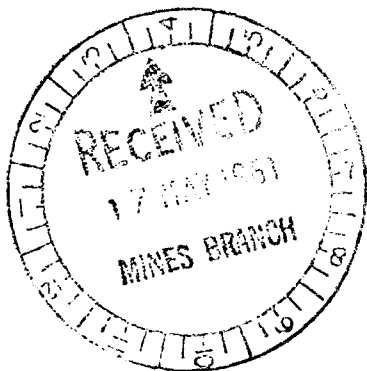


REYNOLDS METALS COMPANY  
REYNOLDS METALS BUILDING  
RICHMOND 18, VIRGINIA

Libbey

EXECUTIVE OFFICES



May 11, 1961

CR 1961/004

C. F. Adams, Esq.  
Director of Mines  
Mines Branch  
Northern Territory Administration  
Darwin, Northern Territory  
Australia

Dear Mr. Adams:

I trust that the Mines Branch will find the accompanying report by Benny Kidd on "Bauxite Exploration of "Permits to Enter" Nos. 57 and 69 Arnhem Land, Northern Territory Australia" both satisfactory and helpful.

Kindest regards,

*J. H. Moses*  
J. H. Moses  
Chief Geologist

JHM/cm  
cc: W. L. Rice  
B. F. Kidd

S.R.G.

For information + filing

PWE 5/16/61

*[Signature]* 19 5/61

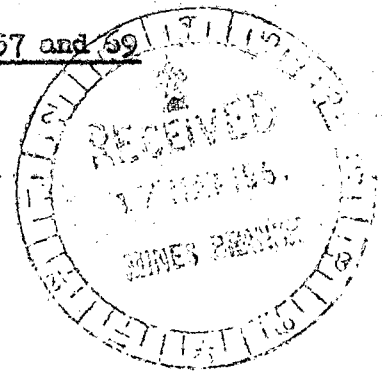
NOV 1953

Bauxite Exploration of "Permits to Enter" Nos. 57 and 59

Arnhem Land, Northern Territory

Australia

By  
Benny Kidd



Contents

	<u>Page</u>
Introduction .....	1
Geography.....	1
Access.....	2
Climate.....	2
Field Methods.....	2
Geology.....	3
Ore Deposits .....	4
Croker Island.....	5
Summary & Conclusion.....	6

Reference:

Owen, H.B., Bauxite in Australia, Bureau of Mineral Resources, Geology and Geophysics, Bulletin 24, 1954.

### Introduction

In August, 1957, Dr. John H. Moses flew from Darwin, Northern Territory, 400 miles east to the Yirrkala Methodist Mission on the west side of the Gulf of Carpentaria. His return flight east was by charter plane along the north coast of Arnhem Land. His itinerary included a trip to the Marchinbar deposit with Rev. Shepherdson in the latter's light aircraft.

Subsequent to this trip and because bauxite does occur at Yirrkala (Gove) and Marchinbar (Wessel Islands), Dr. Moses applied for a "Permit to Enter" a portion of the Arnhem Land Reserve for Wards for the purpose of mining. The permit was granted subject to specific conditions for twelve calendar months from August 16, 1957. At that time a one mile wide ribbon of land along the north coast of Arnhem Land was held by Rio Tinto. This strip was later included in Dr. Moses' "Permit to Enter #57/1".

After Permit 57 was granted, Dr. Keith R. Miles, consulting geologist from Adelaide, South Australia, was commissioned to go into the permit area to check some specific points that Dr. Moses had seen from the air. Dr. Miles considered it necessary to have an assistant, and Mr. D. A. Berkman, geologist, was employed. Dr. Miles and Mr. Berkman spent four weeks in the field and returned to Darwin, on November 20, 1957. In the meantime, plans were being made in the U.S. to launch an exploration program in Australia with the primary target being Permit 57. The writer was assigned to the project and arrived in Australia January 1, 1958.

### Geography

Permits 57 and 69 lie along the northern boundary of the "Arnhem Land Reserve for Wards" in Northern Territory, Australia. The west end of Permit 57 is on the Cobourg Peninsula about longitude  $132^{\circ} 20'$ . The permit boundary follows the north coast eastward, including all offshore islands, except the Wessel group, to the southeast side of Arnhem Bay at longitude  $136^{\circ} 10' E$ . From Arnhem Bay, the southern boundary is a straight line to a point on the Mitchel range forming the watershed between the Goyder and Koolatong Rivers, thence northwesterly about 180 miles to Tor Rock, thence westward to Van Diemen Gulf.

Permit 69 joins 57 at longitude  $136^{\circ} 10'$  in Arnhem Bay and follows the north coast to the south side of Melville Bay, thence southeast across Yirrkala Peninsula to Port Bradshaw, thence southwest along the coast to Caledon Bay, thence northwest to the point of beginning in Arnhem Bay.

The combined permits form a rectangular block approximately 300 miles long and 35 miles wide enclosing an area of 10,500 square miles.

Drainage is northward from a Pre-Cambrian sandstone plateau to a mature coastline and fresh water is plentiful a few miles inland, even during the dry season. Fresh water is found in very shallow water tables along the coast and on the offshore islands. The shallow water tables are small and probably would not supply adequate water for a large mining camp during the dry season.

Access: Access to the permit area is by boat, or plane. Shipping along the north coast is hazardous during the turn of the seasons and dangerous all through the "wet" because of the prevailing north-westerlies.

While field work was in progress, the area was served by M. H. Airlines every fortnight with landings at Croker Island, Milingimbi, Eliche Island, and Gove. This service could not be depended upon to serve field crews because the aircraft were small 7 place DeHavilland Doves and almost entirely reserved by the Missions. I suspect that Goulburn Island, and the new native welfare station at Maningrida are being served by the airline at the time of this writing.

Exploration camps in the permit area were served by a chartered 32 ton lugger, and one amphibious Cessna 180 airplane. While the plane was engaged in reconnaissance flights along the coast and grid flying over the mainland the lugger acted as a floating camp and fuel dump. Drill camps, and base camp on Croker Island were supplied from Darwin, 150 mi. Southwest, by the amphibious Cessna.

Climate: The permit area lies between latitudes 11° and 13° South, and the weather is monsoonal with sharply divided wet and dry seasons. The dry season lasts from about mid-April to December, and is characterized by cool, dry, south-easterly winds.

North-westerly winds prevail during the "wet" from about December to April. It is not practical to attempt extended field work through the wet season; however, the completely opposite seasons should not handicap a well established, permanent installation. Annual rainfall is estimated at about 50 inches with no more than 2 or 3 inches during the dry season.

The average daily temperature during the dry season is about 80°- 85° and during the "wet" about 85°- 95° with a high relative humidity.

#### Field Methods

Because of the size of the area to be explored, and its remote location, it was necessary to use aircraft and boats as major pieces of exploration equipment. A Cessna 180 aircraft equipped with Edo amphibious floats and a 50-foot, 32 ton lugger were used for general transportation as well as coastal and inland reconnaissance.

A base camp was established at Croker Island where fuel for the plane was available. A drilling program was commenced early in the season

and drill crews and equipment were transported locally by jeep and/or aluminum boats powered by outboard motors.

An aerial reconnaissance program was carried out by flying a uniform grid pattern over the mainland at 1000 feet above sealevel, and on one mile intervals. Grid lines were plotted on "World Aeronautical Charts" and geology was plotted directly on the map. Where it was possible to land along the coast the outcrops were checked, and when necessary samples were collected. As the program proceeded east, away from convenient refueling stations, the lugger acted as a base camp and fuel dump. An aluminum dinghy, powered with a 35 h.p. outboard motor, was used to transport field parties from the accompanying lugger to the beach for reconnaissance trips inland to double check aerial interpretations.

Samples collected from drill holes, or outcrops, were checked with a portable "differential thermal analysis" unit at base camp. Power for the unit was supplied by a 2200 watt generating plant. Samples chosen for chemical analysis were shipped to the Research Laboratory in Bauxite, Arkansas.

During the course of all our work we maintained a field staff of two geologists, one general foreman, three white laborers and several native laborers, plus the lugger crew.

### Geology

The most prominent formation in the permit area is a Pre-Cambrian sandstone that forms a high plateau in the southern and central portions. Nearer the coast the sandstone is characterized by isolated remnants standing 200-300 feet above broad, gently sloping plains. Most of the off-shore islands are Pre-Cambrian sandstone monadnocks surrounded by Recent sands and capped with Tertiary laterites.

The broad, gently sloping plains of sandstone and quartzite are heavily timbered with eucalyptus but void of underbrush, making aerial observations and ground traverses simple and conclusive.

Cretaceous sandstones and shales outcrop over the east and west ends of the area. The largest Cretaceous area is permit 69 between Arnhem Bay and the Gulf of Carpentaria. Other Cretaceous outcrops cover the west end of Permit 57 on Cobourg Peninsula, a small strip of clay and mudstone on the southwest side of Croker Island, and a narrow band of white kaolinitic clay and sandy shale around Malay Bay and DeCourcy Head.

