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BEACH SANDS INVESTIGATION.

SOUTH STRADBROKE ISLAND.
THE "TROUGH" AREA.

by

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SOUTHPORT, QUEENSLAND.

31st January, 1949.

DEPARTMENT OF SUPPLY & DEVELOPMENT.

Bureau of Mineral Resources, Geology and Geophysics.

Report No.

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BEACH SANDS INVESTIGATION.

THE "TROUGH" AREA, SOUTH STRADBROKE ISLAND.

A plan (No. Q25-13A-11) and sections of the area are given at the back of this report.

The "Trough" Area extends parallel to and 200 to 300 feet west of the eastern beach from approximately 4800 feet north of the zero-line shown on the locality plan, to 6000 feet south of the zero-line. It has a flat sandy floor 150 to 200 feet wide, and a foot or two below high-water level. The "trough" is bounded on the east by the fore-dunes, and on the west by an area of shifting sand which rises sharply to elevations of 25 to 35 or 40 feet. Deposits of heavy minerals occur at or near the surface along the western edge of the trough at the following localities (referred to the zero-line shown in the locality plan):-

- (a) From approx. 3600 feet north to 2800 feet north,
- (b) From 2100 feet north to 1100 feet north,
- (c) From 460 feet north to 360 feet north,
- (d) From 50 feet north to 320 feet south,
- (e) From 700 feet south to 900 feet south,
- (f) From 1280 feet south to 1600 feet south,
- (g) From 2100 feet south to 2400 feet south,
- (h) From 3600 feet south to 3800 feet south.

A previous report (No. 1948/67) has given an estimate of the quantities of heavy minerals occurring from 2100 feet north to 1100 feet north. The following report deals with the remaining areas. Of these, only (c), (d) and (f) (from 460 feet north to 360 feet north, 50 feet north to 320 feet south, and from 1280 feet south to 1600 feet south respectively), are considered workable, a grade of 5% heavy mineral being taken as the economic minimum. The tonnages of heavy minerals from the previous report are incorporated herein, in order to give a complete figure for the whole area.

SAMPLING.

The area was sampled during the 8th and 9th September, 1948, where the heavy minerals were at or close to the surface, samples were obtained from shovel holes. Where the mineral was at some depth below the surface, the samples were obtained from bores put down with a post-hole digger.

DETERMINATION OF SAMPLES.

Samples were dried, and their weights and volumes determined. The samples were then concentrated by panning, and the weights and volumes of the dry concentrates were determined. The percentage composition of a composite sample of concentrates from bore lines in each of the areas, was determined by grain counting.

RESULTS.

Estimates of the quantities and grades of heavy mineral concentrates, the quantities of overburden, and the quantities of each of the heavy minerals are tabulated in this report as follows :-

Table 1 - Tonnage of Heavy Mineral Concentrate, Volumes and Average Thicknesses of Mineral-Bearing Sands and of Overburden, and Average Grade of Mineral-Bearing Sands.

Table 2 - Tonnages of Each of the Heavy Minerals.

The figures of Tables 1 and 2 were derived from data tabulated in the appendix as follows :-

A p p e n d i x.

Table A. Quantities of Heavy Minerals Intersected in Bores.

Table B. Weight of Mineral in 1 Yard Strip along Bore Lines.

Table C. Volume and Average Thickness of Mineral-Bearing Sand along Bore Line.

Table D. Volume and Average Thickness of Overburden along Bore Line.

Table E. Average Weight of Heavy Mineral Concentrate per 1 Yard Strip between Bore Lines, and Average Area of Longitudinal Section of Mineral-Bearing Sands and of Overburden between Bore Lines.

Table F. Total weight of Heavy Mineral Concentrate, Total Volume of Mineral-Bearing Sands, and Total Volume of Overburden between Bore Lines.

Table G. Average Thickness of Mineral-Bearing Sands and of Overburden.

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TABLE 1.

TONNAGES OF HEAVY MINERAL CONCENTRATE, VOLUMES AND AVERAGE THICKNESSES OF MINERAL-BEARING SANDS AND OF OVERBURDEN, AND AVERAGE GRADES OF MINERAL-BEARING SANDS.

AREA BETWEEN BORE LINES.	WEIGHT OF HEAVY MINERAL CONCENTRATE.	VOLUME		AVERAGE THICKNESSES				AVERAGE GRADE OF MINERAL-BEARING SANDS.
	(TABLE F.)	MINERAL-BEARING SANDS	OVER-BURDEN	MINERAL-BEARING SANDS	OVER-BURDEN			LBS. OF HEAVY MINERAL CONCENTRATE PER CUB YD
	TONS	CUBIC YDS.	CUBIC YDS.	FEET	INCHES	FEET	INCHES	
2100N - 1100N. (From Report No. 1)	227.2	2042.7	1882.2	1	1.9	1	0.8	249.1
460N - 362N.	6.1	82.9	49.1	0	6.9	0	5.6	159.2
52N - 320S.	74.2	389.0	867.6	0	7.6	1	6.7	427.2
12768 - 15068	11.1	76.6	372.8	0	3.7	1	0.9	344.9
TOTAL :-	318.6	2591.2	3171.7	0	8.0	1	0.5	295.1

TOTAL TONNAGES FOR AREAS

(2100N - 1100N
(500N - 300N
(100N - 400S
(1200S - 1400S

TABLE # 2.

TONNAGES OF EACH OF THE HEAVY MINERALS

ESTIMATED FROM PERCENTAGE COMPOSITIONS DETERMINED BY GRAIN COUNTING

AREA BETWEEN BORE LINES.	TONNAGES OF HEAVY MINERAL CONCENTRATES.	PERCENTAGE COMPOSITIONS & TONNAGES OF HEAVY MINERALS.											
		M O N A Z I T E		Z I R C O N		R U T I L E		I L M E N I T E		G A R N E T		O T H E R M I N E R A L S	
		%	TONS	%	TONS	%	TONS	%	TONS	%	TONS	%	TONS
2100N - 1100N	227.2												
500N - 300N	6.1												
100N - 400S	74.2	0.5	1.6	27.9	88.9	33.3	106.1	32.6	103.9	1.9	6.1	3.8	12.1
1200S - 1400S	11.1												
TOTAL -	318.6												

z (From Report No.

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APPENDIX.

TABLE A.

Page 1.

QUANTITIES OF HEAVY MINERALS INTERSECTED IN BORES.

500N - 300N.

BORE NO. & R. L.	CO-ORDINATES FROM	SAMPLE NO.		DEPTH		QUANTITY OF HEAVY MINERALS		THICKNESS OF SAMPLE (FT.) X (LBS. PER CU. YD).	REMARKS.
		FIELD	LABOR- ATORY	FROM	TO	LBS PER CU. YD.	WT. PER CENT		
Line 460N.									
322	460N/258W	1		0'3"	0'6"	226.3	8.1	56.6	Overburden: 3"
326	460N/246W	1		0'9"	1'0"	269.7	9.8	67.4	Overburden: 9"
LINE 438N.									
323	438N/309W			2'	2'6"	Very light traces. No sample.			
321	438N/279W	1		0'0"	0'3"	436.2	15.6	109.1	No overburden.
		2		0'8"	0'11"	153.3	5.7	38.4	
				Thickness of 0'11".		160.9		147.5	
320	438N/249W	1		0'3"	0'10"	224.3	8.1	130.9	Overburden: 3"
328	438N/240W	1		0'6"	0'9"	ESTIMATE 628.4	(Heavy Rainbow) 20.0	157.1	Overburden: 6"

500W - 300W.

BORE NO. & R.L.	CO-ORDINATES FROM	SAMPLE NO.		DEPTH		QUANTITY OF HEAVY MINERALS		THICKNESS OF SAMPLE (FT.) X (LBS. PER CU. YD).	REMARKS.
		FIELD	LABORATORY	FROM	TO	LBS PER CU. YD.	WT. PER CENT		
LINE 388W.									
318	388W/278W	1		0'11"	1'2"	240.2	8.3	60.05	Overburden 0'11"
		2		1'6"	1'10"	133.8	5.0	44.6	
				Thickness of 0'11"	124.1		104.65		
327	388W/260W	1		0'9"	0'11"	591.6	20.0	98.6	Overburden 0'9"
LINE 362W.									
324	362W/278W	1		1'0"	1'10"	99.6	3.6	83.0	
319	362W/250W			0'0"	0'3"	Light Traces.	No sample.		
325	362W/242W			0'	0'2"	) Light Traces.	No sample.		
				3'	3'6"			)	

APPENDIX. TABLE B.

