COMMONWEALTH OF AUSTRALIA

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BUREAU OF MINERAL RESOURCES GEOLOGY AND GEOPHYSICS

RECORDS:

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BAUXITE DEPOSITS ON SPECIAL MINING LEASE NO. 1, GOVE PENINSULA, NORTHERN TERRITORY.

by

G.F. Mead.

Bauxite Deposits on Special Mineral Lease No. 1

Gove Peninsula. Northern Territory.

Special Mineral Lease No. 1 was granted to the Commonwealth Aluminium Corporation Pty. Ltd. (Comalco) on 17th November 1958 and was later transferred by that company to the British Aluminium Co. Ltd. The lease was cancelled by the Minister for Territories on 21st May 1963. Although the lease was cancelled the area within the former lease boundaries is referred to as S.M.L. No. 1 for convenience.

S.M.L. No. 1 is on the Gove Peninsula in Arnhem Land, Northern Territory. The exact position of a military astro-fix on the north-eastern side of the Gove air-strip, which is in the north-western quarter of the lease is:

Latitude 12°16'34" South and
Longitude 136°49'24" East.

The lease area was 13,496 acres (21.1 square miles) Plate No. 1 shows the location of S.M.L. No. 1 in relation to the Gove Peninsula and the air-strip.

In 1955, i.e. before S.M.L. No. 1 was granted, the area was test-bored by the New Guinea Resources Prospecting Co. Ltd. in which the shareholders were the Commonwealth Government and the British Aluminium Co. Ltd. At Gove, 132 prospecting bore-holes were sunk, mostly on a grid of 2000 ft. squares but in part, in the eastern part of the area, on a grid of 2000 ft. by 4000 ft. rectangles. In addition 26 bores were sunk on a grid of 500 ft. squares in order to evaluate more closely one of the 2000 ft. squares and part of another. The locations of all bore-holes are shown on Plate No. 1.

The boring was done mostly by 2-inch Empire hand drill. Loose pisolitic surface material was discarded without sampling, being considered to be contaminated with organic material, the remainder of each hole being sampled mostly in 2-ft. sections, but some holes were sampled in 4 ft. sections. With rare exceptions, the bore-holes were sunk to material containing more than 10% silica.

The samples were assayed for silica and those containing less than 10% silica were assayed for titania, iron oxide, alumina (by difference) and loss on ignition. Table I gives the average analyses for the 132 prospecting bore-holes and Table 2 the same for the 26 evaluation bore-holes.

From these results, two estimates of ore-reserves were made, i.e. by G.A. Daniels of the British Aluminium Co. Ltd. and by D.E. Gardner, of the Bureau of Mineral Resources. In making these estimates, no lower limit of alumina in ore was taken but an upper limit of 5% silica in individual samples was used. All samples accepted as ore on this basis contained more than 44% alumina, except two, which contained between 43% and 44% alumina. Some high-grade samples containing up to 6.9% silica were also accepted as ore. All such samples contained more than 49% alumina with five exceptions, which ranged down to 45.5% alumina.

Details of the two estimates follow:

(a) by G.A. Daniels

Area of ore	6.60 sq. miles (4,224 acres)
Average thickness of ore	10.0 sq. ft.
Average thickness of overburden	5.2 ft.
Volume factor	25 cubic ft. per dry ton
Gross quantity of ore	74.68 million tons
Reduction by 10%	7.47
Net quantity of ore	67.2 million tons
Minus ore under air-strip	12.0 million tons
Available ore in S.M.L. No. 1	55.2 million tons
Average analysis of ore	SiO_2 3.33%
	Al_2O_3 48.69%
	Fe_2O_3 18.45%
	TiO_2 3.45%
Loss on ignition	26.08%

A further 10 million tons of possible ore, of the same average grade were added to the estimate to allow for ore outside the boundaries of the main deposit as calculated.

(b) By D.E. Gardner

Area of ore	10.40 sq. miles (6,658 acres)
Average thickness of ore	9.7 ft.
Average thickness of overburden	5.0 ft.
Volume factor	20 cubic ft. per ton
Gross quantity of ore	138.14 ~~126.14~~ million tons
Minus ore under air-strip	12.0 million tons
Net quantity of ore	126.14 million tons
Minus ore now outside S.M.L. No.1	3.34 million tons
Available ore in S.M.L. No.1	122.8 million tons
Analysis of ore	SiO_2 3.4%
	Al_2O_3 49.6%
	Fe_2O_3 17.1%
	TiO_2 3.4%
Loss on ignition	26.4%

The difference in quantity between the two estimates was caused by:

(a) Difference in areas taken into account. The outlines of the respective areas accepted for the estimates are shown on Plate I.

(b) The different volume factors used.

