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UNION TEXAS AUSTRALIA INCORPORATED

FOURTH YEAR - THIRD QUARTER (TO 3RD JANUARY 1983)

PETROLEUM EXPLORATION PERMIT T13P

OFFSHORE TASMANIA

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Permit T13P, Offshore Tasmania  
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1. T13P Seismic Programme 1982 (Designation UT82)

1. ADMINISTRATION

Pursuant to Section 103 of the PSLA 1967, Otter Exploration N.L., acting in its capacity as Operator of Permit T/13P applied on December 15, 1982 for a variation of the exploration work programme in the permit. Otter proposed that a comprehensive geological and geophysical study be conducted during the fifth year of the permit and that the two exploratory wells contemplated in the original permit work program be deferred until the sixth year of the permit. Notice of the approval of the application was given by telex dated January 13, 1983.

Union Texas, having completed a 183 km. seismic programme as required under the terms of the May 1982 Seismic Option/Farmout Agreement, agreed to assume operatorship of the permit and to conduct the geological and geophysical evaluation. In return, the Union Texas group, which in addition to Union Texas includes Cultus Pacific, Ampol Exploration, CRA Exploration, York Resources, Metramar Minerals and Sovereign Oil earned an undivided 50% interest in the permit and acquired an option to earn an additional 25% by drilling one well. The document which sets forth this agreement is pending FIRB and Reserve Bank approval. Following approval, it will be executed and submitted to the Designated Authority.

The new Heads of Agreement supersedes the May 1982 Seismic Option/Farmout Agreement which terminated December 31, 1982. Accordingly, transfer documents recording title in Pan Pacific, Meridian, Valiant and Ocita are the only documents which have been filed with the Department of Mines and still await Designated Authority approval.

## 2. GEOLOGICAL AND GEOPHYSICAL STUDIES

Prior to acquiring a working interest in Permit T13P, the Union Texas Group (including Union Texas Australia, Cultus Pacific, Ampol Exploration, CRA Exploration, Metramar Minerals, Sovereign Oil and York Resources) had conducted an extensive appraisal of Permit Vic P/12 immediately to the north of Permit T13P. This appraisal had included the drilling of a single well, Pisces No. 1, during April-May, 1982. While the Pisces well had not encountered significant hydrocarbons a great deal of important geological and geophysical information had been accrued which proved to be of immediate importance to the exploration for hydrocarbons in Permit T13P.

In particular two distinctly different play types in Permit Vic P/12 had been recognised as extending southwards into Permit T13P. These were:

- (i) Top Latrobe structures produced by the drape of Latrobe Valley Group sediments across old underlying Basement Highs. The Basement Highs were considered to be horst blocks developed by the intersection of WNW-ESE and N-S trending basin boundary normal faults during the Early Cretaceous phase of rifting of the Gippsland Basin. It was recognised that such Top Latrobe structures were unique to the northeastern part of Permit T13P and Vic P/12.

Geochemical studies suggested that Campanian and pre-Campanian Latrobe Valley source rocks had reached the level of hydrocarbon maturation very early in their history and that hydrocarbons were being generated in the northeastern parts of Permits Vic P/12 and T13P since the Maastrichtian period 65-70 million years ago. Therefore, the Top Latrobe structures recognised in Permits T13P and Vic P/12 should have been capable of entrapping

hydrocarbons since that time. In addition it was realised that intra-Latrobe traps associated with the same Top Latrobe plays should also have been able to act as adequate traps to migrating hydrocarbons.

- (ii) Geophysical studies prior to the drilling of the Pisces No. 1 well in Permit Vic P/12 had suggested the existence of a very large intra-Lakes Entrance Formation stratigraphic trap trending northwest to southeast across the shallow Platform area in the western central part of Permit Vic P/12. From previous seismic studies it had been suggested that the mapped feature represented a barrier sand complex within the Lakes Entrance Formation. Seismic mapping strongly suggested that the feature continued southeastwards across the width of Permit Vic P/12 and into Permit T13P.

The results of Pisces No. 1 suggested that the mapped complex would consist of Middle Miocene shelfal sands which had prograded northeastwards into deep water and had been redistributed by strong oceanic currents into a northwest to southeast alignment. While Pisces intersected thin interbeds (up to 2 m.) of clean, well sorted sands deposited in water depths in excess of 200 m. (shelf break/slope environment), it was believed that the equivalent section across the Platform area of Vic P/12 and T13P would consist of thicker, shelfal sands deposited in a more proximal position.

The trap associated with this so-called "Gemini Trend" involved structural reversal to the north and east, combined with stratigraphic truncation or facies changes to the west and south. Amplitude and velocity anomalies recognised along the western margin of the "Gemini Trend" suggested that the hydrocarbon trap had been breached and that gas was escaping along this western margin. The seismic survey undertaken by the Cultus Gorup within

the confines of Permit T13P during December 1981 had been designed to follow the Gemini Trend southeastwards into that Permit.

The GC 81A survey had indeed confirmed the existence of the Gemini Trend in Permit T13P.

The drilling of Pisces No. 1 had also suggested the existence of a series of sub-basins or half-grabens in the northeastern, deeper water parts of Permits Vic P/12 and T13P. Geochemical studies and heat flow measurements had suggested that these sub-basins, while containing thinner prospective Latrobe Valley Group sediments were hotter and retained a shallower "oil-window" than the more typical Deep Gippsland Basin. However, from further geological and geochemical studies it was still believed that the main source area for the potential hydrocarbons in Permits T13P and Vic P/12 would be the "Central Deep" lying north of Permit Vic P/12.

The geophysical programme developed for Permit T13P (survey designation UT 82) in late 1982 was, therefore, designed to map the following:

- (a) the possibility of the existence of Top Latrobe Valley Group (or equivalent) structures produced by drape across Basement horst blocks in the shallower water parts of Permit T13P.
- (b) the possible southeastward extension into Permit T13P of the "Gemini Trend" recognised in Permit Vic P/12 to the north.
- (c) the possible existence of half-grabens or sub-basins in the north-eastern part of Permit T13P.

Because of these technical constraints and the limited extent of the proposed survey (180 line kms.), the seismic programme was restricted

to the shallower water areas of the northeastern corner of Permit T13P  
(Enclosure 1).

