Open File Envelope No. 2783

EL 246

TRINITY MINE

COMBINED FIRST PROGRESS/FINAL REPORT AT LICENCE SURRENDER, FOR THE PERIOD 21/5/1976 TO 15/10/1976

Submitted by
South Australia. Director of Mines
1976

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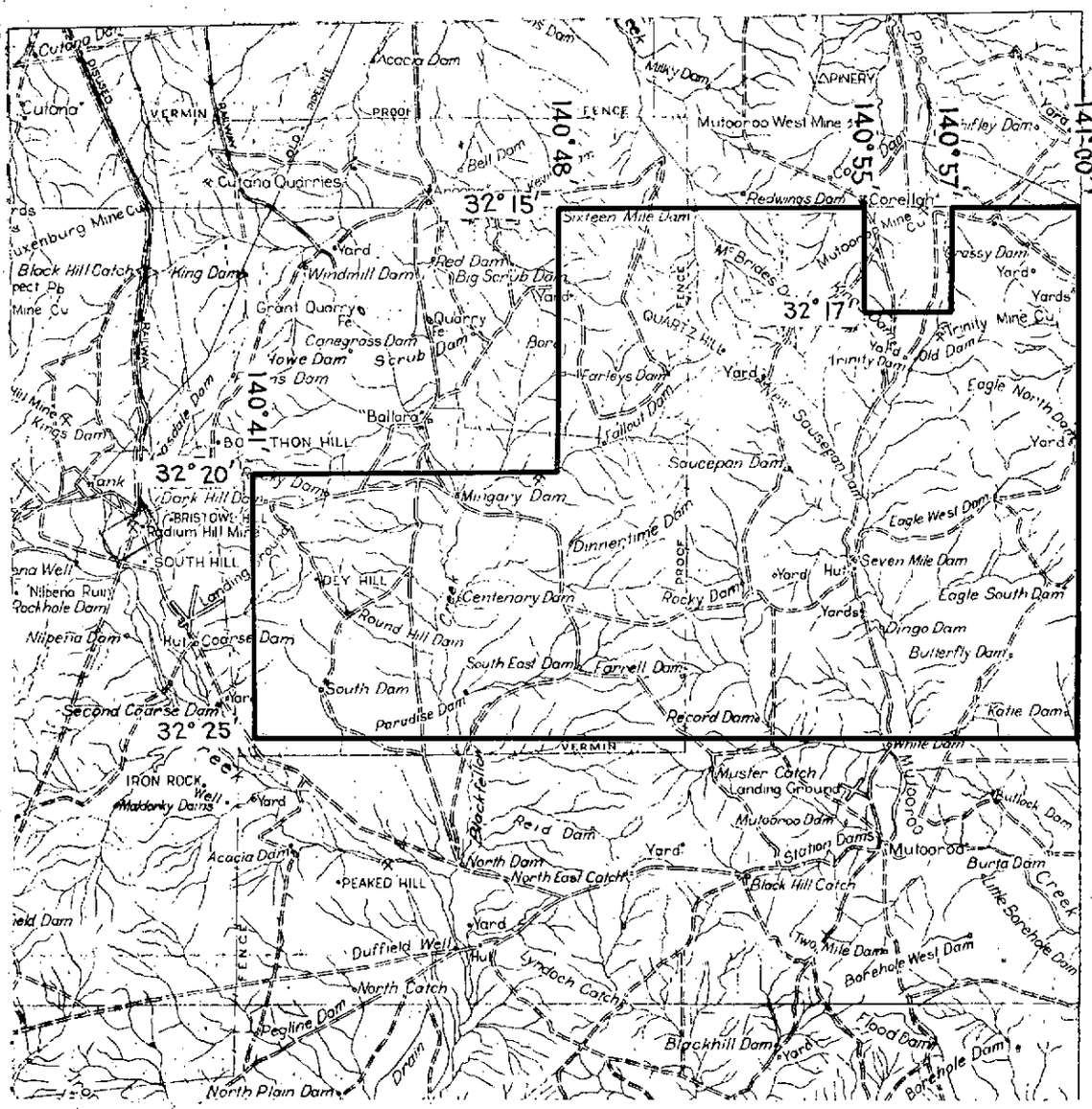
Government of South Australia
Primary Industries and Resources SA

SCHEDULE 'A'



SCALE 1:250,000

KILOMETRES 5 0 5 10 15 20 25 KILOMETRES

APPLICANT : DIRECTOR OF MINES

D.M. : 497/75 AREA : 397 Square Kilometres

1:250 000 PLANS : OLARY

LOCALITY : TRINITY MINE AREA - APPROX. 75 km S of COCKBURN.

E.L. No. : 246 EXPIRY DATE : 20.5.77

246

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TENEMENT: EXPLORATION LICENCE NO. 246

TENEMENT HOLDER: DEPARTMENT OF MINES SOUTH AUSTRALIA

REPORT:

STADTER M.H. 1976

Base Metal Exploration in the Mutooroo - Trinity Mine Area, Olary Province

Report Book 78/89

(pgs1-18)

APPENDICES

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PLANS:

DEPARTMENT OF MINES

SOUTH AUSTRALIA

BASE METAL EXPLORATION IN THE MUTOOROO - TRINITY MINE AREA, OLARY PROVINCE : EXPLORATION LICENCE 246.

by

M.H. Stadter

Rept.Bk.No. 76/89

G.S. No. 5764

D.M. No. 308/76

June, 1976

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PLANS

DEPARTMENT OF MINES
SOUTH AUSTRALIA

Rept.Bk.No. 76/89
G.S. No. 5764
D.M. No. 308/76

BASE METAL EXPLORATION IN THE MUTOOROO - TRINITY MINE AREA, OLARY PROVINCE: EXPLORATION LICENCE 246.

SUMMARY AND CONCLUSIONS

Soil geochemistry in the Trinity Mine area has revealed a discontinuous zone of high copper values (exceeding 100 parts per million and with a mean of about 200 parts per million). Bedrock geochemistry has shown that the copper content increases with depth, and suggests continuity of the anomalous zone at depth across areas where soil sampling has produced low copper values. The zone parallels the magnetic trends, and has an overall length of about 6.5 km with an average width of about 300 metres.

The anomaly occurs in a similar geological environment to that at Mutooroo Mine (8.7 million tonnes of 1.8% copper) and further exploration is recommended.

Base metal exploration in the remainder of E.L. 246 by Mines Exploration Pty. Ltd. suggests that there may be other anomalies worthy of further exploration.

INTRODUCTION

This report summarizes base metal exploration in the Trinity Mine - Ballara area which is part of the Olary Province. The area, of approximately 450 square kilometres, is currently held by the Director of Mines under Exploration

Licence 246. It lies south of the main Adelaide to Broken Hill highway with the South Australia - New South Wales border as the eastern boundary (Fig.1).

High grade metamorphic rocks of the Willyama Complex, similar to those found at Broken Hill, are found throughout the area but rock exposure is poor. Main rock types are amphibolites, pegmatites and gneisses.

The Mutooroo Mine, which is just north of Exploration Licence 246 (Fig.1) , was the largest copper producer in the Olary Province having raised about 6000 tonnes of ore up to its closure in 1914. Further detailed exploration by Mines Exploration Pty. Ltd. has indicated probable reserves of 8.7 million tonnes of massive sulphides with a grade of 1.8% copper (Horn, 1973).

A number of old copper workings occur in Exploration Licence 246 with the largest being the Trinity Mine workings. It is in this area that exploration by the South Australian Department of Mines was concentrated.

EXPLORATION IN THE TRINITY MINE AREA

A. Investigations by Mines Exploration Pty. Ltd.

The area around Trinity Mine was investigated by Mines Exploration Pty. Ltd. as part of a regional exploration programme following the discovery of massive copper sulphide mineralization at Mutooroo Mine. All exploration data, both regional and detailed follow-up, is in D.M. Envelope 2080 and an index for this envelope is given in Appendix I.

Exploration in the Trinity Mine area consisted mainly of induced polarization, bedrock geochemical and ground magnetic surveys. Two surveyed grids were used: one very extensive grid covering the entire Mutooroo Mine - Trinity Mine - Ballara area with its origin at Broken Hill, and a less extensive grid covering the Mutooroo Mine - Trinity Mine area (Fig.1).

Reconnaissance induced polarization (I.P.) traverses were run on a regional basis at a line spacing of 4000 feet with station intervals every 500 feet. In the Trinity Mine area follow-up traverses were run at a line spacing of 500 feet with station intervals of 300, 400 or 500 feet. All readings were taken using frequencies of .25 and 2.5 cycles per second. The location of I.P. traverses and the zones considered anomalous by the company are shown in Fig.2; however, traverses along the same line with different station intervals are only shown as the one line.

As a follow-up to the I.P., soil geochemistry was carried out, but in the Trinity Mine area only one traverse was sampled. This line was 3900 feet long and samples were collected every 300 feet. The samples were analysed by emission spectroscopy for Cu, Pb, Zn, Co, Ag and Mo. The location of this line, and all other soil traverses, are shown in Fig.3. The copper values along the traverse are shown in Fig.8.

Following the soil geochemistry, a programme of shallow drilling to bedrock was carried out over the I.P. anomalies. The location of the traverses is shown on Fig.4.

