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THE SHELL COMPANY OF AUSTRALIA LIMITED

METALS DIVISION

E.L. 36/79 - LOONGANA

Progress Report on Exploration for the Period

1st July, 1983 - 30th April, 1984

Authors: R.G. Wright
W.D. Smyth

Date : 18/5/84

Report No: 08.2263

Copy No : 1

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1. Dept. of Mines
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4. BXH/Devonport

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428002

CONTENTS

LIST OF FIGURES

003

428004

LIST OF PLANS

Drawing No.	Title	Scale
D/MZ 02/048	E.L. 36/79 Loongana - Geology	1:50,000
D/MT 24/055	Regional Volcanic Study - Loongana Sheet, Geology	1:50,000
D/MT 24/058	Regional Volcanic Study - Loongana Sheet, Grid Locations & Anomalies	1:50,000
KT2/76-CH3-3 (Geopeko Plan No.)	Challenger III - Geological Map & UTEM Survey Grid	1:5,000

LIST OF APPENDICES

SUMMARY

Six prospect areas on E.L. 36/79 were investigated over the past year but none of them were upgraded enough to warrant more work.

Regional reconnaissance mapping indicated that favourable Cambrian volcanics underly much of the licence area. Tertiary basalt and Ordovician cover is widespread and masks most of the licence.

Poor exposure and rugged topography make the licence difficult to explore. Continued effort should be made, however, to upgrade our knowledge of the ground.

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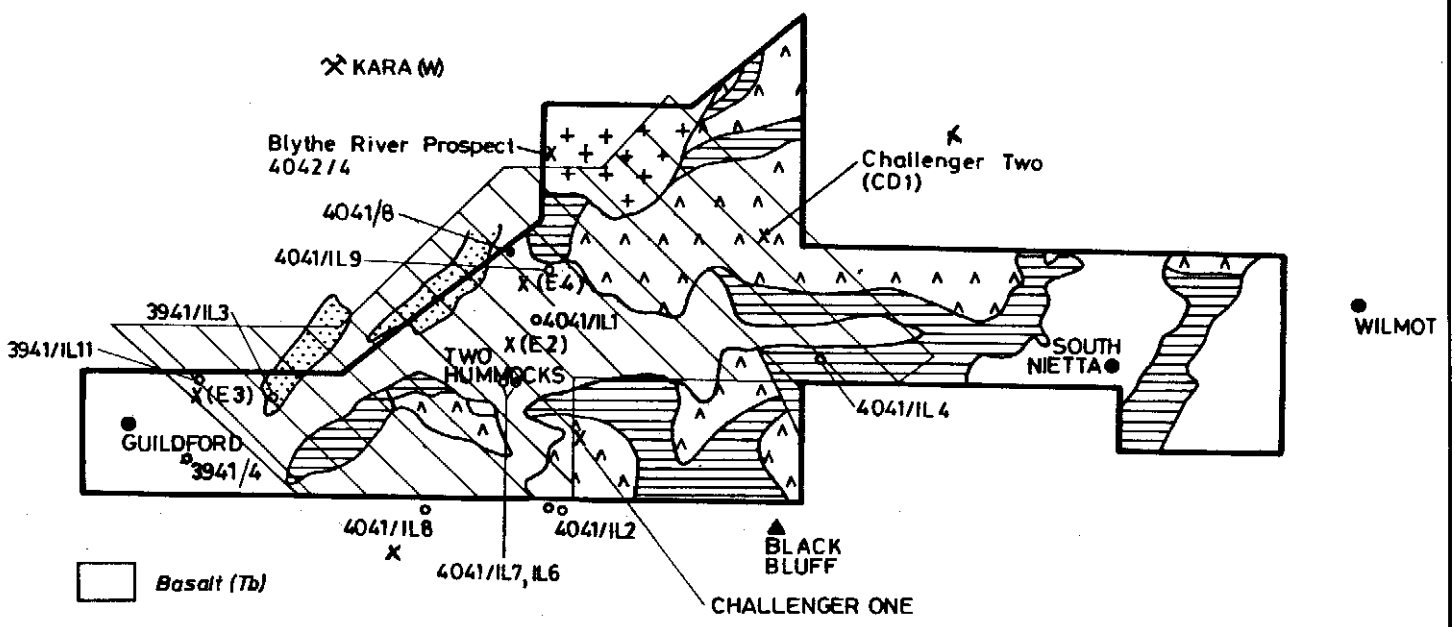
BURNIE

ULVERSTONE



Basalt (Tb)

Bell shale (Db)
Florence Sst (Df)

Gordon Limestone (Og)
Moina Sandstone (Om)
Roland Conglomerate (Or)

Acid/intermediate Volcanics, Sediments (fc)

Housetop Granite (Dg)

(E) *Electrical sounding location*

1982 Input survey area

Input anomaly

5 cm

5 0 5 10 Km

The Shell Company of Australia Limited
METALS DIVISION

E.L. 36/79 LOONGANA

Scale 1:250,000

FIG. No. 1	REPORT No.
ENCL. No.	DRG. No D/MZ02/044
DATE 24-6-81	AUTHOR J.J.L.
DRAWN H.L.H	OFFICE DEVONPORT

1.0 INTRODUCTION

1.1 General

The Loongana Exploration Licence 36/79 is located about 40 km due south of Burnie in N.W. Tasmania. (Refer Fig. 1).

The licence covers a rugged area of rainforest with a few pastoral properties at its eastern end.

1.2 Tenement Status

The Loongana Licence of 277 sq km was granted to the Shell Company of Australia Limited on the 1st November, 1979.

The licence was subsequently included in the Moina Joint Venture with Comalco Ltd., covering both E.L. 36/79 and E.L. 7/74 - Moina. Both companies contributed equally to exploration expenditure with Shell as operator.

In June, 1981 Comalco gave notice of its intention to dilute within the Moina Joint Venture. Shell equity in the Loongana Licence as at 29th February, 1984 was estimated to be 81.7%.

1.3 Previous Investigations

A summary of previous exploration over the Loongana area was provided in the first Shell report entitled: "E.L. 36/79, Loongana - Progress Report on Exploration for the Period 1st May, 1980 - 30th June, 1983".

2.0 GEOLOGICAL SETTING

The Loongana Licence covers the central western end of the WSW trending Fossey Mountain Trough at a position where this structure begins to trend SW into the Dundas Trough.

The area consists of a complex series of anticlines and synclines trending generally EW but with evidence for secondary NNE folding in the western part of the licence. (Refer Plan D/MZ 02/048). Major faulting trends NNW to NW. Much of the western side of the area is covered with thick vegetation and Tertiary basalt making an understanding of its structural geology extremely difficult.

Anticlinal cores are occupied by Cambrian acid-intermediate volcanics, sediments and cherts.

The Ordovician Roland Conglomerate - Moina Sandstone rest unconformably over these deposits, often in an angular unconformable relationship. Ordovician Gordon Limestone is preserved in a major EW trending synclinal structure partly exposed on the eastern end of the licence.

Disconnected outcrops of Silurian Florence Sandstone occur on the western boundary of the licence.

Tertiary basalt, of variable thickness, is present across much of the licence especially over its central and western portions.

An update of regional geology prepared by W.D. Smyth is shown on plan D/MT 24/055.

The work is preliminary but the following comments are placed on record for future workers.

Traverses were made by W. Smyth across the Ordovician and Cambrian rocks exposed at Mount Everett and Native Track Tier on the northern part of the licence. A conformable contact between the Ordovician Roland Conglomerate and a possible Jukes Breccia equivalent (purple siltstones, tuffs, siliceous breccias) was noted. These units appear to be in the order of 50m thick and are underlain by a highly cleaved ignimbritic sequence.

An EW series of intrusive - extrusive volcanics occurs east of Mount Everett to Crosby Creek. They are characterized by their higher than usual basemetal content which has produced significant stream sediment anomalies.

C.R.A., in the past, carried out intensive investigation of these rocks at Crosby Creek and Loyetea North. Geopeko - E.Z., and later Shell, investigated similar intrusives at Challenger II. Traces of galena, sphalerite and chalcopyrite have been located in these volcanics or in the adjacent sediments and re-worked tuffs.

The economic significance of these rocks is unknown.

A window of Cambrian volcanics west of Mount Tor on the southern part of the licence was examined by W. Smyth. This area, called Challenger I, had been examined in the past by Geopeko while following up anomalous stream sediment results.

The stratigraphy from west to east (possibly facing east) consists of a basic intrusive (pyroxene microdiorite), laminated shales, fine grained tuffs, ash flow tuffs and a complex of pink rhyolitic lavas, agglomerates and autobrecciated lavas. All the rocks are to some extent silicified and sericitised.

Although the area appears interesting geologically, (as it includes part of a possible rhyolite dome, some silicification and sericitization) lack of interesting geochemistry and poor geophysical response (some response from a pyrite halo would be expected) tends to downgrade the area. The top(?) of the rhyolite dome is not exposed and may be covered by a volcanoclastic conglomerate (Jukes Breccia Equivalent?) which is well developed in the southeast portion of the Mt. Tor volcanic window.

Just south of the licence boundary dark brown micaceous sandstone/greywacke float was located near the banks of the Leven River.

Similar rocks to the north at Mt. Tor had been thought by Geopeko to be Silurian, however, they may be equivalents of the Que River Beds (shales, dark greenish brown micaceous sandstones and grits). These rocks in the Que River area conformably overlies the andesites of the hanging wall(?) of the Que River Mine.

Silurian rocks to the south near Mt. Cripps consists predominantly of siliceous quartz sandstone with interbedded cleaved siltstone and slate.

3.0 INVESTIGATION OF ANOMALIES

The following six anomalies have been investigated during the past 12 months. Locations are shown plotted on plan D/MT 24/058.

3.1 Challenger II Prospect

Results from Shell's work on this prospect was recorded in the previous report.

The main exposure of porphyritic trachyte at 19 600N 11 300E was re-sampled to help identify the nature of the anomalous Pb, Zn, Ba assays. No sulphide minerals had been identified in previous petrological work.

One sample collected from the outcrop contain several minute spots of a silvery grey mineral which looked to be galena under the microscope. This sample was sent to AMDEL for positive identification.

Galena grains were located by AMDEL as inclusions in yellow-brown limonite which infills sparse, scattered amygdales. The limonite filling possibly originated from the breakdown of original ferroan carbonate, formed during very late-stage or post volcanic hydro-thermal alteration.

A report on the examination is included in Appendix I.

3.2 Burghley Park INPUT Anomaly 4041/IL8

This one line 6 channel INPUT anomaly is part of a much broader conductive zone situated over Tertiary basalt just south of the southern licence boundary.

G. Oakes, Geophysicist, selected the anomaly as being worthy of further follow-up.

A single line of dipole-dipole IP was surveyed across the anomaly by Scintrex. The results are shown plotted on Figure 2.

Chargeabilities are consistently low, usually less than 5 msecs, and resistivities are also low at between 50 - 70 ohm metres. The response is typical of a thick sequence of Tertiary basalt. No further work is warranted.

