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25 JUN 1969

CR. 2770

CONTINENTAL OIL COMPANY OF AUSTRALIA LTD.

MINERAL EXPLORATION DIVISION

PROGRESS NOTES

on

1968

DRILLING OPERATIONS (FIRST HALF)

for

PHOSPHATE

AUTHORITY TO PROSPECT Nos. 354M & 375M

UNDILLA BASIN

QUEENSLAND, AUSTRALIA

June 30, 1968.

## INTRODUCTION

This report covers the first half of the 1968 phosphate drilling programme carried out on behalf of the Mineral Exploration Division of the Continental Oil Company of Australia Ltd. in Authority to Prospect 375M, approximately 100 miles north-west by road from Mt. Isa, Queensland, Australia. Unseasonably wet weather forced abandonment of the drilling operations with only nine (9) of the proposed twenty (20) holes completed. This report outlines the progress and the information obtained from the first half of the programme.

## DRILLING

The 1968 Drilling Programme was designed to evaluate the grade and thickness of the phosphate beds found during the 1967 Drilling Programme (see Plate I and II - Progress Editions). A 20 hole grid, spaced at half mile intervals, was constructed to more fully examine the area of "Grade Phosphate"; 1967 Hole S.C.15 is approximately the centre of this grid.

Austral Geo Prospectors Pty. Ltd., Brisbane, contracted to air drill the area and supplied a standard Mayhew 1000 Rig.

A road grader was brought into the area to improve creek crossings and tracks made impassable by the previous "wet" season.

The twenty (20) hole grid was surveyed in via plane table and telescopic alidade by R. Grasso (Minoil Services Pty. Ltd.) and the writer. The grid was tied into existing known hole locations and elevations, and the error was therefore kept to a reasonable minimum.

Drilling commenced on April 25th, and was abandoned on April 29th due to heavy and prolonged rain in the area. Yelvertoft Homestead, some twenty (20) miles from the drilling area, reported four and a half (4½) inches in the twenty-four hour period, which caused immediate flooding throughout the area.

Prior to shut down, drilling was relatively successful, completing eight (8) holes in two of the three days drilling. Only one hole was lost because of very siliceous material found in Hole SC 2-68. In all, ten (10) holes were drilled for a total of 848 feet; nine (9) holes were completed. No holes drilled required casing, and loss of circulation was only a very minor problem, which was very unusual considering past drilling operations where caving and lost circulation were critical problems.

Table I is a summary of the holes completed, i.e. Total Depth, Depth to top of Phosphate, thickness and average percent P<sub>2</sub>O<sub>5</sub> ( $\geq 10\%$ ). Table 2 is a listing of detailed Field Shapiro and A.M.D.E.L. Shapiro results for all holes completed to date.

TABLE I

<u>Hole</u>	<u>Total Depth (ft)</u>	<u>Depth to Top of Zone (ft)</u>	<u>Thickness of Zone</u>	<u>Average % P<sub>2</sub>O<sub>5</sub> of Zone (<math>\geq 10\%</math>)</u>
SC 1-68	81	61	8 ft	20.1%
SC 2-68	51	- Lost Hole	-	-
SC 3-68	105	47 (1st Zone)	2 ft	10.5%
		72 (2nd Zone)	5 ft	15.6%
		85 (3rd Zone)	4 ft	13.0%
SC 4-68	90	50	16 ft	12.6%
SC 5-68	82	59	14 ft	14.8%
SC 8-68	101	59	8 ft	15.5%
SC 17-68	82	33	7 ft	11.1%
SC 18-68	91	74	8 ft	14.1%
SC 19-68	86	74	1 ft	11.4%
SC 20-68	79	59 (1st Zone)	4 ft	12.8%
		68 (2nd Zone)	1 ft	10.6%
Total Holes: 10	Total Ft. Drilled	848		