In the Trinity Mine area about 30 line-miles of bedrock sampling was carried out over both surveyed grids. The sample interval along lines varied between 12.5 and 100 feet, but was usually 50 or 100 feet. The -80 mesh fraction of each sample was analysed by A.A.S. for Cu, Pb, Zn and occasionally Ni. The depth of sampling varied between 3 and 51 feet, but was generally less than 15 feet.

Individual analytical results are available for the bedrock samples, except those taken along 5 lines each 10 000 feet in length . The Cu results for these lines are shown in profile form in Fig.7, and the individual Cu values for the other traverses are shown in Figs. 5 and 6. The bedrock sampling revealed copper values up to 5300 p.p.m. and the results were described as "strong though erratic" by Mines Exploration Pty. Ltd.

The South Australian Department of Mines has recorded the bedrock geochemistry on to punch cards so that computer studies of the results may be made. Copies of the punch cards are available from the Department. A computer print-out of the results is included in D.M. Envelope 2080.

A regional ground magnetic survey was run along east-west lines of the Mutooroo Mine grid and the southern part of this survey covered the Trinity Mine area. Readings were taken every 100 feet along traverse lines 1000 feet apart. The readings were contoured and this produced a number of spot anomalies in the Trinity Mine area. These north-south grid elongated anomalies probably reflect a grid contouring error rather than a true magnetic trend

(Pilkington, pers. comm.).

B. Investigations by South Australian Department of Mines

The S.A. Department of Mines investigated an area of about 16 square kilometres surrounding Trinity Mine. Interest in the area resulted from the detection of high copper values (up to 0.5%) in bedrock samples by Mines Exploration Pty. Ltd.

Geochemical soil sampling, ground magnetic and induced polarization surveys were the main methods of base metal exploration. Work in the area was carried out in the period May 1974 to July 1975. The previously reported geochemical sampling (Stadter, 1974) and subsequent geochemistry in the area is discussed below.

Systematic soil sampling was carried out to determine the extent and orientation of the copper anomaly detected by Mines Exploration Pty. Ltd. Approximately 4080 soil samples were collected at either 50 or 100 feet intervals along traverse lines of the Mutooroo Mine grid. The -80 mesh size fraction of each sample was analysed for Cu using A.A.S. and the results are shown in Figs. 8 and 9. Some samples were also analysed for the following elements, with their range of values (in parts per million) shown in brackets: Pb(< 5-18), Zn (20-105), Co (< 5-50), Ni (< 5-35), Cr (10-50), V (30-150), Au (<0.05-0.05), Mn (180-650), Mo (all < 3), Sn (all < 1), W (all< 50), Bi (all< 1), As (all < 50), Ag (all 0.1) and Fe (2.4% - 7.7%). Fig. 12 shows the location of samples and the elements analysed for each sample.

The soil sampling revealed a discontinuous zone of high copper values (exceeding 100 parts per million and with a mean of about 200 parts per million) with an overall length of about 6.5 km and an average width of about 300 metres. The zone is coincident with a number of old workings; petrographic work on a rock specimen from one of the old workings shows that it once contained 1-2% disseminated chalcopyrite (see Appendix 11). The copper zone is probably antiformal in structure with the Trinity Mine workings occuring near the nose of the fold.

Poor rock exposure in the area has limited the understanding of the geology. Preliminary mapping and inspection of old mine dumps has shown that the rocks are high grade metamorphics - amphibolites, schists, gneisses and pegmatites, with minor quartzite and aplite, of the Willyama Complex. Similar rock types are found at Mutooroo Mine. The outcrop geology plan (Stadter, 1974) suggests that the major geologic trend parallels the zone of high copper values.

A ground magnetic survey was run over 73 km of the Mutooroo Mine grid (Pilkington, 1974 and 1975). The results of this survey (Fig.10) show that the anomalous copper zone is parallel to the magnetic trends. The ground magnetics also support the hypothesis of the antiformal structure.

The induced polarization results were significant over the Trinity Mine workings and suggest vein-type mineralization.

C. Investigations by Geoterrex Ltd.

An airborne INPUT/Magnetic survey was flown by Geoterrex Ltd. in 1975. Seven flight lines covered the area between Trinity and Mutooroo Mines, and the flight lines are shown in Fig.11.

The inflight data and plans, in D.M. Envelope 2696, have been made available by Geoterrex Ltd. and any further information about this survey may be obtained from the company.

ADDITIONAL EXPLORATION IN E.L.246

Base metal exploration in the remainder of E.L. 246 by Mines Exploration Pty. Ltd. consisted of induced polarization, soil and bedrock geochemistry, ground magnetic and TX-AFMAG traverses, and percussion and diamond drilling. The data is in D.M. Envelope 2080.

The location of I.P. traverses and the zones considered anomalous by Mines Exploration Pty. Ltd. are shown in Fig.2. The location of the soil and bedrock traverses are shown in Figs. 3 and 4 respectively, and the percussion and diamond drill-holes are shown in Fig.4.

M.H. STADTER

21st June, 1976

MHS:JK

REFERENCES

Geoterrex Ltd., 1975. S. Aust. Dept. of Mines open file Env. 2696 (unpublished).

Mines Exploration Pty. Ltd., S. Aust. Dept. Mines open file Env. 2080 (unpublished).

Pilkington, G., 1974. E.L. 141, Trinity - King Dam Geophysical Survey, August, 1974. S.A. Department of Mines R.B. 74/221 (unpublished).

Pilkington, G., 1975. E.L. 141. Trinity Mines - King Dam Area Magnetic Survey, November, 1974 S.A. Department of Mines R.B. 75/66 (unpublished).

Stadter, M.H., 1974. Trinity Mine - King Dam Geochemical Survey. S.A. Department of Mines. R.B. 74/230 (unpublished).

Horn, R.A., 1973. Ore Calculation, Mutooroo, S. Aust. Dept. Mines open file Env. 2080 Vol.III (unpublished).

APPENDIX I

Summary of contents in D.M. Envelope 2080

Summary of Contents in D.M. Envelope 2080

Vol. I - 1. All quarterly reports (April 1962 - March 1974)
2. Exploration of the Mutooroo Joint Venture area to 23rd October, 1971.

Vol. II - Honours Thesis, Mutooroo Mine by W.J.L. Brooke

Vol. III - 1. Ore calculation, Mutooroo Mine by R.A. Horn
2. Geological Plan, Mutooroo Mine
3. Longitudinal Projection, Ore Potential, Mutooroo Mine.
4. Geological Interpretation Plan, 450 ft. level, Mutooroo Mine
5. Geological Interpretation Plan, 900 ft. level Mutooroo Mine
6. Geological Interpretation Plan, 1,300 feet level, Mutooroo Mine.
7. Geological Interpretation Plan, 1700 feet level, Mutooroo Mine.

Vol. IV - Diamond and Percussion Drill-logs, Mutooroo Mine and Mutooroo West.

Vol. V - 1. Longitudinal Projection, Mutooroo Mine
2. Cross-section through diamond drill-holes DD. MM 10
3. " " " " " " DD.MM 11
4. " " " " " " DD.MM 12
5. " " " " " " DD.MM 13
6. " " " " " " DD.MM 21A
7. " " " " " " DD.MM 23
8. " " " " " " DD.MM 9,17B
9. " " " " " " DD.MM 1,15 22.
10. " " " " " " DD.MM 2,3, 16.
11. " " " " " " DD.MM 6,18, 25.
12. " " " " " " DD.MM 4,7, 20,26
13. " " " " " " DD.MM 5,8, 14,19 27
14. " " " " " " DD.MM 21A, 24,24A,26, 28 D1

Vol. VI - 1. Cross-section on line M 5N, Mutooroo Mine
2. " " " " M 20S, " "
3. " " " " M35S, " "
4. " " " " M40S, " "
5. " " " " M45S, " "
6. " " " " M55S, " "
7. " " " " M65S, " "
8. " " " " M75S, " "

Vol. VII
1. Ground Magnetics, Mutooroo Mine
2. TX-AFMAG Survey, Mutooroo Mine

Vol. VIII
1. I.P. Profiles, Mutooroo Mine
2. Geophysical Summary Plan, Mutooroo Mine
3. Geological Overlay showing I.P. lines over Mutooroo Mine and Mutooroo West.

Vol. IX
1. Geological Plan, Mutooroo West
2. Longitudinal Projection, Mutooroo West
3. Cross-section through diamond drill-hole DD MW 5.
4. Cross-section along line M 35 N, Mutooroo West
5. " " " " M 45 N, " "
6. Bedrock geochemistry, Cu profiles, Mutooroo West
7. " " Co " " "
8. Ground Magnetics, Mutooroo West
9. I.P. Profiles, Mutooroo West

Vol. X
1. Regional Plan SML 285
2. Surveyed Geophysical Grid, Broken Hill Area
3. Plan of Geological Structures and Company Holdings Broken Hill Region.

Vol. XI
1. Geological Plan, Joint Venture Area
2. Location of bedrock geochemical traverses, Joint Venture Area
3. Bedrock Geochemistry, Cu profiles, Joint Venture Area.
4. Bedrock Geochemistry, Pb profiles, " " Area.
5. Bedrock " , Zn " " " Area.

Vol. XII
1. Ground Magnetics, Eagle Nest and McBride Dam Anomalies.
2. Diamond Drill-logs, Ballara, Eagle Nest, McBride Dam and Pine Creek Anomalies.
3. Cross-section along line 2725 S, Ballara anomaly.
4. TX-AFMAG Survey, Ballara Anomaly.
5. Bedrock Geochemistry, spectrographic analyses for range of elements over Ballara Anomaly.