WEIGHT OF MINERAL IN 1 YARD STRIP ALONG BORE LINE.

500M - 300M.

BORE NOS.	LBS. OF MINERAL PER SQ. YD. AT BORE. (FROM TABLE A.)	AVERAGE LBS. WEIGHT OF MINERAL PER SQ. YD. BE- TWEEN BORES.	DISTANCE BETWEEN BORES (YDS) (FROM TABLE A.)	WEIGHT OF MINERAL In 1 YD. STRIP BE- TWEEN BORES (LBS)
LINE 460M. 322	56.6 = 18.87	41.34 = 20.7	4	82.8
326	<u>67.4</u> = 22.47	<u>2</u>		
LINE 435M. 323	No sample.	49.17 = 24.6	10	246.0
321	<u>147.5</u> = 49.17	<u>2</u>		
321	49.17			
320	<u>130.9</u> = 43.63	<u>92.80</u> = 46.4	10	464.0
320	43.63			
328	<u>157.1</u> = 52.37	<u>96.00</u> = 48.0	3	144.0
	<u>3</u>	<u>2</u>		
TOTAL 323 - 328			23	854.0
LINE 388M. 318	253.65 = 34.88	67.75 = 33.9	6	203.4
327	<u>98.6</u> = 32.87	<u>2</u>		
LINE 362M. 324	<u>83.0</u> = 27.67	<u>27.67</u> = 13.84	9	124.56
319	No sample.	<u>2</u>		
319	No sample.			
325	No sample.	-		

APPENDIX. TABLE C. VOLUME AND AVERAGE THICKNESS OF MINERAL-BEARING SAND ALONG BORE LINE.

500H - 300H.

BORE NO.	THICKNESS (TABLE A.)			DISTANCE BETWEEN BORES. (TABLE A.)	AREA OF LONGITUDINAL SECTION BETWEEN BORES.		COMPLETE BORE LINE		
	AT BORE	AV. BETWEEN BORES					AV. THICKNESS	VOLUME OF 1YD. STRIP	
	INCHES	INCHES	FEET		FEET	SQ. FEET	SQ. YDS.	FEET	INCHES
LINE 460H. 322	3	-	0.25	12	3.00	0.33	0.25	3	0.33
326	3								
LINE 438H. 323	6	8.5	0.71	30	21.3	2.37			
321	11								
321	11	9	0.75	30	21.5	2.4			
320	7								
320	7	5	0.42	9	3.78	0.42			
328	3								
TOTAL 323-328				69	46.58	5.19	0.67	8.0	5.19
LINE 388H. 318	11	6.5	0.54	18	9.72	1.08	0.54	6.5	1.08
327	2								
LINE 362H. 324	10	5	0.42	27	11.34	1.26	0.42	5.0	1.26
319	Traces.								

APPENDIX

TABLE D.

VOLUME AND AVERAGE THICKNESS OF OVERBURDEN ALONG BORE LINE.

500M - 300M.

BORE NO.	THICKNESS (TABLE A.)		DISTANCE BETWEEN BORES (TABLE A.)	AREA OF LONGITUDINAL SECTION BETWEEN BORES.		COMPLETE BORE LINE.		
	AT BORE	AVERAGE RE- TWEEN BORES				AVERAGE THICKNESS	VOLUME OF 1YD STRIP	
	FEET	FEET	FEET	SQUARE FEET	SQUARE YARDS	FEET	INCHES.	CUBIC YARDS
LINE 460M.								
322	0.25	0.5	12	6.0	0.67	0.5	6.0	0.67
326	0.75							
LINE 438M.								
323	-	0	30	0	0			
321	0.0							
321	0.0	0.13	30	5.4	0.43			
320	0.25							
320	0.25	0.38	9	3.42	0.38			
328	0.5							
TOTAL: 323 - 328.			69	7.29	0.81	0.11	1.3	0.81
LINE 388M.								
318	0.92	0.84	18	15.12	1.68	0.84	10.1	1.68
327	0.75							
LINE 362M.								
324	1.0	1.0	28	28.0	3.11	1.0	12.0	3.11
319	low grade.							
319	-	-						
325	-							

APPENDIX: TABLE. E.
500M - 300M.

AVERAGE WEIGHT OF HEAVY MINERAL CONCENTRATE PER 1 YARD STRIP BETWEEN BORE LINES, AND AVERAGE AREA OF LONGITUDINAL SECTION OF MINERAL-BEARING SANDS AND OF OVERBURDEN BETWEEN BORE LINES.

LINES	A T T O I N G B O R E L I N E S			A V E R A G E B E T W E E N B O R E L I N E S		
	WEIGHT OF MINERAL PER 1 YARD STRIP.	AREA OF LONGITUDINAL SECTION OF		WEIGHT OF MINERAL PER 1 YARD STRIP.	AREA OF LONGITUDINAL SECTION OF	
	FROM TABLE B.	MINERAL-BEARING SANDS	OVERBURDEN		MINERAL-BEARING SANDS	OVERBURDEN
	LBS.	FROM TABLE C.	FROM TABLE D.			
	LBS.	SQ. YARDS	SQ. YARDS	LBS.	SQ. YARDS	SQ. YARDS
460N	82.8	0.33	0.67			
438N	854.0	5.19	0.81	468.4	2.76	0.74
438N	854.0	5.19	0.81			
388N	203.4	1.08	1.68	528.7	3.14	1.25
388N	203.4	1.08	1.68			
362N	124.56	1.26	3.11	164.0	1.17	2.40

APPENDIX.

TABLE F.

500M - 300M.

TOTAL WEIGHT OF HEAVY MINERAL CONCENTRATE, TOTAL VOLUME OF MINERAL-BEARING SANDS AND TOTAL VOLUME OF OVERBURNEN BETWEEN BORE LINES.

BORE LINES (TABLE A.)				WT. OF HEAVY MIN. CONC.		VOL. OF MINERAL-BEARING SANDS		VOL. OF OVERBURDEN	
DESIG- NATION	LENGTH	DISTANCE BETWEEN	AREA BETWEEN	AV. PER 1 YD. STRIP (TABLE E.)	TOTAL BE- TWEEN LINES	AV. AREA OF LONGI- TUDINAL SECTION. (TABLE E.)	VOL. BETWEEN BORE LINES.	AV. AREA OF LONG. SECTION (TABLE E.)	VOL. BETWEEN BORE LINES.
Y	YDS.	YDS.	SQ. YDS.	LBS.	TONS	SQ. YDS.	CU. YDS.	SQ. YDS.	CU. YDS.
460W	4								
438W	23	$\frac{22}{3}$	99.0	468.4	3434.2 lbs. 1.53 tons.	2.76	20.24	0.83	6.16
438W	23								
388W	6	$\frac{50}{3}$	242.5	528.7	8810 lbs. 3.93 tons.	3.14	52.5	1.25	21.0
388W	6								
362W	9	$\frac{26}{3}$	65.0	164.0	1422.2 lbs. 0.63 tons.	1.17	10.14	2.40	20.8
<u>TOTAL.</u>				1161.1	13,666.4 lbs. 6.09 tons.				

180N - 400E.

BORE NO. & R. L.	CO-ORDINATES FROM	SAMPLE NO.		DEPTH		QUANTITY OF HEAVY MINERALS		THICKNESS OF SAMPLE (FT.) X (LBS. PER CU. YD).	REMARKS.
		FIELD	LABOR- ATORY	FROM	TO	LBS PER CU. YD.	WT. PER CENT		
LINE 052N.									
316	052N/296W.	1		0'0"	5'6"	12.53	0.53		
288	052N/263W.	1		0'0"	0'4"	45.17	1.7		
		2		1'	1'7"	52.91	2.0		
311	052N/248W	1		0'2"	0'7"	60.45	2.3		
312	052N/236W	1		0'0"	0'6"	64.62	2.4		
313(b)	052N/218W	1		0'10"	1'2"	Trace			
LINE 018E.									
315	018E/301W	1		1'10"	2'6"	492.1	5.6	328.1	Overburden: 1'10"
287	018E/265W	No sample		0 1'4"	5" 1'5"	} Traces			
310	018E/256W	1		0'6"	0'10"		48.64	1.8	
317	018E/241W	1		0'5"	0'8"	744.0	23.8	186.0	Overburden: 5".
		2		1'2"	1'5"	97.23	3.6		

APPENDIX. TABLE A. PAGE 2.
100M - 400M.

