

**RAW DATA REPORT**

**TOOLKA #1A**

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1. SEISMIC LINE B71A-47
2. SEISMIC LINE HB-73A-146

COMMONWEALTH OF AUSTRALIA  
PETROLEUM (SUBMERGED LANDS)  
ACT 1967-8

STATE OF TASMANIA  
PETROLEUM (SUBMERGED LANDS)  
ACT 1967

NOTICE OF INTENTION TO DRILL

The Designated Authority, Tasmania.

Hematite Petroleum Proprietary Limited, being the holder of Petroleum Exploration Permit No. T/3P hereby notifies its intention to drill a well and requests your permission to carry out the proposed operation.

- |                                  |  |
|----------------------------------|--|
| I. <u>WELL:</u>                  | Toolka-1   |
| <u>Classification</u>            | Wildcat  |
| II. <u>OPERATOR:</u>             | Esso Australia Limited,<br>Esso House,<br>127 Kent Street,<br><u>SYDNEY</u> , N.S.W.                                       |
| <u>Person-in-charge</u>          | S.L. Kennedy,<br>Esso Australia Limited,<br>42 Raymond Street,<br><u>SALE</u> , Victoria.                                  |
| <u>Geological Supervision</u>    | E.B. Stanford,<br>Esso Australia Limited,<br>127 Kent Street,<br><u>SYDNEY</u> , N.S.W.                                    |
| III. <u>DRILLING CONTRACTOR:</u> | Global Marine,<br>P.O. Box 532,<br><u>SALE</u> , Victoria.   |
| <u>Drilling Rig</u>              | Glomar Conception  |
| <u>Date of Commencement</u>      | 11th January, 1974.<br>Subject to rig availability.  |
| IV. <u>DETAILS OF OPERATION:</u> |  |
| <u>Location</u>                  | Latitude : 39° 24' 36.83"S<br>Longitude : 145° 23' 45.22"E   |
| <u>Water Depth</u>               | 269 feet   |
| <u>Drilling Datum</u>            | 32 feet above sea level  |
| <u>Casing Programme</u>          | 20 inch at 400 feet penetration<br>10 $\frac{3}{4}$ inch at 2700 feet penetration<br>K.B.                                  |
| <u>Logging Programme Run-1</u>   | At T.D., run ISF/S, GR, FDC/CNL<br>(run GR to surface), HDT,<br>velocity survey, CST's and possible<br>FIT's as necessary. |

*50 k. miles  
SW Wilson Prom<sup>7</sup>*

Coring Programme

Continuously core all significant shows of hydrocarbons until interruptions in shows are indicated, due either to changes in lithology or beneath a water contact.

In the event a water contact is cored within a sand, continue coring until that particular sand is penetrated. In the absence of hydrocarbon shows, at least one stratigraphic core is required in sandstone below 4400 feet for facies interpretation.

Sample Collection

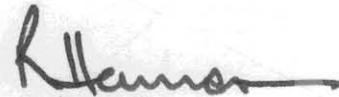
Continuous from 20 inch casing shoe. Catch five sets of washed and dried samples and one set of unwashed cuttings every 10 to 30 feet, depending on drill rate, and one can of composite cuttings every 100 feet.

Proposed Total Depth

9000 feet

Notification Dated

21st December 1973.



R.P. Harrison,  
Manager Operations.

HEMATITE PETROLEUM PTY. LTD.WEEKLY DRILLING REPORTNO. 2TOOLKA-1a

Operator	Esso Australia Ltd.
Drilling Unit	Glomar Conception
Location	Latitude: 39° 24' 36.83"S Longitude: 145° 23' 45.22" E
Water Depth	258 feet
Drilling Datum	32 feet
Date of Report	25th January, 1974
Depth	Current 6524 feet Previous 2840 feet <hr/> Progress 3684 feet

Operations

Drilled 16 inch hole to 2840 feet. Ran and cemented 13 $\frac{3}{8}$  inch casing at 2790 feet, 20th January. Unable to test seal assembly; found and repaired leak in B.O.P. flange. Drilled ahead 9-7/8 inch hole to 5089 feet. Cut Core No. 1 24th January 5089-5119 feet (cut 30 feet, recovered 30 feet). Drilled ahead with 9-7/8 inch hole to 6524 feet on 25th January, 1974.

Geology

2820 - 3550 feet	<u>Marl</u> , light grey, glauconitic, fossiliferous, soft interbedded with <u>marl</u> , light brown, silty.
3550 - 3570 feet	<u>Sandstone</u> , coarse-grained, rounded quartz, hard, pyritic.
3570 - 3660 feet	<u>Marl</u> , as above, interbedded with <u>marl</u> , brown, silty, sandy grading to calcareous siltstone towards base.
3660 - 4860 feet	Interbedded <u>siltstone</u> , <u>sandstone</u> and <u>minor coal</u> . <u>Siltstone</u> , dark to light brown, calcareous, carbonaceous in part, slightly pyritic and fossiliferous. <u>Sandstone</u> , fine to coarse grained, sub-angular to sub-rounded, increasing dolomite content below 4470 feet.

