectance (Romax)...%	4.29
Standard Error of the Mean	.02
Coefficient of Variation...%	4.62
Variance	.0392
Standard Deviation	.1980
Skewness	.0723
Kurtosis	2.7403

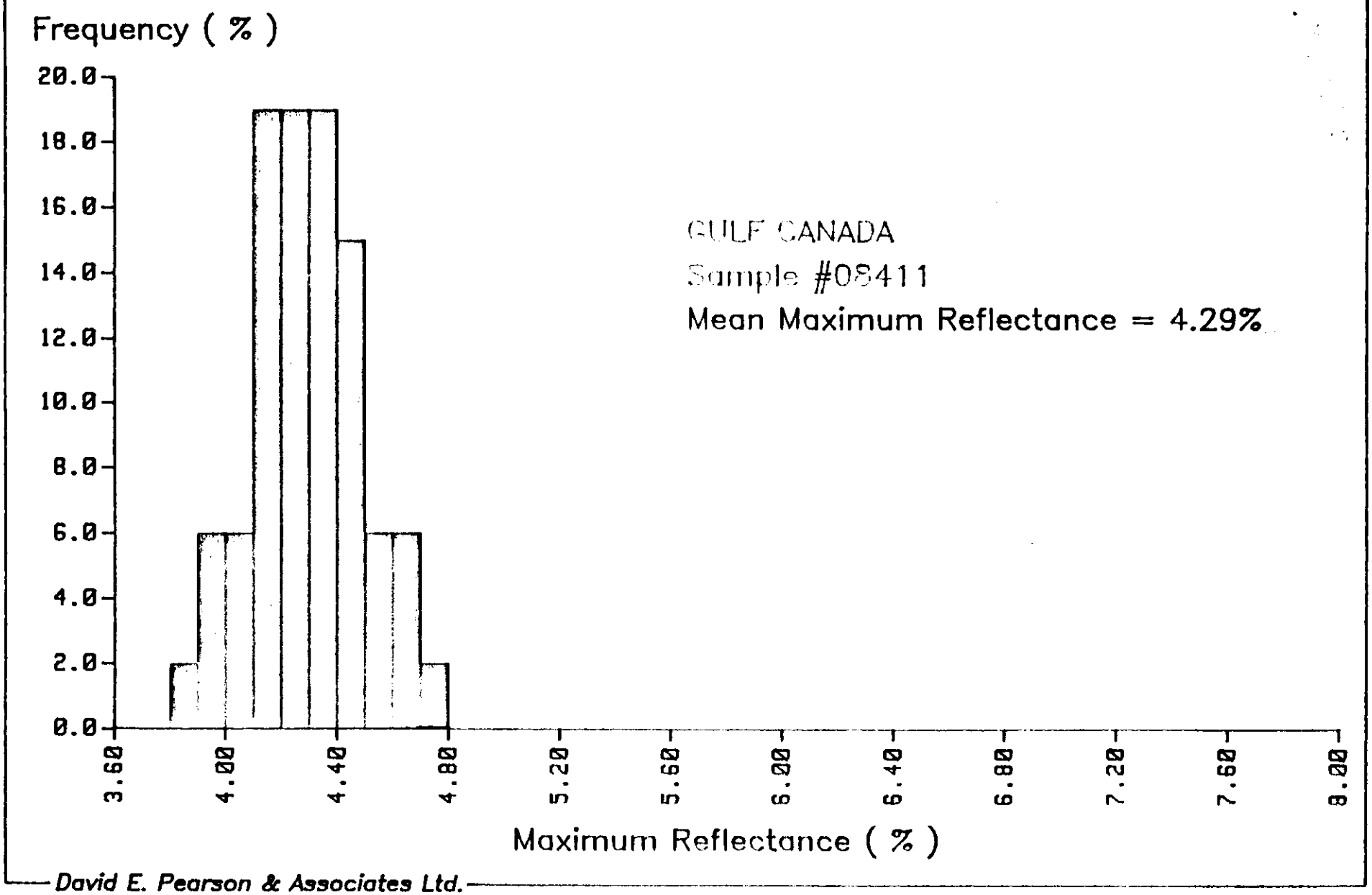
CELL STATISTICS

Cell Number	Lower Limit	Number of Observations	Frequency (%)
3	3.80	2	2.00
4	3.90	6	6.00
5	4.00	6	6.00
6	4.10	19	19.00
7	4.20	19	19.00
8	4.30	19	19.00
9	4.40	15	15.00
10	4.50	6	6.00
11	4.60	6	6.00
12	4.70	2	2.00

VITRINITE TYPE DISTRIBUTION

Vitrinite Type	Frequency (%)
V38	2.00
V39	6.00
V40	6.00
V41	19.00
V42	19.00
V43	19.00
V44	15.00
V45	6.00
V46	6.00
V47	2.00

VITRINITE HISTOGRAM



David E. Pearson & Associates Ltd.

TABLE 7.2a

LOST-FOX AREA ANTHRACITE RESOURCE SUMMARY: 1989

	Category			
Seam:	MEASURED	INDICATED	INFERRED	TOTAL
P	154,590.80	388,733.80	1,520,262.48	2,063,587.08
O	751,963.17	1,790,138.26	3,062,596.51	5,604,697.94
N	1,224,928.65	1,614,967.25	1,407,250.35	4,247,146.25
M/N	438,791.33	369,574.50	983,574.70	1,791,940.53
M upper	233,163.60	26,194.80	0.00	259,358.40
M	5,784,872.56	8,582,331.30	7,842,130.50	22,209,334.36
L	5,884,984.36	7,222,647.05	4,240,222.36	17,347,853.77
K/L	6,610,622.98	8,268,536.08	7,911,839.95	22,790,999.01
K	14,135,435.15	12,821,953.27	10,380,209.53	37,337,597.95
J	1,390,391.98	1,823,839.72	1,230,116.48	4,444,348.18
I	30,899,762.59	19,139,552.26	18,161,628.10	68,200,942.95
H/I	1,772,680.00	1,333,764.25	1,009,920.18	4,116,364.43
H/I2	199,141.60	129,185.76	0.00	328,327.36
H	23,672,599.74	22,183,050.37	25,280,626.38	71,136,276.49
H-1	17,789.80	0.00	0.00	17,789.80
H lower	25,995.60	8,665.20	0.00	34,660.80
Phantom	2,671,292.18	3,470,808.21	6,354,478.52	12,496,578.91
G	4,994,924.16	7,921,244.16	3,490,475.52	16,406,643.84
G lower	1,194,117.65	1,219,634.70	741,740.85	3,155,493.20
F/G	59,761.80	45,722.52	3,794.40	109,278.72
F	5,666,500.44	6,453,587.06	7,911,830.24	20,031,917.74
E	2,185,067.00	3,001,111.55	5,072,020.52	10,258,199.07
D	1,219,142.75	3,276,313.25	14,014,112.44	18,509,568.44
C	235,420.08	609,470.40	3,232,620.72	4,077,511.20
	MEAS:	IND:	INF:	TOTAL:
	111,423,939.97	111,701,025.72	123,851,450.73	346,976,416.42 Tonnes
		Speculative Resource:		711,517,500.00
	LOST-FOX AREA TOTAL RESOURCE:			1,058,493,916.42 Tonnes
			or	1,058.49 M.Tonnes

TABLE 7.2b

LOST-FOX AREA ANTHRACITE RESOURCE SUMMARY: 1989

Section:	Category MEASURED	INDICATED	INFERRED	TOTAL
4000 N	0.00	95,449.73	357,229.83	452,679.56
3900 N	0.00	696,944.95	430,825.15	1,127,770.10
3800 N	554,610.84	859,261.52	674,132.80	2,088,005.16
3700 N	977,202.65	639,177.13	768,197.50	2,384,577.28
3600 N	926,283.95	1,065,858.55	454,316.71	2,446,459.21
3500 N	998,625.63	1,147,237.10	721,684.93	2,867,547.66
3400 N	1,500,233.15	1,197,338.35	993,296.26	3,690,867.76
3300 N	2,057,160.53	1,950,626.12	3,642,377.71	7,650,164.36
3200 N	1,445,975.85	3,502,054.30	4,314,883.14	9,262,913.29
3100 N	1,449,401.19	5,070,104.10	4,564,946.01	11,084,451.30
3000 N	3,395,221.22	4,127,480.65	5,267,915.53	12,790,617.40
2900 N	4,158,102.12	3,727,403.33	5,067,617.53	12,953,122.98
2800 N	5,669,154.13	3,608,879.74	6,826,759.96	16,104,793.83
2700 N	5,986,160.08	4,187,738.89	6,082,306.29	16,256,205.26
2600 N	4,814,414.50	5,932,391.89	6,235,939.78	16,982,746.17
2500 N	5,248,459.34	7,309,637.66	5,786,219.89	18,344,316.89
2400 N	6,356,141.41	4,429,238.35	7,686,752.39	18,472,132.15
2300 N	6,188,004.13	6,053,942.00	7,024,656.31	19,266,602.44
2200 N	6,346,765.39	6,178,324.61	6,366,548.60	18,891,638.60
2100 N	5,842,025.63	6,498,211.60	5,356,617.15	17,696,854.38
2000 N	6,938,398.24	4,146,410.66	4,225,882.80	15,310,691.70
1900 N	6,118,371.45	3,146,665.78	3,663,854.10	12,928,891.33
1800 N	4,425,372.71	5,288,852.20	4,474,104.29	14,188,329.20
1700 N	4,754,769.73	4,693,955.47	3,473,026.96	12,921,752.16
1600 N	6,066,830.84	3,336,181.38	3,716,526.61	13,119,538.83
1500 N	6,580,971.78	3,277,479.04	2,944,001.16	12,802,451.98
1400 N	4,954,647.05	3,939,808.83	2,110,946.21	11,005,402.09
1300 N	4,122,202.22	3,793,269.01	2,788,662.36	10,704,133.59
1200 N	2,962,105.10	3,782,243.36	4,188,106.66	10,932,455.12
1100 N	586,329.10	4,956,823.10	5,272,504.10	10,815,656.30
1000 N	0.00	3,062,036.30	8,370,612.01	11,432,648.31
	MEAS:	IND:	INF:	TOTAL:
	111,423,939.96	111,701,025.70	123,851,450.73	346,976,416.39 Tonnes
		Speculative Resource:		711,517,500.00
	LOST-FOX AREA TOTAL RESOURCE:			1,058,493,916.39 Tonnes
			or	1,058.49 M.Tonnes

TABLE 7.2c

MT. KLAPPAN PROPERTY: SPECULATIVE RESOURCE CALCULATIONS April 1989

AREA : MT. KLAPPAN ANTHRACITE PROPERTY
RESOURCE TYPE : SPECULATIVE

AREA NAME	PLANIMETERED AREA (m^2)	SPECIFIC GRAVITY (Tn/m^3)	SEAM THICKNESS (m)	TOTAL TONNES
SUMMIT	80,800,000	1.66	11.43	1,533,083,040
NASS	115,390,000	1.66	11.43	2,189,386,782
LOST-FOX	37,500,000	1.66	11.43	711,517,500
HOBBIT	39,175,000	1.70 *	11.43	761,209,425
TOTALS:	272,865,000 m^2			5,195,196,747 Tonnes

TOTAL SPECULATIVE TONNAGE OF THE ENTIRE MT. KLAPPAN RESOURCE AREA: 5,195,196,747 TONNES

* - Average specific gravity of seams in the Hobbit area.

TABLE 7.3

DIAMOND DRILL HOLE SEAM INTERSECTIONS USED IN 1988 RESOURCE CALCULATIONS
(true thickness in meters)

Drillhole:		C	D	E	F	F/G	Gl	G	Ph	H-1	H-lwr	H	H/I2	H/I	I	J	K	K/L	L	M	M-upr	M/N	N	O	P
DDH82005	---	-	-	-	-	-	-	-	-	-	-	-	-	-	4.98	-	5.16	-	5.75	2.24	-	-	-	-	-
DDH83001	---	-	-	1.32	4.79	-	2.25	3.93	-	-	-	4.54	-	-	5.51	-	-	-	-	-	-	-	-	-	-
DDH84005	---	-	-	-	-	-	-	0.78	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DDH84006	---	-	-	-	-	-	-	-	-	-	-	-	-	0.61	6.67	3.56	2.88	-	-	-	-	-	-	-	-
84006 cont.															5.04										
DDH84007	---	-	-	1.00	1.07	-	0.89	-	2.98	-	-	3.98	-	-	5.43	-	-	-	-	-	-	-	-	-	-
84007 cont.				3.79																					
DDH84008	---	-	-	-	-	-	-	3.28	-	-	-	6.41	-	-	3.86	-	3.93	-	-	-	-	-	-	-	-
84008 cont.												3.84													
DDH85001	---	-	-	-	-	-	-	0.94	-	-	-	2.15	-	-	4.38	-	-	-	-	-	-	-	-	-	-
DDH85002	---	-	-	-	-	-	-	-	-	-	-	3.96	-	-	3.70	-	-	-	-	-	-	-	-	-	-
DDH85003	---	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
85003 cont.																				5.30	-	0.56	1.72	-	-
DDH85004	---	-	-	2.23	2.35	-	2.86	1.37	-	-	-	3.96	-	-	3.70	-	-	-	-				1.44		
85004 cont.				0.50																-	-	-	-	-	-
DDH85005	---	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3.10	0.66	0.61	3.94	-	-	-	0.67	-
85005 cont.																				2.93				1.33	
DDH85006	---	-	-	0.91	3.10	-	-	3.49	-	-	-	2.76	-	-	-	-	-	-	-	-	-	-	-	-	-
DDH85007	---	-	-	-	-	-	-	-	-	-	-	-	-	-	4.90	-	-	-	-	-	-	-	-	-	-
DDH85008	---	-	-	-	0.66	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DDH85009	---	-	-	-	-	-	-	-	-	-	-	-	-	-	4.90	-	3.27	-	4.46	-	-	-	-	-	-
85009 cont.																	2.81								
DDH85010	---	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3.96	-	1.81	4.60	-	-	-	-	-
DDH85011	---	-	-	-	-	-	-	-	-	-	-	-	-	-	4.59	-	3.47	-	-	-	-	-	-	-	-
DDH85012	---	-	-	-	-	-	-	-	-	-	-	3.22	-	-	-	-	1.74	1.49	1.37	-	-	-	-	-	-
DDH85013	---	-	-	-	3.20	0.87	-	-	0.65	-	-	4.37	-	-	6.16	-	0.98	-	-	-	-	-	-	-	-
DDH85014	---	-	-	-	2.71	-	-	-	-	-	-	2.09	-	-	5.46	-	-	-	-	-	-	-	-	-	-
DDH85015	---	-	-	0.95	2.73	-	1.30	3.43	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DDH85016	---	-	2.41	2.22	2.13	-	-	0.79	-	-	-	6.75	-	-	5.55	-	-	-	-	-	-	-	-	-	-
DDH85017	---	-	-	2.34	1.93	-	0.97	1.01	-	-	-	4.67	-	-	5.37	-	-	-	-	-	-	-	-	-	-
DDH85018	---	-	1.89	-	6.02	-	-	-	-	-	-	3.63	-	-	2.61	-	-	-	-	-	-	-	-	-	-
DDH85019	---	0.51	-	-	4.21	0.51	0.52	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DDH85020	---	1.19	4.74	1.91	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DDH85021	---	-	-	1.81	3.43	-	-	-	-	-	-	5.55	-	-	1.61	-	-	-	-	-	-	-	-	-	-
DDH85022	---	-	-	-	-	-	-	-	-	-	-	3.85	-	-	4.69	-	-	-	-	-	-	-	-	-	-
DDH85023	---	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4.47	-	4.57	3.44	-	-	-	-	-
85023 cont.																				3.44					
85023 cont.																				3.44					
DDH85024	---	-	-	-	-	-	-	6.45	-	-	-	4.62	-	-	-	-	-	-	-	-	-	-	-	-	-
DDH85025	---	-	-	-	-	-	-	-	-	-	-	3.72	-	-	4.42	-	-	-	-	-	-	-	-	-	-
DDH85026	---	-	-	-	-	-	-	-	-	-	-	3.43	-	-	5.68	-	-	-	-	-	-	-	-	-	-
DDH85027	---	-	-	-	-	-	-	-	-	-	-	2.25	-	-	5.03	-	1.08	3.22	1.62	1.20	2.63	1.15	2.17	-	-
DDH85028	---	-	-	-	-	-	-	-	-	-	-	4.08	-	-	4.74	-	-	-	-	-	-	-	-	-	-
DDH85029	---	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DDH85030	---	-	-	-	-	-	-	-	-	-	-	-	-	-	3.98	-	-	-	-	-	-	-	-	-	-
DDH85031	---	-	-	-	-	-	-	-	-	-	-	-	-	-	4.54	-	-	-	-	-	-	-	-	-	-
DDH85032	---	-	-	-	-	-	-	-	-	-	-	-	-	-	5.47	-	-	-	-	-	-	-	-	-	-
DDH85033	---	-	-	-	-	-	-	-	-	-	-	-	-	-	5.48	-	-	-	-	-	-	-	-	-	-
DDH85034	---	-	-	-	-	-	-	-	-	-	-	-	-	-	5.14	-	-	-	-	-	-	-	-	-	-

TABLE 7.3 (cont.)

DIAMOND DRILL HOLE SEAM INTERSECTIONS USED IN 1988 RESOURCE CALCULATIONS
(true thickness in meters)

Drillhole:		C	D	E	F	F/G	Gl	G	Ph	H-1	H-lwr	H	H/I2	H/I	I	J	K	K/L	L	M	M-upr	M/N	N	O	P
DDH86001	---	-	-	-	-	-	-	-	-	-	-	2.84	-	-	3.55	-	-	-	-	-	-	-	-	-	-
DDH86002	---	-	-	-	-	-	-	-	0.84	-	-	4.85	-	-	-	-	-	-	-	-	-	-	-	-	-
DDH86003	---	-	-	-	-	-	-	-	-	-	-	3.35	-	-	7.25	-	-	-	-	-	-	-	-	-	-
DDH86004	---	-	-	-	-	-	-	-	-	-	-	7.10	-	-	5.28	-	3.44	3.76	-	-	-	-	-	-	-
86004 cont.																	5.47	1.09							
86004 cont.																		2.04							
DDH86005	---	-	-	-	-	-	-	-	-	-	-	2.94	-	-	4.78	-	-	-	-	-	-	-	-	-	-
DDH86006	---	-	-	-	-	-	-	-	-	-	-	5.89	-	-	5.01	-	-	-	-	-	-	-	-	-	-
DDH86007	---	-	-	-	-	-	-	-	-	-	-	3.66	-	-	5.57	-	-	-	-	-	-	-	-	-	-
DDH86008	---	-	-	-	-	-	-	-	4.68	-	-	5.89	-	-	3.50	-	-	-	-	-	-	-	-	-	-
86008 cont.															4.86										
DDH86009	---	-	-	-	-	-	-	-	-	-	-	9.01	-	-	5.80	-	5.82	-	-	-	-	-	-	-	-
DDH86010	---	-	-	-	-	-	-	-	-	-	-	3.91	-	-	5.15	1.08	-	-	-	-	-	-	-	-	-
DDH86011	---	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.70	4.91	-	-	-	-	-	-
DDH86012	---	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.42	1.02	-
86012 cont.																								1.46	
DDH86013	---	-	-	-	-	-	-	-	-	-	-	-	-	-	6.98	0.61	4.76	-	-	-	-	-	-	-	-
86013 cont.															6.98										
DDH86014	---	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.58	0.97	3.05	-	-	-	-	-	-
DDH86015	---	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3.98	0.50	1.24	-	-	-	-	-	-
DDH86016	---	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.62	2.74	2.29	-	-	-	-	-	-
DDH86017	---	-	-	-	-	-	-	-	-	-	-	2.73	-	-	5.16	-	-	-	-	-	-	-	-	-	-
86017 cont.												4.45													
DDH86018	---	-	-	-	-	-	-	-	3.80	-	-	0.83	-	-	1.62	-	-	-	-	-	-	-	-	-	-
DDH86019	---	-	-	-	-	-	-	-	-	-	-	-	-	-	6.95	-	3.33	4.43	1.88	0.68	-	1.17	-	-	-
DDH86020	---	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DDH86021	---	-	-	-	-	-	-	-	-	-	-	-	-	-	4.55	-	1.15	-	-	-	-	-	-	-	-
86021 cont.															4.60										
DDH86022	---	-	-	-	-	-	-	-	-	-	-	-	-	-	1.14	-	1.92	4.30	2.39	1.52	-	-	-	-	-
86022 cont.															4.54										
DDH86023	---	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DDH86024	---	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DDH86025	---	-	-	-	-	-	-	-	-	-	-	-	-	-	2.90	-	1.05	-	1.85	0.92	-	-	-	-	-
86025 cont.															4.74										
DDH86026	---	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DDH86027	---	-	-	-	-	-	-	-	-	-	-	-	-	-	0.95	-	2.77	5.80	1.81	2.98	-	-	-	-	-
DDH86028	---	-	2.85	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DDH86029	---	-	-	-	-	-	-	-	-	-	-	1.22	-	-	4.42	-	2.96	-	-	-	-	-	-	-	-
DDH86030	---	-	-	-	-	-	-	-	-	-	-	2.98	-	-	5.59	0.82	-	-	-	-	-	-	-	-	-
DDH86031	---	-	-	-	-	-	-	5.78	2.32	-	-	6.58	-	-	4.50	-	-	-	-	-	-	-	-	-	-
DDH86032	---	-	-	-	-	-	-	-	-	-	-	4.92	-	-	3.16	-	-	-	-	-	-	-	-	-	-
DDH86033	---	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5.03	2.11	2.45	3.55	-	-	-	-	-
DDH86034	---	-	-	-	-	-	-	-	-	-	-	-	-	-	5.09	0.75	6.50	3.84	-	-	-	-	-	-	-
DDH86035	---	-	-	-	-	-	-	-	-	-	-	1.16	-	0.77	1.23	-	8.35	1.42	3.35	-	-	-	-	-	-
DDH86036	---	-	-	-	-	-	-	-	-	-	-	2.17	-	1.33	5.16	0.99	1.86	-	-	-	-	-	-	-	-
DDH86037	---	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.66	2.34	4.70	-	-	-	2.50	-
DDH86038	---	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

TABLE 7.3 (cont.)

DIAMOND DRILL HOLE SEAM INTERSECTIONS USED IN 1988 RESOURCE CALCULATIONS
(true thickness in meters)

Drillhole:		C	D	E	F	F/G	Gl	G	Ph	H-1	H-lwr	H	H/I2	H/I	I	J	K	K/L	L	M	M-upr	M/N	N	O	P
DDH87001	---	-	-	-	-	-	-	-	-	-	-	5.43	-	-	2.09	-	-	-	-	-	-	-	-	-	-
DDH87002	---	-	-	-	-	-	-	-	-	-	-	4.10	-	-	6.37	-	-	-	-	-	-	-	-	-	-
87002 cont.															3.87										
87002 cont.															7.97										
DDH87003	---	-	-	-	-	-	-	-	-	-	-	3.55	-	1.81	5.52	-	-	-	-	-	-	-	-	-	-
DDH87004	---	-	-	-	-	-	-	-	1.42	-	-	1.90	0.52	1.31	3.82	-	-	-	-	-	-	-	-	-	-
DDH87005	---	-	-	-	-	-	-	-	-	-	-	1.42	-	-	3.44	-	8.06	4.43	-	-	-	-	-	-	
DDH87006	---	-	-	-	-	-	-	-	-	-	-	1.28	-	2.25	1.83	-	-	-	-	-	-	-	-	-	
DDH87007	---	-	-	-	-	-	-	2.71	1.35	-	1.16	2.93	-	-	2.23	-	6.01	-	-	-	-	-	-	-	
DDH87008	---	-	-	-	-	-	-	-	-	-	-	-	-	-	3.33	-	-	-	-	-	-	-	-	-	
87008 cont.															4.77										
87008 cont.															7.43										
DDH87009	---	-	-	-	-	-	-	-	2.16	-	-	2.77	-	-	4.79	-	-	-	-	-	-	-	-	-	-
DDH87010	---	-	-	-	-	-	-	-	-	-	-	4.97	-	-	-	-	-	-	-	-	-	-	-	-	-
DDH87011	---	-	-	-	-	-	-	-	0.51	-	-	4.97	-	-	-	-	-	-	-	-	-	-	-	-	-
DDH87012	---	-	-	-	-	-	-	-	-	-	-	5.31	-	-	1.51	-	-	-	-	-	-	-	-	-	-
DDH87013	---	-	-	-	-	-	-	-	1.36	-	-	1.35	-	-	4.77	0.94	-	-	-	-	-	-	-	-	-
DDH87014	---	-	-	-	-	-	-	-	-	-	-	-	-	1.60	3.04	-	1.87	-	-	-	-	-	-	-	-
DDH87015	---	-	-	-	-	-	-	-	-	-	-	3.33	-	-	-	-	1.92	-	4.84	-	-	-	-	-	-
DDH87016	---	-	-	-	-	-	-	-	-	-	-	-	-	-	4.92	-	-	-	-	-	-	-	-	-	-
DDH87017	---	-	-	-	-	-	-	-	-	-	-	-	1.38	-	2.26	-	2.82	-	-	-	-	-	-	-	-
DDH87018	---	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DDH87019	---	-	-	-	-	-	-	-	-	-	-	1.98	1.66	1.79	3.23	-	-	-	-	-	-	-	-	-	-
DDH87020	---	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4.64	4.38	3.61	-	3.09	-	-	-
DDH87021	---	-	-	-	-	-	-	-	-	-	-	3.82	-	-	3.82	-	-	-	-	-	-	-	-	-	-
DDH87022	---	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DDH87023	---	-	-	-	-	-	-	-	-	-	-	-	-	1.55	-	-	-	-	-	-	-	1.92	2.70	2.48	-
87023 cont.														1.76											
DDH87024	---	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.86	2.06	2.40	-	1.17	1.91	0.66	-
DDH87025	---	-	-	-	-	-	-	-	-	-	-	-	-	-	4.59	-	4.98	-	-	-	-	-	-	-	-
DDH87026	---	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.85	1.61	-	-	0.79	-	-
87026 cont.																				1.25					
DDH87027	---	-	-	-	-	-	-	0.71	0.97	1.31	-	8.62	-	-	-	-	-	-	-	-	-	-	-	-	-
87027 cont.								0.63																	
DDH87028	---	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.25	3.89	0.73	1.48	-	0.88	0.88	1.49	-
DDH87029	---	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.45	-	0.85	3.29	0.68	-
87029 cont.																							1.02	0.92	
DDH87030	---	-	-	-	-	-	-	-	-	-	-	-	-	-	2.87	-	3.26	3.50	1.98	2.23	-	-	-	-	-
DDH87031	---	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4.17	3.65	1.45	2.08	-	-	-	-	-
87031 cont.																			1.64						
DDH87032	---	-	-	-	-	-	-	-	-	-	-	-	-	-	5.59	-	-	-	-	-	-	-	-	-	-
DDH87033	---	-	-	-	-	-	-	-	-	-	-	-	-	-	5.56	-	5.32	-	-	-	-	-	-	-	-
DDH87034	---	-	-	-	-	-	-	-	-	-	-	-	-	-	4.78	-	-	-	-	-	-	-	-	-	-

TABLE 7.3 (cont.)

DIAMOND DRILL HOLE SEAM INTERSECTIONS USED IN 1988 RESOURCE CALCULATIONS
(true thickness in meters)

Drillhole:		C	D	E	F	F/G	Gl	G	Ph	H-1	H-lwr	H	H/I2	H/I	I	J	K	K/L	L	M	M-upr	M/N	N	O	P
DDH88001	---	-	-	-	-	-	-	-	-	-	-	2.81	-	-	5.15	-	-	-	-	-	-	-	-	-	-
DDH88002	---	-	-	-	-	-	-	-	-	-	-	-	-	-	4.25	-	-	-	-	-	-	-	-	-	-
DDH88003	---	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3.10	6.11	2.36	7.06	-	-	-	-	-
DDH88004	---	-	-	-	-	-	-	-	-	-	-	3.32	-	-	7.95	0.94	-	-	-	-	-	-	-	-	-
DDH88005	---	-	-	-	-	-	-	-	-	-	-	-	-	-	5.65	0.75	2.58	0.97	-	-	-	-	-	-	-
DDH88006	---	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.11	-	-	-	-	-	-	-	-
DDH88007	---	-	-	-	-	-	-	1.37	-	-	-	-	-	-	3.99	-	-	-	-	-	-	-	-	-	-
DDH88008	---	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DDH88009	---	-	-	-	-	-	-	-	-	-	-	2.11	-	-	4.40	-	1.57	3.98	0.86	-	-	-	-	-	-
DDH88010	---	-	-	-	-	-	-	-	-	-	-	4.24	-	-	4.12	-	2.13	4.80	2.85	6.22	-	-	-	-	-
DDH88011	---	-	-	-	-	-	-	-	-	-	-	3.94	-	-	4.89	-	6.52	4.27	0.79	-	-	-	-	-	-
DDH88012	---	-	-	-	-	-	-	-	-	-	-	-	-	-	4.92	0.57	2.75	4.05	-	-	-	-	-	-	-
88012 cont.															3.60										
88012 cont.															5.40										
DDH88013	---	-	-	-	-	-	-	-	-	-	-	4.86	-	-	4.33	0.50	4.25	1.04	2.60	-	-	-	-	-	-
DDH88014	---	-	-	-	-	-	-	-	-	-	-	2.17	-	-	3.20	-	2.25	-	-	-	-	-	-	-	-
DDH88015	---	-	-	-	-	-	-	-	-	-	-	3.62	-	-	4.33	1.69	4.01	-	2.25	-	-	-	-	-	-
DDH88016	---	-	-	-	-	-	-	-	-	-	-	5.04	-	-	5.19	-	-	-	-	-	-	-	-	-	-
DDH88017	---	-	-	-	-	-	-	1.38	-	-	-	-	-	-	8.29	-	-	-	-	-	-	-	-	-	-
DDH88018	---	-	-	-	-	-	-	-	-	-	-	3.26	-	2.17	4.10	0.56	5.09	0.67	2.26	4.40	-	-	-	-	-
DDH88019	---	-	-	-	-	-	1.56	2.23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
88019 cont.							2.25	5.23																	
88019 cont.							1.92	2.14																	
DDH88020	---	-	-	-	-	-	-	-	-	-	-	2.05	-	-	0.85	0.53	-	-	-	-	-	-	-	-	-
DDH88021	---	-	-	-	-	-	-	-	-	-	-	2.86	-	-	4.49	-	-	-	-	-	-	-	-	-	-
DDH88022	---	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DDH88023	---	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.92	-
DDH88024	---	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.55	1.84
DDH88025	---	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.82
DDH88026	---	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DDH88027	---	-	-	-	-	-	-	-	-	-	-	-	-	-	4.80	1.56	1.00	1.51	-	-	-	-	-	-	-
88027 cont.															2.59	-	1.86	5.82	0.76	-	-	-	-	-	-
DDH88028	---	-	-	-	-	-	-	-	-	-	-	-	-	-	5.59										
88028 cont.															-	-	-	-	-	1.90	1.85	0.53	0.79	0.68	-
DDH88029	---	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.11		
																		4.03	2.69	11.13	-	-	1.65	-	-
NUMBER OF INTERSECTIONS:		2	4	11	13	2	9	19	12	1	1	68	3	11	104	15	52	34	35	28	2	9	13	13	2
TOTAL SEAM METRES:		1.70	11.89	18.98	38.33	1.38	14.52	47.65	23.04	1.31	1.16	258.32	3.56	16.95	471.08	15.85	180.32	96.92	80.41	80.57	4.48	11.32	19.24	16.36	3.66
AVGERAGE TRUE THICKNESS:		0.85	2.97	1.73	2.95	0.69	1.61	2.51	1.92	1.31	1.16	3.80	1.19	1.54	4.53	1.06	3.47	2.85	2.30	2.88	2.24	1.26	1.48	1.26	1.83

Table 7.4

SUMMARY OF MEAN SPECIFIC GRAVITIES

Seam	Mean Specific Gravity (g/cc)	Number of Seam Occurrences
P	1.55	1
O	1.73	8
N	1.65	14
M/N	1.85	5
M	1.72	19
L	1.66	22
K/L	1.70	23
K	1.63	41
J	1.61	4
I	1.54	72
H	1.66	61
H-1	1.94	1
H/I	1.75	5
H/I2	1.72	1
Phantom	1.79	8
G	1.92	10
G lower	1.85	4
F/G	1.86	1
F	1.72	13
E	1.55	13
D	1.75	5
C	1.68	3
A	1.53	1
Overall Mean	1.66	Total Seams 335

Table 8.2

STRAIGHT AVERAGE SIZE CONSIST

LOST-FOX AREA 1988

Seam	35 x 25mm	25 x 12mm	12 x 6mm	6 x 0.5mm	0.5 x 0.15mm	0.15 x 0mm
	wt%	wt%	wt%	wt%	wt%	wt%
H/I	12.64	19.98	18.15	38.09	6.42	4.72
H	27.94	20.95	14.92	27.90	5.24	3.05
I	19.31	18.34	16.19	34.64	7.50	4.02
J	34.01	20.33	13.40	24.31	5.12	2.83
K	27.34	20.49	14.20	28.33	6.30	3.34
K/L	31.08	23.01	15.03	24.52	4.17	2.19
L	20.98	22.47	17.31	29.20	6.68	3.36
M	22.04	20.44	15.91	32.22	5.57	3.82
N	22.26	20.14	14.89	30.95	7.23	4.53
P	25.94	21.46	15.95	30.17	4.38	2.10

APPENDIX D

RESOURCE DATA
AND CALCULATIONS

MT. KLAPPAN PROPERTY: SPECULATIVE RESOURCE CALCULATIONS April 1989

AREA : MT. KLAPPAN ANTHRACITE PROPERTY
RESOURCE TYPE : SPECULATIVE

AREA NAME	PLANIMETERED AREA (m^2)	SPECIFIC GRAVITY (Tn/m^3)	SEAM THICKNESS (m)	TOTAL TONNES
SUMMIT	80,800,000	1.66	11.43	1,533,083,040
MASS	115,390,000	1.66	11.43	2,189,386,782
LOST-FOX	37,500,000	1.66	11.43	711,517,500
HOBBIT	39,175,000	1.70 *	11.43	761,209,425
TOTALS:	272,865,000 m^2			5,195,196,747 Tonnes

TOTAL SPECULATIVE TONNAGE OF THE ENTIRE MT. KLAPPAN RESOURCE AREA: 5,195,196,747 TONNES

* - Average specific gravity of seams in the Hobbit area.

LOST-FOX AREA ANTHRACITE RESOURCE SUMMARY: 1989

Section:	Category MEASURED	INDICATED	INFERRED	TOTAL
4000 N	0.00	95,449.73	357,229.83	452,679.56
3900 N	0.00	696,944.95	430,825.15	1,127,770.10
3800 N	554,610.84	859,261.52	674,132.80	2,088,005.16
3700 N	977,202.65	639,177.13	768,197.50	2,384,577.28
3600 N	926,283.95	1,065,858.55	454,316.71	2,446,459.21
3500 N	998,625.63	1,147,237.10	721,684.93	2,867,547.66
3400 N	1,500,233.15	1,197,338.35	993,296.26	3,690,867.76
3300 N	2,057,160.53	1,950,626.12	3,642,377.71	7,650,164.36
3200 N	1,445,975.85	3,502,054.30	4,314,883.14	9,262,913.29
3100 N	1,449,401.19	5,070,104.10	4,564,946.01	11,084,451.30
3000 N	3,395,221.22	4,127,480.65	5,267,915.53	12,790,617.40
2900 N	4,158,102.12	3,727,403.33	5,067,617.53	12,953,122.98
2800 N	5,669,154.13	3,608,879.74	6,826,759.96	16,104,793.83
2700 N	5,986,160.08	4,187,738.89	6,082,306.29	16,256,205.26
2600 N	4,814,414.50	5,932,391.89	6,235,939.78	16,982,746.17
2500 N	5,248,459.34	7,309,637.66	5,786,219.89	18,344,316.89
2400 N	6,356,141.41	4,429,238.35	7,686,752.39	18,472,132.15
2300 N	6,188,004.13	6,053,942.00	7,024,656.31	19,266,602.44
2200 N	6,346,765.39	6,178,324.61	6,366,548.60	18,891,638.60
2100 N	5,842,025.63	6,498,211.60	5,356,617.15	17,696,854.38
2000 N	6,938,398.24	4,146,410.66	4,225,882.80	15,310,691.70
1900 N	6,118,371.45	3,146,665.78	3,663,854.10	12,928,891.33
1800 N	4,425,372.71	5,288,852.20	4,474,104.29	14,188,329.20
1700 N	4,754,769.73	4,693,955.47	3,473,026.96	12,921,752.16
1600 N	6,066,830.84	3,336,181.38	3,716,526.61	13,119,538.83
1500 N	6,580,971.78	3,277,479.04	2,944,001.16	12,802,451.98
1400 N	4,954,647.05	3,939,808.83	2,110,946.21	11,005,402.09
1300 N	4,122,202.22	3,793,269.01	2,788,662.36	10,704,133.59
1200 N	2,962,105.10	3,782,243.36	4,188,106.66	10,932,455.12
1100 N	586,329.10	4,956,823.10	5,272,504.10	10,815,656.30
1000 N	0.00	3,062,036.30	8,370,612.01	11,432,648.31
	MEAS:	IND:	INF:	TOTAL:
	111,423,939.96	111,701,025.70	123,851,450.73	346,976,416.39 Tonnes
		Speculative Resource:		711,517,500.00
	LOST-FOX AREA TOTAL RESOURCE:			1,058,493,916.39 Tonnes
			or	1,058.49 M.Tonnes

LOST-FOX AREA ANTHRACITE RESOURCE SUMMARY: 1989

Seam:	Category MEASURED	INDICATED	INFERRED	TOTAL
P	154,590.80	388,733.80	1,520,262.48	2,063,587.08
O	751,963.17	1,790,138.26	3,062,596.51	5,604,697.94
N	1,224,928.65	1,614,967.25	1,407,250.35	4,247,146.25
M/N	438,791.33	369,574.50	983,574.70	1,791,940.53
M upper	233,163.60	26,194.80	0.00	259,358.40
M	5,784,872.56	8,582,331.30	7,842,130.50	22,209,334.36
L	5,884,984.36	7,222,647.05	4,240,222.36	17,347,853.77
K/L	6,610,622.98	8,268,536.08	7,911,839.95	22,790,999.01
K	14,135,435.15	12,821,953.27	10,380,209.53	37,337,597.95
J	1,390,391.98	1,823,839.72	1,230,116.48	4,444,348.18
I	30,899,762.59	19,139,552.26	18,161,628.10	68,200,942.95
H/I	1,772,680.00	1,333,764.25	1,009,920.18	4,116,364.43
H/I2	199,141.60	129,185.76	0.00	328,327.36
H	23,672,599.74	22,183,050.37	25,280,626.38	71,136,276.49
H-1	17,789.80	0.00	0.00	17,789.80
H lower	25,995.60	8,665.20	0.00	34,660.80
Phantom	2,671,292.18	3,470,808.21	6,354,478.52	12,496,578.91
G	4,994,924.16	7,921,244.16	3,490,475.52	16,406,643.84
G lower	1,194,117.65	1,219,634.70	741,740.85	3,155,493.20
F/G	59,761.80	45,722.52	3,794.40	109,278.72
F	5,666,500.44	6,453,587.06	7,911,830.24	20,031,917.74
E	2,185,067.00	3,001,111.55	5,072,020.52	10,258,199.07
D	1,219,142.75	3,276,313.25	14,014,112.44	18,509,568.44
C	235,420.08	609,470.40	3,232,620.72	4,077,511.20
	MEAS:	IND:	INF:	TOTAL:
	111,423,939.97	111,701,025.72	123,851,450.73	346,976,416.42 Tonnes
		Speculative Resource:		711,517,500.00
	LOST-FOX AREA TOTAL RESOURCE:			1,058,493,916.42 Tonnes
			or	1,058.49 M.Tonnes

LOST FOX AREA : RESOURCE CALCULATIONS - February 1989

SECTION : 1000 N
RESOURCE TYPE : MEASURED

SEAM NAME	DIAMOND DRILL HOLE	SEAM THICKNESS (m)	SPECIFIC GRAVITY (t/m3)	SEAM LENGTH (m)	WIDTH INFLUENCE (m)	TOTAL TONNES SEAMS >=0.5m

NO MEASURED RESERVES ON THIS SECTION.

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seams >=0.5m

TOTAL TONNES FOR THIS SECTION : 0.00

SEAM TOTALS:

0.00

0.00

SECTION : 1100 N
RESOURCE TYPE : MEASURED

SEAM NAME	DIAMOND DRILL HOLE	SEAM THICKNESS (m)	SPECIFIC GRAVITY (t/m3)	SEAM LENGTH (m)	WIDTH INFLUENCE (m)	TOTAL TONNES SEAMS >=0.5m
P	88024	1.82	1.55	180	100	50,778.00
L	86035	3.35	1.66	170	100	94,537.00
K/L	86035	1.42	1.70	170	100	41,038.00
K/L	88026	1.51	1.70	30	100	7,701.00
K	88026	1.00	1.63	65	100	10,595.00
K	86035	8.35	1.63	170	100	231,378.50
J	88026	1.56	1.61	75	100	18,837.00
I	88026	4.80	1.54	90	100	66,528.00
I	86035	1.23	1.54	170	100	32,201.40
H	86035	1.16	1.66	170	100	32,735.20
						seams >=0.5m

TOTAL TONNES FOR THIS SECTION : 586,329.10

SEAM TOTALS:

P:	50,778.00
L:	94,537.00
K/L:	48,739.00
K:	241,973.50
J:	18,837.00
I:	98,729.40
H:	32,735.20
	586,329.10

SECTION : 1200 N
RESOURCE TYPE : MEASURED

SEAM NAME	DIAMOND DRILL HOLE	SEAM THICKNESS (m)	SPECIFIC GRAVITY (t/m3)	SEAM LENGTH (m)	WIDTH INFLUENCE (m)	TOTAL TONNES SEAMS >=0.5m
P	88024	1.82	1.55	300	100	84,630.00
O	85027	1.51	1.73	270	100	70,532.10
N	85027	2.17	1.65	280	100	100,254.00
M/N	85027	1.15	1.85	280	100	59,570.00
M upper	85072	2.63	1.66	230	100	100,413.40
M	85027	1.20	1.72	310	100	63,984.00
M	88010	4.12	1.72	175	100	124,012.00
M	86033	3.55	1.72	80	100	48,848.00
L	86033	3.45	1.66	80	100	45,816.00
L	86035	3.35	1.66	252	100	140,137.20
L	85027	1.62	1.66	320	100	86,054.40
L	88010	2.85	1.66	170	100	80,427.00
K/L	85027	3.22	1.70	340	100	186,116.00
K/L	88010	4.80	1.70	170	100	138,720.00
K/L	88026	1.51	1.70	205	100	52,623.50
K/L	86033	2.11	1.70	80	100	28,696.00
K/L	86035	1.42	1.70	300	100	72,420.00
K	86033	5.03	1.63	80	100	65,591.20
K	86035	8.35	1.63	300	100	408,315.00
K	85027	1.08	1.63	275	100	48,411.00
K	88010	2.13	1.63	160	100	55,550.40
K	88026	1.00	1.63	240	100	39,120.00
J	88056	1.56	1.61	220	100	55,255.20
I	85027	5.03	1.54	275	100	213,020.50
I	88010	3.66	1.54	160	100	90,182.40
I	88026	4.80	1.54	200	100	147,840.00
I	86035	1.23	1.54	305	100	57,773.10
H/I	86035	0.77	1.75	190	100	25,602.50
H	86035	1.16	1.66	305	100	58,730.80
H	85027	2.25	1.66	270	100	100,845.00
H	88010	4.24	1.66	160	100	112,614.40
...	...	...	...	...	...	...
						seams >=0.5m

TOTAL TONNES FOR THIS SECTION : 2,962,105.10

SEAM TOTALS:

P:	84,630.00
O:	70,532.10
N:	100,254.00
M/N:	59,570.00
M upper:	100,413.40
M:	236,844.00
L:	352,434.60

cont. next page

K/L:	478,575.50
K:	616,987.60
J:	55,255.20
I:	508,816.00
H/I:	25,602.50
H:	272,190.20
	2,962,105.10

SECTION : 1300 N
RESOURCE TYPE : MEASURED

SEAM NAME	DIAMOND DRILL HOLE	SEAM THICKNESS (m)	SPECIFIC GRAVITY (t/m3)	SEAM LENGTH (m)	WIDTH INFLUENCE (m)	TOTAL TONNES SEAMS >=0.5m
P	88024	1.82	1.55	80	85	19,182.80
O	85027	1.51	1.73	205	80	42,841.72
N	85027	2.17	1.65	280	100	100,254.00
M/N	85027	1.15	1.85	160	100	34,040.00
M upper	85027	2.63	1.66	260	100	113,510.80
M	86022	1.52	1.72	225	100	58,824.00
M	85027	1.20	1.72	225	100	46,440.00
M	88010	4.12	1.72	160	100	113,382.40
M	86033	3.55	1.72	180	100	109,908.00
L	88009	0.86	1.66	80	100	11,420.80
L	86022	2.39	1.66	235	100	93,233.90
L	85027	1.62	1.66	225	100	60,507.00
L	88010	2.85	1.66	200	100	94,620.00
L	86033	3.45	1.66	323	100	184,982.10
L	86035	3.35	1.66	180	100	100,098.00
K/L	88009	3.98	1.70	75	100	50,745.00
K/L	86022	4.30	1.70	270	100	197,370.00
K/L	85027	3.22	1.70	240	100	131,376.00
K/L	88010	4.80	1.70	250	100	204,000.00
K/L	88026	1.51	1.70	130	100	33,371.00
K/L	86033	2.11	1.70	265	100	95,055.50
K/L	86035	1.42	1.70	250	100	60,350.00
K	88009	1.57	1.63	70	100	17,913.70
K	86022	1.92	1.63	295	100	92,323.20
K	85027	1.08	1.63	240	100	42,249.60
K	88010	2.13	1.63	270	100	93,741.30
K	88026	1.00	1.63	230	100	37,490.00
K	86033	5.03	1.63	270	100	221,370.30
K	86035	8.35	1.63	250	100	340,262.50
J	88026	1.56	1.61	210	100	52,743.60
I	88009	4.40	1.54	75	100	50,820.00
I	86022	1.14	1.54	100	100	17,556.00
I	86022	4.54	1.54	250	100	174,790.00
I	85027	5.03	1.54	210	100	162,670.20
I	88010	3.66	1.54	325	100	183,183.00
I	88026	4.80	1.54	175	100	129,360.00
I	86035	1.23	1.54	250	100	47,355.00
H/I	86035	0.77	1.75	190	100	25,602.50
H	88009	2.11	1.66	75	100	26,269.50
H	85027	2.25	1.66	240	100	89,640.00
H	88010	4.24	1.66	445	100	313,208.80
H	86035	1.16	1.66	250	100	48,140.00
						seams >=0.5m

TOTAL TONNES FOR THIS SECTION : 4,122,202.22

cont. next page

SEAM TOTALS:

P:	19,182.80
O:	42,841.72
N:	100,254.00
M/N:	34,040.00
M upper:	113,510.80
M:	328,554.40
L:	544,861.80
K/L:	772,267.50
K:	845,350.60
J:	52,743.60
I:	765,734.20
H/I:	25,602.50
H:	477,258.30
	4,122,202.22

SECTION : 1400 N
RESOURCE TYPE : MEASURED

SEAM NAME	DIAMOND DRILL HOLE	SEAM THICKNESS (m)	SPECIFIC GRAVITY (t/m3)	SEAM LENGTH (m)	WIDTH INFLUENCE (m)	TOTAL TONNES SEAMS >=0.5m
M/N	86019	1.17	1.85	320	100	69,264.00
M	86033	3.55	1.72	70	100	42,742.00
M	88010	4.12	1.72	80	100	56,691.20
M	86019	0.68	1.72	263	100	30,760.48
M	86022	1.52	1.72	207	100	54,118.08
M	86033	3.55	1.72	82	100	50,069.20
L	86033	3.45	1.66	12	100	6,872.40
L	88011	0.79	1.66	110	100	14,425.40
L	88013	2.60	1.66	266	100	114,805.60
L	88010	2.85	1.66	136	100	64,341.60
L	86019	1.88	1.66	266	100	83,013.28
L	86022	2.39	1.66	207	100	82,125.18
L	88009	0.86	1.66	224	100	31,978.24
L	86033	3.45	1.66	184	100	105,376.80
K/L	88010	4.80	1.70	126	100	102,816.00
K/L	86019	4.43	1.70	265	100	199,571.50
K/L	86022	4.30	1.70	252	100	184,212.00
K/L	88009	3.98	1.70	224	100	151,558.40
K	88011	6.52	1.63	103	100	109,464.28
K	86013	4.76	1.63	182	100	141,210.16
K	88013	4.25	1.63	235	100	162,796.25
K	88010	2.13	1.63	115	100	39,926.85
K	86019	3.33	1.63	235	100	127,555.65
K	86022	1.92	1.63	316	100	98,895.36
K	88009	1.57	1.63	224	100	57,323.84
K	86033	5.03	1.63	167	100	136,921.63
K	86034	6.50	1.63	251	100	265,934.50
K	86036	1.86	1.63	53	100	16,068.54
J	88011	0.66	1.61	103	100	10,944.78
J	86013	0.61	1.61	150	100	14,731.50
J	88013	0.50	1.61	233	100	18,756.50
J	88011	0.66	1.61	96	100	10,200.96
J	86034	0.75	1.61	251	100	30,308.25
J	86036	0.99	1.61	126	100	20,083.14
I	88011	4.89	1.54	100	100	75,306.00
I	86013	6.98	1.54	202	100	217,133.84
I	88013	4.33	1.54	236	100	157,369.52
I	88010	3.66	1.54	136	100	76,655.04
I	86019	6.95	1.54	235	100	251,520.50
I	86022	4.54	1.54	111	100	77,606.76
I	86022	1.14	1.54	280	100	49,156.80
I	88009	4.40	1.54	224	100	151,782.40
I	88011	4.89	1.54	96	100	72,293.76
I	86034	5.09	1.54	251	100	196,748.86
I	86036	5.16	1.54	126	100	100,124.64
H/I	86036	1.33	1.75	126	100	29,326.50
H	88011	3.94	1.66	156	100	102,030.24
H	88013	4.86	1.66	267	100	215,404.92

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H	88010	4.24	1.66	324	100	228,044.16
H	88009	2.11	1.66	400	100	140,104.00
H	88011	3.94	1.66	96	100	62,787.84
H	86036	2.17	1.66	126	100	45,387.72
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						seams >=0.5m

TOTAL TONNES FOR THIS SECTION : 4,954,647.05

SEAM TOTALS:

M/N:	69,264.00
M:	234,380.96
L:	502,938.50
K/L:	638,157.90
K:	1,156,097.06
J:	105,025.13
I:	1,425,698.12
H/I:	29,326.50
H:	793,758.88
	4,954,647.05

SECTION : 1500 N
RESOURCE TYPE : MEASURED

SEAM NAME	DIAMOND DRILL HOLE	SEAM THICKNESS (m)	SPECIFIC GRAVITY (t/m3)	SEAM LENGTH (m)	WIDTH INFLUENCE (m)	TOTAL TONNES SEAMS >=0.5m
O	88022	0.92	1.73	60	100	9,549.60
N	88029	1.65	1.65	120	100	32,670.00
M/N	86019	1.17	1.85	190	85	34,956.68
M	88029	11.13	1.72	165	100	315,869.40
M	86019	0.68	1.72	280	100	32,748.80
M	86025	0.92	1.72	117	100	18,514.08
L	88011	0.79	1.66	50	100	6,557.00
L	88013	2.60	1.66	270	100	116,532.00
L	88029	2.69	1.66	230	100	102,704.20
L	86019	1.88	1.66	280	100	87,382.40
L	88027	0.76	1.66	200	100	25,232.00
L	88009	0.86	1.66	165	100	23,555.40
L	86025	1.85	1.66	123	100	37,773.30
L	88011	0.79	1.66	110	100	14,425.40
K/L	88011	1.72	1.70	120	100	35,088.00
K/L	88013	1.04	1.70	245	100	43,316.00
K/L	88029	4.27	1.70	220	100	159,698.00
K/L	86019	4.43	1.70	320	100	240,992.00
K/L	88027	4.69	1.70	200	100	159,460.00
K/L	88009	3.98	1.70	190	100	128,554.00
K/L	88011	1.72	1.70	120	100	35,088.00
K/L	86034	3.84	1.70	210	100	137,088.00
K	88011	6.52	1.63	180	100	191,296.80
K	86013	4.76	1.63	160	100	124,140.80
K	88013	4.25	1.63	225	100	155,868.75
K	86019	3.33	1.63	270	100	146,553.30
K	88027	1.86	1.63	305	100	92,469.90
K	88009	1.57	1.63	225	100	57,579.75
K	86025	1.05	1.63	125	100	21,393.75
K	88011	6.52	1.63	120	100	127,531.20
K	86034	6.50	1.63	305	100	323,147.50
K	86036	1.86	1.63	166	95	47,811.49
J	88011	0.66	1.61	115	100	12,219.90
J	86013	0.61	1.61	290	100	28,480.90
J	88013	0.50	1.61	250	100	20,125.00
J	88011	0.66	1.61	121	100	12,857.46
J	86034	0.75	1.61	305	100	36,828.75
J	86036	0.99	1.61	290	100	46,223.10
I	88011	4.89	1.54	100	100	75,306.00
I	86013	6.98	1.54	240	100	257,980.80
I	86013	6.98	1.54	85	100	91,368.20
I	88013	4.33	1.54	240	100	160,036.80
I	85026	5.68	1.54	140	100	122,460.80
I	86019	6.95	1.54	220	100	235,466.00
I	88027	5.59	1.54	235	100	202,302.10
I	88027	2.59	1.54	140	100	55,840.40
I	88009	4.40	1.54	220	100	149,072.00
I	86025	4.74	1.54	120	100	87,595.20

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I	86026	2.90	1.54	57	100	25,456.20
I	88011	4.89	1.54	121	100	91,120.26
I	86034	5.09	1.54	305	100	239,077.30
I	86036	5.16	1.54	287	100	228,061.68
I	87004	3.82	1.54	279	100	164,130.12
H/I	86036	1.33	1.75	287	100	66,799.25
H/I	87004	1.31	1.75	301	100	69,004.25
H/I2	87004	0.52	1.72	130	100	11,627.20
H	88011	3.94	1.66	170	100	111,186.80
H	88013	4.86	1.66	365	100	294,467.40
H	85026	3.43	1.66	170	100	96,794.60
H	88009	2.11	1.66	410	100	143,606.60
H	88011	3.94	1.66	121	100	79,138.84
H	86036	2.17	1.66	283	100	101,942.26
H	87004	1.90	1.66	314	100	99,035.60
Ph	87004	1.42	1.79	314	100	79,812.52
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						seams >=0.5m

TOTAL TONNES FOR THIS SECTION : 6,580,971.78

SEAM TOTALS:

O:	9,549.60
N:	32,670.00
M/N:	34,956.68
M:	367,132.28
L:	414,161.70
K/L:	939,284.00
K:	1,287,793.24
J:	156,735.11
I:	2,185,273.86
H/I:	135,803.50
H/I2:	11,627.20
H:	926,172.10
Ph:	79,812.52
	6,580,971.78

SECTION : 1600 N
RESOURCE TYPE : MEASURED

SEAM NAME	DIAMOND DRILL HOLE	SEAM THICKNESS (m)	SPECIFIC GRAVITY (t/m3)	SEAM LENGTH (m)	WIDTH INFLUENCE (m)	TOTAL TONNES SEAMS >=0.5m
O	88022	0.92	1.73	163	100	25,943.08
N	88029	1.65	1.65	178	100	48,460.50
M	86025	0.92	1.72	196	100	31,015.04
M	88029	11.13	1.72	240	100	459,446.40
L	86025	1.85	1.66	301	100	92,437.10
L	88027	0.76	1.66	90	100	11,354.40
L	86016	2.29	1.66	250	100	95,035.00
L	88029	2.69	1.66	295	100	131,729.30
L	88015	2.25	1.66	35	100	13,072.50
L	86015	1.24	1.66	170	100	34,992.80
L	86011	4.91	1.66	145	100	118,183.70
K/L	86034	3.84	1.70	120	100	78,336.00
K/L	88027	4.69	1.70	90	100	71,757.00
K/L	86016	2.74	1.70	220	100	102,476.00
K/L	88029	4.27	1.70	312	100	226,480.80
K/L	86015	0.50	1.70	156	100	13,260.00
K/L	86011	1.70	1.70	190	100	54,910.00
K	86025	1.05	1.63	296	100	50,660.40
K	86021	1.15	1.63	245	100	45,925.25
K	88027	1.86	1.63	150	100	45,477.00
K	86016	2.62	1.63	315	100	134,523.90
K	86015	3.98	1.63	113	100	73,307.62
K	88015	4.01	1.63	120	100	78,435.60
K	88011	6.52	1.63	180	100	191,296.80
K	88011	6.52	1.63	50	100	53,138.00
K	86036	1.86	1.63	107	95	30,818.25
K	86034	6.50	1.63	200	100	211,900.00
J	88011	0.66	1.61	53	100	5,631.78
J	86034	0.75	1.61	205	100	24,753.75
J	86036	0.99	1.61	267	100	42,557.13
J	88013	0.50	1.61	54	100	4,347.00
J	88015	1.06	1.61	202	100	34,473.32
J	88011	0.66	1.61	220	100	23,377.20
I	86025	2.90	1.54	300	100	133,980.00
I	86025	4.74	1.54	300	100	218,988.00
I	86021	4.55	1.54	245	100	171,671.50
I	86021	4.60	1.54	245	100	173,558.00
I	88027	2.59	1.54	287	100	114,472.82
I	88027	5.59	1.54	130	100	111,911.80
I	85026	5.68	1.54	135	100	118,087.20
I	85026	5.68	1.54	283	100	247,545.76
I	88013	4.33	1.54	150	100	100,023.00
I	88015	4.33	1.54	287	100	191,377.34
I	88011	4.89	1.54	167	100	125,761.02
I	86034	5.09	1.54	207	100	162,259.02
I	86036	5.16	1.54	267	100	212,168.88
I	87004	3.82	1.54	290	100	170,601.20
H/I	86036	1.33	1.75	267	100	62,144.25

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H/I	87004	1.31	1.75	325	100	74,506.25
H/I2	87004	0.52	1.72	100	100	8,944.00
H	86036	2.17	1.66	267	100	96,178.74
H	87004	1.90	1.66	325	100	102,505.00
H	88021	2.86	1.66	19	100	9,020.44
H	85026	3.43	1.66	602	100	342,766.76
H	88013	4.86	1.66	150	100	121,014.00
H	88015	3.62	1.66	240	100	144,220.80
H	88011	3.94	1.66	167	100	109,224.68
Ph	87004	1.42	1.79	332	100	84,387.76
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						seams >=0.5m

TOTAL TONNES FOR THIS SECTION : 6,066,830.84

SEAM TOTALS:

O:	25,943.08
N:	48,460.50
M:	490,461.44
L:	496,804.80
K/L:	547,219.80
K:	915,482.82
J:	135,140.18
I:	2,252,405.54
H/I:	136,650.50
H/I2:	8,944.00
H:	924,930.42
Ph:	84,387.76

	6,066,830.84

SECTION : 1700 N
RESOURCE TYPE : MEASURED

SEAM NAME	DIAMOND DRILL HOLE	SEAM THICKNESS (m)	SPECIFIC GRAVITY (t/m3)	SEAM LENGTH (m)	WIDTH INFLUENCE (m)	TOTAL TONNES SEAMS >=0.5m
O	88022	0.92	1.73	43	80	5,475.10
N	88029	1.65	1.65	140	100	38,115.00
M	86025	0.92	1.72	174	100	27,533.76
M	88029	11.13	1.72	180	100	344,584.80
L	86025	1.85	1.66	245	100	75,239.50
L	86016	2.29	1.66	170	75	48,467.85
L	88029	2.69	1.66	245	100	109,402.30
L	86015	1.24	1.66	120	100	24,700.80
L	88015	2.25	1.66	105	100	39,217.50
L	86011	4.91	1.66	15	100	12,225.90
L	86011	4.91	1.66	120	100	97,807.20
K/L	88012	2.12	1.70	45	85	13,785.30
K/L	86016	2.74	1.70	140	100	65,212.00
K/L	88029	4.27	1.70	135	100	97,996.50
K/L	86015	0.50	1.70	165	100	14,025.00
K/L	86011	1.70	1.70	60	100	17,340.00
K/L	86011	1.70	1.70	160	100	46,240.00
K	86025	1.05	1.63	280	100	47,922.00
K	86021	1.15	1.63	25	100	4,686.25
K	88012	2.75	1.63	80	100	35,860.00
K	86016	2.62	1.63	110	100	46,976.60
K	86015	3.98	1.63	60	100	38,924.40
K	88015	4.01	1.63	200	100	130,726.00
J	88012	0.57	1.61	110	100	10,094.70
J	88015	1.06	1.61	350	100	59,731.00
J	86030	0.82	1.61	186	100	24,555.72
I	86025	2.90	1.54	285	100	127,281.00
I	86025	4.74	1.54	70	100	51,097.20
I	86021	4.55	1.54	190	100	133,133.00
I	86021	4.60	1.54	180	100	127,512.00
I	88012	4.92	1.54	120	100	90,921.60
I	88012	3.60	1.54	122	100	67,636.80
I	88012	5.40	1.54	220	100	182,952.00
I	88021	4.49	1.54	190	100	131,377.40
I	85026	5.68	1.54	390	100	341,140.80
I	88015	4.33	1.54	340	100	226,718.80
I	86030	5.59	1.54	182	100	156,676.52
I	87001	2.09	1.54	90	100	28,967.40
I	87003	5.52	1.54	240	100	204,019.20
I	87004	3.82	1.54	22	100	12,942.16
I	87006	1.83	1.54	252	100	71,018.64
H/I	87003	1.80	1.75	206	100	64,890.00
H/I	87004	1.31	1.75	22	100	5,043.50
H/I	87006	2.25	1.75	252	100	99,225.00
H/I	87023	1.55	1.75	217	100	58,861.25
H	85028	4.08	1.66	130	100	88,046.40
H	88014	1.78	1.66	350	100	103,418.00
H	88021	2.86	1.66	190	100	90,204.40

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H	85026	3.43	1.66	415	100	236,292.70
H	88015	3.62	1.66	300	100	180,276.00
H	86030	2.98	1.66	182	100	90,031.76
H	87001	5.43	1.66	93	100	83,828.34
H	87003	3.55	1.66	240	100	141,432.00
H	87004	1.90	1.66	22	100	6,938.80
H	87006	1.28	1.66	255	100	54,182.40
Ph	87004	1.42	1.79	86	100	21,859.48
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						seams >=0.5m

TOTAL TONNES FOR THIS SECTION : 4,754,769.73

SEAM TOTALS:

O:	5,475.10
N:	38,115.00
M:	372,118.56
L:	407,061.05
K/L:	254,598.80
K:	305,095.25
J:	94,381.42
I:	1,953,394.52
H/I:	228,019.75
H:	1,074,650.80
Ph:	21,859.48

	4,754,769.73

SECTION : 1800 N
RESOURCE TYPE : MEASURED

SEAM NAME	DIAMOND DRILL HOLE	SEAM THICKNESS (m)	SPECIFIC GRAVITY (t/m3)	SEAM LENGTH (m)	WIDTH INFLUENCE (m)	TOTAL TONNES SEAMS >=0.5m
M	88018	2.58	1.72	198	100	87,864.48
L	88015	2.25	1.66	219	100	81,796.50
L	88018	2.26	1.66	245	100	91,914.20
L	86011	4.91	1.66	130	100	105,957.80
K	88015	4.01	1.63	242	100	158,178.46
K	88018	5.09	1.63	250	100	207,417.50
K	88006	2.11	1.63	230	100	79,103.90
K	88014	2.25	1.63	160	55	32,274.00
J	88015	1.06	1.61	269	100	45,907.54
J	88018	0.56	1.61	270	100	24,343.20
I	88015	4.33	1.54	269	100	179,374.58
I	88018	4.10	1.54	270	100	170,478.00
I	87016	4.92	1.54	152	100	115,167.36
I	87016	4.92	1.54	125	100	94,710.00
I	85022	4.92	1.54	110	100	83,344.80
I	88021	4.49	1.54	90	100	62,231.40
I	85025	4.42	1.54	115	100	78,278.20
I	88014	3.17	1.54	290	100	141,572.20
I	85028	4.74	1.54	200	100	145,992.00
I	86030	5.59	1.54	307	100	264,284.02
I	87001	2.09	1.54	292	100	93,983.12
I	87003	5.52	1.54	247	100	209,969.76
I	87006	1.83	1.54	320	100	90,182.40
H/I	87003	1.80	1.75	247	100	77,805.00
H/I	87006	2.25	1.75	355	100	139,781.25
H	88015	3.62	1.66	269	100	161,647.48
H	88018	1.86	1.66	270	100	83,365.20
H	85022	3.85	1.66	545	100	348,309.50
H	88021	2.86	1.66	88	100	41,778.88
H	85025	3.72	1.66	130	100	80,277.60
H	88014	1.78	1.66	220	100	65,005.60
H	85028	4.08	1.66	220	100	149,001.60
H	86030	2.98	1.66	306	100	151,372.08
H	87001	5.43	1.66	292	100	263,202.96
H	87003	3.55	1.66	247	100	145,557.10
H	87006	1.28	1.66	348	100	73,943.04
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						seams >=0.5m

TOTAL TONNES FOR THIS SECTION : 4,425,372.71

SEAM TOTALS:

M:	87,864.48
L:	279,668.50

cont. next page

K:	476,973.86
J:	70,250.74
I:	1,729,567.84
H/I:	217,586.25
H:	1,563,461.04
	4,425,372.71

SECTION : 1900 N
RESOURCE TYPE : MEASURED

SEAM NAME	DIAMOND DRILL HOLE	SEAM THICKNESS (m)	SPECIFIC GRAVITY (t/m3)	SEAM LENGTH (m)	WIDTH INFLUENCE (m)	TOTAL TONNES SEAMS >=0.5m
M	88003	4.57	1.72	230	100	180,789.20
M	86027	2.98	1.72	195	100	99,949.20
M	88018	2.58	1.72	220	100	97,627.20
L	88003	2.36	1.66	230	100	90,104.80
L	86027	1.81	1.66	215	100	64,598.90
L	86014	3.05	1.66	130	100	65,819.00
L	88018	2.26	1.66	245	100	91,914.20
K/L	88018	0.67	1.70	140	100	15,946.00
K/L	88003	6.11	1.70	230	100	238,901.00
K/L	86027	5.80	1.70	280	100	276,080.00
K	88003	3.10	1.63	225	100	113,692.50
K	86027	2.77	1.63	300	100	135,453.00
K	88006	2.11	1.63	290	100	99,739.70
K	86014	2.58	1.63	170	100	71,491.80
K	88018	5.09	1.63	220	100	182,527.40
K	86009	5.82	1.63	150	100	142,299.00
K	86010	4.92	1.63	170	100	136,333.20
K	86010	4.92	1.63	118	100	94,631.28
J	88018	0.56	1.61	210	100	18,933.60
J	86010	1.08	1.61	175	100	30,429.00
J	86010	1.08	1.61	108	100	18,779.04
J	86030	0.82	1.61	225	100	29,704.50
I	86027	0.95	1.54	305	100	44,621.50
I	85028	4.74	1.54	110	100	80,295.60
I	88014	3.17	1.54	115	90	50,526.63
I	85025	4.42	1.54	205	100	139,539.40
I	85022	4.92	1.54	57	100	43,187.76
I	87016	4.92	1.54	565	100	428,089.20
I	88018	4.10	1.54	225	100	142,065.00
I	86009	5.80	1.54	150	100	133,980.00
I	86010	5.15	1.54	170	100	134,827.00
I	86010	5.15	1.54	108	100	85,654.80
I	86030	5.59	1.54	273	100	235,014.78
I	87001	2.09	1.54	310	100	99,776.60
I	87003	5.52	1.54	167	100	141,963.36
I	87002	6.37	1.54	42	100	41,201.16
I	87006	1.83	1.54	346	100	97,509.72
H/I	88018	2.71	1.75	190	100	90,107.50
H/I	87003	1.80	1.75	33	100	10,395.00
H/I	87006	2.25	1.75	350	100	137,812.50
H/I	87023	1.55	1.75	290	100	78,662.50
H	85028	4.08	1.66	205	100	138,842.40
H	88014	1.78	1.66	120	100	35,457.60
H	85025	3.72	1.66	220	100	135,854.40
H	85022	3.85	1.66	370	100	236,467.00
H	88018	1.86	1.66	210	100	64,839.60
H	86009	9.01	1.66	140	100	209,392.40
H	86010	3.91	1.66	155	100	100,604.30

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H	86010	3.91	1.66	108	100	70,098.48
H	86030	2.98	1.66	273	100	135,047.64
H	87001	5.43	1.66	310	100	279,427.80
H	87003	3.55	1.66	167	100	98,413.10
H	87002	4.10	1.66	42	100	28,585.20
H	87006	1.28	1.66	350	100	74,368.00
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						seams >=0.5m

TOTAL TONNES FOR THIS SECTION : 6,118,371.45

SEAM TOTALS:

M:	378,365.60
L:	312,436.90
K/L:	530,927.00
K:	976,167.88
J:	97,846.14
I:	1,898,252.51
H/I:	316,977.50
H:	1,607,397.92
	6,118,371.45

SECTION : 2000 N
RESOURCE TYPE : MEASURED

SEAM NAME	DIAMOND DRILL HOLE	SEAM THICKNESS (m)	SPECIFIC GRAVITY (t/m3)	SEAM LENGTH (m)	WIDTH INFLUENCE (m)	TOTAL TONNES SEAMS >=0.5m
O	86012	1.02	1.73	20	100	3,529.20
O	86012	1.46	1.73	165	100	41,675.70
N	86012	1.42	1.65	210	100	49,203.00
N	87026	0.79	1.65	112	100	14,599.20
M	88003	4.57	1.72	285	100	224,021.40
M	86027	2.98	1.72	55	100	28,190.80
M	88018	2.58	1.72	35	100	15,531.60
M	87026	1.61	1.72	100	100	27,692.00
M	87026	1.25	1.72	106	100	22,790.00
L	88003	2.36	1.66	285	100	111,651.60
L	86027	1.81	1.66	170	100	51,078.20
L	86014	3.05	1.66	120	100	60,756.00
L	88018	2.26	1.66	70	100	26,261.20
L	87026	0.85	1.66	126	100	17,778.60
K/L	88003	6.11	1.70	285	100	296,029.50
K/L	86027	5.80	1.70	270	100	266,220.00
K/L	86014	0.97	1.70	105	100	17,314.50
K	88003	3.10	1.63	285	100	144,010.50
K	86027	2.77	1.63	270	100	121,907.70
K	87007	6.01	1.63	27	100	26,450.01
K	88006	2.11	1.63	125	100	42,991.25
K	86014	2.58	1.63	190	100	79,902.60
K	88018	5.09	1.63	7	100	5,807.69
K	86009	5.82	1.63	145	100	137,555.70
K	86010	4.92	1.63	160	100	128,313.60
K	86010	4.92	1.63	125	100	100,245.00
J	88018	0.56	1.61	7	100	631.12
J	86010	1.08	1.61	160	100	27,820.80
J	86010	1.08	1.61	120	100	20,865.60
I	86027	0.95	1.54	270	100	39,501.00
I	87007	2.23	1.54	155	100	53,230.10
I	86018	3.95	1.54	130	100	79,079.00
I	88016	5.19	1.54	220	100	175,837.20
I	86017	5.16	1.54	405	100	321,829.20
I	88018	4.10	1.54	7	100	4,419.80
I	86009	5.80	1.54	280	100	250,096.00
I	86007	5.57	1.54	35	100	30,022.30
I	86010	5.15	1.54	150	100	118,965.00
I	86010	5.15	1.54	120	100	95,172.00
I	86032	3.16	1.54	284	100	138,205.76
I	87021	3.82	1.54	251	100	147,658.28
I	87002	6.37	1.54	66	100	64,744.68
I	87002	3.87	1.54	108	100	64,365.84
I	87002	7.97	1.54	161	100	197,608.18
H/I	87023	1.55	1.75	398	100	107,957.50
H/I	87023	1.76	1.75	295	100	90,860.00
H	87007	2.93	1.66	178	100	86,575.64
H	86018	0.83	1.66	290	100	39,956.20

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H	88016	5.04	1.66	190	100	158,961.60
H	85024	4.62	1.66	19	100	14,571.48
H	86017	7.18	1.66	435	100	518,467.80
H	88018	1.86	1.66	7	100	2,161.32
H	86009	9.01	1.66	290	100	433,741.40
H	86007	3.66	1.66	35	100	21,264.60
H	86010	3.91	1.66	155	100	100,604.30
H	86010	3.91	1.66	120	100	77,887.20
H	86032	4.92	1.66	291	100	237,665.52
H	87021	3.82	1.66	251	100	159,164.12
H	87002	4.10	1.66	490	100	333,494.00
Ph	87007	1.35	1.79	175	100	42,288.75
Ph	86018	3.80	1.79	540	100	367,308.00
G	87007	2.71	1.92	35	100	18,211.20
G	85024	6.45	1.92	170	100	210,528.00
G	88017	1.38	1.92	95	100	25,171.20
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						seams >=0.5m

TOTAL TONNES FOR THIS SECTION : 6,938,398.24

SEAM TOTALS:

O:	45,204.90
N:	63,802.20
M:	318,225.80
L:	267,525.60
K/L:	579,564.00
K:	787,184.05
J:	49,317.52
I:	1,780,734.34
H/I:	198,817.50
H:	2,184,515.18
Ph:	409,596.75
G:	253,910.40
	6,938,398.24

SECTION : 2100 N
RESOURCE TYPE : MEASURED

SEAM NAME	DIAMOND DRILL HOLE	SEAM THICKNESS (m)	SPECIFIC GRAVITY (t/m3)	SEAM LENGTH (m)	WIDTH INFLUENCE (m)	TOTAL TONNES SEAMS >=0.5m
O	86012	1.02	1.73	35	100	6,176.10
O	86012	1.46	1.73	300	100	75,774.00
N	86012	1.42	1.65	360	100	84,348.00
N	87026	0.79	1.65	112	100	14,599.20
M	87026	1.61	1.72	89	100	24,645.88
L	88003	2.36	1.66	154	70	42,231.73
L	86014	3.05	1.66	135	100	68,350.50
L	87026	0.85	1.66	217	100	30,618.70
K/L	88005	0.97	1.70	220	100	36,278.00
K/L	88003	6.11	1.70	98	100	101,792.60
K/L	87005	4.43	1.70	101	100	76,063.10
K	88005	1.03	1.63	240	100	40,293.60
K	88003	3.10	1.63	100	100	50,530.00
K	86029	2.96	1.63	245	100	118,207.60
K	87007	6.01	1.63	165	80	129,311.16
K	84006	2.88	1.63	100	75	35,208.00
K	86014	2.58	1.63	170	100	71,491.80
K	86009	5.82	1.63	95	100	90,122.70
K	87005	8.06	1.63	257	100	337,641.46
J	88005	0.75	1.61	240	100	28,980.00
J	88020	0.53	1.61	198	100	16,895.34
I	88005	5.65	1.54	245	100	213,174.50
I	86029	4.42	1.54	235	100	159,959.80
I	87007	2.23	1.54	160	100	54,947.20
I	86018	3.95	1.54	34	100	20,682.20
I	88017	8.29	1.54	135	100	172,349.10
I	84006	5.04	1.54	60	100	46,569.60
I	86009	5.80	1.54	160	100	142,912.00
I	86007	5.57	1.54	245	100	210,156.10
I	86007	5.57	1.54	40	100	34,311.20
I	88020	0.85	1.54	240	100	31,416.00
I	86032	3.16	1.54	185	100	90,028.40
I	87021	3.82	1.54	202	100	118,832.56
I	87002	6.37	1.54	66	100	64,744.68
I	87002	3.87	1.54	113	100	67,345.74
I	87002	7.97	1.54	181	100	222,155.78
I	87005	3.44	1.54	252	100	133,499.52
H/I	87023	1.55	1.75	328	100	88,970.00
H/I	87023	1.76	1.75	102	100	31,416.00
H	86029	1.22	1.66	235	100	47,592.20
H	87007	2.93	1.66	135	100	65,661.30
H	88016	5.04	1.66	50	100	41,832.00
H	85024	4.62	1.66	150	100	115,038.00
H	86017	7.18	1.66	245	100	292,010.60
H	86009	9.01	1.66	160	100	239,305.60
H	86007	3.66	1.66	280	100	170,116.80
H	86007	3.66	1.66	40	100	24,302.40
H	88020	2.05	1.66	247	100	84,054.10

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H	86032	4.92	1.66	247	100	201,729.84
H	87021	3.82	1.66	261	100	165,505.32
H	87002	4.10	1.66	395	100	268,837.00
H	87005	1.42	1.66	252	100	59,401.44
H lower	87007	1.16	1.66	135	100	25,995.60
Ph	87007	1.35	1.79	270	100	65,245.50
Ph	86018	3.80	1.79	170	100	115,634.00
Ph	86002	0.84	1.79	60	80	7,217.28
G	87007	2.71	1.92	310	100	161,299.20
G	85024	6.45	1.92	220	100	272,448.00
G	88017	1.38	1.92	135	100	35,769.60
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						seams >=0.5m

TOTAL TONNES FOR THIS SECTION : 5,842,025.63

SEAM TOTALS:

O:	81,950.10
N:	98,947.20
M:	24,645.88
L:	141,200.93
K/L:	214,133.70
K:	872,806.32
J:	45,875.34
I:	1,783,084.38
H/I:	120,386.00
H:	1,775,386.60
H lower:	25,995.60
Ph:	188,096.78
G:	469,516.80

	5,842,025.63

SECTION : 2200 N
RESOURCE TYPE : MEASURED

SEAM NAME	DIAMOND DRILL HOLE	SEAM THICKNESS (m)	SPECIFIC GRAVITY (t/m3)	SEAM LENGTH (m)	WIDTH INFLUENCE (m)	TOTAL TONNES SEAMS >=0.5m
O	86012	1.46	1.73	275	100	69,459.50
O	86012	1.02	1.73	45	100	7,940.70
N	87026	0.79	1.65	192	100	25,027.20
N	86012	1.42	1.65	225	100	52,717.50
M	85023	3.44	1.72	45	100	26,625.60
M	85023	3.44	1.72	15	100	8,875.20
M	85010	4.60	1.72	75	100	59,340.00
M	87026	1.61	1.72	60	100	16,615.20
M	87026	1.25	1.72	218	100	46,870.00
L	87026	0.85	1.66	322	100	45,434.20
L	85023	4.57	1.66	180	100	136,551.60
L	85010	1.81	1.66	75	100	22,534.50
K/L	86004	1.09	1.70	30	100	5,559.00
K/L	86004	3.76	1.70	100	100	63,920.00
K/L	87005	4.43	1.70	175	95	125,202.88
K	87005	8.06	1.63	272	100	357,348.16
K	88005	1.03	1.63	255	100	42,811.95
K	86029	2.96	1.63	143	100	68,994.64
K	85023	4.57	1.63	395	100	294,239.45
K	85010	3.96	1.63	85	100	54,865.80
K	86004	3.44	1.63	165	100	92,518.80
K	86004	5.47	1.63	25	100	22,290.25
J	88005	0.75	1.61	272	100	32,844.00
J	84006	3.56	1.61	330	100	189,142.80
J	88020	0.53	1.61	195	100	16,639.35
I	86007	5.57	1.54	11	100	9,435.58
I	84007	5.43	1.54	25	100	20,905.50
I	88020	0.85	1.54	314	100	41,102.60
I	87008	4.77	1.54	88	100	64,643.04
I	87008	3.31	1.54	60	100	30,584.40
I	87008	7.43	1.54	86	100	98,402.92
I	87005	3.44	1.54	248	100	131,380.48
I	87009	4.79	1.54	173	100	127,615.18
I	88007	3.99	1.54	145	100	89,096.70
I	88005	5.65	1.54	270	100	234,927.00
I	86031	4.50	1.54	220	100	152,460.00
I	86029	4.42	1.54	270	100	183,783.60
I	87007	2.23	1.54	175	100	60,098.50
I	88017	8.29	1.54	40	100	51,066.40
I	84006	6.67	1.54	190	100	195,164.20
I	84006	5.04	1.54	400	100	310,464.00
I	86004	5.28	1.54	195	100	158,558.40
I	86007	5.57	1.54	225	100	193,000.50
H/I	84006	0.61	1.75	140	100	14,945.00
H	86031	6.58	1.66	235	100	256,685.80
H	86029	1.22	1.66	260	100	52,655.20
H	87007	2.93	1.66	250	100	121,595.00
H	86002	4.85	1.66	65	80	41,865.20

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H	86004	7.10	1.66	260	100	306,436.00
H	86007	3.66	1.66	240	100	145,814.40
H	86007	3.66	1.66	11	100	6,683.16
H	84007	3.98	1.66	26	100	17,177.68
H	88020	2.05	1.66	301	100	102,430.30
H	87021	3.82	1.66	12	100	7,609.44
H	87005	1.42	1.66	245	80	46,201.12
H	87009	2.77	1.66	214	100	98,401.48
Ph	84007	2.98	1.79	128	100	68,277.76
Ph	87009	2.16	1.79	267	100	103,232.88
Ph	86031	2.32	1.79	235	100	97,590.80
Ph	87007	1.35	1.79	245	100	59,204.25
Ph	86002	0.84	1.79	155	100	23,305.80
Ph	84007	2.98	1.79	40	100	21,336.80
G	88017	1.38	1.92	115	100	30,470.40
G	85024	6.45	1.92	180	100	222,912.00
G	87007	2.71	1.92	250	100	130,080.00
G	86031	5.78	1.92	245	100	271,891.20
F	87007	1.07	1.72	35	100	6,441.40
F	84007	1.07	1.72	151	100	27,790.04
E	84007	1.00	1.55	150	100	23,250.00
E	84007	1.00	1.55	35	100	5,425.00
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						seams >=0.5m

TOTAL TONNES FOR THIS SECTION : 6,346,765.39

SEAM TOTALS:

O:	77,400.20
N:	77,744.70
M:	158,326.00
L:	204,520.30
K/L:	194,681.88
K:	933,069.05
J:	238,626.15
I:	2,152,689.00
H/I:	14,945.00
H:	1,203,554.78
Ph:	372,948.29
G:	655,353.60
F:	34,231.44
E:	28,675.00
	6,346,765.39

SECTION : 2300 N
RESOURCE TYPE : MEASURED

SEAM NAME	DIAMOND DRILL HOLE	SEAM THICKNESS (m)	SPECIFIC GRAVITY (t/m3)	SEAM LENGTH (m)	WIDTH INFLUENCE (m)	TOTAL TONNES SEAMS >=0.5m
O	85005	0.67	1.73	65	100	7,534.15
O	85005	1.33	1.73	80	100	18,407.20
M	85023	3.44	1.72	185	100	109,460.80
M	85023	3.44	1.72	90	100	53,251.20
M	85005	2.93	1.72	205	100	103,311.80
M	85010	4.60	1.72	290	100	229,448.00
L	85023	4.57	1.66	170	100	128,965.40
L	85005	0.61	1.66	205	100	20,758.30
L	85010	1.81	1.66	290	100	87,133.40
K/L	86004	2.09	1.70	50	100	17,765.00
K/L	86004	1.09	1.70	14	100	2,594.20
K/L	86004	3.76	1.70	125	100	79,900.00
K	85023	4.57	1.63	400	100	297,964.00
K	85005	3.10	1.63	200	100	101,060.00
K	85010	3.96	1.63	260	100	167,824.80
K	86004	3.44	1.63	150	100	84,108.00
K	86004	5.47	1.63	25	100	22,290.25
K	85011	3.47	1.63	60	100	33,936.60
J	88004	0.94	1.61	115	100	17,404.10
J	88005	0.75	1.61	145	70	12,256.13
J	84006	3.56	1.61	200	100	114,632.00
I	88004	7.95	1.54	120	100	146,916.00
I	88007	3.99	1.54	80	100	49,156.80
I	88005	5.65	1.54	142	100	123,554.20
I	86031	4.50	1.54	295	100	204,435.00
I	86029	4.42	1.54	25	100	17,017.00
I	84006	5.04	1.54	360	100	279,417.60
I	86004	5.28	1.54	150	100	121,968.00
I	85011	4.59	1.54	100	100	70,686.00
I	84007	5.43	1.54	100	100	83,622.00
I	84007	5.43	1.54	200	100	167,244.00
I	87008	3.31	1.54	55	100	28,035.70
I	87008	4.77	1.54	70	100	51,420.60
I	87008	7.43	1.54	250	100	286,055.00
I	87012	1.51	1.54	200	100	46,508.00
I	87009	4.79	1.54	230	100	169,661.80
H/I	84006	0.61	1.75	40	100	4,270.00
H	87027	8.62	1.66	385	100	550,904.20
H	87009	2.77	1.66	275	100	126,[illegible]50
H	87012	5.31	1.66	215	100	189,513.90
H	87011	4.97	1.66	150	100	123,753.00
H	87010	4.68	1.66	55	100	42,728.40
H	86031	6.58	1.66	150	100	163,842.00
H	86029	1.22	1.66	190	100	38,478.80
H	86004	7.10	1.66	200	100	235,720.00
H	84007	3.98	1.66	350	100	231,238.00
Ph	87027	0.97	1.79	380	100	65,979.40
Ph	87009	2.16	1.79	255	100	98,593.20

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Ph	87011	0.51	1.79	200	100	18,258.00
Ph	80031	2.32	1.79	140	100	58,139.20
Ph	84007	2.98	1.79	345	100	184,029.90
G	87027	0.63	1.92	310	100	37,497.60
G	87027	0.71	1.92	175	100	23,856.00
G	88007	1.37	1.92	210	100	55,238.40
G	86031	5.78	1.92	145	100	160,915.20
G	85008	0.58	1.92	170	100	18,931.20
G	84005	0.78	1.92	50	100	7,488.00
G lower	84007	0.89	1.85	120	100	19,758.00
F	85008	0.66	1.72	195	100	22,136.40
F	84007	1.07	1.72	245	100	45,089.80
E	84007	3.79	1.55	160	100	93,992.00
E	84007	1.00	1.55	100	100	15,500.00
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						seams >=0.5m

TOTAL TONNES FOR THIS SECTION : 6,188,004.13

SEAM TOTALS:

O:	25,941.35
M:	495,471.80
L:	236,857.10
K/L:	100,259.20
K:	707,183.65
J:	144,292.23
I:	1,845,697.70
H/I:	4,270.00
H:	1,702,628.80
Ph:	424,999.70
G:	303,926.40
G lower:	19,758.00
F:	67,226.20
E:	109,492.00
	6,188,004.13

SECTION : 2400 N
RESOURCE TYPE : MEASURED

SEAM NAME	DIAMOND DRILL HOLE	SEAM THICKNESS (m)	SPECIFIC GRAVITY (t/m3)	SEAM LENGTH (m)	WIDTH INFLUENCE (m)	TOTAL TONNES SEAMS >=0.5m
O	85005	0.67	1.73	34	100	3,940.94
O	85005	1.33	1.73	55	100	12,654.95
O	87028	1.49	1.73	245	100	63,153.65
N	87028	0.88	1.65	250	100	36,300.00
M/N	87028	0.88	1.85	255	100	41,514.00
M	87028	1.48	1.72	245	100	62,367.20
M	85010	4.60	1.72	275	100	217,580.00
M	85005	2.93	1.72	265	100	133,549.40
M	85005	3.94	1.72	85	100	57,602.80
L	85010	1.81	1.66	275	100	82,626.50
L	85005	0.61	1.66	300	100	30,378.00
L	85023	4.57	1.66	195	100	147,930.90
L	87015	4.84	1.66	65	100	52,223.60
L	87028	0.73	1.66	240	100	29,083.20
K/L	87028	3.89	1.70	230	100	152,099.00
K/L	85005	0.66	1.70	290	100	32,538.00
K	87028	2.25	1.63	220	100	80,685.00
K	85011	3.47	1.63	50	100	28,280.50
K	87025	4.98	1.63	155	100	125,819.70
K	85010	3.96	1.63	280	100	180,734.40
K	85005	3.10	1.63	290	100	146,537.00
K	85023	4.57	1.63	150	100	111,736.50
K	85009	2.81	1.63	50	100	22,901.50
K	85023	2.81	1.63	205	100	93,896.15
K	87015	1.92	1.63	25	100	7,824.00
J	88004	0.94	1.61	240	100	36,321.60
I	87008	4.77	1.54	270	100	198,336.60
I	87012	1.51	1.54	290	100	67,436.60
I	87009	4.79	1.54	40	100	29,506.40
I	84007	5.43	1.54	265	100	221,598.30
I	86008	3.50	1.54	40	100	21,560.00
I	85011	4.59	1.54	80	100	56,548.80
I	87025	4.59	1.54	145	100	102,494.70
I	85009	4.90	1.54	420	100	316,932.00
I	88004	7.95	1.54	270	100	330,561.00
H	84007	3.98	1.66	305	100	201,507.40
H	86008	5.89	1.66	45	100	43,998.30
H	85006	2.76	1.66	60	100	27,489.60
H	86031	6.58	1.66	170	100	185,687.60
H	87010	4.68	1.66	140	100	108,763.20
H	87011	4.97	1.66	140	100	115,502.80
H	88004	3.32	1.66	205	100	112,979.60
H	87012	5.31	1.66	295	100	260,030.70
H	87009	2.77	1.66	140	100	64,374.80
H	87027	8.62	1.66	355	100	507,976.60
H-1	87027	1.31	1.94	70	100	17,789.80
Ph	84007	2.98	1.79	330	100	176,028.60
Ph	86008	4.68	1.79	250	100	209,430.00

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Ph	86031	2.32	1.79	170	100	70,597.60
Ph	87011	0.51	1.79	285	100	26,017.65
Ph	87009	2.16	1.79	140	100	54,129.60
Ph	87027	0.97	1.79	475	100	82,474.25
G	87027	0.71	1.92	155	100	21,129.60
G	87027	0.63	1.92	325	100	39,312.00
G	85008	0.58	1.92	135	100	15,033.60
G	85006	3.49	1.92	155	100	103,862.40
G	86031	5.78	1.92	160	100	177,561.60
G	88007	1.37	1.92	120	100	31,564.80
G lower	84007	0.89	1.85	243	100	40,009.95
F	84007	1.07	1.72	340	100	62,573.60
F	85008	0.66	1.72	106	100	12,033.12
F	85006	3.10	1.72	154	100	82,112.80
E	85006	0.91	1.55	204	100	28,774.20
E	84007	1.00	1.55	178	100	27,590.00
E	84007	3.79	1.55	195	100	114,552.75
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						seams >=0.5m

TOTAL TONNES FOR THIS SECTION : 6,356,141.41

SEAM TOTALS:

O:	79,749.54
N:	36,300.00
M/N:	41,514.00
M:	471,099.40
L:	342,242.20
K/L:	184,637.00
K:	798,414.75
J:	36,321.60
I:	1,344,974.40
H:	1,628,310.60
H-1:	17,789.80
Ph:	618,677.70
G:	388,464.00
G lower:	40,009.95
F:	156,719.52
E:	170,916.95

	6,356,141.41

SECTION : 2500 N
RESOURCE TYPE : MEASURED

SEAM NAME	DIAMOND DRILL HOLE	SEAM THICKNESS (m)	SPECIFIC GRAVITY (t/m3)	SEAM LENGTH (m)	WIDTH INFLUENCE (m)	TOTAL TONNES SEAMS >=0.5m
O	85005	1.33	1.73	95	100	21,858.55
O	85005	0.67	1.73	75	100	8,693.25
O	87028	1.49	1.73	300	100	77,331.00
O	88028	0.68	1.73	70	100	8,234.80
N	88028	0.79	1.65	44	100	5,735.40
N	88028	1.11	1.65	80	100	14,652.00
N	87028	0.88	1.65	300	100	43,560.00
M/N	87028	0.88	1.85	308	100	50,142.40
M/N	88028	0.53	1.85	80	100	7,844.00
M	85005	2.93	1.72	170	100	85,673.20
M	88028	1.90	1.72	160	100	52,288.00
M	87028	1.48	1.72	312	100	79,422.72
L	85005	0.61	1.66	170	100	17,214.20
L	85009	4.46	1.66	115	100	85,141.40
L	87015	4.84	1.66	150	55	66,283.80
L	87028	0.73	1.66	320	100	38,777.60
K/L	87028	3.89	1.70	351	100	232,116.30
K	87025	4.98	1.63	50	100	40,587.00
K	85005	3.10	1.63	170	100	85,901.00
K	85009	2.81	1.63	40	100	18,321.20
K	85009	3.27	1.63	245	100	130,587.45
K	87015	1.92	1.63	175	70	38,337.60
K	87014	1.87	1.63	315	100	96,015.15
K	87014	1.87	1.63	70	100	21,336.70
K	87028	2.25	1.63	345	100	126,528.75
J	88004	0.94	1.61	225	100	34,051.50
I	85007	4.90	1.54	345	100	260,337.00
I	85017	5.37	1.54	195	100	161,261.10
I	88001	5.15	1.54	60	100	47,586.00
I	86008	3.50	1.54	130	100	70,070.00
I	86008	4.86	1.54	160	100	119,750.40
I	88004	7.95	1.54	230	100	281,589.00
I	87014	3.04	1.54	325	100	152,152.00
I	87012	1.51	1.54	190	100	44,182.60
H/I	87014	1.60	1.75	320	100	89,600.00
H	87015	3.33	1.66	205	100	113,319.90
H	88004	3.32	1.66	230	100	126,757.60
H	87011	4.97	1.66	55	70	31,763.27
H	87010	4.68	1.66	145	70	78,853.32
H	85006	2.76	1.66	200	100	91,632.00
H	85017	4.67	1.66	195	100	151,167.90
H	88001	2.81	1.66	60	100	27,987.60
H	86008	5.89	1.66	240	100	234,657.60
H	87012	5.31	1.66	231	100	203,617.26
H	87027	8.62	1.66	310	100	443,585.20
Ph	87011	0.51	1.79	210	100	19,170.90
Ph	86008	4.68	1.79	300	100	251,316.00
Ph	87027	0.97	1.79	380	100	65,979.40

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G	87027	0.71	1.92	301	100	41,032.32
G	87027	0.63	1.92	100	100	12,096.00
G	85006	3.49	1.92	185	100	123,964.80
G	85017	1.01	1.92	205	100	39,753.60
F	85006	3.10	1.72	470	100	250,604.00
F	85017	1.93	1.72	205	100	68,051.80
E	85006	0.91	1.72	495	100	77,477.40
E	85017	2.34	1.72	205	100	82,508.40
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						seams >=0.5m

TOTAL TONNES FOR THIS SECTION : 5,248,459.34

SEAM TOTALS:

O:	116,117.60
N:	63,947.40
M/N:	57,986.40
M:	217,383.92
L:	207,417.00
K/L:	232,116.30
K:	557,614.85
J:	34,051.50
I:	1,136,928.10
H/I:	89,600.00
H:	1,503,341.65
Ph:	336,466.30
G:	216,846.72
F:	318,655.80
E:	159,985.80
	5,248,459.34

SECTION : 2600 N
RESOURCE TYPE : MEASURED

SEAM NAME	DIAMOND DRILL HOLE	SEAM THICKNESS (m)	SPECIFIC GRAVITY (t/m3)	SEAM LENGTH (m)	WIDTH INFLUENCE (m)	TOTAL TONNES SEAMS >=0.5m
O	88028	0.68	1.73	120	100	14,116.80
O	87028	1.49	1.73	165	100	42,532.05
N	85003	1.72	1.65	185	100	52,503.00
N	85003	1.44	1.65	120	100	28,512.00
N	88028	0.79	1.65	40	100	5,214.00
N	88028	1.11	1.65	130	100	23,809.50
N	87028	0.88	1.65	165	100	23,958.00
M/N	85003	0.56	1.85	250	100	25,900.00
M/N	88028	0.53	1.85	160	100	15,688.00
M/N	87028	0.88	1.85	125	100	20,350.00
M upper	88028	0.61	1.66	190	100	19,239.40
M	85003	5.30	1.72	240	100	218,784.00
M	87029	1.45	1.72	15	100	3,741.00
M	88028	1.90	1.72	220	100	71,896.00
M	87028	1.48	1.72	175	100	44,548.00
M	87031	2.08	1.72	134	100	47,939.84
L	87028	0.73	1.66	165	100	19,994.70
L	87031	1.45	1.66	143	100	34,420.10
K/L	87031	3.65	1.70	143	100	88,731.50
K/L	87028	3.89	1.70	220	100	145,486.00
K	85009	3.27	1.63	177	100	94,342.77
K	85009	2.81	1.63	60	100	27,481.80
K	84008	3.93	1.63	115	100	73,667.85
K	87014	1.87	1.63	280	100	85,346.80
K	87028	2.25	1.63	215	100	78,851.25
K	87031	4.17	1.63	155	100	105,355.05
J	87013	0.94	1.61	216	100	32,689.44
I	87013	4.77	1.54	196	100	143,977.68
I	88002	4.25	1.54	320	100	209,440.00
I	86001	3.55	1.54	85	100	46,469.50
I	85009	4.90	1.54	500	100	377,300.00
I	84008	3.86	1.54	100	100	59,444.00
I	85017	5.37	1.54	250	100	206,745.00
I	88001	5.15	1.54	245	100	194,309.50
I	87019	3.23	1.54	200	100	99,484.00
I	87014	3.04	1.54	300	100	140,448.00
H/I	87019	1.79	1.75	260	100	81,445.00
H/I	84014	1.60	1.75	270	100	75,600.00
H/I2	87019	1.66	1.72	315	100	89,938.80
H	87015	3.33	1.66	200	100	110,556.00
H	87013	1.35	1.66	216	100	48,405.60
H	86001	2.84	1.66	262	100	123,517.28
H	84008	6.41	1.66	112	100	119,174.72
H	85017	4.67	1.66	250	100	193,805.00
H	88001	2.81	1.66	240	100	111,950.40
H	87019	1.98	1.66	390	100	128,185.20
Ph	87013	1.36	1.79	80	100	19,475.20
G	85017	1.01	1.92	316	100	61,278.72

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G	84008	3.28	1.92	113	100	71,162.88
G lower	85017	0.97	1.85	315	100	56,526.75
F	85006	3.10	1.72	576	100	307,123.20
F	85017	1.93	1.72	317	100	105,231.32
E	85020	0.91	1.55	520	100	73,346.00
E	85017	2.34	1.55	317	100	114,975.90
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						seams >=0.5m

TOTAL TONNES FOR THIS SECTION : 4,814,414.50

SEAM TOTALS:

O:	56,648.85
N:	133,996.50
M/N:	61,938.00
M upper:	19,239.40
M:	386,908.84
L:	54,414.80
K/L:	234,217.50
K:	465,045.52
J:	32,689.44
I:	1,477,617.68
H/I:	157,045.00
H/I2:	89,938.80
H:	835,594.20
Ph:	19,475.20
G:	132,441.60
G lower:	56,526.75
F:	412,354.52
E:	188,321.90

	4,814,414.50

SECTION : 2700 N
RESOURCE TYPE : MEASURED

SEAM NAME	DIAMOND DRILL HOLE	SEAM THICKNESS (m)	SPECIFIC GRAVITY (t/m3)	SEAM LENGTH (m)	WIDTH INFLUENCE (m)	TOTAL TONNES SEAMS >=0.5m
O	88028	0.68	1.73	345	100	40,585.80
N	85003	1.72	1.65	160	100	45,408.00
N	85003	1.44	1.65	143	100	33,976.80
N	87029	3.29	1.65	40	100	21,714.00
N	87029	1.02	1.65	40	100	6,732.00
N	87029	1.34	1.65	40	100	8,844.00
N	88028	0.79	1.65	40	100	5,214.00
N	88028	1.11	1.65	170	100	31,135.50
M/N	85003	0.56	1.85	335	100	34,706.00
M/N	87029	0.85	1.85	110	100	17,297.50
M	85003	5.30	1.72	450	100	410,220.00
M	87031	2.08	1.72	185	100	66,185.60
M	88028	1.90	1.72	170	100	55,556.00
M	87029	1.45	1.72	325	100	81,055.00
L	82005	5.75	1.66	245	100	233,852.50
L	87031	1.45	1.66	210	100	50,547.00
L	87031	1.64	1.66	105	100	28,585.20
K/L	87031	0.70	1.70	150	100	17,850.00
K/L	87031	3.65	1.70	195	100	120,997.50
K	82005	5.16	1.63	432	100	363,346.56
K	84008	3.93	1.63	293	100	187,692.87
K	87031	4.17	1.63	240	100	163,130.40
K	87017	2.82	1.63	210	100	96,528.60
J	87013	0.94	1.61	160	95	23,003.68
I	87013	4.77	1.54	250	100	183,645.00
I	88002	4.25	1.54	90	100	58,905.00
I	86001	3.55	1.54	155	100	84,738.50
I	85033	5.48	1.54	120	65	65,825.76
I	82005	4.98	1.54	545	100	417,971.40
I	84008	3.86	1.54	310	100	184,276.40
I	85017	5.37	1.54	220	100	181,935.60
I	88001	5.15	1.54	146	100	115,792.60
I	87019	3.23	1.54	260	100	129,329.20
I	87017	2.26	1.54	200	100	69,608.00
H/I	87019	1.79	1.75	230	100	72,047.50
H/I2	87019	1.66	1.72	140	100	39,972.80
H	87013	1.35	1.66	305	100	68,350.50
H	86001	2.84	1.66	305	100	143,789.20
H	84008	6.41	1.66	310	100	329,858.60
H	85017	4.67	1.66	221	100	171,323.62
H	88001	2.81	1.66	190	100	88,627.40
H	87019	1.98	1.66	410	100	134,758.80
Ph	87013	1.36	1.79	305	100	74,249.20
G	88019	2.23	1.92	15	100	6,422.40
G	88019	5.23	1.92	39	100	39,162.24
G	88019	2.14	1.92	65	100	26,707.20
G	85004	1.37	1.92	170	100	44,716.80
G	84008	3.28	1.92	315	100	198,374.40

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G	85017	1.01	1.92	240	100	46,540.80
G lower	88019	1.56	1.85	15	100	4,329.00
G lower	88019	2.25	1.85	27	100	11,238.75
G lower	88019	1.92	1.85	122	100	43,334.40
G lower	85004	2.86	1.85	167	100	88,359.70
G lower	85017	0.97	1.85	240	100	43,068.00
G lower	85019	0.52	1.85	178	100	17,123.60
F/G	85019	0.51	1.86	190	100	18,023.40
F	85004	2.35	1.72	455	100	183,911.00
F	85017	1.93	1.72	257	100	85,313.72
F	85019	4.21	1.72	200	100	144,824.00
E	85017	2.34	1.55	257	100	93,213.90
E	85004	2.23	1.55	306	100	105,768.90
E	85004	0.50	1.55	126	100	9,765.00
C	85019	0.51	1.68	196	100	16,793.28
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						seams >=0.5m

TOTAL TONNES FOR THIS SECTION : 5,986,160.08

SEAM TOTALS:

O:	40,585.80
N:	153,024.30
M/N:	52,003.50
M:	613,016.60
L:	312,984.70
K/L:	138,847.50
K:	810,698.43
J:	23,003.68
I:	1,492,027.46
H/I:	72,047.50
H/I2:	39,972.80
H:	936,708.12
Ph:	74,249.20
G:	361,923.84
G lower:	207,453.45
F/G:	18,023.40
F:	414,048.72
E:	208,747.80
C:	16,793.28

	5,986,160.08

SECTION : 2800 N
RESOURCE TYPE : MEASURED

SEAM NAME	DIAMOND DRILL HOLE	SEAM THICKNESS (m)	SPECIFIC GRAVITY (t/m3)	SEAM LENGTH (m)	WIDTH INFLUENCE (m)	TOTAL TONNES SEAMS >=0.5m
O	87029	0.68	1.73	145	100	17,057.80
O	87029	0.92	1.73	165	100	26,261.40
N	85003	1.44	1.65	105	100	24,948.00
N	85003	1.72	1.65	170	100	48,246.00
N	87029	3.29	1.65	65	100	35,285.25
N	87029	1.02	1.65	90	100	15,147.00
N	87029	1.34	1.65	195	100	43,114.50
M/N	87029	0.85	1.85	100	100	15,725.00
M	85003	5.30	1.72	134	100	122,154.40
M	82005	2.24	1.72	160	100	61,644.80
M	85003	5.30	1.72	65	100	59,254.00
M	87031	2.08	1.72	210	100	75,129.60
M	87029	1.45	1.72	485	100	120,959.00
L	82005	5.75	1.66	330	100	314,985.00
L	87031	1.45	1.66	175	100	42,122.50
L	87031	1.64	1.66	120	100	32,668.80
K/L	87031	3.65	1.70	205	100	127,202.50
K/L	87031	0.70	1.70	105	100	12,495.00
K	87033	5.32	1.63	270	100	234,133.20
K	84008	3.93	1.63	15	100	9,608.85
K	82005	5.16	1.63	395	100	332,226.60
K	87017	2.82	1.63	187	100	85,956.42
K	87031	4.17	1.63	235	100	159,731.85
I	86006	5.01	1.54	220	100	169,738.80
I	87033	5.56	1.54	270	100	231,184.80
I	84008	3.86	1.54	4	100	2,377.76
I	82005	4.98	1.54	195	100	149,549.40
I	85033	5.48	1.54	150	100	126,588.00
I	82005	4.98	1.54	225	100	172,557.00
I	85033	5.48	1.54	15	100	12,658.80
I	85034	5.14	1.54	65	100	51,451.40
I	85004	3.70	1.54	153	100	87,179.40
I	87013	4.77	1.54	140	100	102,841.20
I	85001	4.38	1.54	190	100	128,158.80
I	87017	2.26	1.54	160	100	55,686.40
H/I2	87017	1.38	1.72	205	100	48,658.80
H	86006	5.89	1.66	255	100	249,323.70
H	84008	3.84	1.66	135	100	86,054.40
H	84008	6.41	1.66	150	100	159,609.00
H	85004	3.96	1.66	145	100	95,317.20
H	85002	1.35	1.66	170	100	38,097.00
H	87013	1.35	1.66	200	100	44,820.00
H	85001	2.15	1.66	165	100	58,888.50
G	84008	3.28	1.92	280	100	176,332.80
G	85004	1.37	1.92	580	100	152,563.20
G	88019	2.14	1.92	145	100	59,577.60
G	88019	5.23	1.92	105	100	105,436.80
G	88019	2.23	1.92	20	100	8,563.20

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G	85001	0.94	1.92	145	100	26,169.60
G lower	85019	0.52	1.85	210	100	20,202.00
G lower	85004	2.86	1.85	600	100	317,460.00
G lower	88019	1.92	1.85	145	100	51,504.00
G lower	88019	2.25	1.85	97	100	40,376.25
G lower	88019	1.56	1.85	35	100	10,101.00
F/G	85019	0.51	1.86	250	100	23,715.00
F	85019	4.21	1.72	305	100	220,856.60
F	85013	3.20	1.72	160	100	88,064.00
F	85004	2.35	1.72	455	100	183,911.00
E	85004	2.23	1.55	145	100	50,119.25
E	85004	0.50	1.55	280	100	21,700.00
C	85019	0.51	1.68	300	100	25,704.00
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						seams >=0.5m

TOTAL TONNES FOR THIS SECTION : 5,669,154.13

SEAM TOTALS:

O:	43,319.20
N:	166,740.75
M/N:	15,725.00
M:	439,141.80
L:	389,776.30
K/L:	139,697.50
K:	821,656.92
I:	1,289,971.76
H/I2:	48,658.80
H:	732,109.80
G:	528,643.20
G lower:	439,643.25
F/G:	23,715.00
F:	492,831.60
E:	71,819.25
C:	25,704.00
	5,669,154.13

SECTION : 2900 N
RESOURCE TYPE : MEASURED

SEAM NAME	DIAMOND DRILL HOLE	SEAM THICKNESS (m)	SPECIFIC GRAVITY (t/m3)	SEAM LENGTH (m)	WIDTH INFLUENCE (m)	TOTAL TONNES SEAMS >=0.5m
O	87029	0.68	1.73	77	100	9,058.28
O	87029	0.92	1.73	136	100	21,645.76
N	87029	3.29	1.65	180	100	97,713.00
N	87029	1.02	1.65	77	100	12,959.10
M/N	87029	0.85	1.85	75	100	11,793.75
L	85012	1.37	1.66	250	100	56,855.00
L	82005	5.75	1.66	50	100	47,725.00
K/L	85012	1.49	1.70	245	100	62,058.50
K	82005	5.16	1.63	250	100	210,270.00
K	87017	2.82	1.63	175	100	80,440.50
I	86006	5.01	1.54	105	100	81,011.70
I	85013	6.16	1.54	250	100	237,160.00
I	82005	4.98	1.54	230	100	176,391.60
I	85032	5.47	1.54	80	100	67,390.40
I	85030	3.98	1.54	34	100	20,839.28
I	83001	5.51	1.54	95	100	80,611.30
I	85034	5.14	1.54	200	100	158,312.00
I	85001	4.38	1.54	275	100	185,493.00
I	87017	2.26	1.54	165	100	57,426.60
H	86006	5.89	1.66	245	100	239,546.30
H	85013	4.37	1.66	250	100	181,355.00
H	85012	3.22	1.66	105	100	56,124.60
H	85004	3.96	1.66	105	100	69,022.80
H	85002	1.35	1.66	60	100	13,446.00
H	83001	4.54	1.66	155	100	116,814.20
H	85001	2.15	1.66	373	100	133,123.70
Ph	85013	0.65	1.79	100	100	11,635.00
G	85004	1.37	1.92	555	100	145,987.20
G	83001	3.93	1.92	100	100	75,456.00
G	88019	2.23	1.92	140	100	59,942.40
G	88019	5.23	1.92	36	100	36,149.76
G	88019	2.14	1.92	100	100	41,088.00
G	85001	0.94	1.92	293	100	52,880.64
G lower	83001	2.25	1.85	6	100	2,497.50
G lower	88019	1.92	1.85	110	100	39,072.00
G lower	88019	2.25	1.85	45	100	18,731.25
G lower	88019	1.56	1.85	80	100	23,088.00
F/G	85019	0.51	1.86	190	100	18,023.40
F	85019	4.21	1.72	240	100	173,788.80
F	85013	3.20	1.72	145	100	79,808.00
F	85004	2.35	1.72	500	100	202,100.00
F	83001	4.79	1.72	145	100	119,462.60
E	85004	2.23	1.55	300	100	103,695.00
E	85004	0.50	1.55	190	100	14,725.00
E	83001	1.32	1.55	140	100	28,644.00
E	85020	1.91	1.55	310	100	91,775.50
D	85020	4.74	1.75	305	100	252,997.50
C	85019	0.51	1.68	245	100	20,991.60

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C	85020	1.19	1.68	305	100	60,975.60
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						seams >=0.5m

TOTAL TONNES FOR THIS SECTION : 4,158,102.12

SEAM TOTALS:

O:	30,704.04
N:	110,672.10
M/N:	11,793.75
L:	104,580.00
K/L:	62,058.50
K:	290,710.50
I:	1,064,635.88
H:	809,432.60
Ph:	11,635.00
G:	411,504.00
G lower:	83,388.75
F/G:	18,023.40
F:	575,159.40
E:	238,839.50
D:	252,997.50
C:	81,967.20
	4,158,102.12

SECTION : 3000 N
RESOURCE TYPE : MEASURED

SEAM NAME	DIAMOND DRILL HOLE	SEAM THICKNESS (m)	SPECIFIC GRAVITY (t/m3)	SEAM LENGTH (m)	WIDTH INFLUENCE (m)	TOTAL TONNES SEAMS >=0.5m
L	85012	1.37	1.66	260	95	56,172.74
K/L	85012	1.49	1.70	235	100	59,525.50
K	85012	1.74	1.63	220	100	62,396.40
I	85013	6.16	1.54	160	100	151,782.40
I	87034	4.78	1.54	115	100	84,653.80
I	86005	4.78	1.54	75	100	55,209.00
I	85030	3.98	1.54	40	100	24,516.80
I	85031	4.54	1.54	60	95	39,852.12
I	83001	5.51	1.54	120	90	91,642.32
I	85001	4.38	1.54	240	100	161,884.80
H	86006	5.89	1.66	30	100	29,332.20
H	85013	4.37	1.66	190	100	137,829.80
H	86005	2.94	1.66	105	100	51,244.20
H	85012	3.22	1.66	140	100	74,832.80
H	83001	4.54	1.66	300	100	226,092.00
H	85001	2.15	1.66	225	100	80,302.50
Ph	85013	0.65	1.79	250	100	29,087.50
G	83001	3.93	1.92	600	100	452,736.00
G	85001	0.94	1.92	230	100	41,510.40
G lower	83001	2.25	1.85	625	100	260,156.25
F	85013	3.20	1.72	270	100	148,608.00
F	83001	4.79	1.72	608	100	500,919.04
E	85020	1.91	1.55	355	100	105,097.75
E	83001	1.32	1.55	520	100	106,392.00
D	85020	4.74	1.75	355	100	294,472.50
C	85020	1.19	1.68	345	100	68,972.40
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						seams >=0.5m

TOTAL TONNES FOR THIS SECTION : 3,395,221.22

SEAM TOTALS:

L:	56,172.74
K/L:	59,525.50
K:	62,396.40
I:	609,541.24
H:	599,633.50
Ph:	29,087.50
G:	494,246.40
G lower:	260,156.25
F:	649,527.04
E:	211,489.75
D:	294,472.50
C:	68,972.40
	3,395,221.22

SECTION : 3100 N
RESOURCE TYPE : MEASURED

SEAM NAME	DIAMOND DRILL HOLE	SEAM THICKNESS (m)	SPECIFIC GRAVITY (t/m3)	SEAM LENGTH (m)	WIDTH INFLUENCE (m)	TOTAL TONNES SEAMS >=0.5m
L	85012	1.37	1.66	42	100	9,551.64
K/L	85012	1.49	1.70	103	100	26,089.90
K	85012	1.74	1.63	120	100	34,034.40
I	86005	4.78	1.54	60	100	44,167.20
I	87034	4.78	1.54	115	100	84,653.80
H	85012	3.22	1.66	105	100	56,124.60
H	86005	2.94	1.66	255	100	124,450.20
G	83001	3.93	1.92	195	100	147,139.20
G lower	83001	2.25	1.85	195	100	81,168.75
F	83001	4.79	1.72	560	100	461,372.80
E	85020	1.91	1.55	210	100	62,170.50
E	83001	1.32	1.55	500	100	102,300.00
D	85020	4.74	1.75	210	100	174,195.00
C	85020	1.19	1.68	210	100	41,983.20
						seams >=0.5m

TOTAL TONNES FOR THIS SECTION : 1,449,401.19

SEAM TOTALS:

L:	9,551.64
K/L:	26,089.90
K:	34,034.40
I:	128,821.00
H:	180,574.80
G:	147,139.20
G lower:	81,168.75
F:	461,372.80
E:	164,470.50
D:	174,195.00
C:	41,983.20
	1,449,401.19

SECTION : 3200 N
RESOURCE TYPE : MEASURED

SEAM NAME	DIAMOND DRILL HOLE	SEAM THICKNESS (m)	SPECIFIC GRAVITY (t/m3)	SEAM LENGTH (m)	WIDTH INFLUENCE (m)	TOTAL TONNES SEAMS >=0.5m
M	87030	2.23	1.72	205	100	78,629.80
L	87030	1.98	1.66	205	100	67,379.40
K/L	87030	3.50	1.70	215	100	127,925.00
K	87030	3.26	1.63	95	100	50,481.10
I	86005	4.78	1.54	85	100	62,570.20
I	85016	5.55	1.54	260	100	222,222.00
I	87030	2.87	1.54	170	100	75,136.60
H	86005	2.94	1.66	150	100	73,206.00
H	85016	6.75	1.66	265	100	296,932.50
G	85016	0.79	1.92	300	100	45,504.00
F	85016	2.13	1.72	300	100	109,908.00
E	85016	2.22	1.55	300	100	103,230.00
D	85016	2.41	1.75	315	100	132,851.25
						seams >=0.5m

TOTAL TONNES FOR THIS SECTION : 1,445,975.85

SEAM TOTALS:

M:	78,629.80
L:	67,379.40
K/L:	127,925.00
K:	50,481.10
I:	359,928.80
H:	370,138.50
G:	45,504.00
F:	109,908.00
E:	103,230.00
D:	132,851.25
	1,445,975.85

SECTION : 3300 N
RESOURCE TYPE : MEASURED

SEAM NAME	DIAMOND DRILL HOLE	SEAM THICKNESS (m)	SPECIFIC GRAVITY (t/m3)	SEAM LENGTH (m)	WIDTH INFLUENCE (m)	TOTAL TONNES SEAMS >=0.5m
M	87030	2.23	1.72	225	100	86,301.00
L	87030	1.98	1.66	260	100	85,456.80
K/L	87030	3.50	1.70	180	100	107,100.00
K	87030	3.26	1.63	230	100	122,217.40
I	87030	2.87	1.54	315	100	139,223.70
I	85016	5.55	1.54	245	100	209,401.50
I	87032	5.59	1.54	48	100	41,321.28
H	85016	6.75	1.66	290	100	324,945.00
G	85015	3.43	1.92	405	100	266,716.80
G	85016	0.79	1.92	290	100	43,987.20
F	85015	2.73	1.72	465	100	218,345.40
F	85016	2.13	1.72	295	100	108,076.20
E	85015	0.95	1.55	545	100	80,251.25
E	85016	2.22	1.55	295	100	101,509.50
D	85016	2.41	1.75	290	100	122,307.50
						seams >=0.5m

TOTAL TONNES FOR THIS SECTION : 2,057,160.53

SEAM TOTALS:

M:	86,301.00
L:	85,456.80
K/L:	107,100.00
K:	122,217.40
I:	389,946.48
H:	324,945.00
G:	310,704.00
F:	326,421.60
E:	181,760.75
D:	122,307.50
	2,057,160.53

SECTION : 3400 N
RESOURCE TYPE : MEASURED

SEAM NAME	DIAMOND DRILL HOLE	SEAM THICKNESS (m)	SPECIFIC GRAVITY (t/m3)	SEAM LENGTH (m)	WIDTH INFLUENCE (m)	TOTAL TONNES SEAMS >=0.5m
I	85014	5.46	1.54	250	100	210,210.00
I	87032	5.59	1.54	195	100	167,867.70
I	86003	7.25	1.54	80	100	89,320.00
H	85014	2.09	1.66	250	100	86,735.00
H	86003	3.35	1.66	290	100	161,269.00
G	85015	3.43	1.92	400	100	263,424.00
G	85016	0.79	1.92	75	100	11,376.00
G lower	85015	1.30	1.85	25	100	6,012.50
F	85015	2.73	1.72	480	100	225,388.80
F	85014	2.71	1.72	245	100	114,199.40
F	85016	2.13	1.72	75	100	27,477.00
E	85015	0.95	1.55	540	100	79,515.00
E	85016	2.22	1.55	75	100	25,807.50
D	85016	2.41	1.75	75	100	31,631.25
						seams >=0.5m

TOTAL TONNES FOR THIS SECTION : 1,500,233.15

SEAM TOTALS:

I:	467,397.70
H:	248,004.00
G:	274,800.00
G lower:	6,012.50
F:	367,065.20
E:	105,322.50
D:	31,631.25
	1,500,233.15

SECTION : 3500 N
RESOURCE TYPE : MEASURED

SEAM NAME	DIAMOND DRILL HOLE	SEAM THICKNESS (m)	SPECIFIC GRAVITY (t/m3)	SEAM LENGTH (m)	WIDTH INFLUENCE (m)	TOTAL TONNES SEAMS >=0.5m
I	85014	5.46	1.54	310	100	260,660.40
I	86003	7.25	1.54	150	100	167,475.00
H	85014	2.09	1.66	305	100	105,816.70
H	86003	3.35	1.66	230	100	127,903.00
F	85014	2.71	1.72	308	100	143,564.96
F	85015	2.73	1.72	297	100	139,459.32
E	85015	0.95	1.55	365	100	53,746.25
						seams >=0.5m

TOTAL TONNES FOR THIS SECTION : 998,625.63

SEAM TOTALS:

I:	428,135.40
H:	233,719.70
F:	283,024.28
E:	53,746.25
	998,625.63

SECTION : 3600 N
RESOURCE TYPE : MEASURED

SEAM NAME	DIAMOND DRILL HOLE	SEAM THICKNESS (m)	SPECIFIC GRAVITY (t/m3)	SEAM LENGTH (m)	WIDTH INFLUENCE (m)	TOTAL TONNES SEAMS >=0.5m
I	85014	5.46	1.54	75	100	63,063.00
I	85018	2.61	1.54	200	100	80,388.00
I	85021	1.61	1.54	100	100	24,794.00
H	85014	2.09	1.66	85	100	29,489.90
H	85018	3.63	1.66	220	100	132,567.60
H	85021	5.55	1.66	145	100	133,588.50
F	85014	2.71	1.72	65	100	30,297.80
F	85018	6.02	1.72	210	100	217,442.40
F	85021	3.41	1.72	150	100	87,978.00
E	85021	1.81	1.55	145	100	40,679.75
D	85018	1.89	1.75	260	100	85,995.00
						seams >=0.5m

TOTAL TONNES FOR THIS SECTION : 926,283.95

SEAM TOTALS:

I:	168,245.00
H:	295,646.00
F:	335,718.20
E:	40,679.75
D:	85,995.00
	926,283.95

SECTION : 3700 N
RESOURCE TYPE : MEASURED

SEAM NAME	DIAMOND DRILL HOLE	SEAM THICKNESS (m)	SPECIFIC GRAVITY (t/m3)	SEAM LENGTH (m)	WIDTH INFLUENCE (m)	TOTAL TONNES SEAMS >=0.5m
I	85018	2.61	1.54	250	100	100,485.00
I	85021	1.61	1.54	90	100	22,314.60
H	85018	3.63	1.66	250	100	150,645.00
H	85021	5.55	1.66	130	100	119,769.00
F	85021	3.43	1.72	265	100	156,339.40
F	85018	6.02	1.72	250	100	258,860.00
E	85021	1.81	1.55	268	100	75,187.40
D	85018	1.89	1.75	283	100	93,602.25
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						seams >=0.5m

TOTAL TONNES FOR THIS SECTION : 977,202.65

SEAM TOTALS:

I:	122,799.60
H:	270,414.00
F:	415,199.40
E:	75,187.40
D:	93,602.25
	977,202.65

SECTION : 3800 N
RESOURCE TYPE : MEASURED

SEAM NAME	DIAMOND DRILL HOLE	SEAM THICKNESS (m)	SPECIFIC GRAVITY (t/m3)	SEAM LENGTH (m)	WIDTH INFLUENCE (m)	TOTAL TONNES SEAMS >=0.5m
I	85018	2.61	1.54	90	55	19,896.03
I	85021	1.61	1.54	138	55	18,818.65
H	85018	3.63	1.66	90	100	54,232.20
H	85021	5.55	1.66	127	95	111,154.85
F	85018	6.02	1.72	95	100	98,366.80
F	85021	3.43	1.72	252	100	148,669.92
E	85021	1.81	1.55	258	100	72,381.90
D	85018	1.89	1.75	94	100	31,090.50
						seams >=0.5m