(c) The reduction by 10% in quantity by G.A. Daniels. The origin of this reduction is that an estimate of the rectangle covered by the 26 evaluation boreholes was slightly less in quantity than that obtained from the four prospecting boreholes in the same rectangle. In order to avoid any possibility of over-estimation of the entire area, a reduction of quantity by 10% was made. It should also be noted that the introduction to Daniel's report states "The survey, which is the subject of this report, was designed to test only the grade of the laterite and its value as a source of alumina, without reference to the quantity of ore available".

In 1958 the Enterprise Exploration Co. Pty. Ltd., on behalf of Comalco, tested the entire area of S.M.L. No. 1 by boreholes on a grid of 2000 ft. squares. Enterprise Exploration re-surveyed the boring grid but, except for sites not bored by N.G.R.P., Enterprise Exploration's boreholes were only a few feet distant from those sunk by N.G.R.P. The numbering of the grid is also the same as for the grid used by N.G.R.P. A total of 175 boreholes were sunk by Enterprise Exploration, 15 of them being bored with a 6-inch auger, the remainder with a 4-inch auger. Borehole locations are shown on Plate 2.

Samples were usually taken in 3-ft. sections starting from the surface; for a few holes the sampling was done in 1-ft. sections. The samples were beneficiated by rejecting lumps larger than $\frac{3}{4}$ inch, washing the remainder on a 10-mesh screen and rejecting the undersize. Samples from some holes were also analysed without beneficiation.

The samples were dried at 110°C and analysed for:

(a) Total silica ($Si\ O_2$ T)

(b) Silica as quartz ($Si\ O_2$ Q)

(c) Alumina extractable by caustic soda solution at 120°C ($Al_2\ O_3$ 120)

(d) Alumina extractable by caustic soda solution at 180°C ($Al_2\ O_3$ 180)

From (a) and (b), combined silica ($Si\ O_2$ C) was estimated by difference and reported.

Table 3 gives the average analyses for Enterprise Exploration's bore holes. With some exceptions, only those holes from which material could be obtained having an average Al_2O_3 120 content greater than 40% and an average SiO_2 C content less than 5% are given in this table.

In estimating ore reserves, Enterprise Exploration averaged the results of four bore holes at the corners of a square, or three at the corners of a triangle and rejected that square or triangle if the SiO_2 C content exceeded 4%. The outline of the area accepted as ore is shown in Plate 2.

Details of the Enterprise Exploration estimate follow:

Area of ore		13.13 sq. miles (8,402 acres)
Average thickness of ore		12.1 ft.
Average thickness of overburden		3.25 ft.
Volume factor		27 cubic ft. per ton
Quantity of ore	(166.3)	166.3 million tons
Analysis of ore	Al_2O_3 120	42.19%
	Al_2O_3 180	47.05%
	SiO_2 Q	0.94%
	SiO_2 C	2.41%

Enterprise Exploration considered that the effects of beneficiation on the samples were only marginal. Beneficiation generally reduced the SiO_2 C content and increased the Al_2O_3 180 content, but often reduced the Al_2O_3 120 content. It was thought that the latter effect may have been due to break-up of the soft tri-hydrate by the auger. As a check the company sank nine pits and analysed corresponding beneficiated and unbeneficiated samples. Table 4 gives the average results of analyses of samples from the nine pits. It may be noted that the trend of silica and alumina content in the samples from these pits is the same as that from the bore-holes.

Recovery of beneficiated samples (reported for five pits only) averaged 82½% of the weight of material which was beneficiated. In view of the small improvement in the grade of samples, it is doubtful whether beneficiation was warranted.

The three reports from which this record has been summarised are available on open file at the Bureau of Mineral Resources, Canberra.

References

Daniels G.A. 1956 Gove Bauxite Survey

Gardner D.E. 1957 Geology of the Melville Bay Area. Aust. Bur. Miner. Resour. Record No. 1957/8.

Enterprise Exploration Co. Pty Ltd Undated Gove Bauxite Survey

TABLE I

NEW GUINEA RESOURCES PROSPECTING CO. LTD.
AVERAGES FOR PROSPECTING BOREHOLES.
(BASED ON MAXIMUM 5% SiO_2 CUT-OFF).