QUANTITIES OF HEAVY MINERALS INTERSECTED IN BORES.

BORE NO. & R.L.	CO-ORDINATES FROM	SAMPLE NO.		DEPTH		QUANTITY OF HEAVY MINERALS		THICKNESS OF SAMPLE (FT.) X (LBS. PER CU. YD).	REMARKS.
		FIELD	LABOR- ATORY	FROM	TO	LBS PER CU. YD.	WT. PER CENT		
LINE 0768. 314	0768/308W	1		3'6"	3'10"	258.9	8.9	86.3	Overburden: 3'6"
286	0768/278W	1		0'6"	1'0"	592.7	19.8	296.4	Overburden: 0'6"
309	0768/260W	1		0'8"	0'11"	Trace			
LINE 1228. 313(a)	1228/321W	1		2'2"	2'10"	222.4	7.9	148.3	Overburden: 2'2"
		2		2'10"	4'0"	793.4	25.3	925.6	
				Thickness	1'10"	585.6		1073.9	
285	1228/285W	1		0'8"	1'2"	453.5	15.1	226.8	Overburden: 0'8"
		2		1'6"	1'11"	99.47	3.3		
307	1228/276W	1		0'7"	0'10"	70.63	2.6		

QUANTITIES OF HEAVY MINERALS INTERSECTED IN BORES.

BORE NO. & R. L.	CO-ORDINATES FROM ZERO.	SAMPLE NO.		DEPTH		QUANTITY OF HEAVY MINERALS		THICKNESS OF SAMPLE (FT.) X (LBS. PER CU. YD).	REMARKS.
		FIELD	LABOR- ATORY	FROM	TO	LBS PER CU. YD.	WT. PER CENT		
<u>LINE 190S.</u> 306	190S/324W.	1		4'0"	5'0"	378.4	13.2	378.4	Overburden: 4'0"
284	190S/291W.	1		2'1"	2'8"	161.3	5.8	94.1	Overburden: 2'1"
302	190S/282W.	1		0'0"	0'5"	188.9	6.9	78.7	No overburden.
		2		1'3"	1'9"	217.5	7.6	108.8	Overburden: 10"
				Thickness		1'9"		187.5	
303	190S/276W.	1		0'3"	1'1"	120.8	4.4		
<u>LINE 220S.</u> 305	220S/340W.	No sample.		4'4"	4'8"	} Traces.			
				5'4"	6'				
				7'6"	8'				
298	220S/319.	1		3'6"	4'8"	61.4	2.2		
296	220S/307W.	1		1'10"	2'4"	390.0	13.3	195.0	Overburden: 1'10"
		2		2'9"	3'3"	268.9	9.6	134.5	Overb.: 1'10" + 0'5"
				Thickness:		1'5"		329.5	

APPENDIX.

TAB. I A. PAGE 4.

QUANTITIES OF HEAVY MINERALS INTERSECTED IN BORES.

100W - 400S.

BORE NO. & R. L.	CO-ORDINATES FROM ZERO.	SAMPLE NO.		DEPTH		QUANTITY OF HEAVY MINERALS		THICKNESS OF SAMPLE (FT.) X (LBS. PER CU. YD).	REMARKS.
		FIELD.	LABOR- ATORY	FROM	TO	LBS PER CU. YD.	WT. PER CENT		
LINE 220S. (Contd.)									
297	220S/292W	1		0'0"	0'4"	74.5	2.7		
		2		1'8"	2'4"	234.5	8.0	156.3	Overburden: 1'8"
301	220S/274W	1		0'8"	1'1"	137.5	4.8		
LINE 252' SOUTH.									
295	252S/340W	No sample.		At 6'.		Light trace.			
308	252S/328W	1		0'1"	0'7"	153.0	5.4	76.5	Overburden: 0'1"
		2		1'0"	1'3"	421.9	14.3	105.5	Overburden: 0'1"+1'0"
				Thickness:	1'2"	156.0		182.0	
293	252S/310W	1		1'0"	1'9"	362.2	12.5	271.7	Overburden: 1'0"
294	252S/298W	1		1'8"	2'6"	610.9	20.5	509.1	Overburden: 1'8".
300	252S/280W	1		0'9"	1'1"	40.4	1.5		Overburden: 0'9".

QUANTITIES OF HEAVY MINERALS INTERSECTED IN BORES.

100W - 4009.

[illegible]

100% - 400%.

BORE NOS.	LBS. OF MINERAL PER SQ. YD. AT BORE. (FROM TABLE A.)	AVERAGE LBS. WEIGHT OF MINERAL PER SQ. YD. BE- TWEEN BORES.	DISTANCE BETWEEN BORES (YDS) (FROM TABLE A.)	WEIGHT OF MINERAL In 1 YD. STRIP BE- TWEEN BORES (LBS.)
LINE 0528.				
316	)			
288	)			
288	)			
311	) LOW			
311	)			
312	) GRADE			
312	)			
313(b)	) (less than 5%).			
LINE 0188.				
315	$\frac{328.1}{3} = 109.4$	$\frac{109.4}{2} = 54.7$	12	656.4
287	No sample.			
287	No sample.	-	3	
310	Low grade.			
310	Low grade.			
317	$\frac{186.0}{3} = 62.0$	$\frac{62.0}{2} = 31.0$	5	155.0
TOTAL: 315-317			17 (+ 3 yds. low grade).	811.4

1001 - 4002.

BORE NOS.	LBS. OF MINERAL PER SQ. YD. AT BORE. (FROM TABLE A.)	AVERAGE LBS. WEIGHT OF MINERAL PER SQ. YD. BE- TWEEN BORES.	DISTANCE BETWEEN BORES (YDS) (FROM TABLE A.)	WEIGHT OF MINERAL In 1 YD. STRIP BE- TWEEN BORES (LBS)
<u>LINE 0768.</u>				
314	$\frac{86.3}{3} = 28.8$	$\frac{127.6}{2} = 63.8$	8	510.4
286	$\frac{296.4}{3} = 98.8$			
286	98.8			
309	Trace	$\frac{98.8}{2} = 49.4$	6	296.4
TOTAL: 314 - 309.			14	806.8
<u>LINE 1228.</u>				
313(a)	$\frac{1073.2}{3} = 358.0$	$\frac{433.6}{2} = 216.8$	12	2601.6
285	$\frac{226.8}{3} = 75.6$			
285	75.6			
307	Low grade.	$\frac{75.6}{2} = 37.8$	3	113.4
TOTAL: 313(a) - 307.			15	2715.0
<u>LINE 1908.</u>				
306	$\frac{378.4}{3} = 126.1$	$\frac{160.8}{2} = 80.4$	11	884.4
284	$\frac{94.1}{3} = 31.4$			
284	31.4			
302	$\frac{187.5}{3} = 62.5$	$\frac{97.2}{2} = 48.6$	3	145.8
302	62.5			
303	Low grade.	$\frac{62.5}{2} = 31.25$	2	62.5
TOTAL: 306 - 303.			16	1092.7

100M - 400M.