TOTAL TONNES FOR THIS SECTION : 554,610.84

SEAM TOTALS:

I:	38,714.68
H:	165,387.05
F:	247,036.72
E:	72,381.90
D:	31,090.50
	554,610.84

SECTION : 3900 N
RESOURCE TYPE : MEASURED

SEAM NAME	DIAMOND DRILL HOLE	SEAM THICKNESS (m)	SPECIFIC GRAVITY (t/m3)	SEAM LENGTH (m)	WIDTH INFLUENCE (m)	TOTAL TONNES SEAMS >=0.5m

NO MEASURED RESERVES ON THIS SECTION.

						seams >=0.5m

TOTAL TONNES FOR THIS SECTION : 0.00

SEAM TOTALS:

0.00

0.00

SECTION : 4000 N
RESOURCE TYPE : MEASURED

SEAM NAME	DIAMOND DRILL HOLE	SEAM THICKNESS (m)	SPECIFIC GRAVITY (t/m3)	SEAM LENGTH (m)	WIDTH INFLUENCE (m)	TOTAL TONNES SEAMS >=0.5m

NO MEASURED RESERVES ON THIS SECTION.

						seams >=0.5m

TOTAL TONNES FOR THIS SECTION : 0.00

SEAM TOTALS:

LOST FOX AREA : RESOURCE CALCULATIONS - February 1989

SECTION : 1000 N
RESOURCE TYPE :INDICATED

SEAM NAME	DIAMOND DRILL HOLE	SEAM THICKNESS (m)	SPECIFIC GRAVITY (t/m3)	SEAM LENGTH (m)	WIDTH INFLUENCE (m)	TOTAL TONNES SEAMS >=0.5m
P	88024	1.82	1.55	370	100	104,377.00
O	86037	2.50	1.73	570	100	246,525.00
O	85027	1.51	1.73	310	100	80,981.30
N	85027	2.17	1.65	320	100	114,576.00
M	85027	1.20	1.72	320	100	66,048.00
L	85037	2.34	1.66	410	100	159,260.40
L	88027	1.62	1.66	310	100	83,365.20
L	86035	3.35	1.66	420	100	233,562.00
K/L	86035	1.42	1.70	423	100	102,112.20
K/L	86037	0.66	1.70	400	100	44,880.00
K/L	85027	3.22	1.70	325	100	177,905.00
K/L	88026	1.51	1.70	360	100	92,412.00
K	88026	1.00	1.63	300	100	48,900.00
K	85027	1.08	1.63	365	100	64,254.60
K	86035	8.35	1.63	425	100	578,446.25
J	88026	1.56	1.61	360	100	90,417.60
J	85027	5.03	1.61	305	100	246,998.15
I	88026	4.80	1.54	340	100	251,328.00
I	86035	1.23	1.54	423	100	80,124.66
H	86035	1.16	1.66	424	100	81,645.44
H	85027	2.25	1.66	305	100	113,917.50
						seams >=0.5m

TOTAL TONNES FOR THIS SECTION : 3,062,036.30

SEAM TOTALS:

P:	104,377.00
O:	327,506.30
N:	114,576.00
M:	66,048.00
L:	476,187.60
K/L:	417,309.20
K:	691,600.85
J:	337,415.75
I:	331,452.66
H:	195,562.94
	3,062,036.30

SECTION : 1100 N
RESOURCE TYPE : INDICATED

SEAM NAME	DIAMOND DRILL HOLE	SEAM THICKNESS (m)	SPECIFIC GRAVITY (t/m3)	SEAM LENGTH (m)	WIDTH INFLUENCE (m)	TOTAL TONNES SEAMS >=0.5m
P	88024	1.82	1.55	290	100	81,809.00
O	86037	2.50	1.73	405	100	175,162.50
O	85027	1.51	1.73	495	100	129,308.85
N	85027	2.17	1.65	505	100	180,815.25
M/N	85027	1.15	1.85	510	100	108,502.50
M	86022	1.52	1.72	80	100	20,915.20
M	85027	1.20	1.72	410	100	84,624.00
M	88010	4.12	1.72	260	100	184,246.40
M	86033	3.55	1.72	232	100	141,659.20
L	86033	3.45	1.66	182	100	104,231.40
L	86035	3.35	1.66	252	100	140,137.20
L	86037	2.34	1.66	330	100	128,185.20
L	86022	2.39	1.66	80	100	31,739.20
L	85027	1.62	1.66	410	100	110,257.20
L	88010	2.85	1.66	250	100	118,275.00
L	86033	3.45	1.66	15	100	8,590.50
K/L	86037	0.66	1.70	330	100	37,026.00
K/L	86022	4.30	1.70	80	100	58,480.00
K/L	85027	3.22	1.70	410	100	224,434.00
K/L	88010	4.80	1.70	240	100	195,840.00
K/L	88026	1.51	1.70	200	100	51,340.00
K/L	86033	2.11	1.70	197	100	70,663.90
K/L	86035	1.42	1.70	332	100	80,144.80
K	86033	5.03	1.63	182	100	149,219.98
K	86035	8.35	1.63	373	100	507,671.65
K	86033	5.03	1.63	15	100	12,298.35
K	86022	1.92	1.63	75	100	23,472.00
K	85027	1.08	1.63	425	100	74,817.00
K	88010	2.13	1.63	250	100	86,797.50
K	88026	1.00	1.63	435	100	70,905.00
J	88026	1.56	1.61	210	100	52,743.60
J	88026	1.56	1.61	285	100	71,580.60
I	88026	4.80	1.54	35	100	25,872.00
I	86035	1.23	1.54	394	100	74,631.48
I	86022	1.14	1.54	85	100	14,922.60
I	85027	5.03	1.54	425	100	329,213.50
I	88010	3.66	1.54	260	100	146,546.40
I	88026	4.80	1.54	465	100	343,728.00
H	85027	2.25	1.66	445	100	166,207.50
H	88010	4.24	1.66	375	100	263,940.00
H	86035	1.16	1.66	394	100	75,868.64
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						seams >=0.5m

TOTAL TONNES FOR THIS SECTION : 4,956,823.10

cont. next page

SEAM TOTALS:

P:	81,809.00
O:	304,471.35
N:	180,815.25
M/N:	108,502.50
M:	431,444.80
L:	641,415.70
K/L:	717,928.70
K:	925,181.48
J:	124,324.20
I:	934,913.98
H:	506,016.14
	4,956,823.10

SECTION : 1200 N
RESOURCE TYPE :INDICATED

SEAM NAME	DIAMOND DRILL HOLE	SEAM THICKNESS (m)	SPECIFIC GRAVITY (t/m3)	SEAM LENGTH (m)	WIDTH INFLUENCE (m)	TOTAL TONNES SEAMS >=0.5m
P	88024	1.82	1.55	155	100	43,725.50
P	88024	1.82	1.55	150	100	42,315.00
O	85027	1.51	1.73	140	100	36,572.20
O	85027	1.51	1.73	60	100	15,673.80
N	85027	2.17	1.65	135	100	48,336.75
N	85027	2.17	1.65	110	100	39,385.50
M/N	85027	1.15	1.85	140	100	29,785.00
M/N	85027	1.15	1.85	160	100	34,040.00
M upper	85027	2.63	1.66	15	100	6,548.70
M	86022	1.52	1.72	200	100	52,288.00
M	85027	1.20	1.72	30	100	6,192.00
M	88010	4.12	1.72	10	100	7,086.40
M	86033	3.55	1.72	110	100	67,166.00
M	86033	3.55	1.72	125	100	76,325.00
L	86033	3.45	1.66	125	100	71,587.50
L	86035	3.35	1.66	83	100	46,156.30
L	88009	0.86	1.66	170	100	24,269.20
L	86022	2.39	1.66	200	100	79,348.00
L	85027	1.62	1.66	30	100	8,067.60
L	88010	2.85	1.66	140	100	66,234.00
L	86033	3.45	1.66	65	100	37,225.50
K/L	88009	3.98	1.70	170	100	115,022.00
K/L	86022	4.30	1.70	200	100	146,200.00
K/L	85027	3.22	1.70	30	100	16,422.00
K/L	88010	4.80	1.70	200	100	163,200.00
K/L	88026	1.51	1.70	70	100	17,969.00
K/L	86033	2.11	1.70	60	100	21,522.00
K/L	86035	1.42	1.70	129	100	31,140.60
K/L	86033	2.11	1.70	125	100	44,837.50
K	86033	5.03	1.63	125	100	102,486.25
K	86035	8.35	1.63	200	100	272,210.00
K	88009	1.57	1.63	170	100	43,504.70
K	86022	1.92	1.63	200	100	62,592.00
K	85027	1.08	1.63	130	100	22,885.20
K	88010	2.13	1.63	240	100	83,325.60
K	88026	1.00	1.63	145	100	23,635.00
K	88026	1.00	1.63	100	100	16,300.00
K	86033	5.03	1.63	60	100	49,193.40
J	88026	1.56	1.61	140	100	35,162.40
J	88026	1.56	1.61	210	100	52,743.60
J	88026	1.56	1.61	65	100	16,325.40
J	88011	0.66	1.61	10	100	1,062.60
I	88026	4.80	1.54	65	100	48,048.00
I	88011	4.89	1.54	10	100	7,530.60
I	86035	1.23	1.54	311	100	58,909.62
I	88009	4.40	1.54	165	100	111,804.00
I	88022	1.14	1.54	160	100	28,089.60
I	86022	4.54	1.54	145	100	101,378.20

cont. next page

I	85027	5.03	1.54	35	100	27,111.70
I	88010	3.66	1.54	365	100	205,728.60
I	88026	4.80	1.54	150	100	110,880.00
I	88026	4.80	1.54	260	100	192,192.00
H	88011	3.94	1.66	77	100	50,361.08
H	86035	1.16	1.66	211	100	40,630.16
H	88009	2.11	1.66	260	100	91,067.60
H	85027	2.25	1.66	210	100	78,435.00
H	88010	4.24	1.66	295	100	207,632.80
H	88013	4.86	1.66	200	100	161,352.00
H	88011	3.94	1.66	130	100	85,025.20
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						seams >=0.5m

TOTAL TONNES FOR THIS SECTION : 3,782,243.36

SEAM TOTALS:

P:	86,040.50
O:	52,246.00
N:	87,722.25
M/N:	63,825.00
M upper:	6,548.70
M:	209,057.40
L:	332,888.10
K/L:	556,313.10
K:	676,132.15
J:	105,294.00
I:	891,672.32
H:	714,503.84

	3,782,243.36

SECTION : 1300 N
RESOURCE TYPE :INDICATED

SEAM NAME	DIAMOND DRILL HOLE	SEAM THICKNESS (m)	SPECIFIC GRAVITY (t/m3)	SEAM LENGTH (m)	WIDTH INFLUENCE (m)	TOTAL TONNES SEAMS >=0.5m
O	85027	1.51	1.73	150	60	23,510.70
N	85027	2.17	1.65	140	100	50,127.00
N	85027	2.17	1.65	65	100	23,273.25
M/N	85027	1.15	1.85	150	100	31,912.50
M upper	85027	2.63	1.66	45	100	19,646.10
M	86033	3.55	1.72	25	100	15,265.00
M	86033	3.55	1.72	63	100	38,467.80
L	88009	0.86	1.66	230	100	32,834.80
L	88029	2.69	1.66	150	100	66,981.00
L	88013	2.60	1.66	220	100	94,952.00
L	86033	3.45	1.66	25	100	14,317.50
L	86033	3.45	1.66	63	100	36,080.10
L	86035	3.35	1.66	70	100	38,927.00
K/L	88009	3.98	1.70	225	100	152,235.00
K/L	88010	4.80	1.70	45	100	36,720.00
K/L	88029	4.27	1.70	160	100	116,144.00
K/L	88013	1.04	1.70	220	100	38,896.00
K/L	88026	1.51	1.70	25	100	6,417.50
K/L	88026	1.51	1.70	60	100	15,402.00
K/L	86033	2.11	1.70	50	100	17,935.00
K/L	86034	3.84	1.70	37	100	24,153.60
K/L	86035	1.42	1.70	63	100	15,208.20
K	88026	1.00	1.63	90	100	14,670.00
K	88009	1.57	1.63	225	100	57,579.75
K	88010	2.13	1.63	160	95	52,772.88
K	88013	4.25	1.63	220	100	152,405.00
K	88026	1.00	1.63	25	100	4,075.00
K	86033	5.03	1.63	50	100	40,994.50
K	86034	6.50	1.63	37	100	39,201.50
K	86035	8.35	1.63	161	100	219,129.05
J	88013	0.50	1.61	220	100	17,710.00
J	88026	1.56	1.61	25	100	6,279.00
J	88026	1.56	1.61	160	100	40,185.60
J	88011	0.66	1.61	50	100	5,313.00
J	88011	0.66	1.61	140	100	14,876.40
J	86034	0.75	1.61	125	100	15,093.75
J	86036	0.99	1.61	55	100	8,766.45
I	88009	4.40	1.54	220	100	149,072.00
I	88010	3.66	1.54	285	100	160,637.40
I	88013	4.33	1.54	220	100	146,700.40
I	88026	4.80	1.54	25	100	18,480.00
I	88026	4.80	1.54	210	100	155,232.00
I	88011	4.89	1.54	50	100	37,653.00
I	88011	4.89	1.54	140	100	105,428.40
I	86034	5.09	1.54	125	100	97,982.50
I	86035	1.23	1.54	165	100	31,254.30
I	86036	5.16	1.54	101	100	80,258.64
I	87004	3.82	1.54	228	100	134,127.84

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H	88009	2.11	1.66	50	100	17,513.00
H	88009	2.11	1.66	200	100	70,052.00
H	85027	2.25	1.66	75	100	28,012.50
H	88010	4.24	1.66	155	100	109,095.20
H	88013	4.86	1.66	485	100	391,278.60
H	88011	3.94	1.66	195	100	127,537.80
H	88011	3.94	1.66	180	100	117,727.20
H	86035	1.16	1.66	255	100	49,102.80
H	86036	2.17	1.66	100	100	36,022.00
H	87004	1.90	1.66	228	100	71,911.20
Ph	87004	1.42	1.79	235	100	59,732.30
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						seams >=0.5m

TOTAL TONNES FOR THIS SECTION : 3,793,269.01

SEAM TOTALS:

O:	23,510.70
N:	73,400.25
M/N:	31,912.50
M upper:	19,646.10
M:	53,732.80
L:	284,092.40
K/L:	423,111.30
K:	580,827.68
J:	108,224.20
I:	1,116,826.48
H:	1,018,252.30
Ph:	59,732.30
	3,793,269.01

SECTION : 1400 N
RESOURCE TYPE :INDICATED

SEAM NAME	DIAMOND DRILL HOLE	SEAM THICKNESS (m)	SPECIFIC GRAVITY (t/m3)	SEAM LENGTH (m)	WIDTH INFLUENCE (m)	TOTAL TONNES SEAMS >=0.5m
P	88024	1.82	1.55	273	100	77,013.30
O	88022	0.92	1.73	365	100	58,093.40
N	88029	1.65	1.65	75	100	20,418.75
N	86019	2.17	1.65	90	90	29,002.05
M/N	86019	1.17	1.85	74	100	16,017.30
M	88029	11.13	1.72	210	100	402,015.60
M	86025	0.92	1.72	260	100	41,142.40
M	86033	3.55	1.72	76	100	46,405.60
L	88013	2.60	1.66	104	100	44,886.40
L	88029	2.69	1.66	367	100	163,880.18
L	88009	0.86	1.66	177	100	25,268.52
L	88009	0.86	1.66	145	100	20,700.20
L	86025	1.85	1.66	260	100	79,846.00
L	86033	3.45	1.66	76	100	43,525.20
L	86035	3.35	1.66	64	100	35,590.40
K/L	88009	3.98	1.70	318	100	215,158.80
K	86013	4.76	1.63	63	100	48,880.44
K	88013	4.25	1.63	160	100	110,840.00
K	88010	2.13	1.63	90	100	31,247.10
K	88009	1.57	1.63	100	100	25,591.00
K	86025	1.05	1.63	245	100	41,931.75
K	86025	1.05	1.63	232	100	39,706.80
K	86034	6.50	1.63	45	100	47,677.50
K	86035	8.35	1.63	15	100	20,415.75
K	86036	1.86	1.63	70	100	21,222.60
J	86013	0.61	1.61	115	100	11,294.15
J	88013	0.50	1.61	160	100	12,880.00
J	88011	0.66	1.61	39	100	4,144.14
J	86034	0.75	1.61	77	100	9,297.75
J	86036	0.99	1.61	75	100	11,954.25
I	86013	6.98	1.54	105	100	112,866.60
I	88013	4.33	1.54	155	100	103,357.10
I	88010	3.66	1.54	478	100	269,419.92
I	88009	4.40	1.54	100	100	67,760.00
I	86025	4.74	1.54	250	100	182,490.00
I	88011	4.89	1.54	39	100	29,369.34
I	86034	5.09	1.54	75	100	58,789.50
I	86035	1.23	1.54	15	100	2,841.30
I	86036	5.16	1.54	170	100	135,088.80
I	87004	3.82	1.54	237	100	139,422.36
H/I	86036	1.33	1.75	107	100	24,904.25
H/I	87004	1.31	1.75	237	100	54,332.25
H	88011	3.94	1.66	50	100	32,702.00
H	88013	4.36	1.66	338	100	272,684.88
H	88010	4.24	1.66	295	100	207,632.80
H	85027	2.25	1.66	255	100	95,242.50
H	88009	2.11	1.66	109	100	38,178.34
H	88011	3.94	1.66	134	100	87,641.36

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H	86035	1.16	1.66	247	100	47,562.32
H	86036	2.17	1.66	166	100	59,796.52
H	87004	1.90	1.66	237	100	74,749.80
Ph	87004	1.42	1.79	342	100	86,929.56
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						seams >=0.5m

TOTAL TONNES FOR THIS SECTION : 3,939,808.83

SEAM TOTALS:

P:	77,013.30
O:	58,093.40
N:	49,420.80
M/N:	16,017.30
M:	489,563.60
L:	413,696.90
K/L:	215,158.80
K:	387,512.94
J:	49,570.29
I:	1,101,404.92
H/I:	79,236.50
H:	916,190.52
Ph:	86,929.56

	3,939,808.83

SECTION : 1500 N
RESOURCE TYPE :INDICATED

SEAM NAME	DIAMOND DRILL HOLE	SEAM THICKNESS (m)	SPECIFIC GRAVITY (t/m3)	SEAM LENGTH (m)	WIDTH INFLUENCE (m)	TOTAL TONNES SEAMS >=0.5m
P	88024	1.82	1.55	140	100	39,494.00
O	88022	0.92	1.73	410	100	65,255.60
N	88029	1.65	1.65	10	100	2,722.50
M	88029	11.13	1.72	67	100	128,262.12
M	88029	11.13	1.72	150	95	272,796.30
M	86025	0.92	1.72	278	100	43,990.72
M	86033	3.55	1.72	55	100	33,583.00
L	88013	2.60	1.66	33	100	14,242.80
L	88029	2.69	1.66	37	100	16,521.98
L	88029	2.69	1.66	120	100	53,584.80
L	86019	1.88	1.66	37	100	11,546.96
L	88009	0.86	1.66	60	100	8,565.60
L	86025	1.85	1.66	293	100	89,980.30
L	88011	0.79	1.66	82	100	10,753.48
L	86033	3.45	1.66	75	100	42,952.50
K/L	88013	1.04	1.70	30	100	5,304.00
K/L	88029	4.27	1.70	37	100	26,858.30
K/L	86019	4.43	1.70	35	100	26,358.50
K/L	88009	3.98	1.70	70	100	47,362.00
K/L	88009	3.98	1.70	266	100	179,975.60
K/L	88011	1.72	1.70	11	100	3,216.40
K/L	86034	3.84	1.70	11	100	7,180.80
K	88013	4.25	1.63	150	100	103,912.50
K	88010	2.13	1.63	28	100	9,721.32
K	86019	3.33	1.63	26	100	14,112.54
K	88009	1.57	1.63	38	100	9,724.58
K	86025	1.05	1.63	197	100	33,716.55
K	88009	1.57	1.63	134	100	34,291.94
K	86025	1.05	1.63	343	100	58,704.45
K	88011	6.52	1.63	11	100	11,690.36
K	86034	6.50	1.63	19	100	20,130.50
K	86036	1.86	1.63	8	100	2,425.44
J	88013	0.50	1.61	165	100	13,282.50
J	88011	0.66	1.61	11	100	1,168.86
J	86034	0.75	1.61	19	100	2,294.25
J	86036	0.99	1.61	36	100	5,738.04
I	88013	4.33	1.54	170	100	113,359.40
I	85026	5.68	1.54	145	100	126,834.40
I	85026	5.68	1.54	215	100	188,064.80
I	85026	5.68	1.54	50	100	43,736.00
I	88009	4.40	1.54	35	100	23,716.00
I	86025	4.74	1.54	203	100	148,181.88
I	86025	2.90	1.54	115	100	51,359.00
I	88011	4.89	1.54	11	100	8,283.66
I	86034	5.09	1.54	19	100	14,893.34
I	86036	5.16	1.54	13	100	10,330.32
I	87004	3.82	1.54	225	100	132,363.00
H/I	86036	1.33	1.75	25	100	5,818.75

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H/I	87004	1.31	1.75	200	100	45,850.00
H	88011	3.94	1.66	33	100	21,583.32
H	88013	4.86	1.66	188	100	151,670.88
H	85026	3.43	1.66	410	100	233,445.80
H	85026	3.43	1.66	160	100	91,100.80
H	88021	2.86	1.66	110	100	52,223.60
H	88009	2.11	1.66	182	100	63,747.32
H	88011	3.94	1.66	150	100	98,106.00
H	86036	2.17	1.66	160	100	57,635.20
H	87004	1.90	1.66	185	100	58,349.00
Ph	87004	1.42	1.79	336	100	85,404.48
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						seams >=0.5m

TOTAL TONNES FOR THIS SECTION : 3,277,479.04

SEAM TOTALS:

P:	39,494.00
O:	65,255.60
N:	2,722.50
M:	478,632.14
L:	248,148.42
K/L:	296,255.60
K:	298,430.18
J:	22,483.65
I:	861,121.80
H/I:	51,668.75
H:	827,861.92
Ph:	85,404.48

	3,277,479.04

SECTION : 1600 N
RESOURCE TYPE :INDICATED

SEAM NAME	DIAMOND DRILL HOLE	SEAM THICKNESS (m)	SPECIFIC GRAVITY (t/m3)	SEAM LENGTH (m)	WIDTH INFLUENCE (m)	TOTAL TONNES SEAMS >=0.5m
O	88022	0.92	1.73	501	100	79,739.16
M	86025	0.92	1.72	155	100	24,527.20
M	88029	11.13	1.72	150	100	287,154.00
M	86019	0.68	1.72	172	75	15,087.84
M	86033	3.55	1.72	70	100	42,742.00
L	86025	1.85	1.66	155	100	47,600.50
L	86016	2.29	1.66	44	100	16,726.16
L	88029	2.69	1.66	136	100	60,729.44
L	88029	2.69	1.66	35	100	15,628.90
L	88013	2.60	1.66	44	100	18,990.40
L	86015	1.24	1.66	75	100	15,438.00
L	86011	4.91	1.66	90	100	73,355.40
K/L	88009	3.98	1.70	102	100	69,013.20
K/L	86016	2.74	1.70	34	100	15,837.20
K/L	88029	4.27	1.70	35	100	25,406.50
K/L	88013	1.04	1.70	44	100	7,779.20
K/L	86015	0.50	1.70	90	100	7,650.00
K/L	86011	1.70	1.70	25	100	7,225.00
K/L	86034	3.84	1.70	25	100	16,320.00
K	86025	1.05	1.63	160	100	27,384.00
K	86021	1.15	1.63	85	100	15,933.25
K	86016	2.62	1.63	55	50	11,744.15
K	88013	4.25	1.63	205	100	142,913.75
K	86015	3.98	1.63	146	100	94,716.04
K	88011	6.52	1.63	80	100	85,020.80
K	86034	6.50	1.63	57	100	60,391.50
J	88013	0.50	1.61	232	100	18,676.00
J	88015	1.06	1.61	5	100	853.30
J	88013	0.50	1.61	93	100	7,486.50
J	88011	0.66	1.61	80	100	8,500.80
J	86034	0.75	1.61	97	100	11,712.75
J	86036	0.99	1.61	145	100	23,111.55
I	86025	2.90	1.54	160	100	71,456.00
I	86025	4.74	1.54	70	100	51,097.20
I	86021	4.55	1.54	5	100	3,503.50
I	86021	4.60	1.54	5	100	3,542.00
I	88027	2.59	1.54	20	100	7,977.20
I	88021	4.49	1.54	110	100	76,060.60
I	85026	5.68	1.54	305	100	266,789.60
I	88013	4.33	1.54	233	100	155,369.06
I	88015	4.33	1.55	3	100	2,013.45
I	88011	4.89	1.54	80	100	60,244.80
I	86034	5.09	1.54	97	100	76,034.42
I	86036	5.16	1.54	40	100	31,785.60
I	87004	3.82	1.54	167	100	98,242.76
I	87006	1.83	1.54	95	100	26,772.90
H/I	86036	1.33	1.75	160	100	37,240.00
H/I	87004	1.31	1.75	131	100	30,031.75

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H/I	87006	2.25	1.75	95	100	37,406.25
H	88009	2.11	1.66	525	100	183,886.50
H	88014	1.78	1.66	160	100	47,276.80
H	88021	2.86	1.66	177	100	84,032.52
H	85026	3.43	1.66	138	100	78,574.44
H	88013	4.86	1.66	233	100	187,975.08
H	88015	3.62	1.66	3	100	1,802.76
H	88011	3.94	1.66	120	100	78,484.80
H	86030	2.98	1.66	188	100	92,999.84
H	86036	2.17	1.66	115	100	41,425.30
H	87004	1.90	1.66	131	100	41,317.40
H	87006	1.28	1.66	96	100	20,398.08
Ph	87004	1.42	1.79	346	100	87,946.28
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						seams >=0.5m

TOTAL TONNES FOR THIS SECTION : 3,336,181.38

SEAM TOTALS:

O:	79,739.16
M:	369,511.04
L:	248,468.80
K/L:	149,231.10
K:	437,203.49
J:	70,340.90
I:	930,889.09
H/I:	104,678.00
H:	858,173.52
Ph:	87,946.28

	3,336,181.38

SECTION : 1700 N
RESOURCE TYPE :INDICATED

SEAM NAME	DIAMOND DRILL HOLE	SEAM THICKNESS (m)	SPECIFIC GRAVITY (t/m3)	SEAM LENGTH (m)	WIDTH INFLUENCE (m)	TOTAL TONNES SEAMS >=0.5m
O	88022	0.92	1.73	260	100	41,381.60
O	88022	0.92	1.73	155	100	24,669.80
N	88029	1.65	1.65	115	80	25,047.00
M	88003	4.57	1.72	220	100	172,928.80
M	86025	0.92	1.72	157	100	24,843.68
M	88029	11.13	1.72	180	100	344,584.80
M	88029	11.13	1.72	63	100	120,604.68
L	88003	2.36	1.66	220	100	86,187.20
L	86025	1.85	1.66	160	100	49,136.00
L	88029	2.69	1.66	212	100	94,666.48
L	88018	2.26	1.66	50	100	18,758.00
L	86015	1.24	1.66	20	100	4,116.80
L	86015	1.24	1.66	15	100	3,087.60
K/L	88003	6.11	1.70	222	100	230,591.40
K/L	86027	5.80	1.70	340	100	335,240.00
K/L	88029	4.27	1.70	63	100	45,731.70
K/L	88018	0.67	1.70	50	100	5,695.00
K/L	86015	0.50	1.70	47	100	3,995.00
K/L	86011	1.70	1.70	21	100	6,069.00
K	88003	3.10	1.63	230	100	116,219.00
K	86025	1.05	1.63	174	100	29,780.10
K	86021	1.15	1.63	14	100	2,624.30
K	88006	2.11	1.63	45	100	15,476.85
K	86014	2.58	1.63	90	100	37,848.60
K	88013	4.25	1.63	220	100	152,405.00
K	86015	3.98	1.63	148	100	96,013.52
K	88015	4.01	1.63	110	100	71,899.30
K	88015	4.01	1.63	24	100	15,687.12
K	88011	6.52	1.63	104	100	110,527.04
K	86034	6.50	1.63	110	100	116,545.00
J	88018	0.56	1.61	323	100	29,121.68
J	88015	1.06	1.61	87	100	14,847.42
J	88015	1.06	1.61	24	100	4,095.84
J	88011	0.66	1.61	13	100	1,381.38
J	86030	0.82	1.61	236	100	31,156.72
J	86036	0.99	1.61	270	100	43,035.30
I	88012	4.92	1.54	25	100	18,942.00
I	86025	2.90	1.54	185	100	82,621.00
I	86025	4.74	1.54	17	100	12,409.32
I	86021	4.55	1.54	12	100	8,408.40
I	86021	4.60	1.54	11	100	7,792.40
I	88012	5.40	1.54	25	50	10,395.00
I	88021	4.49	1.54	35	100	24,201.10
I	85026	5.68	1.54	35	100	30,615.20
I	85026	5.68	1.54	175	100	153,076.00
I	88018	4.10	1.54	320	100	202,048.00
I	88015	4.33	1.54	92	100	61,347.44
I	88015	4.33	1.54	24	100	16,003.68

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I	88011	4.89	1.54	13	100	9,789.78
I	86030	5.59	1.54	184	100	158,398.24
I	87001	2.09	1.54	138	100	44,416.68
I	86036	5.16	1.54	35	100	27,812.40
I	87003	5.52	1.54	26	100	22,102.08
I	87006	1.83	1.54	210	100	59,182.20
H/I	87006	2.25	1.75	210	100	82,687.50
H/I	87023	1.55	1.75	42	100	11,392.50
H	85028	4.08	1.66	220	100	149,001.60
H	85028	4.08	1.66	318	100	215,375.04
H	88014	1.78	1.66	33	100	9,750.84
H	88014	1.78	1.66	25	100	7,387.00
H	88021	2.86	1.66	50	100	23,738.00
H	85026	3.43	1.66	225	100	128,110.50
H	88018	1.86	1.66	320	100	98,803.20
H	88015	3.62	1.66	85	100	51,078.20
H	88015	3.62	1.66	24	100	14,422.08
H	88011	3.94	1.66	13	100	8,502.52
H	86030	2.98	1.66	184	100	91,021.12
H	87001	5.43	1.66	131	100	118,080.78
H	86036	2.17	1.66	35	100	12,607.70
H	87003	3.55	1.66	26	100	15,321.80
H	87006	1.28	1.66	210	100	44,620.80
Ph	87004	1.42	1.79	537	100	136,494.66
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						seams >=0.5m

TOTAL TONNES FOR THIS SECTION : 4,693,955.47

SEAM TOTALS:

O:	66,051.40
N:	25,047.00
M:	662,961.96
L:	255,952.08
K/L:	627,322.10
K:	765,025.83
J:	123,638.34
I:	949,560.92
H/I:	94,080.00
H:	987,821.18
Ph:	136,494.66

	4,693,955.47

SECTION : 1800 N
RESOURCE TYPE :INDICATED

SEAM NAME	DIAMOND DRILL HOLE	SEAM THICKNESS (m)	SPECIFIC GRAVITY (t/m3)	SEAM LENGTH (m)	WIDTH INFLUENCE (m)	TOTAL TONNES SEAMS >=0.5m
O	88022	0.92	1.73	151	100	24,033.16
N	88029	1.65	1.65	80	100	21,780.00
N	88029	1.65	1.65	320	100	87,120.00
M	88018	2.58	1.72	70	100	31,063.20
M	88029	11.13	1.72	165	100	315,869.40
M	88029	11.13	1.72	195	100	373,300.20
M	86027	2.98	1.72	300	100	153,768.00
M	88003	4.57	1.72	460	100	361,578.40
L	86011	4.91	1.66	40	100	32,602.40
L	88015	2.25	1.66	5	100	1,867.50
L	88018	2.26	1.66	70	100	26,261.20
L	88029	2.69	1.66	288	100	128,603.52
L	86014	3.05	1.66	120	100	60,756.00
L	86027	1.81	1.66	340	100	102,156.40
L	88003	2.36	1.66	460	100	180,209.60
L	86011	4.91	1.66	21	100	17,116.26
K/L	86027	5.80	1.70	385	100	379,610.00
K/L	88003	6.11	1.70	460	100	477,802.00
K	86010	4.92	1.63	86	100	68,968.56
K	88015	4.01	1.63	25	100	16,340.75
K	88018	5.09	1.63	40	100	33,186.80
K	88018	5.09	1.63	150	100	124,450.50
K	86014	2.58	1.63	305	100	128,264.70
K	86014	2.58	1.63	75	100	31,540.50
K	88006	2.11	1.63	32	100	11,005.76
K	86025	1.05	1.63	55	100	9,413.25
K	86027	2.77	1.63	373	100	168,413.23
K	88003	3.10	1.63	408	100	206,162.40
K	86010	4.92	1.63	230	100	184,450.80
J	86010	1.08	1.61	77	100	13,388.76
J	88015	1.06	1.61	25	100	4,266.50
J	88018	0.56	1.61	150	100	13,524.00
J	86010	1.08	1.61	57	100	9,911.16
J	86030	0.82	1.61	27	100	3,564.54
J	86036	0.99	1.61	154	100	24,546.06
I	86010	5.15	1.54	70	100	55,517.00
I	88015	4.33	1.54	20	100	13,336.40
I	88018	4.10	1.54	150	100	94,710.00
I	87016	4.92	1.54	180	100	136,382.40
I	85028	4.74	1.54	235	100	171,540.60
I	85028	4.74	1.54	55	100	40,147.80
I	86027	0.95	1.54	280	100	40,964.00
I	86010	5.15	1.54	57	100	45,206.70
I	86030	5.59	1.54	27	100	23,243.22
I	87006	1.83	1.54	94	100	26,491.08
H/I	87006	2.25	1.75	92	100	36,225.00
H/I	87023	1.55	1.75	475	100	128,843.75
H/I	87023	1.76	1.75	144	100	44,352.00

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H	86010	3.91	1.66	70	100	45,434.20
H	88015	3.62	1.66	20	100	12,018.40
H	88018	1.86	1.66	150	100	46,314.00
H	85028	4.08	1.66	39	100	26,413.92
H	85028	4.08	1.66	223	100	151,033.44
H	85028	4.08	1.66	322	100	218,084.16
H	86010	3.91	1.66	57	100	36,996.42
H	86030	2.98	1.66	27	100	13,356.36
H	87006	1.28	1.66	93	100	19,760.64
Ph	87004	1.42	1.79	140	100	35,585.20
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						seams >=0.5m

TOTAL TONNES FOR THIS SECTION : 5,288,852.20

SEAM TOTALS:

O:	24,033.16
N:	108,900.00
M:	1,235,579.20
L:	549,572.88
K/L:	857,412.00
K:	982,197.25
J:	69,201.02
I:	647,539.20
H/I:	209,420.75
H:	569,411.54
Ph:	35,585.20

	5,288,852.20

SECTION : 1900 N
RESOURCE TYPE : INDICATED

SEAM NAME	DIAMOND DRILL HOLE	SEAM THICKNESS (m)	SPECIFIC GRAVITY (t/m3)	SEAM LENGTH (m)	WIDTH INFLUENCE (m)	TOTAL TONNES SEAMS >=0.5m
O	86012	1.46	1.73	310	100	78,299.80
O	86012	1.02	1.73	75	100	13,234.50
N	86012	1.42	1.65	455	100	106,606.50
M	88003	4.57	1.72	160	100	125,766.40
M	86027	2.98	1.72	100	100	51,256.00
M	88018	2.58	1.72	135	100	59,907.60
L	88018	2.26	1.66	25	100	9,379.00
L	88015	2.25	1.66	40	100	14,940.00
L	88003	2.36	1.66	160	100	62,681.60
L	86027	1.81	1.66	100	100	30,046.00
L	86014	3.05	1.66	265	100	134,169.50
L	88018	2.26	1.66	140	100	52,522.40
L	87026	0.85	1.66	70	100	9,877.00
K/L	86027	5.80	1.70	100	100	98,600.00
K/L	88003	6.11	1.70	160	100	166,192.00
K/L	86011	1.70	1.70	95	100	27,455.00
K/L	87005	4.43	1.70	77	100	57,988.70
K	86027	2.77	1.63	100	100	45,151.00
K	86014	2.58	1.63	150	100	63,081.00
K	88018	5.09	1.63	135	100	112,005.45
K	86009	5.82	1.63	25	100	23,716.50
K	86010	4.92	1.63	19	100	15,237.24
K	86014	2.58	1.63	68	100	28,596.72
K	86010	4.92	1.63	97	100	77,790.12
K	87005	8.06	1.63	163	100	214,146.14
J	88018	0.56	1.61	135	100	12,171.60
J	86010	1.08	1.61	21	100	3,651.48
I	88005	5.65	1.54	155	100	134,865.50
I	86027	0.95	1.54	164	100	23,993.20
I	85028	4.74	1.54	6	100	4,379.76
I	85028	4.74	1.54	235	100	171,540.60
I	85025	4.42	1.54	50	100	34,034.00
I	87016	4.92	1.54	10	100	7,576.80
I	86017	5.16	1.54	16	100	12,714.24
I	88018	4.10	1.54	150	100	94,710.00
I	86009	5.80	1.54	25	100	22,330.00
I	86010	5.15	1.54	20	100	15,862.00
I	87001	2.09	1.54	16	100	5,149.76
I	87003	5.52	1.54	16	100	13,601.28
I	87006	1.83	1.54	186	100	52,418.52
H/I	87006	2.25	1.75	76	100	29,925.00
H/I	87023	1.55	1.75	309	100	83,816.25
H/I	87023	1.76	1.75	150	100	46,200.00
H	86029	1.22	1.66	140	100	28,352.80
H	85028	4.08	1.66	180	100	121,910.40
H	85028	4.08	1.66	340	100	230,275.20
H	86017	7.18	1.66	60	100	71,512.80
H	88018	1.86	1.66	155	100	47,857.80

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H	86009	9.01	1.66	23	100	34,400.18
H	86010	3.91	1.66	18	100	11,683.08
H	87001	5.43	1.66	16	100	14,422.08
H	87003	3.55	1.66	16	100	9,428.80
H	87006	1.28	1.66	76	100	16,148.48
G	85024	6.45	1.92	43	100	53,251.20
G	87007	2.71	1.92	115	100	59,836.80
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						seams >=0.5m

TOTAL TONNES FOR THIS SECTION : 3,146,665.78

SEAM TOTALS:

O:	91,534.30
N:	106,606.50
M:	236,930.00
L:	313,615.50
K/L:	350,235.70
K:	579,724.17
J:	15,823.08
I:	593,175.66
H/I:	159,941.25
H:	585,991.62
G:	113,088.00
	3,146,665.78

SECTION : 2000 N
RESOURCE TYPE :INDICATED

SEAM NAME	DIAMOND DRILL HOLE	SEAM THICKNESS (m)	SPECIFIC GRAVITY (t/m3)	SEAM LENGTH (m)	WIDTH INFLUENCE (m)	TOTAL TONNES SEAMS >=0.5m
O	86012	1.02	1.73	20	100	3,529.20
O	86012	1.46	1.73	45	90	10,229.49
N	86012	1.42	1.66	215	100	50,679.80
N	87026	0.79	1.65	255	100	33,239.25
N	87026	1.25	1.72	231	100	49,665.00
M	88003	4.57	1.72	50	100	39,302.00
M	88003	4.57	1.72	80	100	62,883.20
M	86027	2.98	1.72	95	100	48,693.20
M	88018	2.58	1.72	240	100	106,502.40
L	88003	2.36	1.66	52	100	20,371.52
L	88003	2.36	1.66	80	100	31,340.80
L	86027	1.81	1.66	95	100	28,543.70
L	86014	3.05	1.66	260	100	131,638.00
L	88018	2.26	1.66	230	100	86,286.80
L	88018	2.26	1.66	40	100	15,006.40
L	87026	0.85	1.66	369	100	52,065.90
K/L	88005	0.97	1.70	12	100	1,978.80
K/L	88003	6.11	1.70	40	100	41,548.00
K/L	88003	6.11	1.70	80	100	83,096.00
K/L	86027	5.80	1.70	95	100	93,670.00
K/L	87005	4.43	1.70	74	100	55,729.40
K	88005	1.03	1.63	12	100	2,014.68
K	88003	3.10	1.63	34	100	17,180.20
K	88003	3.10	1.63	80	100	40,424.00
K	86027	2.77	1.63	85	100	38,378.35
K	86014	2.58	1.63	135	100	56,772.90
K	88018	5.09	1.63	215	100	178,379.05
K	86009	5.82	1.63	170	100	161,272.20
K	86010	4.92	1.63	60	100	48,117.60
K	87005	8.06	1.63	216	100	283,776.48
J	88005	0.75	1.61	15	100	1,811.25
J	84006	3.56	1.61	265	100	151,887.40
J	88018	0.56	1.61	205	100	18,482.80
J	88020	0.53	1.61	128	100	10,922.24
J	86030	0.82	1.61	30	100	3,960.60
I	88005	5.65	1.54	275	100	239,277.50
I	86031	4.50	1.54	73	100	50,589.00
I	86029	4.42	1.54	32	100	21,781.76
I	86027	0.95	1.54	117	100	17,117.10
I	86018	3.93	1.54	23	100	13,920.06
I	86017	5.16	1.54	40	100	31,785.60
I	84006	6.67	1.54	80	100	82,174.40
I	84006	5.04	1.54	200	100	155,232.00
I	88018	4.10	1.54	210	100	132,594.00
I	87002	7.97	1.54	18	100	22,092.84
I	87005	3.44	1.54	324	100	171,642.24
H/I	84006	0.61	1.75	70	100	7,472.50
H/I	84006	0.61	1.75	250	100	26,687.50

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H/I	87023	1.55	1.75	215	100	58,318.75
H	86031	6.58	1.66	95	100	103,766.60
H	86029	1.22	1.66	335	100	67,844.20
H	87007	2.93	1.66	88	100	42,801.44
H	86018	0.83	1.66	70	100	9,644.60
H	87007	2.93	1.66	150	100	72,957.00
H	86017	7.18	1.66	70	100	83,431.60
H	88018	1.86	1.66	220	100	67,927.20
H	88020	2.05	1.66	80	100	27,224.00
H	86032	4.92	1.66	5	100	4,083.60
H	87002	4.10	1.66	19	100	12,931.40
H	87005	1.42	1.66	168	100	39,600.96
Ph	87007	1.35	1.79	285	100	68,870.25
Ph	87007	1.35	1.79	15	100	3,624.75
Ph	87009	2.16	1.79	330	100	127,591.20
G	87007	2.71	1.92	205	100	106,665.60
G	85024	6.45	1.92	145	100	179,568.00
G	85024	6.45	1.92	7	100	8,668.80
G	88017	1.38	1.92	10	100	2,649.60
G	88017	1.38	1.92	100	100	26,496.00
...	...	...	...	...	...	...
						seams >=0.5m

TOTAL TONNES FOR THIS SECTION : 4,146,410.66

SEAM TOTALS:

O:	13,758.69
N:	133,584.05
M:	257,380.80
L:	365,253.12
K/L:	276,022.20
K:	826,315.46
J:	187,064.29
I:	938,206.50
H/I:	92,478.75
H:	532,212.60
Ph:	200,086.20
G:	324,048.00
	4,146,410.66

SECTION : 2100 N
RESOURCE TYPE : INDICATED

SEAM NAME	DIAMOND DRILL HOLE	SEAM THICKNESS (m)	SPECIFIC GRAVITY (t/m3)	SEAM LENGTH (m)	WIDTH INFLUENCE (m)	TOTAL TONNES SEAMS >=0.5m
O	86012	1.02	1.73	40	100	7,058.40
N	86012	1.42	1.65	163	100	38,190.90
N	87026	0.79	1.65	296	100	38,583.60
M	85023	3.44	1.72	190	100	112,419.20
M	85005	3.94	1.72	40	100	27,107.20
M	85005	2.93	1.72	70	100	35,277.20
M	85010	4.60	1.72	280	100	221,536.00
M	88018	2.58	1.72	25	100	11,094.00
M	87026	1.25	1.72	311	100	66,865.00
M	87026	1.61	1.72	46	100	12,738.32
L	88003	2.36	1.66	215	70	58,959.88
L	86027	1.31	1.66	117	60	21,092.29
L	86014	3.05	1.66	280	100	141,764.00
L	85010	1.81	1.66	235	100	70,608.10
L	88018	2.26	1.66	120	100	45,019.20
L	87026	0.85	1.66	304	100	42,894.40
K/L	88005	0.97	1.70	10	100	1,649.00
K/L	88003	6.11	1.70	156	100	162,037.20
K/L	86027	5.80	1.70	245	100	241,570.00
K	88005	1.03	1.63	150	100	25,183.50
K	88003	3.10	1.63	106	100	53,561.80
K	86029	2.96	1.63	97	100	46,800.56
K	87007	6.01	1.63	3	100	2,938.89
K	84006	2.88	1.63	28	75	9,858.24
K	86014	2.58	1.63	155	100	65,183.70
K	85010	3.96	1.63	214	100	138,132.72
K	86004	5.47	1.63	80	100	71,328.80
K	86009	5.82	1.63	150	100	142,299.00
K	86010	4.92	1.63	55	100	44,107.80
J	88005	0.75	1.61	163	100	19,682.25
J	84006	3.56	1.61	100	100	57,316.00
J	84006	3.56	1.61	310	100	177,679.60
I	88007	3.99	1.54	240	100	147,470.40
I	88005	5.65	1.54	75	100	65,257.50
I	88005	5.65	1.54	63	100	54,816.30
I	86031	4.50	1.54	154	100	106,722.00
I	86029	4.42	1.54	69	100	46,966.92
I	87007	2.23	1.54	108	100	37,089.36
I	84006	5.04	1.54	150	100	116,424.00
I	84006	5.04	1.54	320	100	248,371.20
I	86004	5.28	1.54	130	100	105,705.60
I	86009	5.80	1.54	84	100	75,028.80
I	87005	3.44	1.54	35	100	18,541.60
I	87009	4.79	1.54	272	100	200,643.52
H/I	87023	1.55	1.75	249	100	67,541.25
H	86031	6.58	1.66	270	100	294,915.60
H	86029	1.22	1.66	69	100	13,973.88
H	87007	2.93	1.66	128	100	62,256.64

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H	86018	0.83	1.66	170	100	23,422.60
H	86017	7.18	1.66	63	100	75,088.44
H	86017	7.18	1.66	105	100	125,147.40
H	86004	7.10	1.66	158	100	186,218.80
H	86009	9.01	1.66	60	100	89,739.60
H	87021	3.82	1.66	73	100	46,290.76
H	87005	1.42	1.66	35	100	8,250.20
H lower	87007	1.16	1.66	45	100	8,665.20
Ph	86031	2.32	1.79	265	100	110,049.20
Ph	84007	2.98	1.79	378	100	201,632.76
Ph	87009	2.16	1.79	571	100	220,771.44
Ph	87027	0.97	1.79	60	100	10,417.80
G	88007	1.37	1.92	45	100	11,836.80
G	86031	5.78	1.92	455	100	504,940.80
G	87007	2.71	1.92	252	100	131,120.64
G	85024	6.45	1.92	470	100	582,048.00
G	88017	1.38	1.92	100	100	26,496.00
G	88017	1.38	1.92	245	100	64,915.20
G	87027	0.71	1.92	227	100	30,944.64
F	84007	1.07	1.72	150	100	27,606.00
F	85008	0.66	1.72	255	100	28,947.60
F	84007	1.07	1.72	260	100	47,850.40
E	84007	1.00	1.55	150	100	23,250.00
E	84007	1.00	1.55	260	100	40,300.00
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						seams >=0.5m

TOTAL TONNES FOR THIS SECTION : 6,498,211.60

SEAM TOTALS:

O:	7,058.40
N:	76,774.50
M:	487,036.92
L:	380,337.87
K/L:	405,256.20
K:	599,395.01
J:	254,677.85
I:	1,223,037.20
H/I:	67,541.25
H:	925,303.92
H lower:	8,665.20
Ph:	542,871.20
G:	1,352,302.08
F:	104,404.00
E:	63,550.00

	6,498,211.60

SECTION : 2200 N
RESOURCE TYPE : INDICATED

SEAM NAME	DIAMOND DRILL HOLE	SEAM THICKNESS (m)	SPECIFIC GRAVITY (t/m3)	SEAM LENGTH (m)	WIDTH INFLUENCE (m)	TOTAL TONNES SEAMS >=0.5m
O	86012	1.02	1.73	70	100	12,352.20
N	87026	0.79	1.65	155	100	20,204.25
N	86012	1.42	1.65	125	100	29,287.50
M	85023	3.44	1.72	79	100	46,742.72
M	85005	2.93	1.72	180	100	90,712.80
M	85010	4.60	1.72	220	100	174,064.00
M	87026	1.25	1.72	158	100	33,970.00
L	87026	0.85	1.66	158	100	22,293.80
L	85023	4.57	1.66	100	100	75,862.00
L	85005	0.61	1.66	165	100	16,707.90
L	85010	1.81	1.66	295	100	88,635.70
K/L	87005	4.43	1.70	51	100	38,408.10
K	87005	8.06	1.63	135	100	177,360.30
K	88005	1.03	1.63	133	100	22,329.37
K	88003	3.10	1.63	7	100	3,537.10
K	86029	2.96	1.63	120	100	57,897.60
K	85023	4.57	1.63	40	100	29,796.40
K	85005	3.10	1.63	160	100	80,848.00
K	85010	3.96	1.63	182	100	117,477.36
K	86004	3.44	1.63	24	100	13,457.28
K	86004	5.47	1.63	60	100	53,496.60
J	88005	0.75	1.61	177	100	21,372.75
J	84006	3.56	1.61	150	100	85,974.00
I	88007	3.99	1.54	170	100	104,458.20
I	88005	5.65	1.54	6	100	5,220.60
I	86031	4.50	1.54	6	100	4,158.00
I	86029	4.42	1.54	3	100	2,042.04
I	87007	2.23	1.54	3	100	1,030.26
I	84006	5.04	1.54	150	100	116,424.00
I	86004	5.28	1.54	275	100	223,608.00
I	86007	5.57	1.54	6	100	5,146.68
I	88020	0.85	1.54	9	100	1,178.10
I	86032	3.16	1.54	57	100	27,738.48
I	87008	4.77	1.54	27	100	19,833.66
I	87002	7.97	1.54	77	100	94,508.26
I	87005	3.44	1.54	20	100	10,595.20
I	87009	4.79	1.54	112	100	82,617.92
H/I	87023	1.55	1.75	232	100	62,930.00
H/I	87023	1.76	1.75	80	100	24,640.00
H/I	84006	0.61	1.75	330	100	35,227.50
H	87011	4.97	1.66	130	100	107,252.60
H	86031	6.58	1.66	60	100	65,536.80
H	86029	1.22	1.66	3	100	607.56
H	87007	2.93	1.66	13	100	6,322.94
H	86002	4.85	1.66	140	100	112,714.00
H	86017	7.18	1.66	615	100	733,006.20
H	86004	7.10	1.66	176	100	207,433.60
H	86007	3.66	1.66	4	100	2,430.24

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H	88020	2.05	1.66	9	100	3,062.70
H	86032	4.92	1.66	176	100	143,742.72
H	87021	3.82	1.66	373	100	236,526.76
H	87002	4.10	1.66	177	100	120,466.20
H	87005	1.42	1.66	20	100	4,714.40
H	87009	2.77	1.66	53	100	24,370.46
H	87027	8.62	1.66	466	100	666,808.72
Ph	84007	2.98	1.79	424	100	226,170.08
Ph	87009	2.16	1.79	212	100	81,967.68
Ph	87027	0.97	1.79	452	100	78,480.76
Ph	87011	0.51	1.79	128	100	11,685.12
Ph	86031	2.32	1.79	60	100	24,916.80
Ph	87007	1.35	1.79	12	100	2,899.80
Ph	86002	0.84	1.79	130	100	19,546.80
Ph	86008	4.68	1.79	145	100	121,469.40
G	88017	1.38	1.92	125	100	33,120.00
G	85024	6.45	1.92	240	100	297,216.00
G	87007	2.71	1.92	280	100	145,689.60
G	86031	5.78	1.92	265	100	294,086.40
G	88007	1.37	1.92	70	100	18,412.80
G	87027	0.71	1.92	632	100	86,154.24
G	87027	0.63	1.92	55	100	6,652.80
F	84007	1.07	1.72	210	100	38,648.40
F	85008	0.66	1.72	495	100	56,192.40
E	84007	1.00	1.55	425	100	65,875.00
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						seams >=0.5m

TOTAL TONNES FOR THIS SECTION : 6,178,324.61

SEAM TOTALS:

O:	12,352.20
N:	49,491.75
M:	345,489.52
L:	203,499.40
K/L:	38,408.10
K:	556,200.01
J:	107,346.75
I:	698,559.40
H/I:	122,797.50
H:	2,434,995.90
Ph:	567,136.44
G:	881,331.84
F:	94,840.80
E:	65,875.00

	6,178,324.61

SECTION : 2300 N
RESOURCE TYPE : INDICATED

SEAM NAME	DIAMOND DRILL HOLE	SEAM THICKNESS (m)	SPECIFIC GRAVITY (t/m3)	SEAM LENGTH (m)	WIDTH INFLUENCE (m)	TOTAL TONNES SEAMS >=0.5m
O	85005	1.33	1.73	143	100	32,902.87
O	87028	1.49	1.73	515	100	132,751.55
N	87028	0.88	1.65	350	100	50,820.00
N	87026	0.79	1.65	195	100	25,418.25
M/N	87028	0.88	1.85	350	100	56,980.00
M	85005	2.93	1.72	111	100	55,939.56
M	85010	4.60	1.72	38	100	30,065.60
M	87028	1.48	1.72	350	100	89,096.00
M	87026	1.61	1.72	55	100	15,230.60
M	87026	1.25	1.72	265	100	56,975.00
L	87015	4.84	1.66	150	100	120,516.00
L	87015	4.84	1.66	145	60	69,899.28
L	85023	4.57	1.66	145	100	109,999.90
L	85005	0.61	1.66	17	100	1,721.42
L	85010	1.81	1.66	83	100	24,938.18
L	87028	0.73	1.66	350	100	42,413.00
L	87026	0.85	1.66	390	100	55,029.00
K/L	87028	3.89	1.70	455	100	300,891.50
K/L	87005	4.43	1.70	165	65	80,769.98
K	87015	1.92	1.63	405	100	126,748.80
K	85005	3.10	1.63	16	100	8,084.80
K	85010	3.96	1.63	12	100	7,745.76
K	87028	2.25	1.63	450	100	165,037.50
K	87005	8.06	1.63	300	85	335,013.90
K	87014	1.87	1.63	180	100	54,865.80
J	88004	0.94	1.61	295	100	44,645.30
J	88005	0.75	1.61	115	70	9,720.38
J	88005	0.75	1.61	27	100	3,260.25
J	84006	3.56	1.61	235	100	134,692.60
I	88004	7.95	1.54	295	100	361,168.50
I	88007	3.99	1.54	100	100	61,446.00
I	88005	5.65	1.54	40	100	34,804.00
I	86031	4.50	1.54	20	100	13,860.00
I	84006	5.04	1.54	150	100	116,424.00
I	86004	5.28	1.54	250	100	203,280.00
I	85011	4.59	1.54	40	100	28,274.40
I	84007	5.43	1.54	45	100	37,629.90
I	87008	4.77	1.54	145	100	106,514.10
I	87012	1.51	1.54	15	100	3,488.10
I	87005	3.44	1.54	60	100	31,785.60
I	87009	4.79	1.54	105	100	77,454.30
H/I	87014	1.60	1.75	260	100	72,800.00
H	87027	8.62	1.66	170	100	243,256.40
H	87005	1.42	1.66	63	100	14,850.36
H	87012	5.31	1.66	125	100	110,182.50
H	87021	3.82	1.66	345	100	218,771.40
H	86032	4.92	1.66	85	100	69,421.20
H	88020	2.05	1.66	180	100	61,254.00

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H	84007	3.98	1.66	15	100	9,910.20
H	86031	6.58	1.66	115	100	125,612.20
H	86029	1.22	1.66	75	100	15,189.00
H	87007	2.93	1.66	23	100	11,186.74
H	86004	7.10	1.66	180	100	212,148.00
H	84007	3.98	1.66	30	100	19,820.40
Ph	87027	0.97	1.79	160	100	27,780.80
Ph	87009	2.16	1.79	150	100	57,996.00
Ph	84007	2.98	1.79	230	100	122,686.60
Ph	86031	2.32	1.79	130	100	53,986.40
Ph	87007	1.35	1.79	195	100	47,121.75
Ph	86002	0.84	1.79	15	100	2,255.40
Ph	86008	4.68	1.79	325	100	272,259.00
G	87027	0.63	1.92	90	100	10,886.40
G	87027	0.71	1.92	160	100	21,811.20
G	88007	1.37	1.92	100	100	26,304.00
G	86031	5.78	1.92	358	100	397,294.08
G	87007	2.71	1.92	455	100	236,745.60
G	85024	6.45	1.92	48	100	59,443.20
G	85008	0.58	1.92	40	100	4,454.40
F	84007	1.07	1.72	155	100	28,526.20
F	85006	3.10	1.72	70	100	37,324.00
F	85008	0.66	1.72	345	100	39,164.40
E	84007	1.00	1.55	160	100	24,800.00
E	85006	0.91	1.55	570	100	80,398.50
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						seams >=0.5m

TOTAL TONNES FOR THIS SECTION : 6,053,942.00

SEAM TOTALS:

O:	165,654.42
N:	76,238.25
M/N:	56,980.00
M:	247,306.76
L:	424,516.78
K/L:	381,661.48
K:	697,496.56
J:	192,318.53
I:	1,076,128.90
H/I:	72,800.00
H:	1,111,602.40
Ph:	584,085.95
G:	756,938.88
F:	105,014.60
E:	105,198.50
	6,053,942.00

SECTION : 2400 N
RESOURCE TYPE :INDICATED

SEAM NAME	DIAMOND DRILL HOLE	SEAM THICKNESS (m)	SPECIFIC GRAVITY (t/m3)	SEAM LENGTH (m)	WIDTH INFLUENCE (m)	TOTAL TONNES SEAMS >=0.5m
O	85005	1.33	1.73	70	100	16,106.30
O	85005	1.33	1.73	140	100	32,212.60
O	88028	0.68	1.73	45	100	5,293.80
O	87028	1.49	1.73	275	100	70,886.75
N	88028	1.11	1.65	70	100	12,820.50
N	87028	0.88	1.65	290	100	42,108.00
M/N	88028	0.53	1.85	155	100	15,197.75
M/N	87028	0.88	1.85	140	100	22,792.00
M	85010	4.60	1.72	47	100	37,186.40
M	85005	3.94	1.72	175	100	118,594.00
M	88028	1.90	1.72	220	100	71,896.00
M	87028	1.48	1.72	220	100	56,003.20
L	85010	1.81	1.66	110	100	33,050.60
L	85005	0.61	1.66	18	100	1,822.68
L	85023	4.57	1.66	65	100	49,310.30
L	87015	4.84	1.66	6	100	4,820.64
L	87028	0.73	1.66	225	100	27,265.50
K/L	86004	3.76	1.70	13	100	8,309.60
K/L	85005	0.66	1.70	415	100	46,563.00
K/L	87028	3.89	1.70	315	100	208,309.50
K	87025	4.98	1.63	11	100	8,929.14
K	86004	3.44	1.63	14	100	7,850.08
K	85010	3.96	1.63	15	100	9,682.20
K	87015	1.92	1.63	50	100	15,648.00
K	87014	1.87	1.63	340	100	103,635.40
K	87028	2.25	1.63	305	100	111,858.75
J	88004	0.94	1.61	45	100	6,810.30
I	84007	5.43	1.54	23	100	19,233.06
I	86008	3.50	1.54	21	100	11,319.00
I	87025	4.59	1.54	12	100	8,482.32
I	86004	5.28	1.54	80	100	65,049.60
I	85017	5.37	1.54	170	100	140,586.60
I	85009	4.90	1.54	150	100	113,190.00
I	84007	5.43	1.54	145	100	121,251.90
I	87008	4.77	1.54	145	100	106,514.10
I	87012	1.51	1.54	37	100	8,603.98
I	87009	4.79	1.54	60	100	44,259.60
H/I	87019	1.79	1.75	30	100	9,397.50
H/I	87014	1.60	1.75	445	100	124,600.00
H	84007	3.98	1.66	24	100	15,856.32
H	86008	5.89	1.66	20	100	19,554.80
H	86004	7.10	1.66	80	100	94,288.00
H	85017	4.67	1.66	165	100	127,911.30
H	85006	2.76	1.66	80	100	36,652.80
H	86031	6.58	1.66	11	100	12,015.08
H	84007	3.98	1.66	170	100	112,315.60
H	87019	1.98	1.66	375	100	123,255.00
H	87012	5.31	1.66	183	100	161,307.18

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H	87009	2.77	1.66	50	100	22,991.00
H	87027	8.62	1.66	155	100	221,792.60
Ph	84007	2.98	1.79	18	100	9,601.56
Ph	86008	4.68	1.79	22	100	18,429.84
Ph	86008	4.68	1.79	80	100	67,017.60
Ph	86031	2.32	1.79	80	100	33,222.40
Ph	84007	2.98	1.79	145	100	77,345.90
Ph	87009	2.16	1.79	185	100	71,528.40
Ph	87027	0.97	1.79	150	100	26,044.50
G	85017	1.01	1.92	415	100	80,476.80
G	85008	0.58	1.92	370	100	41,203.20
G	87007	2.71	1.92	43	100	22,373.76
G	86031	5.78	1.92	170	100	188,659.20
G	86031	5.78	1.92	135	100	149,817.60
G	88007	1.37	1.92	125	100	32,880.00
G	87027	0.71	1.92	157	100	21,402.24
G	87027	0.63	1.92	160	100	19,353.60
F	84007	1.07	1.72	155	100	28,526.20
F	85017	1.93	1.72	430	100	142,742.80
F	85008	0.66	1.72	541	100	61,414.32
F	85006	3.10	1.72	185	100	98,642.00
F	84007	1.07	1.72	150	100	27,606.00
E	85806	0.91	1.55	190	100	26,799.50
E	85006	0.91	1.55	432	100	60,933.60
E	85017	2.34	1.55	420	100	152,334.00
E	84007	1.00	1.55	150	100	23,250.00
E	84007	3.79	1.55	140	100	82,243.00
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						seams >=0.5m

TOTAL TONNES FOR THIS SECTION : 4,429,238.35

SEAM TOTALS:

O:	124,499.45
N:	54,928.50
M/N:	37,989.75
M:	283,679.60
L:	116,269.72
K/L:	263,182.10
K:	257,603.57
J:	6,810.30
I:	638,490.16
H/I:	133,997.50
H:	947,939.68
Ph:	303,190.20
G:	556,166.40
F:	358,931.32
E:	345,560.10
	4,429,238.35

SECTION : 2500 N
RESOURCE TYPE :INDICATED

SEAM NAME	DIAMOND DRILL HOLE	SEAM THICKNESS (m)	SPECIFIC GRAVITY (t/m3)	SEAM LENGTH (m)	WIDTH INFLUENCE (m)	TOTAL TONNES SEAMS >=0.5m
O	85005	1.33	1.73	250	100	57,522.50
O	87028	1.49	1.73	150	100	38,665.50
N	85003	1.44	1.65	15	100	3,564.00
N	85003	1.72	1.65	34	100	9,649.20
N	87028	0.88	1.65	150	100	21,780.00
M/N	85003	0.56	1.85	120	100	12,432.00
M/N	88028	0.53	1.85	100	100	9,805.00
M/N	87028	0.88	1.85	17	100	2,767.60
M	85010	4.60	1.72	205	100	162,196.00
M	85005	2.93	1.72	110	100	55,435.60
M	85003	5.30	1.72	310	100	282,596.00
M	88028	1.90	1.72	106	100	34,640.80
M	87028	1.48	1.72	125	100	31,820.00
M	87031	2.08	1.72	233	100	83,358.08
L	85010	1.81	1.66	300	100	90,138.00
L	85005	0.61	1.66	150	100	15,189.00
L	85009	4.46	1.66	245	100	181,388.20
L	87028	0.73	1.66	125	100	15,147.50
L	87031	1.45	1.66	265	100	63,785.50
K/L	87028	3.89	1.70	283	100	187,147.90
K/L	87031	3.65	1.70	266	100	165,053.00
K	87025	4.98	1.63	15	100	12,176.10
K	85010	3.96	1.63	115	100	74,230.20
K	85005	3.10	1.63	150	100	75,795.00
K	85009	2.81	1.63	70	100	32,062.10
K	85009	3.27	1.63	180	100	95,941.80
K	87015	1.92	1.63	40	100	12,518.40
K	87014	1.87	1.63	40	100	12,192.40
K	87028	2.25	1.63	273	100	100,122.75
K	87031	4.17	1.63	267	100	181,482.57
J	88004	0.94	1.61	74	100	11,199.16
J	87013	0.94	1.61	110	100	16,647.40
I	85007	4.90	1.54	280	100	211,288.00
I	84008	3.86	1.54	255	100	151,582.20
I	85017	5.37	1.54	125	100	103,372.50
I	86008	4.86	1.54	55	100	41,164.20
I	84007	5.43	1.54	25	100	20,905.50
I	88004	7.95	1.54	80	100	97,944.00
I	88002	4.25	1.54	230	100	150,535.00
I	87014	3.04	1.54	115	100	53,838.40
I	87019	3.23	1.54	85	100	42,280.70
I	87012	1.51	1.54	115	100	26,742.10
I	87009	4.79	1.54	10	100	7,376.60
I	84007	5.43	1.54	38	100	31,776.36
H/I	87014	1.60	1.75	27	100	7,560.00
H/I	87019	1.79	1.75	218	100	68,288.50
H/I	87019	1.79	1.75	60	90	16,915.50
H/I2	87019	1.66	1.72	276	100	78,803.52

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H	87015	3.33	1.66	190	100	105,028.20
H	88004	3.32	1.66	80	100	44,089.60
H	87013	1.35	1.66	120	100	26,892.00
H	87011	4.97	1.66	80	80	52,801.28
H	85006	2.76	1.66	400	100	183,264.00
H	84008	6.41	1.66	260	100	276,655.60
H	85017	4.67	1.66	125	100	96,902.50
H	88001	2.81	1.66	45	100	20,990.70
H	86008	5.89	1.66	55	100	53,775.70
H	84007	3.89	1.66	55	100	35,515.70
H	84007	3.98	1.66	38	100	25,105.84
H	87019	1.98	1.66	475	100	156,123.00
H	87012	5.31	1.66	275	100	242,401.50
H	87009	2.77	1.66	102	100	46,901.64
H	87027	8.62	1.66	28	100	40,065.76
H	87027	8.62	1.66	230	100	329,111.60
H	84007	3.98	1.66	270	100	178,383.60
H	87019	1.98	1.66	104	100	34,182.72
H	85006	2.76	1.66	50	100	22,908.00
Ph	87013	1.36	1.79	325	100	79,118.00
Ph	87011	0.51	1.79	175	100	15,975.75
Ph	86031	2.32	1.79	150	100	62,292.00
Ph	86008	4.68	1.79	60	100	50,263.20
Ph	84007	2.98	1.79	55	100	29,338.10
Ph	84007	2.98	1.79	295	100	157,358.90
Ph	87009	2.16	1.79	202	100	78,101.28
Ph	87027	0.97	1.79	296	100	51,394.48
G	88007	1.37	1.92	140	100	36,825.60
G	88007	1.37	1.92	200	100	52,608.00
G	86031	5.78	1.92	405	100	449,452.80
G	85006	3.49	1.92	50	100	33,504.00
G	85008	0.58	1.92	95	100	10,579.20
G	84008	3.28	1.92	250	100	157,440.00
G	85017	1.01	1.92	300	100	58,176.00
G	87027	0.71	1.92	386	100	52,619.52
F	85006	3.10	1.72	170	100	90,644.00
F	85006	3.10	1.72	120	100	63,984.00
F	85006	3.10	1.72	100	100	53,320.00
F	85008	0.66	1.72	95	100	10,784.40
F	85017	1.93	1.72	360	100	119,505.60
F	84007	1.07	1.72	200	100	36,808.00
F	84007	1.07	1.72	320	100	58,892.80
E	85006	0.91	1.55	155	100	21,862.75
E	85006	0.91	1.55	70	100	9,873.50
E	85006	0.91	1.55	80	100	11,284.00
E	87017	2.34	1.55	360	100	130,572.00
E	84007	1.00	1.55	200	100	31,000.00
E	84007	1.00	1.55	313	100	48,515.00
E	84007	3.79	1.55	30	100	17,623.50
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						seams >=0.5m

TOTAL TONNES FOR THIS SECTION : 7,309,637.66

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SEAM TOTALS:

O:	96,188.00
N:	34,993.20
M/N:	25,004.60
M:	650,046.48
L:	365,648.20
K/L:	352,200.90
K:	596,521.32
J:	27,846.56
I:	938,805.56
H/I:	92,764.00
H/I2:	78,803.52
H:	1,971,098.94
Ph:	523,841.71
G:	851,205.12
F:	433,938.80
E:	270,730.75
	7,309,637.66

SECTION : 2600 N
RESOURCE TYPE :INDICATED

SEAM NAME	DIAMOND DRILL HOLE	SEAM THICKNESS (m)	SPECIFIC GRAVITY (t/m3)	SEAM LENGTH (m)	WIDTH INFLUENCE (m)	TOTAL TONNES SEAMS >=0.5m
O	85005	0.67	1.73	140	100	16,227.40
O	85005	1.33	1.73	155	100	35,663.95
O	85005	1.33	1.73	50	100	11,504.50
O	87028	1.49	1.73	155	100	39,954.35
N	85003	1.44	1.65	40	100	9,504.00
N	87028	0.88	1.65	170	100	24,684.00
M/N	85003	0.56	1.85	6	100	621.60
M/N	85003	0.56	1.85	50	100	5,180.00
M/N	88028	0.53	1.85	145	100	14,217.25
M	85003	5.30	1.72	254	100	231,546.40
M	85005	2.93	1.72	200	100	100,792.00
M	85010	4.60	1.72	85	100	67,252.00
M	88028	1.90	1.72	155	100	50,654.00
M	87028	1.48	1.72	115	100	29,274.40
M	87031	2.08	1.72	135	100	48,297.60
L	85009	4.46	1.66	425	100	314,653.00
L	85005	0.61	1.66	85	100	8,607.10
L	85010	1.81	1.66	15	100	4,506.90
L	87028	0.73	1.66	100	100	12,118.00
L	87031	1.45	1.66	145	100	34,901.50
K/L	87028	3.89	1.70	255	100	168,631.50
K/L	87031	3.65	1.70	166	100	103,003.00
K	85009	3.27	1.63	145	100	77,286.45
K	85009	2.81	1.63	155	100	70,994.65
K	85005	3.10	1.63	85	100	42,950.50
K	84008	3.93	1.63	207	100	132,602.13
K	87014	1.87	1.63	135	100	41,149.35
K	87028	2.25	1.63	255	100	93,521.25
K	87031	4.17	1.63	145	100	98,557.95
J	88004	0.94	1.61	34	100	5,145.56
J	87013	0.94	1.61	154	70	16,314.45
I	88004	7.95	1.54	34	100	41,626.20
I	87013	4.77	1.54	34	100	24,975.72
I	85009	4.90	1.54	188	100	141,864.80
I	84008	3.86	1.54	275	100	163,471.00
I	85017	5.37	1.54	24	100	19,847.52
I	87014	3.04	1.54	57	100	26,685.12
I	87012	1.51	1.54	110	100	25,579.40
H/I	87014	1.60	1.75	57	100	15,960.00
H	87015	3.33	1.66	215	100	118,847.70
H	88004	3.32	1.66	35	100	19,289.20
H	87013	1.35	1.66	243	100	54,456.30
H	85006	2.76	1.66	480	100	219,916.80
H	85006	2.76	1.66	131	85	51,016.12
H	84008	6.41	1.66	268	100	285,168.08
H	85017	4.67	1.66	30	100	23,256.60
H	86008	5.89	1.66	145	100	141,772.30
H	87019	1.98	1.66	135	100	44,371.80

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H	87012	5.31	1.66	385	100	339,362.10
H	87027	8.62	1.66	490	100	701,150.80
Ph	87013	1.36	1.79	130	100	31,647.20
Ph	87011	0.51	1.79	370	100	33,777.30
Ph	87027	0.97	1.79	590	100	102,441.70
G	84008	3.28	1.92	265	100	166,886.40
G	85017	1.01	1.92	95	100	18,422.40
G	87027	0.71	1.92	565	100	77,020.80
G lower	84007	0.89	1.85	233	100	38,363.45
G lower	85019	0.52	1.85	240	100	23,088.00
G lower	85017	0.97	1.85	95	100	17,047.75
G lower	85004	2.86	1.85	630	100	333,333.00
G lower	88019	2.25	1.85	20	50	4,162.50
G lower	88019	1.92	1.85	110	100	39,072.00
F	85006	3.10	1.72	250	100	133,300.00
F	85013	3.20	1.72	255	100	140,352.00
F	85019	4.21	1.72	240	100	173,788.80
F	84007	1.07	1.72	233	100	42,881.32
F	84007	1.07	1.72	233	100	42,881.32
E	85006	0.91	1.55	175	100	24,683.75
E	85017	2.34	1.55	227	100	82,332.90
E	84007	1.00	1.55	245	100	37,975.00
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						seams >=0.5m

TOTAL TONNES FOR THIS SECTION : 5,932,391.89

SEAM TOTALS:

O:	103,350.20
N:	34,188.00
M/N:	20,018.85
M:	527,816.40
L:	374,786.50
K/L:	271,634.50
K:	557,062.28
J:	21,460.01
I:	444,049.76
H/I:	15,960.00
H:	1,998,607.80
Ph:	167,866.20
G:	262,329.60
G lower:	455,066.70
F:	533,203.44
E:	144,991.65

	5,932,391.89

SECTION : 2700 N
RESOURCE TYPE :INDICATED

SEAM NAME	DIAMOND DRILL HOLE	SEAM THICKNESS (m)	SPECIFIC GRAVITY (t/m3)	SEAM LENGTH (m)	WIDTH INFLUENCE (m)	TOTAL TONNES SEAMS >=0.5m
O	88028	0.68	1.73	70	100	8,234.80
O	87028	1.49	1.73	225	100	57,998.25
N	85003	1.44	1.65	84	100	19,958.40
N	88028	1.11	1.65	65	100	11,904.75
N	87028	0.88	1.65	225	100	32,670.00
M/N	85003	0.56	1.85	90	100	9,324.00
M	85003	5.30	1.72	141	100	128,535.60
M	85005	2.93	1.72	10	100	5,039.60
M	87031	2.08	1.72	120	100	42,931.20
M	87028	1.48	1.72	180	100	45,820.80
M	88028	1.90	1.72	67	100	21,895.60
L	85012	1.37	1.66	15	100	3,411.30
L	82005	5.75	1.66	210	100	200,445.00
L	87031	1.45	1.66	110	100	26,477.00
L	87028	0.73	1.66	190	100	23,024.20
K/L	87031	3.65	1.70	125	100	77,562.50
K/L	87028	3.89	1.70	100	100	66,130.00
K	82005	5.16	1.63	115	100	96,724.20
K	85012	1.74	1.63	30	100	8,508.60
K	84008	3.93	1.63	139	100	89,042.01
K	87031	4.17	1.63	195	100	132,543.45
K	87028	2.25	1.63	185	100	67,848.75
K	87017	2.82	1.63	160	100	73,545.60
I	87013	4.77	1.54	80	100	58,766.40
I	88002	4.25	1.54	110	100	71,995.00
I	82005	4.98	1.54	156	100	119,639.52
I	84008	3.86	1.54	155	100	92,138.20
I	85017	5.37	1.54	15	100	12,404.70
I	87017	2.26	1.54	77	100	26,799.08
I	87014	3.04	1.54	87	100	40,729.92
H/I	87014	1.60	1.75	130	100	36,400.00
H	87015	3.33	1.66	360	100	199,000.80
H	87013	1.35	1.66	244	100	54,680.40
H	86001	2.84	1.66	592	100	279,092.48
H	85012	3.22	1.66	167	100	89,264.84
H	84008	6.41	1.66	140	100	148,968.40
H	85017	4.67	1.66	15	100	11,628.30
H	87019	1.98	1.66	155	100	50,945.40
Ph	87013	1.36	1.79	167	100	40,654.48
G	88019	2.14	1.92	50	100	20,544.00
G	85004	1.37	1.92	550	100	144,672.00
G	84008	3.28	1.92	164	100	103,280.64
G	85017	1.01	1.92	44	100	8,532.48
G	85001	0.94	1.92	540	100	97,459.20
G lower	88019	1.92	1.85	48	100	17,049.60
G lower	85004	2.86	1.85	543	100	287,301.30
G lower	85017	0.97	1.85	45	100	8,075.25
G lower	85019	0.52	1.85	167	100	16,065.40

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F/G	85019	0.51	1.86	187	100	17,738.82
F	85004	2.35	1.72	280	100	113,176.00
F	85013	3.20	1.72	278	100	153,011.20
F	85017	1.93	1.72	124	100	41,163.04
F	85019	4.21	1.72	191	100	138,306.92
E	85020	1.91	1.55	167	100	49,440.35
E	85004	2.23	1.55	190	100	65,673.50
E	85017	2.34	1.55	181	100	65,648.70
D	85020	4.74	1.75	220	100	182,490.00
C	85020	1.19	1.68	220	100	43,982.40
C	85019	0.51	1.68	367	100	31,444.56
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						seams >=0.5m

TOTAL TONNES FOR THIS SECTION : 4,187,738.89

SEAM TOTALS:

O:	66,233.05
N:	64,533.15
M/N:	9,324.00
M:	244,222.80
L:	253,357.50
K/L:	143,692.50
K:	468,212.61
I:	422,472.82
H/I:	36,400.00
H:	833,580.62
Ph:	40,654.48
G:	374,488.32
G lower:	328,491.55
F/G:	17,738.82
F:	445,657.16
E:	180,762.55
D:	182,490.00
C:	75,426.96

	4,187,738.89

SECTION : 2800 N
RESOURCE TYPE :INDICATED

SEAM NAME	DIAMOND DRILL HOLE	SEAM THICKNESS (m)	SPECIFIC GRAVITY (t/m3)	SEAM LENGTH (m)	WIDTH INFLUENCE (m)	TOTAL TONNES SEAMS >=0.5m
O	87029	0.92	1.73	40	100	6,366.40
O	88028	0.68	1.73	190	100	22,351.60
N	85003	1.44	1.65	170	100	40,392.00
N	87029	1.34	1.65	40	100	8,844.00
N	88028	1.11	1.65	190	100	34,798.50
M	85003	5.30	1.72	8	100	7,292.80
M	82005	2.24	1.72	8	100	3,082.24
M	82005	2.24	1.72	12	100	4,623.36
M	85003	5.30	1.72	12	100	10,939.20
M	87031	2.08	1.72	270	100	96,595.20
M	88028	1.90	1.72	195	100	63,726.00
M	87029	1.45	1.72	40	100	9,976.00
L	85012	1.37	1.66	145	100	32,975.90
L	82005	5.75	1.66	33	100	31,498.50
L	87031	1.45	1.66	150	100	36,105.00
K/L	87031	3.65	1.70	150	100	93,075.00
K	87033	5.32	1.63	32	100	27,749.12
K	84008	3.93	1.63	55	100	35,232.45
K	85012	1.74	1.63	95	100	26,943.90
K	82005	5.16	1.63	28	100	23,550.24
K	87017	2.82	1.63	85	100	39,071.10
K	87031	4.17	1.63	215	100	146,137.65
I	86006	5.01	1.54	15	100	11,573.10
I	84008	3.86	1.54	130	100	77,277.20
I	82005	4.98	1.54	80	100	61,353.60
I	87013	4.77	1.54	40	100	29,383.20
I	88002	4.25	1.54	95	100	62,177.50
I	87017	2.26	1.54	150	100	52,206.00
H/I2	87017	1.38	1.72	104	100	24,685.44
H/I2	87019	1.66	1.72	90	100	25,696.80
H	88001	2.81	1.66	95	100	44,313.70
H	85017	4.67	1.66	50	100	38,761.00
H	84008	6.41	1.66	45	100	47,882.70
H	85012	3.22	1.66	300	100	160,356.00
H	85004	3.96	1.66	560	100	368,121.60
H	87013	1.35	1.66	180	100	40,338.00
H	87013	1.35	1.66	175	100	39,217.50
H	87019	1.98	1.66	155	100	50,945.40
H	85001	2.15	1.66	200	100	71,380.00
Ph	85013	0.65	1.79	46	100	5,352.10
G	85017	1.01	1.92	165	100	31,996.80
G	84008	3.28	1.92	60	100	37,785.60
G	84008	3.28	1.92	155	100	97,612.80
G	85004	1.37	1.92	120	100	31,564.80
G	85001	0.94	1.92	465	100	83,923.20
G lower	85019	0.52	1.85	56	100	5,387.20
G lower	85017	0.97	1.85	165	100	29,609.25
G lower	85004	2.86	1.85	65	100	34,391.50

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F/G	85019	0.51	1.86	150	100	14,229.00
F	85019	4.21	1.72	55	100	39,826.60
F	85019	4.21	1.72	55	100	39,826.60
F	85017	1.93	1.72	195	100	64,732.20
F	85013	3.20	1.72	112	100	61,644.80
F	85013	3.20	1.72	200	100	110,080.00
F	85004	2.35	1.72	80	100	32,336.00
F	83001	4.79	1.72	33	100	27,188.04
E	85017	2.34	1.55	304	100	110,260.80
E	85004	2.23	1.55	80	100	27,652.00
E	83001	1.32	1.55	33	100	6,751.80
E	85020	1.91	1.55	485	100	143,584.25
D	85020	4.74	1.75	525	100	435,487.50
C	85019	0.51	1.68	160	100	13,708.80
C	85019	0.51	1.68	140	100	11,995.20
C	85020	1.19	1.68	525	100	104,958.00
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						seams >=0.5m

TOTAL TONNES FOR THIS SECTION : 3,608,879.74

SEAM TOTALS:

O:	28,718.00
N:	84,034.50
M:	196,234.80
L:	100,579.40
K/L:	93,075.00
K:	298,684.46
I:	293,970.60
H/I2:	50,382.24
H:	861,315.90
Ph:	5,352.10
G:	282,883.20
G lower:	69,387.95
F/G:	14,229.00
F:	375,634.24
E:	288,248.85
D:	435,487.50
C:	130,662.00

	3,608,879.74

SECTION : 2900 N
RESOURCE TYPE :INDICATED

SEAM NAME	DIAMOND DRILL HOLE	SEAM THICKNESS (m)	SPECIFIC GRAVITY (t/m3)	SEAM LENGTH (m)	WIDTH INFLUENCE (m)	TOTAL TONNES SEAMS >=0.5m
O	87029	0.92	1.73	208	100	33,105.28
N	85003	1.44	1.65	225	60	32,076.00
N	85003	1.72	1.65	75	100	21,285.00
N	87029	3.29	1.65	208	100	112,912.80
M	85003	5.30	1.72	195	90	159,985.80
M	82005	2.24	1.72	205	100	78,982.40
M	87029	1.45	1.72	66	100	16,460.40
M	87029	1.45	1.72	306	100	76,316.40
M	87031	2.08	1.72	368	100	131,655.68
L	85012	1.37	1.66	40	100	9,096.80
L	85012	1.37	1.66	15	100	3,411.30
L	82005	5.75	1.66	145	100	138,402.50
L	87031	1.45	1.66	283	100	68,118.10
L	87031	1.64	1.66	133	100	36,207.92
K/L	85012	1.49	1.70	90	100	22,797.00
K/L	85012	1.49	1.70	290	100	73,457.00
K/L	87031	3.65	1.70	435	100	269,917.50
K	82005	5.16	1.63	49	100	41,212.92
K	87017	2.82	1.63	131	100	60,215.46
K	87031	4.17	1.63	416	100	282,759.36
I	86006	5.01	1.54	40	100	30,861.60
I	85013	6.16	1.54	75	100	71,148.00
I	86005	4.78	1.54	63	100	46,375.56
I	82005	4.98	1.54	180	100	138,045.60
I	82005	4.98	1.54	30	100	23,007.60
I	88002	4.25	1.54	130	100	85,085.00
H	86006	5.89	1.66	95	100	92,885.30
H	85013	4.37	1.66	18	100	13,057.56
H	85013	4.37	1.66	18	100	13,057.56
H	85012	3.22	1.66	16	100	8,552.32
H	85012	3.22	1.66	125	100	66,815.00
H	85004	3.96	1.66	195	100	128,185.20
H	85004	3.96	1.66	365	100	239,936.40
H	87013	1.35	1.66	425	100	95,242.50
H	85001	2.15	1.66	165	100	58,888.50
Ph	85013	0.65	1.79	135	100	15,707.25
G	85004	1.37	1.92	150	100	39,456.00
G	85001	0.94	1.92	347	100	62,626.56
F/G	85019	0.51	1.86	145	100	13,754.70
F	85019	4.21	1.72	145	100	104,997.40
F	85013	3.20	1.72	300	100	165,120.00
F	85013	3.20	1.72	150	100	82,560.00
F	85004	2.35	1.72	75	100	30,315.00
F	83001	4.79	1.72	50	100	41,194.00
E	85017	2.34	1.55	60	100	21,762.00
E	85004	2.23	1.55	50	100	17,282.50
E	83001	1.32	1.55	50	100	10,230.00
E	85020	1.91	1.55	20	100	5,921.00

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D	85020	4.74	1.75	300	100	248,850.00
C	85019	0.51	1.68	275	100	23,562.00
C	85020	1.19	1.68	310	100	61,975.20
C	85019	0.51	1.68	30	100	2,570.40
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						seams >=0.5m

TOTAL TONNES FOR THIS SECTION : 3,727,403.33

SEAM TOTALS:

O:	33,105.28
N:	166,273.80
M:	463,400.68
L:	255,236.62
K/L:	366,171.50
K:	384,187.74
I:	394,523.36
H:	716,620.34
Ph:	15,707.25
G:	102,082.56
F/G:	13,754.70
F:	424,186.40
E:	55,195.50
D:	248,850.00
C:	88,107.60
	3,727,403.33

SECTION : 3000 N
RESOURCE TYPE :INDICATED

SEAM NAME	DIAMOND DRILL HOLE	SEAM THICKNESS (m)	SPECIFIC GRAVITY (t/m3)	SEAM LENGTH (m)	WIDTH INFLUENCE (m)	TOTAL TONNES SEAMS >=0.5m
O	87029	0.68	1.73	100	100	11,764.00
O	87029	0.92	1.73	220	100	35,015.20
N	87029	3.29	1.65	40	100	21,714.00
N	87029	1.02	1.65	75	100	12,622.50
N	87029	1.34	1.65	255	100	56,380.50
M	82005	2.24	1.72	165	100	63,571.20
M	87031	2.08	1.72	215	100	76,918.40
M	87029	1.45	1.72	490	100	122,206.00
L	85012	1.37	1.66	100	100	22,742.00
L	85012	1.37	1.66	160	100	36,387.20
L	82005	5.75	1.66	50	100	47,725.00
L	87031	1.45	1.66	140	100	33,698.00
L	87031	1.64	1.66	135	100	36,752.40
K/L	85012	1.49	1.70	305	100	77,256.50
K/L	87030	3.50	1.70	265	100	157,675.00
K	85012	1.74	1.63	15	100	4,254.30
K	85012	1.74	1.63	103	100	29,212.86
K	82005	5.16	1.63	295	100	248,118.60
K	87031	4.17	1.63	215	100	146,137.65
I	86005	4.78	1.54	117	100	86,126.04
I	85016	5.55	1.54	36	100	30,769.20
I	82005	4.98	1.54	150	100	115,038.00
I	85032	5.47	1.54	480	100	404,342.40
I	85001	4.38	1.54	150	100	101,178.00
H	86006	5.89	1.66	6	100	5,866.44
H	85013	4.37	1.66	7	100	5,077.94
H	85012	3.22	1.66	270	100	144,320.40
H	85004	3.96	1.66	95	100	62,449.20
H	85004	3.96	1.66	80	100	52,588.80
H	83001	4.54	1.66	350	100	263,774.00
H	83001	4.54	1.66	40	100	30,145.60
H	85001	2.15	1.66	235	100	83,871.50
Ph	85013	0.65	1.79	150	100	17,452.50
Ph	85013	0.65	1.79	20	100	2,327.00
G	85016	0.79	1.92	190	100	28,819.20
G	85004	1.37	1.92	115	100	30,249.60
G	83001	3.93	1.92	110	100	83,001.60
G	83001	3.93	1.92	57	100	43,009.92
G	88019	2.23	1.92	53	100	22,692.48
G	85001	0.94	1.92	222	100	40,066.56
G lower	85004	2.86	1.85	75	100	39,682.50
G lower	83001	2.25	1.85	65	100	27,056.25
G lower	83001	2.25	1.85	32	100	13,320.00
G lower	88019	1.56	1.85	135	100	38,961.00
F	85019	4.21	1.72	240	100	173,788.80
F	85013	3.20	1.72	160	100	88,064.00
F	85013	3.20	1.72	135	100	74,304.00
F	85016	2.13	1.72	200	100	73,272.00

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F	85004	2.35	1.72	25	100	10,105.00
F	83001	4.79	1.72	22	100	18,125.36
E	85020	1.91	1.55	145	100	42,927.25
E	85020	1.91	1.55	28	100	8,289.40
E	83001	1.32	1.55	23	100	4,705.80
E	85016	2.22	1.55	310	100	106,671.00
D	85016	2.41	1.75	300	100	126,525.00
D	85020	4.74	1.75	150	100	124,425.00
D	85020	4.74	1.75	150	100	124,425.00
C	85019	0.51	1.68	450	100	38,556.00
C	85020	1.19	1.68	355	100	70,971.60
C	85020	1.19	1.68	150	100	29,988.00
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						seams >=0.5m

TOTAL TONNES FOR THIS SECTION : 4,127,480.65

SEAM TOTALS:

O:	46,779.20
N:	90,717.00
M:	262,695.60
L:	177,304.60
K/L:	234,931.50
K:	427,723.41
I:	737,453.64
H:	648,093.88
Ph:	19,779.50
G:	247,839.36
G lower:	119,019.75
F:	437,659.16
E:	162,593.45
D:	375,375.00
C:	139,515.60
	4,127,480.65

SECTION : 3100 N
RESOURCE TYPE : INDICATED

SEAM NAME	DIAMOND DRILL HOLE	SEAM THICKNESS (m)	SPECIFIC GRAVITY (t/m3)	SEAM LENGTH (m)	WIDTH INFLUENCE (m)	TOTAL TONNES SEAMS >=0.5m
M	87030	2.23	1.72	510	100	195,615.60
L	85012	1.37	1.66	255	100	57,992.10
L	87030	1.98	1.66	505	100	165,983.40
K/L	85012	1.49	1.70	325	100	82,322.50
K/L	87030	3.50	1.70	515	100	306,425.00
K	85012	1.74	1.63	295	100	83,667.90
K	87030	3.26	1.63	490	100	260,376.20
I	85031	4.54	1.54	390	100	272,672.40
I	85030	3.98	1.54	75	100	45,969.00
I	85016	5.55	1.54	290	100	247,863.00
I	86005	4.78	1.54	5	100	3,680.60
I	86005	4.78	1.54	100	100	73,612.00
I	87030	2.87	1.54	510	100	225,409.80
I	85001	4.38	1.54	140	100	94,432.80
H	83001	4.54	1.66	450	100	339,138.00
H	85012	3.22	1.66	230	100	122,939.60
H	86005	2.94	1.66	20	100	9,760.80
H	86005	2.94	1.66	35	100	17,081.40
H	85013	4.37	1.66	65	100	47,152.30
H	85001	2.15	1.66	270	100	96,363.00
G	83001	3.93	1.92	725	100	547,056.00
G	85016	0.79	1.92	445	100	67,497.60
G	85001	0.94	1.92	300	100	54,144.00
G lower	83001	2.25	1.85	595	100	247,668.75
F	83001	4.79	1.72	135	100	111,223.80
F	85016	2.13	1.72	445	100	163,030.20
F	85013	3.20	1.72	385	100	211,904.00
F	85019	4.21	1.72	10	100	7,241.20
E	85020	1.91	1.55	265	100	78,453.25
E	83001	1.32	1.55	90	100	18,414.00
E	85016	2.22	1.55	540	100	185,814.00
D	85020	4.74	1.75	375	100	311,062.50
D	85016	2.41	1.75	540	100	227,745.00
C	85020	1.19	1.68	375	100	74,970.00
C	85019	0.51	1.68	180	100	15,422.40
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						seams >=0.5m

TOTAL TONNES FOR THIS SECTION : 5,070,104.10

SEAM TOTALS:

M:	195,615.60
L:	223,975.50
K/L:	388,747.50

cont. next page

K:	344,044.10
I:	963,639.60
H:	632,435.10
G:	668,697.60
G lower:	247,668.75
F:	493,399.20
E:	282,681.25
D:	538,807.50
C:	90,392.40
	5,070,104.10

SECTION : 3200 N
RESOURCE TYPE :INDICATED

SEAM NAME	DIAMOND DRILL HOLE	SEAM THICKNESS (m)	SPECIFIC GRAVITY (t/m3)	SEAM LENGTH (m)	WIDTH INFLUENCE (m)	TOTAL TONNES SEAMS >=0.5m
M	87030	2.23	1.72	180	100	69,040.80
M	87030	2.23	1.72	100	100	38,356.00
L	85012	1.37	1.66	163	100	37,069.46
L	87030	1.98	1.66	230	100	75,596.40
L	87030	1.98	1.66	115	100	37,798.20
K/L	87030	3.50	1.70	178	100	105,910.00
K/L	87030	3.50	1.70	190	100	113,050.00
K	85012	1.74	1.63	240	100	68,068.80
K	87030	3.26	1.63	105	100	55,794.90
K	87030	3.26	1.63	340	100	180,669.20
I	85016	5.55	1.54	135	100	115,384.50
I	85031	4.54	1.54	370	100	258,689.20
I	87030	2.87	1.54	260	100	114,914.80
I	87030	2.87	1.54	120	100	53,037.60
H	85016	6.75	1.66	150	100	168,075.00
H	83001	4.54	1.66	280	100	211,019.20
Ph	85013	0.65	1.79	70	100	8,144.50
G	85016	0.79	1.92	130	100	19,718.40
G	85016	0.79	1.92	150	100	22,752.00
G	85015	3.43	1.92	540	100	355,622.40
G	85001	0.94	1.92	70	100	12,633.60
F	85013	3.20	1.72	140	100	77,056.00
F	85016	2.13	1.72	145	100	53,122.20
F	85016	2.13	1.72	165	100	60,449.40
F	85015	2.73	1.72	275	60	77,477.40
F	85015	2.73	1.72	600	100	281,736.00
E	85016	2.22	1.55	155	100	53,335.50
E	85016	2.22	1.55	160	100	55,056.00
E	85015	0.95	1.55	725	100	106,756.25
E	85020	1.91	1.55	145	100	42,927.25
D	85016	2.41	1.75	150	100	63,262.50
D	85016	2.41	1.75	160	100	67,480.00
D	85020	4.74	1.75	430	100	356,685.00
C	85020	1.19	1.68	427	100	85,365.84
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						seams >=0.5m

TOTAL TONNES FOR THIS SECTION : 3,502,054.30

SEAM TOTALS:

M:	107,396.80
L:	150,464.06
K/L:	218,960.00
K:	304,532.90

cont. next page

I:	542,026.10
H:	379,094.20
Ph:	8,144.50
G:	410,726.40
F:	549,841.00
E:	258,075.00
D:	487,427.50
C:	85,365.84
	3,502,054.30

SECTION : 3300 N
RESOURCE TYPE :INDICATED

SEAM NAME	DIAMOND DRILL HOLE	SEAM THICKNESS (m)	SPECIFIC GRAVITY (t/m3)	SEAM LENGTH (m)	WIDTH INFLUENCE (m)	TOTAL TONNES SEAMS >=0.5m
M	87030	2.23	1.72	165	100	63,287.40
M	87030	2.23	1.72	45	100	17,260.20
L	87030	1.98	1.66	60	100	19,720.80
L	87030	1.98	1.66	145	100	47,658.60
K/L	87030	3.50	1.70	237	100	141,015.00
K/L	87030	3.50	1.70	140	100	83,300.00
K	87030	3.26	1.63	30	100	15,941.40
K	87030	3.26	1.63	74	100	39,322.12
K	87030	3.26	1.63	235	100	124,874.30
I	87032	5.59	1.54	85	100	73,173.10
I	85014	5.46	1.54	495	100	416,215.80
I	87030	2.87	1.54	150	100	66,297.00
H	86005	2.94	1.66	55	100	26,842.20
H	86003	3.35	1.66	50	100	27,805.00
H	85016	6.75	1.66	80	100	89,640.00
H	85014	2.09	1.66	240	100	83,265.60
G	85016	0.79	1.92	295	100	44,745.60
G	85015	3.43	1.92	145	100	95,491.20
G	85015	3.43	1.92	30	100	19,756.80
F	85016	2.13	1.72	200	100	73,272.00
F	85014	2.71	1.72	175	100	81,571.00
F	85015	2.73	1.72	100	100	46,956.00
E	85016	2.22	1.55	300	100	103,230.00
E	85015	0.95	1.55	145	100	21,351.25
D	85016	2.41	1.75	305	100	128,633.75
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						seams >=0.5m

TOTAL TONNES FOR THIS SECTION : 1,950,626.12

SEAM TOTALS:

M:	80,547.60
L:	67,379.40
K/L:	224,315.00
K:	180,137.82
I:	555,685.90
H:	227,552.80
G:	159,993.60
F:	201,799.00
E:	124,581.25
D:	128,633.75
	1,950,626.12

SECTION : 3400 N
RESOURCE TYPE :INDICATED

SEAM NAME	DIAMOND DRILL HOLE	SEAM THICKNESS (m)	SPECIFIC GRAVITY (t/m3)	SEAM LENGTH (m)	WIDTH INFLUENCE (m)	TOTAL TONNES SEAMS >=0.5m
I	85014	5.46	1.54	350	100	294,294.00
H	85014	2.09	1.66	445	100	154,388.30
H	86003	3.35	1.66	25	100	13,902.50
G	85015	3.43	1.92	155	100	102,076.80
G	85016	0.79	1.92	440	100	66,739.20
F	85015	2.73	1.72	55	100	25,825.80
F	85014	2.71	1.72	110	100	51,273.20
F	85016	2.13	1.72	280	100	102,580.80
E	85015	0.95	1.55	155	100	22,823.75
E	85016	2.22	1.55	440	100	151,404.00
D	85018	1.89	1.75	80	100	26,460.00
D	85016	2.41	1.75	440	100	185,570.00
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						seams >=0.5m

TOTAL TONNES FOR THIS SECTION : 1,197,338.35

SEAM TOTALS:

I:	294,294.00
H:	168,290.80
G:	168,816.00
F:	179,679.80
E:	174,227.75
D:	212,030.00
	1,197,338.35

SECTION : 3500 N
RESOURCE TYPE :INDICATED

SEAM NAME	DIAMOND DRILL HOLE	SEAM THICKNESS (m)	SPECIFIC GRAVITY (t/m3)	SEAM LENGTH (m)	WIDTH INFLUENCE (m)	TOTAL TONNES SEAMS >=0.5m
I	85014	5.46	1.54	350	100	294,294.00
H	85014	2.09	1.66	145	100	50,306.30
G	85015	3.43	1.92	320	100	210,739.20
F	85015	2.73	1.72	153	100	71,842.68
F	85014	2.71	1.72	80	100	37,289.60
F	85014	2.71	1.72	66	100	30,763.92
F	85021	3.43	1.72	250	100	147,490.00
E	85015	0.95	1.55	200	100	29,450.00
E	85021	1.81	1.55	248	100	69,576.40
D	85016	2.41	1.75	150	100	63,262.50
D	85018	1.89	1.75	430	100	142,222.50
						seams >=0.5m

TOTAL TONNES FOR THIS SECTION : 1,147,237.10

SEAM TOTALS:

I:	294,294.00
H:	50,306.30
G:	210,739.20
F:	287,386.20
E:	99,026.40
D:	205,485.00
	1,147,237.10

SECTION : 3600 N
RESOURCE TYPE : INDICATED

SEAM NAME	DIAMOND DRILL HOLE	SEAM THICKNESS (m)	SPECIFIC GRAVITY (t/m3)	SEAM LENGTH (m)	WIDTH INFLUENCE (m)	TOTAL TONNES SEAMS >=0.5m
I	85014	5.46	1.54	250	100	210,210.00
H	85014	2.09	1.66	190	100	65,918.60
H	85021	5.55	1.66	45	100	41,458.50
G	85015	3.43	1.92	300	100	197,568.00
F	85015	2.73	1.72	325	100	152,607.00
F	85014	2.71	1.72	150	100	69,918.00
F	85021	3.43	1.72	195	100	115,042.20
E	85015	0.95	1.55	415	100	61,108.75
E	85021	1.81	1.55	200	100	56,110.00
D	85018	1.89	1.75	290	100	95,917.50
						seams >=0.5m

TOTAL TONNES FOR THIS SECTION : 1,065,858.55

SEAM TOTALS:

I:	210,210.00
H:	107,377.10
G:	197,568.00
F:	337,567.20
E:	117,218.75
D:	95,917.50
	1,065,858.55

SECTION : 3700 N
RESOURCE TYPE : INDICATED

SEAM NAME	DIAMOND DRILL HOLE	SEAM THICKNESS (m)	SPECIFIC GRAVITY (t/m3)	SEAM LENGTH (m)	WIDTH INFLUENCE (m)	TOTAL TONNES SEAMS >=0.5m
I	85018	2.61	1.54	180	100	72,349.20
I	85021	1.61	1.54	20	100	4,958.80
H	85018	3.63	1.66	150	100	90,387.00
H	85021	5.55	1.66	75	100	69,097.50
H	85021	5.55	1.66	10	100	9,213.00
F	85018	6.02	1.72	150	100	155,316.00
F	85021	3.43	1.72	153	100	90,263.88
E	85021	1.81	1.55	150	100	42,082.50
D	85018	1.89	1.75	154	100	50,935.50
D	85018	1.89	1.75	165	100	54,573.75
...	...	...	...	...	...	...
						seams >=0.5m

TOTAL TONNES FOR THIS SECTION : 639,177.13

SEAM TOTALS:

I:	77,308.00
H:	168,697.50
F:	245,579.88
E:	42,082.50
D:	105,509.25
	639,177.13

SECTION : 3800 N
RESOURCE TYPE :INDICATED

SEAM NAME	DIAMOND DRILL HOLE	SEAM THICKNESS (m)	SPECIFIC GRAVITY (t/m3)	SEAM LENGTH (m)	WIDTH INFLUENCE (m)	TOTAL TONNES SEAMS >=0.5m
I	85018	2.61	1.54	165	55	36,476.06
I	85021	1.61	1.54	10	55	1,363.67
H	85018	3.63	1.66	235	100	141,606.30
H	85021	5.55	1.66	135	100	124,375.50
H	85021	5.55	1.66	37	65	22,157.27
F	85018	6.02	1.72	240	100	248,505.60
F	85021	3.43	1.72	163	100	96,163.48
E	85021	1.81	1.55	163	100	45,729.65
D	85018	1.89	1.75	432	100	142,884.00
						seams >=0.5m

TOTAL TONNES FOR THIS SECTION : 859,261.52

SEAM TOTALS:

I:	37,839.73
H:	288,139.07
F:	344,669.08
E:	45,729.65
D:	142,884.00
	859,261.52

SECTION : 3900 N
RESOURCE TYPE :INDICATED

SEAM NAME	DIAMOND DRILL HOLE	SEAM THICKNESS (m)	SPECIFIC GRAVITY (t/m3)	SEAM LENGTH (m)	WIDTH INFLUENCE (m)	TOTAL TONNES SEAMS >=0.5m
F	85021	3.43	1.72	410	100	241,883.60
F	85018	6.02	1.72	215	100	222,619.60
E	85021	1.81	1.55	410	100	115,025.50
D	85018	1.89	1.75	355	100	117,416.25
						seams >=0.5m

TOTAL TONNES FOR THIS SECTION : 696,944.95

SEAM TOTALS:

F:	464,503.20
E:	115,025.50
D:	117,416.25
	696,944.95

SECTION : 4000 N
RESOURCE TYPE :INDICATED

SEAM NAME	DIAMOND DRILL HOLE	SEAM THICKNESS (m)	SPECIFIC GRAVITY (t/m3)	SEAM LENGTH (m)	WIDTH INFLUENCE (m)	TOTAL TONNES SEAMS >=0.5m
F	85021	3.43	1.72	110	55	35,692.58
E	85021	1.81	1.55	213	100	59,757.15
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						seams >=0.5m

TOTAL TONNES FOR THIS SECTION : 95,449.73

SEAM TOTALS:

F:	35,692.58
E:	59,757.15
	95,449.73

LOST FOX AREA : RESOURCE CALCULATIONS - February 1989

SECTION : 1000 N
RESOURCE TYPE : INFERRED

SEAM NAME	DIAMOND DRILL HOLE	SEAM THICKNESS (m)	SPECIFIC GRAVITY (t/m3)	SEAM LENGTH (m)	WIDTH INFLUENCE (m)	TOTAL TONNES SEAMS >=0.5m
P	88024	1.82	1.55	700	100	197,470.00
P	88023	1.84	1.55	325	100	92,690.00
O	86037	2.50	1.73	85	100	36,762.50
O	86037	2.50	1.73	115	100	49,737.50
O	85027	1.51	1.73	155	100	40,490.65
O	85027	1.51	1.73	275	100	71,838.25
O	88023	1.55	1.73	20	100	5,363.00
O	87022	2.48	1.73	30	100	12,871.20
O	87022	2.48	1.73	400	95	163,035.20
N	85027	2.17	1.65	400	100	143,220.00
N	88029	1.65	1.65	385	95	99,575.44
M/N	85027	1.15	1.85	310	100	65,952.50
M	86022	1.52	1.72	180	100	47,059.20
M	85027	1.20	1.72	125	100	25,800.00
M	85027	1.20	1.72	50	100	10,320.00
M	88010	4.12	1.72	570	100	403,924.80
M	88029	11.13	1.72	400	100	765,744.00
M	86033	3.55	1.72	550	100	335,830.00
M	86033	3.55	1.72	153	100	93,421.80
L	86033	3.45	1.66	135	100	77,314.50
L	86035	3.35	1.66	93	100	51,717.30
L	86037	2.34	1.66	110	100	42,728.40
L	86022	2.39	1.66	40	100	15,869.60
L	85027	1.62	1.66	125	100	33,615.00
L	85027	1.62	1.66	55	100	14,790.60
L	88010	2.85	1.66	560	100	264,936.00
L	88029	2.69	1.66	110	100	49,119.40
K/L	86037	0.66	1.70	105	100	11,781.00
K/L	86037	0.66	1.70	40	100	4,488.00
K/L	85022	4.30	1.70	125	100	91,375.00
K/L	85027	3.22	1.70	50	100	27,370.00
K/L	88010	4.80	1.70	580	100	473,280.00
K/L	88029	4.27	1.70	125	100	90,737.50
K/L	88026	1.51	1.70	390	100	100,113.00
K/L	88026	1.51	1.70	70	100	17,969.00
K/L	88026	1.51	1.70	15	100	3,850.50
K/L	86033	2.11	1.70	135	100	48,424.50
K/L	86035	1.42	1.70	145	100	35,003.00
K	88026	1.00	1.63	15	100	2,445.00
K	86033	5.03	1.63	135	100	110,685.15
K	86035	8.35	1.63	430	100	585,251.50
K	88009	1.57	1.63	380	100	97,245.80
K	86022	1.92	1.63	170	100	53,203.20
K	85027	1.08	1.63	160	100	28,166.40
K	85027	1.08	1.63	55	100	9,682.20
K	88010	2.13	1.63	625	100	216,993.75

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K	88013	4.25	1.63	35	100	24,246.25
K	88026	1.00	1.63	425	100	69,275.00
K	88026	1.00	1.63	65	100	10,595.00
J	88013	0.50	1.61	35	100	2,817.50
J	88026	1.56	1.61	410	100	102,975.60
J	88026	1.56	1.61	65	100	16,325.40
J	88026	1.56	1.61	93	100	23,357.88
I	88026	4.80	1.54	93	100	68,745.60
I	86035	1.23	1.54	458	100	86,754.36
I	88009	4.40	1.54	390	100	264,264.00
I	86022	1.14	1.54	175	100	30,723.00
I	85027	5.03	1.54	160	100	123,939.20
I	85027	5.03	1.54	55	100	42,604.10
I	88010	3.66	1.54	700	100	394,548.00
I	88013	4.33	1.54	35	100	23,338.70
I	88026	4.80	1.54	400	100	295,680.00
I	88026	4.80	1.54	65	100	48,048.00
H	88009	2.11	1.66	450	100	157,617.00
H	85027	2.25	1.66	220	100	82,170.00
H	85027	2.25	1.66	60	100	22,410.00
H	88010	4.24	1.66	700	100	492,688.00
H	88013	4.86	1.66	650	100	524,394.00
H	88011	3.94	1.66	210	100	137,348.40
H	86035	1.16	1.66	553	100	106,485.68
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						seams >=0.5m

TOTAL TONNES FOR THIS SECTION : 8,370,612.01

SEAM TOTALS:

P:	290,160.00
O:	380,098.30
N:	242,795.44
M/N:	65,952.50
M:	1,682,099.80
L:	550,090.80
K/L:	904,391.50
K:	1,207,789.25
J:	145,476.38
I:	1,378,644.96
H:	1,523,113.08
	8,370,612.01

SECTION : 1100 N
RESOURCE TYPE : INFERRED

SEAM NAME	DIAMOND DRILL HOLE	SEAM THICKNESS (m)	SPECIFIC GRAVITY (t/m3)	SEAM LENGTH (m)	WIDTH INFLUENCE (m)	TOTAL TONNES SEAMS >=0.5m
P	88024	1.82	1.55	640	100	180,544.00
P	88023	1.84	1.55	190	100	54,188.00
O	86037	2.50	1.73	180	100	77,850.00
O	86037	2.50	1.73	160	100	69,200.00
O	85027	1.51	1.73	115	100	30,041.45
O	85027	1.51	1.73	25	100	6,530.75
O	87022	2.48	1.73	164	100	70,362.56
N	85027	2.17	1.65	115	100	41,175.75
N	85027	2.17	1.65	70	100	25,063.50
N	88029	1.65	1.65	80	100	21,780.00
M/N	85027	1.15	1.85	795	100	169,136.25
M/N	85027	1.15	1.85	240	100	51,060.00
M	86025	0.92	1.72	145	100	22,944.80
M	86022	1.52	1.72	110	100	28,758.40
M	88010	4.12	1.72	200	100	141,728.00
M	88029	11.13	1.72	270	95	491,033.34
M	86033	3.55	1.72	120	70	51,290.40
L	86037	2.34	1.66	80	100	31,075.20
L	86037	2.34	1.66	90	100	34,959.60
L	88009	0.86	1.66	20	100	2,855.20
L	86022	2.39	1.66	115	100	45,625.10
L	88010	2.85	1.66	340	100	160,854.00
L	88029	2.69	1.66	210	100	93,773.40
L	88013	2.60	1.66	40	100	17,264.00
K/L	86037	0.66	1.70	60	100	6,732.00
K/L	86037	0.66	1.70	90	100	10,098.00
K/L	88009	3.98	1.70	20	100	13,532.00
K/L	88022	4.30	1.70	115	100	84,065.00
K/L	88010	4.80	1.70	150	100	122,400.00
K	86025	1.05	1.63	140	100	23,961.00
K	88009	1.57	1.63	380	100	97,245.80
K	86022	1.92	1.63	110	100	34,425.60
K	88010	2.13	1.63	440	100	152,763.60
K	88013	4.25	1.63	180	100	124,695.00
K	88026	1.00	1.63	195	100	31,785.00
K	86035	8.35	1.63	30	100	40,831.50
J	88026	1.56	1.61	61	100	15,320.76
J	88013	0.50	1.61	195	100	15,697.50
J	88026	1.56	1.61	190	100	47,720.40
I	86025	4.74	1.54	125	100	91,245.00
I	88009	4.40	1.54	390	100	264,264.00
I	88022	1.14	1.54	110	100	19,311.60
I	88010	3.66	1.54	480	100	270,547.20
I	88013	4.33	1.54	175	100	116,693.50
I	88026	4.80	1.54	190	100	140,448.00
I	86035	1.23	1.54	236	100	44,703.12
I	88026	4.80	1.54	61	100	45,091.20
I	87004	3.82	1.54	76	100	44,709.28

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H	88011	3.94	1.66	57	100	37,280.28
H	86035	1.16	1.66	276	100	53,146.56
H	87004	1.90	1.66	59	100	18,608.60
H	88009	2.11	1.66	610	100	213,658.60
H	85027	2.25	1.66	55	100	20,542.50
H	88010	4.24	1.66	400	100	281,536.00
H	88013	4.86	1.66	720	100	580,867.20
H	88011	3.94	1.66	190	100	124,267.60
Ph	87004	1.42	1.79	650	100	165,217.00
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						seams >=0.5m

TOTAL TONNES FOR THIS SECTION : 5,272,504.10

SEAM TOTALS:

P:	234,732.00
O:	253,984.76
N:	88,019.25
M/N:	220,196.25
M:	735,754.94
L:	386,406.50
K/L:	236,827.00
K:	505,707.50
J:	78,738.66
I:	1,037,012.90
H:	1,329,907.34
Ph:	165,217.00

	5,272,504.10

SECTION : 1200 N
RESOURCE TYPE : INFERRED

SEAM NAME	DIAMOND DRILL HOLE	SEAM THICKNESS (m)	SPECIFIC GRAVITY (t/m3)	SEAM LENGTH (m)	WIDTH INFLUENCE (m)	TOTAL TONNES SEAMS >=0.5m
P	88024	1.82	1.55	100	100	28,210.00
P	88024	1.82	1.55	360	100	101,556.00
P	88024	1.82	1.55	85	75	17,983.88
P	88023	1.84	1.55	55	100	15,686.00
O	88022	0.92	1.73	170	100	27,057.20
O	86037	2.50	1.73	880	100	380,600.00
O	85027	1.51	1.73	150	100	39,184.50
O	87022	2.48	1.73	65	100	27,887.60
N	85027	2.17	1.65	150	100	53,707.50
M/N	85027	1.15	1.85	490	100	104,247.50
M	86025	0.92	1.72	430	100	68,043.20
M	88010	4.12	1.72	95	95	63,954.76
M	88029	11.13	1.72	170	100	325,441.20
M	86033	3.55	1.72	90	80	43,963.20
L	86037	2.34	1.66	310	100	120,416.40
L	88009	0.86	1.66	100	100	14,276.00
L	88010	2.85	1.66	195	100	92,254.50
L	88029	2.69	1.66	310	100	138,427.40
L	88013	2.60	1.66	130	100	56,108.00
K/L	86037	0.66	1.70	345	100	38,709.00
K/L	88009	3.98	1.70	90	100	60,894.00
K/L	88010	4.80	1.70	40	100	32,640.00
K	86025	1.05	1.63	215	100	36,797.25
K	88009	1.57	1.63	210	100	53,741.10
K	88010	2.13	1.63	340	100	118,044.60
K	88013	4.25	1.63	340	100	235,535.00
K	88026	1.00	1.63	15	100	2,445.00
K	86036	1.86	1.63	20	100	6,063.60
J	86036	0.99	1.61	143	100	22,792.77
J	88011	0.66	1.61	40	100	4,250.40
J	88013	0.50	1.61	345	100	27,772.50
J	88026	1.56	1.61	15	100	3,767.40
I	86025	4.74	1.54	235	100	171,540.60
I	88009	4.40	1.54	205	100	138,908.00
I	88010	3.66	1.54	280	100	157,819.20
I	88013	4.33	1.54	345	100	230,052.90
I	88026	4.80	1.54	10	100	7,392.00
I	88011	4.89	1.54	40	100	30,122.40
I	86035	1.23	1.54	96	100	18,184.32
I	87004	3.82	1.54	194	100	114,126.32
H	88011	3.94	1.66	40	100	26,161.60
H	86035	1.16	1.66	96	100	18,485.76
H	87004	1.90	1.66	185	100	58,349.00
H	88009	2.11	1.66	15	100	5,253.90
H	88010	4.24	1.66	275	100	193,556.00
H	88013	4.86	1.66	370	100	298,501.20
H	88013	4.86	1.66	165	100	133,115.40
H	88011	3.94	1.66	90	100	58,863.60

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Ph	87004	1.42	1.79	650	100	165,217.00
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						seams >=0.5m

TOTAL TONNES FOR THIS SECTION : 4,188,106.66

SEAM TOTALS:

P:	163,435.88
O:	474,729.30
N:	53,707.50
M/N:	104,247.50
M:	501,402.36
L:	421,482.30
K/L:	132,243.00
K:	452,626.55
J:	58,583.07
I:	868,145.74
H:	792,286.46
Ph:	165,217.00
	4,188,106.66

SECTION : 1300 N
RESOURCE TYPE : INFERRED

SEAM NAME	DIAMOND DRILL HOLE	SEAM THICKNESS (m)	SPECIFIC GRAVITY (t/m3)	SEAM LENGTH (m)	WIDTH INFLUENCE (m)	TOTAL TONNES SEAMS >=0.5m
O	86037	2.50	1.73	370	100	160,025.00
O	85027	1.51	1.73	210	100	54,858.30
N	85027	2.17	1.65	190	100	68,029.50
M/N	85027	1.15	1.85	730	100	155,307.50
M	86025	0.92	1.72	460	100	72,790.40
M	88029	11.13	1.72	150	65	186,650.10
L	86025	1.85	1.66	460	100	141,266.00
L	88009	0.86	1.66	50	100	7,138.00
L	88010	2.85	1.66	100	100	47,310.00
L	88029	2.69	1.66	280	100	125,031.20
K/L	88009	3.98	1.70	160	100	108,256.00
K/L	88010	4.80	1.70	295	100	240,720.00
K/L	88029	4.27	1.70	120	100	87,108.00
K	86025	1.05	1.63	180	100	30,807.00
K	88009	1.57	1.63	50	100	12,795.50
K	88010	2.13	1.63	295	100	102,421.05
K	88013	4.25	1.63	280	100	193,970.00
J	88013	0.50	1.61	260	100	20,930.00
J	86036	0.99	1.61	107	100	17,054.73
I	86025	4.74	1.54	200	100	145,992.00
I	88009	4.40	1.54	50	100	33,880.00
I	88010	3.66	1.54	240	100	135,273.60
I	88013	4.33	1.54	260	100	173,373.20
H	88010	4.24	1.66	240	100	168,921.60
H	88013	4.86	1.66	255	100	205,723.80
Ph	87004	1.42	1.79	366	100	93,029.88
						seams >=0.5m

TOTAL TONNES FOR THIS SECTION : 2,788,662.36

SEAM TOTALS:

O:	214,883.30
N:	68,029.50
M/N:	155,307.50
M:	259,440.50
L:	320,745.20
K/L:	436,084.00
K:	339,993.55
J:	37,984.73
I:	488,518.80
H:	374,645.40
Ph:	93,029.88
	2,788,662.36

SECTION : 1400 N
RESOURCE TYPE : INFERRED

SEAM NAME	DIAMOND DRILL HOLE	SEAM THICKNESS (m)	SPECIFIC GRAVITY (t/m3)	SEAM LENGTH (m)	WIDTH INFLUENCE (m)	TOTAL TONNES SEAMS >=0.5m
P	88024	1.82	1.55	735	100	207,343.50
O	86037	2.50	1.73	151	100	65,307.50
O	88022	0.92	1.73	550	100	87,538.00
M/N	85027	1.15	1.85	432	100	91,908.00
M	86025	0.92	1.72	345	100	54,592.80
M	88003	4.57	1.72	400	100	314,416.00
L	88029	2.69	1.66	30	100	13,396.20
L	88010	2.85	1.66	46	100	21,762.60
L	86025	1.85	1.66	200	100	61,420.00
K/L	88009	3.98	1.70	180	100	121,788.00
K	88013	4.25	1.63	262	100	181,500.50
K	88010	2.13	1.63	277	100	96,171.63
K	86025	1.05	1.63	70	100	11,980.50
J	88013	0.50	1.61	262	100	21,091.00
J	86036	0.99	1.61	70	100	11,157.30
I	88013	4.33	1.54	262	100	174,706.84
I	88010	3.66	1.54	252	100	142,037.28
H	88013	4.86	1.66	258	100	208,144.08
H	88010	4.24	1.66	247	100	173,848.48
Ph	87004	1.42	1.79	200	100	50,836.00
						seams >=0.5m

TOTAL TONNES FOR THIS SECTION : 2,110,946.21

SEAM TOTALS:

P:	207,343.50
O:	152,845.50
M/N:	91,908.00
M:	369,008.80
L:	96,578.80
K/L:	121,788.00
K:	289,652.63
J:	32,248.30
I:	316,744.12
H:	381,992.56
Ph:	50,836.00
	2,110,946.21

SECTION : 1500 N
RESOURCE TYPE : INFERRED

SEAM NAME	DIAMOND DRILL HOLE	SEAM THICKNESS (m)	SPECIFIC GRAVITY (t/m3)	SEAM LENGTH (m)	WIDTH INFLUENCE (m)	TOTAL TONNES SEAMS >=0.5m
P	88024	1.82	1.55	885	100	249,658.50
O	88022	0.92	1.73	885	100	140,856.60
O	86037	2.50	1.73	55	100	23,787.50
M/N	86019	1.17	1.85	315	100	68,181.75
M	86025	0.92	1.72	170	100	26,900.80
M	88003	4.57	1.72	240	100	188,649.60
M	87026	1.25	1.72	57	100	12,255.00
L	87026	0.85	1.66	105	100	14,815.50
L	86025	1.85	1.66	170	100	52,207.00
L	88003	2.36	1.66	210	100	82,269.60
K/L	88009	3.98	1.70	175	100	118,405.00
K/L	86027	5.80	1.70	123	100	121,278.00
K/L	88003	6.11	1.70	125	100	129,837.50
K/L	87005	4.43	1.70	165	100	124,261.50
K	86036	1.86	1.66	219	100	67,618.44
K	88013	4.25	1.63	225	100	155,868.75
K	86014	2.58	1.63	95	85	33,958.61
K	88010	2.13	1.63	170	85	50,168.96
K	86025	1.05	1.63	50	100	8,557.50
J	88013	0.50	1.61	228	100	18,354.00
J	86036	0.99	1.61	321	100	51,164.19
I	87004	3.82	1.54	94	100	55,298.32
I	88013	4.33	1.54	265	100	176,707.30
I	88010	3.66	1.54	265	100	149,364.60
I	85026	5.68	1.54	25	100	21,868.00
H/I	87004	1.31	1.75	95	100	21,778.75
H	88011	1.94	1.66	20	100	6,440.80
H	86036	2.17	1.66	20	100	7,204.40
H	87004	1.90	1.66	95	100	29,963.00
H	88013	4.86	1.66	270	100	217,825.20
H	88010	4.24	1.66	275	100	193,556.00
H	85026	3.43	1.66	24	100	13,665.12
Ph	87004	1.42	1.79	197	100	50,073.46
G	87027	0.71	1.92	315	100	42,940.80
F	84007	1.07	1.72	578	100	106,375.12
F	85008	0.66	1.72	175	100	19,866.00
F	84007	1.07	1.72	500	100	92,020.00
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						seams >=0.5m

