042001 TPR OR-090

SEISMIC STRATIGRAPHIC STUDY OF THE T-12-P PERMIT AREA, OFFSHORE WEST TASMANIA, AUSTRALIA

Jeffrey A. Boyer
August, 1981

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Conclusions

1) The Cape Sorell Sub-Basin has resulted from extensional tectonics related to the rifting apart of Australia and Antarctica which started in Jurassic (?) to Lower Cretaceous time and culminated in Eocene time. The stratigraphic section is therefore similar to the Otway Basin, on strike to the north.

2) A thick section of sediments was formed by synsedimentary fault movement during Cretaceous time.

3) The principal objective horizons in the prospective structures are Cretaceous in age, specifically the Lower Cretaceous Pretty Hill Sandstone equivalent and the Upper Cretaceous Waarre Sandstone equivalent.

4) Both objective horizons are sealed and possibly sourced by Upper Cretaceous marine shales. Other possible source rocks are in the Jurassic (?)-Lower Cretaceous section.

5) The Jurassic (?)-Lower Cretaceous section is thermally mature at the prospect area and should have expelled any generated oil from Paleocene time onward. Hydrocarbon shows to-date in the Otway Basin area indicate the area is gas-condensate prone with possibilities of oil generation and migration.

Recommendation

It is recommended that a 12,000 foot well be drilled on the Cape Sorell prospect. This well would adequately test the Upper and Lower Cretaceous sections as well as penetrate possible older Mesozoic to Paleozoic section below the Lower Cretaceous.

042005

ESSO CLAM - 1

RKB = 99'

5 cm

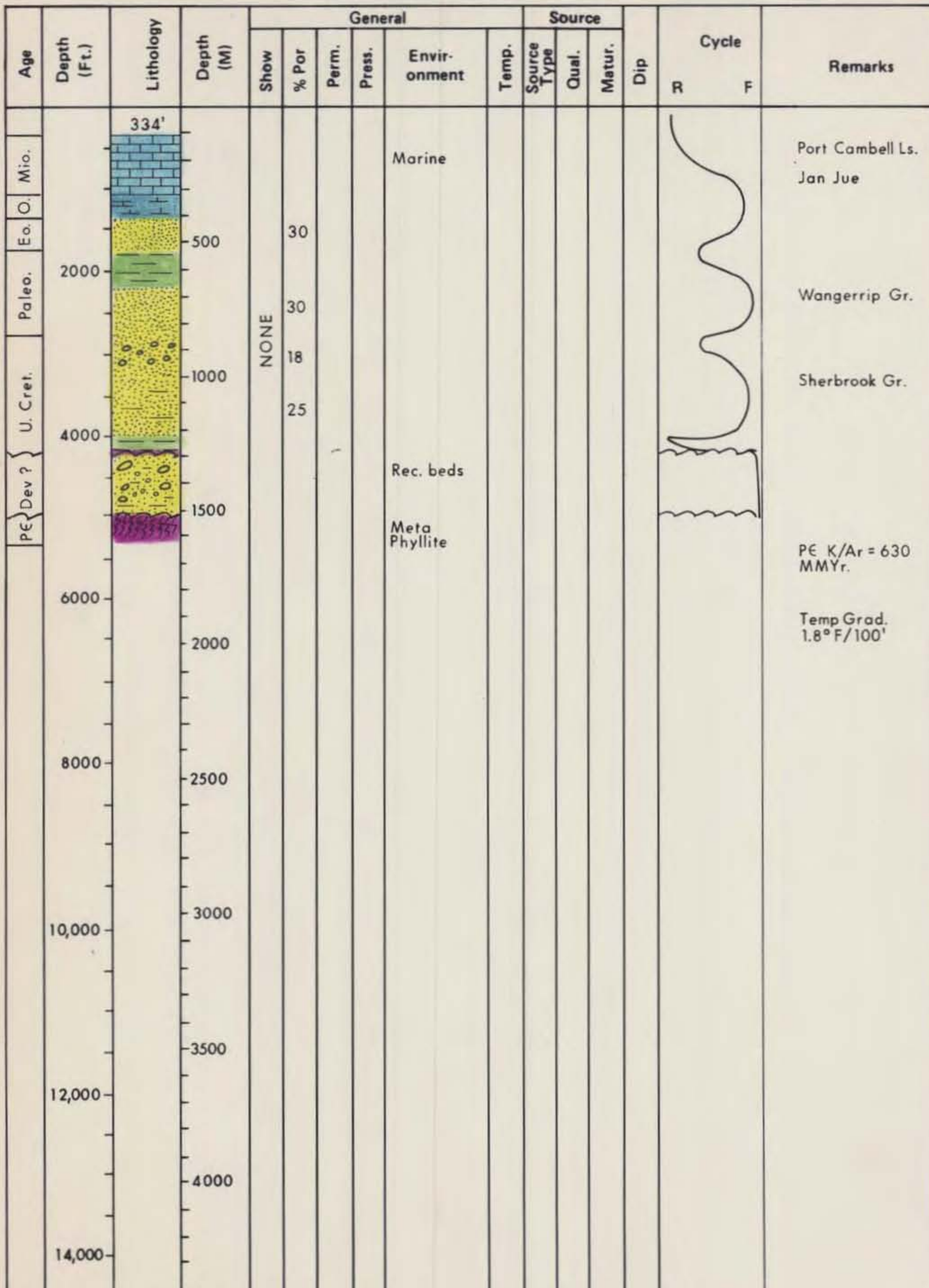


Figure 1

Introduction

The small sub-basin underlying permit area T-12-P, hereafter called the Cape Sorell Sub-Basin, lies approximately six to ten miles offshore west Tasmania near the town of Strahan and is about 30 miles long and 15 miles wide. The sub-basin is fault bounded on the north and east and to a lesser extent to the south. The nearest well control is the Esso/Hematite Clam 1 well 110 miles to the north. The Cape Sorell Sub-Basin is on trend with the Otway Basin, approximately 250 miles north, where some 100 wells have been drilled to date.

The purpose of this study was to use the methods of seismic stratigraphy to determine first, the relative age of the prospective section and secondly to gain an understanding of the possible vertical stratigraphy which may be encountered as well as the possible areal extent of that stratigraphy. This was done using the 785 km. of seismic shot in March, 1981, plus the geologic data from the Clam 1 well (Figure 1), the onshore geology of western Tasmania, and the published stratigraphy of the Otway Basin (Figure 2), and geology of Antartica.

Regional Tectonics and Structure

The Cape Sorell Sub-Basin is a remnant of the rift margin between Australia and Antarctica which was initiated in Jurassic to Lower Cretaceous time. Extensive Jurassic dolerites in eastern Tasmania are thought to indicate the initial rifting phase of the two continents. Further north, in the Otway Basin, a major period of tensional faulting occurred in the Lower Cretaceous producing a series of half-grabens bounded by down-to-the-basin normal faults. These faults do not extend up into the Upper Cretaceous or Tertiary sections. This same period of faulting is thought to have formed the Cape Sorell Sub-Basin (See Encl. 1). After this period of extensional tectonism, the basin has gently subsided. This subsidence was aided by apparently continuous normal fault movement on the basin margin faults, at least until Upper Cretaceous time.

During Eocene time actual separation of Australia and Antarctica took place and the first ocean crust of the present Southern Ocean was formed. This is evidenced by the DSDP corehole number 282 which penetrated Eocene submarine basalts. It was also at this time that the several diapiric-like structures may have been formed. These structures show on the seismic as piercement features which penetrate into the supposed Eocene section. These features, as shown on Figure 1, are parallel to the eastern basin margin fault. Tertiary intrusives occur elsewhere in the Bass Straits area and these features may be more of the same. The paleolatitude of 60° south latitude at this time would seem to rule out salt or other evaporites as the cause of the diapir.

Stratigraphy from Surface and Subsurface Control

The oldest sediments in the area are Precambrian metamorphics, including quartzites, conglomerates, and phyllites. Cape Sorell is itself a Precambrian outcrop which appears to extend below the surface northward and thus form the eastern margin of the Cape Sorell Sub-Basin. Elsewhere in the area, the Clam 1 well penetrated Precambrian meta-phyllites dated at 630 MM yr.

Paleozoic rocks, composed predominantly of siliciclastics are common onshore in west Tasmania. The Clam 1 well penetrated Devonian (?) redbeds lying above the Precambrian. These Paleozoic siliciclastics, later uplifted and eroded, form the source area for the Cretaceous and Tertiary sediments thought to be present in the Cape Sorell Sub-Basin.

The oldest section encountered in the Otway Basin is the Jurassic to Lower Cretaceous, Lower Otway Group composed of black shales, basalts, and sandstones. The black shales are known to be marginal source rocks for gas and light oil in the Otway area. The basalts are contemporaneous and like the dolerites on Tasmania, they are thought to evidence the initial rifting of the Otway Basin area. This basal unit is overlain by medium-to-thick bedded quartzose Pretty Hill sandstones which are the principal Lower Cretaceous objective. The sands have 15 to 25% porosity and fair to excellent permeability. The Upper Otway Group produced 157 MCFGPD plus oil/water emulsion in the Port Cambell-4 and 245 MCFGD plus 51° API condensate in the Flaxman-1 well. Minor oil shows have been recorded elsewhere in the section. The sands are developed on or near the flanks of paleohighs and represent a rift valley alluvial fan sequence. The Otway Group sedimentation was terminated by a period of uplift and erosion. This resulting unconformity is not definitively dated but it is probably synchronous with the major Aptian-Albian unconformity seen in many places throughout the world.

Above the unconformity, the Waarre Sandstone forms the basal unit of the transgressive Sherbrook Group. The sandstone averages 100 ft. thick and has an average porosity of 23% and fair permeability. The Waarre Sandstone is the principal objective in the Upper Cretaceous section. The sandstones produced 4 MMCFGPD plus condensate in the Port Campbell-1 well and 140 MCFGPD in the Pecten-1A well. The sandstones are overlain by marine shales and siltstones which form a regional seal for the basal sands.

The Paleocene and Eocene form two separate transgressive-regressive sequences composed predominantly of continental alluvial-deltaic sands, shales and lignites. Although these sands could form potential reservoirs the Tertiary section is not deeply buried and thus any Tertiary source beds are immature over most of the Otway Basin area.

The Oligocene-Miocene marks a basin-wide marine transgression composed of marls and limestones. The Pliocene to Recent was marked by uplift and erosion and associated volcanism which is widespread in the onshore portion of the Otway Basin.

Seismic Depositional Sequences and Their Associated Seismic Facies

As an initial step in this study, the east-west oriented, or dip, seismic profiles were divided into seismic sequences. Vail, et.al, define a sequence as a "stratigraphic unit composed of a relatively conformable succession of genetically related strata and bounded at its top and base by unconformities or their correllative conformities". Seismic depositional sequence boundaries are identified by the terminating reflections above and/or below the boundary.

An investigation of the seismic lines in the area shows some of the sequence boundaries to be obvious while others are less so. Seismic

042008

OTWAY BASIN (COMPOSITE)

5 cm

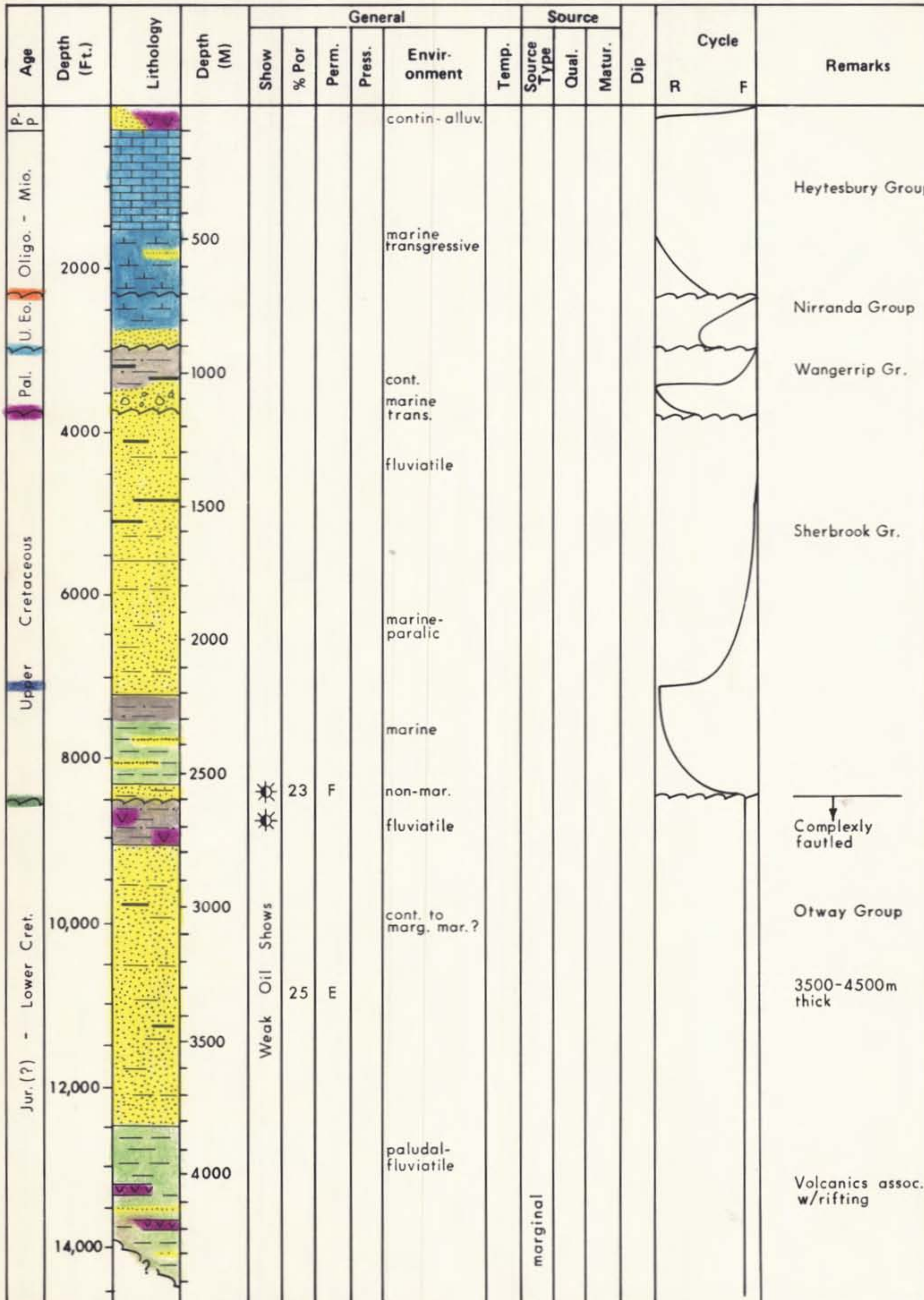


Figure 2

line W-81-8 is included (Encl. 2) to illustrate the different depositional sequences and seismic facies. The seismic facies are determined by the variations in amplitude, continuity, and shape. On line W-81-8 the upper wedge of sediments from the sea floor to the orange horizon are characterized by low amplitude, parallel, continuous reflectors. This type of seismic facies is indicative of low energy, marine deposition. Similar, but less distinct facies can be seen in the section from the dark blue horizon to the green horizon. Here, the reflectors have good to fair continuity, medium amplitudes and lower frequency. Refering back to Figure 2 it can be seen that only two major periods of marine transgression occur in the Otway Basin area. The first in Upper Cretaceous time and the second in Oligocene-Miocene time. It is therefore postulated that the uppermost section marks the Oligocene-Miocene marine carbonate transgression while the lower section marks the Upper Cretaceous marine transgression over the unconformable Lower Cretaceous surface. This Upper Cretaceous transgression would include the basal Waarre Sandstone which is a principal objective in the area.