4860 - 6524 feet Siltstone, sandstone, minor shale and interbedded bands of coal, becoming increasingly silty and shaly towards base. Siltstone, as above, interbedded with dolomitic sandstone in part. Sandstone, very fine to coarse grained, friable, sub-angular to sub-rounded, clear to milky quartz. Shale, black, carbonaceous, pyritic. Coal, black, dull.

Shows

Nil.

High C<sub>1</sub> gas readings up to 20,000 units (3710-3712 feet) were encountered between the interval 2820 to 5089 feet and were mainly from siltstones; and C<sub>1</sub>-C<sub>3</sub> readings occurred below 5089 to 6200 feet and these were mainly coincident with coals. Maximum reading of C<sub>1</sub> - 28,000; C<sub>2</sub> - 600; C<sub>3</sub> - 200 units at 6140 feet.

360007

Toolka-1

DR M	LOG	ES	CC & M	D.S.M.C.
HEMATITE PETROLEUM PTY. LTD.				
RECEIVED	- 6 FEB 1974		E & IL WEEKLY DRILLING REPORT	
ANSWERED	DEPT OF MINES			
REF. No.	698/74			

NO. 3

TOOLKA-1a

Operator	Esso Australia Limited
Drilling Unit	Glomar Conception
Location	Latitude : 39° 24' 36.83" S Longitude : 145° 23' 45.22" E
Water Depth	258 feet
Drilling Datum	32 feet
Date of Report	1st February, 1974
Depth	Current 8907 feet Previous 6524 feet Progress 2383 feet

Operations

Drilled ahead 9-7/8 inch hole to 8907 feet. Ran ISF/S 8890-2788 feet. (Sonic only over interval 8890-8324 feet).

Geology

6524-7930 feet	Interbedded <u>mudstone</u> and <u>siltstone</u> with minor <u>sandstone</u> and <u>coal bands</u> .
7930-8291 feet	Basic to intermediate igneous rock (plagioclase, hornblende, chloritised, pyritic).
8291-8293 feet	<u>Coal</u> , high grade grading to graphite trace very fine-grained rock as above.
8293-8907 feet	Interbedded <u>siltstone</u> , <u>mudstone</u> , intermediate to basic intrusions and minor <u>sandstone</u> . <u>Siltstone</u> , medium to dark grey, carbonaceous, pyritic. <u>Mudstone</u> , buff to olive brown, pyritic grading to siltstone in part. Intrusions as above. <u>Sandstone</u> , light grey, very fine grained, quartzose, with secondary silica in part.

2.

360008

Shows

Nil

C<sub>1</sub>-C<sub>4</sub> gas readings were encountered (max. C<sub>1</sub> - 23,000 units, max. C<sub>4</sub> - 400 units) over the interval 6560-8291 feet. Most of the readings corresponded to coals or coaly sections.

*Bluman*  
4/27/68

360009

Toolka  
-1a

HEMATITE PETROLEUM PTY. LTD.

## WEEKLY DRILLING REPORT

NO. 4

D.M.M.	A.O.	CG	CC & M	D.S.M.
RECEIVED				Registrar
15 FEB 1974				E & IL
ANSWER				
DEPT. OF MINES				
REF. No. 902/74				

TOOLKA-1a

Operator Esso Australia Limited

Drilling Unit Glomar Conception

Location Latitude : 39° 24' 35.678"S  
Longitude: 145° 23' 45.108"E  
(Revised co-ordinates)

Water Depth 258 feet

Drilling Datum 32 feet

Date of Report 8th February, 1974

Depth Current 8907 feet  
Previous 8907 feet  
Progress - feet

Operations Ran HDT 8889-2790 feet; CNL/FDC/GR  
8892-2790 feet (GR to sea floor).  
BHCS 8894-2790 feet. Shot 30 sidewall  
cores; recovered 29.

Ran two FIT tests. No. 1 at 7361 feet;  
recovered 9500 c.c. water. No. 2 at  
7224 feet; no recovery. The well was  
plugged and abandoned at 8907 feet on  
5th February, 1974.

Plug 1. 2890 to 2590 feet  
Plug 2. 605 to 355 feet

Geology Nil

Shows Nil

DEPT OF MINES — TASMANIA  
Copy for information of:—  
Director,  
Bureau of Mineral Resources,  
Box 378 P.O.,  
CANBERRA CITY. 2601

Sent Date: 15-2-74

bhs  
IM:SCC  
11/2/74

IEC *dep*

360010

P8/2

21<sup>st</sup> Jan 74

Toolka 1A.

19<sup>th</sup> Jan

Depth	2840
Pressure	945
Progress	1895

Running 10 3/4 casing.

Lithology.

930' - 1800'	
40 - 100'	limestone.
1800 - 1890'	
40 - 90'	limestone.
10 - 60'	marl.
1890 - 2190'	
10 - 20'	limestone
70 - 90'	marl.
2190 - 2400'	
100'	marl with some <u>coal</u> reported.
2400 - 2820'	
10 - 90'	slab - calcareous & pyritic.
50 - 80'	calcareous; glauconitic

Numerous C<sub>1</sub> readings in above  
no C<sub>2</sub> or higher gases.