TOTAL TONNES FOR THIS SECTION : 2,944,001.16

SEAM TOTALS:

P:	249,658.50
O:	164,644.10

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M/N:	68,181.75
M:	227,805.40
L:	149,292.10
K/L:	493,782.00
K:	316,172.25
J:	69,518.19
I:	403,238.22
H/I:	21,778.75
H:	468,654.52
Ph:	50,073.46
G:	42,940.80
F:	218,261.12
	2,944,001.16

SECTION : 1600 N
RESOURCE TYPE : INFERRED

SEAM NAME	DIAMOND DRILL HOLE	SEAM THICKNESS (m)	SPECIFIC GRAVITY (t/m3)	SEAM LENGTH (m)	WIDTH INFLUENCE (m)	TOTAL TONNES SEAMS >=0.5m
P	88023	1.84	1.55	80	100	22,816.00
P	88024	1.82	1.55	625	100	176,312.50
P	88024	1.82	1.55	75	90	19,041.75
O	88022	0.92	1.73	400	100	63,664.00
O	88022	0.92	1.73	407	100	64,778.12
M/N	86019	1.17	1.85	280	100	60,606.00
M	88003	4.57	1.72	1105	100	868,574.20
M	86025	0.92	1.72	100	100	15,824.00
M	87026	1.25	1.72	30	100	6,450.00
L	88003	2.36	1.66	295	100	115,569.20
L	86025	1.85	1.66	100	100	30,710.00
L	87026	0.85	1.66	90	100	12,699.00
K/L	87005	4.43	1.70	150	100	112,965.00
K	88003	3.10	1.63	293	100	148,052.90
K	86025	1.05	1.63	100	100	17,115.00
K	88010	2.13	1.63	85	100	29,511.15
K	86014	2.58	1.63	214	100	89,995.56
K	86014	2.58	1.63	35	100	14,718.90
K	88013	4.25	1.63	166	100	114,996.50
K	86036	1.86	1.63	94	100	28,498.92
K	87005	8.06	1.63	100	100	131,378.00
J	88013	0.50	1.61	245	100	19,722.50
J	86036	0.99	1.61	165	100	26,299.35
I	88005	5.65	1.54	106	100	92,230.60
I	86025	2.90	1.54	280	100	125,048.00
I	85026	5.68	1.54	288	100	251,919.36
I	88018	4.10	1.54	90	100	56,826.00
I	88013	4.33	1.54	217	100	144,699.94
I	87006	1.83	1.54	55	100	15,500.10
H/I	86036	1.33	1.75	123	100	28,628.25
H/I	87006	2.25	1.75	55	100	21,656.25
H	85028	4.08	1.66	505	100	342,026.40
H	88009	2.11	1.66	85	100	29,772.10
H	85026	3.43	1.66	288	100	163,981.44
H	88018	1.86	1.66	90	100	27,788.40
H	88013	4.86	1.66	217	100	175,066.92
H	87006	1.28	1.66	55	100	11,686.40
Ph	87004	1.42	1.79	155	100	39,397.90
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						seams >=0.5m

TOTAL TONNES FOR THIS SECTION : 3,716,526.61

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SEAM TOTALS:

P:	218,170.25
O:	128,442.12
M/N:	60,606.00
M:	890,848.20
L:	158,978.20
K/L:	112,965.00
K:	574,266.93
J:	46,021.85
I:	686,224.00
H/I:	50,284.50
H:	750,321.66
Ph:	39,397.90
	3,716,526.61

SECTION : 1700 N
RESOURCE TYPE : INFERRED

SEAM NAME	DIAMOND DRILL HOLE	SEAM THICKNESS (m)	SPECIFIC GRAVITY (t/m3)	SEAM LENGTH (m)	WIDTH INFLUENCE (m)	TOTAL TONNES SEAMS >=0.5m
P	88024	1.82	1.55	495	90	125,675.55
P	88023	1.84	1.55	109	100	31,086.80
O	88022	0.92	1.73	55	100	8,753.80
O	88022	0.92	1.73	395	100	62,868.20
N	86019	2.17	1.65	45	100	16,112.25
M/N	86019	1.17	1.85	240	100	51,948.00
M	88003	4.57	1.72	657	100	516,428.28
	86025	0.92	1.72	35	100	5,538.40
L	88003	2.36	1.66	1.37	100	536.71
L	86025	1.85	1.66	33	100	10,134.30
L	87026	0.85	1.66	130	100	18,343.00
K/L	87005	4.43	1.70	271	100	204,090.10
K/L	88003	6.11	1.70	175	100	181,772.50
K/L	86027	5.80	1.70	93	100	91,698.00
K/L	86027	5.80	1.70	13	100	12,818.00
K/L	88009	3.98	1.70	5	100	3,383.00
K	88003	3.10	1.63	128	100	64,678.40
K	86025	1.05	1.63	32	100	5,476.80
K	88010	2.13	1.63	190	100	65,966.10
K	88006	2.11	1.63	16	100	5,502.88
K	86014	2.58	1.63	20	100	8,410.80
K	86014	2.58	1.63	220	100	92,518.80
K	88013	4.25	1.63	75	100	51,956.25
K	87005	8.06	1.63	402	100	528,139.56
J	88018	0.56	1.61	215	100	19,384.40
I	87006	1.83	1.54	258	100	72,709.56
I	88005	5.65	1.54	190	100	165,319.00
I	86025	2.90	1.54	205	100	91,553.00
I	85026	5.68	1.54	275	100	240,548.00
I	88018	4.10	1.54	290	100	183,106.00
H	85028	4.08	1.66	211	100	142,906.08
H	85026	3.43	1.66	260	100	148,038.80
H	88018	1.86	1.66	295	100	91,084.20
Ph	87004	1.42	1.79	608	100	154,541.44
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						seams >=0.5m

TOTAL TONNES FOR THIS SECTION : 3,473,026.96

SEAM TOTALS:

P:	156,762.35
O:	71,622.00
N:	16,112.25
M/N:	51,948.00

cont. next page

M:	521,966.68
L:	29,014.01
K/L:	493,761.60
K:	822,649.59
J:	19,384.40
I:	753,235.56
H:	382,029.08
Ph:	154,541.44
	3,473,026.96

SECTION : 1800 N
RESOURCE TYPE : INFERRED

SEAM NAME	DIAMOND DRILL HOLE	SEAM THICKNESS (m)	SPECIFIC GRAVITY (t/m3)	SEAM LENGTH (m)	WIDTH INFLUENCE (m)	TOTAL TONNES SEAMS >=0.5m
O	88022	0.92	1.73	15	100	2,387.40
O	88022	0.92	1.73	424	100	67,483.84
O	87028	1.49	1.73	195	100	50,265.15
N	88029	1.65	1.65	45	85	10,413.56
N	86019	2.17	1.65	136	100	48,694.80
N	87026	0.79	1.65	211	100	27,503.85
M/N	86019	1.17	1.85	215	100	46,536.75
M	87026	1.61	1.72	108	100	29,907.36
M	87026	1.25	1.72	187	100	40,205.00
M	88003	4.57	1.72	465	100	365,508.60
L	88003	2.36	1.66	130	100	50,928.80
L	87026	0.85	1.66	330	100	46,563.00
L	87026	0.85	1.66	63	100	8,889.30
K/L	87005	4.43	1.70	206	95	147,381.67
K/L	87028	3.89	1.70	407	100	269,149.10
K/L	88003	6.11	1.70	145	100	150,611.50
K	88018	5.09	1.63	25	100	20,741.75
K	86014	2.58	1.63	39	100	16,401.06
K	87005	8.06	1.63	446	100	585,945.88
K	87028	2.25	1.63	371	100	136,064.25
J	88018	0.56	1.61	195	100	17,581.20
I	88018	4.10	1.54	262	100	165,426.80
I	84006	6.67	1.54	156	100	160,240.08
I	85026	5.68	1.54	105	100	91,845.60
I	87016	4.92	1.54	190	100	143,959.20
I	87006	1.83	1.54	534	100	150,491.88
I	87009	4.79	1.54	535	100	394,648.10
H/I	87023	1.55	1.75	67	100	18,173.75
H/I	87023	1.76	1.75	420	100	129,360.00
H	88018	1.86	1.66	262	100	80,895.12
H	85026	3.43	1.66	280	100	159,426.40
H	85022	3.85	1.66	220	100	140,602.00
H	85028	4.08	1.66	144	100	97,528.32
H	86029	1.22	1.66	45	100	9,113.40
Ph	87004	1.42	1.79	381	100	96,842.58
Ph	87009	2.16	1.79	510	100	197,186.40
Ph	87027	0.97	1.79	380	100	65,979.40
Ph	86008	4.68	1.79	212	100	177,596.64
F	85008	0.66	1.72	490	100	55,624.80
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						seams >=0.5m

TOTAL TONNES FOR THIS SECTION : 4,474,104.29

cont. next page

SEAM TOTALS:

O:	120,136.39
N:	86,612.21
M/N:	46,536.75
M:	435,620.96
L:	106,381.10
K/L:	567,142.27
K:	759,152.94
J:	17,581.20
I:	1,106,611.66
H/I:	147,533.75
H:	487,565.24
Ph:	537,605.02
F:	55,624.80
	4,474,104.29

SECTION : 1900 N
RESOURCE TYPE : INFERRED

SEAM NAME	DIAMOND DRILL HOLE	SEAM THICKNESS (m)	SPECIFIC GRAVITY (t/m3)	SEAM LENGTH (m)	WIDTH INFLUENCE (m)	TOTAL TONNES SEAMS >=0.5m
N	86009	2.17	1.65	68	75	18,260.55
N	86012	1.42	1.65	60	85	11,949.30
M/N	86019	1.17	1.85	170	100	36,796.50
M	88029	11.13	1.72	295	100	564,736.20
M	88018	2.58	1.72	22	100	9,762.72
K/L	87005	4.43	1.70	109	75	61,565.93
K/L	87028	3.89	1.70	91	85	51,151.56
K	87005	8.06	1.63	294	100	386,251.32
K	87028	2.25	1.63	46	100	16,870.50
J	86030	0.82	1.61	22	100	2,904.44
J	86036	0.99	1.61	105	100	16,735.95
J	88018	0.56	1.61	160	100	14,425.60
I	88005	5.65	1.54	127	100	110,502.70
I	86027	0.95	1.54	70	100	10,241.00
I	84006	6.67	1.54	140	100	143,805.20
I	84006	5.04	1.54	380	100	294,940.80
I	88018	4.10	1.54	165	100	104,181.00
I	87006	1.83	1.54	145	100	40,863.90
I	87009	4.79	1.54	476	100	351,126.16
H/I	87023	1.55	1.75	65	100	17,631.25
H	86017	7.18	1.66	385	100	458,873.80
H	88018	1.86	1.66	235	100	72,558.60
Ph	87004	1.42	1.79	550	100	139,799.00
Ph	87009	2.16	1.79	700	100	270,648.00
Ph	87027	0.97	1.79	171	100	29,690.73
Ph	86008	4.68	1.79	360	100	301,579.20
Ph	84007	2.98	1.79	50	100	26,671.00
G	87007	2.71	1.92	60	100	31,219.20
G	85024	6.45	1.92	55	100	68,112.00
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						seams >=0.5m

TOTAL TONNES FOR THIS SECTION : 3,663,854.10

SEAM TOTALS:

N:	30,209.85
M/N:	36,796.50
M:	574,498.92
K/L:	112,717.48
K:	403,121.82
J:	34,065.99
I:	1,055,660.76
H/I:	17,631.25
H:	531,432.40
Ph:	768,387.93
G:	99,331.20
	3,663,854.10

SECTION : 2000 N
RESOURCE TYPE : INFERRED

SEAM NAME	DIAMOND DRILL HOLE	SEAM THICKNESS (m)	SPECIFIC GRAVITY (t/m3)	SEAM LENGTH (m)	WIDTH INFLUENCE (m)	TOTAL TONNES SEAMS >=0.5m
O	87028	1.49	1.73	414	100	106,716.78
N	87026	0.79	1.65	68	100	8,863.80
M	87026	1.25	1.72	68	100	14,620.00
M	85023	3.44	1.72	100	100	59,168.00
M	85023	3.44	1.72	95	100	56,209.60
M	85005	3.94	1.72	25	100	16,942.00
M	85005	2.93	1.72	30	100	15,118.80
M	88018	2.58	1.72	95	100	42,157.20
L	86014	3.05	1.66	4	100	2,025.20
L	88016	2.26	1.66	4	100	1,500.64
L	87026	0.85	1.66	68	100	9,594.80
K/L	87005	4.43	1.70	256	100	192,793.60
K/L	87028	3.89	1.70	377	100	249,310.10
K	87005	8.06	1.63	340	100	446,685.20
K	87028	2.25	1.63	385	100	141,198.75
K	86014	2.58	1.63	4	100	1,682.16
K	88018	5.09	1.63	4	100	3,318.68
J	84006	3.56	1.61	220	100	126,095.20
J	88018	0.56	1.61	150	100	13,524.00
I	84006	5.04	1.54	220	100	170,755.20
I	88018	4.10	1.54	165	100	104,181.00
I	87009	4.79	1.54	945	100	697,088.70
H/I	87023	1.55	1.75	358	100	97,107.50
H	87011	4.97	1.66	55	100	45,376.10
H	86031	6.38	1.66	170	100	185,687.60
H	86017	7.18	1.66	405	100	482,711.40
H	88018	1.86	1.66	235	100	72,558.60
Ph	86008	4.68	1.79	360	100	301,579.20
Ph	87009	2.16	1.79	461	100	178,241.04
Ph	87027	0.97	1.79	525	100	91,155.75
Ph	84007	2.98	1.79	510	100	272,044.20
G	88017	1.38	1.92	75	100	19,872.00
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						seams >=0.5m

TOTAL TONNES FOR THIS SECTION : 4,225,882.80

SEAM TOTALS:

O:	106,716.78
N:	8,863.80
M:	204,215.60
L:	13,120.64
K/L:	442,103.70
K:	592,884.79

cont. next page

J:	139,619.20
I:	972,024.90
H/I:	97,107.50
H:	786,333.70
Ph:	843,020.19
G:	19,872.00
	4,225,882.80

SECTION : 2100 N
RESOURCE TYPE : INFERRED

SEAM NAME	DIAMOND DRILL HOLE	SEAM THICKNESS (m)	SPECIFIC GRAVITY (t/m3)	SEAM LENGTH (m)	WIDTH INFLUENCE (m)	TOTAL TONNES SEAMS >=0.5m
O	87028	1.49	1.73	600	100	154,662.00
N	87026	0.79	1.65	123	100	16,033.05
N	87028	0.88	1.65	98	100	14,229.60
M/N	87028	0.88	1.85	102	100	16,605.60
M	87026	1.25	1.72	267	100	57,405.00
M	85005	2.93	1.72	17	100	8,567.32
M	85010	4.60	1.72	8	100	6,329.60
L	87026	0.85	1.66	133	100	18,766.30
L	87028	0.73	1.66	101	100	12,239.18
K/L	87005	4.43	1.70	133	100	100,162.30
K/L	87028	3.89	1.70	674	100	445,716.20
K/L	88005	0.97	1.70	133	100	21,931.70
K	88005	1.03	1.63	195	100	32,738.55
K	87005	8.06	1.63	280	100	367,858.40
K	87028	2.25	1.63	630	100	231,052.50
J	88005	0.75	1.61	195	100	23,546.25
J	84006	3.56	1.61	165	100	94,571.40
J	88018	0.56	1.61	200	100	18,032.00
I	88007	3.99	1.54	58	100	35,638.68
I	84006	5.04	1.54	165	100	128,066.40
I	88018	4.10	1.54	200	100	126,280.00
I	86004	5.28	1.54	27	100	21,954.24
I	87009	4.79	1.54	830	100	612,257.80
H/I	87023	1.55	1.75	566	100	153,527.50
H	87011	4.97	1.66	45	100	37,125.90
H	86031	6.58	1.66	4	100	4,369.12
H	86017	7.18	1.66	450	100	536,346.00
H	88018	1.86	1.66	310	100	95,715.60
H	86004	7.10	1.66	28	100	33,000.80
Ph	87011	0.51	1.79	45	100	4,108.05
Ph	86031	2.32	1.79	4	100	1,661.12
Ph	86008	4.68	1.79	365	100	305,767.80
Ph	84007	2.98	1.79	115	100	61,343.30
Ph	87009	2.16	1.79	469	100	181,334.16
Ph	87027	0.97	1.79	486	100	84,384.18
G	87027	0.71	1.92	997	100	135,911.04
G	88007	1.37	1.92	28	100	7,365.12
G	86031	5.78	1.92	34	100	37,731.84
G	84005	0.78	1.92	375	100	56,160.00
G	85017	1.01	1.92	440	100	85,324.80
F	84007	1.07	1.72	280	100	51,531.20
F	85017	1.93	1.72	250	100	82,990.00
F	85008	0.66	1.72	415	100	47,110.80
F	85006	3.10	1.72	180	100	95,976.00
F	85006	3.10	1.72	325	100	173,290.00
F	84007	1.07	1.72	1030	100	189,561.20
E	84007	1.00	1.55	891	100	138,105.00
E	84007	3.79	1.55	99	100	58,157.55

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E	84007	1.00	1.55	280	100	43,400.00
E	84017	2.34	1.55	250	100	90,675.00
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						seams >=0.5m

TOTAL TONNES FOR THIS SECTION : 5,356,617.15

SEAM TOTALS:

O:	154,662.00
N:	30,262.65
M/N:	16,605.60
M:	72,301.92
L:	31,005.48
K/L:	567,810.20
K:	631,649.45
J:	136,149.65
I:	924,197.12
H/I:	153,527.50
H:	706,557.42
Ph:	638,598.61
G:	322,492.80
F:	640,459.20
E:	330,337.55
	5,356,617.15

SECTION : 2200 N
RESOURCE TYPE : INFERRED

SEAM NAME	DIAMOND DRILL HOLE	SEAM THICKNESS (m)	SPECIFIC GRAVITY (t/m3)	SEAM LENGTH (m)	WIDTH INFLUENCE (m)	TOTAL TONNES SEAMS >=0.5m
O	87028	1.49	1.73	552	100	142,289.04
N	87026	0.79	1.65	230	100	29,980.50
M/N	87028	0.88	1.85	232	100	37,769.60
M	87026	1.25	1.72	234	100	50,310.00
L	87028	0.73	1.66	234	100	28,356.12
K/L	87028	3.89	1.70	750	100	495,975.00
K	87028	2.25	1.63	820	100	300,735.00
J	88005	0.75	1.61	110	75	9,961.88
J	84006	3.56	1.61	150	100	85,974.00
I	84006	5.04	1.54	140	100	108,662.40
I	86004	5.28	1.54	160	100	130,099.20
I	87009	4.79	1.54	831	100	612,995.46
H/I	87023	1.55	1.75	654	100	177,397.50
H	87027	8.62	1.66	552	100	789,867.84
H	86017	7.18	1.66	290	100	345,645.20
H	84008	6.41	1.66	45	100	47,882.70
H	86004	7.10	1.66	250	100	294,650.00
Ph	86008	4.68	1.79	180	100	150,789.60
Ph	84007	2.98	1.79	147	100	78,412.74
Ph	87009	2.16	1.79	546	100	211,105.44
Ph	87027	0.97	1.79	522	100	90,634.86
G	87027	0.71	1.92	1005	100	137,001.60
G	85017	1.01	1.92	275	100	53,328.00
F	84007	1.07	1.72	140	100	25,765.60
F	85017	1.93	1.72	225	100	74,691.00
F	85008	0.66	1.72	170	100	19,298.40
F	85006	3.10	1.72	490	100	261,268.00
F	84007	1.07	1.72	948	100	174,469.92
E	84007	1.00	1.55	226	100	35,030.00
E	84007	1.00	1.55	140	100	21,700.00
E	85017	2.34	1.55	225	100	81,607.50
E	85006	0.91	1.55	1235	100	174,196.75
E	85020	1.91	1.55	105	100	31,085.25
D	85020	4.74	1.75	1275	100	1,057,612.50
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						seams >=0.5m

TOTAL TONNES FOR THIS SECTION : 6,366,548.60

SEAM TOTALS:

O:	142,289.04
N:	29,980.50
M/N:	37,769.60
M:	50,310.00

cont. next page

L:	28,356.12
K/L:	495,975.00
K:	300,735.00
J:	95,935.88
I:	851,757.06
H/I:	177,397.50
H:	1,478,045.74
Ph:	530,942.64
G:	190,329.60
F:	555,492.92
E:	343,619.50
D:	1,057,612.50
	6,366,548.60

SECTION : 2300 N
RESOURCE TYPE : INFERRED

SEAM NAME	DIAMOND DRILL HOLE	SEAM THICKNESS (m)	SPECIFIC GRAVITY (t/m3)	SEAM LENGTH (m)	WIDTH INFLUENCE (m)	TOTAL TONNES SEAMS >=0.5m
M	85010	4.60	1.72	307	100	242,898.40
L	87015	4.84	1.66	350	100	281,204.00
L	88023	2.36	1.66	70	100	27,423.20
L	85010	1.81	1.66	38	100	11,417.48
L	87015	4.84	1.66	100	60	48,206.40
K/L	87028	3.89	1.70	350	100	231,455.00
K	87028	2.25	1.63	400	100	146,700.00
K	87015	1.92	1.63	405	100	126,748.80
K	88005	1.03	1.63	105	100	17,628.45
J	88004	0.94	1.61	205	100	31,024.70
J	84006	3.56	1.61	145	100	83,108.20
I	88004	7.95	1.54	50	100	61,215.00
I	88002	4.25	1.54	100	100	65,450.00
I	84006	5.04	1.54	145	100	112,543.20
I	84008	3.86	1.54	20	100	11,888.80
I	85017	5.37	1.54	35	100	28,944.30
I	86004	5.28	1.54	145	100	117,902.40
I	87009	4.79	1.54	815	100	601,192.90
H/I	87023	1.55	1.75	572	100	155,155.00
H	87027	8.62	1.66	510	100	729,769.20
H	86017	7.18	1.66	670	100	798,559.60
H	84008	6.41	1.66	240	100	255,374.40
H	85017	4.67	1.66	36	100	27,907.92
H	86004	7.10	1.66	135	100	159,111.00
Ph	84007	2.98	1.79	550	100	293,381.00
Ph	87027	0.97	1.79	250	100	43,407.50
Ph	87009	2.16	1.79	320	100	123,724.80
Ph	86008	4.68	1.79	25	100	20,943.00
G	87027	0.71	1.92	340	100	46,348.80
G	85001	0.94	1.92	200	100	36,096.00
G	87007	2.71	1.92	28	100	14,568.96
G	85024	6.45	1.92	30	100	37,152.00
G	85017	1.01	1.92	155	100	30,057.60
F	84007	1.07	1.72	955	100	175,758.20
F	85006	3.10	1.72	505	100	269,266.00
E	84007	1.00	1.55	950	100	147,250.00
E	85020	1.91	1.55	460	100	136,183.00
E	85006	0.91	1.55	500	100	70,525.00
D	85020	4.74	1.75	245	100	203,227.50
D	85020	4.74	1.75	950	100	788,025.00
C	85020	1.19	1.68	225	100	44,982.00
C	85020	1.19	1.68	855	100	170,931.60
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						seams >=0.5m

TOTAL TONNES FOR THIS SECTION : 7,024,656.31

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SEAM TOTALS:

M:	242,898.40
L:	368,251.08
K/L:	231,455.00
K:	291,077.25
J:	114,132.90
I:	999,136.60
H/I:	155,155.00
H:	1,970,722.12
Ph:	481,456.30
G:	164,223.36
F:	445,024.20
E:	353,958.00
D:	991,252.50
C:	215,913.60
	7,024,656.31

SECTION : 2400 N
RESOURCE TYPE : INFERRED

SEAM NAME	DIAMOND DRILL HOLE	SEAM THICKNESS (m)	SPECIFIC GRAVITY (t/m3)	SEAM LENGTH (m)	WIDTH INFLUENCE (m)	TOTAL TONNES SEAMS >=0.5m
O	87028	1.49	1.73	150	100	38,665.50
N	87028	0.88	1.65	190	100	27,588.00
M	87028	1.48	1.72	55	100	14,000.80
M	87031	2.08	1.72	185	100	66,185.60
L	87028	0.73	1.66	55	100	6,664.90
L	87031	1.45	1.66	185	100	44,529.50
K/L	87028	3.89	1.70	804	100	531,685.20
K/L	87031	3.65	1.70	187	100	116,033.50
K	87028	2.25	1.63	379	100	138,998.25
K	87031	4.17	1.63	185	100	125,746.35
J	84006	3.56	1.61	45	100	25,792.20
I	85017	5.37	1.54	60	100	49,618.80
I	84008	3.86	1.54	160	100	95,110.40
I	84006	6.67	1.54	45	100	46,223.10
I	85009	4.90	1.54	30	100	22,638.00
I	87009	4.79	1.54	865	100	638,075.90
I	87030	2.87	1.54	380	100	167,952.40
H/I	84006	0.61	1.75	48	100	5,124.00
H/I	87019	1.79	1.75	120	100	37,590.00
H/I	87023	1.55	1.75	355	100	96,293.75
H	86004	7.10	1.66	60	100	70,716.00
H	84008	6.41	1.66	355	100	377,741.30
H	85006	2.76	1.66	510	100	233,661.60
H	87027	8.62	1.66	690	100	987,334.80
Ph	84007	2.98	1.79	500	100	266,710.00
Ph	87009	2.16	1.79	380	100	146,923.20
Ph	87027	0.97	1.79	705	100	122,409.15
G	85017	1.01	1.92	29	100	5,623.68
G	85017	1.01	1.92	55	100	10,665.60
G	84008	3.28	1.92	255	100	160,588.80
G	87007	2.71	1.92	90	100	46,828.80
G	86031	5.78	1.92	40	100	44,390.40
G	85001	0.94	1.92	220	100	39,705.60
G	87027	0.71	1.92	470	100	64,070.40
G lower	84004	2.86	1.85	56	100	29,629.60
G lower	88019	1.56	1.85	735	100	212,121.00
F	84007	1.07	1.72	35	100	6,441.40
F	85017	1.93	1.72	31	100	10,290.76
F	85017	1.93	1.72	130	100	43,154.80
F	85008	0.66	1.72	35	100	3,973.20
F	85006	3.10	1.72	230	100	122,636.00
F	85006	3.10	1.72	100	55	29,326.00
F	84007	1.07	1.72	900	100	165,636.00
E	85020	1.91	1.55	645	100	190,952.25
E	85006	0.91	1.55	330	100	46,546.50
E	85006	0.91	1.55	65	100	9,168.25
E	85017	2.34	1.55	31	100	11,243.70
E	84007	1.00	1.55	35	100	5,425.00

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E	84007	3.79	1.55	865	100	508,144.25
D	85016	2.41	1.75	40	100	16,870.00
D	85020	4.74	1.75	1370	100	1,136,415.00
C	85020	1.19	1.68	1335	100	266,893.20
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						seams >=0.5m

TOTAL TONNES FOR THIS SECTION : 7,686,752.39

SEAM TOTALS:

O:	38,665.50
N:	27,588.00
M:	80,186.40
L:	51,194.40
K/L:	647,718.70
K:	264,744.60
J:	25,792.20
I:	1,019,618.60
H/I:	139,007.75
H:	1,669,453.70
Ph:	536,042.35
G:	371,873.28
G lower:	241,750.60
F:	381,458.16
E:	771,479.95
D:	1,153,285.00
C:	266,893.20
	7,686,752.39

SECTION : 2500 N
RESOURCE TYPE : INFERRED

SEAM NAME	DIAMOND DRILL HOLE	SEAM THICKNESS (m)	SPECIFIC GRAVITY (t/m3)	SEAM LENGTH (m)	WIDTH INFLUENCE (m)	TOTAL TONNES SEAMS >=0.5m
O	87028	1.49	1.73	95	100	24,488.15
N	87028	0.88	1.65	135	100	19,602.00
L	87015	4.84	1.66	125	100	100,430.00
K/L	87028	3.89	1.70	270	100	178,551.00
K	88005	1.03	1.63	75	100	12,591.75
K	87015	1.92	1.63	140	95	41,623.68
K	87028	2.25	1.63	355	100	130,196.25
J	87013	0.94	1.61	170	100	25,727.80
I	87009	4.79	1.54	835	100	615,946.10
I	87030	2.87	1.54	520	100	229,829.60
H/I	87019	1.79	1.75	101	90	28,474.43
H/I	87023	1.55	1.63	65	100	16,422.25
H	88004	3.32	1.66	50	100	27,556.00
H	85006	2.76	1.66	150	100	68,724.00
H	84008	6.41	1.66	180	100	191,530.80
H	87027	8.62	1.66	750	100	1,073,190.00
Ph	87013	1.36	1.79	30	100	7,303.20
Ph	84007	2.98	1.79	160	100	85,347.20
Ph	87009	2.16	1.79	305	100	117,925.20
Ph	87027	0.97	1.79	745	100	129,354.35
G	88007	1.37	1.92	40	100	10,521.60
G	86031	5.78	1.92	40	100	44,390.40
G	86031	5.78	1.92	80	100	88,780.80
G	84008	3.28	1.92	145	100	91,315.20
G	85017	1.01	1.92	15	100	2,908.80
G	85001	0.94	1.92	515	100	92,947.20
G	87027	0.71	1.92	1061	100	144,635.52
G lower	88019	1.56	1.85	485	100	139,971.00
G lower	88019	1.56	1.85	85	100	24,531.00
F	85008	0.66	1.72	40	100	4,540.80
F	85013	3.20	1.72	40	100	22,016.00
F	85017	1.93	1.72	180	100	59,752.80
F	84007	1.07	1.72	20	100	3,680.80
F	84007	1.07	1.72	984	100	181,095.36
E	85020	1.91	1.55	850	100	251,642.50
E	85006	0.91	1.55	105	100	14,810.25
E	85017	2.34	1.55	150	100	54,405.00
E	84007	1.00	1.55	20	100	3,100.00
E	84007	1.00	1.55	879	100	136,245.00
D	85020	4.74	1.75	1295	100	1,074,202.50
C	85020	1.19	1.68	1080	100	215,913.60
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						seams >=0.5m

TOTAL TONNES FOR THIS SECTION : 5,786,219.89

cont. next page

SEAM TOTALS:

O:	24,488.15
N:	19,602.00
L:	100,430.00
K/L:	178,551.00
K:	184,411.68
J:	25,727.80
I:	845,775.70
H/I:	44,896.68
H:	1,361,000.80
Ph:	339,929.95
G:	475,499.52
G lower:	164,502.00
F:	271,085.76
E:	460,202.75
D:	1,074,202.50
C:	215,913.60
	5,786,219.89

SECTION : 2600 N
RESOURCE TYPE : INFERRED

SEAM NAME	DIAMOND DRILL HOLE	SEAM THICKNESS (m)	SPECIFIC GRAVITY (t/m3)	SEAM LENGTH (m)	WIDTH INFLUENCE (m)	TOTAL TONNES SEAMS >=0.5m
O	87028	1.49	1.73	105	100	27,065.85
N	87028	0.88	1.65	155	100	22,506.00
L	87015	4.84	1.66	165	100	132,567.60
K/L	87028	3.89	1.70	270	100	178,551.00
K	87015	1.92	1.63	160	100	50,073.60
K	87028	2.25	1.63	340	100	124,695.00
J	87013	0.94	1.61	140	100	21,187.60
I	87009	4.79	1.54	685	100	505,297.10
I	87030	2.87	1.54	620	100	274,027.60
H	85006	2.76	1.66	90	100	41,234.40
H	85012	3.22	1.66	100	100	53,452.00
H	84008	6.41	1.66	70	100	74,484.20
H	87012	5.31	1.66	45	100	39,665.70
H	87027	8.62	1.66	755	100	1,080,344.60
Ph	87027	0.97	1.79	785	100	136,299.55
Ph	87009	2.16	1.79	360	100	139,190.40
Ph	84007	2.98	1.79	80	50	21,336.80
G	86031	5.78	1.92	317	100	351,793.92
G	84008	3.28	1.92	136	100	85,647.36
G	87027	0.71	1.92	955	100	130,185.60
G	85001	0.94	1.92	340	100	61,363.20
G lower	85004	2.86	1.85	150	100	79,365.00
G lower	88019	1.56	1.85	320	100	92,352.00
G lower	84007	0.89	1.85	125	100	20,581.25
F	85006	3.10	1.72	58	100	30,925.60
F	85013	3.20	1.72	175	100	96,320.00
F	84007	1.07	1.72	1030	100	189,561.20
E	85020	1.91	1.55	703	100	208,123.15
E	85020	1.91	1.55	300	100	88,815.00
E	85006	0.91	1.55	133	100	18,759.65
E	85017	2.34	1.55	160	100	58,032.00
E	84007	1.00	1.55	150	100	23,250.00
D	85020	4.74	1.75	1750	100	1,451,625.00
D	85016	2.41	1.75	27	100	11,387.25
C	85020	1.19	1.68	1580	100	315,873.60
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						seams >=0.5m

TOTAL TONNES FOR THIS SECTION : 6,235,939.78

SEAM TOTALS:

O:	27,065.85
N:	22,506.00
L:	132,567.60

cont. next page

K/L:	178,551.00
K:	174,768.60
J:	21,187.60
I:	779,324.70
H:	1,289,180.90
Ph:	296,826.75
G:	628,990.08
G lower:	192,298.25
F:	316,806.80
E:	396,979.80
D:	1,463,012.25
C:	315,873.60
	6,235,939.78

SECTION : 2700 N
RESOURCE TYPE : INFERRED

SEAM NAME	DIAMOND DRILL HOLE	SEAM THICKNESS (m)	SPECIFIC GRAVITY (t/m3)	SEAM LENGTH (m)	WIDTH INFLUENCE (m)	TOTAL TONNES SEAMS >=0.5m
O	85005	0.67	1.73	85	100	9,852.35
O	85005	1.33	1.73	165	100	37,964.85
O	87028	1.49	1.73	105	100	27,065.85
N	87028	0.88	1.65	155	100	22,506.00
L	87015	4.84	1.66	66	100	53,027.04
K	87015	1.92	1.63	56	100	17,525.76
K	87028	2.25	1.63	535	100	196,211.25
K	87014	1.87	1.63	20	100	6,096.20
J	87013	0.94	1.61	60	100	9,080.40
I	87014	3.04	1.54	20	100	9,363.20
I	87009	4.79	1.54	655	100	483,167.30
I	87030	2.87	1.54	740	100	327,065.20
H/I	87014	1.60	1.75	20	100	5,600.00
H	86001	2.84	1.66	36	100	16,971.84
H	85012	3.22	1.66	75	100	40,089.00
H	87019	1.98	1.66	25	100	8,217.00
H	87012	5.31	1.66	285	100	251,216.10
H	87027	8.62	1.66	1315	100	1,881,659.80
Ph	87011	0.51	1.79	115	100	10,498.35
Ph	87009	2.16	1.79	200	100	77,328.00
Ph	87027	0.97	1.79	755	100	131,090.65
G	88007	1.37	1.92	325	100	85,488.00
G	86031	5.78	1.92	123	100	136,300.48
G	85004	1.37	1.92	130	100	34,195.20
G	84008	3.28	1.92	128	100	80,609.28
G	85001	0.94	1.92	190	100	34,291.20
G lower	88019	1.56	1.85	145	100	41,847.00
F/G	85019	0.51	1.86	40	100	3,794.40
F	85004	2.35	1.72	100	100	40,420.00
F	85013	3.20	1.72	180	100	99,072.00
F	85019	4.21	1.72	90	70	45,619.56
F	84007	1.07	1.72	105	70	13,526.94
F	84007	1.07	1.72	800	100	147,232.00
E	85020	1.91	1.55	985	100	291,609.25
E	85004	2.23	1.55	36	100	12,443.40
E	85016	2.22	1.55	7	100	2,408.70
E	85017	2.34	1.55	274	100	99,379.80
E	84007	1.00	1.55	210	100	32,550.00
D	85020	4.74	1.75	1145	100	949,777.50
D	85016	2.41	1.75	200	100	84,350.00
C	85020	1.19	1.68	894	100	178,728.48
C	85019	0.51	1.68	337	100	28,874.16
C	85019	0.51	1.68	210	100	17,992.80
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						seams >=0.5m

TOTAL TONNES FOR THIS SECTION : 6,082,306.29

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SEAM TOTALS:

O:	74,883.05
N:	22,506.00
L:	53,027.04
K:	219,833.21
J:	9,080.40
I:	819,595.70
H/I:	5,600.00
H:	2,198,153.74
Ph:	218,917.00
G:	371,084.16
G lower:	41,847.00
F/G:	3,794.40
F:	345,870.50
E:	438,391.15
D:	1,034,127.50
C:	225,595.44
	6,082,306.29

SECTION : 2800 N
RESOURCE TYPE : INFERRED

SEAM NAME	DIAMOND DRILL HOLE	SEAM THICKNESS (m)	SPECIFIC GRAVITY (t/m3)	SEAM LENGTH (m)	WIDTH INFLUENCE (m)	TOTAL TONNES SEAMS >=0.5m
O	85005	0.67	1.73	110	100	12,750.10
O	85005	1.33	1.73	170	100	39,115.30
O	88028	0.68	1.73	30	100	3,529.20
O	87028	1.49	1.73	315	100	81,197.55
N	88028	1.11	1.65	25	100	4,578.75
N	87028	0.88	1.65	370	100	53,724.00
M	87031	2.08	1.72	33	100	11,806.08
M	87028	1.48	1.72	65	100	16,546.40
M	88028	1.90	1.72	22	100	7,189.60
L	87015	4.84	1.66	100	100	80,344.00
L	87028	0.73	1.66	60	100	7,270.80
L	87031	1.45	1.66	35	100	8,424.50
K/L	87031	3.65	1.70	35	100	21,717.50
K/L	87028	3.89	1.70	245	100	162,018.50
K	87015	1.92	1.63	97	100	30,357.12
K	87017	2.82	1.63	15	100	6,894.90
K	87028	2.25	1.63	925	100	339,243.75
K	87031	4.17	1.63	37	100	25,149.27
J	87013	0.94	1.61	97	100	14,679.98
I	87009	4.79	1.54	645	100	475,790.70
I	87030	2.87	1.54	870	100	384,522.60
H	87013	1.35	1.66	210	100	47,061.00
H	87015	3.33	1.66	12	100	6,633.36
H	87027	8.62	1.66	1340	100	1,917,432.80
H	87012	5.31	1.66	165	100	145,440.90
H	87019	1.98	1.66	120	100	39,441.60
Ph	87009	2.16	1.79	60	100	23,198.40
Ph	87027	0.97	1.79	1130	100	196,201.90
G	84008	3.28	1.92	110	100	69,273.60
G	85004	1.37	1.92	100	100	26,304.00
G	85001	0.94	1.92	300	100	54,144.00
G	87027	0.71	1.92	1095	100	149,270.40
G lower	85004	2.86	1.85	100	100	52,910.00
F	85013	3.20	1.72	125	100	68,800.00
F	85004	2.35	1.72	135	100	54,567.00
F	85019	4.21	1.72	260	100	188,271.20
F	84007	1.07	1.72	640	100	117,785.60
E	85017	2.34	1.55	205	100	74,353.50
E	85016	2.22	1.55	215	100	73,981.50
E	85004	0.50	1.55	95	100	7,362.50
E	85020	1.91	1.55	550	100	162,827.50
E	85020	1.91	1.55	130	100	38,486.50
E	84007	1.00	1.55	650	100	100,750.00
D	85016	2.41	1.75	410	100	172,917.50
D	85020	4.74	1.75	395	100	327,652.50
D	85020	4.74	1.75	735	100	609,682.50
C	85020	1.19	1.68	740	100	147,940.80
C	85020	1.19	1.68	320	100	63,974.40

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C	85019	0.51	1.68	255	100	21,848.40
C	85019	0.51	1.68	950	100	81,396.00
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						seams >=0.5m

TOTAL TONNES FOR THIS SECTION : 6,826,759.96

SEAM TOTALS:

O:	136,592.15
N:	58,302.75
M:	35,542.08
L:	96,039.30
K/L:	183,736.00
K:	401,645.04
J:	14,679.98
I:	860,313.30
H:	2,156,009.66
Ph:	219,400.30
G:	298,992.00
G lower:	52,910.00
F:	429,423.80
E:	457,761.50
D:	1,110,252.50
C:	315,159.60
	6,826,759.96

SECTION : 2900 N
RESOURCE TYPE : INFERRED

SEAM NAME	DIAMOND DRILL HOLE	SEAM THICKNESS (m)	SPECIFIC GRAVITY (t/m3)	SEAM LENGTH (m)	WIDTH INFLUENCE (m)	TOTAL TONNES SEAMS >=0.5m
O	87029	0.92	1.73	42	100	6,684.72
O	88028	0.68	1.73	195	100	22,939.80
O	87028	1.49	1.73	210	100	54,131.70
N	87029	1.02	1.65	41	100	6,900.30
N	87028	0.88	1.65	265	100	38,478.00
M	87029	1.45	1.72	41	100	10,225.40
M	88028	1.90	1.72	132	100	43,137.60
M	87031	2.08	1.72	140	100	50,086.40
L	87015	4.84	1.66	60	100	48,206.40
L	87031	1.45	1.66	145	100	34,901.50
K/L	87028	3.89	1.70	205	100	135,566.50
K/L	87031	3.65	1.70	163	100	101,141.50
K	87015	1.92	1.63	95	100	29,731.20
K	87028	2.25	1.63	564	100	206,847.00
K	87031	4.17	1.63	165	100	112,152.15
J	87013	0.94	1.61	150	100	22,701.00
I	87009	4.79	1.54	103	100	75,978.98
I	87030	2.87	1.54	1022	100	451,703.56
H	87013	1.35	1.66	30	100	6,723.00
H	87027	8.62	1.66	783	100	1,120,410.36
Ph	87027	0.97	1.79	515	100	89,419.45
G	85016	0.79	1.92	90	100	13,651.20
G	85004	1.37	1.92	90	100	23,673.60
G	85001	0.94	1.92	20	100	3,609.60
G	87027	0.71	1.92	365	100	49,756.80
F	85013	3.20	1.72	55	100	30,272.00
F	85016	2.13	1.72	75	100	27,477.00
F	85004	2.35	1.72	95	100	38,399.00
F	85019	4.21	1.72	423	100	306,302.76
F	84007	1.07	1.72	295	100	54,291.80
E	85019	2.34	1.55	260	100	94,302.00
E	85016	2.22	1.55	400	100	137,640.00
E	85004	2.23	1.55	85	100	29,380.25
E	85020	1.91	1.55	555	100	164,307.75
E	84007	1.00	1.55	295	100	45,725.00
D	85016	2.41	1.75	595	100	250,941.25
D	85020	4.74	1.75	1010	100	837,795.00
C	85019	0.51	1.68	220	100	18,849.60
C	85020	1.19	1.68	955	100	190,923.60
C	85019	0.51	1.68	960	100	82,252.80
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						seams >=0.5m

TOTAL TONNES FOR THIS SECTION : 5,067,617.53

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SEAM TOTALS:

O:	83,756.22
N:	45,378.30
M:	103,449.40
L:	83,107.90
K/L:	236,708.00
K:	348,730.35
J:	22,701.00
I:	527,682.54
H:	1,127,133.36
Ph:	89,419.45
G:	90,691.20
F:	456,742.56
E:	471,355.00
D:	1,088,736.25
C:	292,026.00
	5,067,617.53

SECTION : 3000 N
RESOURCE TYPE : INFERRED

SEAM NAME	DIAMOND DRILL HOLE	SEAM THICKNESS (m)	SPECIFIC GRAVITY (t/m3)	SEAM LENGTH (m)	WIDTH INFLUENCE (m)	TOTAL TONNES SEAMS >=0.5m
O	87029	0.92	1.73	255	100	40,585.80
O	88028	0.68	1.73	40	100	4,705.60
O	87028	1.49	1.73	40	100	10,310.80
N	87029	1.34	1.65	255	100	56,380.50
N	88028	1.11	1.65	90	100	16,483.50
N	87028	0.88	1.65	160	100	23,232.00
M/N	87029	0.85	1.85	70	100	11,007.50
M	87031	2.08	1.72	33	100	11,806.08
M	87030	2.23	1.72	350	100	134,246.00
M	87029	1.45	1.72	120	100	29,928.00
M	85003	5.30	1.72	55	100	50,138.00
L	87031	1.45	1.66	33	100	7,943.10
L	87030	1.98	1.66	400	100	131,472.00
L	87015	4.84	1.66	160	100	128,550.40
K/L	87028	3.89	1.70	465	100	307,504.50
K/L	87030	3.50	1.70	45	100	26,775.00
K	87031	4.17	1.63	70	100	47,579.70
K	87030	3.26	1.63	570	100	302,886.60
K	87028	2.25	1.63	215	100	78,851.25
K	87015	1.92	1.63	170	100	53,203.20
J	87013	0.94	1.61	160	100	24,214.40
I	87030	2.87	1.54	1065	100	470,708.70
I	88002	4.25	1.54	150	100	98,175.00
H	87027	8.62	1.66	670	100	958,716.40
H	87013	1.35	1.66	175	100	39,217.50
Ph	87027	0.97	1.79	465	100	80,737.95
Ph	85013	0.65	1.79	24	100	2,792.40
G	87027	0.71	1.92	300	100	40,896.00
G	85001	0.94	1.92	185	100	33,388.80
G	85016	0.79	1.92	80	100	12,134.40
G	85004	1.37	1.92	60	100	15,782.40
F	85019	4.21	1.72	728	100	527,159.36
F	85013	3.20	1.72	21	100	11,558.40
F	85016	2.13	1.72	85	100	31,140.60
F	85004	2.35	1.72	60	100	24,252.00
F	85020	4.74	1.72	978	100	797,343.84
E	85017	2.34	1.55	140	100	50,778.00
E	85016	2.22	1.55	310	100	106,671.00
E	85004	0.50	1.55	60	100	4,650.00
E	85020	1.91	1.55	255	100	75,492.75
D	85016	2.41	1.75	350	100	147,612.50
C	85019	0.51	1.68	1120	100	95,961.60
C	85020	1.19	1.68	725	100	144,942.00
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						seams >=0.5m

TOTAL TONNES FOR THIS SECTION : 5,267,915.53

cont. next page

SEAM TOTALS:

O:	55,602.20
N:	96,096.00
M/N:	11,007.50
M:	226,118.08
L:	267,965.50
K/L:	334,279.50
K:	482,520.75
J:	24,214.40
I:	568,883.70
H:	997,933.90
Ph:	83,530.35
G:	102,201.60
F:	1,391,454.20
E:	237,591.75
D:	147,612.50
C:	240,903.60
	5,267,915.53

SECTION : 3100 N
RESOURCE TYPE : INFERRED

SEAM NAME	DIAMOND DRILL HOLE	SEAM THICKNESS (m)	SPECIFIC GRAVITY (t/m3)	SEAM LENGTH (m)	WIDTH INFLUENCE (m)	TOTAL TONNES SEAMS >=0.5m
O	87029	0.68	1.73	65	100	7,646.60
O	87029	0.92	1.73	530	100	84,354.80
N	87029	3.29	1.65	20	100	10,857.00
N	87029	1.02	1.65	90	100	15,147.00
N	88028	1.11	1.65	45	100	8,241.75
N	87028	0.88	1.65	110	100	15,972.00
N	87029	1.34	1.65	588	100	130,006.80
M/N	87029	0.85	1.85	40	100	6,290.00
M	82005	2.24	1.72	175	100	67,424.00
M	87030	2.23	1.72	155	100	59,451.80
M	87029	1.45	1.72	500	100	124,700.00
L	87015	4.84	1.66	155	100	124,533.20
L	87030	1.98	1.66	285	100	93,673.80
K/L	87030	3.50	1.70	530	100	315,350.00
K	85012	1.74	1.63	220	100	62,396.40
K	87030	3.26	1.63	515	100	273,660.70
J	87013	0.94	1.61	145	100	21,944.30
I	88002	4.25	1.54	110	100	71,995.00
I	87030	2.87	1.54	543	100	239,995.14
H	87013	1.35	1.66	135	100	30,253.50
H	83001	4.54	1.66	35	100	26,377.40
H	85012	3.22	1.66	35	100	18,708.20
H	85001	2.15	1.66	55	100	19,629.50
H	87027	8.62	1.66	615	100	880,015.80
Ph	87027	0.97	1.79	65	100	11,285.95
G	83001	3.93	1.92	45	100	33,955.20
G	85016	0.79	1.92	50	100	7,584.00
G	87027	0.71	1.92	130	100	17,721.60
G	85001	0.94	1.92	195	100	35,193.60
G lower	83001	2.25	1.85	110	100	45,787.50
G lower	85004	2.86	1.85	5	100	2,645.50
F	83001	4.79	1.72	40	100	32,955.20
F	85013	3.20	1.72	90	100	49,536.00
F	85019	4.21	1.72	705	100	510,504.60
E	85020	1.91	1.55	210	100	62,170.50
E	83001	1.32	1.55	40	100	8,184.00
E	85016	2.22	1.55	2.65	100	911.87
D	85020	4.74	1.75	810	100	671,895.00
D	85016	2.41	1.75	280	100	118,090.00
C	85020	1.19	1.68	790	100	157,936.80
C	85019	0.51	1.68	1050	100	89,964.00
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						seams >=0.5m

TOTAL TONNES FOR THIS SECTION : 4,564,946.01

cont. next page

SEAM TOTALS:

O:	92,001.40
N:	180,224.55
M/N:	6,290.00
M:	251,575.80
L:	218,207.00
K/L:	315,350.00
K:	336,057.10
J:	21,944.30
I:	311,990.14
H:	974,984.40
Ph:	11,285.95
G:	94,454.40
G lower:	48,433.00
F:	592,995.80
E:	71,266.37
D:	789,985.00
C:	247,900.80
	4,564,946.01

SECTION : 3200 N
RESOURCE TYPE : INFERRED

SEAM NAME	DIAMOND DRILL HOLE	SEAM THICKNESS (m)	SPECIFIC GRAVITY (t/m3)	SEAM LENGTH (m)	WIDTH INFLUENCE (m)	TOTAL TONNES SEAMS >=0.5m
O	87029	0.92	1.73	475	100	75,601.00
O	87029	0.68	1.73	75	100	8,823.00
N	87029	1.34	1.65	545	100	120,499.50
N	87029	1.02	1.65	70	100	11,781.00
N	87029	3.29	1.65	18	100	9,771.30
M/N	87029	0.85	1.85	35	100	5,503.75
M	82005	2.24	1.72	175	100	67,424.00
M	87029	1.45	1.72	270	100	67,338.00
M	87030	2.23	1.72	165	100	63,287.40
L	85012	1.37	1.66	205	100	46,621.10
L	87015	4.84	1.66	160	100	128,550.40
L	87030	1.98	1.66	335	100	110,107.80
K/L	87030	3.50	1.70	420	100	249,900.00
K	87015	1.92	1.63	150	100	46,944.00
K	87030	3.26	1.63	415	100	220,522.70
J	87013	0.94	1.61	160	100	24,214.40
I	85016	5.55	1.54	12	100	10,256.40
I	85031	4.54	1.54	15	100	10,487.40
I	87013	4.77	1.54	140	100	102,841.20
I	87030	2.87	1.54	405	100	179,001.90
H	85016	6.75	1.66	16	100	17,928.00
H	85014	2.09	1.66	50	100	17,347.00
H	83001	4.54	1.66	105	100	79,132.20
H	87013	1.35	1.66	120	100	26,892.00
H	87027	8.62	1.66	440	100	629,604.80
H	85001	2.15	1.66	220	100	78,518.00
G	85016	0.79	1.92	28	100	4,247.04
G	85015	3.43	1.92	40	100	26,342.40
G	85001	0.94	1.92	350	100	63,168.00
F	85019	4.21	1.72	110	100	79,653.20
F	85013	3.20	1.72	108	100	59,443.20
F	85016	2.13	1.72	22	100	8,059.92
F	85014	2.71	1.72	24	100	11,186.88
F	85015	2.73	1.72	30	100	14,086.80
F	85019	4.21	1.72	490	100	354,818.80
E	85016	2.22	1.55	273	100	93,939.30
E	85015	0.95	1.55	47	100	6,920.75
D	85020	4.74	1.75	875	100	725,812.50
D	85016	2.41	1.75	270	100	113,872.50
C	85020	1.19	1.68	1245	100	248,900.40
C	85019	0.51	1.68	1115	100	95,533.20
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						seams >=0.5m

TOTAL TONNES FOR THIS SECTION : 4,314,883.14

cont. next page

SEAM TOTALS:

O:	84,424.00
N:	142,051.80
M/N:	5,503.75
M:	198,049.40
L:	285,279.30
K/L:	249,900.00
K:	267,466.70
J:	24,214.40
I:	302,586.90
H:	849,422.00
G:	93,757.44
F:	527,248.80
E:	100,860.05
D:	839,685.00
C:	344,433.60
	4,314,883.14

SECTION : 3300 N
RESOURCE TYPE : INFERRED

SEAM NAME	DIAMOND DRILL HOLE	SEAM THICKNESS (m)	SPECIFIC GRAVITY (t/m3)	SEAM LENGTH (m)	WIDTH INFLUENCE (m)	TOTAL TONNES SEAMS >=0.5m
O	87029	0.92	1.73	455	100	72,417.80
O	87029	0.68	1.73	65	100	7,646.60
N	87029	1.34	1.65	535	100	118,288.50
N	87029	1.02	1.65	55	100	9,256.50
N	87029	3.29	1.65	20	100	10,857.00
M/N	87029	0.85	1.85	30	100	4,717.50
M	82005	2.24	1.72	80	100	30,822.40
M	87030	2.23	1.72	255	100	97,807.80
M	87029	1.45	1.72	175	100	43,645.00
L	85012	1.37	1.66	255	100	57,992.10
L	87030	1.98	1.66	410	100	134,758.80
K/L	87030	3.50	1.70	400	100	238,000.00
K	87030	3.26	1.63	400	100	212,552.00
J	87013	0.94	1.61	100	100	15,134.00
I	87013	4.77	1.54	100	100	73,458.00
I	87030	2.87	1.54	395	100	174,582.10
H	85014	2.09	1.66	350	100	121,429.00
H	87013	1.35	1.66	100	100	22,410.00
H	87027	8.62	1.66	235	100	336,266.20
Ph	87027	0.97	1.79	235	100	40,803.05
G	85016	0.79	1.92	115	100	17,443.20
G	85015	3.43	1.92	20	100	13,171.20
G	85001	0.94	1.92	140	90	22,740.48
F	85013	3.20	1.72	95	100	52,288.00
F	85016	2.13	1.72	100	100	36,636.00
F	85019	4.21	1.72	335	100	242,580.20
E	85016	2.22	1.55	245	100	84,304.50
E	85016	2.22	1.55	20	100	6,882.00
E	85015	0.95	1.55	20	100	2,945.00
E	85020	1.91	1.55	135	100	39,966.75
D	85016	2.41	1.75	290	100	122,307.50
D	85016	2.41	1.75	120	100	50,610.00
D	85020	4.74	1.75	505	100	418,897.50
D	85020	4.74	1.75	205	75	127,535.63
D	85020	4.74	1.75	250	100	207,375.00
C	85020	1.19	1.68	1510	100	301,879.20
C	85019	0.51	1.68	50	100	4,284.00
C	85019	0.51	1.68	790	100	67,687.20
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						seams >=0.5m

TOTAL TONNES FOR THIS SECTION : 3,642,377.71

cont. next page

SEAM TOTALS:

O:	80,064.40
N:	138,402.00
M/N:	4,717.50
M:	172,275.20
L:	192,750.90
K/L:	238,000.00
K:	212,552.00
J:	15,134.00
I:	248,040.10
H:	480,105.20
Ph:	40,803.05
G:	53,354.88
F:	331,504.20
E:	134,098.25
D:	926,725.63
C:	373,850.40
	3,642,377.71

SECTION : 3400 N
RESOURCE TYPE : INFERRED

SEAM NAME	DIAMOND DRILL HOLE	SEAM THICKNESS (m)	SPECIFIC GRAVITY (t/m3)	SEAM LENGTH (m)	WIDTH INFLUENCE (m)	TOTAL TONNES SEAMS >=0.5m
M	82005	2.24	1.72	27	65	6,761.66
L	85012	1.37	1.66	180	100	40,935.60
G	85015	3.43	1.92	10	100	6,585.60
G	85016	0.79	1.92	100	95	14,409.60
F	85016	2.13	1.72	235	100	86,094.60
E	85015	0.95	1.55	10	100	1,472.50
E	85016	2.22	1.55	290	100	99,789.00
D	85020	4.74	1.75	400	100	331,800.00
D	85018	1.89	1.75	340	100	112,455.00
D	85016	2.41	1.75	370	100	156,047.50
C	85020	1.19	1.68	460	100	91,963.20
C	85019	0.51	1.68	305	100	26,132.40
C	85019	0.51	1.68	220	100	18,849.60
						seams >=0.5m

TOTAL TONNES FOR THIS SECTION : 993,296.26

SEAM TOTALS:

M:	6,761.66
L:	40,935.60
G:	20,995.20
F:	86,094.60
E:	101,261.50
D:	600,302.50
C:	136,945.20
	993,296.26

SECTION : 3500 N
RESOURCE TYPE : INFERRED

SEAM NAME	DIAMOND DRILL HOLE	SEAM THICKNESS (m)	SPECIFIC GRAVITY (t/m3)	SEAM LENGTH (m)	WIDTH INFLUENCE (m)	TOTAL TONNES SEAMS >=0.5m
L	85012	1.37	1.66	165	100	37,524.30
H	85014	2.09	1.66	240	100	83,265.60
F	85021	3.43	1.72	140	100	82,594.40
E	85021	1.81	1.55	338	100	94,825.90
D	85016	2.41	1.75	520	100	219,310.00
D	85018	1.89	1.75	595	100	196,796.25
C	85019	0.51	1.68	86	100	7,368.48
						seams >=0.5m

TOTAL TONNES FOR THIS SECTION : 721,684.93

SEAM TOTALS:

L:	37,524.30
H:	83,265.60
F:	82,594.40
E:	94,825.90
D:	416,106.25
C:	7,368.48
	721,684.93

SECTION : 3600 N
RESOURCE TYPE : INFERRED

SEAM NAME	DIAMOND DRILL HOLE	SEAM THICKNESS (m)	SPECIFIC GRAVITY (t/m3)	SEAM LENGTH (m)	WIDTH INFLUENCE (m)	TOTAL TONNES SEAMS >=0.5m
L	85012	1.37	1.66	135	70	21,491.19
I	85014	5.46	1.54	35	100	29,429.40
H	85014	2.09	1.66	150	100	52,041.00
F	85021	3.43	1.72	100	100	58,996.00
E	85021	1.81	1.55	260	100	72,943.00
D	85016	2.41	1.75	350	100	147,612.50
D	85018	1.89	1.75	150	100	49,612.50
C	85019	0.51	1.68	259	100	22,191.12
						seams >=0.5m

TOTAL TONNES FOR THIS SECTION : 454,316.71

SEAM TOTALS:

L:	21,491.19
I:	29,429.40
H:	52,041.00
F:	58,996.00
E:	72,943.00
D:	197,225.00
C:	22,191.12
	454,316.71

SECTION : 3700 N
RESOURCE TYPE : INFERRED

SEAM NAME	DIAMOND DRILL HOLE	SEAM THICKNESS (m)	SPECIFIC GRAVITY (t/m3)	SEAM LENGTH (m)	WIDTH INFLUENCE (m)	TOTAL TONNES SEAMS >=0.5m
I	85018	2.61	1.54	18	100	7,234.92
H	85018	3.63	1.66	130	100	78,335.40
G	85015	3.43	1.92	75	100	49,392.00
F	85015	2.73	1.72	150	100	70,434.00
F	85018	6.02	1.72	103	100	106,650.32
F	85021	3.43	1.72	128	100	75,514.88
E	85015	0.95	1.55	230	100	33,867.50
E	85021	1.81	1.55	200	100	56,110.00
D	85018	1.89	1.75	390	100	128,992.50
D	85018	1.89	1.75	400	100	132,300.00
D	85016	2.41	1.75	42	100	17,713.50
C	85019	0.51	1.68	136	100	11,652.48
						seams >=0.5m

TOTAL TONNES FOR THIS SECTION : 768,197.50

SEAM TOTALS:

I:	7,234.92
H:	78,335.40
G:	49,392.00
F:	252,599.20
E:	89,977.50
D:	279,006.00
C:	11,652.48
	768,197.50

SECTION : 3800 N
RESOURCE TYPE : INFERRED

SEAM NAME	DIAMOND DRILL HOLE	SEAM THICKNESS (m)	SPECIFIC GRAVITY (t/m3)	SEAM LENGTH (m)	WIDTH INFLUENCE (m)	TOTAL TONNES SEAMS >=0.5m
F	85015	2.73	1.72	20	60	5,634.72
F	85018	6.02	1.72	208	100	215,371.52
F	85021	3.43	1.72	155	95	86,871.61
E	85015	0.95	1.55	90	100	13,252.50
E	85021	1.81	1.55	220	95	58,634.95
D	85018	1.89	1.75	890	100	294,367.50
						seams >=0.5m

TOTAL TONNES FOR THIS SECTION : 674,132.80

SEAM TOTALS:

F:	307,877.85
E:	71,387.45
D:	294,367.50
	674,132.80

SECTION : 3900 N
RESOURCE TYPE : INFERRED

SEAM NAME	DIAMOND DRILL HOLE	SEAM THICKNESS (m)	SPECIFIC GRAVITY (t/m3)	SEAM LENGTH (m)	WIDTH INFLUENCE (m)	TOTAL TONNES SEAMS >=0.5m
F	85021	3.43	1.72	10	100	5,899.60
F	85018	6.02	1.72	120	100	124,252.80
E	85021	1.81	1.55	105	100	29,457.75
D	85018	1.89	1.75	820	100	271,215.00
						seams >=0.5m

TOTAL TONNES FOR THIS SECTION : 430,825.15

SEAM TOTALS:

F:	130,152.40
E:	29,457.75
D:	271,215.00
	430,825.15

SECTION : 4000 N
RESOURCE TYPE : INFERRED

SEAM NAME	DIAMOND DRILL HOLE	SEAM THICKNESS (m)	SPECIFIC GRAVITY (t/m3)	SEAM LENGTH (m)	WIDTH INFLUENCE (m)	TOTAL TONNES SEAMS >=0.5m
F	85018	6.02	1.72	5	50	2,588.60
F	85021	3.43	1.72	97	55	31,474.37
E	85021	1.81	1.55	93	100	26,091.15
E	85021	1.81	1.55	90	70	17,674.65
D	85018	1.89	1.75	193	75	47,876.06
D	85018	1.89	1.75	700	100	231,525.00
						seams >=0.5m

TOTAL TONNES FOR THIS SECTION : 357,229.83

SEAM TOTALS:

F:	34,062.97
E:	43,765.80
D:	279,401.06
	357,229.83

SEAM : P RESOURCE SUMMARY

Section	Category			
	MEASURED	INDICATED	INFERRED	TOTAL TONNES
4000				0.00
3900				0.00
3800				0.00
3700				0.00
3600				0.00
3500				0.00
3400				0.00
3300				0.00
3200				0.00
3100				0.00
3000				0.00
2900				0.00
2800				0.00
2700				0.00
2600				0.00
2500				0.00
2400				0.00
2300				0.00
2200				0.00
2100				0.00
2000				0.00
1900				0.00
1800				0.00
1700			156,762.35	156,762.35
1600			218,170.25	218,170.25
1500		39,494.00	249,658.50	289,152.50
1400		77,013.30	207,343.50	284,356.80
1300	19,182.80			19,182.80
1200	84,630.00	86,040.50	163,435.88	334,106.38
1100	50,778.00	81,809.00	234,732.00	367,319.00
1000		104,377.00	290,160.00	394,537.00
TOTAL TONNES :	154,590.80	388,733.80	1,520,262.48	2,063,587.08
	MEASURED	INDICATED	INFERRED	TOTAL TONNES

SEAM : O RESOURCE SUMMARY

Section	Category MEASURED	INDICATED	INFERRED	TOTAL TONNES
4000				0.00
3900				0.00
3800				0.00
3700				0.00
3600				0.00
3500				0.00
3400				0.00
3300			80,064.40	80,064.40
3200			84,424.00	84,424.00
3100			92,001.40	92,001.40
3000		46,779.20	55,602.20	102,381.40
2900	30,704.04	33,105.28	83,756.22	147,565.54
2800	43,319.20	28,718.00	136,592.15	208,629.35
2700	40,585.80	66,233.05	74,883.05	181,701.90
2600	56,648.85	103,350.20	27,065.85	187,064.90
2500	116,117.60	96,188.00	24,488.15	236,793.75
2400	79,749.54	124,499.45	38,665.50	242,914.49
2300	25,941.35	165,654.42		191,595.77
2200	77,400.20	12,352.20	142,289.04	232,041.44
2100	81,950.10	7,058.40	154,662.00	243,670.50
2000	45,204.90	13,758.69	106,716.78	165,680.37
1900		91,534.30		91,534.30
1800		24,033.16	120,136.39	144,169.55
1700	5,475.10	66,051.40	71,622.00	143,148.50
1600	25,943.08	79,739.16	128,442.12	234,124.36
1500	9,549.60	65,255.60	164,644.10	239,449.30
1400		58,093.40	152,845.50	210,938.90
1300	42,841.72	23,510.70	214,883.30	281,235.72
1200	70,532.10	52,246.00	474,729.30	597,507.40
1100		304,471.35	253,984.76	558,456.11
1000		327,506.30	380,098.30	707,604.60
TOTAL TONNES :	751,963.18	1,790,138.26	3,062,596.51	5,604,697.95
	MEASURED	INDICATED	INFERRED	TOTAL TONNES

SEAM : N RESOURCE SUMMARY

Section	Category			
	MEASURED	INDICATED	INFERRED	TOTAL TONNES
4000				0.00
3900				0.00
3800				0.00
3700				0.00
3600				0.00
3500				0.00
3400				0.00
3300			138,402.00	138,402.00
3200			142,051.80	142,051.80
3100			180,224.55	180,224.55
3000		90,717.00	96,096.00	186,813.00
2900	110,672.10	166,273.80	45,378.30	322,324.20
2800	166,740.75	84,034.50	58,302.75	309,078.00
2700	153,024.30	64,533.15	22,506.00	240,063.45
2600	133,996.50	34,188.00	22,506.00	190,690.50
2500	63,947.40	34,993.20	19,602.00	118,542.60
2400	36,300.00	54,928.50	27,588.00	118,816.50
2300		76,238.25		76,238.25
2200	77,744.70	49,491.75	29,980.50	157,216.95
2100	98,947.20	76,774.50	30,262.65	205,984.35
2000	63,802.20	133,584.05	8,863.80	206,250.05
1900		106,606.50	30,209.85	136,816.35
1800		108,900.00	86,612.21	195,512.21
1700	38,115.00	25,047.00	16,112.25	79,274.25
1600	48,460.50			48,460.50
1500	32,670.00	2,722.50		35,392.50
1400		49,420.80		49,420.80
1300	100,254.00	73,400.25	68,029.50	241,683.75
1200	100,254.00	87,722.25	53,707.50	241,683.75
1100		180,815.25	88,019.25	268,834.50
1000		114,576.00	242,795.44	357,371.44
TOTAL TONNES :	1,224,928.65	1,614,967.25	1,407,250.35	4,247,146.25
	MEASURED	INDICATED	INFERRED	TOTAL TONNES

SEAM : M/N RESOURCE SUMMARY

	Category			
Section	MEASURED	INDICATED	INFERRED	TOTAL TONNES
4000				0.00
3900				0.00
3800				0.00
3700				0.00
3600				0.00
3500				0.00
3400				0.00
3300			4,717.50	4,717.50
3200			5,503.75	5,503.75
3100			6,290.00	6,290.00
3000			11,007.50	11,007.50
2900	11,793.75			11,793.75
2800	15,725.00			15,725.00
2700	52,003.50	9,324.00		61,327.50
2600	61,938.00	20,018.85		81,956.85
2500	57,986.40	25,004.60		82,991.00
2400	41,514.00	37,989.75		79,503.75
2300		56,980.00		56,980.00
2200			37,769.60	37,769.60
2100			16,605.60	16,605.60
2000				0.00
1900			36,796.50	36,796.50
1800			46,536.75	46,536.75
1700			51,948.00	51,948.00
1600			60,606.00	60,606.00
1500	34,956.68		68,181.75	103,138.43
1400	69,264.00	16,017.30	91,908.00	177,189.30
1300	34,040.00	31,912.50	155,307.50	221,260.00
1200	59,570.00	63,825.00	104,247.50	227,642.50
1100		108,502.50	220,196.25	328,698.75
1000			65,952.50	65,952.50

TOTAL TONNES :	MEASURED	INDICATED	INFERRED	TOTAL TONNES
	MEASURED	INDICATED	INFERRED	TOTAL TONNES

SEAM : M upper RESOURCE SUMMARY

Section	Category MEASURED	INDICATED	INFERRED	TOTAL TONNES
4000				0.00
3900				0.00
3800				0.00
3700				0.00
3600				0.00
3500				0.00
3400				0.00
3300				0.00
3200				0.00
3100				0.00
3000				0.00
2900				0.00
2800				0.00
2700				0.00
2600	19,239.40			19,239.40
2500				0.00
2400				0.00
2300				0.00
2200				0.00
2100				0.00
2000				0.00
1900				0.00
1800				0.00
1700				0.00
1600				0.00
1500				0.00
1400				0.00
1300	113,510.80	19,646.10		133,156.90
1200	100,413.40	6,548.70		106,962.10
1100				0.00
1000				0.00
TOTAL TONNES :	233,163.60	26,194.80	0.00	259,358.40
	MEASURED	INDICATED	INFERRED	TOTAL TONNES

SEAM : M RESOURCE SUMMARY

Section	Category			
	MEASURED	INDICATED	INFERRED	TOTAL TONNES
4000				0.00
3900				0.00
3800				0.00
3700				0.00
3600				0.00
3500				0.00
3400			6,761.66	6,761.66
3300	86,301.00	80,547.60	172,275.20	339,123.80
3200	78,629.80	107,396.80	198,049.40	384,076.00
3100		195,615.60	251,575.80	447,191.40
3000		262,695.60	226,118.08	488,813.68
2900		463,400.68	103,449.40	566,850.08
2800	439,141.80	196,234.80	35,542.08	670,918.68
2700	613,016.60	244,222.80		857,239.40
2600	386,908.84	527,816.40		914,725.24
2500	217,383.92	650,046.48		867,430.40
2400	471,099.40	283,679.60	80,186.40	834,965.40
2300	495,471.80	247,306.76	242,898.40	985,676.96
2200	158,326.00	345,489.52	50,310.00	554,125.52
2100	24,645.88	487,036.92	72,301.92	583,984.72
2000	318,225.80	257,380.80	204,215.60	779,822.20
1900	378,365.60	236,930.00	574,498.92	1,189,794.52
1800	87,864.48	1,235,579.20	435,620.96	1,759,064.64
1700	372,118.56	662,961.96	521,966.68	1,557,047.20
1600	490,461.44	369,511.04	890,848.20	1,750,820.68
1500	367,132.28	478,632.14	227,805.40	1,073,569.82
1400	234,380.96	489,563.60	369,008.80	1,092,953.36
1300	328,554.40	53,732.80	259,440.50	641,727.70
1200	236,844.00	209,057.40	501,402.36	947,303.76
1100		431,444.80	735,754.94	1,167,199.74
1000		66,048.00	1,682,099.80	1,748,147.80
TOTAL TONNES :	5,784,872.56	8,582,331.30	7,842,130.50	22,209,334.36
	MEASURED	INDICATED	INFERRED	TOTAL TONNES

SEAM : L RESOURCE SUMMARY

Section	Category MEASURED	INDICATED	INFERRED	TOTAL TONNES
4000				0.00
3900				0.00
3800				0.00
3700				0.00
3600			21,491.19	21,491.19
3500			37,524.30	37,524.30
3400			40,935.60	40,935.60
3300	85,456.80	67,379.40	192,750.90	345,587.10
3200	67,379.40	150,464.06	285,279.30	503,122.76
3100	9,551.64	223,975.50	218,207.00	451,734.14
3000	56,172.74	177,304.60	267,965.50	501,442.84
2900	104,580.00	255,236.62	83,107.90	442,924.52
2800	389,776.30	100,579.40	96,039.30	586,395.00
2700	312,984.70	253,357.50	53,027.04	619,369.24
2600	54,414.80	374,786.50	132,567.60	561,768.90
2500	207,417.00	365,648.20	100,430.00	673,495.20
2400	342,242.20	116,269.72	51,194.40	509,706.32
2300	236,857.10	424,516.78	368,251.08	1,029,624.96
2200	204,520.30	203,499.40	28,356.12	436,375.82
2100	141,200.93	380,337.87	31,005.48	552,544.28
2000	267,525.60	365,253.12	13,120.64	645,899.36
1900	312,436.90	313,615.50		626,052.40
1800	279,668.50	549,572.88	106,381.10	935,622.48
1700	407,061.05	255,952.08	29,014.01	692,027.14
1600	496,804.80	248,468.80	158,978.20	904,251.80
1500	414,161.70	248,148.42	149,292.10	811,602.22
1400	502,938.50	413,696.90	96,578.80	1,013,214.20
1300	544,861.80	284,092.40	320,745.20	1,149,699.40
1200	352,434.60	332,888.10	421,482.30	1,106,805.00
1100	94,537.00	641,415.70	386,406.50	1,122,359.20
1000		476,187.60	550,090.80	1,026,278.40
TOTAL TONNES :	5,884,984.36	7,222,647.05	4,240,222.36	17,347,853.77
	MEASURED	INDICATED	INFERRED	TOTAL TONNES

SEAM : K/L RESOURCE SUMMARY

Section	Category			
	MEASURED	INDICATED	INFERRED	TOTAL TONNES
4000				0.00
3900				0.00
3800				0.00
3700				0.00
3600				0.00
3500				0.00
3400				0.00
3300	107,100.00	224,315.00	238,000.00	569,415.00
3200	127,925.00	218,960.00	249,900.00	596,785.00
3100	26,089.90	388,747.50	315,350.00	730,187.40
3000	59,525.50	234,931.50	334,279.50	628,736.50
2900	62,058.50	366,171.50	236,708.00	664,938.00
2800	139,697.50	93,075.00	183,736.00	416,508.50
2700	138,847.50	143,692.50		282,540.00
2600	234,217.50	271,634.50	178,551.00	684,403.00
2500	232,116.30	352,200.90	178,551.00	762,868.20
2400	184,637.00	263,182.10	647,718.70	1,095,537.80
2300	100,259.20	381,661.48	231,455.00	713,375.68
2200	194,681.88	38,408.10	495,975.00	729,064.98
2100	214,133.70	405,256.20	567,810.20	1,187,200.10
2000	579,564.00	276,022.20	442,103.70	1,297,689.90
1900	530,927.00	350,235.70	112,717.48	993,880.18
1800		857,412.00	567,142.27	1,424,554.27
1700	254,598.80	627,322.10	493,761.60	1,375,682.50
1600	547,219.80	149,231.10	112,965.00	809,415.90
1500	939,284.00	296,255.60	493,782.00	1,729,321.60
1400	638,157.90	215,158.80	121,788.00	975,104.70
1300	772,267.50	423,111.30	436,084.00	1,631,462.80
1200	478,575.50	556,313.10	132,243.00	1,167,131.60
1100	48,739.00	717,928.70	236,827.00	1,003,494.70
1000		417,309.20	904,391.50	1,321,700.70
TOTAL TONNES :	6,610,622.98	8,268,536.08	7,911,839.95	22,790,999.01
	MEASURED	INDICATED	INFERRED	TOTAL TONNES

SEAM : K RESOURCE SUMMARY

Section	Category			
	MEASURED	INDICATED	INFERRED	TOTAL TONNES
4000				0.00
3900				0.00
3800				0.00
3700				0.00
3600				0.00
3500				0.00
3400				0.00
3300	122,217.40	180,137.82	212,552.00	514,907.22
3200	50,481.10	304,532.90	267,466.70	622,480.70
3100	34,034.40	344,044.10	336,057.10	714,135.60
3000	62,396.40	427,723.41	482,520.75	972,640.56
2900	290,710.50	384,187.74	348,730.35	1,023,628.59
2800	821,656.92	298,684.46	401,645.04	1,521,986.42
2700	810,698.43	468,212.61	219,833.21	1,498,744.25
2600	465,045.52	557,062.28	174,768.60	1,196,876.40
2500	557,614.85	596,521.32	184,411.68	1,338,547.85
2400	798,414.75	257,603.57	264,744.60	1,320,762.92
2300	707,183.65	697,496.56	291,077.25	1,695,757.46
2200	933,069.05	556,200.01	300,735.00	1,790,004.06
2100	872,806.32	599,395.01	631,649.45	2,103,850.78
2000	787,184.05	826,315.46	592,884.79	2,206,384.30
1900	976,167.88	579,724.17	403,121.82	1,959,013.87
1800	476,973.86	982,197.25	759,152.94	2,218,324.05
1700	305,095.25	765,025.83	822,649.59	1,892,770.67
1600	915,482.82	437,203.49	574,266.93	1,926,953.24
1500	1,287,793.24	298,430.18	316,172.25	1,902,395.67
1400	1,156,097.06	387,512.94	289,652.63	1,833,262.63
1300	845,350.60	580,827.68	339,993.55	1,766,171.83
1200	616,987.60	676,132.15	452,626.55	1,745,746.30
1100	241,973.50	925,181.48	505,707.50	1,672,862.48
1000		691,600.85	1,207,789.25	1,899,390.10
TOTAL TONNES :	14,135,435.15	12,821,953.27	10,380,209.53	37,337,597.95
	MEASURED	INDICATED	INFERRED	TOTAL TONNES

SEAM : J RESOURCE SUMMARY

Section	Category			
	MEASURED	INDICATED	INFERRED	TOTAL TONNES
4000				0.00
3900				0.00
3800				0.00
3700				0.00
3600				0.00
3500				0.00
3400				0.00
3300			15,134.00	15,134.00
3200			24,214.40	24,214.40
3100			21,944.30	21,944.30
3000			24,214.40	24,214.40
2900			22,701.00	22,701.00
2800			14,679.98	14,679.98
2700	23,003.68		9,080.40	32,084.08
2600	32,689.44	21,460.01	21,187.60	75,337.05
2500	34,051.50	27,846.56	25,727.80	87,625.86
2400	36,321.60	6,810.30	25,792.20	68,924.10
2300	144,292.23	192,318.53	114,132.90	450,743.66
2200	238,626.15	107,346.75	95,935.88	441,908.78
2100	45,875.34	254,677.85	136,149.65	436,702.84
2000	49,317.52	187,064.29	139,619.20	376,001.01
1900	97,846.14	15,823.08	34,065.99	147,735.21
1800	70,250.74	69,201.02	17,581.20	157,032.96
1700	94,381.42	123,638.34	19,384.40	237,404.16
1600	135,140.18	70,340.90	46,021.85	251,502.93
1500	156,735.11	22,483.65	69,518.19	248,736.95
1400	105,025.13	49,570.29	32,248.30	186,843.72
1300	52,743.60	108,224.20	37,984.73	198,952.53
1200	55,255.20	105,294.00	58,583.07	219,132.27
1100	18,837.00	124,324.20	78,738.66	221,899.86
1000		337,415.75	145,476.38	482,892.13
TOTAL TONNES :	1,390,391.98	1,823,839.72	1,230,116.48	4,444,348.18
	MEASURED	INDICATED	INFERRED	TOTAL TONNES

SEAM : I RESOURCE SUMMARY

Section	Category MEASURED	INDICATED	INFERRED	TOTAL TONNES
4000				0.00
3900				0.00
3800	38,714.68	37,839.73		76,554.41
3700	122,799.60	77,308.00	7,234.92	207,342.52
3600	168,245.00	210,210.00	29,429.40	407,884.40
3500	428,135.40	294,294.00		722,429.40
3400	467,397.70	294,294.00		761,691.70
3300	389,946.48	555,685.90	248,040.10	1,193,672.48
3200	359,928.80	542,026.10	302,586.90	1,204,541.80
3100	128,821.00	963,639.60	311,990.14	1,404,450.74
3000	609,541.24	737,453.64	568,883.70	1,915,878.58
2900	1,064,635.88	394,523.36	527,682.54	1,986,841.78
2800	1,289,971.76	293,970.60	860,313.30	2,444,255.66
2700	1,492,027.46	422,472.82	819,595.70	2,734,095.98
2600	1,477,617.68	444,049.76	779,324.70	2,700,992.14
2500	1,136,928.10	938,805.56	845,775.70	2,921,509.36
2400	1,344,974.40	638,490.16	1,019,618.60	3,003,083.16
2300	1,845,697.70	1,076,128.90	999,136.60	3,920,963.20
2200	2,152,689.00	698,559.40	851,757.06	3,703,005.46
2100	1,783,084.38	1,223,037.20	924,197.12	3,930,318.70
2000	1,780,734.34	938,206.50	972,024.90	3,690,965.74
1900	1,898,252.51	593,175.66	1,055,660.76	3,547,088.93
1800	1,729,567.84	647,539.20	1,106,611.66	3,483,718.70
1700	1,953,394.52	949,560.92	753,235.56	3,656,191.00
1600	2,252,405.54	930,889.09	686,224.00	3,869,518.63
1500	2,185,273.86	861,121.80	403,238.22	3,449,633.88
1400	1,425,698.12	1,101,404.92	316,744.12	2,843,847.16
1300	765,734.20	1,116,826.48	488,518.80	2,371,079.48
1200	508,816.00	891,672.32	868,145.74	2,268,634.06
1100	98,729.40	934,913.98	1,037,012.90	2,070,656.28
1000		331,452.66	1,378,644.96	1,710,097.62
TOTAL TONNES :	30,899,762.59	19,139,552.26	18,161,628.10	68,200,942.95
	MEASURED	INDICATED	INFERRED	TOTAL TONNES

SEAM : H/I RESOURCE SUMMARY

Section	Category			
	MEASURED	INDICATED	INFERRED	TOTAL TONNES
4000				0.00
3900				0.00
3800				0.00
3700				0.00
3600				0.00
3500				0.00
3400				0.00
3300				0.00
3200				0.00
3100				0.00
3000				0.00
2900				0.00
2800				0.00
2700	72,047.50	36,400.00	5,600.00	114,047.50
2600	157,045.00	15,960.00		173,005.00
2500	89,600.00	92,764.00	44,896.68	227,260.68
2400		133,997.50	139,007.75	273,005.25
2300	4,270.00	72,800.00	155,155.00	232,225.00
2200	14,945.00	122,797.50	177,397.50	315,140.00
2100	120,386.00	67,541.25	153,527.50	341,454.75
2000	198,817.50	92,478.75	97,107.50	388,403.75
1900	316,977.50	159,941.25	17,631.25	494,550.00
1800	217,586.25	209,420.75	147,533.75	574,540.75
1700	228,019.75	94,080.00		322,099.75
1600	136,650.50	104,678.00	50,284.50	291,613.00
1500	135,803.50	51,668.75	21,778.75	209,251.00
1400	29,326.50	79,236.50		108,563.00
1300	25,602.50			25,602.50
1200	25,602.50			25,602.50
1100				0.00
1000				0.00
TOTAL TONNES :	1,772,680.00	1,333,764.25	1,009,920.18	4,116,364.43
	MEASURED	INDICATED	INFERRED	TOTAL TONNES

SEAM : H/I2 RESOURCE SUMMARY

Section	Category MEASURED	INDICATED	INFERRED	TOTAL TONNES
4000				0.00
3900				0.00
3800				0.00
3700				0.00
3600				0.00
3500				0.00
3400				0.00
3300				0.00
3200				0.00
3100				0.00
3000				0.00
2900				0.00
2800	48,658.80	50,382.24		99,041.04
2700	39,972.80			39,972.80
2600	89,938.80			89,938.80
2500		78,803.52		78,803.52
2400				0.00
2300				0.00
2200				0.00
2100				0.00
2000				0.00
1900				0.00
1800				0.00
1700				0.00
1600	8,944.00			8,944.00
1500	11,627.20			11,627.20
1400				0.00
1300				0.00
1200				0.00
1100				0.00
1000				0.00
TOTAL TONNES :	199,141.60	129,185.76	0.00	328,327.36
	MEASURED	INDICATED	INFERRED	TOTAL TONNES

SEAM : H RESOURCE SUMMARY

Section	Category			
	MEASURED	INDICATED	INFERRED	TOTAL TONNES
4000				0.00
3900				0.00
3800	165,387.05	288,139.07		453,526.12
3700	270,414.00	168,697.50	78,335.40	517,446.90
3600	295,646.00	107,377.10	52,041.00	455,064.10
3500	233,719.70	50,306.30	83,265.60	367,291.60
3400	248,004.00	168,290.80		416,294.80
3300	324,945.00	227,552.80	480,105.20	1,032,603.00
3200	370,138.50	379,094.20	849,422.00	1,598,654.70
3100	180,574.80	632,435.10	974,984.40	1,787,994.30
3000	599,633.50	648,093.88	997,933.90	2,245,661.28
2900	809,432.60	716,620.34	1,127,133.36	2,653,186.30
2800	732,109.80	861,315.90	2,156,009.66	3,749,435.36
2700	936,708.12	833,580.62	2,198,153.74	3,968,442.48
2600	835,594.20	1,998,607.80	1,289,180.90	4,123,382.90
2500	1,503,341.65	1,971,098.94	1,361,000.80	4,835,441.39
2400	1,628,310.60	947,939.68	1,669,453.70	4,245,703.98
2300	1,702,628.80	1,111,602.40	1,970,722.12	4,784,953.32
2200	1,203,554.78	2,434,995.90	1,478,045.74	5,116,596.42
2100	1,775,386.60	925,303.92	706,557.42	3,407,247.94
2000	2,184,515.18	532,212.60	786,333.70	3,503,061.48
1900	1,607,397.92	585,991.62	531,432.40	2,724,821.94
1800	1,563,461.04	569,411.54	487,565.24	2,620,437.82
1700	1,074,650.80	987,821.18	382,029.08	2,444,501.06
1600	924,930.42	858,173.52	750,321.66	2,533,425.60
1500	926,172.10	827,861.92	468,654.52	2,222,688.54
1400	793,758.88	916,190.52	381,992.56	2,091,941.96
1300	477,258.30	1,018,252.30	374,645.40	1,870,156.00
1200	272,190.20	714,503.84	792,286.46	1,778,980.50
1100	32,735.20	506,016.14	1,329,907.34	1,868,658.68
1000		195,562.94	1,523,113.08	1,718,676.02
TOTAL TONNES :	23,672,599.74	22,183,050.37	25,280,626.38	71,136,276.49
	MEASURED	INDICATED	INFERRED	TOTAL TONNES

SEAM : H-1 RESOURCE SUMMARY

Section	Category MEASURED	INDICATED	INFERRED	TOTAL TONNES
4000				0.00
3900				0.00
3800				0.00
3700				0.00
3600				0.00
3500				0.00
3400				0.00
3300				0.00
3200				0.00
3100				0.00
3000				0.00
2900				0.00
2800				0.00
2700				0.00
2600				0.00
2500				0.00
2400	17,789.80			17,789.80
2300				0.00
2200				0.00
2100				0.00
2000				0.00
1900				0.00
1800				0.00
1700				0.00
1600				0.00
1500				0.00
1400				0.00
1300				0.00
1200				0.00
1100				0.00
1000				0.00
TOTAL TONNES :	17,789.80	0.00	0.00	17,789.80
	MEASURED	INDICATED	INFERRED	TOTAL TONNES

SEAM : H lower RESOURCE SUMMARY

Section	Category MEASURED	INDICATED	INFERRED	TOTAL TONNES
4000				0.00
3900				0.00
3800				0.00
3700				0.00
3600				0.00
3500				0.00
3400				0.00
3300				0.00
3200				0.00
3100				0.00
3000				0.00
2900				0.00
2800				0.00
2700				0.00
2600				0.00
2500				0.00
2400				0.00
2300				0.00
2200				0.00
2100	25,995.60	8,665.20		34,660.80
2000				0.00
1900				0.00
1800				0.00
1700				0.00
1600				0.00
1500				0.00
1400				0.00
1300				0.00
1200				0.00
1100				0.00
1000				0.00
TOTAL TONNES :	25,995.60	8,665.20	0.00	34,660.80
	MEASURED	INDICATED	INFERRED	TOTAL TONNES

SEAM : Ph RESOURCE SUMMARY

Section	Category			
	MEASURED	INDICATED	INFERRED	TOTAL TONNES
4000				0.00
3900				0.00
3800				0.00
3700				0.00
3600				0.00
3500				0.00
3400				0.00
3300			40,803.05	40,803.05
3200		8,144.50		8,144.50
3100			11,285.95	11,285.95
3000	29,087.50	19,779.50	83,530.35	132,397.35
2900	11,635.00	15,707.25	89,419.45	116,761.70
2800		5,352.10	219,400.30	224,752.40
2700	74,249.20	40,654.48	218,917.00	333,820.68
2600	19,475.20	167,866.20	296,826.75	484,168.15
2500	336,466.30	523,841.71	339,929.95	1,200,237.96
2400	618,677.70	303,190.20	536,042.35	1,457,910.25
2300	424,999.70	584,085.95	481,456.30	1,490,541.95
2200	372,948.29	567,136.44	530,942.64	1,471,027.37
2100	188,096.78	542,871.20	638,598.61	1,369,566.59
2000	409,596.75	200,086.20	843,020.19	1,452,703.14
1900			768,387.93	768,387.93
1800		35,585.20	537,605.02	573,190.22
1700	21,859.48	136,494.66	154,541.44	312,895.58
1600	84,387.76	87,946.28	39,397.90	211,731.94
1500	79,812.52	85,404.48	50,073.46	215,290.46
1400		86,929.56	50,836.00	137,765.56
1300		59,732.30	93,029.88	152,762.18
1200			165,217.00	165,217.00
1100			165,217.00	165,217.00
1000				0.00
TOTAL TONNES :	2,671,292.18	3,470,808.21	6,354,478.52	12,496,578.91
	MEASURED	INDICATED	INFERRED	TOTAL TONNES

SEAM : G RESOURCE SUMMARY

Section	Category			
	MEASURED	INDICATED	INFERRED	TOTAL TONNES
4000				0.00
3900				0.00
3800				0.00
3700			49,392.00	49,392.00
3600		197,568.00		197,568.00
3500		210,739.20		210,739.20
3400	274,800.00	168,816.00	20,995.20	464,611.20
3300	310,704.00	159,993.60	53,354.88	524,052.48
3200	45,504.00	410,726.40	93,757.44	549,987.84
3100	147,139.20	668,697.60	94,454.40	910,291.20
3000	494,246.40	247,839.36	102,201.60	844,287.36
2900	411,504.00	102,082.56	90,691.20	604,277.76
2800	528,643.20	282,883.20	298,992.00	1,110,518.40
2700	361,923.84	374,488.32	371,084.16	1,107,496.32
2600	132,441.60	262,329.60	628,990.08	1,023,761.28
2500	216,846.72	851,205.12	475,499.52	1,543,551.36
2400	388,464.00	556,166.40	371,873.28	1,316,503.68
2300	303,926.40	756,938.88	164,223.36	1,225,088.64
2200	655,353.60	881,331.84	190,329.60	1,727,015.04
2100	469,516.80	1,352,302.08	322,492.80	2,144,311.68
2000	253,910.40	324,048.00	19,872.00	597,830.40
1900		113,088.00	99,331.20	212,419.20
1800				0.00
1700				0.00
1600				0.00
1500			42,940.80	42,940.80
1400				0.00
1300				0.00
1200				0.00
1100				0.00
1000				0.00
TOTAL TONNES :	4,994,924.16	7,921,244.16	3,490,475.52	16,406,643.84
	MEASURED	INDICATED	INFERRED	TOTAL TONNES

SEAM : G lower RESOURCE SUMMARY

	Category			
Section	MEASURED	INDICATED	INFERRED	TOTAL TONNES
4000				0.00
3900				0.00
3800				0.00
3700				0.00
3600				0.00
3500				0.00
3400	6,012.50			6,012.50
3300				0.00
3200				0.00
3100	81,168.75	247,668.75	48,433.00	377,270.50
3000	260,156.25	119,019.75		379,176.00
2900	83,388.75			83,388.75
2800	439,643.25	69,387.95	52,910.00	561,941.20
2700	207,453.45	328,491.55	41,847.00	577,792.00
2600	56,526.75	455,066.70	192,298.25	703,891.70
2500			164,502.00	164,502.00
2400	40,009.95		241,750.60	281,760.55
2300	19,758.00			19,758.00
2200				0.00
2100				0.00
2000				0.00
1900				0.00
1800				0.00
1700				0.00
1600				0.00
1500				0.00
1400				0.00
1300				0.00
1200				0.00
1100				0.00
1000				0.00
TOTAL TONNES :	1,194,117.65	1,219,634.70	741,740.85	3,155,493.20
	MEASURED	INDICATED	INFERRED	TOTAL TONNES

SEAM : F/G RESOURCE SUMMARY

Section	Category			
	MEASURED	INDICATED	INFERRED	TOTAL TONNES
4000				0.00
3900				0.00
3800				0.00
3700				0.00
3600				0.00
3500				0.00
3400				0.00
3300				0.00
3200				0.00
3100				0.00
3000				0.00
2900	18,023.40	13,754.70		31,778.10
2800	23,715.00	14,229.00		37,944.00
2700	18,023.40	17,738.82	3,794.40	39,556.62
2600				0.00
2500				0.00
2400				0.00
2300				0.00
2200				0.00
2100				0.00
2000				0.00
1900				0.00
1800				0.00
1700				0.00
1600				0.00
1500				0.00
1400				0.00
1300				0.00
1200				0.00
1100				0.00
1000				0.00
TOTAL TONNES :	59,761.80	45,722.52	3,794.40	109,278.72
	MEASURED	INDICATED	INFERRED	TOTAL TONNES

SEAM : F RESOURCE SUMMARY

Section	Category			
	MEASURED	INDICATED	INFERRED	TOTAL TONNES
4000		35,692.58	34,062.97	69,755.55
3900		464,503.20	130,152.40	594,655.60
3800	247,036.72	344,669.08	307,877.85	899,583.65
3700	415,199.40	245,579.88	252,599.20	913,378.48
3600	335,718.20	337,567.20	58,996.00	732,281.40
3500	283,024.28	287,386.20	82,594.40	653,004.88
3400	367,065.20	179,679.80	86,094.60	632,839.60
3300	326,421.60	201,799.00	331,504.20	859,724.80
3200	109,908.00	549,841.00	527,248.80	1,186,997.80
3100	461,372.80	493,399.20	592,995.80	1,547,767.80
3000	649,527.04	437,659.16	1,391,454.20	2,478,640.40
2900	575,159.40	424,186.40	456,742.56	1,456,088.36
2800	492,831.60	375,634.24	429,423.80	1,297,889.64
2700	414,048.72	445,657.16	345,870.50	1,205,576.38
2600	412,354.52	533,203.44	316,806.80	1,262,364.76
2500	318,655.80	433,938.80	271,085.76	1,023,680.36
2400	156,719.52	358,931.32	381,458.16	897,109.00
2300	67,226.20	105,014.60	445,024.20	617,265.00
2200	34,231.44	94,840.80	555,492.92	684,565.16
2100		104,404.00	640,459.20	744,863.20
2000				0.00
1900				0.00
1800			55,624.80	55,624.80
1700				0.00
1600				0.00
1500			218,261.12	218,261.12
1400				0.00
1300				0.00
1200				0.00
1100				0.00
1000				0.00
TOTAL TONNES :	5,666,500.44	6,453,587.06	7,911,830.24	20,031,917.74
	MEASURED	INDICATED	INFERRED	TOTAL TONNES

SEAM : E RESOURCE SUMMARY

Section	Category			
	MEASURED	INDICATED	INFERRED	TOTAL TONNES
4000		59,757.15	43,765.80	103,522.95
3900		115,025.50	29,457.75	144,483.25
3800	72,381.90	45,729.65	71,887.45	189,999.00
3700	75,187.40	42,082.50	89,977.50	207,247.40
3600	40,679.75	117,218.75	72,943.00	230,841.50
3500	53,746.25	99,026.40	94,825.90	247,598.55
3400	105,322.50	174,227.75	101,261.50	380,811.75
3300	181,760.75	124,581.25	134,098.25	440,440.25
3200	103,230.00	258,075.00	100,860.05	462,165.05
3100	164,470.50	282,681.25	71,266.37	518,418.12
3000	211,489.75	162,593.45	237,591.75	611,674.95
2900	238,839.50	55,195.50	471,355.00	765,390.00
2800	71,819.25	288,248.85	457,761.50	817,829.60
2700	208,747.80	180,762.55	438,391.15	827,901.50
2600	188,321.90	144,991.65	396,979.80	730,293.35
2500	159,985.80	270,730.75	460,202.75	890,919.30
2400	170,916.95	345,560.10	771,479.95	1,287,957.00
2300	109,492.00	105,198.50	353,958.00	568,648.50
2200	28,675.00	65,875.00	343,619.50	438,169.50
2100		63,550.00	330,337.55	393,887.55
2000				0.00
1900				0.00
1800				0.00
1700				0.00
1600				0.00
1500				0.00
1400				0.00
1300				0.00
1200				0.00
1100				0.00
1000				0.00
TOTAL TONNES :	2,185,067.00	3,001,111.55	5,072,020.52	10,258,199.07
	MEASURED	INDICATED	INFERRED	TOTAL TONNES

SEAM : D RESOURCE SUMMARY

Section	Category			
	MEASURED	INDICATED	INFERRED	TOTAL TONNES
4000			279,401.06	279,401.06
3900		117,416.25	271,215.00	388,631.25
3800	31,090.50	142,884.00	294,367.50	468,342.00
3700	93,602.25	105,509.25	279,006.00	478,117.50
3600	85,995.00	95,917.50	197,225.00	379,137.50
3500		205,485.00	416,106.25	621,591.25
3400	31,631.25	212,030.00	600,302.50	843,963.75
3300	122,307.50	128,633.75	926,725.63	1,177,666.88
3200	132,851.25	487,427.50	839,685.00	1,459,963.75
3100	174,195.00	538,807.50	789,985.00	1,502,987.50
3000	294,472.50	375,375.00	147,612.50	817,460.00
2900	252,997.50	248,850.00	1,088,736.25	1,590,583.75
2800		435,487.50	1,110,252.50	1,545,740.00
2700		182,490.00	1,034,127.50	1,216,617.50
2600			1,463,012.25	1,463,012.25
2500			1,074,202.50	1,074,202.50
2400			1,153,285.00	1,153,285.00
2300			991,252.50	991,252.50
2200			1,057,612.50	1,057,612.50
2100				0.00
2000				0.00
1900				0.00
1800				0.00
1700				0.00
1600				0.00
1500				0.00
1400				0.00
1300				0.00
1200				0.00
1100				0.00
1000				0.00
TOTAL TONNES :	1,219,142.75	3,276,313.25	14,014,112.44	18,509,568.44
	MEASURED	INDICATED	INFERRED	TOTAL TONNES

SEAM : C RESOURCE SUMMARY

Section	Category			
	MEASURED	INDICATED	INFERRED	TOTAL TONNES
4000				0.00
3900				0.00
3800				0.00
3700			11,652.48	11,652.48
3600			22,191.12	22,191.12
3500			7,368.48	7,368.48
3400			136,945.20	136,945.20
3300			373,850.40	373,850.40
3200		85,365.84	344,433.60	429,799.44
3100	41,983.20	90,392.40	247,900.80	380,276.40
3000	68,972.40	139,515.60	240,903.60	449,391.60
2900	81,967.20	88,107.60	292,026.00	462,100.80
2800	25,704.00	130,662.00	315,159.60	471,525.60
2700	16,793.28	75,426.96	225,595.44	317,815.68
2600			315,873.60	315,873.60
2500			215,913.60	215,913.60
2400			266,893.20	266,893.20
2300			215,913.60	215,913.60
2200				0.00
2100				0.00
2000				0.00
1900				0.00
1800				0.00
1700				0.00
1600				0.00
1500				0.00
1400				0.00
1300				0.00
1200				0.00
1100				0.00
1000				0.00
TOTAL TONNES :	235,420.08	609,470.40	3,232,620.72	4,077,511.20

	MEASURED	INDICATED	INFERRED	TOTAL TONNES

Drillhole Quality Data - Washability Mt. Klappan 1988

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748

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

NOV 01/88 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88001 SEAM - I SAMPLE ID - 1 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 35.00 X 6.00 RELATIVE WEIGHT % - 65.85 ASH % - 26.10

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	CUM. S	CUM. S	CUM. VOL.	CUM. VOL.	CUM. MOIST	CUM. MOIST
1.40	2.07	2.12	2.07	2.12	97.93	25.71	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.22	1.22
1.45	31.08	6.22	33.15	5.96	66.85	34.78	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.43	1.42
1.50	24.96	10.78	58.11	8.03	41.89	49.08	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.68	1.53
1.55	4.27	17.27	62.38	8.66	37.62	52.69	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.41	1.52
1.60	4.14	18.06	66.52	9.25	33.48	56.97	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.38	1.51
1.70	7.46	28.20	73.98	11.16	26.02	65.22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.52	1.51
1.80	0.47	33.90	74.45	11.30	25.55	65.79	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.91	1.52
2.00	2.37	41.67	76.82	12.24	23.18	68.26	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.32	1.51
2.60	23.18	68.26	100.00	25.23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.49	1.51

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 6.00 X 0.50 RELATIVE WEIGHT % - 25.08 ASH % - 21.77

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	CUM. S	CUM. S	CUM. VOL.	CUM. VOL.	CUM. MOIST	CUM. MOIST
1.40	20.66	1.83	20.66	1.83	79.34	26.25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.22	1.22
1.45	28.31	5.29	48.97	3.83	51.03	37.87	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.55	1.41
1.50	11.31	9.92	60.28	4.97	39.72	45.83	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.42	1.41
1.55	4.32	13.74	64.60	5.56	35.40	49.75	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.72	1.43
1.60	4.35	16.34	68.95	6.24	31.05	54.43	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.03	1.41
1.70	7.34	21.04	76.29	7.66	23.71	64.77	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.05	1.37
1.80	3.00	27.28	79.29	8.41	20.71	70.20	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.59	1.38
2.00	3.22	39.49	82.51	9.62	17.49	75.85	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.25	1.38
2.60	17.49	75.85	100.00	21.20	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.08	1.32

GULF CANADA RESOURCES LIMITED - COAL DIVISION

NOV 01/88 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88001 SEAM - I SAMPLE ID - 1 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 0.50 X 0.15 RELATIVE WEIGHT % - 5.54 ASH % - 22.01

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	24.72	1.67	24.72	1.67	75.28	27.65	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.57	1.57
1.45	19.73	3.00	44.45	2.26	55.55	36.41	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.40	1.49
1.50	11.91	6.07	56.36	3.07	43.64	44.69	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.91	1.58
1.55	4.02	8.57	60.38	3.43	39.62	48.35	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.80	1.60
1.60	4.49	10.94	64.87	3.95	35.13	53.13	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.68	1.60
1.70	8.58	15.85	73.45	5.34	26.55	65.18	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.40	1.58
1.80	4.02	24.36	77.47	6.39	22.53	72.46	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.28	1.56
2.00	3.00	38.89	80.47	7.54	19.53	77.62	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.36	1.56
2.60	19.53	77.62	100.00	21.23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.82	1.61

ANALYSIS TYPE - FROTH

FRACTION SIZE(MM) 0.15 X 0.00 RELATIVE WEIGHT % - 3.53 ASH % - 25.01

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
240.00	*****	25.01	100.00	25.01	0.0	0.0	0.0	0.0	24.99	24.99	0.39	0.39	4.92	4.92	1.81	1.81

GULF CANADA RESOURCES LIMITED - COAL DIVISION

NOV 01/88 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88001 SEAM - I SAMPLE ID - 2 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 35.00 X 6.00 RELATIVE WEIGHT % - 68.12 ASH % - 17.23

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	10.42	3.93	10.42	3.93	89.58	17.91	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.99	0.99
1.45	31.81	6.55	42.23	5.90	57.77	24.17	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.23	1.17
1.50	28.40	10.51	70.63	7.76	29.37	37.38	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.27	1.21
1.55	8.74	14.92	79.37	8.54	20.63	46.90	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.50	1.24
1.60	1.12	20.09	80.49	8.71	19.51	48.44	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.41	1.24
1.70	1.76	29.79	82.25	9.16	17.75	50.29	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.21	1.24
1.80	3.82	32.96	86.07	10.21	13.93	55.04	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.28	1.25
2.00	3.60	40.97	89.67	11.45	10.33	59.94	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.34	1.25
2.60	10.33	59.94	100.00	16.46	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.42	1.27

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 6.00 X 0.50 RELATIVE WEIGHT % - 24.80 ASH % - 12.00

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	43.99	2.76	43.99	2.76	56.01	18.21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.12	1.12
1.45	27.46	6.39	71.45	4.16	28.55	29.59	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.13	1.12
1.50	9.76	10.92	81.21	4.97	18.79	39.28	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.26	1.14
1.55	4.10	15.38	85.31	5.47	14.69	45.95	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.22	1.14
1.60	2.31	18.67	87.62	5.82	12.38	51.04	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.36	1.15
1.70	2.43	22.41	90.05	6.26	9.95	58.04	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.57	1.16
1.80	1.18	31.32	91.23	6.59	8.77	61.63	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.51	1.17
2.00	1.44	43.06	92.67	7.16	7.33	65.28	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.04	1.18
2.60	7.33	65.28	100.00	11.42	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.43	1.20

GULF CANADA RESOURCES LIMITED - COAL DIVISION

NOV 01/88 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88001 SEAM - I SAMPLE ID - 2 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 0.50 X 0.15 RELATIVE WEIGHT % - 3.80 ASH % - 19.50

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	34.45	5.87	34.45	5.87	65.55	27.51	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.26	1.26
1.45	22.27	9.47	56.72	7.28	43.28	36.79	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.58	1.39
1.50	10.02	13.11	66.74	8.16	33.26	43.93	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.93	1.47
1.55	5.71	17.87	72.45	8.92	27.55	49.33	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.57	1.48
1.60	2.92	19.46	75.37	9.33	24.63	52.87	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.12	1.46
1.70	5.36	30.36	80.73	10.73	19.27	59.13	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.70	1.48
1.80	2.92	30.71	83.65	11.43	16.35	64.21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.59	1.48
2.00	3.06	41.52	86.71	12.49	13.29	69.43	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.62	1.49
2.60	13.29	69.43	100.00	20.06	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.47	1.48

ANALYSIS TYPE - FROTH

FRACTION SIZE(MM) 0.15 X 0.00 RELATIVE WEIGHT % - 3.28 ASH % - 23.01

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
240.00	*****	23.01	100.00	23.01	0.0	0.0	0.0	0.0	25.73	25.73	0.40	0.40	5.19	5.19	1.55	1.55

========== GULF CANADA CORPORATION - COAL DIVISION ==========

---------- C L E A N S I M U L A T E D P R O D U C T R E P O R T ----------

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88001
Coal zone:	1		
Field sample no.:	10411	Composite sample no.:	201

---------- PRODUCT COAL ANALYSIS (SP2) ----------

Target Ash: 8.0 %

Standard:	ASTM
Size analysis	
Fraction size(mm):	35.00 X 6.00
Cutpoint:	sp.g. 1.47
Contribution(%):	32.71
Total yield(%):	32.71

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture(%):	0.75	
Ash(%):	6.92	6.97
Volatile matter(%):	6.34	6.39
Fixed carbon(%):	85.99	86.64
Total sulphur(%):	0.48	0.48
Combustible sulphur(%):	0.46	
Gross calorific value(cal/g):	7,844.00	7,904.00
Volatile matter(dmmf%):	6.20	
Hardgrove index:	39.00	
Phosphorous in coal(%):	0.052	

---------- ASH FUSION ANALYSIS (AF1) ----------

	OXIDIZING ATM	REDUCING ATM
Initial temperature(°C):	1,290.00	1,232.00
Softening temperature(°C):	1,453.00	1,395.00
Hemispherical temperature(°C):	1,472.00	1,471.00
Final temperature(°C):	1,472.00	1,471.00

---------- ASH MINERAL ANALYSIS (AM1) ----------

SiO2(%):	54.42	TiO2(%):	1.64
Al2O3(%):	25.57	Na2O(%):	2.02
Fe2O3(%):	3.99	K2O(%):	0.90
CaO(%):	2.55	SO3(%):	0.62
MgO(%):	2.00	P2O5(%):	1.71

GULF CANADA CORPORATION - COAL DIVISION

CLEAN SIMULATED PRODUCT REPORT

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88001
Coal zone:	I		
Field sample no.:	10411	Composite sample no.:	201

PRODUCT COAL ANALYSIS (SP5)

Target Ash: 11.0 %

Standard:	ASTM	
Size analysis		
Fraction size(mm):	35.00 X	6.00
Cutpoint:	sp.g.	1.58
Contribution(%):		9.80
Total yield(%):		9.80

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture(%):	0.99	
Ash(%):	11.93	12.05
Volatile matter(%):	6.25	6.31
Fixed carbon(%):	80.83	81.64
Total sulphur(%):	0.40	0.40
Combustible sulphur(%):	0.33	
Gross calorific value(cal/g):	7,144.00	7,215.00
Volatile matter(dmmf%):	6.00	
Hardgrove index:	39.00	
Phosphorous in coal(%):	0.035	

ASH FUSION ANALYSIS (AF1)

	OXIDIZING ATM	REDUCING ATM
Initial temperature(°C):	1,222.00	1,101.00
Softening temperature(°C):	1,272.00	1,203.00
Hemispherical temperature(°C):	1,301.00	1,243.00
Final temperature(°C):	1,340.00	1,264.00

ASH MINERAL ANALYSIS (AM1)

SiO2(%):	53.78	TiO2(%):	0.70
Al2O3(%):	19.28	Na2O(%):	1.60
Fe2O3(%):	9.58	K2O(%):	0.81
CaO(%):	3.47	SO3(%):	1.46
MgO(%):	4.05	P2O5(%):	0.67

SAMPLE PRODUCT ID: SP4 COAL COMPOSITION ID: CC1 ULTIMATE ID:

========== GULF CANADA CORPORATION - COAL DIVISION ==========
---------- C L E A N S I M U L A T E D P R O D U C T R E P O R T ----------

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88001
Coal zone:	1		
Field sample no.:	10411 - 10412	Composite sample no.:	300

---------- PRODUCT COAL ANALYSIS (SP3) ----------

Target Ash: 7.5 %

Standard:	ASTM
Size analysis	
Fraction size(mm):	6.00 X 0.50
Cutpoint:	sp.g. 1.73
Contribution(%):	19.65
Total yield(%):	19.65

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture(%):	1.00	
Ash(%):	7.31	7.38
Volatile matter(%):	5.83	5.89
Fixed carbon(%):	85.86	86.73
Total sulphur(%):	0.46	0.46
Combustible sulphur(%):	0.43	
Gross calorific value(cal/g):	7,681.00	7,759.00
Volatile matter(dmmf%):	5.60	
Hardgrove index:	44.00	
Phosphorous in coal(%):	0.107	

---------- ASH FUSION ANALYSIS (AF1) ----------

	OXIDIZING ATM	REDUCING ATM
Initial temperature(°C):	1,209.00	1,077.00
Softening temperature(°C):	1,285.00	1,274.00
Hemispherical temperature(°C):	1,343.00	1,285.00
Final temperature(°C):	1,448.00	1,430.00

---------- ASH MINERAL ANALYSIS (AM1) ----------

SiO2(%):	49.54	TiO2(%):	1.18
Al2O3(%):	26.46	Na2O(%):	1.94
Fe2O3(%):	4.03	K2O(%):	0.84
CaO(%):	4.81	SO3(%):	1.15
MgO(%):	2.30	P2O5(%):	3.34

GULF CANADA CORPORATION - COAL DIVISION

C L E A N S I M U L A T E D P R O D U C T R E P O R T

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88001
Coal zone:	I		
Field sample no.:	10412	Composite sample no.:	202

PRODUCT COAL ANALYSIS (SP2)

Target Ash: 8.0 %

Standard:	ASTM
Size analysis	
Fraction size(mm):	35.00 X 6.00
Cutpoint:	sp.g. 1.52
Contribution(%):	49.83
Total yield(%):	49.83

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture(%):	0.91	
Ash(%):	7.86	7.93
Volatile matter(%):	5.75	5.80
Fixed carbon(%):	85.48	86.27
Total sulphur(%):	0.46	0.46
Combustible sulphur(%):	0.40	
Gross calorific value(cal/g):	7,629.00	7,699.00
Volatile matter(dmmf%):	5.50	
Hardgrove index:	38.00	
Phosphorous in coal(%):	0.197	

ASH FUSION ANALYSIS (AFI)

	OXIDIZING ATM	REDUCING ATM
Initial temperature(°C):	1,240.00	1,238.00
Softening temperature(°C):	1,264.00	1,243.00
Hemispherical temperature(°C):	1,285.00	1,264.00
Final temperature(°C):	1,288.00	1,285.00

ASH MINERAL ANALYSIS (AMI)

SiO2(%):	44.66	TiO2(%):	0.82
Al2O3(%):	23.06	Na2O(%):	1.94
Fe2O3(%):	5.46	K2O(%):	0.74
CaO(%):	8.26	SO3(%):	1.85
MgO(%):	3.30	P2O5(%):	5.75

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

NOV 01/88 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88001 SEAM - H SAMPLE ID - 3 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 35.00 X 6.00 RELATIVE WEIGHT % - 57.51 ASH % - 40.68

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	0.54	4.54	0.54	4.54	99.46	41.46	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.01	1.01
1.45	1.20	7.61	1.74	6.66	98.26	41.87	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.22	1.15
1.50	5.81	13.20	7.55	11.69	92.45	43.67	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.10	1.11
1.55	12.65	19.13	20.20	16.35	79.80	47.57	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.36	1.27
1.60	10.76	23.16	30.96	18.72	69.04	51.37	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.34	1.29
1.70	22.38	29.73	53.34	23.34	46.66	61.75	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.41	1.34
1.80	7.74	34.01	61.08	24.69	38.92	67.26	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.66	1.38
2.00	11.73	43.93	72.81	27.79	27.19	77.33	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.54	1.41
2.60	27.19	77.33	100.00	41.26	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.77	1.51

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 6.00 X 0.50 RELATIVE WEIGHT % - 32.26 ASH % - 26.45

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	14.52	2.35	14.52	2.35	85.48	29.95	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.09	1.09
1.45	16.86	6.05	31.38	4.34	68.62	35.82	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.12	1.11
1.50	12.09	10.40	43.47	6.02	56.53	41.26	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.11	1.11
1.55	9.69	14.21	53.16	7.52	46.84	46.86	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.50	1.18
1.60	5.96	17.43	59.12	8.52	40.88	51.15	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.76	1.24
1.70	8.31	21.33	67.43	10.09	32.57	58.76	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.46	1.26
1.80	4.65	27.85	72.08	11.24	27.92	63.90	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.64	1.29
2.00	7.40	40.81	79.48	13.99	20.52	72.23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.84	1.34
2.60	20.52	72.23	100.00	25.94	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.87	1.45

GULF CANADA RESOURCES LIMITED - COAL DIVISION

NOV 01/88 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88001 SEAM - H SAMPLE ID - 3 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 0.50 X 0.15 RELATIVE WEIGHT % - 5.90 ASH % - 25.33

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	21.57	4.91	21.57	4.91	78.43	29.73	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.82	1.82
1.45	7.79	4.30	29.36	4.75	70.64	32.54	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.55	1.48
1.50	11.39	6.11	40.75	5.13	59.25	37.62	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.10	1.38
1.55	8.53	9.29	49.28	5.85	50.72	42.38	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.74	1.44
1.60	6.47	11.35	55.75	6.49	44.25	46.92	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.57	1.45
1.70	6.56	12.58	62.31	7.13	37.69	52.89	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.77	1.49
1.80	9.62	19.20	71.93	8.74	28.07	64.44	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.48	1.49
2.00	7.42	33.86	79.35	11.09	20.65	75.43	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.88	1.52
2.60	20.65	75.43	100.00	24.38	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.57	1.53

ANALYSIS TYPE - FROTH

FRACTION SIZE(MM) 0.15 X 0.00 RELATIVE WEIGHT % - 4.33 ASH % - 28.70

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
240.00	*****	28.70	100.00	28.70	0.0	0.0	0.0	0.0	24.11	24.11	0.42	0.42	4.61	4.61	1.58	1.58

GULF CANADA CORPORATION - COAL DIVISION

C L E A N S I M U L A T E D P R O D U C T R E P O R T

March 02, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88001
Coal zone:	H		
Field sample no.:	10405	Composite sample no.:	203

PRODUCT COAL ANALYSIS (SP2)

Target Ash: 8.0 %

Standard:	ASTM	
Size analysis		
Fraction size(mm):	35.00 X	6.00
Cutpoint:	sp.g.	1.47
Contribution(%):		1.99
Total yield(%):		1.99

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture(%):	0.83	
Ash(%):	7.65	7.71
Volatile matter(%):	5.93	5.98
Fixed carbon(%):	85.59	86.31
Total sulphur(%):	0.54	0.54
Combustible sulphur(%):	0.52	
Gross calorific value(cal/g):	7,722.00	7,787.00
Volatile matter(dmmf%):	5.70	
Hardgrove index:	42.00	
Phosphorous in coal(%):	0.053	

ASH FUSION ANALYSIS (AF1)

	OXIDIZING ATM	REDUCING ATM
Initial temperature(°C):	1,285.00	1,216.00
Softening temperature(°C):	1,369.00	1,322.00
Hemispherical temperature(°C):	1,448.00	1,446.00
Final temperature(°C):	1,453.00	1,451.00

ASH MINERAL ANALYSIS (AM1)

SiO2(%):	62.40	TiO2(%):	1.00
Al2O3(%):	20.54	Na2O(%):	1.84
Fe2O3(%):	3.28	K2O(%):	0.61
CaO(%):	2.69	SO3(%):	0.51
MgO(%):	1.31	P2O5(%):	1.60

GULF CANADA CORPORATION - COAL DIVISION

C L E A N S I M U L A T E D P R O D U C T R E P O R T

March 03, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88001
Coal zone:	H		
Field sample no.:	10405	Composite sample no.:	301

PRODUCT COAL ANALYSIS (SP3)

Target Ash: 7.5 %

Standard:	ASTM
Size analysis	
Fraction size (mm):	6.00 X 0.50
Cutpoint:	sp.g. 1.47
Contribution (%):	10.75
Total yield (%):	10.75

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture (%):	0.93	
Ash (%):	4.65	4.69
Volatile matter (%):	5.92	5.98
Fixed carbon (%):	88.50	89.33
Total sulphur (%):	0.56	0.57
Combustible sulphur (%):	0.55	
Gross calorific value (cal/g):	8,104.00	8,181.00
Volatile matter (dmmf%):	5.70	
Hardgrove index:	45.00	
Phosphorous in coal (%):	0.055	

ASH FUSION ANALYSIS (AFI)

	OXIDIZING ATM	REDUCING ATM
Initial temperature (°C):	1,282.00	1,214.00
Softening temperature (°C):	1,330.00	1,269.00
Hemispherical temperature (°C):	1,395.00	1,380.00
Final temperature (°C):	1,432.00	1,417.00

ASH MINERAL ANALYSIS (AMI)

SiO2 (%):	57.60	TiO2 (%):	1.02
Al2O3 (%):	22.26	Na2O (%):	2.77
Fe2O3 (%):	3.67	K2O (%):	0.64
CaO (%):	3.43	SO3 (%):	0.48
MgO (%):	1.18	P2O5 (%):	2.69

GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88003 SEAM - M? SAMPLE ID - 5 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 35.00 X 6.00 RELATIVE WEIGHT % - 42.63 ASH % - 37.91

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	1.37	2.42	1.37	2.42	98.63	38.29	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.77	0.77
1.45	13.04	7.73	14.41	7.23	85.59	42.95	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.79	0.79
1.50	13.14	11.79	27.55	9.40	72.45	48.60	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.99	0.88
1.55	5.42	16.66	32.97	10.60	67.03	51.18	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.04	0.91
1.60	7.37	21.40	40.34	12.57	59.66	54.86	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.12	0.95
1.70	12.34	28.06	52.68	16.20	47.32	61.85	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.22	1.01
1.80	8.53	33.92	61.21	18.67	38.79	68.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.46	1.07
2.00	9.65	42.77	70.86	21.95	29.14	76.35	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.47	1.13
2.60	29.14	76.35	100.00	37.80	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.05	1.40

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 6.00 X 0.50 RELATIVE WEIGHT % - 41.22 ASH % - 28.07

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	14.44	1.65	14.44	1.65	85.56	31.36	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.94	1.94
1.45	15.65	5.63	30.09	3.72	69.91	37.12	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.11	1.51
1.50	13.10	9.88	43.19	5.59	56.81	43.41	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.23	1.42
1.55	7.89	13.70	51.08	6.84	48.92	48.20	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.26	1.40
1.60	5.31	17.06	56.39	7.80	43.61	51.99	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.44	1.40
1.70	7.01	22.37	63.40	9.41	36.60	57.66	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.83	1.45
1.80	3.19	27.82	66.59	10.30	33.41	60.51	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.91	1.47
2.00	9.35	36.92	75.94	13.57	24.06	69.68	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.72	1.50
2.60	24.06	69.68	100.00	27.07	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.34	1.46

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88003 SEAM - M? SAMPLE ID - 5 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 0.50 X 0.15 RELATIVE WEIGHT % - 10.32 ASH % - 27.88

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	19.96	4.52	19.96	4.52	80.04	32.63	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.63	1.63
1.45	11.12	6.76	31.08	5.32	68.92	36.80	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.24	1.49
1.50	11.16	7.76	42.24	5.97	57.76	42.42	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.65	1.53
1.55	7.81	11.81	50.05	6.88	49.95	47.20	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.89	1.59
1.60	6.79	17.35	56.84	8.13	43.16	51.90	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.77	1.61
1.70	7.15	20.67	63.99	9.53	36.01	58.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.50	1.60
1.80	5.34	26.73	69.33	10.85	30.67	63.56	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.38	1.58
2.00	7.57	39.48	76.90	13.67	23.10	71.45	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.28	1.55
2.60	23.10	71.45	100.00	27.02	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.28	1.49

ANALYSIS TYPE - FROTH

FRACTION SIZE(MM) 0.15 X 0.00 RELATIVE WEIGHT % - 5.83 ASH % - 30.78

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
240.00	*****	30.78	100.00	30.78	0.0	0.0	0.0	0.0	22.81	22.81	0.69	0.69	5.14	5.14	1.63	1.63

GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88003 SEAM - M? SAMPLE ID - 6 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 35.00 X 6.00 RELATIVE WEIGHT % - 72.62 ASH % - 56.86

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	0.70	3.25	0.70	3.25	99.30	56.43	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.69	0.69
1.45	0.87	6.65	1.57	5.13	98.43	56.87	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.85	0.78
1.50	1.70	12.84	3.27	9.14	96.73	57.64	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.81	0.79
1.55	2.01	18.17	5.28	12.58	94.72	58.48	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.81	0.80
1.60	1.80	23.86	7.08	15.45	92.92	59.15	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.94	0.84
1.70	6.08	31.72	13.16	22.96	86.84	61.07	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.83	0.83
1.80	11.90	39.51	25.06	30.82	74.94	64.49	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	0.91
2.00	23.30	50.74	48.36	40.42	51.64	70.70	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	0.95
2.60	51.64	70.70	100.00	56.06	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.77	0.86