### 3. GEOPHYSICAL OPERATIONS

Tenders for the T13P seismic programme were called for during the third quarter of 1982. Following an analysis of the bids, contracts for the acquisition and processing of the seismic data were awarded to Geophysical Service International (G.S.I.).

A submission for the UT82 seismic survey was presented to the Tasmanian Mines Department on November 2nd, 1982.

The survey commenced at 13.15 hrs. on November 28th and was completed at 14.00 hrs. on November 30th, 1982. The survey was shot by GSI Party 2931 using the "Eugene McDermott II" seismic vessel. Navigation for the survey was provided by the Syledis system.

A total of eight (8) seismic lines was recorded, with a total coverage of 183.475 line kms.

The following gives the costing for the survey:

(1)	Total chargeable time	=	2.031 days.
(2)	<u>Acquisition Costs</u>		
	Mobilisation Cost	=	\$48,000.00
	Seismic line cost : 183.475 x \$69/km	=	\$12,659.78
	Day rate : 2.031 x \$32,000/day	=	\$64,992.00
			<hr/>
	Total acquisition cost	=	\$125,651.78
(3)	<u>Navigation Costs</u>		
	Mobilisation of Syledis System	=	\$11,000.00
	Day rate : 2.031 x \$2,800/day	=	\$5,686.80
			<hr/>
	Total Navigation Cost	=	\$16,686.80
	Grant Total Cost	=	\$142,338.58
			<hr/> <hr/>

Processing of the UT82 seismic data began immediately in GSI's Perth office. Initial results of this processing were expected to be available within the first few weeks of January, 1983



# UNION TEXAS ASIA CORPORATION

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February 3, 1983

Mr. H. Murchie  
Director of Mines  
Tasmania Department of Mines  
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HOBART, TASMANIA 7018

D of M	1/2	CG	E.O.	D.S.
				Registrar
Received	- 4 FEB 1983			E & IL
Answered				
DEPT. OF MINES				
REF. No. 894/83				

R.G.R

*Copies sent to BMD & Nat Res*

Dear Sir

FIFTH YEAR (1983) WORK PROGRAMME  
PROPOSED SEISMIC SURVEY, PERMIT T13P, OFFSHORE TASMANIA

Under the terms of the Petroleum Submerged Lands Act (1967), Directions as to Geological and Geophysical Surveys, Schedule 1, Section 4 (1)(a), Union Texas, on behalf of itself and its joint venture partners submits a proposal to conduct a marine seismic survey in Permit T13P, Offshore Tasmania, under an arrangement with the Otter Group, the present permit holders.

The seismic survey constitutes the major project to be undertaken during the fifth year of the Permit (1983) as was described in the detailed work programme submitted to the Tasmanian Mines Department on December 15th, 1982.

The proposed survey entails a total of approximately 200 line kms. of seismic coverage encompassing seismic leads previously identified in the northeastern corner of the Permit. The location and orientation of the proposed seismic pattern are presented in the enclosed map.

The basic parameters which have been defined for the survey are as follows:

- (1) Data acquisition = 240 channel; 60 fold.
- (2) Streamer length = 3600 m.
- (3) recording tape =  $\frac{1}{2}$ " 9 track phase equalised SEGB format
- (4) energy source = tuned airgun array of 4075 cu. ins. capacity controlled by the "Tiger System" to ensure that all guns fire 51msecs. after the field time break to an accuracy of  $\pm 0.5$  msec.

..2...

...2...

- (5) nominal airgun pressure = 1800 p.s.i. (not less than 1600 p.s.i.)
- (6) depth of airgun array = 6m. (+ 1 m.)
- (7) inoperational guns not to exceed 15% of the total airgun array volume at any one time.
- (8) output of airguns = 80 bar metres (before D.F.S.)
- (9) primary signal/bubble ratio  $\geq$  10:1.
- (10) hydrophone streamer used to be a "Multiplex" streamer; 240 channel; 15 m. group interval; 3600 m. total length; cable diameter = 1.74 ins./4.3 cm; 20 seismic electronic modules each controls 12 channels; 80 hydrophones per group; hydrophones to be Texas Instruments' Dish hydrophone; each group = 32 volts/bar with feedback capacity at highest gain.
- (11) cable depth = 10 to 12 m.
- (12) feathering of the cable to be no more than  $10^0$ .
- (13) recording instrument = D.F.S. V.

The basic processing parameters for the seismic data will be as follows:

- (1) amplitude recovery
- (2) resampling
- (3) time variant deconvolution (or designation)
- (4) common depth point gather
- (5) time variant scaling
- (6) near trace gather
- (7) velocity analysis
- (8) normal move-out correction
- (9) common depth point stack
- (10) time variant deconvolution

...3..

...3...

- (11) time variant filtering
- (12) time variant scaling
- (13) final stack to be printed on film.

The survey will be conducted in March-April, 1983 by G.S.I. using the "Eugene McDermott II" seismic vessel. Navigation for the survey will be provided by an Argo/Syledis system. All data processing will be conducted by G.S.I. in their Perth, Western Australian office.