TABLE 2  
FIELD SHAPIRO (F)  
and  
A.M.D.E.L. SHAPIRO (A)  
SHERRIN CREEK AREA

SC 1-68

<u>Footage</u>	<u>F</u>	<u>A</u>
		<u>% P<sub>2</sub>O<sub>5</sub></u>
53-54	< 1	-
55	< 1	-
56	< 1	-
57	< 1	-
58	2	-
59	< 1	-
60	2	-
61	10	9.0
62	15	10.0
63	10	12.4
64	25-30	24.4
65	25-30	26.5
66	25-30	25.3
67	25	24.9
68	25	21.6
69	18	15.3
70	9	7.9
71	9	6.6
71-72	8	6.6

SC 3-68

<u>Footage</u>	<u>F</u>	<u>A</u>	<u>Footage</u>	<u>F</u>	<u>A</u>
	<u>% P<sub>2</sub>O<sub>5</sub></u>			<u>% P<sub>2</sub>O<sub>5</sub></u>	
41-42	<1	-	75	17	17.0
43	<1	-	76	19	19.8
44	<1	-	77	18	15.4
45	<1	-	78	7	7.0
46	4	-	79	5	4.3
47	8	9.4	80	6	4.2
48	9	11.1	81	6	3.6
49	15	9.9	82	9	6.2
50	6	7.4	83	14	9.0
51	2	-	84	16	8.6
52	2	-	85	13	8.7
53	2	-	86	15	11.0
54	1	-	87	20	15.8
55	6	4.4	88	15	13.8
56	1	-	89	16	11.2
57	2	-	90	5	6.0
58	1	-	91	5	4.9
59	1	-	92	4	-
60	1	-	93	3	2.6
61	1	-	94	9	5.1
62	1	-	94-95	9	5.3
63	1	-	95-96	4	-
64	1	-	97	5	3.9
64-65	1	-	98	3	-
65-66	1	-	99	4	-
67	9	6.6	100	4	-
68	1	-	101	4	-
69	1	-	102	3	-
70	2	-	103	3	-
71	8	5.6	104	3	-
72	9	5.0	104-105	3	-
73	13	11.6			
74	18	14.1			

SC 4-68

<u>Footage</u>	<u>F</u>	<u>A</u>
	<u>% P<sub>2</sub>O<sub>5</sub></u>	
42-43	< 1	-
44	< 1	-
45	< 1	-
46	3	-
47	8	8.2
48	12	6.4
49	13	8.1
50	7	7.5
51	11	11.8
52	20	14.2
53	9	11.6
54	11	8.0
55	13	15.6
56	14	13.4
57	13	11.6
58	14	12.5
59	16	10.8
60	16	13.2
61	13	11.8
62	10	9.3
62-63	18	17.5
63-64	9	9.5
65	20-25	16.5
66	18	15.0
67	7	4.5
67-68	2	2.6
74-75	1	1.1

SC 5-68

<u>Footage</u>	<u>F</u>	<u>A</u>	<u>Footage</u>	<u>F</u>	<u>A</u>
		<u>% P2O5</u>			<u>% P2O5</u>
46-47	5	3.0	79	15	7.2
48	7	5.0	80	4	3.8
49	7	4.1	81	5	3.3
50	7	5.2	81-82	5	4.1
51	9	8.7			
52	7	6.6			
53	12	8.7			
54	3	-			
55	3	-			
56	3	-			
57	4	3.6			
58	9	7.4			
59	9	9.0			
60	11	10.2			
61	16	13.5			
62	16	14.9			
63	18	15.1			
64	18	18.4			
85	18	18.2			
66	19	23.5			
67	18	20.8			
68	16	18.8			
69	14	11.3			
69-70	6	7.5			
70-71	9	6.8			
72	16	16.2			
73	15	11.3			
74	12	7.5			
75	12	7.2			
76	12	5.8			
77	4	3.9			
78	7	6.6			