BORE NOS.	LBS. OF MINERAL PER SQ. YD. AT BORE. (FROM TABLE A.)	AVERAGE LBS. WEIGHT OF MINERAL PER SQ. YD. BE- TWEEN BORES.	DISTANCE BETWEEN BORES (YDS) (FROM TABLE A.)	WEIGHT OF MINERAL In 1 YD. STRIP BE- TWEEN BORES (LBS)
LINE 220M. 305	No sample.	-	7	
298	Low grade.			
298	Low grade.			
296	$\frac{329.5}{3} = 109.8$	$\frac{109.8}{2} = 54.9$	4	219.6
296	109.8			
297	156.3	$\frac{266.1}{2} = 133.1$	5	665.5
297	156.3			
301	Low grade.	$\frac{156.3}{2} = 78.2$	6	469.2
TOTAL: 305- 301			15 (+ 7 low grade).	1354.3
LINE 252' S. 295	No sample (Trace).	$\frac{60.7}{2} = 30.4$	4	121.6
308	$\frac{182.0}{3} = 60.7$			
308	60.7	$\frac{151.3}{2} = 75.7$	6	454.2
293	$\frac{271.2}{3} = 90.6$			
293	90.6	$\frac{260.1}{2} = 130.2$	4	520.8
294	$\frac{509.1}{3} = 169.7$			
294	169.7	$\frac{169.7}{2} = 84.9$	6	509.4
300	Low grade.			
TOTAL: 295- 300.			20	1606.0

WEIGHT OF MINERAL IN 1 YARD STRIP ALONG BORE LINE.

100W - 400B.

BORE NOS.	LBS. OF MINERAL PER SQ. YD. AT BORE. (FROM TABLE A.)	AVERAGE LBS. WEIGHT OF MINERAL PER SQ. YD. BE- TWEEN BORES.	DISTANCE BETWEEN BORES (YDS) (FROM TABLE A.)	WEIGHT OF MINERAL In 1 YD. STRIP BE- TWEEN BORES (LBS)
LINE 2838.				
292	$\frac{244.2}{3} = 81.4$	$\frac{246.6}{2} = 123.3$	15	1849.5
283	$\frac{495.7}{3} = 165.2$			
283	165.2			
299	Low grade.	$\frac{165.2}{2} = 82.6$	4	330.4
TOTAL: 292-299.			19	2179.9
LINE 3208.				
290	$\frac{87.6}{3} = 29.2$	$\frac{242.7}{2} = 121.4$	6	728.4
282	$\frac{640.5}{3} = 213.5$			
282	213.5			
289	$\frac{87.8}{3} = 29.3$	$\frac{242.8}{2} = 121.4$	7	849.8
TOTAL: 290 - 289.			13	1578.2

PAGE 1.

VOLUME AND AVERAGE THICKNESS OF MINERAL-BEARING SAND ALONG BORE LINE.

LOG# 4003.

BORE NO.	THICKNESS (TABLE A.)			DISTANCE BETWEEN BORES. (TABLE A.)	AREA OF LONGITUDINAL SECTION BETWEEN BORES.		COMPLETE BORE LINE		
	AT BORE INCHLS	AV. BETWEEN BORES INCHES	FEET		FEET	SQ. FEET	SQ. YDS.	AV. THICKNESS FEET	INCHES
LINE 052N. 316 - 313(b) -	LOW GRADE.								
LINE 018S. 315	8								
287	Traces	4	0.33	36	11.88	1.32	0.33	4	1.32
287	Traces								
		-	-	(9)	-	-	-	-	-
310	Low grade.								
310	Low grade.								
		1.5	0.13	15	1.95	0.22	0.13	1.5	0.22
317	3								
TOTAL : 315 - 317				51 (+ 9 Low Grade).	13.83	1.54	0.27	3.2	1.54
LINE 076S. 314	4								
286	6	5	0.42	24	10.08	1.12			
286	6								
		3	0.25	18	4.5	0.5			
309	Traces								
TOTAL: 314 - 309				42	14.58	1.62	0.35	4.2	1.62

APPENDIX. TABLE C. PAGE 3.
1000 - 4000.

VOLUME AND AVERAGE THICKNESS OF MINERAL-BEARING SAND ALONG BORE LINE.

BORE NO.	THICKNESS (TABLE A.)			DISTANCE BETWEEN BORES. (TABLE A.) FEET	AREA OF LONGITUDINAL SECTION BETWEEN BORES.		COMPLETE BORE LINE		
	AT BORE	AV. BETWEEN BORES	SQ. FEET		SQ. YDS.	AV. THICKNESS		VOLUME OF 1 YD. STRIP CUBIC YDS.	
	INCHES	INCHES				FEET	INCHES		
LINE 2205. 305	No sample	-	-	(21)					
298 298	Low grade								
296 296	Low grade	8.5	0.71	12	8.52	0.95			
296 296	17								
296 296	17	12.5	1.04	15	15.60	1.73			
297 297	8								
297 297	8	4.0	0.33	18	5.94	0.66			
301 TOTAL:	Low grade								
305 - 301.				45 (+ 21 Low Grade)	30.06	3.34	0.67	8.0	3.34
LINE 2525. 295	No sample								
308 308	14	7.0	0.58	12	6.96	0.77			
308 308	14								
293 293	9	11.5	0.96	18	17.28	1.92			
293 293	9								
294 294		9.5	0.79	12	9.48	1.05			
294 294	10								
294 294	10	5.0	0.42	18	7.56	0.84			
300	Low Grade								
TOTAL: 295-300				60	41.28	4.58	0.69	8.3	4.58

IOX-4008.

BORE NO:	THICKNESS (TABLE A.)		DISTANCE BETWEEN BORES (TABLE A.)	AREA OF LONGITUDINAL SECTION BETWEEN BORES.		COMPLETE BORE LINE.		
	AT BORE	AVERAGE BE- TWEEN BORES		SQUARE FEET	SQUARE YARDS	AVERAGE THICKNESS		VOLUME OF 1YD STRIP
	FEET	FEET				FEET	INCHES	
LINE 052 N. 316 - 313(b)	LOW GRADE.							
LINE 0183. 315 287	1.83 No sample.	1.83	36	65.88	7.32			
287 310	No sample. Low grade.	-	(9)	-	-	-	-	-
310 317	Low grade. 0.42	- 0.42	15	6.30	0.70			
TOTAL : 315- 317			51 (+ 9 Low Grade)	72.18	8.02	1.42	17.0	8.02

VOLUME AND AVERAGE THICKNESS OF OVERBURDEN ALONG BORE LINE.

1000 - 4000.

BORE NO.	THICKNESS (TABLE A.)		DISTANCE BETWEEN BORES (TABLE A.)	AREA OF LONGITUDINAL SECTION BETWEEN BORES.		COMPLETE BORE LINE.	
	AT BOLE	AVERAGE BE- TWEEN BORES				AVERAGE THICKNESS	VOLUME OF 1YD STRIP
	FEET	FEET	FEET	SQUARE FEET	SQUARE YARDS	FEET INCHES	CUBIC YARDS
LINE 0769.							
314	3.5						
		2.0	24	48.0	5.33		
286	0.5						
286	0.5						
		0.5	18	9.0	1.0		
309	Trace Min.						
TOTAL :							
314 - 309			42	57.0	6.33	1.36 16.2	6.33
LINE 1228.							
313 (a)	2.17						
		2.84 = 1.42	36	51.12	5.68		
285	0.67						
285	0.67						
		0.67	9	6.03	0.67		
307	Low grade.						
TOTAL -							
313(a) - 307			45	57.15	6.35	1.27 15.2	6.35
LINE 1906.							
306	4.0						
		6.08 = 3.04	33	100.32	11.15		
284	2.08						
284	2.08						
		2.92 = 1.46	9	13.14	1.46		
302	0.84						
302	0.84						
		0.84	6	5.04	0.56		
303	Low grade.						
TOTAL:							
306 - 303			48	118.50	13.17	2.47 29.6	13.17

VOLUME AND AVERAGE THICKNESS OF OVERBURDEN ALONG BORE LINE.

100W - 400S.

