

447001

TPR
OR-357A



Amoco Australia Petroleum Company

**PELICAN-5 PROGNOSIS
EXPLORATION PERMIT T/22P
OFFSHORE TASMANIA**

DECEMBER 1985

**CONFIDENTIAL
CLASS 1**

TPR
OR-357A

CONTENTS

APPLICATION FOR PERMISSION TO DRILL
WELL PROGNOSIS
EVALUATION PROGRAM
SAMPLING PROGRAM

FIGURES

1. WELL LOCATION MAP

ENCLOSURES

1. SEISMIC LINE TNK4-87

**Amoco Australia Petroleum Company**

(Inc. in Delaware, U.S.A., with Limited Liability - Registered
as a Foreign Company in Tasmania)

15 Blue Street, North Sydney
P.O. Box 126, North Sydney 2060
Phone (02) 957 4500
Telex AA23359
Facsimile (02) 922 4886

December 17, 1985

Mr. Hugh Murchie,
The Director of Mines,
Tasmanian Department of Mines,
P.O. Box 56,
Rosny Park. Tas. 7018

Dear Sir,

Re: Permit T/22P Application for Permission to Drill Well Prognosis
MISC-AUP-567-L-400-SCB

Amoco Australia Petroleum Company, as Operator of the Exploration Permit T/22P in the Bass Basin, hereby applies for permission to drill the well Pelican -5 to a total depth of 4263 meters to test sandstone objectives in the Eastern View Coal Measures (Late Cretaceous to Eocene).

The well would be located at:

Latitude 40 degrees 20 minutes 43.58 seconds South
Longitude 145 degrees 51 minutes 49.21 seconds East

on seismic line TNK4-87 at shotpoint 240 in a water depth of 77 meters (Attachment 1).

The enclosed Prognosis illustrates the structural position of the well, location, predicted lithology and the planned evaluation program.

Yours faithfully,

Steven C, Bane
Exploration Manager

SCB/lrc

Attach.

COMMONWEALTH OF AUSTRALIA
PETROLEUM (SUBMERGED LANDS)
ACT, 1967-1974

STATE OF TASMANIA
PETROLEUM (SUBMERGED LANDS)
ACT, 1982

APPLICATION FOR PERMISSION TO DRILL

To: The Designated Authority,
 Department of Mines,
 PO Box 56,
ROSNY PARK,
 Tasmania. 7018

.....AMOCO AUSTRALIA PETROLEUM COMPANY.....

.....
 OPERATOR FOR AMOCO AUSTRALIA PETROLEUM COMPANY, SOUTH
 AUSTRALIAN OIL AND GAS CORPORATION PTY LTD, BASS STRAIT
 being the
 (state whether permittee, licensee, or operator for)
 OIL AND GAS NL., HAMPTON OIL AND GAS GROUP PTY LTD, PHOENIX OIL AND GAS
 NL., SOUTH EASTERN PETROLEUM NL., TASMANIAN OIL AND GAS NL., FORSYTH
 OIL AND GAS NL., AND TASSOIL LIMITED.....

of exploration permit (production licence) no. .TASMANIA T/22P.....

situated in the area specified as being adjacent to the State of TASMANIA
 hereby applies for permission to drill a well.

The following information is submitted in support of the application.

- i. Name of the well .PELICAN NO 5.....
- ii. Location (latitudes and longitudes) .145° 51' 49.21" E Long.....
40° 20' 43.58" S Lat.....
- iii. Block number ...0311 (SK 55).....
- iv. Estimated cost ...US \$ 11,465,647.....
- v. Name and address of the contractor DIAMOND M. DRILLING COMPANY.....
 ...10 LAMPTON AVENUE, DERWENT PARK ...TAS...7009.....
- vi. Name of drilling vessel ...DIAMOND M. EPOCH.....
- vii. Port from which drilling vessel will operate
- viii. Scheduled commencement date .12 JANUARY, 1986.....
- ix. Estimated duration of drilling ...106 DAYS.....

