



Energy, Mines and
Resources Canada

Énergie, Mines et
Ressources Canada

CANMET

Canada Centre
for Mineral
and Energy
Technology

Centre canadien
de la technologie
des minéraux
et de l'énergie

This document was produced
by scanning the original publication.

Ce document est le produit d'une
numérisation par balayage
de la publication originale.

PETROGRAPHIC ANALYSES OF THREE SMALL SAMPLES
OF COAL FROM THE WILDHAY PROPERTY
SUBMITTED BY DENISON MINES LIMITED

Project No. 03-1-3/13-4
Job No. 3413R

J. G. Jorgensen
Combustion and Carbonization Research Laboratory

FEBRUARY 1983

ENERGY RESEARCH PROGRAM
ENERGY RESEARCH LABORATORIES
DIVISION REPORT 83-09 (CF)

Declassified
Déclassifié

~~CONFIDENTIAL~~
Declassification Date:
March 1, 1984

CONTENTS

	<u>Page</u>
INTRODUCTION	1
REFERENCES.....	2
APPENDIX 1	5

TABLES

No.

1. Petrographic analysis of component coals.....	3
---	---

FIGURES

1. Predicted stability factors from petrographic data of component coals.....	4
--	---

PETROGRAPHIC ANALYSIS OF THREE DRILL CORE SAMPLES
FROM THE WILDHAY PROPERTY SUBMITTED BY
DENISON MINES LIMITED

Project 03-1-3/13-4
Job No. 3413R

by

J. G. Jorgensen

INTRODUCTION

This investigation involved the petrographic analyses of three drill core samples taken from the Wildhay Property in the Alberta Foothills near Hinton and submitted by Denison Mines Limited.

The project was initiated by R. Sagi, Chief Geologist, Coal Division, Denison Mines Limited in a letter dated November 3, 1982. A copy of the letter is included in Appendix 1.

The results of the petrographic analysis of the three Wildhay's coal samples appear in Table 1.

REFERENCES

1. ASTM Designation: D388-66; "Classification of Coals by Rank"
2. ASTM Designation: D720-67; "Test for Free Swelling Index of Coal"
3. ASTM Designation: D2639-71; "Test of Plastic Properties of Coal by the Constant-Torque Gieseler Plastometer". (Constant torque plastometer used with a torque of 40 gram-inch; start, 1 dd/m; fusion, 55 dd/m; final, 1dd/m; solidification, no movement; range-temp., between start and final temperatures).
4. Burrough, E. J. "Specific Volatile Index"; Fuel Division Memorandum 97/58-CG; Fuels and Mining Practice Division, Mines Branch, Department of M and TS; Ottawa, Canada
5. German Industrial Specification No. DIN 51739/March 1951.
6. ASTM Designation; D2797-72; "Preparing Coal Samples for Microscopical Analysis by Reflected Light".
7. ASTM Designation; D2798-72; "Determining Microscopically the Reflectance of the Organic Components in a Polished Speciment of Coal".
8. ASTM Designation; D2799-72; "Microscopical Determination of Volume Per Cent of Physical Components of Coal".
9. Schapiro, N., Gray, R. J. "Petrographic Classification Applicable to Coals of All Ranks"; Proc III; Min. Inst; 1960, 68, 83-97.

Table 1 - Petrographic analysis of component coals

<u>Identification</u>			
Laboratory Number.....	2071	2072	2073
Description	Wildhay 2604	Wildhay 2611	Wildhay 2615
<u>Distribution of Vitrinite Types</u>			
V-6.....%			
V-7.....%			
V-8.....%			
V-9.....%			
V-10.....%			
V-11.....%			
V-12.....%	1.3		
V-13	31.7	8.2	0.5
V-14.....%	30.5	34.2	12.0
V-15.....%		20.2	29.2
V-16.....%		0.6	6.2
V-17.....%			
V-18.....%			
<u>Reactive Components</u>			
Total Vitrinite.....%	63.5	63.2	47.9
Reactive Semi-fusinite (1/3)....%	9.4*	5.4	18.0*
Exinite.....%	0.0	0.0	0.0
Total.....%	72.9	68.6	65.9
<u>Inert Components</u>			
Inert Semi-fusinite (2/3).....%	9.5**	10.7	18.1**
Micrinite.....%	2.5	2.2	4.0
Fusinite.....%	9.2	5.6	4.4
Mineral Matter.....%	5.9	7.2	7.6
Coke.....%		5.7	
Total.....%	27.1	31.4	34.1
<u>Petrographic Indices</u>			
Mean Reflectance.....%	1.39	1.47	1.53
Balance Index.....	2.28	3.47	4.71
Strength Index.....	6.35	6.73	6.87
Stability Index.....	59.3	52.8	43.4

*Reactive Semi-fusinite (1/2) **Inert Semi-fusinite (1/2)