Tertiary laterites occur in isolated patches and as cappings on larger mesas over much of northern and western Australia. The accompanying geologic map of the permit area shows only those areas of Tertiary laterite that were visited by the writer. Also, it was only those areas shown on the geologic map that were considered well developed laterites worthy of examination. Some of the broad Pre-Cambrian plains appear to be capped by laterite but field checks on many occasions proved the reddish

coloration to be iron stained, loosely consolidated sandy soil. These soils were 6-18 inches thick underlain by hard, reddish brown sandstone (Pre-Cambrian).

Reference to the accompanying geologic map will show Quaternary sands outcropping along most of the northern boundary coast line.

Igneous outcrops occur in two localities within the permit area. The most extensive outcrops are in Permit 69 on the west side of Melville Bay, and at Port Bradshaw on the west side of the Gulf of Carpentaria. Small, isolated, granite hills occur inland and most of them are capped with a thin, tubular laterite.

Granite outcrops on the mainland southwest of Goulburn Island in small scattered patches along creek banks and steep slopes in Pre-Cambrian sandstone.

The igneous outcrops in Permit 69, at Gove, and southwest of Goulburn Island, are bluish, coarse-grained, garnetiferous granites of probable Pre-Cambrian age.

#### Ore Deposits

Bauxite of commercial quality occurs in three areas within the district. The largest single deposit is at Gove on the Yirrkala Peninsula where the Commonwealth Aluminium Corporation reportedly have blocked out 250 million long dry tons. In the same area, about 2 miles south of the Comalco deposit, bauxite outcrops over several square miles. The latter deposit is on Crown land and is not available for lease. (Application was made for this land March 24, 1958, but was not honoured.)

Bauxite occurs on Marchinbar Island in the Wessel Islands group at about longitude  $136^{\circ} 40'$  E., latitude  $11^{\circ} 20'$  S. H.B. Owen, in his bulletin 24 on Bauxite in Australia, estimates reserves at almost 10,000,000 long tons. I believe his reserve figure is long dry tons based on 17 cubic feet per one long dry ton. Bauxite also occurs on Drysdale Island and on a small island south of Drysdale, but the areas are too small to consider commercial.

Owen describes two isolated deposits on the Cobourg Peninsula at longitude  $132^{\circ} 07'$  E., latitude  $11^{\circ} 30'$  S. The deposits are on Mounts Roe and Bedwell. The two deposits occupy an area of about 20 acres and are described by Owen as being "examples of mature laterite development on siliceous sedimentary rocks". His description of rocks of the Millaman group (Lower Cretaceous) correlates with other formations found within the permit area on Croker Island, DeCourcy Head, and Arnhem Bay.

Extensive exploration of the permit area throughout 1958 and mid-1959 failed to turn up more than one bauxite deposit worthy of

description. Several Tertiary laterites were examined, sampled, and drilled but none of them approached bauxite. Other than Croker Island, the only true bauxite found was on Drysdale Island (mentioned above) and the area is too small for commercial exploitation.

Croker Island: Croker Island is 150 miles northeast of Darwin at about longitude  $132^{\circ} 35'$  E., latitude  $11^{\circ} 10'$  S. The island is separated from the mainland at Cobourg Peninsula by Bowen Strait. From point David on the southern tip to Cape Croker on the northern tip is approximately 25 miles. The average width is 5 miles giving the island a total area of 125 square miles. Most of the surface is covered with laterite but only the northern extremities contained bauxite.

Field work on Croker Island began February 21, 1958. Mr. D. A. Berman, geologist, and the writer flew from Darwin to the Methodist Mission on the east side of the island in a Cessna 180 amphibious airplane. We landed at the mission airstrip where we met Rev. Eric Moore, mission manager, who invited us to stay at the mission during our preliminary investigation. Our first target was the highest part of the island where red soils could be seen from the air and traced eastward to the coast. Several landings were made along the southeast coast and short traverses inland proved the red soils to be hard, red, tubular laterite. We worked our way north along the east coast and located pisolitic, aluminous laterite, about five miles north of Mission Bay. (See Croker Island map).

A temporary camp was established on the east coast about 2 miles south of Cape Croker. Further investigation indicated that the better part of the Cape Croker deposit was on the west side of the peninsula, consequently, a base camp was established at Octopus Bay.

Several formal foot traverses were made across the island from east to west and around the swampy areas. Where pisolitic laterite was observed, the area was drilled. (It is interesting to note that pisolitic laterite occurs only on the narrow peninsulas.) Drill sites for exploration drilling was on a uniform grid with spacing dependent upon the size and shape of the laterite area. After drilling the pisolitic areas a profile was drilled from the Cape Croker deposit south to Point David. This profile was drilled on one mile intervals and failed to reveal any bauxitic laterite.

The only bauxite deposit of commercial quality is on the Cape Croker peninsula. The bauxite is pisolitic with pisolites ranging from 3 to 8 m.m. in diameter. The bauxite overlies a hard, reddish-brown tubular laterite, with a sharply defined contact. The tubular laterite grades down into a mottled clay. The mottled clay horizon was not penetrated with the drill, but where it outcrops on the south end of the island, it overlies a soft, gray, weathered shale. At Palm Bay the laterite overlies a clayey sand dipping  $10^{\circ}$  southeast.

The Cape Croker deposit was drilled primarily on a 1,000 foot intervals with a "Mighty Midget" vacuum drill. Dry samples were

collected in a cyclone, packed in clothlined paper bags, and shipped to the Reynolds Metals Company Research Laboratory in Bauxite, Arkansas, for analysis. Where analysis showed caustic soluble alumina in excess of 30 percent a closer pattern was drilled around that hole. By using this method approximately 650,000 long dry tons of plus 30 percent caustic soluble alumina may be estimated as "probable" on the whole island. A tonnage factor of 18 cubic feet per long dry ton was used in estimating reserves.

Several miles of grid lines were cut through short, heavy scrub to accommodate the drilling program. A total of 1,702 feet was drilled in 129 holes on Croker Island. Of the 129 holes drilled, 74 were drilled on Cape Croker.

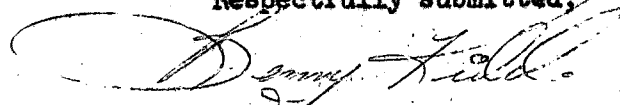
#### Summary and Conclusions

Exploration in Arnhem Land, Northern Territory, was initiated with Dr. J. H. Moses' trip to Darwin in August, 1957. A formal field program began in February, 1958, and continued through August, 1959. Our efforts proved only one small bauxite deposit of 650,000 long dry tons on the north end of Croker Island. Many laterite bodies were mapped, but did not approach even a low grade source of aluminum.

With the exception of Marchinbar Island, bauxite is closely associated with laterite development on Cretaceous sandstones and shales. Examples are Mounts Roe and Bedwell on the Cobourg Peninsula, Croker Island, and Yirrkala. The bulk of our permit area was Pre-Cambrian sandstone and Quaternary sands, and in my opinion no high alumina laterites occur between Arnhem Bay and Croker Island.

Full cooperation from all government agencies was enjoyed, and sincerely appreciated. There is no doubt that the Darwin administration will cooperate with the aluminum industry in the establishment of an installation on Yirrkala Peninsula. It is unfortunate that our permit to enter that portion of Yirrkala Peninsula outside Comalco's mining lease has not been honored in the same way that we were encouraged to search for bauxite in the unknown areas. If, or when, we are granted permission to enter the area, I suggest we move immediately.