Hole location	Unsampled and high silica overburden (feet)	Ore (feet)	Assay Results				
			SiO_2 %	Al_2O_3 %	Fe_2O_3 %	TiO_2 %	L.O.I. %
N 12-E6		0					
N 12-E8	10	4	3.7	50.0	15.6	3.5	27.2
N 10-E6		0					
N 10-E8	6	8	3.9	49.7	16.4	3.0	27.0
N 8-E6		0					
N 8 -E8	5	13	3.0	50.6	16.1	3.3	27.0
N 8-E20		0					
N 8-E24		0					
N 6-E6	8	4	5.4	49.4	15.4	3.0	26.8
N 6-E8	2	4	1.6	50.5	16.8	3.2	27.9
N 6-E20	2	10	2.9	49.0	18.1	3.5	26.4
N 6-E24	2	6	3.3	51.7	13.6	3.3	28.1
N 4-00		0					
N 4-E2	-	2	3.0	48.6	18.5	2.9	27.0
N 4-E6	8	10	2.6	49.4	17.8	3.5	26.7
N 4-E8	6	12	3.7	48.5	18.7	3.4	25.6
N 4-E10	1	5	5.6	49.8	15.6	3.4	25.6
N 4-E12	0	0					
N 4-E16	4	8	4.1	49.9	15.8	3.3	26.9
N 4-E20	4	8	4.0	53.4	11.5	3.4	27.9
N 4-E24		0					
N 2-W2	6	4	5.1	49.4	15.9	3.1	26.5
N 2-00	6	16	4.5	50.3	15.3	3.6	26.3
N 2-E2	18	10	3.2	50.3	16.1	3.4	26.9
N 2-E4	4	6	3.9	47.1	20.4	3.2	25.2
N 2-E6	6	16	3.2	47.3	19.4	3.8	26.3
N 2-E8	2	6	3.9	45.5	22.1	2.9	25.6
N 2-E10	12	6	3.4	50.4	15.8	3.4	27.0

N2 - E12	2	16	3.9	52.6	12.3	3.7	27.5
N2 - E24	4	4	4.0	48.0	18.8	2.5	26.7
00 - W4	2	12	3.9	50.8	15.2	3.2	26.9
00 - W2	6	8	6.0	51.2	12.9	3.2	26.7
00 - 00	2	12	3.7	50.4	15.5	3.4	27.0
00 - E2	4	10	3.8	49.3	17.8	3.1	26.0
00 - E4	2	16	2.6	47.3	21.4	3.4	25.3
00 - E6	4	14	2.4	47.2	20.2	4.2	26.9
00 - E8	8	16	2.7	47.3	20.5	3.6	25.6
00 - E10	6	2	2.7	51.1	15.4	3.0	27.8
00 - E20	2	12	2.7	51.1	16.0	3.8	26.3
S1 - E12	2	16	2.2	52.6	13.9	3.3	28.0
S2 - W6	2	6	3.3	49.1	17.0	3.2	27.4
S2 - W4	2	8	3.7	49.9	16.7	3.3	26.3
S2 - W2	10	8	2.0	49.2	19.1	3.3	26.4
S2 - 00	3	11	3.4	48.5	19.5	3.1	25.5
S2 - E2	6	10	2.1	48.9	19.5	3.6	25.9
S2 - E4	6	12	2.6	48.3	20.6	3.2	25.3
S2 - E6	6	10	3.6	47.7	18.8	3.9	26.0
S2 - E8	2	20	2.4	47.5	20.3	4.0	25.8
S2 - E10	8	12	2.8	47.8	20.5	3.0	25.9
S2 - E12	2	20	2.0	51.2	16.1	3.4	27.3
S2 - E14	6	14	5.9	55.0	7.7	3.5	27.8
S2 - E16	6	8	3.3	51.9	13.8	3.4	27.6
S2 - E20	4	6	2.5	50.3	16.4	3.5	27.3
S2 - E24	4	8	2.7	51.8	13.7	3.7	28.1
S4 - W8	4	8	2.9	49.5	16.8	3.4	27.4
S4 - W6	0						
S4 - W4	2	16	3.3	50.4	16.9	3.2	26.2
S4 - W2	2	8	3.0	50.0	17.1	3.8	26.1
S4 - 00	2	8	2.2	46.9	21.9	3.7	25.3
S4 - E2	8	8	3.2	48.2	18.8	3.7	26.1
S4 - E4	10	8	5.0	45.8	21.6	3.4	24.2
S4 - E6	6	8	3.0	50.4	15.5	3.8	27.3

S4 - E8	10	3	4.7	44.6	23.2	2.8	24.7
S4 - E10	2	8	2.9	46.7	21.7	3.2	25.6
S4 - E12	12	20	5.4	53.4	19.3	4.0	28.0
S4 - E14		0					
S4 - E16	4	8	3.0	48.4	19.1	3.1	26.4
S4 - E20		0					
S4 - E24		0					
S6 - W8	4	10	3.3	51.1	13.9	3.5	28.1
S6 - W6	2	12	3.0	49.8	17.8	3.5	25.6
S6 - W4	2	4	5.6	47.5	18.7	3.6	24.6
S6 - W2	4	4	3.3	48.5	19.7	3.5	25.2
S6 - 00	6	6	2.9	46.2	22.5	3.5	24.9
S6 - E2	8	8	3.9	48.3	17.5	3.4	26.9
S6 - E4	2	16	3.2	47.2	20.5	3.4	25.7
S6 - E6	2	8	2.9	52.3	12.9	3.6	28.3
S6 - E8	6	16	2.2	48.8	18.8	3.8	26.4
S6 - E10	14	14	6.4	54.4	8.1	3.9	27.2
S6 - E12	18	4	3.8	51.9	14.0	3.7	26.6
S6 - E14		0					
S6 - E16	4	6	4.4	52.8	13.6	3.7	25.5
S6 - E20	6	16	4.3	50.7	14.0	3.9	27.1
S6 - E24		0					
S8 - W8	4	6	3.0	50.0	17.2	2.8	27.0
S8 - W6	6	10	3.4	49.6	17.7	3.5	25.8
S8 - W4	2	8	3.7	47.6	19.5	3.3	26.0
S8 - W2	2	10	2.4	47.3	21.8	3.2	25.4
S8 - 00	6	8	2.9)	50.2	16.9	3.4	26.2
S8 - E2	4	10	2.9	49.5	17.1	3.2	27.2
S8 - E4	2	14	3.4	49.3	17.6	3.6	26.1
S8 - E6	8	8	3.7	47.4	20.4	3.4	25.1
S8 - E8	6	12	3.7	46.7	21.3	2.9	25.4
S8 - E10		0					
S8 - E12	14	8	4.2	53.1	12.1	3.6	27.0
S8 - E16		0					