Vol. XIII
1. Location plan of regional Bedrock Geochemical traverses
2. Computer print-out of bedrock analyses (regional grid).

Vol. XIV - Bedrock geochemistry - tabulated results, regional grid. Book 1.

Vol. XV - Bedrock geochemistry - tabulated results, regional grid. Book 2.

Vol. XVI - Computer print-out of bedrock analyses, Mutooroo Mine Grid.

Vol. XVII - Bedrock geochemistry - tabulated results, Mutooroo Mine Grid.

Vol. XVIII - 1. Location plan of regional soil traverses
2. Soil geochemistry - tabulated results

Vol. XIX - Regional I.P. Profiles, Book 1.

Vol. XX - Regional I.P. Profiles, Book 2.

Vol. XXI - Regional I.P. Profiles, Book 3.

Vol. XXII - Regional I.P. Profiles, Book 4

Vol. XXIII - Regional I.P. Profiles, Book 5

Vol. XXIV - Regional I.P. Profiles, Book 6.

Vol. XXV - Regional I.P. Profiles, Book 7.

Vol. XXVI - I.P. Profiles, Radium Hill Grid.

APPENDIX II

Petrographic description of rock specimen.

Sample: P158/75; Applicant's Mark: TME2; TS34318

Location:
Ballara 1:63,360. Trinity Mine Area. Mutooroo Grid Co-ordinates 226S 63W.

Rock Type:
Hornblende schist which once contained disseminated chalcopyrite.

Hand Specimen:
A medium-grained, dark grey schist which tends to split along some foliation planes. On the surface of these foliation planes aggregates of prismatic amphibole crystals are clearly visible.

A cut surface normal to the foliation shows scattered grains now composed of brown limonite which were probably once sulphide grains. Films of green malachite occur along small fractures and foliation planes.

Thin Section:
A visual estimate of the constituents is as follows:-

	%
Hornblende	>70
Quartz	15-20
Plagioclase	3-5
Epidote	trace
Sphene	trace
Sericite	trace
Limonite boxwork after chalcopyrite	1-2
Limonite after pyrite?	trace-1
Opaque oxide	1-2
Malachite	1-2

This is a moderately coarse-grained schist composed predominantly of intergrown prismatic crystals of bluish-green to yellowish-green hornblende up to 5 mm long, most of which show a preferred orientation parallel to the schistosity. Crystals of opaque oxide are scattered through the hornblende schist, some occurring as tabular inclusions within hornblende crystals and other slightly larger crystals in interstices. Very few of these opaque oxide crystals and small aggregates are associated with sphene and this was probably derived from altered and recrystallized ilmenite. Plagioclase occurs as crystals and aggregates 0.2 to 1 mm in size distributed through the rock occurring mainly in interstices between hornblende crystals. Most of this plagioclase shows at least minor alteration to sericite and locally there has been slight replacement by epidote. Quartz is unevenly distributed and some occurs as small inclusions averaging 0.1 mm in size within hornblende crystals, and larger aggregates occur in interstices. Some quartz has migrated and recrystallized in elongate vein-like aggregates which are parallel to the schistosity.

This rock once contained crystals of chalcopyrite, most of which were elongate in the direction of schistosity and were 2 to 3 mm long. These have now been completely replaced by translucent, orange to brown limonitic boxworks which show well developed cellular patterns typical of those formed from oxidized chalcopyrite. Most of the cellular voids in these boxworks either remain empty or have been filled with goethite, but some contain malachite. The section also contains a few limonite pseudomorphs which were very probably derived from pyrite crystals and a few of these are associated with the boxworks after chalcopyrite.

Malachite has filled a few small fractures which are generally parallel to the schistosity.

Conclusion:

This rock has completely recrystallized under conditions of medium grade metamorphism equivalent to the amphibolite facies. No evidence of original textures was found and therefore its origin cannot be determined with certainty. The greater abundance of quartz than plagioclase is more suggestive of a metamorphosed basic sediment than a basic igneous rock but this is not conclusive. The presence of minor amounts of epidote, more particularly along zones of fracturing, indicates some hydrothermal activity but there is no evidence to suggest that this was responsible for the introduction of chalcopyrite and pyrite. The origin of these sulphide minerals remains obscure but the elongation of chalcopyrite crystals parallel to the schistosity and the general textural relationships with other minerals strongly suggests that they were present in the rock and recrystallized with the other minerals during metamorphism.

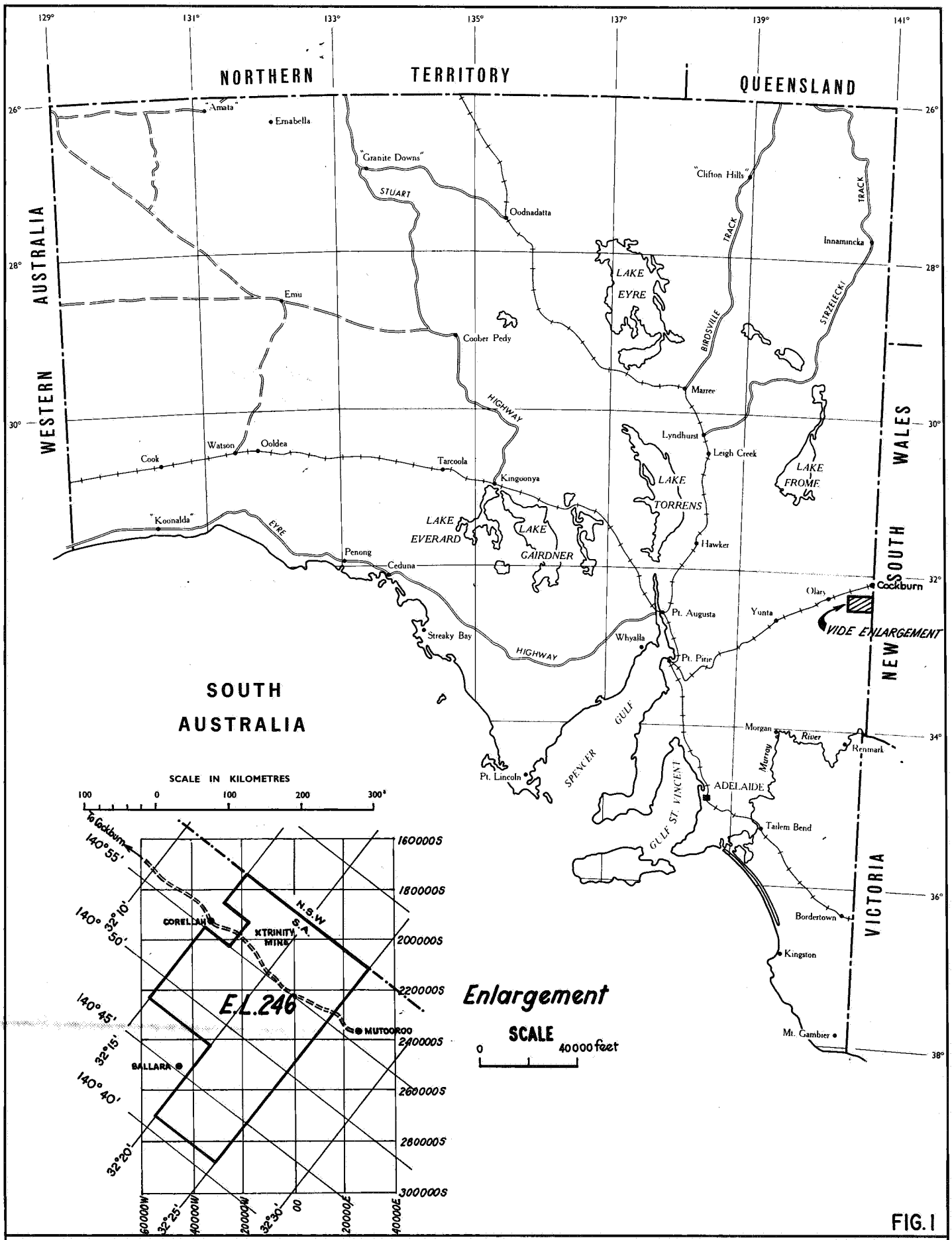


FIG. 1

DEPARTMENT OF MINES — SOUTH AUSTRALIA

Compiled. M.H.S.	LOCATION OF E.L. Nº 246	Date: JUNE '76
Drn. L.C. Ckd.	TRINITY MINE — BALLARA AREA	Drg. No. S12253
GEOCHEMICAL EXPLORATION		

