

CONTENTS ENVELOPE 812

TENEMENT: S.M.L. 97

TENEMENT HOLDER: Broken Hill Proprietary Company Ltd.

REPORT: Half Yearly Report - 1st December 1967 (Pgs. 3-7)

PLANS: Geological Plan & Sections 812-1

HALF YEARLY REPORT TO 1ST DECEMBER 1967, SPECIAL
MINING LEASE NO.97 COFFIN BAY

Channel samples of clay were taken from the main tramway cuttings and assayed for SiO_2 , Al_2O_3 , Ign. Loss, CaO , MgO , SO_4 , Fe and alkalis. Some samples assayed as high as 29.8% Al_2O_3 but in general the quality appears to be patchy and nothing was located to warrant further work.

FINAL REPORT 1-12-65 TO 1-12-67

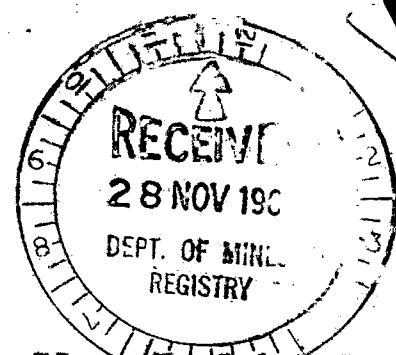
Tenure to the lease expires on 1st December 1967. The area was geologically mapped and a report written which confirmed that aeolianite, laterite, lateritic clay, limesand dunes and weathered basement occur on the lease. Thick mallee scrub covers most of the area and the main exposures are in the tramway cuttings. Samples of clay and aeolianite were taken from these cuttings and tested by assaying and the aeolianite subjected to drop testing. The drop testing produced a large proportion of fines and none of the material was suitable for blast furnaces or B.O.S. flux. Some of the clay assayed in the order of 30.0% Al_2O_3 but the clay, which is derived from weathered basement, appears to be fairly shallow and the grade is patchy. No materials were located which are of use at the present time. Total expenditure was approximately \$5000 which includes geological mapping, sampling and laboratory testing.

ENV 812

COFFIN BAY RAILWAY CUTTINGS

CLAY SAMPLES.

NO. 6 CUTTING.



Co-Ord:	Sample No:	Fe:	SiO ₂ :	Al ₂ O ₃ :	Loss Loss:	CaO:	MgO:	SO ₄ :	Na ₂ O:	K ₂ O:
68250-350	S13	5.8	47.7	27.6	12.3	.8	.7	.06	.40	.55
68450-550	S15	5.4	49.6	24.5	12.4	2.7	.6	.05	.75	.50
68650-750	S17	4.7	45.0	19.0	16.5	9.1	.5	.04	.20	.95
68850-950	S19	2.7	40.0	17.0	19.5	15.2	.6	.03	1.50	2.45
69050-150	S21	4.9	44.6	21.6	15.6	6.7	.4	.04	.60	1.10
69250-350	S23	1.7	61.4	18.7	8.9	3.9	.2	.12	.75	3.70
69450-550	S25	1.9	66.0	18.0	6.2	1.4	.4	.11	1.15	3.40
69650-750	S27	7.7	59.2	15.8	6.5	2.0	.7	.11	2.20	2.70
69850-950	S29	4.2	56.0	22.4	8.3	1.2	.4	.12	.60	2.30
70050-150	S31	8.1	47.8	22.2	11.3	2.0	.8	.10	.75	1.40
70250-350	S33	5.5	67.0	23.0	13.0	3.3	.6	.14	.40	.40
70450-550	S35	5.5	62.1	15.6	6.6	2.5	.6	.18	1.90	2.80
70650-750	S37	4.8	45.0	12.0	16.8	13.5	.9	.16	1.40	1.75
70850-950	S39	3.3	43.0	11.6	17.6	15.8	.5	.15	1.60	2.05
71050-150	S41	2.3	46.7	10.7	16.5	15.6	.5	.14	1.15	2.45
71250-350	S43	5.6	38.0	8.5	20.9	18.4	.8	.12	1.35	1.95
71450-550	S45	3.0	42.0	10.4	19.7	18.0	.9	.13	.85	1.55
71650-750	S47	2.5	33.7	9.8	24.6	23.5	1.0	.20	.60	1.05
71850-950	S49	3.5	27.5	7.2	27.2	28.0	.8	.17	.65	1.50
66750-850	S50	8.9	44.0	24.6	12.9	1.7	.3	.09	.20	.40
66950-050	S52	6.4	50.8	24.4	11.4	.7	.3	.07	.30	.60
67150-250	S54	4.7	39.7	15.9	19.9	13.6	.8	.07	.20	.30
67350-450	S56	5.7	41.1	16.3	18.6	11.9	.8	.09	.20	.25
67550-650	S58	4.0	50.0	20.4	14.4	6.4	.2	.17	.50	1.40
67750-850	S60	9.7	45.2	24.8	12.7	1.2	.3	.08	.20	.30
69950-050	S62	7.8	47.8	25.0	12.3	1.3	.3	.03	.20	.30