SC 8-68

<u>Footage</u>	<u>F</u>	<u>A</u>	<u>Footage</u>	<u>F</u>	<u>A</u>
		<u>% P<sub>2</sub>O<sub>5</sub></u>			
52-53	2	-	85	2	-
54	5	4.8	86	2	-
55	4	-	87	2	-
56	5	4.4	88	2	-
57	5	4.1	89	2	-
58	4	2.9	90	2	-
59	4	-	91	3	-
60	18	21.6	92	4	-
61	20	31.2	93	7	8.1
62	18	14.4	94	4	-
63	12	9.8	94-95	5	2.8
64	11	9.0	96	4	-
65	11	10.8	97	4	-
66	10	10.6	98	6	6.1
67	15	16.3	99	9	5.4
68	7	6.8	100	4	-
69	2	-	100-101	2	-
70	4	-			
70-71	4	3.0			
71-72	4	-			
73	3	-			
74	3	-			
75	3	-			
76	4	-			
77	6	3.8			
78	4	-			
79	2	-			
80	3	-			
81	3	-			
82	2	-			
83	2	-			
84	2	-			



SC 17-68

<u>Footage</u>	<u>F</u>	<u>A</u>	<u>Footage</u>	<u>F</u>	<u>A</u>
		<u>% P<sub>2</sub>O<sub>5</sub></u>			<u>% P<sub>2</sub>O<sub>5</sub></u>
31-32	1	-	64	< 1	-
33	4	4.9	64-65	< 1	-
34	11	9.9	65-66	< 1	-
35	8	7.9	67	< 1	-
36	12	11.2	68	< 1	-
37	9	10.5	69	< 1	-
38	14	12.9	70	2	-
39	10	14.0	71	2	-
40	9	11.0	72	2	-
41	7	6.2	73	2	-
42	2	-	74	3	-
43	1	-	75	3	-
44	2	-	75-76	4	5.3
45	2	-	77	4	-
46	1	-	78	5	7.5
47	1	-	79	2	-
48	1	-	80	2	-
49	1	-	81	2	-
50	1	-	81-82	2	-
51	1	-			
52	1	-			
53	2	-			
54	4	-			
55	13	8.5			
56	4	-			
57	1	-			
58	< 1	-			
59	< 1	-			
60	< 1	-			
61	< 1	-			
62	< 1	-			
63	< 1	-			

SC 18-68

<u>Footage</u>	<u>F</u>	<u>A</u>
		<u>% P<sub>2</sub>O<sub>5</sub></u>
70-71	1	-
72	1	-
73	2	-
74	5	-
75	17	14.8
76	15	17.5
77	20	16.2
78	15	16.1
79	14	12.7
80	15	12.5
81	15	12.9
82	10	9.9
83	7	8.0
84	5	3.5
84-85	5	2.4

SC 19-68

<u>Footage</u>	<u>F</u>	<u>A</u>
64-65	< 2	-
66	< 2	-
67	< 2	-
68	< 2	-
69	< 2	0.6
70	< 2	1.4
71	3	4.7
72	8	5.7
73	8	8.0
74	10	8.2
75	12	11.4
76	7	8.7
77	5	4.3
78	5	3.4
79	5	3.4
79-80	4	2.9

SC 20-68

<u>Footage</u>	<u>F</u>	<u>A</u>	<u>Footage</u>	<u>F</u>	<u>A</u>
		<u>% P<sub>2</sub>O<sub>5</sub></u>			<u>% P<sub>2</sub>O<sub>5</sub></u>
45-46	4	3.2	74	3	2.0
47	6	5.4	75	2	3.6
48	8	6.1	76	3	3.6
49	5	5.7	77	1	2.2
50	8	4.1	78	2	2.3
51	5	4.4	78-79	2	1.6
52	8	5.7			
53	6	6.3			
54	7	5.7			
55	9	5.4			
56	10	4.6			
57	6	5.4			
58	5	4.1			
59	5	3.9			
59-60	12	12.8			
60-61	15	11.0			
62	20	13.8			
63	20	13.5			
64	3	4.1			
65	12	8.5			
66	8	6.1			
67	7	7.2			
68	6	5.0			
69	12	10.6			
70	2	4.0			
71	4	3.2			
72	3	2.3			
73	2	1.1			

CORING

Nil

SAMPLING

Air drilling, using a rock-bit, provided generally good samples which were collected at one foot intervals from the surface to T.D. As usual, the material of the phosphate zone was collected in "large" Hubco sample bags and later split, with half immediately being sent to A.M.D.E.L., Adelaide for detailed analysis, while the other half was sent to storage along with other "non-phosphate" samples for later detailed study, if necessary.