The section between the two marine transgressions contains at least three sequences which are characterized by varying amplitudes, some very high; poor continuity; and in some areas, prograding stratal surfaces. This type of facies is indicative of continental-to-marginal marine alluvial-deltaic sediments. In this type of depositional environment, interbedded sand, shales, and lignites give rise to the highly varying amplitudes and continuity commonly associated with the delta plain environment. The inclined oblique to sigmoid prograding surfaces are also indicative of the delta environment. The entire section between the two transgressions is dividied into three regressive, prograding delta systems, one in the Upper Cretaceous, Paleocene, and Eocene, respectively.

On line W-81-8, it is interesting to note the very high amplitude reflections seen in the delta slope or delta toe positions of the Paleocene and Eocene deltas. On a stike line these appear as hummocky, chaotic reflectors. Vail, et. al., would consider these reflectors to be caused by turbidites, where porous sands are trapped between shales giving rise to the high amplitudes.

The green horizon is a distinctive erosional unconformity over most of the area. In the southern portion of the permit area the section below the green horizon is highly faulted by down-to-the-west normal faults (Encl. 3). This period of faulting and erosion can logically be related to the early rifting extensional tectonics of the Jurassic (?) to Lower Cretaceous. The section directly beneath the green horizon is then considered to be Lower Cretaceous or older in age. Because of decreasing signal return at depth it is difficult to define a seismic facie for this section, although its location near the major basin margin fault would seem to suggest a similar depositional environment to the Pretty Hill sandstones mentioned earlier. These would be another primary target in the area of interest.

Below the green horizon there are several unconformities whose extent and age cannot be specifically determined. Because of the lack of equivalent section onshore, the geologic history of the Mesozoic is sketchy. The section under older unconformity may be Jurassic or Paleozoics. On Enclosure 2, a major angular unconformity can be seen below the pink horizon. This erosional truncation has an amplitude anomaly associated with it which could be an indication of increased porosity.

<u>Summary of Cape Sorell Sub-Basin Stratigraphy as Derived from Seismic Stratigraphy</u>

The most obvious sequence boundary in the permit area is the green horizon marking the top of the Lower Cretaceous. Jurassic (?) to Lower Cretaceous time marked the creation of the major basin margin faults to the north and east and thus the initiation of rapid subsidence. At this time a thick wedge of Lower Cretaceous clastics (Pretty Hill equivalent) was developed next to the fault and thins westward. An isochron map of the Lower Cretaceous to Basement (?) is shown as Enclosure 4. On this map it appears that the major sediment influx into the sub-basin was from the northeast and south. The southern portion of the area being a faulted high area at this time, relative to the sub-basin. Several periods of uplift and erosion are evident in the Pre-Tertiary section, as mentioned earlier, with the most widespread being the top of the Lower Cretaceous.

The erosion associated with the Aptian-Albian unconformity (green horizon) produced two major erosion channels with an erosional high between. This erosional high is part of the Cape Sorell prospect. Subsequent to the channel formation, the channels were infilled to approximately half their length (see Encl. 2). This channel fill is Aptian-Albian in age and should form a lateral seal for the main Cape Sorell prospect.

The channel infilling ceased as a result of the Upper Cretaceous marine transgression, which on line W-81-8 can be seen to onlap the Lower Cretaceous green horizon and then the channel fill sediments. The basal sand objective is covered by marine shales and siltstones which should act as both a source and seal for the sands below. The transgression was followed, still in the Upper Cretaceous, by a regressive prograding delta sequence. This regressive sequence (Sherbrook Group equivalent) was apparently sourced from the northeast (Encl. 5). Up until this time the eastern basin margin fault was continuous in movement, creating a rollover of sediments into the fault. During the regressive Upper Cretaceous phase the faulting ended and the section builds above the Precambrian (?) basment immediately to the east.

The Paleocene and Eocene are represented by two separate regressive cycles sourced from the east (Encl. 6). The stratigraphy of each would be represented by a prograding sequence of shales, sandstones, and lignites. The more sand-prone delta plain facies are represented by the higher amplitude, higher continuity reflectors which occur at the top of each cycle. Similarly, the sand-prone turbidites within the cycles also show up as obvious reflectors. This section is unfortunately thermally immature and not considered prospective at this time.

The last major sequence is the marine transgressive Oligocene-Miocene marls and limestones equivalent to the Port Campbell Limestone of the Otway Basin. Low interval velocities in this section indicate it may be shale prone but the same limestone section in the Clam 1 well also had low seismic velocities. Later uplift and erosion landward has resulted in an erosional pinchout of this sequence before it reaches the coast (Encl. 7).

The complete anticipated stratigraphy of the Cape Sorell Sub-Basin is shown as Figure 3. Only a portion of the anticipated stratigraphy is, however, thermally mature. Figure 4 shows that only the Pre-Tertiary section has reached thermal maturation. Using Amoco methods of estimating thermal maturation and time of generation and expulsion, it is thought that the Lower Cretaceous or older section was thermally mature and could have expelled oil from Paleocene time onward (this of course assumes average oil-prone source rocks are present). By Paleocene time the prospective structure was well sealed by Upper Cretaceous shales.

CAPE SORELL SUB - BASIN (PREDICTED)

042012

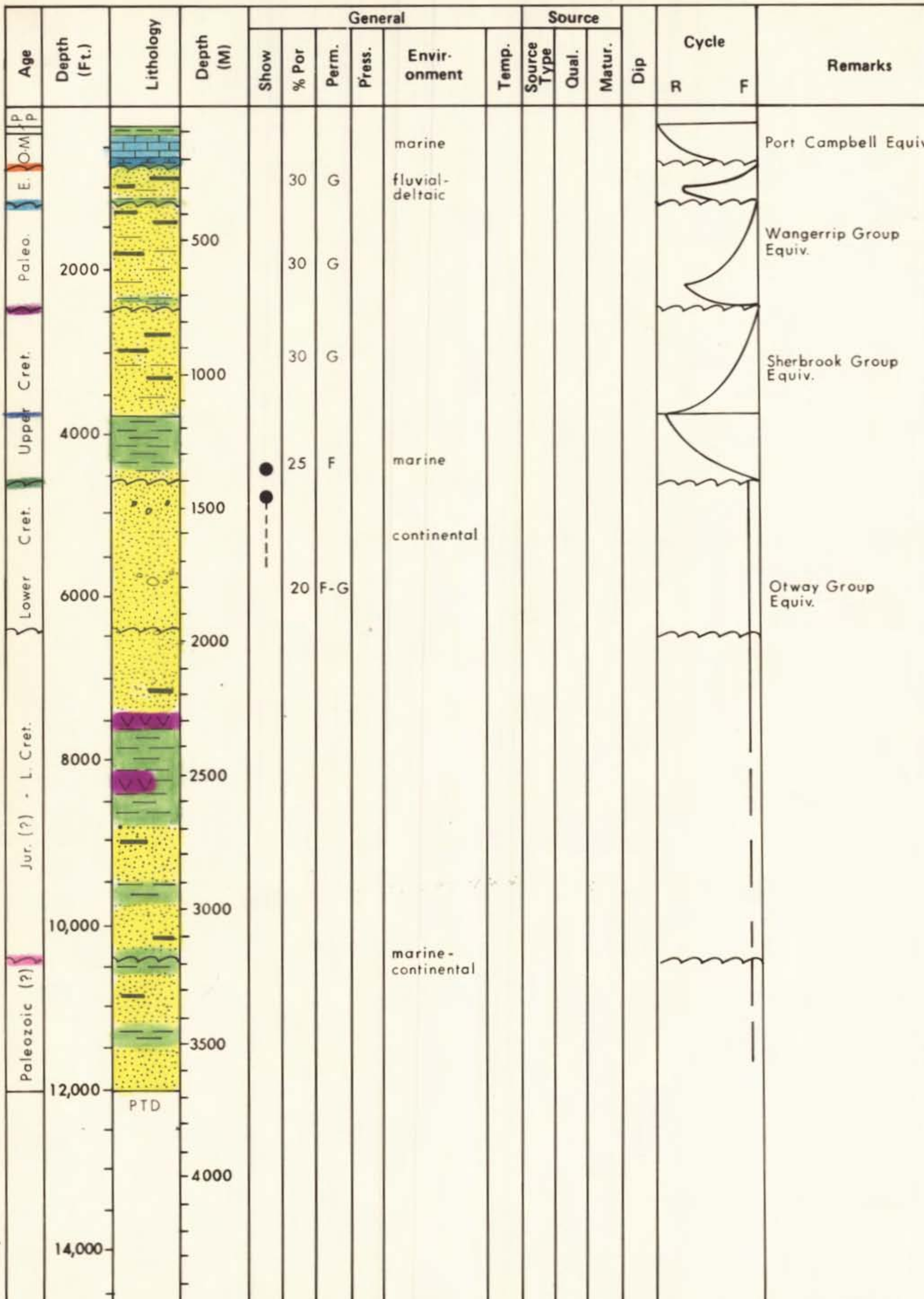
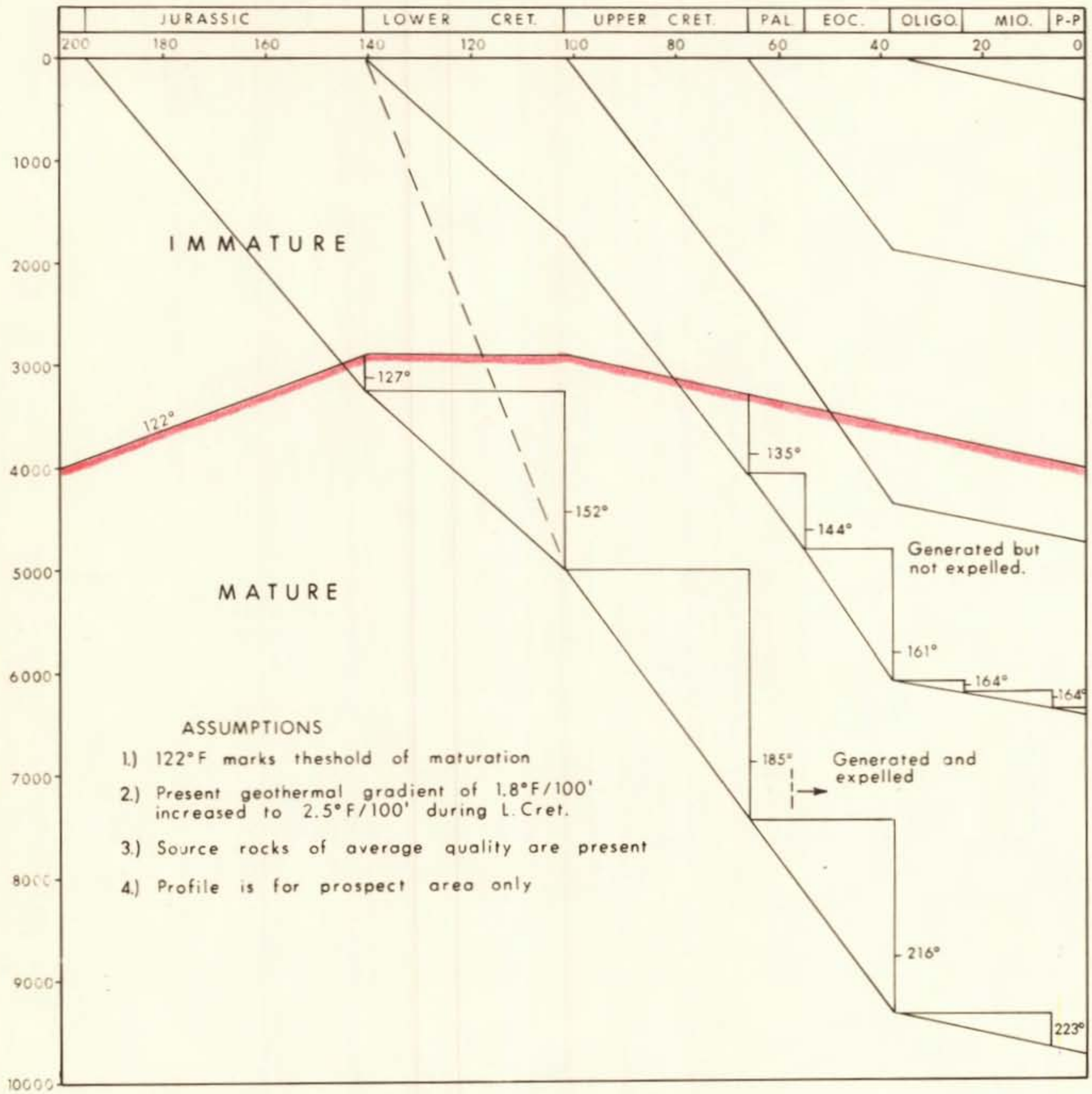