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 6.00 X 0.50 RELATIVE WEIGHT % - 21.43 ASH % - 44.81

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	11.32	2.32	11.32	2.32	88.68	49.22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.39	0.39
1.45	10.87	5.77	22.19	4.01	77.81	55.29	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.38	0.39
1.50	4.19	10.96	26.38	5.11	73.62	57.82	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.65	0.43
1.55	4.05	15.56	30.43	6.50	69.57	60.28	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.66	0.46
1.60	3.19	20.22	33.62	7.81	66.38	62.20	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.82	0.49
1.70	6.21	26.64	39.83	10.74	60.17	65.87	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.54	0.66
1.80	5.56	35.00	45.39	13.71	54.61	69.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.45	0.75
2.00	10.90	46.53	56.29	20.07	43.71	74.62	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.55	0.91
2.60	43.71	74.62	100.00	43.91	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.46	1.15

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88003 SEAM - M? SAMPLE ID - 6 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 0.50 X 0.15 RELATIVE WEIGHT % - 3.86 ASH % - 42.36

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	14.51	4.38	14.51	4.38	85.49	47.68	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.84	0.84
1.45	12.33	6.59	26.84	5.40	73.16	54.61	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.94	0.89
1.50	3.24	7.61	30.08	5.63	69.92	56.79	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.99	0.90
1.55	3.89	11.53	33.97	6.31	66.03	59.45	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.04	0.91
1.60	2.22	13.09	36.19	6.72	63.81	61.07	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.20	0.93
1.70	4.51	18.65	40.70	8.05	59.30	64.29	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.33	0.98
1.80	4.69	24.81	45.39	9.78	54.61	67.68	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.32	1.01
2.00	10.11	40.89	55.50	15.45	44.50	73.77	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.66	1.13
2.60	44.50	73.77	100.00	41.40	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.47	1.28

ANALYSIS TYPE - FROTH

FRACTION SIZE(MM) 0.15 X 0.00 RELATIVE WEIGHT % - 2.09 ASH % - 49.62

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
240.00	*****	49.62	100.00	49.62	0.0	0.0	0.0	0.0	15.72	15.72	0.41	0.41	6.30	6.30	1.54	1.54

SAMPLE PRODUCT ID: SP3 COAL COMPOSITION ID: CC1 ULTIMATE ID:

========== GULF CANADA CORPORATION - COAL DIVISION ==========
---------- C L E A N S I M U L A T E D P R O D U C T R E P O R T ----------

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88003
Coal zone:	M ?		
Field sample no.:	10408	Composite sample no.:	204

---------- PRODUCT COAL ANALYSIS (SP4) ----------

Target Ash: 10.0 %

Standard:	ASTM	
Size analysis		
Fraction size(mm):	35.00 X	6.00
Cutpoint:	sp.g.	1.53
Contribution(%):		9.29
Total yield(%):		9.29

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture(%):	0.41	
Ash(%):	10.52	10.56
Volatile matter(%):	6.42	6.45
Fixed carbon(%):	82.65	82.99
Total sulphur(%):	0.57	0.57
Combustible sulphur(%):	0.54	
Gross calorific value(cal/g):	7,500.00	7,531.00
Volatile matter(dmmf%):	6.10	
Hardgrove index:	40.00	
Phosphorous in coal(%):	0.164	

---------- ASH FUSION ANALYSIS (AFI) ----------

	OXIDIZING ATM	REDUCING ATM
Initial temperature(°C):	1,222.00	1,153.00
Softening temperature(°C):	1,285.00	1,251.00
Hemispherical temperature(°C):	1,327.00	1,288.00
Final temperature(°C):	1,401.00	1,356.00

---------- ASH MINERAL ANALYSIS (AMI) ----------

SiO2(%):	54.64	TiO2(%):	1.86
Al2O3(%):	21.95	Na2O(%):	1.83
Fe2O3(%):	3.49	K2O(%):	0.64
CaO(%):	5.68	SO3(%):	0.79
MgO(%):	1.82	P2O5(%):	3.57

GULF CANADA CORPORATION - COAL DIVISION

C L E A N S I M U L A T E D P R O D U C T R E P O R T

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88003
Coal zone:	M ?		
Field sample no.:	10408 - 10409	Composite sample no.:	302

PRODUCT COAL ANALYSIS (SP3)

Target Ash: 7.5 %

Standard:	ASTM
Size analysis	
Fraction size(mm):	6.00 X 0.50
Cutpoint:	sp.g. 1.58
Contribution(%):	15.32
Total yield(%):	15.32

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture(%):	0.92	
Ash(%):	7.66	7.73
Volatile matter(%):	7.06	7.13
Fixed carbon(%):	84.36	85.14
Total sulphur(%):	0.60	0.61
Combustible sulphur(%):	0.58	
Gross calorific value(cal/g):	7,641.00	7,712.00
Volatile matter(dmmf%):	6.90	
Hardgrove index:	42.00	
Phosphorous in coal(%):	0.059	

ASH FUSION ANALYSIS (AFI)

	OXIDIZING ATM	REDUCING ATM
Initial temperature(°C):	1,209.00	1,206.00
Softening temperature(°C):	1,317.00	1,259.00
Hemispherical temperature(°C):	1,345.00	1,322.00
Final temperature(°C):	1,393.00	1,390.00

ASH MINERAL ANALYSIS (AMI)

SiO2(%):	52.78	TiO2(%):	3.62
Al2O3(%):	24.19	Na2O(%):	2.10
Fe2O3(%):	4.98	K2O(%):	0.86
CaO(%):	3.08	SO3(%):	0.75
MgO(%):	2.12	P2O5(%):	1.75

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88003 SEAM - L? SAMPLE ID - 7 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 35.00 X 6.00 RELATIVE WEIGHT % - 72.27 ASH % - 44.90

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ/KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	0.87	4.02	0.87	4.02	99.13	44.25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.76	0.76
1.45	6.01	7.54	6.88	7.09	93.12	46.62	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.59	0.61
1.50	5.08	12.57	11.96	9.42	88.04	48.59	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.63	0.62
1.55	6.49	18.31	18.45	12.55	81.55	51.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.63	0.62
1.60	5.16	22.89	23.61	14.81	76.39	52.90	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.80	0.66
1.70	19.27	29.98	42.88	21.63	57.12	60.63	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.74	0.70
1.80	7.70	39.11	50.58	24.29	49.42	63.98	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.92	0.73
2.00	15.24	48.04	65.82	29.79	34.18	71.09	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.08	0.81
2.60	34.18	71.09	100.00	43.90	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.46	1.03

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 6.00 X 0.50 RELATIVE WEIGHT % - 22.62 ASH % - 27.08

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ/KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	9.06	2.44	9.06	2.44	90.94	29.18	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.68	0.68
1.45	25.28	6.78	34.34	5.63	65.66	37.80	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.77	0.75
1.50	12.68	12.69	47.02	7.54	52.98	43.81	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.90	0.79
1.55	7.29	17.23	54.31	8.84	45.69	48.05	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.99	0.81
1.60	4.08	20.21	58.39	9.63	41.61	50.78	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.40	0.86
1.70	10.33	24.96	68.72	11.94	31.28	59.31	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.69	0.98
1.80	4.28	33.28	73.00	13.19	27.00	63.44	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.06	1.04
2.00	8.47	43.72	81.47	16.36	18.53	72.45	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.24	1.06
2.60	18.53	72.45	100.00	26.76	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.40	1.13

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88003 SEAM - L? SAMPLE ID - 7 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 0.50 X 0.15 RELATIVE WEIGHT % - 3.30 ASH % - 33.35

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	24.53	6.31	24.53	6.31	75.47	40.98	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.29	1.29
1.45	12.95	7.03	37.48	6.56	62.52	48.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.23	1.27
1.50	5.21	8.15	42.69	6.75	57.31	51.64	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.39	1.28
1.55	5.88	10.96	48.57	7.26	51.43	56.29	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.46	1.31
1.60	4.68	20.10	53.25	8.39	46.75	59.91	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.01	1.37
1.70	5.38	22.36	58.63	9.67	41.37	64.80	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.10	1.34
1.80	4.26	25.84	62.89	10.77	37.11	69.27	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.09	1.39
2.00	6.37	39.92	69.26	13.45	30.74	75.35	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.27	1.38
2.60	30.74	75.35	100.00	32.48	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.79	1.51

ANALYSIS TYPE - FROTH

FRACTION SIZE(MM) 0.15 X 0.00 RELATIVE WEIGHT % - 1.81 ASH % - 41.95

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
240.00	*****	41.95	100.00	41.95	0.0	0.0	0.0	0.0	18.47	18.47	0.41	0.41	5.44	5.44	1.13	1.13

========== GULF CANADA CORPORATION - COAL DIVISION ==========

---------- C L E A N S I M U L A T E D P R O D U C T R E P O R T ----------

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88003
Coal zone:	L ?		
Field sample no.:	10415	Composite sample no.:	205

---------- PRODUCT COAL ANALYSIS (SP4) ----------

Target Ash: 10.0 %

Standard:	ASTM
Size analysis	
Fraction size(mm):	35.00 X 6.00
Cutpoint:	sp.g. 1.51
Contribution(%):	10.47
Total yield(%):	10.47

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture(%):	0.84	
Ash(%):	9.81	9.89
Volatile matter(%):	6.43	6.48
Fixed carbon(%):	82.92	83.63
Total sulphur(%):	0.59	0.60
Combustible sulphur(%):	0.57	
Gross calorific value(cal/g):	7,507.00	7,571.00
Volatile matter(dmmf%):	6.20	
Hardgrove index:	40.00	
Phosphorous in coal(%):	0.197	

---------- ASH FUSION ANALYSIS (AF1) ----------

	OXIDIZING ATM	REDUCING ATM
Initial temperature(°C):	1,232.00	1,216.00
Softening temperature(°C):	1,264.00	1,253.00
Hemispherical temperature(°C):	1,295.00	1,290.00
Final temperature(°C):	1,311.00	1,306.00

---------- ASH MINERAL ANALYSIS (AM1) ----------

SiO2(%):	57.04	TiO2(%):	1.86
Al2O3(%):	21.28	Na2O(%):	1.83
Fe2O3(%):	1.72	K2O(%):	0.78
CaO(%):	5.51	SO3(%):	0.55
MgO(%):	1.08	P2O5(%):	4.60

========== GULF CANADA CORPORATION - COAL DIVISION ==========

---------- C L E A N S I M U L A T E D P R O D U C T R E P O R T ----------

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88003
Coal zone:	L ?		
Field sample no.:	10415	Composite sample no.:	303

---------- PRODUCT COAL ANALYSIS (SP3) ----------

Target Ash: 7.5 %

Standard:	ASTM	
Size analysis		
Fraction size(mm):	6.00 X	0.50
Cutpoint:	sp.g.	1.50
Contribution(%):		9.09
Total yield(%):		9.09

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture(%):	0.92	
Ash(%):	6.66	6.72
Volatile matter(%):	5.86	5.91
Fixed carbon(%):	86.56	87.37
Total sulphur(%):	0.61	0.62
Combustible sulphur(%):	0.59	
Gross calorific value(cal/g):	7,772.00	7,845.00
Volatile matter(dmmf%):	5.60	
Hardgrove index:	43.00	
Phosphorous in coal(%):	0.108	

---------- ASH FUSION ANALYSIS (AF1) ----------

	OXIDIZING ATM	REDUCING ATM
Initial temperature(°C):	1,232.00	1,206.00
Softening temperature(°C):	1,269.00	1,235.00
Hemispherical temperature(°C):	1,290.00	1,248.00
Final temperature(°C):	1,327.00	1,317.00

---------- ASH MINERAL ANALYSIS (AM1) ----------

SiO2(%):	53.70	TiO2(%):	3.47
Al2O3(%):	22.55	Na2O(%):	1.86
Fe2O3(%):	2.95	K2O(%):	0.75
CaO(%):	4.91	SO3(%):	0.74
MgO(%):	1.43	P2O5(%):	3.71

GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88003 SEAM - K/L SAMPLE ID - 8 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 35.00 X 6.00 RELATIVE WEIGHT % - 71 86 ASH % - 36.35

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	3.26	2.05	3.26	2.05	96.74	36.67	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.55	0.55
1.45	5.13	6.78	8.39	4.94	91.61	38.35	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.77	0.68
1.50	8.43	12.07	16.82	8.51	83.18	41.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.91	0.80
1.55	8.02	17.70	24.84	11.48	75.16	43.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.04	0.88
1.60	15.28	21.75	40.12	15.39	59.88	49.05	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.99	0.92
1.70	15.70	28.70	55.82	19.13	44.18	56.28	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.01	0.94
1.80	4.42	33.20	60.24	20.17	39.76	58.85	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.20	0.96
2.00	13.95	48.29	74.19	25.45	25.81	64.55	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.11	0.99
2.60	25.81	64.55	100.00	35.55	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.11	1.02

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 6.00 X 0.50 RELATIVE WEIGHT % - 22.62 ASH % - 20.91

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	18.82	1.67	18.82	1.67	81.18	24.35	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.89	0.89
1.45	16.51	5.12	35.33	3.28	64.67	29.26	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.74	0.82
1.50	12.85	10.23	48.18	5.14	51.82	33.98	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.10	0.89
1.55	10.11	14.63	58.29	6.78	41.71	38.67	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.11	0.93
1.60	7.79	18.60	66.08	8.18	33.92	43.29	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.16	0.96
1.70	11.10	23.87	77.18	10.43	22.82	52.73	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.47	1.03
1.80	5.54	30.13	82.72	11.75	17.28	59.97	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.99	1.10
2.00	5.38	40.43	88.10	13.50	11.90	68.81	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.20	1.10
2.60	11.90	68.81	100.00	20.08	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.03	1.21

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88003 SEAM - K/L SAMPLE ID - 8 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 0.50 X 0.15 RELATIVE WEIGHT % - 3.86 ASH % - 27.63

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	11.80	1.74	11.80	1.74	88.20	30.27	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	1.00
1.45	20.54	3.01	32.34	2.55	67.66	38.55	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.98	0.99
1.50	8.27	6.79	40.61	3.41	59.39	42.97	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.29	1.05
1.55	6.24	10.44	46.85	4.35	53.15	46.79	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.72	1.14
1.60	6.71	13.23	53.56	5.46	46.44	51.64	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.66	1.20
1.70	9.02	17.89	62.58	7.25	37.42	59.77	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.49	1.24
1.80	3.56	21.51	66.14	8.02	33.86	63.79	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.06	1.29
2.00	9.18	32.94	75.32	11.06	24.68	75.27	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.75	1.35
2.60	24.68	75.27	100.00	26.90	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.83	1.46

ANALYSIS TYPE - FROTH

FRACTION SIZE(MM) 0.15 X 0.00 RELATIVE WEIGHT % - 1.66 ASH % - 39.35

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
240.00	*****	39.30	100.00	39.30	0.0	0.0	0.0	0.0	19.79	19.79	0.51	0.51	5.49	5.49	1.15	1.15

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88003 SEAM - K/L SAMPLE ID - 9 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 35.00 X 6.00 RELATIVE WEIGHT % - 74.33 ASH % - 45.94

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	2.11	3.01	2.11	3.01	97.89	45.85	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.58	0.58
1.45	3.78	7.12	5.89	5.65	94.11	47.41	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.57	0.57
1.50	5.68	12.66	11.57	9.09	88.43	49.64	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.60	0.59
1.55	7.12	17.50	18.69	12.29	81.31	52.46	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.73	0.64
1.60	7.42	22.73	26.11	15.26	73.89	55.44	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.63	0.64
1.70	15.24	29.56	41.35	20.53	58.65	62.17	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.90	0.73
1.80	8.32	37.55	49.67	23.38	50.33	66.24	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.80	0.75
2.00	17.47	49.06	67.14	30.06	32.86	75.37	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.79	0.76
2.60	32.86	75.37	100.00	44.95	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.08	0.86

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 6.00 X 0.50 RELATIVE WEIGHT % - 21.20 ASH % - 24.41

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	17.73	5.38	17.73	5.38	82.27	29.06	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.52	0.52
1.45	26.08	6.85	43.81	6.26	56.19	39.37	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.54	0.53
1.50	10.41	13.17	54.22	7.58	45.78	45.33	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.71	0.57
1.55	7.42	18.09	61.64	8.85	38.36	50.59	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.83	0.60
1.60	3.97	22.23	65.61	9.66	34.39	53.87	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.87	0.61
1.70	7.43	28.01	73.04	11.52	26.96	61.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.03	0.66
1.80	4.51	35.41	77.55	12.91	22.45	66.14	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.68	0.72
2.00	6.12	47.26	83.67	15.43	16.33	73.21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.94	0.81
2.60	16.33	73.21	100.00	24.86	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.11	0.86

GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88003 SEAM - K/L SAMPLE ID - 9 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 0.50 X 0.15 RELATIVE WEIGHT % - 2.90 ASH % - 32.95

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	27.06	5.28	27.06	5.28	72.94	42.56	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.87	0.87
1.45	11.56	6.98	38.62	5.79	61.38	49.26	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.81	0.85
1.50	7.98	12.48	46.60	6.93	53.40	54.75	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.15	0.90
1.55	2.73	15.55	49.33	7.41	50.67	56.86	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.17	0.92
1.60	4.29	22.60	53.62	8.63	46.38	60.03	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.21	0.94
1.70	6.81	25.75	60.43	10.56	39.57	65.93	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.64	1.02
1.80	3.99	30.08	64.42	11.77	35.58	69.95	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.31	1.04
2.00	5.91	41.86	70.33	14.29	29.67	75.55	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.85	1.11
2.60	29.67	75.55	100.00	32.47	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.57	1.24

ANALYSIS TYPE - FROTH

FRACTION SIZE(MM) 0.15 X 0.00 RELATIVE WEIGHT % - 1.57 ASH % - 42.24

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
240.00	*****	42.24	100.00	42.24	0.0	0.0	0.0	0.0	18.60	18.60	0.38	0.38	5.40	5.40	1.13	1.13

GULF CANADA CORPORATION - COAL DIVISION

C L E A N S I M U L A T E D P R O D U C T R E P O R T

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88003
Coal zone:	K/L		
Field sample no.:	10418 - 10419	Composite sample no.:	206

PRODUCT COAL ANALYSIS (SP4)

Target Ash: 10.0 %

Standard:	ASTM
Size analysis	
Fraction size(mm):	35.00 X 6.00
Cutpoint:	sp.g. 1.52
Contribution(%):	15.02
Total yield(%):	15.02

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture(%):	1.03	
Ash(%):	9.76	9.86
Volatile matter(%):	6.31	6.38
Fixed carbon(%):	82.90	83.76
Total sulphur(%):	0.58	0.59
Combustible sulphur(%):	0.55	
Gross calorific value(cal/g):	7,469.00	7,546.00
Volatile matter(dmmf%):	6.10	
Hardgrove index:	39.00	
Phosphorous in coal(%):	0.109	

ASH FUSION ANALYSIS (AF1)

	OXIDIZING ATM	REDUCING ATM
Initial temperature(°C):	1,206.00	1,095.00
Softening temperature(°C):	1,285.00	1,243.00
Hemispherical temperature(°C):	1,322.00	1,288.00
Final temperature(°C):	1,356.00	1,317.00

ASH MINERAL ANALYSIS (AM1)

SiO2(%):	56.88	TiO2(%):	1.64
Al2O3(%):	21.17	Na2O(%):	2.26
Fe2O3(%):	4.38	K2O(%):	0.78
CaO(%):	3.89	SO3(%):	0.73
MgO(%):	1.52	P2O5(%):	2.55

GULF CANADA CORPORATION - COAL DIVISION

C L E A N S I M U L A T E D P R O D U C T R E P O R T

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88003
Coal zone:	K/L		
Field sample no.:	10418 - 10419	Composite sample no.:	304

PRODUCT COAL ANALYSIS (SP3)

Target Ash: 7.5 %

Standard:	ASTM
Size analysis	
Fraction size(mm):	6.00 X 0.50
Cutpoint:	sp.g. 1.55
Contribution(%):	14.44
Total yield(%):	14.44

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture(%):	1.01	
Ash(%):	7.19	7.26
Volatile matter(%):	6.03	6.09
Fixed carbon(%):	85.77	86.65
Total sulphur(%):	0.60	0.61
Combustible sulphur(%):	0.58	
Gross calorific value(cal/g):	7,679.00	7,757.00
Volatile matter(dmmf%):	5.80	
Hardgrove index:	41.00	
Phosphorous in coal(%):	0.052	

ASH FUSION ANALYSIS (AF1)

	OXIDIZING ATM	REDUCING ATM
Initial temperature(°C):	1,240.00	1,169.00
Softening temperature(°C):	1,322.00	1,274.00
Hemispherical temperature(°C):	1,353.00	1,348.00
Final temperature(°C):	1,438.00	1,422.00

ASH MINERAL ANALYSIS (AM1)

SiO2(%):	56.41	TiO2(%):	1.80
Al2O3(%):	22.68	Na2O(%):	2.18
Fe2O3(%):	4.18	K2O(%):	0.80
CaO(%):	2.91	SO3(%):	0.65
MgO(%):	2.40	P2O5(%):	1.65

GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88003 SEAM - K SAMPLE ID - 10 - WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 35.00 X 6.00 RELATIVE WEIGHT % - 71.97 ASH % - 41.10

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	1.40	2.50	1.40	2.50	98.60	41.16	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.73	0.73
1.45	2.81	6.41	4.21	5.11	95.79	42.18	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.78	0.76
1.50	7.44	11.69	11.65	9.31	88.35	44.75	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.81	0.79
1.55	7.90	13.53	19.55	11.02	80.45	47.81	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.76	0.78
1.60	6.15	25.33	25.70	14.44	74.30	49.67	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.89	0.81
1.70	10.21	29.90	35.91	18.84	64.09	52.82	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.01	0.86
1.80	15.23	37.69	51.14	24.45	48.86	57.54	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.83	0.85
2.00	14.20	45.93	65.34	29.12	34.66	62.30	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.96	0.88
2.60	34.66	62.30	100.00	40.62	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.76	0.84

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 6.00 X 0.50 RELATIVE WEIGHT % - 22.12 ASH % - 24.38

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	16.67	3.47	16.67	3.47	83.33	27.73	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.75	0.75
1.45	18.39	7.81	35.06	5.75	64.94	33.37	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.81	0.78
1.50	9.02	14.28	44.08	7.49	55.92	36.45	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.87	0.80
1.55	7.75	16.99	51.83	8.91	48.17	39.58	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.98	0.83
1.60	4.30	19.88	56.13	9.75	43.87	41.51	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.20	0.86
1.70	11.37	22.84	67.50	11.96	32.50	48.04	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.21	0.91
1.80	10.00	29.96	77.50	14.28	22.50	56.07	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.82	1.03
2.00	8.92	40.86	86.42	17.02	13.58	66.06	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.19	1.05
2.60	13.58	66.06	100.00	23.68	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.19	1.07

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88003 SEAM - K SAMPLE ID - 10 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 0.50 X 0.15 RELATIVE WEIGHT % - 3.96 ASH % - 28.27

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	21.08	5.11	21.08	5.11	78.92	35.05	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.55	1.55
1.45	20.02	8.94	41.10	6.98	58.90	43.93	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.36	1.46
1.50	3.54	12.76	44.64	7.43	55.36	45.92	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.46	1.46
1.55	4.25	14.46	48.89	8.05	51.11	48.54	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.89	1.50
1.60	8.57	18.69	57.46	9.63	42.54	54.55	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.94	1.56
1.70	7.04	22.56	64.50	11.04	35.50	60.89	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.65	1.57
1.80	8.22	36.35	72.72	13.90	27.28	68.29	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.59	1.57
2.00	4.80	44.07	77.52	15.77	22.48	73.46	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.60	1.57
2.60	22.48	73.46	100.00	28.74	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.66	1.59

ANALYSIS TYPE - FROTH

FRACTION SIZE(MM) 0.15 X 0.00 RELATIVE WEIGHT % - 1.95 ASH % - 34.62

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
240.00	*****	34.62	100.00	34.62	0.0	0.0	0.0	0.0	21.69	21.69	0.88	0.88	6.41	6.41	1.10	1.10

GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88003 SEAM - K SAMPLE ID - 11 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 35.00 X 6.00 RELATIVE WEIGHT % - 73.94 ASH % - 26.88

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	2.17	3.62	2.17	3.62	97.83	27.94	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.37	0.37
1.45	17.90	8.28	20.07	7.78	79.93	32.35	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.74	0.70
1.50	12.55	12.28	32.62	9.51	67.38	36.09	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.86	0.76
1.55	15.24	19.23	47.86	12.60	52.14	41.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.79	0.77
1.60	10.52	23.11	58.38	14.50	41.62	45.54	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.75	0.77
1.70	9.44	27.19	67.82	16.26	32.18	50.92	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.93	0.79
1.80	9.28	31.32	77.10	18.08	22.90	58.86	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.81	0.79
2.00	4.64	43.18	81.74	19.50	18.26	62.85	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.92	0.80
2.60	18.26	62.85	100.00	27.42	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.09	0.85

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 6.00 X 0.50 RELATIVE WEIGHT % - 21.74 ASH % - 24.14

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	16.12	4.61	16.12	4.61	83.88	27.06	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.65	0.65
1.45	17.64	6.95	33.76	5.83	66.24	32.41	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.81	0.73
1.50	19.66	12.81	53.42	8.40	46.58	40.68	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.86	0.78
1.55	7.26	17.75	60.68	9.52	39.32	44.92	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.70	0.77
1.60	7.40	21.99	68.08	10.87	31.92	50.23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.95	0.79
1.70	7.23	27.23	75.31	12.44	24.69	56.97	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.02	0.81
1.80	4.45	32.91	79.76	13.59	20.24	62.26	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.15	0.83
2.00	5.74	43.75	85.50	15.61	14.50	69.59	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.17	0.85
2.60	14.50	69.59	100.00	23.44	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.38	0.93

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88003 SEAM - K SAMPLE ID - 11 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 0.50 X 0.15 RELATIVE WEIGHT % - 2.92 ASH % - 28.55

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ/KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	11.92	6.20	11.92	6.20	88.08	30.64	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.96	0.96
1.45	26.24	7.37	38.16	7.00	61.84	40.52	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.85	0.88
1.50	6.03	8.36	44.19	7.19	55.81	44.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.85	0.88
1.55	12.37	18.93	56.56	9.76	43.44	51.13	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.14	0.94
1.60	3.02	21.02	59.58	10.33	40.42	53.38	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.26	0.95
1.70	3.62	22.14	63.20	11.00	36.80	56.46	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.49	0.98
1.80	6.03	29.45	69.23	12.61	30.77	61.75	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.70	1.05
2.00	4.52	38.57	73.75	14.20	26.25	65.74	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.72	1.09
2.60	26.25	65.74	100.00	27.73	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.30	1.14

ANALYSIS TYPE - FROTH

FRACTION SIZE(MM) 0.15 X 0.00 RELATIVE WEIGHT % - 1.40 ASH % - 36.97

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ/KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
240.00	*****	36.97	100.00	36.97	0.0	0.0	0.0	0.0	20.49	20.49	0.53	0.53	6.15	6.15	1.15	1.15

========== GULF CANADA CORPORATION - COAL DIVISION ==========

---------- C L E A N S I M U L A T E D P R O D U C T R E P O R T ----------

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88003
Coal zone:	K		
Field sample no.:	10422 - 10423	Composite sample no.:	207

---------- PRODUCT COAL ANALYSIS (SP4) ----------

Target Ash: 10.0 %

Standard:	ASTM
Size analysis	
Fraction size(mm):	35.00 X 6.00
Cutpoint:	sp.g. 1.51
Contribution(%):	26.91
Total yield(%):	26.91

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture(%):	1.18	
Ash(%):	9.75	9.87
Volatile matter(%):	7.26	7.35
Fixed carbon(%):	81.81	82.78
Total sulphur(%):	0.71	0.72
Combustible sulphur(%):	0.68	
Gross calorific value(cal/g):	7,435.00	7,524.00
Volatile matter(dmmf%):	7.10	
Hardgrove index:	41.00	
Phosphorous in coal(%):	0.132	

---------- ASH FUSION ANALYSIS (AFI) ----------

	OXIDIZING ATM	REDUCING ATM
Initial temperature(°C):	1,285.00	1,238.00
Softening temperature(°C):	1,317.00	1,274.00
Hemispherical temperature(°C):	1,343.00	1,306.00
Final temperature(°C):	1,395.00	1,380.00

---------- ASH MINERAL ANALYSIS (AMI) ----------

SiO2(%):	49.26	TiO2(%):	1.40
Al2O3(%):	24.57	Na2O(%):	2.29
Fe2O3(%):	5.83	K2O(%):	1.09
CaO(%):	4.76	SO3(%):	0.76
MgO(%):	2.54	P2O5(%):	3.09

GULF CANADA CORPORATION - COAL DIVISION

C L E A N S I M U L A T E D P R O D U C T R E P O R T

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88003
Coal zone:	K		
Field sample no.:	10422 - 10423	Composite sample no.:	305

PRODUCT COAL ANALYSIS (SP3)

Target Ash: 7.5 %

Standard:	ASTM
Size analysis	
Fraction size (mm):	6.00 X 0.50
Cutpoint:	sp.g. 1.49
Contribution (%):	10.25
Total yield (%):	10.25

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture (%):	0.92	
Ash (%):	7.33	7.40
Volatile matter (%):	7.23	7.30
Fixed carbon (%):	84.52	85.30
Total sulphur (%):	0.60	0.61
Combustible sulphur (%):	0.57	
Gross calorific value (cal/g):	7,729.00	7,801.00
Volatile matter (dmmf%):	7.10	
Hardgrove index:	43.00	
Phosphorous in coal (%):	0.057	

ASH FUSION ANALYSIS (AF1)

	OXIDIZING ATM	REDUCING ATM
Initial temperature (°C):	1,295.00	1,127.00
Softening temperature (°C):	1,322.00	1,232.00
Hemispherical temperature (°C):	1,345.00	1,274.00
Final temperature (°C):	1,395.00	1,374.00

ASH MINERAL ANALYSIS (AM1)

SiO2 (%):	50.34	TiO2 (%):	1.40
Al2O3 (%):	23.06	Na2O (%):	1.97
Fe2O3 (%):	7.95	K2O (%):	0.97
CaO (%):	3.83	SO3 (%):	1.09
MgO (%):	2.67	P2O5 (%):	1.79

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88004 SEAM - I SAMPLE ID - 14 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 35.00 X 6.00 RELATIVE WEIGHT % - 63.30 ASH % - 49.49

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	2.27	1.73	2.27	1.73	97.73	50.02	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.79	0.79
1.45	3.11	4.37	5.38	3.26	94.62	51.52	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.67	0.72
1.50	2.34	8.20	7.72	4.75	92.28	52.62	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.81	0.75
1.55	2.04	12.48	9.76	6.37	90.24	53.53	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.94	0.79
1.60	2.75	20.41	12.51	9.46	87.49	54.57	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.84	0.80
1.70	8.97	27.46	21.48	16.97	78.52	57.66	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.77	0.79
1.80	12.20	35.46	33.68	23.67	66.32	61.75	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.98	0.86
2.00	29.56	52.00	63.24	36.91	36.76	69.59	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.04	0.94
2.60	36.76	69.59	100.00	48.92	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.95	0.95

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 6.00 X 0.50 RELATIVE WEIGHT % - 30.10 ASH % - 21.62

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	7.39	4.20	7.39	4.20	92.61	23.14	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.91	0.91
1.45	32.45	3.90	39.84	3.96	60.16	33.52	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.79	0.81
1.50	11.85	7.97	51.69	4.88	48.31	39.79	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.79	0.81
1.55	5.90	12.53	57.59	5.66	42.41	43.58	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.13	0.84
1.60	4.66	16.05	62.25	6.44	37.75	46.98	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.08	0.86
1.70	7.53	22.41	69.78	8.16	30.22	53.11	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.44	0.92
1.80	5.44	30.00	75.22	9.74	24.78	58.18	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.81	0.99
2.00	9.24	41.16	84.46	13.18	15.54	68.30	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.73	1.07
2.60	15.54	68.30	100.00	21.74	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.27	1.10

GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88004 SEAM - 1 SAMPLE ID - 14 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 0.50 X 0.15 RELATIVE WEIGHT % - 4.44 ASH % - 25.69

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	6.93	6.15	6.93	6.15	93.07	26.72	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.68	0.68
1.45	12.36	1.88	19.29	3.41	80.71	30.52	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.77	0.74
1.50	19.01	3.42	38.30	3.42	61.70	38.87	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.70	0.72
1.55	9.94	6.29	48.24	4.01	51.76	45.13	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.93	0.76
1.60	6.58	8.80	54.82	4.58	45.18	50.42	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.02	0.79
1.70	7.58	15.68	62.40	5.93	37.60	57.42	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.26	0.85
1.80	5.92	24.91	68.32	7.58	31.68	63.49	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.24	0.88
2.00	7.20	39.47	75.52	10.62	24.48	70.56	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.33	0.93
2.60	24.48	70.56	100.00	25.29	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.84	0.91

ANALYSIS TYPE - FROTH

FRACTION SIZE(MM) 0.15 X 0.00 RELATIVE WEIGHT % - 2.16 ASH % - 33.75

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
240.00	*****	33.75	100.00	33.75	0.0	0.0	0.0	0.0	21.66	21.66	0.37	0.37	5.70	5.70	1.06	1.06

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88004 SEAM - I SAMPLE ID - 15 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 35.00 X 6.00 RELATIVE WEIGHT % - 69.53 ASH % - 66.84

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.45	0.51	6.83	0.51	6.83	99.49	66.92	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.77	1.77
1.50	0.44	8.59	0.95	7.65	99.05	67.18	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.73	1.75
1.55	1.41	14.23	2.36	11.58	97.64	67.94	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.66	1.70
1.60	1.76	19.21	4.12	14.84	95.88	68.84	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.75	1.72
1.70	7.66	26.08	11.78	22.15	88.22	72.55	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.76	1.75
1.80	9.32	33.78	21.10	27.29	78.90	77.13	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.78	1.76
2.00	12.34	47.41	33.44	34.71	66.56	82.64	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.90	1.81
2.60	66.56	82.64	100.00	66.61	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.00	1.94

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 6.00 X 0.50 RELATIVE WEIGHT % - 24.97 ASH % - 61.03

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	0.07	16.23	0.07	16.23	99.93	60.93	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.26	1.26
1.45	4.02	3.94	4.09	4.15	95.91	63.32	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.49	1.49
1.50	4.80	8.71	8.89	6.61	91.11	66.20	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.50	1.49
1.55	3.57	13.05	12.46	8.46	87.54	68.37	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.52	1.50
1.60	3.27	16.47	15.73	10.12	84.27	70.38	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.90	1.58
1.70	6.39	22.68	22.12	13.75	77.88	74.30	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.06	1.72
1.80	5.89	29.71	28.01	17.11	71.99	77.94	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.39	1.65
2.00	10.23	40.30	38.24	23.31	61.76	84.18	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.93	1.73
2.60	61.76	84.18	100.00	60.90	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.50	1.59

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88004 SEAM - I SAMPLE ID - 15 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 0.50 X 0.15 RELATIVE WEIGHT % - 3.75 ASH % - 44.39

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	0.34	8.73	0.34	8.73	99.66	43.59	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.90	1.90
1.45	20.47	8.38	20.81	8.39	79.19	52.70	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.05	2.05
1.50	8.66	10.56	29.47	9.02	70.53	57.87	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.98	2.03
1.55	4.59	10.42	34.06	9.21	65.94	61.17	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.46	1.95
1.60	5.39	12.74	39.45	9.69	60.55	65.49	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.68	1.91
1.70	5.39	17.49	44.84	10.63	55.16	70.18	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.36	1.85
1.80	5.10	23.90	49.94	11.99	50.06	74.89	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.66	1.83
2.00	8.03	34.22	57.97	15.07	42.03	82.66	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.60	1.80
2.60	42.03	82.66	100.00	43.48	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.53	1.68

ANALYSIS TYPE - FROTH

FRACTION SIZE(MM) 0.15 X 0.00 RELATIVE WEIGHT % - 1.75 ASH % - 47.94

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
240.00	*****	47.94	100.00	47.94	0.0	0.0	0.0	0.0	16.17	16.17	0.28	0.28	6.08	6.08	1.69	1.69

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88004 SEAM - 1 SAMPLE ID - 16 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 35.00 X 6.00 RELATIVE WEIGHT % - 50.08 ASH % - 15.89

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	0.12	13.13	0.12	13.13	99.88	16.67	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.85	0.85
1.45	26.50	4.01	26.62	4.05	73.38	21.25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.58	0.58
1.50	30.78	7.34	57.40	5.81	42.60	31.29	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.65	0.62
1.55	13.81	12.87	71.21	7.18	28.79	40.13	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.69	0.63
1.60	5.33	18.75	76.54	7.99	23.46	44.99	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.93	0.65
1.70	6.53	25.09	83.07	9.33	16.93	52.66	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.36	0.71
1.80	1.26	27.98	84.33	9.61	15.67	54.65	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.19	0.72
2.00	4.96	41.12	89.29	11.36	10.71	60.91	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.77	0.77
2.60	10.71	60.91	100.00	16.67	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.21	0.82

ANALYSIS TYPE FLOAT

FRACTION SIZE(MM) 6.00 X 0.50 RELATIVE WEIGHT % - 36.12 ASH % - 15.78

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	7.44	3.94	7.44	3.94	92.56	15.65	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.81	0.81
1.45	29.69	4.94	37.13	4.74	62.87	20.71	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.92	0.90
1.50	20.28	9.02	57.41	6.25	42.59	26.28	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.94	0.91
1.55	11.22	13.56	68.63	7.45	31.37	30.83	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.06	0.94
1.60	5.94	16.71	74.57	8.18	25.43	34.13	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.43	0.98
1.70	11.49	20.38	86.06	9.81	13.94	45.47	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.83	1.09
1.80	4.98	28.52	91.04	10.84	8.96	54.89	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.43	1.11
2.00	3.04	39.16	94.08	11.75	5.92	62.97	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.66	1.13
2.60	5.92	62.97	100.00	14.78	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.34	1.14

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88004 SEAM - I SAMPLE ID - 16 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 0.50 X 0.15 RELATIVE WEIGHT % - 9.76 ASH % - 15.78

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	15.50	5.33	15.50	5.33	84.50	17.64	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.15	1.15
1.45	25.57	5.86	41.07	5.66	58.93	22.75	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.96	1.65
1.50	16.53	8.08	57.60	6.35	42.40	28.47	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.12	1.50
1.55	9.41	11.49	67.01	7.08	32.99	33.31	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.55	1.51
1.60	5.16	15.39	72.17	7.67	27.83	36.64	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.81	1.53
1.70	8.86	19.24	81.03	8.94	18.97	44.76	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.61	1.54
1.80	6.09	23.11	87.12	9.93	12.88	55.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.52	1.54
2.00	3.50	33.43	90.62	10.83	9.38	63.05	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.98	1.55
2.60	9.38	63.05	100.00	15.73	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.66	1.56

ANALYSIS TYPE - FROTH

FRACTION SIZE(MM) 0.15 X 22.94 RELATIVE WEIGHT % - 4.04 ASH % - 25.95

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
240.00	*****	22.94	100.00	22.94	0.0	0.0	0.0	0.0	25.95	25.95	0.41	0.41	4.39	4.39	1.57	1.57

GULF CANADA CORPORATION - COAL DIVISION

C L E A N S I M U L A T E D P R O D U C T R E P O R T

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88004
Coal zone:	I		
Field sample no.:	10429 - 10430	Composite sample no.:	208

PRODUCT COAL ANALYSIS (SP2)

Target Ash: 8.0 %

Standard:	ASTM	
Size analysis		
Fraction size (mm):	35.00 X	6.00
Cutpoint:	sp.g.	1.57
Contribution (%):		4.85
Total yield (%):		4.85

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture (%):	1.04	
Ash (%):	8.25	8.34
Volatile matter (%):	6.09	6.15
Fixed carbon (%):	84.62	85.51
Total sulphur (%):	0.49	0.50
Combustible sulphur (%):	0.42	
Gross calorific value (cal/g):	7,576.00	7,656.00
Volatile matter (dmmf%):	5.90	
Hardgrove index:	40.00	
Phosphorous in coal (%):	0.031	

ASH FUSION ANALYSIS (AF1)

	OXIDIZING ATM	REDUCING ATM
Initial temperature (°C):	1,232.00	1,153.00
Softening temperature (°C):	1,253.00	1,180.00
Hemispherical temperature (°C):	1,259.00	1,203.00
Final temperature (°C):	1,295.00	1,264.00

ASH MINERAL ANALYSIS (AM1)

SiO2 (%):	53.22	TiO2 (%):	1.52
Al2O3 (%):	18.90	Na2O (%):	1.66
Fe2O3 (%):	8.81	K2O (%):	0.94
CaO (%):	3.61	SO3 (%):	2.05
MgO (%):	4.34	P2O5 (%):	0.85

========== GULF CANADA CORPORATION - COAL DIVISION ==========

---------- C L E A N S I M U L A T E D P R O D U C T R E P O R T ----------

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88004
Coal zone:	1		
Field sample no.:	10431 - 10432	Composite sample no.:	209

---------- PRODUCT COAL ANALYSIS (SP2) ----------

Target Ash: 8.0 %

Standard:	ASTM
Size analysis	
Fraction size (mm):	35.00 X 6.00
Cutpoint:	sp.g. 1.60
Contribution (%):	38.38
Total yield (%):	38.38

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture (%):	0.83	
Ash (%):	7.63	7.69
Volatile matter (%):	5.39	5.44
Fixed carbon (%):	86.15	86.87
Total sulphur (%):	0.51	0.51
Combustible sulphur (%):	0.49	
Gross calorific value (cal/g):	7,667.00	7,732.00
Volatile matter (dmmf%):	5.10	
Hardgrove index:	41.00	
Phosphorous in coal (%):	0.271	

---------- ASH FUSION ANALYSIS (AF1) ----------

	OXIDIZING ATM	REDUCING ATM
Initial temperature (°C):	1,238.00	1,222.00
Softening temperature (°C):	1,269.00	1,243.00
Hemispherical temperature (°C):	1,282.00	1,259.00
Final temperature (°C):	1,388.00	1,385.00

---------- ASH MINERAL ANALYSIS (AM1) ----------

SiO2 (%):	42.64	TiO2 (%):	1.86
Al2O3 (%):	26.46	Na2O (%):	1.90
Fe2O3 (%):	3.77	K2O (%):	1.04
CaO (%):	6.66	SO3 (%):	0.71
MgO (%):	3.11	P2O5 (%):	8.14

GULF CANADA CORPORATION - COAL DIVISION

C L E A N S I M U L A T E D P R O D U C T R E P O R T

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88004
Coal zone:	I		
Field sample no.:	10429 - 10432	Composite sample no.:	306

PRODUCT COAL ANALYSIS (SP3)

Target Ash: 7.5 %

Standard:	ASTM
Size analysis	
Fraction size (mm):	6.00 X 0.50
Cutpoint:	sp.g. 1.59
Contribution (%):	20.18
Total yield (%):	20.18

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture (%):	1.05	
Ash (%):	7.22	7.30
Volatile matter (%):	5.70	5.76
Fixed carbon (%):	86.03	86.94
Total sulphur (%):	0.49	0.50
Combustible sulphur (%):	0.46	
Gross calorific value (cal/g):	7,531.00	7,611.00
Volatile matter (dmmf%):	5.50	
Hardgrove index:	48.00	
Phosphorous in coal (%):	0.081	

ASH FUSION ANALYSIS (AFT)

	OXIDIZING ATM	REDUCING ATM
Initial temperature (°C):	1,264.00	1,227.00
Softening temperature (°C):	1,293.00	1,261.00
Hemispherical temperature (°C):	1,319.00	1,285.00
Final temperature (°C):	1,411.00	1,409.00

ASH MINERAL ANALYSIS (AMT)

SiO2 (%):	51.94	TiO2 (%):	1.52
Al2O3 (%):	24.57	Na2O (%):	1.99
Fe2O3 (%):	3.95	K2O (%):	1.05
CaO (%):	3.72	SO3 (%):	1.11
MgO (%):	3.29	P2O5 (%):	2.56

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRODH880Q4 SEAM - H SAMPLE ID - 17 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 35.00 X 6.00 RELATIVE WEIGHT % - 72.46 ASH % - 6.00

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	0.14	5.84	0.14	5.84	99.86	40.15	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.64	0.64
1.45	4.02	3.00	4.16	3.10	95.84	41.70	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.27	0.28
1.50	11.65	7.79	15.81	6.55	84.19	46.40	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.36	0.34
1.55	8.85	14.32	24.66	9.34	75.34	50.17	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.33	0.34
1.60	11.17	20.22	35.83	12.73	64.17	55.38	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.29	0.32
1.70	10.52	26.32	46.35	15.82	53.65	61.08	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.40	0.34
1.80	8.05	35.92	54.40	18.79	45.60	65.52	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.56	0.37
2.00	13.19	42.41	67.59	23.40	32.41	74.92	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.45	0.39
2.60	32.41	74.92	100.00	40.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.98	0.58

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 6.00 X 0.50 RELATIVE WEIGHT % - 23.57 ASH % - 21.18

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	8.51	4.52	8.51	4.52	91.49	23.52	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.53	0.53
1.45	25.23	4.80	33.74	4.73	66.26	30.65	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.43	0.46
1.50	16.09	10.60	49.83	6.62	50.17	37.08	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.44	0.45
1.55	11.87	14.56	61.70	8.15	38.30	44.06	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.65	0.49
1.60	7.34	19.11	69.04	9.32	30.96	49.97	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.53	0.49
1.70	9.14	25.60	78.18	11.22	21.82	60.18	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.74	0.52
1.80	3.81	32.39	81.99	12.20	18.01	66.06	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.89	0.54
2.00	4.56	45.27	86.55	13.95	13.45	73.11	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.86	0.56
2.60	13.45	73.11	100.00	21.90	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.08	0.63

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88004 SEAM - H SAMPLE ID - 17 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 0.50 X 0.15 RELATIVE WEIGHT % - 2.68 ASH % - 31.35

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	22.46	6.64	22.46	6.64	77.54	38.09	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.74	0.74
1.45	6.30	9.31	28.76	7.22	71.24	40.64	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.51	0.69
1.50	4.55	10.14	33.31	7.62	66.69	42.72	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.83	0.71
1.55	10.93	11.11	44.24	8.48	55.76	48.91	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.93	0.76
1.60	5.39	13.38	49.63	9.02	50.37	52.72	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.26	0.82
1.70	5.61	19.95	55.24	10.13	44.76	56.82	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.99	0.83
1.80	7.21	24.95	62.45	11.84	37.55	62.94	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.26	0.88
2.00	8.12	34.32	70.57	14.42	29.43	70.84	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.32	0.93
2.60	29.43	70.84	100.00	31.03	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.94	0.94

ANALYSIS TYPE - FROTH

FRACTION SIZE(MM) 0.15 X 0.00 RELATIVE WEIGHT % - 1.29 ASH % - 38.59

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
240.00	*****	38.59	100.00	38.59	0.0	0.0	0.0	0.0	19.56	19.56	0.48	0.48	5.84	5.84	1.10	1.10

GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88004 SEAM - H SAMPLE ID - 18 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 35.00 X 6.00 RELATIVE WEIGHT % - 65.51 ASH % - 0.0

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.45	0.15	4.85	0.15	4.85	99.85	55.79	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.03	1.03
1.50	0.05	7.32	0.20	5.47	99.80	55.81	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.98	1.02
1.55	0.07	14.85	0.27	7.90	99.73	55.84	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.06	1.03
1.60	0.91	20.40	1.18	17.54	98.82	56.16	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.89	0.92
1.70	3.29	28.60	4.47	25.68	95.53	57.11	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.76	0.80
1.80	13.66	39.43	18.13	36.04	81.87	60.06	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.55	0.61
2.00	37.73	50.22	55.86	45.62	44.14	68.48	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.57	0.58
2.60	44.14	68.48	100.00	55.71	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.61	0.60

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 6.00 X 0.50 RELATIVE WEIGHT % - 25.43 ASH % - 0.0

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	0.58	12.44	0.58	12.44	99.42	61.44	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.11	1.11
1.45	1.76	5.23	2.34	7.02	97.66	62.46	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.88	0.94
1.50	0.85	10.13	3.19	7.85	96.81	62.91	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.19	1.00
1.55	1.23	12.33	4.42	9.09	95.58	63.57	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.01	1.01
1.60	1.55	16.15	5.97	10.93	94.03	64.35	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.16	1.05
1.70	6.17	23.69	12.14	17.41	87.86	67.20	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.16	1.10
1.80	12.12	34.99	24.26	26.19	75.74	72.36	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.38	1.24
2.00	14.31	43.80	38.57	32.73	61.43	79.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.89	1.48
2.60	61.43	79.01	100.00	61.16	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.37	1.41

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88004 SEAM - H SAMPLE ID - 18 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 0.50 X 0.15 RELATIVE WEIGHT % - 4.54 ASH % - 0.0

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	3.27	8.72	3.27	8.72	96.73	59.17	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.30	1.30
1.45	6.92	10.82	10.19	10.15	89.81	62.90	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.32	1.31
1.50	3.33	17.51	13.52	11.96	86.48	64.65	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.17	1.28
1.55	3.33	17.61	16.85	13.08	83.15	66.53	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.94	1.41
1.60	3.53	23.49	20.38	14.88	79.62	68.44	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.12	1.36
1.70	2.55	20.54	22.93	15.51	77.07	70.02	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.91	1.42
1.80	4.31	27.13	27.24	17.35	72.76	72.57	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.20	1.39
2.00	10.91	36.09	38.15	22.71	61.85	79.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.36	1.38
2.60	61.85	79.00	100.00	57.52	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.12	1.22

ANALYSIS TYPE - FROTH

FRACTION SIZE(MM) 0.15 X 0.00 RELATIVE WEIGHT % - 4.52 ASH % - 55.00

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
240.00	*****	55.00	100.00	55.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88004 SEAM - H SAMPLE ID - 19 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 35.00 X 6.00 RELATIVE WEIGHT % - 56.21 ASH % - 30.90

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	CUM. S	CUM. S	CUM. VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	0.07	33.25	0.07	33.25	99.93	29.99	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.59	0.59
1.45	6.25	4.76	6.32	5.08	93.68	31.67	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.45	0.45
1.50	10.31	9.49	16.63	7.81	83.37	34.41	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.38	0.41
1.55	16.81	15.02	33.44	11.44	66.56	39.31	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.41	0.41
1.60	15.74	20.45	49.18	14.32	50.82	45.16	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.42	0.41
1.70	13.81	25.40	62.99	16.75	37.01	52.53	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.57	0.45
1.80	5.23	34.85	68.22	18.14	31.78	55.44	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.52	0.45
2.00	12.01	48.78	80.23	22.72	19.77	59.48	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.88	0.52
2.60	19.77	59.48	100.00	29.99	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.44	0.50

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 6.00 X 0.50 RELATIVE WEIGHT % - 34.67 ASH % - 19.64

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	CUM. S	CUM. S	CUM. VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	3.71	5.21	3.71	5.21	96.29	19.32	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.63	0.63
1.45	19.51	5.05	23.22	5.08	76.78	22.94	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.49	0.51
1.50	18.74	9.64	41.96	7.11	58.04	27.24	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.56	0.53
1.55	16.81	13.74	58.77	9.01	41.23	32.74	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.61	0.56
1.60	5.03	16.69	63.80	9.61	36.20	34.97	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.70	0.57
1.70	14.83	20.23	78.63	11.62	21.37	45.20	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.85	0.62
1.80	7.25	26.91	85.88	12.91	14.12	54.59	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.16	0.58
2.00	5.14	37.47	91.02	14.30	8.98	64.39	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.87	0.60
2.60	8.98	64.39	100.00	18.79	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.77	0.61

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88004 SEAM - H SAMPLE ID - 19 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 0.50 X 0.15 RELATIVE WEIGHT % - 6.04 ASH % - 21.93

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	15.81	6.69	15.81	6.69	84.19	23.99	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.66	0.66
1.45	16.22	7.98	32.03	7.34	67.97	27.81	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.74	0.70
1.50	10.61	8.18	42.64	7.55	57.36	31.44	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.66	0.69
1.55	8.21	8.78	50.85	7.75	49.15	35.23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.73	0.70
1.60	10.81	14.58	61.66	8.95	38.34	41.05	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.76	0.71
1.70	8.49	16.99	70.15	9.92	29.85	47.89	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.83	0.72
1.80	8.49	21.09	78.64	11.13	21.36	58.54	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.06	0.76
2.00	7.08	34.66	85.72	13.07	14.28	70.38	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.02	0.78
2.60	14.28	70.38	100.00	21.25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.73	0.77

ANALYSIS TYPE - FROTH

FRACTION SIZE(MM) 0.15 X 0.00 RELATIVE WEIGHT % - 3.08 ASH % - 29.58

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
240.00	*****	29.58	100.00	29.58	0.0	0.0	0.0	0.0	22.83	22.83	0.34	0.34	4.34	4.34	1.23	1.23

GULF CANADA CORPORATION - COAL DIVISION

C L E A N S I M U L A T E D P R O D U C T R E P O R T

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88004
Coal zone:	H		
Field sample no.:	10435	Composite sample no.:	210

PRODUCT COAL ANALYSIS (SP4)

Target Ash: 10.0 %

Standard:	ASTM
Size analysis	
Fraction size (mm):	35.00 X 6.00
Cutpoint:	sp.g. 1.56
Contribution (%):	21.21
Total yield (%):	21.21

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture (%):	0.88	
Ash (%):	10.44	10.53
Volatile matter (%):	6.40	6.46
Fixed carbon (%):	82.28	83.01
Total sulphur (%):	0.51	0.51
Combustible sulphur (%):	0.43	
Gross calorific value (cal/g):	7,423.00	7,489.00
Volatile matter (dmmf%):	6.20	
Hardgrove index:	42.00	
Phosphorous in coal (%):	0.098	

ASH FUSION ANALYSIS (AF1)

	OXIDIZING ATM	REDUCING ATM
Initial temperature (°C):	1,243.00	1,203.00
Softening temperature (°C):	1,264.00	1,245.00
Hemispherical temperature (°C):	1,280.00	1,259.00
Final temperature (°C):	1,306.00	1,295.00

ASH MINERAL ANALYSIS (AM1)

SiO2 (%):	56.44	TiO2 (%):	1.38
Al2O3 (%):	18.92	Na2O (%):	1.34
Fe2O3 (%):	3.26	K2O (%):	0.88
CaO (%):	5.99	SO3 (%):	1.83
MgO (%):	3.70	P2O5 (%):	2.16

GULF CANADA CORPORATION - COAL DIVISION

C L E A N S I M U L A T E D P R O D U C T R E P O R T

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88004
Coal zone:	H		
Field sample no.:	10437	Composite sample no.:	211

PRODUCT COAL ANALYSIS (SP4)

Target Ash: 10.0 %

Standard:	ASTM	
Size analysis		
Fraction size(mm):	35.00 X	6.00
Cutpoint:	sp.g.	1.53
Contribution(%):		14.68
Total yield(%):		14.68

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture(%):	0.78	
Ash(%):	8.48	8.55
Volatile matter(%):	5.04	5.08
Fixed carbon(%):	85.70	86.37
Total sulphur(%):	0.47	0.47
Combustible sulphur(%):	0.42	
Gross calorific value(cal/g):	7,586.00	7,646.00
Volatile matter(dmmf%):	4.70	
Hardgrove index:	42.00	
Phosphorous in coal(%):	0.120	

ASH FUSION ANALYSIS (AFI)

	OXIDIZING ATM	REDUCING ATM
Initial temperature(°C):	1,243.00	1,211.00
Softening temperature(°C):	1,272.00	1,248.00
Hemispherical temperature(°C):	1,280.00	1,264.00
Final temperature(°C):	1,301.00	1,290.00

ASH MINERAL ANALYSIS (AMI)

SiO2(%):	54.94	TiO2(%):	1.62
Al2O3(%):	20.91	Na2O(%):	1.73
Fe2O3(%):	3.49	K2O(%):	0.67
CaO(%):	5.74	SO3(%):	1.36
MgO(%):	2.21	P2O5(%):	3.24

GULF CANADA CORPORATION - COAL DIVISION

C L E A N S I M U L A T E D P R O D U C T R E P O R T

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88004
Coal zone:	H		
Field sample no.:	10435 - 10437	Composite sample no.:	307

PRODUCT COAL ANALYSIS (SP3)

Target Ash: 7.5 %

Standard:	ASTM
Size analysis	
Fraction size(mm):	6.00 X 0.50
Cutpoint:	sp.g. 1.51
Contribution(%):	12.07
Total yield(%):	12.07

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture(%):	1.05	
Ash(%):	7.27	7.35
Volatile matter(%):	5.15	5.20
Fixed carbon(%):	86.53	87.45
Total sulphur(%):	0.50	0.51
Combustible sulphur(%):	0.47	
Gross calorific value(cal/g):	7,638.00	7,719.00
Volatile matter(dmmf%):	4.90	
Hardgrove index:	43.00	
Phosphorous in coal(%):	0.088	

ASH FUSION ANALYSIS (AF1)

	OXIDIZING ATM	REDUCING ATM
Initial temperature(°C):	1,235.00	1,230.00
Softening temperature(°C):	1,277.00	1,248.00
Hemispherical temperature(°C):	1,288.00	1,264.00
Final temperature(°C):	1,364.00	1,360.00

ASH MINERAL ANALYSIS (AM1)

SiO2(%):	54.16	TiO2(%):	1.18
Al2O3(%):	22.30	Na2O(%):	2.08
Fe2O3(%):	3.20	K2O(%):	0.81
CaO(%):	4.87	SO3(%):	1.18
MgO(%):	2.58	P2O5(%):	2.78

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88005 SEAM - K/L SAMPLE ID - 20 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 35.00 X 6.00 RELATIVE WEIGHT % - 68.06 ASH % - 63.24

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	1.06	11.84	1.06	11.84	98.94	63.21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.57	0.57
1.45	11.79	8.41	12.85	8.69	87.15	70.62	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.55	0.55
1.50	4.95	11.62	17.80	9.51	82.20	74.17	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.63	0.57
1.55	1.00	15.50	18.80	9.83	81.20	74.90	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.78	0.58
1.60	2.30	18.36	21.10	10.76	78.90	76.55	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.81	0.61
1.70	1.81	26.33	22.91	11.99	77.09	77.72	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	0.64
1.80	2.97	39.24	25.88	15.11	74.12	79.27	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.59	0.75
2.00	8.56	54.50	34.44	24.90	65.56	82.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.29	0.88
2.60	65.56	82.50	100.00	62.66	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.82	0.84

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 6.00 X 0.50 RELATIVE WEIGHT % - 24.80 ASH % - 42.50

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	15.18	3.59	15.18	3.59	84.82	50.63	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.65	0.65
1.45	14.31	6.44	29.49	4.97	70.51	59.60	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.92	0.78
1.50	7.89	10.95	37.38	6.23	62.62	65.73	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.98	0.82
1.55	2.12	13.82	39.50	6.64	60.50	67.55	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.17	0.84
1.60	1.83	16.92	41.33	7.10	58.67	69.13	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.38	0.87
1.70	2.45	24.29	43.78	8.06	56.22	71.08	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.69	0.91
1.80	2.79	33.90	46.57	9.61	53.43	73.02	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.90	0.97
2.00	7.45	46.49	54.02	14.69	45.98	77.32	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.67	1.07
2.60	45.98	77.32	100.00	43.49	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.64	1.33

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88005 SEAM - K/L SAMPLE ID - 20 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 0.50 X 0.15 RELATIVE WEIGHT % - 4.67 ASH % - 33.16

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	10.91	3.73	10.91	3.73	89.09	36.33	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.92	0.92
1.45	18.98	4.85	29.89	4.44	70.11	44.85	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.85	0.88
1.50	11.98	6.99	41.87	5.17	58.13	52.65	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.91	0.89
1.55	6.35	10.00	48.22	5.81	51.78	57.89	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.06	0.91
1.60	5.16	13.53	53.38	6.55	46.62	62.79	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.12	0.93
1.70	3.91	18.35	57.29	7.36	42.71	66.86	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.26	0.95
1.80	3.08	25.18	60.37	8.27	39.63	70.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.34	0.97
2.00	5.94	36.83	66.31	10.83	33.69	75.97	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.31	1.00
2.60	33.69	75.97	100.00	32.77	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.47	1.16

ANALYSIS TYPE - FROTH

FRACTION SIZE(MM) 0.15 X 0.00 RELATIVE WEIGHT % - 2.47 ASH % - 35.47

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
240.00	*****	35.47	100.00	35.47	0.0	0.0	0.0	0.0	21.85	21.85	0.52	0.52	5.73	5.73	1.02	1.02

========== GULF CANADA CORPORATION - COAL DIVISION ==========

---------- C L E A N S I M U L A T E D P R O D U C T R E P O R T ----------

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88005
Coal zone:	K/L		
Field sample no.:	04371	Composite sample no.:	212

---------- PRODUCT COAL ANALYSIS (SP4) ----------

Target Ash: 10.0 %

Standard:	ASTM	
Size analysis		
Fraction size(mm):	35.00 X	6.00
Cutpoint:	sp.g.	1.56
Contribution(%):		13.53
Total yield(%):		13.53

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture(%):	0.85	
Ash(%):	10.70	10.79
Volatile matter(%):	6.29	6.34
Fixed carbon(%):	82.16	82.87
Total sulphur(%):	0.55	0.55
Combustible sulphur(%):	0.52	
Gross calorific value(cal/g):	7,526.00	7,591.00
Volatile matter(dmmf%):	6.00	
Hardgrove index:	41.00	
Phosphorous in coal(%):	0.100	

---------- ASH FUSION ANALYSIS (AF1) ----------

	OXIDIZING ATM	REDUCING ATM
Initial temperature(°C):	1,232.00	1,214.00
Softening temperature(°C):	1,243.00	1,216.00
Hemispherical temperature(°C):	1,264.00	1,219.00
Final temperature(°C):	1,280.00	1,253.00

---------- ASH MINERAL ANALYSIS (AM1) ----------

SiO2(%):	45.32	TiO2(%):	1.46
Al2O3(%):	20.41	Na2O(%):	1.55
Fe2O3(%):	11.65	K2O(%):	0.69
CaO(%):	9.18	SO3(%):	0.81
MgO(%):	2.34	P2O5(%):	2.14

========== GULF CANADA CORPORATION - COAL DIVISION ==========

---------- C L E A N S I M U L A T E D P R O D U C T R E P O R T ----------

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88005
Coal zone:	K/L		
Field sample no.:	04371	Composite sample no.:	308

---------- PRODUCT COAL ANALYSIS (SP3) ----------

Target Ash: 7.5 %

Standard:	ASTM
Size analysis	
Fraction size(mm):	6.00 X 0.50
Cutpoint:	sp.g. 1.64
Contribution(%):	10.45
Total yield(%):	10.45

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture(%):	0.93	
Ash(%):	7.69	7.76
Volatile matter(%):	6.46	6.52
Fixed carbon(%):	84.92	85.72
Total sulphur(%):	0.56	0.57
Combustible sulphur(%):	0.53	
Gross calorific value(cal/g):	7,691.00	7,763.00
Volatile matter(dmmf%):	6.30	
Hardgrove index:	49.00	
Phosphorous in coal(%):	0.247	

---------- ASH FUSION ANALYSIS (AF1) ----------

	OXIDIZING ATM	REDUCING ATM
Initial temperature(°C):	1,243.00	1,190.00
Softening temperature(°C):	1,248.00	1,198.00
Hemispherical temperature(°C):	1,264.00	1,203.00
Final temperature(°C):	1,280.00	1,232.00

---------- ASH MINERAL ANALYSIS (AM1) ----------

SiO2(%):	39.28	TiO2(%):	2.66
Al2O3(%):	21.67	Na2O(%):	1.60
Fe2O3(%):	10.67	K2O(%):	0.78
CaO(%):	7.72	SO3(%):	1.06
MgO(%):	2.74	P2O5(%):	7.36

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88005 SEAM - K SAMPLE ID - 21 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 35.00 X 6.00 RELATIVE WEIGHT % - 53.44 ASH % - 26.07

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ/KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	1.26	4.11	1.26	4.11	98.74	27.21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.55	0.55
1.45	26.39	8.00	27.65	7.82	72.35	34.22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.46	0.46
1.50	27.59	12.11	55.24	9.96	44.76	47.84	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.45	0.46
1.55	6.36	17.22	61.60	10.71	38.40	52.92	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.59	0.47
1.60	2.60	20.20	64.20	11.10	35.80	55.29	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.75	0.48
1.70	1.01	24.33	65.21	11.30	34.79	56.19	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.97	0.49
1.80	11.68	39.64	76.89	15.61	23.11	64.56	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.04	0.57
2.00	7.34	49.96	84.23	18.60	15.77	71.35	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.94	0.61
2.60	15.77	71.35	100.00	26.92	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.14	0.69

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 6.00 X 0.50 RELATIVE WEIGHT % - 34.25 ASH % - 23.03

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ/KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	11.62	2.66	11.62	2.66	88.38	26.42	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.50	0.50
1.45	25.66	6.21	37.28	5.10	62.72	34.69	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.44	0.46
1.50	14.33	10.21	51.61	6.52	48.39	41.94	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.64	0.51
1.55	6.99	13.57	58.60	7.36	41.40	46.74	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.79	0.54
1.60	4.92	17.20	63.52	8.12	36.48	50.72	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.04	0.58
1.70	6.26	22.32	69.78	9.40	30.22	56.60	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.67	0.68
1.80	4.66	30.43	74.44	10.71	25.56	61.37	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.73	0.74
2.00	6.87	41.06	81.31	13.28	18.69	68.84	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.56	0.81
2.60	18.69	68.84	100.00	23.66	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.87	1.01

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88005 SEAM - K SAMPLE ID - 21 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 0.50 X 0.15 RELATIVE WEIGHT % - 8.12 ASH % - 20.33

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	23.89	3.21	23.89	3.21	76.11	24.42	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.68	0.68
1.45	16.75	4.07	40.64	3.56	59.36	30.17	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.70	0.69
1.50	12.10	7.11	52.74	4.38	47.26	36.07	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.08	0.78
1.55	6.41	9.66	59.15	4.95	40.85	40.22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.22	0.83
1.60	6.05	11.22	65.20	5.53	34.80	45.26	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.65	0.90
1.70	5.95	16.59	71.15	6.46	28.85	51.17	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.91	0.99
1.80	2.84	23.30	73.99	7.10	26.01	54.21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.02	1.03
2.00	5.33	34.59	79.32	8.95	20.68	59.27	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.92	1.09
2.60	20.68	59.27	100.00	19.36	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.56	1.18

ANALYSIS TYPE - FROTH

FRACTION SIZE(MM) 0.15 X 0.00 RELATIVE WEIGHT % - 4.19 ASH % - 22.43

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
240.00	*****	22.43	100.00	22.43	0.0	0.0	0.0	0.0	26.14	26.14	0.53	0.53	5.26	5.26	1.04	1.04

GULF CANADA CORPORATION - COAL DIVISION

C L E A N S I M U L A T E D P R O D U C T R E P O R T

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88005
Coal zone:	K		
Field sample no.:	04374	Composite sample no.:	213

PRODUCT COAL ANALYSIS (SP2)

Target Ash: 8.0 %

Standard:	ASTM
Size analysis	
Fraction size (mm):	35.00 X 6.00
Cutpoint:	sp.g. 1.45
Contribution (%):	18.63
Total yield (%):	18.63

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture (%):	0.85	
Ash (%):	7.77	7.84
Volatile matter (%):	6.75	6.81
Fixed carbon (%):	84.63	85.35
Total sulphur (%):	0.59	0.60
Combustible sulphur (%):	0.57	
Gross calorific value (cal/g):	7,722.00	7,788.00
Volatile matter (dmmf%):	6.60	
Hardgrove index:	41.00	
Phosphorous in coal (%):	0.327	

ASH FUSION ANALYSIS (AF1)

	OXIDIZING ATM	REDUCING ATM
Initial temperature (°C):	1,272.00	1,243.00
Softening temperature (°C):	1,280.00	1,274.00
Hemispherical temperature (°C):	1,295.00	1,285.00
Final temperature (°C):	1,322.00	1,319.00

ASH MINERAL ANALYSIS (AM1)

SiO2 (%):	40.23	TiO2 (%):	1.64
Al2O3 (%):	25.33	Na2O (%):	2.13
Fe2O3 (%):	6.32	K2O (%):	0.78
CaO (%):	8.56	SO3 (%):	0.56
MgO (%):	1.56	P2O5 (%):	9.65

========== GULF CANADA CORPORATION - COAL DIVISION ==========

---------- C L E A N S I M U L A T E D P R O D U C T R E P O R T ----------

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88005
Coal zone:	K		
Field sample no.:	04374	Composite sample no.:	309

---------- PRODUCT COAL ANALYSIS (SP3) ----------

Target Ash: 7.5 %

Standard:	ASTM
Size analysis	
Fraction size (mm):	6.00 X 0.50
Cutpoint:	sp.g. 1.56
Contribution (%):	20.87
Total yield (%):	20.87

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture (%):	0.88	
Ash (%):	7.81	7.88
Volatile matter (%):	7.77	7.84
Fixed carbon (%):	83.54	84.28
Total sulphur (%):	0.58	0.59
Combustible sulphur (%):	0.56	
Gross calorific value (cal/g):	7,667.00	7,735.00
Volatile matter (dmmf%):	7.70	
Hardgrove index:	44.00	
Phosphorous in coal (%):	0.189	

---------- ASH FUSION ANALYSIS (AF1) ----------

	OXIDIZING ATM	REDUCING ATM
Initial temperature (°C):	1,251.00	1,156.00
Softening temperature (°C):	1,288.00	1,243.00
Hemispherical temperature (°C):	1,322.00	1,264.00
Final temperature (°C):	1,401.00	1,319.00

---------- ASH MINERAL ANALYSIS (AM1) ----------

SiO2 (%):	42.96	TiO2 (%):	2.00
Al2O3 (%):	27.46	Na2O (%):	2.05
Fe2O3 (%):	5.62	K2O (%):	0.90
CaO (%):	6.74	SO3 (%):	0.51
MgO (%):	1.74	P2O5 (%):	5.53

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88005 SEAM - J SAMPLE ID - 22 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 35.00 X 6.00 RELATIVE WEIGHT % - 60.38 ASH % - 0.0

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	13.59	2.34	13.59	2.34	86.41	26.40	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.76	0.76
1.45	24.75	7.18	38.34	5.46	61.66	34.11	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.62	0.67
1.50	12.56	13.44	50.90	7.43	49.10	39.40	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.62	0.66
1.55	23.00	16.90	73.90	10.38	26.10	59.23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.70	0.67
1.60	0.50	17.56	74.40	10.43	25.60	60.04	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.99	0.67
1.70	3.80	28.55	78.20	11.31	21.80	65.53	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.75	0.68
1.80	1.22	31.14	79.42	11.61	20.58	67.57	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.07	0.68
2.00	0.99	46.97	80.41	12.05	19.59	68.61	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.10	0.69
2.60	19.59	68.61	100.00	23.13	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.79	0.71

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 6.00 X 0.50 RELATIVE WEIGHT % - 31.68 ASH % - 0.0

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	26.47	2.82	26.47	2.82	73.53	21.85	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.60	0.60
1.45	28.55	6.28	55.02	4.62	44.98	31.72	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.59	0.59
1.50	5.34	10.51	60.36	5.14	39.64	34.58	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.83	0.62
1.55	15.59	12.92	75.95	6.73	24.05	48.63	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.19	0.73
1.60	3.87	15.52	79.82	7.16	20.18	54.97	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.09	0.75
1.70	3.61	20.26	83.43	7.73	16.57	62.54	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.13	0.77
1.80	1.25	31.41	84.68	8.08	15.32	65.08	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.20	0.77
2.00	2.50	42.60	87.18	9.07	12.82	69.46	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.17	0.78
2.60	12.82	69.46	100.00	16.81	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.09	0.82

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88005 SEAM - J SAMPLE ID - 22 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 0.50 X 0.15 RELATIVE WEIGHT % - 5.27 ASH % - 0.0

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ/KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	6.81	5.01	6.81	5.01	93.19	24.62	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.90	0.90
1.45	23.65	7.58	30.46	7.01	69.54	30.42	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.90	0.90
1.50	15.83	7.91	46.29	7.31	53.71	37.06	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.12	0.98
1.55	9.02	10.53	55.31	7.84	44.69	42.41	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.10	1.00
1.60	13.43	19.68	68.74	10.15	31.26	52.17	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.23	1.04
1.70	5.81	15.01	74.55	10.53	25.45	60.66	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.48	1.08
1.80	4.41	21.67	78.96	11.15	21.04	68.83	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.48	1.10
2.00	3.21	44.11	82.17	12.44	17.83	73.28	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.34	1.11
2.60	17.83	73.28	100.00	23.29	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.99	1.09

GULF CANADA CORPORATION - COAL DIVISION

CLEAN SIMULATED PRODUCT REPORT

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88005
Coal zone:	J		
Field sample no.:	04377	Composite sample no.:	214

PRODUCT COAL ANALYSIS (SP2)

Target Ash: 8.0 %

Standard:	ASTM		
Size analysis			
Fraction size(mm):	35.00 X 6.00		
Cutpoint:	sp.g. 1.51		
Contribution(%):	39.09		
Total yield(%):	39.09		

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture(%):	0.84	
Ash(%):	7.98	8.05
Volatile matter(%):	5.72	5.77
Fixed carbon(%):	85.46	86.18
Total sulphur(%):	0.61	0.62
Combustible sulphur(%):	0.57	
Gross calorific value(cal/g):	7,681.00	7,747.00
Volatile matter(dmmf%):	5.40	
Hardgrove index:	37.00	
Phosphorous in coal(%):	0.266	

ASH FUSION ANALYSIS (AFI)

	OXIDIZING ATM	REDUCING ATM
Initial temperature(°C):	1,269.00	1,216.00
Softening temperature(°C):	1,272.00	1,243.00
Hemispherical temperature(°C):	1,280.00	1,264.00
Final temperature(°C):	1,311.00	1,301.00

ASH MINERAL ANALYSIS (AMI)

SiO2(%):	44.08	TiO2(%):	1.86
Al2O3(%):	22.17	Na2O(%):	1.73
Fe2O3(%):	2.83	K2O(%):	1.34
CaO(%):	11.03	SO3(%):	1.32
MgO(%):	2.30	P2O5(%):	7.64

GULF CANADA CORPORATION - COAL DIVISION

C L E A N S I M U L A T E D P R O D U C T R E P O R T

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88005
Coal zone:	J		
Field sample no.:	04377	Composite sample no.:	310

PRODUCT COAL ANALYSIS (SP3)

Target Ash: 7.5 %

Standard:	ASTM
Size analysis	
Fraction size (mm):	6.00 X 0.50
Cutpoint:	sp.g. 1.66
Contribution (%):	25.98
Total yield (%):	25.98

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture (%):	0.84	
Ash (%):	7.98	8.05
Volatile matter (%):	5.72	5.77
Fixed carbon (%):	85.46	86.18
Total sulphur (%):	0.61	0.62
Combustible sulphur (%):	0.50	
Gross calorific value (cal/g):	7,681.00	7,747.00
Volatile matter (dmmf%):	5.40	
Hardgrove index:	37.00	
Phosphorous in coal (%):	0.176	

ASH FUSION ANALYSIS (AF1)

	OXIDIZING ATM	REDUCING ATM
Initial temperature (°C):	1,269.00	1,256.00
Softening temperature (°C):	1,280.00	1,269.00
Hemispherical temperature (°C):	1,295.00	1,282.00
Final temperature (°C):	1,322.00	1,317.00

ASH MINERAL ANALYSIS (AM1)

SiO2 (%):	43.94	TiO2 (%):	2.66
Al2O3 (%):	21.29	Na2O (%):	1.43
Fe2O3 (%):	3.63	K2O (%):	1.34
CaO (%):	10.24	SO3 (%):	3.31
MgO (%):	2.79	P2O5 (%):	5.05

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88005 SEAM - I SAMPLE ID - 23 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 35.00 X 6.00 RELATIVE WEIGHT % - 54.89 ASH % - 0.0

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	3.94	1.45	3.94	1.45	96.06	23.68	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.10	1.10
1.45	5.87	6.04	9.81	4.20	90.19	24.82	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.15	1.13
1.50	24.29	13.03	34.10	10.49	65.90	29.17	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.63	0.77
1.55	13.83	13.28	47.93	11.29	52.07	33.39	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.87	0.80
1.60	18.16	15.44	66.09	12.43	33.91	43.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.04	0.87
1.70	1.13	25.00	67.22	12.64	32.78	43.63	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.19	0.87
1.80	0.26	29.93	67.48	12.71	32.52	43.73	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.95	0.87
2.00	16.73	36.33	84.21	17.40	15.79	51.58	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.72	0.84
2.60	15.79	51.58	100.00	22.80	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.52	0.79

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 6.00 X 0.50 RELATIVE WEIGHT % - 38.03 ASH % - 0.0

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	27.06	1.62	27.06	1.62	72.94	18.25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.69	0.69
1.45	31.12	5.14	58.18	3.50	41.82	28.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.75	0.72
1.50	11.22	9.34	69.40	4.45	30.60	34.85	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.21	0.80
1.55	9.75	14.07	79.15	5.63	20.85	44.57	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.08	0.84
1.60	3.25	19.76	82.40	6.19	17.60	49.15	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.20	0.85
1.70	4.17	24.10	86.57	7.05	13.43	56.93	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.06	0.86
1.80	1.77	28.80	88.34	7.49	11.66	61.20	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.07	0.86
2.00	2.06	41.23	90.40	8.26	9.60	65.49	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.17	0.87
2.60	9.60	65.49	100.00	13.75	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.01	0.88

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88005 SEAM - I SAMPLE ID - 23 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 0.50 X 0.15 RELATIVE WEIGHT % - 5.03 ASH % - 0.0

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	CUM. S	CUM. S	CUM. VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	37.58	3.77	37.58	3.77	62.42	32.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.46	1.46
1.45	11.49	4.75	49.07	4.00	50.93	38.15	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.29	1.42
1.50	6.21	9.49	55.28	4.62	44.72	42.13	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.23	1.40
1.55	1.55	12.46	56.83	4.83	43.17	43.20	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.49	1.40
1.60	9.63	15.42	66.46	6.36	33.54	51.18	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.64	1.44
1.70	5.28	18.99	71.74	7.29	28.26	57.19	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.50	1.44
1.80	3.42	22.95	75.16	8.01	24.84	61.90	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.72	1.45
2.00	2.80	36.36	77.96	9.02	22.04	65.15	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.80	1.47
2.60	22.04	65.15	100.00	21.39	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.04	1.37

ANALYSIS TYPE - FROTH

FRACTION SIZE(MM) 0.15 X 0.00 RELATIVE WEIGHT % - 2.05 ASH % - 22.00

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	CUM. S	CUM. S	CUM. VOL.	CUM. VOL.	MOIST	CUM. MOIST
240.00	*****	22.00	100.00	22.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88005 SEAM - 1 SAMPLE ID - 25 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 35.00 X 6.00 RELATIVE WEIGHT % - 44.12 ASH % - 31.96

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	4.64	2.25	4.64	2.25	95.36	33.33	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.71	0.71
1.45	14.43	7.33	19.07	6.09	80.93	37.97	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.60	0.63
1.50	15.18	12.81	34.25	9.07	65.75	43.78	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.66	0.64
1.55	9.34	18.14	43.59	11.01	56.41	48.02	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.82	0.68
1.60	4.53	22.45	48.12	12.09	51.88	50.25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.91	0.70
1.70	10.62	28.85	58.74	15.12	41.26	55.76	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.87	0.73
1.80	12.51	34.96	71.25	18.60	28.75	64.81	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.79	0.74
2.00	13.62	49.29	84.87	23.53	15.13	78.79	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.92	0.77
2.60	15.13	78.79	100.00	31.89	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.30	0.85

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 6.00 X 0.50 RELATIVE WEIGHT % - 43.68 ASH % - 18.32

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	11.09	3.67	11.09	3.67	88.91	19.45	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.85	0.85
1.45	24.51	6.18	35.60	5.40	64.40	24.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.63	0.70
1.50	12.44	9.98	48.04	6.58	51.96	27.98	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.75	0.71
1.55	12.71	13.28	60.75	7.99	39.25	32.74	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.94	0.76
1.60	6.05	15.66	66.80	8.68	33.20	35.85	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.15	0.79
1.70	13.53	18.25	80.33	10.29	19.67	47.95	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.79	1.13
1.80	6.68	24.10	87.01	11.35	12.99	60.22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.29	1.22
2.00	3.51	38.81	90.52	12.42	9.48	68.15	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.50	1.27
2.60	9.48	68.15	100.00	17.70	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.46	1.38

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88005 SEAM - I SAMPLE ID - 25 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 0.50 X 0.15 RELATIVE WEIGHT % - 7.46 ASH % - 19.78

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	6.19	3.83	6.19	3.83	93.81	20.47	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.43	1.43
1.45	20.19	6.13	26.38	5.59	73.62	24.40	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.99	1.86
1.50	10.14	8.01	36.52	6.26	63.48	27.02	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.01	1.90
1.55	7.74	9.82	44.26	6.88	55.74	29.41	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.87	1.90
1.60	9.89	11.02	54.15	7.64	45.85	33.37	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.59	1.84
1.70	11.96	13.05	66.11	8.62	33.89	40.55	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.16	1.72
1.80	14.29	16.96	80.40	10.10	19.60	57.74	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.30	1.64
2.00	4.86	31.36	85.26	11.31	14.74	66.44	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.40	1.63
2.60	14.74	66.44	100.00	19.44	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.96	1.68

ANALYSIS TYPE - FROTH

FRACTION SIZE(MM) 0.15 X 0.00 RELATIVE WEIGHT % - 4.74 ASH % - 21.81

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
240.00	*****	21.81	100.00	21.81	0.0	0.0	0.0	0.0	25.87	25.87	0.42	0.42	4.29	4.29	1.82	1.82

GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRODH88005 SEAM - I SAMPLE ID - 26 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 35.00 X 6.00 RELATIVE WEIGHT % - 30.48 ASH % - 12.21

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	13.69	3.01	13.69	3.01	86.31	13.30	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.70	0.70
1.45	49.13	5.63	62.82	5.06	37.18	23.43	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.77	0.75
1.50	12.15	10.90	74.97	6.01	25.03	29.51	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.66	0.74
1.55	3.57	15.82	78.54	6.45	21.46	31.78	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.08	0.75
1.60	3.61	20.82	82.15	7.08	17.85	34.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.03	0.77
1.70	7.04	22.47	89.19	8.30	10.81	41.51	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.91	0.78
1.80	6.55	31.75	95.74	9.90	4.26	56.52	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.13	0.80
2.00	2.53	47.38	98.27	10.87	1.73	69.89	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.30	0.82
2.60	1.73	69.89	100.00	11.89	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.98	0.82

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 6.00 X 0.50 RELATIVE WEIGHT % - 57.73 ASH % - 11.05

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	30.88	3.54	30.88	3.54	69.12	14.33	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.80	0.80
1.45	30.62	6.17	61.50	4.85	38.50	20.82	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.76	0.78
1.50	14.73	10.46	76.23	5.93	23.77	27.25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.84	0.79
1.55	5.45	13.63	81.68	6.45	18.32	31.30	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.03	0.81
1.60	4.70	15.40	86.38	6.93	13.62	36.78	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.29	0.83
1.70	6.31	20.91	92.69	7.89	7.31	50.48	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.42	0.87
1.80	1.42	26.46	94.11	8.17	5.89	56.27	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.42	0.88
2.00	1.99	34.97	96.10	8.72	3.90	67.14	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.83	0.90
2.60	3.90	67.14	100.00	11.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.69	0.93

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRODH88005 SEAM - I SAMPLE ID - 26 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 0.50 X 0.15 RELATIVE WEIGHT % - 7.51 ASH % - 14.17

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	13.99	4.69	13.99	4.69	86.01	14.58	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.35	1.35
1.45	18.17	5.06	32.16	4.90	67.84	17.12	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.32	1.33
1.50	19.59	7.40	51.75	5.85	48.25	21.07	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.34	1.34
1.55	13.89	9.31	65.64	6.58	34.36	25.83	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.15	1.30
1.60	2.51	9.41	68.15	6.68	31.85	27.12	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.83	1.32
1.70	12.12	14.62	80.27	7.88	19.73	34.80	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.98	1.42
1.80	9.29	19.51	89.56	9.09	10.44	48.41	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.48	1.42
2.00	3.71	28.90	93.27	9.88	6.73	59.16	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.97	1.44
2.60	6.73	59.16	100.00	13.19	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.51	1.45

ANALYSIS TYPE - FROTH

FRACTION SIZE(MM) 0.15 X 0.00 RELATIVE WEIGHT % - 4.28 ASH % - 19.16

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
240.00	*****	19.16	100.00	19.16	0.0	0.0	0.0	0.0	27.38	27.38	0.43	0.43	4.88	4.88	1.14	1.14

========== GULF CANADA CORPORATION - COAL DIVISION ==========

---------- C L E A N S I M U L A T E D P R O D U C T R E P O R T ----------

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88005
Coal zone:	I		
Field sample no.:	04380 - 04383	Composite sample no.:	215

---------- PRODUCT COAL ANALYSIS (SP2) ----------

Target Ash: 8.0 %

Standard:	ASTM	
Size analysis		
Fraction size(mm):	35.00 X	6.00
Cutpoint:	sp.g.	1.48
Contribution(%):		4.96
Total yield(%):		4.96

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture(%):	1.01	
Ash(%):	7.84	7.92
Volatile matter(%):	6.34	6.40
Fixed carbon(%):	84.81	85.68
Total sulphur(%):	0.52	0.53
Combustible sulphur(%):	0.46	
Gross calorific value(cal/g):	7,689.00	7,767.00
Volatile matter(dmmf%):	6.20	
Phosphorous in coal(%):	0.113	

---------- ASH FUSION ANALYSIS (AFI) ----------

	OXIDIZING ATM	REDUCING ATM
Initial temperature(°C):	1,201.00	1,159.00
Softening temperature(°C):	1,251.00	1,211.00
Hemispherical temperature(°C):	1,259.00	1,235.00
Final temperature(°C):	1,290.00	1,288.00

---------- ASH MINERAL ANALYSIS (AMI) ----------

SiO2(%):	49.75	TiO2(%):	1.14
Al2O3(%):	21.93	Na2O(%):	2.35
Fe2O3(%):	5.78	K2O(%):	0.69
CaO(%):	6.66	SO3(%):	1.83
MgO(%):	2.88	P2O5(%):	3.31

GULF CANADA CORPORATION - COAL DIVISION

C L E A N S I M U L A T E D P R O D U C T R E P O R T

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88005
Coal zone:	I		
Field sample no.:	04384	Composite sample no.:	216

PRODUCT COAL ANALYSIS (SP2)

Target Ash: 8.0 %

Standard:	ASTM	
Size analysis		
Fraction size (mm):	35.00 X 6.00	
Cutpoint:	sp.g. 1.68	
Contribution (%):	26.38	
Total yield (%):	26.38	

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture (%):	0.73	
Ash (%):	8.01	8.07
Volatile matter (%):	6.71	6.76
Fixed carbon (%):	84.55	85.17
Total sulphur (%):	0.50	0.50
Combustible sulphur (%):	0.43	
Gross calorific value (cal/g):	7,662.00	7,719.00
Volatile matter (dmmf%):	6.50	
Hardgrove index:	43.00	
Phosphorous in coal (%):	0.266	

ASH FUSION ANALYSIS (AF1)

	OXIDIZING ATM	REDUCING ATM
Initial temperature (°C):	1,274.00	1,259.00
Softening temperature (°C):	1,282.00	1,277.00
Hemispherical temperature (°C):	1,290.00	1,280.00
Final temperature (°C):	1,301.00	1,290.00

ASH MINERAL ANALYSIS (AM1)

SiO2 (%):	44.38	TiO2 (%):	1.46
Al2O3 (%):	20.79	Na2O (%):	1.43
Fe2O3 (%):	4.32	K2O (%):	0.91
CaO (%):	9.52	SO3 (%):	2.25
MgO (%):	3.14	P2O5 (%):	7.60

GULF CANADA CORPORATION - COAL DIVISION

C L E A N S I M U L A T E D P R O D U C T R E P O R T

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88005
Coal zone:	I		
Field sample no.:	04380 - 04384	Composite sample no.:	311

PRODUCT COAL ANALYSIS (SP3)

Target Ash: 7.5 %

Standard:	ASTM
Size analysis	
Fraction size(mm):	6.00 X 0.50
Cutpoint:	sp.g. 1.60
Contribution(%):	36.69
Total yield(%):	36.69

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture(%):	0.94	
Ash(%):	7.24	7.31
Volatile matter(%):	7.19	7.26
Fixed carbon(%):	84.63	85.43
Total sulphur(%):	0.50	0.50
Combustible sulphur(%):	0.49	
Gross calorific value(cal/g):	7,643.00	7,716.00
Volatile matter(dmmf%):	7.10	
Hardgrove index:	48.00	
Phosphorous in coal(%):	0.176	

ASH FUSION ANALYSIS (AF1)

	OXIDIZING ATM	REDUCING ATM
Initial temperature(°C):	1,253.00	1,190.00
Softening temperature(°C):	1,264.00	1,243.00
Hemispherical temperature(°C):	1,269.00	1,253.00
Final temperature(°C):	1,306.00	1,298.00

ASH MINERAL ANALYSIS (AM1)

SiO2(%):	47.09	TiO2(%):	0.98
Al2O3(%):	24.95	Na2O(%):	1.91
Fe2O3(%):	4.26	K2O(%):	0.92
CaO(%):	6.97	SO3(%):	0.43
MgO(%):	2.71	P2O5(%):	5.58

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88006 SEAM - K/L? OVT SAMPLE ID - 30 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 35.00 X 6.00 RELATIVE WEIGHT % - 61.36 ASH % - 54.50

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	0.05	5.17	0.05	5.17	99.95	53.69	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.15	1.15
1.45	0.23	9.08	0.28	8.38	99.72	53.80	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.83	0.89
1.50	0.34	10.90	0.62	9.76	99.38	53.94	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.82	0.85
1.55	1.25	15.53	1.87	13.62	98.13	54.43	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.71	0.76
1.60	5.28	23.85	7.15	21.17	92.85	56.17	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.79	0.78
1.70	14.22	29.33	21.37	26.60	78.63	61.03	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.85	0.83
1.80	9.23	34.36	30.60	28.94	69.40	64.57	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.83	0.83
2.00	15.58	47.59	46.18	35.23	53.82	69.49	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.80	0.82
2.60	53.82	69.49	100.00	53.67	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.12	0.98

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 6.00 X 0.50 RELATIVE WEIGHT % - 30.43 ASH % - 36.73

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	6.91	4.11	6.91	4.11	93.09	38.42	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.68	0.68
1.45	8.07	9.61	14.98	7.07	85.02	41.15	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.45	0.56
1.50	3.40	10.75	18.38	7.75	81.62	42.42	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.76	0.59
1.55	9.91	18.00	28.29	11.34	71.71	45.79	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.64	0.61
1.60	3.90	20.19	32.19	12.41	67.81	47.26	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.72	0.62
1.70	12.54	25.35	44.73	16.04	55.27	52.23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.95	0.71
1.80	15.33	32.28	60.06	20.19	39.94	59.89	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.54	0.93
2.00	13.24	42.58	73.30	24.23	26.70	68.48	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.65	1.06
2.60	26.70	68.48	100.00	36.05	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.68	1.22

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRODH88006 SEAM - K/L? OVT SAMPLE ID - 30 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 0.50 X 0.15 RELATIVE WEIGHT % - 6.29 ASH % - 0.15

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	SINKS CUM. WT%	SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	CUM. S	CUM. S	CUM. VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	13.41	8.18	13.41	8.18	86.59	42.42	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.59	1.59
1.45	15.32	14.08	28.73	11.33	71.27	48.51	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.24	1.40
1.50	5.48	16.15	34.21	12.10	65.79	51.21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.18	1.37
1.55	5.57	19.32	39.78	13.11	60.22	54.15	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.89	1.44
1.60	5.37	25.79	45.15	14.62	54.85	56.93	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.91	1.50
1.70	6.44	26.30	51.59	16.08	48.41	61.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.54	1.50
1.80	6.26	31.20	57.85	17.71	42.15	65.43	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.67	1.52
2.00	10.14	44.86	67.99	21.76	32.01	71.95	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.36	1.50
2.60	32.01	71.95	100.00	37.83	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.36	1.45

ANALYSIS TYPE - FROTH

FRACTION SIZE(MM) 0.15 X 0.00 RELATIVE WEIGHT % - 1.92 ASH % - 42.72

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	SINKS CUM. WT%	SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	CUM. S	CUM. S	CUM. VOL.	CUM. VOL.	MOIST	CUM. MOIST
240.00	*****	42.72	100.00	42.72	0.0	0.0	0.0	0.0	17.85	17.85	2.72	2.72	6.24	6.24	1.44	1.44

GULF CANADA CORPORATION - COAL DIVISION

C L E A N S I M U L A T E D P R O D U C T R E P O R T

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88006
Coal zone:	K/L? OVT		
Field sample no.:	08107	Composite sample no.:	312

PRODUCT COAL ANALYSIS (SP3)

Target Ash: 7.5 %

Standard:	ASTM	
Size analysis		
Fraction size(mm):	35.00 X	6.00
Cutpoint:	sp.g.	1.48
Contribution(%):		4.86
Total yield(%):		4.86

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture(%):	0.86	
Ash(%):	7.08	7.14
Volatile matter(%):	5.90	5.95
Fixed carbon(%):	86.16	86.91
Total sulphur(%):	1.35	1.36
Combustible sulphur(%):	1.33	
Gross calorific value(cal/g):	7,763.00	7,830.00
Volatile matter(dmmf%):	5.30	
Hardgrove index:	45.00	
Phosphorous in coal(%):	0.014	

ASH FUSION ANALYSIS (AF1)

	OXIDIZING ATM	REDUCING ATM
Initial temperature(°C):	1,356.00	1,161.00
Softening temperature(°C):	1,390.00	1,222.00
Hemispherical temperature(°C):	1,395.00	1,303.00
Final temperature(°C):	1,417.00	1,353.00

ASH MINERAL ANALYSIS (AM1)

SiO2(%):	46.18	TiO2(%):	2.66
Al2O3(%):	24.19	Na2O(%):	1.44
Fe2O3(%):	14.87	K2O(%):	1.02
CaO(%):	1.96	SO3(%):	0.79
MgO(%):	1.82	P2O5(%):	0.44

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88007 SEAM - I? OVT SAMPLE ID - 31 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 35.00 X 6.00 RELATIVE WEIGHT % - 38.12 ASH % - 63.13

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	0.05	3.61	0.05	3.61	99.95	62.28	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.48	1.48
1.45	0.45	4.67	0.50	4.56	99.50	62.54	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.46	1.46
1.50	0.66	10.57	1.16	7.98	98.84	62.89	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.45	1.46
1.55	1.82	14.97	2.98	12.25	97.02	63.79	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.16	1.27
1.60	1.13	19.26	4.11	14.18	95.89	64.31	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.37	1.30
1.70	14.37	28.33	18.48	25.18	81.52	70.65	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.29	1.29
1.80	8.44	35.13	26.92	28.30	73.08	74.76	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.70	1.42
2.00	12.14	45.97	39.06	33.79	60.94	80.49	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.77	1.53
2.60	60.94	80.49	100.00	62.25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.84	1.72

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 6.00 X 0.50 RELATIVE WEIGHT % - 44.17 ASH % - 35.66

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	11.50	5.32	11.50	5.32	88.50	39.40	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.12	1.12
1.45	10.47	8.83	21.97	6.99	78.03	43.51	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.15	1.13
1.50	5.86	12.74	27.83	8.20	72.17	46.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.28	1.16
1.55	5.19	16.24	33.02	9.47	66.98	48.31	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.26	1.18
1.60	6.50	19.47	39.52	11.11	60.48	51.41	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.56	1.24
1.70	17.47	26.66	56.99	15.88	43.01	61.46	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.78	1.41
1.80	7.44	33.58	64.43	17.92	35.57	67.30	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.21	1.38
2.00	10.03	44.68	74.46	21.53	25.54	76.18	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.24	1.36
2.60	25.54	76.18	100.00	35.48	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.01	1.53

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88007 SEAM - I? OVT SAMPLE ID - 31 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 0.50 X 0.15 RELATIVE WEIGHT % - 12.54 ASH % - 25.88

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	21.28	6.35	21.28	6.35	78.72	29.76	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.19	1.19
1.45	25.47	9.37	46.75	8.00	53.25	39.52	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.02	1.10
1.50	9.65	13.44	56.40	8.93	43.60	45.29	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.20	1.11
1.55	7.29	18.67	63.69	10.04	36.31	50.63	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.68	1.18
1.60	3.25	18.98	66.94	10.48	33.06	53.74	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.71	1.21
1.70	5.28	35.79	72.22	12.33	27.78	57.16	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.50	1.23
1.80	5.70	26.06	77.92	13.33	22.08	65.18	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.80	1.27
2.00	5.61	41.56	83.53	15.23	16.47	73.23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.11	1.26
2.60	16.47	73.23	100.00	24.78	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.14	1.24

ANALYSIS TYPE - FROTH

FRACTION SIZE(MM) 0.15 X 0.00 RELATIVE WEIGHT % - 5.17 ASH % - 27.97

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
240.00	*****	27.97	100.00	27.97	0.0	0.0	0.0	0.0	22.11	22.11	0.58	0.58	5.84	5.84	1.76	1.76

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88007 SEAM - I? OVT SAMPLE ID - 32 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 35.00 X 6.00 RELATIVE WEIGHT % - 77.76 ASH % - 92.86

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	CUM. S	CUM. S	CUM. VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	0.00	0.00	0.00	0.00	100.00	92.87	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
1.45	0.00	0.00	0.00	0.00	100.00	92.87	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
1.50	0.00	0.00	0.00	0.00	100.00	92.87	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
1.55	0.00	0.00	0.00	0.00	100.00	92.87	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
1.60	0.00	0.00	0.00	0.00	100.00	92.87	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
1.70	0.00	0.00	0.00	0.00	100.00	92.87	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
1.80	0.02	30.26	0.02	29.38	99.98	92.88	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.34	1.30
2.00	0.93	50.70	0.95	50.24	99.05	93.28	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.03	1.04
2.60	99.05	93.28	100.00	92.87	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.40	0.41

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 6.00 X 0.50 RELATIVE WEIGHT % - 18.59 ASH % - 84.38

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	CUM. S	CUM. S	CUM. VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	0.62	3.62	0.62	3.62	99.38	85.36	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.70	1.70
1.45	0.57	8.61	1.19	6.01	98.81	85.80	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.34	1.53
1.50	0.26	10.69	1.45	6.85	98.55	86.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.88	1.59
1.55	0.42	16.50	1.87	9.02	98.13	86.30	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.87	1.65
1.60	0.20	17.82	2.07	9.87	97.93	86.44	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.86	1.67
1.70	1.40	25.97	3.47	16.36	96.53	87.31	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.67	1.67
1.80	0.96	34.68	4.43	20.33	95.57	87.84	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.41	1.62
2.00	3.91	47.83	8.34	33.22	91.66	89.55	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.21	1.43
2.60	91.66	89.55	100.00	84.85	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.96	1.00

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88007 SEAM - I? OVT SAMPLE ID - 32 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 0.50 X 0.15 RELATIVE WEIGHT % - 2.63 ASH % - 67.23

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	CUM. S	CUM. S	CUM. VOL.	CUM. VOL.	CUM. MOIST	CUM. MOIST
1.40	5.56	10.68	5.56	10.68	94.44	70.25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.10	1.10
1.45	8.76	14.50	14.32	13.02	85.68	75.95	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.04	1.06
1.50	2.60	21.38	16.92	14.30	83.08	77.65	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.34	1.11
1.55	4.97	37.97	21.89	19.68	78.11	80.18	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.56	1.21
1.60	1.30	42.77	23.19	20.97	76.81	80.81	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.61	1.23
1.70	0.71	46.87	23.90	21.74	76.10	81.13	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.60	1.24
1.80	2.37	51.65	26.27	24.44	73.73	82.08	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.34	1.25
2.00	4.74	58.31	31.01	29.62	68.99	83.71	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.01	1.37
2.60	68.99	83.71	100.00	66.94	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.65	1.56

ANALYSIS TYPE - FROTH

FRACTION SIZE(MM) 0.15 X 0.00 RELATIVE WEIGHT % - 1.02 ASH % - 58.80

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	CUM. S	CUM. S	CUM. VOL.	CUM. VOL.	CUM. MOIST	CUM. MOIST
240.00	*****	58.80	100.00	58.80	0.0	0.0	0.0	0.0	11.50	11.50	0.58	0.58	7.13	7.13	1.01	1.01

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88007 SEAM - I? OVT SAMPLE ID - 33 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 35.00 X 6.00 RELATIVE WEIGHT % - 17.30 ASH % - 50.69

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.45	6.50	10.45	6.50	10.45	93.50	54.15	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.17	1.17
1.50	6.54	14.16	13.04	12.31	86.96	57.16	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.39	1.28
1.55	4.16	18.57	17.20	13.82	82.80	59.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.49	1.33
1.60	5.32	19.35	22.52	15.13	77.48	61.83	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.28	1.32
1.70	7.49	26.44	30.01	17.95	69.99	65.61	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.68	1.41
1.80	3.53	27.69	33.54	18.98	66.46	67.63	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.17	1.38
2.00	6.90	39.46	40.44	22.47	59.56	70.89	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.65	1.43
2.60	59.56	70.89	100.00	51.31	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.94	1.14

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 6.00 X 0.50 RELATIVE WEIGHT % - 53.02 ASH % - 0.50

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	0.40	8.27	0.40	8.27	99.60	32.19	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.22	1.22
1.45	8.82	6.88	9.22	6.94	90.78	34.65	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.79	0.81
1.50	13.58	10.65	22.80	9.15	77.20	38.88	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	0.92
1.55	11.99	13.00	34.79	10.48	65.21	43.63	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.62	1.16
1.60	7.63	16.22	42.42	11.51	57.58	47.27	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.01	1.32
1.70	11.17	19.36	53.59	13.15	46.41	53.98	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.78	1.41
1.80	10.34	22.90	63.93	14.72	36.07	62.89	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.93	1.50
2.00	9.01	34.01	72.94	17.11	27.06	72.51	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.11	1.45
2.60	27.06	72.51	100.00	32.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.98	1.59

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88007 SEAM - I? OVT SAMPLE ID - 33 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 0.50 X 0.15 RELATIVE WEIGHT % - 22.49 ASH % - 19.34

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	22.19	9.76	22.19	9.76	77.81	21.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.10	1.10
1.45	12.84	11.19	35.03	10.28	64.97	23.06	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.04	1.08
1.50	15.95	12.89	50.98	11.10	49.02	26.37	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.34	1.16
1.55	15.81	13.86	66.79	11.75	33.21	32.32	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.56	1.25
1.60	12.15	16.72	78.94	12.52	21.06	41.32	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.61	1.31
1.70	8.86	19.44	87.80	13.22	12.20	57.22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.60	1.34
1.80	2.52	22.03	90.32	13.46	9.68	66.38	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.34	1.34
2.00	2.44	35.30	92.76	14.04	7.24	76.85	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.01	1.36
2.60	7.24	76.85	100.00	18.58	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.65	1.38

ANALYSIS TYPE - FROTH

FRACTION SIZE(MM) 0.15 X 0.00 RELATIVE WEIGHT % - 7.19 ASH % - 20.01

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
240.00	*****	20.01	100.00	20.01	0.0	0.0	0.0	0.0	26.77	26.77	0.61	0.61	5.84	5.84	1.21	1.21

========== GULF CANADA CORPORATION - COAL DIVISION ==========

---------- C L E A N S I M U L A T E D P R O D U C T R E P O R T ----------

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88007
Coal zone:	I? OVT		
Field sample no.:	04390 - 04392	Composite sample no.:	313

---------- PRODUCT COAL ANALYSIS (SP3) ----------

Target Ash: 7.5 %

Standard:	ASTM	
Size analysis		
Fraction size(mm):	6.00 X	0.50
Cutpoint:	sp.g.	1.46
Contribution(%):		7.29
Total yield(%):		7.29

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture(%):	1.05	
Ash(%):	7.28	7.36
Volatile matter(%):	7.56	7.64
Fixed carbon(%):	84.11	85.00
Total sulphur(%):	0.61	0.62
Combustible sulphur(%):	0.59	
Gross calorific value(cal/g):	7,713.00	7,794.00
Volatile matter(dmmf%):	7.50	
Hardgrove index:	59.00	
Phosphorous in coal(%):	0.121	

---------- ASH FUSION ANALYSIS (AF1) ----------

	OXIDIZING ATM	REDUCING ATM
Initial temperature(°C):	1,240.00	1,201.00
Softening temperature(°C):	1,253.00	1,211.00
Hemispherical temperature(°C):	1,269.00	1,222.00
Final temperature(°C):	1,327.00	1,325.00

---------- ASH MINERAL ANALYSIS (AM1) ----------

SiO2(%):	48.66	TiO2(%):	1.86
Al2O3(%):	23.82	Na2O(%):	1.68
Fe2O3(%):	5.95	K2O(%):	1.37
CaO(%):	5.96	SO3(%):	0.71
MgO(%):	2.52	P2O5(%):	3.82

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88007 SEAM - G? SAMPLE ID - 34 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 35.00 X 6.00 RELATIVE WEIGHT % - 26.24 ASH % - 46.59

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.45	4.94	7.00	4.94	7.00	95.06	47.93	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.86	0.86
1.50	4.40	10.11	9.34	8.47	90.66	49.77	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.29	1.06
1.55	8.08	14.84	17.42	11.42	82.58	53.19	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.07	1.07
1.60	4.07	19.78	21.49	13.00	78.51	54.92	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.17	1.09
1.70	10.94	24.07	32.43	16.74	67.57	59.91	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.98	1.05
1.80	12.16	33.93	44.59	21.43	55.41	65.61	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	1.04
2.00	22.72	49.45	67.31	30.89	32.69	76.85	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.91	0.99
2.60	32.69	76.85	100.00	45.91	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.13	1.04

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 6.00 X 0.50 RELATIVE WEIGHT % - 49.04 ASH % - 24.12

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	1.20	5.98	1.20	5.98	98.80	23.46	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.24	1.24
1.45	16.60	6.12	17.80	6.11	82.20	26.96	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.59	1.57
1.50	11.35	8.97	29.15	7.22	70.85	29.84	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.21	1.43
1.55	12.57	11.65	41.72	8.56	58.28	33.76	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.48	1.44
1.60	5.47	16.51	47.19	9.48	52.81	35.55	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.67	1.47
1.70	12.26	17.10	59.45	11.05	40.55	41.13	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.71	1.52
1.80	11.38	19.85	70.83	12.46	29.17	49.43	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.43	1.50
2.00	11.32	30.83	82.15	15.00	17.85	61.23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.34	1.48
2.60	17.85	61.23	100.00	23.25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.13	1.42

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88007 SEAM - G? SAMPLE ID - 34 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 0.50 X 0.15 RELATIVE WEIGHT % - 16.25 ASH % - 20.31

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	2.99	5.26	2.99	5.26	97.01	19.80	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.27	1.27
1.45	37.38	5.39	40.37	5.38	59.63	28.83	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.80	0.83
1.50	6.22	8.39	46.59	5.78	53.41	31.21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.83	0.83
1.55	11.52	11.88	58.11	6.99	41.89	36.53	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.18	0.90
1.60	11.37	15.17	69.48	8.33	30.52	44.48	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.81	1.05
1.70	4.87	19.61	74.35	9.07	25.65	49.21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.15	1.06
1.80	6.81	23.11	81.16	10.25	18.84	58.64	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.90	1.13
2.00	5.07	37.64	86.23	11.86	13.77	66.37	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.56	1.15
2.60	13.77	66.37	100.00	19.36	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.64	1.22

ANALYSIS TYPE - FROTH

FRACTION SIZE(MM) 0.15 X 0.00 RELATIVE WEIGHT % - 8.47 ASH % - 21.30

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
240.00	*****	21.30	100.00	21.30	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

SAMPLE PRODUCT ID: SP4 COAL COMPOSITION ID: CC1 ULTIMATE ID:

========== GULF CANADA CORPORATION - COAL DIVISION ==========

---------- C L E A N S I M U L A T E D P R O D U C T R E P O R T ----------

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88007
Coal zone:	G?		
Field sample no.:	04395	Composite sample no.:	218

---------- PRODUCT COAL ANALYSIS (SP4) ----------

Target Ash: 10.0 %

Standard:	ASTM	
Size analysis		
Fraction size (mm):	35.00 X	6.00
Cutpoint:	sp.g.	1.53
Contribution (%):		1.56
Total yield (%):		1.56

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture (%):	0.88	
Ash (%):	9.61	9.70
Volatile matter (%):	6.19	6.25
Fixed carbon (%):	83.32	84.05
Total sulphur (%):	0.77	0.78
Combustible sulphur (%):	0.62	
Gross calorific value (cal/g):	7,423.00	7,489.00
Volatile matter (dmmf%):	5.80	
Hardgrove index:	49.00	
Phosphorous in coal (%):	0.171	

---------- ASH FUSION ANALYSIS (AF1) ----------

	OXIDIZING ATM	REDUCING ATM
Initial temperature (°C):	1,220.00	1,201.00
Softening temperature (°C):	1,285.00	1,232.00
Hemispherical temperature (°C):	1,301.00	1,248.00
Final temperature (°C):	1,332.00	1,301.00

---------- ASH MINERAL ANALYSIS (AM1) ----------

SiO2 (%):	39.78	TiO2 (%):	0.33
Al2O3 (%):	22.68	Na2O (%):	1.55
Fe2O3 (%):	8.18	K2O (%):	0.98
CaO (%):	12.71	SO3 (%):	3.81
MgO (%):	3.55	P2O5 (%):	4.07

========== GULF CANADA CORPORATION - COAL DIVISION ==========

---------- C L E A N S I M U L A T E D P R O D U C T R E P O R T ----------

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88007
Coal zone:	G?		
Field sample no.:	04395	Composite sample no.:	314

---------- PRODUCT COAL ANALYSIS (SP3) ----------

Target Ash: 7.5 %

Standard:	ASTM
Size analysis	
Fraction size(mm):	6.00 X 0.50
Cutpoint:	sp.g. 1.51
Contribution(%):	15.62
Total yield(%):	15.62

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture(%):	0.93	
Ash(%):	7.37	7.44
Volatile matter(%):	6.04	6.10
Fixed carbon(%):	85.66	86.46
Total sulphur(%):	0.71	0.72
Combustible sulphur(%):	0.66	
Gross calorific value(cal/g):	7,667.00	7,739.00
Volatile matter(dmmf%):	5.70	
Hardgrove index:	55.00	
Phosphorous in coal(%):	0.266	

---------- ASH FUSION ANALYSIS (AF1) ----------

	OXIDIZING ATM	REDUCING ATM
Initial temperature(°C):	1,235.00	1,169.00
Softening temperature(°C):	1,277.00	1,245.00
Hemispherical temperature(°C):	1,285.00	1,259.00
Final temperature(°C):	1,290.00	1,285.00

---------- ASH MINERAL ANALYSIS (AM1) ----------

SiO2(%):	39.76	TiO2(%):	1.54
Al2O3(%):	21.93	Na2O(%):	1.89
Fe2O3(%):	7.04	K2O(%):	1.04
CaO(%):	11.92	SO3(%):	1.66
MgO(%):	2.88	P2O5(%):	8.27

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88009 SEAM - L SAMPLE ID - 35 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 35.00 X 6.00 RELATIVE WEIGHT % - 52.98 ASH % - 73.49

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.55	0.01	1.63	0.01	1.63	99.99	73.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.31	0.31
1.60	0.03	2.59	0.04	2.35	99.96	73.52	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.37	0.35
1.70	0.09	18.85	0.13	13.77	99.87	73.57	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.41	1.09
1.80	2.11	37.54	2.24	36.16	97.76	74.35	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.24	1.23
2.00	14.51	48.24	16.75	46.62	83.25	78.90	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.19	1.20
2.60	83.25	78.90	100.00	73.49	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.85	0.91

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 6.00 X 0.50 RELATIVE WEIGHT % - 37.25 ASH % - 61.31

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.45	0.28	3.60	0.28	3.60	99.72	61.47	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.29	1.29
1.50	0.37	6.99	0.65	5.53	99.35	61.67	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.35	1.32
1.55	0.22	9.97	0.87	6.65	99.13	61.79	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.38	1.34
1.60	0.42	13.71	1.29	8.95	98.71	61.99	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.41	1.36
1.70	2.67	22.29	3.96	17.94	96.04	63.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.29	1.31
1.80	7.53	28.06	11.49	24.57	88.51	66.08	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.69	1.56
2.00	24.02	41.37	35.51	35.94	64.49	75.28	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.97	1.84
2.60	64.49	75.28	100.00	61.31	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.31	1.50

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88009 SEAM - L SAMPLE ID - 35 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 0.50 X 0.15 RELATIVE WEIGHT % - 6.05 ASH % - 49.36

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.45	1.52	3.07	1.52	3.07	98.48	50.07	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.28	1.28
1.50	3.05	5.88	4.57	4.95	95.43	51.48	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.34	1.32
1.55	2.95	7.27	7.52	5.86	92.48	52.89	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.39	1.35
1.60	2.54	11.10	10.06	7.18	89.94	54.07	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.72	1.44
1.70	7.22	17.79	17.28	11.61	82.72	57.24	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.02	1.68
1.80	12.91	24.16	30.19	16.98	69.81	63.35	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.78	1.72
2.00	22.87	38.44	53.06	26.23	46.94	75.49	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.03	1.86
2.60	46.94	75.49	100.00	49.35	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.76	1.81

ANALYSIS TYPE - FROTH

FRACTION SIZE(MM) 0.15 X 0.00 RELATIVE WEIGHT % - 3.72 ASH % - 50.00

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
240.00	*****	50.00	100.00	50.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.50	1.50

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88009 SEAM - K/L SAMPLE ID - 36 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 35.00 X 6.00 RELATIVE WEIGHT % - 52.64 ASH % - 6.00

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	0.31	4.90	0.31	4.90	99.69	45.08	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.15	1.15
1.45	2.00	4.63	2.31	4.67	97.69	45.91	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.83	0.87
1.50	3.06	10.54	5.37	8.01	94.63	47.05	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.82	0.84
1.55	5.53	16.07	10.90	12.10	89.10	48.98	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.71	0.78
1.60	4.48	22.38	15.38	15.09	84.62	50.38	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.79	0.78
1.70	19.96	26.32	35.34	21.43	64.66	57.81	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.85	0.82
1.80	8.10	38.78	43.44	24.67	56.56	60.54	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.83	0.82
2.00	22.26	48.35	65.70	32.69	34.30	68.45	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.80	0.81
2.60	34.30	68.45	100.00	44.96	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.12	0.92

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 6.00 X 0.50 RELATIVE WEIGHT % - 35.64 ASH % - 29.59

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	10.99	3.07	10.99	3.07	89.01	34.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.68	0.68
1.45	15.59	5.64	26.58	4.58	73.42	40.15	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.45	0.55
1.50	15.42	11.51	42.00	7.12	58.00	47.76	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.76	0.62
1.55	8.29	15.73	50.29	8.54	49.71	53.11	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.64	0.63
1.60	6.71	20.24	57.00	9.92	43.00	58.23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.72	0.64
1.70	7.10	24.46	64.10	11.53	35.90	64.91	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.95	0.67
1.80	5.42	31.50	69.52	13.09	30.48	70.85	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.54	0.74
2.00	6.38	43.60	75.90	15.65	24.10	78.07	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.65	0.82
2.60	24.10	78.07	100.00	30.69	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.68	1.02

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88009 SEAM - K/L SAMPLE ID - 36 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 0.50 X 0.15 RELATIVE WEIGHT % - 8.75 ASH % - 30.13

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	23.66	6.66	23.66	6.66	76.34	36.15	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.59	1.59
1.45	6.16	6.96	29.82	6.72	70.18	38.72	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.24	1.52
1.50	9.69	7.40	39.51	6.89	60.49	43.73	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.18	1.43
1.55	7.22	10.39	46.73	7.43	53.27	48.25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.89	1.51
1.60	3.55	12.67	50.28	7.80	49.72	50.79	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.91	1.53
1.70	5.47	15.92	55.75	8.60	44.25	55.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.54	1.53
1.80	7.79	20.01	63.54	10.00	36.46	62.60	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.67	1.55
2.00	12.63	43.73	76.17	15.59	23.83	72.60	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.36	1.52
2.60	23.83	72.60	100.00	29.17	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.36	1.48

ANALYSIS TYPE - FROTH

FRACTION SIZE(MM) 0.15 X 0.00 RELATIVE WEIGHT % - 2.97 ASH % - 33.57

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
240.00	*****	33.57	100.00	33.57	0.0	0.0	0.0	0.0	21.77	21.77	0.41	0.41	5.48	5.48	1.54	1.54

GULF CANADA CORPORATION - COAL DIVISION

C L E A N S I M U L A T E D P R O D U C T R E P O R T

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88009
Coal zone:	K/L		
Field sample no.:	08113	Composite sample no.:	219

PRODUCT COAL ANALYSIS (SP4)

Target Ash: 10.0 %

Standard:	ASTM	
Size analysis		
Fraction size(mm):	35.00 X	6.00
Cutpoint:	sp.g.	1.52
Contribution(%):		4.40
Total yield(%):		4.40

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture(%):	0.94	
Ash(%):	9.84	9.93
Volatile matter(%):	6.63	6.69
Fixed carbon(%):	82.59	83.38
Total sulphur(%):	0.55	0.56
Combustible sulphur(%):	0.53	
Gross calorific value(cal/g):	7,514.00	7,586.00
Volatile matter(dmmf%):	6.40	
Hardgrove index:	41.00	
Phosphorous in coal(%):	0.165	

ASH FUSION ANALYSIS (AFI)

	OXIDIZING ATM	REDUCING ATM
Initial temperature(°C):	1,238.00	1,164.00
Softening temperature(°C):	1,272.00	1,248.00
Hemispherical temperature(°C):	1,288.00	1,266.00
Final temperature(°C):	1,340.00	1,337.00

ASH MINERAL ANALYSIS (AMI)

SiO2(%):	54.74	TiO2(%):	1.70
Al2O3(%):	22.68	Na2O(%):	2.21
Fe2O3(%):	4.03	K2O(%):	1.04
CaO(%):	6.04	SO3(%):	0.58
MgO(%):	1.24	P2O5(%):	3.85

========== GULF CANADA CORPORATION - COAL DIVISION ==========

---------- C L E A N S I M U L A T E D P R O D U C T R E P O R T ----------

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88009
Coal zone:	K/L		
Field sample no.:	08113	Composite sample no.:	315

---------- PRODUCT COAL ANALYSIS (SP3) ----------

Target Ash: 7.5 %

Standard: ASTM

Size analysis

Fraction size(mm):	6.00 X	0.50
Cutpoint:	sp.g.	1.51
Contribution(%):		15.41
Total yield(%):		15.41

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture(%):	1.12	
Ash(%):	7.30	7.38
Volatile matter(%):	6.64	6.72
Fixed carbon(%):	84.94	85.90
Total sulphur(%):	0.56	0.57
Combustible sulphur(%):	0.52	
Gross calorific value(cal/g):	7,677.00	7,763.00
Volatile matter(dmmf%):	6.50	
Hardgrove index:	42.00	
Phosphorous in coal(%):	0.073	

---------- ASH FUSION ANALYSIS (AF1) ----------

	OXIDIZING ATM	REDUCING ATM
Initial temperature(°C):	1,269.00	1,182.00
Softening temperature(°C):	1,338.00	1,277.00
Hemispherical temperature(°C):	1,353.00	1,303.00
Final temperature(°C):	1,453.00	1,448.00

---------- ASH MINERAL ANALYSIS (AM1) ----------

SiO2(%):	59.32	TiO2(%):	1.26
Al2O3(%):	22.30	Na2O(%):	2.10
Fe2O3(%):	2.83	K2O(%):	1.13
CaO(%):	3.58	SO3(%):	1.21
MgO(%):	1.09	P2O5(%):	2.29

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88009 SEAM - K SAMPLE ID - 37 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 35.00 X 6.00 RELATIVE WEIGHT % - 39.95 ASH % - 52.63

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	0.42	3.15	0.42	3.15	99.58	51.69	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.86	0.86
1.45	3.49	7.71	3.91	7.22	96.09	53.29	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.60	0.63
1.50	10.92	13.39	14.83	11.76	85.17	58.40	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.47	0.51
1.55	7.82	15.41	22.65	13.02	77.35	62.75	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.60	0.54
1.60	1.66	19.95	24.31	13.50	75.69	63.69	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.80	0.56
1.70	6.56	27.10	30.87	16.39	69.13	67.16	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.66	0.58
1.80	9.48	37.91	40.35	21.44	59.65	71.81	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.64	0.59
2.00	14.06	50.63	54.41	28.99	45.59	78.34	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.72	0.63
2.60	45.59	78.34	100.00	51.49	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.92	0.76

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 6.00 X 0.50 RELATIVE WEIGHT % - 46.82 ASH % - 35.44

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	11.27	3.10	11.27	3.10	88.73	40.20	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.25	0.25
1.45	11.47	5.97	22.74	4.55	77.26	45.28	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.39	0.32
1.50	18.87	11.17	41.61	7.55	58.39	56.31	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.46	0.38
1.55	7.61	15.74	49.22	8.82	50.78	62.39	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.55	0.41
1.60	2.97	19.60	52.19	9.43	47.81	65.05	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.74	0.43
1.70	5.61	25.56	57.80	11.00	42.20	70.29	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.75	0.46
1.80	4.14	33.30	61.94	12.49	38.06	74.32	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.76	0.48
2.00	5.67	43.01	67.61	15.05	32.39	79.80	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.53	0.57
2.60	32.39	79.80	100.00	36.02	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.31	0.81

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88009 SEAM - K SAMPLE ID - 37 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 0.50 X 0.15 RELATIVE WEIGHT % - 9.78 ASH % - 34.27

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	19.23	5.72	19.23	5.72	80.77	39.96	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.46	0.46
1.45	18.93	8.73	38.16	7.21	61.84	49.52	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.45	0.46
1.50	7.66	10.71	45.82	7.80	54.18	55.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.82	0.52
1.55	9.72	20.00	55.54	9.93	44.46	62.66	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.84	0.57
1.60	3.64	27.37	59.18	11.01	40.82	65.81	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.83	0.59
1.70	3.40	30.75	62.58	12.08	37.42	69.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.01	0.61
1.80	4.34	30.94	66.92	13.30	33.08	73.99	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.86	0.63
2.00	4.75	46.14	71.67	15.48	28.33	78.66	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.97	0.65
2.60	28.33	78.66	100.00	33.38	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.75	0.68

ANALYSIS TYPE - FROTH

FRACTION SIZE(MM) 0.15 X 0.00 RELATIVE WEIGHT % - 3.45 ASH % - 40.12

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
240.00	*****	40.12	100.00	40.12	0.0	0.0	0.0	0.0	19.33	19.33	0.32	0.32	5.21	5.21	1.70	1.70

GULF CANADA CORPORATION - COAL DIVISION

C L E A N S I M U L A T E D P R O D U C T R E P O R T

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88009
Coal zone:	K		
Field sample no.:	08116	Composite sample no.:	220