STRENGTH INDEX

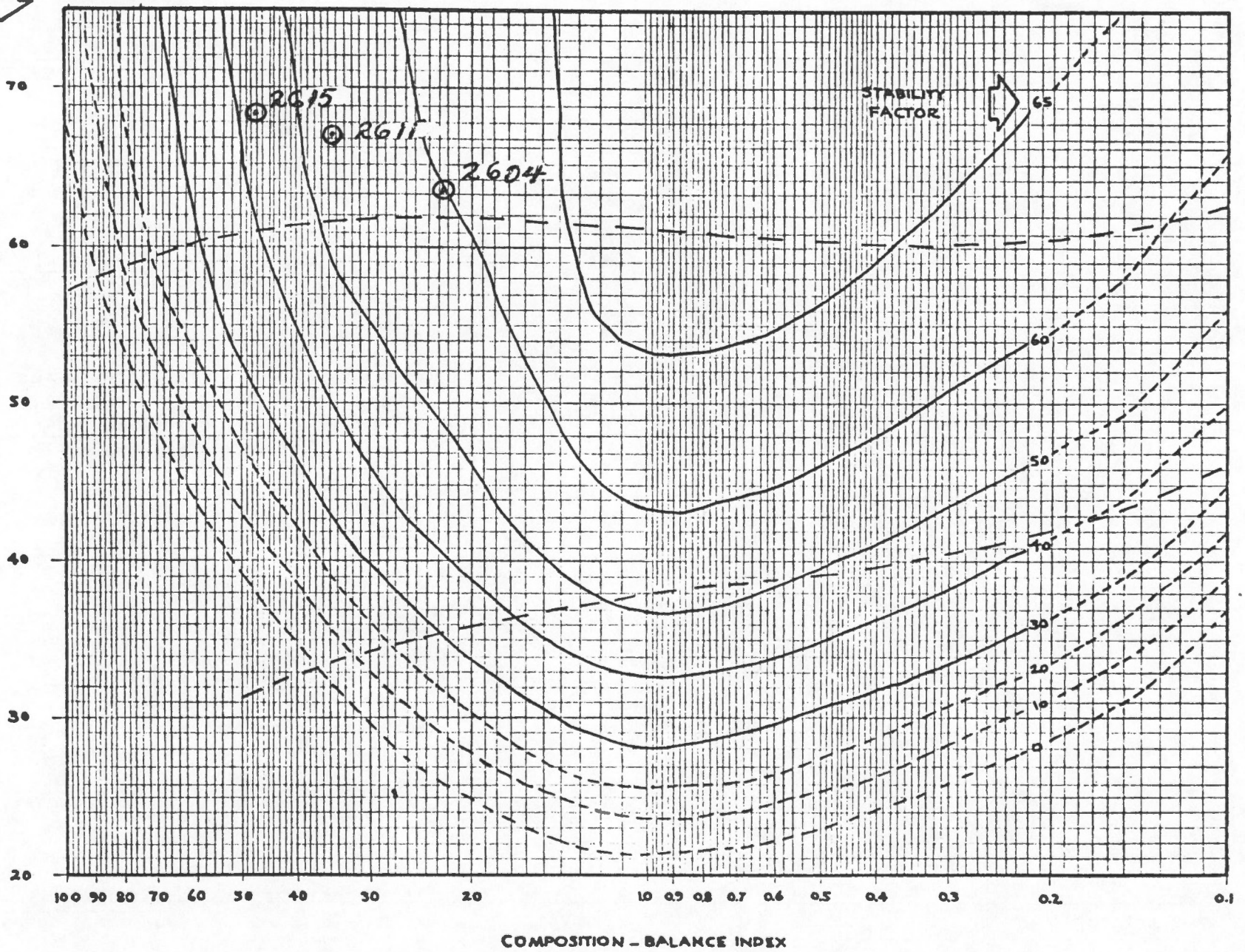


Fig. 1 - Predicted stability factors from petrographic data of component coals

APPENDIX 1

Letter dated November 3, 1982

from R. Sagi, Chief Geologist, Coal Division

Denison Mines Limited

Vancouver, British Columbia

DENISON MINES LIMITED

COAL DIVISION

P.O. BOX 11575
650 WEST GEORGIA STREET
VANCOUVER, B.C. CANADA V6B 4N7
TEL (604) 669-2226
TELEX 04-51547



November 3, 1982

Mr. George Lee, Manager
Carbonization and Combustion Laboratories
CANMET, Energy, Mines and Resources
Bells Corner Complex
555 Booth Street
Ottawa, Ontario
K1A 0G1

Dear Mr. Lee:

Denison Mines Limited has just completed an exploration programme on the Wildhay property in the Alberta Foothills, near Hinton (please refer to the attached map, for the location). We would like to request petrographic analyses at your facilities on our drill core samples, to establish the rank and maceral content of these coal seams.

Three drill core samples accompany this letter. They have been washed at 1.5 S.G. at the General Testing Laboratories here in Vancouver. The sample numbers are as follows:

WH 2604
WH 2611
WH 2615

Quality Information relevant to these samples can be found on the attached sheet.

We certainly appreciate your cooperation in handling these tests at your facilities.

Yours truly,

DENISON MINES LIMITED


R. Sagi
Chief Geologist

RS:smc

Encl.

cc: Mr. J.G. Jorgensen ✓

COMPONENT SAMPLES - Float/Sink at 1.50 S.G.
 1.50 FLOAT - Proximate, FEI
 1.50 SINK - Residual Moisture, Ash

TAG NO	AIR DRY		CALC. DRY		F/S	BASIS	YIELD %	R.P. %	ASH %	V.M. %	F.C. %	FST	S (dry)
	WEIGHT KG	HEAD	ASH	%									
WH 2504	0.7	19.46			F	AIR DRY	-	0.99	10.37	20.27	68.37	8.0	
							80.9	-	10.47	20.47	69.06	-	0.43
					S	AIR DRY	-	2.01	56.40	-	-	-	
							19.1	-	57.56	-	-	-	
WH 2511	4.6	42.86			F	AIR DRY	-	2.22	12.42	19.61	65.75	6.0	
							20.6	-	12.70	20.06	67.24	-	0.51
					S	AIR DRY	-	3.11	49.11	-	-	-	
							79.4	-	50.69	-	-	-	
WH 2513	0.4	49.66			F	AIR DRY	-	0.86	13.29	18.28	67.57	6.5	
							27.5	-	13.40	18.43	68.17	-	0.41
					S	AIR DRY	-	1.68	62.35	-	-	-	
							72.5	-	63.42	-	-	-	

