TR11-177-178

R. 526

30. GRAVEL FROM RUBICON ESTUARY

Introduction

Mr O. Harvey of Wivenhoe submitted a sample of gravel from his lease on the shore of the Rubicon Estuary in the Franklin River, Branch Creek area.

Primarily Mr Harvey was interested in supplying gravel to Savage River Mines for the starting up of their pelletizing plant, but other opportunities for the sale of water-worn gravel became apparent. One of these was with Broken Hill Pty Co. Ltd for use in filter beds.

B.H.P. Filter Gravel Specification (as supplied by Mr Harvey)

Type	*Size Range (mm)*	*Distribution (Per Cent)*	*Tons Required per Filter Bed*
1	2.5-2.0	35	470
	2.0-1.5	50	
	1.5-1.2	15	
2	7-6	5	20
	6-5	35	
	5-4	30	
	4-3	30	
3	15-7	100	30
4	25-15	100	10
5	35-25	100	10

All sizes must be water-worn, not crushed stone. The material should be quartz or quartzite of high purity.

Savage River Mines Specification (as supplied by Mr Harvey)

Water-worn gravel all minus 1 inch (25.4 mm), and all plus ¼ inch (6.3 mm). A high silica content is required.

Sizing of Gravel and Products that can be made from it

Fraction Aperture (mm)	*Sample 'as recd.' Weight Per Cent*	*Type 1 Gravel*		*Type 2 Gravel*		*Savage River Gravel Yield Per Cent*
		Weight Per Cent	*Yield*	*Weight Per Cent*	*Yield*	
+25.4	—					
9.5	21.1	....	....	....	....	45.1
6.3	24.0	....	....	*13.9	....	
3.9	39.0	....	....	64.3	60.6	
3.34	7.2	....	....	11.8		
2.81	6.1	....	....	10.0		
2.41	1.4					
2.05	0.2	23.8				
1.67	0.2	33.4	0.7			
1.40	0.2	26.2				
1.20	0.1	16.6				
— 1.20	0.5					
Total	100.0	100.0		100.0		

* By rejecting two-thirds of the minus 9.5 plus 6.3 mm fraction a product fulfilling Type 2 specification can be obtained.

From every 100 tons of gravel mined the following yield could be expected:—

B.H.P. Type 1 Gravel		0.7 tons
B.H.P. Type 2 Gravel		60.6 tons
Savage River Gravel		36.8 tons
Reject—		
Minus 1.2 mm	0.5 tons	
Minus 2.81 mm, plus 2.41 mm	1.4 tons	
		1.9 tons
		100.0 tons

To produce this five screens are required, namely:—9.5, 6.3, 2.8, 2.4 and 1.2 mm aperture, and provision to divide the minus 9.5 plus 6.3 fraction into thirds.

However, it should be noted that the yield of Type 1 gravel which is the major requirement is very low, and the Savage River demand is only limited (2000 tons) after fulfilment of which that fraction would be reject also.

Gravel Analysis

The gravels produced were analysed with the following results:—

Description	*Assays Per Cent*		
	SiO_2	Fe_2O_3	*Loss on Ignition*
B.H.P. Type 1 Gravel	90.7	2.9	2.9
B.H.P. Type 2 Gravel	94.6	5.6	0.1
Savage River Gravel	94.4	5.4	0.2