P.F. No. S5850 994.2

7033

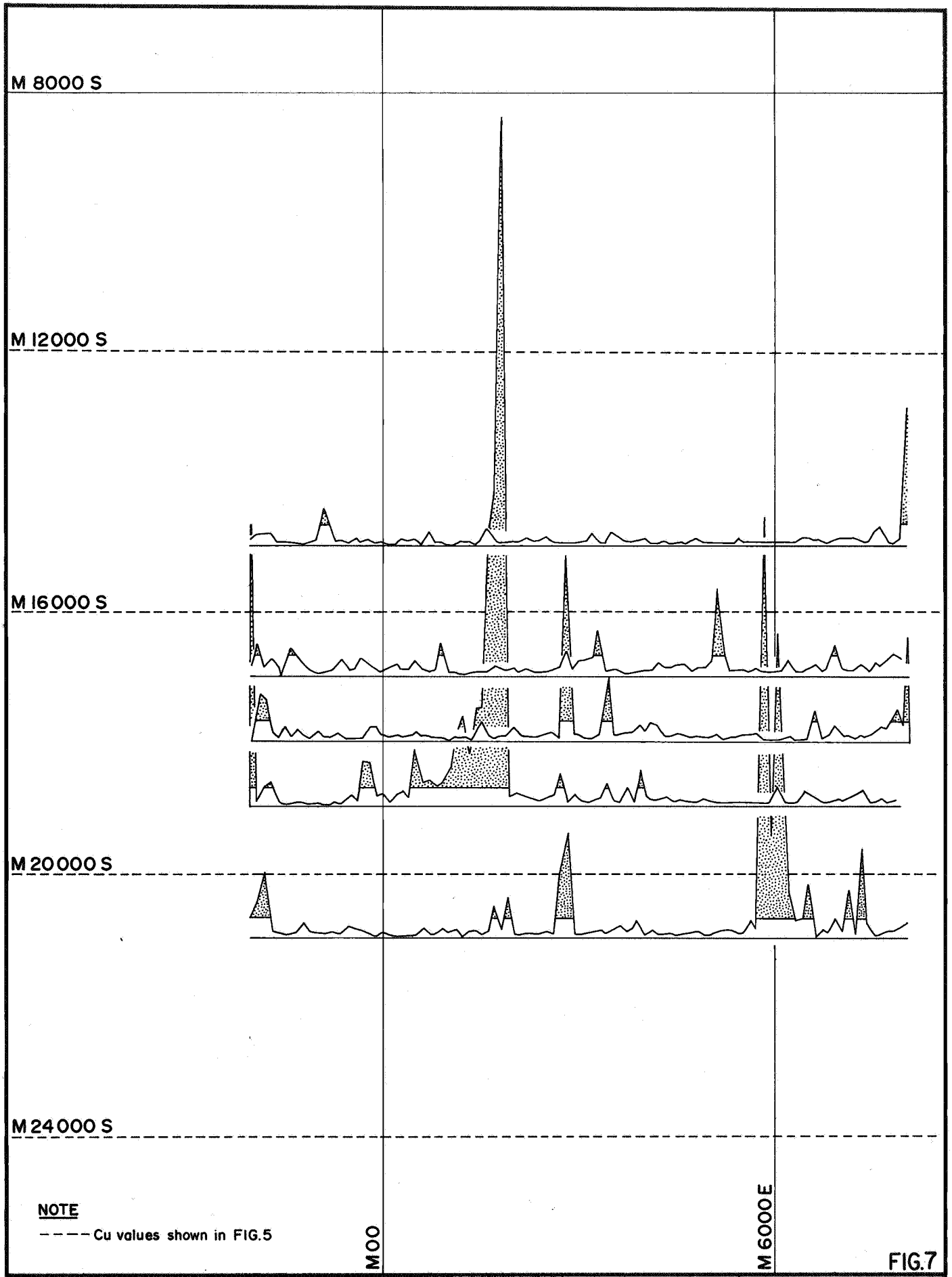


FIG.7

GEOCHEMICAL EXPLORATION	DEPARTMENT OF MINES—SOUTH AUSTRALIA	SCALE: HORIZ. 1"=2000' VERT. 1"=1000ppm
COMPILED: M.H.S	MINES EXPLORATION PTY. LTD.	DATE: APRIL 1976
DRN: Lee CKD.	BEDROCK GEOCHEMISTRY TRINITY MINE AREA	PLAN NUMBER:
M.H.STADTER GEOLOGIST	Cu PROFILES	S12203

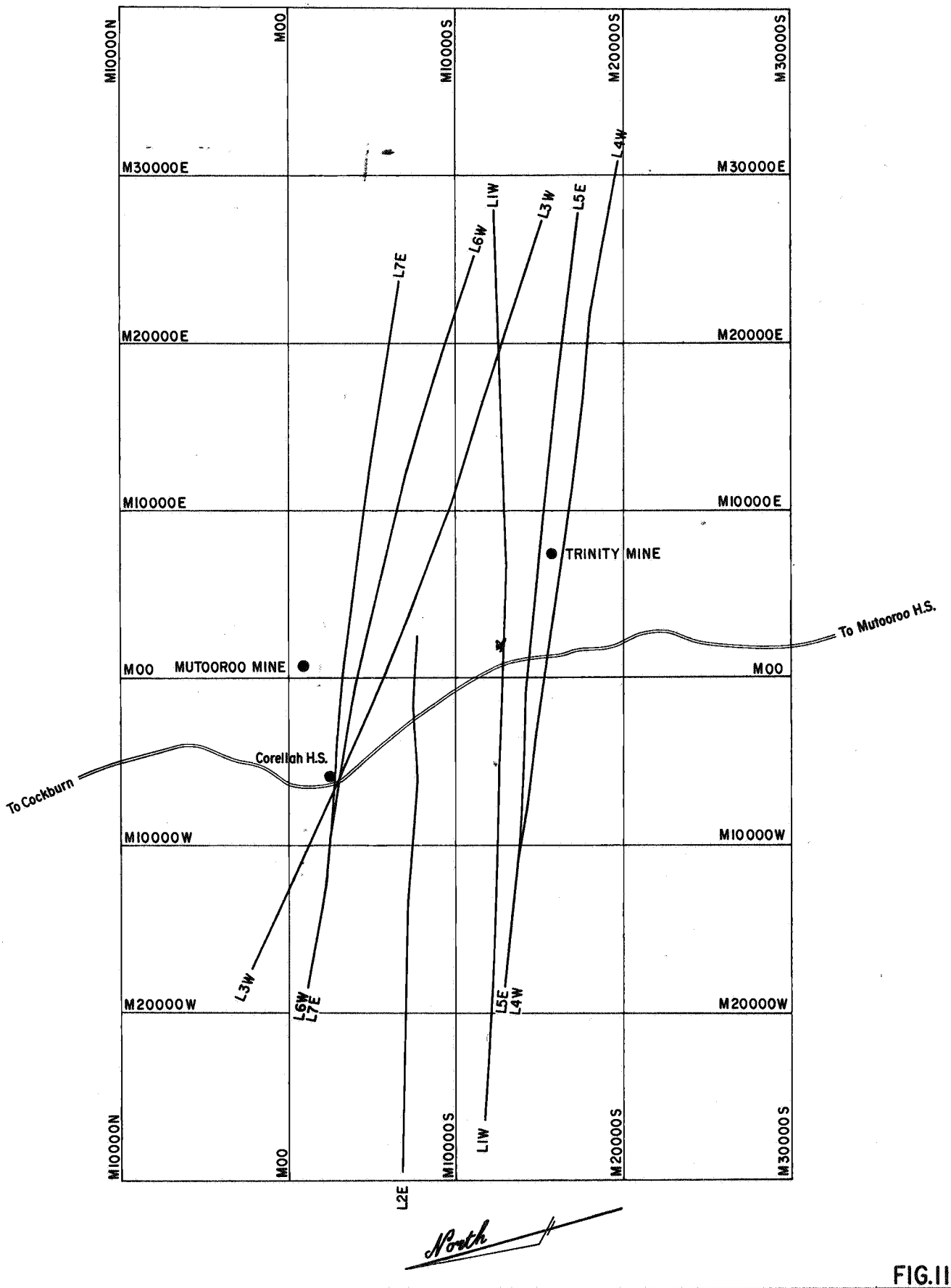


FIG.11

GEOCHEMICAL EXPLORATION	DEPARTMENT OF MINES—SOUTH AUSTRALIA	SCALE. 3mm=1000ft.
COMPILED: M.H.S	GEOTERREX LTD. FLIGHT LINE LOCATION DIAGRAM	DATE: April 1976
DRN: Lee / CKD.		PLAN NUMBER: S12204
M.H.STADTER GEOLOGIST		