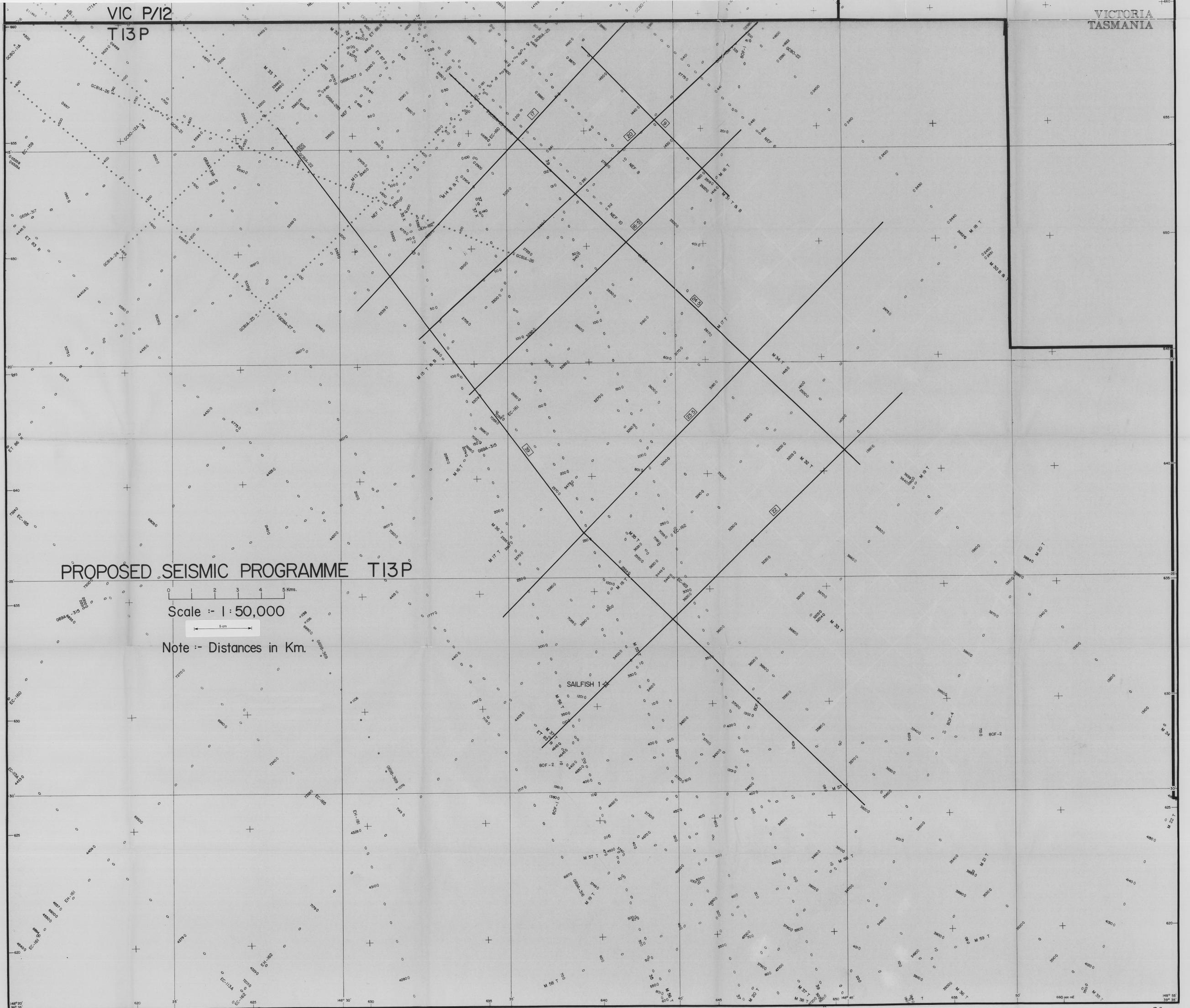
Yours faithfully

*Phillip R. Davies*

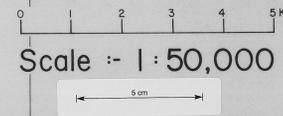
PHILLIP R. DAVIES  
SENIOR GEOLOGIST  
UNION TEXAS AUSTRALIA INCORPORATED

PRD:bc

VIC P/12  
T13P



PROPOSED SEISMIC PROGRAMME T13P



Note :- Distances in Km.

UNION TEXAS AUSTRALIA INCORPORATED  
FOURTH YEAR - FOURTH QUARTER (TO APRIL 2, 1983)  
PETROLEUM EXPLORATION PERMIT T13P  
OFFSHORE GIPPSLAND BASIN

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C O N T E N T S

1. Administration
2. Geological and Geophysical Studies
  - 2.1. Introduction
  - 2.2. 1983 Work Program
3. Review of Prospects/Leads
4. Geophysical Operations

Attachments

1. Summary of Expenditures 3.1.83 - 2.4.83

Enclosures

1. Seismic Program Map

1. Administration

On January 13, 1983 the Director of Mines advised that the Designated Authority had approved the variation of the work program proposed by Otter Exploration N.L. in their application of December 15, 1982. As a result of that application and approval, an extensive geological and geophysical study was approved as the fifth year work program and the drilling of two exploratory wells was deferred until the sixth year of the permit.

In February, the Reserve Bank advised that it had no objection to the completion of the Heads of Agreement under which a consortium, lead by Union Texas, would undertake the fifth year work program to earn a 50 percent interest in the permit and an option to earn an additional 25 percent by drilling one well. The Foreign Investment Review Board also approved the Heads of Agreement in March.

Having agreed to assume Operatorship of the permit, Union Texas submitted on February 2, 1983, an application to conduct the 200 KM seismic survey which was part of the fifth year work program. Approval to conduct the survey was given by the Director on March 17.

## 2. Geological and Geophysical Studies

### 2.1. Introduction

On December 15th, 1982, Union Texas Australia, acting on behalf of its Joint Venture Partners and acting as representative for Otter Petroleum and Meridian Oil, submitted to the Tasmanian Mines Department, Hobart and the Department of National Development, Canberra an application for a variation of the fifth year work program for Permit T13P. The submission requested that the two exploration wells contemplated in the original permit work program for the fifth year be deferred until the sixth year and that a comprehensive geological and geophysical study be substituted.

The Union Texas group presented detailed technical reasoning in an attempt to obtain approval for the variation of the work program. In essence, it was argued that the understanding to be gained from an extensive geological and geophysical program would surpass that which would be gained by the drilling of a single well. Additionally, a similar detailed study was proposed in the immediately adjacent Permit VIC P/12 wherein leads had been identified which could be extrapolated to the Permit T13P. It was felt that such an extensive evaluation was a logical step in an integrated exploration program which would lead to selection of more optimally situated well locations for future drilling.

Otter Petroleum was notified of the requisite approval of the variance of the fifth year work program by telex dated January 13th, 1983.

## 2.2. 1983 Work Program

### a) Geophysical Studies

The proposed geophysical program involved the acquisition of 200 line kilometers of high resolution seismic data. Interpretation of the '83 survey and integration with previous seismic data and seismic trade data will constitute a major part of the proposed geophysical program for 1983. Interpretation studies will include horizon mapping, prospect lead mapping, seismic stratigraphy studies, isopach studies and also incorporation of magnetic data.