BORE NO.	THICKNESS (TABLE A.)		DISTANCE BETWEEN BORES (TABLE A.)	AREA OF LONGITUDINAL SECTION BETWEEN BORES.		COMPLETE BORE LINE.	
	AT BORE	AVERAGE BETWEEN BORES				AVERAGE THICKNESS	VOLUME OF 1YD STRIP
	FEET	FEET	FEET	SQUARE FEET	SQUARE YARDS	FEET INCHES	CUBIC YARDS
LINE 2208.							
305	No sample.	-	(21)				
298	Low grade.						
298	Low grade.	2.25	12	27.00	3.00		
296	2.25						
296	2.25	$\frac{3.92}{2} = 1.96$	15	29.40	3.27		
297	1.67						
297	1.67	1.67	18	30.06	3.34		
301	Low grade.						
TOTAL:							
305 - 301.			45 (+ 21 L.G.)	86.46	9.61	1.92 23.0	9.61
LINE 2528.							
295	No sample						
		1.08	12	12.96	1.44		
308	1.08						
308	1.08	$\frac{2.08}{2} = 1.04$	18	18.72	2.08		
293	1.0						
293	1.0	$\frac{2.67}{2} = 1.33$	12	15.96	1.77		
294	1.67						
294	1.67	$\frac{2.42}{2} = 1.21$	18	21.78	2.42		
300	0.75						
TOTAL:							
295 - 300			60	69.42	7.71	1.16 13.9	7.71

100N - 400S.

BORE NO.	THICKNESS (TABLE A.)		DISTANCE BETWEEN BORES (TABLE A.)	AREA OF LONGITUDINAL SECTION BETWEEN BORES.		COMPLETE BORE LINE.		
	AT BORE	AVERAGE BE- TWEEN BORES				AVERAGE THICKNESS	VOLUME OF 1YD STRIP	
	FEET	FEET	FEET	SQUARE FEET	SQUARE YARDS	FEET	INCHES.	CUBIC YARDS
LINE 253S.								
292	0.50	$\frac{1.66}{2} = 0.83$	45	37.35	4.15			
283	1.16							
283	1.16	1.16	12	13.92	1.55			
299	Low grade.							
TOTAL:								
292 - 299			57	51.27	5.70	0.90	10.8	5.70
LINE 320S.								
290	0.25	$\frac{0.41}{2} = 0.21$	18	3.78	0.42			
282	0.16							
282	0.16	$\frac{1.66}{2} = 0.83$	21	17.43	1.94			
289	1.50							
TOTAL :								
290 - 289			39	21.21	2.36	0.54	6.5	2.36

AVERAGE WEIGHT OF HEAVY MINERAL CONCENTRATE PER 1 YARD STRIP BETWEEN BORE LINES, AND AVERAGE AREA OF LONGITUDINAL SECTION OF MINERAL-BEARING SANDS AND OF OVERBURDEN BETWEEN BORE LINES.

LINES	A T J I G B O R E L I N E S			A V E R A G E B E T W E E N B O R E L I N E S.		
	WEIGHT OF MINERAL PER 1 YARD STRIP.	AREA OF LONGITUDINAL SECTION OF		WEIGHT OF MINERAL PER 1 YARD STRIP.	AREA OF LONGITUDINAL SECTION OF	
		MINERAL-BEARING SANDS	OVERBURDEN		MINERAL-BEARING SANDS	OVERBURDEN
	FROM TABLE B. LBS.	FROM TABLE C. SQ. YARDS	FROM TABLE D. SQ. YARDS			
052H.	LOW	GRADE (less than 5%).				
0188	811.4	1.54	8.02	809.1	1.58	7.18
076s	806.8	1.62	6.33			
076s	806.8	1.62	6.33	1760.9	3.10	6.34
122S	2715.0	4.57	6.35			
122S	2715.0	4.57	6.35	1905.2	4.62	9.76
1908	1095.4	4.66	13.17			
1908	1092.7	4.66	13.17	1223.5	4.00	11.39
220S	1354.3	3.34	9.61			
220S	1354.3	3.34	9.61	1480.2	3.96	8.66
252S	1606.0	4.58	7.71			
252S	1606.0	4.58	7.71	1893.0	5.34	6.71
283S	2179.9	6.09	5.70			
283S	2179.9	6.09	5.70	1879.1	4.05	4.03
320S	1578.2	2.01	2.36			

TOTAL WEIGHT OF HEAVY MINERAL CONCENTRATE, TOTAL VOLUME OF MINERAL-BEARING SANDS AND TOTAL VOLUME OF OVERBURNEN BETWEEN BORE LINES.

BORE LINES (TABLE A.)				WT. OF HEAVY MIN. CONC.		VOL. OF MINERAL-BEARING SANDS		VOL. OF OVERBURDEN	
DESIG- NATION	LENGTH	DISTANCE BETWEEN	AREA BETWEEN	AV. PER 1 YD. STRIP (TABLE E.)	TOTAL BE- TWEEN LINES	AV. AREA OF LONGI- TUDINAL SECTION. (TABLE E.)	VOL. BETWEEN BORE LINES.	AV. AREA OF LONG. SECTION (TABLE E.)	VOL. BETWEEN BORE LINES.
Y	YDS.	YDS.	SQ. YDS.	LBS.	TONS	SQ. YDS.	CU. YDS.	SQ. YDS.	CU. YDS.
0.52 M.									
0183	17								
		31.3	485.2	809.1	25,325 lbs. 11.3	1.58	49.5	7.18	224.7
0768	14								
		15.3	221.9	1760.9	26,942 lbs. 12.0	3.10	47.4	6.34	96.0
1228	15								
		22.7	241.9	1905.2	43,248 lbs. 19.3	4.62	104.9	9.76	221.6
1908	16								
		10.0	155.0	1223.5	12,235 lbs. 5.5	4.00	40.0	11.39	113.9
2208	15								
		10.7	187.3	1480.2	15,838 lbs. 7.1	3.96	42.4	8.66	92.7
2528	20								
		10.3	200.9	1893.0	19,498 lbs. 8.7	5.34	55.0	6.71	69.1
2838	19								
		12.3	196.8	1879.1	23,113 lbs. 10.3	4.05	49.8	4.03	49.6
3208	13								
TOTAL :			1689.0		166,213 lbs. 74.2 tons.				

APPENDIX. TABLE G.

AVERAGE THICKNESSES OF MINERAL-BEARING SANDS AND OF OVERBURDEN.

BORE LINES (TABLE F.)		VOLUME (TABLE F.)		AVERAGE THICKNESS.			
DESIGNATION.	AREA BETWEEN LINES	MINERAL-BEARING SANDS	OVERBURDEN	MINERAL-BEARING SANDS		OVERBURDEN	
	SQUARE YARDS	CUBIC YARDS	CUBIC YARDS	FEET	INCHES	FEET	INCHES
0528.	LOW GRADE.						
0188 - 0768	485.2	49.5	224.7	0	3.7	1	4.7
0768 - 1228	221.9	47.4	960.0	0	7.7	1	3.6
1228 - 1908	241.9	104.9	221.6	1	5.6	2	9
1908 - 2208	155.0	40.0	113.9	0	9.3	2	2.5
2208 - 2528	187.3	42.4	92.7	0	8.2	1	5.8
2528 - 2838	200.9	55.0	69.1	0	9.9	1	0.4
2838 - 3208	196.8	49.8	49.6	0	9.1	0	9.1

QUANTITIES OF HEAVY MINERALS INTERSECTED IN BORES.

BORE. NO. & R. L.	CO-ORDINATES FROM	SAMPLE NO.		DEPTH		QUANTITY OF HEAVY MINERALS		THICKNESS OF SAMPLE (FT.) X (LBS. PER CU. YD).	REMARKS.
		FIELD	LABOR- ATORY	FROM	TO	LBS PER CU. YD.	WT. PER CENT		
LINE 12765. 249	12765/288W	1		No Sample.					
		1		0'3"	0'6"	228.3	8.2	57.1	Overburden: 0'3"
251	12765/321W	2		3'0"	3'6"	79.7	2.9		
				Thickness: 0'3"		228.3		57.1	
LINE 13128. 248	13128/240W	1		No Sample.					
		1		0'0"	3'0"	Traces			
250	13128/273W	2		3'6"	4'0"	342.6	12.3	171.3	Overburden: 3'6"
		3		5'3"	5'11"	194.1	6.8	129.4	Overb: 3'6" + 1'3"
				Thickness: 1'2"				300.7	
259	13128/280W	1		2'9"	3'6"	Traces			
		2		4'0"	4'3"	280.8	Estimated. 10.0	70.2	Overburden: 4'0"
				Thickness: 0'3"		280.8		70.2	
261	13128/288W	1		0'9"	1'1"	398.3	14.7	132.8	Overburden: 0'9"
247	13128/310W	1		No Sample.					