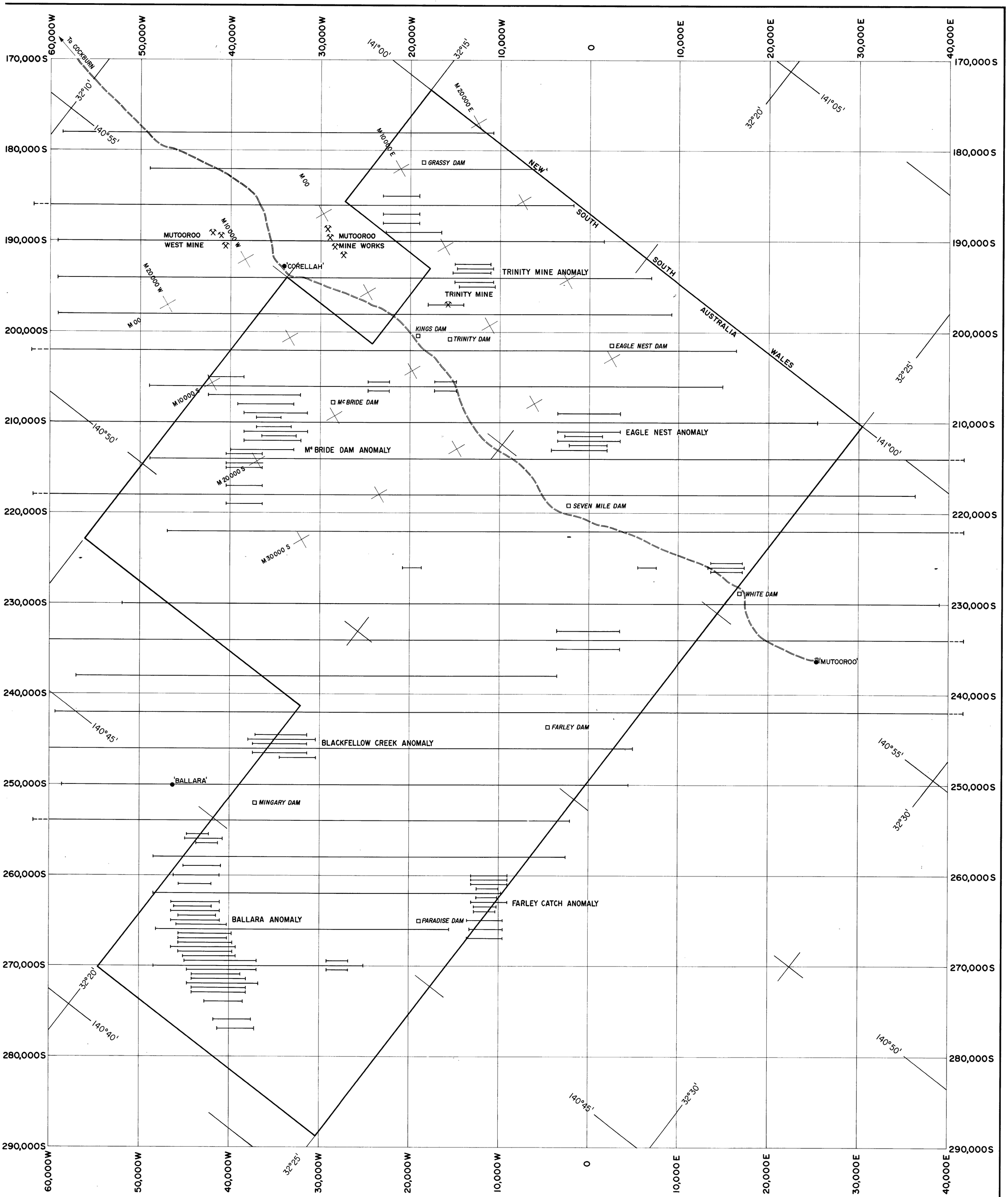


FIG.2

SCALE

0 10000 20000 feet

0 1000 2000 3000 4000 5000 metres

LEGEND

.....BOUNDARY OF EXPLORATION LICENCE Nº 246

.....I.P. TRAVERSE

2783-1

DEPARTMENT OF MINES-SOUTH AUSTRALIA

TRINITY MINE - BALLARA AREA
LOCATION OF MINES EXPLORATION PTY. LTD.
I.P. TRAVERSES AND ANOMALIES

GEOCHEMICAL EXPLORATION SECTION	COMPILED M.H.S	DRN Lee	SCALE 5mm=1000ft	PLAN NUMBER
DIRECTOR OF MINES	M.H.STADTER GEOLOGIST	CKD	DATE MARCH '76	76-337

7033

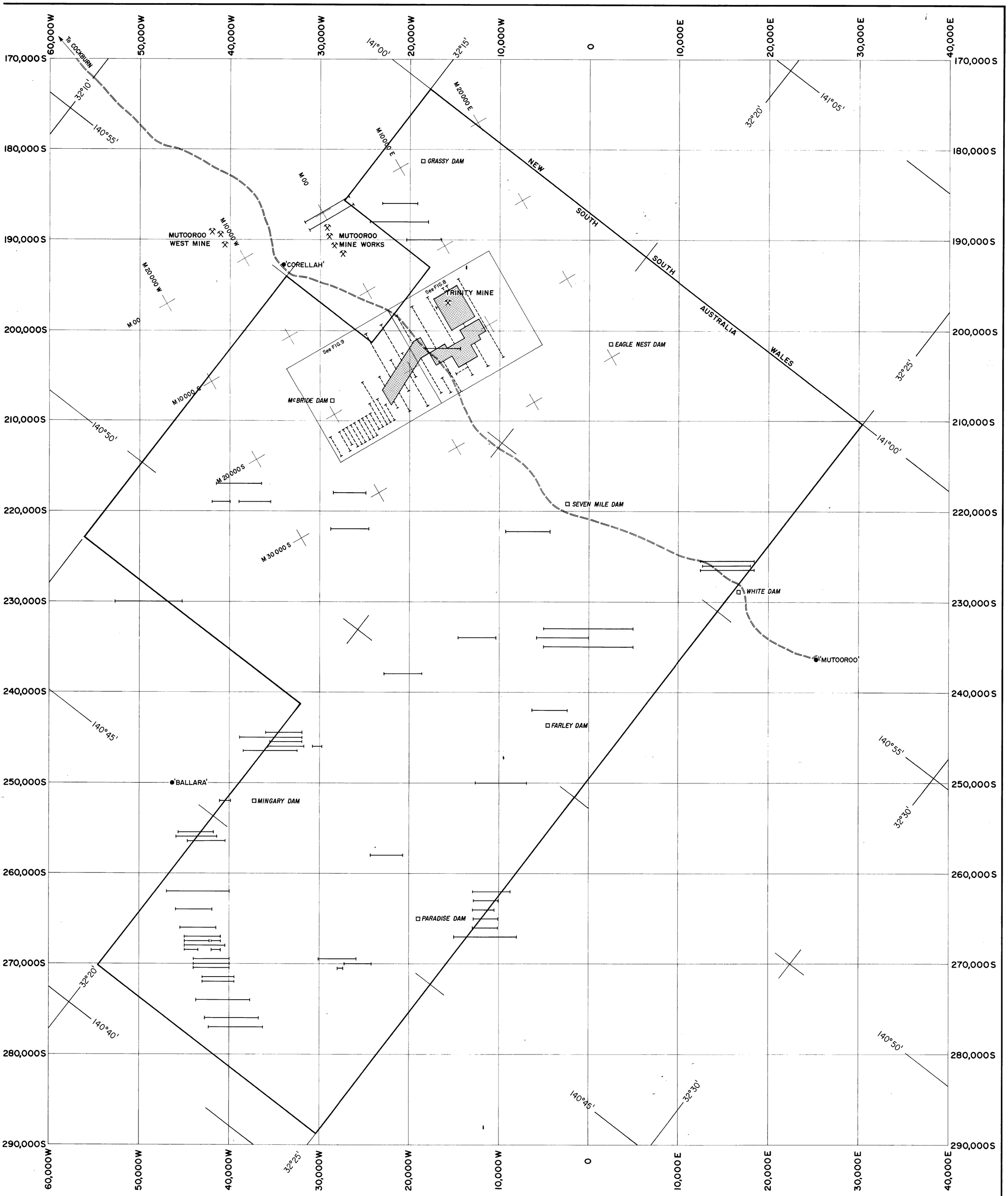


FIG.3

SCALE

0 10000 20000 feet

0 1000 2000 3000 4000 5000 metres

LEGEND

..... BOUNDARY OF EXPLORATION LICENCE Nº 246

..... SOIL TRAVERSE BY MINES EXPLORATION PTY. LTD.

