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SML 555

BRADYS DAM

PROGRESS AND FINAL REPORTS FOR THE PERIOD 1/4/71 TO 12/11/71

Submitted by
Mines Administration Pty Ltd
1972

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PRIMARY INDUSTRIES AND RESOURCES SA

CONTENTS ENVELOPE 1644

TENEMENT: S.M.L. 555 Brady's Dam

TENEMENT HOLDER: Mines Administration Pty. Ltd.

REPORT:	Summary of Work Carried on S.M.L. 555 April to June 1971	(P3)
	Final Report S.M.L. 555 (Brady's Dam 17 Feb 1972	(Pgs4-6)
	Material Submitted 10 Sept 1973	(Pgs7-8)
PLANS:	Airborne Radiometric Survey	1644-1
	Murray Basin & Cockburn Area Olary	
	Locality Map	1644-2

SUMMARY OF WORK CARRIED OUT ON SML 555, April to June, 1971

Work carried out during the three month period ending 30th June, 1971 has been two fold - to evaluate results of drilling programme completed in February 1971 along with a drilling programme completed in June on the adjacent SML 416 (Postmark) and an airborne scintillometer survey completed in April 1971.

Env 1422

A report of the reconnaissance drilling programme to evaluate the uranium potential of SML 555 was included as part of the Final Report on SML 282 (Lilydale) dated 18th June, 1971. (SML 555 was previously held by Minad and referred to as "the soft rock portion" of SML 282).

An airborne scintillometer survey was carried out in the area in conjunction with a similar survey in the Cockburn area, South Australia from 7.4.71 to 15.4.71. The aircraft used was a Cessna 182, VH-DNN and the scintillometer was a Nuclear Enterprises Ltd. instrument; the output together with the altitude was recorded continuously. The scintillometer settings used were:-

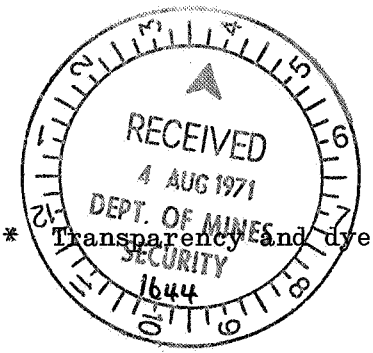
Time constant	-	1 second
High voltage	-	2.90 14 x 100
Analyser	-	Positive Polarity Mode - INT
		E = 8 E = 1.42
Amplifier	-	Cain 109 Positive Square Wave
Range	-	300 CPS F.S.D. to 1,000 CPS F.S.D.

The average altitude during the survey was 210 feet with an average indicated air speed of 105 knots. Spacing of survey lines was approximately 1 mile.

Results are shown on Plate 1 *, which is an overlay of the Olary 1:250,000 Series Topographic Sheet. Flight lines are plotted along with CPS recorded. The average background recorded in the area was 120 - 140 CPS. Anomalous values were recorded adjacent to the basement rock near Lilydale Homestead - especially along Manunda Creek. Several smaller anomalous areas were picked up in the north-east of the survey area.

It appears that the anomalous areas are associated with present day drainage systems within and adjacent to exposures of Pre-Cambrian rocks.

A decision on future exploration on SML 555 will be made after evaluation of drilling in adjacent SML 416 (Postmark) has been made.



R.L. JOHNSON
July 30, 1971

* Transparency and dyeline sent under separate cover.

FINAL REPORT

SML.555 (BRADY'S DAM)

by

G.A. JARRE

LEASE DETAILS

SML.555 was granted to Mines Administration Pty. Ltd. on 30th March 1971. It was held continuously by this company until the relinquishment of the lease on 12th November 1971. SML.555 covered an area of 284 square miles in the vicinity of Brady's Dam - about 50 miles south-east of Yunta, S.A. The limits of the lease are plotted on the attached copy of a portion of the Olary 1:250,000 topographic map sheet.

The lease covered exploration for all minerals; however, sedimentary uranium was the prime target. In this project, Mines Administration Pty. Limited was acting for a Joint Venture with Teton Exploration Drilling Company of Wyoming U.S.A. (50:50). The object was to apply the sedimentary uranium exploration technology and methodology successfully developed in the States of Wyoming and New Mexico, to the Tertiary sediments of South Australia.

GEOLOGY

The Brady's Dam area is bounded to the north and west by outcropping Lower Palaeozoic and Precambrian rocks. The area covered by SML.555 is one of low relief in which no outcrops occur.