S8 - E20	2	8	3.1	507	15.8	3.5	26.7
S8 - E24	4	4	4.6	50.5	15.5	3.0	26.4
S10 - W8	4	8	4.1	50.3	15.7	3.1	26.8
S10 - W6		0					
S10 - W4	2	8	3.5	46.2	22.5	3.1	24.7
S10 - W2	6	4	3.1	47.3	20.2	3.0	26.3
S10 - 00	2	18	3.7	50.1	16.4	3.2	26.6
S10 - E2	4	6	2.8	48.6	18.7	3.0	27.0
S10 - E4	1	11	3.7	48.5	17.9	3.3	26.4
S10 - E6	4	8	2.9	48.9	18.8	3.3	26.1
S10 - E8	2	20	3.9	49.9	16.5	3.4	26.1
S10 - E10		0					
S10 - E12	2½	11½	3.0	52.3	13.2	3.3	28.2
S10 - E16	14	4	3.1	54.1	10.5	3.4	28.9
S10 - E20	2	12	3.5	54.2	10.1	4.1	28.1
S10 - E24	2	8	3.5	51.8	12.0	4.4	28.3
S12 - W8	2	6	4.7	49.6	16.1	3.3	26.3
S12 - W6		0					
S12 - W2		0					
S12 - 00		0					
S12 - E2		0					
S12 - E4		0					
S12 - E6		0					
S12 - E8		0					
S12 - E12		0					
S12 - E16	12	6	5.2	52.9	10.9	3.1	27.9
S12 - E20	2	2	3.5	53.2	10.4	3.4	29.5
S14 - W8		0					
S14 - W2		0					
S14 - 00		0					
S14 - E12		0					
S14 - E16		0					
S14 - E20	2	2	4.5	51.4	16.7	2.7	24.7
S16 - E20		0					
S16 - E16		0					

Table 2. New Guinea Resources Prospecting Co. Ltd.

Averages for evaluation boreholes.

(Based on maximum 5% SiO_2 cut-off)

Hole Number	Unsampled and high-silica overburden (feet)	Ore (feet)	Assay Results				
			SiO_2 %	Al_2O_3 %	Fe_2O_3 %	TiO_2 %	L.O.I. %
S2-E6	6	10	3.6	47.7	18.8	3.9	26.0
S2½-E6	8	12	3.0	49.6	17.6	3.5	26.3
S3-E6	4	18	2.5	49.0	18.9	3.7	25.9
S3½-E6	4	10	3.2	49.6	17.9	3.5	25.8
S4-E6	6	8	3.0	50.4	15.5	3.8	27.3
S2-E6½	2	20	2.8	49.7	17.5	3.7	26.6
S2½-E6½	4	16	3.2	48.6	19.1	3.6	25.5
S3-E6½	6	18	2.4	48.9	18.8	3.9	26.0
S3½-E6½	4	10	2.9	48.9	19.0	3.6	25.6
S4-E6½	6	8	2.6	50.3	16.6	3.5	27.0
S2-E7	6	20	2.8	50.1	16.9	3.8	26.4
S2½-E7	4	10	2.5	48.8	19.2	3.8	25.7
S3-E7	6	10	2.8	49.4	17.4	3.7	26.7
S3½-E7	4	8	2.8	49.0	18.1	3.5	26.6
S4-E7	4	12	2.3	50.7	17.4	3.5	26.1
S2-E7½	10	14	3.3	48.8	18.8	3.8	25.3
S2½-E7½	8	10	2.1	49.7	18.4	3.6	26.2
S3-E7½	6	8	3.2	48.4	19.3	3.4	25.7
S3½-E7½	4	8	3.7	47.8	19.3	3.4	25.8
S4-E7½		0					
S2-E8	2	20	2.4	47.5	20.3	4.0	25.8
S2½-E8	6	6	3.2	48.6	18.4	3.5	26.3
S3-E8	6	6	3.3	48.0	19.1	3.5	26.1
S3½-E8	6	8	4.1	48.2	18.0	3.7	26.0
S4-E8	10	3	4.7	44.6	23.2	2.8	24.7
S2-E8½	4	16	2.5	50.4	15.9	4.2	27.0
S2½-E8½	6	12	2.8	48.1	18.8	3.9	26.4
S3-E8½	4	8	3.4	48.9	18.1	3.5	26.1
S3½-E8½	2	6	3.9	47.1	19.6	3.2	26.2
S4-E8½	2	8	3.0	48.8	17.5	3.6	27.1