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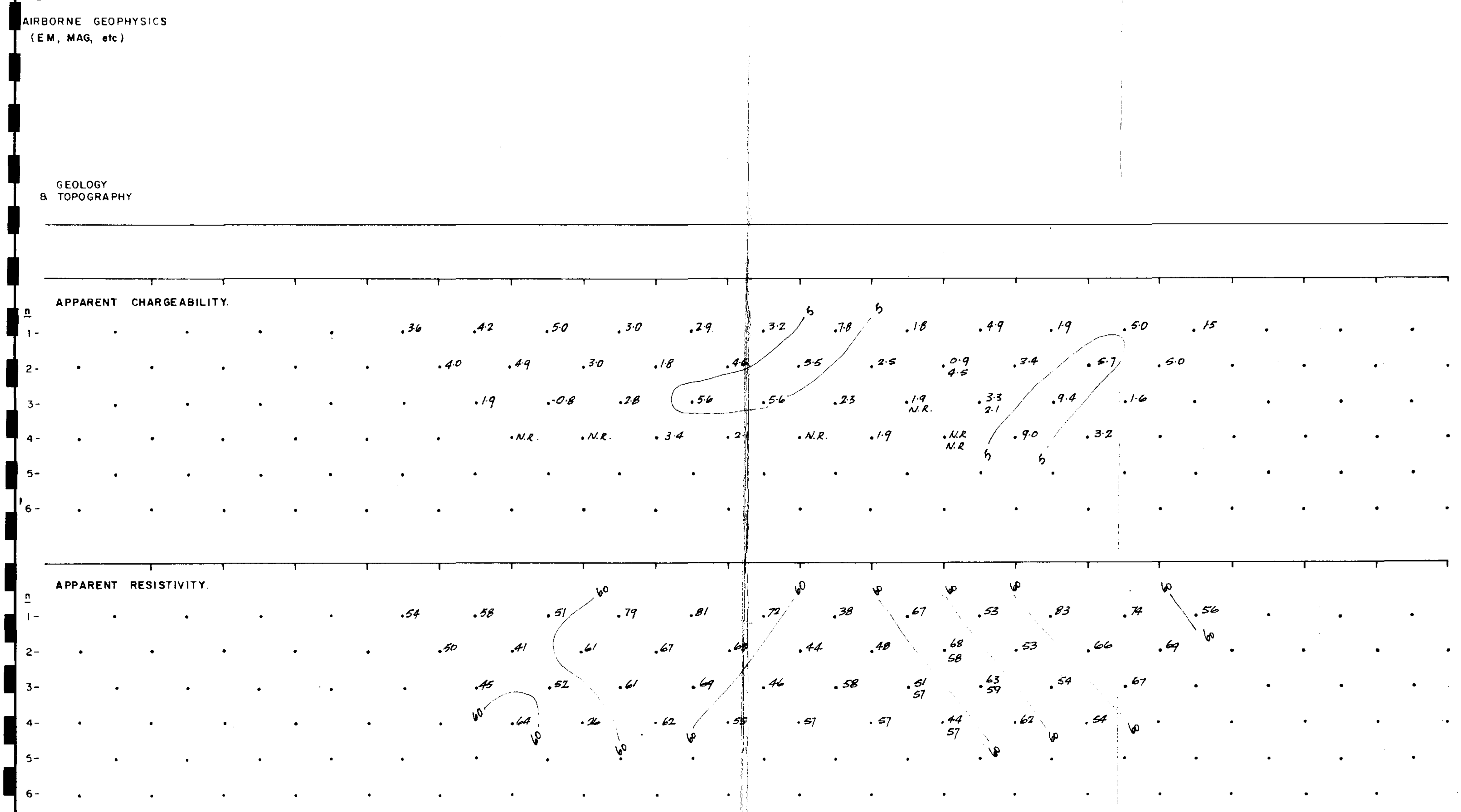

Contractor : SCINTREX
Date : 29-8-83
Timing : 2 Sec
Transmitter : 1 PTAA 2·5 kw
Receiver : 1 PR8
Integration time :
Array : DIPOLE - DIPOLE
Dipole length : 100 m

5 cm

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E.L. 36/79 LOONGANA
BURGHLEY PARK 4041/IL8
I.P. / RESISTIVITY SURVEY
LINE 2000 E

SCALE	1:500	DATE	29-8-83
AUTHOR		DRAWN	J.L.L.
OFFICE	D'PORT.	REF. No.	
DR. No.	D/MZ02/92	FIG. No.	2

3.3 Talbot Lagoon Anomaly 3941/1

A grid was established over this aeromagnetic anomaly (Refer Figure 3). Ground magnetic results suggest that the anomaly is caused by a slightly elevated hill of Tertiary basalt.

No further work is warranted. Results from the survey are detailed in Appendix II.

3.4 Blythe Road South Anomaly 4041/8

A grid was established across this aeromagnetic anomaly. (Refer Figure 4). Very spikey, basalt-related profiles were obtained from the ground magnetic survey.

No further work is warranted. Results are detailed in Appendix II.

3.5 Tor Creek Anomaly 4041/9

Two grid lines were cut in over this anomaly. (Refer Figure 5). A basalt hill is the apparent source of the anomaly.

Results are detailed in Appendix II.

3.6 Two Hummocks (Challenger III) Prospect

Five lines of UTEM were surveyed across the poorly - exposed zone of Cambrian acid volcanics and carbonaceous shales interbeds at Two Hummocks. (Refer plan KT2/76-CH3-3).

The locality was investigated in the past by Geopeko and Pennzoil because of the presence, in a quarry exposure,

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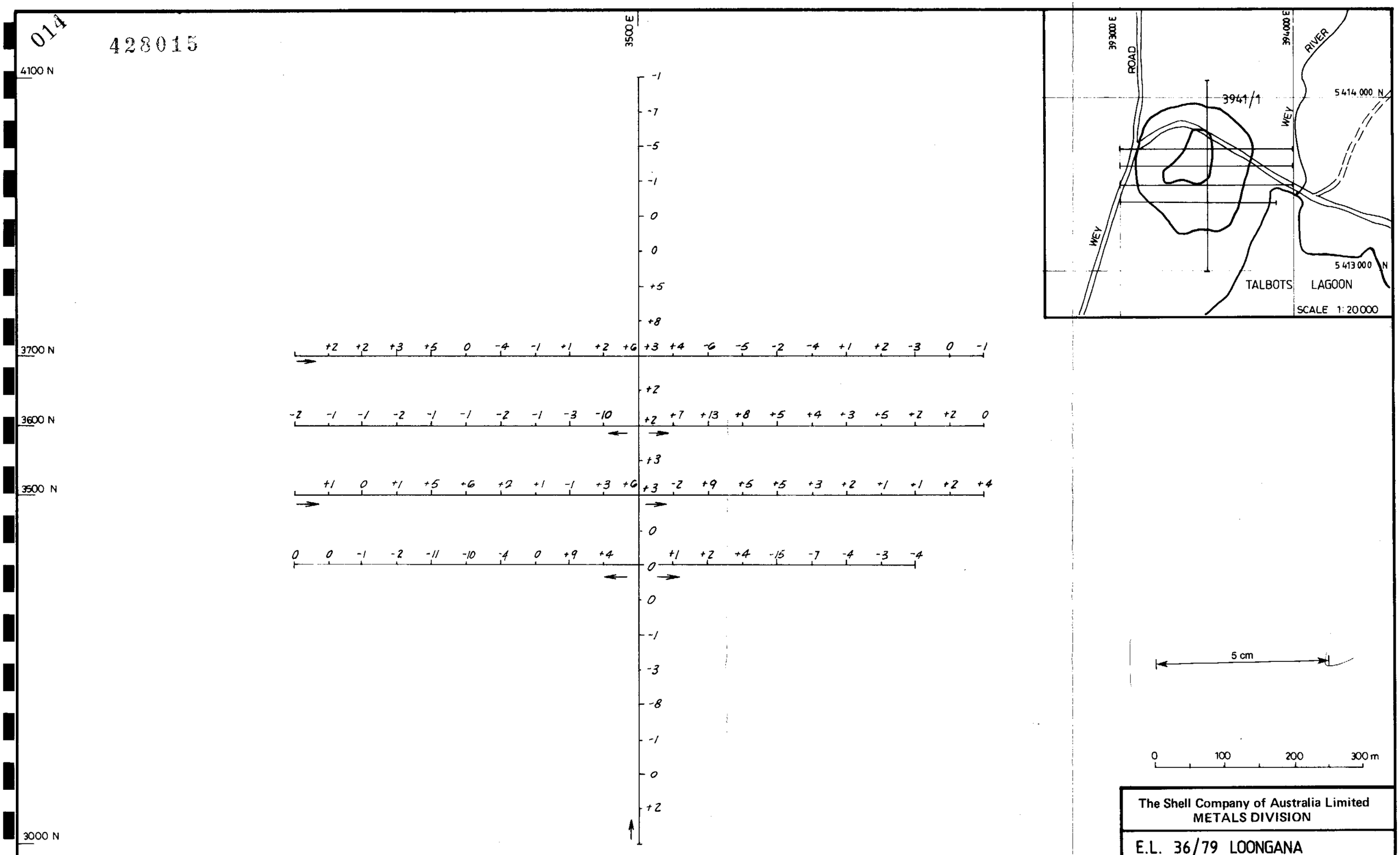