Quaternary

Clays, sands, and gravels form a thin veneer over the relatively flat Upper Tertiary landscape.

Upper Tertiary

A sequence of light red to yellowish clays, silty clays and sands directly underlies the Quaternary section. It is generally 2-300 feet thick. The main sand unit occurs at the base of the section and is equated with the Loxton Sands of Pliocene age. Lateral variations within this sand unit suggests its deposition in a fluviatile to lacustrine environment.

Lower Eocene

Knight Group equivalent sediments disconformably underlie the Loxton Sands. These Lower Eocene beds are composed predominantly of dark greenish grey, carbonaceous, pyritic clays with minor silt interbeds. A thin lignitic horizon occurs at the top of the section in parts of the area. Sandy horizons are also present, the best developed being near the top of the section. Shell fragments have been recorded sporadically throughout the Knight Group and are particularly numerous towards the base. This probably reflects a diminishing marine influence in this part of the Murray Basin during the Eocene. In the area of interest these sediments appear to have been deposited under varying paralic-lacustrine-fluviatile conditions.

Precambrian

Basement consisting predominantly of quartzites and aplitic rocks underlie the Cainozoic section in this area.

4A

Drilling.

BF 1	-
BF 2	290'
BF 3	290'
BF 4	290'
BF 5	305'
BF 6	335'
BF 7	335'
BF 8	320'
BF 9	280'
BF 10	305'

cuttings from the surface to the depths listed are stored at Thebarton.

EXPLORATION

The exploration of SML.555 consisted of two sequential stages:-

: Airborne Radiometric Survey
: Openhole Drilling and Wireline Logging.

Details relating to these exploration stages have been set out in the various Quarterly Reports. For this reason present comment will be confined to summarizing the results.

Airborne Radiometric Survey

The whole of SML.555 was surveyed using a light aircraft carrying a "Nuclear Enterprise" scintillometer with a 4" x 6" crystal. The aircraft was flown at an average elevation of 210 feet above ground surface at an indicated air speed of 105 knots. Flight line spacing was one mile. Anomalous radioactivity detected near Lilydale Homestead was directly attributed to the close proximity of the adjacent basement rocks. Several small radiometric anomalies were also recorded in the north-west portion of the area. These were attributed to present day drainage systems which crossed the anomalous areas from adjacent Precambrian outcrops. No anomalous radioactivity indicative of nearby sedimentary uranium concentrations was found during the airborne survey.

Drilling Programme

A 10 hole ~~drilling~~ programme was initiated and completed on SML.555 despite the disappointing results of the airborne radiometric survey. The reason was directly related to the proximity to a radioactive lignite encountered during drilling on the adjoining SML.416 (Postmark). A total of ten holes were completed on SML.555 - aggregating 3,205 feet. All holes were logged in their entirety for gross gamma, electri c al resistivity and spontaneous potential characteristics.

BF1 to BF10 (see plan)

Anomalous radioactivity was detected in three drill holes. In one hole (BF-3) the mineralization occurred in a lignite at a depth of 217'. The recorded radioactivity suggested that the uranium content was in the range of 0.06% U_3O_8 when compared with similar anomalous lignite from cored holes on SML.416.

In all three of the above mentioned holes an anomalous zone of radioactivity was present at the top of the dark grey carbonaceous clay section of the Knight Group equivalent. The level of activity in this zone was not as intense as the overlying lignite anomaly. However, chemical analyses of drill cuttings from the anomalous intervals did indicate the presence of slight uranium mineralization.

CONCLUSIONS

Radioactivity indicative of modest uranium mineralization occurs in the Tertiary section of SML.555. In all cases the section has been oxidized from the surface down to the zone of intersection. This suggests that surface and near-surface vertical alteration has been a dominant process and has caused slight thin uraniferous enrichment of underlying horizons. Hydrogeochemical cell mechanics, which has produced a majority of sedimentary uranium ore bodies, does not appear to have been operative in the area.

The occurrence of the uraniferous lignite horizon in a small part of the area is not considered to be economically important at this time because of its apparent very low grade, thin zone of mineralization, depth of burial, and well known poor amenability to current metallurgical extraction processes. The disappointing results of drilling on the adjoining SML.416 (Postmark), where likewise nothing approaching economic grades of uranium was detected, also severely downgrades the attractiveness of SML.555.

Any further exploration of the area to bring forward as yet undetected target areas and elavuate them can only be accomplished by additional drilling - a substantial exploration cost.