Respectfully submitted,



Benny Kidd



Northern Territory, Australia

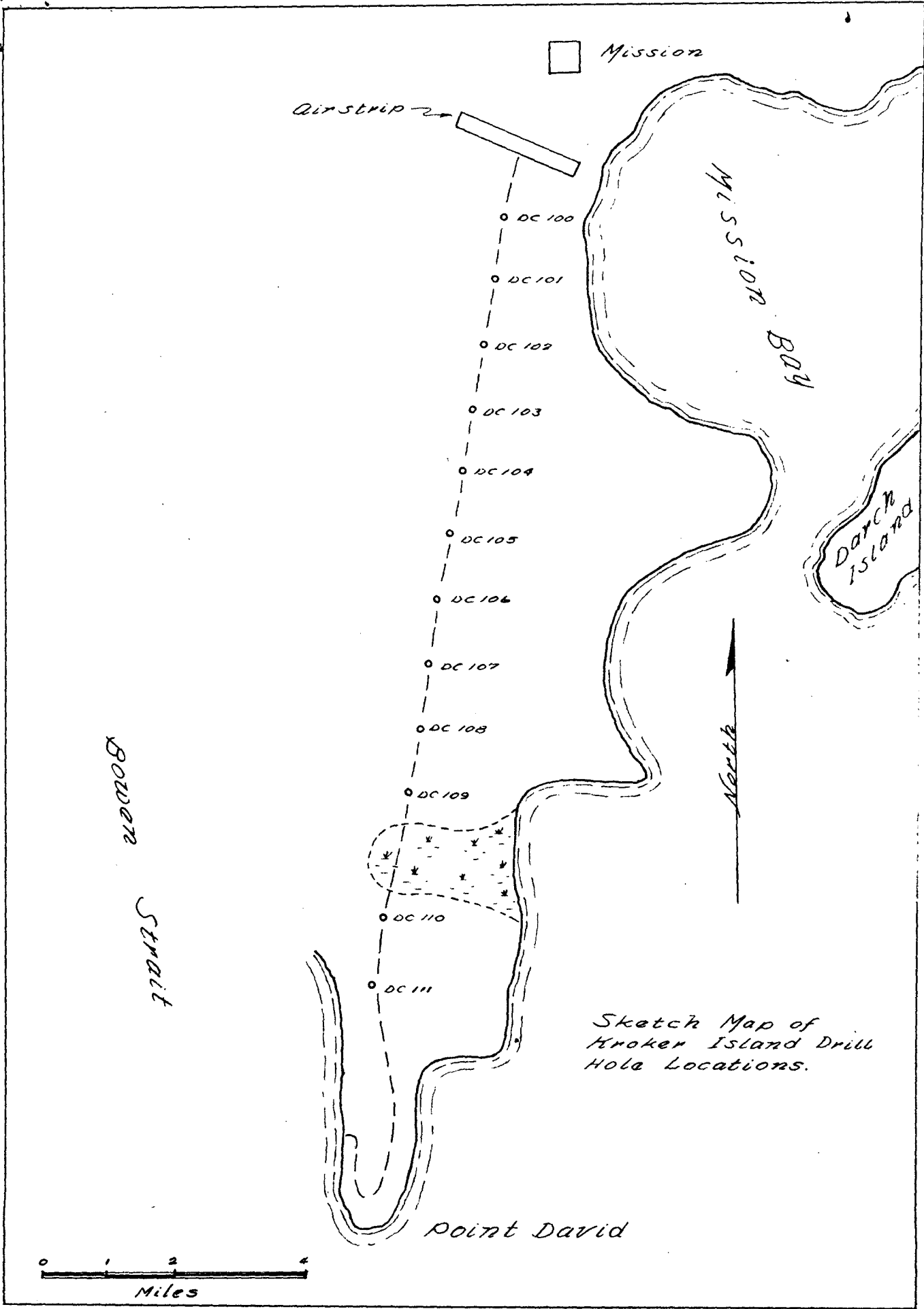
Croker Island Outcrop

Samples & Analysis

<u>Sample Number</u>	<u>Date Collected</u>	<u>Location &amp; Description</u>	<u>Al<sub>2</sub>O<sub>3</sub></u>	<u>CSA</u>	<u>SiO<sub>2</sub></u>
A	Feb. 21, 1958	East Coast north of Mission Bay. 1 foot sample of pebbly red soil.	22.57	3	50.95
B	Feb. 21, 1958	Same as A but in lower section 1 ft. sample of red friable clay.	19.88	3	57.62
C	Feb. 21, 1958	40 yds So. A. Grab sample of soil and red pebbles.	22.61	3	30.63
D	Feb. 21, 1958	Same as C. 18" channel sample from center of profile approx. 5 foot above high tide level.	24.29	4	31.45
E	Feb. 22, 1958	73 mi. So. of the mouth of "Big River". Spot samples from 6' bank of coarsely pisolitic material.	22.11	4	33.72
F	Feb. 22, 1958	2,000' No. of E. Grab sample from 2 ton boulder on beach.	36.39	17	24.99
G	Feb. 22, 1958	600' No. of F. Grab sample from boulder similar to F.	31.69	6	37.58
H	Feb. 22, 1958	1300' No. G. Grab sample from 6' face. Coarsely pisolitic	28.23	7	40.63
I	Feb. 27, 1958	Flat plain No. of "Big River". 200' W. of beach. Tannish pisolitic bauxite samples chipped from surface. No soil cover. Looks same as Gove.	46.33	39	7.28
J	Feb. 27, 1958	300' No. of I. 10' face of pisolitic material.	49.01	33	11.11
K	Feb. 28, 1958	Wooded point No. of Palm Bay. Large pisolites. Only 5' sampled in 15' bank because lower section covered with slumped overburden.	27.55	3	31.89
L	Feb. 28, 1958	1200' So. of K. Spot sample of 15' face of material same as K.	34.17	7	33.88
M	Feb. 28, 1958	North arm of Palm Bay. Coarsely pisolitic, deep red material spot samples from top 5' of exposed laterite in 40' bank. Lower section bank covered with slump.			

D.C.60	Aug. 9, 1958	0- 9' 9'	Wind blown sand shell and coral detritus Damp white clay		
D.C.61	Aug. 9, 1958	0- 1' 1- 5' 5-13' Sampled 5-13'	Soil and humus Hard red laterite Hard red laterite with some iron rich pisolite	7	37.5
D.C.62	Aug. 9, 1958	0- 2' 2- 8' 8- 9' 9-12' Sampled 2- 8'	Soil and loose gravel Coarse iron rich pisolites in red laterite Hard red laterite Mottled red and white clay	6	34.8
D.C.63	Aug. 9, 1958	0- 2' 2- 8' 8-11'	Soil Soft red laterite Red clay		
D.C.64	Aug. 13, 1958	0- 4' 4- 8' 8- 9.5' 9.5' Sampled 4- 8'	Soil and loose iron stone pebbles Soft sandy red laterite Hard red laterite Damp white clay	3	56.8
D.C.65	Aug. 13, 1958	0- 2' 2- 6' 6-10' 10-14' 14' Sampled 2- 6'	Soil and loose iron stone pebbles Hard red laterite with some pisolites Hard red laterite Hard red laterite with occasional blebs of white clay Red and white mottled clay	7	30.9

<u>Hole Number</u>	<u>Date Drilled</u>	<u>Interval</u>	<u>Description</u>	<u>CSA</u>	<u>Insoluble Residue</u>
D.C.66	Aug. 13, 1958	0- 2' 2-30'	Soil and loose iron stone pebbles Soft brown sandy laterite		
D.C.67	Aug. 13, 1958	0- 2' 2- 9.5' 9.5'	Soil and loose iron stone pebbles Soft red and yellow laterite Red and white mottled clay		
D.C.68	Aug. 13, 1958	0- 2' 2-14' 14'	Soil and loose iron stone pebbles Hard red laterite Damp red clay		
D.C.69	Aug.13, 1958	0- 2' 2-18' 18-32'	Soil and loose iron stone pebbles Hard red laterite Soft sandy loam		
D.C.70	Aug. 13, 1958	0- 3' 3-16' 16' Sampled 6-10'	Soil and iron stone pebbles Soft red laterite with some iron stone Damp yellow loam	3	69.9
D.C.71	Aug.13, 1958	0- 2' 2-17'	Soil and loose iron stone pebbles Soft red sandy laterite		
D.C.72	Aug. 14, 1958	0- 2' 2-20' 20-22'	Soil and loose iron stone pebbles Soft red sandy laterite Red and white mottled clay		
D.C.73	Aug. 14, 1958	0- 2' 2-12' 12'	Soil and loose iron stone pebbles Hard red iron rich laterite Damp red clay		
D.C.74	Aug. 14, 1958	0- 2' 2-20.5' 20.5'	Soil and loose pebbles Hard red iron rich laterite with angular iron stone pebbles Damp red clay		



□ Mission

QIT STRIP →

DC 100

DC 101

DC 102

DC 103

DC 104

DC 105

DC 106

DC 107

DC 108

DC 109

DC 110

DC 111

MISSION BAY

DARREN ISLAND

BOWEN STRAIT

North ↑

Sketch Map of Kroker Island Drill Hole Locations.

Point David

0 1 2 4  
Miles

<u>Hole Number</u>	<u>Date Drilled</u>	<u>Interval</u>	<u>Description</u>
D.C.103	Sept. 10, 1958	0- 4' 4- 8'	Yellow sandy loam Red and white mottled clay
D.C.104	Sept. 10, 1958	0- 4' 4- 8'	Loose soil and Ironstone gravel Hard dry banded brown and white clay
D.C.105	Sept. 10, 1958	0- 2' 2- 8'	Grey soil and loose Ironstone Yellow clay
D.C.106	Sept. 10, 1958	0- 2' 2-10'	Sandy soil and loose Ironstone Banded brown and yellow clay
D.C.107	Sept. 10, 1958	0- 2' 2- 9.5'	Grey sandy soil Brown sandy loam
D.C.108	Sept. 11, 1958	0- 2' 2- 8' 8'	Soil and loose Ironstone Hard red stony laterite Mottled red and white clay
D.C.109	Sept. 11, 1958	0- 2' 2- 8' 8'	Grey sandy soil Yellow loam Water level
D.C.110	Sept. 11, 1958	0- 2' 2- 5' 5'	Yellow sandy soil and loose Ironstone Hard red stony laterite Damp white clay
D.C.111	Sept. 11, 1958	0- 2' 2- 4' 4'	Grey sandy soil and loose Ironstone Hard stony laterite White clay.