APPENDIX.

TABLE A. PAGE 2.
1200 - 1400.

QUANTITIES OF HEAVY MINERALS INTERSECTED IN BORES.

BORE NO. & R. L.	CO-ORDINATES FROM	SAMPLE NO.		DEPTH		QUANTITY OF HEAVY MINERALS		THICKNESS OF SAMPLE (FT.) X (LBS. PER CU. YD).	REMARKS.
		FIELD	LABOR- ATORY	FROM	TO	LBS PER CU. YD.	WT. PER CENT		
LINE 1358. 252	13585/268W	1		4'0"	4'2"	Traces			
260-A	13585/340W	1		8'3"	9'0"	11.1	0.4		
260	13586/349W	1		1'0"	1'4"	369.9	13.0	123.3	Overburden: 1'0"
LINE 13728. 257	13723/256W	1		0'4"	1'0"	450.6	15.4	75.1	Overburden: 0'4"
246	13723/271W.	1		1'3"	1'6"	30.7	1.1	7.7	
		2		3'3"	3'6"	100.1	1.6	25.0	
		Total		0'6"		65.4		32.7	
258	13726/299W	1		No Sample.					
LINE 14048. 255	14048/232W	1		0'0"	0'10"	307.7	14.1	256.4	No Overburden.
		2		0'10"	1'3"	14.7	0.6		
		Thickness:		0'10"				256.4	
245	14048/247W	1		0'0"	0'5"	514.1	17.6	214.2	No Overburden.
		2		0'7"	1'0"	Traces			
		Thickness:		0'5"		514.1		214.2	
256	14048/	No Record of this Bore.							

1200S - 1400S.

BORE NO. & R.L.	CO-ORDINATES FROM	SAMPLE NO.		DEPTH		QUANTITY OF HEAVY MINERALS		THICKNESS OF SAMPLE (FT.) X (LBS. PER CU. YD).	REMARKS.
		FIELD	LABOR- ATORY	FROM	TO	LBS PER CU. YD.	WT. PER CENT		
<u>LINE 1442S.</u> 253	1442S/236W	1		0'0"	3'0"	Traces			
244	1442S/251W	1		0'6"	1'1"	559.9	18.8	326.9	Overburden: 0'6"
		2		1'7"	2'1"	66.4	2.4		
		Thickness:		0'7"		559.9		326.9	
<u>LINE 1472S.</u> 243	1472S/236W	No Sample.							
254	1472S/245W	1		0'10"	1'2"	361.5	12.2	120.5	Overburden: 0'10"
		2		1'6"	1'10"	34.3	1.2		
		Thickness:		0'4"		361.5		120.5	
<u>LINE 1506S.</u> 242	1506S/220W	1		0'0"	4'0"	Traces.			
<u>LINE 1532S.</u> 241	1532S/212W	1		4'0"	4'3"	Traces.			
<u>LINE 1566S.</u> 240	1566S/200W	No Sample.							
<u>LINE 1596S.</u> 239	1596S/184W	No Sample.							

APPENDIX.

TABLE B. **PAGE 1.**
12908 - 14008.WEIGHT OF MINERAL IN 1 YARD STRIP ALONG BORE LINE.

BORE NOS.	LBS. OF MINERAL PER SQ. YD. AT BORE. (FROM TABLE A.)	AVERAGE LBS. WEIGHT OF MINERAL PER SQ. YD. BE- TWEEN BORES.	DISTANCE BETWEEN BORES (YDS) (FROM TABLE A.)	WEIGHT OF MINERAL In 1 YD. STRIP BE- TWEEN BORES (LBS)
LINE 12768. 249	No sample			
251	$\frac{57.1}{3} = 19.0$	$\frac{19.0}{2} = 9.5$	11 (12)	104.5
LINE 13128. 248	No Sample.			
250	$\frac{300.7}{3} = 100.2$	$\frac{100.2}{2} = 50.1$	11	551.1
250	100.2			
259	$\frac{20.2}{3} = 23.4$	$\frac{123.6}{2} = 61.8$	2	123.6
259	23.4			
261	$\frac{132.8}{3} = 44.3$	$\frac{67.2}{2} = 33.85$	3	101.55
261	44.3			
247	No Sample.	$\frac{44.3}{2} = 22.15$	7	155.05
TOTAL: 248 - 247			23	931.30
LINE 13588. 262	Traces	-		
260-A	Low Grade		24	-
260-A	Low Grade			
260	$\frac{123.3}{3} = 41.1$	$\frac{41.1}{2} = 20.55$	3	61.65
TOTAL: 262 - 260.			3 (+ 24 Low Grade)	61.65

12008 - 14008.

BORE NOS.	LBS. OF MINERAL PER SQ. YD. AT BORE. (FROM TABLE A.)	AVERAGE LBS. WEIGHT OF MINERAL PER SQ. YD. BE- TWEEN BORES.	DISTANCE BETWEEN BORES (YDS) (FROM TABLE A.)	WEIGHT OF MINERAL In 1 YD. STRIP BE- TWEEN BORES (LBS)
LINE 13728.				
257	$\frac{75.2}{3} = 25.0$	$\frac{25.0}{2} = 12.5$	5	62.5
246	Low Grade.			
246	Low Grade.	-	8	-
258	No Sample.			
TOTAL : 257 - 258			5 (+ 8 Low Grade).	62.5
LINE 14048.				
255	$\frac{256.4}{3} = 85.5$	$\frac{156.9}{2} = 78.45$	5	392.25
245	$\frac{214.2}{3} = 71.4$			
245	71.4			
256	No record	$\frac{71.4}{2} = 35.7$	5	178.5
TOTAL : 255 - 256			10	570.75
LINE 14428.				
253	Traces			
244	$\frac{326.9}{3} = 109.0$	$\frac{109.0}{2} = 54.5$	5	272.5
LINE 14728.				
243	No sample			
254	$\frac{120.5}{3} = 40.2$	$\frac{40.2}{2} = 20.1$	3	60.3
LINES 1506, 1532, 1544, 1568.	LOW	GRADE.		

APPENDIX. TABLE C. PAGE 1.
1200S - 1400S.

VOLUME AND AVERAGE THICKNESS OF MINERAL-BEARING SAND ALONG BORE LINE.

BORE NO.	THICKNESS (TABLE A.)			DISTANCE BETWEEN BORES. (TABLE A.)	AREA OF LONGITUDINAL SECTION		COMPLETE BORE LINE		
	AT BORE	AV. BETWEEN BORES			BETWEEN BORES.		AV. THICKNESS		VOLUME OF 1YD. STRIP
	INCHES	INCHES	FEET		FEET	SQ. FEET	SQ. YDS.	FEET	INCHES
LINE 1276S. 249	No Sample	1.5	0.12	33	3.96	0.44	0.12	1.5	0.44
251	3								
LINE 1312S. 248	No Sample.	7.0	0.58	33	19.14	2.13			
250	14								
250	14	8.5	0.71	6	4.26	0.47			
259	3								
259	3	3.5	0.29	9	2.61	0.29			
261	4								
261	4	2.0	0.16	21	3.36	0.37			
247	No Sample.								
TOTAL: 248 - 247				69	29.32	3.26	0.44	5.3	3.26
LINE 1358 S. 262	Traces	-	-	72	-	-	-	-	-
260-A.	Low Grade.								
260-A.	Low Grade.	2.0	0.16	9	1.44	0.16	0.16	2.0	0.16
260.	4								
TOTAL: 262 - 260				9 (+ 72 Low Grade)	1.44	0.16	0.16	2.0	0.16

APPENDIX.

TABLE C. PAGE 2.

VOLUME AND AVERAGE THICKNESS OF MINERAL-BEARING SAND ALONG BORE LINE.

12008 & 14008.