LOGGING AND TESTING

Logging of the cuttings was performed by R. Grasso and the writer. The logging procedure was relatively simple and brief. Therefore, only a relatively quick description (with the aid of hand lens) was performed. If detailed studies are required, the cuttings should be washed and then relogged with a binocular microscope.

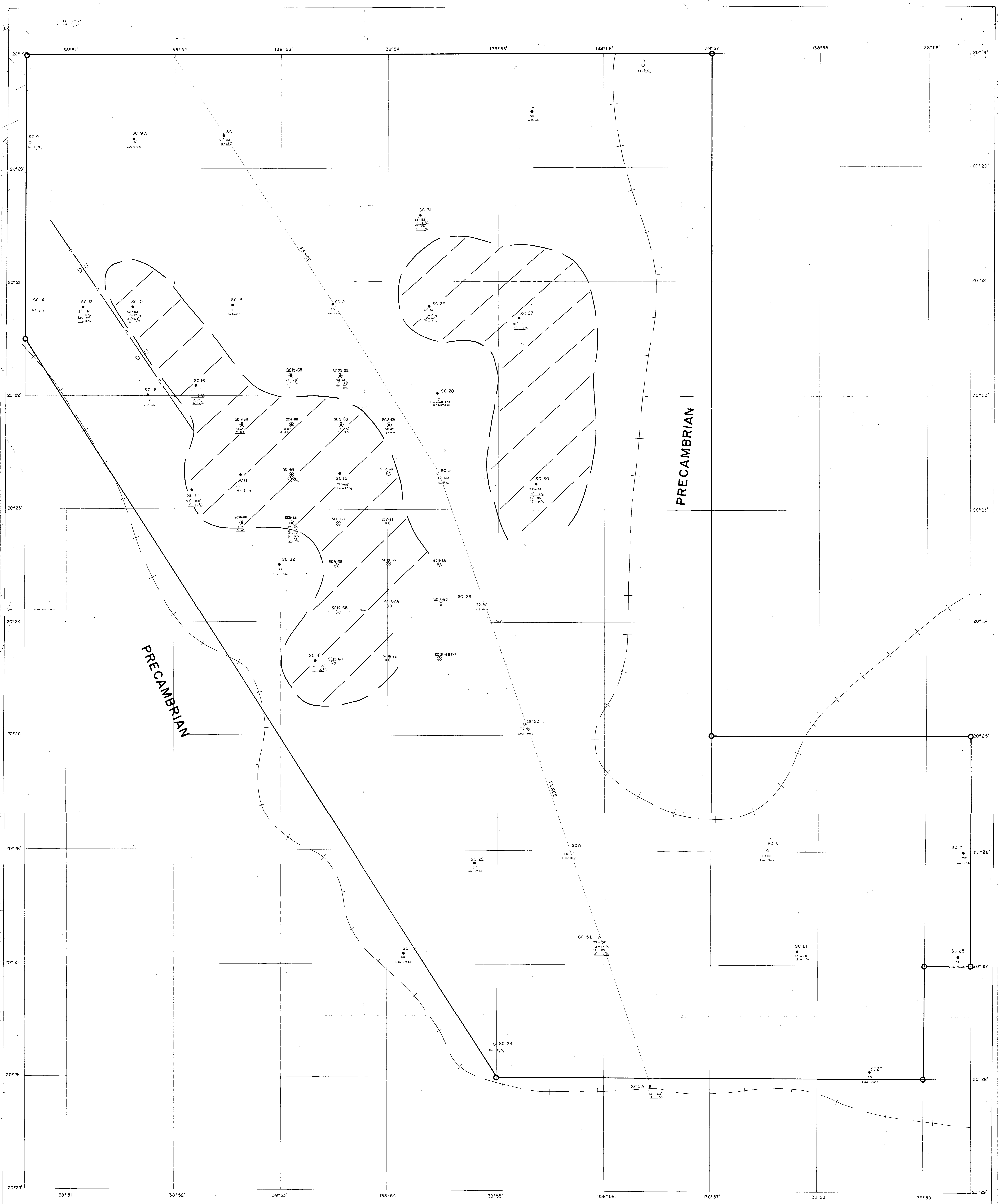
Chip testing with Shapiro solution was performed while the holes were being drilled; semi-quantitative Field Shapiro analyses for the P<sub>2</sub>O<sub>5</sub> content were performed by R. Grasso and the writer in a temporary laboratory at the camp site. Samples which gave a Shapiro P<sub>2</sub>O<sub>5</sub> content greater than 4% or those which appeared mineralogically interesting, i.e. usually in the crandalitic (?) zone above the phosphate zone, were sent to A.M.D.E.L. for more accurate P<sub>2</sub>O<sub>5</sub> determination and evaluation.