SML.555 does not appear to contain economic uranium mineralization nor does it offer any additional potential target areas. This company feels that additional expenditure of funds and effort on the area for uranium exploration is unjustified.

G.A. JARRE.

MATERIAL SUBMITTED

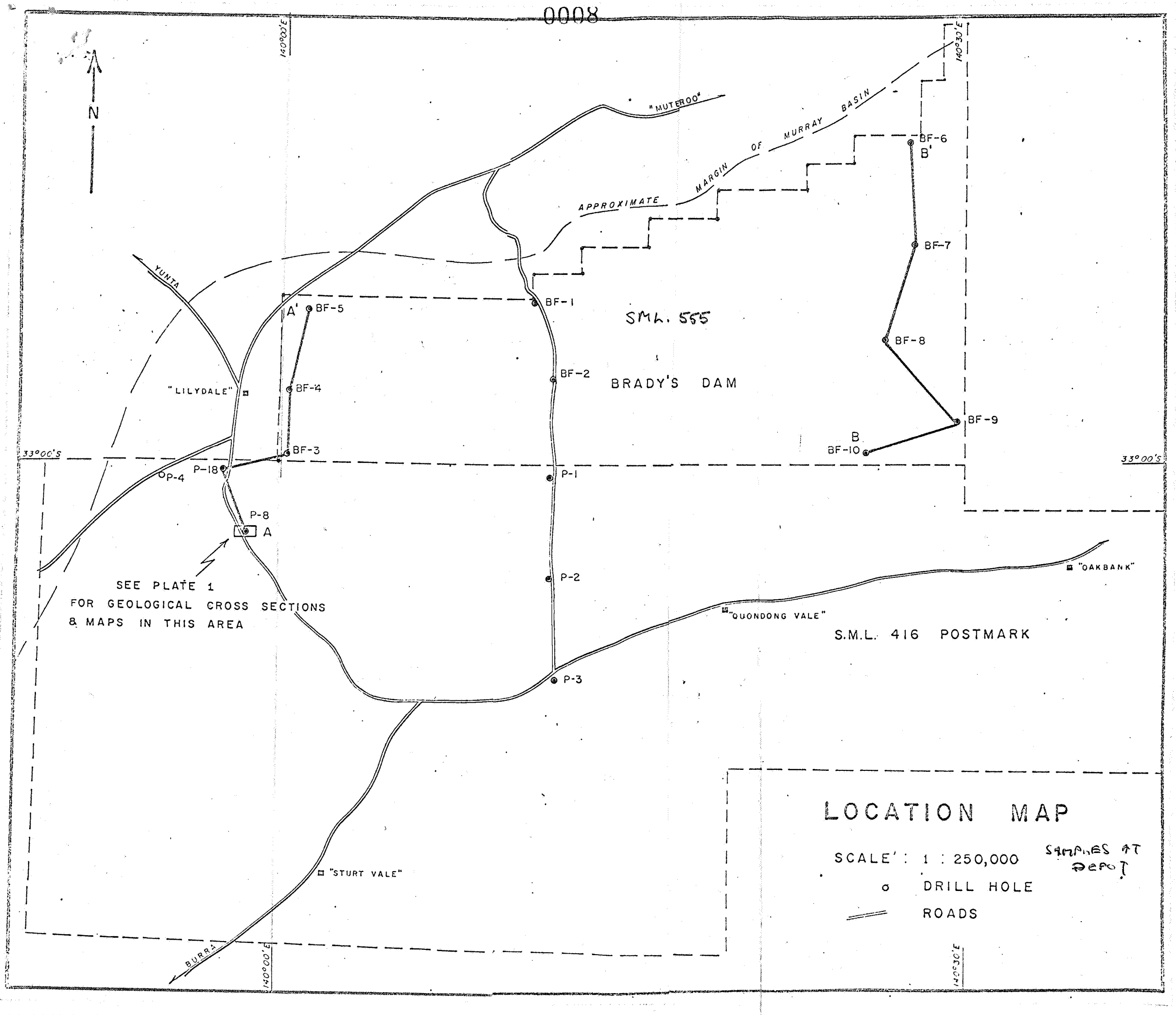
S.M.L.		Drill Holes
SML.612	(Mundaerno Hill) 724/71	MH1 to MH11
SML.531	(South West Frome) 1348/70	F1 to F3
SML.495	(Wyambana) * 1124/70	WY1 to WY11
SML.465	(Wirrealpa) ** 987/70	W1 to W14
SML.416	(Postmark) 364/70	P1 to P18
SML.555	(Brady's Dam) 395/71	BF1 to BF10
SML.344	(Rudall) 1152/69	RX1 to RX10 DP1 to DP5 DP25 to DP27
SML.469	(Lock) 818/70	L1 to L8