20<sup>th</sup> Jan

Depth 2840

progress met

Run 13 3/8 casing

Testing BOP Stack.

Q

21<sup>st</sup> Jan

Depth as above - repaired stack

& tested 5 hours - pulled stack &

repaired leak - expect to replace stack

& commence drilling this afternoon.

9/

11-30 am 23/1/74

Depth 4079' Progress 1229' &amp; drilling ahead.

- 2820' - 3110' 100% marl lb. gray, glauconitic, fossilif. soft.
- 3110 - 3550 100% marl lb. gray, fossilif. interbedded marl lb. brown silty
- 3550 - 3750 100% S.S. pyritic hard e.g. rounded qtz.
- 3750 - 3660 100% marl lb. gray interbed marl brown silty sandy gradling calc. siltstone towards base.
- 3660 - 3710 100% siltst. brown soft carbonaceous calcareous
- 3710 - 3712 100% S.S. dolomitic lb. brown hard e.g. rounded qtz.
- 3712 - 4079 100% siltst. carb. calc. fossilif. slightly pyritic

360012

All siltst. below 2660 bleeding gas -  
 hopefully bleeding from deeper reservoir? no  
 coal concerned.

2820 - 2140	H.W.	10-25	C1	1,000 - 10,000
3140 - 3550	"	30-75	"	2,300 - 10,000
3550 - 3570	"	75	"	9,000
3570 - 3660	"	25	"	2,800
2660 - 3710	"	20-25	"	2,400
XX 3710 - 3712	"	105	"	20,000
3712 - 4079	"	10-20	"	2200 (0?) - 6200 (0?)

not sure 100's or 1,000's

MUR

Wt. 9.9

VISC 3.6

PH 9.5

WATER LOSS 10.8

NITRATES 1.25.

Jordana 14

24/1/73

Daily ReportToolka 1A.

Present depth	5089
Previous	4079
Progress	1010

Current activity - Pulling out of hole to take core no 1.

Lithology & gas readings

- (1) 4079 - 4280 100 g Siltstone calcareous, fossiliferous. Pyritic.  
gas readings - 2000 - 8000 C,
- (2) 4280 - 4290 100 g Sandstone fine - coarse fine grained quartz.  
gas readings - 2400 C,
- (3) 4290 - 4860 100 g Siltstone as above - calcareous dolomitic SS. of fine buff  
gas readings - 800 - 6800 C,
- (4) 4860 - 4920 10 g coal - black & dull, 10 g slate 80 g siltstone  
gas readings - 1500 C,
- (5) 4920 - 4935 100 g Sandstone - coarse to very coarse - fine.  
gas readings 2500 C,

(6) 4935 - 5070 109 loose 108 stone  
809 siltstone.  
gas readings 1400 - 5000 c.

(7) 5070 - 5089 109 Sandstone, coarse  
- Very coarse - quartz.  
gas readings 1700 c.

DOM

TOOLKA 1A

360015

P8/2

Released Reg 3.20 am 5/2/74

Q

Q

360016

Toolka  
1a

TOOLKA - 1a

ABANDONMENT PROCEDURE

13-3/8" casing @ 2790'

<u>Plug No.</u>	<u>Interval</u>	<u>Cement</u>	<u>Remarks</u>
1.	2890'-2590'	235 sx Aust. 'N' with 2% CaCl <sub>2</sub> .	Bottom of plug 100±' below surface casing shoe. After W.O.C., feel for top of plug and displace mud in hole with seawater.
2.	605'-355'	180 sx Aust. 'N' with 2% CaCl <sub>2</sub> .	Top of plug should be 65±' below mud line.

Before final abandonment, recover wellhead by cutting casing 50±' below mud line.

N.B. Cement volumes calculated assuming gauge hole.

\* \* \*

*Steven J. Kerckhoff*

Drilling Engineering

*L. Bove*

Drilling Operations

TOOLKA - 1aABANDONMENT PROCEDURE

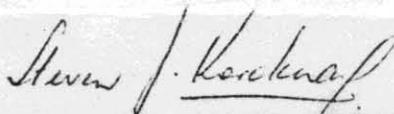
13-3/8" casing @ 2790'

<u>Plug No.</u>	<u>Interval</u>	<u>Cement</u>	<u>Remarks</u>
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\* \* \*