004
ENV 812

COFFIN BAY RAILWAY CUTTINGS.

CLAY SAMPLES.

NO.2 CUTTING.

<u>Co-ord:</u>	<u>Sample No:</u>	<u>Fe:</u>	<u>SiO₂:</u>	<u>Al₂O₃:</u>	<u>Ign Loss:</u>	<u>CaO:</u>	<u>MgO:</u>	<u>SO₄:</u>	<u>Na₂O:</u>	<u>K₂O:</u>
33300-350	S64	7.4	42.9	29.8	13.3	.7	.6	.03	.30	.25
33400-450	S65	5.5	30.7	14.5	24.1	19.9	.5	.08	.20	.70
33675-725	S66	7.9	46.9	16.7	14.1	7.1	.8	.10	1.10	1.10
33850-900	S67	1.3	49.2	11.5	18.2	16.5	.6	.06	.50	2.50
34000-050	S68	5.2	39.5	17.1	19.5	14.0	.4	.08	.15	.20
34100-150	S69	2.8	46.9	14.0	18.5	13.8	.7	.07	.15	.25
34200-250	S70	6.4	46.9	20.3	14.8	5.9	1.0	.09	.30	.30

NO.4 CUTTING.

48800-900	S71	4.0	53.2	25.5	10.3	.6	1.4	.05	.30	1.40
49000-200	S72	2.9	58.4	23.0	10.1	1.5	.8	.08	.40	1.75
49450-550	S73	4.0	76.2	9.8	6.0	1.6	.7	.03	.30	.65
49550-650	S74	4.7	72.0	10.1	6.4	1.0	.9	.04	.40	2.00
49650-750	S75	5.4	55.0	19.4	8.6	2.2	3.2	.08	1.10	3.30
49750-800	S76	4.3	60.4	13.4	5.4	2.9	5.4	.03	.55	4.7

Channel Samples taken from north wall of cutting commencing from cutting floor upwards in 10 ft. intervals.

48860

0-10'	S77	3.2	50.7	29.0	12.3	1.3	1.1	.03	.20	.90
10-20'	S78	4.3	47.8	28.1	12.5	1.9	1.1	.04	.30	1.25
20-30'	S79	4.0	42.7	25.8	16.8	6.9	.8	.05	.20	.50
30-40'	S80	1.9	50.1	26.0	14.9	4.5	.4	.06	.20	.25
40-50'	S81	3.9	52.4	19.0	14.4	6.2	.9	.07	.20	.20

Auger Hole in floor of cutting.

48860

0-5'	S82	4.5	72.2	12.9	6.8	.9	.6	.04	.15	.30
5-8'	S83	5.5	71.5	12.0	6.5	.6	.4	.04	.60	.50
8-11'	S84	3.8	79.4	9.1	4.9	.7	.3	.04	.15	.20

TABLE I
AEOLIANITE

Sample No. Location	WY301 Cut 11 151,000	WY302 Cut 10 123,800	WY303 Cut 10 122,500	WY304 Cut 10 115,500	WY305 Cut 8 94,000	WY306 Cut 8 91,700
CaO	52.0	52.5	51.8	52.2	52.5	53.0
MgO	1.9	1.8	2.2	2.0	1.9	1.4
SiO ₂	1.0	1.1	0.9	0.9	0.9	1.0
Al ₂ O ₃	0.25	0.2	0.15	0.2	0.2	0.2
Ign Loss	43.4	43.6	43.8	43.7	43.7	43.3
Fe	0.25	0.2	0.15	0.15	0.2	0.2
SO ₃	0.23	0.21	0.28	0.22	0.2	0.13
Na ₂ O	0.19	0.2	0.24	0.19	0.18	0.13
K ₂ O	0.05	0.04	0.03	0.03	0.03	0.02