PRODUCT COAL ANALYSIS (SP4)

Target Ash: 10.0 %

Standard:	ASTM	
Size analysis		
Fraction size (mm):	35.00 X	6.00
Cutpoint:	sp.g.	1.48
Contribution (%):		4.03
Total yield (%):		4.03

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture (%):	0.69	
Ash (%):	9.63	9.70
Volatile matter (%):	6.06	6.10
Fixed carbon (%):	83.62	84.20
Total sulphur (%):	0.49	0.49
Combustible sulphur (%):	0.48	
Gross calorific value (cal/g):	7,459.00	7,511.00
Volatile matter (dmmf%):	5.80	
Hardgrove index:	40.00	
Phosphorous in coal (%):	0.244	

ASH FUSION ANALYSIS (AF1)

	OXIDIZING ATM	REDUCING ATM
Initial temperature (°C):	1,274.00	1,201.00
Softening temperature (°C):	1,290.00	1,266.00
Hemispherical temperature (°C):	1,303.00	1,288.00
Final temperature (°C):	1,359.00	1,355.00

ASH MINERAL ANALYSIS (AM1)

SiO2 (%):	51.10	TiO2 (%):	1.14
Al2O3 (%):	23.06	Na2O (%):	2.29
Fe2O3 (%):	2.77	K2O (%):	1.35
CaO (%):	7.19	SO3 (%):	0.19
MgO (%):	1.26	P2O5 (%):	5.81

GULF CANADA CORPORATION - COAL DIVISION

C L E A N S I M U L A T E D P R O D U C T R E P O R T

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88009
Coal zone:	K		
Field sample no.:	08116	Composite sample no.:	316

PRODUCT COAL ANALYSIS (SP3)

Target Ash: 7.5 %

Standard:	ASTM
Size analysis	
Fraction size(mm):	6.00 X 0.50
Cutpoint:	sp.g. 1.50
Contribution(%):	17.61
Total yield(%):	17.61

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture(%):	0.74	
Ash(%):	7.21	7.26
Volatile matter(%):	6.34	6.39
Fixed carbon(%):	85.71	86.35
Total sulphur(%):	0.49	0.49
Combustible sulphur(%):	0.48	
Gross calorific value(cal/g):	7,691.00	7,749.00
Volatile matter(dmmf%):	6.20	
Hardgrove index:	45.00	
Phosphorous in coal(%):	0.107	

ASH FUSION ANALYSIS (AF1)

	OXIDIZING ATM	REDUCING ATM
Initial temperature(°C):	1,222.00	1,127.00
Softening temperature(°C):	1,253.00	1,222.00
Hemispherical temperature(°C):	1,277.00	1,243.00
Final temperature(°C):	1,359.00	1,354.00

ASH MINERAL ANALYSIS (AM1)

SiO2(%):	53.36	TiO2(%):	2.50
Al2O3(%):	23.82	Na2O(%):	2.16
Fe2O3(%):	2.12	K2O(%):	1.25
CaO(%):	5.54	SO3(%):	0.42
MgO(%):	1.33	P2O5(%):	3.41

GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88009 SEAM - I SAMPLE ID - 38 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 35.00 X 6.00 RELATIVE WEIGHT % - 65.18 ASH % - 44.94

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	2.31	3.66	2.31	3.66	97.69	45.06	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.96	0.96
1.45	11.37	4.74	13.68	4.56	86.32	50.37	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.48	0.56
1.50	9.03	9.18	22.71	6.40	77.29	55.19	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.69	0.61
1.55	10.54	14.92	33.25	9.10	66.75	61.54	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.73	0.65
1.60	6.06	18.57	39.31	10.56	60.69	65.83	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.80	0.67
1.70	9.77	25.47	49.08	13.53	50.92	73.58	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.30	0.80
1.80	4.15	33.31	53.23	15.07	46.77	77.15	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.41	0.85
2.00	9.32	50.44	62.55	20.34	37.45	83.80	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.28	0.91
2.60	37.45	83.80	100.00	44.11	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.11	0.98

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 6.00 X 0.50 RELATIVE WEIGHT % - 27.78 ASH % - 24.30

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	15.03	3.62	15.03	3.62	84.97	27.26	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.86	0.86
1.45	20.61	4.69	35.64	4.24	64.36	34.48	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.93	0.90
1.50	14.09	9.54	49.73	5.74	50.27	41.48	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.26	1.00
1.55	12.64	13.82	62.37	7.38	37.63	50.77	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.44	1.09
1.60	4.66	17.85	67.03	8.11	32.97	55.42	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.81	1.14
1.70	7.77	22.43	74.80	9.59	25.20	65.59	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.27	1.15
1.80	3.30	27.68	78.10	10.36	21.90	71.30	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.38	1.16
2.00	3.66	40.57	81.76	11.71	18.24	77.47	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.72	1.19
2.60	18.24	77.47	100.00	23.71	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.75	1.29

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88009 SEAM - I SAMPLE ID - 38 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 0.50 X 0.15 RELATIVE WEIGHT % - 5.58 ASH % - 31.81

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	12.08	7.29	12.08	7.29	87.92	34.49	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.10	1.10
1.45	12.30	8.22	24.38	7.76	75.62	38.77	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.04	1.07
1.50	14.29	9.15	38.67	8.27	61.33	45.67	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.34	1.17
1.55	9.75	9.66	48.42	8.55	51.58	52.47	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.56	1.25
1.60	3.32	14.76	51.74	8.95	48.26	55.07	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.61	1.27
1.70	5.10	15.72	56.84	9.56	43.16	59.72	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.60	1.30
1.80	6.98	22.97	63.82	11.02	36.18	66.81	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.34	1.31
2.00	6.48	34.30	70.30	13.17	29.70	73.90	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.01	1.37
2.60	29.70	73.90	100.00	31.21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.65	1.45

ANALYSIS TYPE - FROTH

FRACTION SIZE(MM) 0.15 X 0.00 RELATIVE WEIGHT % - 1.46 ASH % - 37.61

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
240.00	*****	1.46	100.00	1.46	0.0	0.0	0.0	0.0	20.13	20.13	0.32	0.32	6.09	6.09	1.40	1.40

GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRODH88009 SEAM - I SAMPLE ID - 39 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 35.00 X 6.00 RELATIVE WEIGHT % - 73.58 ASH % - 11.50

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	0.14	2.94	0.14	2.94	99.86	11.08	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.72	0.72
1.45	30.17	4.78	30.31	4.77	69.69	13.81	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.57	0.57
1.50	38.15	8.66	68.46	6.94	31.54	20.05	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.68	0.63
1.55	20.94	13.51	89.40	8.48	10.60	32.97	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.84	0.68
1.60	3.68	18.48	93.08	8.87	6.92	40.67	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.77	0.68
1.70	1.59	20.90	94.67	9.08	5.33	46.57	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.78	0.69
1.80	0.46	21.44	95.13	9.13	4.87	48.94	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.81	0.69
2.00	2.82	29.97	97.95	9.73	2.05	75.04	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.54	0.68
2.60	2.05	75.04	100.00	11.07	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.79	0.68

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 6.00 X 0.50 RELATIVE WEIGHT % - 21.74 ASH % - 10.98

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	51.51	3.04	51.51	3.04	48.49	18.29	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.48	0.48
1.45	11.52	4.47	63.03	3.30	36.97	22.59	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.52	0.49
1.50	12.18	8.50	75.21	4.14	24.79	29.51	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.58	0.50
1.55	6.83	11.44	82.04	4.75	17.96	36.39	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.62	0.51
1.60	3.13	13.22	85.17	5.06	14.83	41.27	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.79	0.52
1.70	4.56	16.58	89.73	5.65	10.27	52.24	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.08	0.55
1.80	2.08	23.38	91.81	6.05	8.19	59.57	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.30	0.57
2.00	2.12	35.86	93.93	6.72	6.07	67.85	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.16	0.58
2.60	6.07	67.85	100.00	10.43	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.38	0.63

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88009 SEAM - I SAMPLE ID - 39 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 0.50 X 0.15 RELATIVE WEIGHT % - 3.57 ASH % - 19.39

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	7.74	2.19	7.74	2.19	92.26	20.67	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.06	1.06
1.45	22.68	2.40	30.42	2.35	69.58	26.62	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.97	0.99
1.50	14.44	4.74	44.86	3.12	55.14	32.35	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.09	1.02
1.55	8.99	7.19	53.85	3.80	46.15	37.25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.46	1.10
1.60	8.04	7.82	61.89	4.32	38.11	43.46	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.71	1.18
1.70	10.44	12.02	72.33	5.43	27.67	55.32	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.31	1.20
1.80	6.14	20.59	78.47	6.62	21.53	65.23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.21	1.20
2.00	3.05	34.74	81.52	7.67	18.48	70.26	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.86	1.22
2.60	18.48	70.26	100.00	19.24	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.26	1.23

ANALYSIS TYPE - FROTH

FRACTION SIZE(MM) 0.15 X 0.00 RELATIVE WEIGHT % - 1.11 ASH % - 25.64

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
240.00	*****	1.11	100.00	1.11	0.0	0.0	0.0	0.0	24.62	24.62	0.32	0.32	6.05	6.05	1.29	1.29

GULF CANADA CORPORATION - COAL DIVISION

C L E A N S I M U L A T E D P R O D U C T R E P O R T

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88009
Coal zone:	1		
Field sample no.:	08119 - 08120	Composite sample no.:	221

PRODUCT COAL ANALYSIS (SP2)

Target Ash: 8.0 %

Standard:	ASTM
Size analysis	
Fraction size(mm):	35.00 X 6.00
Cutpoint:	sp.g. 1.53
Contribution(%):	19.25
Total yield(%):	19.25

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture(%):	0.67	
Ash(%):	7.71	7.76
Volatile matter(%):	6.33	6.37
Fixed carbon(%):	85.29	85.87
Total sulphur(%):	0.48	0.48
Combustible sulphur(%):	0.41	
Gross calorific value(cal/g):	7,643.00	7,694.00
Volatile matter(dmmf%):	6.10	
Hardgrove index:	42.00	
Phosphorous in coal(%):	0.028	

ASH FUSION ANALYSIS (AF1)

	OXIDIZING ATM	REDUCING ATM
Initial temperature(°C):	1,232.00	1,180.00
Softening temperature(°C):	1,264.00	1,206.00
Hemispherical temperature(°C):	1,274.00	1,217.00
Final temperature(°C):	1,348.00	1,317.00

ASH MINERAL ANALYSIS (AM1)

SiO2(%):	57.36	TiO2(%):	0.95
Al2O3(%):	19.28	Na2O(%):	1.77
Fe2O3(%):	5.81	K2O(%):	0.89
CaO(%):	3.92	SO3(%):	2.20
MgO(%):	3.44	P2O5(%):	0.82

GULF CANADA CORPORATION - COAL DIVISION

C L E A N S I M U L A T E D P R O D U C T R E P O R T

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88009
Coal zone:	I		
Field sample no.:	08121	Composite sample no.:	222

PRODUCT COAL ANALYSIS (SP2)

Target Ash: 8.0 %

Standard:	ASTM
Size analysis	
Fraction size (mm):	35.00 X 6.00
Cutpoint:	sp.g. 1.53
Contribution (%):	63.43
Total yield (%):	63.43

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture (%):	0.75	
Ash (%):	7.74	7.80
Volatile matter (%):	5.70	5.74
Fixed carbon (%):	85.81	86.46
Total sulphur (%):	0.48	0.48
Combustible sulphur (%):	0.47	
Gross calorific value (cal/g):	7,665.00	7,723.00
Volatile matter (dmmf%):	5.40	
Hardgrove index:	42.00	
Phosphorous in coal (%):	0.181	

ASH FUSION ANALYSIS (AF1)

	OXIDIZING ATM	REDUCING ATM
Initial temperature (°C):	1,259.00	1,230.00
Softening temperature (°C):	1,277.00	1,253.00
Hemispherical temperature (°C):	1,301.00	1,277.00
Final temperature (°C):	1,472.00	1,472.00

ASH MINERAL ANALYSIS (AM1)

SiO2 (%):	48.14	TiO2 (%):	1.54
Al2O3 (%):	27.60	Na2O (%):	2.32
Fe2O3 (%):	3.49	K2O (%):	1.16
CaO (%):	4.62	SO3 (%):	0.45
MgO (%):	2.07	P2O5 (%):	5.36

GULF CANADA CORPORATION - COAL DIVISION

CLEAN SIMULATED PRODUCT REPORT

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88009
Coal zone:	I		
Field sample no.:	08119 - 08121	Composite sample no.:	317

PRODUCT COAL ANALYSIS (SP3)

Target Ash: 7.5 %

Standard:	ASTM
Size analysis	
Fraction size(mm):	6.00 X 0.50
Cutpoint:	sp.g. 1.77
Contribution(%):	20.45
Total yield(%):	20.45

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture(%):	0.94	
Ash(%):	7.89	7.96
Volatile matter(%):	6.98	7.05
Fixed carbon(%):	84.19	84.99
Total sulphur(%):	0.46	0.46
Combustible sulphur(%):	0.42	
Gross calorific value(cal/g):	7,650.00	7,723.00
Volatile matter(dmmf%):	6.90	
Hardgrove index:	50.00	
Phosphorous in coal(%):	0.062	

ASH FUSION ANALYSIS (AF1)

	OXIDIZING ATM	REDUCING ATM
Initial temperature(°C):	1,251.00	1,216.00
Softening temperature(°C):	1,295.00	1,259.00
Hemispherical temperature(°C):	1,324.00	1,285.00
Final temperature(°C):	1,422.00	1,432.00

ASH MINERAL ANALYSIS (AM1)

SiO2(%):	53.74	TiO2(%):	1.20
Al2O3(%):	23.06	Na2O(%):	1.97
Fe2O3(%):	4.63	K2O(%):	1.05
CaO(%):	4.28	SO3(%):	1.13
MgO(%):	2.40	P2O5(%):	1.79

GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88009 SEAM - H SAMPLE ID - 40 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 35.00 X 6.00 RELATIVE WEIGHT % - 70.61 ASH % - 41.94

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ/KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	0.08	4.82	0.08	4.82	99.92	42.90	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.11	1.11
1.45	4.18	4.85	4.26	4.85	95.74	44.56	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.43	0.44
1.50	11.39	9.18	15.65	8.00	84.35	49.34	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.40	0.41
1.55	4.13	15.03	19.78	9.47	80.22	51.11	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.38	0.41
1.60	10.64	21.13	30.42	13.55	69.58	55.69	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.39	0.40
1.70	13.39	28.83	43.81	18.22	56.19	62.09	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.49	0.43
1.80	10.74	35.09	54.55	21.54	45.45	68.47	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.75	0.49
2.00	8.58	47.46	63.13	25.06	36.87	73.36	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.74	0.52
2.60	36.87	73.36	100.00	42.87	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.24	0.79

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 6.00 X 0.50 RELATIVE WEIGHT % - 24.37 ASH % - 25.37

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ/KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	6.08	3.93	6.08	3.93	93.92	26.98	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.65	0.65
1.45	17.38	4.89	23.46	4.64	76.54	32.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.52	0.55
1.50	20.62	10.46	44.08	7.36	55.92	39.94	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.59	0.57
1.55	10.12	15.56	54.20	8.89	45.80	45.33	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.61	0.58
1.60	6.84	19.54	61.04	10.09	38.96	49.86	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.76	0.60
1.70	11.52	25.14	72.56	12.48	27.44	60.24	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.82	0.63
1.80	6.01	32.73	78.57	14.03	21.43	67.95	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.13	0.67
2.00	4.92	42.22	83.49	15.69	16.51	75.62	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.84	0.74
2.60	16.51	75.62	100.00	25.58	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.70	0.90

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88009 SEAM - H SAMPLE ID - 40 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 0.50 X 0.15 RELATIVE WEIGHT % - 3.89 ASH % - 35.65

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	13.89	5.56	13.89	5.56	86.11	39.69	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.98	0.98
1.45	21.81	9.16	35.70	7.76	64.30	50.04	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.19	1.11
1.50	11.64	15.72	47.34	9.72	52.66	57.63	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.34	1.17
1.55	9.10	24.02	56.44	12.02	43.56	64.65	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.67	1.25
1.60	3.49	24.41	59.93	12.74	40.07	68.16	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.49	1.26
1.70	5.44	27.89	65.37	14.00	34.63	74.48	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.48	1.28
1.80	4.14	30.52	69.51	14.99	30.49	80.45	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.60	1.30
2.00	4.67	44.04	74.18	16.82	25.82	87.04	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.55	1.31
2.60	25.82	87.04	100.00	34.95	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.93	1.21

ANALYSIS TYPE - FROTH

FRACTION SIZE(MM) 0.15 X 0.00 RELATIVE WEIGHT % - 1.13 ASH % - 38.35

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
240.00	*****	38.35	100.00	38.35	0.0	0.0	0.0	0.0	19.72	19.72	0.45	0.45	6.63	6.63	1.58	1.58

========== GULF CANADA CORPORATION - COAL DIVISION ==========

---------- C L E A N S I M U L A T E D P R O D U C T R E P O R T ----------

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88009
Coal zone:	H		
Field sample no.:	08124	Composite sample no.:	223

---------- PRODUCT COAL ANALYSIS (SP4) ----------

Target Ash: 10.0 %

Standard:	ASTM
Size analysis	
Fraction size(mm):	35.00 X 6.00
Cutpoint:	sp.g. 1.56
Contribution(%):	17.44
Total yield(%):	17.44

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture(%):	0.72	
Ash(%):	9.78	9.85
Volatile matter(%):	6.07	6.11
Fixed carbon(%):	83.43	84.04
Total sulphur(%):	0.59	0.59
Combustible sulphur(%):	0.52	
Gross calorific value(cal/g):	7,414.00	7,468.00
Volatile matter(dmmf%):	5.80	
Hardgrove index:	42.00	
Phosphorous in coal(%):	0.080	

---------- ASH FUSION ANALYSIS (AFI) ----------

	OXIDIZING ATM	REDUCING ATM
Initial temperature(°C):	1,256.00	1,201.00
Softening temperature(°C):	1,274.00	1,216.00
Hemispherical temperature(°C):	1,277.00	1,232.00
Final temperature(°C):	1,359.00	1,327.00

---------- ASH MINERAL ANALYSIS (AMI) ----------

SiO2(%):	61.32	TiO2(%):	1.09
Al2O3(%):	18.15	Na2O(%):	1.62
Fe2O3(%):	3.20	K2O(%):	0.61
CaO(%):	4.42	SO3(%):	1.73
MgO(%):	2.23	P2O5(%):	1.87

GULF CANADA CORPORATION - COAL DIVISION

CLEAN SIMULATED PRODUCT REPORT

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88009
Coal zone:	H		
Field sample no.:	08124	Composite sample no.:	318

PRODUCT COAL ANALYSIS (SP3)

Target Ash: 7.5 %

Standard:	ASTM
Size analysis	
Fraction size (mm):	6.00 X 0.50
Cutpoint:	sp.g. 1.51
Contribution (%):	11.03
Total yield (%):	11.03

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture (%):	0.64	
Ash (%):	7.39	7.44
Volatile matter (%):	6.01	6.05
Fixed carbon (%):	85.96	86.51
Total sulphur (%):	0.60	0.60
Combustible sulphur (%):	0:58	
Gross calorific value (cal/g):	7,758.00	7,808.00
Volatile matter (dmmf%):	5.70	
Hardgrove index:	43.00	
Phosphorous in coal (%):	0.050	

ASH FUSION ANALYSIS (AF1)

	OXIDIZING ATM	REDUCING ATM
Initial temperature (°C):	1,253.00	1,209.00
Softening temperature (°C):	1,301.00	1,243.00
Hemispherical temperature (°C):	1,343.00	1,295.00
Final temperature (°C):	1,422.00	1,419.00

ASH MINERAL ANALYSIS (AM1)

SiO2 (%):	61.63	TiO2 (%):	0.88
Al2O3 (%):	19.66	Na2O (%):	1.64
Fe2O3 (%):	3.63	K2O (%):	0.66
CaO (%):	2.97	SO3 (%):	0.71
MgO (%):	1.82	P2O5 (%):	1.54

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88010 SEAM - M SAMPLE ID - 41 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 35.00 X 6.00 RELATIVE WEIGHT % - 78.48 ASH % - 42.55

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.45	0.93	4.78	0.93	4.78	99.07	42.90	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.35	1.35
1.50	5.10	10.38	6.03	9.52	93.97	44.67	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.10	1.14
1.55	4.00	17.66	10.03	12.76	89.97	45.87	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.09	1.12
1.60	8.93	20.72	18.96	16.51	81.04	48.64	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.98	1.05
1.70	16.96	29.90	35.92	22.83	64.08	53.60	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.02	1.04
1.80	5.62	35.41	41.54	24.53	58.46	55.35	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.12	1.05
2.00	30.53	45.40	72.07	33.37	27.93	66.22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.12	1.08
2.60	27.93	66.22	100.00	42.55	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.78	1.27

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 6.00 X 0.50 RELATIVE WEIGHT % - 17.00 ASH % - 29.09

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	0.65	2.90	0.65	2.90	99.35	29.26	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.97	0.97
1.45	13.99	7.52	14.64	7.31	85.36	32.82	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.05	1.05
1.50	14.35	8.92	28.99	8.11	71.01	37.65	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.42	1.23
1.55	13.96	12.70	42.95	9.60	57.05	43.75	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.92	1.13
1.60	9.03	16.94	51.98	10.88	48.02	48.80	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.08	1.12
1.70	8.40	22.03	60.38	12.43	39.62	54.47	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.23	1.14
1.80	6.93	29.99	67.31	14.24	32.69	59.66	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.29	1.15
2.00	10.27	40.91	77.58	17.77	22.42	68.25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.99	1.26
2.60	22.42	68.25	100.00	29.09	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.76	1.37

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88010 SEAM - M SAMPLE ID - 41 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 0.50 X 0.15 RELATIVE WEIGHT % - 2.86 ASH % - 29.35

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	1.18	3.39	1.18	3.39	98.82	29.66	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.42	1.42
1.45	9.41	4.24	10.59	4.15	89.41	32.33	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.32	1.33
1.50	17.12	6.23	27.71	5.43	72.29	38.51	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.48	1.42
1.55	11.18	6.37	38.89	5.70	61.11	44.39	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.65	1.49
1.60	8.17	6.64	47.06	5.87	52.94	50.22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.73	1.53
1.70	9.80	13.80	56.86	7.23	43.14	58.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.74	1.57
1.80	5.69	24.29	62.55	8.78	37.45	63.69	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.75	1.58
2.00	8.24	36.05	70.79	11.96	29.21	71.49	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.93	1.62
2.60	29.21	71.49	100.00	29.35	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.66	1.63

ANALYSIS TYPE - FROTH

FRACTION SIZE(MM) 0.15 X 0.00 RELATIVE WEIGHT % - 1.66 ASH % - 30.00

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
240.00	*****	30.00	100.00	30.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.50	1.50

GULF CANADA CORPORATION - COAL DIVISION

CLEAN SIMULATED PRODUCT REPORT

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88010
Coal zone:	M		
Field sample no.:	08130	Composite sample no.:	224

PRODUCT COAL ANALYSIS (SP4)

Target Ash: 10.0 %

Standard:	ASTM	
Size analysis		
Fraction size (mm):	35.00 X	6.00
Cutpoint:	sp.g.	1.51
Contribution (%):		5.94
Total yield (%):		5.94

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture (%):	0.87	
Ash (%):	10.42	10.51
Volatile matter (%):	5.94	5.99
Fixed carbon (%):	82.77	83.50
Total sulphur (%):	0.46	0.46
Combustible sulphur (%):	0.42	
Gross calorific value (cal/g):	7,454.00	7,520.00
Volatile matter (dmmf%):	5.70	
Hardgrove index:	44.00	
Phosphorous in coal (%):	0.120	

ASH FUSION ANALYSIS (AF1)

	OXIDIZING ATM	REDUCING ATM
Initial temperature (°C):	1,240.00	1,201.00
Softening temperature (°C):	1,253.00	1,216.00
Hemispherical temperature (°C):	1,280.00	1,243.00
Final temperature (°C):	1,380.00	1,369.00

ASH MINERAL ANALYSIS (AM1)

SiO2 (%):	60.28	TiO2 (%):	0.98
Al2O3 (%):	20.04	Na2O (%):	1.77
Fe2O3 (%):	3.29	K2O (%):	0.66
CaO (%):	4.39	SO3 (%):	0.93
MgO (%):	1.33	P2O5 (%):	2.64

GULF CANADA CORPORATION - COAL DIVISION

C L E A N S I M U L A T E D P R O D U C T R E P O R T

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88010
Coal zone:	M		
Field sample no.:	08130	Composite sample no.:	319

PRODUCT COAL ANALYSIS (SP3)

Target Ash: 7.5 %

Standard:	ASTM	
Size analysis		
Fraction size (mm):	6.00 X	0.50
Cutpoint:	sp.g.	1.46
Contribution (%):		4.17
Total yield (%):		4.17

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture (%):	0.87	
Ash (%):	7.25	7.31
Volatile matter (%):	6.30	6.36
Fixed carbon (%):	85.58	86.33
Total sulphur (%):	0.69	0.70
Combustible sulphur (%):	0.64	
Gross calorific value (cal/g):	7,744.00	7,812.00
Volatile matter (dmmf%):	6.00	
Hardgrove index:	46.00	
Phosphorous in coal (%):	0.073	

ASH FUSION ANALYSIS (AF1)

	OXIDIZING ATM	REDUCING ATM
Initial temperature (°C):	1,253.00	1,174.00
Softening temperature (°C):	1,269.00	1,193.00
Hemispherical temperature (°C):	1,274.00	1,211.00
Final temperature (°C):	1,338.00	1,327.00

ASH MINERAL ANALYSIS (AM1)

SiO2 (%):	49.56	TiO2 (%):	2.76
Al2O3 (%):	21.93	Na2O (%):	1.85
Fe2O3 (%):	7.46	K2O (%):	0.70
CaO (%):	5.37	SO3 (%):	1.69
MgO (%):	2.54	P2O5 (%):	2.32

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88010 SEAM - L SAMPLE ID - 43 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 35.00 X 6.00 RELATIVE WEIGHT % - 48.43 ASH % - 68.51

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	0.07	3.80	0.07	3.80	99.93	67.55	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.86	0.86
1.45	1.91	4.63	1.98	4.60	98.02	68.77	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.91	0.91
1.50	0.27	4.51	2.25	4.59	97.75	68.95	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.86	0.90
1.55	0.98	14.85	3.23	7.70	96.77	69.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.02	0.94
1.60	0.88	22.66	4.11	10.91	95.89	69.93	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	0.95
1.70	3.83	28.95	7.94	19.61	92.06	71.63	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.99	0.97
1.80	2.58	39.75	10.52	24.55	89.48	72.55	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.30	1.05
2.00	4.14	49.71	14.66	31.65	85.34	73.66	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.37	1.14
2.60	85.34	73.66	100.00	67.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.29	1.27

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 6.00 X 0.50 RELATIVE WEIGHT % - 36.57 ASH % - 59.84

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	1.95	4.50	1.95	4.50	98.05	60.73	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.86	0.86
1.45	5.45	4.58	7.40	4.56	92.60	64.04	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.93	0.91
1.50	5.36	10.37	12.76	7.00	87.24	67.33	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.26	1.06
1.55	2.94	14.29	15.70	8.37	84.30	69.18	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.44	1.13
1.60	2.41	18.42	18.11	9.70	81.89	70.68	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.81	1.22
1.70	3.99	23.71	22.10	12.23	77.90	73.08	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.27	1.23
1.80	5.41	31.18	27.51	15.96	72.49	76.21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.38	1.26
2.00	9.73	45.07	37.24	23.56	62.76	81.04	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.71	1.38
2.60	62.76	81.04	100.00	59.64	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.46	1.43

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88010 SEAM - L SAMPLE ID - 43 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 0.50 X 0.15 RELATIVE WEIGHT % - 9.93 ASH % - 40.12

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	26.08	8.38	26.08	8.38	73.92	50.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.39	1.39
1.45	9.06	10.87	35.14	9.02	64.86	55.48	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.28	1.36
1.50	7.93	15.93	43.07	10.29	56.93	60.99	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.62	1.41
1.55	6.78	19.01	49.85	11.48	50.15	66.66	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.93	1.48
1.60	5.15	29.17	55.00	13.14	45.00	70.96	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.02	1.53
1.70	2.93	35.30	57.93	14.26	42.07	73.44	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.26	1.52
1.80	3.71	35.56	61.64	15.54	38.36	77.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.12	1.49
2.00	4.76	42.67	66.40	17.48	33.60	81.98	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.48	1.49
2.60	33.60	81.98	100.00	39.15	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.48	1.49

ANALYSIS TYPE - FROTH

FRACTION SIZE(MM) 0.15 X 0.00 RELATIVE WEIGHT % - 5.07 ASH % - 40.73

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
240.00	*****	40.73	100.00	40.73	0.0	0.0	0.0	0.0	19.35	19.35	0.34	0.34	6.55	6.55	1.40	1.40

========== GULF CANADA CORPORATION - COAL DIVISION ==========

---------- C L E A N S I M U L A T E D P R O D U C T R E P O R T ----------

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88010
Coal zone:	L		
Field sample no.:	08134	Composite sample no.:	320

---------- PRODUCT COAL ANALYSIS (SP3) ----------

Target Ash: 7.5 %

Standard:	ASTM	
Size analysis		
Fraction size(mm):	6.00 X	0.50
Cutpoint:	sp.g.	1.52
Contribution(%):		4.97
Total yield(%):		4.97

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture(%):	0.73	
Ash(%):	7.62	7.68
Volatile matter(%):	7.17	7.22
Fixed carbon(%):	84.48	85.10
Total sulphur(%):	0.57	0.57
Combustible sulphur(%):	0.56	
Gross calorific value(cal/g):	7,665.00	7,721.00
Volatile matter(dmmf%):	7.00	
Hardgrove index:	46.00	
Phosphorous in coal(%):	0.030	

---------- ASH FUSION ANALYSIS (AF1) ----------

	OXIDIZING ATM	REDUCING ATM
Initial temperature(°C):	1,272.00	1,232.00
Softening temperature(°C):	1,359.00	1,295.00
Hemispherical temperature(°C):	1,364.00	1,322.00
Final temperature(°C):	1,472.00	1,467.00

---------- ASH MINERAL ANALYSIS (AM1) ----------

SiO2(%):	57.83	TiO2(%):	3.88
Al2O3(%):	22.68	Na2O(%):	2.29
Fe2O3(%):	4.29	K2O(%):	0.84
CaO(%):	2.01	SO3(%):	0.19
MgO(%):	1.80	P2O5(%):	0.89

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FE8 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88010 SEAM - K/L SAMPLE ID - 44 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 35.00 X 6.00 RELATIVE WEIGHT % - 65.20 ASH % - 54.27

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.45	4.01	4.47	4.01	4.47	95.99	55.55	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.56	0.56
1.50	4.25	11.18	8.26	7.92	91.74	57.61	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.68	0.62
1.55	6.54	15.87	14.80	11.43	85.20	60.81	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.58	0.60
1.60	3.22	20.18	18.02	13.00	81.98	62.41	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.67	0.62
1.70	9.85	29.80	27.87	18.94	72.13	66.86	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.72	0.65
1.80	10.22	35.84	38.09	23.47	61.91	71.98	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.68	0.66
2.00	20.26	51.90	58.35	33.34	41.65	81.75	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.82	0.72
2.60	41.65	81.75	100.00	53.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.01	0.84

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 6.00 X 0.50 RELATIVE WEIGHT % - 26.53 ASH % - 39.78

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	5.03	2.08	5.03	2.08	94.97	40.98	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.77	0.77
1.45	13.29	4.93	18.32	4.15	81.68	46.84	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.62	0.66
1.50	8.90	9.49	27.22	5.89	72.78	51.41	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.60	0.64
1.55	6.89	14.38	34.11	7.61	65.89	55.28	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.82	0.68
1.60	5.32	18.16	39.43	9.03	60.57	58.54	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.78	0.69
1.70	10.06	24.50	49.49	12.18	50.51	65.32	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.88	0.73
1.80	7.62	32.80	57.11	14.93	42.89	71.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.06	0.77
2.00	9.77	43.85	66.88	19.15	33.12	79.14	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.34	0.86
2.60	33.12	79.14	100.00	39.02	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.35	1.02

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88010 SEAM - K/L SAMPLE ID - 44 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 0.50 X 0.15 RELATIVE WEIGHT % - 5.17 ASH % - 42.58

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	11.40	3.75	11.40	3.75	88.60	46.49	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.09	1.09
1.45	6.62	3.91	18.02	3.81	81.98	49.93	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.13	1.10
1.50	4.15	5.71	22.17	4.16	77.83	52.29	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.39	1.16
1.55	5.37	8.87	27.54	5.08	72.46	55.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.50	1.22
1.60	5.64	12.87	33.18	6.41	66.82	59.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.86	1.33
1.70	7.68	17.62	40.86	8.51	59.14	64.49	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.92	1.44
1.80	8.93	26.40	49.79	11.72	50.21	71.26	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.02	1.55
2.00	9.39	37.58	59.18	15.82	40.82	79.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.25	1.50
2.60	40.82	79.01	100.00	41.62	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.46	1.48

ANALYSIS TYPE - FROTH

FRACTION SIZE(MM) 0.15 X 0.00 RELATIVE WEIGHT % - 3.10 ASH % - 45.04

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
240.00	*****	45.04	100.00	45.04	0.0	0.0	0.0	0.0	17.42	17.42	0.34	0.34	7.19	7.19	1.15	1.15

GULF CANADA CORPORATION - COAL DIVISION

C L E A N S I M U L A T E D P R O D U C T R E P O R T

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88010
Coal zone:	K/L		
Field sample no.:	08137	Composite sample no.:	225

PRODUCT COAL ANALYSIS (SP4)

Target Ash: 10.0 %

Standard:	ASTM	
Size analysis		
Fraction size (mm):	35.00 X	6.00
Cutpoint:	sp.g.	1.53
Contribution (%):		8.03
Total yield (%):		8.03

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture (%):	0.73	
Ash (%):	9.50	9.57
Volatile matter (%):	6.29	6.34
Fixed carbon (%):	83.48	84.09
Total sulphur (%):	0.57	0.57
Combustible sulphur (%):	0.56	
Gross calorific value (cal/g):	7,440.00	7,495.00
Volatile matter (dmmf%):	6.00	
Hardgrove index:	42.00	
Phosphorous in coal (%):	0.056	

ASH FUSION ANALYSIS (AF1)

	OXIDIZING ATM	REDUCING ATM
Initial temperature (°C):	1,272.00	1,240.00
Softening temperature (°C):	1,359.00	1,311.00
Hemispherical temperature (°C):	1,385.00	1,327.00
Final temperature (°C):	1,472.00	1,472.00

ASH MINERAL ANALYSIS (AM1)

SiO2 (%):	59.82	TiO2 (%):	1.06
Al2O3 (%):	22.30	Na2O (%):	2.29
Fe2O3 (%):	3.32	K2O (%):	0.88
CaO (%):	2.60	SO3 (%):	0.19
MgO (%):	1.39	P2O5 (%):	1.35

GULF CANADA CORPORATION - COAL DIVISION

C L E A N S I M U L A T E D P R O D U C T R E P O R T

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88010
Coal zone:	K/L		
Field sample no.:	08137	Composite sample no.:	321

PRODUCT COAL ANALYSIS (SP3)

Target Ash: 7.5 %

Standard:	ASTM	
Size analysis		
Fraction size(mm):	6.00 X	0.50
Cutpoint:	sp.g.	1.55
Contribution(%):		8.94
Total yield(%):		8.94

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture(%):	0.71	
Ash(%):	7.46	7.51
Volatile matter(%):	7.00	7.05
Fixed carbon(%):	84.83	85.44
Total sulphur(%):	0.57	0.57
Combustible sulphur(%):	0.56	
Gross calorific value(cal/g):	7,679.00	7,734.00
Volatile matter(dmmf%):	6.80	
Hardgrove index:	44.00	
Phosphorous in coal(%):	0.038	

ASH FUSION ANALYSIS (AF1)

	OXIDIZING ATM	REDUCING ATM
Initial temperature(°C):	1,261.00	1,243.00
Softening temperature(°C):	1,359.00	1,311.00
Hemispherical temperature(°C):	1,374.00	1,330.00
Final temperature(°C):	1,472.00	1,467.00

ASH MINERAL ANALYSIS (AM1)

SiO2(%):	58.32	TiO2(%):	2.95
Al2O3(%):	21.93	Na2O(%):	1.87
Fe2O3(%):	3.98	K2O(%):	0.83
CaO(%):	2.27	SO3(%):	0.31
MgO(%):	1.44	P2O5(%):	1.16

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRODH88010 SEAM - K SAMPLE ID - 45 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 35.00 X 6.00 RELATIVE WEIGHT % - 53.18 ASH % - 40.95

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	0.37	4.85	0.37	4.85	99.63	40.68	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.70	1.70
1.45	5.00	7.01	5.37	6.86	94.63	42.46	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.11	1.15
1.50	15.58	9.33	20.95	8.70	79.05	48.99	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.75	0.85
1.55	8.90	14.14	29.85	10.32	70.15	53.41	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.05	0.91
1.60	6.83	19.24	36.68	11.98	63.32	57.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.16	0.96
1.70	14.08	30.46	50.76	17.11	49.24	64.72	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.18	1.02
1.80	4.06	32.14	54.82	18.22	45.18	67.64	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.20	1.03
2.00	14.54	48.31	69.36	24.53	30.64	76.82	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.20	1.07
2.60	30.64	76.82	100.00	40.55	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.24	1.12

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 6.00 X 0.50 RELATIVE WEIGHT % - 35.15 ASH % - 26.75

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	5.08	2.66	5.08	2.66	94.92	27.51	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.30	1.30
1.45	17.97	3.84	23.05	3.58	76.95	33.04	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.87	0.96
1.50	18.83	8.50	41.88	5.79	58.12	40.99	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.02	0.99
1.55	11.58	13.12	53.46	7.38	46.54	47.93	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.04	1.00
1.60	3.49	15.98	56.95	7.91	43.05	50.52	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.42	1.03
1.70	10.06	20.56	67.01	9.81	32.99	59.65	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.44	1.09
1.80	6.93	28.07	73.94	11.52	26.06	68.05	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.45	1.12
2.00	7.46	39.15	81.40	14.05	18.60	79.64	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.73	1.27
2.60	18.60	79.64	100.00	26.25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.65	1.34

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88010 SEAM - K SAMPLE ID - 45 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 0.50 X 0.15 RELATIVE WEIGHT % - 8.01 ASH % - 30.07

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	CUM. S	CUM. S	CUM. VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	2.17	2.20	2.17	2.20	97.83	29.93	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.46	1.46
1.45	10.03	2.49	12.20	2.44	87.80	33.07	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.34	1.36
1.50	19.64	4.78	31.84	3.88	68.16	41.22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.36	1.36
1.55	5.79	7.27	37.63	4.40	62.37	44.37	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.97	1.45
1.60	9.55	9.55	47.18	5.45	52.82	50.66	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.13	1.39
1.70	12.34	14.36	59.52	7.29	40.48	61.73	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.57	1.43
1.80	8.22	21.20	67.74	8.98	32.26	72.05	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.74	1.46
2.00	9.97	34.46	77.71	12.25	22.29	88.87	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.98	1.53
2.60	22.29	88.87	100.00	29.33	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.96	1.40

ANALYSIS TYPE - FROTH

FRACTION SIZE(MM) 0.15 X 0.00 RELATIVE WEIGHT % - 3.66 ASH % - 34.87

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	CUM. S	CUM. S	CUM. VOL.	CUM. VOL.	MOIST	CUM. MOIST
240.00	*****	34.87	100.00	34.87	0.0	0.0	0.0	0.0	21.37	21.37	0.38	0.38	6.78	6.78	1.22	1.22

========== GULF CANADA CORPORATION - COAL DIVISION ==========

---------- C L E A N S I M U L A T E D P R O D U C T R E P O R T ----------

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88010
Coal zone:	K		
Field sample no.:	08140	Composite sample no.:	226

---------- PRODUCT COAL ANALYSIS (SP4) ----------

Target Ash: 10.0 %

Standard:	ASTM
Size analysis	
Fraction size(mm):	35.00 X 6.00
Cutpoint:	sp.g. 1.54
Contribution(%):	15.02
Total yield(%):	15.02

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture(%):	0.80	
Ash(%):	9.68	9.76
Volatile matter(%):	6.67	6.72
Fixed carbon(%):	82.85	83.52
Total sulphur(%):	0.53	0.53
Combustible sulphur(%):	0.51	
Gross calorific value(cal/g):	7,421.00	7,481.00
Volatile matter(dmmf%):	6.50	
Hardgrove index:	41.00	
Phosphorous in coal(%):	0.162	

---------- ASH FUSION ANALYSIS (AFI) ----------

	OXIDIZING ATM	REDUCING ATM
Initial temperature(°C):	1,264.00	1,201.00
Softening temperature(°C):	1,309.00	1,266.00
Hemispherical temperature(°C):	1,322.00	1,269.00
Final temperature(°C):	1,390.00	1,327.00

---------- ASH MINERAL ANALYSIS (AMI) ----------

SiO2(%):	47.12	TiO2(%):	1.60
Al2O3(%):	27.60	Na2O(%):	2.61
Fe2O3(%):	5.32	K2O(%):	1.13
CaO(%):	5.74	SO3(%):	0.50
MgO(%):	2.40	P2O5(%):	3.84

========== GULF CANADA CORPORATION - COAL DIVISION ==========

---------- C L E A N S I M U L A T E D P R O D U C T R E P O R T ----------

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88010
Coal zone:	K		
Field sample no.:	08140	Composite sample no.:	322

---------- PRODUCT COAL ANALYSIS (SP3) ----------

Target Ash: 7.5 %

Standard:	ASTM
Size analysis	
Fraction size(mm):	6.00 X 0.50
Cutpoint:	sp.g. 1.56
Contribution(%):	19.05
Total yield(%):	19.05

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture(%):	0.78	
Ash(%):	7.42	7.48
Volatile matter(%):	6.61	6.66
Fixed carbon(%):	85.19	85.86
Total sulphur(%):	0.54	0.54
Combustible sulphur(%):	0.52	
Gross calorific value(cal/g):	7,693.00	7,754.00
Volatile matter(dmmf%):	6.40	
Hardgrove index:	43.00	
Phosphorous in coal(%):	0.110	

---------- ASH FUSION ANALYSIS (AF1) ----------

	OXIDIZING ATM	REDUCING ATM
Initial temperature(°C):	1,266.00	1,243.00
Softening temperature(°C):	1,306.00	1,261.00
Hemispherical temperature(°C):	1,322.00	1,274.00
Final temperature(°C):	1,390.00	1,388.00

---------- ASH MINERAL ANALYSIS (AM1) ----------

SiO2(%):	49.06	TiO2(%):	2.55
Al2O3(%):	25.33	Na2O(%):	2.56
Fe2O3(%):	4.12	K2O(%):	1.15
CaO(%):	5.26	SO3(%):	0.58
MgO(%):	2.13	P2O5(%):	3.39

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88010 SEAM - I SAMPLE ID - 46 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 35.00 X 6.00 RELATIVE WEIGHT % - 37.85 ASH % - 60.47

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	0.08	4.07	0.08	4.07	99.92	60.45	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.16	1.16
1.45	3.04	4.29	3.12	4.28	96.88	62.21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.46	1.45
1.50	4.35	8.39	7.47	6.68	92.53	64.74	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.31	1.37
1.55	4.22	13.25	11.69	9.05	88.31	67.20	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.42	1.39
1.60	7.98	21.79	19.67	14.22	80.33	71.71	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.41	1.40
1.70	5.60	26.91	25.27	17.03	74.73	75.07	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.44	1.41
1.80	6.05	35.03	31.32	20.51	68.68	78.60	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.51	1.43
2.00	8.26	50.79	39.58	26.83	60.42	82.40	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.53	1.45
2.60	60.42	82.40	100.00	60.40	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.52	1.49

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 0.60 X 0.50 RELATIVE WEIGHT % - 44.35 ASH % - 36.34

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	0.44	3.33	0.44	3.33	99.56	35.62	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.98	0.98
1.45	16.86	7.57	17.30	7.46	82.70	41.34	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.16	1.16
1.50	16.87	9.17	34.17	8.31	65.83	49.58	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.86	1.50
1.55	9.10	12.21	43.27	9.13	56.73	55.58	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.05	1.41
1.60	3.13	13.99	46.40	9.45	53.60	58.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.58	1.42
1.70	10.42	18.56	56.82	11.12	43.18	67.52	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.68	1.47
1.80	5.66	26.65	62.48	12.53	37.52	73.69	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.00	1.52
2.00	7.05	40.33	69.53	15.35	30.47	81.41	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.44	1.51
2.60	30.47	81.41	100.00	35.48	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.91	1.63

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88010 SEAM - I SAMPLE ID - 46 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 0.50 X 0.15 RELATIVE WEIGHT % - 13.12 ASH % - 26.21

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	0.47	2.22	0.47	2.22	99.53	25.62	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.59	1.59
1.45	10.85	3.53	11.32	3.48	88.68	28.32	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.56	1.56
1.50	19.84	6.31	31.16	5.28	68.84	34.67	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.99	1.83
1.55	13.07	6.99	44.23	5.79	55.77	41.15	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.08	1.61
1.60	10.00	9.79	54.23	6.52	45.77	48.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.36	1.57
1.70	10.27	14.44	64.50	7.78	35.50	57.72	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.52	1.56
1.80	7.31	20.94	71.81	9.12	28.19	67.25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.98	1.60
2.00	6.74	33.31	78.55	11.20	21.45	77.92	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.50	1.59
2.60	21.45	77.92	100.00	25.51	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.80	1.64

ANALYSIS TYPE - FROTH

FRACTION SIZE(MM) 0.15 X 0.00 RELATIVE WEIGHT % - 4.68 ASH % - 23.40

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
240.00	*****	23.40	100.00	23.40	0.0	0.0	0.0	0.0	25.93	25.93	0.40	0.40	5.66	5.66	1.93	1.93

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRODH88010 SEAM - I SAMPLE ID - 47 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 35.00 X 6.00 RELATIVE WEIGHT % - 34.93 ASH % - 32.56

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	7.94	3.85	7.94	3.85	92.06	34.95	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.73	1.73
1.45	1.54	8.80	9.48	4.65	90.52	35.39	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.37	1.67
1.50	7.34	11.56	16.82	7.67	83.18	37.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.20	1.47
1.55	20.14	13.63	36.96	10.92	63.04	45.12	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.17	1.30
1.60	13.62	17.81	50.58	12.77	49.42	52.65	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.31	1.31
1.70	11.16	19.54	61.74	14.00	38.26	62.31	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.85	1.40
1.80	4.44	30.16	66.18	15.08	33.82	66.53	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.41	1.40
2.00	7.86	35.96	74.04	17.30	25.96	75.78	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.59	1.42
2.60	25.96	75.78	100.00	32.48	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.19	1.36

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 6.00 X 0.50 RELATIVE WEIGHT % - 37.37 ASH % - 23.70

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	2.40	3.85	2.40	3.85	97.60	23.81	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.49	1.49
1.45	28.80	5.01	31.20	4.92	68.80	31.68	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.25	1.27
1.50	10.48	9.05	41.68	5.96	58.32	35.74	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.19	1.25
1.55	15.41	12.76	57.09	7.79	42.91	44.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.89	1.42
1.60	5.01	15.44	62.10	8.41	37.90	47.77	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.88	1.46
1.70	10.74	19.02	72.84	9.98	27.16	59.14	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.13	1.41
1.80	4.75	26.09	77.59	10.96	22.41	66.15	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.30	1.40
2.00	4.13	37.82	81.72	12.32	18.28	72.55	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.77	1.42
2.60	18.28	72.55	100.00	23.33	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.29	1.40

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88010 SEAM - I SAMPLE ID - 47 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 0.50 X 0.15 RELATIVE WEIGHT % - 20.40 ASH % - 0.15

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	41.08	6.29	41.08	6.29	58.92	22.64	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.29	1.29
1.45	23.49	7.56	64.57	6.75	35.43	32.64	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.49	1.36
1.50	9.17	12.32	73.74	7.44	26.26	39.74	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.44	1.37
1.55	6.01	15.95	79.75	8.09	20.25	46.80	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.47	1.38
1.60	1.34	17.14	81.09	8.24	18.91	48.90	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.64	1.38
1.70	3.53	19.12	84.62	8.69	15.38	55.74	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.81	1.40
1.80	2.06	25.97	86.68	9.10	13.32	60.34	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.64	1.41
2.00	2.32	36.80	89.00	9.82	11.00	65.31	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.61	1.41
2.60	11.00	65.31	100.00	15.93	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.32	1.40

ANALYSIS TYPE - FROTH

FRACTION SIZE(MM) 0.15 X 0.00 RELATIVE WEIGHT % - 7.30 ASH % - 13.53

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
240.00	*****	13.53	100.00	13.53	0.0	0.0	0.0	0.0	29.30	29.30	0.44	0.44	4.92	4.92	1.32	1.32

GULF CANADA CORPORATION - COAL DIVISION

C L E A N S I M U L A T E D P R O D U C T R E P O R T

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88010
Coal zone:	I		
Field sample no.:	08143 - 08144	Composite sample no.:	227

PRODUCT COAL ANALYSIS (SP2)

Target Ash: 8.0 %

Standard:	ASTM
Size analysis	
Fraction size(mm):	35.00 X 6.00
Cutpoint:	sp.g. 1.53
Contribution(%):	4.28
Total yield(%):	4.28

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture(%):	0.70	
Ash(%):	8.31	8.37
Volatile matter(%):	6.21	6.25
Fixed carbon(%):	84.78	85.38
Total sulphur(%):	0.44	0.44
Combustible sulphur(%):	0.43	
Gross calorific value(cal/g):	7,631.00	7,685.00
Volatile matter(dmmf%):	6.00	
Hardgrove index:	45.00	
Phosphorous in coal(%):	0.046	

ASH FUSION ANALYSIS (AF1)

	OXIDIZING ATM	REDUCING ATM
Initial temperature(°C):	1,243.00	1,198.00
Softening temperature(°C):	1,388.00	1,322.00
Hemispherical temperature(°C):	1,443.00	1,406.00
Final temperature(°C):	1,472.00	1,472.00

ASH MINERAL ANALYSIS (AM1)

SiO2(%):	59.76	TiO2(%):	1.20
Al2O3(%):	23.44	Na2O(%):	2.21
Fe2O3(%):	3.20	K2O(%):	0.90
CaO(%):	2.24	SO3(%):	0.26
MgO(%):	2.16	P2O5(%):	1.28

========== GULF CANADA CORPORATION - COAL DIVISION ==========

---------- C L E A N S I M U L A T E D P R O D U C T R E P O R T ----------

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88010
Coal zone:	I		
Field sample no.:	08145	Composite sample no.:	228

---------- PRODUCT COAL ANALYSIS (SP2) ----------

Target Ash: 8.0 %

Standard:	ASTM	
Size analysis		
Fraction size(mm):	35.00 X	6.00
Cutpoint:	sp.g.	1.51
Contribution(%):		6.97
Total yield(%):		6.97

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture(%):	1.29	
Ash(%):	8.25	8.36
Volatile matter(%):	7.23	7.32
Fixed carbon(%):	83.23	84.32
Total sulphur(%):	0.44	0.45
Combustible sulphur(%):	0.42	
Gross calorific value(cal/g):	7,595.00	7,695.00
Volatile matter(dmmf%):	7.20	
Hardgrove index:	47.00	
Phosphorous in coal(%):	0.009	

---------- ASH FUSION ANALYSIS (AF1) ----------

	OXIDIZING ATM	REDUCING ATM
Initial temperature(°C):	1,174.00	1,140.00
Softening temperature(°C):	1,290.00	1,261.00
Hemispherical temperature(°C):	1,322.00	1,290.00
Final temperature(°C):	1,343.00	1,322.00

---------- ASH MINERAL ANALYSIS (AM1) ----------

SiO2(%):	54.82	TiO2(%):	1.50
Al2O3(%):	27.22	Na2O(%):	2.29
Fe2O3(%):	4.03	K2O(%):	1.10
CaO(%):	2.52	SO3(%):	0.68
MgO(%):	2.69	P2O5(%):	0.25

GULF CANADA CORPORATION - COAL DIVISION

C L E A N S I M U L A T E D P R O D U C T R E P O R T

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88010
Coal zone:	I		
Field sample no.:	08143 - 08145	Composite sample no.:	323

PRODUCT COAL ANALYSIS (SP3)

Target Ash: 7.5 %

Standard:	ASTM
Size analysis	
Fraction size(mm):	6.00 X 0.50
Cutpoint:	sp.g. 1.53
Contribution(%):	16.65
Total yield(%):	16.65

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture(%):	1.00	
Ash(%):	7.28	7.35
Volatile matter(%):	6.67	6.74
Fixed carbon(%):	85.05	85.91
Total sulphur(%):	0.49	0.49
Combustible sulphur(%):	0.46	
Gross calorific value(cal/g):	7,710.00	7,788.00
Volatile matter(dmmf%):	6.50	
Hardgrove index:	48.00	
Phosphorous in coal(%):	0.053	

ASH FUSION ANALYSIS (AF1)

	OXIDIZING ATM	REDUCING ATM
Initial temperature(°C):	1,317.00	1,274.00
Softening temperature(°C):	1,359.00	1,295.00
Hemispherical temperature(°C):	1,390.00	1,338.00
Final temperature(°C):	1,472.00	1,472.00

ASH MINERAL ANALYSIS (AM1)

SiO2(%):	57.52	TiO2(%):	1.40
Al2O3(%):	23.06	Na2O(%):	2.16
Fe2O3(%):	4.03	K2O(%):	0.93
CaO(%):	2.80	SO3(%):	1.10
MgO(%):	2.14	P2O5(%):	1.68

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88010 SEAM - H SAMPLE ID - 48 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 35.00 X 6.00 RELATIVE WEIGHT % - 61.55 ASH % - 41.10

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	0.00	0.00	0.00	0.00	100.00	41.06	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
1.45	2.93	4.72	2.93	4.72	97.07	42.16	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.08	1.08
1.50	8.17	9.78	11.10	8.44	88.90	45.13	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.85	0.91
1.55	11.39	14.64	22.49	11.58	77.51	49.62	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.01	0.96
1.60	8.15	18.92	30.64	13.53	69.36	53.22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.88	0.94
1.70	14.25	25.81	44.89	17.43	55.11	60.31	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.81	0.90
1.80	11.18	36.38	56.07	21.21	43.93	66.40	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.91	0.90
2.00	10.09	45.98	66.16	24.99	33.84	72.49	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.70	0.87
2.60	33.84	72.49	100.00	41.06	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.91	0.88

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 6.00 X 0.50 RELATIVE WEIGHT % - 29.83 ASH % - 27.98

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	20.63	4.49	20.63	4.49	79.37	33.26	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.85	0.85
1.45	15.92	6.07	36.55	5.18	63.45	40.08	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.84	0.85
1.50	15.15	10.58	51.70	6.76	48.30	49.33	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.86	0.85
1.55	7.62	15.30	59.32	7.86	40.68	55.70	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.92	0.86
1.60	4.65	19.45	63.97	8.70	36.03	60.38	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.14	0.88
1.70	6.91	26.20	70.88	10.41	29.12	68.49	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.11	0.90
1.80	2.24	33.64	73.12	11.12	26.88	71.40	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.22	0.91
2.00	4.08	42.82	77.20	12.79	22.80	76.51	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.17	0.93
2.60	22.80	76.51	100.00	27.32	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.95	1.16

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88010 SEAM - H SAMPLE ID - 48 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 0.50 X 0.15 RELATIVE WEIGHT % - 7.09 ASH % - 30.03

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	24.18	8.55	24.18	8.55	75.82	36.27	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.52	1.52
1.45	27.94	10.48	52.12	9.58	47.88	51.32	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.60	1.56
1.50	2.21	10.81	54.33	9.63	45.67	53.28	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.71	1.57
1.55	8.97	18.43	63.30	10.88	36.70	61.80	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.27	1.53
1.60	1.67	20.37	64.97	11.12	35.03	63.77	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.41	1.52
1.70	3.77	20.62	68.74	11.65	31.26	68.98	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.70	1.53
1.80	3.24	27.42	71.98	12.36	28.02	73.78	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.56	1.53
2.00	5.54	46.70	77.52	14.81	22.48	80.46	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.71	1.55
2.60	22.48	80.46	100.00	29.57	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.15	1.46

ANALYSIS TYPE - FROTH

FRACTION SIZE(MM) 0.15 X 0.00 RELATIVE WEIGHT % - 1.53 ASH % - 31.36

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
240.00	*****	1.52	100.00	1.52	0.0	0.0	0.0	0.0	22.61	22.61	0.77	0.77	5.66	5.66	1.40	1.40

GULF CANADA CORPORATION - COAL DIVISION

C L E A N S I M U L A T E D P R O D U C T R E P O R T

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88010
Coal zone:	H		
Field sample no.:	08127	Composite sample no.:	229

PRODUCT COAL ANALYSIS (SP4)

Target Ash: 10.0 %

Standard:	ASTM	
Size analysis		
Fraction size (mm):	35.00 X	6.00
Cutpoint:	sp.g.	1.52
Contribution (%):		11.59
Total yield (%):		11.59

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture (%):	0.70	
Ash (%):	9.84	9.91
Volatile matter (%):	6.15	6.19
Fixed carbon (%):	83.31	83.90
Total sulphur (%):	0.47	0.47
Combustible sulphur (%):	0.40	
Gross calorific value (cal/g):	7,459.00	7,511.00
Volatile matter (dmmf%):	5.90	
Hardgrove index:	43.00	
Phosphorous in coal (%):	0.086	

ASH FUSION ANALYSIS (AF1)

	OXIDIZING ATM	REDUCING ATM
Initial temperature (°C):	1,253.00	1,243.00
Softening temperature (°C):	1,295.00	1,287.00
Hemispherical temperature (°C):	1,348.00	1,343.00
Final temperature (°C):	1,472.00	1,472.00

ASH MINERAL ANALYSIS (AM1)

SiO2 (%):	55.37	TiO2 (%):	1.10
Al2O3 (%):	24.19	Na2O (%):	2.59
Fe2O3 (%):	2.66	K2O (%):	0.72
CaO (%):	3.13	SO3 (%):	1.80
MgO (%):	1.58	P2O5 (%):	2.01

GULF CANADA CORPORATION - COAL DIVISION

CLEAN SIMULATED PRODUCT REPORT

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88010
Coal zone:	H		
Field sample no.:	08127	Composite sample no.:	324

PRODUCT COAL ANALYSIS (SP3)

Target Ash: 7.5 %

Standard:	ASTM
Size analysis	
Fraction size (mm):	6.00 X 0.50
Cutpoint:	sp.g. 1.53
Contribution (%):	16.65
Total yield (%):	16.65

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture (%):	0.85	
Ash (%):	7.36	7.42
Volatile matter (%):	6.22	6.27
Fixed carbon (%):	85.57	86.31
Total sulphur (%):	0.59	0.60
Combustible sulphur (%):	0.56	
Gross calorific value (cal/g):	7,765.00	7,832.00
Volatile matter (dmmf%):	6.00	
Hardgrove index:	43.00	
Phosphorous in coal (%):	0.061	

ASH FUSION ANALYSIS (AF1)

	OXIDIZING ATM	REDUCING ATM
Initial temperature (°C):	1,238.00	1,206.00
Softening temperature (°C):	1,277.00	1,238.00
Hemispherical temperature (°C):	1,317.00	1,298.00
Final temperature (°C):	1,430.00	1,428.00

ASH MINERAL ANALYSIS (AM1)

SiO2 (%):	56.32	TiO2 (%):	1.97
Al2O3 (%):	22.30	Na2O (%):	2.32
Fe2O3 (%):	3.86	K2O (%):	0.81
CaO (%):	3.61	SO3 (%):	0.99
MgO (%):	1.82	P2O5 (%):	1.90

GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88011 SEAM - L SAMPLE ID - 61 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 35.00 X 6.00 RELATIVE WEIGHT % - 60.31 ASH % - 40.75

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	0.69	6.43	0.69	6.43	99.31	41.39	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.04	1.04
1.45	0.75	8.48	1.44	7.50	98.56	41.64	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.35	1.20
1.50	1.31	12.86	2.75	10.05	97.25	42.03	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.45	1.32
1.55	1.21	18.02	3.96	12.49	96.04	42.33	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.00	1.53
1.60	4.89	24.14	8.85	18.93	91.15	43.31	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.43	1.47
1.70	21.77	29.94	30.62	26.76	69.38	47.51	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.32	1.36
1.80	25.54	37.55	56.16	31.67	43.84	53.31	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.34	1.35
2.00	25.58	45.63	81.74	36.04	18.26	64.06	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.29	1.33
2.60	18.26	64.06	100.00	41.15	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.21	1.31

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 6.00 X 0.50 RELATIVE WEIGHT % - 28.42 ASH % - 36.49

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	8.77	8.31	8.77	8.31	91.23	38.18	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.43	1.43
1.45	3.42	10.79	12.19	9.01	87.81	39.25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.80	1.53
1.50	6.17	14.90	18.36	10.99	81.64	41.09	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.65	1.57
1.55	11.29	19.74	29.65	14.32	70.35	44.52	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.59	1.58
1.60	4.08	21.38	33.73	15.17	66.27	45.94	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.74	1.60
1.70	23.50	27.34	57.23	20.17	42.77	56.16	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.91	1.73
1.80	11.55	36.40	68.78	22.90	31.22	63.47	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.76	1.73
2.00	10.98	43.95	79.76	25.79	20.24	74.06	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.77	1.74
2.60	20.24	74.06	100.00	35.56	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.18	1.62

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88011 SEAM - L SAMPLE ID - 61 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 0.50 X 0.15 RELATIVE WEIGHT % - 8.15 ASH % - 26.18

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	6.61	4.46	6.61	4.46	93.39	26.79	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.36	1.36
1.45	11.65	6.90	18.26	6.02	81.74	29.62	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.34	1.35
1.50	10.74	8.07	29.00	6.78	71.00	32.88	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.42	1.37
1.55	9.92	9.99	38.92	7.60	61.08	36.60	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.52	1.41
1.60	9.09	13.36	48.01	8.69	51.99	40.66	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.01	1.52
1.70	11.57	15.87	59.58	10.08	40.42	47.76	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.57	1.53
1.80	14.38	24.80	73.96	12.94	26.04	60.44	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.74	1.57
2.00	10.58	38.96	84.54	16.20	15.46	75.14	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.01	1.63
2.60	15.46	75.14	100.00	25.31	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.02	1.69

ANALYSIS TYPE - FROTH

FRACTION SIZE(MM) 0.15 X 0.00 RELATIVE WEIGHT % - 3.12 ASH % - 26.71

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
240.00	*****	26.71	100.00	26.71	0.0	0.0	0.0	0.0	24.71	24.71	0.48	0.48	5.99	5.99	1.62	1.62

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88O11 SEAM - ? SAMPLE ID - 49 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 35.00 X 6.00 RELATIVE WEIGHT % - 62.51 ASH % - 68.41

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	0.03	4.52	0.03	4.52	99.97	67.98	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.60	0.60
1.45	0.07	7.84	0.10	6.84	99.90	68.02	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.33	1.11
1.50	0.28	9.95	0.38	9.13	99.62	68.18	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.29	1.24
1.55	0.08	12.13	0.46	9.65	99.54	68.23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.32	1.26
1.60	1.93	21.10	2.39	18.90	97.61	69.16	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.06	1.10
1.70	0.97	33.20	3.36	23.03	96.64	69.52	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.96	1.06
1.80	6.74	44.02	10.10	37.04	89.90	71.43	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.88	0.94
2.00	18.45	54.14	28.55	48.09	71.45	75.90	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.11	1.05
2.60	71.45	75.90	100.00	67.96	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.10	1.09

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 6.00 X 0.50 RELATIVE WEIGHT % - 29.54 ASH % - 59.95

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	1.04	3.95	1.04	3.95	98.96	60.18	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.23	1.23
1.45	0.85	7.21	1.89	5.42	98.11	60.64	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.18	1.21
1.50	0.43	11.43	2.32	6.53	97.68	60.86	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.38	1.24
1.55	0.39	16.05	2.71	7.90	97.29	61.04	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.19	1.23
1.60	0.29	19.52	3.00	9.02	97.00	61.16	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.44	1.25
1.70	1.71	19.78	4.71	12.93	95.29	61.90	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.50	1.34
1.80	6.49	29.77	11.20	22.69	88.80	64.25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.44	1.40
2.00	25.47	44.17	36.67	37.61	63.33	72.33	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.63	1.56
2.60	63.33	72.33	100.00	59.60	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.19	1.33

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88011 SEAM - ? SAMPLE ID - 49 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 0.50 X 0.15 RELATIVE WEIGHT % - 4.45 ASH % - 43.28

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	19.46	6.34	19.46	6.34	80.54	51.80	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.34	1.34
1.45	11.34	10.26	30.80	7.78	69.20	58.61	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.53	1.41
1.50	3.21	20.50	34.01	8.98	65.99	60.46	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.68	1.44
1.55	2.86	23.74	36.87	10.13	63.13	62.12	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.46	1.44
1.60	1.25	28.20	38.12	10.72	61.88	62.81	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.48	1.44
1.70	4.46	29.84	42.58	12.72	57.42	65.37	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.87	1.48
1.80	4.73	33.65	47.31	14.82	52.69	68.22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.01	1.54
2.00	19.47	56.51	66.78	26.97	33.22	75.08	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.29	1.46
2.60	33.22	75.08	100.00	42.95	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.03	1.65

ANALYSIS TYPE - FROTH

FRACTION SIZE(MM) 0.15 X 0.00 RELATIVE WEIGHT % - 3.50 ASH % - 35.28

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
240.00	*****	35.28	100.00	35.28	0.0	0.0	0.0	0.0	20.98	20.98	0.42	0.42	6.47	6.47	1.89	1.89

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88011 SEAM - ? SAMPLE ID - 50 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 35.00 X 6.00 RELATIVE WEIGHT % - 81.28 ASH % - 73.69

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ/KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	0.04	8.14	0.04	8.14	99.96	73.63	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.57	1.57
1.45	0.09	14.36	0.13	12.45	99.87	73.69	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.48	1.51
1.50	0.06	14.88	0.19	13.21	99.81	73.72	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.57	1.53
1.55	0.05	15.38	0.24	13.67	99.76	73.75	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.71	1.57
1.60	0.04	22.27	0.28	14.90	99.72	73.77	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.73	1.59
1.70	2.94	31.05	3.22	29.65	96.78	75.07	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.34	1.36
1.80	3.15	40.74	6.37	35.13	93.63	76.23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.24	1.30
2.00	11.21	51.49	17.58	45.56	82.42	79.59	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.40	1.36
2.60	82.42	79.59	100.00	73.61	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.08	1.13

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 6.00 X 0.50 RELATIVE WEIGHT % - 14.69 ASH % - 63.41

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ/KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	5.92	3.33	5.92	3.33	94.08	66.80	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.93	0.93
1.45	2.27	6.02	8.19	4.08	91.81	68.30	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.17	1.00
1.50	1.33	8.34	9.52	4.67	90.48	69.18	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.44	1.06
1.55	1.32	12.75	10.84	5.66	89.16	70.02	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.53	1.12
1.60	0.54	21.71	11.38	6.42	88.62	70.31	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.67	1.14
1.70	4.07	26.54	15.45	11.72	84.55	72.42	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.50	1.24
1.80	5.25	35.84	20.70	17.84	79.30	74.84	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.56	1.32
2.00	11.37	47.97	32.07	28.52	67.93	79.34	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.84	1.50
2.60	67.93	79.34	100.00	63.04	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.81	1.71

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRODH88011 SEAM - ? SAMPLE ID - 50 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 0.50 X 0.15 RELATIVE WEIGHT % - 2.60 ASH % - 44.68

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	23.34	5.65	23.34	5.65	76.66	55.56	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.96	0.96
1.45	10.88	8.47	34.22	6.55	65.78	63.35	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.26	1.06
1.50	1.80	15.78	36.02	7.01	63.98	64.69	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.71	1.04
1.55	3.81	20.75	39.83	8.32	60.17	67.47	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.63	1.09
1.60	0.16	23.02	39.99	8.38	60.01	67.59	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.90	1.10
1.70	6.53	24.92	46.52	10.70	53.48	72.80	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.97	1.22
1.80	1.85	29.21	48.37	11.41	51.63	74.37	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.94	1.25
2.00	5.50	43.46	53.87	14.68	46.13	78.05	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.07	1.33
2.60	46.13	78.05	100.00	43.91	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.15	1.25

ANALYSIS TYPE - FROTH

FRACTION SIZE(MM) 0.15 X 0.00 RELATIVE WEIGHT % - 1.43 ASH % - 52.14

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
240.00	*****	52.14	100.00	52.14	0.0	0.0	0.0	0.0	14.12	14.12	0.36	0.36	7.90	7.90	1.33	1.33

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88011 SEAM - ? SAMPLE ID - 51 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 35.00 X 6.00 RELATIVE WEIGHT % - 87.26 ASH % - 66.07

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ/KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	0.12	3.46	0.12	3.46	99.88	66.71	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.46	1.46
1.45	0.10	5.51	0.22	4.39	99.78	66.77	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.48	1.47
1.50	0.01	13.70	0.23	4.80	99.77	66.78	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.89	1.49
1.55	0.09	16.28	0.32	8.03	99.68	66.82	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.57	1.51
1.60	0.21	23.39	0.53	14.11	99.47	66.92	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.34	1.44
1.70	2.72	31.12	3.25	28.35	96.75	67.92	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.05	1.11
1.80	1.48	35.90	4.73	30.71	95.27	68.42	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.54	1.25
2.00	19.88	52.95	24.61	48.68	75.39	72.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.29	1.28
2.60	75.39	72.50	100.00	66.64	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.16	1.19

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 6.00 X 0.50 RELATIVE WEIGHT % - 9.56 ASH % - 46.60

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ/KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	7.49	2.19	7.49	2.19	92.51	50.53	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.97	0.97
1.45	10.53	3.13	18.02	2.74	81.98	56.62	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.01	0.99
1.50	3.18	11.37	21.20	4.03	78.80	58.44	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.36	1.05
1.55	1.92	16.18	23.12	5.04	76.88	59.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.60	1.09
1.60	1.38	20.47	24.50	5.91	75.50	60.21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.64	1.12
1.70	3.34	21.24	27.84	7.75	72.16	62.02	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.49	1.17
1.80	5.51	32.82	33.35	11.89	66.65	64.43	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.39	1.21
2.00	17.14	46.98	50.49	23.80	49.51	70.47	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.82	1.41
2.60	49.51	70.47	100.00	46.91	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.38	1.40

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDOH88011 SEAM - ? SAMPLE ID - 51 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 0.50 X 0.15 RELATIVE WEIGHT % - 2.14 ASH % - 47.00

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	13.57	2.55	13.57	2.55	86.43	53.69	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.31	1.31
1.45	10.70	5.10	24.27	3.67	75.73	60.55	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.42	1.36
1.50	5.14	12.19	29.41	5.16	70.59	64.07	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.87	1.45
1.55	2.44	15.49	31.85	5.95	68.15	65.81	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.93	1.48
1.60	1.68	18.88	33.53	6.60	66.47	67.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.13	1.47
1.70	3.45	23.92	36.98	8.22	63.02	69.36	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.82	1.50
1.80	2.86	33.45	39.84	10.03	60.16	71.06	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.85	1.53
2.00	8.51	42.02	48.35	15.66	51.65	75.85	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.02	1.61
2.60	51.65	75.85	100.00	46.75	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.26	1.43

ANALYSIS TYPE - FROTH

FRACTION SIZE(MM) 0.15 X 0.00 RELATIVE WEIGHT % - 1.04 ASH % - 54.16

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
240.00	*****	54.16	100.00	54.16	0.0	0.0	0.0	0.0	13.68	13.68	0.15	0.15	7.12	7.12	1.44	1.44

========== GULF CANADA CORPORATION - COAL DIVISION ==========

---------- C L E A N S I M U L A T E D P R O D U C T R E P O R T ----------

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88011
Coal zone:	?		
Field sample no.:	08352 - 08354	Composite sample no.:	325

---------- PRODUCT COAL ANALYSIS (SP3) ----------

Target Ash: 7.5 %

Standard:	ASTM	
Size analysis		
Fraction size(mm):	6.00 X	0.50
Cutpoint:	sp.g.	1.61
Contribution(%):		1.80
Total yield(%):		1.80

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture(%):	0.83	
Ash(%):	7.63	7.69
Volatile matter(%):	6.68	6.74
Fixed carbon(%):	84.86	85.57
Total sulphur(%):	0.68	0.69
Combustible sulphur(%):	0.66	
Gross calorific value(cal/g):	7,691.00	7,756.00
Volatile matter(dmmf%):	6.50	
Hardgrove index:	51.00	
Phosphorous in coal(%):	0.010	

---------- ASH FUSION ANALYSIS (AFI) ----------

	OXIDIZING ATM	REDUCING ATM
Initial temperature(°C):	1,343.00	1,285.00
Softening temperature(°C):	1,385.00	1,306.00
Hemispherical temperature(°C):	1,401.00	1,327.00
Final temperature(°C):	1,443.00	1,395.00

---------- ASH MINERAL ANALYSIS (AMI) ----------

SiO2(%):	43.92	TiO2(%):	12.62
Al2O3(%):	23.82	Na2O(%):	1.40
Fe2O3(%):	8.89	K2O(%):	0.81
CaO(%):	1.54	SO3(%):	0.76
MgO(%):	2.70	P2O5(%):	0.29

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88011 SEAM - ? SAMPLE ID - 52 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 35.00 X 6.00 RELATIVE WEIGHT % - 75.86 ASH % - 83.40

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	0.02	8.05	0.02	8.05	99.98	83.26	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.23	1.23
1.45	0.07	12.17	0.09	11.25	99.91	83.31	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.12	1.14
1.50	0.04	12.65	0.13	11.68	99.87	83.34	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.17	1.15
1.55	0.03	15.88	0.16	12.47	99.84	83.36	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.76	1.08
1.60	0.03	19.17	0.19	13.53	99.81	83.38	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.69	1.02
1.70	0.03	22.88	0.22	14.80	99.78	83.40	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.58	0.96
1.80	1.71	40.82	1.93	37.85	98.07	84.14	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.11	1.09
2.00	3.43	52.93	5.36	47.50	94.64	85.27	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.28	1.21
2.60	94.64	85.27	100.00	83.25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.99	1.00

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 6.00 X 0.50 RELATIVE WEIGHT % - 17.86 ASH % - 76.06

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	2.33	4.78	2.33	4.78	97.67	77.65	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.12	1.12
1.45	0.55	7.91	2.88	5.38	97.12	78.04	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.31	1.16
1.50	0.41	12.92	3.29	6.32	96.71	78.32	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.29	1.17
1.55	0.32	17.93	3.61	7.35	96.39	78.52	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.29	1.18
1.60	0.11	22.15	3.72	7.78	96.28	78.58	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.10	1.18
1.70	1.34	28.86	5.06	13.37	94.94	79.28	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.23	1.19
1.80	2.52	35.99	7.58	20.89	92.42	80.46	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.24	1.21
2.00	7.91	50.70	15.49	36.11	84.51	83.25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.13	1.17
2.60	84.51	83.25	100.00	75.95	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.64	1.57

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88011 SEAM - ? SAMPLE ID - 52 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 0.50 X 0.15 RELATIVE WEIGHT % - 3.76 ASH % - 52.12

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ/KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	24.60	7.69	24.60	7.69	75.40	66.05	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.19	1.19
1.45	6.13	16.64	30.73	9.48	69.27	70.42	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.40	1.23
1.50	1.36	17.48	32.09	9.81	67.91	71.48	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.50	1.24
1.55	3.19	30.20	35.28	11.66	64.72	73.52	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.79	1.29
1.60	1.62	41.14	36.90	12.95	63.10	74.35	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.95	1.32
1.70	2.21	41.78	39.11	14.58	60.89	75.53	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.05	1.36
1.80	3.57	48.64	42.68	17.43	57.32	77.21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.86	1.40
2.00	5.23	57.35	47.91	21.79	52.09	79.20	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.00	1.47
2.60	52.09	79.20	100.00	51.69	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.63	1.55

ANALYSIS TYPE - FROTH

FRACTION SIZE(MM) 0.15 X 0.00 RELATIVE WEIGHT % - 2.52 ASH % - 49.64

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ/KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
240.00	*****	49.64	100.00	49.64	0.0	0.0	0.0	0.0	14.84	14.84	0.32	0.32	6.70	6.70	1.74	1.74

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88011 SEAM - ? SAMPLE ID - 53 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 35.00 X 6.00 RELATIVE WEIGHT % - 79.80 ASH % - 75.75

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	0.01	3.06	0.01	3.06	99.99	74.33	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.48	0.48
1.45	0.10	4.00	0.11	3.91	99.89	74.40	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.71	1.60
1.50	0.05	9.12	0.16	5.54	99.84	74.44	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.43	1.55
1.55	0.03	12.91	0.19	6.70	99.81	74.45	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.90	1.44
1.60	0.01	18.35	0.20	7.29	99.80	74.46	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.69	1.41
1.70	0.14	28.05	0.34	15.84	99.66	74.53	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.44	1.42
1.80	0.25	35.48	0.59	24.16	99.41	74.62	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.35	1.39
2.00	3.87	52.25	4.46	48.53	95.54	75.53	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.20	1.23
2.60	95.54	75.53	100.00	74.33	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	1.01

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 6.00 X 0.50 RELATIVE WEIGHT % - 14.13 ASH % - 65.59

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	5.73	2.74	5.73	2.74	94.27	69.36	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.78	0.78
1.45	3.00	3.59	8.73	3.03	91.27	71.53	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.88	0.81
1.50	1.29	4.23	10.02	3.19	89.98	72.49	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.22	0.87
1.55	0.42	4.87	10.44	3.25	89.56	72.81	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.40	0.89
1.60	0.43	12.73	10.87	3.63	89.13	73.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.53	0.91
1.70	1.28	18.78	12.15	5.23	87.85	73.89	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.46	0.97
1.80	1.90	27.38	14.05	8.22	85.95	74.92	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.57	1.05
2.00	8.20	42.27	22.25	20.77	77.75	78.36	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.19	1.10
2.60	77.75	78.36	100.00	65.55	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.67	1.54

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88011 SEAM - ? SAMPLE ID - 53 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 0.50 X 0.15 RELATIVE WEIGHT % - 3.46 ASH % - 40.19

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	17.31	2.53	17.31	2.53	82.69	48.56	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.79	0.79
1.45	18.09	4.42	35.40	3.50	64.60	60.92	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.02	0.91
1.50	5.65	7.03	41.05	3.98	58.95	66.09	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.27	0.96
1.55	2.50	15.28	43.55	4.63	56.45	68.34	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.58	0.99
1.60	1.87	18.16	45.42	5.19	54.58	70.06	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.47	1.01
1.70	2.30	24.66	47.72	6.13	52.28	72.06	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.37	1.03
1.80	1.54	33.15	49.26	6.97	50.74	73.24	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.58	1.05
2.00	4.80	46.31	54.06	10.46	45.94	76.05	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.04	1.14
2.60	45.94	76.05	100.00	40.59	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.92	1.50

ANALYSIS TYPE - FROTH

FRACTION SIZE(MM) 0.15 X 0.00 RELATIVE WEIGHT % - 2.61 ASH % - 40.62

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
240.00	*****	40.62	100.00	40.62	0.0	0.0	0.0	0.0	19.20	19.20	0.40	0.40	7.61	7.61	1.85	1.85

GULF CANADA CORPORATION - COAL DIVISION

C L E A N S I M U L A T E D P R O D U C T R E P O R T

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88011
Coal zone:	?		
Field sample no.:	08348 - 08349	Composite sample no.:	326

PRODUCT COAL ANALYSIS (SP3)

Target Ash: 7.5 %

Standard:	ASTM	
Size analysis		
Fraction size(mm):	6.00 X	0.50
Cutpoint:	sp.g.	1.74
Contribution(%):		1.59
Total yield(%):		1.59

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture(%):	0.86	
Ash(%):	7.86	7.93
Volatile matter(%):	6.91	6.97
Fixed carbon(%):	84.37	85.10
Total sulphur(%):	0.63	0.64
Combustible sulphur(%):	0.59	
Gross calorific value(cal/g):	7,698.00	7,765.00
Volatile matter(dmmf%):	6.70	
Hardgrove index:	45.00	
Phosphorous in coal(%):	0.058	

ASH FUSION ANALYSIS (AFI)

	OXIDIZING ATM	REDUCING ATM
Initial temperature(°C):	1,261.00	1,169.00
Softening temperature(°C):	1,301.00	1,201.00
Hemispherical temperature(°C):	1,319.00	1,222.00
Final temperature(°C):	1,369.00	1,280.00

ASH MINERAL ANALYSIS (AMI)

SiO2(%):	47.88	TiO2(%):	6.75
Al2O3(%):	21.55	Na2O(%):	1.27
Fe2O3(%):	7.49	K2O(%):	0.92
CaO(%):	3.81	SO3(%):	1.32
MgO(%):	2.80	P2O5(%):	1.70

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88011 SEAM - K/L SAMPLE ID - 54 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 35.00 X 6.00 RELATIVE WEIGHT % - 64.90 ASH % - 54.45

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.45	0.10	4.78	0.10	4.78	99.90	53.65	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.07	1.07
1.50	0.18	5.26	0.28	5.09	99.72	53.73	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.11	1.10
1.55	0.06	7.83	0.34	5.57	99.66	53.76	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.18	1.11
1.60	0.26	19.00	0.60	11.39	99.40	53.85	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.33	1.21
1.70	14.47	30.65	15.07	29.88	84.93	57.80	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.21	1.21
1.80	14.04	39.24	29.11	34.40	70.89	61.48	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.44	1.32
2.00	34.02	51.62	63.13	43.68	36.87	70.58	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.35	1.34
2.60	36.87	70.58	100.00	53.60	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.04	1.23

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 6.00 X 0.50 RELATIVE WEIGHT % - 25.52 ASH % - 42.12

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	6.01	2.41	6.01	2.41	93.99	44.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.93	0.93
1.45	5.31	5.02	11.32	3.63	88.68	46.33	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.97	0.95
1.50	1.84	8.89	13.16	4.37	86.84	47.13	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.24	0.99
1.55	1.63	15.33	14.79	5.58	85.21	47.74	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.17	1.01
1.60	3.34	18.73	18.13	8.00	81.87	48.92	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.24	1.05
1.70	16.66	27.25	34.79	17.22	65.21	54.45	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.33	1.19
1.80	14.72	34.20	49.51	22.27	50.49	60.36	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.47	1.27
2.00	22.85	46.22	72.36	29.83	27.64	72.05	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.85	1.45
2.60	27.64	72.05	100.00	41.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.13	1.36

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88011 SEAM - K/L SAMPLE ID - 54 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 0.50 X 0.15 RELATIVE WEIGHT % - 5.69 ASH % - 28.95

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	26.87	3.53	26.87	3.53	73.13	37.37	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.22	1.22
1.45	13.79	3.96	40.66	3.68	59.34	45.13	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.45	1.30
1.50	7.41	8.94	48.07	4.49	51.93	50.30	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.33	1.30
1.55	2.30	12.03	50.37	4.83	49.63	52.07	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.77	1.32
1.60	1.84	14.90	52.21	5.19	47.79	53.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.95	1.35
1.70	7.59	19.75	59.80	7.03	40.20	59.87	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.15	1.32
1.80	5.21	26.35	65.01	8.58	34.99	64.87	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.22	1.31
2.00	11.49	43.22	76.50	13.79	23.50	75.45	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.53	1.35
2.60	23.50	75.45	100.00	28.28	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.95	1.49

ANALYSIS TYPE - FROTH

FRACTION SIZE(MM) 0.15 X 0.00 RELATIVE WEIGHT % - 3.89 ASH % - 33.75

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
240.00	*****	33.75	100.00	33.75	0.0	0.0	0.0	0.0	21.70	21.70	0.52	0.52	6.85	6.85	1.65	1.65

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88011 SEAM - k/1 SAMPLE ID - 55 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 35.00 X 6.00 RELATIVE WEIGHT % - 80.78 ASH % - 74.57

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	0.03	3.41	0.03	3.41	99.97	74.59	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.34	0.34
1.45	0.09	4.25	0.12	4.04	99.88	74.65	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.18	0.97
1.50	0.10	5.30	0.22	4.61	99.78	74.72	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.16	1.06
1.55	0.06	9.02	0.28	5.56	99.72	74.76	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.25	1.10
1.60	0.01	10.34	0.29	5.72	99.71	74.77	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.16	1.10
1.70	0.08	20.57	0.37	8.93	99.63	74.81	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.51	1.19
1.80	4.09	42.46	4.46	39.68	95.54	76.19	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.33	1.32
2.00	5.83	53.64	10.29	47.59	89.71	77.66	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.09	1.19
2.60	89.71	77.66	100.00	74.57	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.02	1.04

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 6.00 X 0.50 RELATIVE WEIGHT % - 14.31 ASH % - 64.66

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	2.66	3.15	2.66	3.15	97.34	66.35	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.13	1.13
1.45	5.41	3.44	8.07	3.34	91.93	70.05	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.15	1.14
1.50	1.86	5.21	9.93	3.69	90.07	71.39	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.28	1.17
1.55	0.61	12.79	10.54	4.22	89.46	71.79	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.26	1.17
1.60	1.04	17.89	11.58	5.45	88.42	72.42	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.34	1.19
1.70	1.91	22.22	13.49	7.82	86.51	73.53	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.30	1.20
1.80	3.10	37.83	16.59	13.43	83.41	74.86	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.33	1.23
2.00	9.47	48.06	26.06	26.01	73.94	78.29	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.80	1.44
2.60	73.94	78.29	100.00	64.67	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.76	1.68

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88011 SEAM - K/I SAMPLE ID - 55 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 0.50 X 0.15 RELATIVE WEIGHT % - 2.83 ASH % - 32.12

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	11.18	2.45	11.18	2.45	88.82	35.86	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.28	1.28
1.45	26.42	2.79	37.60	2.69	62.40	49.86	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.15	1.19
1.50	13.89	4.36	51.49	3.14	48.51	62.89	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.35	1.23
1.55	1.36	9.76	52.85	3.31	47.15	64.42	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.34	1.23
1.60	1.56	13.40	54.41	3.60	45.59	66.17	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.49	1.24
1.70	4.74	19.19	59.15	4.85	40.85	71.62	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.69	1.28
1.80	2.24	30.78	61.39	5.79	38.61	73.98	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.71	1.29
2.00	4.88	40.47	66.27	8.35	33.73	78.83	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.81	1.33
2.60	33.74	78.82	100.01	32.12	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.65	1.44

ANALYSIS TYPE - FROTH

FRACTION SIZE(MM) 0.15 X 0.00 RELATIVE WEIGHT % - 2.08 ASH % - 32.00

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
240.00	*****	32.00	100.00	32.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.30	1.30

GULF CANADA CORPORATION - COAL DIVISION

C L E A N S I M U L A T E D P R O D U C T R E P O R T

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88011
Coal zone:	K/L		
Field sample no.:	08171 - 08172	Composite sample no.:	327

PRODUCT COAL ANALYSIS (SP3)

Target Ash: 7.5 %

Standard:	ASTM	
Size analysis		
Fraction size (mm):	6.00 X	0.50
Cutpoint:	sp.g.	1.60
Contribution (%):		3.13
Total yield (%):		3.13

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture (%):	0.98	
Ash (%):	7.80	7.88
Volatile matter (%):	6.78	6.85
Fixed carbon (%):	84.44	85.27
Total sulphur (%):	0.66	0.67
Combustible sulphur (%):	0.65	
Gross calorific value (cal/g):	7,705.00	7,782.00
Volatile matter (dmmf%):	6.60	
Hardgrove index:	49.00	
Phosphorous in coal (%):	0.018	

ASH FUSION ANALYSIS (AFI)

	OXIDIZING ATM	REDUCING ATM
Initial temperature (°C):	1,369.00	1,248.00
Softening temperature (°C):	1,443.00	1,385.00
Hemispherical temperature (°C):	1,472.00	1,411.00
Final temperature (°C):	1,472.00	1,472.00

ASH MINERAL ANALYSIS (AMI)

SiO2 (%):	49.64	TiO2 (%):	5.50
Al2O3 (%):	27.22	Na2O (%):	1.89
Fe2O3 (%):	5.23	K2O (%):	1.28
CaO (%):	1.60	SO3 (%):	0.42
MgO (%):	1.91	P2O5 (%):	0.52

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88011 SEAM - K SAMPLE ID - 56 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 35.00 X 6.00 RELATIVE WEIGHT % - 56.32 ASH % - 47.98

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ/KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	0.19	7.64	0.19	7.64	99.81	48.27	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.93	0.93
1.45	3.61	10.40	3.80	10.26	96.20	49.69	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.37	1.35
1.50	6.96	11.55	10.76	11.10	89.24	52.67	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.88	1.05
1.55	11.13	18.31	21.89	14.76	78.11	57.57	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.72	0.88
1.60	9.03	22.49	30.92	17.02	69.08	62.15	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.84	0.87
1.70	8.46	26.32	39.38	19.02	60.62	67.15	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.83	0.86
1.80	3.84	36.08	43.22	20.53	56.78	69.25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.96	0.87
2.00	6.59	42.69	49.81	23.47	50.19	72.74	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.77	0.86
2.60	50.19	72.74	100.00	48.20	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.78	0.82

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 6.00 X 0.50 RELATIVE WEIGHT % - 29.46 ASH % - 28.30

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ/KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	11.89	2.42	11.89	2.42	88.11	31.11	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.57	0.57
1.45	8.97	5.53	20.86	3.76	79.14	34.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.72	0.63
1.50	14.05	9.38	34.91	6.02	65.09	39.32	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.59	0.62
1.55	11.73	13.25	46.64	7.84	53.36	45.05	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.76	0.65
1.60	8.37	15.65	55.01	9.03	44.99	50.52	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	0.71
1.70	11.10	19.27	66.11	10.75	33.89	60.75	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.48	0.84
1.80	7.41	33.05	73.52	12.99	26.48	68.51	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.13	0.87
2.00	6.32	39.12	79.84	15.06	20.16	77.72	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.75	0.94
2.60	20.16	77.72	100.00	27.69	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.55	1.06

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88011 SEAM - K SAMPLE ID - 56 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 0.50 X 0.15 RELATIVE WEIGHT % - 11.16 ASH % - 14.86

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	28.76	2.19	28.76	2.19	71.24	20.09	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.38	1.38
1.45	13.14	3.36	41.90	2.56	58.10	23.87	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.42	1.39
1.50	12.65	4.91	54.55	3.10	45.45	29.15	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.70	1.46
1.55	26.06	14.15	80.61	6.67	19.39	49.30	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.43	1.45
1.60	2.89	19.17	83.50	7.11	16.50	54.58	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.44	1.45
1.70	2.31	19.64	85.81	7.44	14.19	60.27	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.11	1.44
1.80	2.83	29.10	88.64	8.14	11.36	68.03	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.03	1.43
2.00	1.91	37.91	90.55	8.76	9.45	74.12	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.68	1.44
2.60	9.45	74.12	100.00	14.94	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.07	1.40

ANALYSIS TYPE - FROTH

FRACTION SIZE(MM) 0.15 X 0.00 RELATIVE WEIGHT % - 3.06 ASH % - 15.19

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
240.00	*****	3.06	100.00	3.06	0.0	0.0	0.0	0.0	28.21	28.21	0.53	0.53	6.55	6.55	1.72	1.72

GULF CANADA CORPORATION - COAL DIVISION

CLEAN SIMULATED PRODUCT REPORT

March 02, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88011
Coal zone:	K		
Field sample no.:	08175 - 08177	Composite sample no.:	328

PRODUCT COAL ANALYSIS (SP3)

Target Ash: 7.5 %

Standard:	ASTM
Size analysis	
Fraction size (mm):	6.00 X 0.50
Cutpoint:	sp.g. 1.54
Contribution (%):	13.65
Total yield (%):	13.65

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture (%):	1.07	
Ash (%):	7.83	7.91
Volatile matter (%):	7.94	8.03
Fixed carbon (%):	83.16	84.06
Gross calorific value (cal/g):	7,698.00	7,781.00
Volatile matter (dmmf%):	8.10	
Hardgrove index:	50.00	
Phosphorous in coal (%):	0.079	

ASH FUSION ANALYSIS (AF1)

	OXIDIZING ATM	REDUCING ATM
Initial temperature (°C):	1,269.00	1,243.00
Softening temperature (°C):	1,332.00	1,306.00
Hemispherical temperature (°C):	1,374.00	1,348.00
Final temperature (°C):	1,472.00	1,472.00

ASH MINERAL ANALYSIS (AM1)

SiO2 (%):	56.76	TiO2 (%):	2.46
Al2O3 (%):	24.95	Na2O (%):	2.18
Fe2O3 (%):	3.26	K2O (%):	1.07
CaO (%):	3.19	SO3 (%):	0.36
MgO (%):	1.41	P2O5 (%):	2.32

GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRODH88011 SEAM - 1 SAMPLE ID - 57 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 35.00 X 6.00 RELATIVE WEIGHT % - 56.20 ASH % - 43.47

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	3.51	4.95	3.51	4.95	96.49	45.17	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.91	0.91
1.45	11.71	6.85	15.22	6.41	84.78	50.46	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.78	0.81
1.50	7.17	11.55	22.39	8.06	77.61	54.06	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.91	0.84
1.55	11.39	12.65	33.78	9.61	66.22	61.18	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.98	0.89
1.60	6.68	21.62	40.46	11.59	59.54	65.62	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.02	0.91
1.70	9.31	29.61	49.77	14.96	50.23	72.29	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.94	0.92
1.80	3.77	32.92	53.54	16.22	46.46	75.49	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.10	0.93
2.00	5.24	47.25	58.78	18.99	41.22	79.08	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.83	0.92
2.60	41.22	79.08	100.00	43.76	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.50	1.16

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 6.00 X 0.50 RELATIVE WEIGHT % - 31.65 ASH % - 32.98

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	20.92	3.68	20.92	3.68	79.08	40.65	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.78	0.78
1.45	7.39	7.31	28.31	4.63	71.69	44.08	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.98	0.83
1.50	14.67	11.68	42.98	7.03	57.02	52.42	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.03	0.90
1.55	7.70	15.15	50.68	8.27	49.32	58.24	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.21	0.95
1.60	5.51	17.47	56.19	9.17	43.81	63.37	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.44	1.00
1.70	9.65	22.19	65.84	11.08	34.16	75.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.10	1.16
1.80	2.16	26.09	68.00	11.56	32.00	78.30	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.81	1.18
2.00	3.17	41.76	71.17	12.90	28.83	82.32	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.55	1.19
2.60	28.83	82.32	100.00	32.91	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.04	1.15

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88011 SEAM - I SAMPLE ID - 57 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 0.50 X 0.15 RELATIVE WEIGHT % - 8.09 ASH % - 27.79

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	44.94	6.13	44.94	6.13	55.06	43.64	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.63	1.63
1.45	13.67	11.11	58.61	7.29	41.39	54.38	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.99	1.71
1.50	1.04	13.98	59.65	7.41	40.35	55.42	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.96	1.72
1.55	8.04	14.46	67.69	8.25	32.31	65.62	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.78	1.73
1.60	0.47	14.50	68.16	8.29	31.84	66.37	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.65	1.73
1.70	3.62	17.52	71.78	8.75	28.22	72.64	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.63	1.72
1.80	3.28	21.22	75.06	9.30	24.94	79.40	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.83	1.73
2.00	2.48	35.29	77.54	10.13	22.46	84.27	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.53	1.72
2.60	22.46	84.27	100.00	26.78	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.27	1.62

ANALYSIS TYPE - FROTH

FRACTION SIZE(MM) 0.15 X 0.00 RELATIVE WEIGHT % - 4.06 ASH % - 53.24

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
240.00	*****	53.24	100.00	53.24	0.0	0.0	0.0	0.0	26.07	26.07	0.40	0.40	6.28	6.28	1.58	1.58

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88011 SEAM - I SAMPLE ID - 58 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 35.00 X 6.00 RELATIVE WEIGHT % - 61.76 ASH % - 16.99

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	5.84	3.71	5.84	3.71	94.16	17.52	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.79	0.79
1.45	41.13	6.05	46.97	5.76	53.03	26.41	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.74	0.75
1.50	22.42	11.14	69.39	7.50	30.61	37.60	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.88	0.79
1.55	9.50	16.59	78.89	8.59	21.11	47.06	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.81	0.79
1.60	1.25	20.58	80.14	8.78	19.86	48.72	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.49	0.80
1.70	2.15	28.30	82.29	9.29	17.71	51.20	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.41	0.82
1.80	1.01	29.10	83.30	9.53	16.70	52.54	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.46	0.83
2.00	6.73	34.29	90.03	11.38	9.97	64.86	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.68	0.82
2.60	9.97	64.86	100.00	16.71	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.30	0.86

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 6.00 X 0.50 RELATIVE WEIGHT % - 30.07 ASH % - 12.84

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	22.67	2.61	22.67	2.61	77.33	14.96	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.71	0.71
1.45	16.27	5.14	38.94	3.67	61.06	17.58	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.88	0.78
1.50	37.30	9.39	76.24	6.47	23.76	30.43	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.88	0.83
1.55	7.36	13.53	83.60	7.09	16.40	38.02	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.02	0.85
1.60	3.56	16.86	87.16	7.49	12.84	43.89	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.44	0.87
1.70	4.25	21.67	91.41	8.15	8.59	54.88	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.51	0.90
1.80	1.26	28.55	92.67	8.42	7.33	59.40	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.62	0.91
2.00	1.52	38.51	94.19	8.91	5.81	64.87	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.10	0.91
2.60	5.81	64.87	100.00	12.16	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.81	0.97

GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88011 SEAM - I SAMPLE ID - 58 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 0.50 X 0.15 RELATIVE WEIGHT % - 5.89 ASH % - 15.18

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	31.26	3.50	31.26	3.50	68.74	19.69	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.51	1.51
1.45	20.73	3.99	51.99	3.70	48.01	26.47	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.38	1.46
1.50	10.32	6.46	62.31	4.15	37.69	31.94	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.90	1.53
1.55	7.12	8.86	69.43	4.64	30.57	37.32	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.01	1.58
1.60	5.14	10.96	74.57	5.07	25.43	42.65	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.86	1.60
1.70	9.72	15.08	84.29	6.23	15.71	59.70	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.21	1.55
1.80	2.34	25.40	86.63	6.74	13.37	65.71	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.60	1.56
2.00	3.47	38.22	90.10	7.96	9.90	75.34	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.55	1.56
2.60	9.90	75.34	100.00	14.63	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.98	1.60

ANALYSIS TYPE - FROTH

FRACTION SIZE(MM) 0.15 X 0.00 RELATIVE WEIGHT % - 2.28 ASH % - 19.82

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
240.00	*****	19.82	100.00	19.82	0.0	0.0	0.0	0.0	27.39	27.39	0.41	0.41	6.29	6.29	1.28	1.28

SAMPLE PRODUCT ID: SP4 COAL COMPOSITION ID: CC1 ULTIMATE ID:

========== GULF CANADA CORPORATION - COAL DIVISION ==========
---------- C L E A N S I M U L A T E D P R O D U C T R E P O R T ----------

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88011
Coal zone:	I		
Field sample no.:	08180	Composite sample no.:	232

---------- PRODUCT COAL ANALYSIS (SP2) ----------

Target Ash: 8.0 %

Standard:	ASTM
Size analysis	
Fraction size(mm):	35.00 X 6.00
Cutpoint:	sp.g. 1.50
Contribution(%):	15.26
Total yield(%):	15.26

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture(%):	0.88	
Ash(%):	8.18	8.25
Volatile matter(%):	6.64	6.70
Fixed carbon(%):	84.30	85.05
Total sulphur(%):	0.56	0.56
Combustible sulphur(%):	0.54	
Gross calorific value(cal/g):	7,464.00	7,530.00
Volatile matter(dmmf%):	6.50	
Hardgrove index:	42.00	
Phosphorous in coal(%):	0.011	

---------- ASH FUSION ANALYSIS (AF1) ----------

	OXIDIZING ATM	REDUCING ATM
Initial temperature(°C):	1,374.00	1,348.00
Softening temperature(°C):	1,443.00	1,422.00
Hemispherical temperature(°C):	1,472.00	1,453.00
Final temperature(°C):	1,472.00	1,472.00

---------- ASH MINERAL ANALYSIS (AMI) ----------

SiO2(%):	61.20	TiO2(%):	0.78
Al2O3(%):	23.06	Na2O(%):	1.99
Fe2O3(%):	4.03	K2O(%):	1.08
CaO(%):	1.74	SO3(%):	0.69
MgO(%):	1.76	P2O5(%):	0.32

GULF CANADA CORPORATION - COAL DIVISION

C L E A N S I M U L A T E D P R O D U C T R E P O R T

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88011
Coal zone:	1		
Field sample no.:	08181 - 08182	Composite sample no.:	233

PRODUCT COAL ANALYSIS (SP2)

Target Ash: 8.0 %

Standard:	ASTM
Size analysis	
Fraction size(mm):	35.00 X 6.00
Cutpoint:	sp.g. 1.52
Contribution(%):	46.04
Total yield(%):	46.04

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture(%):	0.76	
Ash(%):	7.83	7.89
Volatile matter(%):	6.65	6.70
Fixed carbon(%):	84.76	85.41
Total sulphur(%):	0.47	0.47
Combustible sulphur(%):	0.43	
Gross calorific value(cal/g):	7,665.00	7,724.00
Volatile matter(dmmf%):	6.50	
Hardgrove index:	41.00	
Phosphorous in coal(%):	0.156	

ASH FUSION ANALYSIS (AF1)

	OXIDIZING ATM	REDUCING ATM
Initial temperature(°C):	1,269.00	1,253.00
Softening temperature(°C):	1,285.00	1,274.00
Hemispherical temperature(°C):	1,295.00	1,285.00
Final temperature(°C):	1,472.00	1,459.00

ASH MINERAL ANALYSIS (AM1)

SiO2(%):	49.86	TiO2(%):	1.42
Al2O3(%):	25.33	Na2O(%):	2.26
Fe2O3(%):	4.58	K2O(%):	0.87
CaO(%):	5.01	SO3(%):	1.37
MgO(%):	1.61	P2O5(%):	4.56

SAMPLE PRODUCT ID: SP3 COAL COMPOSITION ID: CC1 ULTIMATE ID:

========== GULF CANADA CORPORATION - COAL DIVISION ==========

---------- C L E A N S I M U L A T E D P R O D U C T R E P O R T ----------

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88011
Coal zone:	1		
Field sample no.:	08180 - 08182	Composite sample no.:	329

---------- PRODUCT COAL ANALYSIS (SP3) ----------

Target Ash: 7.5 %

Standard:	ASTM
Size analysis	
Fraction size(mm):	6.00 X 0.50
Cutpoint:	sp.g. 1.56
Contribution(%):	22.37
Total yield(%):	22.37

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture(%):	0.86	
Ash(%):	7.18	7.24
Volatile matter(%):	6.51	6.57
Fixed carbon(%):	85.45	86.19
Total sulphur(%):	0.48	0.48
Combustible sulphur(%):	0.46	
Gross calorific value(cal/g):	7,789.00	7,857.00
Volatile matter(dmmf%):	6.40	
Hardgrove index:	47.00	
Phosphorous in coal(%):	0.103	

---------- ASH FUSION ANALYSIS (AF1) ----------

	OXIDIZING ATM	REDUCING ATM
Initial temperature(°C):	1,243.00	1,222.00
Softening temperature(°C):	1,280.00	1,274.00
Hemispherical temperature(°C):	1,338.00	1,327.00
Final temperature(°C):	1,411.00	1,340.00

---------- ASH MINERAL ANALYSIS (AM1) ----------

SiO2(%):	53.16	TiO2(%):	1.58
Al2O3(%):	23.82	Na2O(%):	2.16
Fe2O3(%):	5.61	K2O(%):	0.81
CaO(%):	4.00	SO3(%):	0.61
MgO(%):	1.60	P2O5(%):	3.30

GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRODH88011 SEAM - H SAMPLE ID - 59 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 35.00 X 6.00 RELATIVE WEIGHT % - 43.37 ASH % - 58.81

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ/KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	0.03	7.46	0.03	7.46	99.97	58.04	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.53	0.53
1.45	0.23	8.76	0.26	8.61	99.74	58.15	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.09	1.03
1.50	0.51	9.40	0.77	9.13	99.23	58.40	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.04	1.04
1.55	4.40	18.28	5.17	16.92	94.83	60.26	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.83	0.86
1.60	2.03	21.22	7.20	18.13	92.80	61.12	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.87	0.86
1.70	9.08	28.61	16.28	23.98	83.72	64.64	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.85	0.86
1.80	14.89	36.10	31.17	29.77	68.83	70.82	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.94	0.90
2.00	15.90	44.08	47.07	34.60	52.93	78.85	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.01	0.93
2.60	52.93	78.85	100.00	58.02	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.25	1.10

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 6.00 X 0.50 RELATIVE WEIGHT % - 37.73 ASH % - 35.64

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ/KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	2.50	1.90	2.50	1.90	97.50	36.42	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.94	0.94
1.45	8.26	4.60	10.76	3.97	89.24	39.37	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.77	0.81
1.50	8.81	9.08	19.57	6.27	80.43	42.69	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.84	0.82
1.55	7.82	13.34	27.39	8.29	72.61	45.85	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.95	0.86
1.60	5.86	16.03	33.25	9.65	66.75	48.46	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.15	0.91
1.70	13.48	19.81	46.73	12.58	53.27	55.71	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.82	1.17
1.80	11.69	26.26	58.42	15.32	41.58	63.99	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.61	1.26
2.00	13.55	38.89	71.97	19.76	28.03	76.13	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.14	1.24
2.60	28.03	76.13	100.00	35.56	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.19	1.22

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88011 SEAM - H SAMPLE ID - 59 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 0.50 X 0.15 RELATIVE WEIGHT % - 11.30 ASH % - 26.50

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	1.81	2.07	1.81	2.07	98.19	26.38	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.23	1.23
1.45	22.60	3.34	24.41	3.25	75.59	33.27	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.27	1.27
1.50	8.21	4.52	32.62	3.57	67.38	36.77	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.22	1.26
1.55	6.92	8.89	39.54	4.50	60.46	39.96	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.75	1.34
1.60	4.67	11.59	44.21	5.25	55.79	42.34	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.01	1.41
1.70	9.46	15.55	53.67	7.06	46.33	47.81	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.88	1.49
1.80	8.35	21.58	62.02	9.02	37.98	53.57	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.10	1.44
2.00	21.46	36.29	83.48	16.03	16.52	76.02	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.99	1.58
2.60	16.52	76.02	100.00	25.94	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.23	1.52

ANALYSIS TYPE - FROTH

FRACTION SIZE(MM) 0.15 X 0.00 RELATIVE WEIGHT % - 7.60 ASH % - 22.37

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
240.00	*****	22.37	100.00	22.37	0.0	0.0	0.0	0.0	26.50	26.50	0.40	0.40	5.73	5.73	1.56	1.56

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88011 SEAM - H SAMPLE ID - 60 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 35.00 X 6.00 RELATIVE WEIGHT % - 38.80 ASH % - 39.43

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	1.33	2.27	1.33	2.27	98.67	39.52	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.74	0.74
1.45	12.58	6.58	13.91	6.17	86.09	44.33	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.66	0.67
1.50	15.35	11.55	29.26	8.99	70.74	51.45	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.85	0.76
1.55	14.25	17.05	43.51	11.63	56.49	60.13	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.91	0.81
1.60	4.44	20.35	47.95	12.44	52.05	63.52	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.12	0.84
1.70	6.13	27.06	54.08	14.10	45.92	68.39	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.44	0.91
1.80	3.90	32.44	57.98	15.33	42.02	71.72	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.44	0.94
2.00	5.55	38.75	63.53	17.38	36.47	76.74	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.30	0.97
2.60	36.47	76.74	100.00	39.03	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.37	1.12

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 6.00 X 0.50 RELATIVE WEIGHT % - 42.24 ASH % - 19.13

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	16.75	2.99	16.75	2.99	83.25	21.52	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.62	0.62
1.45	26.94	7.33	43.69	5.67	56.31	28.30	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.72	0.68
1.50	16.70	11.96	60.39	7.41	39.61	35.19	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.79	0.71
1.55	12.15	13.83	72.54	8.48	27.46	44.64	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.01	0.76
1.60	6.51	16.73	79.05	9.16	20.95	53.32	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.40	0.81
1.70	6.71	21.65	85.76	10.14	14.24	68.24	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.17	0.84
1.80	2.88	29.16	88.64	10.76	11.36	78.15	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.26	0.86
2.00	1.85	41.75	90.49	11.39	9.51	85.23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.79	0.87
2.60	9.51	85.23	100.00	18.41	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.50	0.93

GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRODH88011 SEAM - H SAMPLE ID - 60 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 0.50 X 0.15 RELATIVE WEIGHT % - 10.51 ASH % - 13.77

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	13.24	1.70	13.24	1.70	86.76	14.51	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.79	0.79
1.45	32.98	2.31	46.22	2.14	53.78	21.99	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.85	0.83
1.50	18.17	5.10	64.39	2.97	35.61	30.60	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.92	0.86
1.55	10.28	7.36	74.67	3.58	25.33	40.03	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.09	0.89
1.60	6.45	9.71	81.12	4.06	18.88	50.39	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.34	0.93
1.70	5.73	14.80	86.85	4.77	13.15	65.90	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.54	0.97
1.80	2.85	29.74	89.70	5.57	10.30	75.91	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.49	0.98
2.00	1.52	37.01	91.22	6.09	8.78	82.64	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.88	1.00
2.60	8.78	82.64	100.00	12.81	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.88	1.07

ANALYSIS TYPE - FROTH

FRACTION SIZE(MM) 0.15 X 0.00 RELATIVE WEIGHT % - 8.45 ASH % - 15.65

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
240.00	*****	15.65	100.00	15.65	0.0	0.0	0.0	0.0	29.02	29.02	0.43	0.43	5.52	5.52	1.77	1.77

========== GULF CANADA CORPORATION - COAL DIVISION ==========

---------- C L E A N S I M U L A T E D P R O D U C T R E P O R T ----------

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88011
Coal zone:	H		
Field sample no.:	08186	Composite sample no.:	234

---------- PRODUCT COAL ANALYSIS (SP4) ----------

Target Ash: 10.0 %

Standard:	ASTM	
Size analysis		
Fraction size(mm):	35.00 X	6.00
Cutpoint:	sp.g.	1.51
Contribution(%):		7.76
Total yield(%):		7.76

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture(%):	0.89	
Ash(%):	9.56	9.65
Volatile matter(%):	6.06	6.11
Fixed carbon(%):	83.49	84.24
Total sulphur(%):	0.50	0.50
Combustible sulphur(%):	0.49	
Gross calorific value(cal/g):	7,526.00	7,594.00
Volatile matter(dmmf%):	5.80	
Hardgrove index:	44.00	
Phosphorous in coal(%):	0.243	

---------- ASH FUSION ANALYSIS (AFI) ----------

	OXIDIZING ATM	REDUCING ATM
Initial temperature(°C):	1,293.00	1,269.00
Softening temperature(°C):	1,306.00	1,293.00
Hemispherical temperature(°C):	1,314.00	1,306.00
Final temperature(°C):	1,348.00	1,345.00

---------- ASH MINERAL ANALYSIS (AMI) ----------

SiO2(%):	52.16	TiO2(%):	1.86
Al2O3(%):	23.44	Na2O(%):	2.53
Fe2O3(%):	1.52	K2O(%):	0.48
CaO(%):	7.53	SO3(%):	0.38
MgO(%):	1.03	P2O5(%):	5.82

GULF CANADA CORPORATION - COAL DIVISION

C L E A N S I M U L A T E D P R O D U C T R E P O R T

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88011
Coal zone:	H		
Field sample no.:	08186	Composite sample no.:	330

PRODUCT COAL ANALYSIS (SP3)

Target Ash: 7.5 %

Standard: ASTM

Size analysis

Fraction size(mm):	6.00 X 0.50
Cutpoint:	sp.g. 1.51
Contribution(%):	18.07
Total yield(%):	18.07

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture(%):	0.93	
Ash(%):	7.21	7.28
Volatile matter(%):	7.76	7.83
Fixed carbon(%):	84.10	84.89
Total sulphur(%):	0.53	0.53
Combustible sulphur(%):	0.52	
Gross calorific value(cal/g):	7,784.00	7,857.00
Volatile matter(dmmf%):	7.70	
Hardgrove index:	43.00	
Phosphorous in coal(%):	0.099	

ASH FUSION ANALYSIS (AF1)

	OXIDIZING ATM	REDUCING ATM
Initial temperature(°C):	1,238.00	1,148.00
Softening temperature(°C):	1,274.00	1,243.00
Hemispherical temperature(°C):	1,290.00	1,288.00
Final temperature(°C):	1,427.00	1,422.00

ASH MINERAL ANALYSIS (AM1)

SiO2(%):	51.18	TiO2(%):	2.60
Al2O3(%):	24.57	Na2O(%):	2.29
Fe2O3(%):	5.75	K2O(%):	0.60
CaO(%):	4.79	SO3(%):	0.46
MgO(%):	1.17	P2O5(%):	3.14

GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88012 SEAM - I SAMPLE ID - 62 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 35.00 X 6.00 RELATIVE WEIGHT % - 56.70 ASH % - 0.0

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	4.08	4.10	4.08	4.10	95.92	32.55	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.91	0.91
1.45	24.82	7.41	28.90	6.94	71.10	41.32	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.82	0.83
1.50	11.61	12.42	40.51	8.51	59.49	46.96	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.87	0.84
1.55	12.31	17.54	52.82	10.62	47.18	54.64	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.01	0.88
1.60	3.67	23.17	56.49	11.43	43.51	57.29	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.19	0.90
1.70	5.28	28.14	61.77	12.86	38.23	61.32	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.10	0.92
1.80	2.98	37.12	64.75	13.98	35.25	63.37	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.09	0.93
2.00	10.32	51.04	75.07	19.07	24.93	68.47	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.22	0.97
2.60	24.93	68.47	100.00	31.39	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.16	1.02

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 6.00 X 0.50 RELATIVE WEIGHT % - 32.63 ASH % - 0.0

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	7.46	5.16	7.46	5.16	92.54	26.25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.85	0.85
1.45	25.84	5.24	33.30	5.22	66.70	34.39	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.23	1.14
1.50	15.11	10.52	48.41	6.88	51.59	41.39	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.99	1.10
1.55	10.09	13.88	58.50	8.08	41.50	48.08	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.16	1.11
1.60	5.02	17.84	63.52	8.85	36.48	52.24	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.21	1.12
1.70	7.80	22.29	71.32	10.32	28.68	60.38	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.28	1.13
1.80	4.07	28.73	75.39	11.32	24.61	65.61	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.61	1.16
2.00	4.90	41.98	80.29	13.19	19.71	71.49	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.80	1.20
2.60	19.71	71.49	100.00	24.68	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.40	1.24

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88012 SEAM - I SAMPLE ID - 62 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 0.50 X 0.15 RELATIVE WEIGHT % - 8.10 ASH % - 0.0

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ/KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	1.10	2.08	1.10	2.08	98.90	28.07	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.55	1.55
1.45	11.74	4.36	12.84	4.16	87.16	31.27	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.42	1.43
1.50	15.37	4.75	28.21	4.48	71.79	36.94	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.46	1.45
1.55	11.02	7.70	39.23	5.39	60.77	42.25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.81	1.55
1.60	8.56	10.10	47.79	6.23	52.21	47.52	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.20	1.49
1.70	11.13	15.78	58.92	8.04	41.08	56.12	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.27	1.45
1.80	7.16	22.01	66.08	9.55	33.92	63.32	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.44	1.44
2.00	8.41	37.22	74.49	12.67	25.51	71.92	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.50	1.45
2.60	25.51	71.92	100.00	27.79	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.86	1.56

GULF CANADA CORPORATION - COAL DIVISION

C L E A N S I M U L A T E D P R O D U C T R E P O R T

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88012
Coal zone:	I		
Field sample no.:	08148	Composite sample no.:	235

PRODUCT COAL ANALYSIS (SP2)

Target Ash: 8.0 %

Standard:	ASTM
Size analysis	
Fraction size (mm):	35.00 X 6.00
Cutpoint:	sp.g. 1.48
Contribution (%):	25.09
Total yield (%):	25.09

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture (%):	0.46	
Ash (%):	7.78	7.82
Volatile matter (%):	6.93	6.96
Fixed carbon (%):	84.83	85.22
Total sulphur (%):	0.49	0.49
Combustible sulphur (%):	0.47	
Gross calorific value (cal/g):	7,653.00	7,688.00
Volatile matter (dmmf%):	6.80	
Hardgrove index:	46.00	
Phosphorous in coal (%):	0.116	

ASH FUSION ANALYSIS (AF1)

	OXIDIZING ATM	REDUCING ATM
Initial temperature (°C):	1,243.00	1,148.00
Softening temperature (°C):	1,290.00	1,245.00
Hemispherical temperature (°C):	1,319.00	1,303.00
Final temperature (°C):	1,367.00	1,348.00

ASH MINERAL ANALYSIS (AM1)

SiO2 (%):	55.83	TiO2 (%):	0.69
Al2O3 (%):	22.68	Na2O (%):	1.46
Fe2O3 (%):	4.43	K2O (%):	0.78
CaO (%):	5.04	SO3 (%):	0.68
MgO (%):	1.83	P2O5 (%):	3.41

GULF CANADA CORPORATION - COAL DIVISION

C L E A N S I M U L A T E D P R O D U C T R E P O R T

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88012
Coal zone:	1		
Field sample no.:	08148	Composite sample no.:	331

PRODUCT COAL ANALYSIS (SP3)

Target Ash: 7.5 %

Standard:	ASTM
Size analysis	
Fraction size (mm):	6.00 X 0.50
Cutpoint:	sp.g. 1.53
Contribution (%):	18.22
Total yield (%):	18.22

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture (%):	0.89	
Ash (%):	7.24	7.31
Volatile matter (%):	6.43	6.49
Fixed carbon (%):	85.44	86.20
Total sulphur (%):	0.51	0.51
Combustible sulphur (%):	0.47	
Gross calorific value (cal/g):	7,722.00	7,792.00
Volatile matter (dmmf%):	6.30	
Hardgrove index:	48.00	
Phosphorous in coal (%):	0.030	

ASH FUSION ANALYSIS (AF1)

	OXIDIZING ATM	REDUCING ATM
Initial temperature (°C):	1,253.00	1,174.00
Softening temperature (°C):	1,338.00	1,269.00
Hemispherical temperature (°C):	1,359.00	1,317.00
Final temperature (°C):	1,406.00	1,404.00

ASH MINERAL ANALYSIS (AM1)

SiO2 (%):	57.38	TiO2 (%):	1.20
Al2O3 (%):	22.30	Na2O (%):	1.62
Fe2O3 (%):	5.46	K2O (%):	0.92
CaO (%):	3.22	SO3 (%):	1.22
MgO (%):	2.61	P2O5 (%):	0.94

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88012 SEAM - K SAMPLE ID - 64 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 35.00 X 6.00 RELATIVE WEIGHT % - 53.64 ASH % - 0.0

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	0.55	3.74	0.55	3.74	99.45	32.24	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.32	1.32
1.45	3.21	6.66	3.76	6.23	96.24	33.09	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.81	0.88
1.50	5.33	10.47	9.09	8.72	90.91	34.42	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.88	0.88
1.55	7.98	15.10	17.07	11.70	82.93	36.28	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.99	0.93
1.60	14.09	21.56	31.16	16.16	68.84	39.29	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.90	0.92
1.70	18.91	28.40	50.07	20.78	49.93	43.42	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.96	0.93
1.80	22.52	33.80	72.59	24.82	27.41	51.32	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.06	0.97
2.00	8.95	38.91	81.54	26.37	18.46	57.33	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.09	0.99
2.60	18.46	57.33	100.00	32.08	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.97	0.98

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 6.00 X 0.50 RELATIVE WEIGHT % - 36.37 ASH % - 0.0

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	5.50	2.47	5.50	2.47	94.50	27.78	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.92	0.92
1.45	20.02	5.10	25.52	4.53	74.48	33.87	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.76	0.79
1.50	15.22	9.75	40.74	6.48	59.26	40.07	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.79	0.79
1.55	8.44	13.85	49.18	7.75	50.82	44.42	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.90	0.81
1.60	5.44	17.10	54.62	8.68	45.38	47.70	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.07	0.84
1.70	11.25	22.12	65.87	10.97	34.13	56.13	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.13	0.89
1.80	7.54	28.28	73.41	12.75	26.59	64.02	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.47	0.95
2.00	8.46	39.68	81.87	15.53	18.13	75.38	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.21	0.97
2.60	18.13	75.38	100.00	26.38	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.92	1.15

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDHB8012 SEAM - K SAMPLE ID - 64 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 0.50 X 0.15 RELATIVE WEIGHT % - 6.95 ASH % - 0.0

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	2.18	2.49	2.18	2.49	97.82	35.19	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.81	1.81
1.45	8.71	4.16	10.89	3.83	89.11	38.23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.38	1.47
1.50	12.95	5.04	23.84	4.49	76.16	43.87	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.19	1.32
1.55	4.73	7.88	28.57	5.05	71.43	46.25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.79	1.39
1.60	7.54	10.38	36.11	6.16	63.89	50.49	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.98	1.52
1.70	11.86	14.67	47.97	8.26	52.03	58.65	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.06	1.65
1.80	5.53	20.38	53.50	9.52	46.50	63.20	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.19	1.60
2.00	12.44	32.69	65.94	13.89	34.06	74.35	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.27	1.54
2.60	34.06	74.35	100.00	34.48	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.67	1.58

ANALYSIS TYPE - FROTH

FRACTION SIZE(MM) 0.15 X 0.00 RELATIVE WEIGHT % - 3.04 ASH % - 34.00

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
240.00	*****	34.00	100.00	34.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

GULF CANADA CORPORATION - COAL DIVISION

C L E A N S I M U L A T E D P R O D U C T R E P O R T

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88012
Coal zone:	K		
Field sample no.:	08154	Composite sample no.:	236

PRODUCT COAL ANALYSIS (SP4)

Target Ash: 10.0 %

Standard:	ASTM	
Size analysis		
Fraction size (mm):	35.00 X	6.00
Cutpoint:	sp.g.	1.52
Contribution (%):		7.35
Total yield (%):		7.35

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture (%):	0.98	
Ash (%):	9.84	9.94
Volatile matter (%):	7.03	7.10
Fixed carbon (%):	82.15	82.96
Total sulphur (%):	0.52	0.53
Combustible sulphur (%):	0.49	
Gross calorific value (cal/g):	7,478.00	7,552.00
Volatile matter (dmmf%):	6.90	
Hardgrove index:	42.00	
Phosphorous in coal (%):	0.238	

ASH FUSION ANALYSIS (AF1)

	OXIDIZING ATM	REDUCING ATM
Initial temperature (°C):	1,216.00	1,106.00
Softening temperature (°C):	1,243.00	1,153.00
Hemispherical temperature (°C):	1,253.00	1,174.00
Final temperature (°C):	1,259.00	1,235.00

ASH MINERAL ANALYSIS (AM1)

SiO2 (%):	48.06	TiO2 (%):	1.28
Al2O3 (%):	19.66	Na2O (%):	1.72
Fe2O3 (%):	8.15	K2O (%):	0.91
CaO (%):	7.81	SO3 (%):	0.79
MgO (%):	2.50	P2O5 (%):	5.55