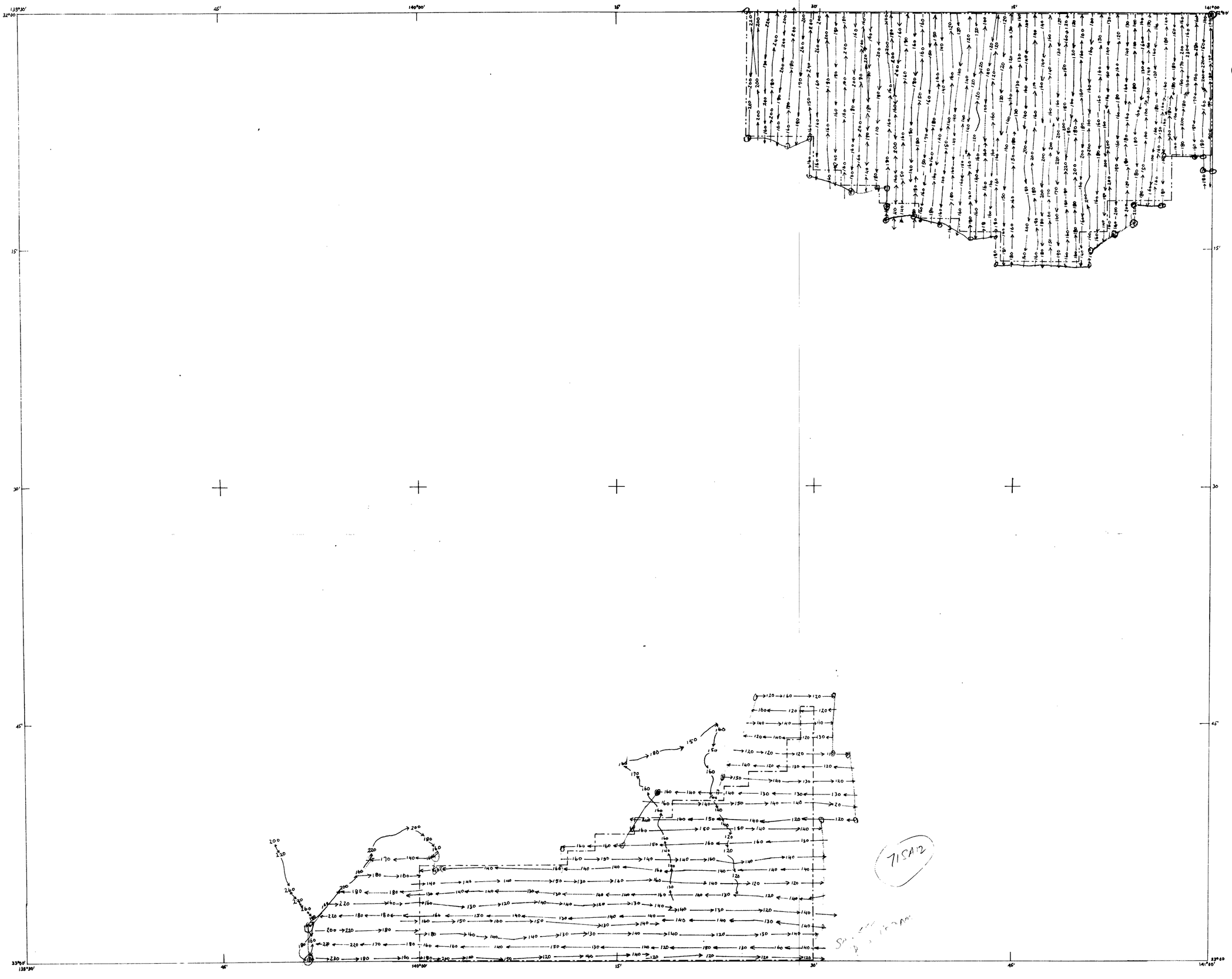
* Please note change of numbers for drill holes WY5 to WY11.