TABLE II - CLAY

Sample No. Location	WH291 Cut 2 34,000	WH292 Cut 4 48,800	WH293 Cut 4 48,900
SiO ₂	52.2	49.4	51.3
Al ₂ O ₃	31.7	24.5	19.1
Fe ₂ O ₃	3.9	11.5	14.7
CaO	0.6	0.8	1.8
MgO	0.3	2.6	3.5
Na ₂ O	0.2	0.7	2.1
K ₂ O	0.6	1.0	1.7
Ign Loss	10.5	9.5	5.7
Total	100.0	100.0	99.9

06

TABLE III - CLAY

	<u>S-1</u>	<u>S-2</u>	<u>S-3</u>	<u>S-3A</u>	<u>S-4</u>	<u>S-5</u>	<u>S-6</u>	<u>S-7</u>	<u>S-8</u>	<u>S-9</u>	<u>S-10</u>	<u>S-11</u>	<u>S-12</u>
SiO ₂	55.0	52.0	48.0	59.0	53.5	48.0	20.0	51.0	59.0	34.0	15.7	34.0	44.0
Al ₂ O ₃	20.5	22.0	27.0	22.0	24.0	27.0	9.5	26.0	17.0	6.2	7.2	14.2	23.0
TiO ₂	1.0	1.3	0.9	1.0	1.5	1.3	0.5	1.1	1.5	0.5	0.4	1.1	1.3
CaO	0.5	0.3	0.4	11.0	0.6	0.3	33.2	1.5	2.3	28.5	34.5	20.0	5.9
MgO	0.72	0.50	0.16	0.31	0.19	0.3	30.5	0.27	0.73	0.45	0.54	0.37	0.32
Ign. Loss	11.1	11.6	12.4	20.3	12.2	13.1	32.1	13.2	8.2	26.5	33.0	24.2	15.5
Fe	7.0	7.1	8.6	3.3	5.7	6.5	2.4	4.1	6.3	0.5	5.7	4.0	6.7
Mn	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
P	0.03	0.02	0.12	0.02	0.04	0.02	0.01	0.03	0.02	0.01	0.01	0.02	0.02
S	0.04	0.03	0.01	0.02	0.02	0.02	0.05	0.02	0.02	0.01	0.02	0.02	0.04
Total Alkalies	1.2	1.4	0.6	1.2	0.6	0.3	0.5	0.2	2.2	2.0	0.2	0.2	0.3

Sample No.

S-1

S-2

S-3

S-3A

S-4

S-5

Location

Cut 1/8,900'

Cut 1/8,700'

Cut 2/34,200'

Cut 2/33,400'

Cut 6/67,400'

Cut 6/66,700'

Sample No.

S-6

S-7

S-8

S-9

S-10

S-11

S-12

Location

Cut 6/67,100'

Cut 6/69,900'

Cut 6/70,700'

Cut 6/71,200'

Borrow Pit

Cut 9/108,900'