Figure 3

5 cm

042013



SUBSIDENCE PROFILE

OFFSHORE WEST TASMANIA

5 cm

J. BOYER - JULY 1981

Figure 4

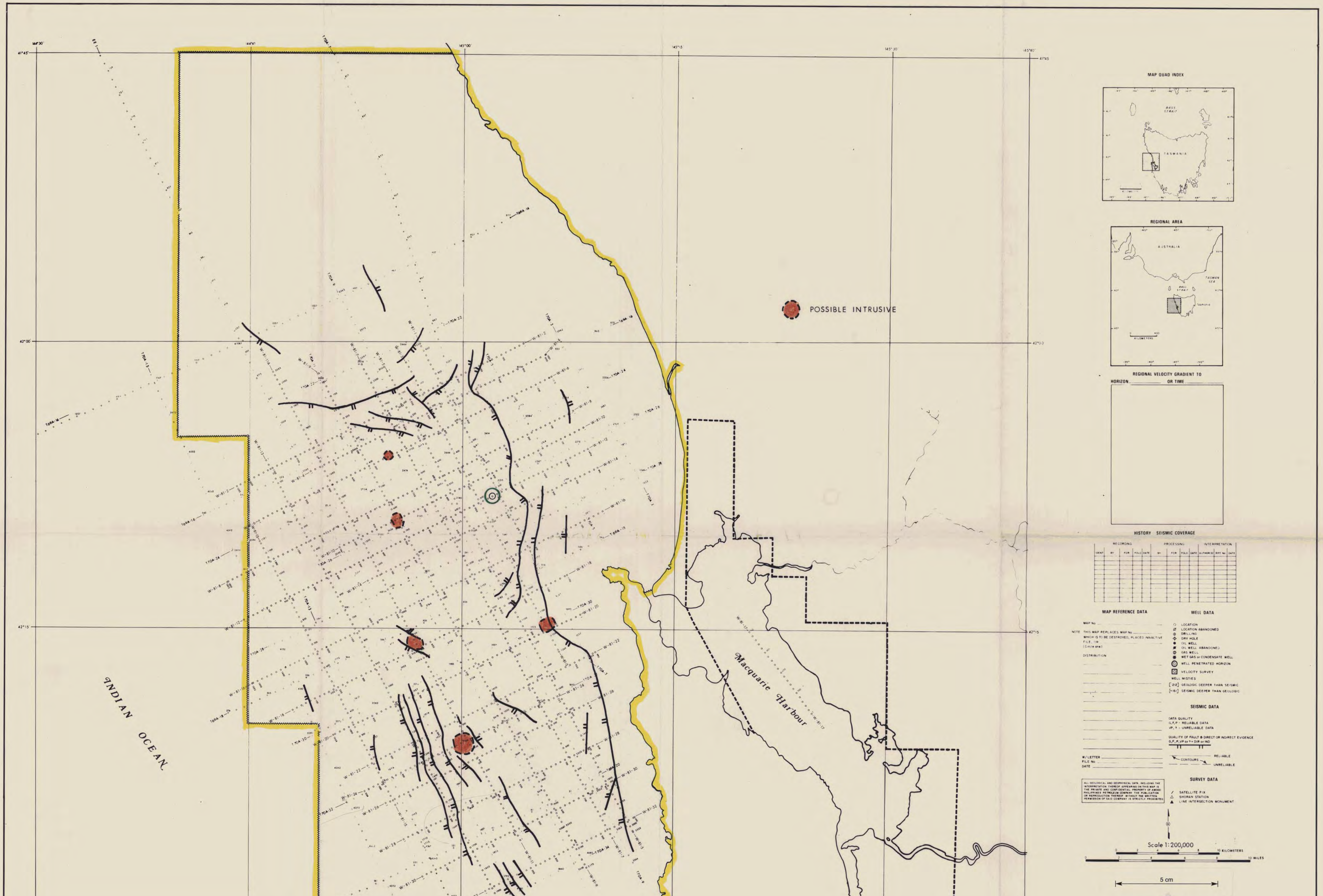
REFERENCES

1) Boeuf, M. G., (1974) Evolution of the Southern Margin of Australia in the Light of Shell Reconnaissance Seismic Surveys, Proceedings of the Challenger Centenary Symposium, Melbourne, Aust.

2) Ellenor, D. W., (1976) Otway Basin, in Economic Geol. of Aust. and Papua New Guinea, No. 3. Aust. Inst. of Mining and Metallurgy, Victoria Aust.

3) Jones, H. A. and Holdgate, G. R., (1980) Shallow Structure and Late Cainozoic geological history of Western Bass Strait and the West Tasmanian Shelf. BMR Jour. of Aust. Geol. and Geoph, 5, 87-93.

4) Vail, et. al., (1977) Seismic Stratigraphy - Applications to Hydrocarbon Exploration. AAPG Memoir 26.



AMOCO

Amoco Australia Petroleum Company

Houston, Texas

Type of map:	
Horizon: BASEMENT FAULTING & INTRUSIVES (?)	
Area: West Tasmania Basin	Map Quad:
Interpreter: J. BOYER	Date: JULY, 1981
Scale:	Contour Interval:
Remarks: ENCL. 1	

042015

OR-090

T/12P PT. 3

(1)

LINE W-81-08

LINE DIRECTION

VELOCITY FUNCTION

DIRECTION

LINE INTERSECTION

WATER DEPTHS (METERS)

STATIONS

AMOCO INTL OIL CO.

WEST TASMANIAN BASIN
LINE W-81-08
SP 1503 TO SP 1
WAVE EQUATION MIGRATION

FIELD INFORMATION

PROCESSING SEQUENCE

CGG - data processing services

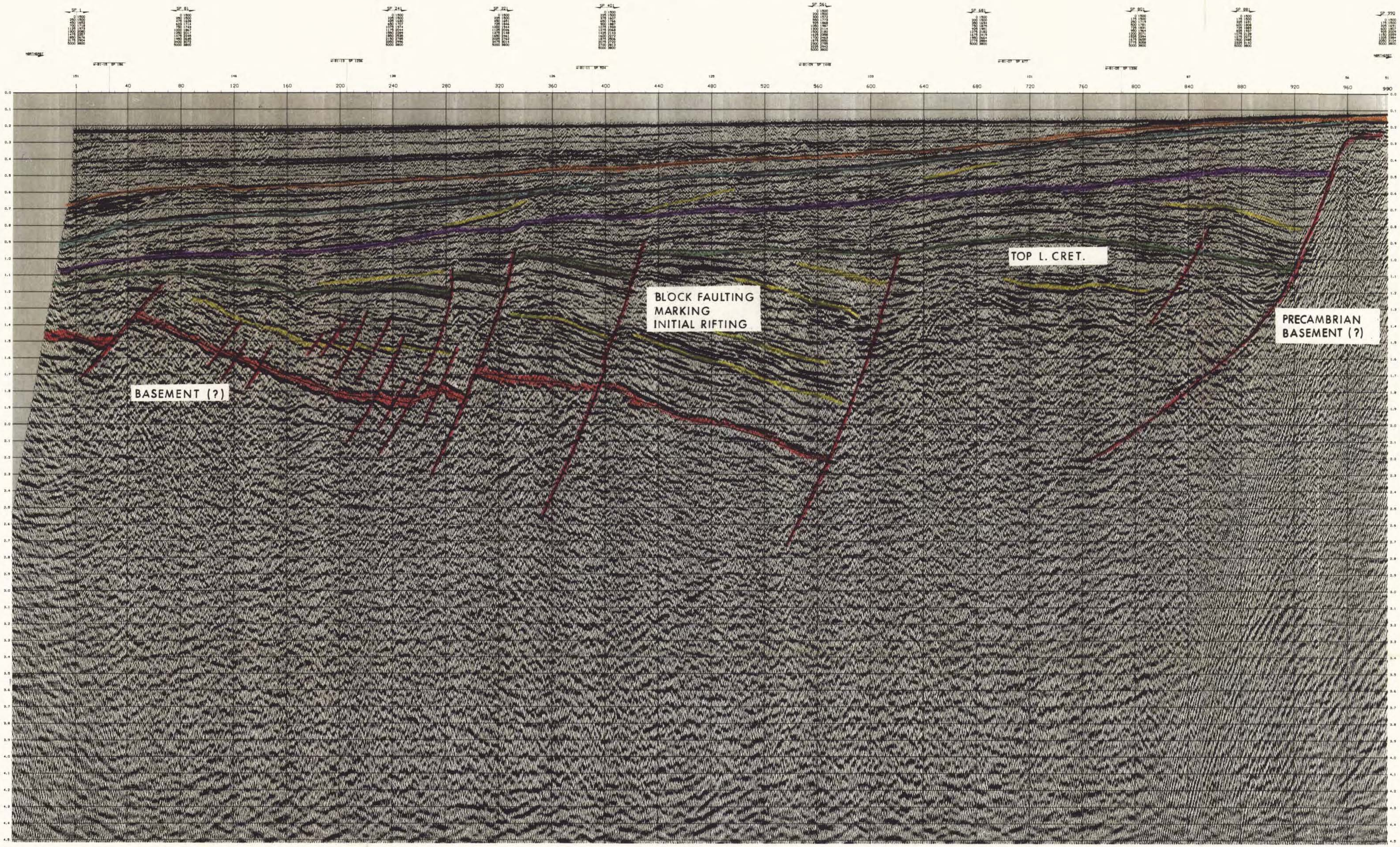
T/12P PT.3
OR-090

042016

5 cm

ENCL. 2

LINE W-81-22



LINE DIRECTION

VELOCITY FUNCTION

DIRECTION

LINE INTERSECTION

WATER DEPTHS (METERS)

STATIONS

AMOCO INTL OIL CO.

WEST TASMANIAN BASIN
LINE W-81-22
SP 1 TO SP 990
WAVE EQUATION MIGRATION

INPUT REEL HEADER INFORMATION

REEL NUMBER	
DATE CREATED	06/19/81
NUMBER SAMPLE/TRACE	1250
SAMPLE RATE IN MILLS	4.00
PROCESSOR	6 - h
LINE NUMBER	
JOB NUMBER	
SECTION NUMBER	1
PROCESSING STEP	

FIELD INFORMATION

RECORDED BY: WESTERN GEO.	
FOLD: 48	GEOPHONE TYPE: N/A
SPREAD: 0- 200-2375	GEOPHONE INTERVAL: 25M
GROUP INTERVAL: 25M	GEOPHONES/GROUP: 20
SHOT INTERVAL: 25M	DEPTH OF CABLE: 12M
NO. OF GROUPS: 96	ENERGY SOURCE: AIRGUN
SAMPLE RATE: 2MS.	LENGTH OF ARRAY: 10M
RECORD LENGTH: 5SEC.	DEPTH OF SOURCE: 6M
INSTRUMENT: DFS V	NO. OF GUNS: 10
FILTER: OUT-128/70	DATE RECORDED: MARCH 1981

DATUM: MEAN SEA LEVEL

PROCESSING SEQUENCE

01) DEMULTIPLEX
02) AMPLITUDE RECOVERY
03) RESAMPLE 2 TO 4MS.
04) COMMON DEPTH POINT GATHER
05) DECONVOLUTION PREDICTIVE
OPERATOR: 220MS, GAP: 20MS
GATES: (T200-T2200), (T1800-T4000)
06) VELOCITY ANALYSIS: 1/KM.
07) NORMAL MOVEOUT
08) MUTES
09) STACK, FOLD:48
10) DECONVOLUTION SPIKING
OPERATOR: 160MS
GATES: (T200-T2200), (T1800-T4000)
11) WAVE EQUATION MIGRATION
-STRUCTURAL
12) TIME VARIANT FILTER
GATES: (8,12,50,70), (T0-T800)
(7,11,38,50), (T1500-T2500)
(6,10,20,35), (T4000-T5000)
13) DYNAMIC EQUALIZATION
GATES: OPER:
(T0-T600) 200MS.
(T600-T5000) 600MS.

SCALE:
HORIZONTAL- 1 INCH=625M

PROCESSED BY: T.GREENE/S.HOLLOWAY
CHECKED BY: A.Y.BLISS

CGG - data processing services
HOUSTON TEXAS

FILMING PARAMETERS

PERCENT GAIN	150
HORIZONTAL SCALE	50.000 TR/IN
VERTICAL SCALE	5.000 IN/SEC
FILMING DIRECTION	LTOR
PERCENT GAP	0
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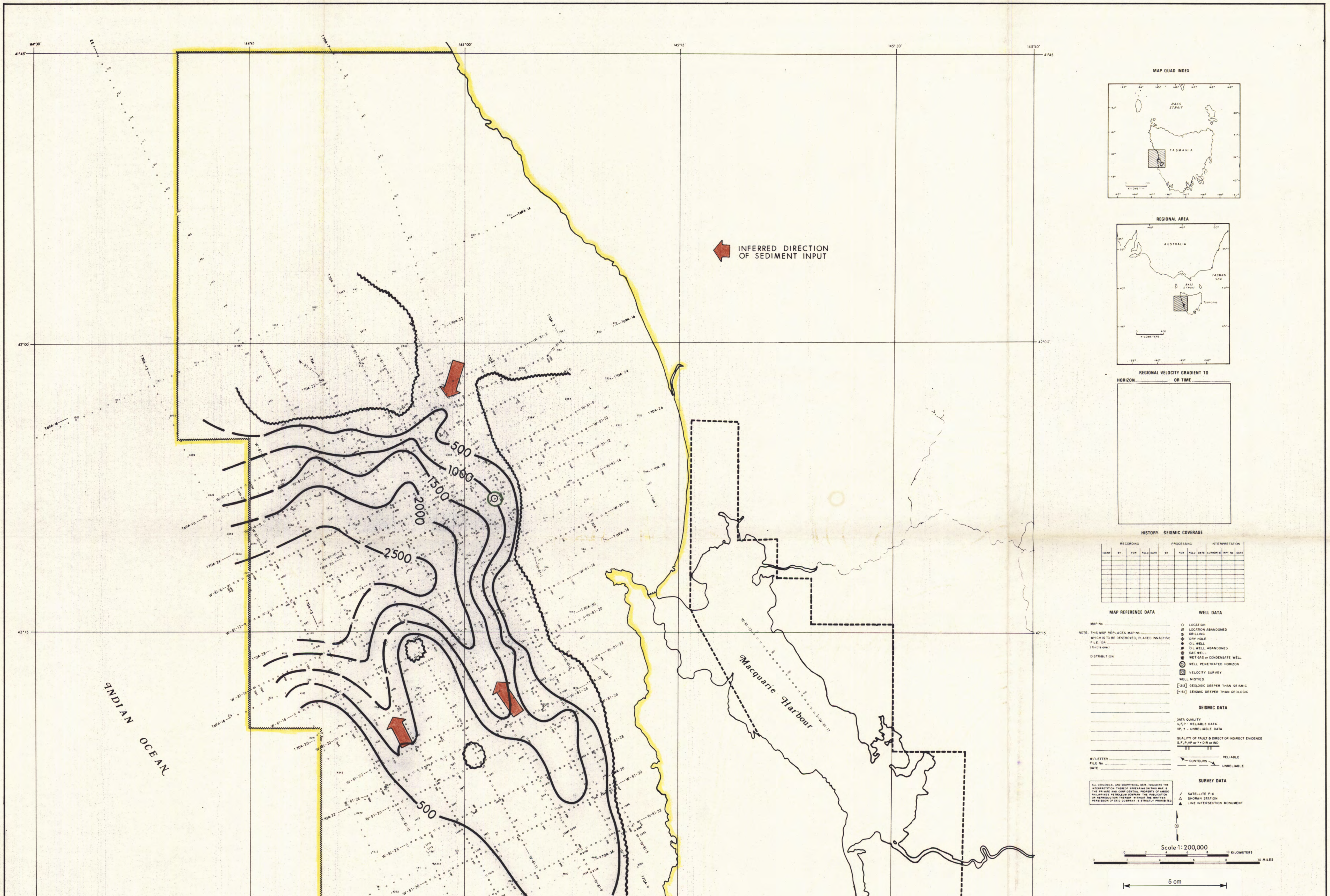
DATA PROCESSED BY CGG