Table 3. Enterprise Exploration Co. Pty. Ltd.

Averages for boreholes (beneficiated samples)

Hole Location	High Silica overburden (feet)	Ore (feet)	Assay Results				
			SiO_2.T %	SiO_2.Q %	SiO_2.C %	Al_2O_3.120 %	Al_2O_3.180 %
N16-[illegible]	3	3	7.3	1.7	5.6	38.2	48.0
N16-E6	3	9	5.0	1.7	3.3	40.6	47.0
N16-E8	0	6	8.4	2.5	5.9	38.3	42.8
N16-E10	3	3	7.6	1.0	6.6	41.3	42.6
N16-E12		0					
N14-E6		0					
N14-E8	3	6	4.6	1.0	3.6	43.6	45.4
N12-E6	3	3	8.1	1.6	6.5	42.6	45.5
N12-E8	0	18	4.7	1.0	3.7	41.0	45.1
N10-E6	3	12	7.8	2.8	5.0	33.4	45.0
N10-E8	3	12	4.1	0.7	3.4	39.5	43.8
N10-E10	0	12	3.9	1.1	2.8	41.0	46.7
N8-E4		0					
N8-E6	3	3	6.9	1.2	5.7	36.0	43.8
N8-E8	0	18	3.6	0.9	2.7	41.5	46.0
N8-E10	3	12	3.3	1.0	2.3	44.2	46.8
N6-E4		0					
N6-E6	3	6	5.8	1.4	4.4	36.0	44.6
N6-E8	3	3	5.6	1.5	4.1	33.6	41.5
N6-E10	3	6	4.2	0.9	3.3	40.3	46.2
N4-W8		0					
N4-W6		0					
N4-W4	3	6	9.2	2.7	6.5	40.9	43.6
N4-W2		0					
N4-00		0					
N4-E2	3	3	3.6	1.0	2.6	38.7	38.8
N4-E4	3	9	3.6	0.9	2.7	39.2	43.4
N4-E6	3	15	3.6	0.7	2.9	39.9	45.6
N4-E8	3	15	3.8	1.2	2.6	39.2	45.3
N4-E10	3	3	4.5	1.2	3.3	39.2	46.0

[illegible]-B12		0					
[illegible]-W8		0					
[illegible]-W6		0					
W2-W4	3	9	4.4	1.2	3.2	42.4	44.4
W2-W2	3	6	2.8	1.0	1.8	44.9	48.8
W2-00	3	21	2.7	0.6	2.1	42.7	48.0
W2-B2	6	27	3.1	0.9	2.2	41.9	45.4
W2-B4	3	9	2.0	0.8	1.2	41.9	44.2
W2-B6	3	15	3.5	1.1	2.4	39.4	44.1
W2-B8	15	9	3.1	1.0	2.1	42.1	45.1
W2-B10	3	18	2.2	0.4	1.8	46.1	50.6
W2-B12	3	15	3.7	0.8	2.9	41.9	48.6
[illegible]-W8		0					
[illegible]-W6		0					
[illegible]-W4	3	12	2.9	0.7	2.2	44.3	49.3
[illegible]-W2	3	15	3.9	0.8	3.1	43.9	47.3
[illegible]-00	3	15	3.5	0.5	3.0	40.5	45.2
[illegible]-B2	0	15	2.4	0.5	1.9	38.9	43.9
[illegible]-B4	3	12	2.1	0.8	1.3	40.5	43.1
[illegible]-B6	3	18	2.5	0.6	1.9	40.1	44.2
[illegible]-B7	2	20	3.6	1.4	2.2	41.8	44.5
[illegible]-B8	2	14	3.7	1.1	2.6	38.9	42.1
[illegible]-B10	3	3	2.4	0.5	1.9	47.4	49.6
[illegible]-B12	3	9	2.1	0.9	1.2	48.6	53.4
[illegible]-B14	0	6	8.0	2.1	5.9	33.6	42.0
[illegible]-B16		0					
[illegible]-B18	3	9	2.9	1.0	1.9	44.3	49.2
[illegible]-B20	3	15	2.1	0.5	1.6	44.4	49.2
[illegible]-B22	3	9	2.6	0.9	1.7	44.5	48.2
[illegible]-B24	3	3	5.9	0.9	5.0	31.4	44.8
S2-W8		0					
S2-W6	3	6	1.9	0.7	1.2	46.5	47.9
S2-W4	3	9	2.6	0.7	1.9	42.6	48.6
S2-W2	3	15	2.5	0.7	1.8	41.8	46.0
S2-00	3	15	2.6	0.7	1.9	38.9	44.3