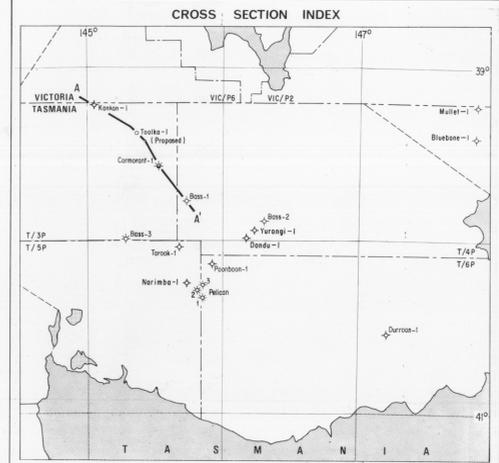
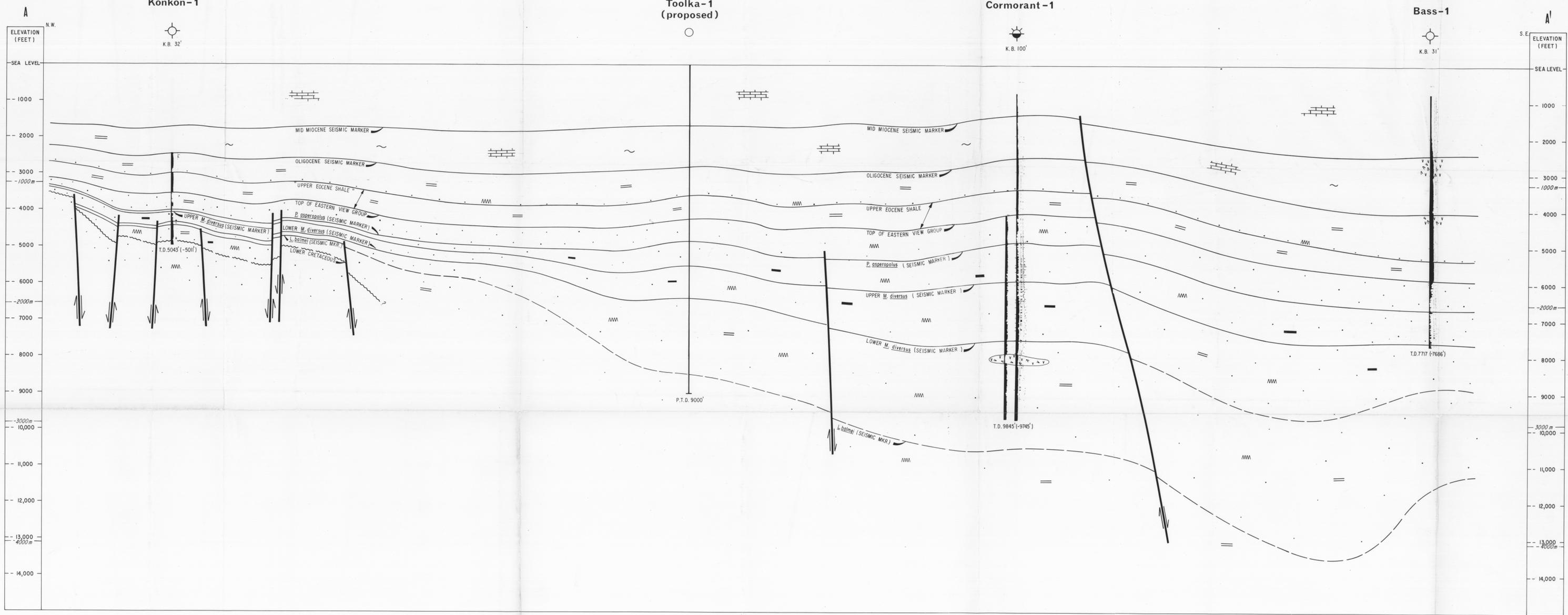

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 Drilling Engineering




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 Drilling Operations



- MARL, LIMESTONE
- SANDSTONE
- SILTSTONE
- SHALE
- VOLCANICS
- COAL

ESSO EXPLORATION AND PRODUCTION AUSTRALIA INC.

