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CONFIDENTIAL  
FUEL RESEARCH INSTITUTE OF S.A.

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REPORT NO. 1972

VAN \_\_\_\_\_

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# BRANDSTOFNAVORSINGSINSTITUUT VAN SUID-AFRIKA

## FUEL RESEARCH INSTITUTE OF SOUTH AFRICA

SURVEY REPORT NO. 377

ONDERWERP:

SUBJECT: \_\_\_\_\_

REPORT ON THREE FACE SAMPLES TAKEN AT DUMBE

COLLIERY, PAULPIETERSBURG DISTRICT, NATAL

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AFDELING: SURVEY  
DIVISION: \_\_\_\_\_

NAAM VAN AMPTENAAR: H.P. BOSHOFF  
NAME OF OFFICER: \_\_\_\_\_

FUEL RESEARCH INSTITUTE OF SOUTH AFRICA

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REPORT NO. 14 OF 1972

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REPORT ON THREE FACE SAMPLES TAKEN AT DUMBE  
COLLIERY, PAULPIETERSBURG DISTRICT, NATAL

INTRODUCTION

During 1967 officers of the Institute took samples at three faces in the Dumbe Colliery, situated approximately 2 miles (3 km) to the south-east of Paulpietersburg, Natal.

No plan of the colliery or the location of the faces is available.

In Table 1 the description of samples taken is given, and Table 2 gives calorific values and proximate analyses on raw coal. In the appendix a brief description is given of the analytical methods used and their significance.

DISCUSSION

The Alfred seam, having thicknesses of 68, 70 and 71 inches, was sampled. Two shale bands of 4 inches occurred near the bottom of the seam, and 6 inches of shale in the upper part of the seam. Samples were taken of the whole face and a duplicate of the same face but excluding the shale bands.

Ash contents of the samples (including shale) ranged from 22,4% to 26,2% and between 18,1% and 20,9% on the duplicate samples. The moisture content of the sample taken at Face 1 was approximately 1% higher than that of the other two samples, probably due to weathering (swelling

number on the former was 0 and on all the latter  $\frac{1}{2}$  and dry ash-free calorific values are 0,2 to 0,3 lb/lb lower than at faces 2 and 3).

Average analyses for the three faces are as follows:-

	<u>Including shale bands</u>	<u>Excluding shale bands</u>
Thickness (Ins.)	70	59
Calorific Value (lb/lb)	11,0	11,8
Calorific Value (MJ/kg)	24,8	26,6
Moisture (%)	2,5	2,6
Ash (%)	23,7	19,6
Volatile Matter (%)	19,5	20,6
Fixed Carbon (%)	54,3	57,2

H.P. BOSHOFF  
SENIOR RESEARCH OFFICER

Pretoria.  
31st August, 1972  
HPB/EMc

TABLE 1

Face No.	Sample No.	Thickness Ins.	Description
<u>ALFRED SEAM</u>			
1	67/133B	( 20 ( 10 ( 6 ( 18 ( 4 ( 8 ( 4	Roof: Sandstone Bright coal Mixed mainly bright coal Shale Dull coal with bright bands Shale Dull coal Bright coal Floor: Shale
	A		As above but <u>excluding</u> the two shale bands.
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2	67/134B	( 26 ( 6 ( 7 ( 10 ( 8 ( 5 ( 4 ( 5	Roof: Sandstone Bright coal Shale Dull coal Bright coal Dull coal Bright coal Shale Bright coal Floor: Shale
	A		As above but <u>excluding</u> the two shale bands.
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3	67/135B	( 22 ( 7 ( 8 ( 10 ( 11 ( 3 ( 4 ( 3	Roof: Sandstone Bright coal Shale Dull coal Bright coal Dull coal Bright coal Shale Bright coal Floor: Shale
	A		As above but <u>excluding</u> the two shale bands

TABLE 2  
PROXIMATE ANALYSIS AND CALORIFIC VALUES,  
(AIR-DRY BASIS)

Face No.	Sample No.	Thickness In.		Analysis of Raw Coal					
		Excl- uded	Samp- led	Cal. Val. lb/lb	H <sub>2</sub> O %	Ash %	Vol. Mat. %	Fix. Carb. %	Sw. No.
				<u>ALFRED SEAM</u>					
1	67/133B		70	10,90	3,4	22,7	18,8	55,1	0
	A	10	60	11,78	3,3	18,1	20,1	58,5	0
2	67/134B		71	11,35	2,2	22,4	20,9	54,5	$\frac{1}{2}$
	A	10	61	11,82	2,3	20,0	21,5	56,2	$\frac{1}{2}$
3	67/135B		68	10,79	2,0	26,2	18,9	52,9	$\frac{1}{2}$
	A	11	57	11,71	2,1	20,9	20,1	56,9	$\frac{1}{2}$

NOTE: A samples duplicates of B samples but  
excluding shale bands.