- x. Target depth ... 14,000 FT MSL (4,268 m)
- xi. Copy of technical details of the drilling vessel and drilling equipment, together with a detailed Operational Sequences Manual, Emergency Response Plan and seven (7) copies of the Oil Spill Contingency Plan (if these items have not previously been supplied).
- xii. Drilling programme to be attached.
- xiii. Geological prognosis to be attached.
- xiv. Seismic map to be attached, or, if previously supplied, reference to the particular survey is to be made.
- xv. Location map to be attached.
- xvi. Other information it is desired to have considered by the Designated Authority.

.....

.....

.....

Dated at HOBART this 9TH day of DECEMBER 1985

C. W. Waring

 (applicant) *ec*

C. W. WARING
 PRESIDENT
 AMOCO AUSTRALIA PETROLEUM COMPANY

Note:

Seven (7) copies of this application plus item xv (size A4), together with three (3) copies of items xii, xiii, xiv are to be submitted not less than one (1) month prior to the commencement of operations.

WELL PROGNOSIS

The Pelican -5 well will test marginal and non-marine sandstones with intraformational shales acting as seals within the Eastern View Coal Measures of Late Cretaceous to Eocene age.

The Pelican structure is a faulted anticline defined by a 1 by 2 kilometer grid of poor to fair quality seismic data. The structure is broken by a series of northwest-trending normal faults downthrown into a central graben. Faulting was contemporaneous with deposition of the Eastern View Coal Measures and did not continue during the deposition of younger formations. The structural trend is approximately 60 kilometers long and is about 10 kilometers wide.

Three wells have been drilled on the Pelican structure. The Pelican -1 and -2 wells were drilled in 1970 by Esso Exploration and Production Australia Inc. and the Pelican -4 well was drilled in 1979 by Hematite Petroleum. All three wells found gas and condensate on formation interval tests in Eocene sandstones of the Eastern View Coal Measures. No production tests were conducted. The porosity of sandstones recovered in cores ranges from 13 to 23 percent and the permeability ranges from 1 to 400 millidarcies. Well log calculations indicate 30 to 60 meters of net hydrocarbon-bearing sandstone beds. Calculations of pay are sensitive to a changing water resistivity. No uncontaminated water samples were collected.

One objective of the Pelican -5 well is to test these sandstones of the Eastern View Coal measures to establish production rates and liquid hydrocarbon yields. In addition, approximately 1220 meters of Paleocene and Cretaceous section below the total depths of Pelican wells 1,2 and 4 will be tested in a structurally favourable position.

This deeper section is expected to be fluvial and lacustrine, generally shalier and less coaly than the higher pay section. Vitrinite reflectance in the Pelican -1 well averages 0.81 percent at 3170 meters suggesting that the untested portion of the Paleocene section lies within the peak oil stage of thermal maturity. Source rocks that may be present at the total depth of 4263 meters RKB in the Pelican -5 well are expected to be beyond the oil generating stage of thermal maturity. The possibility of finding additional hydrocarbons is supported by a recent geochemical study of a condensate sample from the Pelican -1 well. This study indicates a high thermal maturity for the condensate suggesting a deep source, possibly below 4263 meters RKB. The gas and condensate discovered by the Pelican wells may have migrated upward through the Cretaceous and Paleocene rocks which would be drilled by the Pelican -5 well.

EVALUATION PROGRAM

The evaluation program has been developed based on the following casing points measured below the rotary Kelly bushing:

<u>Casing Size</u>	<u>Shoe</u>	<u>Formation</u>
30 inch	185 M.	Torquay Group
20 inch	404 M.	Torquay Group
13 3/8 inch	1745 M.	Demons Bluff
9 5/8 inch	3200 M.	Eastern View

SAMPLING PROGRAM

- Drill cuttings would be taken from the 30 inch shoe (185 meters) to Total Depth as follows:

<u>Sample Type</u>	<u>Interval</u>
Washed and Dried (6 sets)	10 m samples from 185-1631m 5 m samples from 1631-1745m 3 m samples from 1745-4263m

Samples will be collected in paper or plastic bags.