D.C.100

Sept. 10, 1958

0- 2'  
2-18'  
18'

Soil and loose Ironstone  
Soft red stony laterite  
Damp red clay

31

D.C.101

Sept. 10, 1959

0- 2'  
2-12'  
12'

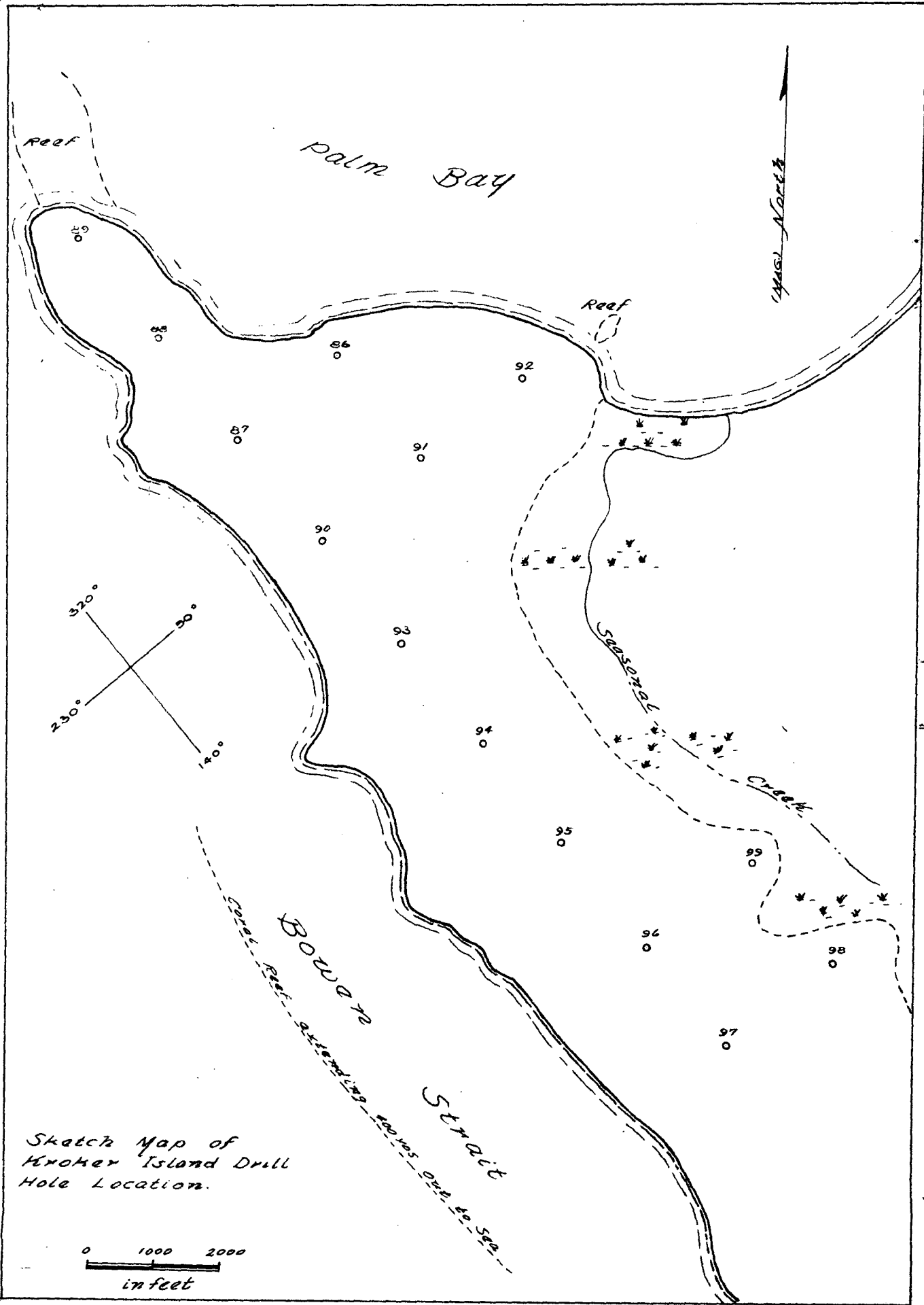
Soil and loose Ironstone  
Hard red laterite  
Mottled red and white clay

D.C.102

Sept. 10, 1958

0- 2'  
2-16'  
16-18'

Soil and loose Ironstone gravel  
Hard red stony laterite  
Soft reddish yellow loam



Sketch Map of  
Kroker Island Drill  
Hole Location.

0 1000 2000  
in feet

Coral Reef extending 500 yds. out to sea.

29

<u>Hole Number</u>	<u>Date Drilled</u>	<u>Interval</u>	<u>Description</u>
D.C.94	Sept. 9, 1958	0-2' 2-4' 4-12' 12'	Soil and loose Ironstone Soft red sandy laterite Hard red laterite with angular Ironstone pebbles Damp red clay
D.C.95	Sept. 9, 1958	0-2' 2-10.5' 10.5'	Sandy soil and loose Ironstone Hard red Iron rich laterite Damp red clay
D.C.96	Sept. 9, 1958	0-2' 2-8' 8'	Sandy soil and loose Ironstone Soft red laterite with free Ironstone Damp red clay
D.C.97	Sept. 10, 1958	0-2' 2-9.5' 9.5'	Sandy soil and loose Ironstone Hard red stony laterite Red and white mottled clay
D.C.98	Sept. 10, 1958	0-3' 3-6' 6'	Sandy soil and loose Ironstone Sandy soft red laterite White clay
D.C.99	Sept. 10, 1958	0-2' 2-5' 5-7'	Soil and loose Ironstone Sandy red laterite with loose Ironstone Sandy white clay



Northern Territory, AustraliaCroker Island Drill LogsPeninsula West of Palm Bay

<u>Hole Number</u>	<u>Date Drilled</u>	<u>Interval</u>	<u>Description</u>
D.C.86	Sept. 8, 1958	0- 2' 2- 6' 6'	Soil and loose Ironstone pebbles Hard red laterite with angular Ironstone particles Damp red clay
D.C.87	Sept. 8, 1958	0- 2' 2-14' 14'	Soil and loose Ironstone pebbles Hard red laterite Damp red clay
D.C.88	Sept. 8, 1958	0- 2' 2-10' 10'	Soil and loose Ironstone gravel Hard red Iron rich laterite Damp red clay
D.C.89	Sept. 8, 1958	0- 9'	Sand and shell detritus
D.C.90	Sept. 8, 1958	0- 2' 2-9.5' 9.5'	Soil and loose Ironstone pebbles Soft red laterite with Ironstone pebbles White sand.
D.C.91	Sept. 9, 1958	0- 2' 2- 9.5' 9.5'	Soil and loose Ironstone gravel Hard red laterite Damp red clay
D.C.92	Sept. 9, 1958	0- 2' 2- 5.5' 5.5'	Soil and loose Ironstone Hard red stony laterite Water level
D.C.93	Sept. 9, 1958	0- 2' 2- 8' 8- 9.5'	Sandy soil and Ironstone pebbles Soft sandy red laterite Yellow sandy loam

Northern Territory, Australia

Croker Island Drill Logs

Cape Croker

<u>Hole Number</u>	<u>Date Drilled</u>	<u>Interval</u>	<u>Description</u>	<u>GRA</u>	<u>Insoluble Residue</u>
D.C. 1	June 10, 1958	0-2'	Soil weathered from bauxite		
		2-20'	Finely pisolitic bauxitic laterite		
		Sampled			
		0-5'		12	42.07
		5-10'		17	39.70
		10-15'		4	36.36
		15-20'		4	31.47
D.C. 2	June 16, 1958	0- 1'	Soil and humus		
		1- 3'	Loose red soil containing pisolites		
		3-16.6'	Friable red pisolitic laterite		
		16.6	Damp white clay		
		Sampled			
		1- 3'		6	54.22
		3- 5'		14	39.73
		5- 7'		14	43.75
		7- 9'		19	33.79
		9-11'		14	38.54
		11-13'		17	34.59
		13-15'		8	42.53
		15-16.6'		5	42.52
D.C. 3	June 23, 1958	0- 2'	Soil and humus with loose laterite boulders		
		2- 6'	Hard red laterite with some large pisolites of 1/2" dia.		
		6-12'	Hard red laterite		
		Sampled			
		2- 4'		6	41.44
		4- 6'		5	33.32
		6- 8'		9	27.03
		8-10'		5	33.68
		10-12'		5	31.15
D.C. 4	June 23, 1958	0- 2'	Soil, humus & loose pebbles		
		2- 6'	Coarsely pisolitic laterite		
		6- 8'	Hard red laterite		
		8-14'	Dry purplish clay		
		Sampled			
		2- 4'		6	31.80
		4- 6'		6	32.16
		6-8'		4	31.73
		8-10'		6	35.11
		10-12'		3	39.39
		12-14'		3	39.43