## BASS BASIN

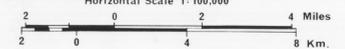
VICTORIA - TASMANIA

### GEOLOGICAL CROSS SECTION A-A'

5 cm

**INTERPRETATIVE**

Vertical Scale 1 in. = 1000 Feet  
Horizontal Scale 1:100,000



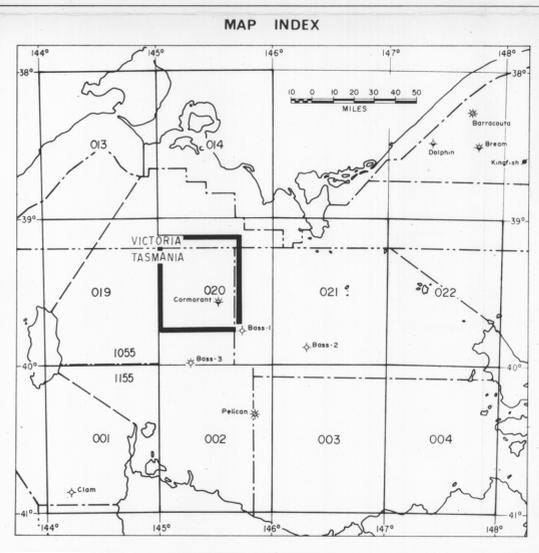
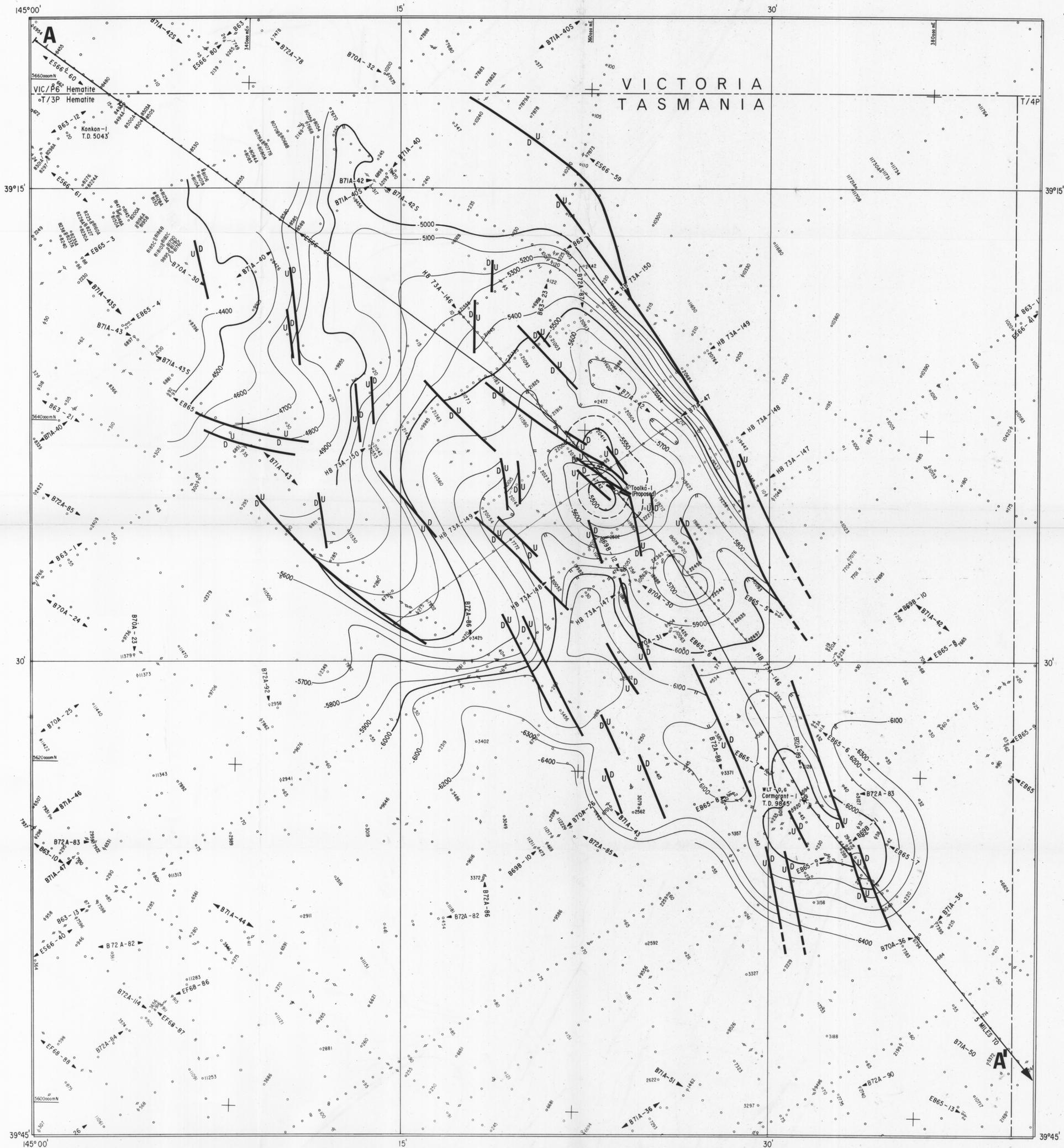
AUTHOR R. J. COPPIN, V.A. ROBINSON DRAFTED BY: J. SCHMIDT, HOVICK

TO ACCOMPANY AUTHORISATION TO DRILL TOOLKA-1 DATE DECEMBER, 1973

PLATE I

VERTICAL EXAGGERATION 83:1

360C18



ESSO EXPLORATION AND PRODUCTION AUSTRALIA INC.