T/12P PT. 3
OR-090

042017

5 cm

ENCL. 3



042018

Amoco Australia Petroleum Company

Houston, Texas

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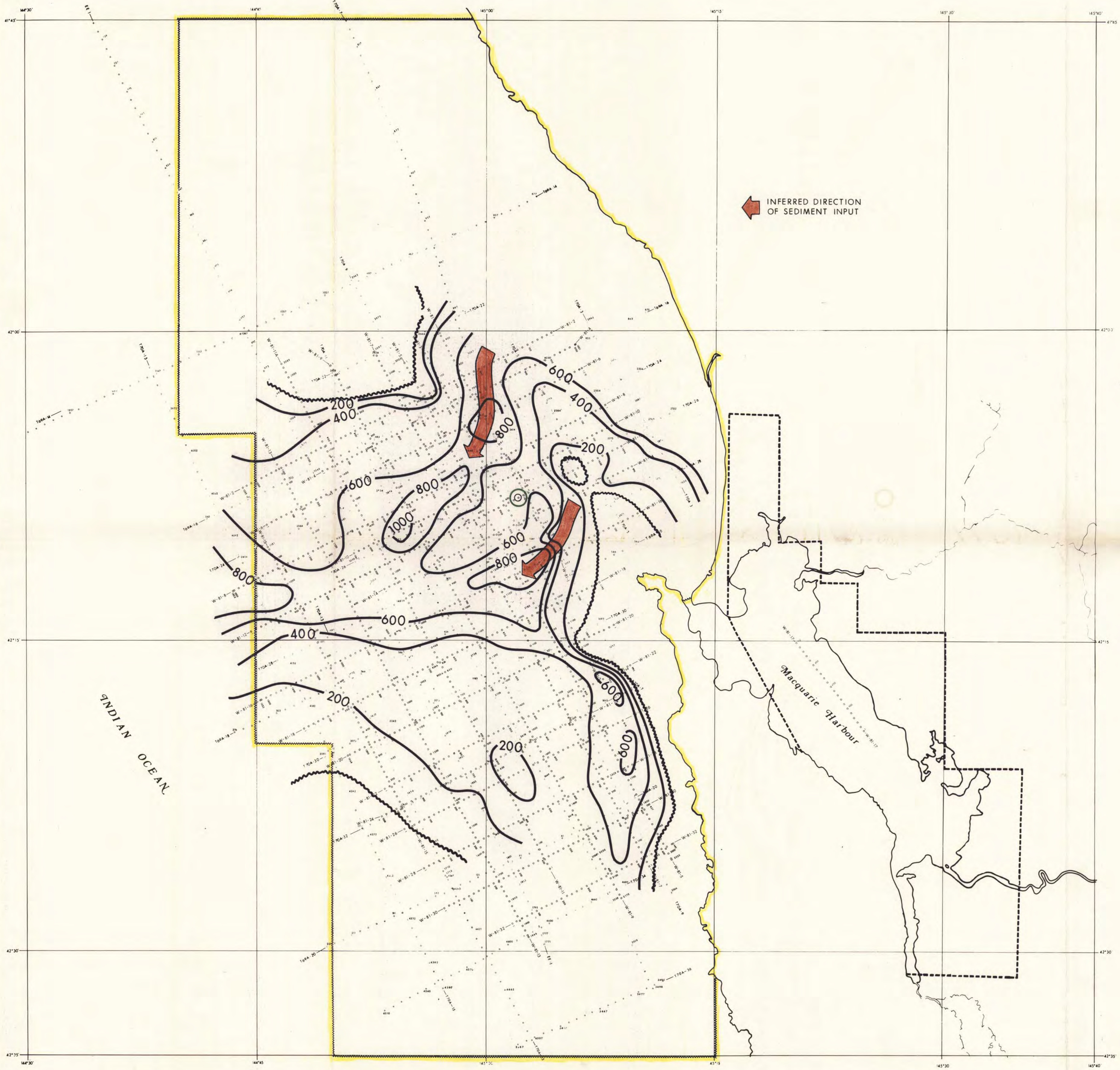
Area: West Tasmania Basin	Map Quad :
Interpreter: J. BOYER	Date: JULY, 1981
Scale: 1:200,000	Contour Interval: 500ms
Remarks: Basement pick often questionable. ENCL. 4	

OR-090

T/12P PT3



Scale 1:200,000

0 2 4 6 8 10 KILOMETERS

0 2 4 6 8 10 MILES

5 cm

042019

Amoco Australia Petroleum Company

Houston, Texas

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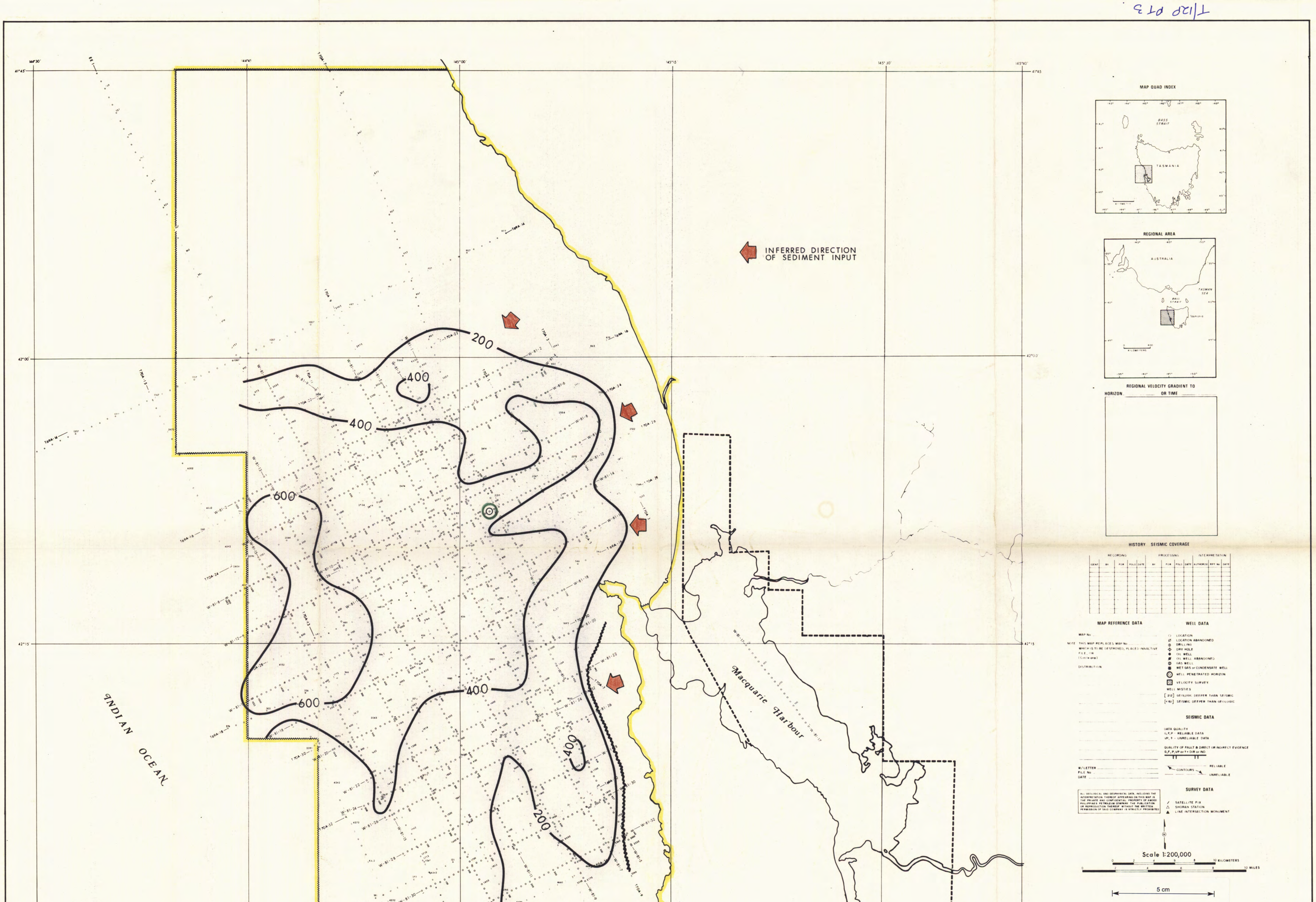
Scale: 1:200,000	Contour Interval: 200 ms
Remarks: ENCL. 5	

OR-090

T/12P. PT. 3



Amoco Australia Petroleum Company

Houston, Texas

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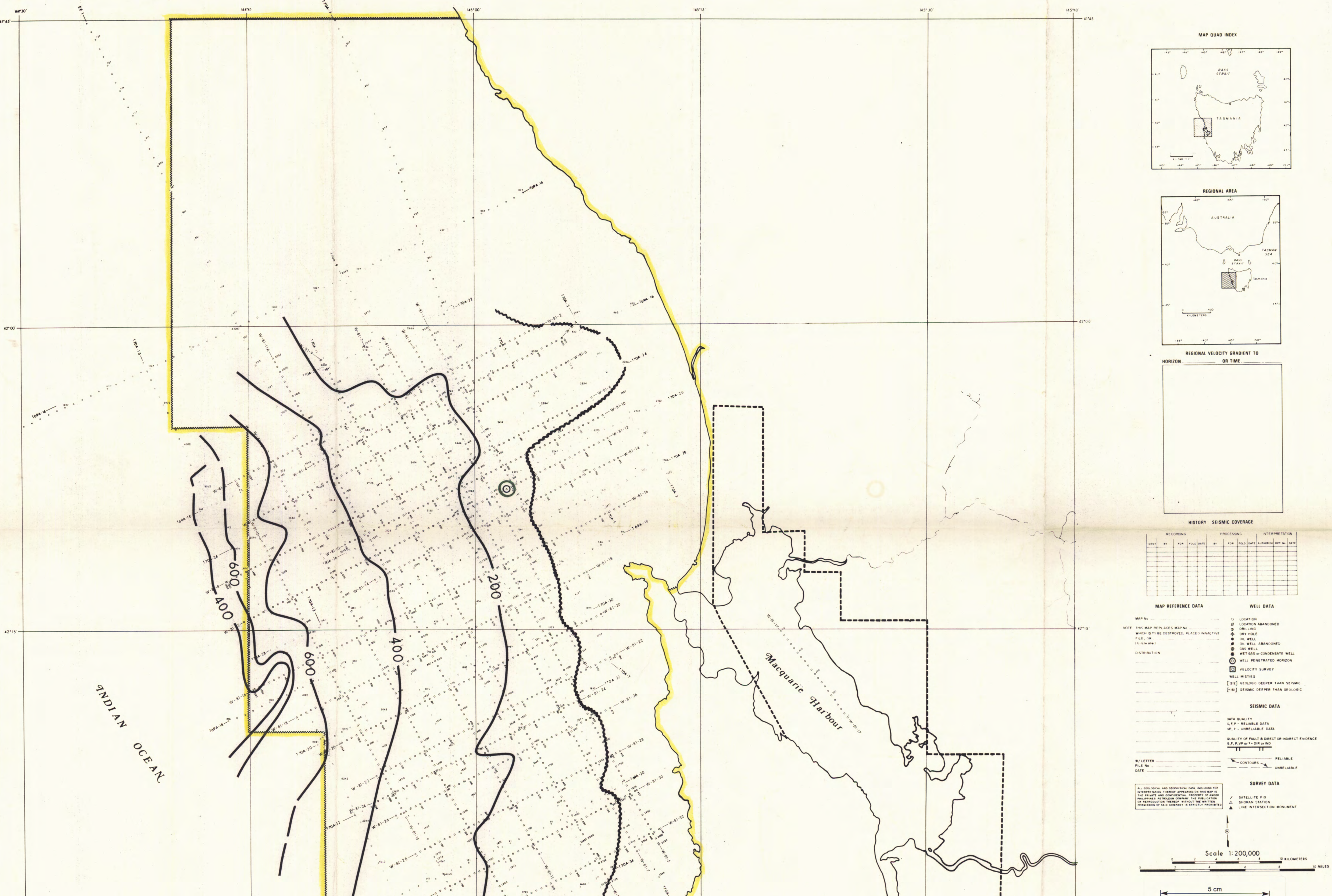
Remarks: ENCL. 6	

042020

OR-090



Amoco Australia Petroleum Company

Houston, Texas

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Area: West Tasmania Basin	Map Quad:
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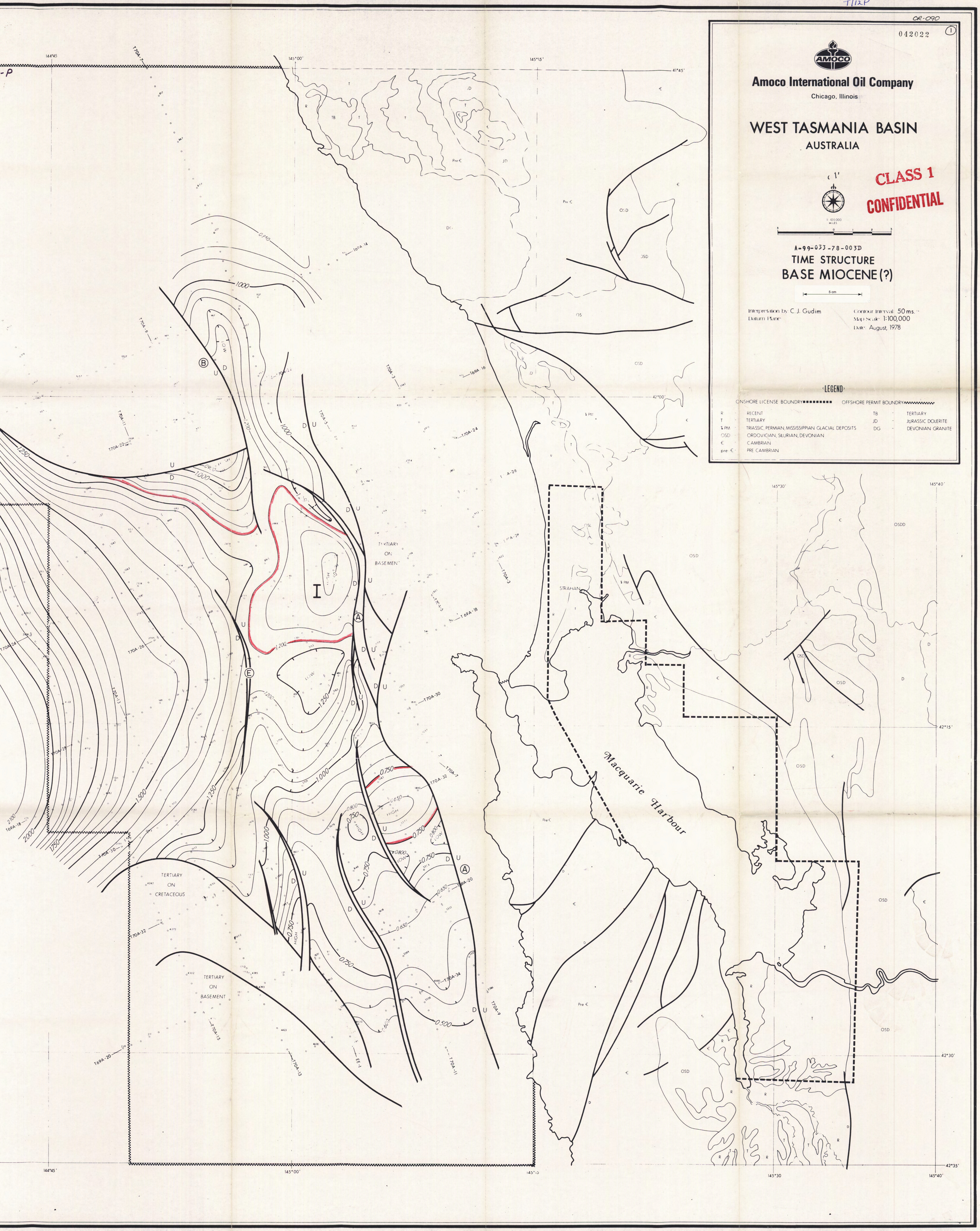
Scale: 1:200,000	Contour Interval: 200ms
Remarks: ENCL. 7	