<u>Hole Number</u>	<u>Date Drilled</u>	<u>Interval</u>	<u>Description</u>	<u>CSA</u>	<u>Insoluble Residue</u>	
D.C. 5	June 23, 1958	0- 2'	Soil and humus			
		2- 4'	Hard pisolitic laterite of average diameter 1/4"			
		4- 9.6'	Hard red laterite			
		Sampled				
		2- 4'			7	37
		4- 6'			11	29.17
		6- 8'			7	34.80
		8- 9.6'		4	31.9	
D.C. 6	June 23, 1958	0- 2'	Soil and loose pisolites			
		2-10'	Coarse pisolitic laterite			
		10-13.6'	Hard red laterite-- bottom hole			
		Sampled				
		2- 4'			18	27.6
		4- 6'			18	27.2
		6- 8'			18	28.6
		8-10'			4	
		10-12'		3		
		12-13.6'		4		
D.C. 7	June 27, 1958	0- 2'	Soil and humus			
		2-15'	Friable red finely pisolitic laterite			
		15.3	Moddled clay			
		Sampled				
		2- 4'			9	
		4- 6'			1	
		6- 8'			31	
		8-10'			32	
		10-12'		32		
		12-14'		28		
		14- 15.3'		17		
D.C. 8	June 27, 1958	0- 2'	Soil and humus			
		2- 8'	Red friable finely pisolitic laterite			
		8-13.6'	Purplish clay bottom hole			
		Sampled				
		2- 4'			14	
		4- 6'			13	
		6- 8'			6	
		8-10'		3		
		10-12'		3		
		12-13.6'		3		

<u>Hole Number</u>	<u>Date Drilled</u>	<u>Interval</u>	<u>Description</u>	<u>CSA</u>	<u>Insoluble Residue</u>
D.C. 9	June 30, 1958	0 -1'	Soil and humus		
		1- 5'q	Red friable coarsely pisolitic laterite		
		5- 9'	Hard red laterite		
		Sampled			
		1- 3'			16
		3- 5'			19
		5- 7'			4
		7- 9'			3
D.C. 10	June 30, 1958	0- 1'	Soil and humus		
		1- 8.6'	Red friable finely pisolitic laterite		
		8.6-17'	Hard red laterite in bottom hole		
		Sampled			
		1- 3'			19
		3- 5'			28
		5- 7'			32
		7- 9'			31
		9-11'			14
		11-13'			4
13-15'			4		
15-17'			3		
D.C. 11	June 30, 1958	0- 1'	Soil and humus		
		1-9.5'	Hard red laterite		
		Sampled			
		1- 3'			5
		3- 5'			3
		5- 7'			3
7- 9'			3		
D.C. 12	June 30, 1958	0- 1'	Soil and humus		
		1-11'	Red laterite		
		11-14.5'	Red clay		
		Sampled			
		1- 3'			5
		3- 5'			6
		5- 7'			4
		7- 9'			4
9- 11'			7		
11- 13'			6		
13- 14.5'			4		

<u>Hole Number</u>	<u>Date Drilled</u>	<u>Interval</u>	<u>Description</u>	<u>CSA</u>	<u>Insoluble Residue</u>
D.C.13	July 2, 1958	0- 1'	Soil and humus		
		1-14'	Soft red laterite		
		14'	Whitish clay		
		Sampled			
		1- 3'			4
		3- 5'			4
		5- 7'			4
		7-11'			4
		11-13'			3
		13-14'			3
D.C.14	July 2, 1958	0- 1'	Soil and humus		
		1- 7'	Hard red laterite		
		7'	Grey clay		
		Sampled			
		1-3'			4
		3- 5'			4
5- 7'			3		
D.C.15	July 2, 1958	0- 1'	Soil and humus		
		1-13'	Hard red iron rich laterite		
		13-14'	Whitish clay		
		Sampled			
		1- 3'			7
		3- 5'			13
		5- 7'			8
		7- 9'			11
		9-11'			19
11-13'			20		
D.C.16	July 3, 1958	0- 1'	Soil and humus		
		1-11'	Hard red laterite		
		13-23'	Hard red laterite and some iron rich pisolites		
		Sampled			
		1- 3'			6
		3- 5'			6
		5- 7'			6
		7- 9'			4
		9-11'			7
		11-13'			18
		13-15'			19
		15-17'			27
		17-19'			21
		19-21'			4
21-23'			7		

<u>Hole Number</u>	<u>Date Drilled</u>	<u>Interval</u>	<u>Description</u>	<u>CSA</u>	<u>Insoluble Residue</u>	
D.C.17	July 4, 1958	0- 1'	Brown soil and humus			
		1-15'	Hard red laterite with some small iron rich pisolites			
		15-18.6'	Hard reddish laterite			
		18.6-19'	Clay			
		Sampled				
		1- 3'			6	30.6
		3- 5'			12	26.5
		5- 7'			16	29.6
		7- 9'			20	25.8
		9-11'			22	23.2
		11-13'			21	23.4
		13-15'			19	26.5
		15-17'			12	34.5
		17-19'			9	28.1
D.C.18	July 4, 1958	0- 1'	Soil and humus			
		1-14.6'	Hard red laterite, some iron rich pebbles Bottomed on white clay			
		Sampled				
		1- 3'			6	40.7
		3- 5'			5	39.9
		5- 7'			3	39.9
		7- 9'			3	28.8
		9-11'			5	36.3
		11-13'			3	38.5
13-14.6'						
D.C.19	July 7, 1958	0- 3'	Soil and humus			
		3-17'	Hard red iron rich laterite			
		17'	Grayish clay			
		Sampled				
		3- 5'			3	36.8
		5- 7'			3	37.8
		7- 9'			1	34.7
		9-11'			3	34.2
		11-13'			3	36.1
13-15'			1	36.2		
15-17'			3	38.6		
D.C.20	July 7, 1958	0- 2'	Soil and humus			
		2- 5'	Friable iron rich pisolitic laterite			
		5- 8'	Hard red laterite			
		8	White clay			
		Sampled				
2- 8'			3	42.8		

<u>Hole Number</u>	<u>Date Drilled</u>	<u>Interval</u>	<u>Description</u>	<u>CSA</u>	<u>Insoluble Residue</u>
D.C.21	July 7, 1958	0- 2'	Soil and humus		
		2- 6'	Soft red laterite with some iron rich pisolites		
		6-14'	Soft red laterite		
		14	White clay		
		Sampled			
		2- 4'		5	56.8
		4- 6'		6	54.4
		6- 8'		4	60.2
		8-10'		4	77.6
		10-12'		3	79.3
12-14'		4	77.8		
D.C.22	July 7, 1958	0- 2'	Soil and humus		
		2-14'	Friable red laterite and some iron rich pisolites		
		14'	Damp white clay		
		Sampled			
		2- 4'		5	44.8
		4- 6'		7	50.7
		6- 8'		7	63.1
		8-10'		7	71.2
		10-12'		6	71.3
		12-14'		5	76.9
D.C.23	July 9, 1958	0- 2'	Soil and humus		
		2- 8'	Red pisolitic bauxite		
		8	Yellowish clay		
		Sampled			
		2- 4'		} 15	27.3
4- 6'					
6- 8'					
D.C.24	July 9, 1958	0- 1'	Soil and humus		
		1-17'	Hard red laterite-some iron rich pisolites		
		17	Greyish clay		
		Sampled			
		1- 3'		16	27.6
		3- 5'		10	31.1
		5- 7'		4	35.4
		7- 9'		5	33.3
		9-11'		4	32.1
		11-13'		3	33.6
13-15'		4	39.5		
15-17'		3	40.2		