Wet (Paleo-Palynology) (2 sets)	10 m wet composites from 185-1745m 9 m wet composites from 1638-4263m Samples collected in cloth bags
------------------------------------	---

Wet (Geochemistry) (1 set)	9 m wet composites from 1745-4263m Samples collected in 1 litre cans.
-------------------------------	--

- Conventional cores to more thoroughly investigate shows and potential reservoir rocks would be cut upon the recommendation of the wellsite geologist with concurrence of Amoco's Sydney Office.
- Sidewall cores would only be taken below the 13 3/8" shoe, to complement any conventional cores cut, and would be programmed to obtain detailed palynological, geochemical and lithological data. Extra sidewall cores would be located around suspected unconformities and within zones of hydrocarbon shows.
- Drilling fluid samples in 1 litre cans would be taken of drilling mud in and out every 250m. These samples would be used as a check on mud filtrate properties for logging and testing programs.

Analytical Program

- Core Analysis

Core Laboratories Inc. in Adelaide would do routine or special core analysis as the case may dictate.

- Paleontological and Palynological Analysis

David Taylor of D & Y Taylor would do the paleontological analysis. This work, would be restricted to that portion of the hole above the Eastern View Coal Measures and would consist of an analysis every 100 meters from the 10 meter composite samples.

Roger Morgan of Analabs would conduct the palynologic work. During drilling wet composites would be analysed routinely every 100 meters from the top Eastern View Coal Measures to total depth. Later, as considered necessary samples would be analysed on a maximum interval spacing of 25 meters. The sample material would be comprised of conventional core, sidewall core and cuttings obtained during the drilling of the well.

- Geochemistry

With the exception of vitrinite reflectance determinations all geochemical analyses would be conducted by Analabs. The geochemical program would initially consist of headspace analyses of composite canned samples from the top Eastern View Coal Measures to total depth. This would be followed by more screening analyses in the form of TOC and subsequent Rockeval pyrolysis. More detailed hydrocarbon and bitumen evaluations would be conducted if the analyses confirmed potential source rocks and if free hydrocarbons were obtained from the well.

Vitrinite reflectance determinations would be conducted concurrently during the drilling of the well by Brian Watson of Amdel. The analyses would be done every 200 meters from the top of the Eastern View Coal Measures to total depth.