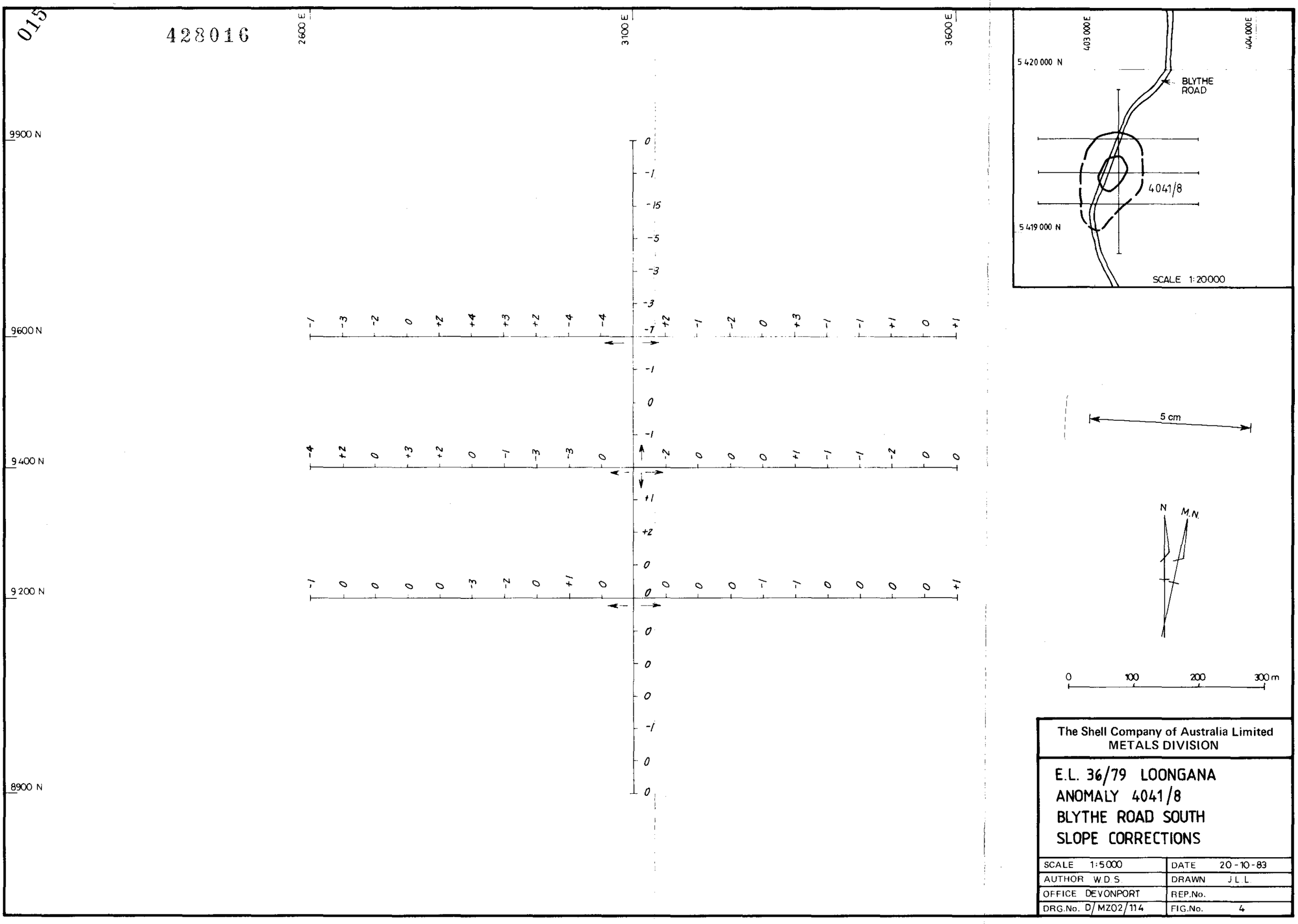
5 cm

0 100 200 300 m

The Shell Company of Australia Limited
METALS DIVISION

E.L. 36/79 LOONGANA
ANOMALY 3941/1
TALBOTS LAGOON
SLOPE CORRECTIONS

SCALE	1:5000	DATE	9-11-83
AUTHOR	W.D.S.	DRAWN	J.L.L.
OFFICE	DEVONPORT	REP.No.	
DRG.No.	D/MZ02/115	FIG.No.	3



015

428016

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METALS DIVISION

E.L. 36/79 LOONGANA
ANOMALY 4041/8
BLYTHE ROAD SOUTH
SLOPE CORRECTIONS

SCALE 1:5000	DATE 20-10-83
AUTHOR W D S	DRAWN J L L
OFFICE DEVONPORT	REP.No.
DRG.No. D/MZ02/114	FIG.No. 4

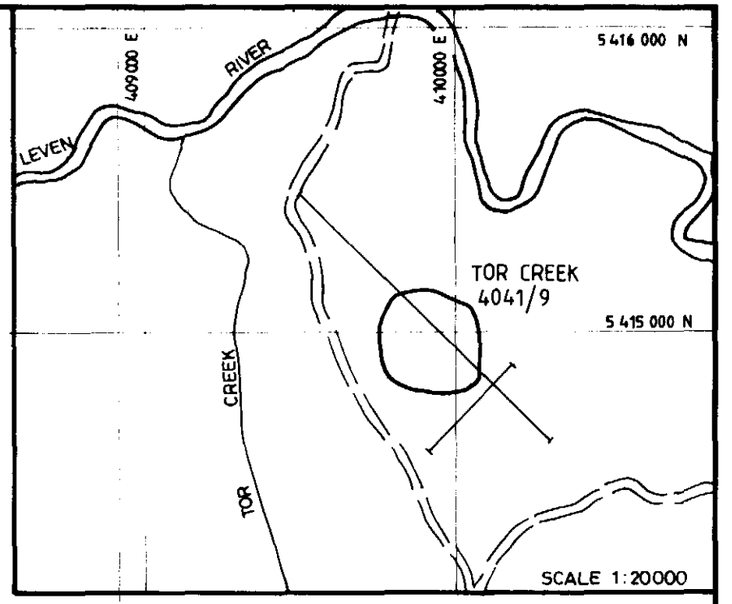
016

900 W.

428017

00 E

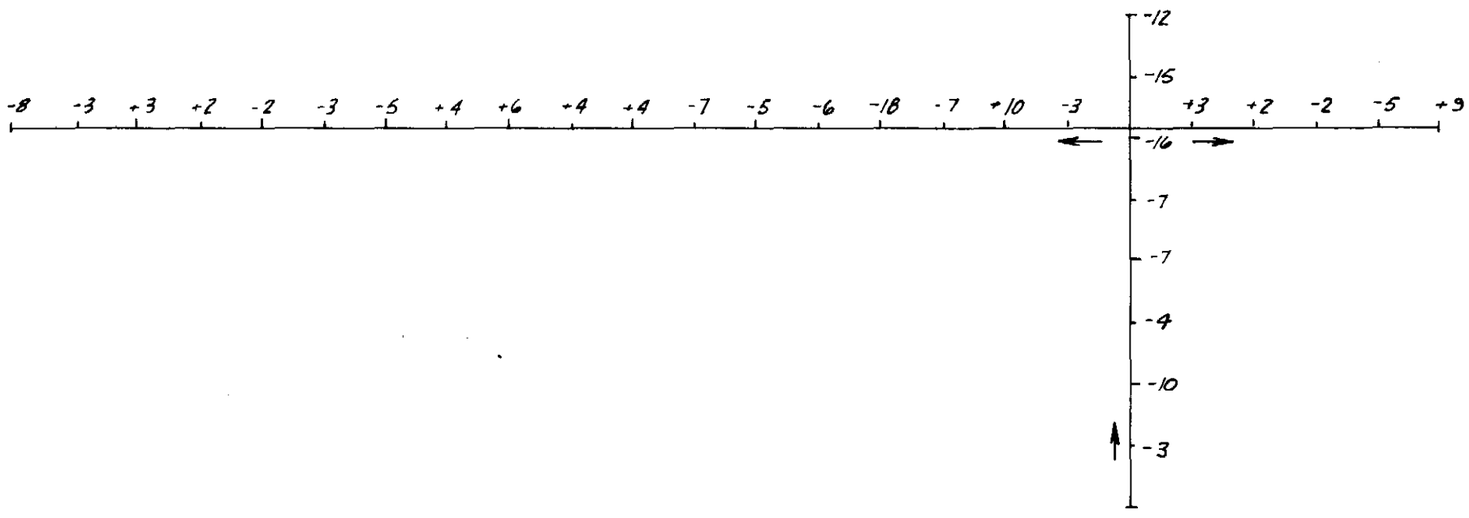
250 E

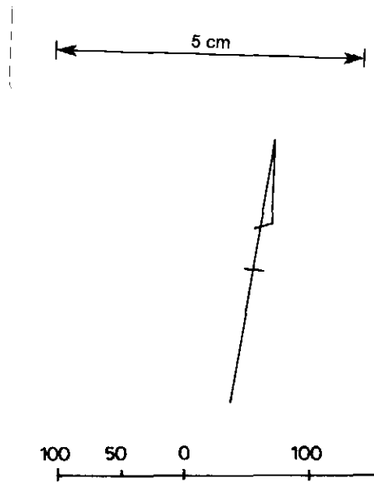


400 N

310 N

00 N





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METALS DIVISION

E.L. 36/79 LOONGANA
ANOMALY 4041/9
TOR CREEK
SLOPE CORRECTIONS

SCALE	1:5000	DATE	3-11-83
AUTHOR	W.D.S.	DRAWN	J.L.L.
OFFICE	DEVONPORT	REP.No.	
DRG.No.	D/MZ02/116	FIG.No.	5

of weak disseminated galena at the base of a carbonaceous shale horizon.

South of the quarry prospecting pits in the volcanics have exposed thin gash veins of baryte. The area of interest is exposed as a 2km long window in the Tertiary basalt. The stratigraphy from west to east consists of rhyolitic lavas, thin ash flow tuffs as black laminated shale. The volcanics have extensively sericitic and siliceous alteration.

A grid was established by Geopeko and hand and power augered soil geochemical samples were collected at 50m spacings on lines 200m apart.

Peak soil sample results were 280 ppm Cu, 520 ppm Pb, 1760 ppm Zn (background 10 - 50 ppm Cu, 80 - 120 ppm Pb, 30 - 400 ppm Zn) associated with the black shale horizon.

A magnetometer survey over the area failed to locate any significant magnetic horizons.

Pennzoil did several lines of RRMIP over a new grid at right angles to strike (135^{o}M). A line of moderate conductive anomalies occur associated with the black shale and another zone approximately 250m to the east. The conductors were not thought to be due to sulphides.

Shell re-established the Geopeko grid and carried out a VLF-EM survey. This appeared to locate the black shale horizon.

Only a small section of volcanics is exposed. They are quite altered although lacking the intensity of Que River

or Mt. Lyell and contain very little pyrite. There does, however, appear to be a system (assuming an east facing) of major volcanic activity followed by a period of quiescence which may be favourable to ore formation. The presence of barite veining also appears to be a favourable indicator.

The recent UTEM survey was run by Shell to check for the possibility of deep massive sulphide zones. The basalt cover proved to be a major problem as it gave a strong conductive response. Only a very large and conductive body could be expected to be outlined through the basalt.

Results from the survey are detailed in Appendix III.

4.0 CONCLUSIONS & RECOMMENDATIONS

Regional reconnaissance mapping indicates that favourable Cambrian volcanics underly much of the licence area. Exposures, however, are poor and widely spaced and difficult to correlate over any distance.

Volcanics exposed east of Mount Tor and further south may be the N.E. continuation of the Que River - Hellyer Prospect stratigraphy. They therefore warrant more detailed examination to determine their potential for economic mineralization.

The high basemetal content of the intrusive - extrusive volcanics at Challenger III through to Crosby Creek is unusual and requires further investigation.

Poor exposure and rugged topography make the licence a difficult area to explore. Continued effort should be made, however, to upgrade our knowledge of the ground.

REFERENCE

LAWTON, J.J. el al, 1983. E.L. 36/79 - Loongana. Progress Report on Exploration for the Period 1st May, 1980 - 30th June, 1983. Shell Company of Australia Ltd. Metals Division. Unpubl. Rept. 08.1266.

APPENDIX I

AMDEL PETROLOGICAL REPORT

GS 6455/84

021

The Australian
Mineral Development
Laboratories

Flemington Street, Frewville
South Australia 5063
Phone Adelaide 79 1662
Telex AA82520

Please address all
correspondence to
P.O. Box 114 Eastwood
SA 5063
In reply quote:

N202 - 848

428022

amdel

11 April 1984

GS 3/114/0

The Shell Company of Australia Limited
Shell Metals
P O Box 860
DEVONPORT. TAS 7310

Attention: Mr. R. Wright

REPORT GS 6455/84

YOUR REFERENCE:	Order No. 4479 of 16 February 1984.
IDENTIFICATION:	Number 1363 PORPHYRITIC TRACHYTE OUTCROP AT 19600N 11300E CHALLENGER JI PROSPECT
MATERIAL:	Rock sample.
DATE RECEIVED:	17th February 1984.
WORK REQUIRED	Identification of metallic mineral indicated on sample. Mineralogy of orange flecks. Possible presence of lead, zinc and barium minerals.

Investigation and Report by: Don McColl, Peter Schulz and Roger Brown

Chief - Geological Services Section: Dr Keith J. Henley
Manager, Mineral and Materials Sciences Division: Dr William G. Spencer

Keith Henley

for Brian S. Hickman
Managing Director

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Queensland 4814
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INVESTIGATION OF ANOMALOUS LEAD-ZINC BEARING VOLCANIC ROCK

1. INTRODUCTION

On February 17th 1984 a sample of dark grey fine grained volcanic rock was received by AMDEL from Mr R. Wright of Shell Metals Pty. Limited in Devonport, Tasmania. It was requested that minute spots of grey silvery mineral indicated by markings within the sample be identified, the mineralogy of yellow-orange spots profusely distributed through the rock be investigated, and a check made for the presence of lead, zinc and barium minerals by electron microprobe analyser or other methods as necessary.