BORE NO.	THICKNESS (TABLE A.)			DISTANCE BETWEEN BORES. (TABLE A.) FEET	AREA OF LONGITUDINAL SECTION BETWEEN BORES.		COMPLETE BORE LINE		
	AT PORE	AV. BETWEEN BORES			SQ. FEET	SQ. YDS.	AV. THICKNESS		VOLUME OF 1YD. STRIP CUBIC YDS.
	INCHES	INCHES	FEET				FEET	INCHES	
LINE 13728. 297	8	4.0	0.33	15	4.95	0.55	0.33	4.0	0.55
246	Low Grade.								
246	Low Grade.		-	24	-	-	-	-	-
258	No Sample.								
TOTAL: 297 - 258.				15 (+ 24 Low Grade).	4.95	0.55	0.33	4.0	0.55
LINE 14048. 255	10	7.5	0.63	15	9.45	1.05			
245	5								
245	5	2.5	0.21	15	3.15	0.35			
256	No record.								
TOTAL: 255 - 256				30	12.60	1.40	0.42	5.0	1.40
LINE 14428. 253	Traces	3.5	0.29	15	4.35	0.48	0.29	3.5	0.48
244	7								
LINE 14728. 243	No sample.	2.0	0.16	9	1.44	0.16	0.16	2.0	0.16
254	4								
LINKS 1506, 1532, 1566, 1596.		LOW	GRADE.						

VOLUME AND AVERAGE THICKNESS OF OVERBURDEN ALONG BORE LINE.

BORE NO.	THICKNESS (TABLE A.)		DISTANCE BETWEEN BORES (TABLE A.)	AREA OF LONGITUDINAL SECTION BETWEEN BORES.		COMPLETE BORE LINE.		
	AT BORE	AVERAGE BETWEEN BORES				AVERAGE THICKNESS	VOLUME OF 1YD STRIP	
	FEET	FEET	FEET	SQUARE FEET	SQUARE YARDS	FEET	INCHES	CUBIC YARDS
LINE 1276s.								
249	No Sample.	0.25	33	8.25	0.92	0.25	3	0.92
251	0.25							
LINE 1312s.								
248	No Sample.	4.75	33	156.75	17.42			
250	4.75							
250	4.75	4.4	6	26.4	2.9			
252	4.0							
259	4.0	2.4	9	21.6	2.4			
261	0.75							
261	0.75	0.75	21	15.75	1.75			
247	No Sample.							
TOTAL : 248- 247.			69	220.5	24.5	3.08	36.96	24.5
LINE 1358s.								
260	Traces	-	72	-	-	-	-	-
260-A	Low Grade.							
260-A	Low Grade.	1.0	9	9.0	1.0	1.0	12.0	1.0
260	1.0							
TOTAL: 262 - 260			9 (+ 72 Low Grade)	9.0	1.0	1.0	12.0	1.0

APPENDIX.

TABLE D. **PAGE 2.**
12008 - 14008.

VOLUME AND AVERAGE THICKNESS OF OVERBURDEN ALONG BORE LINE.

BORE NO.	THICKNESS (TABLE A.)		DISTANCE BETWEEN BORES (TABLE A.)	AREA OF LONGITUDINAL SECTION BETWEEN BORES.		COMPLETE BORE LINE.		
	AT BORE	AVERAGE BETWEEN BORES				AVERAGE THICKNESS	VOLUME OF 1YD STRIP	
	FEET	FEET		SQUARE FEET	SQUARE YARDS	FEET	INCHES	CUBIC YARDS
LINE 13728.								
257	0.33	0.33	15	4.95	0.55	0.33	4.0	0.55
246	Low Grade.							
246	Low Grade.	-	24	-	-	-	-	-
258	No Sample.							
TOTAL: 257 - 258.			15 (+ 24 Low Grade)	4.95	0.55	0.33	4.0	0.55
LINE 14048.								
255	0	0	15	0	0			
245	0							
245	0	0	15	0	0			
256	No record.							
TOTAL: 255 - 256.			30	0	0	0	0	0
LINE 14428.								
253	Traces	0.5	15	7.5	0.83	0.5	6	0.83
244	0.5							
LINE 14728.								
243	No sample.	0.84	9	7.56	0.84	0.84	10.08	0.84
254	0.84							
LINES 1506, 1532, 1566, 1596.		-	LOW GRADE.					

APPENDIX. TABLE. E.
1200S - 1400S.

AVERAGE WEIGHT OF HEAVY MINERAL CONCENTRATE PER 1 YARD STRIP BETWEEN BORE LINES, AND AVERAGE AREA OF LONGITUDINAL SECTION OF MINERAL-BEARING SANDS AND OF OVERBURDEN BETWEEN BORE LINES.

LINES	A T T O I N G B O R E L I N E S			A V E R A G E B E T W E E N B O R E L I N E S.		
	WEIGHT OF MINERAL	AREA OF LONGITUDINAL SECTION OF		WEIGHT OF MINERAL	AREA OF LONGITUDINAL SECTION OF	
	PER 1 YARD STRIP.	MINERAL-BEARING SANDS	OVERBURDEN	PER 1 YARD STRIP.	MINERAL-BEARING SANDS	OVERBURDEN
	FROM TABLE B.	FROM TABLE C.	FROM TABLE D.			
	LBS.	SQ. YARDS	SQ. YARDS	LBS.	SQ. YARDS	SQ. YARDS
12768.	104.5	0.44	0.92	517.9	1.85	12.71
13128	931.3	3.26	24.5			
13128	931.3	3.26	24.5	496.5	1.71	12.75
13588	61.65	0.16	1.0			
13588	61.65	0.16	1.0	62.1	0.36	0.78
13728	62.5	0.55	0.55			
13728	62.5	0.55	0.55	316.6	0.98	0.28
14048	570.75	1.40	0			
14048	570.75	1.40	0	421.6	0.94	0.42
14428	272.5	0.48	0.83			
14428	272.5	0.48	0.83	166.4	0.32	0.84
14728	60.3	0.16	0.84			
14728	60.3	0.16	0.84	30.2	0.08	0.42
15068	Low Grade	Low Grade	Low Grade			
15068						
15328						
15668						
15968						
	LOW	GRADE				

APPENDIX. TABLE F.

12008 - 14008.

TOTAL WEIGHT OF HEAVY MINERAL CONCENTRATE, TOTAL VOLUME OF MINERAL-BEARING SANDS AND TOTAL VOLUME OF OVERBURNEN BETWEEN BORE LINES.

BORE LINES (TABLE A.)				WT. OF HEAVY MIN. CONC.		VOL. OF MINERAL-BEARING SANDS		VOL. OF OVERBURDEN	
DESIG- NATION	LENGTH	DISTANCE BETWEEN	AREA BETWEEN	AV. PER 1 YD. STRIP (TABLE E.)	TOTAL BE- TWEEN LINES	AV. AREA OF LONGI- TUDINAL SECTION. (TABLE E.)	VOL. BETWEEN BORE LINES.	AV. AREA OF LONG. SECTION (TABLE E.)	VOL. BETWEEN BORE LINES.
Y	YDS.	YDS.	SQ. YDS.	LBS.	TONS	SQ. YDS.	CU. YDS.	SQ. YDS.	CU. YDS.
12768	11	12	204	517.9	6214.8 lbs. 2.77	1.85	22.20	12.71	152.52
13128	23								
13128	23	15.3	198.9	496.5	7597 lbs. 3.39	1.71	26.16	12.75	195.10
13588	3								
13588	3	4.7	18.8	62.1	291.8 lbs. 0.13	0.36	1.69	0.78	3.67
13728	5								
13728	5	10.7	80.25	316.6	3388 lbs. 1.51	0.98	10.48	0.28	3.00
14048	10								
14048	10	12.7	95.25	421.6	5355 lbs. 2.39	0.94	11.93	0.42	5.33
14428	5								
14428	5	10.0	40.0	166.4	1664 lbs. 0.74	0.32	3.2	0.84	8.4
14728	3								
14728	3	11.3	16.95	30.2	341.3 lbs. 0.15	0.08	0.90	0.42	4.75
15068	Low Grade.								
15068 }	LOW GRADE								
15328 }									
15668 }									
15968 }									
TOTAL:			654.15		24,852 lbs. 11.08 tons				

AVERAGE THICKNESSES OF MINERAL-BEARING SANDS AND OF OVERBURDEN.

AVERAGE THICKNESSES OF MINERAL-BEARING SANDS AND OF OVERBURDEN.