========== GULF CANADA CORPORATION - COAL DIVISION ==========

---------- C L E A N S I M U L A T E D P R O D U C T R E P O R T ----------

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88012
Coal zone:	K		
Field sample no.:	08154	Composite sample no.:	332

---------- PRODUCT COAL ANALYSIS (SP3) ----------

Target Ash: 7.5 %

Standard:	ASTM
Size analysis	
Fraction size(mm):	6.00 X 0.50
Cutpoint:	sp.g. 1.54
Contribution(%):	17.35
Total yield(%):	17.35

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture(%):	0.97	
Ash(%):	7.53	7.60
Volatile matter(%):	6.85	6.92
Fixed carbon(%):	84.65	85.48
Total sulphur(%):	0.53	0.54
Combustible sulphur(%):	0.50	
Gross calorific value(cal/g):	7,744.00	7,819.00
Volatile matter(dmmf%):	6.70	
Hardgrove index:	45.00	
Phosphorous in coal(%):	0.150	

---------- ASH FUSION ANALYSIS (AF1) ----------

	OXIDIZING ATM	REDUCING ATM
Initial temperature(°C):	1,227.00	1,148.00
Softening temperature(°C):	1,243.00	1,174.00
Hemispherical temperature(°C):	1,251.00	1,185.00
Final temperature(°C):	1,264.00	1,243.00

---------- ASH MINERAL ANALYSIS (AM1) ----------

SiO2(%):	49.58	TiO2(%):	2.11
Al2O3(%):	20.41	Na2O(%):	1.49
Fe2O3(%):	6.21	K2O(%):	0.89
CaO(%):	7.39	SO3(%):	0.88
MgO(%):	2.35	P2O5(%):	4.56

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88012 SEAM - I SAMPLE ID - 67 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 35.00 X 6.00 RELATIVE WEIGHT % - 53.98 ASH % - 0.0

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	7.88	5.69	7.88	5.69	92.12	43.23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.32	1.32
1.45	9.50	8.44	17.38	7.19	82.62	47.23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.92	1.10
1.50	9.98	9.50	27.36	8.03	72.64	52.41	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.99	1.06
1.55	6.37	14.82	33.73	9.32	66.27	56.03	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.19	1.09
1.60	5.76	19.36	39.49	10.78	60.51	59.52	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.16	1.10
1.70	4.81	23.24	44.30	12.13	55.70	62.65	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.40	1.13
1.80	7.85	33.42	52.15	15.34	47.85	67.44	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.24	1.15
2.00	15.82	49.13	67.97	23.20	32.03	76.49	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.25	1.17
2.60	32.03	76.49	100.00	40.27	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.25	1.20

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 6.00 X 0.50 RELATIVE WEIGHT % - 33.56 ASH % - 0.0

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	1.90	3.06	1.90	3.06	98.10	20.61	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.47	1.47
1.45	28.74	3.27	30.64	3.26	69.36	27.80	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.87	0.91
1.50	12.25	5.99	42.89	4.04	57.11	32.48	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.87	0.90
1.55	9.82	8.71	52.71	4.91	47.29	37.41	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.01	0.92
1.60	7.86	10.40	60.57	5.62	39.43	42.80	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.30	0.97
1.70	12.90	13.98	73.47	7.09	26.53	56.81	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.17	1.00
1.80	6.11	22.92	79.58	8.30	20.42	66.95	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.14	1.01
2.00	5.22	36.78	84.80	10.06	15.20	77.31	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.80	1.06
2.60	15.20	77.31	100.00	20.28	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.15	1.08

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88012 SEAM - I SAMPLE ID - 67 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 0.50 X 0.15 RELATIVE WEIGHT % - 8.97 ASH % - 0.0

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	CUM. S	CUM. S	CUM. VOL.	CUM. VOL.	CUM. MOIST	CUM. MOIST
1.40	0.23	1.36	0.23	1.36	99.77	16.84	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.89	0.89
1.45	9.88	2.83	10.11	2.80	89.89	18.38	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.36	1.35
1.50	21.83	3.42	31.94	3.22	68.06	23.18	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.31	1.32
1.55	46.20	10.86	78.14	7.74	21.86	49.21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.20	1.25
1.60	1.72	16.59	79.86	7.93	20.14	51.99	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.77	1.26
1.70	2.43	17.80	82.29	8.22	17.71	56.68	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.52	1.27
1.80	2.09	21.49	84.38	8.55	15.62	61.39	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.60	1.28
2.00	3.25	35.18	87.63	9.54	12.37	68.28	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.43	1.28
2.60	12.37	68.28	100.00	16.80	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.43	1.30

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88012 SEAM - 1 OVT SAMPLE ID - 68 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 35.00 X 6.00 RELATIVE WEIGHT % - 41.12 ASH % - 19.67

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	1.63	3.15	1.63	3.15	98.37	19.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.16	1.16
1.45	40.35	4.81	41.98	4.75	58.02	28.89	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.95	0.96
1.50	16.74	11.05	58.72	6.54	41.28	36.13	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.05	0.98
1.55	11.36	17.37	70.08	8.30	29.92	43.25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.03	0.99
1.60	6.01	20.33	76.09	9.25	23.91	49.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.12	1.00
1.70	4.13	25.52	80.22	10.09	19.78	53.92	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.21	1.01
1.80	3.61	35.58	83.83	11.18	16.17	58.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.24	1.02
2.00	3.24	40.58	87.07	12.28	12.93	62.38	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.34	1.03
2.60	12.93	62.38	100.00	18.76	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.97	1.03

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 6.00 X 0.50 RELATIVE WEIGHT % - 46.22 ASH % - 12.92

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	44.78	4.15	44.78	4.15	55.22	18.31	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.90	0.90
1.45	21.79	5.94	66.57	4.74	33.43	26.37	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.91	0.90
1.50	12.95	11.38	79.52	5.82	20.48	35.85	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.06	0.93
1.55	4.00	15.89	83.52	6.30	16.48	40.69	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.38	0.95
1.60	1.46	18.06	84.98	6.50	15.02	42.89	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.49	0.96
1.70	3.85	21.29	88.83	7.14	11.17	50.34	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.69	0.99
1.80	3.10	28.12	91.93	7.85	8.07	58.87	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.07	1.03
2.00	2.26	39.74	94.19	8.62	5.81	66.31	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.26	1.03
2.60	5.81	66.31	100.00	11.97	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.55	1.06

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88012 SEAM - I OVT SAMPLE ID - 68 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 0.50 X 0.15 RELATIVE WEIGHT % - 9.52 ASH % - 19.04

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	35.67	6.17	35.67	6.17	64.33	25.14	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.19	1.19
1.45	32.38	9.95	68.05	7.97	31.95	40.54	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.02	1.11
1.50	4.91	10.34	72.96	8.13	27.04	46.02	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.20	1.12
1.55	0.08	12.79	73.04	8.13	26.96	46.12	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.68	1.12
1.60	0.70	15.69	73.74	8.21	26.26	46.93	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.71	1.12
1.70	3.72	19.70	77.46	8.76	22.54	51.42	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.50	1.14
1.80	6.38	24.02	83.84	9.92	16.16	62.24	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.80	1.19
2.00	4.18	36.51	88.02	11.18	11.98	71.22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.11	1.19
2.60	11.98	71.22	100.00	18.37	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.14	1.18

ANALYSIS TYPE - FROTH

FRACTION SIZE(MM) 0.15 X 0.00 RELATIVE WEIGHT % - 3.14 ASH % - 24.83

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
240.00	*****	24.83	100.00	24.83	0.0	0.0	0.0	0.0	25.08	25.08	0.44	0.44	5.88	5.88	1.37	1.37

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRODH88012 SEAM - I OVT SAMPLE ID - 70 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 35.00 X 6.00 RELATIVE WEIGHT % - 57.68 ASH % - 27.13

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.45	19.20	5.51	19.20	5.51	80.80	31.86	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.63	0.63
1.50	13.64	9.15	32.84	7.02	67.16	36.47	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.82	0.71
1.55	13.24	14.78	46.08	9.25	53.92	41.80	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.30	0.88
1.60	12.71	15.27	58.79	10.55	41.21	49.98	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.87	0.88
1.70	8.06	21.02	66.85	11.81	33.15	57.02	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.80	0.87
1.80	8.38	46.13	75.23	15.64	24.77	60.70	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.76	0.97
2.00	10.04	46.40	85.27	19.26	14.73	70.45	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.25	1.00
2.60	14.73	70.45	100.00	26.80	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.11	1.02

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 6.00 X 0.50 RELATIVE WEIGHT % - 32.37 ASH % - 17.42

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	0.95	3.82	0.95	3.82	99.05	17.85	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.58	0.58
1.45	31.70	4.84	32.65	4.81	67.35	23.97	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.54	1.51
1.50	20.12	8.13	52.77	6.08	47.23	30.72	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.81	1.24
1.55	12.22	12.51	64.99	7.29	35.01	37.07	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	1.20
1.60	7.00	16.25	71.99	8.16	28.01	42.27	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.04	1.18
1.70	10.13	20.37	82.12	9.66	17.88	54.68	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.25	1.19
1.80	4.52	27.56	86.64	10.60	13.36	63.86	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.72	1.22
2.00	3.83	39.60	90.47	11.83	9.53	73.61	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.32	1.22
2.60	9.53	73.61	100.00	17.71	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.21	1.22

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRODH88012 SEAM - I OVT SAMPLE ID - 70 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 0.50 X 0.15 RELATIVE WEIGHT % - 7.00 ASH % - 24.12

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	1.69	2.30	1.69	2.30	98.31	24.09	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.38	1.38
1.45	17.72	4.11	19.41	3.95	80.59	28.48	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.63	1.61
1.50	11.32	5.46	30.73	4.51	69.27	32.25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.05	1.77
1.55	18.64	7.03	49.37	5.46	50.63	41.53	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.82	1.79
1.60	7.94	11.87	57.31	6.35	42.69	47.05	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.96	1.81
1.70	9.67	15.90	66.98	7.73	33.02	56.17	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.42	1.76
1.80	9.12	21.42	76.10	9.37	23.90	69.43	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.39	1.71
2.00	5.48	35.41	81.58	11.12	18.42	79.55	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.43	1.69
2.60	18.42	79.55	100.00	23.72	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.16	1.60

ANALYSIS TYPE - FROTH

FRACTION SIZE(MM) 0.15 X 0.00 RELATIVE WEIGHT % - 2.95 ASH % - 27.09

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
240.00	*****	27.09	100.00	27.09	0.0	0.0	0.0	0.0	24.39	24.39	0.36	0.36	5.88	5.88	1.62	1.62

========== GULF CANADA CORPORATION - COAL DIVISION ==========

---------- C L E A N S I M U L A T E D P R O D U C T R E P O R T ----------

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88012
Coal zone:	1 ovt		
Field sample no.:	08162 - 08163	Composite sample no.:	237

---------- PRODUCT COAL ANALYSIS (SP2) ----------

Target Ash: 8.0 %

Standard:	ASTM
Size analysis	
Fraction size(mm):	35.00 X 6.00
Cutpoint:	sp.g. 1.54
Contribution(%):	26.60
Total yield(%):	26.60

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture(%):	0.89	
Ash(%):	7.74	7.81
Volatile matter(%):	6.04	6.09
Fixed carbon(%):	85.33	86.10
Total sulphur(%):	0.51	0.51
Combustible sulphur(%):	0.42	
Gross calorific value(cal/g):	7,677.00	7,746.00
Volatile matter(dmmf%):	5.80	
Hardgrove index:	41.00	
Phosphorous in coal(%):	0.112	

---------- ASH FUSION ANALYSIS (AF1) ----------

	OXIDIZING ATM	REDUCING ATM
Initial temperature(°C):	1,290.00	1,243.00
Softening temperature(°C):	1,338.00	1,272.00
Hemispherical temperature(°C):	1,417.00	1,322.00
Final temperature(°C):	1,472.00	1,472.00

---------- ASH MINERAL ANALYSIS (AM1) ----------

SiO2(%):	48.94	TiO2(%):	1.48
Al2O3(%):	26.08	Na2O(%):	2.32
Fe2O3(%):	4.58	K2O(%):	1.14
CaO(%):	4.42	SO3(%):	2.86
MgO(%):	2.23	P2O5(%):	3.32

GULF CANADA CORPORATION - COAL DIVISION

C L E A N S I M U L A T E D P R O D U C T R E P O R T

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88012
Coal zone:	I ovt		
Field sample no.:	08165	Composite sample no.:	238

PRODUCT COAL ANALYSIS (SP2)

Target Ash: 8.0 %

Standard:	ASTM
Size analysis	
Fraction size(mm):	35.00 X 6.00
Cutpoint:	sp.g. 1.52
Contribution(%):	21.27
Total yield(%):	21.27

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture(%):	0.89	
Ash(%):	8.23	8.30
Volatile matter(%):	6.78	6.84
Fixed carbon(%):	84.10	84.86
Total sulphur(%):	0.47	0.47
Combustible sulphur(%):	0.43	
Gross calorific value(cal/g):	7,622.00	7,690.00
Volatile matter(dmmf%):	6.60	
Hardgrove index:	45.00	
Phosphorous in coal(%):	0.022	

ASH FUSION ANALYSIS (AF1)

	OXIDIZING ATM	REDUCING ATM
Initial temperature(°C):	1,222.00	1,164.00
Softening temperature(°C):	1,343.00	1,269.00
Hemispherical temperature(°C):	1,359.00	1,309.00
Final temperature(°C):	1,406.00	1,403.00

ASH MINERAL ANALYSIS (AM1)

SiO2(%):	60.62	TiO2(%):	1.10
Al2O3(%):	20.04	Na2O(%):	1.70
Fe2O3(%):	5.01	K2O(%):	0.89
CaO(%):	2.60	SO3(%):	1.15
MgO(%):	2.86	P2O5(%):	0.60

GULF CANADA CORPORATION - COAL DIVISION

CLEAN SIMULATED PRODUCT REPORT

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88012
Coal zone:	I ovt		
Field sample no.:	08162 - 08165	Composite sample no.:	333

PRODUCT COAL ANALYSIS (SP3)

Target Ash: 7.5 %

Standard:	ASTM
Size analysis	
Fraction size(mm):	6.00 X 0.50
Cutpoint:	sp.g. 1.67
Contribution(%):	35.32
Total yield(%):	35.32

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture(%):	1.04	
Ash(%):	7.64	7.72
Volatile matter(%):	6.31	6.38
Fixed carbon(%):	85.01	85.90
Total sulphur(%):	0.51	0.52
Combustible sulphur(%):	0.47	
Gross calorific value(cal/g):	7,717.00	7,798.00
Volatile matter(dmmf%):	6.10	
Hardgrove index:	45.00	
Phosphorous in coal(%):	0.084	

ASH FUSION ANALYSIS (AF1)

	OXIDIZING ATM	REDUCING ATM
Initial temperature(°C):	1,269.00	1,243.00
Softening temperature(°C):	1,327.00	1,290.00
Hemispherical temperature(°C):	1,359.00	1,324.00
Final temperature(°C):	1,432.00	1,422.00

ASH MINERAL ANALYSIS (AM1)

SiO2(%):	53.56	TiO2(%):	1.55
Al2O3(%):	24.57	Na2O(%):	2.05
Fe2O3(%):	3.49	K2O(%):	1.00
CaO(%):	4.11	SO3(%):	1.15
MgO(%):	2.25	P2O5(%):	2.52

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88013 SEAM - L SAMPLE ID - 71 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 35.00 X 6.00 RELATIVE WEIGHT % - 75.84 ASH % - 44.93

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ/KG)	CUM. C.V.	CUM. S	CUM. S	CUM. VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	2.88	2.80	2.88	2.80	97.12	46.35	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.87	0.87
1.45	8.63	7.67	11.51	6.45	88.49	50.12	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.85	0.86
1.50	6.86	14.00	18.37	9.27	81.63	53.15	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.83	0.85
1.55	7.77	18.57	26.14	12.03	73.86	56.79	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.84	0.84
1.60	6.50	24.28	32.64	14.47	67.36	59.93	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.05	0.89
1.70	7.02	28.92	39.66	17.03	60.34	63.54	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.18	0.94
1.80	6.61	39.12	46.27	20.19	53.73	66.54	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.29	0.99
2.00	8.36	44.07	54.63	23.84	45.37	70.68	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.08	1.00
2.60	45.37	70.68	100.00	45.09	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.93	0.97

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 6.00 X 0.50 RELATIVE WEIGHT % - 19.37 ASH % - 26.56

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ/KG)	CUM. C.V.	CUM. S	CUM. S	CUM. VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	33.65	4.08	33.65	4.08	66.35	37.63	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.75	0.75
1.45	12.71	7.78	46.36	5.09	53.64	44.70	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.88	0.79
1.50	10.57	14.09	56.93	6.76	43.07	52.22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.96	0.82
1.55	2.71	17.38	59.64	7.25	40.36	54.55	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.34	0.84
1.60	3.73	22.40	63.37	8.14	36.63	57.83	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.34	0.87
1.70	5.92	28.59	69.29	9.89	30.71	63.47	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.24	0.90
1.80	5.30	37.27	74.59	11.83	25.41	68.93	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.48	0.94
2.00	4.43	45.77	79.02	13.73	20.98	73.82	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.45	0.97
2.60	20.98	73.82	100.00	26.34	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.68	1.12

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88013 SEAM - L SAMPLE ID - 71 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 0.50 X 0.15 RELATIVE WEIGHT % - 3.01 ASH % - 0.15

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	12.47	3.52	12.47	3.52	87.53	35.76	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.85	1.85
1.45	31.30	6.58	43.77	5.71	56.23	52.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.81	1.82
1.50	4.33	9.27	48.10	6.03	51.90	55.56	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.01	1.84
1.55	5.85	16.45	53.95	7.16	46.05	60.53	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.44	1.80
1.60	1.78	17.01	55.73	7.47	44.27	62.28	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.80	1.76
1.70	2.80	18.17	58.53	7.99	41.47	65.26	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.12	1.73
1.80	5.34	32.02	63.87	9.99	36.13	70.17	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.50	1.71
2.00	4.33	43.51	68.20	12.12	31.80	73.80	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.37	1.69
2.60	31.80	73.80	100.00	31.74	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.97	1.78

ANALYSIS TYPE - FROTH

FRACTION SIZE(MM) 0.15 X 0.00 RELATIVE WEIGHT % - 1.78 ASH % - 41.48

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
240.00	*****	41.48	100.00	41.48	0.0	0.0	0.0	0.0	18.48	18.48	0.30	0.30	7.34	7.34	1.49	1.49

GULF CANADA CORPORATION - COAL DIVISION

C L E A N S I M U L A T E D P R O D U C T R E P O R T

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88013
Coal zone:	L		
Field sample no.:	08189	Composite sample no.:	239

PRODUCT COAL ANALYSIS (SP4)

Target Ash: 10.0 %

Standard:	ASTM
Size analysis	
Fraction size (mm):	35.00 X 6.00
Cutpoint:	sp.g. 1.51
Contribution (%):	16.49
Total yield (%):	16.49

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture (%):	0.84	
Ash (%):	9.56	9.64
Volatile matter (%):	6.25	6.30
Fixed carbon (%):	83.35	84.06
Total sulphur (%):	0.60	0.61
Combustible sulphur (%):	0.56	
Gross calorific value (cal/g):	7,488.00	7,552.00
Volatile matter (dmmf%):	6.00	
Hardgrove index:	41.00	
Phosphorous in coal (%):	0.123	

ASH FUSION ANALYSIS (AF1)

	OXIDIZING ATM	REDUCING ATM
Initial temperature (°C):	1,227.00	1,180.00
Softening temperature (°C):	1,261.00	1,206.00
Hemispherical temperature (°C):	1,274.00	1,227.00
Final temperature (°C):	1,317.00	1,311.00

ASH MINERAL ANALYSIS (AM1)

SiO2 (%):	56.22	TiO2 (%):	1.57
Al2O3 (%):	19.66	Na2O (%):	2.02
Fe2O3 (%):	5.52	K2O (%):	0.55
CaO (%):	4.98	SO3 (%):	0.97
MgO (%):	1.87	P2O5 (%):	2.95

GULF CANADA CORPORATION - COAL DIVISION

C L E A N S I M U L A T E D P R O D U C T R E P O R T

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88013
Coal zone:	L		
Field sample no.:	08189	Composite sample no.:	334

PRODUCT COAL ANALYSIS (SP3)

Target Ash: 7.5 %

Standard:	ASTM
Size analysis	
Fraction size (mm):	6.00 X 0.50
Cutpoint:	sp.g. 1.56
Contribution (%):	11.65
Total yield (%):	11.65

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture (%):	0.88	
Ash (%):	7.50	7.57
Volatile matter (%):	6.51	6.57
Fixed carbon (%):	85.11	85.86
Total sulphur (%):	0.61	0.62
Combustible sulphur (%):	0.57	
Gross calorific value (cal/g):	7,739.00	7,808.00
Volatile matter (dmmf%):	6.30	
Hardgrove index:	42.00	
Phosphorous in coal (%):	0.079	

ASH FUSION ANALYSIS (AF1)

	OXIDIZING ATM	REDUCING ATM
Initial temperature (°C):	1,232.00	1,174.00
Softening temperature (°C):	1,264.00	1,201.00
Hemispherical temperature (°C):	1,274.00	1,222.00
Final temperature (°C):	1,338.00	1,332.00

ASH MINERAL ANALYSIS (AM1)

SiO2 (%):	52.90	TiO2 (%):	2.35
Al2O3 (%):	21.17	Na2O (%):	2.10
Fe2O3 (%):	5.95	K2O (%):	0.63
CaO (%):	4.56	SO3 (%):	1.23
MgO (%):	1.95	P2O5 (%):	2.41

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88013 SEAM - K/L SAMPLE ID - 72 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 35.00 X 6.00 RELATIVE WEIGHT % - 81.86 ASH % - 51.55

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	0.30	4.13	0.30	4.13	99.70	50.73	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.40	1.40
1.45	2.22	8.40	2.52	7.89	97.48	51.69	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.10	1.14
1.50	7.47	14.19	9.99	12.60	90.01	54.81	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.68	0.79
1.55	5.71	19.11	15.70	14.97	84.30	57.22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.84	0.81
1.60	6.53	24.69	22.23	17.82	77.77	59.95	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.69	0.78
1.70	13.00	30.99	35.23	22.68	64.77	65.77	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.64	0.73
1.80	6.45	39.16	41.68	25.23	58.32	68.71	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.66	0.72
2.00	19.96	53.80	61.64	34.48	38.36	76.47	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.93	0.78
2.60	38.36	76.47	100.00	50.59	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.10	0.91

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 6.00 X 0.50 RELATIVE WEIGHT % - 14.66 ASH % - 0.50

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	14.02	5.13	14.02	5.13	85.98	55.28	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.87	0.87
1.45	7.78	8.61	21.80	6.37	78.20	59.92	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.10	0.95
1.50	7.29	12.86	29.09	8.00	70.91	64.76	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.11	0.99
1.55	6.83	18.09	35.92	9.92	64.08	69.73	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.12	1.02
1.60	4.07	21.99	39.99	11.15	60.01	72.97	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.39	1.05
1.70	4.66	29.51	44.65	13.06	55.35	76.63	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.15	1.06
1.80	3.46	34.89	48.11	14.63	51.89	79.41	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.47	1.09
2.00	8.09	51.28	56.20	19.91	43.80	84.61	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.55	1.16
2.60	43.80	84.61	100.00	48.25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.66	1.38

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88013 SEAM - K/L SAMPLE ID - 72 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 0.50 X 0.15 RELATIVE WEIGHT % - 2.31 ASH % - 49.76

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	12.10	8.92	12.10	8.92	87.90	55.12	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.95	1.95
1.45	17.49	10.60	29.59	9.91	70.41	66.18	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.58	1.73
1.50	1.08	11.32	30.67	9.96	69.33	67.03	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.38	1.72
1.55	13.61	26.92	44.28	15.17	55.72	76.83	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.26	1.58
1.60	0.65	29.79	44.93	15.39	55.07	77.39	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.71	1.57
1.70	1.51	32.90	46.44	15.96	53.56	78.64	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.91	1.54
1.80	3.02	39.44	49.46	17.39	50.54	80.98	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.29	1.53
2.00	6.05	55.34	55.51	21.53	44.49	84.47	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.52	1.53
2.60	44.49	84.47	100.00	49.53	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.13	1.35

ANALYSIS TYPE - FROTH

FRACTION SIZE(MM) 0.15 X 0.00 RELATIVE WEIGHT % - 1.17 ASH % - 57.78

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
240.00	*****	57.78	100.00	57.78	0.0	0.0	0.0	0.0	12.44	12.44	0.35	0.35	4.73	4.73	1.49	1.49

========== GULF CANADA CORPORATION - COAL DIVISION ==========

---------- C L E A N S I M U L A T E D P R O D U C T R E P O R T ----------

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88013
Coal zone:	K/L		
Field sample no.:	08192	Composite sample no.:	240

---------- PRODUCT COAL ANALYSIS (SP4) ----------

Target Ash: 10.0 %

Standard:	ASTM	
Size analysis		
Fraction size(mm):	35.00 X	6.00
Cutpoint:	sp.g.	1.47
Contribution(%):		5.22
Total yield(%):		5.22

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture(%):	1.02	
Ash(%):	9.63	9.73
Volatile matter(%):	6.01	6.07
Fixed carbon(%):	83.34	84.20
Total sulphur(%):	0.64	0.65
Combustible sulphur(%):	0.60	
Gross calorific value(cal/g):	7,485.00	7,563.00
Volatile matter(dmmf%):	5.70	
Hardgrove index:	42.00	
Phosphorous in coal(%):	0.227	

---------- ASH FUSION ANALYSIS (AF1) ----------

	OXIDIZING ATM	REDUCING ATM
Initial temperature(°C):	1,235.00	1,190.00
Softening temperature(°C):	1,248.00	1,211.00
Hemispherical temperature(°C):	1,256.00	1,232.00
Final temperature(°C):	1,309.00	1,266.00

---------- ASH MINERAL ANALYSIS (AM1) ----------

SiO2(%):	48.54	TiO2(%):	1.70
Al2O3(%):	21.17	Na2O(%):	1.76
Fe2O3(%):	5.21	K2O(%):	0.98
CaO(%):	8.28	SO3(%):	1.14
MgO(%):	1.63	P2O5(%):	5.41

GULF CANADA CORPORATION - COAL DIVISION

C L E A N S I M U L A T E D P R O D U C T R E P O R T

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88013
Coal zone:	K/L		
Field sample no.:	08192	Composite sample no.:	335

PRODUCT COAL ANALYSIS (SP3)

Target Ash: 7.5 %

Standard:	ASTM	
Size analysis		
Fraction size(mm):	6.00 X	0.50
Cutpoint:	sp.g.	1.49
Contribution(%):		3.89
Total yield(%):		3.89

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture(%):	0.84	
Ash(%):	7.68	7.75
Volatile matter(%):	7.58	7.64
Fixed carbon(%):	83.90	84.61
Total sulphur(%):	0.62	0.63
Combustible sulphur(%):	0.55	
Gross calorific value(cal/g):	7,789.00	7,855.00
Volatile matter(dmmf%):	7.50	
Hardgrove index:	46.00	
Phosphorous in coal(%):	0.106	

ASH FUSION ANALYSIS (AF1)

	OXIDIZING ATM	REDUCING ATM
Initial temperature(°C):	1,211.00	1,137.00
Softening temperature(°C):	1,243.00	1,164.00
Hemispherical temperature(°C):	1,253.00	1,182.00
Final temperature(°C):	1,306.00	1,232.00

ASH MINERAL ANALYSIS (AM1)

SiO2(%):	47.02	TiO2(%):	3.35
Al2O3(%):	20.04	Na2O(%):	1.73
Fe2O3(%):	8.12	K2O(%):	0.86
CaO(%):	6.55	SO3(%):	2.40
MgO(%):	2.79	P2O5(%):	3.17

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88013 SEAM - K SAMPLE ID - 73 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 35.00 X 6.00 RELATIVE WEIGHT % - 78.82 ASH % - 33.99

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	1.66	2.00	1.66	2.00	98.34	34.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.21	1.21
1.45	12.43	6.89	14.09	6.31	85.91	37.93	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.79	0.84
1.50	10.94	11.02	25.03	8.37	74.97	41.86	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.87	0.85
1.55	8.09	16.71	33.12	10.41	66.88	44.90	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.92	0.87
1.60	5.96	21.60	39.08	12.11	60.92	47.18	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.95	0.88
1.70	15.08	27.58	54.16	16.42	45.84	53.63	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.78	0.85
1.80	16.36	37.70	70.52	21.36	29.48	62.48	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.93	0.87
2.00	8.69	42.61	79.21	23.69	20.79	70.78	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.72	0.85
2.60	20.79	70.78	100.00	33.48	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.09	0.90

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 6.00 X 0.50 RELATIVE WEIGHT % - 16.91 ASH % - 26.67

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	13.16	2.05	13.16	2.05	86.84	29.40	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.01	1.01
1.45	16.75	4.95	29.91	3.67	70.09	35.24	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.07	1.04
1.50	16.40	9.28	46.31	5.66	53.69	43.17	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.06	1.05
1.55	8.06	14.23	54.37	6.93	45.63	48.29	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.18	1.07
1.60	5.95	18.10	60.32	8.03	39.68	52.81	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.30	1.09
1.70	8.99	23.70	69.31	10.06	30.69	61.34	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.39	1.13
1.80	5.41	31.00	74.72	11.58	25.28	67.84	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.51	1.16
2.00	6.70	43.92	81.42	14.24	18.58	76.46	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.29	1.17
2.60	18.58	76.46	100.00	25.80	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.53	1.24

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88013 SEAM - K SAMPLE ID - 73 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 0.50 X 0.15 RELATIVE WEIGHT % - 2.76 ASH % - 31.40

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	12.09	2.13	12.09	2.13	87.91	35.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.71	1.71
1.45	7.43	2.86	19.52	2.41	80.48	38.08	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.96	1.81
1.50	11.41	5.35	30.93	3.49	69.07	43.49	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.84	1.82
1.55	7.34	8.07	38.27	4.37	61.73	47.70	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.22	1.70
1.60	7.74	10.79	46.01	5.45	53.99	52.99	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.57	1.68
1.70	9.94	16.28	55.95	7.37	44.05	61.28	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.87	1.71
1.80	5.19	23.53	61.14	8.75	38.86	66.32	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.69	1.71
2.00	8.15	33.26	69.29	11.63	30.71	75.09	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.80	1.72
2.60	30.71	75.09	100.00	31.12	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.12	1.54

ANALYSIS TYPE - FROTH

FRACTION SIZE(MM) 0.15 X 0.00 RELATIVE WEIGHT % - 1.51 ASH % - 38.61

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
240.00	*****	38.61	100.00	38.61	0.0	0.0	0.0	0.0	19.92	19.92	0.39	0.39	7.68	7.68	1.25	1.25

GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88013 SEAM - K SAMPLE ID - 75 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 35.00 X 6.00 RELATIVE WEIGHT % - 61.33 ASH % - 39.02

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	CUM. S	CUM. S	CUM. VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	1.29	5.50	1.29	5.50	98.71	39.17	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.66	1.66
1.45	3.58	8.94	4.87	8.03	95.13	40.31	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.08	1.23
1.50	15.96	14.41	20.83	12.92	79.17	45.53	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.78	0.89
1.55	15.16	19.16	35.99	15.55	64.01	51.78	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.90	0.89
1.60	6.91	22.96	42.90	16.74	57.10	55.26	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.88	0.89
1.70	11.43	29.85	54.33	19.50	45.67	61.62	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.01	0.92
1.80	8.92	36.21	63.25	21.86	36.75	67.79	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.81	0.90
2.00	10.58	43.93	73.83	25.02	26.17	77.44	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.85	0.89
2.60	26.17	77.44	100.00	38.74	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.29	1.00

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 6.00 X 0.50 RELATIVE WEIGHT % - 31.68 ASH % - 32.53

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	CUM. S	CUM. S	CUM. VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	10.64	5.23	10.64	5.23	89.36	35.62	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.89	0.89
1.45	17.90	11.18	28.54	8.96	71.46	41.75	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.83	0.85
1.50	8.06	15.27	36.60	10.35	63.40	45.11	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.17	0.92
1.55	11.61	20.56	48.21	12.81	51.79	50.62	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	0.94
1.60	1.35	21.66	49.56	13.05	50.44	51.39	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.01	0.97
1.70	8.16	30.03	57.72	15.45	42.28	55.52	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.20	1.00
1.80	11.53	38.83	69.25	19.34	30.75	61.77	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.28	1.05
2.00	15.37	49.52	84.62	24.82	15.38	74.02	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.81	1.19
2.60	15.38	74.02	100.00	32.39	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.76	1.28

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88013 SEAM - K SAMPLE ID - 75 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 0.50 X 0.15 RELATIVE WEIGHT % - 4.70 ASH % - 39.20

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	15.30	8.14	15.30	8.14	84.70	44.33	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.62	1.62
1.45	20.14	15.60	35.44	12.38	64.56	53.29	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.68	1.65
1.50	5.79	26.54	41.23	14.37	58.77	55.93	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.53	1.64
1.55	5.88	30.17	47.11	16.34	52.89	58.79	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.21	1.58
1.60	4.58	32.64	51.69	17.78	48.31	61.27	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.31	1.56
1.70	2.51	37.88	54.20	18.72	45.80	62.56	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.39	1.55
1.80	5.19	40.82	59.39	20.65	40.61	65.33	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.21	1.52
2.00	13.14	51.90	72.53	26.31	27.47	71.76	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.24	1.47
2.60	27.47	71.76	100.00	38.79	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.95	1.60

ANALYSIS TYPE - FROTH

FRACTION SIZE(MM) 0.15 X 0.00 RELATIVE WEIGHT % - 2.29 ASH % - 45.23

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
240.00	*****	45.23	100.00	45.23	0.0	0.0	0.0	0.0	16.97	16.97	0.60	0.60	6.62	6.62	1.23	1.23

GULF CANADA CORPORATION - COAL DIVISION

C L E A N S I M U L A T E D P R O D U C T R E P O R T

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88013
Coal zone:	K		
Field sample no.:	08194	Composite sample no.:	241

PRODUCT COAL ANALYSIS (SP4)

Target Ash: 10.0 %

Standard:	ASTM
Size analysis	
Fraction size (mm):	35.00 X 6.00
Cutpoint:	sp.g. 1.54
Contribution (%):	24.22
Total yield (%):	24.22

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture (%):	0.83	
Ash (%):	9.50	9.58
Volatile matter (%):	5.67	5.72
Fixed carbon (%):	84.00	84.70
Total sulphur (%):	0.55	0.55
Combustible sulphur (%):	0.53	
Gross calorific value (cal/g):	7,450.00	7,512.00
Volatile matter (dmmf%):	5.30	
Hardgrove index:	40.00	
Phosphorous in coal (%):	0.236	

ASH FUSION ANALYSIS (AF1)

	OXIDIZING ATM	REDUCING ATM
Initial temperature (°C):	1,293.00	1,269.00
Softening temperature (°C):	1,301.00	1,280.00
Hemispherical temperature (°C):	1,306.00	1,295.00
Final temperature (°C):	1,343.00	1,317.00

ASH MINERAL ANALYSIS (AM1)

SiO2 (%):	46.78	TiO2 (%):	1.20
Al2O3 (%):	25.33	Na2O (%):	2.40
Fe2O3 (%):	4.86	K2O (%):	0.87
CaO (%):	7.05	SO3 (%):	0.64
MgO (%):	1.86	P2O5 (%):	5.69

GULF CANADA CORPORATION - COAL DIVISION

C L E A N S I M U L A T E D P R O D U C T R E P O R T

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88013
Coal zone:	K		
Field sample no.:	08196	Composite sample no.:	242

PRODUCT COAL ANALYSIS (SP4)

Target Ash: 10.0 %

Standard:	ASTM	
Size analysis		
Fraction size (mm):	35.00 X	6.00
Cutpoint:	sp.g.	1.47
Contribution (%):		9.09
Total yield (%):		9.09

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture (%):	0.67	
Ash (%):	9.42	9.48
Volatile matter (%):	5.87	5.91
Fixed carbon (%):	84.04	84.61
Total sulphur (%):	0.60	0.60
Combustible sulphur (%):	0.57	
Gross calorific value (cal/g):	7,502.00	7,552.00
Volatile matter (dmmf%):	5.50	
Hardgrove index:	41.00	
Phosphorous in coal (%):	0.026	

ASH FUSION ANALYSIS (AFI)

	OXIDIZING ATM	REDUCING ATM
Initial temperature (°C):	1,238.00	1,201.00
Softening temperature (°C):	1,472.00	1,417.00
Hemispherical temperature (°C):	1,472.00	1,432.00
Final temperature (°C):	1,472.00	1,472.00

ASH MINERAL ANALYSIS (AMI)

SiO2 (%):	52.02	TiO2 (%):	1.82
Al2O3 (%):	26.08	Na2O (%):	2.16
Fe2O3 (%):	6.12	K2O (%):	1.25
CaO (%):	1.76	SO3 (%):	0.70
MgO (%):	3.18	P2O5 (%):	0.63

GULF CANADA CORPORATION - COAL DIVISION

C L E A N S I M U L A T E D P R O D U C T R E P O R T

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88013
Coal zone:	K		
Field sample no.:	08194 - 08196	Composite sample no.:	336

PRODUCT COAL ANALYSIS (SP3)

Target Ash: 7.5 %

Standard:	ASTM
Size analysis	
Fraction size (mm):	6.00 X 0.50
Cutpoint:	sp.g. 1.51
Contribution (%):	9.32
Total yield (%):	9.32

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture (%):	0.78	
Ash (%):	7.60	7.66
Volatile matter (%):	6.33	6.38
Fixed carbon (%):	85.29	85.96
Total sulphur (%):	0.58	0.58
Combustible sulphur (%):	0.56	
Gross calorific value (cal/g):	7,758.00	7,819.00
Volatile matter (dmmf%):	6.10	
Hardgrove index:	43.00	
Phosphorous in coal (%):	0.104	

ASH FUSION ANALYSIS (AFI)

	OXIDIZING ATM	REDUCING ATM
Initial temperature (°C):	1,232.00	1,190.00
Softening temperature (°C):	1,280.00	1,232.00
Hemispherical temperature (°C):	1,293.00	1,259.00
Final temperature (°C):	1,390.00	1,385.00

ASH MINERAL ANALYSIS (AMI)

SiO2 (%):	49.62	TiO2 (%):	2.59
Al2O3 (%):	25.71	Na2O (%):	2.16
Fe2O3 (%):	4.18	K2O (%):	1.14
CaO (%):	4.59	SO3 (%):	0.82
MgO (%):	2.21	P2O5 (%):	3.13

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88013 SEAM - J SAMPLE ID - 76 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 35.00 X 6.00 RELATIVE WEIGHT % - 81.60 ASH % - 43.31

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	0.66	3.35	0.66	3.35	99.34	43.27	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.51	1.51
1.45	14.50	6.36	15.16	6.23	84.84	49.58	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.73	0.76
1.50	6.98	11.18	22.14	7.79	77.86	53.03	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.89	0.80
1.55	9.86	16.49	32.00	10.47	68.00	58.32	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.83	0.81
1.60	1.73	18.79	33.73	10.90	66.27	59.36	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.30	0.84
1.70	11.62	26.21	45.35	14.82	54.65	66 40	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.70	0.80
1.80	7.96	32.42	53.31	17.45	46.69	72.20	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.74	0.79
2.00	7.51	36.82	60.82	19.84	39.18	78.98	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.69	0.78
2.60	39.18	78.98	100.00	43.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.53	0.68

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 6.00 X 0.50 RELATIVE WEIGHT % - 15.10 ASH % - 27.78

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	9.71	4.75	9.71	4.75	90.29	29.21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.47	1.47
1.45	39.20	5.66	48.91	5.48	51.09	47.28	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.02	1.11
1.50	11.68	9.93	60.59	6.34	39.41	58.35	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.63	1.21
1.55	3.73	14.11	64.32	6.79	35.68	62.98	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.55	1.23
1.60	2.60	19.04	66.92	7.26	33.08	66.43	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.71	1.25
1.70	3.31	27.18	70.23	8.20	29.77	70.80	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.59	1.26
1.80	2.46	33.65	72.69	9.06	27.31	74.14	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.66	1.28
2.00	2.67	43.73	75.36	10.29	24.64	77.44	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.15	1.27
2.60	24.64	77.44	100.00	26.84	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.26	1.27

GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRODH88013 SEAM - J SAMPLE ID - 76 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 0.50 X 0.15 RELATIVE WEIGHT % - 2.28 ASH % - 33.42

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	10.81	4.04	10.81	4.04	89.19	36.43	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.99	1.99
1.45	17.30	4.80	28.11	4.51	71.89	44.04	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.01	2.00
1.50	19.46	6.29	47.57	5.24	52.43	58.05	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.94	1.98
1.55	3.78	10.17	51.35	5.60	48.65	61.77	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.91	1.90
1.60	3.24	11.40	54.59	5.94	45.41	65.36	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.48	1.87
1.70	4.32	17.33	58.91	6.78	41.09	70.41	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.19	1.82
1.80	2.70	23.56	61.61	7.51	38.39	73.70	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.01	1.79
2.00	4.33	41.49	65.94	9.75	34.06	77.80	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.45	1.77
2.60	34.06	77.80	100.00	32.92	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.82	1.78

ANALYSIS TYPE - FROTH

FRACTION SIZE(MM) 0.15 X 0.00 RELATIVE WEIGHT % - 1.02 ASH % - 41.06

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
240.00	*****	41.06	100.00	41.06	0.0	0.0	0.0	0.0	19.11	19.11	0.60	0.60	8.19	8.19	1.15	1.15

========== GULF CANADA CORPORATION - COAL DIVISION ==========

---------- C L E A N S I M U L A T E D P R O D U C T R E P O R T ----------

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88013
Coal zone:	J		
Field sample no.:	08199	Composite sample no.:	243

---------- PRODUCT COAL ANALYSIS (SP4) ----------

Target Ash: 10.0 %

Standard:	ASTM
Size analysis	
Fraction size (mm):	35.00 X 6.00
Cutpoint:	sp.g. 1.54
Contribution (%):	24.00
Total yield (%):	24.00

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture (%):	0.92	
Ash (%):	9.20	9.29
Volatile matter (%):	6.07	6.13
Fixed carbon (%):	83.81	84.58
Total sulphur (%):	0.65	0.66
Combustible sulphur (%):	0.59	
Gross calorific value (cal/g):	7,574.00	7,644.00
Volatile matter (dmmf%):	5.80	
Hardgrove index:	42.00	
Phosphorous in coal (%):	0.172	

---------- ASH FUSION ANALYSIS (AF1) ----------

	OXIDIZING ATM	REDUCING ATM
Initial temperature (°C):	1,264.00	1,222.00
Softening temperature (°C):	1,277.00	1,259.00
Hemispherical temperature (°C):	1,295.00	1,264.00
Final temperature (°C):	1,319.00	1,306.00

---------- ASH MINERAL ANALYSIS (AM1) ----------

SiO2 (%):	44.78	TiO2 (%):	2.32
Al2O3 (%):	25.71	Na2O (%):	2.02
Fe2O3 (%):	5.52	K2O (%):	1.81
CaO (%):	6.91	SO3 (%):	1.51
MgO (%):	2.49	P2O5 (%):	4.27

GULF CANADA CORPORATION - COAL DIVISION

C L E A N S I M U L A T E D P R O D U C T R E P O R T

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88013
Coal zone:	J		
Field sample no.:	08199	Composite sample no.:	337

PRODUCT COAL ANALYSIS (SP3)

Target Ash: 7.5 %

Standard:	ASTM	
Size analysis		
Fraction size (mm):	6.00 X	0.50
Cutpoint:	sp.g.	1.63
Contribution (%):		7.80
Total yield (%):		7.80

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture (%):	0.79	
Ash (%):	7.75	7.81
Volatile matter (%):	6.23	6.28
Fixed carbon (%):	85.23	85.91
Total sulphur (%):	0.62	0.62
Combustible sulphur (%):	0.56	
Gross calorific value (cal/g):	7,722.00	7,784.00
Volatile matter (dmmf%):	6.00	
Hardgrove index:	47.00	
Phosphorous in coal (%):	0.094	

ASH FUSION ANALYSIS (AF1)

	OXIDIZING ATM	REDUCING ATM
Initial temperature (°C):	1,248.00	1,180.00
Softening temperature (°C):	1,272.00	1,201.00
Hemispherical temperature (°C):	1,274.00	1,245.00
Final temperature (°C):	1,285.00	1,282.00

ASH MINERAL ANALYSIS (AM1)

SiO2 (%):	48.16	TiO2 (%):	2.65
Al2O3 (%):	22.68	Na2O (%):	1.71
Fe2O3 (%):	7.26	K2O (%):	1.65
CaO (%):	5.77	SO3 (%):	1.96
MgO (%):	2.85	P2O5 (%):	2.78

GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88013 SEAM - I SAMPLE ID - 77 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 35.00 X 6.00 RELATIVE WEIGHT % - 64.52 ASH % - 20.28

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	5.37	2.71	5.37	2.71	94.63	22.33	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.62	0.62
1.45	20.86	6.63	26.23	5.83	73.77	26.78	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.66	0.65
1.50	27.04	12.23	53.27	9.08	46.73	35.19	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.79	0.72
1.55	13.57	16.16	66.84	10.52	33.16	42.98	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.85	0.75
1.60	4.83	18.05	71.67	11.02	28.33	47.23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.18	0.78
1.70	9.23	28.72	80.90	13.04	19.10	56.18	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.11	0.82
1.80	2.44	31.55	83.34	13.58	16.66	59.78	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.65	0.84
2.00	5.02	38.92	88.36	15.02	11.64	68.78	0.0	0.0	0.0	0.0	0.0	0.0	0 0	0.0	1.02	0.85
2.60	11.64	68.78	100.00	21.28	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.45	0.92

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 6.00 X 0.50 RELATIVE WEIGHT % - 28.24 ASH % - 15.26

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	27.62	2.35	27.62	2.35	72.38	19.85	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.76	0.76
1.45	21.68	5.58	49.30	3.77	50.70	25.95	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.78	0.77
1.50	15.35	9.53	64.65	5.14	35.35	33.08	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.90	0.80
1.55	7.46	13.71	72.11	6.02	27.89	38.26	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.94	0.81
1.60	5.71	16.28	77.82	6.78	22.18	43.92	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.30	0.85
1.70	6.88	22.18	84.70	8.03	15.30	53.70	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.59	0.91
1.80	3.73	30.06	88.43	8.96	11.57	61.32	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.80	0.91
2.00	3.40	39.99	91.83	10.11	8.17	70.20	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.47	0.93
2.60	8.17	70.20	100.00	15.02	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.42	0.97

GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRODH88013 SEAM - I SAMPLE ID - 78 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 35.00 X 6.00 RELATIVE WEIGHT % - 67.81 ASH % - 11.77

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	CUM. S	CUM. S	CUM. VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	16.29	3.19	16.29	3.19	83.71	13.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.69	0.69
1.45	61.92	5.91	78.21	5.34	21.79	33.15	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.89	0.85
1.50	8.06	10.39	86.27	5.81	13.73	46.51	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.83	0.85
1.55	0.78	11.88	87.05	5.87	12.95	48.60	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.52	0.85
1.60	0.34	16.67	87.39	5.91	12.61	49.46	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.74	0.86
1.70	4.63	25.15	92.02	6.88	7.98	63.56	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.80	0.85
1.80	0.43	35.61	92.45	7.01	7.55	65.15	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.93	0.86
2.00	0.33	37.48	92.78	7.12	7.22	66.42	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.37	0.86
2.60	7.22	66.42	100.00	11.40	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.75	0.85

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 6.00 X 0.50 RELATIVE WEIGHT % - 25.67 ASH % - 8.85

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	CUM. S	CUM. S	CUM. VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	73.02	3.89	73.02	3.89	26.98	20.94	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.68	0.68
1.45	12.46	8.42	85.48	4.55	14.52	31.68	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.87	0.71
1.50	4.80	11.66	90.28	4.93	9.72	41.57	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.09	0.73
1.55	1.31	14.20	91.59	5.06	8.41	45.83	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.67	0.74
1.60	0.90	15.72	92.49	5.16	7.51	49.44	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.59	0.75
1.70	1.46	27.12	93.95	5.51	6.05	54.82	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.34	0.76
1.80	0.75	31.63	94.70	5.71	5.30	58.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.62	0.77
2.00	0.98	42.70	95.68	6.09	4.32	61.60	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.89	0.78
2.60	4.32	61.60	100.00	8.49	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.14	0.79

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88013 SEAM - I SAMPLE ID - 78 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 0.50 X 0.15 RELATIVE WEIGHT % - 4.26 ASH % - 13.20

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ/KG)	CUM. C.V.	CUM. S	CUM. S	CUM. VOL.	CUM. VOL.	CUM. MOIST	CUM. MOIST
1.40	43.63	3.83	43.63	3.83	56.37	19.71	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.08	1.08
1.45	25.34	5.89	68.97	4.59	31.03	30.99	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.49	1.23
1.50	8.27	11.02	77.24	5.28	22.76	38.24	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.68	1.28
1.55	7.21	13.92	84.45	6.01	15.55	49.52	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.84	1.33
1.60	2.05	15.38	86.50	6.24	13.50	54.70	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.00	1.34
1.70	1.29	15.90	87.79	6.38	12.21	58.80	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.15	1.34
1.80	1.67	28.70	89.46	6.79	10.54	63.57	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.54	1.34
2.00	1.14	37.55	90.60	7.18	9.40	66.73	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.46	1.34
2.60	9.40	66.73	100.00	12.78	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.56	1.37

ANALYSIS TYPE - FROTH

FRACTION SIZE(MM) 0.15 X 0.00 RELATIVE WEIGHT % - 2.26 ASH % - 19.82

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ/KG)	CUM. C.V.	CUM. S	CUM. S	CUM. VOL.	CUM. VOL.	CUM. MOIST	CUM. MOIST
240.00	*****	19.82	100.00	19.82	0.0	0.0	0.0	0.0	27.31	27.31	0.42	0.42	7.04	7.04	1.04	1.04

========== GULF CANADA CORPORATION - COAL DIVISION ==========

---------- C L E A N S I M U L A T E D P R O D U C T R E P O R T ----------

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88013
Coal zone:	I		
Field sample no.:	08202	Composite sample no.:	244

---------- PRODUCT COAL ANALYSIS (SP2) ----------

Target Ash: 8.0 %

Standard:	ASTM	
Size analysis		
Fraction size (mm):	35.00 X	6.00
Cutpoint:	sp.g.	1.48
Contribution (%):		28.43
Total yield (%):		28.43

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture (%):	0.77	
Ash (%):	7.81	7.87
Volatile matter (%):	5.98	6.03
Fixed carbon (%):	85.44	86.10
Total sulphur (%):	0.49	0.49
Combustible sulphur (%):	0.46	
Gross calorific value (cal/g):	7,693.00	7,753.00
Volatile matter (dmmf%):	5.70	
Hardgrove index:	40.00	
Phosphorous in coal (%):	0.022	

---------- ASH FUSION ANALYSIS (AF1) ----------

	OXIDIZING ATM	REDUCING ATM
Initial temperature (°C):	1,319.00	1,277.00
Softening temperature (°C):	1,380.00	1,327.00
Hemispherical temperature (°C):	1,472.00	1,359.00
Final temperature (°C):	1,472.00	1,472.00

---------- ASH MINERAL ANALYSIS (AM1) ----------

SiO2 (%):	57.86	TiO2 (%):	1.10
Al2O3 (%):	22.30	Na2O (%):	2.13
Fe2O3 (%):	3.72	K2O (%):	0.78
CaO (%):	4.84	SO3 (%):	0.87
MgO (%):	1.91	P2O5 (%):	0.65

GULF CANADA CORPORATION - COAL DIVISION

C L E A N S I M U L A T E D P R O D U C T R E P O R T

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88013
Coal zone:	I		
Field sample no.:	08203	Composite sample no.:	245

PRODUCT COAL ANALYSIS (SP2)

Target Ash: 8.0 %

Standard:	ASTM
Size analysis	
Fraction size (mm):	35.00 X 6.00
Cutpoint:	sp.g. 2.12
Contribution (%):	63.17
Total yield (%):	63.17

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture (%):	0.85	
Ash (%):	7.80	7.87
Volatile matter (%):	6.39	6.44
Fixed carbon (%):	84.96	85.69
Total sulphur (%):	0.48	0.48
Combustible sulphur (%):	0.34	
Gross calorific value (cal/g):	7,684.00	7,750.00
Volatile matter (dmmf%):	6.20	
Hardgrove index:	38.00	
Phosphorous in coal (%):	0.203	

ASH FUSION ANALYSIS (AF1)

	OXIDIZING ATM	REDUCING ATM
Initial temperature (°C):	1,264.00	1,201.00
Softening temperature (°C):	1,274.00	1,243.00
Hemispherical temperature (°C):	1,289.00	1,253.00
Final temperature (°C):	1,319.00	1,317.00

ASH MINERAL ANALYSIS (AM1)

SiO2 (%):	33.54	TiO2 (%):	1.56
Al2O3 (%):	24.57	Na2O (%):	2.43
Fe2O3 (%):	8.15	K2O (%):	0.67
CaO (%):	11.36	SO3 (%):	4.63
MgO (%):	4.34	P2O5 (%):	5.95

GULF CANADA CORPORATION - COAL DIVISION

C L E A N S I M U L A T E D P R O D U C T R E P O R T

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88013
Coal zone:	I		
Field sample no.:	08202 - 08203	Composite sample no.:	338

PRODUCT COAL ANALYSIS (SP3)

Target Ash: 7.5 %

Standard:	ASTM
Size analysis	
Fraction size(mm):	6.00 X 0.50
Cutpoint:	sp.g. 1.72
Contribution(%):	24.19
Total yield(%):	24.19

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture(%):	0.85	
Ash(%):	7.21	7.27
Volatile matter(%):	6.47	6.53
Fixed carbon(%):	85.47	86.20
Total sulphur(%):	0.46	0.46
Combustible sulphur(%):	0.44	
Gross calorific value(cal/g):	7,756.00	7,822.00
Volatile matter(dmmf%):	6.30	
Hardgrove index:	47.00	
Phosphorous in coal(%):	0.078	

ASH FUSION ANALYSIS (AF1)

	OXIDIZING ATM	REDUCING ATM
Initial temperature(°C):	1,269.00	1,243.00
Softening temperature(°C):	1,327.00	1,295.00
Hemispherical temperature(°C):	1,361.00	1,324.00
Final temperature(°C):	1,432.00	1,427.00

ASH MINERAL ANALYSIS (AM1)

SiO2(%):	53.32	TiO2(%):	1.62
Al2O3(%):	24.95	Na2O(%):	2.32
Fe2O3(%):	4.18	K2O(%):	0.86
CaO(%):	3.50	SO3(%):	0.86
MgO(%):	2.25	P2O5(%):	2.47

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88013 SEAM - H SAMPLE ID - 79 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 35.00 X 6.00 RELATIVE WEIGHT % - 79.27 ASH % - 44.71

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	1.08	2.15	1.08	2.15	98.92	45.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.99	0.99
1.45	6.52	7.04	7.60	6.35	92.40	47.68	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.79	0.82
1.50	7.86	12.81	15.46	9.63	84.54	50.92	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.76	0.79
1.55	9.25	17.27	24.71	12.49	75.29	55.05	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.85	0.81
1.60	10.74	23.21	35.45	15.74	64.55	60.35	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.80	0.81
1.70	14.68	30.00	50.13	19.91	49.87	69.29	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.79	0.80
1.80	6.99	39.31	57.12	22.29	42.88	74.17	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.88	0.81
2.00	7.66	48.02	64.78	25.33	35.22	79.86	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.78	0.81
2.60	35.22	79.86	100.00	44.54	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.07	0.90

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 6.00 X 0.50 RELATIVE WEIGHT % - 16.78 ASH % - 34.02

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	11.54	2.06	11.54	2.06	88.46	38.04	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.66	0.66
1.45	13.31	5.75	24.85	4.04	75.15	43.76	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.67	0.67
1.50	8.82	10.45	33.67	5.72	66.33	48.18	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.72	0.68
1.55	9.02	14.38	42.69	7.55	57.31	53.51	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.95	0.74
1.60	7.45	17.58	50.14	9.04	49.86	58.87	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.08	0.79
1.70	8.64	23.20	58.78	11.12	41.22	66.35	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.16	0.84
1.80	4.69	30.22	63.47	12.53	36.53	70.99	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.43	0.89
2.00	8.43	42.72	71.90	16.07	28.10	79.47	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.46	0.95
2.60	28.10	79.47	100.00	33.89	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.16	1.01

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88013 SEAM - H SAMPLE ID - 79 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 0.50 X 0.15 RELATIVE WEIGHT % - 2.59 ASH % - 36.94

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	12.98	2.01	12.98	2.01	87.02	41.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.41	1.41
1.45	12.17	3.80	25.15	2.88	74.85	47.16	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.42	1.41
1.50	6.11	5.80	31.26	3.45	68.74	50.84	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.81	1.49
1.55	4.27	9.51	35.53	4.18	64.47	53.58	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.58	1.50
1.60	6.96	11.87	42.49	5.44	57.51	58.62	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.27	1.46
1.70	8.26	17.34	50.75	7.37	49.25	65.55	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.21	1.42
1.80	5.88	25.49	56.63	9.25	43.37	70.98	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.28	1.41
2.00	8.94	39.74	65.57	13.41	34.43	79.09	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.52	1.42
2.60	34.43	79.09	100.00	36.02	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.22	1.35

ANALYSIS TYPE - FROTH

FRACTION SIZE(MM) 0.15 X 0.00 RELATIVE WEIGHT % - 1.36 ASH % - 43.05

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
240.00	*****	43.05	100.00	43.05	0.0	0.0	0.0	0.0	17.63	17.63	0.41	0.41	7.29	7.29	2.10	2.10

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88013 SEAM - H SAMPLE ID - 80 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 35.00 X 6.00 RELATIVE WEIGHT % - 58.05 ASH % - 31.36

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	3.62	2.82	3.62	2.82	96.38	33.31	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.74	0.74
1.45	10.73	7.76	14.35	6.51	85.65	36.51	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.64	0.67
1.50	25.36	11.52	39.71	9.71	60.29	47.02	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.83	0.77
1.55	7.98	16.65	47.69	10.87	52.31	51.65	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.79	0.77
1.60	1.48	19.19	49.17	11.12	50.83	52.60	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.29	0.79
1.70	7.75	25.76	56.92	13.12	43.08	57.43	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.86	0.80
1.80	5.15	33.58	62.07	14.81	37.93	60.67	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.04	0.82
2.00	16.78	43.47	78.85	20.91	21.15	74.31	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.81	0.82
2.60	21.15	74.31	100.00	32.21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.43	0.95

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 6.00 X 0.50 RELATIVE WEIGHT % - 33.49 ASH % - 16.15

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	35.00	3.74	35.00	3.74	65.00	21.34	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.77	0.77
1.45	29.62	8.18	64.62	6.78	35.38	32.35	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.77	1.23
1.50	10.91	11.88	75.53	6.66	24.47	41.48	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.95	1.19
1.55	7.21	14.95	82.74	7.38	17.26	52.56	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.07	1.18
1.60	1.06	15.89	83.80	7.49	16.20	54.95	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.62	1.18
1.70	4.07	22.37	87.87	8.18	12.13	65.89	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.31	1.19
1.80	1.40	31.76	89.27	8.55	10.73	70.34	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.72	1.20
2.00	1.65	38.98	90.92	9.10	9.08	76.04	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.80	1.21
2.60	9.08	76.04	100.00	15.18	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.42	1.23

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88013 SEAM - H SAMPLE ID - 80 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 0.50 X 0.15 RELATIVE WEIGHT % - 5.27 ASH % - 23.45

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	52.48	5.21	52.48	5.21	47.52	42.55	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.14	1.14
1.45	7.57	7.07	60.05	5.44	39.95	49.27	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.74	1.22
1.50	7.46	11.34	67.51	6.10	32.49	57.98	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.88	1.29
1.55	1.45	13.24	68.96	6.25	31.04	60.07	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.35	1.29
1.60	1.34	17.78	70.30	6.47	29.70	61.98	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.73	1.30
1.70	4.73	25.41	75.03	7.66	24.97	68.91	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.53	1.31
1.80	2.00	27.65	77.03	8.18	22.97	72.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.25	1.31
2.00	3.22	39.59	80.25	9.44	19.75	77.87	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.88	1.33
2.60	19.75	77.87	100.00	22.95	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.92	1.45

ANALYSIS TYPE - FROTH

FRACTION SIZE(MM) 0.15 X 0.00 RELATIVE WEIGHT % - 3.19 ASH % - 32.11

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
240.00	*****	32.11	100.00	32.11	0.0	0.0	0.0	0.0	22.48	22.48	0.38	0.38	7.03	7.03	1.50	1.50

========== GULF CANADA CORPORATION - COAL DIVISION ==========

---------- C L E A N S I M U L A T E D P R O D U C T R E P O R T ----------

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88013
Coal zone:	H		
Field sample no.:	08206 - 08207	Composite sample no.:	246

---------- PRODUCT COAL ANALYSIS (SP4) ----------

Target Ash: 10.0 %

Standard:	ASTM
Size analysis	
Fraction size (mm):	35.00 X 6.00
Cutpoint:	sp.g. 1.51
Contribution (%):	14.84
Total yield (%):	14.84

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture (%):	0.91	
Ash (%):	9.82	9.91
Volatile matter (%):	5.92	5.97
Fixed carbon (%):	83.35	84.12
Total sulphur (%):	0.55	0.56
Combustible sulphur (%):	0.51	
Gross calorific value (cal/g):	7,469.00	7,537.00
Volatile matter (dmmf%):	5.60	
Hardgrove index:	40.00	
Phosphorous in coal (%):	0.045	

---------- ASH FUSION ANALYSIS (AF1) ----------

	OXIDIZING ATM	REDUCING ATM
Initial temperature (°C):	1,269.00	1,238.00
Softening temperature (°C):	1,422.00	1,411.00
Hemispherical temperature (°C):	1,472.00	1,472.00
Final temperature (°C):	1,472.00	1,472.00

---------- ASH MINERAL ANALYSIS (AM1) ----------

SiO2 (%):	61.00	TiO2 (%):	1.56
Al2O3 (%):	23.44	Na2O (%):	2.37
Fe2O3 (%):	2.12	K2O (%):	0.87
CaO (%):	2.52	SO3 (%):	1.01
MgO (%):	1.47	P2O5 (%):	1.05

========== GULF CANADA CORPORATION - COAL DIVISION ==========

---------- C L E A N S I M U L A T E D P R O D U C T R E P O R T ----------

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88013
Coal zone:	H		
Field sample no.:	08208	Composite sample no.:	247

---------- PRODUCT COAL ANALYSIS (SP4) ----------

Target Ash: 10.0 %

Standard:	ASTM
Size analysis	
Fraction size(mm):	35.00 X 6.00
Cutpoint:	sp.g. 1.51
Contribution(%):	25.08
Total yield(%):	25.08

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture(%):	0.83	
Ash(%):	10.02	10.10
Volatile matter(%):	6.17	6.22
Fixed carbon(%):	82.98	83.68
Total sulphur(%):	0.49	0.49
Combustible sulphur(%):	0.43	
Gross calorific value(cal/g):	7,459.00	7,522.00
Volatile matter(dmmf%):	5.90	
Hardgrove index:	43.00	
Phosphorous in coal(%):	0.251	

---------- ASH FUSION ANALYSIS (AF1) ----------

	OXIDIZING ATM	REDUCING ATM
Initial temperature(°C):	1,264.00	1,256.00
Softening temperature(°C):	1,277.00	1,274.00
Hemispherical temperature(°C):	1,293.00	1,290.00
Final temperature(°C):	1,322.00	1,317.00

---------- ASH MINERAL ANALYSIS (AM1) ----------

SiO2(%):	49.54	TiO2(%):	1.48
Al2O3(%):	23.44	Na2O(%):	2.64
Fe2O3(%):	2.95	K2O(%):	0.52
CaO(%):	7.84	SO3(%):	1.39
MgO(%):	1.44	P2O5(%):	5.74

GULF CANADA CORPORATION - COAL DIVISION

C L E A N S I M U L A T E D P R O D U C T R E P O R T

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88013
Coal zone:	H		
Field sample no.:	08206 - 08208	Composite sample no.:	339

PRODUCT COAL ANALYSIS (SP3)

Target Ash: 7.5 %

Standard:	ASTM
Size analysis	
Fraction size (mm):	6.00 X 0.50
Cutpoint:	sp.g. 1.55
Contribution (%):	13.05
Total yield (%):	13.05

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture (%):	0.98	
Ash (%):	7.68	7.76
Volatile matter (%):	6.67	6.74
Fixed carbon (%):	84.67	85.50
Total sulphur (%):	0.51	0.52
Combustible sulphur (%):	0.49	
Gross calorific value (cal/g):	7,717.00	7,794.00
Volatile matter (dmmf%):	6.50	
Hardgrove index:	43.00	
Phosphorous in coal (%):	0.102	

ASH FUSION ANALYSIS (AFI)

	OXIDIZING ATM	REDUCING ATM
Initial temperature (°C):	1,253.00	1,159.00
Softening temperature (°C):	1,277.00	1,274.00
Hemispherical temperature (°C):	1,364.00	1,359.00
Final temperature (°C):	1,401.00	1,395.00

ASH MINERAL ANALYSIS (AMI)

SiO2 (%):	55.99	TiO2 (%):	1.02
Al2O3 (%):	23.44	Na2O (%):	2.45
Fe2O3 (%):	2.72	K2O (%):	0.63
CaO (%):	4.67	SO3 (%):	0.72
MgO (%):	1.55	P2O5 (%):	3.03

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88014 SEAM - I SAMPLE ID - 81 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 35.00 X 6.00 RELATIVE WEIGHT % - 52.89 ASH % - 42.08

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	0.24	4.72	0.24	4.72	99.76	42.34	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.74	0.74
1.45	7.71	7.69	7.95	7.60	92.05	45.24	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.66	1.63
1.50	11.46	9.53	19.41	8.74	80.59	50.32	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.79	1.13
1.55	13.13	16.27	32.54	11.78	67.46	56.95	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.88	1.03
1.60	4.18	19.47	36.72	12.65	63.28	59.42	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.13	1.04
1.70	14.36	26.45	51.08	16.53	48.92	69.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.84	0.99
1.80	3.78	33.18	54.86	17.68	45.14	72.11	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.94	0.98
2.00	10.61	51.34	65.47	23.13	34.53	78.49	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.22	1.02
2.60	34.53	78.49	100.00	42.25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.39	1.15

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 6.00 X 0.50 RELATIVE WEIGHT % - 34.89 ASH % - 20.84

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	1.43	3.15	1.43	3.15	98.57	21.12	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.16	1.16
1.45	30.85	3.20	32.28	3.20	67.72	29.28	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.77	0.79
1.50	14.83	6.77	47.11	4.32	52.89	35.59	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.68	0.75
1.55	10.70	10.65	57.81	5.49	42.19	41.91	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.82	0.77
1.60	6.58	14.60	64.39	6.42	35.61	46.96	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.07	0.80
1.70	12.06	19.38	76.45	8.47	23.55	61.08	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.32	0.88
1.80	4.29	26.20	80.74	9.41	19.26	68.85	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.51	0.91
2.00	4.12	40.97	84.86	10.94	15.14	76.44	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.46	0.94
2.60	15.14	76.44	100.00	20.86	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.58	1.04

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88014 SEAM - I SAMPLE ID - 81 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 0.50 X 0.15 RELATIVE WEIGHT % - 7.86 ASH % - 23.63

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	5.41	2.02	5.41	2.02	94.59	24.20	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.22	1.22
1.45	11.48	3.73	16.89	3.18	83.11	27.03	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.11	1.15
1.50	25.37	3.82	42.26	3.57	57.74	37.23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.50	1.36
1.55	6.36	7.14	48.62	4.03	51.38	40.96	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.72	1.41
1.60	8.23	11.14	56.85	5.06	43.15	46.64	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.21	1.38
1.70	12.76	19.70	69.61	7.74	30.39	57.95	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.28	1.36
1.80	6.91	23.14	76.52	9.14	23.48	68.20	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.26	1.35
2.00	5.45	33.33	81.97	10.74	18.03	78.74	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.31	1.35
2.60	18.03	78.74	100.00	23.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.40	1.36

ANALYSIS TYPE - FROTH

FRACTION SIZE(MM) 0.15 X 0.00 RELATIVE WEIGHT % - 4.36 ASH % - 26.43

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
240.00	*****	26.43	100.00	26.43	0.0	0.0	0.0	0.0	24.77	24.77	0.39	0.39	5.96	5.96	1.44	1.44

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88014 SEAM - I SAMPLE ID - 82 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 35.00 X 6.00 RELATIVE WEIGHT % - 29.83 ASH % - 29.98

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	0.15	7.42	0.15	7.42	99.85	30.70	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.59	0.59
1.45	35.53	11.28	35.68	11.26	64.32	41.42	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.68	0.68
1.50	8.82	15.62	44.50	12.13	55.50	45.52	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.68	0.68
1.55	10.02	20.15	54.52	13.60	45.48	51.11	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.52	0.83
1.60	5.54	25.41	60.06	14.69	39.94	54.68	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	0.85
1.70	5.78	29.91	65.84	16.03	34.16	58.87	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.44	0.90
1.80	4.55	37.40	70.39	17.41	29.61	62.17	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.93	0.90
2.00	5.45	47.62	75.84	19.58	24.16	65.45	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.49	0.95
2.60	24.16	65.45	100.00	30.66	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	0.96

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 6.00 X 0.50 RELATIVE WEIGHT % - 53.20 ASH % - 17.12

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	9.80	3.57	9.80	3.57	90.20	18.82	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.88	0.88
1.45	40.91	4.19	50.71	4.07	49.29	30.96	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.98	0.96
1.50	7.05	8.24	57.76	4.58	42.24	34.75	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.03	0.97
1.55	9.88	11.54	67.64	5.60	32.36	41.84	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.24	1.01
1.60	6.62	15.32	74.26	6.46	25.74	48.66	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.36	1.04
1.70	4.63	18.63	78.89	7.18	21.11	55.24	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.14	1.05
1.80	5.45	25.03	84.34	8.33	15.66	65.76	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.77	1.09
2.00	3.79	36.88	88.13	9.56	11.87	74.98	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.54	1.11
2.60	11.87	74.98	100.00	17.32	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.49	1.16

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88014 SEAM - I SAMPLE ID - 82 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 0.50 X 0.15 RELATIVE WEIGHT % - 9.99 ASH % - 16.73

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	29.30	5.49	29.30	5.49	70.70	20.34	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.85	1.85
1.45	31.73	5.98	61.03	5.74	38.97	32.04	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.81	1.83
1.50	4.49	7.45	65.52	5.86	34.48	35.24	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.01	1.84
1.55	8.87	11.08	74.39	6.48	25.61	43.61	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.44	1.79
1.60	2.06	16.06	76.45	6.74	23.55	46.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.80	1.77
1.70	4.01	17.53	80.46	7.28	19.54	51.86	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.12	1.73
1.80	5.13	21.05	85.59	8.10	14.41	62.83	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.50	1.72
2.00	3.29	36.19	88.88	9.14	11.12	70.71	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.37	1.71
2.60	11.12	70.71	100.00	15.99	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.97	1.74

ANALYSIS TYPE - FROTH

FRACTION SIZE(MM) 0.15 X 0.00 RELATIVE WEIGHT % - 6.98 ASH % - 29.00

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
240.00	*****	29.00	100.00	29.00	0.0	0.0	0.0	0.0	24.40	24.40	0.44	0.44	6.43	6.43	1.47	1.47

========== GULF CANADA CORPORATION - COAL DIVISION ==========

---------- C L E A N S I M U L A T E D P R O D U C T R E P O R T ----------

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88014
Coal zone:	I		
Field sample no.:	08211 - 08212	Composite sample no.:	248

---------- PRODUCT COAL ANALYSIS (SP2) ----------

Target Ash: 8.0 %

Standard:	ASTM	
Size analysis		
Fraction size (mm):	35.00 X	6.00
Cutpoint:	sp.g.	1.47
Contribution (%):		8.52
Total yield (%):		3.94

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture (%):	0.80	
Ash (%):	7.30	7.36
Volatile matter (%):	6.09	6.14
Fixed carbon (%):	85.81	86.50
Total sulphur (%):	0.51	0.51
Combustible sulphur (%):	0.49	
Gross calorific value (cal/g):	7,765.00	7,828.00
Volatile matter (dmmf%):	5.90	
Hardgrove index:	43.00	
Phosphorous in coal (%):	0.041	

---------- ASH FUSION ANALYSIS (AF1) ----------

	OXIDIZING ATM	REDUCING ATM
Initial temperature (°C):	1,269.00	1,238.00
Softening temperature (°C):	1,359.00	1,301.00
Hemispherical temperature (°C):	1,385.00	1,374.00
Final temperature (°C):	1,472.00	1,456.00

---------- ASH MINERAL ANALYSIS (AM1) ----------

SiO2 (%):	53.56	TiO2 (%):	2.30
Al2O3 (%):	24.95	Na2O (%):	2.37
Fe2O3 (%):	5.66	K2O (%):	0.81
CaO (%):	3.16	SO3 (%):	0.67
MgO (%):	2.71	P2O5 (%):	1.30

GULF CANADA CORPORATION - COAL DIVISION

C L E A N S I M U L A T E D P R O D U C T R E P O R T

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88014
Coal zone:	!		
Field sample no.:	08211 - 08212	Composite sample no.:	248

PRODUCT COAL ANALYSIS (SP5)

Target Ash: 11.0 %

Standard:	ASTM	
Size analysis		
Fraction size (mm):	35.00 X	6.00
Cutpoint:	sp.g.	1.51
Contribution (%):		3.94
Total yield (%):		3.94

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture (%):	0.66	
Ash (%):	10.58	10.65
Volatile matter (%):	7.78	7.83
Fixed carbon (%):	80.98	81.52
Total sulphur (%):	0.48	0.48
Combustible sulphur (%):	0.42	
Gross calorific value (cal/g):	7,196.00	7,244.00
Volatile matter (dmmf%):	7.70	
Hardgrove index:	41.00	
Phosphorous in coal (%):	0.035	

ASH FUSION ANALYSIS (AF1)

	OXIDIZING ATM	REDUCING ATM
Initial temperature (°C):	1,264.00	1,222.00
Softening temperature (°C):	1,327.00	1,264.00
Hemispherical temperature (°C):	1,353.00	1,295.00
Final temperature (°C):	1,385.00	1,356.00

ASH MINERAL ANALYSIS (AM1)

SiO2 (%):	58.60	TiO2 (%):	1.10
Al2O3 (%):	19.66	Na2O (%):	1.85
Fe2O3 (%):	6.64	K2O (%):	0.76
CaO (%):	2.74	SO3 (%):	1.44
MgO (%):	3.26	P2O5 (%):	0.75

========== GULF CANADA CORPORATION - COAL DIVISION ==========

---------- C L E A N S I M U L A T E D P R O D U C T R E P O R T ----------

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88014
Coal zone:	I		
Field sample no.:	08211 - 08213	Composite sample no.:	340

---------- PRODUCT COAL ANALYSIS (SP3) ----------

Target Ash: 7.5 %

Standard:	ASTM
Size analysis	
Fraction size (mm):	6.00 X 0.50
Cutpoint:	sp.g. 1.67
Contribution (%):	32.52
Total yield (%):	32.52

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture (%):	0.88	
Ash (%):	7.22	7.28
Volatile matter (%):	7.82	7.89
Fixed carbon (%):	84.08	84.83
Total sulphur (%):	0.49	0.49
Combustible sulphur (%):	0.45	
Gross calorific value (cal/g):	7,691.00	7,759.00
Volatile matter (dmmf%):	7.80	
Hardgrove index:	55.00	
Phosphorous in coal (%):	0.056	

---------- ASH FUSION ANALYSIS (AF1) ----------

	OXIDIZING ATM	REDUCING ATM
Initial temperature (°C):	1,206.00	1,153.00
Softening temperature (°C):	1,290.00	1,251.00
Hemispherical temperature (°C):	1,327.00	1,285.00
Final temperature (°C):	1,435.00	1,432.00

---------- ASH MINERAL ANALYSIS (AM1) ----------

SiO2 (%):	55.42	TiO2 (%):	1.26
Al2O3 (%):	23.82	Na2O (%):	2.21
Fe2O3 (%):	3.75	K2O (%):	0.88
CaO (%):	3.69	SO3 (%):	1.52
MgO (%):	2.73	P2O5 (%):	1.79

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88014 SEAM - H SAMPLE ID - 84 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 35.00 X 6.00 RELATIVE WEIGHT % - 51.24 ASH % - 36.21

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	0.21	6.32	0.21	6.32	99.79	36.32	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.02	1.02
1.45	6.62	8.81	6.83	8.73	93.17	38.28	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.82	1.80
1.50	7.05	10.01	13.88	9.38	86.12	40.59	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.09	1.44
1.55	17.46	16.63	31.34	13.42	68.66	46.69	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.11	1.25
1.60	19.14	21.57	50.48	16.51	49.52	56.40	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.06	1.18
1.70	13.95	26.35	64.43	18.64	35.57	68.18	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.04	1.15
1.80	5.95	32.46	70.38	19.81	29.62	75.36	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.05	1.14
2.00	6.31	40.80	76.69	21.54	23.31	84.71	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.08	1.14
2.60	23.31	84.71	100.00	36.26	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.65	1.26

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 6.00 X 0.50 RELATIVE WEIGHT % - 38.02 ASH % - 19.56

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	3.22	2.91	3.22	2.91	96.78	19.63	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.39	1.39
1.45	43.03	5.30	46.25	5.13	53.75	31.11	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.06	1.08
1.50	9.85	9.39	56.10	5.88	43.90	35.98	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.12	1.09
1.55	13.46	15.37	69.56	7.72	30.44	45.09	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.05	1.08
1.60	3.44	19.09	73.00	8.25	27.00	48.41	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.22	1.09
1.70	6.96	23.55	79.96	9.58	20.04	57.04	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.18	1.10
1.80	4.62	29.51	84.58	10.67	15.42	65.29	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.55	1.12
2.00	4.66	40.41	89.24	12.23	10.76	76.06	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.34	1.13
2.60	10.76	76.06	100.00	19.09	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.58	1.18

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88014 SEAM - H SAMPLE ID - 84 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 0.50 X 0.15 RELATIVE WEIGHT % - 6.97 ASH % - 25.50

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	1.44	2.64	1.44	2.64	98.56	25.22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.89	1.89
1.45	20.46	4.29	21.90	4.18	78.10	30.70	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.51	1.53
1.50	14.71	5.28	36.61	4.62	63.39	36.60	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.60	1.56
1.55	7.92	7.95	44.53	5.21	55.47	40.69	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.44	1.54
1.60	8.26	12.84	52.79	6.41	47.21	45.56	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.48	1.53
1.70	10.46	17.77	63.25	8.29	36.75	53.47	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.64	1.55
1.80	8.43	22.53	71.68	9.96	28.32	62.68	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.61	1.56
2.00	8.12	35.58	79.80	12.57	20.20	73.57	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.62	1.56
2.60	20.20	73.57	100.00	24.89	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.00	1.65

ANALYSIS TYPE - FROTH

FRACTION SIZE(MM) 0.15 X 0.00 RELATIVE WEIGHT % - 3.77 ASH % - 33.07

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
240.00	*****	33.07	100.00	33.07	0.0	0.0	0.0	0.0	21.95	21.95	0.41	0.41	5.83	5.83	1.93	1.93

SAMPLE PRODUCT ID: SP2 COAL COMPOSITION ID: CC1 ULTIMATE ID:

========== GULF CANADA CORPORATION - COAL DIVISION ==========

---------- C L E A N S I M U L A T E D P R O D U C T R E P O R T ----------

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88014
Coal zone:	H		
Field sample no.:	08217	Composite sample no.:	250

---------- PRODUCT COAL ANALYSIS (SP4) ----------

Target Ash: 10.0 %

Standard:	ASTM	
Size analysis		
Fraction size (mm):	35.00 X	6.00
Cutpoint:	sp.g.	1.51
Contribution (%):		9.80
Total yield (%):		9.80

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture (%):	0.80	
Ash (%):	9.63	9.71
Volatile matter (%):	5.85	5.90
Fixed carbon (%):	83.72	84.39
Total sulphur (%):	0.51	0.51
Combustible sulphur (%):	0.44	
Gross calorific value (cal/g):	7,500.00	7,561.00
Volatile matter (dmmf%):	5.60	
Hardgrove index:	40.00	
Phosphorous in coal (%):	0.156	

---------- ASH FUSION ANALYSIS (AF1) ----------

	OXIDIZING ATM	REDUCING ATM
Initial temperature (°C):	1,261.00	1,206.00
Softening temperature (°C):	1,282.00	1,253.00
Hemispherical temperature (°C):	1,295.00	1,269.00
Final temperature (°C):	1,353.00	1,348.00

---------- ASH MINERAL ANALYSIS (AM1) ----------

SiO2 (%):	52.26	TiO2 (%):	1.38
Al2O3 (%):	23.06	Na2O (%):	2.26
Fe2O3 (%):	2.29	K2O (%):	0.75
CaO (%):	7.14	SO3 (%):	1.83
MgO (%):	2.68	P2O5 (%):	3.70

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88015 SEAM - L? SAMPLE ID - 85 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 35.00 X 6.00 RELATIVE WEIGHT % - 69.66 ASH % - 0.0

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ/KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	1.39	3.48	1.39	3.48	98.61	42.86	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.86	0.86
1.45	2.66	8.36	4.05	6.69	95.95	43.81	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.95	0.92
1.50	5.15	14.37	9.20	10.99	90.80	45.48	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.84	0.87
1.55	12.05	20.13	21.25	16.17	78.75	49.36	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.72	0.79
1.60	9.83	24.40	31.08	18.77	68.92	52.92	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.78	0.78
1.70	16.82	31.48	47.90	23.24	52.10	59.85	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.87	0.81
1.80	4.75	38.95	52.65	24.65	47.35	61.94	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.24	0.85
2.00	15.59	50.85	68.24	30.64	31.76	67.39	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.93	0.87
2.60	31.76	67.39	100.00	42.31	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.01	0.91

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 6.00 X 0.50 RELATIVE WEIGHT % - 25.87 ASH % - 0.0

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ/KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	1.26	5.68	1.26	5.68	98.74	43.61	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.06	1.06
1.45	8.03	7.69	9.29	7.42	90.71	46.79	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.06	1.06
1.50	10.02	13.80	19.31	10.73	80.69	50.89	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.05	1.05
1.55	8.99	19.30	28.30	13.45	71.70	54.85	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.02	1.04
1.60	4.94	21.75	33.24	14.69	66.76	57.30	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.22	1.07
1.70	11.05	31.87	44.29	18.97	55.71	62.34	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.19	1.10
1.80	7.37	40.88	51.66	22.10	48.34	65.62	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.35	1.14
2.00	16.03	52.75	67.69	29.36	32.31	72.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.72	1.27
2.60	32.31	72.00	100.00	43.13	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.03	1.52

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88015 SEAM - L? SAMPLE ID - 85 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 0.50 X 0.15 RELATIVE WEIGHT % - 2.89 ASH % - 0.0

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	8.88	8.23	8.88	8.23	91.12	47.41	0.0	0.0	0:0	0.0	0.0	0.0	0.0	0.0	1.16	1.16
1.45	9.81	13.37	18.69	10.93	81.31	51.52	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.24	1.20
1.50	9.11	18.93	27.80	13.55	72.20	55.63	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.25	1.22
1.55	4.91	25.53	32.71	15.35	67.29	57.82	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.46	1.25
1.60	3.50	28.46	36.21	16.62	63.79	59.44	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.25	1.25
1.70	7.24	32.27	43.45	19.22	56.55	62.91	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.67	1.32
1.80	8.88	44.16	52.33	23.46	47.67	66.41	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.68	1.38
2.00	12.15	47.66	64.48	28.02	35.52	72.82	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.82	1.47
2.60	35.52	72.82	100.00	43.93	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.89	1.62

GULF CANADA CORPORATION - COAL DIVISION

C L E A N S I M U L A T E D P R O D U C T R E P O R T

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88015
Coal zone:	L ?		
Field sample no.:	08325	Composite sample no.:	251

PRODUCT COAL ANALYSIS (SP4)

Target Ash: 10.0 %

Standard:	ASTM	
Size analysis		
Fraction size(mm):	35.00 X	6.00
Cutpoint:	sp.g.	1.49
Contribution(%):		6.16
Total yield(%):		6.16

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture(%):	0.95	
Ash(%):	9.59	9.68
Volatile matter(%):	10.20	10.30
Fixed carbon(%):	79.26	80.02
Total sulphur(%):	0.58	0.59
Combustible sulphur(%):	0.56	
Gross calorific value(cal/g):	7,469.00	7,540.00
Volatile matter(dmmf%):	10.50	
Hardgrove index:	44.00	
Phosphorous in coal(%):	0.050	

ASH FUSION ANALYSIS (AFI)

	OXIDIZING ATM	REDUCING ATM
Initial temperature(°C):	1,295.00	1,169.00
Softening temperature(°C):	1,459.00	1,295.00
Hemispherical temperature(°C):	1,472.00	1,356.00
Final temperature(°C):	1,472.00	1,472.00

ASH MINERAL ANALYSIS (AMI)

SiO2(%):	56.30	TiO2(%):	3.29
Al2O3(%):	25.33	Na2O(%):	2.74
Fe2O3(%):	2.89	K2O(%):	1.01
CaO(%):	2.18	SO3(%):	0.58
MgO(%):	1.04	P2O5(%):	1.19

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88015 SEAM - K SAMPLE ID - 86 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 35.00 X 6.00 RELATIVE WEIGHT % - 32.53 ASH % - 36.88

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	0.50	5.02	0.50	5.02	99.50	36.14	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.67	1.67
1.45	8.34	7.22	8.84	7.10	91.16	38.78	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.05	1.09
1.50	8.75	11.51	17.59	9.29	82.41	41.68	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.08	1.08
1.55	9.14	16.12	26.73	11.63	73.27	44.87	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.17	1.11
1.60	8.81	20.93	35.54	13.93	64.46	48.14	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.03	1.09
1.70	13.68	24.87	49.22	16.97	50.78	54.41	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.35	1.16
1.80	7.55	32.21	56.77	19.00	43.23	58.28	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.50	1.21
2.00	13.38	48.21	70.15	24.57	29.85	62.80	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.66	1.29
2.60	29.85	62.80	100.00	35.98	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.04	1.22

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 6.00 X 0.50 RELATIVE WEIGHT % - 46.47 ASH % - 17.46

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	8.52	3.57	8.52	3.57	91.48	18.61	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.98	0.98
1.45	19.98	4.19	28.50	4.00	71.50	22.65	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	0.99
1.50	15.92	8.24	44.42	5.52	55.58	26.77	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.11	1.04
1.55	11.10	11.54	55.52	6.73	44.48	30.57	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.32	1.09
1.60	9.88	15.32	65.40	8.02	34.60	34.93	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.42	1.14
1.70	14.48	18.63	79.88	9.95	20.12	46.66	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.80	1.26
1.80	6.90	25.03	86.78	11.15	13.22	57.95	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.79	1.30
2.00	5.91	36.88	92.69	12.79	7.31	74.98	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.40	1.31
2.60	7.31	74.98	100.00	17.33	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.23	1.30

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88015 SEAM - K SAMPLE ID - 86 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 0.50 X 0.15 RELATIVE WEIGHT % - 11.71 ASH % - 12.29

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	18.01	2.29	18.01	2.29	81.99	14.09	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.66	1.66
1.45	3.05	2.69	21.06	2.35	78.94	14.53	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.63	1.66
1.50	10.87	2.80	31.93	2.50	68.07	16.40	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.54	1.62
1.55	18.56	5.22	50.49	3.50	49.51	20.60	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.50	1.57
1.60	20.19	8.76	70.68	5.00	29.32	28.75	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.41	1.53
1.70	12.47	11.69	83.15	6.01	16.85	41.37	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.52	1.53
1.80	6.59	20.32	89.74	7.06	10.26	54.90	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.77	1.54
2.00	3.71	33.05	93.45	8.09	6.55	67.27	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.91	1.56
2.60	6.55	67.27	100.00	11.97	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.53	1.56

ANALYSIS TYPE - FROTH

FRACTION SIZE(MM) 0.15 X 0.00 RELATIVE WEIGHT % - 9.29 ASH % - 13.53

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
240.00	*****	13.53	100.00	13.53	0.0	0.0	0.0	0.0	29.65	29.65	0.53	0.53	5.91	5.91	1.52	1.52

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88015 SEAM - K SAMPLE ID - 87 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 35.00 X 6.00 RELATIVE WEIGHT % - 45.03 ASH % - 48.39

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	0.18	6.52	0.18	6.52	99.82	49.03	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.78	1.78
1.45	0.25	8.60	0.43	7.73	99.57	49.13	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.64	1.70
1.50	0.86	10.69	1.29	9.70	98.71	49.47	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.56	1.61
1.55	3.34	14.40	4.63	13.09	95.37	50.69	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.53	1.55
1.60	6.89	21.07	11.52	17.86	88.48	53.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.13	1.30
1.70	25.19	26.14	36.71	23.54	63.29	63.69	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.19	1.22
1.80	14.97	30.85	51.68	25.66	48.32	73.86	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.42	1.28
2.00	4.81	39.99	56.49	26.88	43.51	77.61	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.58	1.31
2.60	43.51	77.61	100.00	48.95	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.78	1.51

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 6.00 X 0.50 RELATIVE WEIGHT % - 36.16 ASH % - 35.66

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	6.43	1.98	6.43	1.98	93.57	38.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.15	1.15
1.45	5.92	6.95	12.35	4.36	87.65	40.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.24	1.19
1.50	5.81	10.37	18.16	6.28	81.84	42.21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.26	1.21
1.55	1.26	14.50	19.42	6.82	80.58	42.64	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.69	1.25
1.60	6.59	18.53	26.01	9.79	73.99	44.79	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.79	1.38
1.70	22.36	21.93	48.37	15.40	51.63	54.69	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.50	1.44
1.80	12.11	30.51	60.48	18.42	39.52	62.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.59	1.47
2.00	11.71	43.32	72.19	22.46	27.81	70.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.94	1.54
2.60	27.81	70.01	100.00	35.69	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.96	1.66

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88015 SEAM - K SAMPLE ID - 87 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 0.50 X 0.15 RELATIVE WEIGHT % - 11.18 ASH % - 22.72

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	34.49	5.19	34.49	5.19	65.51	31.12	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.42	1.42
1.45	18.14	9.89	52.63	6.81	47.37	39.25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.67	1.51
1.50	3.76	10.49	56.39	7.06	43.61	41.73	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.16	1.48
1.55	10.84	19.04	67.23	8.99	32.77	49.23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.48	1.48
1.60	1.97	22.78	69.20	9.38	30.80	50.92	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.35	1.48
1.70	2.83	23.45	72.03	9.93	27.97	53.70	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.30	1.47
1.80	5.77	25.44	77.80	11.08	22.20	61.05	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.34	1.46
2.00	6.41	41.60	84.21	13.41	15.79	68.94	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.36	1.45
2.60	15.79	68.94	100.00	22.17	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.02	1.39

ANALYSIS TYPE - FROTH

FRACTION SIZE(MM) 0.15 X 0.00 RELATIVE WEIGHT % - 7.63 ASH % - 21.32

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
240.00	*****	21.32	100.00	21.32	0.0	0.0	0.0	0.0	26.06	26.06	0.54	0.54	6.31	6.31	1.41	1.41

========== GULF CANADA CORPORATION - COAL DIVISION ==========

---------- C L E A N S I M U L A T E D P R O D U C T R E P O R T ----------

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88015
Coal zone:	K		
Field sample no.:	08220 - 08222	Composite sample no.:	252

---------- PRODUCT COAL ANALYSIS (SP4) ----------

Target Ash: 10.0 %

Standard:	ASTM	
Size analysis		
Fraction size (mm):	35.00 X	6.00
Cutpoint:	sp.g.	1.52
Contribution (%):		5.50
Total yield (%):		5.50

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture (%):	0.89	
Ash (%):	9.42	9.50
Volatile matter (%):	7.64	7.71
Fixed carbon (%):	82.05	82.79
Total sulphur (%):	0.53	0.53
Combustible sulphur (%):	0.50	
Gross calorific value (cal/g):	7,493.00	7,560.00
Volatile matter (dmmf%):	7.60	
Hardgrove index:	49.00	
Phosphorous in coal (%):	0.206	

---------- ASH FUSION ANALYSIS (AF1) ----------

	OXIDIZING ATM	REDUCING ATM
Initial temperature (°C):	1,269.00	1,211.00
Softening temperature (°C):	1,282.00	1,232.00
Hemispherical temperature (°C):	1,301.00	1,251.00
Final temperature (°C):	1,338.00	1,332.00

---------- ASH MINERAL ANALYSIS (AM1) ----------

SiO2 (%):	50.34	TiO2 (%):	0.97
Al2O3 (%):	24.95	Na2O (%):	2.48
Fe2O3 (%):	3.55	K2O (%):	0.73
CaO (%):	6.69	SO3 (%):	0.89
MgO (%):	1.38	P2O5 (%):	5.02

SAMPLE PRODUCT ID: SP3 COAL COMPOSITION ID: CC1 ULTIMATE ID:

========== GULF CANADA CORPORATION - COAL DIVISION ==========

---------- C L E A N S I M U L A T E D P R O D U C T R E P O R T ----------

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88015
Coal zone:	K		
Field sample no.:	08220 - 08222	Composite sample no.:	343

---------- PRODUCT COAL ANALYSIS (SP3) ----------

Target Ash: 7.5 %

Standard:	ASTM	
Size analysis		
Fraction size(mm):	6.00 X 0.50	
Cutpoint:	sp.g. 1.58	
Contribution(%):	23.69	
Total yield(%):	23.69	

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture(%):	0.97	
Ash(%):	7.85	7.93
Volatile matter(%):	8.76	8.85
Fixed carbon(%):	82.42	83.22
Total sulphur(%):	0.56	0.57
Combustible sulphur(%):	0.53	
Gross calorific value(cal/g):	7,703.00	7,778.00
Volatile matter(dmmf%):	8.80	
Hardgrove index:	57.00	
Phosphorous in coal(%):	0.136	

---------- ASH FUSION ANALYSIS (AF1) ----------

	OXIDIZING ATM	REDUCING ATM
Initial temperature(°C):	1,259.00	1,180.00
Softening temperature(°C):	1,285.00	1,253.00
Hemispherical temperature(°C):	1,295.00	1,285.00
Final temperature(°C):	1,401.00	1,395.00

---------- ASH MINERAL ANALYSIS (AM1) ----------

SiO2(%):	51.78	TiO2(%):	2.32
Al2O3(%):	25.33	Na2O(%):	2.29
Fe2O3(%):	3.43	K2O(%):	0.75
CaO(%):	5.51	SO3(%):	0.82
MgO(%):	1.32	P2O5(%):	3.97

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88015 SEAM - J SAMPLE ID - 88 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 35.00 X 6.00 RELATIVE WEIGHT % - 53.89 ASH % - 50.20

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	0.56	5.05	0.56	5.05	99.44	49.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.48	1.48
1.45	4.99	8.00	5.55	7.70	94.45	51.69	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.03	1.08
1.50	2.02	11.35	7.57	8.68	92.43	52.58	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.26	1.12
1.55	2.67	18.35	10.24	11.20	89.76	53.59	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.25	1.16
1.60	3.66	23.22	13.90	14.36	86.10	54.88	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.05	1.13
1.70	12.55	31.18	26.45	22.34	73.55	58.93	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.83	0.99
1.80	18.45	36.16	44.90	28.02	55.10	66.55	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.75	0.89
2.00	16.39	45.92	61.29	32.81	38.71	75.29	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.78	0.86
2.60	38.71	75.29	100.00	49.25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.92	0.88

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 6.00 X 0.50 RELATIVE WEIGHT % - 33.53 ASH % - 25.52

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	23.78	3.14	23.78	3.14	76.22	32.32	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.85	0.85
1.45	22.82	6.74	46.60	4.90	53.40	43.25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.80	0.83
1.50	6.40	11.22	53.00	5.67	47.00	47.62	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.08	0.86
1.55	5.81	15.92	58.81	6.68	41.19	52.09	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.15	0.89
1.60	5.11	19.45	63.92	7.70	36.08	56.71	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.27	0.92
1.70	5.31	26.85	69.23	9.17	30.77	61.86	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.24	0.94
1.80	3.94	34.61	73.17	10.54	26.83	65.86	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.20	0.95
2.00	5.57	45.95	78.74	13.04	21.26	71.08	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.47	0.99
2.60	21.26	71.08	100.00	25.38	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.07	1.01

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88015 SEAM - J SAMPLE ID - 88 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 0.50 X 0.15 RELATIVE WEIGHT % - 7.95 ASH % - 20.87

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	44.36	4.22	44.36	4.22	55.64	32.99	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.49	1.49
1.45	20.87	8.95	65.23	5.73	34.77	47.42	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.76	1.58
1.50	3.27	14.84	68.50	6.17	31.50	50.80	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.56	1.58
1.55	5.81	20.21	74.31	7.27	25.69	57.72	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.95	1.60
1.60	1.69	23.37	76.00	7.62	24.00	60.14	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.98	1.61
1.70	4.24	26.65	80.24	8.63	19.76	67.32	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.68	1.62
1.80	1.54	30.10	81.78	9.03	18.22	70.47	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.67	1.62
2.00	2.85	50.07	84.63	10.42	15.37	74.25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.55	1.62
2.60	15.37	74.25	100.00	20.23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.11	1.54

ANALYSIS TYPE - FROTH

FRACTION SIZE(MM) 0.15 X 0.00 RELATIVE WEIGHT % - 4.63 ASH % - 21.39

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
240.00	*****	21.39	100.00	21.39	0.0	0.0	0.0	0.0	26.36	26.36	0.61	0.61	7.86	7.86	1.53	1.53

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88015 SEAM - J SAMPLE ID - 89 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 35.00 X 6.00 RELATIVE WEIGHT % - 90.52 ASH % - 0.0

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	CUM. S	CUM. S	CUM. VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.60	0.11	8.85	0.11	8.85	99.89	82.71	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.42	1.42
1.70	0.04	13.74	0.15	10.15	99.85	82.74	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	1.31
1.80	0.10	33.96	0.25	19.68	99.75	82.79	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.51	1.39
2.00	5.65	51.08	5.90	49.75	94.10	84.69	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.09	1.10
2.60	94.10	84.69	100.00	82.63	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	1.01

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 6.00 X 0.50 RELATIVE WEIGHT % - 6.00 ASH % - 7.08

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	CUM. S	CUM. S	CUM. VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	8.67	1.94	8.67	1.94	91.33	68.30	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.35	1.35
1.45	5.50	5.51	14.17	3.33	85.83	72.32	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.32	1.34
1.50	2.79	10.77	16.96	4.55	83.04	74.39	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.84	1.26
1.55	3.02	15.10	19.98	6.14	80.02	76.63	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.14	1.24
1.60	0.46	23.64	20.44	6.54	79.56	76.94	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.71	1.23
1.70	2.40	29.23	22.84	8.92	77.16	78.42	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.42	1.25
1.80	0.93	36.87	23.77	10.02	76.23	78.93	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.25	1.25
2.00	6.81	50.55	30.58	19.04	69.42	81.71	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.17	1.23
2.60	69.42	81.71	100.00	62.55	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.35	1.31

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88015 SEAM - J SAMPLE ID - 89 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 0.50 X 0.15 RELATIVE WEIGHT % - 1.63 ASH % - 0.0

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	CUM. S	CUM. S	CUM. VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	29.84	4.38	29.84	4.38	70.16	59.76	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.18	1.18
1.45	10.48	5.76	40.32	4.74	59.68	69.24	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.33	1.22
1.50	1.90	6.79	42.22	4.83	57.78	71.30	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.71	1.20
1.55	1.27	10.04	43.49	4.98	56.51	72.67	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.51	1.18
1.60	0.95	11.89	44.44	5.13	55.56	73.71	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.39	1.16
1.70	1.90	17.06	46.34	5.62	53.66	75.72	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.74	1.14
1.80	1.90	39.40	48.24	6.95	51.76	77.05	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.33	1.15
2.00	3.81	44.86	52.05	9.73	47.95	79.61	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.83	1.13
2.60	47.95	79.61	100.00	43.23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.29	1.20

ANALYSIS TYPE - FROTH

FRACTION SIZE(MM) 0.15 X 0.00 RELATIVE WEIGHT % - 1.85 ASH % - 43.00

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	CUM. S	CUM. S	CUM. VOL.	CUM. VOL.	MOIST	CUM. MOIST
240.00	*****	43.00	100.00	43.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

========== GULF CANADA CORPORATION - COAL DIVISION ==========

---------- C L E A N S I M U L A T E D P R O D U C T R E P O R T ----------

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88015
Coal zone:	J		
Field sample no.:	08225 - 08226	Composite sample no.:	344

---------- PRODUCT COAL ANALYSIS (SP3) ----------

Target Ash: 7.5 %

Standard:	ASTM
Size analysis	
Fraction size(mm):	6.00 X 0.50
Cutpoint:	sp.g. 1.59
Contribution(%):	13.53
Total yield(%):	13.53

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture(%):	1.00	
Ash(%):	7.24	7.31
Volatile matter(%):	8.18	8.26
Fixed carbon(%):	83.58	84.43
Total sulphur(%):	0.71	0.72
Combustible sulphur(%):	0.59	
Gross calorific value(cal/g):	7,772.00	7,851.00
Volatile matter(dmmf%):	8.10	
Hardgrove index:	53.00	
Phosphorous in coal(%):	0.042	

---------- ASH FUSION ANALYSIS (AF1) ----------

	OXIDIZING ATM	REDUCING ATM
Initial temperature(°C):	1,232.00	1,182.00
Softening temperature(°C):	1,248.00	1,195.00
Hemispherical temperature(°C):	1,264.00	1,209.00
Final temperature(°C):	1,303.00	1,301.00

---------- ASH MINERAL ANALYSIS (AM1) ----------

SiO2(%):	47.86	TiO2(%):	1.00
Al2O3(%):	23.44	Na2O(%):	1.54
Fe2O3(%):	5.81	K2O(%):	1.25
CaO(%):	6.16	SO3(%):	4.25
MgO(%):	4.43	P2O5(%):	1.34

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88015 SEAM - I SAMPLE ID - 90 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 35.00 X 6.00 RELATIVE WEIGHT % - 40.85 ASH % - 47.84

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	0.75	2.84	0.75	2.84	99.25	47.18	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.14	1.14
1.45	8.68	6.92	9.43	6.60	90.57	51.04	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.98	0.99
1.50	6.77	13.21	16.20	9.36	83.80	54.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.69	1.28
1.55	8.41	14.54	24.61	11.13	75.39	58.51	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.26	1.28
1.60	9.63	19.42	34.24	13.46	65.76	64.24	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.20	1.25
1.70	12.61	24.89	46.85	16.54	53.15	73.57	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.20	1.24
1.80	5.32	31.58	52.17	18.07	47.83	78.24	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.58	1.27
2.00	5.07	42.08	57.24	20.20	42.76	82.53	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.98	1.25
2.60	42.76	82.53	100.00	46.85	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.66	1.00

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 6.00 X 0.50 RELATIVE WEIGHT % - 42.30 ASH % - 20.05

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	7.81	2.08	7.81	2.08	92.19	20.92	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.28	1.28
1.45	24.23	2.21	32.04	2.18	67.96	27.60	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.06	1.11
1.50	7.33	4.37	39.37	2.59	60.63	30.40	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.08	1.11
1.55	10.45	10.78	49.82	4.31	50.18	34.49	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.34	1.16
1.60	8.58	12.81	58.40	5.55	41.60	38.96	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.67	1.23
1.70	16.85	16.42	75.25	7.99	24.75	54.31	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.11	1.20
1.80	6.90	24.22	82.15	9.35	17.85	65.94	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.56	1.23
2.00	4.69	37.73	86.84	10.88	13.16	75.99	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.45	1.25
2.60	13.16	75.99	100.00	19.45	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.35	1.26

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88015 SEAM - I SAMPLE ID - 90 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 0.50 X 0.15 RELATIVE WEIGHT % - 9.58 ASH % - 14.58

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	10.95	2.52	10.95	2.52	89.05	15.30	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.62	1.62
1.45	22.15	4.31	33.10	3.72	66.90	18.94	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.60	1.61
1.50	16.70	6.89	49.80	4.78	50.20	22.95	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.76	1.66
1.55	11.81	8.30	61.61	5.46	38.39	27.46	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.35	1.60
1.60	5.57	9.03	67.18	5.75	32.82	30.58	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.37	1.58
1.70	14.10	10.59	81.28	6.59	18.72	45.64	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.50	1.57
1.80	7.14	21.57	88.42	7.80	11.58	60.48	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.28	1.54
2.00	3.25	34.99	91.67	8.77	8.33	70.43	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.47	1.54
2.60	8.33	70.43	100.00	13.90	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.66	1.55

ANALYSIS TYPE - FROTH

FRACTION SIZE(MM) 0.15 X 0.00 RELATIVE WEIGHT % - 7.27 ASH % - 16.28

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
240.00	*****	16.28	100.00	16.28	0.0	0.0	0.0	0.0	28.72	28.72	0.42	0.42	5.88	5.88	1.40	1.40

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88015 SEAM - I SAMPLE ID - 91 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 35.00 X 6.00 RELATIVE WEIGHT % - 38.66 ASH % - 39.56

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	0.92	3.94	0.92	3.94	99.08	39.67	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.28	1.28
1.45	8.58	10.28	9.50	9.67	90.50	42.46	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.85	0.89
1.50	15.21	15.06	24.71	12.99	75.29	48.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.21	1.09
1.55	11.59	18.75	36.30	14.83	63.70	53.32	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.03	1.07
1.60	5.36	23.36	41.66	15.92	58.34	56.07	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.23	1.09
1.70	9.34	27.82	51.00	18.10	49.00	61.46	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.39	1.14
1.80	7.18	33.34	58.18	19.98	41.82	66.28	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.34	1.17
2.00	9.50	46.12	67.68	23.65	32.32	72.21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.35	1.19
2.60	32.32	72.21	100.00	39.35	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.42	1.27

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 6.00 X 0.50 RELATIVE WEIGHT % - 43.03 ASH % - 21.82

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	22.32	3.88	22.32	3.88	77.68	26.75	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.87	0.87
1.45	14.94	8.03	37.26	5.54	62.74	31.20	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.91	0.89
1.50	12.44	12.50	49.70	7.29	50.30	35.83	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.06	0.93
1.55	12.48	15.82	62.18	9.00	37.82	42.43	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.37	1.02
1.60	8.74	19.53	70.92	10.30	29.08	49.31	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.80	1.11
1.70	7.01	23.60	77.93	11.49	22.07	57.48	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.18	1.12
1.80	4.24	30.02	82.17	12.45	17.83	64.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.30	1.13
2.00	4.91	41.57	87.08	14.09	12.92	72.54	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.13	1.13
2.60	12.92	72.54	100.00	21.64	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.92	1.23

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88015 SEAM - I SAMPLE ID - 91 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 0.50 X 0.15 RELATIVE WEIGHT % - 11.23 ASH % - 17.41

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	36.29	2.62	36.29	2.62	63.71	24.32	0.0	0.0	1.86	1.86	0.0	0.0	0.0	0.0	1.86	1.86
1.45	1.95	4.66	38.24	2.72	61.76	24.94	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.32	1.83
1.50	8.51	4.91	46.75	3.12	53.25	28.14	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.52	1.78
1.55	6.82	8.01	53.57	3.74	46.43	31.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.70	1.77
1.60	3.67	11.27	57.24	4.23	42.76	32.80	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.15	1.73
1.70	17.09	13.81	74.33	6.43	25.67	45.44	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.48	1.67
1.80	10.58	22.98	84.91	8.49	15.09	61.18	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.96	1.71
2.00	5.14	37.38	90.05	10.14	9.95	73.48	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.59	1.70
2.60	9.95	73.48	100.00	16.44	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.81	1.71

ANALYSIS TYPE - FROTH

FRACTION SIZE(MM) 0.15 X 0.00 RELATIVE WEIGHT % - 7.08 ASH % - 20.10

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
240.00	*****	20.10	100.00	20.10	0.0	0.0	0.0	0.0	27.23	27.23	0.41	0.41	6.46	6.46	1.45	1.45

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88015 SEAM - I SAMPLE ID - 92 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 35.00 X 6.00 RELATIVE WEIGHT % - 24.64 ASH % - 19.06

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	20.57	8.27	20.57	8.27	79.43	21.55	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.29	1.29
1.45	32.91	8.66	53.48	8.51	46.52	30.66	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.30	1.30
1.50	16.37	12.08	69.85	9.35	30.15	40.75	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.41	1.32
1.55	4.53	12.47	74.38	9.54	25.62	45.75	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.57	1.34
1.60	1.64	17.99	76.02	9.72	23.98	47.65	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.52	1.34
1.70	2.99	23.30	79.01	10.23	20.99	51.12	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.76	1.36
1.80	3.94	28.90	82.95	11.12	17.05	56.25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.46	1.36
2.00	6.65	51.51	89.60	14.12	10.40	59.28	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.91	1.33
2.60	10.40	59.28	100.00	18.81	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.02	1.30

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 6.00 X 0.50 RELATIVE WEIGHT % - 47.85 ASH % - 11.50

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	14.86	2.47	14.86	2.47	85.14	12.55	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.13	1.13
1.45	34.91	4.73	49.77	4.06	50.23	17.98	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.19	1.17
1.50	12.60	8.22	62.37	4.90	37.63	21.25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.42	1.22
1.55	11.83	11.33	74.20	5.92	25.80	25.79	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.67	1.29
1.60	7.69	13.71	81.89	6.65	18.11	30.92	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.98	1.36
1.70	9.10	17.52	90.99	7.74	9.01	44.46	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.72	1.39
1.80	2.76	24.73	93.75	8.24	6.25	53.17	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.17	1.39
2.00	2.15	38.88	95.90	8.93	4.10	60,67	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.95	1.40
2.60	4.10	60.67	100.00	11.05	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.50	1.40

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88015 SEAM - I SAMPLE ID - 92 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 0.50 X 0.15 RELATIVE WEIGHT % - 17.05 ASH % - 9.31

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	56.54	4.76	56.54	4.76	43.46	15.94	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.82	1.82
1.45	19.34	10.14	75.88	6.13	24.12	20.59	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.78	1.81
1.50	5.67	11.64	81.55	6.51	18.45	23.34	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.01	1.82
1.55	7.29	14.59	88.84	7.18	11.16	29.06	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.09	1.76
1.60	2.26	16.79	91.10	7.42	8.90	32.18	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.23	1.75
1.70	2.97	18.37	94.07	7.76	5.93	39.09	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.61	1.75
1.80	1.61	26.60	95.68	8.08	4.32	43.74	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.81	1.75
2.00	1.52	32.00	97.20	8.45	2.80	50.12	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.48	1.74
2.60	2.80	50.12	100.00	9.62	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.75	1.74

ANALYSIS TYPE - FROTH

FRACTION SIZE(MM) 0.15 X 0.00 RELATIVE WEIGHT % - 10.46 ASH % - 11.01

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
240.00	*****	11.01	100.00	11.01	0.0	0.0	0.0	0.0	30.72	30.72	0.49	0.49	5.86	5.86	1.70	1.70

GULF CANADA CORPORATION - COAL DIVISION

C L E A N S I M U L A T E D P R O D U C T R E P O R T

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88015
Coal zone:	1		
Field sample no.:	08229	Composite sample no.:	253

PRODUCT COAL ANALYSIS (SP2)

Target Ash: 8.0 %

Standard:	ASTM	
Size analysis		
Fraction size (mm):	35.00 X	6.00
Cutpoint:	sp.g.	1.48
Contribution (%):		5.31
Total yield (%):		5.31

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture (%):	0.89	
Ash (%):	7.63	7.70
Volatile matter (%):	9.40	9.48
Fixed carbon (%):	82.08	82.82
Total sulphur (%):	0.47	0.47
Combustible sulphur (%):	0.44	
Gross calorific value (cal/g):	7,696.00	7,765.00
Volatile matter (dmmf%):	9.50	
Hardgrove index:	51.00	
Phosphorous in coal (%):	0.009	

ASH FUSION ANALYSIS (AF1)

	OXIDIZING ATM	REDUCING ATM
Initial temperature (°C):	1,274.00	1,221.00
Softening temperature (°C):	1,317.00	1,259.00
Hemispherical temperature (°C):	1,353.00	1,303.00
Final temperature (°C):	1,453.00	1,446.00

ASH MINERAL ANALYSIS (AM1)

SiO2 (%):	61.30	TiO2 (%):	0.82
Al2O3 (%):	22.30	Na2O (%):	2.05
Fe2O3 (%):	2.77	K2O (%):	0.78
CaO (%):	2.85	SO3 (%):	1.13
MgO (%):	2.10	P2O5 (%):	0.28

GULF CANADA CORPORATION - COAL DIVISION

C L E A N S I M U L A T E D P R O D U C T R E P O R T

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88015
Coal zone:	I		
Field sample no.:	08230 - 08231	Composite sample no.:	254

PRODUCT COAL ANALYSIS (SP2)

Target Ash: 8.0 %

Standard:	ASTM	
Size analysis		
Fraction size (mm):	35.00 X	6.00
Cutpoint:	sp.g.	1.42
Contribution (%):		3.74
Total yield (%):		3.74

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture (%):	1.10	
Ash (%):	7.72	7.81
Volatile matter (%):	7.14	7.22
Fixed carbon (%):	84.04	84.97
Total sulphur (%):	0.49	0.50
Combustible sulphur (%):	0.43	
Gross calorific value (cal/g):	7,662.00	7,747.00
Volatile matter (dmmf%):	7.10	
Hardgrove index:	49.00	
Phosphorous in coal (%):	0.205	

ASH FUSION ANALYSIS (AF1)

	OXIDIZING ATM	REDUCING ATM
Initial temperature (°C):	1,259.00	1,216.00
Softening temperature (°C):	1,266.00	1,243.00
Hemispherical temperature (°C):	1,274.00	1,259.00
Final temperature (°C):	1,319.00	1,317.00

ASH MINERAL ANALYSIS (AM1)

SiO2 (%):	42.40	TiO2 (%):	1.64
Al2O3 (%):	24.57	Na2O (%):	2.02
Fe2O3 (%):	4.92	K2O (%):	0.92
CaO (%):	8.79	SO3 (%):	1.83
MgO (%):	3.02	P2O5 (%):	6.08

========== GULF CANADA CORPORATION - COAL DIVISION ==========

---------- C L E A N S I M U L A T E D P R O D U C T R E P O R T ----------

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88015
Coal zone:	1		
Field sample no.:	08230 - 08231	Composite sample no.:	254

---------- PRODUCT COAL ANALYSIS (SP5) ----------

Target Ash: 11.0 %

Standard:	ASTM	
Size analysis		
Fraction size (mm):	35.00 X	6.00
Cutpoint:	sp.g.	1.46
Contribution (%):		1.89
Total yield (%):		1.89

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture (%):	1.69	
Ash (%):	10.63	10.81
Volatile matter (%):	8.29	8.43
Fixed carbon (%):	79.39	80.76
Total sulphur (%):	0.45	0.46
Combustible sulphur (%):	0.43	
Gross calorific value (cal/g):	7,536.00	7,665.00
Volatile matter (dmmf%):	8.40	
Hardgrove index:	44.00	
Phosphorous in coal (%):	0.113	

---------- ASH FUSION ANALYSIS (AF1) ----------

	OXIDIZING ATM	REDUCING ATM
Initial temperature (°C):	1,251.00	1,198.00
Softening temperature (°C):	1,293.00	1,261.00
Hemispherical temperature (°C):	1,317.00	1,301.00
Final temperature (°C):	1,453.00	1,448.00

---------- ASH MINERAL ANALYSIS (AM1) ----------

SiO2 (%):	55.18	TiO2 (%):	0.90
Al2O3 (%):	24.19	Na2O (%):	1.89
Fe2O3 (%):	3.26	K2O (%):	0.96
CaO (%):	4.17	SO3 (%):	0.56
MgO (%):	2.35	P2O5 (%):	2.44

========== GULF CANADA CORPORATION - COAL DIVISION ==========

---------- C L E A N S I M U L A T E D P R O D U C T R E P O R T ----------

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88015
Coal zone:	I		
Field sample no.:	08229 - 08231	Composite sample no.:	345

---------- PRODUCT COAL ANALYSIS (SP3) ----------

Target Ash: 7.5 %

Standard:	ASTM
Size analysis	
Fraction size (mm):	6.00 X 0.50
Cutpoint:	sp.g. 1.57
Contribution (%):	25.98
Total yield (%):	25.98

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture (%):	1.09	
Ash (%):	7.56	7.64
Volatile matter (%):	7.83	7.92
Fixed carbon (%):	83.52	84.44
Total sulphur (%):	0.46	0.47
Combustible sulphur (%):	0.42	
Gross calorific value (cal/g):	7,672.00	7,756.00
Volatile matter (dmmf%):	7.80	
Hardgrove index:	56.00	
Phosphorous in coal (%):	0.043	

---------- ASH FUSION ANALYSIS (AF1) ----------

	OXIDIZING ATM	REDUCING ATM
Initial temperature (°C):	1,301.00	1,264.00
Softening temperature (°C):	1,380.00	1,332.00
Hemispherical temperature (°C):	1,414.00	1,359.00
Final temperature (°C):	1,472.00	1,472.00

---------- ASH MINERAL ANALYSIS (AM1) ----------

SiO2 (%):	60.46	TiO2 (%):	2.06
Al2O3 (%):	22.30	Na2O (%):	1.85
Fe2O3 (%):	2.66	K2O (%):	0.80
CaO (%):	2.49	SO3 (%):	1.22
MgO (%):	1.90	P2O5 (%):	1.31

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88015 SEAM - H/I SAMPLE ID - 93 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 35.00 X 6.00 RELATIVE WEIGHT % - 27.87 ASH % - 0.0

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ/KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	0.14	6.41	0.14	6.41	99.86	57.12	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.06	1.06
1.45	0.79	7.10	0.93	7.00	99.07	57.52	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.06	1.06
1.50	1.57	15.59	2.50	12.39	97.50	58.19	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.94	0.98
1.55	5.25	16.84	7.75	15.41	92.25	60.55	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.99	0.99
1.60	2.81	19.25	10.56	16.43	89.44	61.85	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.83	0.95
1.70	4.80	30.04	15.36	20.68	84.64	63.65	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.97	0.95
1.80	7.10	38.74	22.46	26.39	77.54	65.93	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	0.97
2.00	18.39	49.75	40.85	36.91	59.15	70.96	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.85	0.92
2.60	59.15	70.96	100.00	57.05	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.78	0.84

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 6.00 X 0.50 RELATIVE WEIGHT % - 47.66 ASH % - 0.0

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ/KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	8.27	2.59	8.27	2.59	91.73	36.44	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.17	1.17
1.45	9.22	5.01	17.49	3.87	82.51	39.95	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.85	1.00
1.50	3.41	9.46	20.90	4.78	79.10	41.26	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.14	1.02
1.55	7.94	13.11	28.84	7.07	71.16	44.41	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.27	1.09
1.60	12.46	16.83	41.30	10.02	58.70	50.26	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.60	1.25
1.70	9.56	21.45	50.86	12.17	49.14	55.86	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.83	1.35
1.80	8.15	30.49	59.01	14.70	40.99	60.91	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.83	1.42
2.00	14.91	42.89	73.92	20.38	26.08	71.21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.73	1.48
2.60	26.08	71.21	100.00	33.64	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.41	1.46

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88015 SEAM - H/I SAMPLE ID - 93 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 0.50 X 0.15 RELATIVE WEIGHT % - 13.62 ASH % - 0.0

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	39.31	4.24	39.31	4.24	60.69	23.26	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.48	1.48
1.45	20.93	7.43	60.24	5.35	39.76	31.60	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.51	1.49
1.50	5.61	14.46	65.85	6.12	34.15	34.41	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.43	1.49
1.55	9.19	14.74	75.04	7.18	24.96	41.66	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.83	1.53
1.60	1.24	19.28	76.28	7.38	23.72	42.83	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.69	1.53
1.70	2.87	21.04	79.15	7.87	20.85	45.82	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.46	1.53
1.80	3.52	29.03	82.67	8.77	17.33	49.23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.08	1.55
2.00	4.17	38.30	86.84	10.19	13.16	52.70	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.04	1.57
2.60	13.16	52.70	100.00	15.78	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.01	1.63

GULF CANADA CORPORATION - COAL DIVISION

C L E A N S I M U L A T E D P R O D U C T R E P O R T

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88015
Coal zone:	H/I		
Field sample no.:	08234	Composite sample no.:	346

PRODUCT COAL ANALYSIS (SP3)

Target Ash: 7.5 %

Standard:	ASTM
Size analysis	
Fraction size(mm):	6.00 X 0.50
Cutpoint:	sp.g. 1.56
Contribution(%):	14.31
Total yield(%):	14.31

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture(%):	1.08	
Ash(%):	7.84	7.93
Volatile matter(%):	7.44	7.52
Fixed carbon(%):	83.64	84.55
Total sulphur(%):	0.53	0.54
Combustible sulphur(%):	0.49	
Gross calorific value(cal/g):	7,691.00	7,775.00
Volatile matter(dmmf%):	7.40	
Hardgrove index:	50.00	
Phosphorous in coal(%):	0.044	

ASH FUSION ANALYSIS (AF1)

	OXIDIZING ATM	REDUCING ATM
Initial temperature(°C):	1,293.00	1,243.00
Softening temperature(°C):	1,330.00	1,261.00
Hemispherical temperature(°C):	1,351.00	1,295.00
Final temperature(°C):	1,438.00	1,435.00

ASH MINERAL ANALYSIS (AM1)

SiO2(%):	64.46	TiO2(%):	1.68
Al2O3(%):	18.90	Na2O(%):	1.45
Fe2O3(%):	3.98	K2O(%):	0.60
CaO(%):	2.74	SO3(%):	1.34
MgO(%):	1.39	P2O5(%):	1.29

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88015 SEAM - H SAMPLE ID - 94 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 35.00 X 6.00 RELATIVE WEIGHT % - 68.00 ASH % - 54.42

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ/KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	0.62	3.29	0.62	3.29	99.38	55.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	1.00
1.45	1.42	7.71	2.04	6.37	97.96	55.79	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.87	0.91
1.50	2.03	13.84	4.07	10.09	95.93	56.67	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.94	0.92
1.55	7.26	18.79	11.33	15.67	88.67	59.78	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.77	0.83
1.60	5.59	24.83	16.92	18.69	83.08	62.13	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.72	0.79
1.70	13.78	31.35	30.70	24.37	69.30	68.25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.64	0.72
1.80	11.90	39.27	42.60	28.54	57.40	74.26	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.66	0.71
2.00	10.78	47.25	53.38	32.31	46.62	80.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.68	0.70
2.60	46.62	80.50	100.00	54.78	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.59	1.12

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 6.00 X 0.50 RELATIVE WEIGHT % - 24.64 ASH % - 38.22