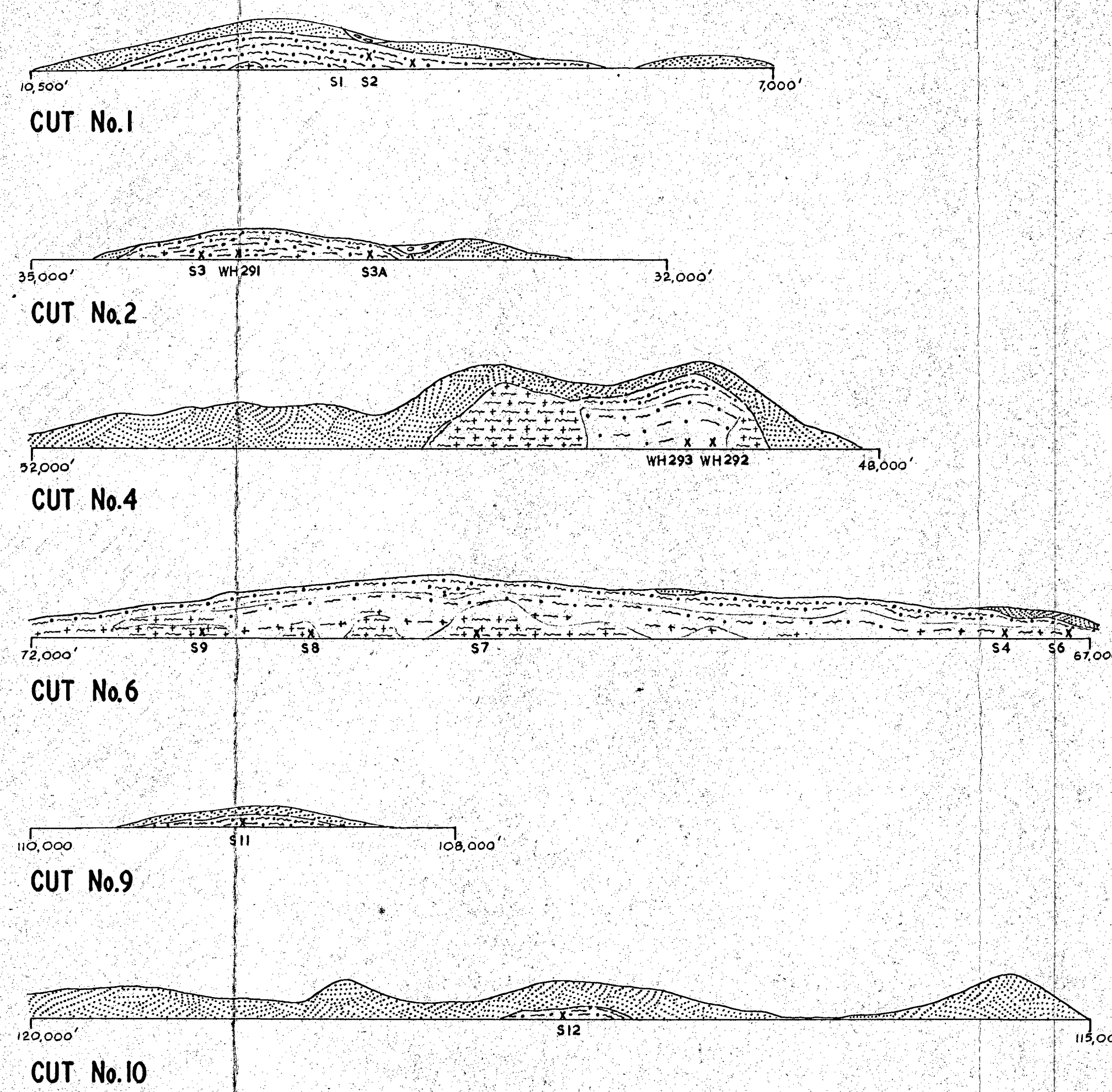
Cut 10/117,500'

000

DETAILS OF BORES MARKED "W"