<u>Hole Number</u>	<u>Date Drilled</u>	<u>Interval</u>	<u>Description</u>	<u>CSA</u>	<u>Insoluble Residue</u>
D.C.25	July 9, 1958	0- 1'	Soil and humus		
		1-21.6'	Friable red laterite some iron rich pisolites		
		Sampled			
		1- 3'		14	27.8
		3- 5'		19	25.3
		5- 7'		11	30.6
		7- 9'		6	34.3
		9-11'		3	38.0
		11-13'		3	32.0
		13-15'		5	41.2
		15-17'		3	69.9
		17-19'		7	57.6
		19-21'		3	46.2
D.C.26	July 9, 1958	0- 3'	Grey sandy soil		
		3- 7'	Sandy friable red laterite		
		7'	White clay		
		Sampled			
		3- 5'		} 3	28.6
5- 7'					
D.C.27	July 10, 1958	0- 1'	soil and humus		
		1- 5'	Hard red laterite - some iron rich pisolites		
		5-13'	Hard red laterite		
		Sampled			
		1- 5'		5	28.8
D.C.28	July 10, 1958	7- 9'		3	38.1
		0- 1'	soil and humus		
		1- 9'	Red friable pisolitic bauxite		
		9-19'	Hard red laterite-Grey clay at 19'		
		Sampled			
D.C.29	July 10, 1958	1- 3'		17	36.6
		3- 5'		22	25.4
		5- 7'		5	35.0
		7- 9'		6	38.8
		13-15'		4	32.0
		0- 1'	soil and humus		
D.C.29	July 10, 1958	1-16'	Hard red laterite with some iron rich pisolites with damp red clay at bottom hole		
		Sampled			
		1- 5'		4	39.9
		5- 9'		4	
9-15'		6			



<u>Hole Number</u>	<u>Date Drilled</u>	<u>Interval</u>	<u>Description</u>	<u>CSA</u>	<u>Insoluble Residue</u>
D.C. 30	July 10, 1958	0- 1'	Soil and humus		
		1-15'	Finely pisolitic bauxite		
		15-19'	Hard red laterite		
		19'	Mottled clay		
		Sampled			
		1- 3'		16	32.8
		3- 5'		17	32.5
		5- 7'		36	17.5
		7- 9'		22	19.5
		9-11'		20	20.5
11-13'		11	29.4		
13-15'		12	31.9		
D.C. 31	July 11, 1958	0- 4"	Wind brown sand (sand dune)		
		4- 8'	Sandy pisolitic red laterite		
		8'	Damp red clay		
		Sampled			
4- 8'					
D.C. 32	July 11, 1958	0- 3'	Soil and humus		
		3- 5'	Iron rich pebbles		
		5- 9'	Sandy clay in bottom hole		
D.C. 33	July 11, 1958	0- 1'	Soil and humus		
		1- 7'	Red pisolitic laterite		
		7- 23'	Hard red and yellow laterite		
		Sampled			
1- 7'		29	17.8		
D.C. 34	July 29, 1958	0- 1'	Surface soil		
		1-11'	Coarse pisolitic laterite		
		11-13'	Red clay		
		Sampled			
		1- 3'		22	21.1
		3- 5'		22	22.2
		5- 7'		22	22.2
7- 9'		6	30.8		
9-13'		4	29.5		
D.C. 35	July 29, 1958	0- 1'	Soil and humus		
		1-13'	Finely pisolitic laterite		
		13-15'	Hard red laterite		
		Sampled			
		1- 3'		12	41.4
		3- 5'		19	28.6
		5- 7'		30	18.0
		7- 9'		37	10.2
9-11'		35	12.6		
11-13'		20	19.2		

<u>Hole Number</u>	<u>Date Drilled</u>	<u>Interval</u>	<u>Description</u>	<u>CSA</u>	<u>Insoluble Residue</u>
D.C.36	July 29, 1958	0- 1'	Soil and loose Ironstone pebbles		
		1- 9'	Finely pisolitic laterite		
		9'	Damp red clay		
		Sampled			
		1- 3'		6	49.5
		3- 5'		17	29.1
		5- 7'		24	27.8
		7- 9'	24	28.7	
D.C.37	July 30, 1958	0- 1'	Soil and loose Ironstone pebbles		
		1- 3'	Hard red laterite with some Iron rich pisolites		
		3'	Damp red clay.		
		Sampled			
		1- 3'	6	43.6	
D.C.38	July 30, 1958	0- 1'	Soil and humus		
		1-13'	Finely pisolitic laterite		
		13'	Hard purplish clay		
		Sampled			
		1- 3'		16	34.4
		3- 5'		22	27.7
		5- 7'		26	26.3
		7- 9'		31	17.2
		9-11'		32	15.6
		11-13'	26	20.0	
D.C.39	July 31, 1958	0- 1'	Soil and humus		
		1-21'	Finely pisolitic laterite		
		21'	Damp red clay		
		Sampled			
		1- 3'		17	29.5
		3- 5'		20	23.9
		5- 7'		29	20.0
		7- 9'		38	7.6
		9-11'		43	7.4
		11-13'		43	7.9
		13-15'		49	3.1
		15-17'		44	5.2
		17-19'		41	6.0
				19-21'	35
D.C.40	July 31, 1958	0- 1'	Soil		
		1- 3'	Finely pisolitic laterite		
		3- 7'	Hard laterite with less pisolites		
		Sampled			
		1- 3'		14	
		3- 7'	12		

<u>Hole Number</u>	<u>Date Drilled</u>	<u>Interval</u>	<u>Description</u>	<u>CSA</u>	<u>Insoluble Residue</u>
D.C.58	Aug. 7, 1958	0- 2'	Red soil		
		2-12'	Hard red laterite with coarse angular iron stone.		
		12-14'	Damp red clay		
D.C.59	Aug. 7, 1958	0- 2'	Soil and gravel		
		2-14'	Hard red laterite		
		14-16'	Red clay		

<u>Hole Number</u>	<u>Date Drilled</u>	<u>Interval</u>	<u>Description</u>	<u>CSA</u>	<u>Insoluble Residue</u>
D.C.41	August 1, 1958	0- 1'	Soil and humus		
		1- 5'	Finely pisolitic brown laterite		
		5- 7'	Hard red Iron rich laterite		
		Sampled			
		1- 3'			12
		3- 5'			23
D.C.42	Aug. 1, 1958	0- 4'	Sand and Coral detritus		
D.C.43	Aug. 1, 1958	0- 7'	Sand and Coral detritus		
D.C.44	Aug. 1, 1958	0- 1'	Soil and loose Iron stone gravel		
		1- 3'	Hard red laterite		
		3- 4'	Damp red clay		
D.C.45	Aug. 1, 1958	0- 1'	Soil and loose Iron stone gravel		
		1- 4'	Red clay		
D.C. 46	Aug. 4, 1958	0- 1'	Soil and loose Iron stone gravel		
		1- 7'	Hard red laterite		
D.C. 47	Aug. 4, 1958	0- 1'	Soil and humus		
		1- 9'	Hard red laterite with some angular iron stone pebbles		
		9-13'	Mottled red and white clay		
D.C.48	Aug. 4, 1958	0- 1'	Soil and loose iron stone gravel		
		1- 5'	Hard red iron rich laterite		
		5-27'	Mottled red and white clay		
D.C.49	Aug. 4, 1958	0- 3'	Soil and loose iron stone pebbles		
		3- 7'	Iron rich pisolitic laterite		
		7- 13'	Purplish clay		
		Sampled			
		3- 5'			21
		5- 7'			19
D.C.50	Aug. 5, 1958	0- 1'	Soil		
		1-13'	Iron rich laterite		
		13-15'	Hard red clay		

<u>Hole Number</u>	<u>Date Drilled</u>	<u>Interval</u>	<u>Description</u>	<u>CSA</u>	<u>Insoluble Residue</u>
D.C.51	Aug. 5, 1958	0- 1'	Sandy soil		
		1- 9'	Hard red laterite with angular iron stone pebbles		
		9-13'	Soft red sandy laterite		
		13-15'	Sandy clay		
D.C.52	Aug. 5, 1958	0- 1'	Soil and humus		
		1- 5'	Red sandy soil		
		5-11'	Hard red rich laterite		
		11-13'	Sandy red clay		
D.C.53	Aug. 5, 1958	0- 1'	Soil and humus		
		1- 7'	Hard red laterite with angular iron stone pebbles		
		7-13'	Mottled red and white clay		
D.C.54	Aug. 6, 1958	0- 5'	Soil and iron stone pebbles		
		5- 7'	Soft red laterite		
		7-13'	Mottled red and white clay		
D.C.55	Aug. 6, 1958	0- 1'	Soil and sand		
		1- 7'	Soft red laterite with loose iron stone		
		7- 11'	Coarse iron rich pisolitic laterite		
		11'	Wet clay.		
		Sampled			
		7- 9'			15
9-11'			12		
D.C.56	Aug. 6, 1958	0- 1'	Soil and loose iron stone gravel		
		1-14.5'	Pisolitic laterite, richer in iron approaching the surface		
		Sampled			
		1- 5'			22
		5- 9'			24
9-14.6'			31		
D.C.57	Aug. 7, 1958	0- 2'	Soil and humus		
		2- 8'	Red pisolitic laterite		
		8'	White clay		
		Sampled			
		2- 6'			7
6- 8'			7		