2. PROCEDURE

The various fragments of sample supplied were initially examined minutely by low power binocular microscope. A fairly representative fragment was chosen and mounted and polished for mineragraphic investigation. Doubtful phases were subjected to X-ray powder diffraction analysis and the section was subjected to electron microprobe analysis in several significant areas.

3. RESULTS

Hand Specimen:- A dull grey-green massive volcanic rock, throughout which very fine phenocrysts and minute vugs lined with orange-yellow powder or filled with white mineral are sparsely scattered.

Careful examination of some of the white mineral spots suggest they are amygdalar vesicle fillings, and several show inclusions of a bright silvery mineral with strong cubical cleavage which is almost certainly galena. A small amount of this was drilled out and its nature confirmed by X-ray diffraction.

Similarly a small portion of the yellow-orange powder was removed and investigated by X-ray diffraction techniques. This indicated the presence of quartz and a disordered phase which could be earthy amorphous limonite or goethite.

Polished Section:- The following opaque constituents were identified:

Magnetite	2%
Galena	Trace
Rutile	1%

Magnetite occurs as rounded moderately equidimensional xenomorphs up to 0.2 mm in diameter. Almost without exception these crystals display an internal network of random cracks and crevices, suggesting that their outer form is a relict of their igneous origin, but which has been disrupted by subsequent deuteric alteration. Such effects would be expected from the presence of the amygdalar mineral fillings, formed during very late-stage if not post-volcanic hydrothermal alteration.

A few clusters of subidiomorphic prisms of rutile (or titanite) of rather smaller dimensions (<0.1mm) are also scattered in some of the light coloured amygdalar mineralisation. These were probably also of deuteric origin, but the section shows only the rarest traces of galena which is believed to be due to its very spasmodic occurrence in appreciable sized crystals.

Electron Microprobe Investigations:- Most of the metallic grains investigated in the section area proved to be the magnetite. It was shown to have an appreciable content of titanium and a little less manganese. It corresponds in composition with the titan-magnetite variety.

Traces of zinc (~0.6%) were noted in chlorite in the rock, but no appreciable source for lead or barium was detected.

The yellow-orange spots were noted to contain both calcium and magnesium suggesting the possible presence of dolmite along with the silica and amorphous limonite detected by X-ray diffraction.

4. CONCLUSIONS

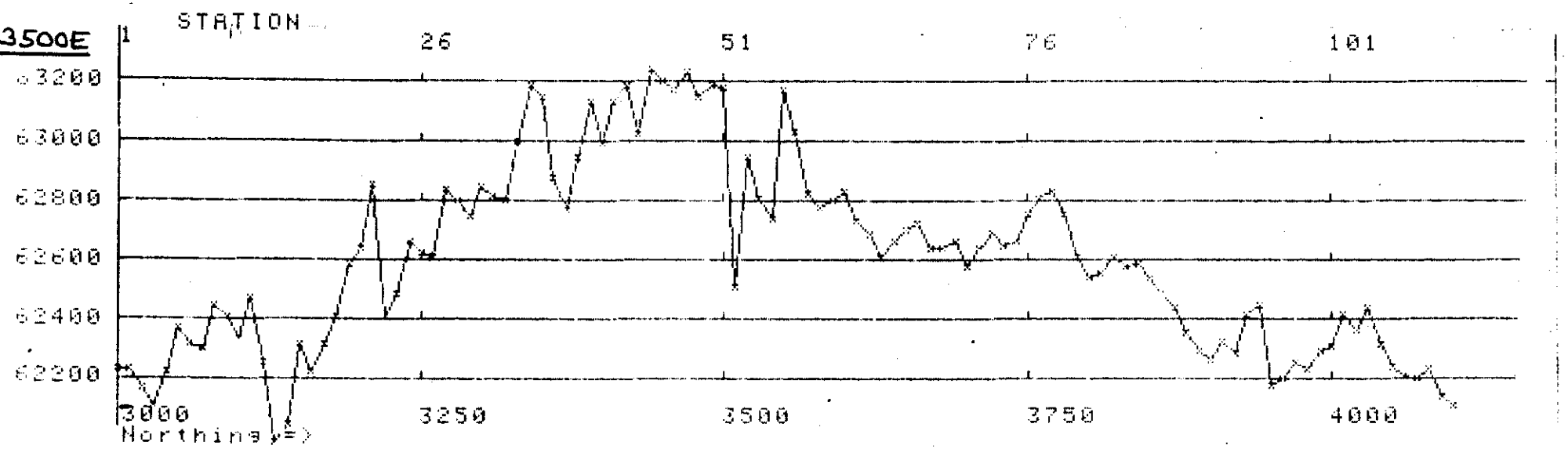
It appears that this sample represents an altered extrusive volcanic which has developed a sparse scattering of fine amygdales possibly filling former vesicles. The metallic mineralisation seems to have been introduced at the concluding stages of this deuteric process. Consequently the galena is noted to be formed at the core of amygdalar fillings.

In places these amygdales have been leached and oxidised leaving a cavity lined by a thin coating of siliceous dolomitic yellow-brown limonite. This is possibly a degraded ferroan carbonate, and may even contain traces of oxidised lead and zinc at levels below those detectable by the microprobe.

APPENDIX II

Ground magnetic data from follow-up of Talbot Lagoon 3941/1, Blythe Road South 4041/8 and Tor Creek 4041/9 anomalies.

