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FUEL RESEARCH INSTITUTE OF SOUTH AFRICA.

TECHNICAL MEMORANDUM NO. 8 OF 1965.

A REPORT ON WASHABILITY TESTS CARRIED OUT ON  
SAMPLES OF COBBLES, NUTS AND PEAS FROM  
EIKEBOOM COLLIERY.

BY:  
P.J.F. FOURIE.

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INTRODUCTION:

The Fuel Research Institute of South Africa was requested by Eikeboom Colliery to conduct washability tests on samples of cobbles, nuts and peas from this colliery at specific gravities 1.50, 1.55 and 1.60. They also asked for phosphorus determinations on the different float fractions.

TREATMENT OF THE SAMPLES:

The coal was despatched by rail in an ES truck. The different grades (cobbles, nuts and peas) were not properly separated in the truck, and a fair amount of mixing occurred in transit. The truck was off-loaded onto a concrete slab, trying to keep the different grade sizes separate as far as possible.

While off-loading the truck the samples for analysis were taken by taking regular increments. Every eighth spade full of coal was considered as a sample increment and kept separately. By taking the described increments the following weights of samples were taken:-

Cobbles - 2312 lb.  
Nuts - 928 lb.  
Peas - 707 lb.

The total sample of 2312 lb. of cobbles was subjected to detailed float and sink analysis. The results are shown in Table 1. From the samples of the nuts and peas representative portions were cut out by using a suitable divider and 220 lb. nuts and 85 lb. peas respectively were subjected to float and sink analysis. The results are tabulated in tables 2 and 3.

The ash content of each float and sink fraction was determined. From these results, which are also shown in tables 1, 2 and 3; and the corresponding float and sink data, washability curves were drawn. See Figure 1.

As requested the phosphorus was determined on the float fractions and are also tabulated in tables 1, 2 and 3.

P.J.F. FOURIE.  
TECHNICAL OFFICER.

PRETORIA.  
23rd March, 1965.

TABLE 1.  
ANALYSIS OF THE COBBLES.

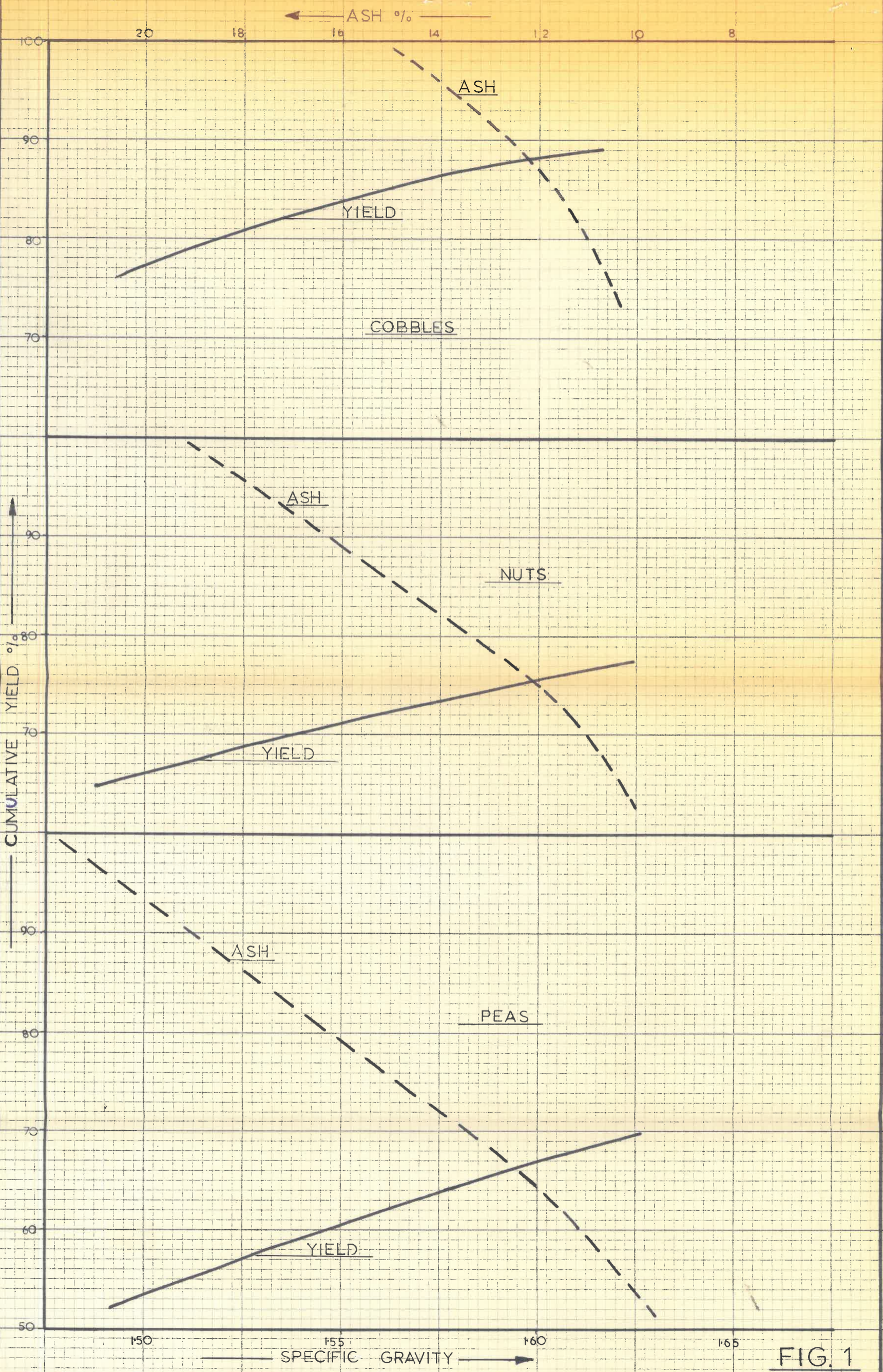
SPECIFIC GRAVITY	YIELD		ASH		PHOSPHORUS	
	FRACT. %	CUM. %	FRACT. %	CUM. %	FRACT. %	CUM. %
F.1.50	77.47	77.47	10.7	10.70	0.085	0.085
1.50-1.55	6.60	84.07	21.2	11.52	0.011	0.079
1.55-1.60	4.21	88.28	25.1	12.17	0.018	0.076
S.1.60	11.72	-	37.2	-	-	-
Total	100.00	100.00	-	15.11	-	-

TABLE 2.  
ANALYSIS OF THE NUTS.

SPECIFIC GRAVITY	YIELD		ASH		PHOSPHORUS	
	FRACT. %	CUM. %	FRACT. %	CUM. %	FRACT. %	CUM. %
F.1.50	66.08	66.08	10.4	10.40	0.096	0.096
1.50-1.55	5.04	71.12	21.7	11.20	0.022	0.091
1.55-1.60	4.80	75.92	25.2	12.09	0.019	0.086
S.1.60	24.08	-	41.6	-	-	-
Total	100.00	100.00	-	19.19	-	-

TABLE 3.  
ANALYSIS OF THE PEAS.

SPECIFIC GRAVITY	YIELD		ASH		PHOSPHORUS	
	FRACT. %	CUM. %	FRACT. %	CUM. %	FRACT. %	CUM. %
F.1.50	53.27	53.27	9.9	9.90	0.076	0.076
1.50-1.55	7.20	60.47	20.8	11.20	0.022	0.070
1.55-1.60	6.54	67.01	25.6	12.60	0.011	0.064
S.1.60	32.98	-	40.7	-	-	-
Total	99.99	99.99	-	21.87	-	-



**FIG. 1**