RESULTS

Field Shapiro and A.M.D.E.L. results are listed in Tables 1 and 2, and on Plates I and II.

M.D. CAMPBELL

May 20, 1968.



- REFERENCE**
- Precambrian boundary
  - Reduced Area (Sherrin Creek)
  - 1966 Hole (Area Discovery Hole)
  - 1967 Hole (Encountered Phosphate)
  - 1967 Hole (Did not encounter Phosphate)
  - 1968 Hole (Completed and encountered Phosphate)
  - 1968 Hole (To be completed in near future)

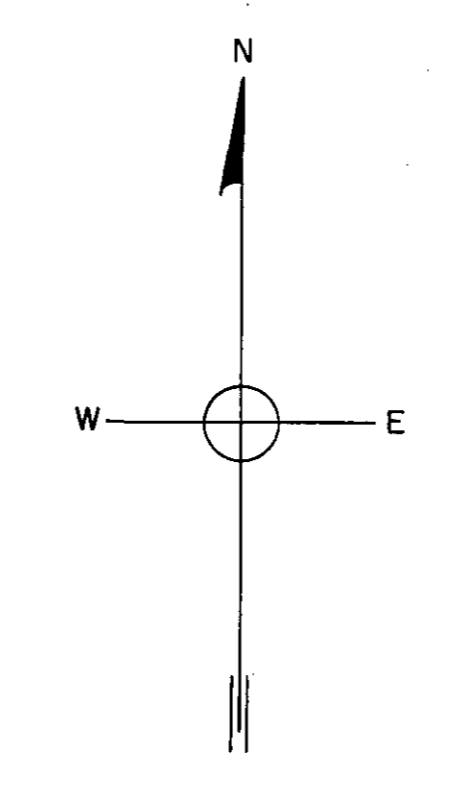
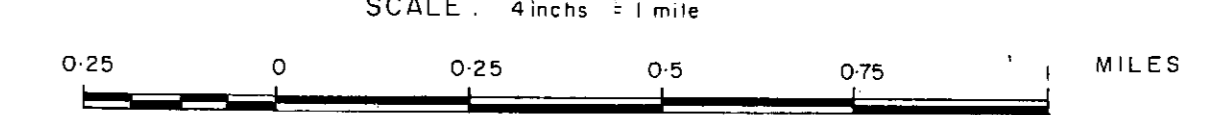


PLATE I  
 PRELIMINARY EDITION  
 CONTINENTAL OIL COMPANY OF AUSTRALIA LTD.  
 MINERAL EXPLORATION DIVISION  
 POTENTIAL AREAS OF GRADE PHOSPHATE\*