BASELINE 3500E



TALBOT LAGOON

LINE : 3500E

FROM : 3000 N

TO : 4100 N

STATION SPACING : 10 m

MIN READING = 62243

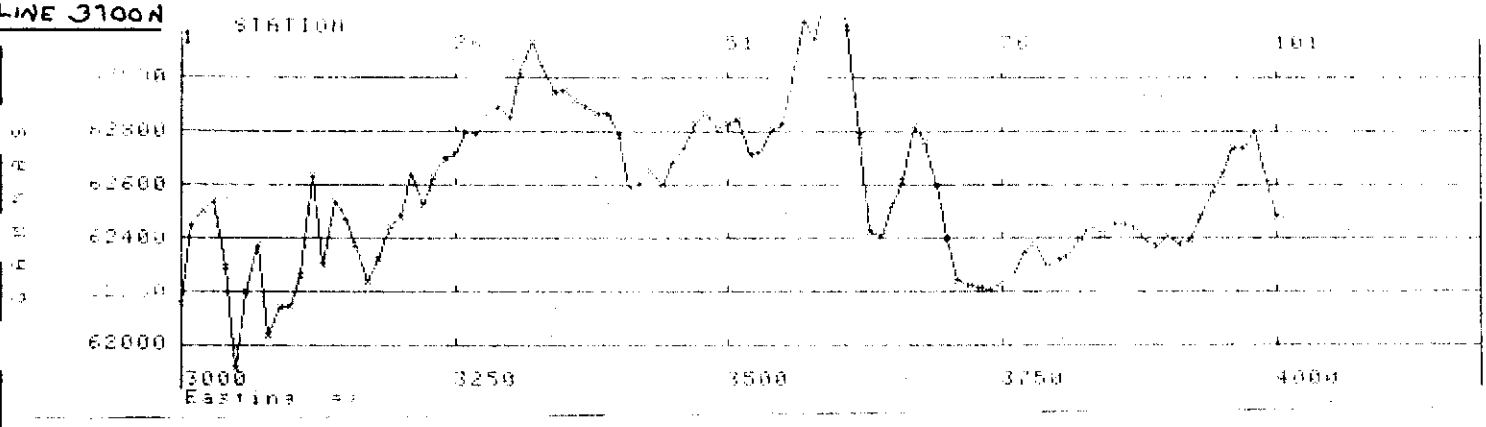
MAX READING => 63236

AVG R : 639

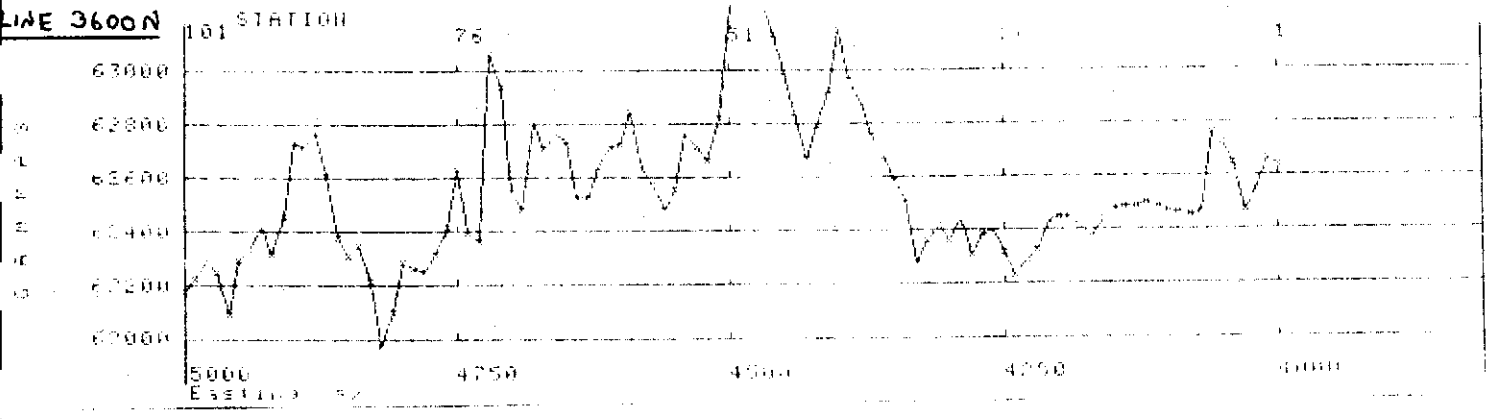
026

428027

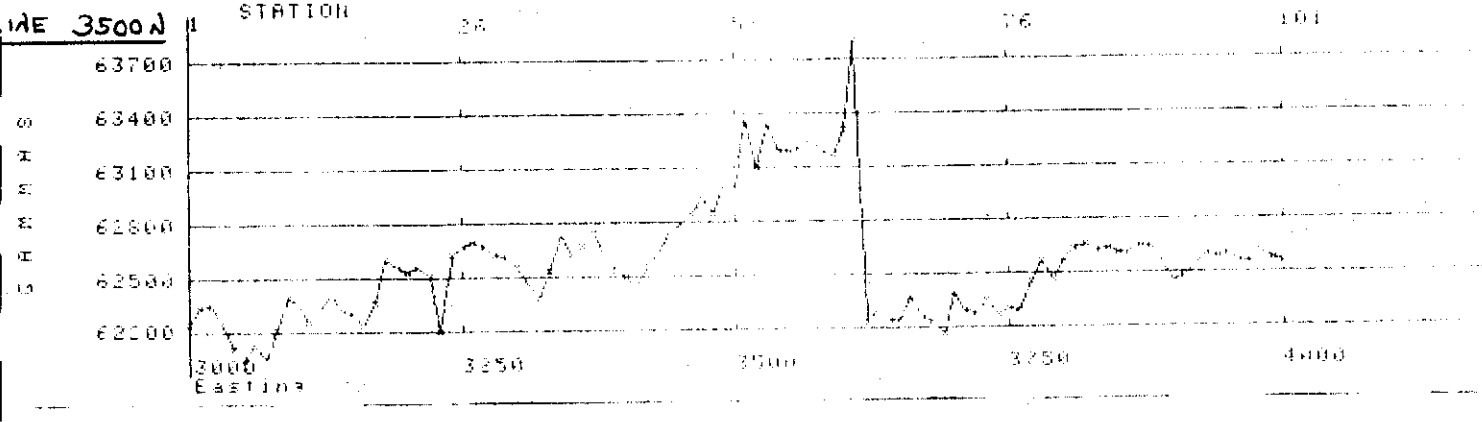
LINE 3700N



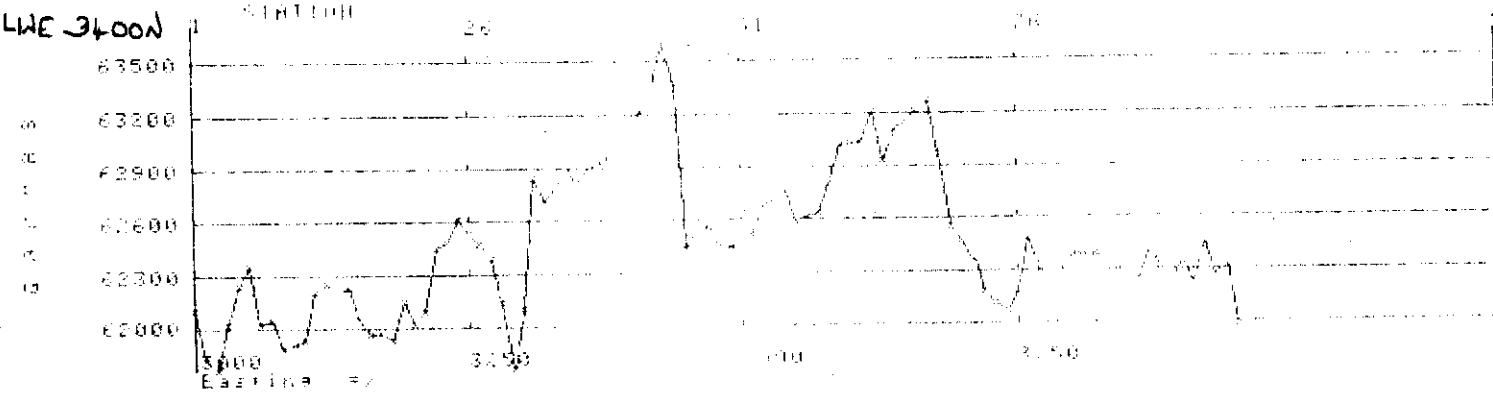
LINE 3600N



LINE 3500N



LINE 3400N



THELON LAGOON

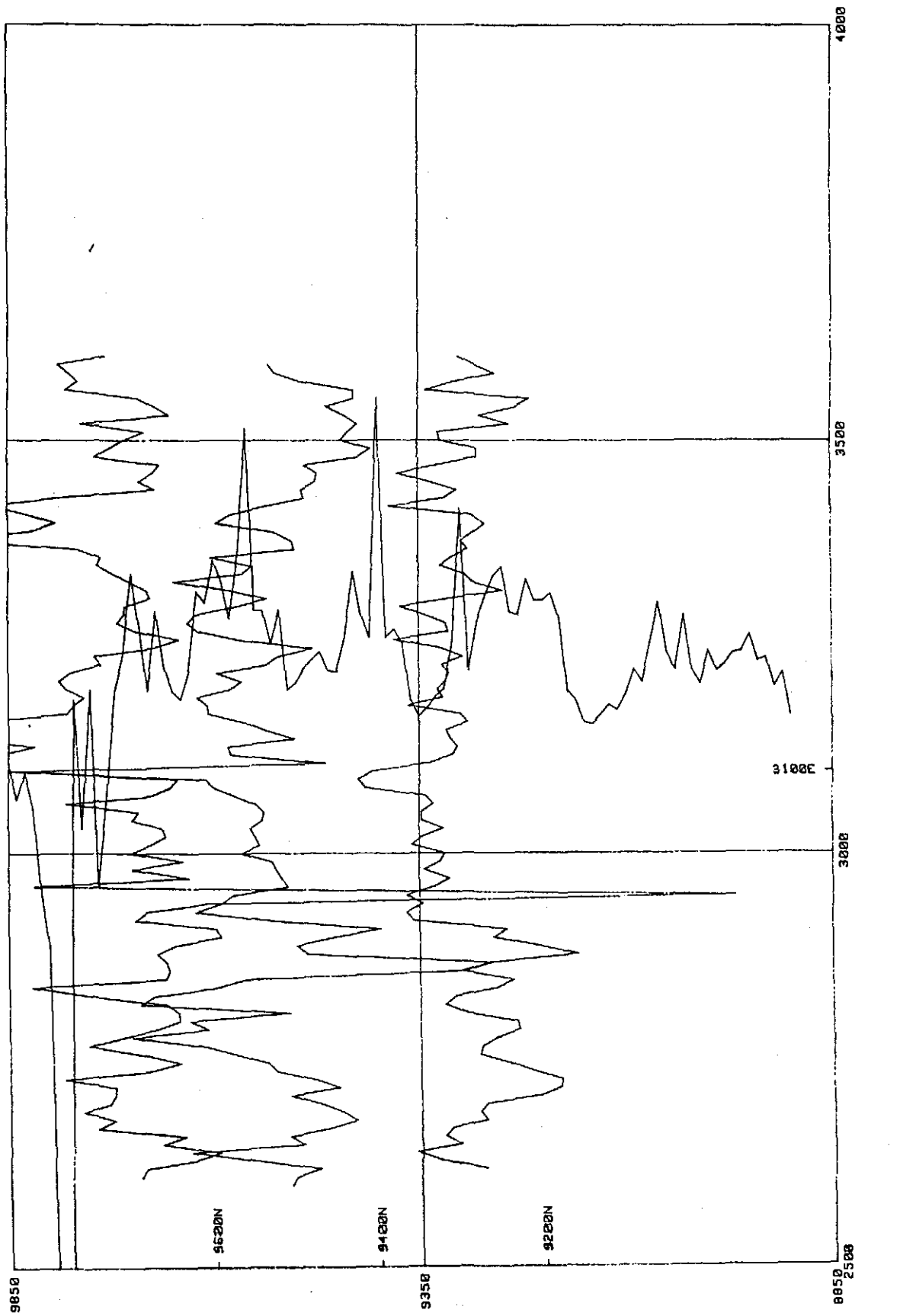
CORRECTED DATA

SHELL COMPANY OF AUSTRALIA

METALS DIVISION

N.W. TASMANIA
LOONGANA E.L.
ANOMALY 4041/8
GRD MAG
(BLYTHE ROAD SOUTH)