..... S.A. DEPARTMENT OF MINES SOIL GEOCHEMISTRY

2783-2

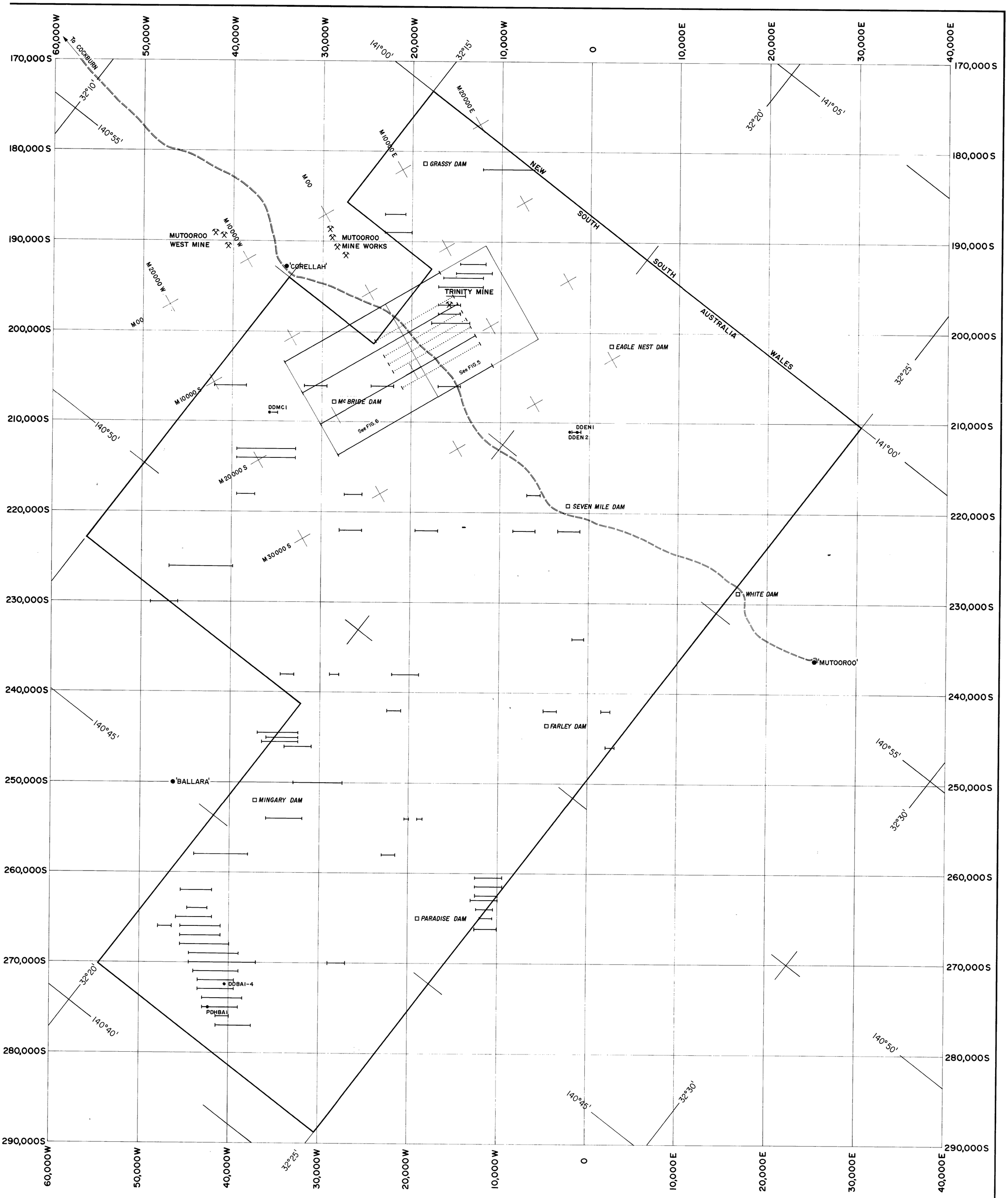
DEPARTMENT OF MINES - SOUTH AUSTRALIA

TRINITY MINE – BALLARA AREA

LOCATION OF SOIL TRAVERSES

GEOCHEMICAL EXPLORATION SECTION	COMPILED M.H.S	DRN Lee	SCALE 5mm=1000ft	PLAN NUMBER
DIRECTOR OF MINES	M.H.STADTER GEOLOGIST	CKD	DATE MARCH '76	76-338

7033



SCALE

0 10000 20000 feet

0 1000 2000 3000 4000 5000 metres

LEGEND

..... BOUNDARY OF EXPLORATION LICENCE Nº 246

• DDEN 2 ..... DRILL HOLE

——— ..... BEDROCK TRAVERSE

····· ..... BEDROCK TRAVERSE (see FIG.7 for Cu profiles)

2783-3

FIG.4

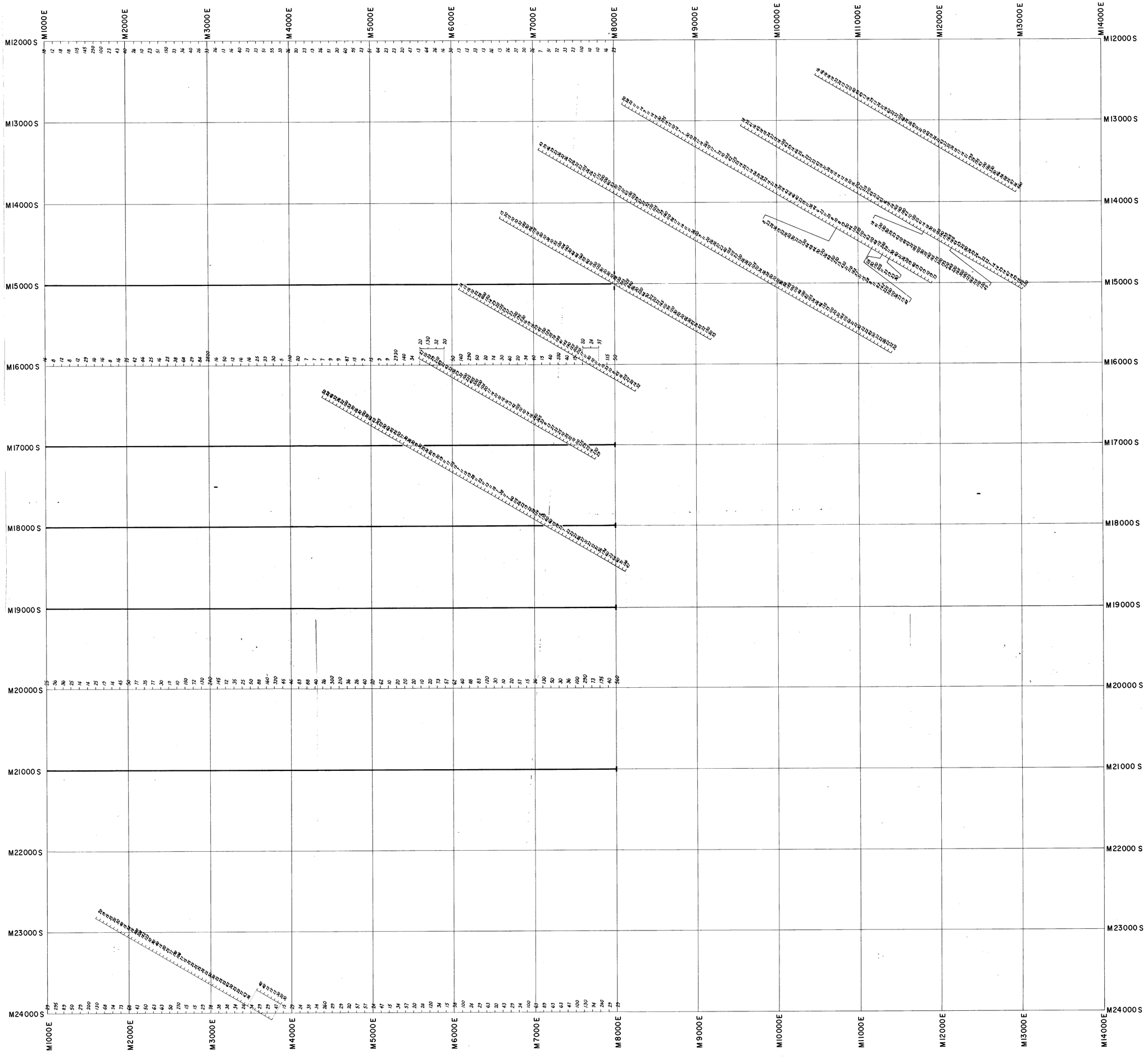
DEPARTMENT OF MINES – SOUTH AUSTRALIA

TRINITY MINE – BALLARA AREA

LOCATION OF BEDROCK TRAVERSES AND DRILL HOLES BY MINES EXPLORATION PTY. LTD.

GEOCHEMICAL EXPLORATION SECTION	COMPILED M.H.S	DRN Lee	SCALE 5mm=1000ft	PLAN NUMBER
DIRECTOR OF MINES	M.H.STADTER GEOLOGIST	CKD	DATE MARCH '76	76-339

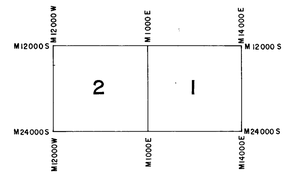
7033



2783-4

LEGEND

LOCATION OF SHALLOW DRILLING – Individual copper results (100ft. spacing) not available but results shown as profiles in FIG. 7