Wireline Logging Program

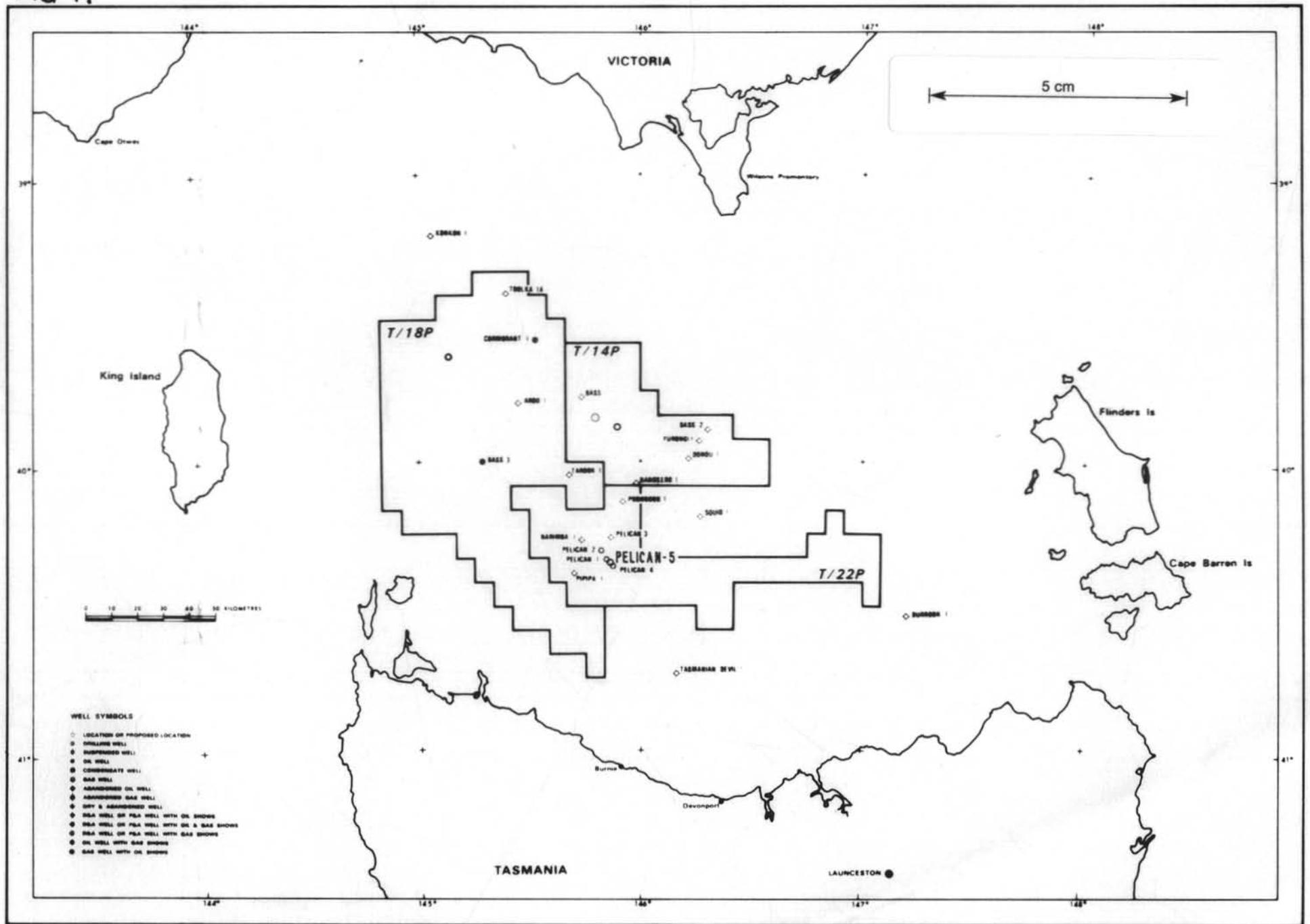
The following wireline logging program is planned (Schlumberger terminology):

<u>Interval</u>	
20" to 13 3/8" Casing 404 to 1745 meters	ISF-BHC-GR-SP-CAL (GR to Seabed)
13 3/8" to Total Depth 1745 to 4263 meters	ISF-BHC-GR-SP-(MSFL/CAL) LDT-CNT-GR HDT (404-1745m. if required) VSP (optional) CST (404-1745 m. if required)

Testing Program

The decision to test the hole would be based on encouragement from mud log shows and wireline log analysis. The rig would be equipped to conduct both RFT's and conventional DST's through casing.

Fig 1.