S2-E2	3	15	2.7	1.0	1.7	39.4	45.0
S2-E4	0	21	2.9	0.6	2.3	39.4	43.0
S2-E6	4	18	2.2	0.7	1.5	40.9	45.6
S2-E7	2	24	4.2	1.6	2.6	44.8	46.0
S2-E8	3	21	3.1	1.0	2.1	38.5	42.4
S2-E10	3	15	2.4	0.7	1.7	42.1	45.8
S2-E12	3	18	1.8	0.7	1.1	44.7	50.6
S2-E14	3	18	4.8	1.0	3.8	46.5	51.2
S2-E16	3	9	3.9	1.9	2.0	40.8	49.2
S2-E18	3	6	3.9	1.4	2.5	39.7	48.2
S2-E20	3	6	2.3	0.6	1.7	44.4	46.9
S2-E22	0	9	3.3	0.9	2.4	40.9	48.6
S2-E24	3	6	3.8	1.2	2.6	45.4	48.8
S3-E6	2.	20	2.8	1.0	1.8	44.0	46.7
S3-E7	2	14	3.4	1.5	1.9	43.8	44.5
S3-E8	3	10	4.8	1.6	3.2	42.4	44.0
S4-W14		0					
S4-W12		0					
S4-W10		0					
S4-W8	3	9	2.8	0.7	2.1	42.2	47.2
S4-W6	3	9	3.3	0.8	2.5	39.6	45.3
S4-W4	6	12	2.6	0.9	1.7	43.7	49.1
S4-W2	3	12	2.5	0.8	1.7	42.1	45.9
S4-00	3	9	2.8	0.8	2.0	41.7	43.9
S4-E2	3	15	3.4	1.0	2.4	38.4	45.2
S4-E4	0	18	4.0	0.8	3.2	40.9	44.0
S4-E6	3	14	2.7	1.1	1.6	44.6	48.8
S4-E7	2	15	3.3	1.1	2.2	45.5	47.3
S4-E8	3	12	2.4	0.9	1.5	40.2	42.7
S4-E10	3	6	2.5	1.0	1.5	38.2	42.8
S4-E12	6	26	4.0	1.1	2.9	47.4	51.0
S4-E14	3	18	6.4	1.1	5.3	46.8	50.9
S4-E16	3	9	3.8	1.2	2.6	41.1	46.2
S4-E18	3	15	1.9	0.6	1.3	46.3	51.1
S4-E20		0					

S4-E22	3	3	4.6	1.0	3.6	42.3	46.9
S4-E24	3	3	4.2	0.7	3.5	45.7	45.8
S6-W14		0					
S6-W12		0					
S6-W10	3	9	2.7	0.5	2.2	40.0	44.4
S6-W8	3	15	3.0	0.8	2.2	43.3	48.2
S6-W6	3	12	3.7	1.0	2.7	37.3	43.5
S6-W4	3	3	5.0	2.8	2.2	31.1	45.4
S6-W2	3	6	3.4	1.2	2.2	37.2	43.1
S6-00	3	9	4.5	1.6	2.9	36.6	41.4
S6-E2	3	12	2.9	1.1	1.8	42.6	47.7
S6-E4	3	18	2.8	0.9	1.9	40.8	44.6
S6-E6	3	6	3.6	0.7	2.9	44.1	47.5
S6-E8	3	18	2.6	1.0	1.6	42.1	45.8
S6-E10	3	12	4.5	0.8	3.7	43.7	48.7
S6-E12	12	18	6.2	1.4	4.8	45.6	50.4
S6-E14	12	15	5.5	0.8	4.7	46.7	50.9
S6-E16	3	9	3.4	0.7	2.7	42.2	48.7
S6-E18	3	9	3.6	1.0	2.6	42.7	48.6
S6-E2	3	21	2.6	0.8	1.8	43.2	49.9
S6-E22	3	3	2.9	0.5	2.4	46.4	48.7
S6-E24	3	3	3.7	1.3	2.4	42.6	48.1
S8-W14		0					
S8-W12		0					
S8-W10	3	6	4.3	1.0	3.3	39.7	47.0
S8-W8	3	6	3.2	1.3	1.9	40.8	47.3
S8-W6	3	15	2.8	0.8	2.0	40.4	45.5
S8-W4	3	9	2.8	1.1	1.7	40.2	46.5
S8-W2	3	9	2.7	0.9	1.8	39.8	43.8
S8-00	3	12	3.9	1.4	2.5	38.5	44.1
S8-E2	3	9	2.4	0.9	1.5	45.5	50.0
S8-E4	3	12	3.8	1.1	2.7	41.0	45.0
S8-E6	3	18	3.1	1.0	2.1	40.2	42.7
S8-E8	3	15	2.6	1.0	1.6	42.6	48.9
S8-E10		0					