<u>Hole Number</u>	<u>Date Drilled</u>	<u>Interval</u>	<u>Description</u>	<u>CGA</u>	<u>Insoluble Residue</u>
D.C.115	Sept. 22, 1958	0- 2'	Soil and humus		
		2-13'	Finely pisolitic friable red bauxitic laterite		
		13-14'	Red and white mottled clay		
		Sampled			
		2- 4'		21	32.3
		4- 6'		27	25.0
		6- 8'		34	17.6
		8-10'		35	13.3
		10-12'		34	15.9
		12-14'		33	19.3
D.C.116	Sept. 23, 1958	0- 2'	Soil and humus		
		2-11'	Finely pisolitic soft red laterite		
		11-14'	Medium pisolitic soft red laterite - average pisolite dia. 1/4"		
		14-15'	Coarsely pisolitic soft red laterite - avg. pisolite dia. 1/2"		
		15-18'	Dry red clay with some pisolites		
		Sampled			
		2- 4'		29	13.9
		4- 6'		36	6.2
		6- 8'		38	10.0
		8-10'		43	8.0
10-12'		39	9.8		
12-14'		31	15.6		
14-16'		15	25.8		
16-18'		24	20.0		
D.C.117	Sept. 23, 1958	0- 2'	Soil and humus		
		2-14'	Finely pisolitic soft red laterite		
		14-19.5'	Finely pisolitic soft red laterite with some angular Ironstone pebbles		
		Sampled			
		2- 4'		22	24.6
		4- 6'		25	16.4
		6- 8'		34	11.2
		8-10'		41	9.0
		10-12'		38	15.3
		12-14'		33	14.7
14-16'		31	17.0		
16-18'		14	26.8		
18-19.5'		6	35.3		

Northern Territory, Australia

Croker Island Drill Logs

Cape Croker

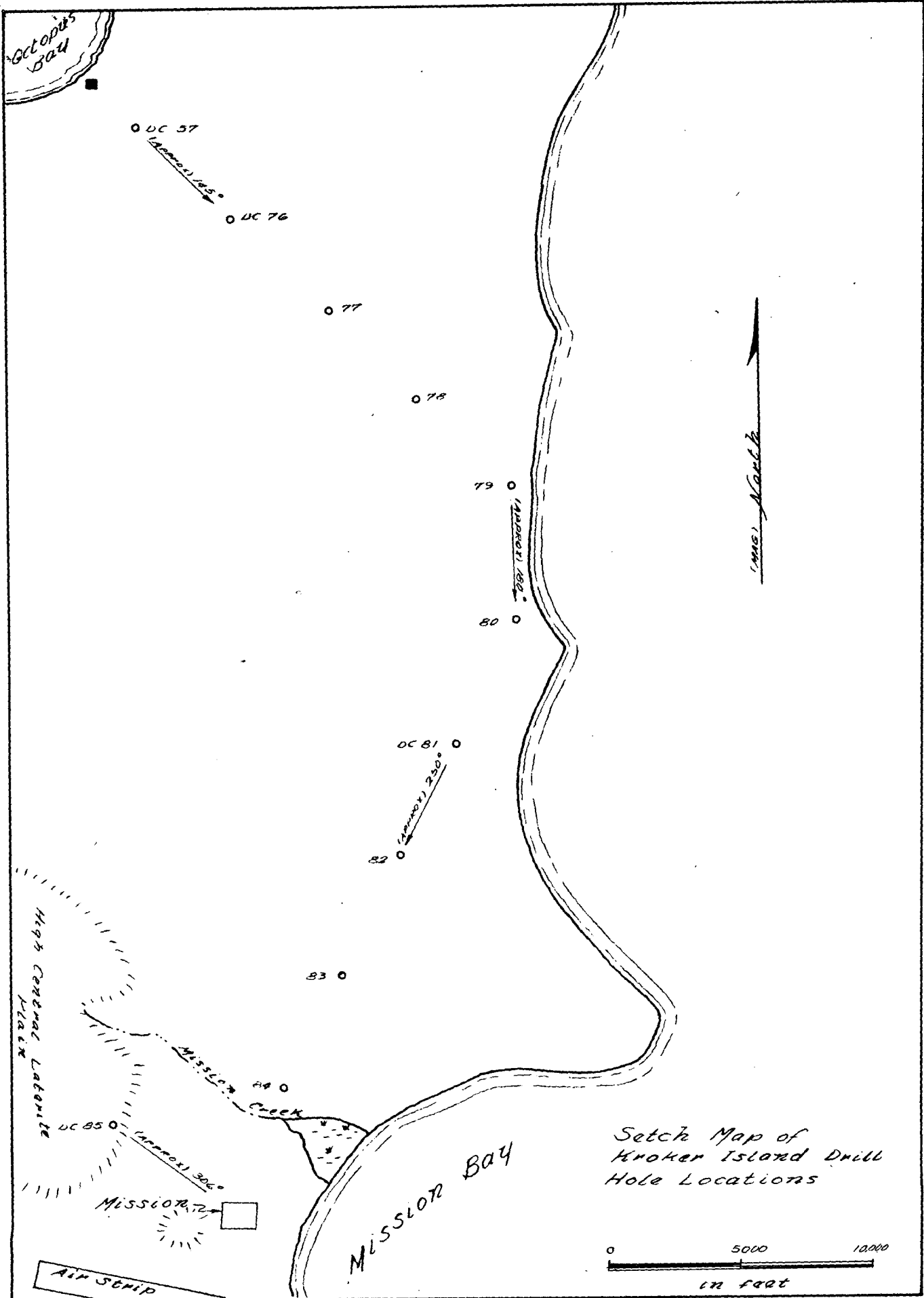
<u>Hole Number</u>	<u>Date Drilled</u>	<u>Interval</u>	<u>Description</u>	<u>CSA</u>	<u>Insoluble Residue</u>
D.C.112	Sept. 22, 1958	0- 2'	Soil and humus		
		2-15'	Soft finely pisolitic red bauxite laterite		
		15-16'	Damp mottled red and white clay		
		Sampled			
		2- 4'		19	36.7
		4- 6'		26	29.3
		6- 8'		28	22.0
		8-10'		29	21.6
		10-12'		29	19.8
		12-14'		32	17.6
		14-16'		26	21.2
D.C.113	Sept. 22, 1958	0- 2'	Soil and humus		
		2-10'	Soft red earthy laterite		
		10-13'	Soft red laterite with some fine pisolites		
		13-14'	Damp red clay		
		Sampled			
		2-10'		5	32.8
		10-12'		17	32.6
		12-14'		18	32.3
D.C.114	Sept. 22, 1958	0- 2'	Soil and humus		
		2-10'	Soft red laterite with a few small pisolites		
		10-14'	Bands of white clay and soft red laterite		
		Sampled			
		2- 5'		7	49.9
		6-10'		11	42.4
		10-14'		4	42.4

<u>Hole Number</u>	<u>Date Drilled</u>	<u>Interval</u>	<u>Description</u>	<u>CSA</u>	<u>Insoluble Residue</u>
D.C.122	Sept. 24, 1958	0- 2'	Soil and humus		
		2-18'	Finely pisolitic friable buff coloured laterite		
		Sampled			
		2- 4'		27	25.8
		4- 6'		33	17.0
		6- 8'		37	13.4
		8-10'		38	9.8
		10-12'		44	8.1
		12-14'		44	8.1
		14-16'		40	8.3
16-18'		40	10.3		
D.C.123	Sept. 25, 1958	0- 2'	Soil and humus		
		2-12'	Soft finely pisolitic buff coloured laterite		
		12-14.5'	Hard red laterite with angular Ironstone & very few pisolites		
		Sampled			
		2- 4'		28	22.5
		4- 6'		31	17.7
		6- 8'		32	16.9
		8-10'		32	13.1
10-12'		32	14.3		
12-14.5'		21	23.9		
D.C.124	Sept. 25, 1958	0- 2'	Soil and humus		
		2-14'	Hard red laterite with angular Ironstone & very few pisolites		
		Sampled			
2-14'		13	27.7		
D.C.125	Sept. 25, 1958	0- 1'	Soil and humus		
		1-11'	Soft finely pisolitic red laterite		
		11-13'	Hard red laterite with angular Ironstone		
		Sampled			
		1- 3'		20	35.3
		3- 5'		29	21.6
		5- 7'		27	19.1
7- 9'		30	21.6		
9-11'		30	17.6		
11-13'		22	22.1		