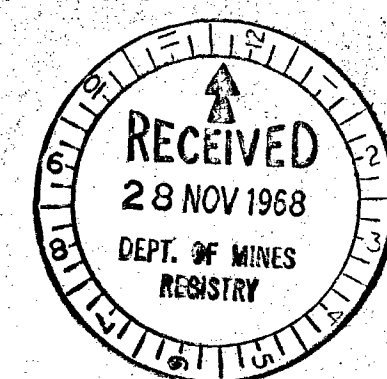
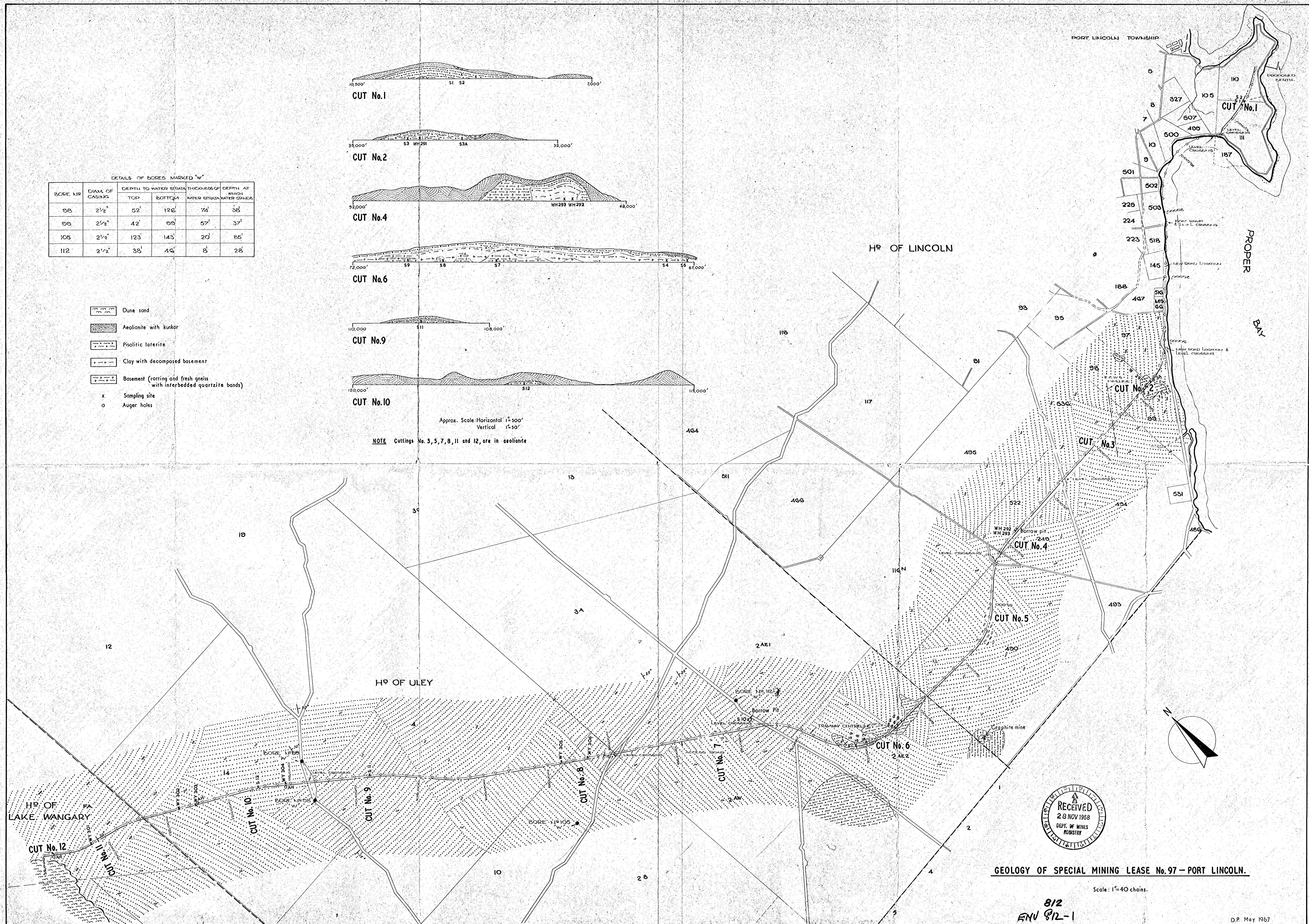
BORE NO.	DIAM. OF CASING	DEPTH TO WATER STRATA TOP	THICKNESS OF WATER STRATA	DEPTH AT WHICH WATER STANDS
88	2 1/2"	52'	126'	74'
98	2 1/2"	42'	99'	57'
105	2 1/2"	123'	143'	20'
112	2 1/2"	38'	14'	8'

- Dune sand
- Aeolianite with kunkar
- Pisolitic laterite
- Clay with decomposed basement
- Basement (rotting and fresh gneiss with interbedded quartzite bands)
- Sampling site
- Auger holes



Approx. Scale: Horizontal 1"=500'
Vertical 1"=50'

NOTE: Cuttings No. 3, 5, 7, 8, 11 and 12, are in aeolianite



GEOLOGY OF SPECIAL MINING LEASE No. 97 - PORT LINCOLN.

Scale: 1"=40 chains.

812
ENV 912-1

D.P. May 1967