447010

ENCLOSURE 1
447011 LINE TNK4-87
S.P. 1-863
N.E.
DIRECTION OF SHOOTING
6000% MIGRATION

AMOCO PRODUCTION CO (INTL)
BASS BASIN
AUSTRALIA

GeoCenter
DATE PROCESSED APR. 1985
REEL NUMBER 3924
CONTRACT NUMBER 5840

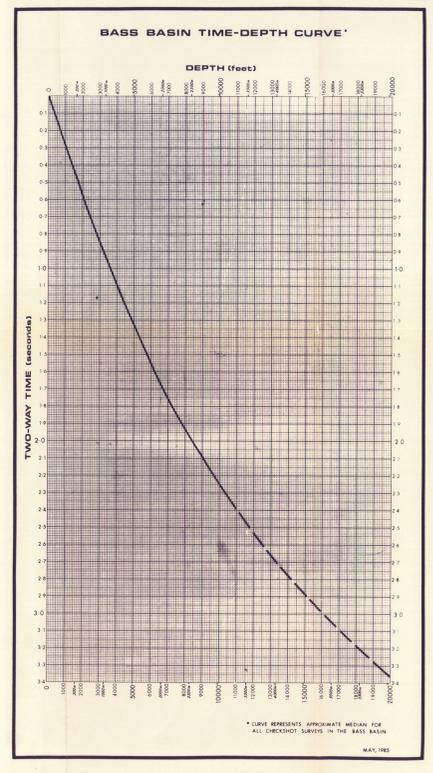
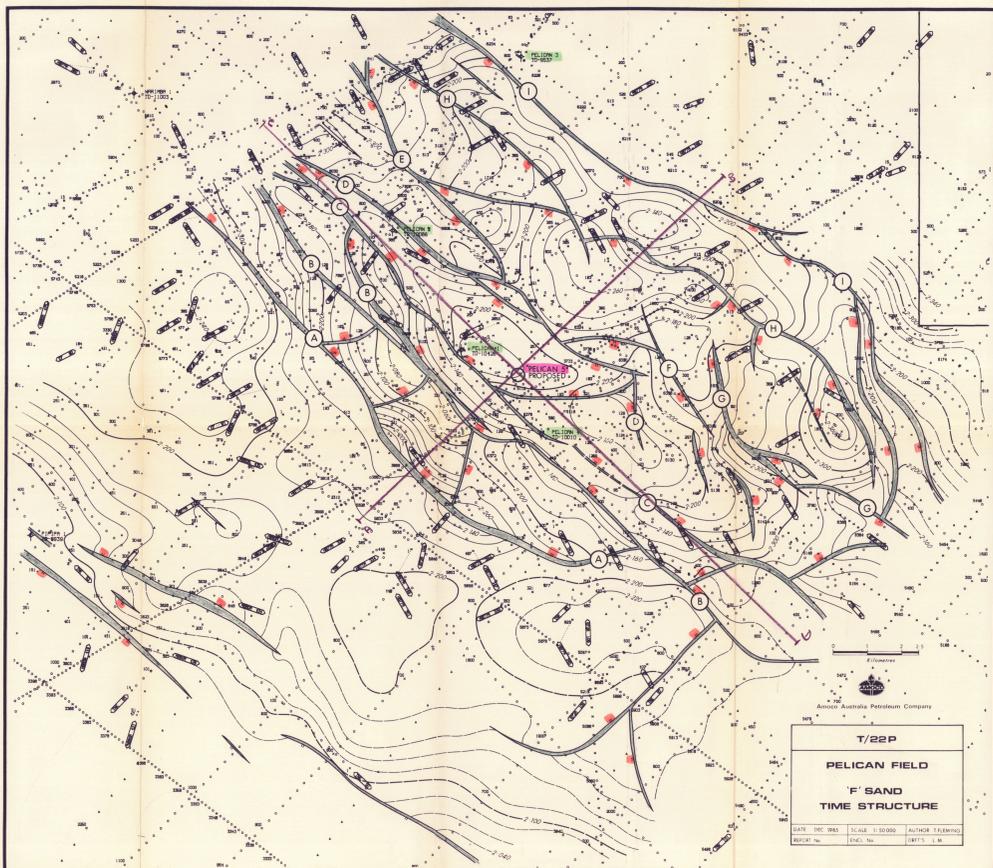
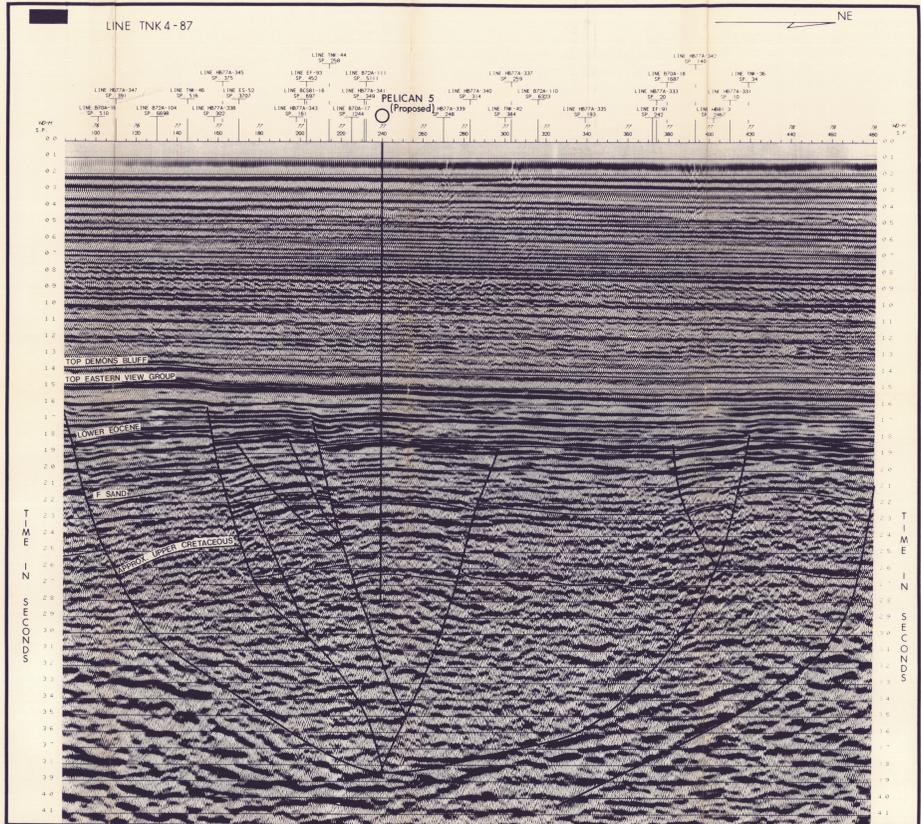
FIELD RECORDING
RECORDED BY G.S. I. PARRY 2931 M/S EUGENE HODDERHOTT J.J.
DATE NOV 1984 SYSTEM TRF 001
FORM# SEED GAIN TFF
ENERGY SOURCE
TYPE AIRGUN 40'S CU IN PRESSURE 1800 PSI
ARRAY 20 GUNS OVER 20M DEPTH 10M
STREAMER
LENGTH 3800M NO TRACES 2ND
DEPTH 15M GROUP INTERVAL 1.5M
ARRAY GEOPHYSICIAN OVER
PARAMETERS
RECORDING FOLD 60 S.P. SPACING 30M
SAMPLE INTERVAL 2MS RECORD LENGTH 65SECONDS
RECORDING FILTER HI-CUT 1200HZ/200 LO-CUT 800HZ/1800