During late March-early April, 1983, 236 kms of high resolution seismic data were shot by G.S.I. using Eugene McDermott II, as part of a program which also included acquisition in the immediately adjacent Permit VIC P/12. The T13P survey is designated GUT-83P and the data is currently being processed by G.S.I. in Sydney. Interpretation should begin in June 1983.

A magnetometer survey to enable interpretation of magnetic data in the area was run in conjunction with the GUT-83P survey. Interpretation of magnetics data is considered

essential in order to gain an understanding of Basement-involved plays which have been mapped over shallow basement areas in the western part of T13P, and also Top Latrobe structures which are developed as drape over Basement highs in the eastern part of Permit T13P.

During the fourth quarter of 1982 a seismic trade was instigated with the Phillips Australian Oil Company, as operator of Permit VIC P/18, for a trade of seismic data from VIC P/12. The trade took place in Mid January 1983 and involved exchange of 614.125 line kms of final stack sections, 274 line kms of time migrated sections, 60.825 line km of depth migrated sections, velocity data and S.P. base maps.

b) Geological Studies

The proposed geological program, as submitted in the fifth year work program variation application, involved integrated studies of well log digitization and playback, well correlation, paleo-environmental interpretation, paleostructural analysis, geochemistry, burial/thermal history analysis and trading of well data.

G.S.I. Singapore has begun a project to digitize available well logs from the area in the vicinity of Permit VIC P/12. It is envisaged that a total of 50 wells will be digitised. A first batch of 23 wells has been sent to G.S.I. and it is expected that the digitisation will be completed by the end of April. Further wells will then be dispatched to G.S.I.

As part of the paleo-environmental studies referred to in the work program, Union Texas Australia has commissioned the services of Paltech Pty. Ltd. Sydney, who will prepare a biostratigraphic, palynostratigraphic and paleo-environmental analysis for 50 wells.

During the fourth quarter of 1982, Union Texas was negotiating with Shell Australia for a trade of well data between Pisces No. 1 (VIC P/12) and Hammerhead No. 1 (VIC P/19). The trade agreement was signed on January 11th, 1983.

Additionally, during the first quarter of 1983, Union Texas agreed with Phillips Australia to trade Pisces No. 1 (VIC P/12) for Helios No. 1 (VIC P/18).

### 3. Review of Prospects/Leads

The extensive geological and geophysical work program which is being undertaken in both Permit T13P and its immediate northerly neighbor, Permit VIC P/12, is designed to identify leads present in those blocks with a view to maturing as many leads as possible into mature drillable prospects.

At this point in time, two distinctly different play types recognised in VIC P/12 have been indicated as extending southwards into Permit T13P:

I. Top Latrobe Structure (Scorpio Lead)

The Scorpio lead was formed by drape of Latrobe Valley Group sediments across an old basement high. It is analagous to similar type leads identified in Permit VIC P/12 though it is present in somewhat shallower water. The Scorpio lead has well-defined amplitude anomalies and "flat-spots" associated with it.

The GUT-83P survey has resulted in further data acquisition over this structure.

II. Intra-Miocene Plays (Gemini Trend)

The Gemini Trend occurs as a seismically defined isochron thick within the Oligo-Miocene Lakes Entrance Formation and is considered to represent a shelfal sand complex.

The trap associated with this trend involves structural reversal to the north and east, combined with stratigraphic truncation or facies change to the west and south. Additionally, a series of four-way dip-closed structures are superimposed upon the sand complex.

The GC 81A survey, which was shot by the Cultus Group confirmed that the "Gemini Trend" previously recognised in Permit VIC P/12, did extend into T13P. This extension will be further evaluated by GUT-83P survey.

4. GEOPHYSICAL OPERATIONS

Tenders for the 1983 Seismic program were called for in early January 1983. After analysis of the bids, Geophysical Service International (G.S.I.) was awarded the contract for both acquisition and processing of the seismic data.

A submission for the UT 83 seismic survey was presented to the Tasmanian Mines Department on December 15, 1982.

The survey commenced on March 29, 1983 at 1013 hours and was completed on April 5, 1983. The survey was shot by the G.S.I. seismic vessel, M/V Eugene McDermott II. Shooting parameters included 4075 cubic inch air guns, 240 channel - 3600 meter streamer cable, 60-fold recording. Magnetometer data were also recorded during the survey. Navigation was provided by an integrated SYLEDIS/ARGO system.

A total of fifteen (15) seismic lines were shot for total line profile of 236.04 km.

Following is the costing of the survey:

1.	Navigation/Mobilization	\$ 12,000.00	
	Exchange rate variation	670.49	
		<u>          </u>	
		\$ 12,670.49	\$ 12,670.49
2.	Seismic Acquisition		
	236.04 km @\$506/km	\$ 119,436.24	
	Exchange rate variation	7,170.73	
		<u>          </u>	
		\$ 126,606.97	126,606.97
3.	Chargeable down time		
	15.783 hours @\$700.00/hour	\$ 11,048.10	
	Exchange rate variation	663.53	
		<u>          </u>	
		\$ 11,711.63	11,711.63
			<u>          </u>
	GRAND TOTAL COST		\$ 150,989.09

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Processing of the seismic data began immediately in G.S.I.'s Sydney office. Initial results are expected to be available in late May 1983.