SCALE

200 0 250 500metres

500 0 500 1000 1500 feet

FIG.5

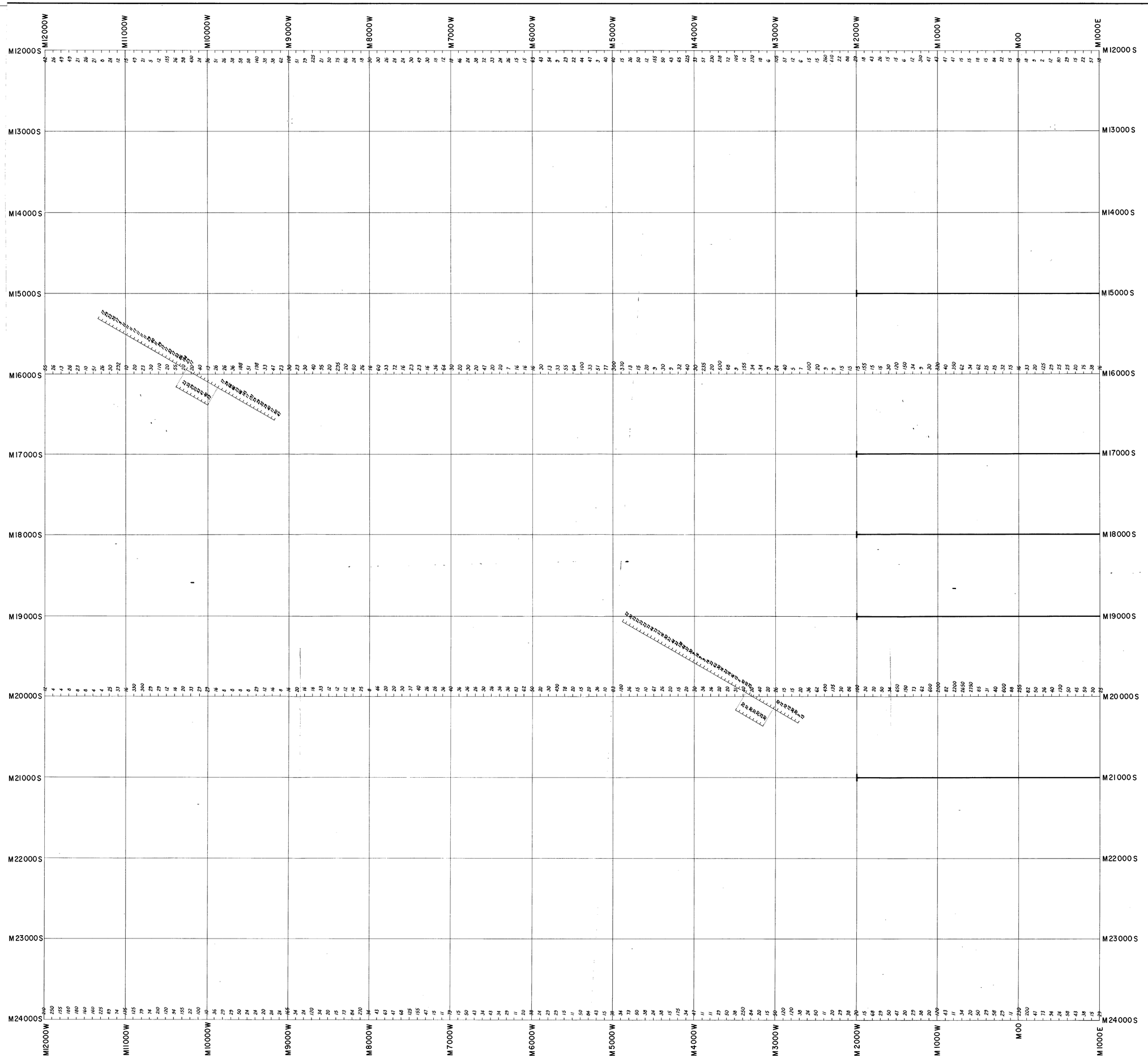
DEPARTMENT OF MINES – SOUTH AUSTRALIA

TRINITY MINE AREA

MINES EXPLORATION PTY. LTD. BEDROCK GEOCHEMISTRY

Cu VALUES – Sheet 1

GEOCHEMICAL EXPLORATION	M.H. STADTER GEOLOGIST	Compiled M.H.S	Scale: 1:6000
			Date: APRIL 1976
Director of Mines		Drn. Lee	Drg. No. 76-340
		Ckd.	

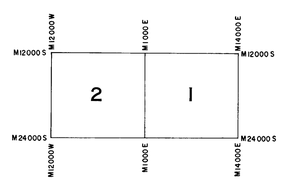


Magnetic North
True North

2783-5

LEGEND

LOCATION OF SHALLOW DRILLING – Individual copper results (100ft. spacing) not available but results shown as profiles in FIG. 7



SCALE

200 0 250 500metres

500 0 500 1000 1500feet

FIG.6

DEPARTMENT OF MINES — SOUTH AUSTRALIA

TRINITY MINE AREA

MINES EXPLORATION PTY. LTD. BEDROCK GEOCHEMISTRY

Cu VALUES — Sheet 2

GEOCHEMICAL EXPLORATION	M.H. STADTER GEOLOGIST	Compiled M.H.S	Scale: 1:6000
		Drn. Lee	Date: APRIL 1976
Director of Mines		Ckd.	Drg. No. 76-341

7033

M1000E M2000E M3000E M4000E M5000E M6000E M7000E M8000E M9000E M10000E M11000E M12000E M13000E M14000E

M13000S M14000S M15000S M16000S M17000S M18000S M19000S M20000S M21000S M22000S M23000S M24000S M25000S

Note: Traverse by Mines Exploration Pty. Ltd.

Magnetic North
True North

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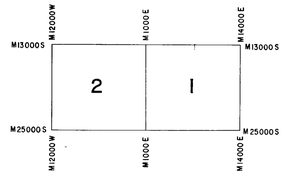
LEGEND

100ppm Cu contour.



SCALE

200 0 250 500metres

500 0 500 1000 1500 feet

FIG.8

DEPARTMENT OF MINES — SOUTH AUSTRALIA

TRINITY MINE AREA

S.A. DEPARTMENT OF MINES — SOIL GEOCHEMISTRY

Cu VALUES — Sheet 1

GEOCHEMICAL EXPLORATION	M.H. STADTER GEOLOGIST	Compiled M.H.S	Scale: 1:6000
		Drn. Lee	Date: APRIL 1976
Director of Mines		Ckd.	Drg. No. 76-342

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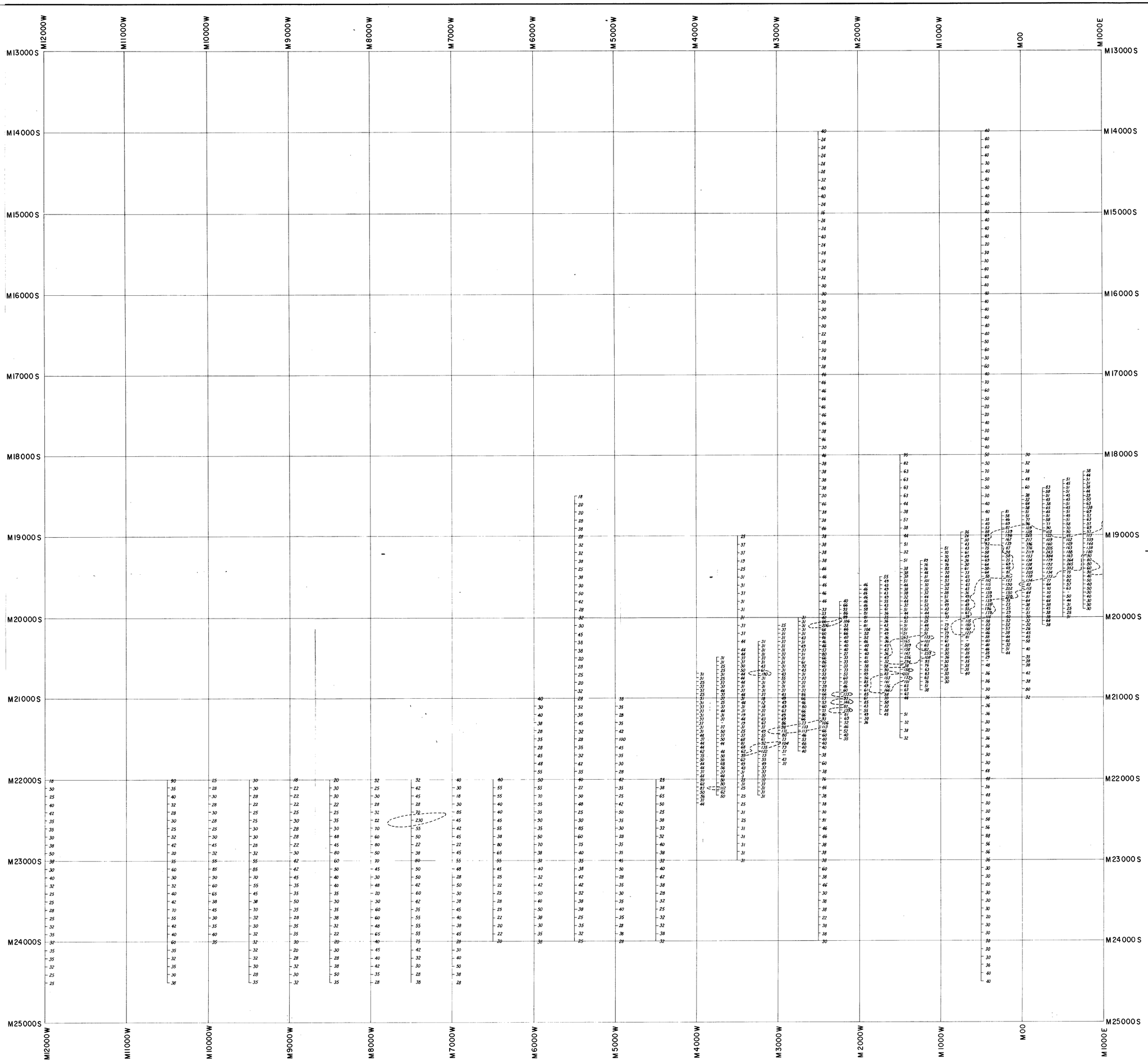
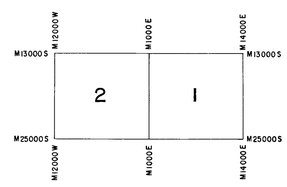


2783-7



SCALE

200 0 250 500metres

500 0 500 1000 1500feet

FIG.9

DEPARTMENT OF MINES — SOUTH AUSTRALIA

TRINITY MINE AREA

S.A. DEPARTMENT OF MINES — SOIL GEOCHEMISTRY

Cu VALUES — Sheet 2

GEOCHEMICAL EXPLORATION	M.H. STADTER GEOLOGIST	Compiled M.H.S	Scale: 1:6000
			Date: APRIL 1976
		Drn. Lee	Drg. No. 76-343
Director of Mines		Ckd.	