042021

OR-090

T/12P PT.3

T-12-P
INDIAN OCEAN
Macquarie Harbour
STRAHAN
TERTIARY ON BASEMENT
TERTIARY ON CRETACEOUS
TERTIARY ON BASEMENT
LOW
HIGH
144°30'
144°45'
145°00'
145°15'
41°45'
42°00'
42°15'
42°30'
42°35'
5 cm


T/12P
OR-090
042022
1
Amoco International Oil Company
Chicago, Illinois
WEST TASMANIA BASIN
AUSTRALIA
CLASS 1
CONFIDENTIAL
1:100,000
MILES
A-99-033-78-003D
TIME STRUCTURE
BASE MIOCENE (?)
5 cm
Interpretation by: C. J. Gudim
Datum Plane:
Contour Interval: 50 ms.
Map Scale: 1:100,000
Date: August, 1978
LEGEND
ONSHORE LICENSE BOUNDRY
OFFSHORE PERMIT BOUNDRY
R - RECENT
T - TERTIARY
TR PM - TRIASSIC, PERMIAN, MISSISSIPPIAN GLACIAL DEPOSITS
OSD - ORDOVICIAN, SILURIAN, DEVONIAN
€ - CAMBRIAN
pre-€ - PRE CAMBRIAN
TB - TERTIARY
JD - JURASSIC DOLERITE
DG - DEVONIAN GRANITE
TERTIARY ON BASEMENT
TERTIARY ON CRETACEOUS
Macquarie Harbour
STRAHAN
145°00'
145°15'
145°30'
145°40'
144°45'
41°45'
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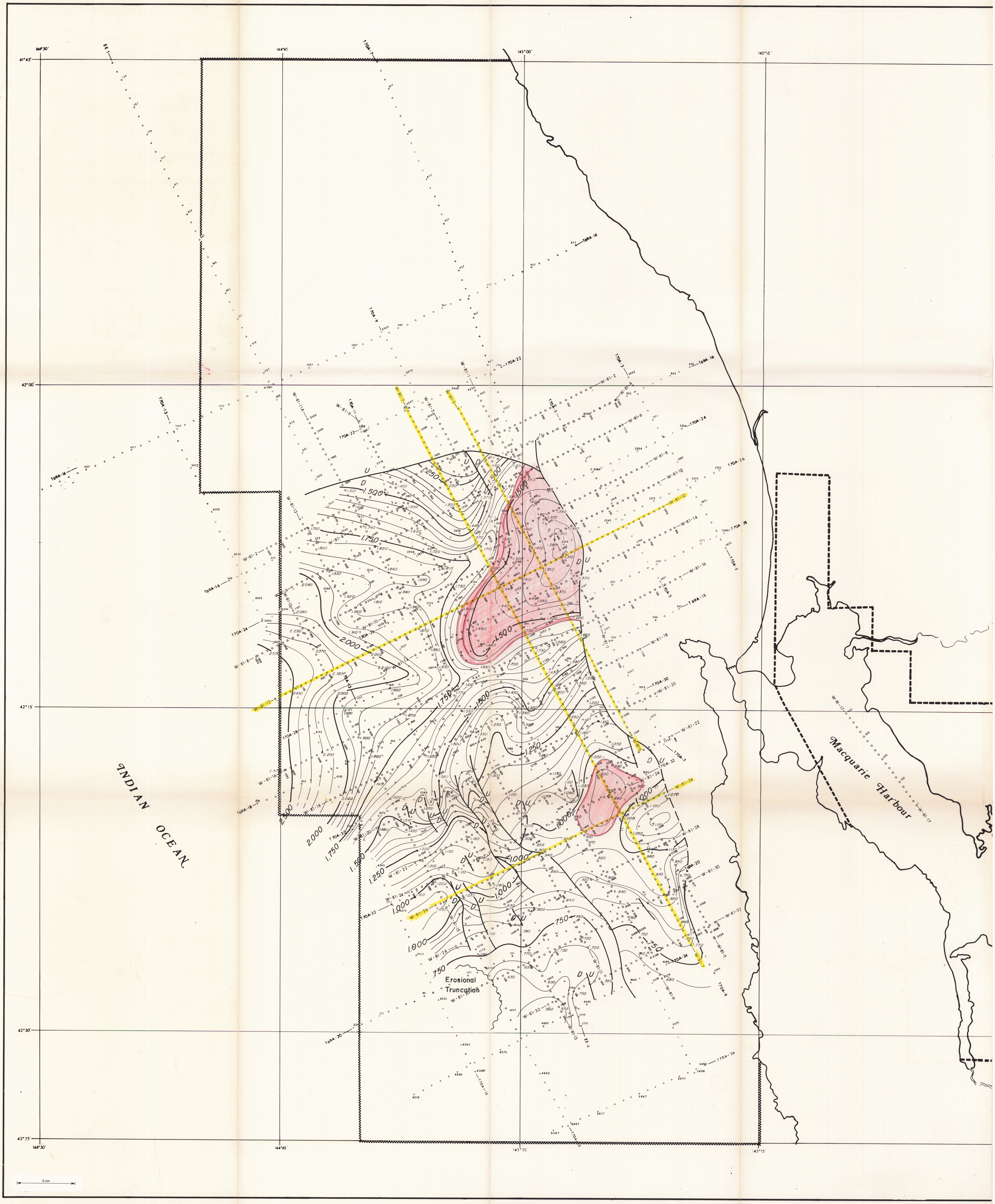
42°30'
42°35'



INDIAN OCEAN
Macquarie Harbour
Erosional Truncation
144°30'
144°45
145°00'
145°15'
41°45'
42°00'
42°15'
42°30'
42°35'
5 cm
W-81-12
W-81-26
W-81-2
W-81-4
W-81-6
W-81-8
W-81-10
W-81-14
W-81-16
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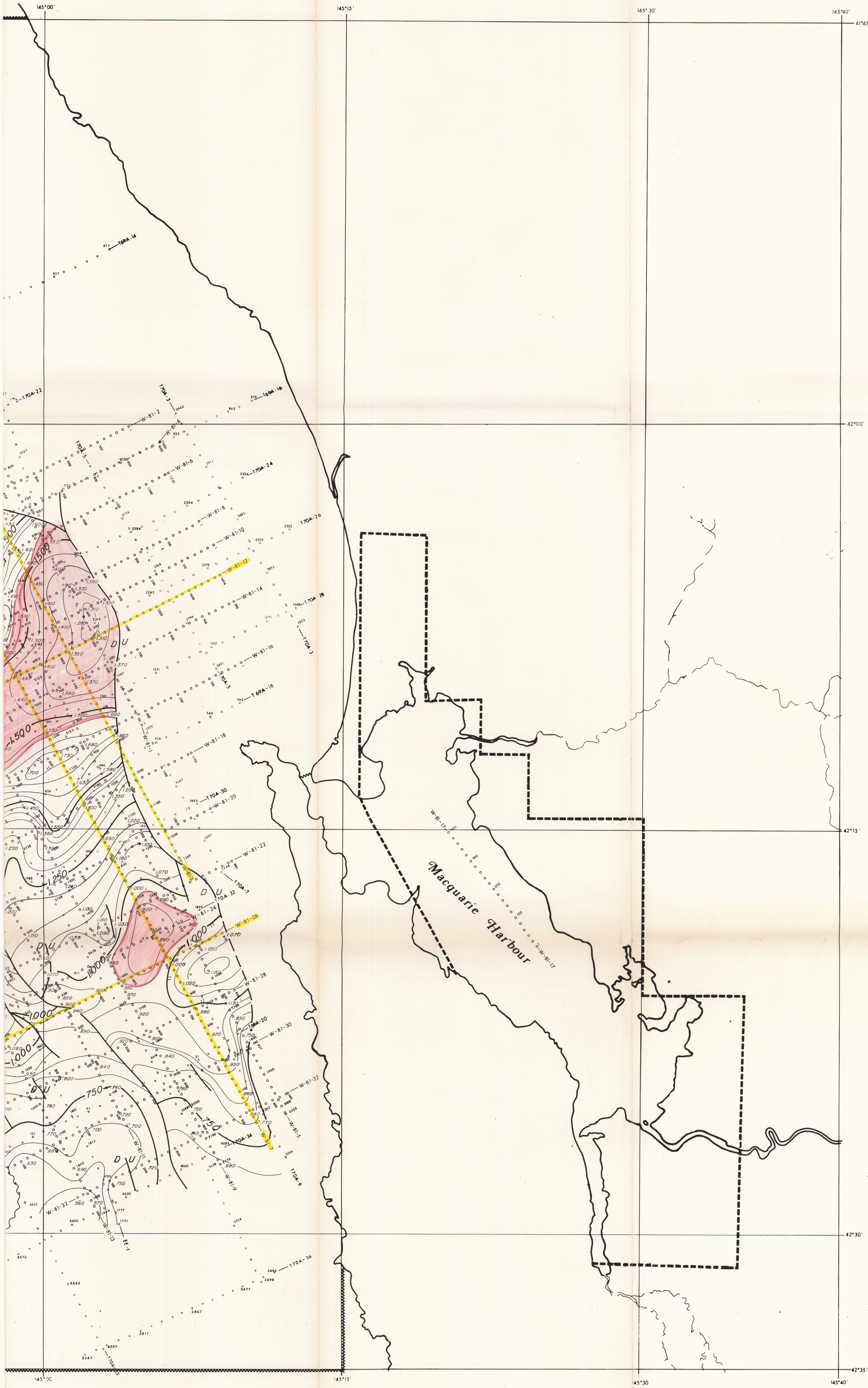
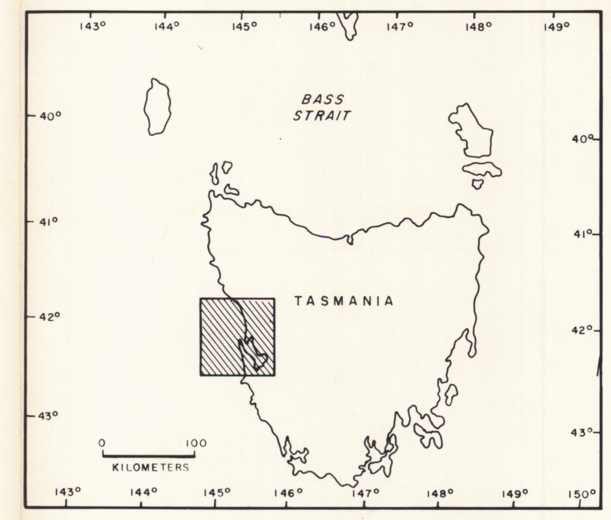
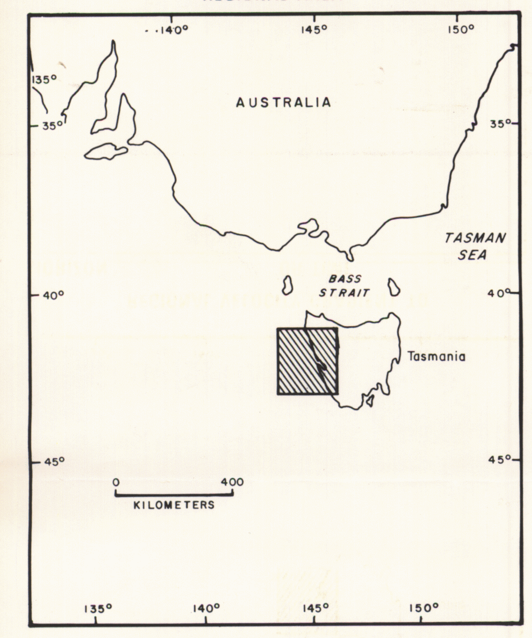
750



MAP QUAD INDEX



REGIONAL AREA



REGIONAL VELOCITY GRADIENT TO

HORIZON ________ OR TIME ________

HISTORY - SEISMIC COVERAGE

RECORDING					PROCESSING				INTERPRETATION		
IDENT	BY	FOR	FOLD	DATE	BY	FOR	FOLD	DATE	AUTHOR(S)	RPT No.	DATE

MAP REFERENCE DATA

MAP No. ________

NOTE: THIS MAP REPLACES MAP No. ________
WHICH IS TO BE DESTROYED; PLACED INNACTIVE
FILE; OR ________
(Circle one)

DISTRIBUTION:

W/LETTER ________
FILE No: ________
DATE: ________

WELL DATA

- ○ LOCATION
- ∅ LOCATION ABANDONED
- DRILLING
- DRY HOLE
- ● OIL WELL
- OIL WELL ABANDONED
- GAS WELL
- WET GAS or CONDENSATE WELL
- WELL PENETRATED HORIZON
- VELOCITY SURVEY