Summary of Expenditures 3.1.83 - 2.4.83  
Fourth Year - Fourth Quarter

	<u>1982</u>	<u>1st Qtr 1983</u>	<u>Total to Date</u>
Travel Expense	1,009.17	0	1,009.17
Postage, drayage, express	3.04	75.70	78.74
Contract office serv.	741.90	0	741.90
Communication	618.68	476.23	1,094.91
Maps, logs, reprod.	2,045.49	1,901.59	3,947.08
Foreign travel	5,194.66	632.87	5,827.53
Head office dir. chg.	0	1,561.66	1,561.66
Regional office alloc.	<u>19,289.89</u>	<u>143,398.59</u>	<u>162,688.48</u>
Total	28,902.83	148,046.64	176,949.47
T13P Exploration			
Seismic (1-9416)	<u>26,494.02</u>	<u>123,445.81</u>	<u>149,939.83</u>
Total	<u>55,396.85</u> =====	<u>271,492.45</u> =====	<u>326,889.30</u> =====

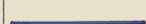
VIC P/12  
T13P

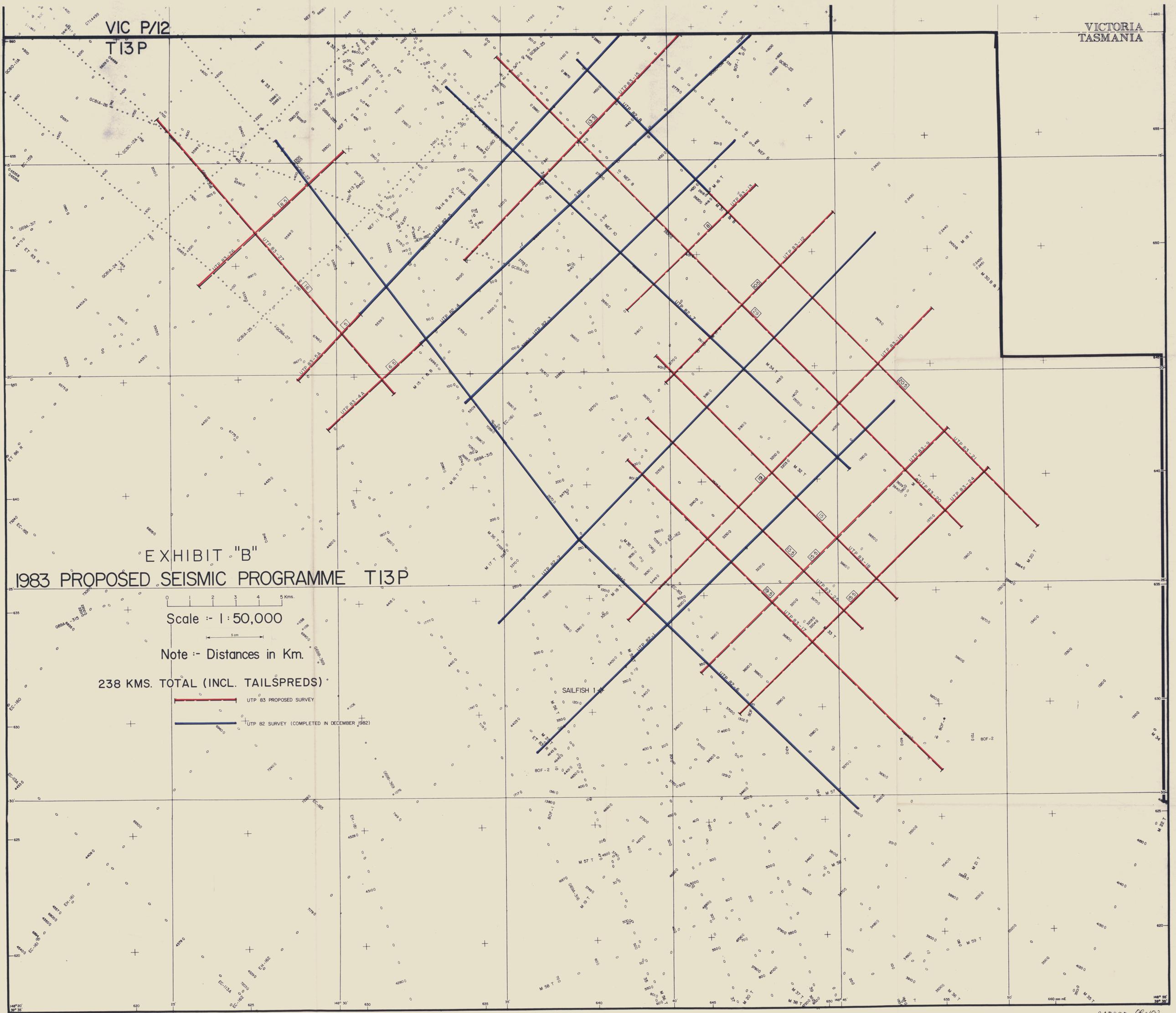
EXHIBIT "B"  
1983 PROPOSED SEISMIC PROGRAMME T13P

Scale :- 1 : 50,000  
5 Kms.  
5 cm

Note :- Distances in Km.

238 KMS. TOTAL (INCL. TAILSPREDS)

-  UTP 83 PROPOSED SURVEY
-  UTP 82 SURVEY (COMPLETED IN DECEMBER 1982)



UNION TEXAS AUSTRALIA INCORPORATED  
FOURTH YEAR - ANNUAL REPORT (TO APRIL 2, 1983)  
PETROLEUM EXPLORATION PERMIT T13P  
OFFSHORE GIPPSLAND BASIN

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C O N T E N T S

1. Administration
2. Geological and Geophysical Studies
  - 2.1. Introduction
  - 2.2. 1983 Work Program
  - 2.3. 1983 Work Program - Progress to Date
3. Review of Prospects and Leads
4. Geophysical Operations

Attachments

1. Summary of Expenditures 3.4.83 - 2.4.83

Enclosures

1. Seismic Program Map

1. Administration

In June, 1982 a group of companies led by Union Texas Petroleum Corporation entered into a Seismic Option/Farmout Agreement with Otter Exploration N.L. and the beneficial interest holders in Permit T13P. That agreement and assignment agreements necessary to lodge title in Pan Pacific, Meridian, Valiant and Ocita were lodged with the Department of Mines for Designated Authority approval. Approval of the documents was received in October, 1982.

Under the terms of the Seismic Option/Farmout Agreement, Union Texas conducted a 183 KM seismic program in November/December 1982. The results of that program revealed several leads which although prospective were not mature enough for drilling. Consequently, on December 15, 1982, Union Texas and Otter jointly submitted an application for a variation of the exploration work program in the permit. They proposed that a comprehensive geological and geophysical study be conducted during the fifth year of the permit and that two exploratory wells contemplated in the original permit work program be deferred until the sixth year of the permit. Notice of approval of the application was given January 13, 1983.