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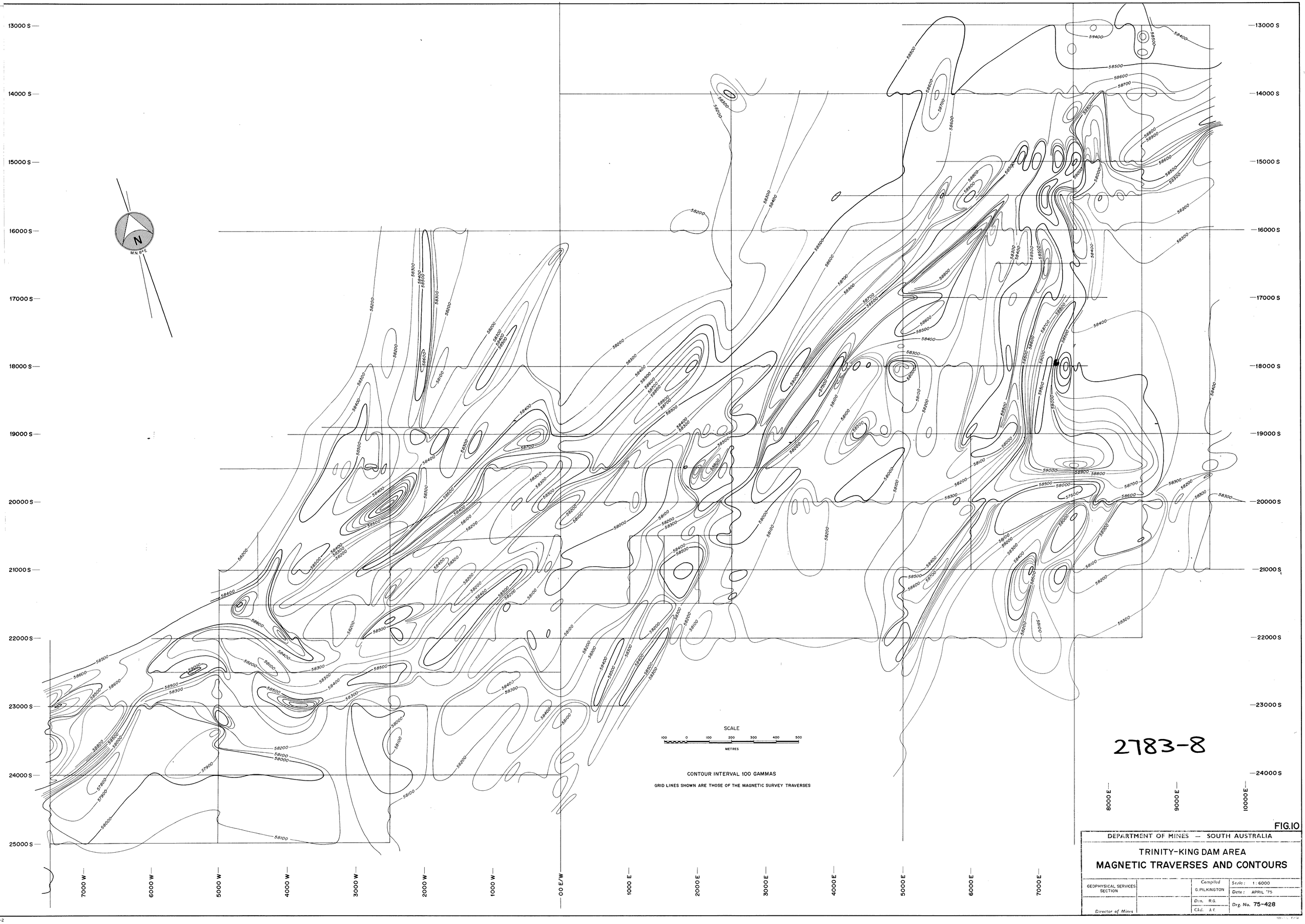

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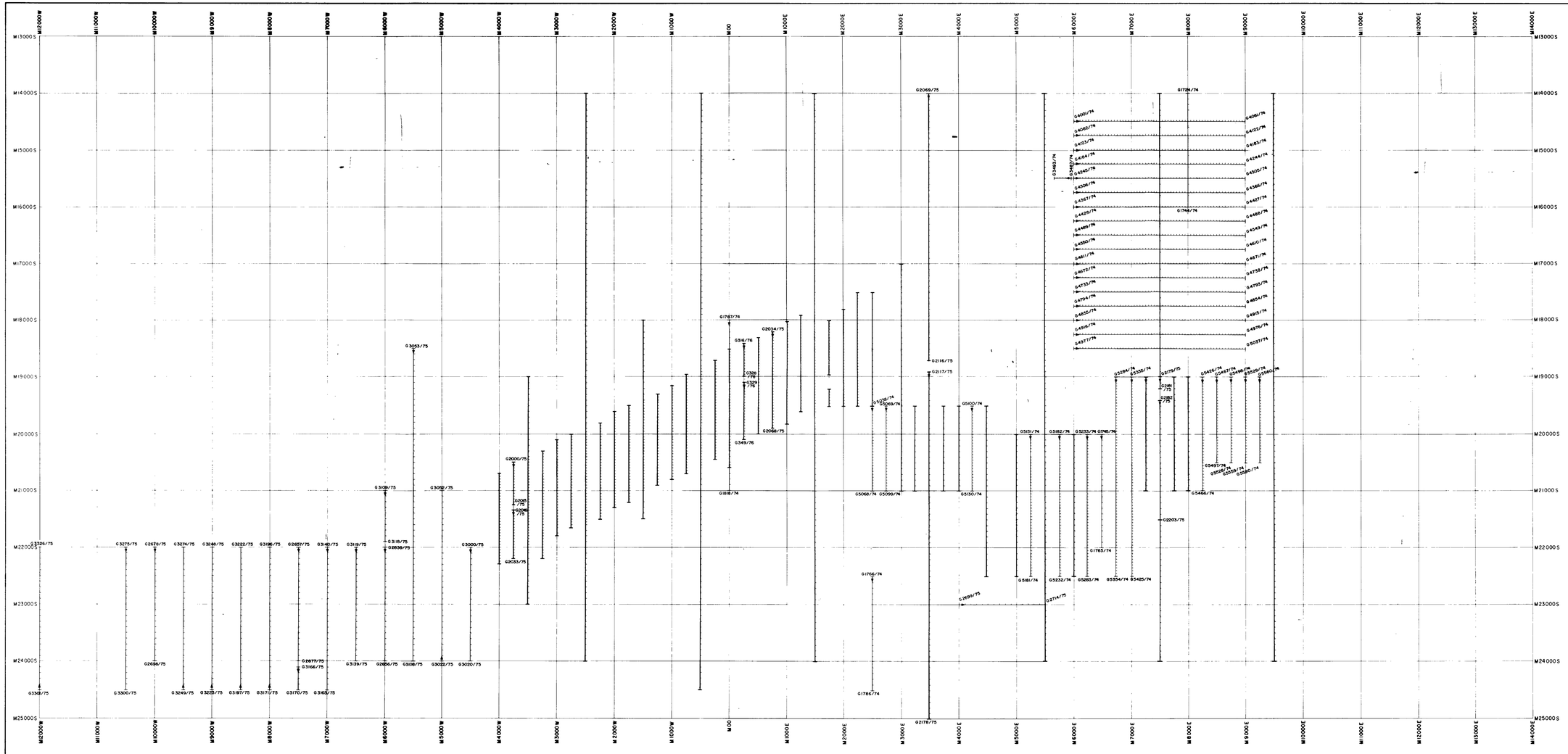
FIG.10

DEPARTMENT OF MINES — SOUTH AUSTRALIA

TRINITY-KING DAM AREA
MAGNETIC TRAVERSES AND CONTOURS

GEOPHYSICAL SERVICES SECTION		Compiled G.PILKINGTON	Scale: 1:6000
		Drn. R.G.	Date: APRIL '75
Director of Mines		Ckd. A.F.	Drg. No. 75-428



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LEGEND

SOIL SAMPLES	ELEMENTS ANALYSED	AMDEL REPORT Nº
G1724/74 → G1818/74	Cu, Pb, Zn, Au	AN 4587/74
G4001/74 → G4732/74	Cu	AN 1404/75
G4733/74 → G5590/74	Cu, Co, Ni	AN 1937/75
G3487/74 → G3493/74	Cu	AN 1834/75
G2636/75 → G2714/75	Cu, Fe, Mn	AN 4294/75
G4855/74 → G4915/74	Fe, Mn	AN 5998/75
G5233/74 → G5283/74	"	"
G3487/74 → G3493/74	"	"
G4245/74 → G4305/74	"	"
G2000/75 → G2203/75	"	"
G3000/75 → G3326/75	Cu	AN 262/76
G316/76 → G349/76	Cu, Ni, Mo, Cr, V, W, Bi, As, Ag, Sn, Au	AN 2522/76

SAMPLES ANALYSED BY S.A. DEPARTMENT OF MINES
— All samples analysed for Cu and some for Zn.
The results are available in D.M. Report Book Nº 74/230

SCALE

200 0 250 500 metres
500 0 500 1000 1500 feet

FIG.12

DEPARTMENT OF MINES — SOUTH AUSTRALIA

TRINITY MINE AREA
S.A. DEPARTMENT OF MINES — SOIL GEOCHEMISTRY
G.Nº Location Plan & Summary of Elements Analysed

GEOCHEMICAL EXPLORATION	M.H. STADTER GEOLOGIST	Compiled M.H.S	Scale 1:12000
			Date APRIL 1976
Director of Mines		Drn. Lee	Drg No. 76-419
		Chd	

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