WELL MISTIES
- [-212] GEOLOGIC DEEPER THAN SEISMIC
- [+161] SEISMIC DEEPER THAN GEOLOGIC

SEISMIC DATA

DATA QUALITY
G, F, P - RELIABLE DATA
VP, ? - UNRELIABLE DATA

QUALITY OF FAULT & DIRECT OR INDIRECT EVIDENCE
G, F, P, VP or ? + DIR or IND

CONTOURS: RELIABLE / UNRELIABLE

SURVEY DATA

- / SATELLITE FIX
- △ SHORAN STATION
- ▲ LINE INTERSECTION MONUMENT

N

SCALE: 1:100,000
0 2 4 6 8 10 KILOMETERS
0 2 4 6 8 10 MILES

5 cm

CLASS I

CONFIDENTIAL

AMOCO

Amoco Australia Petroleum Company

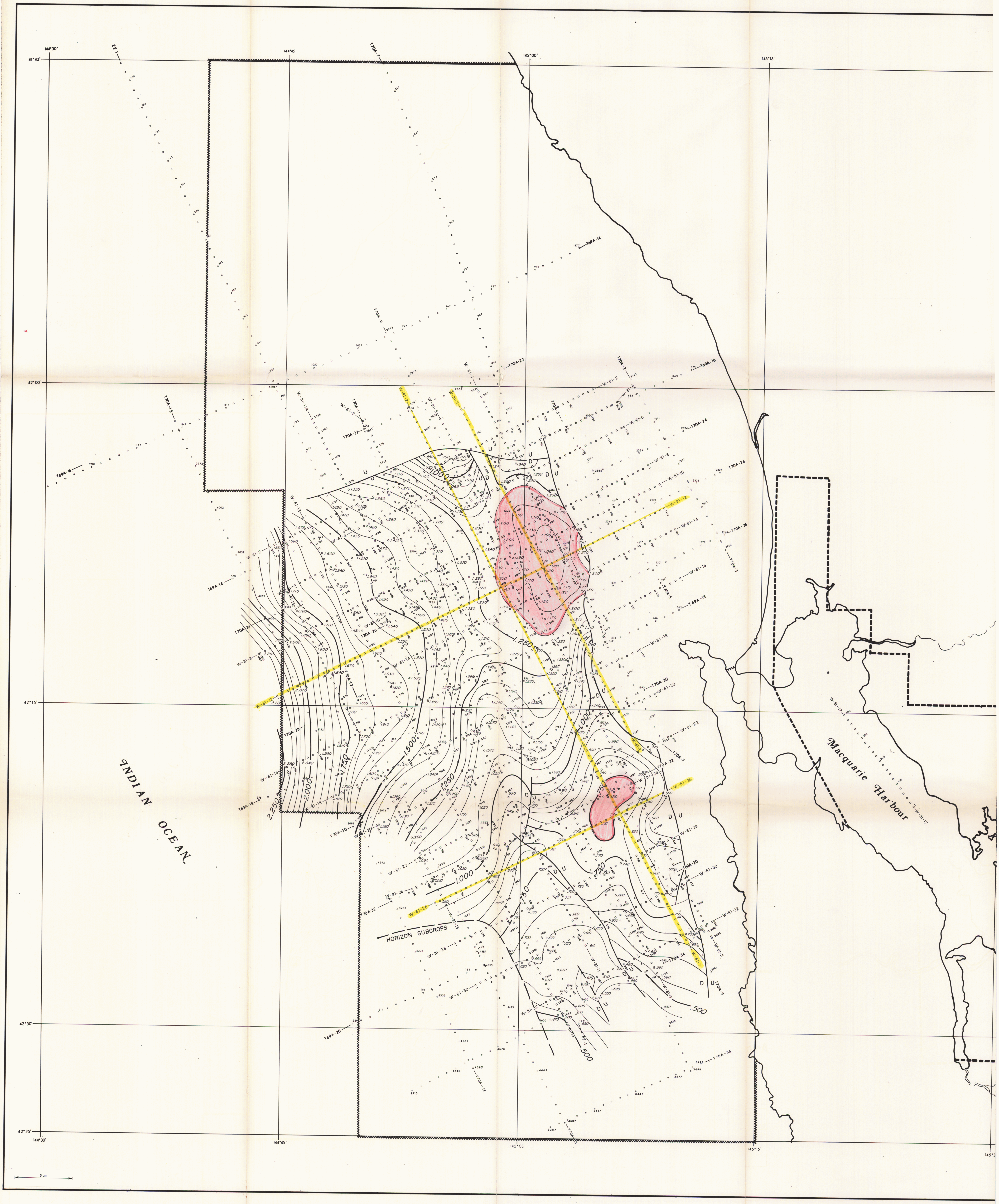
Houston, Texas

Type of map: Time Structure	
Horizon: T. LOWER CRET. (UNCONFORMITY) (GREEN HORIZON)	
Area: WEST TASMANIA BASIN	Map Quad:
Interpreter: H. R. Wellman	Date: Aug. 1981
Scale: 1: 100,000	Contour Interval: 50 ms
Remarks:	

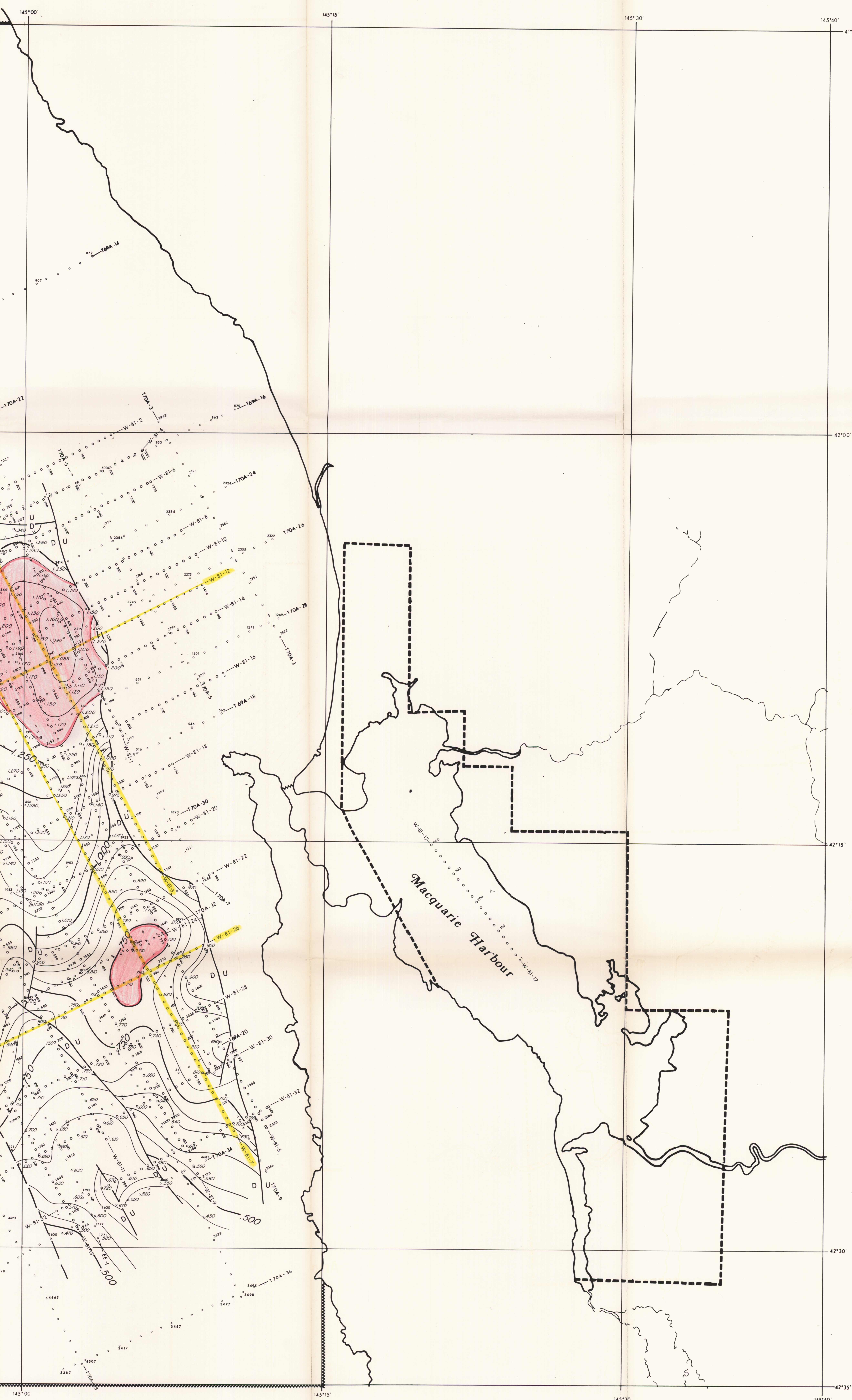
②

A-99-033-81-006   042023   OR-090

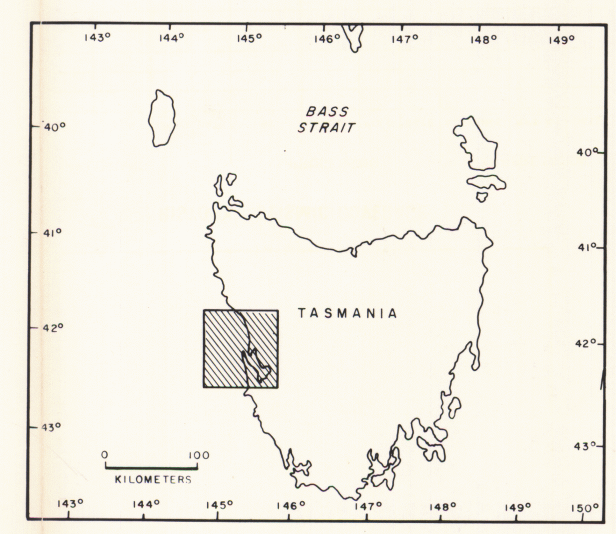
T/12P



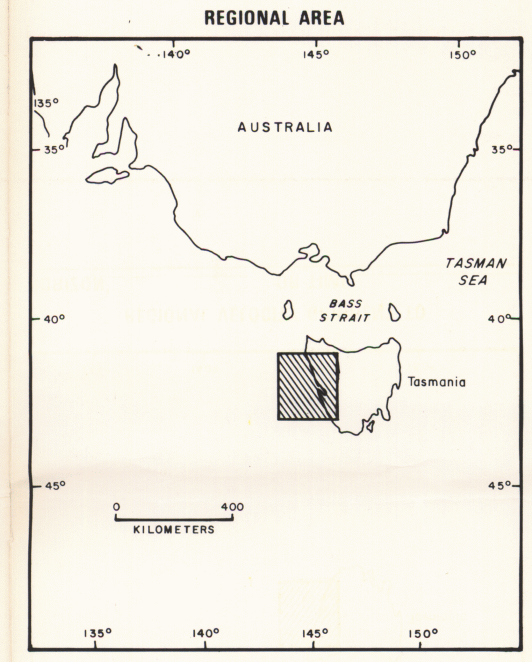
144°30'
144°45
145°00'
145°15'
41°45'
42°00'
42°15'
42°30'
42°35'
INDIAN OCEAN
Macquarie Harbour
HORIZON SUBCROPS
5 cm



MAP QUAD INDEX



REGIONAL AREA



REGIONAL VELOCITY GRADIENT TO
HORIZON ________ OR TIME ________

HISTORY - SEISMIC COVERAGE

RECORDING					PROCESSING				INTERPRETATION		
IDENT	BY	FOR	FOLD	DATE	BY	FOR	FOLD	DATE	AUTHOR(S)	RPT No.	DATE

MAP REFERENCE DATA

MAP No. ________

NOTE: THIS MAP REPLACES MAP No. ________
WHICH IS TO BE DESTROYED; PLACED INNACTIVE
FILE; OR ________
(Circle one)

DISTRIBUTION:

W/LETTER ________
FILE No: ________
DATE: ________

WELL DATA

- LOCATION
- LOCATION ABANDONED
- DRILLING
- DRY HOLE
- OIL WELL
- OIL WELL ABANDONED
- GAS WELL
- WET GAS or CONDENSATE WELL
- WELL PENETRATED HORIZON
- VELOCITY SURVEY

WELL MISTIES

- [-212] GEOLOGIC DEEPER THAN SEISMIC
- [+161] SEISMIC DEEPER THAN GEOLOGIC

SEISMIC DATA

DATA QUALITY
G, F, P - RELIABLE DATA
VP, ? - UNRELIABLE DATA

QUALITY OF FAULT & DIRECT OR INDIRECT EVIDENCE
G, F, P, VP or ? + DIR or IND

CONTOURS: RELIABLE / UNRELIABLE

SURVEY DATA

- SATELLITE FIX
- SHORAN STATION
- LINE INTERSECTION MONUMENT

N

SCALE: 1:100,000

0 2 4 6 8 10 KILOMETERS

0 2 4 6 8 10 MILES

5 cm

CLASS I

CONFIDENTIAL

Amoco Australia Petroleum Company

Houston, Texas

Type of map: Time Structure	
Horizon: WITHIN UPPER CRET. ?	
Area: West Tasmania Basin	Map Quad:
Interpreter: H. R. Wellman	Date: July, 1981
Scale: 1 : 100,000	Contour Interval: 50 ms.
Remarks:	