Under the terms of a Heads of Agreement between Union Texas and the T13P permittees, Union Texas agreed to assume Operatorship and undertake the fifth year work program. In return, Union Texas earned a 50 percent interest in the permit and acquired an option to earn an additional 25 percent by drilling one well. Approval to conduct the 200 KM seismic program which is a part of the fifth year work program was received on March 17, 1983, and the survey was conducted later that month.

## 2. Geological and Geophysical Studies

### 2.1. Introduction

On December 15, 1982, Union Texas Australia, acting on behalf of its Joint Venture Partners and acting as representative of Otter Petroleum and Meridian Oil, submitted to the Tasmanian Mines Department, Hobart and the Department of National Development, Canberra, an application for a variation of the fifth year work program for Permit T13P. The submission requested that the two exploratory wells contemplated in the original permit work program for the fifth year be deferred until the sixth year and that a comprehensive geophysical and geological study be substituted.

In justification of the work program variation it was pointed out that initial exploration of the permit began in 1980 with the acquisition and interpretation of approximately 400 km of seismic data. This program was followed in 1981 by a further 80 km program by the Cultus Pacific N.L. Group. In May 1982 Union Texas Australia, Ampol Exploration and CRA Exploration joined the Cultus group in a seismic option farmout agreement with the T13P permittees. Pursuant to that agreement, Union Texas acquired an additional 183 km of seismic data during December 1982.

It was indicated that, based on the results of the seismic programs and knowledge gained by the Union Texas group in its exploration of the Permit VIC P/12, the northern offset to T13P, two play types had been recognised in T13P:

- a) A stratigraphic/structural play associated with a Miocene sand wedge which trends northwest-southeast through VIC P/12 and into T13P. This is the so-called "Gemini Trend".
- b) A top Latrobe and possibly intra-Latrobe play associated with basement highs along the southern flank of the Gippsland Basin.

Detailed technical arguments were presented in order to obtain approval for the variation of the work program. In essence, it was stated that the understanding to be gained from an extensive geological and geophysical program would surpass that which would be gained by the drilling of a single well. It was pointed out that much of the knowledge gained by the Union Texas group from a similar geological and geophysical appraisal to be undertaken in VIC P/12 in 1983 could be applied to the leads in T13P. The group felt that such an evaluation was a logical step forward in an integrated exploration program which would help in the selection of optimum well locations for future drilling.

Otter Petroleum was notified of the requisite approval of the variance of the fifth year work program by telex dated January 12, 1983.

## 2.2. 1983 Work Program

### a) Geophysical Studies

The geophysical section of the proposed fifth year work program comprised the following projects :

- i) Acquisition and processing of 200 km of high resolution seismic.
- ii) Interpretation of the new seismic survey data and incorporation of such data into previous surveys.
- iii) Interpretation of magnetics data acquired in conjunction with the 1983 seismic survey. This is essential in an area in which it is recognised that magnetic studies are important to an understanding of Basement-involved plays which have been mapped over shallow Basement areas in the western part of T13P. Also the understanding of basement structure is essential to delineate Top Latrobe structures which are developed as drape across underlying basement high in the deeper water, eastern part of Permit T13P.

- iv) Seismic stratigraphic studies utilising all good quality seismic data available and also the VSP well velocity shoot from the Pisces No.1 well drilled in VIC P/12. These studies are of particular importance to an understanding of structural/stratigraphic traps such as the "Gemini Prospect" occurring in the western part of Permit T13P.
- v) Seismic mapping of the basement structure within Permit T13P.
- vi) Seismic re-mapping of the Top Latrobe structure using 1982 and 1983 data.
- vii) Seismic mapping of potential intra-Latrobe leads, both structural and stratigraphic.
- viii) Isopaching of the Latrobe group in the eastern part of Permit T13P.
- ix) Isopaching of possible Miocene sand complexes thought to be associated with the "Gemini Trend".
- x) Trading of seismic lines from VIC P/12 and T13P with those recently acquired by the Phillips Group in Permit VIC P/12 immediately to the north of VIC P/12, followed by incorporation of those lines into all of the 1983 studies. This will allow recognition of potential hydrocarbon migration pathways from the deep Gippsland Basin source area towards the southern flank of the Basin and, in particular, towards Permit T13P and the Gemini Prospect.
- xi) Trading of seismic lines from Permit T13P with those recently acquired by Hudbay in VIC P/11, Aquitaine in VIC P/17 and Shell in VIC P/19. This will allow the group to gain a better understanding of the regional extent of the new hydrocarbon play concepts developed from studies in VIC P/12 and the possible extension of such concepts southwards into Permit T13P.

b) Geological Studies

The geological section of the proposed fifth year work program comprised the following projects :

- i) Digitization of all available electrical logs from wells drilled in the vicinity of Permit T13P. Playback of all such electrical logs on common scale.
- ii) Detailed geological well correlations using the played-back electrical logs. This will be done in order to determine the regional development of the southern flank of the Gippsland Basin and to gain additional understanding of the distribution and inter-relationship of reservoir, source and seal in Permit T13P.
- iii) Paleo-environmental interpretation of all available well data in order to further determine the relationship of Permit T13P to the deep Gippsland Basin.
- iv) Construction of detailed paleo-environmental maps using all available data to determine regional facies patterns.
- v) Paleostuctural analysis of the major tectonic elements within Permit T13P in order to determine the tectonic development of the area.
- vi) Paleo-structural analysis of the leads and prospects which are presently defined within Permit T13P, particularly in relation to their configuration at the time of the onset of oil generation and migration.
- vii) Geochemical studies on cuttings available from wells drilled in the vicinity of T13P to determine the relationship between the organic material type penetrated in those wells with the somewhat dissimilar organic material in the Latrobe group sediments penetrated in the Pisces No. 1 well in Permit VIC P/12.
- viii) Further geochemical studies of cuttings and side-wall cores from the Pisces No. 1 well, including pyrolysis studies, to determine the specific hydrocarbon yield of the Campanian age Latrobe Group sediments which are expected to exist within Permit T13P.