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ/KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	18.39	4.69	18.39	4.69	81.61	44.78	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.03	1.03
1.45	5.54	8.50	23.93	5.57	76.07	47.42	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.84	0.99
1.50	7.13	12.30	31.06	7.12	68.94	51.05	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.82	0.95
1.55	11.23	17.58	42.29	9.90	57.71	57.57	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.96	1.22
1.60	4.26	20.80	46.55	10.89	53.45	60.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.10	1.21
1.70	12.21	26.13	58.76	14.06	41.24	70.67	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.51	1.27
1.80	5.57	33.26	64.33	15.72	35.67	76.51	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.56	1.29
2.00	5.87	45.26	70.20	18.19	29.80	82.67	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.34	1.30
2.60	29.80	82.67	100.00	37.41	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.47	1.35

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88015 SEAM - H SAMPLE ID - 94 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 0.50 X 0.15 RELATIVE WEIGHT % - 4.49 ASH % - 31.61

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	42.77	6.70	42.77	6.70	57.23	48.76	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.41	1.41
1.45	8.50	12.95	51.27	7.74	48.73	55.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.57	1.44
1.50	3.93	15.38	55.20	8.28	44.80	58.48	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.74	1.46
1.55	0.91	16.91	56.11	8.42	43.89	59.35	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.66	1.46
1.60	0.50	17.53	56.61	8.50	43.39	59.83	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.86	1.46
1.70	3.28	18.60	59.89	9.05	40.11	63.20	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.08	1.44
1.80	7.01	23.42	66.90	10.56	33.10	71.63	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.14	1.41
2.00	6.45	38.84	73.35	13.05	26.65	79.56	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.38	1.41
2.60	26.65	79.56	100.00	30.77	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.42	1.41

ANALYSIS TYPE - FROTH

FRACTION SIZE(MM) 0.15 X 0.00 RELATIVE WEIGHT % - 2.87 ASH % - 30.34

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
240.00	*****	30.34	100.00	30.34	0.0	0.0	0.0	0.0	23.23	23.23	0.39	0.39	7.22	7.22	1.46	1.46

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88015 SEAM - H SAMPLE ID - 95 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 35.00 X 6.00 RELATIVE WEIGHT % - 53.85 ASH % - 27.18

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	1.28	1.67	1.28	1.67	98.72	27.02	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.83	0.83
1.45	16.34	6.93	17.62	6.55	82.38	31.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.73	0.74
1.50	33.86	13.31	51.48	11.00	48.52	43.35	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.83	0.80
1.55	12.19	17.88	63.67	12.31	36.33	51.89	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.79	0.80
1.60	8.10	22.35	71.77	13.45	28.23	60.37	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.90	0.81
1.70	5.67	27.58	77.44	14.48	22.56	68.61	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.86	0.81
1.80	2.42	34.67	79.86	15.09	20.14	72.69	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.87	0.81
2.00	1.10	44.43	80.96	15.49	19.04	74.32	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.09	0.82
2.60	19.04	74.32	100.00	26.69	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.14	0.88

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 6.00 X 0.50 RELATIVE WEIGHT % - 35.77 ASH % - 17.19

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	13.57	1.93	13.57	1.93	86.43	19.78	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.50	0.50
1.45	24.70	4.89	38.27	3.84	61.73	25.73	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.60	0.56
1.50	20.82	9.55	59.09	5.85	40.91	33.97	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.69	0.61
1.55	10.58	14.10	69.67	7.10	30.33	40.90	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.77	0.63
1.60	0.51	14.52	70.18	7.16	29.82	41.35	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.19	0.64
1.70	10.10	18.36	80.28	8.57	19.72	53.13	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.76	0.78
1.80	4.75	25.84	85.03	9.53	14.97	61.79	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.90	0.84
2.00	3.93	39.51	88.96	10.86	11.04	69.72	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.75	0.88
2.60	11.04	69.72	100.00	17.36	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.00	1.00

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88015 SEAM - H SAMPLE ID - 95 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 0.50 X 0.15 RELATIVE WEIGHT % - 6.28 ASH % - 21.33

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	CUM. S	CUM. S	CUM. VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	50.43	7.32	50.43	7.32	49.57	34.81	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.50	1.50
1.45	12.02	9.21	62.45	7.68	37.55	43.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.42	1.48
1.50	6.13	12.42	68.58	8.11	31.42	48.98	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.58	1.49
1.55	5.78	17.88	74.36	8.87	25.64	55.99	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.88	1.52
1.60	3.37	21.54	77.73	9.42	22.27	61.20	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.97	1.54
1.70	3.45	27.59	81.18	10.19	18.82	67.36	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.07	1.52
1.80	2.72	35.73	83.90	11.02	16.10	72.71	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.06	1.51
2.00	2.25	55.34	86.15	12.17	13.85	75.53	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.32	1.50
2.60	13.85	75.53	100.00	20.95	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.00	1.57

ANALYSIS TYPE - FROTH

FRACTION SIZE(MM) 0.15 X 0.00 RELATIVE WEIGHT % - 4.10 ASH % - 25.93

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	CUM. S	CUM. S	CUM. VOL.	CUM. VOL.	MOIST	CUM. MOIST
240.00	*****	25.93	100.00	25.93	0.0	0.0	0.0	0.0	24.82	24.82	0.42	0.42	6.94	6.94	1.21	1.21

========== GULF CANADA CORPORATION - COAL DIVISION ==========

---------- C L E A N S I M U L A T E D P R O D U C T R E P O R T ----------

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88015
Coal zone:	H		
Field sample no.:	08239	Composite sample no.:	255

---------- PRODUCT COAL ANALYSIS (SP4) ----------

Target Ash: 10.0 %

Standard:	ASTM
Size analysis	
Fraction size (mm):	35.00 X 6.00
Cutpoint:	sp.g. 1.49
Contribution (%):	22.94
Total yield (%):	22.94

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture (%):	0.71	
Ash (%):	9.23	9.30
Volatile matter (%):	7.93	7.99
Fixed carbon (%):	82.13	82.71
Total sulphur (%):	0.52	0.52
Combustible sulphur (%):	0.49	
Gross calorific value (cal/g):	7,540.00	7,595.00
Volatile matter (dmmf%):	7.90	
Hardgrove index:	42.00	
Phosphorous in coal (%):	0.242	

---------- ASH FUSION ANALYSIS (AF1) ----------

	OXIDIZING ATM	REDUCING ATM
Initial temperature (°C):	1,269.00	1,259.00
Softening temperature (°C):	1,282.00	1,272.00
Hemispherical temperature (°C):	1,288.00	1,280.00
Final temperature (°C):	1,359.00	1,353.00

---------- ASH MINERAL ANALYSIS (AM1) ----------

SiO2 (%):	49.78	TiO2 (%):	3.29
Al2O3 (%):	23.82	Na2O (%):	2.71
Fe2O3 (%):	2.29	K2O (%):	0.57
CaO (%):	6.18	SO3 (%):	0.93
MgO (%):	1.19	P2O5 (%):	6.00

GULF CANADA CORPORATION - COAL DIVISION

C L E A N S I M U L A T E D P R O D U C T R E P O R T

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88015
Coal zone:	H		
Field sample no.:	08237 - 08239	Composite sample no.:	347

PRODUCT COAL ANALYSIS (SP3)

Target Ash: 7.5 %

Standard:	ASTM
Size analysis	
Fraction size (mm):	6.00 X 0.50
Cutpoint:	sp.g. 1.53
Contribution (%):	14.16
Total yield (%):	14.16

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture (%):	0.84	
Ash (%):	7.19	7.25
Volatile matter (%):	7.27	7.33
Fixed carbon (%):	84.70	85.42
Total sulphur (%):	0.51	0.51
Combustible sulphur (%):	0.48	
Gross calorific value (cal/g):	7,770.00	7,836.00
Volatile matter (dmmf%):	7.20	
Hardgrove index:	45.00	
Phosphorous in coal (%):	0.098	

ASH FUSION ANALYSIS (AF1)

	OXIDIZING ATM	REDUCING ATM
Initial temperature (°C):	1,253.00	1,216.00
Softening temperature (°C):	1,280.00	1,240.00
Hemispherical temperature (°C):	1,290.00	1,269.00
Final temperature (°C):	1,417.00	1,411.00

ASH MINERAL ANALYSIS (AM1)

SiO2 (%):	57.04	TiO2 (%):	3.29
Al2O3 (%):	21.17	Na2O (%):	2.12
Fe2O3 (%):	2.55	K2O (%):	0.59
CaO (%):	4.56	SO3 (%):	1.13
MgO (%):	1.37	P2O5 (%):	3.11

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88016 SEAM - H SAMPLE ID - 98 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 35.00 X 6.00 RELATIVE WEIGHT % - 77.45 ASH % - 56.58

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.45	0.33	8.55	0.33	8.55	99.67	56.41	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.04	1.04
1.50	0.86	9.06	1.19	8.92	98.81	56.82	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.24	1.18
1.55	3.95	15.88	5.14	14.27	94.86	58.53	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.88	0.95
1.60	11.09	20.68	16.23	18.65	83.77	63.54	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.60	0.71
1.70	17.64	28.76	33.87	23.92	66.13	72.81	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.93	0.83
1.80	7.99	36.42	41.86	26.30	58.14	77.82	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.93	0.85
2.00	10.50	45.90	52.36	30.23	47.64	84.85	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.72	0.82
2.60	47.64	84.85	100.00	56.25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.21	1.01

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 6.00 X 0.50 RELATIVE WEIGHT % - 18.38 ASH % - 40.52

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	3.64	2.99	3.64	2.99	96.36	40.93	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.85	0.85
1.45	12.10	4.92	15.74	4.47	84.26	46.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.71	0.74
1.50	9.19	9.81	24.93	6.44	75.07	50.54	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.77	0.75
1.55	12.82	15.07	37.75	9.37	62.25	57.84	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.81	0.77
1.60	10.27	19.80	48.02	11.60	51.98	65.36	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.98	0.82
1.70	5.97	25.97	53.99	13.19	46.01	70.47	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.99	0.84
1.80	4.98	34.11	58.97	14.96	41.03	74.88	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.29	0.87
2.00	7.30	45.19	66.27	18.29	33.73	81.31	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.28	0.92
2.60	33.73	81.31	100.00	39.54	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.57	1.14

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88016 SEAM - H SAMPLE ID - 98 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 0.50 X 0.15 RELATIVE WEIGHT % - 2.86 ASH % - 44.73

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	11.35	5.56	11.35	5.56	88.65	49.35	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.04	1.04
1.45	22.94	11.78	34.29	9.72	65.71	62.46	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.04	1.04
1.50	4.51	12.91	38.80	10.09	61.20	66.12	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.48	1.09
1.55	6.98	21.47	45.78	11.83	54.22	71.86	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.54	1.16
1.60	1.94	29.14	47.72	12.53	52.28	73.45	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.53	1.17
1.70	4.33	31.47	52.05	14.11	47.95	77.24	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.55	1.21
1.80	3.56	41.20	55.61	15.84	44.39	80.13	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.83	1.25
2.00	4.86	57.60	60.47	19.20	39.53	82.90	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.71	1.28
2.60	39.53	82.90	100.00	44.38	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.68	1.44

ANALYSIS TYPE - FROTH

FRACTION SIZE(MM) 0.15 X 0.00 RELATIVE WEIGHT % - 1.31 ASH % - 53.18

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
240.00	*****	53.18	100.00	53.18	0.0	0.0	0.0	0.0	12.70	12.70	0.53	0.53	7.85	7.85	1.88	1.88

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88016 SEAM - H SAMPLE ID - 99 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 35.00 X 6.00 RELATIVE WEIGHT % - 72.74 ASH % - 25.67

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	0.16	6.12	0.16	6.12	99.84	25.40	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.89	0.89
1.45	7.09	6.97	7.25	6.95	92.75	26.81	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.53	0.54
1.50	19.01	10.12	26.26	9.25	73.74	31.12	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.54	0.54
1.55	28.32	14.51	54.58	11.98	45.42	41.47	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.66	0.60
1.60	8.87	18.77	63.45	12.93	36.55	46.98	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.50	0.59
1.70	8.66	24.55	72.11	14.32	27.89	53.95	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.65	0.60
1.80	7.59	33.10	79.70	16.11	20.30	61.74	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.71	0.61
2.00	5.79	40.22	85.49	17.74	14.51	70.33	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.60	0.61
2.60	14.51	70.33	100.00	25.37	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.04	0.67

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 6.00 X 0.50 RELATIVE WEIGHT % - 21.61 ASH % - 20.38

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	4.28	3.53	4.28	3.53	95.72	20.87	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	1.00
1.45	21.78	4.22	26.06	4.11	73.94	25.77	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.51	0.59
1.50	25.04	8.96	51.10	6.48	48.90	34.38	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.52	0.56
1.55	10.68	12.89	61.78	7.59	38.22	40.39	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.59	0.56
1.60	9.03	19.64	70.81	9.13	29.19	46.80	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.94	0.61
1.70	10.29	20.74	81.10	10.60	18.90	60.99	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.15	0.68
1.80	2.88	30.94	83.98	11.30	16.02	66.40	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.29	0.70
2.00	3.65	41.99	87.63	12.58	12.37	73.60	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.37	0.73
2.60	12.37	73.60	100.00	20.13	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.73	0.85

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88016 SEAM - H SAMPLE ID - 99 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 0.50 X 0.15 RELATIVE WEIGHT % - 3.68 ASH % - 22.58

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ/KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	12.26	4.37	12.26	4.37	87.74	25.56	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.20	1.20
1.45	5.19	4.70	17.45	4.47	82.55	26.87	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.31	1.23
1.50	12.47	4.87	29.92	4.64	70.08	30.79	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.09	1.17
1.55	9.50	7.94	39.42	5.43	60.58	34.37	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.36	1.22
1.60	8.02	9.78	47.44	6.17	52.56	38.12	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.68	1.30
1.70	14.35	13.08	61.79	7.77	38.21	47.53	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.76	1.40
1.80	11.32	20.82	73.11	9.79	26.89	58.77	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.89	1.48
2.00	8.29	34.33	81.40	12.29	18.60	69.67	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.45	1.48
2.60	18.60	69.67	100.00	22.96	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.67	1.51

ANALYSIS TYPE - FROTH

FRACTION SIZE(MM) 0.15 X 0.00 RELATIVE WEIGHT % - 1.97 ASH % - 28.30

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ/KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
240.00	*****	28.30	100.00	28.30	0.0	0.0	0.0	0.0	23.74	23.74	0.38	0.38	6.14	6.14	1.85	1.85

========== GULF CANADA CORPORATION - COAL DIVISION ==========

---------- C L E A N S I M U L A T E D P R O D U C T R E P O R T ----------

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88016
Coal zone:	H		
Field sample no.:	08247	Composite sample no.:	256

---------- PRODUCT COAL ANALYSIS (SP4) ----------

Target Ash: 10.0 %

Standard:	ASTM
Size analysis	
Fraction size (mm):	35.00 X 6.00
Cutpoint:	sp.g. 1.51
Contribution (%):	29.36
Total yield (%):	29.36

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture (%):	0.79	
Ash (%):	9.35	9.42
Volatile matter (%):	6.10	6.15
Fixed carbon (%):	83.76	84.43
Total sulphur (%):	0.46	0.46
Combustible sulphur (%):	0.40	
Gross calorific value (cal/g):	7,505.00	7,565.00
Volatile matter (dmmf%):	5.90	
Hardgrove index:	40.00	
Phosphorous in coal (%):	0.045	

---------- ASH FUSION ANALYSIS (AF1) ----------

	OXIDIZING ATM	REDUCING ATM
Initial temperature (°C):	1,253.00	1,153.00
Softening temperature (°C):	1,293.00	1,216.00
Hemispherical temperature (°C):	1,314.00	1,238.00
Final temperature (°C):	1,369.00	1,353.00

---------- ASH MINERAL ANALYSIS (AM1) ----------

SiO2 (%):	54.54	TiO2 (%):	2.06
Al2O3 (%):	21.93	Na2O (%):	2.28
Fe2O3 (%):	5.69	K2O (%):	0.86
CaO (%):	3.69	SO3 (%):	1.65
MgO (%):	2.50	P2O5 (%):	1.10

GULF CANADA CORPORATION - COAL DIVISION

C L E A N S I M U L A T E D P R O D U C T R E P O R T

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88016
Coal zone:	H		
Field sample no.:	08246 - 08247	Composite sample no.:	348

PRODUCT COAL ANALYSIS (SP3)

Target Ash: 7.5 %

Standard:	ASTM	
Size analysis		
Fraction size (mm):	6.00 X	0.50
Cutpoint:	sp.g.	1.53
Contribution (%):		9.18
Total yield (%):		9.18

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture (%):	0.86	
Ash (%):	7.56	7.63
Volatile matter (%):	6.46	6.52
Fixed carbon (%):	85.12	85.85
Total sulphur (%):	0.54	0.54
Combustible sulphur (%):	0.52	
Gross calorific value (cal/g):	7,734.00	7,801.00
Volatile matter (dmmf%):	6.30	
Hardgrove index:	43.00	
Phosphorous in coal (%):	0.017	

ASH FUSION ANALYSIS (AFI)

	OXIDIZING ATM	REDUCING ATM
Initial temperature (°C):	1,243.00	1,206.00
Softening temperature (°C):	1,343.00	1,269.00
Hemispherical temperature (°C):	1,361.00	1,295.00
Final temperature (°C):	1,453.00	1,448.00

ASH MINERAL ANALYSIS (AMI)

SiO2 (%):	58.10	TiO2 (%):	2.00
Al2O3 (%):	23.06	Na2O (%):	1.44
Fe2O3 (%):	3.85	K2O (%):	0.84
CaO (%):	2.29	SO3 (%):	0.66
MgO (%):	1.60	P2O5 (%):	0.53

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88017 SEAM - I OVT SAMPLE ID - 100 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 35.00 X 6.00 RELATIVE WEIGHT % - 77.54 ASH % - 59.50

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.45	0.20	3.80	0.20	3.80	99.80	59.11	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.89	0.89
1.50	0.19	6.82	0.39	5.27	99.61	59.21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.10	0.99
1.55	0.12	10.10	0.51	6.41	99.49	59.27	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.16	1.03
1.60	0.15	14.56	0.66	8.26	99.34	59.34	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.23	1.08
1.70	2.92	28.26	3.58	24.57	96.42	60.28	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.29	1.25
1.80	8.64	39.59	12.22	35.19	87.78	62.31	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.08	1.13
2.00	34.51	57.47	46.73	51.64	53.27	65.45	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.84	0.92
2.60	53.27	65.45	100.00	59.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.59	0.74

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 6.00 X 0.50 RELATIVE WEIGHT % - 15.00 ASH % - 43.14

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	0.31	1.89	0.31	1.89	99.69	42.58	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.49	0.49
1.45	12.94	3.90	13.25	3.85	86.75	48.35	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.83	0.82
1.50	8.88	5.33	22.13	4.45	77.87	53.26	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.97	0.88
1.55	4.63	8.83	26.76	5.20	73.24	56.07	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.30	0.95
1.60	3.47	14.40	30.23	6.26	69.77	58.14	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.23	0.99
1.70	8.82	23.03	39.05	10.05	60.95	63.22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.43	1.09
1.80	8.50	31.99	47.55	13.97	52.45	68.28	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.44	1.15
2.00	14.88	45.93	62.43	21.59	37.57	77.13	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.41	1.21
2.60	37.57	77.13	100.00	42.45	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.46	1.30

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88017 SEAM - I OVT SAMPLE ID - 100 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 0.50 X 0.15 RELATIVE WEIGHT % - 4.61 ASH % - 33.38

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	0.51	3.45	0.51	3.45	99.49	33.27	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.58	0.58
1.45	3.97	3.62	4.48	3.60	95.52	34.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.29	1.21
1.50	14.10	5.37	18.58	4.94	81.42	39.55	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.16	1.17
1.55	14.36	8.51	32.94	6.50	67.06	46.20	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.28	1.22
1.60	12.31	9.16	45.25	7.22	54.75	54.52	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.35	1.25
1.70	9.49	14.62	54.74	8.50	45.26	62.89	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.56	1.31
1.80	3.59	25.41	58.33	9.55	41.67	66.12	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.65	1.33
2.00	10.64	36.08	68.97	13.64	31.03	76.42	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.89	1.42
2.60	31.03	76.42	100.00	33.12	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.81	1.54

ANALYSIS TYPE - FROTH

FRACTION SIZE(MM) 0.15 X 0.00 RELATIVE WEIGHT % - 2.85 ASH % - 36.22

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
240.00	*****	36.22	100.00	36.22	0.0	0.0	0.0	0.0	20.40	20.40	0.38	0.38	5.98	5.98	1.16	1.16

GULF CANADA CORPORATION - COAL DIVISION

C L E A N S I M U L A T E D P R O D U C T R E P O R T

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88017
Coal zone:	I ovt		
Field sample no.:	08252	Composite sample no.:	349

PRODUCT COAL ANALYSIS (SP3)

Target Ash: 7.5 %

Standard:	ASTM	
Size analysis		
Fraction size (mm):	6.00 X	0.50
Cutpoint:	sp.g.	1.63
Contribution (%):		4.97
Total yield (%):		4.97

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture (%):	1.02	
Ash (%):	7.17	7.24
Volatile matter (%):	6.98	7.05
Fixed carbon (%):	84.83	85.71
Total sulphur (%):	0.53	0.54
Combustible sulphur (%):	0.51	
Gross calorific value (cal/g):	7,693.00	7,773.00
Volatile matter (dmmf%):	6.90	
Hardgrove index:	54.00	
Phosphorous in coal (%):	0.012	

ASH FUSION ANALYSIS (AF1)

	OXIDIZING ATM	REDUCING ATM
Initial temperature (°C):	1,332.00	1,306.00
Softening temperature (°C):	1,411.00	1,380.00
Hemispherical temperature (°C):	1,438.00	1,403.00
Final temperature (°C):	1,453.00	1,443.00

ASH MINERAL ANALYSIS (AM1)

SiO2 (%):	61.32	TiO2 (%):	1.00
Al2O3 (%):	21.93	Na2O (%):	0.92
Fe2O3 (%):	4.75	K2O (%):	0.66
CaO (%):	1.48	SO3 (%):	0.61
MgO (%):	2.82	P2O5 (%):	0.38

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88017 SEAM - I SAMPLE ID - 101 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 35.00 X 6.00 RELATIVE WEIGHT % - 36.23 ASH % - 33.06

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	0.05	4.08	0.05	4.08	99.95	33.08	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.91	0.91
1.45	6.32	4.71	6.37	4.71	93.63	34.99	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.96	0.96
1.50	13.27	8.04	19.64	6.96	80.36	39.44	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.92	0.93
1.55	11.96	13.67	31.60	9.50	68.40	43.95	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.94	0.94
1.60	3.35	17.50	34.95	10.27	65.05	45.31	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.17	0.96
1.70	15.51	26.16	50.46	15.15	49.54	51.31	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.96	0.96
1.80	11.37	35.86	61.83	18.96	38.17	55.91	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.79	0.93
2.00	10.86	39.61	72.69	22.04	27.31	62.39	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.79	0.91
2.60	27.31	62.39	100.00	33.06	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.16	0.98

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 6.00 X 0.50 RELATIVE WEIGHT % - 48.15 ASH % - 19.69

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	1.23	5.41	1.23	5.41	98.77	19.86	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.78	0.78
1.45	32.73	6.35	33.96	6.32	66.04	26.56	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.31	1.29
1.50	26.14	8.87	60.10	7.43	39.90	38.15	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.95	1.14
1.55	8.13	13.88	68.23	8.20	31.77	44.36	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.04	1.13
1.60	6.10	17.42	74.33	8.95	25.67	50.76	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.10	1.13
1.70	7.99	22.95	82.32	10.31	17.68	63.33	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.22	1.14
1.80	2.92	31.20	85.24	11.03	14.76	69.68	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.23	1.14
2.00	2.66	41.03	87.90	11.93	12.10	75.98	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.87	1.16
2.60	12.09	76.03	99.99	19.68	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.01	1.26

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88017 SEAM - I SAMPLE ID - 101 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 0.50 X 0.15 RELATIVE WEIGHT % - 9.99 ASH % - 21.44

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	35.24	7.20	35.24	7.20	64.76	29.18	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.40	1.40
1.45	20.49	8.57	55.73	7.70	44.27	38.72	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.65	1.49
1.50	8.01	10.95	63.74	8.11	36.26	44.86	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.68	1.52
1.55	9.02	17.33	72.76	9.25	27.24	53.97	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.86	1.56
1.60	1.79	19.99	74.55	9.51	25.45	56.36	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.80	1.56
1.70	4.74	25.34	79.29	10.46	20.71	63.47	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.97	1.59
1.80	2.95	36.63	82.24	11.40	17.76	67.92	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.85	1.60
2.00	3.97	50.00	86.21	13.17	13.79	73.08	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.88	1.61
2.60	13.78	73.12	99.99	21.44	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.97	1.66

ANALYSIS TYPE - FROTH

FRACTION SIZE(MM) 0.15 X 0.00 RELATIVE WEIGHT % - 5.63 ASH % - 21.00

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
240.00	*****	21.00	100.00	21.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.50	1.50

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRODH88017 SEAM - I SAMPLE ID - 102 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 35.00 X 6.00 RELATIVE WEIGHT % - 42.75 ASH % - 32.02

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	0.02	4.26	0.02	4.26	99.98	32.03	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.23	1.23
1.45	23.45	7.12	23.47	7.12	76.53	39.66	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.81	0.81
1.50	6.78	7.69	30.25	7.25	69.75	42.77	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.82	0.81
1.55	5.06	14.01	35.31	8.22	64.69	45.02	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.04	0.85
1.60	1.42	18.87	36.73	8.63	63.27	45.61	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.06	0.85
1.70	11.69	25.97	48.42	12.81	51.58	50.06	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.73	0.82
1.80	8.37	28.42	56.79	15.11	43.21	54.25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.87	0.83
2.00	13.18	37.61	69.97	19.35	30.03	61.55	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.58	0.78
2.60	30.03	61.55	100.00	32.02	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.52	0.70

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 6.00 X 0.50 RELATIVE WEIGHT % - 38.32 ASH % - 20.24

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	0.02	2.32	0.02	2.32	99.98	20.25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.48	0.48
1.45	16.42	5.64	16.44	5.64	83.56	23.12	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.81	0.81
1.50	23.88	5.99	40.32	5.85	59.68	29.98	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.89	0.86
1.55	12.31	11.03	52.63	7.06	47.37	34.90	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.97	0.88
1.60	8.18	14.67	60.81	8.08	39.19	39.12	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.08	0.91
1.70	13.60	20.18	74.41	10.29	25.59	49.19	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.28	0.98
1.80	5.89	28.47	80.30	11.63	19.70	55.38	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.19	0.99
2.00	6.37	37.05	86.67	13.50	13.33	64.14	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.46	1.03
2.60	13.33	64.14	100.00	20.25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.59	1.10

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88017 SEAM - I SAMPLE ID - 102 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 0.50 X 0.15 RELATIVE WEIGHT % - 11.93 ASH % - 17.48

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	0.09	2.41	0.09	2.41	99.91	17.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.67	0.67
1.45	2.85	2.89	2.94	2.88	97.06	17.93	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.31	1.29
1.50	28.40	3.07	31.34	3.05	68.66	24.07	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.18	1.19
1.55	17.19	6.50	48.53	4.27	51.47	29.94	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.35	1.25
1.60	12.83	10.77	61.36	5.63	38.64	36.30	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.68	1.34
1.70	14.08	15.57	75.44	7.49	24.56	48.19	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.85	1.43
1.80	6.61	23.94	82.05	8.81	17.95	57.12	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.86	1.47
2.00	5.65	37.16	87.70	10.64	12.30	66.29	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.70	1.48
2.60	12.30	66.29	100.00	17.48	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.55	1.49

ANALYSIS TYPE - FROTH

FRACTION SIZE(MM) 0.15 X 0.00 RELATIVE WEIGHT % - 7.00 ASH % - 17.00

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
240.00	*****	17.00	100.00	17.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.30	1.30

========== GULF CANADA CORPORATION - COAL DIVISION ==========

---------- C L E A N S I M U L A T E D P R O D U C T R E P O R T ----------

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88017
Coal zone:	I		
Field sample no.:	08255	Composite sample no.:	257

---------- PRODUCT COAL ANALYSIS (SP2) ----------

Target Ash: 8.0 %

Standard:	ASTM	
Size analysis		
Fraction size(mm):	35.00 X	6.00
Cutpoint:	sp.g.	1.52
Contribution(%):		9.54
Total yield(%):		9.54

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture(%):	1.10	
Ash(%):	7.61	7.69
Volatile matter(%):	5.79	5.85
Fixed carbon(%):	85.50	86.46
Total sulphur(%):	0.51	0.52
Combustible sulphur(%):	0.46	
Gross calorific value(cal/g):	7,681.00	7,767.00
Volatile matter(dmmf%):	5.60	
Hardgrove index:	46.00	
Phosphorous in coal(%):	0.023	

---------- ASH FUSION ANALYSIS (AF1) ----------

	OXIDIZING ATM	REDUCING ATM
Initial temperature(°C):	1,269.00	1,243.00
Softening temperature(°C):	1,317.00	1,292.00
Hemispherical temperature(°C):	1,345.00	1,311.00
Final temperature(°C):	1,443.00	1,435.00

---------- ASH MINERAL ANALYSIS (AM1) ----------

SiO2(%):	56.66	TiO2(%):	2.00
Al2O3(%):	23.82	Na2O(%):	1.54
Fe2O3(%):	3.17	K2O(%):	1.02
CaO(%):	3.55	SO3(%):	1.54
MgO(%):	2.59	P2O5(%):	0.70

GULF CANADA CORPORATION - COAL DIVISION

CLEAN SIMULATED PRODUCT REPORT

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88017
Coal zone:	I		
Field sample no.:	08256	Composite sample no.:	258

PRODUCT COAL ANALYSIS (SP2)

Target Ash: 8.0 %

Standard:	ASTM
Size analysis	
Fraction size (mm):	35.00 X 6.00
Cutpoint:	sp.g. 1.54
Contribution (%):	14.45
Total yield (%):	14.45

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture (%):	1.03	
Ash (%):	7.73	7.81
Volatile matter (%):	6.94	7.01
Fixed carbon (%):	84.30	85.18
Total sulphur (%):	0.55	0.56
Combustible sulphur (%):	0.52	
Gross calorific value (cal/g):	7,670.00	7,749.00
Volatile matter (dmmf%):	6.80	
Hardgrove index:	40.00	
Phosphorous in coal (%):	0.140	

ASH FUSION ANALYSIS (AF1)

	OXIDIZING ATM	REDUCING ATM
Initial temperature (°C):	1,264.00	1,238.00
Softening temperature (°C):	1,288.00	1,272.00
Hemispherical temperature (°C):	1,298.00	1,290.00
Final temperature (°C):	1,472.00	1,472.00

ASH MINERAL ANALYSIS (AM1)

SiO2 (%):	42.56	TiO2 (%):	1.68
Al2O3 (%):	31.38	Na2O (%):	2.87
Fe2O3 (%):	4.89	K2O (%):	0.89
CaO (%):	4.90	SO3 (%):	0.88
MgO (%):	2.05	P2O5 (%):	4.15

GULF CANADA CORPORATION - COAL DIVISION

CLEAN SIMULATED PRODUCT REPORT

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88017
Coal zone:	I		
Field sample no.:	08255 - 08256	Composite sample no.:	350

PRODUCT COAL ANALYSIS (SP3)

Target Ash: 7.5 %

Standard:	ASTM
Size analysis	
Fraction size(mm):	6.00 X 0.50
Cutpoint:	sp.g. 1.52
Contribution(%):	21.47
Total yield(%):	21.47

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture(%):	1.01	
Ash(%):	7.29	7.36
Volatile matter(%):	6.39	6.46
Fixed carbon(%):	85.31	86.18
Total sulphur(%):	0.54	0.55
Combustible sulphur(%):	0.52	
Gross calorific value(cal/g):	7,739.00	7,818.00
Volatile matter(dmmf%):	6.20	
Hardgrove index:	45.00	
Phosphorous in coal(%):	0.042	

ASH FUSION ANALYSIS (AF1)

	OXIDIZING ATM	REDUCING ATM
Initial temperature(°C):	1,261.00	1,222.00
Softening temperature(°C):	1,369.00	1,301.00
Hemispherical temperature(°C):	1,406.00	1,332.00
Final temperature(°C):	1,472.00	1,472.00

ASH MINERAL ANALYSIS (AM1)

SiO2(%):	54.16	TiO2(%):	1.28
Al2O3(%):	26.84	Na2O(%):	1.70
Fe2O3(%):	2.82	K2O(%):	1.14
CaO(%):	2.91	SO3(%):	0.73
MgO(%):	2.16	P2O5(%):	1.31

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88018 SEAM - M SAMPLE ID - 103 WASHABILITY ID - WA1

---------- ANALYSIS TYPE - FLOAT ----------

FRACTION SIZE(MM) 35.00 X 6.00 RELATIVE WEIGHT % - 49.27 ASH % - 0.0

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	0.10	5.73	0.10	5.73	99.90	71.89	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.02	1.02
1.45	0.11	9.67	0.21	7.79	99.79	71.96	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.01	1.01
1.50	0.55	15.23	0.76	13.18	99.24	72.28	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.11	1.08
1.55	0.28	18.57	1.04	14.63	98.96	72.43	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.15	1.10
1.60	0.82	20.97	1.86	17.42	98.14	72.86	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	1.06
1.70	1.29	28.15	3.15	21.82	96.85	73.45	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.02	1.04
1.80	5.33	36.27	8.48	30.90	91.52	75.62	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.93	0.97
2.00	13.55	52.36	22.03	44.10	77.97	79.66	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.78	0.85
2.60	77.97	79.66	100.00	71.83	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.85	0.85

---------- ANALYSIS TYPE - FLOAT ----------

FRACTION SIZE(MM) 6.00 X 0.50 RELATIVE WEIGHT % - 41.54 ASH % - 0.0

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	0.42	6.43	0.42	6.43	99.58	74.63	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.21	1.21
1.45	2.05	7.90	2.47	7.65	97.53	76.03	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.24	1.23
1.50	2.01	12.45	4.48	9.80	95.52	77.37	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.21	1.22
1.55	1.56	17.87	6.04	11.89	93.96	78.35	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.23	1.23
1.60	1.81	21.79	7.85	14.17	92.15	79.46	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.28	1.24
1.70	3.37	27.07	11.22	18.04	88.78	81.45	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.39	1.28
1.80	2.21	35.33	13.43	20.89	86.57	82.63	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.30	1.29
2.00	5.27	48.25	18.70	28.60	81.30	84.86	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.27	1.28
2.60	81.30	84.86	100.00	74.34	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.45	1.42

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88018 SEAM - M SAMPLE ID - 103 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 0.50 X 0.15 RELATIVE WEIGHT % - 5.84 ASH % - 0.0

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	0.44	6.59	0.44	6.59	99.56	59.36	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.13	1.13
1.45	11.07	7.37	11.51	7.34	88.49	65.86	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.31	1.30
1.50	2.78	7.98	14.29	7.46	85.71	67.74	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.35	1.31
1.55	4.71	15.43	19.00	9.44	81.00	70.78	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.51	1.36
1.60	2.18	16.66	21.18	10.18	78.82	72.28	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.64	1.39
1.70	5.78	20.38	26.96	12.37	73.04	76.39	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.92	1.50
1.80	4.43	30.13	31.39	14.88	68.61	79.37	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.59	1.52
2.00	5.09	42.46	36.48	18.72	63.52	82.33	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.03	1.59
2.60	63.52	82.33	100.00	59.13	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.30	1.40

ANALYSIS TYPE - FROTH

FRACTION SIZE(MM) 0.15 X 0.00 RELATIVE WEIGHT % - 3.35 ASH % - 59.00

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
240.00	*****	59.00	100.00	59.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88018 SEAM - M SAMPLE ID - 104 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 35.00 X 6.00 RELATIVE WEIGHT % - 48.29 ASH % - 0.0

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	0.11	7.56	0.11	7.56	99.89	50.44	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.27	1.27
1.45	1.35	12.95	1.46	12.54	98.54	50.95	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.36	1.35
1.50	2.18	15.58	3.64	14.36	96.36	51.75	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.41	1.39
1.55	8.49	18.28	12.13	17.10	87.87	54.98	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.13	1.21
1.60	9.65	24.49	21.78	20.38	78.22	58.75	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.14	1.18
1.70	14.25	29.73	36.03	24.08	63.97	65.21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.35	1.25
1.80	7.13	38.00	43.16	26.38	56.84	68.62	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.69	1.32
2.00	14.16	48.44	57.32	31.83	42.68	75.32	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.61	1.39
2.60	42.68	75.32	100.00	50.39	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.72	1.53

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 6.00 X 0.50 RELATIVE WEIGHT % - 40.33 ASH % - 0.0

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	5.29	3.62	5.29	3.62	94.71	32.46	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.27	1.27
1.45	9.57	6.65	14.86	5.57	85.14	35.36	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.24	1.25
1.50	12.20	11.30	27.06	8.15	72.94	39.38	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.07	1.17
1.55	11.68	15.13	38.74	10.26	61.26	44.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.28	1.20
1.60	10.15	18.50	48.89	11.97	51.11	49.07	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.62	1.29
1.70	14.42	23.17	63.31	14.52	36.69	59.25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.20	1.27
1.80	6.72	31.13	70.03	16.11	29.97	65.56	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.00	1.34
2.00	8.89	43.99	78.92	19.25	21.08	74.65	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.13	1.32
2.60	21.08	74.65	100.00	30.93	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.34	1.32

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88018 SEAM - M SAMPLE ID - 104 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 0.50 X 0.15 RELATIVE WEIGHT % - 6.79 ASH % - 0.0

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	35.56	6.38	35.56	6.38	64.44	34.22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.66	1.66
1.45	14.19	10.70	49.75	7.61	50.25	40.86	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.79	1.70
1.50	7.26	13.98	57.01	8.42	42.99	45.40	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.90	1.72
1.55	5.20	17.23	62.21	9.16	37.79	49.27	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.18	1.68
1.60	5.45	21.68	67.66	10.17	32.34	53.92	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.79	1.69
1.70	4.20	22.91	71.86	10.91	28.14	58.55	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.22	1.66
1.80	4.62	29.97	76.48	12.06	23.52	64.17	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.44	1.65
2.00	5.56	50.36	82.04	14.66	17.96	68.44	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.37	1.63
2.60	17.96	68.44	100.00	24.32	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.68	1.64

ANALYSIS TYPE - FROTH

FRACTION SIZE(MM) 0.15 X 0.00 RELATIVE WEIGHT % - 4.59 ASH % - 24.00

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
240.00	*****	24.00	100.00	24.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

GULF CANADA CORPORATION - COAL DIVISION

C L E A N S I M U L A T E D P R O D U C T R E P O R T

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88018
Coal zone:	M		
Field sample no.:	08289 - 08290	Composite sample no.:	351

PRODUCT COAL ANALYSIS (SP3)

Target Ash: 7.5 %

Standard:	ASTM	
Size analysis		
Fraction size(mm):	6.00 X	0.50
Cutpoint:	sp.g.	1.48
Contribution(%):		5.09
Total yield(%):		5.09

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture(%):	1.20	
Ash(%):	7.21	7.30
Volatile matter(%):	7.36	7.45
Fixed carbon(%):	84.23	85.25
Total sulphur(%):	0.57	0.58
Combustible sulphur(%):	0.55	
Gross calorific value(cal/g):	7,705.00	7,799.00
Volatile matter(dmmf%):	7.30	
Hardgrove index:	48.00	
Phosphorous in coal(%):	0.094	

ASH FUSION ANALYSIS (AF1)

	OXIDIZING ATM	REDUCING ATM
Initial temperature(°C):	1,243.00	1,190.00
Softening temperature(°C):	1,269.00	1,216.00
Hemispherical temperature(°C):	1,290.00	1,238.00
Final temperature(°C):	1,417.00	1,411.00

ASH MINERAL ANALYSIS (AM1)

SiO2(%):	53.88	TiO2(%):	3.29
Al2O3(%):	23.06	Na2O(%):	2.20
Fe2O3(%):	2.75	K2O(%):	0.75
CaO(%):	4.42	SO3(%):	0.83
MgO(%):	1.41	P2O5(%):	2.98

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88018 SEAM - L SAMPLE ID - 105 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 35.00 X 6.00 RELATIVE WEIGHT % - 72.06 ASH % - 0.0

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	2.14	6.28	2.14	6.28	97.86	30.33	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.95	0.95
1.45	17.87	8.92	20.01	8.64	79.99	35.12	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.87	0.88
1.50	29.02	12.32	49.03	10.82	50.97	48.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.90	0.89
1.55	6.76	18.04	55.79	11.69	44.21	52.69	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.95	0.90
1.60	5.25	22.95	61.04	12.66	38.96	56.70	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.20	0.92
1.70	4.64	28.43	65.68	13.77	34.32	60.53	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.11	0.94
1.80	2.23	38.46	67.91	14.59	32.09	62.06	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.35	0.95
2.00	7.95	43.38	75.86	17.60	24.14	68.21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.02	0.96
2.60	24.14	68.21	100.00	29.82	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.52	0.85

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 6.00 X 0.50 RELATIVE WEIGHT % - 24.10 ASH % - 0.0

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	14.59	3.06	14.59	3.06	85.41	16.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.05	1.05
1.45	25.20	4.30	39.79	3.85	60.21	20.92	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.90	0.96
1.50	23.71	6.85	63.50	4.97	36.50	30.05	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.91	0.94
1.55	11.77	15.12	75.27	6.55	24.73	37.16	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.08	0.96
1.60	6.29	18.28	81.56	7.46	18.44	43.60	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.42	1.00
1.70	5.53	23.10	87.09	8.45	12.91	52.38	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.67	1.04
1.80	2.94	31.30	90.03	9.20	9.97	58.60	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.62	1.06
2.00	3.28	42.58	93.31	10.37	6.69	66.45	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.24	1.06
2.60	6.69	66.45	100.00	14.12	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.56	1.10

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88018 SEAM - L SAMPLE ID - 105 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 0.50 X 0.15 RELATIVE WEIGHT % - 2.32 ASH % - 0.0

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	8.45	2.97	8.45	2.97	91.55	17.90	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.22	1.22
1.45	25.34	4.67	33.79	4.24	66.21	22.96	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.15	1.17
1.50	19.31	7.48	53.10	5.42	46.90	29.33	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.19	1.18
1.55	8.10	10.72	61.20	6.12	38.80	33.22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.46	1.21
1.60	10.69	13.31	71.89	7.19	28.11	40.79	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.53	1.26
1.70	8.97	18.13	80.86	8.40	19.14	51.41	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.76	1.32
1.80	3.62	27.42	84.48	9.22	15.52	57.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.96	1.34
2.00	5.86	33.87	90.34	10.82	9.66	71.04	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.14	1.33
2.60	9.66	71.04	100.00	16.64	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.91	1.39

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88018 SEAM - K/L SAMPLE ID - 107 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 35.00 X 6.00 RELATIVE WEIGHT % - 74.69 ASH % - 39.24

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	0.48	3.57	0.48	3.57	99.52	40.31	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.57	0.57
1.45	2.83	7.55	3.31	6.97	96.69	41.26	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.97	0.91
1.50	4.80	13.07	8.11	10.58	91.89	42.74	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.99	0.96
1.55	6.31	18.99	14.42	14.26	85.58	44.49	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.99	0.97
1.60	6.58	23.21	21.00	17.06	79.00	46.26	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.97	0.97
1.70	25.29	29.76	46.29	24.00	53.71	54.03	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.80	1.42
1.80	9.33	37.01	55.62	26.18	44.38	57.61	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.05	1.36
2.00	23.49	45.20	79.11	31.83	20.89	71.56	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.87	1.22
2.60	20.89	71.56	100.00	40.13	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.96	1.16

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 6.00 X 0.50 RELATIVE WEIGHT % - 20.17 ASH % - 22.10

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	30.78	3.43	30.78	3.43	69.22	29.45	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.99	0.99
1.45	22.66	7.76	53.44	5.27	46.56	40.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.83	1.35
1.50	10.35	13.01	63.79	6.52	36.21	47.73	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.01	1.29
1.55	5.85	16.63	69.64	7.37	30.36	53.72	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.83	1.34
1.60	3.90	19.39	73.54	8.01	26.46	58.78	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.13	1.33
1.70	6.73	26.23	80.27	9.54	19.73	69.88	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.97	1.38
1.80	2.25	37.11	82.52	10.29	17.48	74.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.06	1.37
2.00	2.62	46.35	85.14	11.40	14.86	78.99	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.87	1.39
2.60	14.86	78.99	100.00	21.44	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.12	1.35

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88018 SEAM - K/L SAMPLE ID - 107 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 0.50 X 0.15 RELATIVE WEIGHT % - 3.49 ASH % - 29.46

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	48.20	5.10	48.20	5.10	51.80	50.62	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.20	1.20
1.45	11.19	13.07	59.39	6.60	40.61	60.97	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.72	1.30
1.50	3.33	17.15	62.72	7.16	37.28	64.88	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.18	1.29
1.55	2.13	20.64	64.85	7.60	35.15	67.57	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.18	1.29
1.60	2.13	24.80	66.98	8.15	33.02	70.32	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.81	1.30
1.70	4.26	33.08	71.24	9.64	28.76	75.84	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.88	1.34
1.80	1.73	46.44	72.97	10.51	27.03	77.72	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.95	1.35
2.00	1.60	53.12	74.57	11.43	25.43	79.27	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.09	1.35
2.60	25.43	79.27	100.00	28.68	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.63	1.42

ANALYSIS TYPE - FROTH

FRACTION SIZE(MM) 0.15 X 0.00 RELATIVE WEIGHT % - 1.65 ASH % - 31.73

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
240.00	*****	31.76	100.00	31.76	0.0	0.0	0.0	0.0	22.57	22.57	0.43	0.43	8.38	8.38	0.62	0.62

GULF CANADA CORPORATION - COAL DIVISION

C L E A N S I M U L A T E D P R O D U C T R E P O R T

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88018
Coal zone:	K/L		
Field sample no.:	08297	Composite sample no.:	259

PRODUCT COAL ANALYSIS (SP4)

Target Ash: 10.0 %

Standard:	ASTM	
Size analysis		
Fraction size (mm):	35.00 X	6.00
Cutpoint:	sp.g.	1.49
Contribution (%):		5.47
Total yield (%):		5.47

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture (%):	0.88	
Ash (%):	9.69	9.78
Volatile matter (%):	6.10	6.15
Fixed carbon (%):	83.33	84.07
Total sulphur (%):	0.57	0.58
Combustible sulphur (%):	0.55	
Gross calorific value (cal/g):	7,500.00	7,567.00
Volatile matter (dmmf%):	5.80	
Hardgrove index:	40.00	
Phosphorous in coal (%):	0.051	

ASH FUSION ANALYSIS (AF1)

	OXIDIZING ATM	REDUCING ATM
Initial temperature (°C):	1,301.00	1,232.00
Softening temperature (°C):	1,385.00	1,295.00
Hemispherical temperature (°C):	1,411.00	1,340.00
Final temperature (°C):	1,472.00	1,472.00

ASH MINERAL ANALYSIS (AM1)

SiO2 (%):	60.52	TiO2 (%):	2.15
Al2O3 (%):	22.68	Na2O (%):	2.33
Fe2O3 (%):	2.32	K2O (%):	1.22
CaO (%):	2.04	SO3 (%):	0.46
MgO (%):	1.55	P2O5 (%):	1.21

GULF CANADA CORPORATION - COAL DIVISION

C L E A N S I M U L A T E D P R O D U C T R E P O R T

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88018
Coal zone:	K/L		
Field sample no.:	08297	Composite sample no.:	352

PRODUCT COAL ANALYSIS (SP3)

Target Ash: 7.5 %

Standard:	ASTM
Size analysis	
Fraction size (mm):	6.00 X 0.50
Cutpoint:	sp.g. 1.56
Contribution (%):	14.44
Total yield (%):	14.44

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture (%):	1.30	
Ash (%):	7.67	7.77
Volatile matter (%):	6.06	6.14
Fixed carbon (%):	84.97	86.09
Total sulphur (%):	0.58	0.59
Combustible sulphur (%):	0.55	
Gross calorific value (cal/g):	7,748.00	7,851.00
Volatile matter (dmmf%):	5.80	
Hardgrove index:	49.00	
Phosphorous in coal (%):	0.030	

ASH FUSION ANALYSIS (AF1)

	OXIDIZING ATM	REDUCING ATM
Initial temperature (°C):	1,288.00	1,201.00
Softening temperature (°C):	1,351.00	1,248.00
Hemispherical temperature (°C):	1,380.00	1,272.00
Final temperature (°C):	1,459.00	1,432.00

ASH MINERAL ANALYSIS (AM1)

SiO2 (%):	59.12	TiO2 (%):	3.29
Al2O3 (%):	20.79	Na2O (%):	2.17
Fe2O3 (%):	4.12	K2O (%):	0.99
CaO (%):	2.15	SO3 (%):	0.92
MgO (%):	1.77	P2O5 (%):	0.91

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88018 SEAM - K SAMPLE ID - 108 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 35.00 X 6.00 RELATIVE WEIGHT % - 70.68 ASH % - 24.75

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	3.43	2.62	3.43	2.62	96.57	24.58	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.74	0.74
1.45	30.49	6.60	33.92	6.20	66.08	32.88	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.67	0.68
1.50	23.29	12.67	57.21	8.83	42.79	43.88	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.84	0.74
1.55	6.82	15.55	64.03	9.55	35.97	49.25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.79	0.75
1.60	3.97	20.11	68.00	10.16	32.00	52.87	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.15	0.77
1.70	10.27	28.32	78.27	12.55	21.73	64.47	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.05	0.81
1.80	3.13	32.50	81.40	13.31	18.60	69.85	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.04	0.82
2.00	3.70	46.97	85.10	14.78	14.90	75.53	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.41	0.84
2.60	14.90	75.53	100.00	23.83	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.08	0.88

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 6.00 X 0.50 RELATIVE WEIGHT % - 21.98 ASH % - 18.86

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	17.10	2.39	17.10	2.39	82.90	21.76	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.66	0.66
1.45	21.40	6.83	38.50	4.86	61.50	26.95	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.72	0.69
1.50	18.77	10.46	57.27	6.69	42.73	34.20	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.79	0.73
1.55	8.97	13.45	66.24	7.61	33.76	39.71	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.91	0.75
1.60	5.25	15.90	71.49	8.22	28.51	44.09	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.10	0.78
1.70	8.97	20.41	80.46	9.58	19.54	54.97	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.47	0.85
1.80	4.36	28.70	84.82	10.56	15.18	62.51	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.71	0.90
2.00	3.86	38.49	88.68	11.78	11.32	70.70	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.41	0.92
2.60	11.32	70.70	100.00	18.45	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.89	1.03

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88018 SEAM - K SAMPLE ID - 108 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 0.50 X 0.15 RELATIVE WEIGHT % - 4.47 ASH % - 17.37

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	14.16	2.69	14.16	2.69	85.84	19.44	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.35	1.35
1.45	20.98	4.34	35.14	3.68	64.86	24.33	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.34	1.34
1.50	15.82	6.19	50.96	4.46	49.04	30.18	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.75	1.47
1.55	9.61	8.44	60.57	5.09	39.43	35.48	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.18	1.42
1.60	6.69	12.06	67.26	5.78	32.74	40.26	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.48	1.43
1.70	12.05	16.45	79.31	7.40	20.69	54.13	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.91	1.50
1.80	4.86	24.40	84.17	8.38	15.83	63.26	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.25	1.49
2.00	4.35	34.69	88.52	9.68	11.48	74.09	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.72	1.50
2.60	11.48	74.09	100.00	17.07	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.94	1.55

ANALYSIS TYPE - FROTH

FRACTION SIZE(MM) 0.15 X 0.00 RELATIVE WEIGHT % - 2.87 ASH % - 20.62

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
240.00	*****	20.62	100.00	20.62	0.0	0.0	0.0	0.0	27.01	27.01	0.49	0.49	6.92	6.92	1.45	1.45

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88018 SEAM - K SAMPLE ID - 109 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 35.00 X 6.00 RELATIVE WEIGHT % - 78.38 ASH % - 66.42

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	0.26	4.17	0.26	4.17	99.74	67.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.21	1.21
1.45	0.30	4.78	0.56	4.50	99.44	67.20	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.07	1.13
1.50	2.56	11.23	3.12	10.02	96.88	68.67	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.32	1.29
1.55	1.61	19.15	4.73	13.13	95.27	69.51	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.03	1.20
1.60	5.00	22.19	9.73	17.79	90.27	72.13	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.92	1.06
1.70	5.24	33.18	14.97	23.17	85.03	74.53	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.99	1.03
1.80	7.56	39.34	22.53	28.60	77.47	77.97	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.02	1.03
2.00	11.10	52.48	33.63	36.48	66.37	82.23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.32	1.12
2.60	66.37	82.23	100.00	66.84	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.35	1.27

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 6.00 X 0.50 RELATIVE WEIGHT % - 15.65 ASH % - 52.90

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	6.35	2.96	6.35	2.96	93.65	55.54	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.30	1.30
1.45	11.80	4.08	18.15	3.69	81.85	62.96	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.21	1.24
1.50	6.37	10.24	24.52	5.39	75.48	67.41	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.27	1.25
1.55	4.53	15.82	29.05	7.02	70.95	70.71	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.10	1.23
1.60	3.25	19.33	32.30	8.26	67.70	73.17	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.31	1.23
1.70	4.48	25.43	36.78	10.35	63.22	76.56	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.33	1.25
1.80	3.25	34.15	40.03	12.28	59.97	78.86	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.31	1.25
2.00	7.49	45.76	47.52	17.56	52.48	83.58	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.79	1.34
2.60	52.48	83.58	100.00	52.21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.47	1.41

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88018 SEAM - K SAMPLE ID - 109 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 0.50 X 0.15 RELATIVE WEIGHT % - 3.55 ASH % - 37.77

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	CUM. S	CUM. S	CUM. VOL.	CUM. VOL.	CUM. MOIST	CUM. MOIST
1.40	7.33	2.49	7.33	2.49	92.67	39.98	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.35	1.35
1.45	22.87	4.42	30.20	3.95	69.80	51.63	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.26	1.28
1.50	12.58	5.97	42.78	4.55	57.22	61.67	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.39	1.31
1.55	2.95	10.39	45.73	4.92	54.27	64.46	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.52	1.33
1.60	3.28	13.92	49.01	5.52	50.99	67.71	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.57	1.34
1.70	5.47	20.00	54.48	6.98	45.52	73.45	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.54	1.36
1.80	2.84	27.87	57.32	8.01	42.68	76.48	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.89	1.39
2.00	4.81	39.46	62.13	10.45	37.87	81.18	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.82	1.42
2.60	37.87	81.18	100.00	37.23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.75	1.55

ANALYSIS TYPE - FROTH

FRACTION SIZE(MM) 0.15 X 0.00 RELATIVE WEIGHT % - 2.42 ASH % - 36.08

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	CUM. S	CUM. S	CUM. VOL.	CUM. VOL.	CUM. MOIST	CUM. MOIST
240.00	*****	36.08	100.00	36.08	0.0	0.0	0.0	0.0	21.06	21.06	0.46	0.46	7.11	7.11	1.43	1.43

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88018 SEAM - K SAMPLE ID - 110 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 35.00 X 6.00 RELATIVE WEIGHT % - 70.91 ASH % - 48.57

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	0.30	5.43	0.30	5.43	99.70	47.86	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.85	0.85
1.45	4.88	8.48	5.18	8.30	94.82	49.89	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.98	0.97
1.50	5.48	12.20	10.66	10.31	89.34	52.20	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.88	0.92
1.55	16.16	17.88	26.82	14.87	73.18	59.78	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.95	0.94
1.60	9.04	22.08	35.86	16.69	64.14	65.09	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.97	0.95
1.70	7.79	28.98	43.65	18.88	56.35	70.09	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.11	0.98
1.80	4.35	38.17	48.00	20.63	52.00	72.75	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.08	0.99
2.00	13.67	51.01	61.67	27.36	38.33	80.51	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.02	0.99
2.60	38.33	80.51	100.00	47.73	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.98	0.99

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 6.00 X 0.50 RELATIVE WEIGHT % - 23.07 ASH % - 29.58

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	3.29	1.96	3.29	1.96	96.71	30.06	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.07	1.07
1.45	17.08	4.33	20.37	3.95	79.63	35.57	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.86	0.89
1.50	10.92	9.56	31.29	5.91	68.71	39.71	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.91	0.90
1.55	8.53	14.13	39.82	7.67	60.18	43.34	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.07	0.94
1.60	9.00	18.19	48.82	9.61	51.18	47.76	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.09	0.96
1.70	12.73	23.81	61.55	12.54	38.45	55.69	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.13	1.00
1.80	10.24	32.41	71.79	15.38	28.21	64.13	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.41	1.06
2.00	10.55	43.97	82.34	19.04	17.66	76.18	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.40	1.10
2.60	17.66	76.18	100.00	29.13	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.95	1.25

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88018 SEAM - K SAMPLE ID - 110 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 0.50 X 0.15 RELATIVE WEIGHT % - 3.94 ASH % - 27.12

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	CUM. S	CUM. S	CUM. VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	4.84	2.25	4.84	2.25	95.16	28.07	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.10	1.10
1.45	20.00	3.20	24.84	3.01	75.16	34.68	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.34	1.29
1.50	12.26	8.66	37.10	4.88	62.90	39.76	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.26	1.28
1.55	6.67	10.84	43.77	5.79	56.23	43.19	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.46	1.31
1.60	7.74	13.66	51.51	6.97	48.49	47.90	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.65	1.36
1.70	10.54	18.56	62.05	8.94	37.95	56.05	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.02	1.47
1.80	8.28	28.69	70.33	11.27	29.67	63.68	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.96	1.53
2.00	11.72	41.58	82.05	15.60	17.95	78.11	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.01	1.60
2.60	17.95	78.11	100.00	26.82	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.66	1.61

ANALYSIS TYPE - FROTH

FRACTION SIZE(MM) 0.15 X 0.00 RELATIVE WEIGHT % - 2.08 ASH % - 31.00

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	CUM. S	CUM. S	CUM. VOL.	CUM. VOL.	MOIST	CUM. MOIST
240.00	*****	31.00	100.00	31.00	0.0	0.0	0.0	0.0	22.88	22.88	0.52	0.52	6.32	6.32	1.51	1.51

========== GULF CANADA CORPORATION - COAL DIVISION ==========

---------- C L E A N S I M U L A T E D P R O D U C T R E P O R T ----------

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88018
Coal zone:	K		
Field sample no.:	08302	Composite sample no.:	260

---------- PRODUCT COAL ANALYSIS (SP4) ----------

Target Ash: 10.0 %

Standard:	ASTM
Size analysis	
Fraction size(mm):	35.00 X 6.00
Cutpoint:	sp.g. 1.59
Contribution(%):	46.92
Total yield(%):	46.92

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture(%):	0.96	
Ash(%):	9.53	9.62
Volatile matter(%):	6.92	6.99
Fixed carbon(%):	82.59	83.39
Total sulphur(%):	0.59	0.60
Combustible sulphur(%):	0.52	
Gross calorific value(cal/g):	7,524.00	7,597.00
Volatile matter(dmmf%):	6.70	
Hardgrove index:	42.00	
Phosphorous in coal(%):	0.217	

---------- ASH FUSION ANALYSIS (AF1) ----------

	OXIDIZING ATM	REDUCING ATM
Initial temperature(°C):	1,317.00	1,264.00
Softening temperature(°C):	1,324.00	1,272.00
Hemispherical temperature(°C):	1,330.00	1,277.00
Final temperature(°C):	1,353.00	1,327.00

---------- ASH MINERAL ANALYSIS (AM1) ----------

SiO2(%):	38.48	TiO2(%):	2.15
Al2O3(%):	26.84	Na2O(%):	2.82
Fe2O3(%):	6.89	K2O(%):	0.86
CaO(%):	8.84	SO3(%):	1.91
MgO(%):	2.50	P2O5(%):	5.22

GULF CANADA CORPORATION - COAL DIVISION

C L E A N S I M U L A T E D P R O D U C T R E P O R T

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88018
Coal zone:	K		
Field sample no.:	08303 - 08304	Composite sample no.:	261

PRODUCT COAL ANALYSIS (SP4)

Target Ash: 10.0 %

Standard:	ASTM	
Size analysis		
Fraction size(mm):	35.00 X	6.00
Cutpoint:	sp.g.	1.50
Contribution(%):		3.96
Total yield(%):		3.96

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture(%):	0.83	
Ash(%):	9.31	9.39
Volatile matter(%):	6.00	6.05
Fixed carbon(%):	83.86	84.56
Total sulphur(%):	0.60	0.61
Combustible sulphur(%):	0.56	
Gross calorific value(cal/g):	7,581.00	7,645.00
Volatile matter(dmmf%):	5.70	
Hardgrove index:	41.00	
Phosphorous in coal(%):	0.114	

ASH FUSION ANALYSIS (AF1)

	OXIDIZING ATM	REDUCING ATM
Initial temperature(°C):	1,256.00	1,195.00
Softening temperature(°C):	1,285.00	1,222.00
Hemispherical temperature(°C):	1,306.00	1,261.00
Final temperature(°C):	1,390.00	1,385.00

ASH MINERAL ANALYSIS (AM1)

SiO2(%):	47.40	TiO2(%):	1.60
Al2O3(%):	26.46	Na2O(%):	2.24
Fe2O3(%):	5.41	K2O(%):	1.37
CaO(%):	4.11	SO3(%):	1.10
MgO(%):	2.80	P2O5(%):	2.81

========== GULF CANADA CORPORATION - COAL DIVISION ==========

---------- C L E A N S I M U L A T E D P R O D U C T R E P O R T ----------

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88018
Coal zone:	K		
Field sample no.:	08302 - 08304	Composite sample no.:	353

---------- PRODUCT COAL ANALYSIS (SP3) ----------

Target Ash: 7.5 %

Standard:	ASTM
Size analysis	
Fraction size(mm):	6.00 X 0.50
Cutpoint:	sp.g. 1.55
Contribution(%):	10.72
Total yield(%):	10.72

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture(%):	1.02	
Ash(%):	7.08	7.15
Volatile matter(%):	7.30	7.38
Fixed carbon(%):	84.60	85.47
Total sulphur(%):	0.59	0.60
Combustible sulphur(%):	0.56	
Gross calorific value(cal/g):	7,701.00	7,780.00
Volatile matter(dmmf%):	7.20	
Hardgrove index:	47.00	
Phosphorous in coal(%):	0.092	

---------- ASH FUSION ANALYSIS (AF1) ----------

	OXIDIZING ATM	REDUCING ATM
Initial temperature(°C):	1,274.00	1,201.00
Softening temperature(°C):	1,306.00	1,232.00
Hemispherical temperature(°C):	1,340.00	1,269.00
Final temperature(°C):	1,430.00	1,420.00

---------- ASH MINERAL ANALYSIS (AM1) ----------

SiO2(%):	44.88	TiO2(%):	3.29
Al2O3(%):	27.22	Na2O(%):	2.60
Fe2O3(%):	5.49	K2O(%):	1.07
CaO(%):	5.21	SO3(%):	0.93
MgO(%):	2.22	P2O5(%):	2.98

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88018 SEAM - I SAMPLE ID - 111 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 35.00 X 6.00 RELATIVE WEIGHT % - 58.48 ASH % - 35.32

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	1.30	1.67	1.30	1.67	98.70	35.15	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.02	1.02
1.45	15.03	6.80	16.33	6.39	83.67	40.24	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.76	0.78
1.50	15.38	13.10	31.71	9.65	68.29	46.35	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.85	0.81
1.55	13.13	18.16	44.84	12.14	55.16	53.06	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.79	0.81
1.60	6.83	23.49	51.67	13.64	48.33	57.24	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.89	0.82
1.70	8.93	27.22	60.60	15.64	39.40	64.05	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.86	0.82
1.80	7.00	34.78	67.60	17.62	32.40	70.37	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.84	0.83
2.00	9.54	44.44	77.14	20.94	22.86	81.19	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.74	0.82
2.60	22.86	81.19	100.00	34.71	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.33	0.93

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 6.00 X 0.50 RELATIVE WEIGHT % - 33.86 ASH % - 19.29

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	21.82	2.38	21.82	2.38	78.18	23.33	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.85	0.85
1.45	21.66	6.41	43.48	4.39	56.52	29.82	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.89	0.87
1.50	12.57	11.01	56.05	5.87	43.95	35.20	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.92	0.88
1.55	10.71	15.27	66.76	7.38	33.24	41.61	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.16	0.93
1.60	12.57	19.71	79.33	9.33	20.67	54.94	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.48	1.01
1.70	4.82	23.70	84.15	10.16	15.85	64.43	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.80	1.06
1.80	2.35	31.05	86.50	10.72	13.50	70.25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.85	1.08
2.00	2.56	41.30	89.06	11.60	10.94	77.02	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.49	1.09
2.60	10.94	77.02	100.00	18.76	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.91	1.18

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88018 SEAM - I SAMPLE ID - 111 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 0.50 X 0.15 RELATIVE WEIGHT % - 4.74 ASH % - 22.44

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	16.43	3.37	16.43	3.37	83.57	25.62	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.20	1.20
1.45	28.74	5.48	45.17	4.71	54.83	36.18	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.07	1.12
1.50	9.77	7.54	54.94	5.22	45.06	42.39	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.26	1.14
1.55	4.74	12.08	59.68	5.76	40.32	45.95	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.42	1.16
1.60	1.48	12.55	61.16	5.92	38.84	47.22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.29	1.17
1.70	8.57	14.79	69.73	7.01	30.27	56.40	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.78	1.24
1.80	6.45	22.63	76.18	8.34	23.82	65.55	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.93	1.30
2.00	5.92	38.36	82.10	10.50	17.90	74.54	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.01	1.35
2.60	17.90	74.54	100.00	21.96	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.94	1.46

ANALYSIS TYPE - FROTH

FRACTION SIZE(MM) 0.15 X 0.00 RELATIVE WEIGHT % - 2.92 ASH % - 25.72

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
240.00	*****	25.72	100.00	25.72	0.0	0.0	0.0	0.0	25.06	25.06	0.38	0.38	7.73	7.73	0.42	0.42

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88018 SEAM - I SAMPLE ID - 112 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 35.00 X 6.00 RELATIVE WEIGHT % - 62.96 ASH % - 9.02

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	9.83	3.22	9.83	3.22	90.17	9.41	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.90	0.90
1.45	62.59	6.34	72.42	5.92	27.58	16.38	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.05	1.03
1.50	18.09	11.03	90.51	6.94	9.49	26.58	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.09	1.04
1.55	1.66	13.37	92.17	7.05	7.83	29.38	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.22	1.04
1.60	4.01	19.87	96.18	7.59	3.82	39.36	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.21	1.05
1.70	1.28	24.45	97.46	7.81	2.54	46.88	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.49	1.06
1.80	0.10	26.13	97.56	7.83	2.44	47.73	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.28	1.06
2.00	0.98	36.38	98.54	8.11	1.46	55.35	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.06	1.06
2.60	1.46	55.35	100.00	8.80	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.05	1.06

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 6.00 X 0.50 RELATIVE WEIGHT % - 29.49 ASH % - 8.99

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	12.08	1.83	12.08	1.83	87.92	10.12	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	1.00
1.45	68.37	5.38	80.45	4.85	19.55	26.70	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.97	0.97
1.50	6.92	10.87	87.37	5.32	12.63	35.38	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.20	0.91
1.55	2.80	15.14	90.17	5.63	9.83	41.14	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.35	0.93
1.60	1.68	17.99	91.85	5.85	8.15	45.91	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.52	0.94
1.70	2.10	25.79	93.95	6.30	6.05	52.89	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.41	0.95
1.80	0.80	29.66	94.75	6.50	5.25	56.43	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.32	0.95
2.00	1.37	38.58	96.12	6.95	3.88	62.74	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.54	0.96
2.60	3.88	62.74	100.00	9.12	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.78	0.99

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88018 SEAM - I SAMPLE ID - 112 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 0.50 X 0.15 RELATIVE WEIGHT % - 4.30 ASH % - 15.65

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	11.32	3.69	11.32	3.69	88.68	16.96	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.40	1.40
1.45	60.95	6.73	72.27	6.25	27.73	39.45	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.52	1.50
1.50	2.98	11.49	75.25	6.46	24.75	42.81	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.44	1.50
1.55	4.34	15.35	79.59	6.95	20.41	48.65	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.98	1.53
1.60	3.46	20.67	83.05	7.52	16.95	54.37	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.15	1.51
1.70	2.98	20.93	86.03	7.98	13.97	61.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.13	1.50
1.80	1.36	30.28	87.39	8.33	12.61	64.87	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.15	1.49
2.00	2.31	44.92	89.70	9.27	10.30	69.34	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.30	1.49
2.60	10.30	69.34	100.00	15.46	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.92	1.53

ANALYSIS TYPE - FROTH

FRACTION SIZE(MM) 0.15 X 0.00 RELATIVE WEIGHT % - 3.25 ASH % - 19.28

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
240.00	*****	19.28	100.00	19.28	0.0	0.0	0.0	0.0	27.56	27.56	0.44	0.44	6.59	6.59	1.36	1.36

========== GULF CANADA CORPORATION - COAL DIVISION ==========

---------- C L E A N S I M U L A T E D P R O D U C T R E P O R T ----------

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88018
Coal zone:	I		
Field sample no.:	08307	Composite sample no.:	262

---------- PRODUCT COAL ANALYSIS (SP2) ----------

Target Ash: 8.0 %

Standard:	ASTM
Size analysis	
Fraction size (mm):	35.00 X 6.00
Cutpoint:	sp.g. 1.48
Contribution (%):	14.46
Total yield (%):	14.46

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture (%):	0.87	
Ash (%):	7.57	7.64
Volatile matter (%):	6.40	6.46
Fixed carbon (%):	85.16	85.90
Total sulphur (%):	0.48	0.48
Combustible sulphur (%):	0.46	
Gross calorific value (cal/g):	7,689.00	7,756.00
Volatile matter (dmmf%):	6.20	
Hardgrove index:	40.00	
Phosphorous in coal (%):	0.088	

---------- ASH FUSION ANALYSIS (AF1) ----------

	OXIDIZING ATM	REDUCING ATM
Initial temperature (°C):	1,240.00	1,206.00
Softening temperature (°C):	1,290.00	1,222.00
Hemispherical temperature (°C):	1,338.00	1,272.00
Final temperature (°C):	1,395.00	1,393.00

---------- ASH MINERAL ANALYSIS (AM1) ----------

SiO2 (%):	57.52	TiO2 (%):	1.68
Al2O3 (%):	23.06	Na2O (%):	2.30
Fe2O3 (%):	2.37	K2O (%):	0.76
CaO (%):	4.20	SO3 (%):	0.78
MgO (%):	1.53	P2O5 (%):	2.66

GULF CANADA CORPORATION - COAL DIVISION

C L E A N S I M U L A T E D P R O D U C T R E P O R T

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88018
Coal zone:	I		
Field sample no.:	08308	Composite sample no.:	263

PRODUCT COAL ANALYSIS (SP2)

Target Ash: 8.0 %

Standard:	ASTM
Size analysis	
Fraction size (mm):	35.00 X 6.00
Cutpoint:	sp.g. 1.92
Contribution (%):	61.66
Total yield (%):	61.66

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture (%):	0.91	
Ash (%):	7.67	7.74
Volatile matter (%):	6.49	6.55
Fixed carbon (%):	84.93	85.71
Total sulphur (%):	0.47	0.47
Combustible sulphur (%):	0.45	
Gross calorific value (cal/g):	7,667.00	7,738.00
Volatile matter (dmmf%):	6.30	
Hardgrove index:	39.00	
Phosphorous in coal (%):	0.164	

ASH FUSION ANALYSIS (AF1)

	OXIDIZING ATM	REDUCING ATM
Initial temperature (°C):	1,269.00	1,222.00
Softening temperature (°C):	1,290.00	1,253.00
Hemispherical temperature (°C):	1,322.00	1,269.00
Final temperature (°C):	1,427.00	1,380.00

ASH MINERAL ANALYSIS (AM1)

SiO2 (%):	44.38	TiO2 (%):	2.16
Al2O3 (%):	29.11	Na2O (%):	2.92
Fe2O3 (%):	4.75	K2O (%):	0.92
CaO (%):	5.43	SO3 (%):	0.62
MgO (%):	1.93	P2O5 (%):	4.91

GULF CANADA CORPORATION - COAL DIVISION

C L E A N S I M U L A T E D P R O D U C T R E P O R T

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88018
Coal zone:	I		
Field sample no.:	08307 - 08308	Composite sample no.:	354

PRODUCT COAL ANALYSIS (SP3)

Target Ash: 7.5 %

Standard:	ASTM
Size analysis	
Fraction size(mm):	6.00 X 0.50
Cutpoint:	sp.g. 1.58
Contribution(%):	24.59
Total yield(%):	24.59

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture(%):	1.15	
Ash(%):	7.09	7.17
Volatile matter(%):	6.97	7.05
Fixed carbon(%):	84.79	85.78
Total sulphur(%):	0.49	0.50
Combustible sulphur(%):	0.47	
Gross calorific value(cal/g):	7,720.00	7,809.00
Volatile matter(dmmf%):	6.90	
Hardgrove index:	48.00	
Phosphorous in coal(%):	0.110	

ASH FUSION ANALYSIS (AF1)

	OXIDIZING ATM	REDUCING ATM
Initial temperature(°C):	1,224.00	1,206.00
Softening temperature(°C):	1,306.00	1,269.00
Hemispherical temperature(°C):	1,348.00	1,283.00
Final temperature(°C):	1,432.00	1,430.00

ASH MINERAL ANALYSIS (AM1)

SiO2(%):	52.74	TiO2(%):	2.15
Al2O3(%):	24.95	Na2O(%):	2.33
Fe2O3(%):	3.49	K2O(%):	0.80
CaO(%):	4.45	SO3(%):	0.76
MgO(%):	2.06	P2O5(%):	3.54

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88018 SEAM - H/I SAMPLE ID - 113 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 35.00 X 6.00 RELATIVE WEIGHT % - 50.77 ASH % - 47.30

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	0.70	4.51	0.70	4.51	99.30	47.37	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.04	1.04
1.45	5.14	6.17	5.84	5.97	94.16	49.62	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.79	0.82
1.50	5.20	12.34	11.04	8.97	88.96	51.80	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.72	0.77
1.55	9.16	18.00	20.20	13.07	79.80	55.68	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.61	0.70
1.60	6.67	22.95	26.87	15.52	73.13	58.67	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.73	0.71
1.70	13.90	29.61	40.77	20.32	59.23	65.49	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.73	0.71
1.80	4.77	37.42	45.54	22.11	54.46	67.94	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.88	0.73
2.00	14.37	48.54	59.91	28.45	40.09	74.90	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.94	0.78
2.60	40.09	74.90	100.00	47.07	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.90	0.83

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 6.00 X 0.50 RELATIVE WEIGHT % - 38.09 ASH % - 26.15

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	10.22	2.52	10.22	2.52	89.78	28.23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.64	0.64
1.45	14.64	5.11	24.86	4.05	75.14	32.74	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.65	0.65
1.50	13.87	9.42	38.73	5.97	61.27	38.02	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.69	0.66
1.55	10.78	13.68	49.51	7.65	50.49	43.22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.28	0.80
1.60	7.92	17.11	57.43	8.95	42.57	48.07	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.45	0.89
1.70	11.62	23.02	69.05	11.32	30.95	57.48	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.92	1.06
1.80	6.60	30.73	75.65	13.01	24.35	64.73	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.45	1.09
2.00	8.56	42.98	84.21	16.06	15.79	76.52	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.41	1.13
2.60	15.79	76.52	100.00	25.61	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.57	1.20

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88018 SEAM - H/I SAMPLE ID - 113 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 0.50 X 0.15 RELATIVE WEIGHT % - 6.42 ASH % - 21.44

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	8.79	2.46	8.79	2.46	91.21	22.63	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.43	1.43
1.45	12.54	2.77	21.33	2.64	78.67	25.80	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.44	1.44
1.50	16.11	5.39	37.44	3.82	62.56	31.05	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.63	1.52
1.55	10.12	8.32	47.56	4.78	52.44	35.44	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.35	1.48
1.60	8.06	11.59	55.62	5.77	44.38	39.77	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.57	1.50
1.70	13.79	15.99	69.41	7.80	30.59	50.49	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.37	1.47
1.80	8.12	23.45	77.53	9.44	22.47	60.27	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.52	1.48
2.00	8.25	36.80	85.78	12.07	14.22	73.88	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.66	1.49
2.60	14.22	73.88	100.00	20.86	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.31	1.47

ANALYSIS TYPE - FROTH

FRACTION SIZE(MM) 0.15 X 0.00 RELATIVE WEIGHT % - 4.72 ASH % - 22.49

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
240.00	*****	22.49	100.00	22.49	0.0	0.0	0.0	0.0	26.45	26.45	0.45	0.45	6.70	6.70	1.18	1.18

========== GULF CANADA CORPORATION - COAL DIVISION ==========

---------- C L E A N S I M U L A T E D P R O D U C T R E P O R T ----------

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88018
Coal zone:	H/I		
Field sample no.:	08311	Composite sample no.:	264

---------- PRODUCT COAL ANALYSIS (SP4) ----------

Target Ash: 10.0 %

Standard:	ASTM	
Size analysis		
Fraction size(mm):	35.00 X	6.00
Cutpoint:	sp.g.	1.51
Contribution(%):		7.06
Total yield(%):		7.06

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture(%):	0.63	
Ash(%):	9.82	9.88
Volatile matter(%):	6.47	6.51
Fixed carbon(%):	83.08	83.61
Total sulphur(%):	0.52	0.52
Combustible sulphur(%):	0.50	
Gross calorific value(cal/g):	7,512.00	7,559.00
Volatile matter(dmmf%):	6.20	
Hardgrove index:	43.00	
Phosphorous in coal(%):	0.027	

---------- ASH FUSION ANALYSIS (AF1) ----------

	OXIDIZING ATM	REDUCING ATM
Initial temperature(°C):	1,285.00	1,269.00
Softening temperature(°C):	1,369.00	1,353.00
Hemispherical temperature(°C):	1,427.00	1,377.00
Final temperature(°C):	1,472.00	1,472.00

---------- ASH MINERAL ANALYSIS (AM1) ----------

SiO2(%):	67.04	TiO2(%):	2.00
Al2O3(%):	20.04	Na2O(%):	1.33
Fe2O3(%):	1.86	K2O(%):	0.58
CaO(%):	1.76	SO3(%):	0.41
MgO(%):	1.27	P2O5(%):	0.64

========== GULF CANADA CORPORATION - COAL DIVISION ==========

---------- C L E A N S I M U L A T E D P R O D U C T R E P O R T ----------

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88018
Coal zone:	H/I		
Field sample no.:	08311	Composite sample no.:	355

---------- PRODUCT COAL ANALYSIS (SP3) ----------

Target Ash: 7.5 %

Standard:	ASTM
Size analysis	
Fraction size (mm):	6.00 X 0.50
Cutpoint:	sp.g. 1.55
Contribution (%):	17.99
Total yield (%):	17.99

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture (%):	0.94	
Ash (%):	7.22	7.29
Volatile matter (%):	7.37	7.44
Fixed carbon (%):	84.47	85.27
Total sulphur (%):	0.52	0.52
Combustible sulphur (%):	0.51	
Gross calorific value (cal/g):	7,722.00	7,795.00
Volatile matter (dmmf%):	7.30	
Hardgrove index:	50.00	
Phosphorous in coal (%):	0.033	

---------- ASH FUSION ANALYSIS (AF1) ----------

	OXIDIZING ATM	REDUCING ATM
Initial temperature (°C):	1,285.00	1,282.00
Softening temperature (°C):	1,406.00	1,356.00
Hemispherical temperature (°C):	1,440.00	1,393.00
Final temperature (°C):	1,472.00	1,472.00

---------- ASH MINERAL ANALYSIS (AM1) ----------

SiO2 (%):	59.38	TiO2 (%):	3.29
Al2O3 (%):	23.44	Na2O (%):	2.12
Fe2O3 (%):	1.80	K2O (%):	0.65
CaO (%):	2.07	SO3 (%):	0.43
MgO (%):	1.36	P2O5 (%):	1.06

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88018 SEAM - H SAMPLE ID - 114 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 35.00 X 6.00 RELATIVE WEIGHT % - 83.18 ASH % - 0.0

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.45	0.03	8.15	0.03	8.15	99.97	91.29	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.89	0.89
1.50	0.09	10.81	0.12	10.14	99.88	91.36	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.15	1.08
1.55	0.06	17.05	0.18	12.45	99.82	91.40	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.13	1.10
1.60	0.97	23.82	1.15	22.04	98.85	92.07	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.38	1.34
1.70	0.01	35.62	1.16	22.16	98.84	92.07	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.64	1.33
1.80	0.37	43.17	1.53	27.24	98.47	92.26	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.07	1.27
2.00	1.25	58.43	2.78	41.26	97.22	92.69	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.92	1.11
2.60	97.22	92.69	100.00	91.26	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.88	0.89

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 6.00 X 0.50 RELATIVE WEIGHT % - 12.86 ASH % - 0.0

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	1.92	5.09	1.92	5.09	98.08	70.56	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.08	1.08
1.45	2.47	5.30	4.39	5.21	95.61	72.25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.13	1.11
1.50	1.48	10.97	5.87	6.66	94.13	73.21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.04	1.09
1.55	1.82	14.64	7.69	8.55	92.31	74.37	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	1.07
1.60	0.89	18.98	8.58	9.63	91.42	74.90	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.24	1.09
1.70	2.96	26.87	11.54	14.05	88.46	76.51	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.05	1.08
1.80	5.45	36.97	16.99	21.40	83.01	79.11	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.20	1.12
2.00	11.24	49.15	28.23	32.45	71.77	83.80	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.22	1.16
2.60	71.77	83.80	100.00	69.30	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.60	1.48

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88018 SEAM - H SAMPLE ID - 114 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 0.50 X 0.15 RELATIVE WEIGHT % - 2.50 ASH % - 0.0

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	CUM. S	CUM. S	CUM. VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	19.23	10.24	19.23	10.24	80.77	61.99	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	1.00
1.45	5.30	15.69	24.53	11.42	75.47	65.24	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	1.00
1.50	4.05	25.97	28.58	13.48	71.42	67.46	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.17	1.02
1.55	2.49	33.42	31.07	15.08	68.93	68.69	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.43	1.06
1.60	6.34	39.45	37.41	19.21	62.59	71.66	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.70	1.17
1.70	1.98	41.08	39.39	20.31	60.61	72.65	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.61	1.19
1.80	5.09	46.95	44.48	23.36	55.52	75.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.49	1.22
2.00	6.86	53.10	51.34	27.33	48.66	78.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.72	1.29
2.60	48.66	78.10	100.00	52.04	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.73	1.50

ANALYSIS TYPE - FROTH

FRACTION SIZE(MM) 0.15 X 0.00 RELATIVE WEIGHT % - 1.46 ASH % - 52.00

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	CUM. S	CUM. S	CUM. VOL.	CUM. VOL.	MOIST	CUM. MOIST
240.00	*****	52.00	100.00	52.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	1.00

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88018 SEAM - H SAMPLE ID - 115 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 35.00 X 6.00 RELATIVE WEIGHT % - 84.21 ASH % - 60.27

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	0.57	4.14	0.57	4.14	99.43	61.13	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.50	0.50
1.45	1.77	6.91	2.34	6.24	97.66	62.12	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.58	0.56
1.50	4.10	12.45	6.44	10.19	93.56	64.29	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.57	0.57
1.55	4.16	17.91	10.60	13.22	89.40	66.45	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.69	0.61
1.60	4.59	21.72	15.19	15.79	84.81	68.87	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.74	0.65
1.70	7.17	32.46	22.36	21.13	77.64	72.24	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.70	0.67
1.80	3.84	38.21	26.20	23.64	73.80	74.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.83	0.69
2.00	13.77	52.89	39.97	33.72	60.03	78.85	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.69	0.69
2.60	60.03	78.85	100.00	60.81	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.74	0.72

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 6.00 X 0.50 RELATIVE WEIGHT % - 13.26 ASH % - 32.18

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	17.07	3.00	17.07	3.00	82.93	37.94	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.56	0.56
1.45	16.87	6.14	33.94	4.56	66.06	46.06	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.55	0.56
1.50	10.22	11.67	44.16	6.21	55.84	52.36	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.70	0.59
1.55	6.68	16.68	50.84	7.58	49.16	57.21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.79	0.62
1.60	5.18	21.11	56.02	8.83	43.98	61.46	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.83	0.63
1.70	7.52	28.09	63.54	11.11	36.46	68.34	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.76	0.65
1.80	4.95	36.34	68.49	12.94	31.51	73.37	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.86	0.66
2.00	7.00	48.60	75.49	16.24	24.51	80.44	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.21	0.72
2.60	24.51	80.44	100.00	31.98	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.14	0.82

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88018 SEAM - H SAMPLE ID - 115 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 0.50 X 0.15 RELATIVE WEIGHT % - 1.67 ASH % - 41.95

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	15.48	6.74	15.48	6.74	84.52	48.64	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.64	0.64
1.45	10.88	7.82	26.36	7.19	73.64	54.67	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.77	0.69
1.50	7.74	16.03	34.10	9.19	65.90	59.21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.98	0.76
1.55	4.35	17.21	38.45	10.10	61.55	62.18	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.03	0.79
1.60	3.02	22.46	41.47	11.00	58.53	64.23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.98	0.80
1.70	7.62	31.64	49.09	14.20	50.91	69.11	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.51	0.91
1.80	3.63	36.77	52.72	15.76	47.28	71.59	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.39	0.95
2.00	10.88	51.19	63.60	21.82	36.40	77.69	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.25	1.00
2.60	36.40	77.69	100.00	42.16	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.35	1.13

ANALYSIS TYPE - FROTH

FRACTION SIZE(MM) 0.15 X 0.00 RELATIVE WEIGHT % - 0.86 ASH % - 50.70

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
240.00	*****	50.70	100.00	50.70	0.0	0.0	0.0	0.0	14.75	14.75	0.74	0.74	6.74	6.74	1.26	1.26

========== GULF CANADA CORPORATION - COAL DIVISION ==========

---------- C L E A N S I M U L A T E D P R O D U C T R E P O R T ----------

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88018
Coal zone:	H		
Field sample no.:	08315	Composite sample no.:	265

---------- PRODUCT COAL ANALYSIS (SP4) ----------

Target Ash: 10.0 %

Standard:	ASTM	
Size analysis		
Fraction size(mm):	35.00 X	6.00
Cutpoint:	sp.g.	1.50
Contribution(%):		4.63
Total yield(%):		4.63

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture(%):	1.07	
Ash(%):	9.34	9.44
Volatile matter(%):	7.09	7.17
Fixed carbon(%):	82.50	83.39
Total sulphur(%):	0.66	0.67
Combustible sulphur(%):	0.63	
Gross calorific value(cal/g):	7,555.00	7,636.00
Volatile matter(dmmf%):	6.90	
Hardgrove index:	39.00	
Phosphorous in coal(%):	0.232	

---------- ASH FUSION ANALYSIS (AF1) ----------

	OXIDIZING ATM	REDUCING ATM
Initial temperature(°C):	1,293.00	1,209.00
Softening temperature(°C):	1,301.00	1,259.00
Hemispherical temperature(°C):	1,306.00	1,272.00
Final temperature(°C):	1,332.00	1,327.00

---------- ASH MINERAL ANALYSIS (AM1) ----------

SiO2(%):	45.38	TiO2(%):	1.77
Al2O3(%):	25.71	Na2O(%):	2.49
Fe2O3(%):	5.69	K2O(%):	0.93
CaO(%):	4.87	SO3(%):	0.85
MgO(%):	2.16	P2O5(%):	5.70

========== GULF CANADA CORPORATION - COAL DIVISION ==========

---------- C L E A N S I M U L A T E D P R O D U C T R E P O R T ----------

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88018
Coal zone:	H		
Field sample no.:	08314 - 08315	Composite sample no.:	356

---------- PRODUCT COAL ANALYSIS (SP3) ----------

Target Ash: 7.5 %

Standard:	ASTM	
Size analysis		
Fraction size(mm):	6.00 X	0.50
Cutpoint:	sp.g.	1.54
Contribution(%):		3.96
Total yield(%):		3.96

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture(%):	0.86	
Ash(%):	7.26	7.32
Volatile matter(%):	6.14	6.19
Fixed carbon(%):	85.74	86.49
Total sulphur(%):	0.64	0.65
Combustible sulphur(%):	0.63	
Gross calorific value(cal/g):	7,791.00	7,859.00
Volatile matter(dmmf%):	5.90	
Hardgrove index:	46.00	
Phosphorous in coal(%):	0.105	

---------- ASH FUSION ANALYSIS (AF1) ----------

	OXIDIZING ATM	REDUCING ATM
Initial temperature(°C):	1,269.00	1,190.00
Softening temperature(°C):	1,285.00	1,198.00
Hemispherical temperature(°C):	1,306.00	1,219.00
Final temperature(°C):	1,348.00	1,338.00

---------- ASH MINERAL ANALYSIS (AM1) ----------

SiO2(%):	48.30	TiO2(%):	3.72
Al2O3(%):	24.95	Na2O(%):	2.22
Fe2O3(%):	5.83	K2O(%):	1.10
CaO(%):	5.71	SO3(%):	0.38
MgO(%):	2.13	P2O5(%):	3.31

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88019 SEAM - G & G LO SAMPLE ID - 121 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 35.00 X 6.00 RELATIVE WEIGHT % - 49.03 ASH % - 0.0

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	0.13	9.54	0.13	9.54	99.87	52.18	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.41	1.41
1.45	2.84	10.53	2.97	10.49	97.03	53.40	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.22	1.23
1.50	2.80	12.91	5.77	11.66	94.23	54.60	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.34	1.28
1.55	7.61	17.16	13.38	14.79	86.62	57.89	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.39	1.34
1.60	1.62	18.19	15.00	15.16	85.00	58.65	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.47	1.36
1.70	4.47	25.68	19.47	17.57	80.53	60.48	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.27	1.34
1.80	12.05	38.58	31.52	25.60	68.48	64.33	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.41	1.37
2.00	25.35	51.06	56.87	36.95	43.13	72.13	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.92	1.61
2.60	43.13	72.13	100.00	52.12	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.70	1.65

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 6.00 X 0.50 RELATIVE WEIGHT % - 41.09 ASH % - 0.0

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	1.10	5.15	1.10	5.15	98.90	27.37	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.42	1.42
1.45	17.98	8.69	19.08	8.49	80.92	31.53	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.28	1.29
1.50	12.46	9.15	31.54	8.75	68.46	35.60	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.33	1.30
1.55	10.24	13.47	41.78	9.91	58.22	39.49	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.46	1.34
1.60	7.53	17.08	49.31	11.00	50.69	42.82	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.64	1.39
1.70	13.36	22.15	62.67	13.38	37.33	50.22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.83	1.48
1.80	9.61	31.45	72.28	15.78	27.72	56.72	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.13	1.44
2.00	12.58	43.05	84.86	19.82	15.14	68.08	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.95	1.51
2.60	15.14	68.08	100.00	27.13	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.94	1.58

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88019 SEAM - G & G LO SAMPLE ID - 121 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 0.50 X 0.15 RELATIVE WEIGHT % - 6.15 ASH % - 0.0

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ/KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	0.31	2.58	0.31	2.58	99.69	23.98	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.17	1.17
1.45	14.38	3.83	14.69	3.80	85.31	27.38	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.64	1.63
1.50	14.63	4.51	29.32	4.16	70.68	32.11	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.60	1.62
1.55	15.71	8.19	45.03	5.56	54.97	38.94	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.38	1.53
1.60	6.00	11.68	51.03	6.28	48.97	42.28	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.45	1.52
1.70	11.63	17.01	62.66	8.27	37.34	50.16	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.22	1.47
1.80	11.39	25.50	74.05	10.92	25.95	60.98	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.20	1.43
2.00	8.76	40.41	82.81	14.04	17.19	71.46	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.32	1.41
2.60	17.19	71.46	100.00	23.91	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.46	1.42

GULF CANADA CORPORATION - COAL DIVISION

C L E A N S I M U L A T E D P R O D U C T R E P O R T

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88019
Coal zone:	G & G LO		
Field sample no.:	08268	Composite sample no.:	357

PRODUCT COAL ANALYSIS (SP3)

Target Ash: 7.5 %

Standard:	ASTM	
Size analysis		
Fraction size (mm):	6.00 X	0.50
Cutpoint:	sp.g.	1.44
Contribution (%):		5.01
Total yield (%):		5.01

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture (%):	0.88	
Ash (%):	6.95	7.01
Volatile matter (%):	5.94	5.99
Fixed carbon (%):	86.23	87.00
Total sulphur (%):	0.54	0.54
Combustible sulphur (%):	0.51	
Gross calorific value (cal/g):	7,901.00	7,972.00
Volatile matter (dmmf%):	5.70	
Hardgrove index:	49.00	
Phosphorous in coal (%):	0.023	

ASH FUSION ANALYSIS (AF1)

	OXIDIZING ATM	REDUCING ATM
Initial temperature (°C):	1,385.00	1,253.00
Softening temperature (°C):	1,427.00	1,306.00
Hemispherical temperature (°C):	1,432.00	1,356.00
Final temperature (°C):	1,453.00	1,430.00

ASH MINERAL ANALYSIS (AM1)

SiO2 (%):	47.04	TiO2 (%):	3.72
Al2O3 (%):	27.60	Na2O (%):	2.04
Fe2O3 (%):	6.32	K2O (%):	0.82
CaO (%):	3.67	SO3 (%):	1.25
MgO (%):	2.90	P2O5 (%):	0.76

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88020 SEAM - I SAMPLE ID - 122 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 35.00 X 6.00 RELATIVE WEIGHT % - 25.98 ASH % - 0.0

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.45	3.70	8.31	3.70	8.31	96.30	53.34	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.97	0.97
1.50	6.30	12.60	10.00	11.01	90.00	56.20	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.15	1.08
1.55	6.27	15.71	16.27	12.82	83.73	59.23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.15	1.11
1.60	5.40	19.90	21.67	14.59	78.33	61.94	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.12	1.11
1.70	5.80	27.96	27.47	17.41	72.53	64.66	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.11	1.11
1.80	10.06	28.52	37.53	20.39	62.47	70.48	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.01	1.08
2.00	5.54	40.74	43.07	23.01	56.93	73.37	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.95	1.07
2.60	56.93	73.37	100.00	51.68	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.93	0.99

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 6.00 X 0.50 RELATIVE WEIGHT % - 53.21 ASH % - 0.0

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	0.20	6.31	0.20	6.31	99.80	30.18	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.97	0.97
1.45	3.71	7.81	3.91	7.73	96.09	31.05	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.21	1.20
1.50	6.97	9.04	10.88	8.57	89.12	32.77	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.12	1.15
1.55	16.69	11.68	27.57	10.45	72.43	37.63	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.30	1.24
1.60	14.00	13.88	41.57	11.61	58.43	43.32	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.67	1.38
1.70	22.16	17.76	63.73	13.75	36.27	58.93	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.42	1.40
1.80	7.17	26.53	70.90	15.04	29.10	66.91	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.75	1.43
2.00	5.64	37.85	76.54	16.72	23.46	73.90	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.34	1.43
2.60	23.46	73.90	100.00	30.13	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.95	1.55

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88020 SEAM - I SAMPLE ID - 122 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 0.50 X 0.15 RELATIVE WEIGHT % - 11.58 ASH % - 0.0

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	1.51	5.73	1.51	5.73	98.49	21.23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.01	1.01
1.45	9.28	7.91	10.79	7.60	89.21	22.61	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.21	1.18
1.50	6.84	8.35	17.63	7.89	82.37	23.80	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.55	1.32
1.55	16.50	9.85	34.13	8.84	65.87	27.29	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.84	1.57
1.60	11.23	10.82	45.36	9.33	54.64	30.68	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.05	1.69
1.70	26.41	14.51	71.77	11.24	28.23	45.80	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.64	1.67
1.80	11.98	26.42	83.75	13.41	16.25	60.08	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.02	1.72
2.00	5.08	33.49	88.83	14.56	11.17	72.18	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.00	1.74
2.60	11.17	72.18	100.00	20.99	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.11	1.67

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88020 SEAM - H SAMPLE ID - 125 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 35.00 X 6.00 RELATIVE WEIGHT % - 61.29 ASH % - 49.85

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	0.22	4.09	0.22	4.09	99.78	50.35	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.97	0.97
1.45	2.15	7.30	2.37	7.00	97.63	51.29	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.98	0.98
1.50	12.54	13.60	14.91	12.55	85.09	56.85	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.83	0.85
1.55	9.57	18.07	24.48	14.71	75.52	61.76	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.88	0.86
1.60	6.30	22.45	30.78	16.29	69.22	65.34	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.89	0.87
1.70	7.55	28.66	38.33	18.73	61.67	69.83	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.06	0.91
1.80	6.10	37.60	44.43	21.32	55.57	73.37	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.13	0.94
2.00	10.20	42.82	54.63	25.33	45.37	80.24	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.84	0.92
2.60	45.37	80.24	100.00	50.24	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.92	0.92

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 6.00 X 0.50 RELATIVE WEIGHT % - 30.68 ASH % - 30.08

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	4.42	4.60	4.42	4.60	95.58	31.09	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.98	0.98
1.45	10.21	5.42	14.63	5.17	85.37	34.16	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.88	0.91
1.50	22.22	11.54	36.85	9.01	63.15	42.11	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.78	0.83
1.55	16.64	15.45	53.49	11.01	46.51	51.65	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.85	0.84
1.60	6.92	19.05	60.41	11.94	39.59	57.35	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.06	0.86
1.70	7.75	24.53	68.16	13.37	31.84	65.34	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.18	0.90
1.80	3.97	31.67	72.13	14.37	27.87	70.14	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.47	0.93
2.00	5.45	42.31	77.58	16.34	22.42	76.90	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.55	0.97
2.60	22.42	76.90	100.00	29.92	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.17	1.02

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88020 SEAM - H SAMPLE ID - 125 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 0.50 X 0.15 RELATIVE WEIGHT % - 4.77 ASH % - 32.57

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	4.89	2.16	4.89	2.16	95.11	33.71	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.99	0.99
1.45	17.40	5.33	22.29	4.63	77.71	40.06	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.21	1.16
1.50	10.46	7.29	32.75	5.48	67.25	45.16	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.13	1.15
1.55	8.99	10.61	41.74	6.59	58.26	50.49	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.31	1.19
1.60	7.23	13.33	48.97	7.58	51.03	55.76	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.73	1.27
1.70	10.65	16.11	59.62	9.11	40.38	66.21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.88	1.38
1.80	4.50	24.37	64.12	10.18	35.88	71.46	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.71	1.40
2.00	5.67	35.67	69.79	12.25	30.21	78.18	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.96	1.44
2.60	30.21	78.18	100.00	32.17	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.98	1.61

ANALYSIS TYPE - FROTH

FRACTION SIZE(MM) 0.15 X 0.00 RELATIVE WEIGHT % - 3.26 ASH % - 40.63

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
240.00	*****	40.63	100.00	40.63	0.0	0.0	0.0	0.0	18.76	18.76	0.35	0.35	7.70	7.70	1.09	1.09

GULF CANADA CORPORATION - COAL DIVISION

C L E A N S I M U L A T E D P R O D U C T R E P O R T

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88020
Coal zone:	H		
Field sample no.:	08276	Composite sample no.:	266

PRODUCT COAL ANALYSIS (SP4)

Target Ash: 10.0 %

Standard:	ASTM	
Size analysis		
Fraction size (mm):	35.00 X	6.00
Cutpoint:	sp.g.	1.48
Contribution (%):		5.20
Total yield (%):		5.20

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture (%):	0.88	
Ash (%):	9.27	9.35
Volatile matter (%):	6.34	6.40
Fixed carbon (%):	83.51	84.25
Total sulphur (%):	0.67	0.68
Combustible sulphur (%):	0.66	
Gross calorific value (cal/g):	7,550.00	7,617.00
Volatile matter (dmmf%):	6.10	
Hardgrove index:	40.00	
Phosphorous in coal (%):	0.141	

ASH FUSION ANALYSIS (AF1)

	OXIDIZING ATM	REDUCING ATM
Initial temperature (°C):	1,243.00	1,206.00
Softening temperature (°C):	1,285.00	1,232.00
Hemispherical temperature (°C):	1,309.00	1,259.00
Final temperature (°C):	1,419.00	1,411.00

ASH MINERAL ANALYSIS (AM1)

SiO2 (%):	49.18	TiO2 (%):	1.77
Al2O3 (%):	25.33	Na2O (%):	2.41
Fe2O3 (%):	5.49	K2O (%):	1.33
CaO (%):	5.09	SO3 (%):	0.33
MgO (%):	1.82	P2O5 (%):	3.49

========== GULF CANADA CORPORATION - COAL DIVISION ==========

---------- C L E A N S I M U L A T E D P R O D U C T R E P O R T ----------

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88020
Coal zone:	H		
Field sample no.:	08276	Composite sample no.:	358

---------- PRODUCT COAL ANALYSIS (SP3) ----------

Target Ash: 7.5 %

Standard:	ASTM	
Size analysis		
Fraction size(mm):	6.00 X	0.50
Cutpoint:	sp.g.	1.48
Contribution(%):		8.59
Total yield(%):		8.59

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture(%):	0.85	
Ash(%):	7.59	7.66
Volatile matter(%):	6.65	6.71
Fixed carbon(%):	84.91	85.63
Total sulphur(%):	0.56	0.56
Combustible sulphur(%):	0.54	
Gross calorific value(cal/g):	7,705.00	7,772.00
Volatile matter(dmmf%):	6.50	
Hardgrove index:	43.00	
Phosphorous in coal(%):	0.130	

---------- ASH FUSION ANALYSIS (AF1) ----------

	OXIDIZING ATM	REDUCING ATM
Initial temperature(°C):	1,245.00	1,211.00
Softening temperature(°C):	1,269.00	1,238.00
Hemispherical temperature(°C):	1,280.00	1,251.00
Final temperature(°C):	1,364.00	1,353.00

---------- ASH MINERAL ANALYSIS (AM1) ----------

SiO2(%):	49.56	TiO2(%):	2.30
Al2O3(%):	24.57	Na2O(%):	2.25
Fe2O3(%):	4.63	K2O(%):	1.18
CaO(%):	6.10	SO3(%):	0.68
MgO(%):	2.09	P2O5(%):	3.92

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88021 SEAM - I SAMPLE ID - 126 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 35.00 X 6.00 RELATIVE WEIGHT % - 74.60 ASH % - 23.62

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	0.05	6.09	0.05	6.09	99.95	23.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.79	1.79
1.45	15.31	7.28	15.36	7.28	84.64	25.86	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.58	0.58
1.50	30.79	10.83	46.15	9.65	53.85	34.45	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.64	0.62
1.55	21.40	15.23	67.55	11.42	32.45	47.12	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.69	0.64
1.60	5.16	19.74	72.71	12.01	27.29	52.30	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.69	0.65
1.70	10.17	30.62	82.88	14.29	17.12	65.18	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.52	0.63
1.80	3.49	38.02	86.37	15.25	13.63	72.14	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.59	0.63
2.00	2.70	50.02	89.07	16.30	10.93	77.60	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.60	0.63
2.60	10.93	77.60	100.00	23.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.32	0.70

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 6.00 X 0.50 RELATIVE WEIGHT % - 21.43 ASH % - 24.28

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	1.27	5.68	1.27	5.68	98.73	23.89	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.58	0.58
1.45	23.21	8.11	24.48	7.98	75.52	28.75	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.91	0.89
1.50	19.29	9.62	43.77	8.70	56.23	35.31	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.67	0.79
1.55	17.63	14.90	61.40	10.48	38.60	44.63	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.70	0.77
1.60	5.73	19.04	67.13	11.21	32.87	49.09	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.84	0.77
1.70	12.31	25.61	79.44	13.44	20.56	63.15	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.02	0.81
1.80	4.04	34.58	83.48	14.47	16.52	70.13	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.98	0.82
2.00	4.19	49.07	87.67	16.12	12.33	77.29	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.39	0.85
2.60	12.33	77.29	100.00	23.66	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.72	0.95

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88021 SEAM - I SAMPLE ID - 126 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 0.50 X 0.15 RELATIVE WEIGHT % - 2.70 ASH % - 27.77

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	14.97	11.25	14.97	11.25	85.03	30.20	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.10	1.10
1.45	19.16	12.56	34.13	11.99	65.87	35.33	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.16	1.13
1.50	11.08	14.78	45.21	12.67	54.79	39.48	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.06	1.12
1.55	8.08	20.22	53.29	13.82	46.71	42.82	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.26	1.14
1.60	3.29	22.07	56.58	14.30	43.42	44.39	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.53	1.16
1.70	16.17	25.28	72.75	16.74	27.25	55.73	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.98	1.34
1.80	7.49	36.68	80.24	18.60	19.76	62.95	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.64	1.37
2.00	3.59	47.35	83.83	19.83	16.17	66.41	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.34	1.37
2.60	16.17	66.41	100.00	27.36	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.75	1.43

ANALYSIS TYPE - FROTH

FRACTION SIZE(MM) 0.15 X 0.00 RELATIVE WEIGHT % - 1.27 ASH % - 36.65

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
240.00	*****	36.65	100.00	36.65	0.0	0.0	0.0	0.0	20.42	20.42	0.32	0.32	9.15	9.15	1.29	1.29

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88021 SEAM - I SAMPLE ID - 127 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 35.00 X 6.00 RELATIVE WEIGHT % - 71.75 ASH % - 42.06

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.45	10.17	4.48	10.17	4.48	89.83	45.47	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.20	1.20
1.50	13.69	8.49	23.86	6.78	76.14	52.12	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.65	0.88
1.55	8.03	15.83	31.89	9.06	68.11	56.40	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.78	0.86
1.60	6.89	21.07	38.78	11.19	61.22	60.37	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.63	0.82
1.70	13.46	27.94	52.24	15.51	47.76	69.51	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.77	0.81
1.80	6.02	36.50	58.26	17.68	41.74	74.28	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.89	0.81
2.00	6.37	47.38	64.63	20.60	35.37	79.12	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.05	0.84
2.60	35.37	79.12	100.00	41.30	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.13	0.94

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 6.00 X 0.50 RELATIVE WEIGHT % - 23.55 ASH % - 28.93

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	0.04	2.50	0.04	2.50	99.96	28.31	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.20	0.20
1.45	8.77	3.69	8.81	3.68	91.19	30.68	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.65	0.65
1.50	19.73	7.85	28.54	6.56	71.46	36.98	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.62	0.63
1.55	12.23	12.99	40.77	8.49	59.23	41.93	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.74	0.66
1.60	6.84	16.87	47.61	9.70	52.39	45.21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.86	0.69
1.70	12.94	21.08	60.55	12.13	39.45	53.12	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.93	0.74
1.80	11.03	27.94	71.58	14.56	28.42	62.89	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.62	0.88
2.00	9.76	39.96	81.34	17.61	18.66	74.89	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.99	1.01
2.60	18.66	74.89	100.00	28.30	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.74	1.15

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88021 SEAM - I SAMPLE ID - 127 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 0.50 X 0.15 RELATIVE WEIGHT % - 3.27 ASH % - 32.26

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	0.40	2.84	0.40	2.84	99.60	31.80	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.33	0.33
1.45	2.82	3.36	3.22	3.30	96.78	32.63	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.01	0.93
1.50	13.44	5.74	16.66	5.27	83.34	36.97	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.14	1.10
1.55	10.08	9.95	26.74	7.03	73.26	40.68	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.14	1.11
1.60	6.32	13.14	33.06	8.20	66.94	43.28	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.25	1.14
1.70	15.46	17.42	48.52	11.14	51.48	51.05	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.51	1.26
1.80	10.48	23.47	59.00	13.33	41.00	58.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.50	1.30
2.00	15.46	34.44	74.46	17.71	25.54	72.42	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.71	1.39
2.60	25.54	72.42	100.00	31.68	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.55	1.43

ANALYSIS TYPE - FROTH

FRACTION SIZE(MM) 0.15 X 0.00 RELATIVE WEIGHT % - 1.43 ASH % - 36.86

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
240.00	*****	36.86	100.00	36.86	0.0	0.0	0.0	0.0	20.28	20.28	0.32	0.32	7.99	7.99	1.27	1.27

GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88021 SEAM - I SAMPLE ID - 128 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 35.00 X 6.00 RELATIVE WEIGHT % - 66.15 ASH % - 13.44

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ/KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	0.04	3.10	0.04	3.10	99.96	13.76	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.74	0.74
1.45	16.86	3.77	16.90	3.77	83.10	15.79	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.77	0.77
1.50	40.19	6.41	57.09	5.63	42.91	24.58	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.90	0.86
1.55	20.35	12.77	77.44	7.50	22.56	35.23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.93	0.88
1.60	4.13	13.28	81.57	7.80	18.43	40.15	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.85	0.88
1.70	4.34	24.33	85.91	8.63	14.09	45.02	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.79	0.87
1.80	1.08	34.87	86.99	8.96	13.01	45.87	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.06	0.88
2.00	8.41	43.44	95.40	12.00	4.60	50.30	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.61	0.85
2.60	4.60	50.30	100.00	13.76	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.61	0.84

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 6.00 X 0.50 RELATIVE WEIGHT % - 27.27 ASH % - 13.80

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ/KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	0.37	3.26	0.37	3.26	99.63	14.73	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.84	0.84
1.45	29.49	6.04	29.86	6.01	70.14	18.39	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.94	0.94
1.50	35.75	10.86	65.61	8.65	34.39	26.21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.09	1.02
1.55	10.84	13.93	76.45	9.40	23.55	31.87	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.08	1.03
1.60	4.69	14.07	81.14	9.67	18.86	36.29	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.81	1.07
1.70	6.46	18.88	87.60	10.35	12.40	45.36	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.16	1.08
1.80	2.86	26.75	90.46	10.87	9.54	50.94	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.70	1.10
2.00	3.30	39.42	93.76	11.87	6.24	57.04	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.21	1.10
2.60	6.24	57.04	100.00	14.69	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.13	1.11

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88021 SEAM - I SAMPLE ID - 128 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 0.50 X 0.15 RELATIVE WEIGHT % - 4.11 ASH % - 15.03

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	0.83	2.82	0.83	2.82	99.17	15.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.08	1.08
1.45	17.77	3.21	18.60	3.19	81.40	17.70	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.06	1.06
1.50	28.82	3.86	47.42	3.60	52.58	25.28	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.23	1.16
1.55	8.47	7.67	55.89	4.22	44.11	28.66	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.55	1.22
1.60	8.47	11.28	64.36	5.15	35.64	32.79	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.55	1.27
1.70	16.20	13.56	80.56	6.84	19.44	48.82	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.80	1.37
1.80	4.07	21.46	84.63	7.54	15.37	56.06	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.60	1.38
2.00	3.90	35.03	88.53	8.75	11.47	63.21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.61	1.39
2.60	11.47	63.21	100.00	15.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.29	1.38

ANALYSIS TYPE - FROTH

FRACTION SIZE(MM) 0.15 X 0.00 RELATIVE WEIGHT % - 2.47 ASH % - 19.69

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
240.00	*****	19.69	100.00	19.69	0.0	0.0	0.0	0.0	26.74	26.74	0.39	0.39	7.68	7.68	1.91	1.91

========== GULF CANADA CORPORATION - COAL DIVISION ==========

---------- C L E A N S I M U L A T E D P R O D U C T R E P O R T ----------

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88021
Coal zone:	I		
Field sample no.:	08279 - 08280	Composite sample no.:	267

---------- PRODUCT COAL ANALYSIS (SP2) ----------

Target Ash: 8.0 %

Standard:	ASTM
Size analysis	
Fraction size(mm):	35.00 X 6.00
Cutpoint:	sp.g. 1.49
Contribution(%):	20.99
Total yield(%):	20.99

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture(%):	0.74	
Ash(%):	7.85	7.91
Volatile matter(%):	6.04	6.09
Fixed carbon(%):	85.37	86.00
Total sulphur(%):	0.49	0.49
Combustible sulphur(%):	0.48	
Gross calorific value(cal/g):	7,696.00	7,754.00
Volatile matter(dmmf%):	5.80	
Hardgrove index:	40.00	
Phosphorous in coal(%):	0.036	

---------- ASH FUSION ANALYSIS (AF1) ----------

	OXIDIZING ATM	REDUCING ATM
Initial temperature(°C):	1,309.00	1,264.00
Softening temperature(°C):	1,453.00	1,390.00
Hemispherical temperature(°C):	1,472.00	1,422.00
Final temperature(°C):	1,472.00	1,472.00

---------- ASH MINERAL ANALYSIS (AM1) ----------

SiO2(%):	57.44	TiO2(%):	1.53
Al2O3(%):	26.08	Na2O(%):	2.10
Fe2O3(%):	2.18	K2O(%):	1.17
CaO(%):	1.76	SO3(%):	0.38
MgO(%):	1.63	P2O5(%):	1.04

========== GULF CANADA CORPORATION - COAL DIVISION ==========

---------- C L E A N S I M U L A T E D P R O D U C T R E P O R T ----------

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88021
Coal zone:	I		
Field sample no.:	08281	Composite sample no.:	268

---------- PRODUCT COAL ANALYSIS (SP2) ----------

Target Ash: 8.0 %

Standard: ASTM

Size analysis

Fraction size(mm):	35.00 X 6.00
Cutpoint:	sp.g. 1.62
Contribution(%):	54.90
Total yield(%):	54.90

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture(%):	0.83	
Ash(%):	7.68	7.74
Volatile matter(%):	5.81	5.86
Fixed carbon(%):	85.68	86.40
Total sulphur(%):	0.49	0.49
Combustible sulphur(%):	0.44	
Gross calorific value(cal/g):	7,686.00	7,751.00
Volatile matter(dmmf%):	5.60	
Hardgrove index:	41.00	
Phosphorous in coal(%):	0.141	

---------- ASH FUSION ANALYSIS (AF1) ----------

	OXIDIZING ATM	REDUCING ATM
Initial temperature(°C):	1,264.00	1,227.00
Softening temperature(°C):	1,272.00	1,243.00
Hemispherical temperature(°C):	1,282.00	1,253.00
Final temperature(°C):	1,422.00	1,414.00

---------- ASH MINERAL ANALYSIS (AM1) ----------

SiO2(%):	40.02	TiO2(%):	1.30
Al2O3(%):	30.24	Na2O(%):	2.87
Fe2O3(%):	6.38	K2O(%):	0.94
CaO(%):	5.43	SO3(%):	1.66
MgO(%):	3.47	P2O5(%):	4.20

========== GULF CANADA CORPORATION - COAL DIVISION ==========

---------- C L E A N S I M U L A T E D P R O D U C T R E P O R T ----------

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88021
Coal zone:	I		
Field sample no.:	08279 - 08281	Composite sample no.:	359

---------- PRODUCT COAL ANALYSIS (SP3) ----------

Target Ash: 7.5 %

Standard:	ASTM
Size analysis	
Fraction size(mm):	6.00 X 0.50
Cutpoint:	sp.g. 1.48
Contribution(%):	10.74
Total yield(%):	10.74

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture(%):	0.75	
Ash(%):	7.15	7.20
Volatile matter(%):	6.35	6.40
Fixed carbon(%):	85.75	86.40
Total sulphur(%):	0.51	0.51
Combustible sulphur(%):	0.50	
Gross calorific value(cal/g):	7,763.00	7,822.00
Volatile matter(dmmf%):	6.20	
Hardgrove index:	42.00	
Phosphorous in coal(%):	0.111	

---------- ASH FUSION ANALYSIS (AF1) ----------

	OXIDIZING ATM	REDUCING ATM
Initial temperature(°C):	1,306.00	1,264.00
Softening temperature(°C):	1,374.00	1,303.00
Hemispherical temperature(°C):	1,419.00	1,340.00
Final temperature(°C):	1,472.00	1,472.00

---------- ASH MINERAL ANALYSIS (AM1) ----------

SiO2(%):	49.80	TiO2(%):	1.05
Al2O3(%):	28.35	Na2O(%):	1.79
Fe2O3(%):	4.03	K2O(%):	1.08
CaO(%):	3.36	SO3(%):	0.47
MgO(%):	2.03	P2O5(%):	3.54

GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88021 SEAM - H SAMPLE ID - 129 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 35.00 X 6.00 RELATIVE WEIGHT % - 74.41 ASH % - 33.40

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	0.02	1.51	0.02	1.51	99.98	32.42	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.61	0.61
1.45	2.22	2.96	2.24	2.95	97.76	33.09	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.98	0.98
1.50	11.65	7.41	13.89	6.69	86.11	36.56	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.94	0.95
1.55	17.75	13.88	31.64	10.72	68.36	42.45	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.03	0.99
1.60	7.66	18.73	39.30	12.28	60.70	45.44	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.08	1.01
1.70	14.77	25.78	54.07	15.97	45.93	51.76	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.94	0.99
1.80	9.88	32.20	63.95	18.48	36.05	57.12	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.88	0.97
2.00	17.72	46.05	81.67	24.46	18.33	67.83	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.96	0.97
2.60	18.33	67.83	100.00	32.41	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.37	1.04

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 6.00 X 0.50 RELATIVE WEIGHT % - 21.13 ASH % - 30.18

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	0.02	1.55	0.02	1.55	99.98	29.83	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.48	0.48
1.45	12.77	2.93	12.79	2.93	87.21	33.77	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.88	1.88
1.50	17.12	6.61	29.91	5.04	70.09	40.41	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.06	1.41
1.55	18.33	11.01	48.24	7.31	51.76	50.82	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.98	1.25
1.60	8.07	15.43	56.31	8.47	43.69	57.36	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.11	1.23
1.70	8.02	20.75	64.33	10.00	35.67	65.59	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.20	1.22
1.80	4.96	27.55	69.29	11.26	30.71	71.73	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.42	1.24
2.00	5.82	39.69	75.11	13.46	24.89	79.22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.20	1.23
2.60	24.89	79.22	100.00	29.83	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.18	1.22

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88021 SEAM - H SAMPLE ID - 129 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 0.50 X 0.15 RELATIVE WEIGHT % - 2.81 ASH % - 43.02

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	0.82	2.27	0.82	2.27	99.18	42.96	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.60	1.60
1.45	7.06	4.01	7.88	3.83	92.12	45.95	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.59	1.59
1.50	11.88	5.21	19.76	4.66	80.24	51.98	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.51	1.54
1.55	7.29	9.35	27.05	5.92	72.95	56.24	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.78	1.61
1.60	7.53	11.71	34.58	7.18	65.42	61.37	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.88	1.67
1.70	8.18	14.03	42.76	8.49	57.24	68.13	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.93	1.72
1.80	6.53	24.03	49.29	10.55	50.71	73.81	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.13	1.64
2.00	7.65	34.41	56.94	13.76	43.06	80.81	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.27	1.59
2.60	43.06	80.81	100.00	42.63	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.10	1.38

ANALYSIS TYPE - FROTH

FRACTION SIZE(MM) 0.15 X 0.00 RELATIVE WEIGHT % - 1.65 ASH % - 52.28

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
240.00	*****	52.28	100.00	52.28	0.0	0.0	0.0	0.0	14.39	14.39	0.39	0.39	8.15	8.15	1.27	1.27

========== GULF CANADA CORPORATION - COAL DIVISION ==========

---------- C L E A N S I M U L A T E D P R O D U C T R E P O R T ----------

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88021
Coal zone:	H		
Field sample no.:	08284 - 08286	Composite sample no.:	269

---------- PRODUCT COAL ANALYSIS (SP4) ----------

Target Ash: 10.0 %

Standard:	ASTM
Size analysis	
Fraction size (mm):	35.00 X 6.00
Cutpoint:	sp.g. 1.54
Contribution (%):	21.05
Total yield (%):	21.05

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture (%):	0.92	
Ash (%):	9.60	9.69
Volatile matter (%):	5.70	5.75
Fixed carbon (%):	83.78	84.56
Total sulphur (%):	0.56	0.57
Combustible sulphur (%):	0.54	
Gross calorific value (cal/g):	7,471.00	7,541.00
Volatile matter (dmmf%):	5.40	
Hardgrove index:	40.00	
Phosphorous in coal (%):	0.081	

---------- ASH FUSION ANALYSIS (AF1) ----------

	OXIDIZING ATM	REDUCING ATM
Initial temperature (°C):	1,243.00	1,238.00
Softening temperature (°C):	1,285.00	1,280.00
Hemispherical temperature (°C):	1,353.00	1,322.00
Final temperature (°C):	1,446.00	1,443.00

---------- ASH MINERAL ANALYSIS (AM1) ----------

SiO2 (%):	54.74	TiO2 (%):	1.77
Al2O3 (%):	25.33	Na2O (%):	2.52
Fe2O3 (%):	3.35	K2O (%):	0.81
CaO (%):	3.50	SO3 (%):	0.60
MgO (%):	1.87	P2O5 (%):	1.93

GULF CANADA CORPORATION - COAL DIVISION

CLEAN SIMULATED PRODUCT REPORT

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88021
Coal zone:	H		
Field sample no.:	08284 - 08286	Composite sample no.:	360

PRODUCT COAL ANALYSIS (SP3)

Target Ash: 7.5 %

Standard:	ASTM
Size analysis	
Fraction size (mm):	6.00 X 0.50
Cutpoint:	sp.g. 1.56
Contribution (%):	11.15
Total yield (%):	11.15

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture (%):	0.95	
Ash (%):	7.66	7.73
Volatile matter (%):	5.99	6.05
Fixed carbon (%):	85.40	86.22
Total sulphur (%):	0.55	0.56
Combustible sulphur (%):	0.52	
Gross calorific value (cal/g):	7,691.00	7,765.00
Volatile matter (dmmf%):	5.80	
Hardgrove index:	43.00	
Phosphorous in coal (%):	0.034	

ASH FUSION ANALYSIS (AF1)

	OXIDIZING ATM	REDUCING ATM
Initial temperature (°C):	1,272.00	1,264.00
Softening temperature (°C):	1,364.00	1,322.00
Hemispherical temperature (°C):	1,422.00	1,338.00
Final temperature (°C):	1,472.00	1,472.00

ASH MINERAL ANALYSIS (AM1)

SiO2 (%):	53.90	TiO2 (%):	2.55
Al2O3 (%):	26.46	Na2O (%):	2.36
Fe2O3 (%):	4.23	K2O (%):	0.86
CaO (%):	2.60	SO3 (%):	0.86
MgO (%):	1.88	P2O5 (%):	1.01

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88022 SEAM - 07 SAMPLE ID - 130 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 35.00 X 6.00 RELATIVE WEIGHT % - 43.38 ASH % - 49.17

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	0.10	5.73	0.10	5.73	99.90	50.12	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.50	0.50
1.45	0.35	7.32	0.45	6.97	99.55	50.27	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.23	1.07
1.50	1.56	11.88	2.01	10.78	97.99	50.88	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.09	1.09
1.55	2.29	14.87	4.30	12.96	95.70	51.74	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.12	1.10
1.60	2.64	20.86	6.94	15.96	93.06	52.62	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	1.06
1.70	23.71	29.79	30.65	26.66	69.35	60.42	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.71	0.79
1.80	13.15	37.04	43.80	29.78	56.20	65.89	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.62	0.74
2.00	12.65	45.84	56.45	33.38	43.55	71.72	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.54	0.69
2.60	43.55	71.72	100.00	50.07	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.46	0.59

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 6.00 X 0.50 RELATIVE WEIGHT % - 36.01 ASH % - 25.59