S8-E12	3	15	3.2	0.9	2.3	42.4	48.6
S8-E14	3	15	3.9	0.9	3.0	47.7	53.0
S8-E16	6	18	6.9	1.6	5.3	43.1	48.9
S8-E18	3	15	3.3	1.3	2.0	45.7	53.2
S8-E20	3	9	3.3	1.0	2.3	41.3	48.6
S8-E22		0					
S8-E24	3	9	2.6	0.8	1.8	48.3	51.5
S10-W10		0					
S10-W8	3	6	3.6	0.7	2.9	42.3	46.0
S10-W6		0					
S10-W4	3	9	2.7	0.9	1.8	39.9	46.1
S10-W2	3	9	2.6	0.6	2.0	39.1	43.2
S10-00	3	15	2.7	0.5	2.2	44.2	48.4
S10-E2	3	6	2.1	0.6	1.5	45.8	48.5
S10-E4	3	9	2.7	0.7	2.0	43.3	45.3
S10-E6	3	9	2.3	0.6	1.7	41.9	46.4
S10-E8	3	12	2.3	0.7	1.6	40.9	45.1
S10-E10		0					
S10-E12	3	9	3.3	0.9	2.4	45.8	51.0
S10-E14	3	15	3.8	1.0	2.8	43.9	49.0
S10-E16	3	15	3.6	1.3	2.3	42.8	49.4
S10-E18	3	15	3.9	0.9	3.0	43.2	50.0
S10-E20	3	9	2.0	0.7	1.3	47.7	52.9
S10-E22		0					
S10-E24	3	6	2.8	0.6	2.2	47.0	49.0
S12-W8	3	6	4.3	0.6	3.7	41.7	45.0
S12-W6		0					
S12-W4	3	6	4.0	0.6	3.4	39.3	41.8
S12-W2		0					
S12-00		0					
S12-E2		0					
S12-E4		0					
S12-E6	6	3	2.2	1.4	0.8	36.8	39.5
S12-E10		0					
S12-E12		0					

S12-E14	6	6	6.5	1.5	5.0	46.1	50.8
S12-E16	3	9	4.3	1.3	3.0	46.2	49.9
S12-E18	3	15	3.2	0.8	2.4	42.6	50.0
S12-E20	3	3	2.3	1.2	1.1	50.4	53.3
S12-E22		0					

Table 4. Enterprise Exploration Co. Pty. Ltd.

Pitting results (averages)

(B, beneficiated samples; UB, unbeneficiated samples)

Pit Location	Over-burden (feet)	Ore (feet)		Assay Results				
				SiO_2.T %	SiO_2.Q %	SiO_2.C %	Al_2O_3.120 %	Al_2O_3.180 %
00-E2	3	12	UB	3.3	1.3	2.0	42.7	44.1
			B	2.2	0.6	1.6	42.3	44.2
00-E4	3	12	UB	2.9	1.2	1.7	42.6	45.0
			B	2.0	0.7	1.3	42.5	45.0
00-E8	3	13	UB	2.8	1.0	1.8	42.5	44.9
			B	2.3	0.8	1.5	43.1	45.7
S2-00	3	15	UB	4.7	1.8	2.9	41.4	43.3
			B	2.8	0.6	2.2	42.1	44.0
S3-E6	2	18	UB	2.9	1.1	1.8	43.0	45.2
			B	2.2	0.7	1.5	41.1	44.1
S3-E8	3	10	UB	5.6	1.9	3.7	41.5	43.8
			B	3.0	0.7	2.3	44.0	46.7
S4-00	0	12	UB	4.0	1.7	2.3	40.8	43.7
			B	2.8	0,8	2.0	42.1	44.9
S4-E2	3	15	UB	3.6	1.2	2.4	42.2	45.6*
			B	2.7	0.7	2.0	41.4	44.1
S4-E6	3	14	UB	4.2	1.2	3.0	43.8	46.0
			B	3.2	0.9	2.3	44.4	47.0

* Al_2O_3.180 figure for 3 ft. to 12 ft. only.

PLATE I

SPECIAL MINING LEASE Nº1

GOVE PENINSULA N.T.