**THE BASS BASIN**  
VICTORIA - TASMANIA

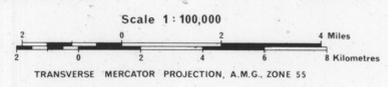
TOOLKA PROSPECT

STRUCTURE MAP

UPPER *M. diversus* Seismic Marker

**INTERPRETATIVE**

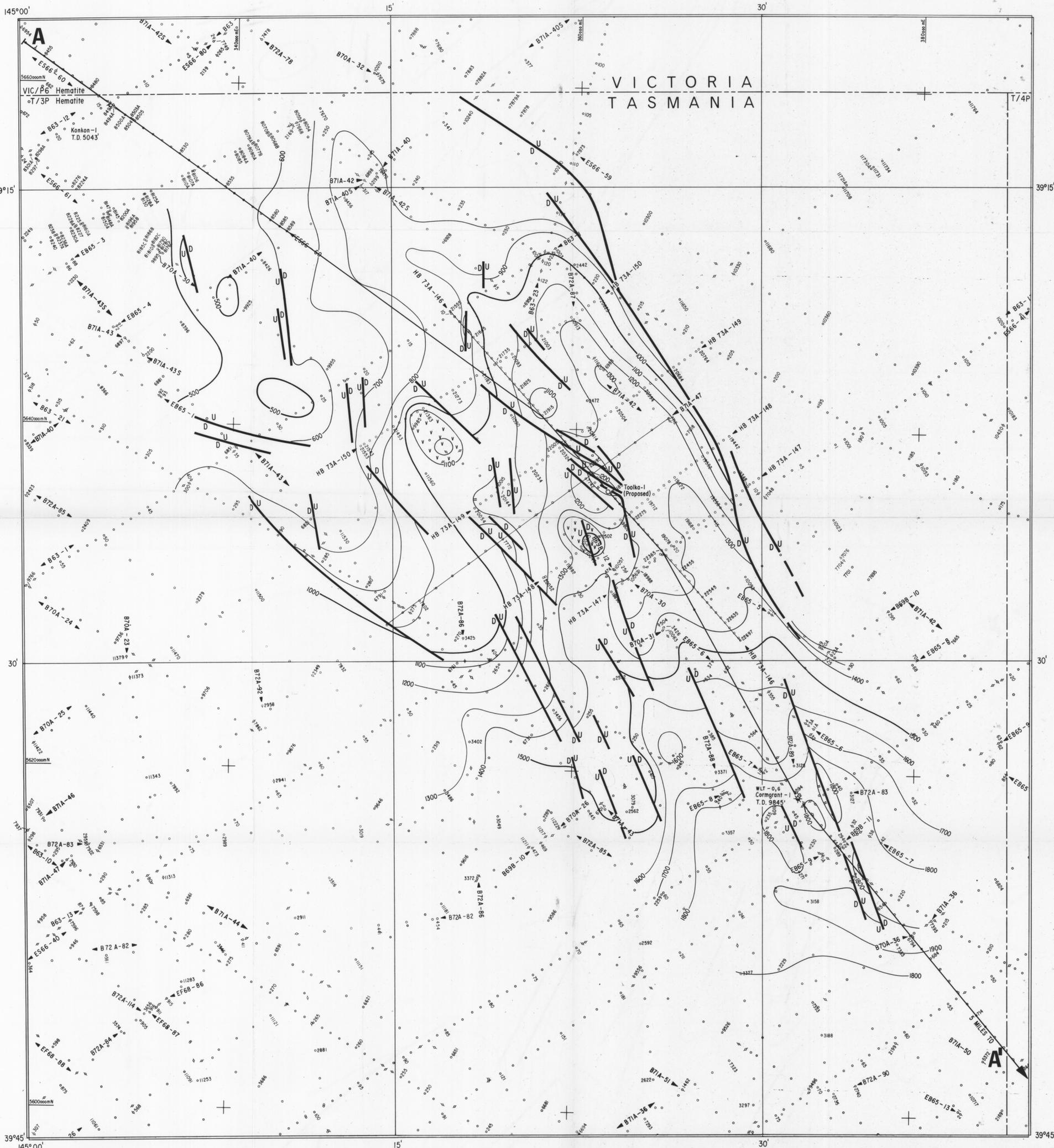
CONTOUR INTERVAL: 100 FEET DATUM: SEA LEVEL



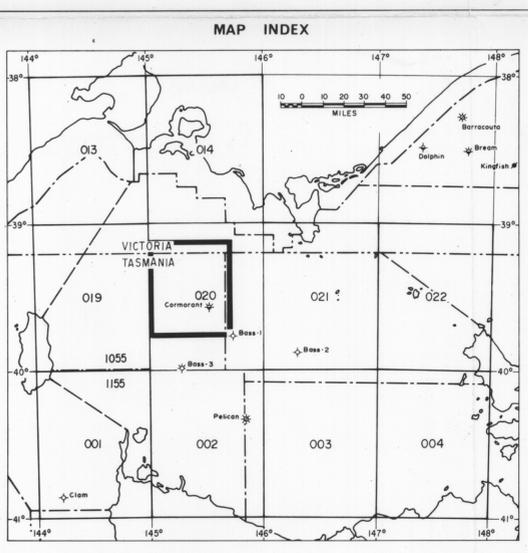
AUTHOR: R.J. COPPIN DRAFTED BY: M. SPACEK  
TO ACCOMPANY: AUTHORISATION TO DRILL TOOLKA-1 DATE: DECEMBER 3, 1973  
SHEET 1055-020/100 REVISED: DECEMBER 3, 1973

360019

PLATE II



VICTORIA  
TASMANIA



LEGEND

V V V Volcanics (Interpreted)  
near top of Eastern View

ESSO EXPLORATION AND PRODUCTION AUSTRALIA INC.