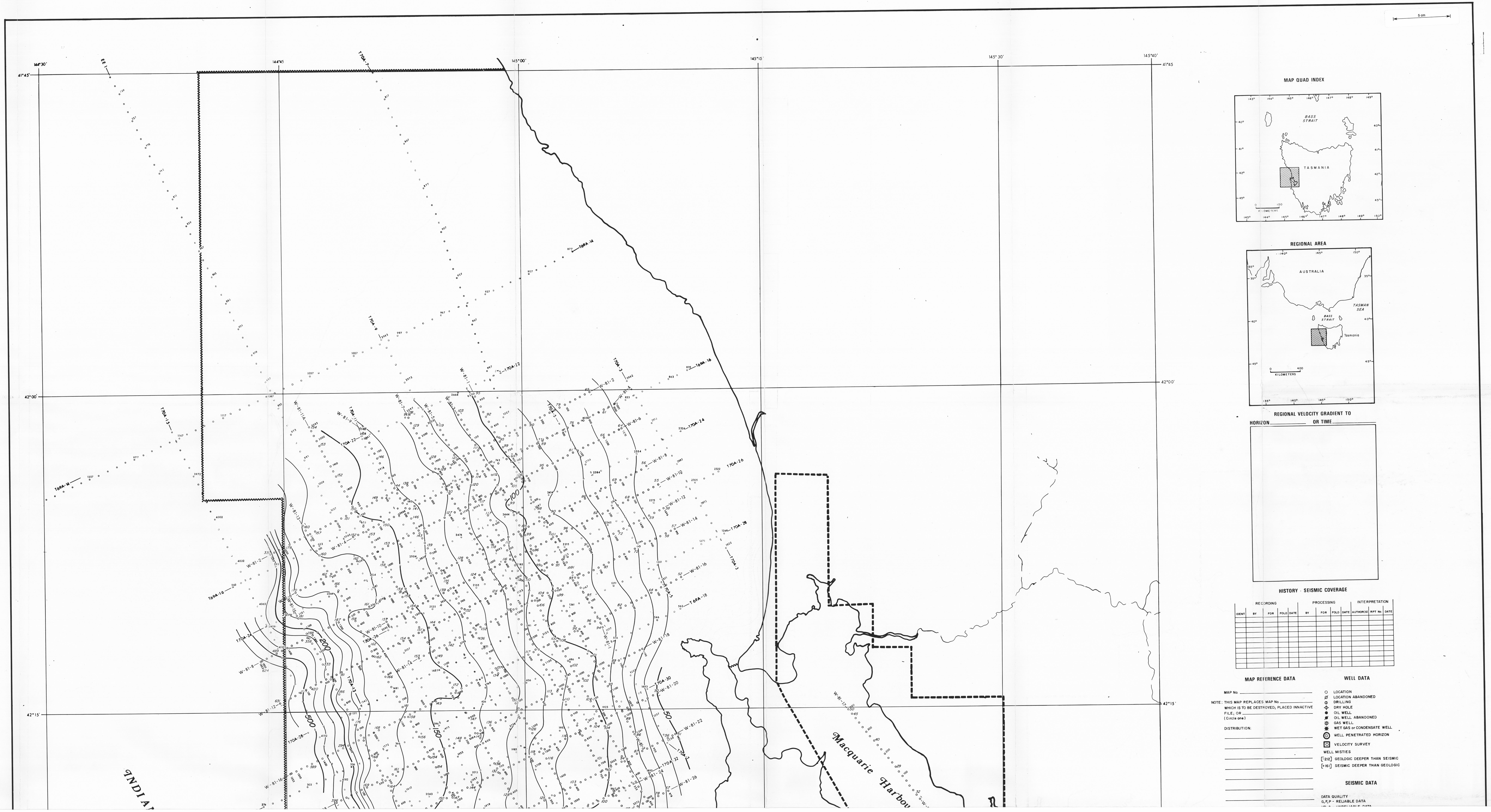
A-99-033-81-007

042024

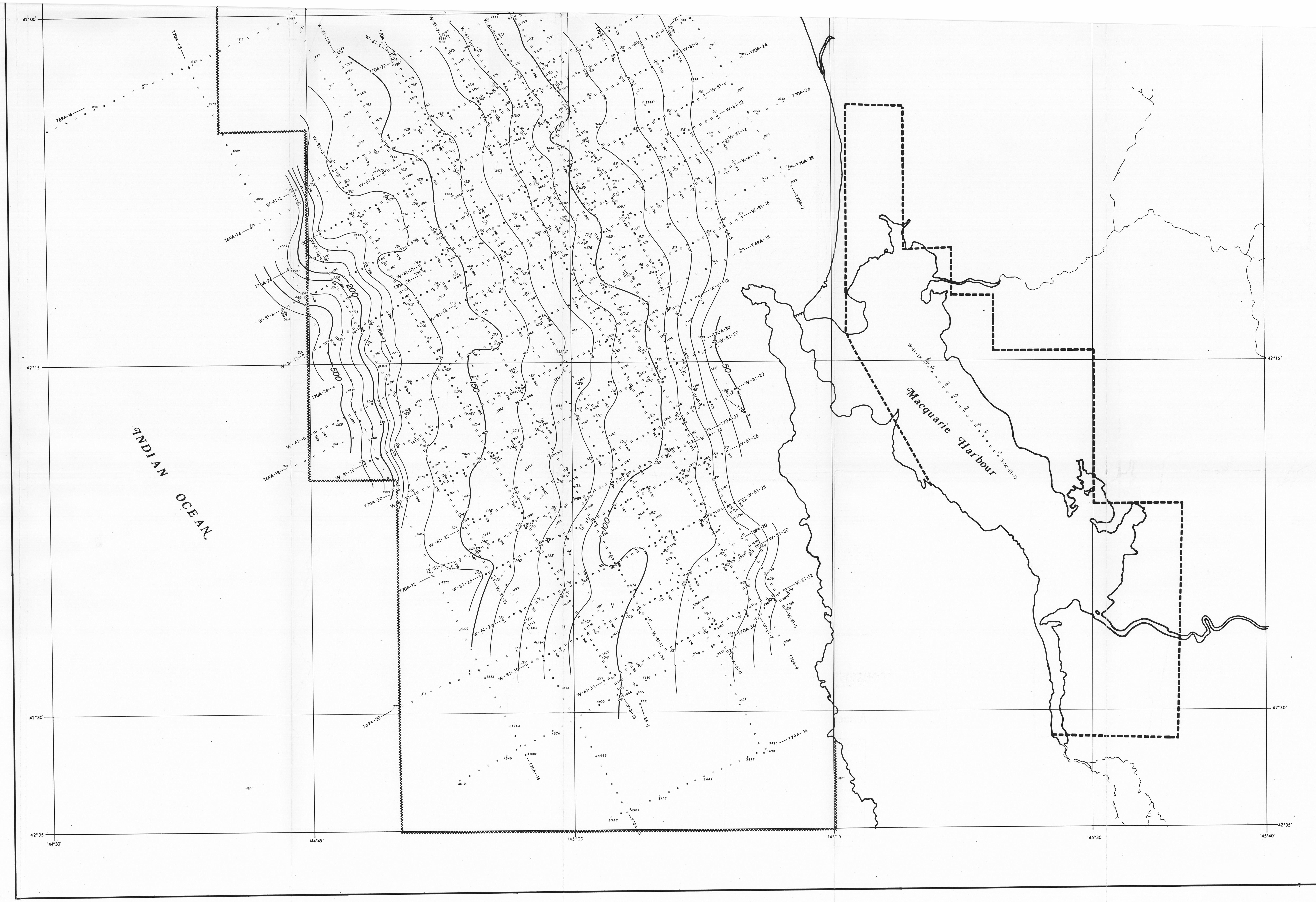
(3.)

OR-090

T/12P



145°00'
145°15'
145°30'
41°45'
42°00'
42°15'
INDIA
Macquarie Harbour
MAP QUAD INDEX
BASS STRAIT
TASMANIA
REGIONAL AREA
AUSTRALIA
TASMAN SEA
BASS STRAIT
Tasmania
KILOMETERS
REGIONAL VELOCITY GRADIENT TO
HORIZON
OR TIME
HISTORY - SEISMIC COVERAGE
RECORDING
PROCESSING
INTERPRETATION
IDENT
BY
FOR
FOLD
DATE
BY
FOR
FOLD
DATE
AUTHOR(S)
RPT No.
DATE
MAP REFERENCE DATA
MAP No.
NOTE: THIS MAP REPLACES MAP No.
WHICH IS TO BE DESTROYED; PLACED INNACTIVE
FILE; OR
(Circle one)
DISTRIBUTION:
WELL DATA
LOCATION
LOCATION ABANDONED
DRILLING
DRY HOLE
OIL WELL
OIL WELL ABANDONED
GAS WELL
WET GAS or CONDENSATE WELL
WELL PENETRATED HORIZON
VELOCITY SURVEY
WELL MISTIES
[-212] GEOLOGIC DEEPER THAN SEISMIC
[+161] SEISMIC DEEPER THAN GEOLOGIC
SEISMIC DATA
DATA QUALITY
G, F, P - RELIABLE DATA



REGIONAL VELOCITY GRADIENT TO

HORIZON ________ OR TIME ________

HISTORY - SEISMIC COVERAGE

RECORDING					PROCESSING				INTERPRETATION		
IDENT	BY	FOR	FOLD	DATE	BY	FOR	FOLD	DATE	AUTHOR(S)	RPT No.	DATE

MAP REFERENCE DATA

MAP No. ________

NOTE: THIS MAP REPLACES MAP No. ________
WHICH IS TO BE DESTROYED; PLACED INNACTIVE
FILE; OR ________
(Circle one)

DISTRIBUTION:

W/LETTER ________
FILE No: ________
DATE: ________

WELL DATA

- LOCATION
- LOCATION ABANDONED
- DRILLING
- DRY HOLE
- OIL WELL
- OIL WELL ABANDONED
- GAS WELL
- WET GAS or CONDENSATE WELL
- WELL PENETRATED HORIZON
- VELOCITY SURVEY

WELL MISTIES
[-212] GEOLOGIC DEEPER THAN SEISMIC
[+161] SEISMIC DEEPER THAN GEOLOGIC

SEISMIC DATA

DATA QUALITY
G, F, P - RELIABLE DATA
VP, ? - UNRELIABLE DATA

QUALITY OF FAULT & DIRECT OR INDIRECT EVIDENCE
G, F, P, VP or ? + DIR or IND

CONTOURS — RELIABLE / UNRELIABLE

SURVEY DATA

- SATELLITE FIX
- SHORAN STATION
- LINE INTERSECTION MONUMENT

N

SCALE: 1:100,000

0 2 4 6 8 10 KILOMETERS

0 2 4 6 8 10 MILES

5 cm

CONFIDENTIAL

CLASS 1

Amoco Australia Petroleum Company

Houston, Texas

Type of map:	
Horizon: WATER DEPTH	
Area: West Tasmania Basin	Map Quad:
Interpreter: D.W. DANZ	Date: JULY, 1981
Scale: 1:100,000	Contour Interval: 10 meters
Remarks:	

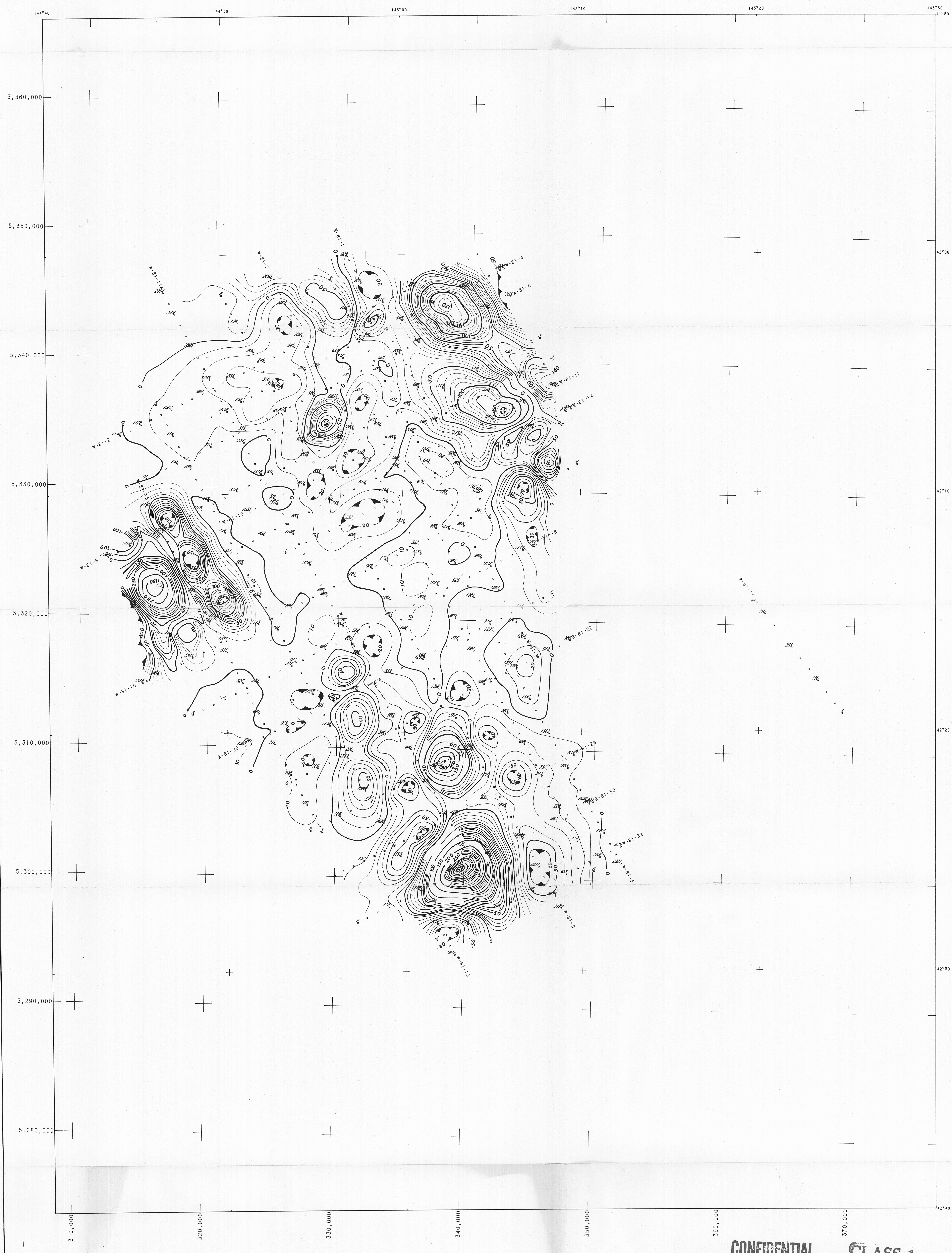
042025

(4)

A-99-033-81-008

OR-090

TT12P



CONFIDENTIAL CLASS 1

REVISIONS		AERO SERVICE DIVISION WESTERN GEOPHYSICAL COMPANY OF AMERICA	
DATE	BY	CLIENT: AMOCO	
		SCALE: 1 : 100,000	AREA: WEST TASMANIA
		PROJECTION: MERCATOR SPHEROID: AUSTRALIAN NAT. SCALE AT LATITUDE 147° 00	RESIDUAL TOTAL MAGNETIC ANOMALY MAP C.I. = 10 GAMMAS.
		DATE: JULY 1981	

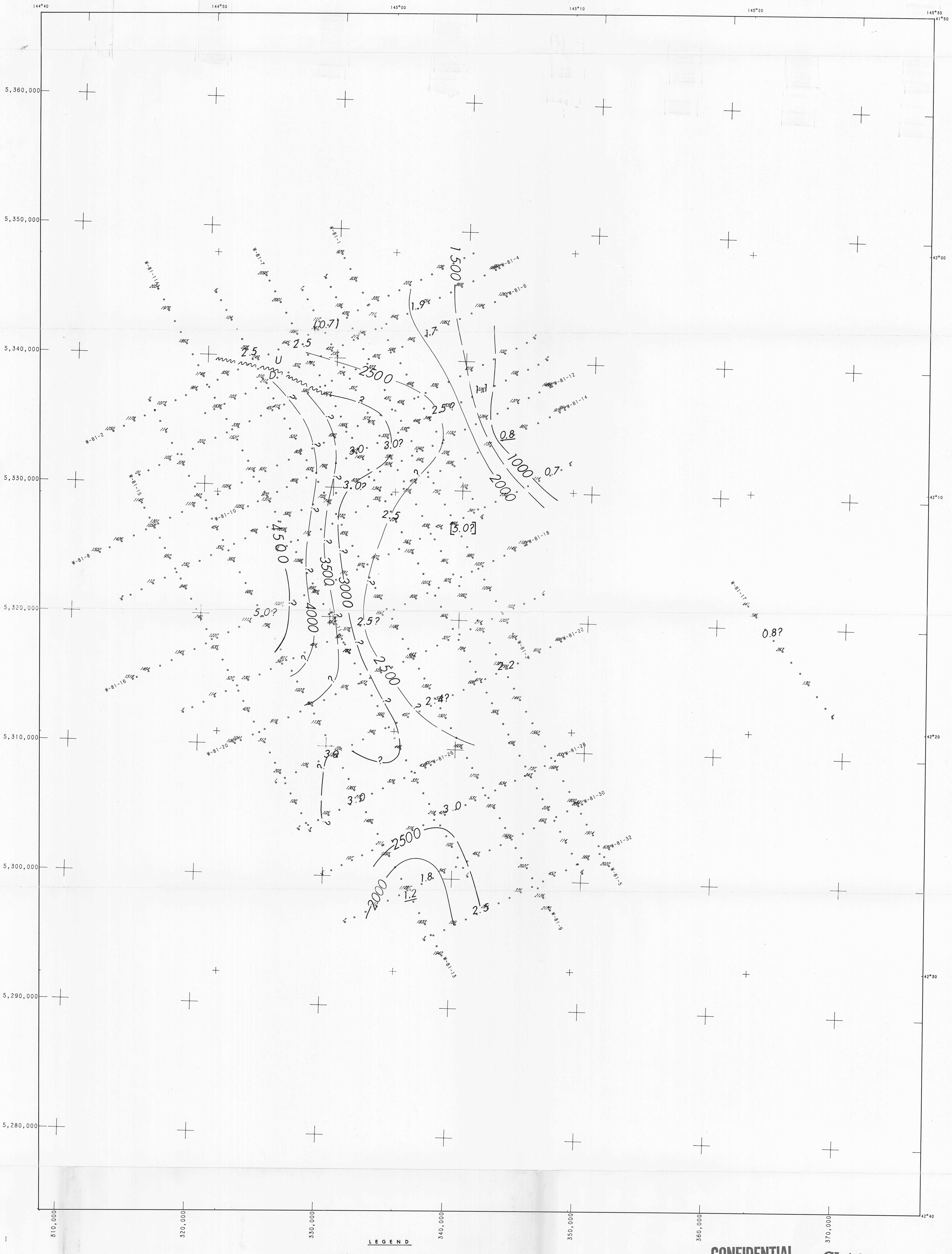
042026

(5)

A-99-033-81-009

OR-090

T/12P



LEGEND

—2 500—	DEPTH TO BASEMENT SURFACE IN METERS SUB-SEA LEVEL.
2.5, 2.5, 2.5?	GRADED DEPTH VALUES TO INTERPRETED BASEMENT SURFACE IN KILOMETERS SUB-SEA LEVEL.
(0.7) , [5.0]	DEPTH TO SOURCE INTERPRETED TO BE (ABOVE) OR [BELOW] BASEMENT SURFACE.
∿∿∿	FAULT.