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 2770/2

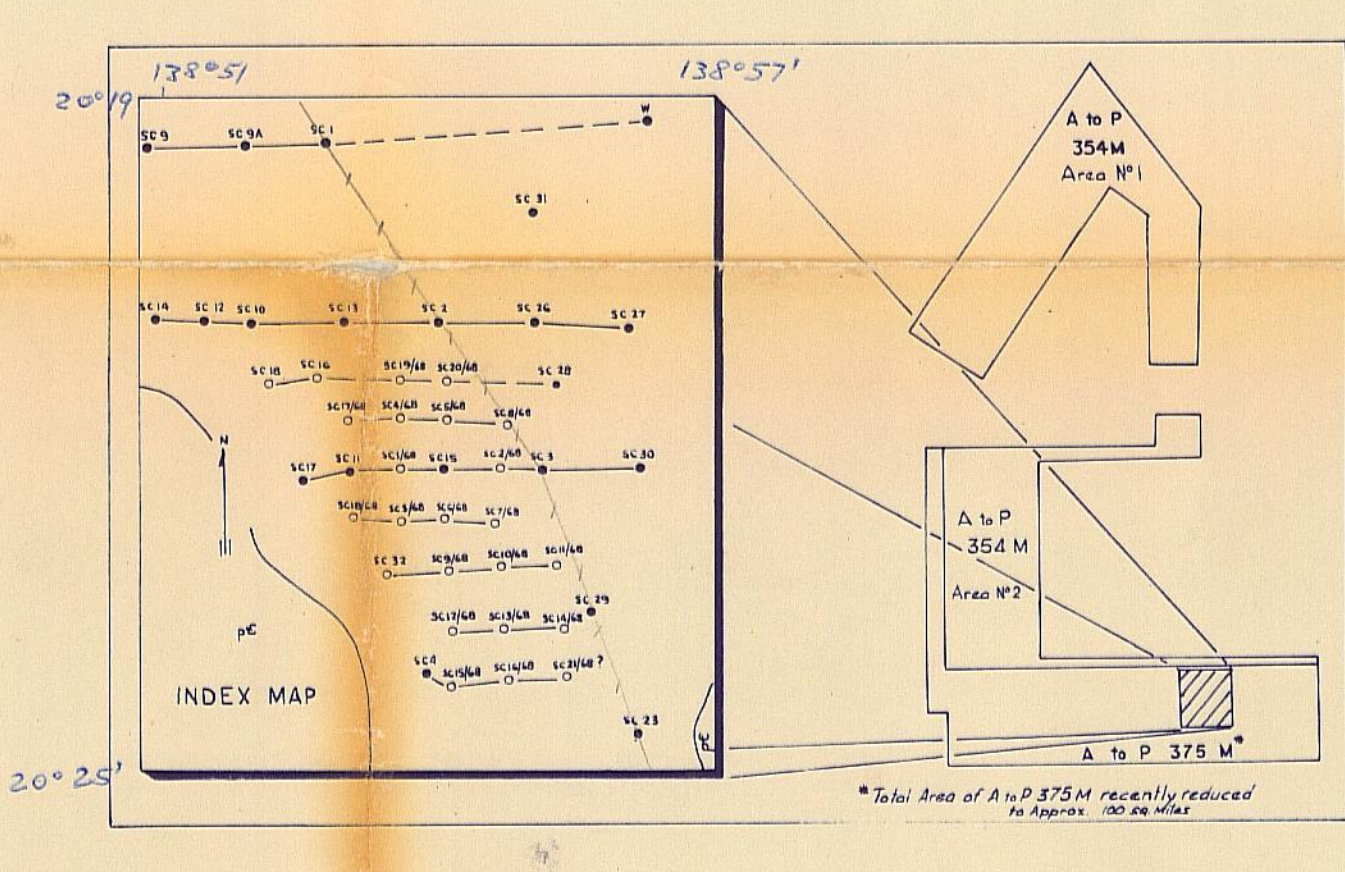
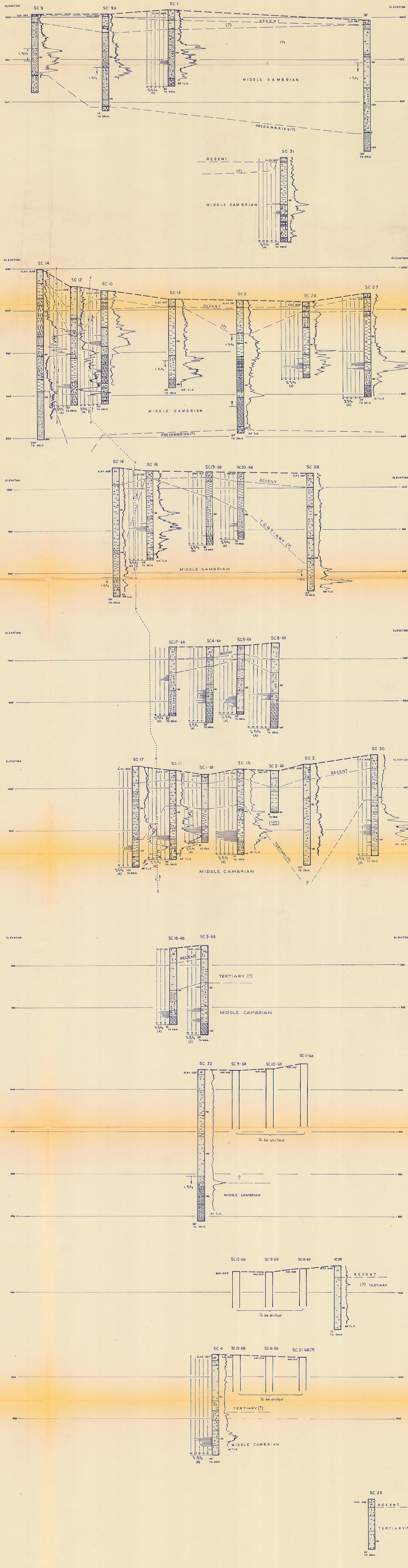
1968 DRILLING PROGRAM  
 SHERRIN CREEK AREA (Reduced 1:48)  
 AUTHORITY TO PROSPECT - 375 M  
 QUEENSLAND  
 BY: M.D. CAMPBELL  
 SCALE: 4 inches = 1 mile