- ix) Determination of the distribution of play types recognised in the Gippsland Basin and which are thought to include :
  - a) Top Latrobe structural/stratigraphic plays
  - b) Gurnard Formation and Lakes Entrance Formation greensand pinch-out plays.
  - c) Intra-Latrobe stratigraphic plays.
  - d) New Intra-Latrobe structural plays.
  - e) Intra-Miocene structural and stratigraphic plays.
  - f) Stratigraphic/structural plays associated with granite wash lying above basement topographic features.
- x) Trading of well data to include Phillips' Helios No. 1 (VIC P/18), Hudbay's West Seahorse No. 1 (VIC P/11), Aquitaine's Edina No.1 (VIC P/17) and Shell's Hammerhead No.1 (VIC P/19). Incorporation of such data into relevant geological and geophysical studies incorporated in the 1983 work program. The applicability of the newly defined play concepts to the southern flank of the Gippsland Basin could then be better determined.
- xi) The extension of regional geological concepts and new play types to the southern flank of the Gippsland Basin and into open acreage where similar, or equivalent, play-types might be mapped.
- xii) Re-interpretation of the Top Latrobe structural/stratigraphic play concept, previously recognised in T13P in the light of the results of Pisces No. 1 well.  
This will incorporate what is known about the significance of the presence or absence of the Gurnard Formation and basal Lakes Entrance Formation greensands.

### 2.3. 1983 Work Program - Progress to Date

- a) Geophysical Studies
  - i) Due to the fact that the contractual year for Permit T13P is not equivalent to the calendar year, there have

been two separate seismic survey during the period covered by the Fourth Year Annual Report - one in December 1982, and one in March-April 1983.

- ii) In December 1982, Union Texas conducted a seismic survey in the northeastern corner of Permit T13P in order to earn an option to earn a working interest in the Permit. The survey, designated UT 82A and shot by G.S.I., involved a total of 183.5 line kilometers of good quality, 96 trace, 48 fold data. Processing of the survey was conducted by G.S.I. in Perth.

The survey was designed to evaluate the following :

- a) The possibility of the existence of Top Latrobe Valley Group (or equivalent) structures produced by drape across Basement horst blocks in the shallower water parts of Permit T13P.
- b) The possible southeastward extension into Permit T13P of the "Gemini Trend" recognised in Permit VIC P/12 to the north.
- c) The possible existence of half-grabens or sub-basins in the north-eastern part of Permit T13P.

Because of above technical constraints and the limited extent of the survey, the seismic program was restricted to the shallower water areas of the northeastern corner of Permit T13P.

- iii) During late March-early April, 1983, 236 km of high resolution seismic data were shot by G.S.I. as part of a program which also included acquisition in the immediately adjacent Permit VIC P/12. The T13P survey is designated GUT-83P and the data is currently being processed by G.S.I. in Sydney.

Interpretation should begin in June 1983. The section on geophysical operations (section 4) provides more operational details on the seismic acquisition.

- iv) A magnetometer survey for interpretation of magnetic data in the area was run in conjunction with the 1983 seismic survey.
- v) During the fourth quarter of 1982 discussions were opened with the Phillips Australia Oil Company, as operator of Permit VIC P/18, for a trade of seismic data from VIC P/12. After attainment of the necessary approvals from all joint venture partners, the trade took place in mid-January 1983.

The data trade with Phillips Australian involved the exchange of 614.125 line kilometers of final stack seismic sections, 274 line kilometers of time migrated seismic sections, 60.825 line kilometers of depth migrated seismic sections, velocity data and shot point base maps.

b) Geological

- i) G.S.I. Singapore has begun a project to digitize available logs in the vicinity of VIC P/12. It is envisaged that a total of 50 wells will be digitized.

A first batch of 23 wells has been sent to G.S.I. who expect to complete the digitization by the end of April. Further wells will then be dispatched to them.

- ii) To enable a paleo-environmental interpretation of available well data to be made, Union Texas Australia has commissioned the services of Paltech Pty. Ltd., Sydney who will prepare a biostratigraphic, palynostratigraphic and paleo-environmental analysis for 50 wells.

iii) During the fourth quarter of 1982, Union Texas was negotiating with Shell Australia for a trade of well data between Pisces No. 1 (VIC P/12) and Hammerhead No. 1 (VIC P/19). The trade agreement was signed on January 11, 1983. Additionally, during the first quarter of 1983, Union Texas agreed with Phillips Australia to trade Pisces No. 1 (VIC P/12) for Helios No. 1 (VIC P/18).

### 3. Review of Prospects and Leads

Prior to acquiring a working interest in Permit T13P, the Union Texas group (including Union Texas Australia, Cultus Pacific, Ampol Exploration, CRA Exploration, Metramar Minerals, Sovereign Oil and York Resources) had conducted an extensive appraisal of Permit VIC P/12 immediately to the north of Permit T13P. This appraisal had included the drilling of a single well, Pisces No.1, during April-May 1982. While the Pisces No. 1 well had not encountered significant hydrocarbons a great deal of important geological and geophysical information had been accrued which proved to be of immediate importance to the exploration for hydrocarbons in Permit T13P.

In particular two distinctly different play types in Permit VIC P/12 had been recognised as extending southwards into Permit T13P.

#### I. Top Latrobe Structure (Scorpio Prospect)

Top Latrobe structures are formed by the drape of Latrobe Valley Group sediments across old underlying Basement highs. The Basement highs are considered to be horst blocks developed during the early Cretaceous phase of rifting of the Gippsland Basin. It was recognised that such Top Latrobe structures were unique to the northeastern part of Permit T13P and VIC P/12. Top Latrobe structures produced by drape across Basement highs are found to occur in water depths of less than 500 feet in Permit T13P.

Geochemical studies suggest that hydrocarbons were being generated in the northeastern part of Permits VIC P/12 and T13P since the Maastrichtian period, 65-70 million years ago. Therefore, the Top Latrobe structures recognized in Permit T13P and VIC P/12 should have been capable of entrapping hydrocarbons since that time.

Of particular note is the "Scorpio Lead" which appears analagous to similar type leads identified in Permit VIC P/12. However, the Scorpio Lead appears in shallower water (less than 400 feet) and also has well defined amplitude anomalies and "flat spots" associated with it. The GUT-83P survey has resulted in further data acquisition over this prospect.