DISTANCE SCALE : 50 M/CM
READING SCALE : 200 /CM
BASE READING : 61700



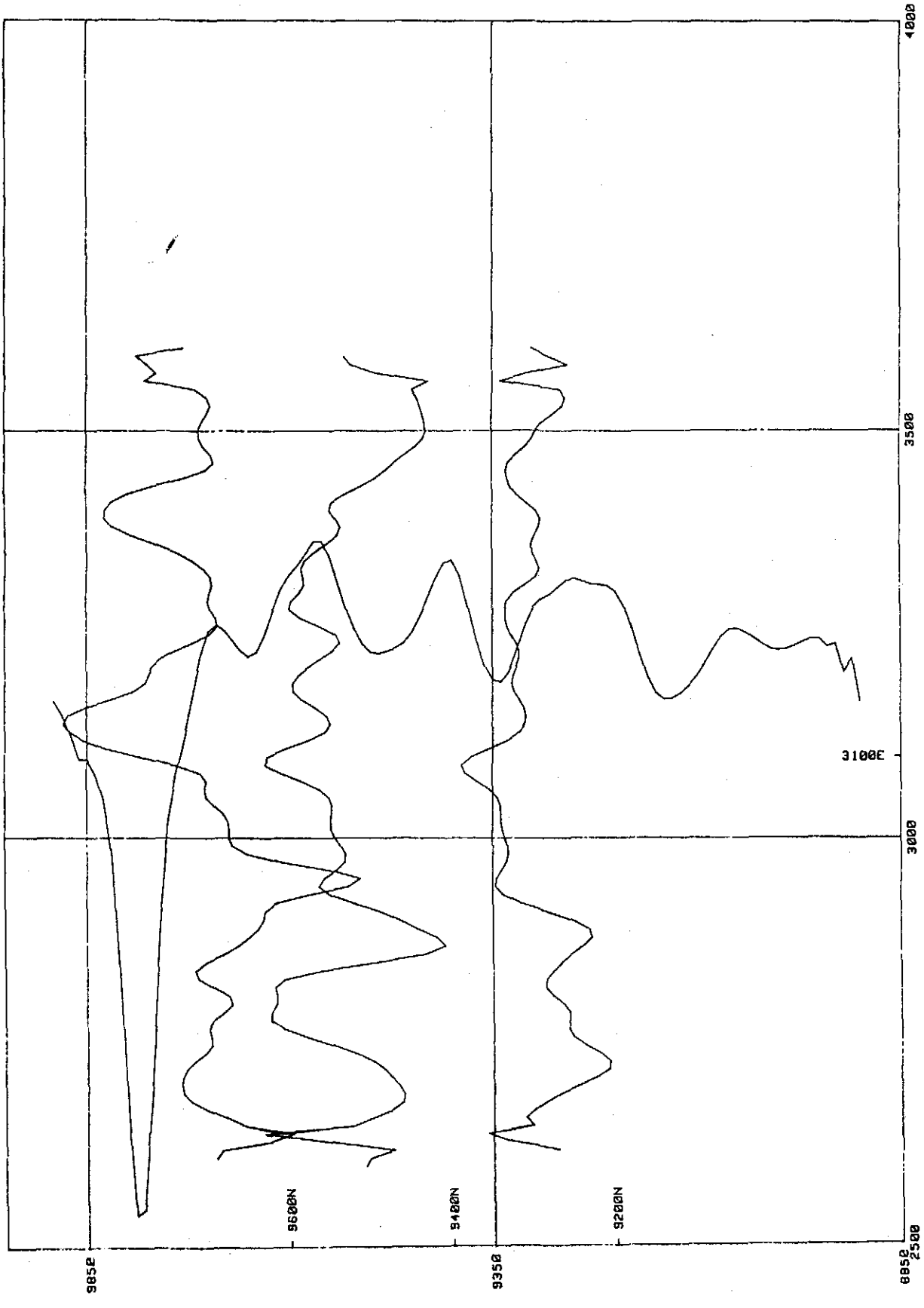
SHELL COMPANY OF AUSTRALIA

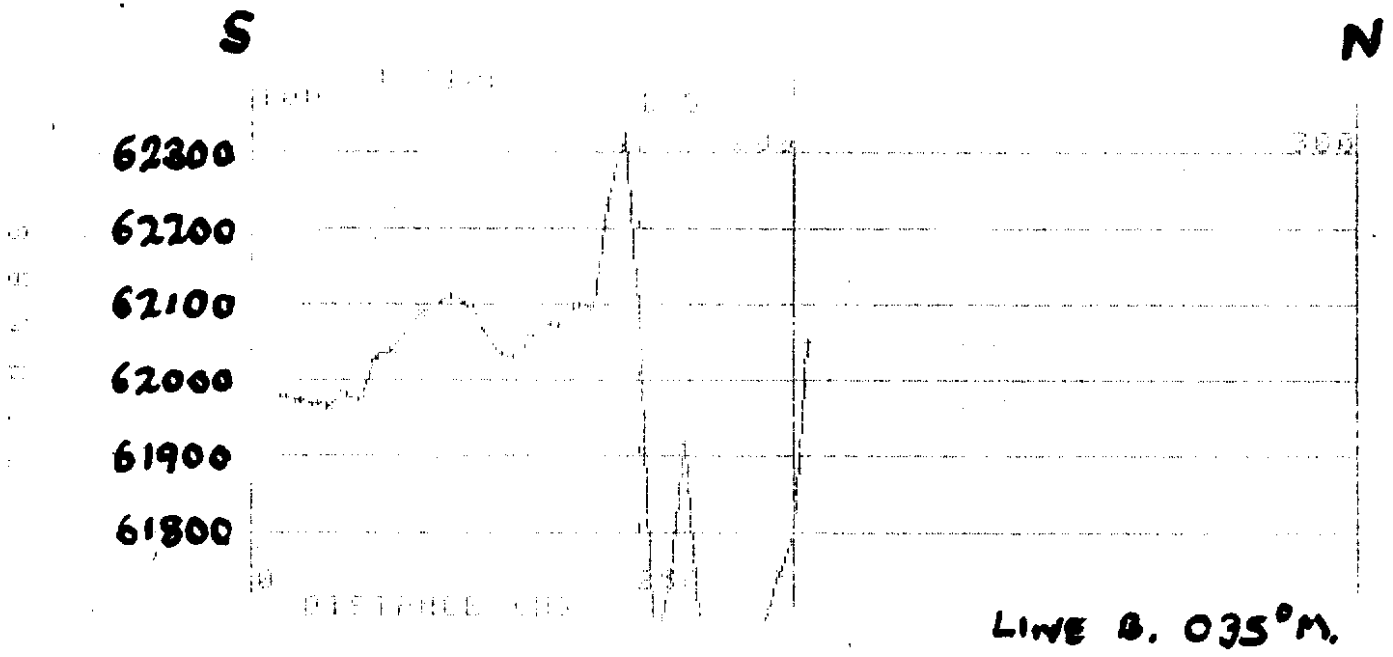
METALS DIVISION

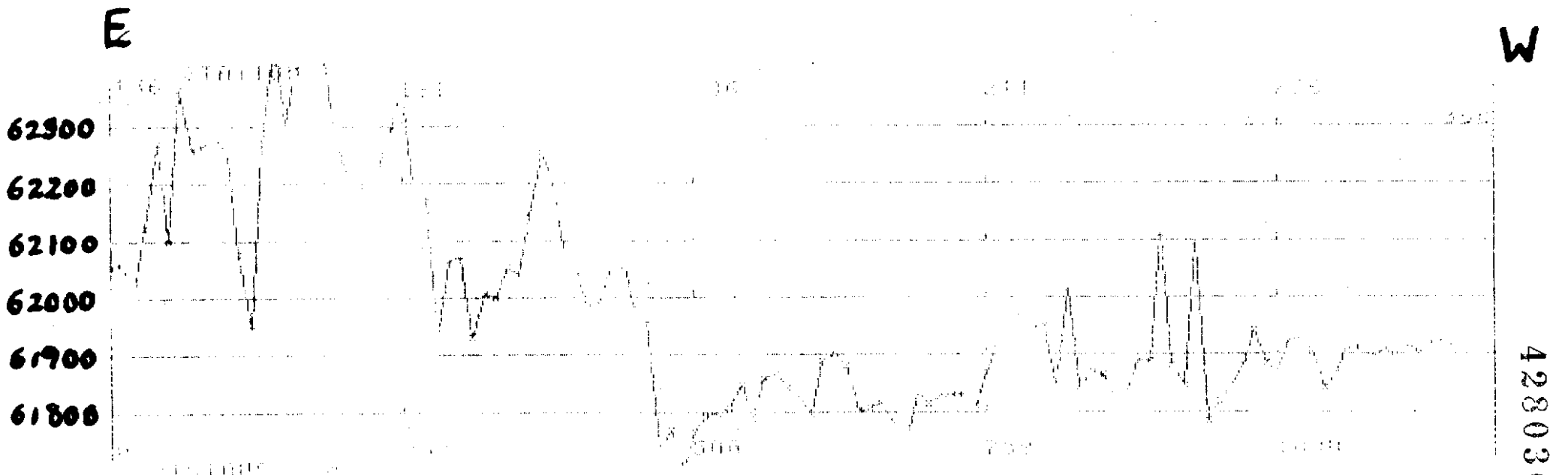
N.W. TASMANIA
LOONGANA E.L.
ANOMALY 4041/8
GRD MAG 11 Pt Filt

DISTANCE SCALE : 50 M/CM
READING SCALE : 200 /CM
BASE READING : 61700

5 cm




S
N
62300
62200
62100
62000
61900
61800
LINE B. 035°M.


E
W
62300
62200
62100
62000
61900
61800
LINE B. 125°M.

TOR CREEK

APPENDIX III

UTEM SURVEY AT CHALLENGER III

031

428032

M E M O R A N D U M

DATE : 12 April, 1984

FROM : BXN:NH:AJD

TO : BXH/Devonport

cc : BXHE

UTEM SURVEY - CHALLENGER 3

Attached are the UTEM profiles from the recent survey , which despite the poor weather, difficult terrain and equipment problems were completed well under budget.

CHALLENGER III (LOONGANA EL)

5 lines, each 1000 metres long were surveyed with UTEM: 9600E, 9800E, 10000E, 10200E, 10400E. An 800 x 800 metre Tx loop was used with a frequency of 26.23 Hz, and was set up to the south of the grid. The Cambrian volcanics dip predominantly east, but the Tx loop was set up to the south primarily to avoid the overlying Tertiary basalts to the north (see attached plan).

The Cambrian carbonaceous shales mapped on the grid are readily apparent especially that unit along about 10500N. Further horizons are evident to the north, although basalt response predominates over the north western part of the grid. The basalt response is such that it would probably 'drown' the response of any but the largest and most conductive of bedrock conductors (for instance the basalt response here is at least 10 x the Bastyan Dam anomaly amplitude).

Present results therefore do not encourage further work on this prospect.

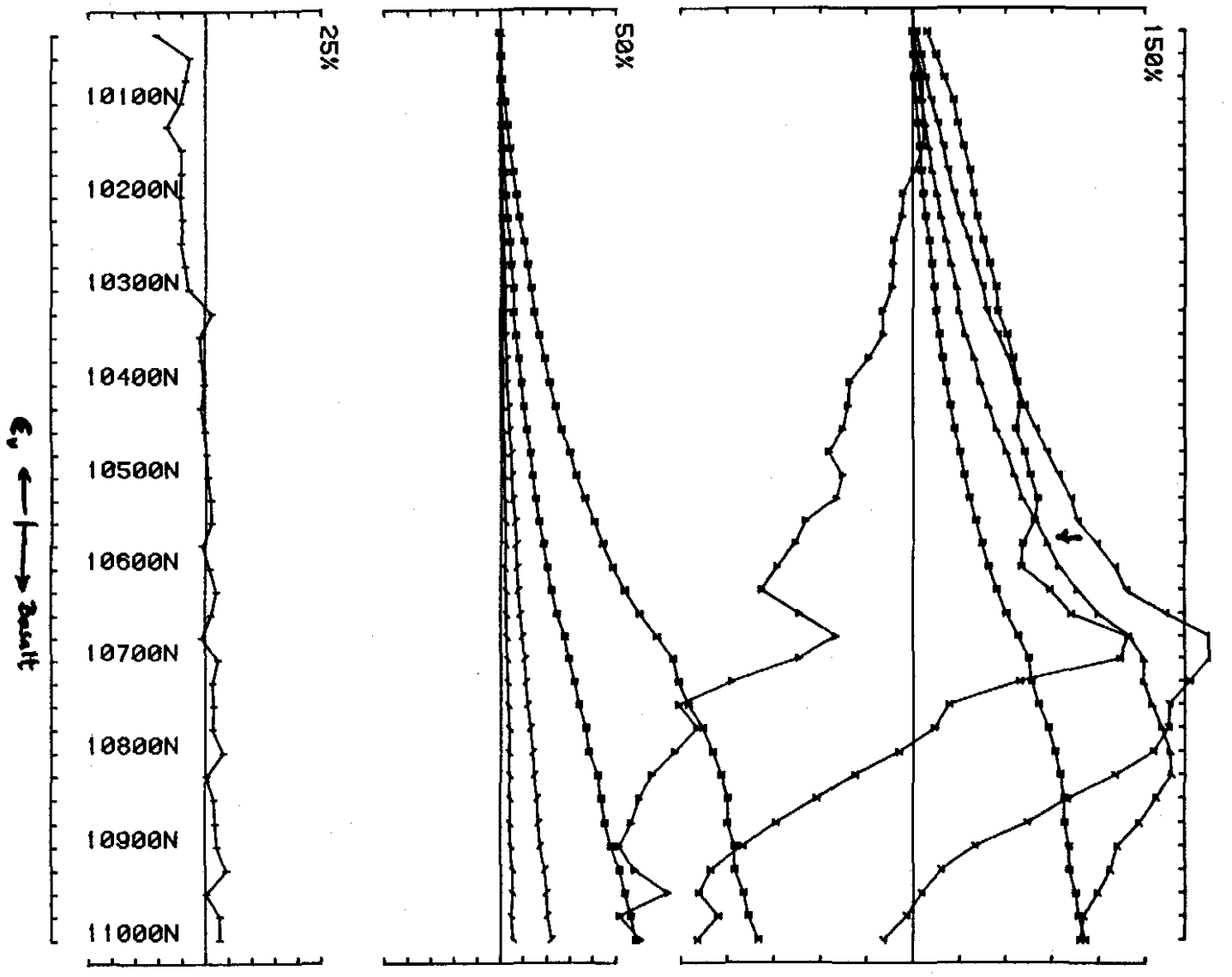
NH

N HUNGERFORD

Attach.