THE BASS BASIN  
VICTORIA - TASMANIA

TOOLKA PROSPECT

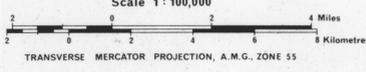
ISOPACH MAP

TOP OF EASTERN VIEW -

UPPER *M. diversus* Seismic Marker

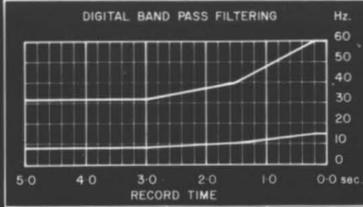
**INTERPRETATIVE**

CONTOUR INTERVAL: 100 FEET DATUM: SEA LEVEL



AUTHOR: R.J. COPPIN DRAFTED BY: M. SPACEK  
TO ACCOMPANY: AUTHORISATION TO DRILL DATE: DECEMBER 3, 1973  
TOOLKA-1 REVISED:  
SHEET 1055-020/100 PLATE III

360020



GEOPHYSICAL SERVICE INTERNATIONAL

DIGITAL PROCESSING CENTRE  
SYDNEY, NSW, AUST.



AUSTRALIA LIMITED

PROCESSING DATA :  
 Groups processed **1-48** Sample period **4** ms.  
 Processed **24** fold  
 TAR: B = **-17** db,  $\alpha$  = **3** db/sec. Gate **0** to **4500** ms.  
 Vertical stack **Odd/Even**  
 Decan before stack: **DCN** **56** pts., **4** ms. No. of gates/trace **1**  
 Design gate (trace 1) **2200** to **4500** ms. Gate shift **-80** ms/trace.  
 Decan after stack: **TVD** **64** pts., **4** ms. No. of gates/trace **2**  
 Design gate (trace 1) **300** to **4500** ms. Gate shift **0** ms/trace.  
 Digital filter **35** pts., **4** ms. to **4** Hz.  
 Displayed **digital AGC**. Playback gain **7** db.  
 Polarity displayed: Positive  / Negative   
 TIAC REQUEST **726** Hold tape **4303**  
 INPUT CREW PARTY **107-ES0-2** Date **March 1972**

VES **1**  
 NMO **4**  
 AR2  
 TVD **3**  
 DCN **2**  
 DPS **5**  
 TVD **6**  
 DCN  
 DGF  
 TVF **7**  
 700 Pkg.

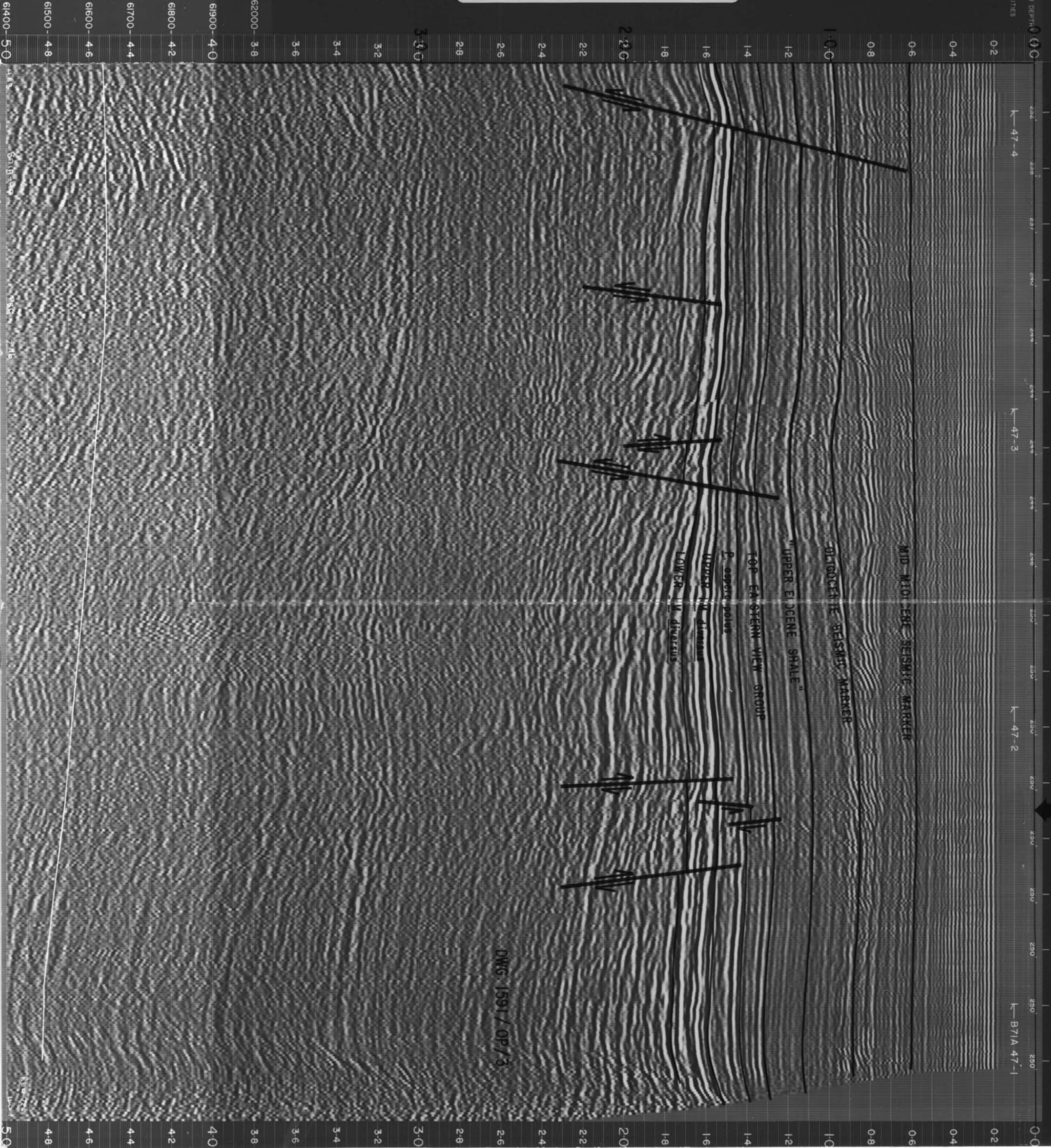
AREA: **BASS BASIN**  
 RECORDING PARAMETERS: LINE: **B71A-47**  
 Source **Air Gun** SP **7712** to **7930**  
 Array size **1300** cu.in., **23** guns, tuned array  
**4** pops/SP. Shot off group **48** No. of groups **48**  
 Cable length (centre of gp 1 to centre of gp. 48) **7708** ft  
 Offset (array centre to centre of group 48) **±912** ft  
 Group interval **164** ft SP interval **656** ft  
**30** geophones/group. Field polarity first break **Negative**  
 Recording system **DFS-III** Filter **8** to **62** Hz.  
 Recording length **5:0** sec Sample rate **4** ms.  
**G.S.I.** Field crew **909** Date **Dec. 1971**