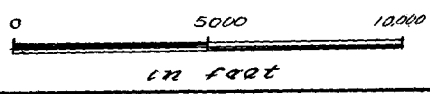


<u>Hole Number</u>	<u>Date Drilled</u>	<u>Interval</u>	<u>Description</u>	<u>CBA</u>	<u>Insoluble Residue</u>
D.C.118	Sept. 23, 1958	0- 2'	Soil and loose pebbles		
		2- 8'	Medium pisolitic soft laterite -avg. pisolite diameter 1/4"		
		8- 9.5'	Hard red laterite		
		Sampled			
		2- 4'		39	18.1
		4- 6'		42	11.2
		6- 8'		22	23.0
		8- 9.5'		14	24.0
D.C.119	Sept. 24, 1958	0- 2'	Soil, humus and loose Ironstone		
		2- 6'	Hard red laterite with angular Ironstone particles approx. 1/4" across.		
		6-17'	Hard red laterite with angular Ironstone particles with some small pisolites		
		17-20	Dry purplish clay		
		Sampled			
		2- 6'		37	13.0
		6-10'		25	20.0
10-14'		4	28.4		
14-18'		3	35.9		
		18-20		3	39.2
D.C.120	Sept. 24, 1958	0- 2'	Soil and humus		
		2- 7'	Finely pisolitic soft red laterite with some angular Ironstone		
		7-14'	Hard red laterite with more Iron- stone and fewer pisolites		
		14-20'	Hard red laterite with Ironstone, and a few thin (1" across) bands of white clay		
		Sampled			
		2- 4'		26	23.2
		4- 6'		36	16.7
6- 8'		21	25.5		
8-14'		5	29.2		
		14-20'		3	35.9
D.C.121	Sept. 24, 1958	0- 1'	Sandy soil		
		1- 3'	Sandy soil and loose pisolites		
		3- 7'	Finely pisolitic soft red laterite		
		7- 9'	Hard red laterite with some angular Ironstone and small angular hard white clay particles		
		Sampled			
		1- 3'		13	37.3
		3- 5'		28	19.5
5- 7'		33	18.0		
		7- 9'		11	31.4

<u>Hole Number</u>	<u>Date Drilled</u>	<u>Interval</u>	<u>Description</u>	<u>CSA</u>	<u>Insoluble Residue</u>
D.C.126	Sept. 25, 1958	0- 2'	Soil and humus		
		2- 12'	Finely pisolitic soft red laterite		
		12- 14'	Hard red laterite with coarse angular Ironstone		
		Sampled			
		2- 4'		23	22.6
		4- 6'		32	19.9
		6- 8'		35	14.0
		8-10'		39	11.0
		10-12'		33	15.2
		12-14'		12	25.1
D.C.127	Sept. 25, 1958	0- 2'	Soil and humus		
		2-12'	Soft finely pisolitic red laterite		
		Sampled			
		2- 4'		25	21.0
		4- 6'		27	22.5
		6- 8'		30	17.6
		8-10'		26	24.3
10-12'		32	12.4		
D.C.128	Sept. 25, 1958	0- 2'	Soil and humus		
		2-14'	Finely pisolitic soft red laterite		
		Sampled			
		2- 4'		22	26.8
		4- 6'		26	25.3
		6- 8'		29	18.8
		8-10'		32	17.6
10-12'		37	12.0		
12-14'		37	8.6		
D.C.129	Sept. 25, 1958	0- 2'	Soil and humus		
		2-19.6'	Soft finely pisolitic red laterite		
		Sampled			
		2- 4'		23	22.3
		4- 6'		27	19.2
		6- 8'		37	10.7
		8-10'		40	12.4
		10-12'		47	3.2
		12-14'		49	3.9
		14-16'		50	4.7
		16-18'		49	4.1
18-19.5'		45	9.3		



Sketch Map of  
Kroker Island Drill  
Hole Locations



<u>Hole Number</u>	<u>Date Drilled</u>	<u>Interval</u>	<u>Description</u>	<u>CSA</u>	<u>Insoluble Residue</u>
D.C.75	Aug. 14, 1958	0-19.5'	Brown sandy soil		
D.C.76	Aug. 15, 1958	0- 2' 2- 6' 6- 8'	Sandy soil with some gravel Red clayey laterite Red and white mottled clay		
D.C.77	Aug. 15, 1958	0- 2' 2- 8'	Soil and loose ironstone gravel Hard red laterite		
D.C.78	Aug. 15, 1958	0- 2' 2- 8' 8'	Sandy soil and gravel Hard red laterite Damp red clay		
D.C.79	Aug. 18, 1958	0- 2' 2- 6' 6- 8'	Sandy soil and ironstone gravel Red iron rich laterite Damp red clay		
D.C.80	Aug. 18, 1958	0- 2' 2- 6' 6- 8'	Sandy soil and ironstone gravel Red sandy laterite Damp red sandy clay		
D.C.81	Aug. 21, 1958	0- 2' 2- 9' 9'	Soil and loose ironstone pebbles Hard red stony laterite Damp white clay		
D.C.82	Aug. 21, 1958	0- 2' 2- 8' 8'	Soil and loose ironstone Hard red stony laterite Soft purplish clay		
D.C.83	Aug. 21, 1958	0-12'	Sandy brown loam		
D.C.84	Aug. 21, 1958	0- 4' 4- 8' 8'	Soil and loose ironstone Soft sandy red laterite Damp red clay		

<u>Hole Number</u>	<u>Date Drilled</u>	<u>Interval</u>	<u>Description</u>	<u>CSA</u>	<u>Insoluble Residue</u>
D.C.85	Aug. 26, 1958	0- 2'	Soil and loose pisolites		
		2- 4'	Soft coarsely pisolitic red laterite		
		4-16'	Soft sandy red laterite with fewer pisolites		
		Sampled			
		2- 4'		16	29.2
		4- 8'		5	38.3
		8-12'		5	40.7
		12-16'		3	41.8

Arnhem Land Permit to Enter Number 57

Liverpool River Area

Drill Logs

Holes were drilled with a "Mighty Midget" vacuum drill. Holes were bottomed in sandstone below the laterite horizon. Where laterite was absent, holes were bottomed in the water table.

"Loam" indicates a weathered sandstone formation that is orange to yellow in color, composed of fine, angular, detrital quartz, and limonite and limonitic clayey sand. Quartz constitutes about 60% of the formation.

D.M. indicates "Drill hole - Maningridi".

D.M. 1

0' to 3'	Grey, sandy soil.
3' to 11'	Soft, red, sandy laterite with 1/2 inch diameter angular Ironstone particles.
11' to 15'	Hard yellow sandstone.

D.M. 2

0' to 2'	Grey, sandy soil.
2' to 6'	Hard, red laterite with rounded Ironstone pebbles.
6' to 16'	Soft, red, sandy laterite.
16' to 17'	White sand.
17' to 22'	Soft, red, sandy laterite.
22' to 23'	Hard brown sandstone.

D.M. 3

- 0' to 2' Brown, sandy soil.
- 2' to 11' Soft, friable, red laterite with small angular Ironstone particles.
- 11' to 18' Soft, red, sandy loam.
- 18' to 22' Alternating 6 inch bands of loamy clay and weathered sandstone.
- 22' to 23' Hard yellow sandstone.

D.M. 4

- 0' to 2' Brown, sandy soil.
- 2' to 10' Orange coloured sandy loam.
- 10' to 16' Red, sandy laterite with angular Ironstone particles.
- 16' to 18' Yellow, sandy loam.
- 18' Water level.

D.M. 5

- 0' to 2' Grey, sandy soil.
- 2' to 6' Loose, yellow, sandy loam.
- 6' to 10' Damp, red and brown clay.
- 10' Water level.

D.M. 6

- 0' to 4' Clean, white, river sand.
- 4' Water level.

D.M. 7

0' to 3' Grey, sandy soil.  
3' to 14' Orange coloured sandy loam.  
14' Water level.

D.M. 8

0' to 2' Grey, sandy soil.  
2' to 14' Orange coloured sandy loam.  
14' to 23' Damp, soft, red laterite with semi-rounded Ironstone  
pebbles with a yellow coating, probably Limonite.  
23' Water level.

D.M. 9

0' to 3' Grey, sandy soil.  
3' to 15' Orange, sandy loam.  
15' Water level.

D.M. 10

0' to 2' Grey, sandy soil.  
2' to 21' Orange, sandy loam.  
21' Water level.

D.M. 11

0' to 2' Grey, sandy soil.  
2' to 11' Loose, red, sandy laterite with some angular Ironstone  
particles.  
11' to 13' Weathered sandstone.  
13' to 15' Hard brown sandstone.



D.M. 12

0' to 3' Greyish brown, sandy soil.  
 3' to 11' Soft, red, stony laterite.  
 11' to 12' Damp, red clay.  
 12' Water level.

D.M. 13

0' to 2' Grey, sandy soil.  
 2' to 10' Soft, red, sandy laterite.  
 10' Water level.

D.M. 14

0' to 2' Grey, sandy soil.  
 2' to 11' Red, sandy loam.  
 11' to 17' Sandstone, becoming harder with increasing depth.

D.M. 15

0' to 3' Grey, sandy soil.  
 3' to 7' Soft, red lateritic soil.  
 7' to 9' Hard brown sandstone.

D.M. 16

0' to 2' Grey, sandy soil.  
 2' to 14' Yellow sandy loam.  
 14' to 17' White sand.  
 17' Water level.

D.M. 17

0' to 2'	Grey, sandy soil.
2' to 11'	Yellow, sandy loam.
11'	Water level.