WY5	reads	WY2-1	on	samples
WY6	"	WY2-2	"	"
WY7	"	WY2-3	"	"
WY8	"	WY2-4	"	"
WY9	"	WY2-5	"	"
WY10	"	WY2-6	"	"
WY11	"	WY2-7	"	"

** Please note change of numbers for drill holes W7 to W14.

W7	reads	W2-1	on	samples
W8	"	W2-2	"	"
W9	"	W2-3	"	"
W10	"	W2-4	"	"
W11	"	W2-5	"	"
W12	"	W2-6	"	"
W13	"	W2-7	"	"
W14	"	W2-8	"	"


N
140°00'E
140°30'E
"MUTEROO"
APPROXIMATE MARGIN OF MURRAY BASIN
YUNTA
"LILYDALE"
A'
BF-5
BF-1
BF-2
BF-4
BF-3
P-18
P-4
P-8
A
SEE PLATE 1
FOR GEOLOGICAL CROSS SECTIONS
& MAPS IN THIS AREA
SML. 555
BRADY'S DAM
BF-6
B'
BF-7
BF-8
BF-9
B
BF-10
33°00'S
P-1
P-2
P-3
"OAKBANK"
"QUONDONG VALE"
S.M.L. 416 POSTMARK
"STURT VALE"
BURRA
LOCATION MAP
SCALE: 1 : 250,000
o DRILL HOLE
ROADS
SAMPLES AT DEPOT



COCKBURN AREA.

71SA11

71SA12

legend

line of flight indicating direction & intensity (C.P.S.)

M. T. A. S.M.L. boundaries

Minad S.M.L. boundaries

PLATE 1

Airborne Radiometric Survey
Murray Basin & Cockburn Area
Olary

T. J. Reddacliff & D. A. Brunt

7-4-71 to 15-4-71

1644-1

Ram Paddock Well
Gorge Well
Copperlinka Well
Copperlinka Yard
North Well
Carnamoodla Well
Double Dam
"Devonborough Downs"
Talatabora Dam
House Dam
Maldorky Well
MALDORKY HILL 1354
Old Powerline
Maldorky D...
32° 30'
140° 00'
32° 30'
140° 30'
Duffield Dam
rough Dam
Well
Little Well
Well
Wadnaminga
DAVENBOROUGH HILL
Carnamoola Dam
98
Quinzina
PEPUARTA
"Taltabooka"
LION HILL
West Knob Well
60.D...
Davenborough Bore
Vermin Proof Fence
Aldermans Dam
Ironstone Dam
Aldermans Catch
"Benda"
Rileys Dam
Bryce Dam
Virginia Well
GOODE HILL
Well
Towers Dam
Maldorky Dam
Gum Well
Well
Giles Nob
Ocalia Well
629
Harolds Dam
Cockrums Dams
Davenborough Dam
97
RANGE
Burdons Dam
Bore
ROUND HILL
Sampsons Dam
South East Dam
Middle Ocalia Dam
Dark Hill Dam
Track
Cornwell Da...
BENDA
Orana Dam
Anabama Dam
32° 41'
140° 16'
Wadnaminga
Vigars Dam
Horse Water Hole Dam
Meadows Dam
589
Powerline
96
Belinda Dam
Ocalia Dam
Proof
Fence
Binda Dam
New House Dam
Cane Grass Dam
Geranium Dam
Old
York Tank
"Dlorah Downs"
Great Eastern Dam
Mc.Lennans Dam
30
Pearces Dam
31
ANABAMA HILL
32
33
34
35
Nedley Gap
Catch Dam
Mallee Dam Bore
Potts Dam
Bayes Dam
Boucauts East Dam
Bore
Pigeon Dam
32° 44'
140° 02'
32° 47'
140° 10'
32° 45'
Nedley Gap Well
Wilks Dam
Anabama East Dam
557
32° 46'
Anabama East Hut
Division Dam
Satire
Fence
Crabbs Dam
NETLEY HILL
Gorge Dam
Cutaway Dam
White Rock Dam
32° 48'
Gorge Well
32° 49'
32° 50'
140° 05'
94
Boucauts West Dam
32° 50'
Cronje Dam
Oakbank Da...
Tobacco Bush Dam
Vermin Proof Fence
517
32° 51'
32° 52'
Diamond Dam
Sisters Dam
Bradys Dam
32° 53'
Cocktail Dam
S.M.L.555
Amateur Dam
93
Track
32° 54'
Vermin Proof Fence
Sixty Dam
Gloucester Dam
Schwiers Dam
Record Dam
430
Powerline
Old
Proof Fence
Vermin
Kruger Dam
33° 00'
140° 00'
140° 11'
140° 13'
140° 16'
140° 19'
140° 23'
140° 25'
140° 28'
140° 29'
140° 30'
RECEIVED
17 FEB 1972
DEPT. ... MINES
SECURITY
1644
1644-2