5 cm

CONFIDENTIAL CLASS 1

REVISIONS		AERO SERVICE DIVISION WESTERN GEOPHYSICAL COMPANY OF AMERICA	
DATE	BY	CLIENT: AMOCO	
		SCALE: 1 : 100,000	AREA: WEST TASMANIA
		PROJECTION: MERCATOR SPHEROID: AUSTRALIAN NAT. SCALE AT LATITUDE 147° 00	DEPTH TO MAGNETIC BASEMENT
		DATE: JULY ,1981	

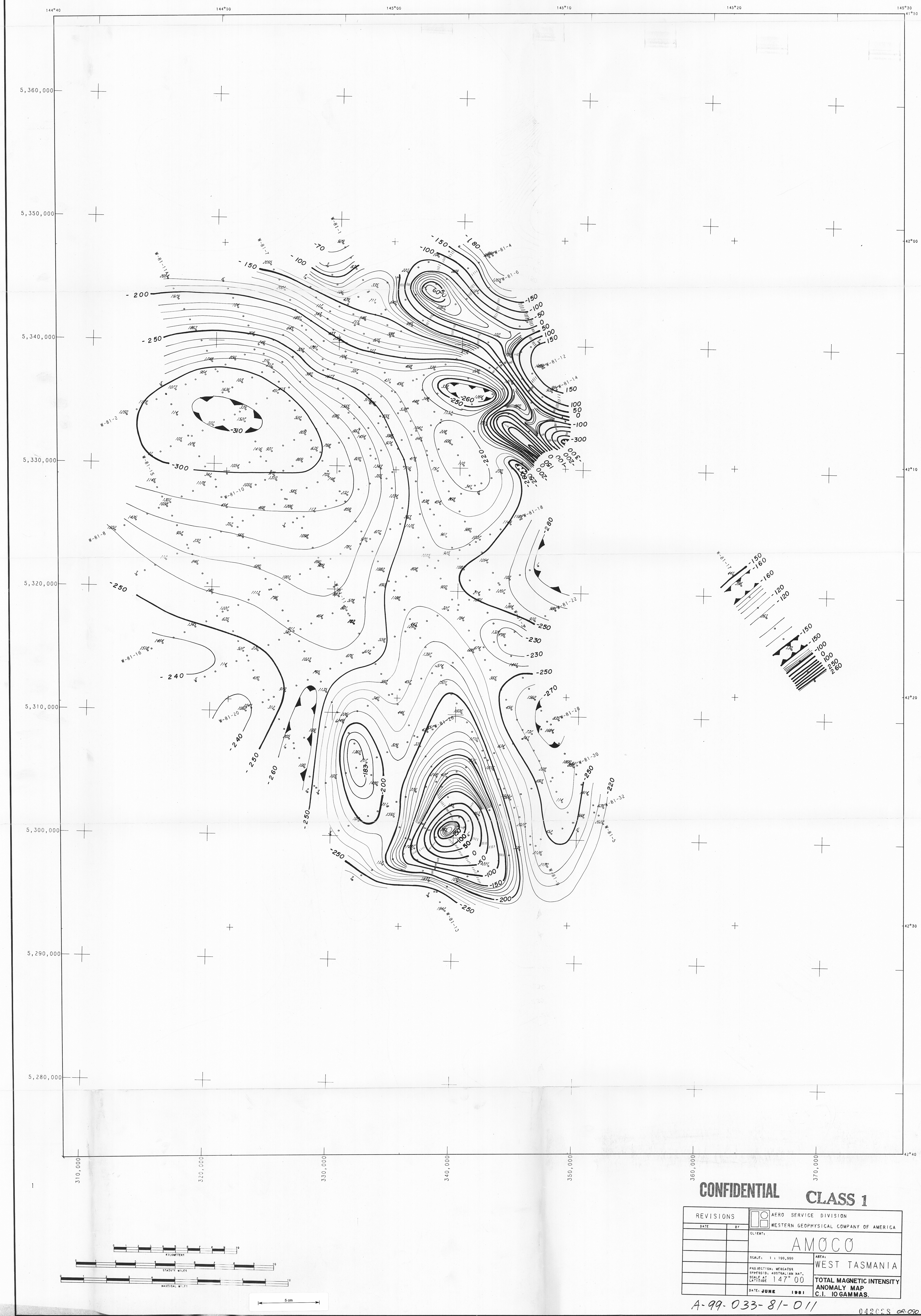
6

A-99-033-81-010

042027

OR-090

T/12P



CONFIDENTIAL

CLASS 1

REVISIONS		AERO SERVICE DIVISION WESTERN GEOPHYSICAL COMPANY OF AMERICA	
DATE	BY	CLIENT: AMØCØ	
		SCALE: 1 : 100,000	AREA: WEST TASMANIA
		PROJECTION: MERCATOR SPHEROID: AUSTRALIAN NAT. SCALE AT LATITUDE 147° 00	TOTAL MAGNETIC INTENSITY ANOMALY MAP C.I. 10 GAMMAS.
		DATE: JUNE 1981	

(7)

A-99-033-81-011

042028 OR-090

T/12P

T/12P.

81-03

OR-090

LINE DIRECTION

VELOCITY FUNCTION

DIRECTION

LINE INTERSECTION

WATER DEPTHS (METERS)

STATIONS

AMOCO INTL OIL CO.

WEST TASMANIAN BASIN
LINE W-81-03

SP 1 TO SP 1269
STRUCTURAL STACK

INPUT REEL HEADER INFORMATION

REEL NUMBER
DATE CREATED 05/30/81
NUMBER SAMPLE/TRACE 1250
SAMPLE RATE IN MILLS 4.00
PROCESSOR
LINE NUMBER
JOB NUMBER
SECTION NUMBER
PROCESSING STEP

FIELD INFORMATION

RECORDED BY: WESTERN GEO.
FOLD: 48
SPREAD: 0- 200-2375
GROUP INTERVAL: 25M
SHOT INTERVAL: 25M
NO. OF GROUPS: 96
SAMPLE RATE: 2MS.
RECORD LENGTH: 5SEC.
INSTRUMENT: DFS V
FILTER: OUT -128/70

GEOPHONE TYPE: N/A
GEOPHONE INTERVAL: 25M
GEOPHONES/GROUP: 20
DEPTH OF CABLE: 12M
ENERGY SOURCE: AIRGUN
LENGTH OF ARRAY: 10M
DEPTH OF SOURCE: 6M
NO. OF GUNS: 10
DATE RECORDED: MARCH 1981

DATUM: MEAN SEA LEVEL

PROCESSING SEQUENCE

01) DEMULTIPLEX
02) AMPLITUDE RECOVERY
03) RESAMPLE 2 TO 4MS.
04) COMMON DEPTH POINT GATHER
05) DECONVOLUTION PREDICTIVE
OPERATOR: 220MS, GAP: 20MS
GATES: (T200-T2200), (T1800-T4000)
06) VELOCITY ANALYSIS: 1/KM.
07) NORMAL MOVEOUT
08) MUTES
09) STACK, FOLD: 48
10) DECONVOLUTION SPIKING
OPERATOR: 160MS
GATES: (T200-T2200), (T1800-T4000)
11) TIME VARIANT FILTER
GATES: (8,12,50,70), (T0-T800)
(7,11,38,50), (T1500-T2500)
(6,10,20,35), (T4000-T5000)
12) DYNAMIC EQUALIZATION
GATES: OPER.
(T0-T600) 200MS.
(T600-T5000) 600MS.

SCALE:
HORIZONTAL- 1 INCH=625M

PROCESSED BY: T. GREENE/S. HOLLOWAY
CHECKED BY: R.V. BLISS

CGG - data processing services

HOUSTON, TEXAS

FILMING PARAMETERS

PERCENT GAIN 150
HORIZONTAL SCALE 50.000 TR/IN
VERTICAL SCALE 5.000 IN/SEC
FILMING DIRECTION LTOR
PERCENT BAR 0
POLARITY BLACK=POSITIVE
DATE FILMED 05/30/81

5 cm

042029

8

T/12P

81-07
OR-C90

LINE DIRECTION

VELOCITY FUNCTION

DIRECTION

LINE INTERSECTION

WATER DEPTHS

STATIONS

AMOCO

AMOCO INTL OIL CO.

WEST TASMANIAN BASIN
LINE W-81-07
SP 2097 TO SP 1
STRUCTURAL STACK

INPUT REEL HEADER INFORMATION

FIELD INFORMATION

PROCESSING SEQUENCE

CGG - data processing services

042030

5 cm

9

T/12P

81-12

QR-090

LINE DIRECTION

VELOCITY FUNCTION

DIRECTION

LINE INTERSECTION

WATER DEPTHS

STATIONS

AMOCO INTL OIL CO.

WEST TASMANIAN BASIN
LINE W-81-12
SP 1 TO SP 1496
STRUCTURAL STACK

INPUT REEL HEADER INFORMATION

FIELD INFORMATION

PROCESSING SEQUENCE

CGG - data processing services

5 cm

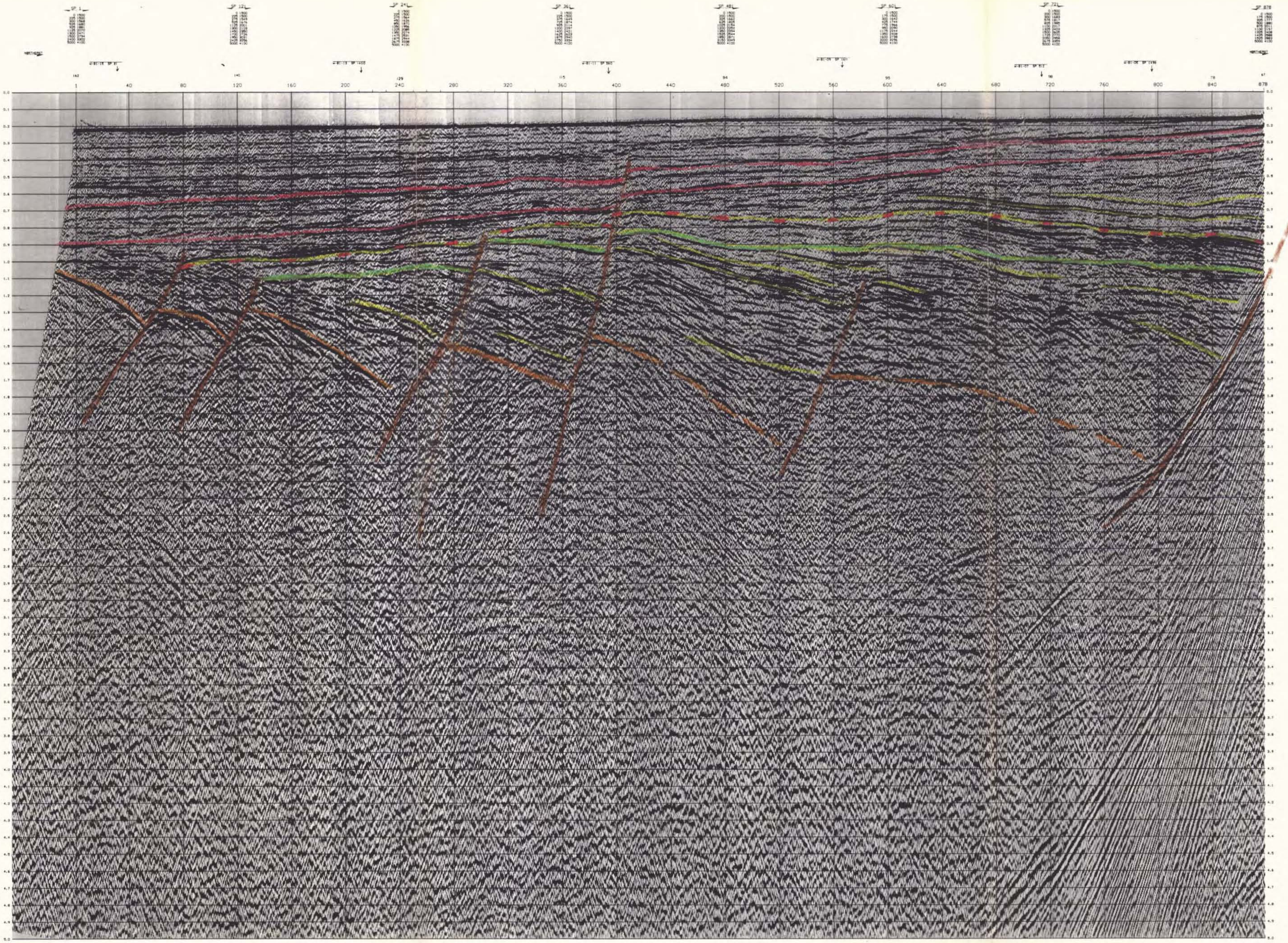
042031

(10)

T/12P

81-26

OR-090



LINE DIRECTION

VELOCITY FUNCTION

DIRECTION

LINE INTERSECTION

WATER DEPTHS (METERS)

STATIONS

AMOCO INTL OIL CO.

WEST TASMANIAN BASIN
LINE W-81-26
SP 1 TO SP 878
STRUCTURAL STACK

FIELD INFORMATION

DATUM: MEAN SEA LEVEL

PROCESSING SEQUENCE

SCALE: HORIZONTAL- 1 INCH=625M

CGG - data processing services

HOUSTON, TEXAS

5 cm

042032

(11)