DIGITAL PROCESSING

SEQ	PROCESS	PARAMETERS
1	ALIGNMENT	NO. 1
2	FLATTEN	NO. 1
3	STATIC	AIRGUN 1 (STANDARD DELAY)
4	NOISE GATE	NOISE GATE 1 (AS ABOVE)
5	SIGNAL GAIN	10000
6	DECONVOLUTION	NO. 1
7	VELOCITY ANALYSIS	NO. 1
8	NOISE GATE	NO. 1
9	VELOCITY ANALYSIS	NO. 1
10	NOISE GATE	NO. 1
11	NOISE GATE	NO. 1
12	NOISE GATE	NO. 1
13	NOISE GATE	NO. 1
14	NOISE GATE	NO. 1

DECON
FILTER

SAMPLE RATE 4MS DATUM CORRECTION 10MS
SCALES: HORIZONTAL 40:87 TPI VERTICAL 3:75 TPI
RECORDING POLARITY: PRESSURE INCREASE IS -VE NUMBER
PROCESSING POLARITY: POSITIVE NO. GIVES BLACK PEAK



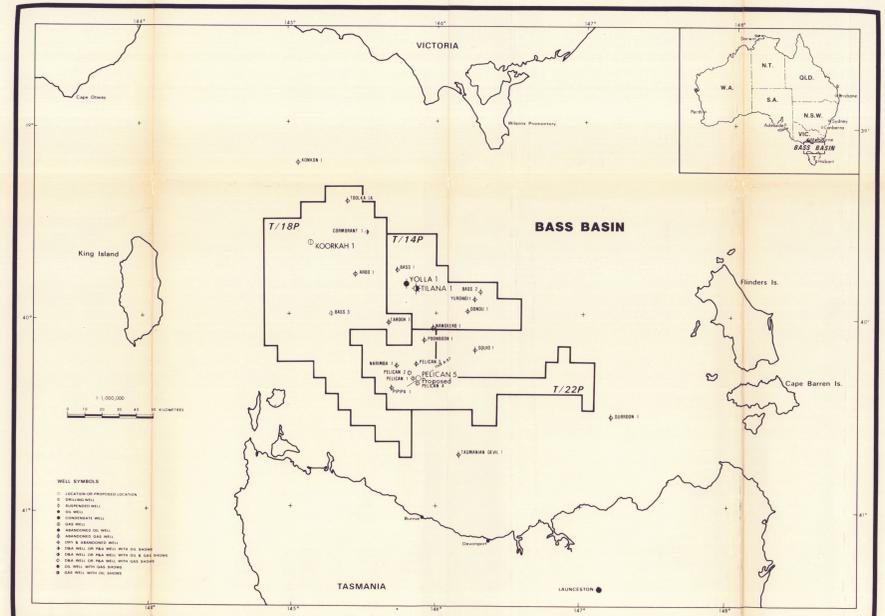
AMOCO Australia Petroleum Company
AREA T/22P
SURFACE LOCATION LAT. 40°20'43.58"S LONG. 145°51'49.21"E (Proposed)
SPUD COMPLETION WATER DEPTH KB ELEV. 77m/22m DRILLERS TD.

WELL PELICAN No. 5
LOCATION BASS STRAIT TASMANIA SEISMIC LINE TNK4-87 SP 240

DRILLING HISTORY

MUD SAMPLES	DITCH SAMPLES	CORE	ANALYTICAL PROGRAM	WIRELINE LOGGING	CASSED HOLE DST'S	PROGNOSIS	DRILLED	PALEONTOLOGY	CASING	Depth m ft	Spud Date	Accumulated days from spud date	DRILLING	MUD WT. / FCCT (PPG)	PV / YP	LDS / MBT / CCB (PPB)	WL / HTHP

Notes: DRILL 30" HOSE, SET 30" CONDUCTOR, SUPPLY UP DIVERSE; SET 90" CASING, INSTALL BOP'S; DRILL 12 1/2" HOSE; LOGS SITE NO. 1, SET 10 1/2" CASING, CHANGE TO FRESH WATER MUD SYSTEM, DRILL 12 1/2" HOSE; LOGS SITE NO. 2, SET 8 1/2" DRILL 8 1/2" HOSE; LOGS SITE NO. 3, 7" LINES TEST P.R. 2 (208 DAYS).



AMOCO
Amoco Australia Petroleum Company

T/22P

PELICAN 5
Well Prognosis

Report No. Enclosure No. Author
Date: DECEMBER, 1985 Scale: L.M. Draw. No. PU-150