032

428033



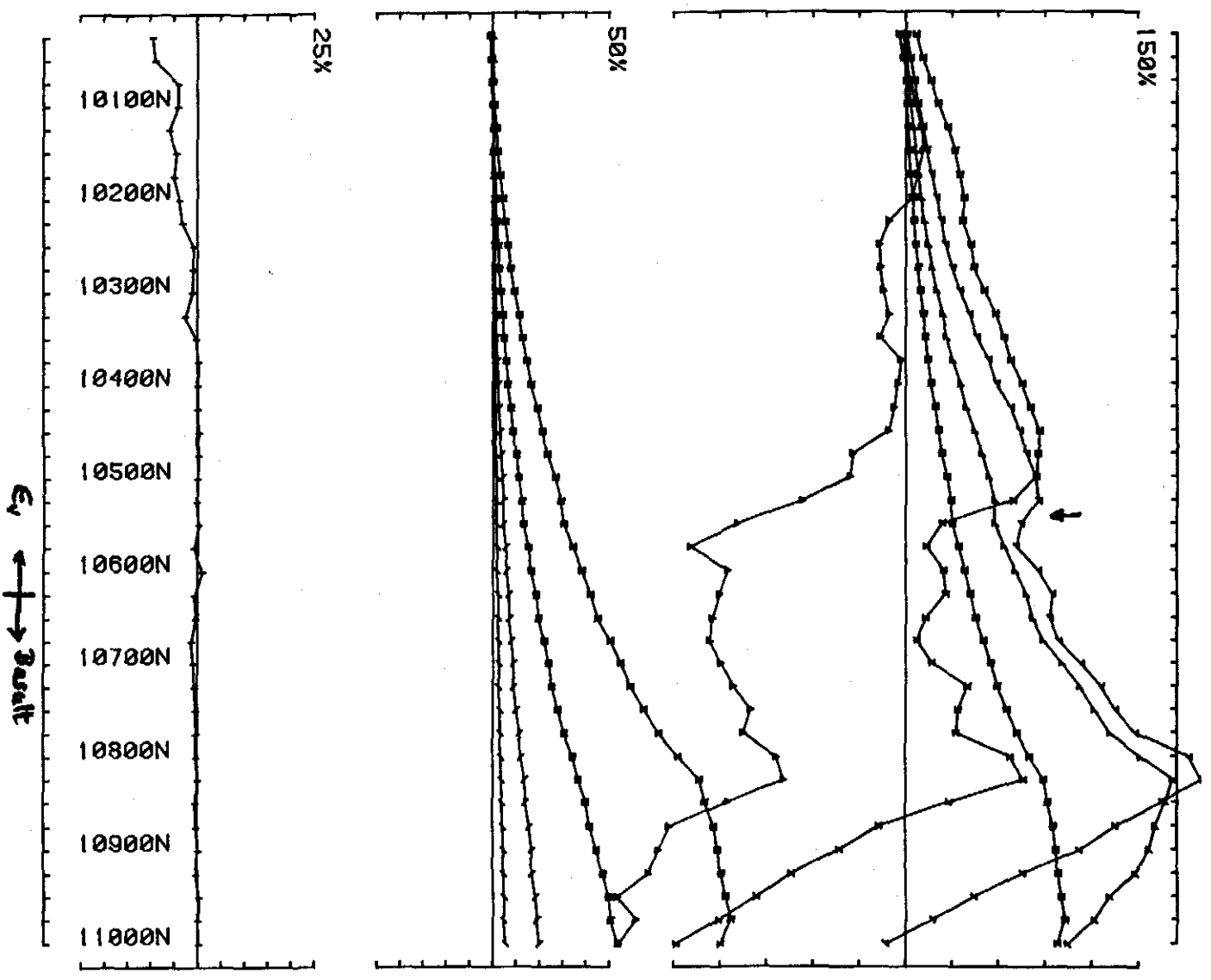
UTEM SURVEY conducted by PMM BJS Job 1502

Project Area Challenger III Survey for Shell Metals freq(hz) 26.230

Loopno 0002 Line 9600E component Hz secondary Ch 1

033

428034



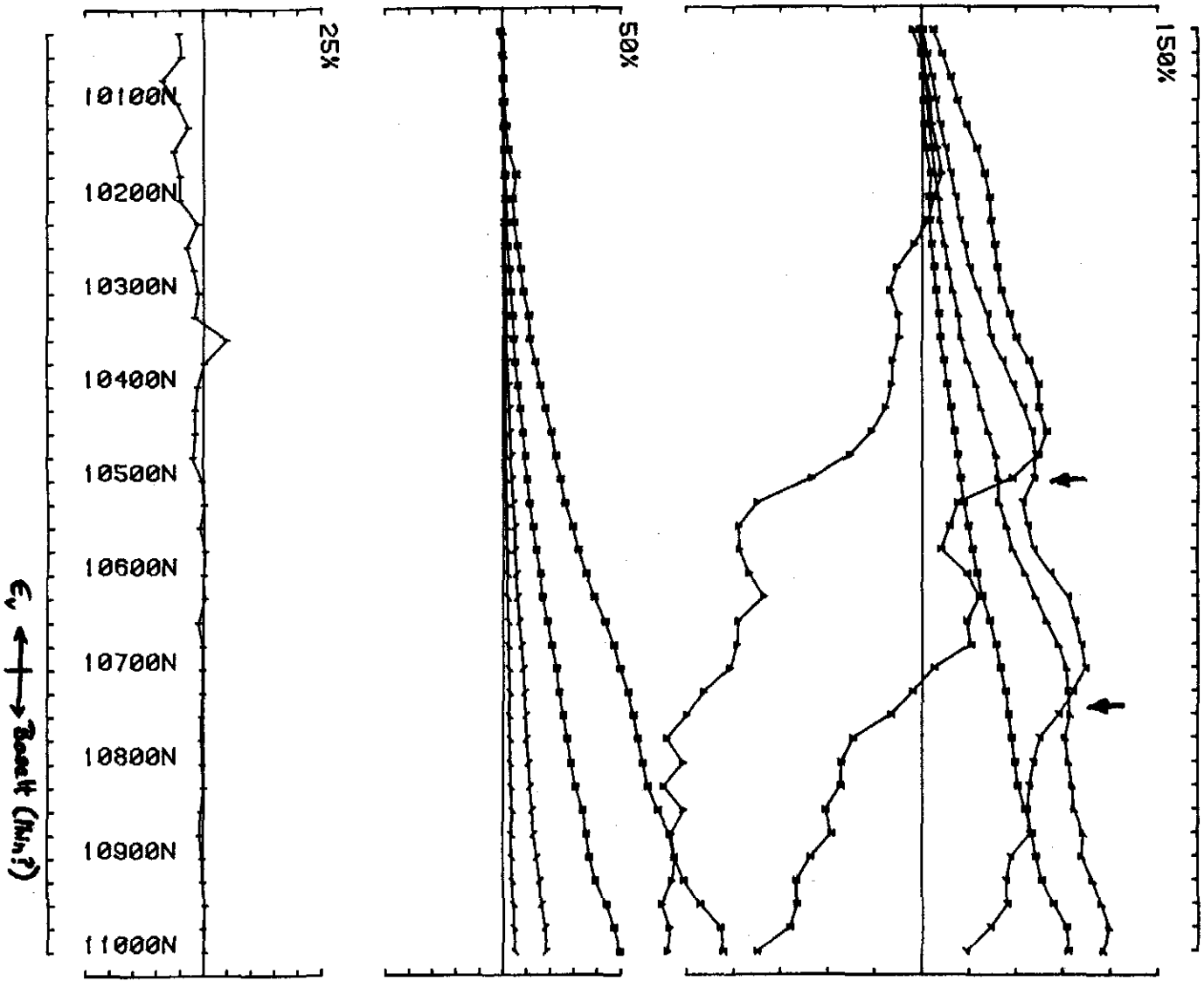
UTEM SURVEY conducted by PMM BJS Job 1502

Project Area Challenger III Survey for Shell Metals freq(hz) 26.230

Loopno 0002 Line 9800E component Hz secondary Ch 1

034

428035



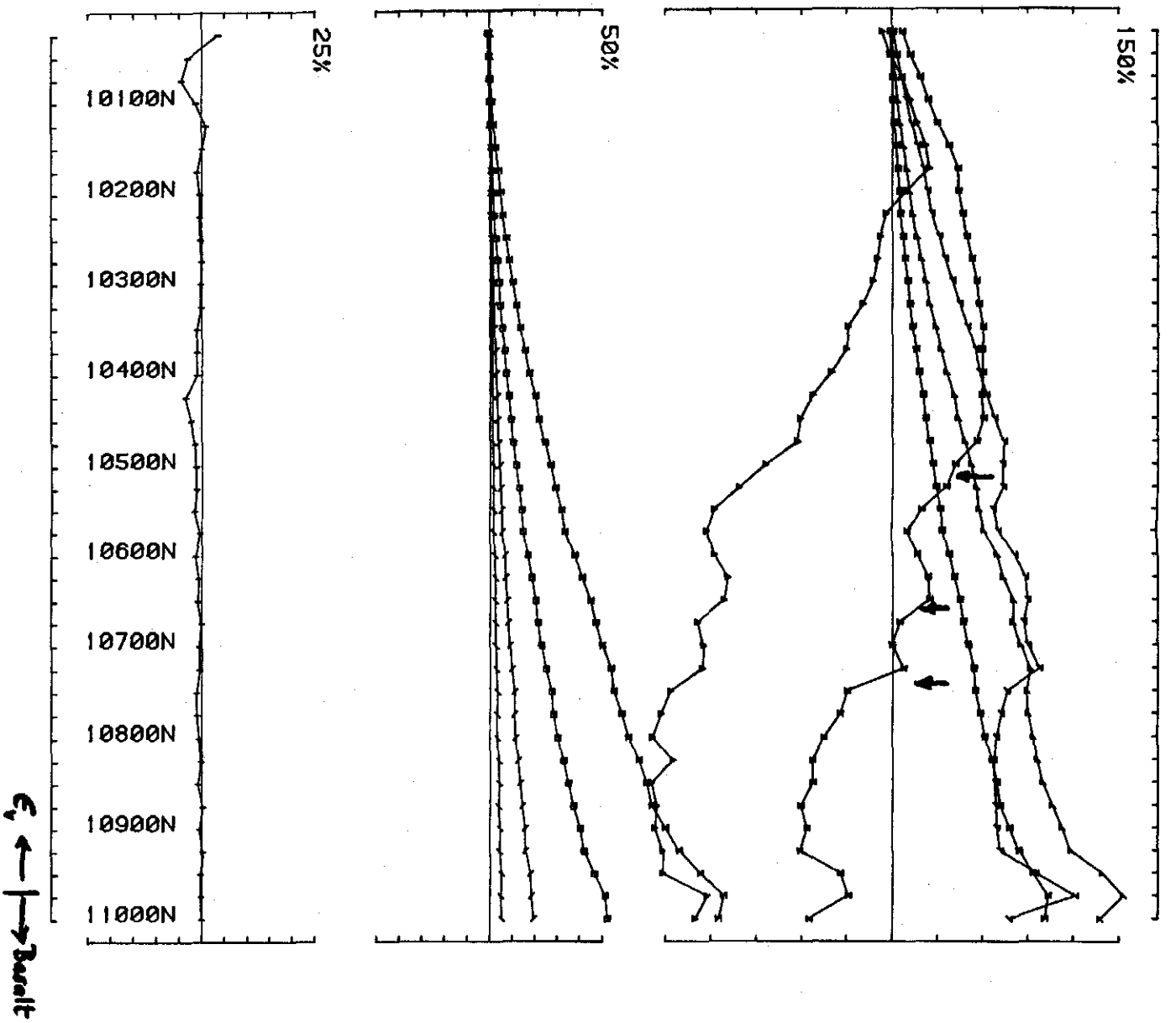
UTEM SURVEY conducted by PMM BJS Job 1502