This map has been re-printed and may not be to scale



\* GRADE PHOSPHATE DEFINED AS ≥ 10.0% P<sub>2</sub>O<sub>5</sub> A.M.D.E.L. (shown by dotted line.)  
 Based on 1967 Drilling Program only. Results of 1968 Drilling Program not included.





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PLATE II

REFERENCE	
	Quartz Pebbles or Large Grains (well rounded)
	Aluminum (or Soil Material)
	Carbon (as %)
	TO DRILL TO DRILL TO DRILL
	TO DRILL TO DRILL TO DRILL
	TO DRILL TO DRILL TO DRILL
	TO DRILL TO DRILL TO DRILL
	TO DRILL TO DRILL TO DRILL

TITLE: SHERRIN CREEK AREA	
SUBTITLE: CROSS SECTIONS (UPPER)	
GEOGRAPHIC REFERENCE OR COORDINATES: _____	
SCALE: VERT 1" = 400' - EXPLANATION 13" BATHY. BASE ON BALDWIN	CONTOUR INTERVAL: _____
PROVINCE: QUEENSLAND	COUNTRY: AUSTRALIA
AREA/REGION: WIMBORNY 100 PROSPECT 375 M	DIVISION: _____
SURFACE GEOLOGY: <input checked="" type="checkbox"/> SURFACE GEOLOGY: <input type="checkbox"/> OTHER: <input type="checkbox"/>	REPLACES: _____
BY: M. D. CAMPBELL	DATE: 12-2-58
FOR: ACQUISITION <input type="checkbox"/> PROPOSED EXPLORATION: <input type="checkbox"/> EXPLORATION PROGRESS REPORT: <input checked="" type="checkbox"/> FIELD DEVELOPMENT: <input type="checkbox"/>	FILE NO.: _____
CONTINENTAL OIL COMPANY OF AUSTRALIA LIMITED	
MINERAL EXPLORATION DIVISION	

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