BORE LINES (TABLE F.)		VOLUME (TABLE F.)		AVERAGE THICKNESS.			
DESIGNATION.	AREA BETWEEN LINES	MINERAL-BEARING SANDS	OVERBURDEN	MINERAL-BEARING SANDS		OVERBURDEN	
	SQUARE YARDS	CUBIC YARDS	CUBIC YARDS	FEET	INCHES	FEET	INCHES
12768 - 13128	204	22.20	152.52	0	3.9	2	2.9
13128 - 13588	198.9	26.16	195.10	0	4.7	2	11.3
13588 - 13728	18.8	1.69	3.67	0	3.2	0	7.0
13728 - 14048	80.25	10.48	3.00	0	4.7	0	1.3
14048 - 14428	95.25	11.93	5.33	0	4.5	0	2.0
14428 - 14728	40.0	3.2	8.4	0	2.9	0	7.6
14728 - 15068	16.95	0.90	4.75	0	1.9	0	10.1
15068 15328 15668 1596	LOW GRADE.						

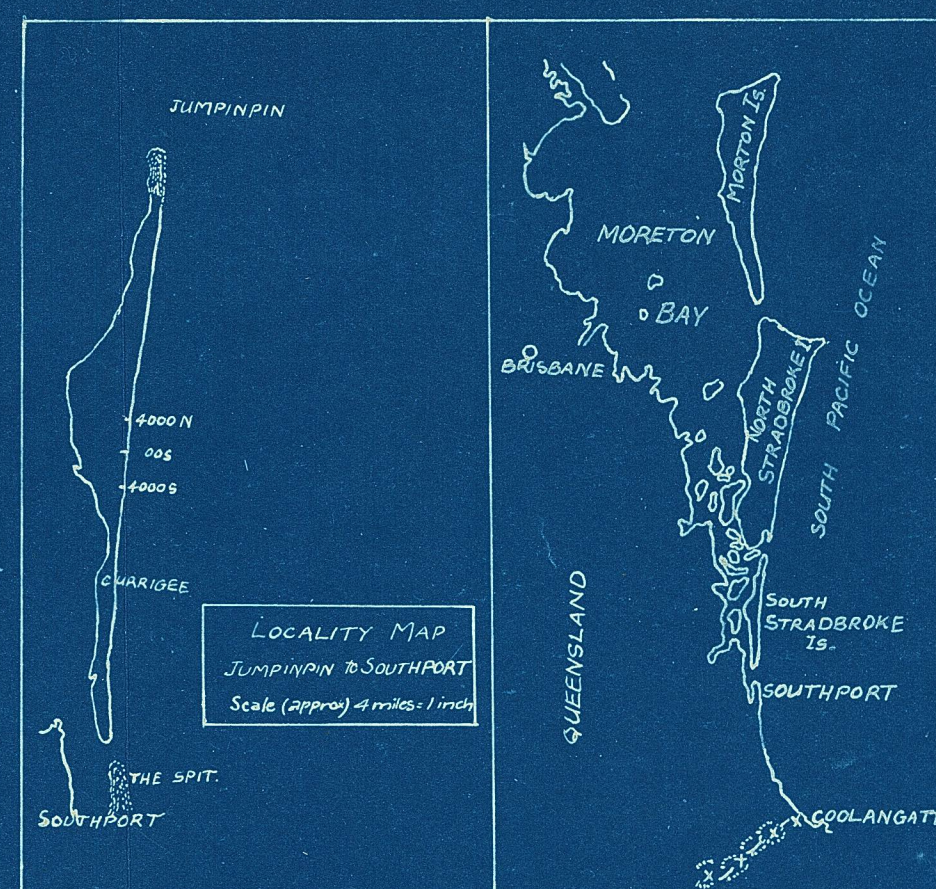
SOUTH STRADBROKE

TROUGH AREA 4000 N.
TO
4000 S.

----- APPROX. TROUGH BOUNDARY.

WORKABLE AREAS.
NON-WORKABLE AREAS.

SCALE: 1 INCH = 500 FEET.



SECTIONS ALONG BORE LINES.

BORE NO. 333

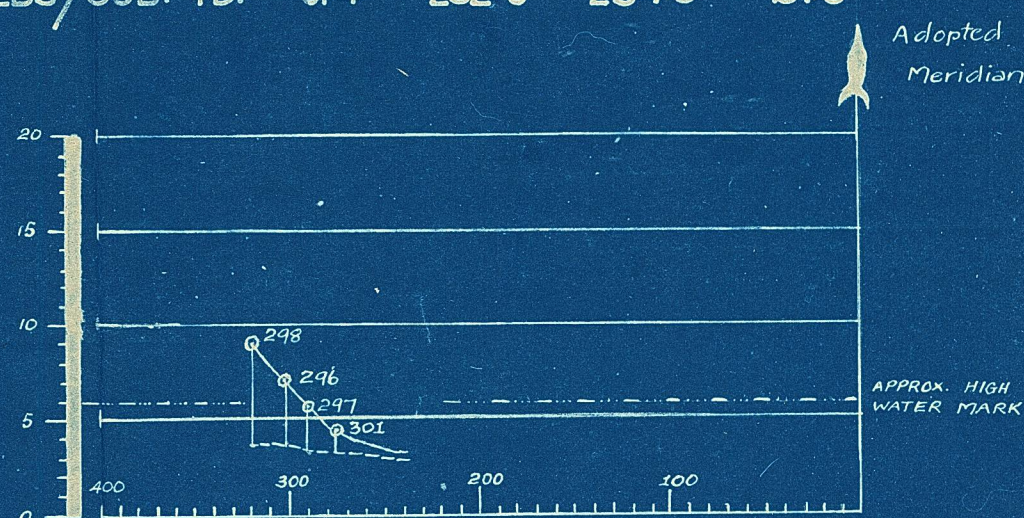
WATER TABLE

LINE 500 N TO LINE 300 N

LINE 100 N TO LINE 400 S

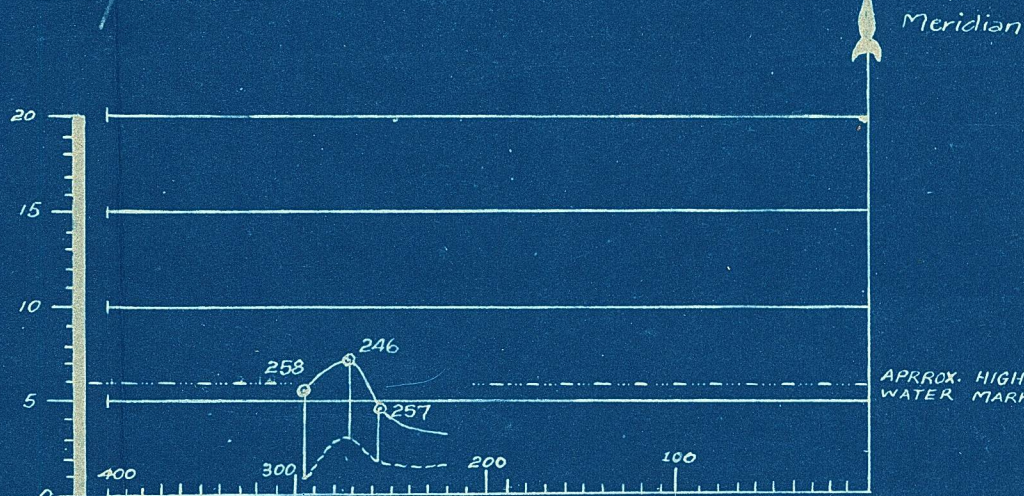
LINE 1200 S TO LINE 1500 S

BORE NO.	298	296	297	301
OVERBURDEN	3' 6"	2' 3"	1' 8"	0' 8"
SAMPLE	1' 2"	1' 5"	0' 8"	0' 5"
LBS/GUB. YD.	61.4	232.6	234.5	137.5



LINE 220S.

BORE NO.	258	246	257
OVERBURDEN	-	3' 0"	0' 4"
SAMPLE	-	0' 6"	0' 8"
LBS/GUB. YD.	-	65.4	450.6



LINE 1372 S

PLANS OF WORKABLE AREAS

BORE NO. 333

----- APPROX. TROUGH BOUNDARY.

SCALE: 1 INCH = 100 FEET

Q25 - 13A - 11