Project Area Challenger III Survey for Shell Metals freq(hz) 26.230

Loopno 0002 Line 10000E component Hz secondary Ch 1

035

428036



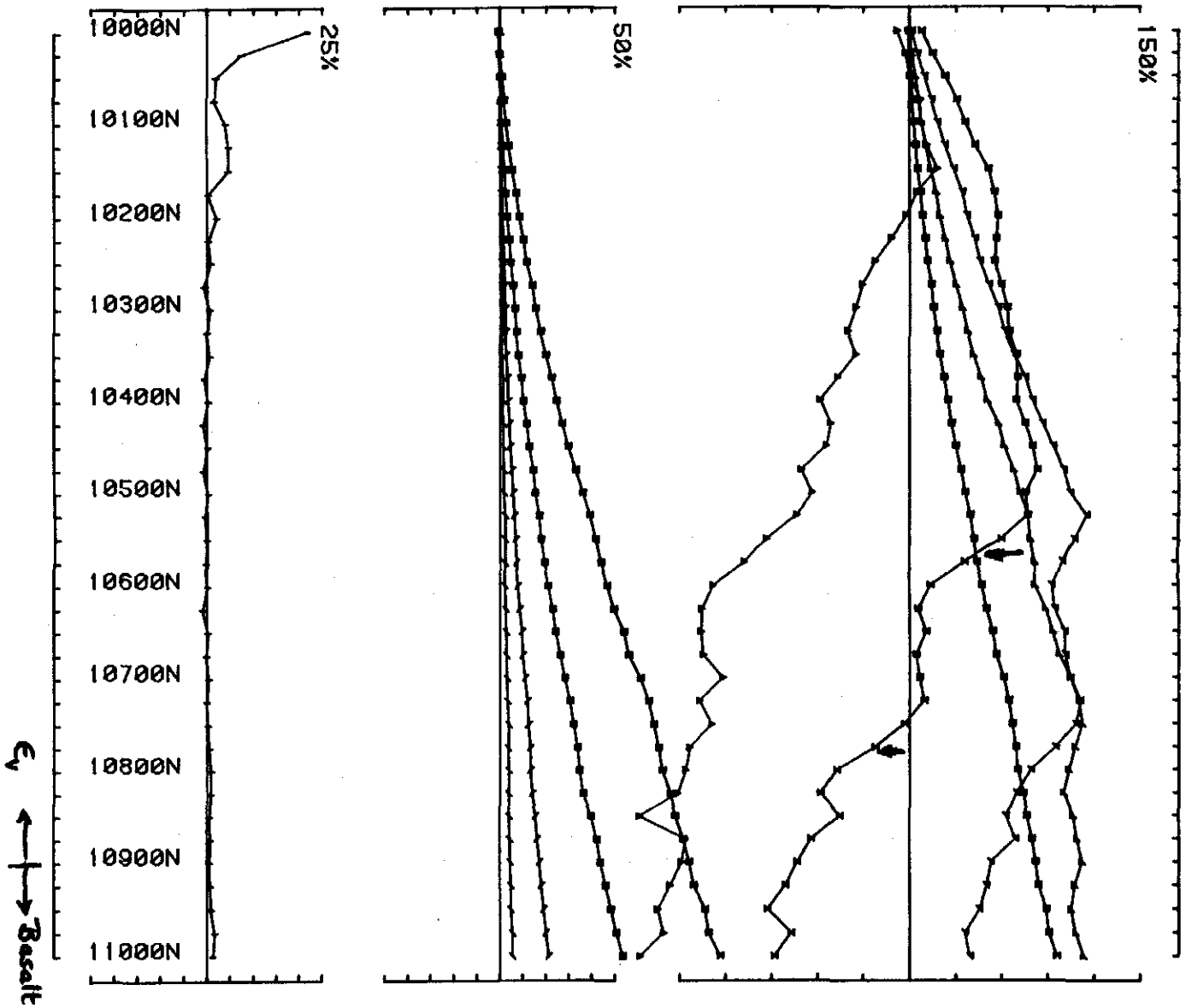
UTEM SURVEY conducted by PMM BJS Job 1502

Project Area Challenger III Survey for Shell Metals freq(hz) 26.230

Loopno 0002 Line 10200E component Hz secondary Ch 1

036

428037



UTEM SURVEY conducted by PMM BJS Job 1502

Project Area Challenger III Survey for Shell Metals freq(hz) 26.230

Loopno 0002 Line 10400E component Hz secondary Ch 1


LEGEND
Quaternary
Alluvium
Talus
Permo-Carboniferous
Sandstone, siltstone, tillite
Devono-Silurian
Bell shale
Florence sandstone
Magnetite rich skarn
Ordovician
Limestone
Sandstone
Conglomerate
Cambrian
Limestone, mudstone
Acid/intermediate volcanics and sediments
Igneous Rocks
Tertiary basalt
Devonian granite - Housetop granite
KEY
Highway
Road
River
Emu Bay Railway
Electrical sounding location
Drill hole location
Landsat interpretation (Huntings)
Circular Feature
Aeromagnetic Anomaly
Input Anomaly
AMT Site
390 000 E
400 000 E
410 000 E
420 000 E
5 430 000 N
5 420 000 N
5 410 000 N
MOUNT HOUSETOP
LOYETEA PEAK
BLYTHE RIVER ANOMALY (4042/4)
CHALLENGER TWO PROSPECT
DDH CD1 (197·8 m)
TULIP CREEK PROSPECT
NIETTA
SOUTH NIETTA
NARRAWA
TWO HUMMOCKS
BLACK MARSH
TALBOTS LAGOON
GUILDFORD
CHALLENGER ONE PROSPECT
MOUNT TOR
BLACK BLUFF
GF1 (>152 m)
GF3 (>90 m)
(E3) Line No. 3 AMT 6 - 250 m
(E2) Line No. 2 160 m
AMT 12 160 m
LOONGANA
428038
5 cm
The Shell Company of Australia Limited
METALS DIVISION
E.L. 36/79 LOONGANA
GEOLOGY
84-2127
037
Scale : 1:50 000
FIG. No.
REPORT No.
ENCL. No.
DRG. No. D/MZ02/048
DATE 5-8-83
AUTHOR J.J. LAWTON
DRAWN H.L.H.
OFFICE DEVONPORT


428039
N
The Shell Company of Australia Limited
METALS DIVISION
84-21127
REGIONAL VOLCANIC STUDY
LOONGANA SHEET
GEOLOGY
038
SCALE 1:50 000
DATE 2-6-83
AUTHOR W.D.S.
DRAWN J.L.L.
OFFICE DEVONPORT
REP.No.
DRG.No. D/MT24/055
FIG.No.
LEGEND
Tertiary
Tb BASALT
Ordovician
Og GORDON LIMESTONE
MOINA SANDSTONE AND BASAL ROLAND CONGLOMERATE
O UNDIFFERENTIATED SEDIMENTS
Cambrian
VOLCANOCLASTIC CONGLOMERATE (JUKES BRECCIA EQUIVALENT ?)
€v ACID - INTERMEDIATE VOLCANICS AND SEDIMENTS
€b BASIC VOLCANICS AND SEDIMENTS.
€sm TUFFACEOUS SEDIMENTS AND MINOR VOLCANICS
INTRUSIVE - EXTRUSIVE PORPHYRITIC TRACHYTE - RHYODACITE - DIORITE
€s UNDIFFERENTIATED SEDIMENTS
Igneous Rocks
Dg. DEVONIAN HOUSETOP GRANITE
SYNCLINE
ANTICLINE
FAULT
RIVER
TIER
LOYETEA NORTH
CROSBY CREEK
MOUNT EVERETT
NATIVE TRACK
CHALLENGER II
LEVEN RIVER
TWO HUMMOCKS
CHALLENGER III
CHALLENGER I
MOUNT TOR
BLACK BLUFF
LEVEN
CATTLEY RANGE
Lake Barrington
Lake Gairdner
MOINA
Lake Cethana
5 cm
5 420 000 N
5 410 000 N
400 000 E
410 000 E
420 000 E
430 000 E

The Shell Company of Australia Limited
METALS DIVISION

REGIONAL VOLCANIC STUDY
LOONGANA SHEET
GRID LOCATIONS AND ANOMALIES

84-2127

039

SCALE	1 50 000	DATE	30-6-83
AUTHOR	W.D.S.	DRAWN	J.L.L.
OFFICE	DEVONPORT	REP No.	
DRG No	D/MT24/058	FIG No	

5 cm

428040

5 430 000 N

5 420 000 N

5 410 000 E

Hampshire

RIVER

BLYTHE RIVER
ANOMALY 4042/4

BRD1
270m

4041/8
BLYTHE ROAD
SOUTH

4041/IL9

PEAK
PLAIN
ANOMALY

BLYTHE

4041/IL12

4041/2

4041/IL1

4041/IL6

4041/IL7

4041/13

3941/IL3

TALBOT LAGOON
3941/1

CHALLENGER III
(TWO HUMMOCKS)

4041/3

CHALLENGER I

4041/4

4041/5

4041/6

4041/IL8
BURGHLEY PARK

4041/IL2
BLACK MARSH ROAD

LEVEN

4041/1

4041/9
TOR CREEK

CHALLENGER II

LOYETEA NORTH

LOYETEA SOUTH

TULIP
CREEK

4141/3

4141/2

4141/IL4

Preston

RIVER

CROSBY
CREEK

South Preston

Nietta

WILMOT

South Nietta

Wilmot

RIVER

Lake
Barrington

Lake
Gairdner

Lake
Cethana

LEGEND

- AEROMAGNETIC ANOMALY
- INPUT ANOMALY
- GRID LINE

TOPOGRAPHICAL SYMBOLS:

- Bulldozed track
- Bulldozed trench
- Rubble heap
- Quarry

SYMBOLS:

IGNEOUS:

A	acid igneous unclassified
Ar	rhyolite
Mv	basalt

SEDIMENTARY:

Ssh	shale
Ssltst	siltstone
Ssst	sandstone
Sq	quartzite
Scongl	conglomerate

STRUCTURAL and TEXTURAL:

t	tuff unclassified
lt	lithic tuff
xt	crystal tuff
vt	vitric tuff
fm	fiamme
af	ash flow
p	porphyritic
vns	veins
m	massive
lam	laminated
frags	fragments
a	amygdaloidal
brec	brecciated
clvd	cleaved
sid	silicified

STRUCTURAL SYMBOLS:

- outcrop limit
- rubble boundary
- approximate contact
- interpreted contact
- bedding
- primary foliation
- jointing
- flt float
- unconformity
- F—F minor fault

COLOURS:

pk	pink
grn	green
blk	black
pur	purple
wte	white
ple	pale
dk	dark

GRAIN SIZE:

fg	fine grained (<1mm)

SILICATE MINERALOGY:

q	quartz
f	feldspar
c	chlorite
s	sericite

GEOLOGICAL LETTERING:

horizontal obtained from Rogers (1976)

MISCELLANEOUS:

* TS 0890 thin section and rock number (Rogers 1976)

TS 0983 thin section and rock number

GEOLOGICAL INTERPRETATION:

Pencil		
19-47	TERT.	Basalt (flows) (Mv)
19-70	U€?	Conglomerate (S congl) Sandstone (Ssst)
19-56	€	Fine grained ? tuffaceous sediment (fg ? t)
19-08	€	Crystal lithic tuff (xlt)
19-01	€	Laminated shale (lam Ssh)
19-57	€	Ashflow tuffs (af lvxt fm, af lxvt fm)
19-21	€	Glassy fine grained lava (vxt f)
19-15	€	Porphyritic amygdaloidal rhyolite (pArf qa)

ROCK GEOCHEMISTRY: (ppm)

KR	Cu	Pb	Zn	Ag	Mn	Fe %
0994	15	720	35	<2	20	0·17
0996	10	<20	30	<2	40	0·55

ANALYTICAL TECHNIQUE:

Cu, Pb, Zn, Ag, Mn, Fe by AAS following hot conc. HCl leach and HCl / HNO_3 leach in latter stages for 1 hr. at 0·25g sample.

GN MN 11·7°

GEOPEKO LIMITED

SCALE: 5000

No KT2/76-CH3-3

84-2127

E.L. 36/79 LOONGANA, TASMANIA

CHALLENGER 3

040

GEOLOGICAL MAP

AND UTEM SURVEY GRID

DATE: October, 1977

GEOLOGIST: G L B.

DRAWN: L G

CHECKED: M C R