360021

5 cm

MAGNETOMETER PLOT (GAMMAS)



LINE B71A-47 HORIZONTAL SCALE: 1 TRACE = 50 METRES  
 SCALE RATIO: 2.81 AT 1.5 SEC.

DCN BEFORE STACK  
 24 FOLD STACK/TVD  
 TVF 15 - 60Hz  
 8 - 30Hz  
 8 - 30Hz  
 3000ms

5 cm

HEMATITE PETROLEUM PTY. LTD. (B)

FLINDERS SEISMIC SURVEY

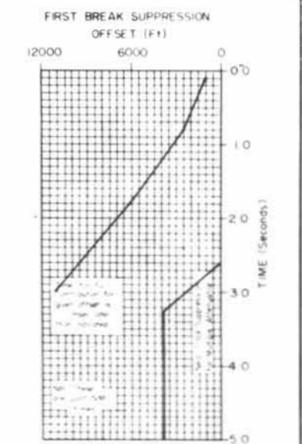
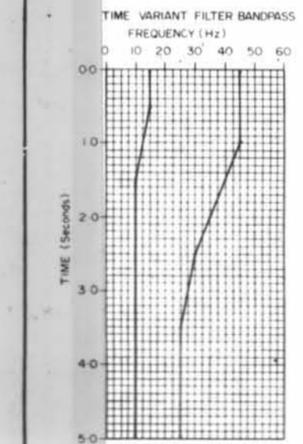
HB-73A-146

FIELD DATA Shot By GSI Party 931, M.V. McDermott  
 Recorded: 48 Trace DFS III (2 Systems)  
 Sample Rate 4 msec. Record Length 5 sec  
 Filter: HI 62 Hz / 72 db/oct., LO 8 Hz / 18 db/oct  
 Gain Binary  
 Energy Source Airgun, 1200 cub in  
 Source Depth 30-35 ft Streamer Depth 55-60 ft  
 Group Interval 219 ft Shot Interval 7.3 ft  
 Streamer 3200m, 48 groups, towing group 48  
 Average Offset to centre of group 48 955 ft  
 Date Sept '73



PROCESSING INFORMATION:  
 1 True Amplitude Recovery 2 Vertical Stack (3 on 1)  
 3 Deconvolution Before Stack 2 Operators/Trace, 64 pts  
 Gap = 0 msec  
 4 24 Fold Common Depthpoint Gather  
 5 Sealevel Static and Airgun Delay Corrections  
 6 Preliminary Normal Moveout Corrections  
 7 Preliminary 24-Fold Stack of Alternate Depthpoints  
 8 Velocity Analysis Continuous 700 Pkg on Alternate Depthpoints  
 9 Normal Moveout Corrections  
 10 24-Fold CDP Stack  
 11 Deconvolution After Stack, 2 Operators/Trace, 70 pts  
 Gap = 0 msec  
 12 Time Variant Filter

Display Normal Polarity, 10 traces/cm (0.53 miles/inch) Horizontal Scale  
 3.75 ins/sec. Vertical Scale



PROCESSED BY GEOPHYSICAL SERVICE INTERNATIONAL, SYDNEY  
 DATE \_\_\_ '73