REFERENCE

- Roads
- Vehicle tracks
- Buildings
- Rivers
- Swamps
- Bore-holes drilled by N.G.R.P.
- Area of ore after G.A. Daniels
- Area of ore after D.E. Gardner

4000 0 4000 8000 12 000
FEET

Bremer Island

MELVILLE BAY

GULF OF CARPENTARIA

Melville Harbour Road

Concrete L.C.T. Ramp

Point Dundas

Timber Jetty

Concrete L.C.T. Ramp

Drimmie Head

MELVILLE HARBOUR

Knoll Island

MILITARY ASTRO-FIX
Lat. 12° 16' 34"
Long. 136° 49' 24"
Elev. 125'

N12
N10
N8
N6
N4
N2
ZERO
S2
S4
S6
S8
S10
S12
S14
S16

W8 W6 W4 W2 ZERO E2 E4 E6 E8 E10 E12 E14 E16 E20 E24

Gove Airstrip

Mission Rd.

South Rd.

Yirrkalla Mission

Miles Island

ROCKY BAY

CAPE ARNHEM

Magnetic North

True North

Myiong R.

Giddy R.

Lakham R.

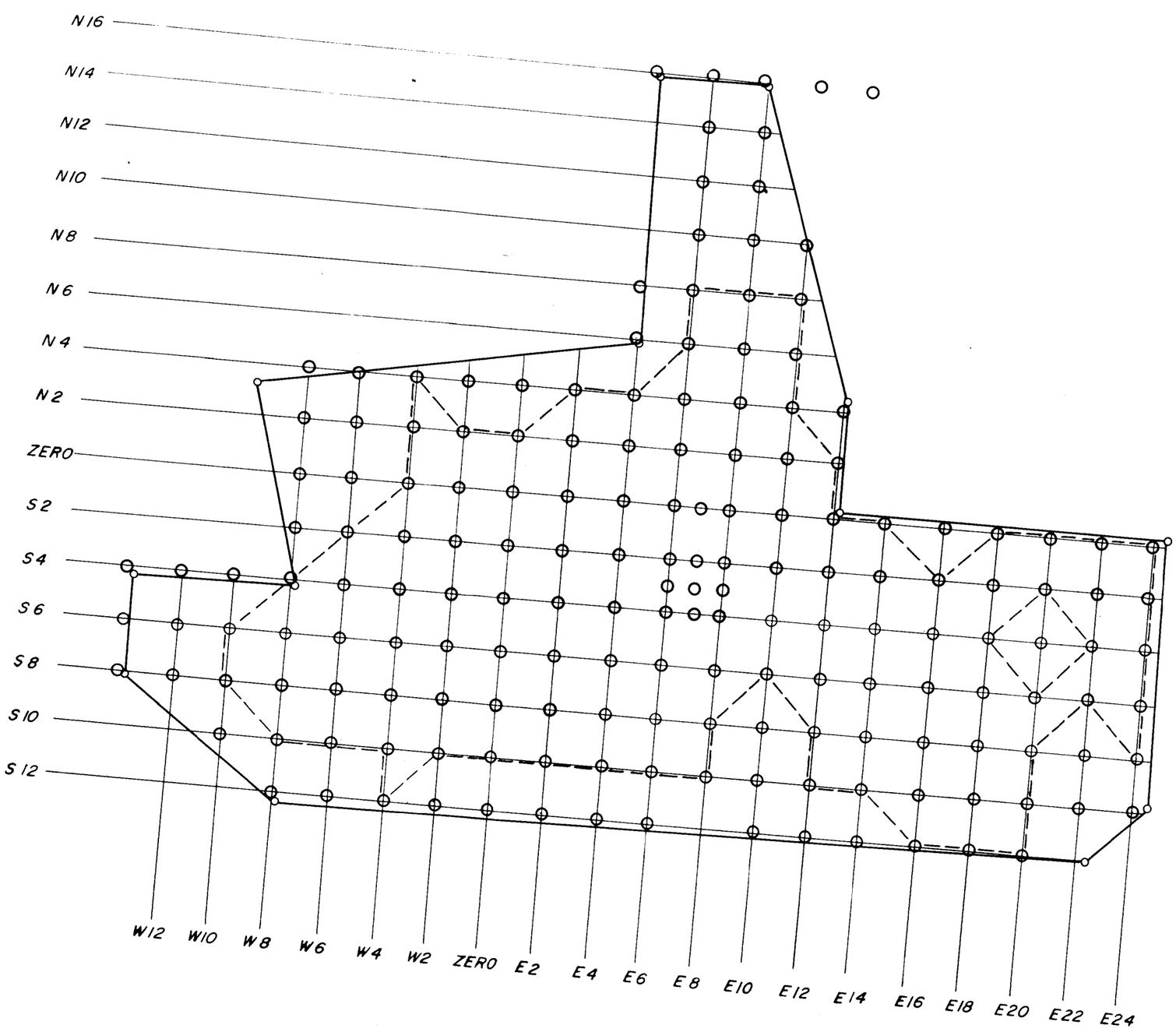
Clear running water in dry season. Oct. 55.

Bureau of Mineral Resources
Geology and Geophysics — June 1963

X AUS-2-3 LP

SPECIAL MINING LEASE Nº1

BORE-HOLES BY ENTERPRISE EXPLORATION ○



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