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	0.53	4.98	0.53	4.98	99.47	24.89	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.20	1.20
1.45	8.13	5.21	8.66	5.20	91.34	26.64	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.94	0.96
1.50	18.40	9.07	27.06	7.83	72.94	31.07	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.93	0.94
1.55	13.93	12.68	40.99	9.48	59.01	35.41	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.86	0.91
1.60	9.44	15.52	50.43	10.61	49.57	39.20	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.04	0.94
1.70	17.26	20.39	67.69	13.10	32.31	49.24	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.39	1.05
1.80	10.87	28.21	78.56	15.19	21.44	59.91	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.56	1.12
2.00	9.02	43.35	87.58	18.09	12.42	71.93	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.21	1.13
2.60	12.42	71.93	100.00	24.78	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.52	1.18

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88022 SEAM - O? SAMPLE ID - 130 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 0.50 X 0.15 RELATIVE WEIGHT % - 12.64 ASH % - 0.15

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	1.01	4.11	1.01	4.11	98.99	18.54	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.27	1.27
1.45	9.92	5.72	10.93	5.57	89.07	19.96	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.22	1.22
1.50	22.07	6.24	33.00	6.02	67.00	24.48	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.18	1.19
1.55	21.06	8.88	54.06	7.13	45.94	31.64	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.66	1.38
1.60	9.57	13.67	63.63	8.12	36.37	36.36	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.92	1.46
1.70	12.86	15.76	76.49	9.40	23.51	47.63	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.15	1.41
1.80	6.92	22.54	83.41	10.49	16.59	58.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.19	1.39
2.00	6.40	35.97	89.81	12.31	10.19	72.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.27	1.38
2.60	10.19	72.00	100.00	18.39	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.44	1.39

ANALYSIS TYPE - FROTH

FRACTION SIZE(MM) 0.15 X 0.00 RELATIVE WEIGHT % - 7.97 ASH % - 22.62

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
240.00	*****	22.62	100.00	22.62	0.0	0.0	0.0	0.0	26.20	26.20	1.22	1.22	7.10	7.10	1.35	1.35

========== GULF CANADA CORPORATION - COAL DIVISION ==========

---------- C L E A N S I M U L A T E D P R O D U C T R E P O R T ----------

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88022
Coal zone:	O ?		
Field sample no.:	08318	Composite sample no.:	361

---------- PRODUCT COAL ANALYSIS (SP3) ----------

Target Ash: 7.5 %

Standard:	ASTM	
Size analysis		
Fraction size (mm):	6.00 X	0.50
Cutpoint:	sp.g.	1.49
Contribution (%):		9.28
Total yield (%):		9.28

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture (%):	0.98	
Ash (%):	7.26	7.33
Volatile matter (%):	7.52	7.59
Fixed carbon (%):	84.24	85.08
Total sulphur (%):	1.12	1.13
Combustible sulphur (%):	1.10	
Gross calorific value (cal/g):	7,777.00	7,854.00
Volatile matter (dmmf%):	7.20	
Hardgrove index:	47.00	
Phosphorous in coal (%):	0.196	

---------- ASH FUSION ANALYSIS (AF1) ----------

	OXIDIZING ATM	REDUCING ATM
Initial temperature (°C):	1,211.00	1,195.00
Softening temperature (°C):	1,243.00	1,206.00
Hemispherical temperature (°C):	1,253.00	1,222.00
Final temperature (°C):	1,295.00	1,290.00

---------- ASH MINERAL ANALYSIS (AM1) ----------

SiO2 (%):	43.04	TiO2 (%):	1.80
Al2O3 (%):	24.19	Na2O (%):	1.56
Fe2O3 (%):	7.78	K2O (%):	0.97
CaO (%):	8.00	SO3 (%):	0.60
MgO (%):	2.22	P2O5 (%):	6.17

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88024 SEAM - ? SAMPLE ID - 132 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 35.00 X 6.00 RELATIVE WEIGHT % - 44.89 ASH % - 0.0

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	0.10	6.34	0.10	6.34	99.90	47.91	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.43	0.43
1.45	0.67	7.71	0.77	7.53	99.23	48.18	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.96	0.89
1.50	0.55	8.87	1.32	8.09	98.68	48.40	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.20	1.02
1.55	0.75	12.56	2.07	9.71	97.93	48.68	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.17	1.07
1.60	8.26	23.66	10.33	20.86	89.67	50.98	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.05	1.05
1.70	22.11	30.76	32.44	27.61	67.56	57.60	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.98	1.00
1.80	3.69	32.64	36.13	28.12	63.87	59.04	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.10	1.01
2.00	26.25	43.10	62.38	34.43	37.62	70.16	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0 87	0.95
2.60	37.62	70.16	100.00	47.87	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.62	0.83

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 6.00 X 0.50 RELATIVE WEIGHT % - 39.09 ASH % - 0.0

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	3.01	2.57	3.01	2.57	96.99	35.44	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.11	1.11
1.45	4.60	5.01	7.61	4.04	92.39	36.95	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.08	1.09
1.50	5.94	9.61	13.55	6.48	86.45	38.83	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.05	1.07
1.55	7.56	12.87	21.11	8.77	78.89	41.32	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.12	1.09
1.60	7.61	18.45	28.72	11.34	71.28	43.76	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.15	1.11
1.70	16.72	23.46	45.44	15.80	54.56	49.98	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.13	1.11
1.80	12.29	28.02	57.73	18.40	42.27	56.37	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.23	1.14
2.00	17.80	41.99	75.53	23.96	24.47	66.83	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.98	1.34
2.60	24.47	66.83	100.00	34.45	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.67	1.42

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88024 SEAM - ? SAMPLE ID - 132 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 0.50 X 0.15 RELATIVE WEIGHT % - 10.16 ASH % - 0.0

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	3.80	3.30	3.80	3.30	96.20	30.31	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.02	1.02
1.45	6.10	6.40	9.90	5.21	90.10	31.93	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.10	1.07
1.50	13.12	6.55	23.02	5.97	76.98	36.26	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.07	1.07
1.55	7.83	10.33	30.85	7.08	69.15	39.19	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.18	1.10
1.60	8.98	14.37	39.83	8.72	60.17	42.90	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.20	1.12
1.70	11.28	20.01	51.11	11.21	48.89	48.18	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.28	1.16
1.80	9.55	26.37	60.66	13.60	39.34	53.48	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.52	1.21
2.00	15.87	35.93	76.53	18.23	23.47	65.34	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.95	1.37
2.60	23.47	65.34	100.00	29.29	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.67	1.44

ANALYSIS TYPE - FROTH

FRACTION SIZE(MM) 0.15 X 0.00 RELATIVE WEIGHT % - 5.86 ASH % - 30.00

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
240.00	*****	30.00	100.00	30.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.20	1.20

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88024 SEAM - ? SAMPLE ID - 134 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 35.00 X 6.00 RELATIVE WEIGHT % - 55.87 ASH % - 47.35

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	1.88	3.28	1.88	3.28	98.12	47.82	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.96	0.96
1.45	9.01	7.44	10.89	6.72	89.11	51.90	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.76	0.79
1.50	8.64	12.39	19.53	9.23	80.47	56.15	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.84	0.81
1.55	2.91	16.40	22.44	10.16	77.56	57.64	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.95	0.83
1.60	4.79	22.72	27.23	12.37	72.77	59.94	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.90	0.84
1.70	8.19	30.19	35.42	16.49	64.58	63.71	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.92	0.86
1.80	8.51	40.18	43.93	21.08	56.07	67.28	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.82	0.85
2.00	18.86	50.49	62.79	29.91	37.21	75.79	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.89	0.86
2.60	37.21	75.79	100.00	46.98	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.85	0.86

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 6.00 X 0.50 RELATIVE WEIGHT % - 31.19 ASH % - 28.59

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	20.80	4.34	20.80	4.34	79.20	33.94	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.74	0.74
1.45	19.38	7.79	40.18	6.00	59.82	42.41	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.75	0.74
1.50	11.55	10.88	51.73	7.09	48.27	49.96	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.10	0.82
1.55	7.47	15.55	59.20	8.16	40.80	56.26	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.10	0.86
1.60	3.85	19.25	63.05	8.84	36.95	60.12	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.20	0.88
1.70	4.87	26.78	67.92	10.12	32.08	65.18	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.04	0.89
1.80	4.15	35.41	72.07	11.58	27.93	69.60	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.34	0.92
2.00	7.05	47.06	79.12	14.74	20.88	77.21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.71	0.99
2.60	20.88	77.21	100.00	27.78	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.55	1.11

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88024 SEAM - ? SAMPLE ID - 134 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 0.50 X 0.15 RELATIVE WEIGHT % - 8.35 ASH % - 21.00

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	CUM. S	CUM. S	CUM. VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	14.98	5.66	14.98	5.66	85.02	23.48	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.27	1.27
1.45	39.84	7.83	54.82	7.24	45.18	37.28	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.22	1.23
1.50	7.66	10.81	62.48	7.68	37.52	42.68	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.18	1.23
1.55	8.21	15.52	70.69	8.59	29.31	50.29	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.66	1.28
1.60	2.77	15.61	73.46	8.85	26.54	53.91	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.92	1.30
1.70	6.27	21.68	79.73	9.86	20.27	63.88	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.15	1.29
1.80	2.66	30.71	82.39	10.53	17.61	68.90	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.19	1.29
2.00	3.67	47.95	86.06	12.13	13.94	74.41	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.27	1.29
2.60	13.94	74.41	100.00	20.81	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.44	1.31

ANALYSIS TYPE - FROTH

FRACTION SIZE(MM) 0.15 X 0.00 RELATIVE WEIGHT % - 4.59 ASH % - 24.18

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	CUM. S	CUM. S	CUM. VOL.	CUM. VOL.	MOIST	CUM. MOIST
240.00	*****	24.18	100.00	24.18	0.0	0.0	0.0	0.0	25.79	25.79	0.82	0.82	6.85	6.85	1.73	1.73

========== GULF CANADA CORPORATION - COAL DIVISION ==========

---------- C L E A N S I M U L A T E D P R O D U C T R E P O R T ----------

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88024
Coal zone:	?		
Field sample no.:	08321 - 08323	Composite sample no.:	270

---------- PRODUCT COAL ANALYSIS (SP4) ----------

Target Ash: 10.0 %

Standard:	ASTM	
Size analysis		
Fraction size (mm):	35.00 X	6.00
Cutpoint:	sp.g.	1.55
Contribution (%):		8.22
Total yield (%):		8.22

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture (%):	0.86	
Ash (%):	9.66	9.74
Volatile matter (%):	7.21	7.27
Fixed carbon (%):	82.27	82.99
Total sulphur (%):	0.60	0.61
Combustible sulphur (%):	0.50	
Gross calorific value (cal/g):	7,509.00	7,575.00
Volatile matter (dmmf%):	7.10	
Hardgrove index:	43.00	
Phosphorous in coal (%):	0.147	

---------- ASH FUSION ANALYSIS (AF1) ----------

	OXIDIZING ATM	REDUCING ATM
Initial temperature (°C):	1,280.00	1,274.00
Softening temperature (°C):	1,306.00	1,290.00
Hemispherical temperature (°C):	1,314.00	1,295.00
Final temperature (°C):	1,338.00	1,330.00

---------- ASH MINERAL ANALYSIS (AM1) ----------

SiO2 (%):	50.60	TiO2 (%):	0.93
Al2O3 (%):	21.93	Na2O (%):	2.16
Fe2O3 (%):	4.78	K2O (%):	0.70
CaO (%):	7.33	SO3 (%):	2.63
MgO (%):	2.64	P2O5 (%):	3.49

========== GULF CANADA CORPORATION - COAL DIVISION ==========

---------- C L E A N S I M U L A T E D P R O D U C T R E P O R T ----------

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88024
Coal zone:	?		
Field sample no.:	08321 - 08323	Composite sample no.:	362

---------- PRODUCT COAL ANALYSIS (SP3) ----------

Target Ash: 7.5 %

Standard:	ASTM
Size analysis	
Fraction size (mm):	6.00 X 0.50
Cutpoint:	sp.g. 1.52
Contribution (%):	13.30
Total yield (%):	13.30

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture (%):	0.92	
Ash (%):	7.61	7.68
Volatile matter (%):	7.32	7.39
Fixed carbon (%):	84.15	84.93
Total sulphur (%):	0.90	0.91
Combustible sulphur (%):	0.86	
Gross calorific value (cal/g):	7,710.00	7,782.00
Volatile matter (dmmf%):	7.10	
Hardgrove index:	50.00	
Phosphorous in coal (%):	0.012	

---------- ASH FUSION ANALYSIS (AF1) ----------

	OXIDIZING ATM	REDUCING ATM
Initial temperature (°C):	1,272.00	1,227.00
Softening temperature (°C):	1,277.00	1,243.00
Hemispherical temperature (°C):	1,282.00	1,253.00
Final temperature (°C):	1,295.00	1,293.00

---------- ASH MINERAL ANALYSIS (AM1) ----------

SiO2 (%):	44.86	TiO2 (%):	1.30
Al2O3 (%):	24.95	Na2O (%):	1.66
Fe2O3 (%):	8.21	K2O (%):	0.99
CaO (%):	9.74	SO3 (%):	1.43
MgO (%):	2.06	P2O5 (%):	0.37

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88024 SEAM - P SAMPLE ID - 135 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 35.00 X 6.00 RELATIVE WEIGHT % - 63.35 ASH % - 34.59

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	1.31	3.98	1.31	3.98	98.69	34.41	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.04	1.04
1.45	16.19	7.69	17.50	7.41	82.50	39.65	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.61	0.64
1.50	14.84	12.16	32.34	9.59	67.66	45.68	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.79	0.71
1.55	6.96	18.10	39.30	11.10	60.70	48.84	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.78	0.72
1.60	2.76	21.47	42.06	11.78	57.94	50.15	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.93	0.74
1.70	14.02	29.82	56.08	16.29	43.92	56.63	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.96	0.79
1.80	7.86	39.17	63.94	19.10	36.06	60.44	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.04	0.82
2.00	10.29	51.45	74.23	23.59	25.77	64.03	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.10	0.86
2.60	25.77	64.03	100.00	34.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.43	1.01

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 6.00 X 0.50 RELATIVE WEIGHT % - 30.17 ASH % - 24.30

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	11.12	3.20	11.12	3.20	88.88	26.79	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.87	0.87
1.45	20.60	7.33	31.72	5.88	68.28	32.66	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.76	0.80
1.50	16.64	12.46	48.36	8.15	51.64	39.16	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.99	0.86
1.55	9.23	17.74	57.59	9.68	42.41	43.83	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.96	0.88
1.60	5.79	21.47	63.38	10.76	36.62	47.36	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	0.89
1.70	11.89	27.38	75.27	13.39	24.73	56.97	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.22	0.94
1.80	5.96	35.37	81.23	15.00	18.77	63.83	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.36	0.97
2.00	6.46	46.01	87.69	17.28	12.31	73.18	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.71	1.03
2.60	12.31	73.18	100.00	24.16	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.44	1.08

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88024 SEAM - P SAMPLE ID - 135 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 0.50 X 0.15 RELATIVE WEIGHT % - 4.38 ASH % - 24.80

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	33.95	5.76	33.95	5.76	66.05	34.05	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.96	0.96
1.45	20.88	12.07	54.83	8.16	45.17	44.21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.31	1.09
1.50	4.86	16.28	59.69	8.82	40.31	47.58	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.23	1.10
1.55	7.42	21.41	67.11	10.22	32.89	53.48	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.45	1.14
1.60	4.01	25.47	71.12	11.08	28.88	57.37	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.55	1.17
1.70	6.50	30.19	77.62	12.68	22.38	65.27	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.59	1.20
1.80	4.40	45.56	82.02	14.44	17.98	70.09	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.50	1.22
2.00	4.14	53.42	86.16	16.31	13.84	75.08	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.45	1.23
2.60	13.84	75.08	100.00	24.45	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.20	1.22

ANALYSIS TYPE - FROTH

FRACTION SIZE(MM) 0.15 X 0.00 RELATIVE WEIGHT % - 2.10 ASH % - 33.86

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
240.00	*****	33.86	100.00	33.86	0.0	0.0	0.0	0.0	21.90	21.90	0.60	0.60	8.10	8.10	1.47	1.47

========== GULF CANADA CORPORATION - COAL DIVISION ==========

---------- C L E A N S I M U L A T E D P R O D U C T R E P O R T ----------

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88024
Coal zone:	P		
Field sample no.:	08329	Composite sample no.:	271

---------- PRODUCT COAL ANALYSIS (SP4) ----------

Target Ash: 10.0 %

Standard:	ASTM
Size analysis	
Fraction size (mm):	35.00 X 6.00
Cutpoint:	sp.g. 1.51
Contribution (%):	22.79
Total yield (%):	22.79

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture (%):	0.92	
Ash (%):	9.88	9.97
Volatile matter (%):	6.46	6.52
Fixed carbon (%):	82.74	83.51
Total sulphur (%):	0.60	0.61
Combustible sulphur (%):	0.54	
Gross calorific value (cal/g):	7,474.00	7,543.00
Volatile matter (dmmf%):	6.20	
Hardgrove index:	43.00	
Phosphorous in coal (%):	0.264	

---------- ASH FUSION ANALYSIS (AF1) ----------

	OXIDIZING ATM	REDUCING ATM
Initial temperature (°C):	1,232.00	1,222.00
Softening temperature (°C):	1,301.00	1,285.00
Hemispherical temperature (°C):	1,311.00	1,293.00
Final temperature (°C):	1,367.00	1,317.00

---------- ASH MINERAL ANALYSIS (AM1) ----------

SiO2 (%):	40.50	TiO2 (%):	1.40
Al2O3 (%):	26.46	Na2O (%):	2.66
Fe2O3 (%):	4.92	K2O (%):	0.96
CaO (%):	8.37	SO3 (%):	1.56
MgO (%):	2.16	P2O5 (%):	6.13

GULF CANADA CORPORATION - COAL DIVISION

C L E A N S I M U L A T E D P R O D U C T R E P O R T

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88024
Coal zone:	P		
Field sample no.:	08329	Composite sample no.:	363

PRODUCT COAL ANALYSIS (SP3)

Target Ash: 7.5 %

Standard: ASTM

Size analysis

Fraction size (mm):	6.00 X 0.50
Cutpoint:	sp.g. 1.49
Contribution (%):	13.44
Total yield (%):	13.44

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture (%):	0.88	
Ash (%):	7.41	7.48
Volatile matter (%):	6.86	6.92
Fixed carbon (%):	84.85	85.60
Total sulphur (%):	0.60	0.61
Combustible sulphur (%):	0.56	
Gross calorific value (cal/g):	7,765.00	7,834.00
Volatile matter (dmmf%):	6.70	
Hardgrove index:	48.00	
Phosphorous in coal (%):	0.132	

ASH FUSION ANALYSIS (AF1)

	OXIDIZING ATM	REDUCING ATM
Initial temperature (°C):	1,274.00	1,253.00
Softening temperature (°C):	1,298.00	1,269.00
Hemispherical temperature (°C):	1,311.00	1,285.00
Final temperature (°C):	1,369.00	1,338.00

ASH MINERAL ANALYSIS (AM1)

SiO2 (%):	43.10	TiO2 (%):	2.40
Al2O3 (%):	27.97	Na2O (%):	2.63
Fe2O3 (%):	4.83	K2O (%):	1.00
CaO (%):	6.46	SO3 (%):	1.28
MgO (%):	3.01	P2O5 (%):	4.08

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88026 SEAM - K/L SAMPLE ID - 137 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 35.00 X 6.00 RELATIVE WEIGHT % - 82.12 ASH % - 50.05

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	0.33	6.41	0.33	6.41	99.67	50.86	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.08	1.08
1.45	1.25	7.19	1.58	7.03	98.42	51.41	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.91	0.95
1.50	6.26	13.61	7.84	12.28	92.16	53.98	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.77	0.81
1.55	6.81	18.65	14.65	15.24	85.35	56.80	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.88	0.84
1.60	4.74	22.77	19.39	17.08	80.61	58.80	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.81	0.83
1.70	10.01	27.40	29.40	20.60	70.60	63.25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.78	0.81
1.80	7.08	34.17	36.48	23.23	63.52	66.49	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.81	0.81
2.00	21.14	53.33	57.62	34.27	42.38	73.06	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.84	0.82
2.60	42.38	73.06	100.00	50.71	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.98	0.89

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 6.00 X 0.50 RELATIVE WEIGHT % - 14.19 ASH % - 37.25

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	2.58	6.10	2.58	6.10	97.42	38.73	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.23	1.23
1.45	23.27	7.11	25.85	7.01	74.15	48.65	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.87	0.91
1.50	12.69	11.49	38.54	8.48	61.46	56.33	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.23	1.01
1.55	6.75	14.58	45.29	9.39	54.71	61.48	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.13	1.03
1.60	5.41	18.25	50.70	10.34	49.30	66.22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.39	1.07
1.70	7.45	24.56	58.15	12.16	41.85	73.64	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.28	1.10
1.80	3.42	34.55	61.57	13.40	38.43	77.12	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.25	1.10
2.00	5.46	46.23	67.03	16.08	32.97	82.23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.84	1.16
2.60	32.97	82.23	100.00	37.89	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.97	1.43

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88026 SEAM - K/L SAMPLE ID - 137 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 0.50 X 0.15 RELATIVE WEIGHT % - 2.51 ASH % - 44.71

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	14.79	6.54	14.79	6.54	85.21	50.42	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.16	1.16
1.45	10.53	7.95	25.32	7.13	74.68	56.41	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.26	1.20
1.50	5.89	9.26	31.21	7.53	68.79	60.45	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.27	1.21
1.55	4.51	13.34	35.72	8.26	64.28	63.75	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.37	1.23
1.60	4.89	16.43	40.61	9.25	59.39	67.65	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.59	1.28
1.70	5.26	21.30	45.87	10.63	54.13	72.15	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.78	1.33
1.80	4.64	29.16	50.51	12.33	49.49	76.18	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.27	1.33
2.00	6.02	43.15	56.53	15.61	43.47	80.76	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.11	1.31
2.60	43.47	80.76	100.00	43.93	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.56	1.42

ANALYSIS TYPE - FROTH

FRACTION SIZE(MM) 0.15 X 0.00 RELATIVE WEIGHT % - 1.18 ASH % - 50.46

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
240.00	*****	50.46	100.00	50.46	0.0	0.0	0.0	0.0	14.39	14.39	0.49	0.49	6.16	6.16	1.94	1.94

========== GULF CANADA CORPORATION - COAL DIVISION ==========

---------- C L E A N S I M U L A T E D P R O D U C T R E P O R T ----------

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88026
Coal zone:	K/L		
Field sample no.:	08338	Composite sample no.:	272

---------- PRODUCT COAL ANALYSIS (SP4) ----------

Target Ash: 10.0 %

Standard: ASTM

Size analysis

Fraction size (mm):	35.00 X	6.00
Cutpoint:	sp.g.	1.47
Contribution (%):		4.54
Total yield (%):		4.54

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture (%):	0.91	
Ash (%):	9.71	9.80
Volatile matter (%):	6.66	6.72
Fixed carbon (%):	82.72	83.48
Total sulphur (%):	0.62	0.63
Combustible sulphur (%):	0.53	
Gross calorific value (cal/g):	7,550.00	7,619.00
Volatile matter (dmmf%):	6.40	
Hardgrove index:	41.00	
Phosphorous in coal (%):	0.276	

---------- ASH FUSION ANALYSIS (AF1) ----------

	OXIDIZING ATM	REDUCING ATM
Initial temperature (°C):	1,259.00	1,222.00
Softening temperature (°C):	1,269.00	1,248.00
Hemispherical temperature (°C):	1,282.00	1,264.00
Final temperature (°C):	1,306.00	1,301.00

---------- ASH MINERAL ANALYSIS (AM1) ----------

SiO2 (%):	42.12	TiO2 (%):	2.55
Al2O3 (%):	23.82	Na2O (%):	2.63
Fe2O3 (%):	3.03	K2O (%):	0.99
CaO (%):	10.07	SO3 (%):	2.31
MgO (%):	1.61	P2O5 (%):	6.52

========== GULF CANADA CORPORATION - COAL DIVISION ==========

---------- C L E A N S I M U L A T E D P R O D U C T R E P O R T ----------

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88026
Coal zone:	K/L		
Field sample no.:	08338	Composite sample no.:	364

---------- PRODUCT COAL ANALYSIS (SP3) ----------

Target Ash: 7.5 %

Standard:	ASTM	
Size analysis		
Fraction size(mm):	6.00 X	0.50
Cutpoint:	sp.g.	1.48
Contribution(%):		4.65
Total yield(%):		4.65

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture(%):	0.78	
Ash(%):	7.25	7.31
Volatile matter(%):	6.61	6.66
Fixed carbon(%):	85.36	86.03
Total sulphur(%):	0.63	0.63
Combustible sulphur(%):	0.56	
Gross calorific value(cal/g):	7,784.00	7,846.00
Volatile matter(dmmf%):	6.40	
Hardgrove index:	45.00	
Phosphorous in coal(%):	0.144	

---------- ASH FUSION ANALYSIS (AF1) ----------

	OXIDIZING ATM	REDUCING ATM
Initial temperature(°C):	1,253.00	1,185.00
Softening temperature(°C):	1,259.00	1,201.00
Hemispherical temperature(°C):	1,269.00	1,211.00
Final temperature(°C):	1,285.00	1,264.00

---------- ASH MINERAL ANALYSIS (AM1) ----------

SiO2(%):	45.12	TiO2(%):	3.34
Al2O3(%):	22.30	Na2O(%):	0.67
Fe2O3(%):	6.26	K2O(%):	0.86
CaO(%):	8.03	SO3(%):	2.41
MgO(%):	2.22	P2O5(%):	4.54

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88026 SEAM - K SAMPLE ID - 138 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 35.00 X 6.00 RELATIVE WEIGHT % - 51.82 ASH % - 0.0

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.45	0.06	4.50	0.06	4.50	99.94	75.12	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.45	0.45
1.50	0.02	0.00	0.08	3.38	99.92	75.13	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.34
1.55	0.34	19.32	0.42	16.28	99.58	75.33	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.10	0.95
1.70	3.12	23.43	3.54	22.58	96.46	77.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.14	1.12
1.80	8.48	41.17	12.02	35.70	87.98	80.46	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.84	0.92
2.00	2.48	46.59	14.50	37.56	85.50	81.44	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.97	0.93
2.60	85.50	81.44	100.00	75.08	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.08	1.06

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 6.00 X 0.50 RELATIVE WEIGHT % - 33.99 ASH % - 0.0

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	4.30	3.80	4.30	3.80	95.70	49.23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.90	0.90
1.45	3.51	5.93	7.81	4.76	92.19	50.88	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.93	0.91
1.50	3.42	9.86	11.23	6.31	88.77	52.46	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.94	0.92
1.55	5.21	14.51	16.44	8.91	83.56	54.82	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.86	1.22
1.60	5.98	17.97	22.42	11.33	77.58	57.67	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.44	1.28
1.70	13.36	23.91	35.78	16.02	64.22	64.69	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.81	1.48
1.80	7.95	32.62	43.73	19.04	56.27	69.22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.81	1.54
2.00	16.30	45.38	60.03	26.19	39.97	78.94	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.92	1.64
2.60	39.97	78.94	100.00	47.28	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.11	1.43

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88026 SEAM - K SAMPLE ID - 138 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 0.50 X 0.15 RELATIVE WEIGHT % - 9.67 ASH % - 0.0

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	11.73	5.28	11.73	5.28	88.27	33.82	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.27	1.27
1.45	18.37	8.05	30.10	6.97	69.90	40.60	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.29	1.28
1.50	4.82	8.38	34.92	7.17	65.08	42.98	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.48	1.31
1.55	4.90	10.58	39.82	7.59	60.18	45.62	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.72	1.36
1.60	2.61	13.32	42.43	7.94	57.57	47.08	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.01	1.40
1.70	9.64	14.69	52.07	9.19	47.93	53.60	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.86	1.49
1.80	9.84	22.40	61.91	11.29	38.09	61.66	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.40	1.47
2.00	11.30	39.28	73.21	15.61	26.79	71.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.42	1.46
2.60	26.79	71.10	100.00	30.47	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.98	1.60

========== GULF CANADA CORPORATION - COAL DIVISION ==========

---------- C L E A N S I M U L A T E D P R O D U C T R E P O R T ----------

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88026
Coal zone:	K		
Field sample no.:	08341	Composite sample no.:	365

---------- PRODUCT COAL ANALYSIS (SP3) ----------

Target Ash: 7.5 %

Standard:	ASTM	
Size analysis		
Fraction size (mm):	6.00 X	0.50
Cutpoint:	sp.g.	1.52
Contribution (%):		4.14
Total yield (%):		4.14

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture (%):	1.09	
Ash (%):	7.19	7.27
Volatile matter (%):	7.17	7.25
Fixed carbon (%):	84.55	85.48
Total sulphur (%):	0.58	0.59
Combustible sulphur (%):	0.56	
Gross calorific value (cal/g):	7,842.00	7,928.00
Volatile matter (dmmf%):	7.10	
Hardgrove index:	46.00	
Phosphorous in coal (%):	0.023	

---------- ASH FUSION ANALYSIS (AF1) ----------

	OXIDIZING ATM	REDUCING ATM
Initial temperature (°C):	1,264.00	1,259.00
Softening temperature (°C):	1,411.00	1,393.00
Hemispherical temperature (°C):	1,459.00	1,409.00
Final temperature (°C):	1,472.00	1,472.00

---------- ASH MINERAL ANALYSIS (AM1) ----------

SiO2 (%):	53.82	TiO2 (%):	4.20
Al2O3 (%):	25.71	Na2O (%):	1.95
Fe2O3 (%):	3.43	K2O (%):	1.19
CaO (%):	1.90	SO3 (%):	0.78
MgO (%):	2.16	P2O5 (%):	0.74

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88026 SEAM - I SAMPLE ID - 139 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 35.00 X 6.00 RELATIVE WEIGHT % - 35.69 ASH % - 31.92

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	0.72	6.34	0.72	6.34	99.28	31.74	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.22	1.22
1.45	9.17	8.91	9.89	8.72	90.11	34.06	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.86	0.89
1.50	14.35	10.19	24.24	9.59	75.76	38.59	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.88	0.88
1.55	14.45	16.80	38.69	12.28	61.31	43.72	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.05	0.95
1.60	9.24	19.91	47.93	13.75	52.07	47.95	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.14	0.98
1.70	20.69	28.08	68.62	18.07	31.38	61.05	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.66	1.19
1.80	6.84	33.16	75.46	19.44	24.54	68.82	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.48	1.21
2.00	8.97	47.19	84.43	22.39	15.57	81.28	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.32	1.22
2.60	15.57	81.28	100.00	31.56	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.21	1.22

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 6.00 X 0.50 RELATIVE WEIGHT % - 38.24 ASH % - 18.26

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	5.97	2.46	5.97	2.46	94.03	18.92	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.01	1.01
1.45	19.55	4.86	25.52	4.30	74.48	22.61	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.10	1.08
1.50	15.59	9.38	41.11	6.23	58.89	26.11	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.16	1.11
1.55	12.72	13.93	53.83	8.05	46.17	29.47	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.21	1.13
1.60	12.46	15.75	66.29	9.49	33.71	34.54	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.49	1.20
1.70	17.36	19.64	83.65	11.60	16.35	50.36	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.31	1.22
1.80	5.83	28.43	89.48	12.70	10.52	62.52	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.54	1.24
2.00	3.77	40.37	93.25	13.82	6.75	74.89	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.89	1.27
2.60	6.75	74.89	100.00	17.94	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.44	1.28

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88026 SEAM - I SAMPLE ID - 139 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 0.50 X 0.15 RELATIVE WEIGHT % - 16.34 ASH % - 16.40

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	14.40	3.66	14.40	3.66	85.60	17.67	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.37	1.37
1.45	4.73	5.13	19.13	4.02	80.87	18.40	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.73	1.46
1.50	12.72	5.30	31.85	4.53	68.15	20.85	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.45	1.46
1.55	11.55	5.70	43.40	4.84	56.60	23.94	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.20	1.39
1.60	9.41	8.20	52.81	5.44	47.19	27.08	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.63	1.43
1.70	19.39	13.18	72.20	7.52	27.80	36.77	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.63	1.48
1.80	14.04	19.28	86.24	9.43	13.76	54.62	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.27	1.45
2.00	6.11	32.96	92.35	10.99	7.65	71.92	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.25	1.44
2.60	7.65	71.92	100.00	15.65	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.18	1.42

ANALYSIS TYPE - FROTH

FRACTION SIZE(MM) 0.15 X 0.00 RELATIVE WEIGHT % - 9.73 ASH % - 18.96

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
240.00	*****	18.96	100.00	18.96	0.0	0.0	0.0	0.0	27.44	27.44	0.37	0.37	4.60	4.60	1.46	1.46

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88026 SEAM - I SAMPLE ID - 140 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 35.00 X 6.00 RELATIVE WEIGHT % - 61.34 ASH % - 7.88

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	5.89	2.70	5.89	2.70	94.11	6.96	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.61	0.61
1.45	77.25	4.90	83.14	4.74	16.86	16.39	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.73	0.72
1.50	9.04	8.83	92.18	5.14	7.82	25.12	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.69	0.72
1.55	1.52	14.00	93.70	5.29	6.30	27.81	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.12	0.72
1.60	3.46	18.90	97.16	5.77	2.84	38.66	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.03	0.74
1.70	0.30	24.40	97.46	5.83	2.54	40.34	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.03	0.74
1.80	0.29	27.31	97.75	5.89	2.25	42.02	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.78	0.74
2.00	0.40	41.09	98.15	6.04	1.85	42.22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.72	0.74
2.60	1.85	42.22	100.00	6.71	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.53	0.73

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 6.00 X 0.50 RELATIVE WEIGHT % - 27.81 ASH % - 8.86

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	31.76	2.62	31.76	2.62	68.24	11.03	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.62	0.62
1.45	40.57	5.04	72.33	3.98	27.67	19.82	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.65	0.64
1.50	8.67	9.01	81.00	4.52	19.00	24.75	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.68	0.64
1.55	5.49	12.22	86.49	5.01	13.51	29.84	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.06	0.67
1.60	2.64	15.96	89.13	5.33	10.87	33.22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.20	0.68
1.70	3.86	19.53	92.99	5.92	7.01	40.75	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.37	0.71
1.80	1.16	24.28	94.15	6.15	5.85	44.02	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.27	0.72
2.00	2.11	35.29	96.26	6.78	3.74	48.94	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.87	0.74
2.60	3.74	48.94	100.00	8.36	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.40	0.77

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88026 SEAM - I SAMPLE ID - 140 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 0.50 X 0.15 RELATIVE WEIGHT % - 6.38 ASH % - 0.0

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	CUM. S	CUM. S	CUM. VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	20.28	2.81	20.28	2.81	79.72	12.64	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.09	1.09
1.45	23.21	3.35	43.49	3.10	56.51	16.46	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.15	1.12
1.50	17.89	5.55	61.38	3.81	38.62	21.51	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.38	1.20
1.55	7.51	8.02	68.89	4.27	31.11	24.76	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.82	1.27
1.60	4.88	10.15	73.77	4.66	26.23	27.48	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.14	1.26
1.70	11.21	12.27	84.98	5.66	15.02	38.84	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.19	1.25
1.80	5.66	18.81	90.64	6.49	9.36	50.95	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.69	1.28
2.00	2.73	33.61	93.37	7.28	6.63	58.09	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.11	1.27
2.60	6.63	58.09	100.00	10.65	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.56	1.29

ANALYSIS TYPE - FROTH

FRACTION SIZE(MM) 0.15 X 0.00 RELATIVE WEIGHT % - 4.47 ASH % - 14.41

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	CUM. S	CUM. S	CUM. VOL.	CUM. VOL.	MOIST	CUM. MOIST
240.00	*****	14.41	100.00	14.41	0.0	0.0	0.0	0.0	29.30	29.30	0.41	0.41	4.91	4.91	1.70	1.70

========== GULF CANADA CORPORATION - COAL DIVISION ==========

---------- C L E A N S I M U L A T E D P R O D U C T R E P O R T ----------

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88026
Coal zone:	I		
Field sample no.:	08344	Composite sample no.:	273

---------- PRODUCT COAL ANALYSIS (SP2) ----------

Target Ash: 8.0 %

Standard: ASTM

Size analysis

Fraction size (mm):	35.00 X	6.00
Cutpoint:	sp.g.	1.47
Contribution (%):		5.49
Total yield (%):		5.49

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture (%):	0.85	
Ash (%):	8.07	8.14
Volatile matter (%):	6.33	6.38
Fixed carbon (%):	84.75	85.48
Total sulphur (%):	0.47	0.47
Combustible sulphur (%):	0.46	
Gross calorific value (cal/g):	7,641.00	7,707.00
Volatile matter (dmmf%):	6.10	
Hardgrove index:	44.00	
Phosphorous in coal (%):	0.016	

---------- ASH FUSION ANALYSIS (AF1) ----------

	OXIDIZING ATM	REDUCING ATM
Initial temperature (°C):	1,306.00	1,285.00
Softening temperature (°C):	1,472.00	1,453.00
Hemispherical temperature (°C):	1,472.00	1,472.00
Final temperature (°C):	1,472.00	1,472.00

---------- ASH MINERAL ANALYSIS (AM1) ----------

SiO2 (%):	59.48	TiO2 (%):	1.76
Al2O3 (%):	25.71	Na2O (%):	2.68
Fe2O3 (%):	2.52	K2O (%):	0.94
CaO (%):	1.04	SO3 (%):	0.30
MgO (%):	1.51	P2O5 (%):	0.45

GULF CANADA CORPORATION - COAL DIVISION

C L E A N S I M U L A T E D P R O D U C T R E P O R T

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88026
Coal zone:	I		
Field sample no.:	08344	Composite sample no.:	273

PRODUCT COAL ANALYSIS (SP5)

Target Ash: 11.0 %

Standard:	ASTM	
Size analysis		
Fraction size (mm):	35.00 X	6.00
Cutpoint:	sp.g.	1.51
Contribution (%):		2.81
Total yield (%):		2.81

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture (%):	1.53	
Ash (%):	11.46	11.64
Volatile matter (%):	8.05	8.17
Fixed carbon (%):	78.96	80.19
Total sulphur (%):	0.42	0.43
Combustible sulphur (%):	0.39	
Gross calorific value (cal/g):	7,182.00	7,293.00
Volatile matter (dmmf%):	8.20	
Hardgrove index:	40.00	
Phosphorous in coal (%):	0.175	

ASH FUSION ANALYSIS (AF1)

	OXIDIZING ATM	REDUCING ATM
Initial temperature (°C):	1,232.00	1,201.00
Softening temperature (°C):	1,406.00	1,393.00
Hemispherical temperature (°C):	1,453.00	1,409.00
Final temperature (°C):	1,472.00	1,472.00

ASH MINERAL ANALYSIS (AM1)

SiO2 (%):	62.04	TiO2 (%):	1.01
Al2O3 (%):	21.93	Na2O (%):	2.04
Fe2O3 (%):	2.26	K2O (%):	0.83
CaO (%):	1.68	SO3 (%):	0.64
MgO (%):	2.02	P2O5 (%):	3.49

========== GULF CANADA CORPORATION - COAL DIVISION ==========

---------- C L E A N S I M U L A T E D P R O D U C T R E P O R T ----------

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88026
Coal zone:	I		
Field sample no.:	08344 - 08345	Composite sample no.:	366

---------- PRODUCT COAL ANALYSIS (SP3) ----------

Target Ash: 7.5 %

Standard:	ASTM
Size analysis	
Fraction size(mm):	6.00 X 0.50
Cutpoint:	sp.g. 1.57
Contribution(%):	22.45
Total yield(%):	22.45

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture(%):	1.04	
Ash(%):	7.31	7.39
Volatile matter(%):	6.93	7.00
Fixed carbon(%):	84.72	85.61
Total sulphur(%):	0.47	0.47
Combustible sulphur(%):	0.45	
Gross calorific value(cal/g):	7,457.00	7,535.00
Volatile matter(dmmf%):	6.80	
Hardgrove index:	53.00	
Phosphorous in coal(%):	0.075	

---------- ASH FUSION ANALYSIS (AF1) ----------

	OXIDIZING ATM	REDUCING ATM
Initial temperature(°C):	1,264.00	1,216.00
Softening temperature(°C):	1,338.00	1,285.00
Hemispherical temperature(°C):	1,359.00	1,353.00
Final temperature(°C):	1,453.00	1,446.00

---------- ASH MINERAL ANALYSIS (AM1) ----------

SiO2(%):	54.68	TiO2(%):	1.52
Al2O3(%):	24.95	Na2O(%):	2.25
Fe2O3(%):	3.12	K2O(%):	0.82
CaO(%):	3.39	SO3(%):	0.56
MgO(%):	1.91	P2O5(%):	2.35

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88027 SEAM - K/L SAMPLE ID - 141 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 35.00 X 6.00 RELATIVE WEIGHT % - 81.99 ASH % - 38.70

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	0.66	5.58	0.66	5.58	99.34	38.44	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.89	0.89
1.45	3.68	7.61	4.34	7.30	95.66	39.63	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.55	0.60
1.50	3.51	11.05	7.85	8.98	92.15	40.72	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.52	0.57
1.55	6.32	15.67	14.17	11.96	85.83	42.56	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.56	0.56
1.60	11.27	20.29	25.44	15.65	74.56	45.93	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.65	0.60
1.70	18.29	30.71	43.73	21.95	56.27	50.87	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.84	0.70
1.80	15.85	39.12	59.58	26.52	40.42	55.48	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.89	0.75
2.00	15.93	45.80	75.51	30.59	24.49	61.78	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.71	0.74
2.60	24.49	61.78	100.00	38.22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.58	0.70

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 6.00 X 0.50 RELATIVE WEIGHT % - 15.08 ASH % - 28.72

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	6.66	3.96	6.66	3.96	93.34	30.14	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.54	0.54
1.45	17.79	6.47	24.45	5.79	75.55	35.72	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.45	0.47
1.50	13.16	12.76	37.61	8.23	62.39	40.56	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.58	0.51
1.55	11.34	17.25	48.95	10.32	51.05	45.74	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.69	0.55
1.60	9.19	21.47	58.14	12.08	41.86	51.07	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.75	0.58
1.70	11.74	26.96	69.88	14.58	30.12	60.47	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.92	0.64
1.80	5.72	34.38	75.60	16.08	24.40	66.58	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.98	0.67
2.00	7.09	45.98	82.69	18.64	17.31	75.02	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.75	0.76
2.60	17.31	75.02	100.00	28.40	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.00	0.97

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88027 SEAM - K/L SAMPLE ID - 141 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 0.50 X 0.15 RELATIVE WEIGHT % - 2.00 ASH % - 31.08

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	1.31	2.93	1.31	2.93	98.69	31.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.11	1.11
1.45	18.21	5.29	19.52	5.13	80.48	36.95	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.92	0.93
1.50	11.55	7.29	31.07	5.93	68.93	41.92	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.34	1.08
1.55	7.92	10.27	38.99	6.81	61.01	46.02	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.55	1.18
1.60	7.86	13.74	46.85	7.98	53.15	50.80	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.59	1.25
1.70	13.15	18.96	60.00	10.38	40.00	61.26	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.84	1.38
1.80	6.73	28.99	66.73	12.26	33.27	67.79	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.86	1.43
2.00	8.39	42.86	75.12	15.68	24.88	76.20	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.00	1.49
2.60	24.88	76.20	100.00	30.74	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.51	1.50

ANALYSIS TYPE - FROTH

FRACTION SIZE(MM) 0.15 X 0.00 RELATIVE WEIGHT % - 0.93 ASH % - 36.43

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
240.00	*****	36.43	100.00	36.43	0.0	0.0	0.0	0.0	20.56	20.56	0.47	0.47	5.39	5.39	1.64	1.64

========== GULF CANADA CORPORATION - COAL DIVISION ==========

---------- C L E A N S I M U L A T E D P R O D U C T R E P O R T ----------

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88027
Coal zone:	K/L		
Field sample no.:	08357	Composite sample no.:	274

---------- PRODUCT COAL ANALYSIS (SP4) ----------

Target Ash: 10.0 %

Standard: ASTM

Size analysis

Fraction size (mm):	35.00 X	6.00
Cutpoint:	sp.g.	1.52
Contribution (%):		9.74
Total yield (%):		9.74

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture (%):	0.65	
Ash (%):	9.76	9.82
Volatile matter (%):	6.44	6.48
Fixed carbon (%):	83.15	83.70
Total sulphur (%):	0.55	0.55
Combustible sulphur (%):	0.47	
Gross calorific value (cal/g):	7,533.00	7,582.00
Volatile matter (dmmf%):	6.20	
Hardgrove index:	39.00	
Phosphorous in coal (%):	0.070	

---------- ASH FUSION ANALYSIS (AF1) ----------

	OXIDIZING ATM	REDUCING ATM
Initial temperature (°C):	1,222.00	1,201.00
Softening temperature (°C):	1,264.00	1,227.00
Hemispherical temperature (°C):	1,293.00	1,243.00
Final temperature (°C):	1,367.00	1,356.00

---------- ASH MINERAL ANALYSIS (AM1) ----------

SiO2 (%):	53.64	TiO2 (%):	1.24
Al2O3 (%):	22.68	Na2O (%):	2.18
Fe2O3 (%):	4.72	K2O (%):	1.21
CaO (%):	4.67	SO3 (%):	1.95
MgO (%):	2.08	P2O5 (%):	1.64

GULF CANADA CORPORATION - COAL DIVISION

C L E A N S I M U L A T E D P R O D U C T R E P O R T

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88027
Coal zone:	K/L		
Field sample no.:	08357	Composite sample no.:	367

PRODUCT COAL ANALYSIS (SP3)

Target Ash: 7.5 %

Standard: ASTM

Size analysis

Fraction size (mm):	6.00 X	0.50
Cutpoint:	sp.g.	1.49
Contribution (%):		5.18
Total yield (%):		5.18

Proximate analysis	AIR DRY BASIS	DRY BASIS
Residual moisture (%):	0.59	
Ash (%):	7.51	7.55
Volatile matter (%):	6.61	6.65
Fixed carbon (%):	85.29	85.80
Total sulphur (%):	0.60	0.60
Combustible sulphur (%):	0.56	
Gross calorific value (cal/g):	7,717.00	7,763.00
Volatile matter (dmmf%):	6.40	
Hardgrove index:	42.00	
Phosphorous in coal (%):	0.056	

ASH FUSION ANALYSIS (AF1)

	OXIDIZING ATM	REDUCING ATM
Initial temperature (°C):	1,243.00	1,190.00
Softening temperature (°C):	1,295.00	1,248.00
Hemispherical temperature (°C):	1,324.00	1,274.00
Final temperature (°C):	1,385.00	1,372.00

ASH MINERAL ANALYSIS (AM1)

SiO2 (%):	56.14	TiO2 (%):	2.62
Al2O3 (%):	22.68	Na2O (%):	2.10
Fe2O3 (%):	3.37	K2O (%):	1.07
CaO (%):	4.03	SO3 (%):	1.28
MgO (%):	1.60	P2O5 (%):	1.71

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88027 SEAM - K SAMPLE ID - 143 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 35.00 X 6.00 RELATIVE WEIGHT % - 81.99 ASH % - 44.83

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	0.34	2.43	0.34	2.43	99.66	44.64	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.96	0.96
1.45	3.04	5.58	3.38	5.26	96.62	45.87	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.53	0.57
1.50	7.17	10.73	10.55	8.98	89.45	48.69	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.65	0.63
1.55	4.62	12.12	15.17	9.94	84.83	50.68	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.68	0.64
1.60	5.55	20.67	20.72	12.81	79.28	52.78	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.74	0.67
1.70	26.18	28.70	46.90	21.68	53.10	64.65	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.83	0.76
1.80	12.18	35.65	59.08	24.56	40.92	73.29	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.85	0.78
2.00	8.03	45.50	67.11	27.07	32.89	80.07	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.02	0.81
2.60	32.89	80.07	100.00	44.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.03	0.88

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 6.00 X 0.50 RELATIVE WEIGHT % - 15.08 ASH % - 33.86

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	2.55	3.15	2.55	3.15	97.45	34.30	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.11	1.11
1.45	15.40	6.38	17.95	5.92	82.05	39.54	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.66	0.72
1.50	10.39	10.25	28.34	7.51	71.66	43.78	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.87	0.78
1.55	11.58	15.13	39.92	9.72	60.08	49.31	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.85	0.80
1.60	8.70	19.72	48.62	11.51	51.38	54.32	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.87	0.81
1.70	13.13	26.44	61.75	14.68	38.25	63.88	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.08	0.87
1.80	6.87	31.30	68.62	16.35	31.38	71.02	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.34	0.92
2.00	6.62	42.51	75.24	18.65	24.76	78.64	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.82	1.00
2.60	24.76	78.64	100.00	33.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.71	1.17

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88027 SEAM - K SAMPLE ID - 143 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 0.50 X 0.15 RELATIVE WEIGHT % - 2.00 ASH % - 45.29

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	8.51	6.75	8.51	6.75	91.49	48.37	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.22	1.22
1.45	14.70	12.10	23.21	10.14	76.79	55.31	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.26	1.25
1.50	6.29	14.67	29.50	11.10	70.50	58.94	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.11	1.22
1.55	4.06	19.02	33.56	12.06	66.44	61.38	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.65	1.27
1.60	3.68	22.57	37.24	13.10	62.76	63.65	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.66	1.31
1.70	14.22	32.15	51.46	18.36	48.54	72.88	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.45	1.35
1.80	3.48	43.87	54.94	19.98	45.06	75.12	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.67	1.37
2.00	7.06	52.47	62.00	23.68	38.00	79.33	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.95	1.43
2.60	38.00	79.33	100.00	44.83	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.56	1.48

ANALYSIS TYPE - FROTH

FRACTION SIZE(MM) 0.15 X 0.00 RELATIVE WEIGHT % - 0.93 ASH % - 57.24

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
240.00	*****	57.24	100.00	57.24	0.0	0.0	0.0	0.0	11.94	11.94	0.35	0.35	6.09	6.09	1.21	1.21

GULF CANADA CORPORATION - COAL DIVISION

C L E A N S I M U L A T E D P R O D U C T R E P O R T

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88027
Coal zone:	K		
Field sample no.:	08371	Composite sample no.:	275

PRODUCT COAL ANALYSIS (SP4)

Target Ash: 10.0 %

Standard:	ASTM
Size analysis	
Fraction size (mm):	35.00 X 6.00
Cutpoint:	sp.g. 1.55
Contribution (%):	14.92
Total yield (%):	14.92

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture (%):	0.68	
Ash (%):	10.36	10.43
Volatile matter (%):	6.83	6.88
Fixed carbon (%):	82.13	82.69
Total sulphur (%):	0.49	0.49
Combustible sulphur (%):	0.40	
Gross calorific value (cal/g):	7,423.00	7,474.00
Volatile matter (dmmf%):	6.70	
Hardgrove index:	41.00	
Phosphorous in coal (%):	0.048	

ASH FUSION ANALYSIS (AF1)

	OXIDIZING ATM	REDUCING ATM
Initial temperature (°C):	1,253.00	1,206.00
Softening temperature (°C):	1,277.00	1,243.00
Hemispherical temperature (°C):	1,295.00	1,251.00
Final temperature (°C):	1,372.00	1,338.00

ASH MINERAL ANALYSIS (AM1)

SiO2 (%):	55.36	TiO2 (%):	1.24
Al2O3 (%):	20.79	Na2O (%):	2.08
Fe2O3 (%):	4.06	K2O (%):	1.12
CaO (%):	4.53	SO3 (%):	2.24
MgO (%):	3.02	P2O5 (%):	1.07

========== GULF CANADA CORPORATION - COAL DIVISION ==========

---------- C L E A N S I M U L A T E D P R O D U C T R E P O R T ----------

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88027
Coal zone:	K		
Field sample no.:	08371	Composite sample no.:	368

---------- PRODUCT COAL ANALYSIS (SP3) ----------

Target Ash: 7.5 %

Standard: ASTM

Size analysis

Fraction size (mm):	6.00 X	0.50
Cutpoint:	sp.g.	1.50
Contribution (%):		4.66
Total yield (%):		4.66

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture (%):	0.55	
Ash (%):	7.59	7.63
Volatile matter (%):	6.44	6.48
Fixed carbon (%):	85.42	85.89
Total sulphur (%):	0.52	0.52
Combustible sulphur (%):	0.49	
Gross calorific value (cal/g):	7,720.00	7,762.00
Volatile matter (dmmf%):	6.20	
Hardgrove index:	44.00	
Phosphorous in coal (%):	0.022	

---------- ASH FUSION ANALYSIS (AF1) ----------

	OXIDIZING ATM	REDUCING ATM
Initial temperature (°C):	1,324.00	1,264.00
Softening temperature (°C):	1,359.00	1,301.00
Hemispherical temperature (°C):	1,411.00	1,335.00
Final temperature (°C):	1,453.00	1,448.00

---------- ASH MINERAL ANALYSIS (AM1) ----------

SiO2 (%):	56.10	TiO2 (%):	2.91
Al2O3 (%):	23.06	Na2O (%):	2.18
Fe2O3 (%):	4.09	K2O (%):	1.13
CaO (%):	2.13	SO3 (%):	0.86
MgO (%):	2.43	P2O5 (%):	0.67

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88027 SEAM - I SAMPLE ID - 145 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 35.00 X 6.00 RELATIVE WEIGHT % - 35.81 ASH % - 18.84

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	6.88	6.03	6.88	6.03	93.12	19.28	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.50	0.50
1.45	42.64	10.90	49.52	10.22	50.48	26.36	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.73	0.70
1.50	18.47	11.01	67.99	10.44	32.01	35.21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.72	0.70
1.55	7.37	14.47	75.36	10.83	24.64	41.42	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.83	0.72
1.60	4.00	18.51	79.36	11.22	20.64	45.86	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.06	0.73
1.70	2.94	21.34	82.30	11.58	17.70	49.93	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.14	0.75
1.80	1.09	24.03	83.39	11.74	16.61	51.63	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.18	0.75
2.00	3.90	39.21	87.29	12.97	12.71	55.44	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.83	0.76
2.60	12.71	55.44	100.00	18.37	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.43	0.72

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 6.00 X 0.50 RELATIVE WEIGHT % - 53.46 ASH % - 13.79

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	5.67	4.97	5.67	4.97	94.33	13.40	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.67	0.67
1.45	40.08	7.68	45.75	7.34	54.25	17.63	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.72	0.71
1.50	18.93	8.76	64.68	7.76	35.32	22.39	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.71	0.71
1.55	14.18	11.38	78.86	8.41	21.14	29.78	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.81	0.73
1.60	4.71	13.44	83.57	8.69	16.43	34.46	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.84	0.74
1.70	6.84	17.31	90.41	9.35	9.59	46.69	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.18	0.77
1.80	2.68	24.11	93.09	9.77	6.91	55.45	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.26	0.78
2.00	2.14	35.96	95.23	10.36	4.77	64.19	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.67	0.80
2.60	4.77	64.19	100.00	12.93	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.22	0.82

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88027 SEAM - I SAMPLE ID - 145 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 0.50 X 0.15 RELATIVE WEIGHT % - 6.80 ASH % - 13.83

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	0.43	3.64	0.43	3.64	99.57	12.94	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.94	0.94
1.45	14.13	5.56	14.56	5.50	85.44	14.16	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.23	1.22
1.50	28.61	5.84	43.17	5.73	56.83	18.34	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.84	0.97
1.55	16.35	7.02	59.52	6.08	40.48	22.92	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.47	1.11
1.60	13.11	9.44	72.63	6.69	27.37	29.37	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.49	1.18
1.70	11.02	13.54	83.65	7.59	16.35	40.04	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.77	1.25
1.80	5.98	18.97	89.63	8.35	10.37	52.20	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.51	1.27
2.00	2.95	27.26	92.58	8.95	7.42	62.11	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.72	1.29
2.60	7.42	62.11	100.00	12.90	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.03	1.27

ANALYSIS TYPE - FROTH

FRACTION SIZE(MM) 0.15 X 0.00 RELATIVE WEIGHT % - 3.93 ASH % - 17.23

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
240.00	*****	17.23	100.00	17.23	0.0	0.0	0.0	0.0	28.43	28.43	0.51	0.51	4.42	4.42	1.64	1.64

========== GULF CANADA CORPORATION - COAL DIVISION ==========

---------- C L E A N S I M U L A T E D P R O D U C T R E P O R T ----------

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88027
Coal zone:	I		
Field sample no.:	08362 - 08363	Composite sample no.:	276

---------- PRODUCT COAL ANALYSIS (SP2) ----------

Target Ash: 8.0 %

Standard:	ASTM
Size analysis	
Fraction size (mm):	35.00 X 6.00
Cutpoint:	sp.g. 1.42
Contribution (%):	8.99
Total yield (%):	8.99

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture (%):	0.47	
Ash (%):	7.68	7.72
Volatile matter (%):	6.33	6.36
Fixed carbon (%):	85.52	85.92
Total sulphur (%):	0.50	0.50
Combustible sulphur (%):	0.46	
Gross calorific value (cal/g):	7,670.00	7,706.00
Volatile matter (dmmf%):	6.10	
Hardgrove index:	42.00	
Phosphorous in coal (%):	0.161	

---------- ASH FUSION ANALYSIS (AF1) ----------

	OXIDIZING ATM	REDUCING ATM
Initial temperature (°C):	1,253.00	1,248.00
Softening temperature (°C):	1,285.00	1,264.00
Hemispherical temperature (°C):	1,295.00	1,274.00
Final temperature (°C):	1,422.00	1,417.00

---------- ASH MINERAL ANALYSIS (AM1) ----------

SiO2 (%):	43.48	TiO2 (%):	1.44
Al2O3 (%):	27.97	Na2O (%):	2.56
Fe2O3 (%):	4.06	K2O (%):	1.23
CaO (%):	5.99	SO3 (%):	1.26
MgO (%):	2.47	P2O5 (%):	4.81

GULF CANADA CORPORATION - COAL DIVISION

C L E A N S I M U L A T E D P R O D U C T R E P O R T

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88027
Coal zone:	I		
Field sample no.:	08362 - 08363	Composite sample no.:	369

PRODUCT COAL ANALYSIS (SP3)

Target Ash: 7.5 %

Standard:	ASTM
Size analysis	
Fraction size (mm):	6.00 X 0.50
Cutpoint:	sp.g. 1.47
Contribution (%):	32.17
Total yield (%):	32.17

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture (%):	0.55	
Ash (%):	7.13	7.17
Volatile matter (%):	6.96	7.00
Fixed carbon (%):	85.36	85.83
Total sulphur (%):	0.51	0.51
Combustible sulphur (%):	0.46	
Gross calorific value (cal/g):	7,746.00	7,789.00
Volatile matter (dmmf%):	6.80	
Hardgrove index:	45.00	
Phosphorous in coal (%):	0.172	

ASH FUSION ANALYSIS (AF1)

	OXIDIZING ATM	REDUCING ATM
Initial temperature (°C):	1,266.00	1,253.00
Softening temperature (°C):	1,274.00	1,261.00
Hemispherical temperature (°C):	1,282.00	1,269.00
Final temperature (°C):	1,317.00	1,301.00

ASH MINERAL ANALYSIS (AM1)

SiO2 (%):	42.16	TiO2 (%):	2.00
Al2O3 (%):	26.08	Na2O (%):	0.61
Fe2O3 (%):	5.03	K2O (%):	1.15
CaO (%):	8.06	SO3 (%):	1.87
MgO (%):	2.92	P2O5 (%):	5.53

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88027 SEAM - I DVT SAMPLE ID - 146 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 35.00 X 6.00 RELATIVE WEIGHT % - 41.51 ASH % - 24.10

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	0.25	4.19	0.25	4.19	99.75	23.81	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.63	0.63
1.45	31.79	5.86	32.04	5.85	67.96	32.21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.93	0.93
1.50	14.02	7.40	46.06	6.32	53.94	38.65	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.69	0.86
1.55	9.98	13.27	56.04	7.56	43.96	44.42	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.80	0.85
1.60	4.83	19.59	60.87	8.51	39.13	47.48	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.79	0.84
1.70	14.09	25.35	74.96	11.68	25.04	59.93	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.79	0.83
1.80	3.06	32.21	78.02	12.48	21.98	63.79	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.86	0.83
2.00	4.29	39.47	82.31	13.89	17.69	69.69	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.78	0.83
2.60	17.69	69.69	100.00	23.76	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.93	0.85

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 6.00 X 0.50 RELATIVE WEIGHT % - 45.14 ASH % - 12.41

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	0.33	2.06	0.33	2.06	99.67	12.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.14	1.14
1.45	37.77	3.72	38.10	3.71	61.90	17.07	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.71	0.71
1.50	22.08	6.55	60.18	4.75	39.82	22.90	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.74	0.72
1.55	14.58	9.78	74.76	5.73	25.24	30.48	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.85	0.75
1.60	7.27	13.71	82.03	6.44	17.97	37.26	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.11	0.78
1.70	7.26	17.63	89.29	7.35	10.71	50.57	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.28	0.74
1.80	2.96	24.97	92.25	7.91	7.75	60.35	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.66	0.77
2.00	2.11	37.34	94.36	8.57	5.64	68.96	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.00	0.80
2.60	5.64	68.96	100.00	11.98	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.76	0.85

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88027 SEAM - I OVT SAMPLE ID - 146 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 0.50 X 0.15 RELATIVE WEIGHT % - 8.09 ASH % - 16.07

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	1.05	2.46	1.05	2.46	98.95	15.59	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	1.00
1.45	10.53	4.00	11.58	3.86	88.42	16.97	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.19	1.17
1.50	20.92	5.68	32.50	5.03	67.50	20.47	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.35	1.29
1.55	29.23	7.78	61.73	6.33	38.27	30.16	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.01	1.63
1.60	9.70	10.77	71.43	6.94	28.57	36.75	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.64	1.63
1.70	9.46	14.17	80.89	7.78	19.11	47.92	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	1.56
1.80	6.04	21.79	86.93	8.75	13.07	60.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.89	1.58
2.00	3.79	37.05	90.72	9.94	9.28	69.37	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.48	1.58
2.60	9.28	69.37	100.00	15.45	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.63	1.58

ANALYSIS TYPE - FROTH

FRACTION SIZE(MM) 0.15 X 0.00 RELATIVE WEIGHT % - 5.26 ASH % - 20.77

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
240.00	*****	20.77	100.00	20.77	0.0	0.0	0.0	0.0	26.94	26.94	0.52	0.52	4.29	4.29	1.34	1.34

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88027 SEAM - I OVT SAMPLE ID - 147 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 35.00 X 6.00 RELATIVE WEIGHT % - 52.04 ASH % - 44.94

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	0.03	3.72	0.03	3.72	99.97	44.46	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.77	0.77
1.45	7.40	5.74	7.43	5.73	92.57	47.55	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.32	0.32
1.50	6.77	7.74	14.20	6.69	85.80	50.70	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.88	0.59
1.55	8.16	13.10	22.36	9.03	77.64	54.65	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.72	0.64
1.60	4.72	17.22	27.08	10.46	72.92	57.07	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.68	0.64
1.70	21.35	26.41	48.43	17.49	51.57	69.76	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.70	0.67
1.80	9.39	34.56	57.82	20.26	42.18	77.60	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.84	0.70
2.00	8.15	45.08	65.97	23.33	34.03	85.39	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.86	0.72
2.60	34.03	85.39	100.00	44.45	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.61	1.02

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 6.00 X 0.50 RELATIVE WEIGHT % - 38.58 ASH % - 22.23

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	0.05	2.74	0.05	2.74	99.95	21.94	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.83	1.83
1.45	24.52	4.90	24.57	4.90	75.43	27.48	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.98	0.98
1.50	20.15	6.20	44.72	5.48	55.28	35.24	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.87	0.93
1.55	12.86	9.89	57.58	6.47	42.42	42.92	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.91	0.93
1.60	7.49	14.35	65.07	7.37	34.93	49.05	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.04	0.94
1.70	11.06	19.38	76.13	9.12	23.87	62.79	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.10	0.96
1.80	4.36	26.92	80.49	10.08	19.51	70.81	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.46	0.99
2.00	4.49	38.57	84.98	11.59	15.02	80.45	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.02	1.04
2.60	15.02	80.45	100.00	21.93	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.94	1.18

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88027 SEAM - I OVT SAMPLE ID - 147 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 0.50 X 0.15 RELATIVE WEIGHT % - 5.72 ASH % - 28.61

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	0.30	2.21	0.30	2.21	99.70	27.83	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.96	0.96
1.45	12.73	3.85	13.03	3.81	86.97	31.34	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.93	0.93
1.50	17.59	5.31	30.62	4.67	69.38	37.93	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.40	1.20
1.55	9.44	7.25	40.06	5.28	59.94	42.77	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.83	1.35
1.60	9.23	9.15	49.29	6.00	50.71	48.88	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.54	1.38
1.70	12.02	13.18	61.31	7.41	38.69	59.98	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.86	1.48
1.80	8.46	19.55	69.77	8.88	30.23	71.29	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.30	1.46
2.00	6.51	36.46	76.28	11.24	23.72	80.85	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.41	1.45
2.60	23.72	80.85	100.00	27.75	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.60	1.49

ANALYSIS TYPE - FROTH

FRACTION SIZE(MM) 0.15 X 0.00 RELATIVE WEIGHT % - 3.66 ASH % - 34.44

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
240.00	*****	34.44	100.00	34.44	0.0	0.0	0.0	0.0	21.66	21.66	0.30	0.30	5.13	5.13	1.43	1.43

GULF CANADA CORPORATION - COAL DIVISION

C L E A N S I M U L A T E D P R O D U C T R E P O R T

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88027
Coal zone:	I ovt		
Field sample no.:	08366	Composite sample no.:	277

PRODUCT COAL ANALYSIS (SP2)

Target Ash: 8.0 %

Standard:	ASTM
Size analysis	
Fraction size(mm):	35.00 X 6.00
Cutpoint:	sp.g. 1.57
Contribution(%):	24.20
Total yield(%):	24.20

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture(%):	0.60	
Ash(%):	7.78	7.83
Volatile matter(%):	5.94	5.98
Fixed carbon(%):	85.68	86.19
Total sulphur(%):	0.52	0.52
Combustible sulphur(%):	0.49	
Gross calorific value(cal/g):	7,686.00	7,732.00
Volatile matter(dmmf%):	5.70	
Hardgrove index:	42.00	
Phosphorous in coal(%):	0.158	

ASH FUSION ANALYSIS (AF1)

	OXIDIZING ATM	REDUCING ATM
Initial temperature(°C):	1,274.00	1,264.00
Softening temperature(°C):	1,290.00	1,274.00
Hemispherical temperature(°C):	1,317.00	1,295.00
Final temperature(°C):	1,459.00	1,453.00

ASH MINERAL ANALYSIS (AM1)

SiO2(%):	47.10	TiO2(%):	1.42
Al2O3(%):	27.22	Na2O(%):	2.53
Fe2O3(%):	3.58	K2O(%):	1.34
CaO(%):	5.09	SO3(%):	0.88
MgO(%):	1.80	P2O5(%):	4.66

========== GULF CANADA CORPORATION - COAL DIVISION ==========

---------- C L E A N S I M U L A T E D P R O D U C T R E P O R T ----------

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88027
Coal zone:	I ovt		
Field sample no.:	08367 - 08368	Composite sample no.:	278

---------- PRODUCT COAL ANALYSIS (SP2) ----------

Target Ash: 8.0 %

Standard:	ASTM
Size analysis	
Fraction size(mm):	35.00 X 6.00
Cutpoint:	sp.g. 1.53
Contribution(%):	10.24
Total yield(%):	10.24

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture(%):	0.66	
Ash(%):	7.68	7.73
Volatile matter(%):	5.99	6.03
Fixed carbon(%):	85.67	86.24
Total sulphur(%):	0.50	0.50
Combustible sulphur(%):	0.46	
Gross calorific value(cal/g):	7,689.00	7,739.00
Volatile matter(dmmf%):	5.80	
Hardgrove index:	43.00	
Phosphorous in coal(%):	0.011	

---------- ASH FUSION ANALYSIS (AFI) ----------

	OXIDIZING ATM	REDUCING ATM
Initial temperature(°C):	1,327.00	1,285.00
Softening temperature(°C):	1,417.00	1,264.00
Hemispherical temperature(°C):	1,438.00	1,390.00
Final temperature(°C):	1,472.00	1,472.00

---------- ASH MINERAL ANALYSIS (AMI) ----------

SiO2(%):	60.16	TiO2(%):	1.32
Al2O3(%):	22.30	Na2O(%):	2.32
Fe2O3(%):	3.83	K2O(%):	1.02
CaO(%):	1.79	SO3(%):	1.45
MgO(%):	2.25	P2O5(%):	0.33

GULF CANADA CORPORATION - COAL DIVISION

C L E A N S I M U L A T E D P R O D U C T R E P O R T

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88027
Coal zone:	I ovt		
Field sample no.:	08366 - 08368	Composite sample no.:	370

PRODUCT COAL ANALYSIS (SP3)

Target Ash: 7.5 %

Standard:	ASTM
Size analysis	
Fraction size (mm):	6.00 X 0.50
Cutpoint:	sp.g. 1.66
Contribution (%):	34.48
Total yield (%):	34.48

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture (%):	1.16	
Ash (%):	7.33	7.42
Volatile matter (%):	6.84	6.92
Fixed carbon (%):	84.67	85.66
Total sulphur (%):	0.50	0.51
Combustible sulphur (%):	0.47	
Gross calorific value (cal/g):	7,736.00	7,827.00
Volatile matter (dmmf%):	6.70	
Hardgrove index:	48.00	
Phosphorous in coal (%):	0.058	

ASH FUSION ANALYSIS (AF1)

	OXIDIZING ATM	REDUCING ATM
Initial temperature (°C):	1,243.00	1,211.00
Softening temperature (°C):	1,322.00	1,264.00
Hemispherical temperature (°C):	1,353.00	1,301.00
Final temperature (°C):	1,472.00	1,472.00

ASH MINERAL ANALYSIS (AM1)

SiO2 (%):	54.74	TiO2 (%):	1.52
Al2O3 (%):	24.57	Na2O (%):	2.16
Fe2O3 (%):	3.69	K2O (%):	1.20
CaO (%):	2.91	SO3 (%):	0.93
MgO (%):	2.22	P2O5 (%):	1.81

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88028 SEAM - N OVT SAMPLE ID - 148 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 35.00 X 6.00 RELATIVE WEIGHT % - 58.25 ASH % - 54.35

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	0.16	4.41	0.16	4.41	99.84	53.76	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.95	0.95
1.45	1.07	7.33	1.23	6.95	98.77	54.26	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.86	0.87
1.50	2.32	11.32	3.55	9.81	96.45	55.30	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.87	0.87
1.55	4.65	17.17	8.20	13.98	91.80	57.23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.75	0.80
1.60	2.22	23.91	10.42	16.10	89.58	58.05	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	0.84
1.70	7.54	30.73	17.96	22.24	82.04	60.56	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	0.91
1.80	15.27	40.21	33.23	30.50	66.77	65.22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.19	1.04
2.00	29.56	51.08	62.79	40.19	37.21	76.45	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.02	1.03
2.60	37.21	76.45	100.00	53.68	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.79	0.94

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 6.00 X 0.50 RELATIVE WEIGHT % - 29.14 ASH % - 30.31

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	9.19	2.59	9.19	2.59	90.81	33.43	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.64	0.64
1.45	10.46	6.87	19.65	4.87	80.35	36.89	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.61	0.62
1.50	11.10	11.76	30.75	7.36	69.25	40.92	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.62	0.62
1.55	8.89	16.25	39.64	9.35	60.36	44.56	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.68	0.64
1.60	5.87	20.04	45.51	10.73	54.49	47.20	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.82	0.66
1.70	12.33	27.23	57.84	14.25	42.16	53.04	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.20	0.77
1.80	8.54	36.05	66.38	17.05	33.62	57.35	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.20	0.83
2.00	18.26	46.65	84.64	23.44	15.36	70.07	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.07	1.10
2.60	15.36	70.07	100.00	30.60	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.36	1.14

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88028 SEAM - N OVT SAMPLE ID - 148 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 0.50 X 0.15 RELATIVE WEIGHT % - 7.83 ASH % - 20.07

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	46.85	4.59	46.85	4.59	53.15	33.04	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.86	0.86
1.45	10.77	8.10	57.62	5.25	42.38	39.38	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.03	0.89
1.50	6.42	11.06	64.04	5.83	35.96	44.43	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.20	0.92
1.55	4.02	17.51	68.06	6.52	31.94	47.82	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.19	0.94
1.60	4.18	22.26	72.24	7.43	27.76	51.67	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.37	0.96
1.70	7.02	28.77	79.26	9.32	20.74	59.42	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.63	1.02
1.80	3.98	37.00	83.24	10.64	16.76	64.74	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.54	1.05
2.00	6.10	49.47	89.34	13.29	10.66	73.48	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.66	1.09
2.60	10.66	73.48	100.00	19.71	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.15	1.10

ANALYSIS TYPE - FROTH

FRACTION SIZE(MM) 0.15 X 0.00 RELATIVE WEIGHT % - 4.78 ASH % - 21.48

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
240.00	*****	21.48	100.00	21.48	0.0	0.0	0.0	0.0	26.81	26.81	0.44	0.44	6.97	6.97	1.26	1.26

========== GULF CANADA CORPORATION - COAL DIVISION ==========

---------- C L E A N S I M U L A T E D P R O D U C T R E P O R T ----------

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88028
Coal zone:	N ovt		
Field sample no.:	08374	Composite sample no.:	371

---------- PRODUCT COAL ANALYSIS (SP3) ----------

Target Ash: 7.5 %

Standard:	ASTM	
Size analysis		
Fraction size(mm):	6.00 X	0.50
Cutpoint:	sp.g.	1.50
Contribution(%):		9.46
Total yield(%):		9.46

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture(%):	0.55	
Ash(%):	7.45	7.49
Volatile matter(%):	6.57	6.61
Fixed carbon(%):	85.43	85.90
Total sulphur(%):	0.61	0.61
Combustible sulphur(%):	0.60	
Gross calorific value(cal/g):	7,832.00	7,875.00
Volatile matter(dmmf%):	6.30	
Hardgrove index:	58.00	
Phosphorous in coal(%):	0.168	

---------- ASH FUSION ANALYSIS (AF1) ----------

	OXIDIZING ATM	REDUCING ATM
Initial temperature(°C):	1,261.00	1,243.00
Softening temperature(°C):	1,274.00	1,256.00
Hemispherical temperature(°C):	1,285.00	1,264.00
Final temperature(°C):	1,432.00	1,427.00

---------- ASH MINERAL ANALYSIS (AM1) ----------

SiO2(%):	44.52	TiO2(%):	2.73
Al2O3(%):	26.84	Na2O(%):	2.48
Fe2O3(%):	3.26	K2O(%):	1.58
CaO(%):	6.63	SO3(%):	0.37
MgO(%):	1.53	P2O5(%):	5.18

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88028 SEAM - N SAMPLE ID - 149 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 35.00 X 6.00 RELATIVE WEIGHT % - 67.52 ASH % - 45.80

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	0.87	3.36	0.87	3.36	99.13	45.74	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.88	0.88
1.45	3.41	7.19	4.28	6.41	95.72	47.11	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.74	0.77
1.50	4.28	11.78	8.56	9.10	91.44	48.76	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.60	0.68
1.55	7.46	19.21	16.02	13.81	83.98	51.39	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.71	0.70
1.60	7.71	24.90	23.73	17.41	76.27	54.06	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.70	0.70
1.70	10.28	30.23	34.01	21.29	65.99	57.78	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.86	0.75
1.80	10.89	41.69	44.90	26.23	55.10	60.96	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.62	0.72
2.00	27.94	53.14	72.84	36.55	27.16	69.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.73	0.72
2.60	27.16	69.00	100.00	45.37	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.49	0.66

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 6.00 X 0.50 RELATIVE WEIGHT % - 23.37 ASH % - 20.91

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	27.72	2.26	27.72	2.26	72.28	27.75	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.52	0.52
1.45	15.80	7.83	43.52	4.28	56.48	33.33	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.69	0.58
1.50	8.73	12.54	52.25	5.66	47.75	37.13	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.72	0.60
1.55	8.30	17.40	60.55	7.27	39.45	41.28	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.78	0.63
1.60	6.20	21.82	66.75	8.62	33.25	44.90	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.95	0.66
1.70	11.79	27.35	78.54	11.43	21.46	54.55	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.17	0.74
1.80	5.55	37.79	84.09	13.17	15.91	60.40	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.05	0.76
2.00	6.29	48.20	90.38	15.61	9.62	68.37	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.24	0.79
2.60	9.62	68.37	100.00	20.69	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.87	0.80

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88028 SEAM - N SAMPLE ID - 149 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 0.50 X 0.15 RELATIVE WEIGHT % - 6.11 ASH % - 15.01

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	53.53	4.22	53.53	4.22	46.47	27.25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.93	0.93
1.45	10.65	5.94	64.18	4.51	35.82	33.59	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.24	0.98
1.50	4.93	9.86	69.11	4.89	30.89	37.37	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.28	1.00
1.55	4.06	15.25	73.17	5.46	26.83	40.72	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.41	1.03
1.60	3.99	18.00	77.16	6.11	22.84	44.69	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.60	1.06
1.70	7.52	22.52	84.68	7.57	15.32	55.57	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.68	1.11
1.80	4.13	32.03	88.81	8.71	11.19	64.26	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.67	1.14
2.00	3.40	45.24	92.21	10.05	7.79	72.56	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.55	1.15
2.60	7.79	72.56	100.00	14.92	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.20	1.16

ANALYSIS TYPE - FROTH

FRACTION SIZE(MM) 0.15 X 0.00 RELATIVE WEIGHT % - 3.00 ASH % - 19.06

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
240.00	*****	19.06	100.00	19.06	0.0	0.0	0.0	0.0	27.56	27.56	0.43	0.43	7.48	7.48	1.72	1.72

========== GULF CANADA CORPORATION - COAL DIVISION ==========

---------- C L E A N S I M U L A T E D P R O D U C T R E P O R T ----------

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88028
Coal zone:	N		
Field sample no.:	08377	Composite sample no.:	279

---------- PRODUCT COAL ANALYSIS (SP4) ----------

Target Ash: 10.0 %

Standard:	ASTM	
Size analysis		
Fraction size (mm):	35.00 X	6.00
Cutpoint:	sp.g.	1.51
Contribution (%):		6.68
Total yield (%):		6.68

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture (%):	0.59	
Ash (%):	10.91	10.97
Volatile matter (%):	6.54	6.58
Fixed carbon (%):	81.96	82.45
Total sulphur (%):	0.58	0.58
Combustible sulphur (%):	0.53	
Gross calorific value (cal/g):	7,383.00	7,426.00
Volatile matter (dmmf%):	6.30	
Hardgrove index:	43.00	
Phosphorous in coal (%):	0.138	

---------- ASH FUSION ANALYSIS (AF1) ----------

	OXIDIZING ATM	REDUCING ATM
Initial temperature (°C):	1,256.00	1,216.00
Softening temperature (°C):	1,280.00	1,232.00
Hemispherical temperature (°C):	1,298.00	1,245.00
Final temperature (°C):	1,372.00	1,356.00

---------- ASH MINERAL ANALYSIS (AM1) ----------

SiO2 (%):	58.14	TiO2 (%):	0.82
Al2O3 (%):	20.04	Na2O (%):	1.54
Fe2O3 (%):	3.37	K2O (%):	1.40
CaO (%):	4.93	SO3 (%):	1.06
MgO (%):	1.91	P2O5 (%):	2.89

========== GULF CANADA CORPORATION - COAL DIVISION ==========

---------- C L E A N S I M U L A T E D P R O D U C T R E P O R T ----------

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88028
Coal zone:	N		
Field sample no.:	08377	Composite sample no.:	372

---------- PRODUCT COAL ANALYSIS (SP3) ----------

Target Ash: 7.5 %

Standard:	ASTM
Size analysis	
Fraction size(mm):	6.00 X 0.50
Cutpoint:	sp.g. 1.56
Contribution(%):	14.62
Total yield(%):	14.62

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture(%):	0.48	
Ash(%):	7.72	7.76
Volatile matter(%):	6.71	6.74
Fixed carbon(%):	85.09	85.50
Total sulphur(%):	0.63	0.63
Combustible sulphur(%):	0.59	
Gross calorific value(cal/g):	7,739.00	7,776.00
Volatile matter(dmmf%):	6.50	
Hardgrove index:	46.00	
Phosphorous in coal(%):	0.081	

---------- ASH FUSION ANALYSIS (AF1) ----------

	OXIDIZING ATM	REDUCING ATM
Initial temperature(°C):	1,259.00	1,190.00
Softening temperature(°C):	1,303.00	1,222.00
Hemispherical temperature(°C):	1,335.00	1,253.00
Final temperature(°C):	1,432.00	1,427.00

---------- ASH MINERAL ANALYSIS (AM1) ----------

SiO2(%):	51.38	TiO2(%):	1.60
Al2O3(%):	24.19	Na2O(%):	2.24
Fe2O3(%):	5.06	K2O(%):	1.63
CaO(%):	4.28	SO3(%):	1.32
MgO(%):	2.04	P2O5(%):	2.41

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88028 SEAM - M UPPER SAMPLE ID - 151 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 35.00 X 6.00 RELATIVE WEIGHT % - 51.85 ASH % - 0.0

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	0.08	1.91	0.08	1.91	99.92	48.66	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.64	0.64
1.45	3.41	5.41	3.49	5.33	96.51	50.18	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.14	1.13
1.50	7.33	10.46	10.82	8.81	89.18	53.45	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.33	1.27
1.55	2.63	16.54	13.45	10.32	86.55	54.57	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.30	1.27
1.60	7.37	24.54	20.82	15.35	79.18	57.36	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.12	1.22
1.70	6.83	26.55	27.65	18.12	72.35	60.27	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.24	1.22
1.80	4.10	38.75	31.75	20.78	68.25	61.57	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.05	1.20
2.00	6.51	49.02	38.26	25.59	61.74	62.89	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.11	1.19
2.60	61.74	62.89	100.00	48.62	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.46	0.74

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 6.00 X 0.50 RELATIVE WEIGHT % - 36.51 ASH % - 0.0

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	12.75	1.23	12.75	1.23	87.25	21.85	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.09	1.09
1.45	25.51	4.74	38.26	3.57	61.74	28.92	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	1.03
1.50	16.96	9.97	55.22	5.54	44.78	36.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.15	1.07
1.55	11.78	14.65	67.00	7.14	33.00	43.75	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.25	1.10
1.60	6.50	18.83	73.50	8.17	26.50	49.86	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.36	1.12
1.70	6.63	26.10	80.13	9.66	19.87	57.79	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.35	1.14
1.80	3.68	31.96	83.81	10.63	16.19	63.66	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.30	1.15
2.00	4.70	44.51	88.51	12.43	11.49	71.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.66	1.18
2.60	11.49	71.50	100.00	19.22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.41	1.20

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88028 SEAM - M UPPER SAMPLE ID - 151 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 0.50 X 0.15 RELATIVE WEIGHT % - 8.08 ASH % - 0.0

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	3.80	1.83	3.80	1.83	96.20	31.90	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.13	1.13
1.45	6.10	2.64	9.90	2.33	90.10	33.88	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.19	1.17
1.50	13.12	6.56	23.02	4.74	76.98	38.53	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.33	1.26
1.55	7.83	10.76	30.85	6.27	69.15	41.68	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.46	1.31
1.60	8.98	13.66	39.83	7.93	60.17	45.86	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.51	1.36
1.70	11.28	22.93	51.11	11.24	48.89	51.15	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.69	1.43
1.80	9.55	26.23	60.66	13.60	39.34	57.20	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.65	1.46
2.00	15.87	36.91	76.53	18.44	23.47	70.92	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.79	1.53
2.60	23.47	70.92	100.00	30.75	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.55	1.54

========== GULF CANADA CORPORATION - COAL DIVISION ==========

---------- C L E A N S I M U L A T E D P R O D U C T R E P O R T ----------

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88028
Coal zone:	M UPPER		
Field sample no.:	08381	Composite sample no.:	280

---------- PRODUCT COAL ANALYSIS (SP4) ----------

Target Ash: 10.0 %

Standard:	ASTM	
Size analysis		
Fraction size (mm):	35.00 X	6.00
Cutpoint:	sp.g.	1.54
Contribution (%):		6.62
Total yield (%):		6.62

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture (%):	0.59	
Ash (%):	10.22	10.28
Volatile matter (%):	6.04	6.08
Fixed carbon (%):	83.15	83.64
Total sulphur (%):	0.66	0.66
Combustible sulphur (%):	0.64	
Gross calorific value (cal/g):	7,576.00	7,621.00
Volatile matter (dmmf%):	5.70	
Hardgrove index:	41.00	
Phosphorous in coal (%):	0.321	

---------- ASH FUSION ANALYSIS (AF1) ----------

	OXIDIZING ATM	REDUCING ATM
Initial temperature (°C):	1,185.00	1,095.00
Softening temperature (°C):	1,306.00	1,253.00
Hemispherical temperature (°C):	1,314.00	1,274.00
Final temperature (°C):	1,359.00	1,343.00

---------- ASH MINERAL ANALYSIS (AM1) ----------

SiO2 (%):	44.56	TiO2 (%):	1.44
Al2O3 (%):	23.44	Na2O (%):	2.62
Fe2O3 (%):	3.52	K2O (%):	1.15
CaO (%):	9.46	SO3 (%):	0.53
MgO (%):	1.33	P2O5 (%):	7.20

========== GULF CANADA CORPORATION - COAL DIVISION ==========

---------- C L E A N S I M U L A T E D P R O D U C T R E P O R T ----------

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88028
Coal zone:	M UPPER		
Field sample no.:	08381	Composite sample no.:	373

---------- PRODUCT COAL ANALYSIS (SP3) ----------

Target Ash: 7.5 %

Standard:	ASTM
Size analysis	
Fraction size(mm):	6.00 X 0.50
Cutpoint:	sp.g. 1.57
Contribution(%):	26.08
Total yield(%):	26.08

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture(%):	0.64	
Ash(%):	7.85	7.90
Volatile matter(%):	6.47	6.51
Fixed carbon(%):	85.04	85.59
Total sulphur(%):	0.59	0.59
Combustible sulphur(%):	0.57	
Gross calorific value(cal/g):	7,787.00	7,836.00
Volatile matter(dmmf%):	6.20	
Hardgrove index:	44.00	
Phosphorous in coal(%):	0.130	

---------- ASH FUSION ANALYSIS (AF1) ----------

	OXIDIZING ATM	REDUCING ATM
Initial temperature(°C):	1,230.00	1,222.00
Softening temperature(°C):	1,306.00	1,253.00
Hemispherical temperature(°C):	1,345.00	1,311.00
Final temperature(°C):	1,453.00	1,448.00

---------- ASH MINERAL ANALYSIS (AM1) ----------

SiO2(%):	50.66	TiO2(%):	1.97
Al2O3(%):	24.19	Na2O(%):	2.51
Fe2O3(%):	3.49	K2O(%):	1.28
CaO(%):	5.07	SO3(%):	0.68
MgO(%):	1.86	P2O5(%):	3.79

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88028 SEAM - M SAMPLE ID - 152 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 35.00 X 6.00 RELATIVE WEIGHT % - 51.32 ASH % - 50.14

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	0.25	4.69	0.25	4.69	99.75	50.93	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.90	0.90
1.45	1.95	4.95	2.20	4.92	97.80	51.84	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.71	0.73
1.50	3.74	9.80	5.94	7.99	94.06	53.52	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.73	0.73
1.55	4.55	15.01	10.49	11.04	89.51	55.47	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.56	0.66
1.60	4.35	20.26	14.84	13.74	85.16	57.27	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.59	0.64
1.70	8.96	27.10	23.80	18.77	76.20	60.82	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.66	0.65
1.80	6.56	33.55	30.36	21.96	69.64	63.39	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.80	0.68
2.00	16.50	49.44	46.86	31.64	53.14	67.72	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.79	0.72
2.60	53.14	67.72	100.00	50.81	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.89	0.81

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 6.00 X 0.50 RELATIVE WEIGHT % - 35.40 ASH % - 24.73

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	5.92	3.01	5.92	3.01	94.08	25.42	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.61	0.61
1.45	16.79	3.80	22.71	3.59	77.29	30.11	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.64	0.63
1.50	13.55	9.36	36.26	5.75	63.74	34.52	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.57	0.61
1.55	10.68	14.39	46.94	7.71	53.06	38.58	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.56	0.60
1.60	6.56	18.59	53.50	9.05	46.50	41.40	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.77	0.62
1.70	13.66	23.61	67.16	12.01	32.84	48.79	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.31	0.76
1.80	10.69	31.16	77.85	14.64	22.15	57.30	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.14	0.81
2.00	10.22	43.37	88.07	17.97	11.93	69.24	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.01	0.95
2.60	11.93	69.24	100.00	24.09	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.49	1.02

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88028 SEAM - M SAMPLE ID - 152 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 0.50 X 0.15 RELATIVE WEIGHT % - 7.72 ASH % - 16.01

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	10.73	1.81	10.73	1.81	89.27	17.65	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.04	1.04
1.45	14.72	2.84	25.45	2.41	74.55	20.57	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.83	0.92
1.50	34.91	5.19	60.36	4.02	39.64	34.11	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	0.97
1.55	6.73	10.89	67.09	4.71	32.91	38.86	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.18	0.99
1.60	2.11	16.93	69.20	5.08	30.80	40.37	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.46	1.00
1.70	9.83	18.44	79.03	6.74	20.97	50.64	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.62	1.08
1.80	5.81	26.90	84.84	8.12	15.16	59.75	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.64	1.12
2.00	5.52	38.99	90.36	10.01	9.64	71.63	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.85	1.16
2.60	9.64	71.63	100.00	15.95	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.34	1.18

ANALYSIS TYPE - FROTH

FRACTION SIZE(MM) 0.15 X 0.00 RELATIVE WEIGHT % - 5.56 ASH % - 19.47

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
240.00	*****	19.47	100.00	19.47	0.0	0.0	0.0	0.0	27.15	27.15	0.34	0.34	7.95	7.95	1.75	1.75

========== GULF CANADA CORPORATION - COAL DIVISION ==========

---------- C L E A N S I M U L A T E D P R O D U C T R E P O R T ----------

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88028
Coal zone:	M		
Field sample no.:	08384	Composite sample no.:	281

---------- PRODUCT COAL ANALYSIS (SP4) ----------

Target Ash: 10.0 %

Standard:	ASTM	
Size analysis		
Fraction size(mm):	35.00 X	6.00
Cutpoint:	sp.g.	1.53
Contribution(%):		4.38
Total yield(%):		4.38

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture(%):	0.50	
Ash(%):	9.70	9.75
Volatile matter(%):	6.52	6.55
Fixed carbon(%):	83.28	83.70
Total sulphur(%):	0.96	0.96
Combustible sulphur(%):	0.93	
Gross calorific value(cal/g):	7,638.00	7,677.00
Volatile matter(dmmf%):	6.10	
Hardgrove index:	45.00	
Phosphorous in coal(%):	0.249	

---------- ASH FUSION ANALYSIS (AF1) ----------

	OXIDIZING ATM	REDUCING ATM
Initial temperature(°C):	1,306.00	1,227.00
Softening temperature(°C):	1,314.00	1,238.00
Hemispherical temperature(°C):	1,322.00	1,248.00
Final temperature(°C):	1,369.00	1,332.00

---------- ASH MINERAL ANALYSIS (AM1) ----------

SiO2(%):	43.44	TiO2(%):	1.24
Al2O3(%):	23.82	Na2O(%):	2.64
Fe2O3(%):	7.61	K2O(%):	1.19
CaO(%):	8.09	SO3(%):	0.67
MgO(%):	1.38	P2O5(%):	5.88

GULF CANADA CORPORATION - COAL DIVISION

C L E A N S I M U L A T E D P R O D U C T R E P O R T

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88028
Coal zone:	M		
Field sample no.:	08384	Composite sample no.:	375

PRODUCT COAL ANALYSIS (SP3)

Target Ash: 7.5 %

Standard:	ASTM	
Size analysis		
Fraction size(mm):	6.00 X 0.50	
Cutpoint:	sp.g. 1.55	
Contribution(%):	16.41	
Total yield(%):	16.41	

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture(%):	0.50	
Ash(%):	7.27	7.31
Volatile matter(%):	6.62	6.65
Fixed carbon(%):	85.61	86.04
Total sulphur(%):	0.61	0.61
Combustible sulphur(%):	0.59	
Gross calorific value(cal/g):	7,772.00	7,811.00
Volatile matter(dmmf%):	6.40	
Hardgrove index:	50.00	
Phosphorous in coal(%):	0.109	

ASH FUSION ANALYSIS (AF1)

	OXIDIZING ATM	REDUCING ATM
Initial temperature(°C):	1,248.00	1,143.00
Softening temperature(°C):	1,288.00	1,243.00
Hemispherical temperature(°C):	1,301.00	1,269.00
Final temperature(°C):	1,422.00	1,419.00

ASH MINERAL ANALYSIS (AM1)

SiO2(%):	49.48	TiO2(%):	2.43
Al2O3(%):	24.19	Na2O(%):	2.37
Fe2O3(%):	3.86	K2O(%):	1.43
CaO(%):	5.60	SO3(%):	0.81
MgO(%):	1.60	P2O5(%):	3.42

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88029 SEAM - N SAMPLE ID - 153 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 35.00 X 6.00 RELATIVE WEIGHT % - 46.08 ASH % - 56.40

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	0.09	2.88	0.09	2.88	99.91	57.12	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.13	1.13
1.45	0.17	9.51	0.26	7.21	99.74	57.21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.18	1.16
1.50	0.95	12.16	1.21	11.10	98.79	57.64	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.16	1.16
1.55	1.35	16.63	2.56	14.01	97.44	58.21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.01	1.08
1.60	2.22	22.08	4.78	17.76	95.22	59.05	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.13	1.10
1.70	7.69	29.57	12.47	25.04	87.53	61.64	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.95	1.01
1.80	12.59	38.60	25.06	31.85	74.94	65.51	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.01	1.01
2.00	18.18	50.68	43.24	39.77	56.76	70.26	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.01	1.01
2.60	56.76	70.26	100.00	57.08	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.06	1.04

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 6.00 X 0.50 RELATIVE WEIGHT % - 40.36 ASH % - 36.95

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	1.89	3.40	1.89	3.40	98.11	36.89	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.05	1.05
1.45	3.87	4.01	5.76	3.81	94.24	38.24	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.99	1.01
1.50	7.94	9.82	13.70	7.29	86.30	40.86	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.06	1.04
1.55	6.99	13.33	20.69	9.33	79.31	43.28	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.11	1.06
1.60	7.41	16.49	28.10	11.22	71.90	46.04	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.29	1.12
1.70	15.61	21.17	43.71	14.77	56.29	52.94	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.16	1.14
1.80	12.60	29.31	56.31	18.03	43.69	59.76	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.05	1.12
2.00	14.24	40.15	70.55	22.49	29.45	69.24	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.64	1.22
2.60	29.45	69.24	100.00	36.26	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.86	1.41

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88029 SEAM - N SAMPLE ID - 153 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 0.50 X 0.15 RELATIVE WEIGHT % - 7.75 ASH % - 24.92

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	CUM. S	CUM. S	CUM. VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	26.68	6.22	26.68	6.22	73.32	30.90	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.58	1.58
1.45	8.26	6.80	34.94	6.36	65.06	33.96	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.37	1.53
1.50	3.94	7.06	38.88	6.43	61.12	35.69	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.47	1.52
1.55	5.61	9.92	44.49	6.87	55.51	38.30	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.75	1.55
1.60	4.13	12.46	48.62	7.34	51.38	40.37	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.13	1.52
1.70	19.24	20.14	67.86	10.97	32.14	52.49	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.24	1.44
1.80	7.37	28.84	75.23	12.72	24.77	59.52	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.60	1.45
2.00	8.21	37.94	83.44	15.20	16.56	70.22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.57	1.47
2.60	16.56	70.22	100.00	24.31	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.06	1.56

ANALYSIS TYPE - FROTH

FRACTION SIZE(MM) 0.15 X 0.00 RELATIVE WEIGHT % - 5.81 ASH % - 24.87

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	CUM. S	CUM. S	CUM. VOL.	CUM. VOL.	MOIST	CUM. MOIST
240.00	*****	24.87	100.00	24.87	0.0	0.0	0.0	0.0	24.86	24.86	2.09	2.09	7.83	7.83	1.58	1.58

========== GULF CANADA CORPORATION - COAL DIVISION ==========

---------- C L E A N S I M U L A T E D P R O D U C T R E P O R T ----------

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88029
Coal zone:	N		
Field sample no.:	08387	Composite sample no.:	376

---------- PRODUCT COAL ANALYSIS (SP3) ----------

Target Ash: 7.5 %

Standard:	ASTM	
Size analysis		
Fraction size (mm):	6.00 X	0.50
Cutpoint:	sp.g.	1.51
Contribution (%):		6.31
Total yield (%):		6.31

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture (%):	0.75	
Ash (%):	7.69	7.75
Volatile matter (%):	8.14	8.20
Fixed carbon (%):	83.42	84.05
Total sulphur (%):	0.92	0.93
Combustible sulphur (%):	0.90	
Gross calorific value (cal/g):	7,770.00	7,829.00
Volatile matter (dmmf%):	8.00	
Hardgrove index:	54.00	
Phosphorous in coal (%):	0.112	

---------- ASH FUSION ANALYSIS (AF1) ----------

	OXIDIZING ATM	REDUCING ATM
Initial temperature (°C):	1,248.00	1,137.00
Softening temperature (°C):	1,285.00	1,201.00
Hemispherical temperature (°C):	1,303.00	1,227.00
Final temperature (°C):	1,356.00	1,353.00

---------- ASH MINERAL ANALYSIS (AM1) ----------

SiO2 (%):	44.24	TiO2 (%):	3.85
Al2O3 (%):	24.57	Na2O (%):	2.29
Fe2O3 (%):	8.04	K2O (%):	0.88
CaO (%):	5.37	SO3 (%):	0.63
MgO (%):	2.21	P2O5 (%):	3.35

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88029 SEAM - M SAMPLE ID - 159 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 35.00 X 6.00 RELATIVE WEIGHT % - 59.60 ASH % - 51.69

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	0.26	2.98	0.26	2.98	99.74	51.18	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.02	1.02
1.45	1.06	6.64	1.32	5.92	98.68	51.66	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	1.00
1.50	0.88	11.75	2.20	8.25	97.80	52.02	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.01	1.01
1.55	2.78	16.18	4.98	12.68	95.02	53.06	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	1.00
1.60	4.52	20.54	9.50	16.42	90.50	54.69	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.02	1.01
1.70	14.96	27.91	24.46	23.45	75.54	59.99	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.98	0.99
1.80	9.92	33.99	34.38	26.49	65.62	63.92	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.06	1.01
2.00	22.97	44.19	57.35	33.58	42.65	74.55	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.93	0.98
2.60	42.65	74.55	100.00	51.05	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.30	1.12

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 6.00 X 0.50 RELATIVE WEIGHT % - 39.05 ASH % - 34.56

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	4.36	2.26	4.36	2.26	95.64	35.97	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.76	0.76
1.45	7.93	4.75	12.29	3.87	87.71	38.79	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.66	0.70
1.50	8.38	9.90	20.67	6.31	79.33	41.85	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.85	0.76
1.55	8.68	14.33	29.35	8.68	70.65	45.23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.74	0.75
1.60	5.85	17.39	35.20	10.13	64.80	47.74	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.96	0.79
1.70	16.93	22.67	52.13	14.20	47.87	56.61	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.68	1.08
1.80	9.65	30.63	61.78	16.77	38.22	63.17	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.68	1.17
2.00	11.55	43.02	73.33	20.90	26.67	71.89	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.71	1.26
2.60	26.67	71.89	100.00	34.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.76	1.39

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88029 SEAM - M SAMPLE ID - 159 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 0.50 X 0.15 RELATIVE WEIGHT % - 5.66 ASH % - 27.43

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	20.33	5.10	20.33	5.10	79.67	32.63	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.32	1.32
1.45	14.91	7.93	35.24	6.30	64.76	38.32	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.39	1.35
1.50	11.17	10.28	46.41	7.26	53.59	44.16	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.82	1.46
1.55	0.80	10.61	47.21	7.31	52.79	44.67	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.72	1.47
1.60	3.19	11.43	50.40	7.57	49.60	46.81	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.90	1.49
1.70	9.27	15.66	59.67	8.83	40.33	53.96	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.84	1.55
1.80	9.56	23.56	69.23	10.86	30.77	63.41	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.87	1.59
2.00	9.65	37.37	78.88	14.11	21.12	75.31	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.81	1.62
2.60	21.12	75.31	100.00	27.03	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.19	1.53

ANALYSIS TYPE - FROTH

FRACTION SIZE(MM) 0.15 X 0.00 RELATIVE WEIGHT % - 3.69 ASH % - 28.17

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
240.00	*****	28.17	100.00	28.17	0.0	0.0	0.0	0.0	23.80	23.80	0.48	0.48	6.72	6.72	1.64	1.64

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88029 SEAM - M SAMPLE ID - 161 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 35.00 X 6.00 RELATIVE WEIGHT % - 72.26 ASH % - 54.99

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	1.43	2.84	1.43	2.84	98.57	55.20	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.05	1.05
1.45	2.94	6.86	4.37	5.54	95.63	56.69	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.03	1.04
1.50	2.95	11.18	7.32	7.82	92.68	58.14	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.10	1.06
1.55	4.64	16.59	11.96	11.22	88.04	60.32	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.16	1.10
1.60	3.42	19.65	15.38	13.09	84.62	61.97	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.18	1.12
1.70	7.66	30.01	23.04	18.72	76.96	65.15	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.25	0.83
1.80	7.16	34.81	30.20	22.53	69.80	68.26	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.23	0.92
2.00	11.20	47.03	41.40	29.16	58.60	72.32	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.13	0.98
2.60	58.60	72.32	100.00	54.45	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.20	1.11

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 6.00 X 0.50 RELATIVE WEIGHT % - 22.20 ASH % - 31.54

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	16.72	2.18	16.72	2.18	83.28	37.28	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.85	0.85
1.45	14.22	5.88	30.94	3.88	69.06	43.75	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.82	0.84
1.50	6.96	10.26	37.90	5.05	62.10	47.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.07	0.88
1.55	6.37	13.92	44.27	6.33	55.73	51.34	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.08	0.91
1.60	5.16	16.99	49.43	7.44	50.57	54.84	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.06	0.92
1.70	9.61	21.70	59.04	9.76	40.96	62.62	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.39	1.00
1.80	5.76	29.07	64.80	11.48	35.20	68.11	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.53	1.05
2.00	7.73	41.38	72.53	14.67	27.47	75.63	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.48	1.09
2.60	27.47	75.63	100.00	31.41	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.29	1.15

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88029 SEAM - M SAMPLE ID - 161 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 0.50 X 0.15 RELATIVE WEIGHT % - 3.33 ASH % - 29.40

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	10.91	2.11	10.91	2.11	89.09	32.22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.23	1.23
1.45	19.74	3.59	30.65	3.06	69.35	40.37	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.25	1.24
1.50	7.40	5.73	38.05	3.58	61.95	44.51	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.42	1.28
1.55	6.30	8.60	44.35	4.29	55.65	48.57	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.60	1.32
1.60	4.89	10.61	49.24	4.92	50.76	52.23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.93	1.38
1.70	9.97	14.23	59.21	6.49	40.79	61.52	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.26	1.36
1.80	7.64	22.76	66.85	8.35	33.15	70.45	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.18	1.34
2.00	6.14	35.17	72.99	10.60	27.01	78.47	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.21	1.33
2.60	27.01	78.47	100.00	28.94	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.91	1.49

ANALYSIS TYPE - FROTH

FRACTION SIZE(MM) 0.15 X 0.00 RELATIVE WEIGHT % - 2.21 ASH % - 33.09

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
240.00	*****	33.09	100.00	33.09	0.0	0.0	0.0	0.0	21.96	21.96	0.39	0.39	7.19	7.19	1.50	1.50

GULF CANADA CORPORATION - COAL DIVISION

C L E A N S I M U L A T E D P R O D U C T R E P O R T

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88029
Coal zone:	M		
Field sample no.:	08402 - 08403	Composite sample no.:	284

PRODUCT COAL ANALYSIS (SP4)

Target Ash: 10.0 %

Standard:	ASTM	
Size analysis		
Fraction size(mm):	35.00 X	6.00
Cutpoint:	sp.g.	1.53
Contribution(%):		7.52
Total yield(%):		7.52

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture(%):	0.67	
Ash(%):	10.00	10.07
Volatile matter(%):	6.73	6.78
Fixed carbon(%):	82.60	83.15
Total sulphur(%):	0.54	0.54
Combustible sulphur(%):	0.50	
Gross calorific value(cal/g):	7,543.00	7,593.00
Volatile matter(dmmf%):	6.50	
Hardgrove index:	43.00	
Phosphorous in coal(%):	0.125	

ASH FUSION ANALYSIS (AFI)

	OXIDIZING ATM	REDUCING ATM
Initial temperature(°C):	1,243.00	1,177.00
Softening temperature(°C):	1,261.00	1,195.00
Hemispherical temperature(°C):	1,274.00	1,206.00
Final temperature(°C):	1,327.00	1,322.00

ASH MINERAL ANALYSIS (AMI)

SiO2(%):	56.56	TiO2(%):	1.70
Al2O3(%):	19.66	Na2O(%):	2.10
Fe2O3(%):	4.12	K2O(%):	0.71
CaO(%):	4.79	SO3(%):	0.93
MgO(%):	1.59	P2O5(%):	2.87

========== GULF CANADA CORPORATION - COAL DIVISION ==========

---------- C L E A N S I M U L A T E D P R O D U C T R E P O R T ----------

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88029
Coal zone:	M		
Field sample no.:	08400 - 08403	Composite sample no.:	379

---------- PRODUCT COAL ANALYSIS (SP3) ----------

Target Ash: 7.5 %

Standard:	ASTM
Size analysis	
Fraction size(mm):	6.00 X 0.50
Cutpoint:	sp.g. 1.54
Contribution(%):	10.26
Total yield(%):	10.26

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture(%):	0.84	
Ash(%):	7.37	7.43
Volatile matter(%):	7.06	7.12
Fixed carbon(%):	84.73	85.45
Total sulphur(%):	0.56	0.56
Combustible sulphur(%):	0.54	
Gross calorific value(cal/g):	7,729.00	7,795.00
Volatile matter(dmmf%):	6.90	
Hardgrove index:	49.00	
Phosphorous in coal(%):	0.063	

---------- ASH FUSION ANALYSIS (AF1) ----------

	OXIDIZING ATM	REDUCING ATM
Initial temperature(°C):	1,269.00	1,187.00
Softening temperature(°C):	1,290.00	1,209.00
Hemispherical temperature(°C):	1,317.00	1,248.00
Final temperature(°C):	1,411.00	1,409.00

---------- ASH MINERAL ANALYSIS (AM1) ----------

SiO2(%):	54.40	TiO2(%):	2.91
Al2O3(%):	23.06	Na2O(%):	2.13
Fe2O3(%):	3.75	K2O(%):	0.84
CaO(%):	3.78	SO3(%):	0.72
MgO(%):	1.55	P2O5(%):	1.95

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88029 SEAM - L SAMPLE ID - 154 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 35.00 X 6.00 RELATIVE WEIGHT % - 58.47 ASH % - 32.43

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	3.09	2.07	3.09	2.07	96.91	33.22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.73	0.73
1.45	9.00	5.98	12.09	4.98	87.91	36.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.60	0.63
1.50	14.13	10.07	26.22	7.72	73.78	40.97	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.63	0.63
1.55	10.27	17.76	36.49	10.55	63.51	44.73	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.70	0.65
1.60	5.27	21.39	41.76	11.92	58.24	46.84	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.89	0.68
1.70	18.10	29.05	59.86	17.10	40.14	54.86	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.85	0.73
1.80	12.12	38.45	71.98	20.69	28.02	61.96	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.02	0.78
2.00	9.32	49.53	81.30	24.00	18.70	68.15	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.16	0.82
2.60	18.70	68.15	100.00	32.25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.29	0.91

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 6.00 X 0.50 RELATIVE WEIGHT % - 32.41 ASH % - 26.54

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	5.40	1.61	5.40	1.61	94.60	27.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.79	0.79
1.45	19.06	3.93	24.46	3.42	75.54	33.44	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.73	0.74
1.50	15.78	8.82	40.24	5.54	59.76	39.95	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.79	0.76
1.55	9.94	13.70	50.18	7.15	49.82	45.18	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.98	0.80
1.60	6.25	17.44	56.43	8.29	43.57	49.16	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	0.83
1.70	9.89	23.57	66.32	10.57	33.68	56.68	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.44	0.92
1.80	6.56	31.90	72.88	12.49	27.12	62.67	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.60	0.98
2.00	9.61	45.13	82.49	16.29	17.51	72.30	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.55	1.05
2.60	17.51	72.30	100.00	26.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.61	1.14

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88029 SEAM - L SAMPLE ID - 154 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 0.50 X 0.15 RELATIVE WEIGHT % - 5.64 ASH % - 27.84

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	11.13	3.75	11.13	3.75	88.87	30.20	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.11	1.11
1.45	28.31	6.29	39.44	5.57	60.56	41.37	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.19	1.17
1.50	5.21	8.51	44.65	5.92	55.35	44.46	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.33	1.19
1.55	8.81	11.00	53.46	6.75	46.54	50.80	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.66	1.26
1.60	2.66	14.08	56.12	7.10	43.88	53.02	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.57	1.28
1.70	5.34	15.81	61.46	7.86	38.54	58.18	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.82	1.33
1.80	6.09	25.54	67.55	9.45	32.45	64.31	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.89	1.38
2.00	8.20	38.74	75.75	12.62	24.25	72.95	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.05	1.45
2.60	24.25	72.95	100.00	27.25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.70	1.51

ANALYSIS TYPE - FROTH

FRACTION SIZE(MM) 0.15 X 0.00 RELATIVE WEIGHT % - 3.48 ASH % - 31.13

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
240.00	*****	31.13	100.00	31.13	0.0	0.0	0.0	0.0	22.48	22.48	0.44	0.44	6.37	6.37	1.87	1.87

========== GULF CANADA CORPORATION - COAL DIVISION ==========

---------- C L E A N S I M U L A T E D P R O D U C T R E P O R T ----------

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88029
Coal zone:	L		
Field sample no.:	08390 - 08391	Composite sample no.:	282

---------- PRODUCT COAL ANALYSIS (SP4) ----------

Target Ash: 10.0 %

Standard: ASTM

Size analysis

Fraction size(mm):	35.00 X 6.00
Cutpoint:	sp.g. 1.54
Contribution(%):	19.11
Total yield(%):	19.11

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture(%):	0.64	
Ash(%):	9.54	9.60
Volatile matter(%):	6.37	6.41
Fixed carbon(%):	83.45	83.99
Total sulphur(%):	0.59	0.59
Combustible sulphur(%):	0.55	
Gross calorific value(cal/g):	7,574.00	7,622.00
Volatile matter(dmmf%):	6.10	
Hardgrove index:	41.00	
Phosphorous in coal(%):	0.234	

---------- ASH FUSION ANALYSIS (AF1) ----------

	OXIDIZING ATM	REDUCING ATM
Initial temperature(°C):	1,222.00	1,180.00
Softening temperature(°C):	1,230.00	1,187.00
Hemispherical temperature(°C):	1,243.00	1,201.00
Final temperature(°C):	1,306.00	1,295.00

---------- ASH MINERAL ANALYSIS (AM1) ----------

SiO2(%):	49.16	TiO2(%):	1.87
Al2O3(%):	19.66	Na2O(%):	2.35
Fe2O3(%):	5.61	K2O(%):	0.57
CaO(%):	8.40	SO3(%):	0.97
MgO(%):	1.73	P2O5(%):	5.62

========== GULF CANADA CORPORATION - COAL DIVISION ==========

---------- C L E A N S I M U L A T E D P R O D U C T R E P O R T ----------

March 02, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88029
Coal zone:	L		
Field sample no.:	08390 - 08391	Composite sample no.:	377

---------- PRODUCT COAL ANALYSIS (SP3) ----------

Target Ash: 7.5 %

Standard:	ASTM
Size analysis	
Fraction size(mm):	6.00 X 0.50
Cutpoint:	sp.g. 1.57
Contribution(%):	17.21
Total yield(%):	17.21

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture(%):	0.80	
Ash(%):	7.60	7.66
Volatile matter(%):	6.81	6.87
Fixed carbon(%):	84.79	85.47
Total sulphur(%):	0.59	0.59
Combustible sulphur(%):	0.56	
Gross calorific value(cal/g):	7,717.00	7,780.00
Volatile matter(dmmf%):	6.60	
Hardgrove index:	47.00	
Phosphorous in coal(%):	0.082	

---------- ASH FUSION ANALYSIS (AF1) ----------

	OXIDIZING ATM	REDUCING ATM
Initial temperature(°C):	1,251.00	1,174.00
Softening temperature(°C):	1,277.00	1,206.00
Hemispherical temperature(°C):	1,290.00	1,227.00
Final temperature(°C):	1,353.00	1,348.00

---------- ASH MINERAL ANALYSIS (AM1) ----------

SiO2(%):	53.64	TiO2(%):	3.58
Al2O3(%):	21.93	Na2O(%):	2.21
Fe2O3(%):	5.38	K2O(%):	0.65
CaO(%):	4.31	SO3(%):	0.94
MgO(%):	1.85	P2O5(%):	2.47

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88029 SEAM - K/L SAMPLE ID - 155 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 35.00 X 6.00 RELATIVE WEIGHT % - 57.39 ASH % - 48.84

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	0.19	4.52	0.19	4.52	99.81	48.88	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.91	0.91
1.45	1.68	5.89	1.87	5.75	98.13	49.62	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.10	1.08
1.50	1.29	9.95	3.16	7.47	96.84	50.15	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.99	1.04
1.55	1.73	15.76	4.89	10.40	95.11	50.77	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.03	1.04
1.60	0.81	17.69	5.70	11.44	94.30	51.06	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.06	1.04
1.70	9.15	27.59	14.85	21.39	85.15	53.58	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.87	0.94
1.80	10.77	35.82	25.62	27.46	74.38	56.15	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.07	0.99
2.00	27.47	46.44	53.09	37.28	46.91	61.84	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.92	0.95
2.60	46.91	61.84	100.00	48.80	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.59	0.78

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 6.00 X 0.50 RELATIVE WEIGHT % - 34.77 ASH % - 30.19

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	2.05	3.28	2.05	3.28	97.95	30.34	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.92	0.92
1.45	9.44	3.93	11.49	3.81	88.51	33.16	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.81	0.83
1.50	5.24	7.47	16.73	4.96	83.27	34.78	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.82	0.83
1.55	5.80	11.15	22.53	6.55	77.47	36.55	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.82	0.82
1.60	4.95	14.60	27.48	8.00	72.52	38.04	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.05	0.87
1.70	14.09	18.50	41.57	11.56	58.43	42.76	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.60	1.11
1.80	17.48	25.98	59.05	15.83	40.95	49.92	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.43	1.21
2.00	22.47	38.56	81.52	22.09	18.48	63.73	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.48	1.28
2.60	18.48	63.73	100.00	29.79	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.41	1.31

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88029 SEAM - K/L SAMPLE ID - 155 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 0.50 X 0.15 RELATIVE WEIGHT % - 4.47 ASH % - 22.84

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	1.48	2.96	1.48	2.96	98.52	22.70	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.26	1.26
1.45	5.70	3.20	7.18	3.15	92.82	23.90	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.44	1.40
1.50	12.25	3.48	19.43	3.36	80.57	27.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.40	1.40
1.55	10.34	5.08	29.77	3.96	70.23	30.23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.72	1.51
1.60	9.91	7.63	39.68	4.87	60.32	33.95	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.03	1.64
1.70	13.98	12.59	53.66	6.88	46.34	40.39	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.17	1.52
1.80	15.61	21.12	69.27	10.09	30.73	50.18	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.49	1.51
2.00	14.07	33.57	83.34	14.06	16.66	64.20	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.57	1.52
2.60	16.66	64.20	100.00	22.41	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.74	1.56

ANALYSIS TYPE - FROTH

FRACTION SIZE(MM) 0.15 X 0.00 RELATIVE WEIGHT % - 3.37 ASH % - 25.28

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
240.00	*****	25.28	100.00	25.28	0.0	0.0	0.0	0.0	25.10	25.10	0.45	0.45	6.38	6.38	1.88	1.88

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88029 SEAM - K/L SAMPLE ID - 158 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 35.00 X 6.00 RELATIVE WEIGHT % - 54.40 ASH % - 41.85

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	2.72	2.84	2.72	2.84	97.28	42.63	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.60	0.60
1.45	3.25	5.95	5.97	4.53	94.03	43.90	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.66	0.63
1.50	3.38	11.86	9.35	7.18	90.65	45.09	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.83	0.70
1.55	11.04	18.48	20.39	13.30	79.61	48.78	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.85	0.78
1.60	4.32	20.35	24.71	14.53	75.29	50.41	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.02	0.82
1.70	9.34	25.82	34.05	17.63	65.95	53.90	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.92	0.85
1.80	12.85	31.46	46.90	21.42	53.10	59.32	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.85	0.85
2.00	18.99	41.21	65.89	27.12	34.11	69.41	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.79	0.83
2.60	34.11	69.41	100.00	41.55	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.24	0.97

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 6.00 X 0.50 RELATIVE WEIGHT % - 39.02 ASH % - 30.20

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	5.06	3.05	5.06	3.05	94.94	31.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.67	0.67
1.45	11.73	6.05	16.79	5.15	83.21	34.63	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.67	0.67
1.50	11.29	12.33	28.08	8.03	71.92	38.13	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.75	0.70
1.55	9.42	16.07	37.50	10.05	62.50	41.46	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.83	0.73
1.60	4.11	18.61	41.61	10.90	58.39	43.07	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.05	0.77
1.70	16.01	24.34	57.62	14.63	42.38	50.14	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.84	1.06
1.80	15.50	32.24	73.12	18.37	26.88	60.46	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.36	1.13
2.00	12.09	41.08	85.21	21.59	14.79	76.31	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.95	1.24
2.60	14.79	76.31	100.00	29.68	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.54	1.29

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GULF CANADA RESOURCES LIMITED - COAL DIVISION

FEB 15/89 WASHABILITY REPORT 2 PAGE -

DATA SOURCE - KPNLRDDH88029 SEAM - K/L SAMPLE ID - 158 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 0.50 X 0.15 RELATIVE WEIGHT % - 4.18 ASH % - 26.84

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
1.40	17.37	4.97	17.37	4.97	82.63	30.52	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.25	1.25
1.45	16.91	8.22	34.28	6.57	65.72	36.25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.25	1.25
1.50	6.49	10.27	40.77	7.16	59.23	39.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.42	1.28
1.55	8.22	16.53	48.99	8.73	51.01	42.74	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.86	1.37
1.60	3.07	19.02	52.06	9.34	47.94	44.26	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.91	1.41
1.70	11.58	21.75	63.64	11.60	36.36	51.42	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.05	1.52
1.80	9.79	32.68	73.43	14.41	26.57	58.33	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.18	1.48
2.00	6.77	39.76	80.20	16.55	19.80	64.68	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.99	1.52
2.60	19.80	64.68	100.00	26.08	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.01	1.62

ANALYSIS TYPE - FROTH

FRACTION SIZE(MM) 0.15 X 0.00 RELATIVE WEIGHT % - 2.40 ASH % - 30.40

SG-TME	ELEMENTAL WT%	ELEMENTAL ASH%	CUM. FLOATS WT%	CUM. FLOATS ASH%	CUM. SINKS WT%	CUM. SINKS ASH%	FSI	CUM. FSI	C.V. (MJ|KG)	CUM. C.V.	S	CUM. S	VOL.	CUM. VOL.	MOIST	CUM. MOIST
240.00	*****	30.40	100.00	30.40	0.0	0.0	0.0	0.0	22.93	22.93	0.43	0.43	6.50	6.50	1.55	1.55

GULF CANADA CORPORATION - COAL DIVISION

CLEAN SIMULATED PRODUCT REPORT

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88029
Coal zone:	K/L		
Field sample no.:	08397	Composite sample no.:	283

PRODUCT COAL ANALYSIS (SP4)

Target Ash: 10.0 %

Standard:	ASTM	
Size analysis		
Fraction size(mm):	35.00 X	6.00
Cutpoint:	sp.g.	1.52
Contribution(%):		7.13
Total yield(%):		7.13

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture(%):	0.73	
Ash(%):	9.44	9.51
Volatile matter(%):	6.91	6.96
Fixed carbon(%):	82.92	83.53
Total sulphur(%):	0.58	0.58
Combustible sulphur(%):	0.54	
Gross calorific value(cal/g):	7,593.00	7,649.00
Volatile matter(dmmf%):	6.70	
Hardgrove index:	42.00	
Phosphorous in coal(%):	0.118	

ASH FUSION ANALYSIS (AF1)

	OXIDIZING ATM	REDUCING ATM
Initial temperature(°C):	1,245.00	1,190.00
Softening temperature(°C):	1,259.00	1,211.00
Hemispherical temperature(°C):	1,277.00	1,227.00
Final temperature(°C):	1,314.00	1,311.00

ASH MINERAL ANALYSIS (AM1)

SiO2(%):	52.30	TiO2(%):	1.91
Al2O3(%):	21.93	Na2O(%):	2.64
Fe2O3(%):	3.75	K2O(%):	0.84
CaO(%):	5.99	SO3(%):	1.15
MgO(%):	2.06	P2O5(%):	2.86

SAMPLE PRODUCT ID: SP3 COAL COMPOSITION ID: CC1 ULTIMATE ID:

========== GULF CANADA CORPORATION - COAL DIVISION ==========

---------- C L E A N S I M U L A T E D P R O D U C T R E P O R T ----------

February 20, 1989.

PROJECT:	KLAPPAN	DATA SOURCE:	KPNLRDDH88029
Coal zone:	K/L		
Field sample no.:	08394 - 08397	Composite sample no.:	378

---------- PRODUCT COAL ANALYSIS (SP3) ----------

Target Ash: 7.5 %

Standard:	ASTM	
Size analysis		
Fraction size (mm):	6.00 X	0.50
Cutpoint:	sp.g.	1.50
Contribution (%):		8.78
Total yield (%):		8.78

	AIR DRY BASIS	DRY BASIS
Proximate analysis		
Residual moisture (%):	0.90	
Ash (%):	7.25	7.32
Volatile matter (%):	7.06	7.12
Fixed carbon (%):	84.79	85.56
Total sulphur (%):	0.60	0.61
Combustible sulphur (%):	0.56	
Gross calorific value (cal/g):	7,796.00	7,867.00
Volatile matter (dmmf%):	6.90	
Hardgrove index:	49.00	
Phosphorous in coal (%):	0.058	

---------- ASH FUSION ANALYSIS (AF1) ----------

	OXIDIZING ATM	REDUCING ATM
Initial temperature (°C):	1,253.00	1,148.00
Softening temperature (°C):	1,290.00	1,264.00
Hemispherical temperature (°C):	1,317.00	1,285.00
Final temperature (°C):	1,448.00	1,443.00

---------- ASH MINERAL ANALYSIS (AM1) ----------

SiO2 (%):	50.82	TiO2 (%):	3.67
Al2O3 (%):	24.95	Na2O (%):	2.29
Fe2O3 (%):	4.12	K2O (%):	0.89
CaO (%):	3.86	SO3 (%):	1.32
MgO (%):	2.01	P2O5 (%):	1.84