## II. Intra-Miocene Plays (Gemini Trend)

Geophysical mapping of an intra-Miocene event in Permit VIC p/12 has indicated that the "Gemini Feature" represents a prominent NW-SE aligned isochron thick within the Oligo-Miocene Lakes Entrance Formation. It had been suggested that the feature represented a barrier sand complex. Seismic mapping strongly suggested that the feature continued southeastwards across the width of Permit VIC P/12 and into Permit T13P.

The results of the Pisces No. 1 well in Permit VIC P/12 suggested that the mapped feature would consist of middle Miocene shelfal sands which had prograded northeastwards into deep water and had been redistributed by strong oceanic currents into a NW-SE alignment. While the Pisces No. 1 well intersected thin interbeds (up to 2m) of clean, well sorted sands deposited in water depths in excess of 200 m (shelf break/slope environment), it was believed that the equivalent section across the platform area of VIC P/12 and T13P would consist of thicker, shelfal sands deposited in a more proximal position.

The trap associated with the "Gemini Trend" involves structural reversal to the north and east, combined with stratigraphic truncation or facies change to the west and south. In addition a series of four-way dip-closed structures are superimposed upon the sand complex.

The seismic survey undertaken by the Cultus Group within the confines of Permit T13P during December 1981 (designated GC 18A) confirmed the existence of the "Gemini Trend" in Permit T13P. The GUT 83P survey was designed to further delineate the "Gemini Trend" in Permit T13P.

The 1983 geological and geophysical program has been designed to arrive at a determination of the prospect ranking. The 1983 seismic survey was acquired over the two primary areas of interest, i.e. the Scorpio Lead and Gemini Leads. It is hoped that these features will mature into drillable prospects as the work program proceeds.

4. GEOPHYSICAL OPERATIONS

Two seismic surveys were conducted in T 13/P during this fourth contract year of the exploration permit. The first was shot in November 1982 (183.475 line kms). The second was shot in March-April 1983 (236.04 line kms).

- i) Tenders for the 1982 T 13/P seismic program were called for during the third quarter of 1982. Following an analysis of the bids, contracts for the acquisition and processing of the seismic data were awarded to Geophysical Service International (G.S.I.).

A submission for the UT 82 seismic survey was presented to the Tasmanian Mines Department on November 2nd, 1982.

The survey commenced at 13.15 hrs. on November 28th and was completed at 14.00 hrs. on November 30th, 1982. The survey was shot by GSI Party 2931 using the "Eugene McDermott II" seismic vessel. Shooting parameters included 4075 cubic inch air guns, 96-channel - 2400 meter streamer cable, 48 fold recording. Navigation for the survey was provided by the Syledis system.

A total of eight (8) seismic lines was recorded, with a total coverage of 183.475 line kms.

The following gives the costing for the survey:

(1)	Total chargeable time	2.031 days
(2)	<u>Acquisition costs</u>	
	Mobilization cost	\$48,000.00
	Seismic line cost: 183.475 x \$69/km	\$12,659.78
	Day rate : 2.031 x \$32,000/day	\$64,992.00
	Total acquisition cost	<u>\$125,651.78</u>

(3) Navigation Costs

Mobilization of Syledis System	=	\$11,000.00	
Day rate : 2.031 x \$2,800/day	=	\$ 5,685.80	
			<hr/>
Total navigation cost	=		\$ 16,686.80
Grand total cost	=		\$142,338.58
			=====

- ii) Tenders for the 1983 seismic program were called for in early January 1983. After analysis of the bids, Geophysical Service International (G.S.I.) was awarded the contract for both, acquisition and processing of the seismic data.

A submission for the UT 83 seismic survey was presented to the Tasmanian Mines Department on December 15, 1982.

The survey commenced on March 29, 1983 at 1013 hours and was completed on April 5, 1983. The survey was shot by the G.S.I. seismic vessel, M/V Eugene McDermott II. Shooting parameters included 4075 cubic inch air guns, 240 channel - 3600 meter streamer cable, 60-fold recording. Magnetometer data were also recorded during the survey. Navigation was provided by an integrated SYLEDIS/ARGO system.

A total of fifteen (15) seismic lines were shot for total line profile of 236.04 km.

Following is the costing of the survey:

1.	Navigation/Mobilization	\$ 12,000.00	
	Exchange rate variation	670.49	
		<hr/>	
		\$ 12,670.49	\$ 12,670.49
2.	Seismic Acquisition		
	236.04 km @ \$506/km	\$ 119,436.24	
	Exchange rate variation	7,170.73	
		<hr/>	
		\$ 126,606.97	126,606.97

3.	Chargeable down time		
	15.783 hours @ \$700.00/hour	\$ 11,048.10	
	Exchange rate variation	663.53	
		<hr/>	
		\$ 11,711.63	11,711.63
			<hr/>
		GRAND TOTAL COST	\$ 150,989.09
			=====

Processing of the seismic data began immediately in G.S.I.'s Sydney office. Initial results are expected to be available in late May 1983.

Attachment : 1Summary of Expenditures 3.4. - 2.4.83 Fourth Year

	<u>1982</u>	<u>1st Qtr 1983</u>	<u>Total to date</u>
Travel expense	1,009.17	0	1,009.17
Postage, drayage, express	3.04	75.70	78.74
Contract office serv.	741.90	0	741.90
Communication	618.68	476.23	1,094.91
Maps, logs, reprod.	2,045.49	1,901.59	3,947.08
Foreign travel	5,194.66	632.87	5,827.53
Head office dir. chg.	0	1,561.66	1,561.66
Regional office alloc.	<u>19,289.89</u>	<u>143,398.59</u>	<u>162,688.48</u>
Total	<u>28,902.83</u> =====	<u>148,046.64</u> =====	<u>176,949.47</u> =====
T/13P exploration			
Seismic	<u>26,494.02</u>	<u>123,445.81</u>	<u>149,939.83</u>
Total	<u>55,396.85</u> =====	<u>271,492.45</u> =====	<u>326,889.30</u> =====

VIC P/12  
T13P

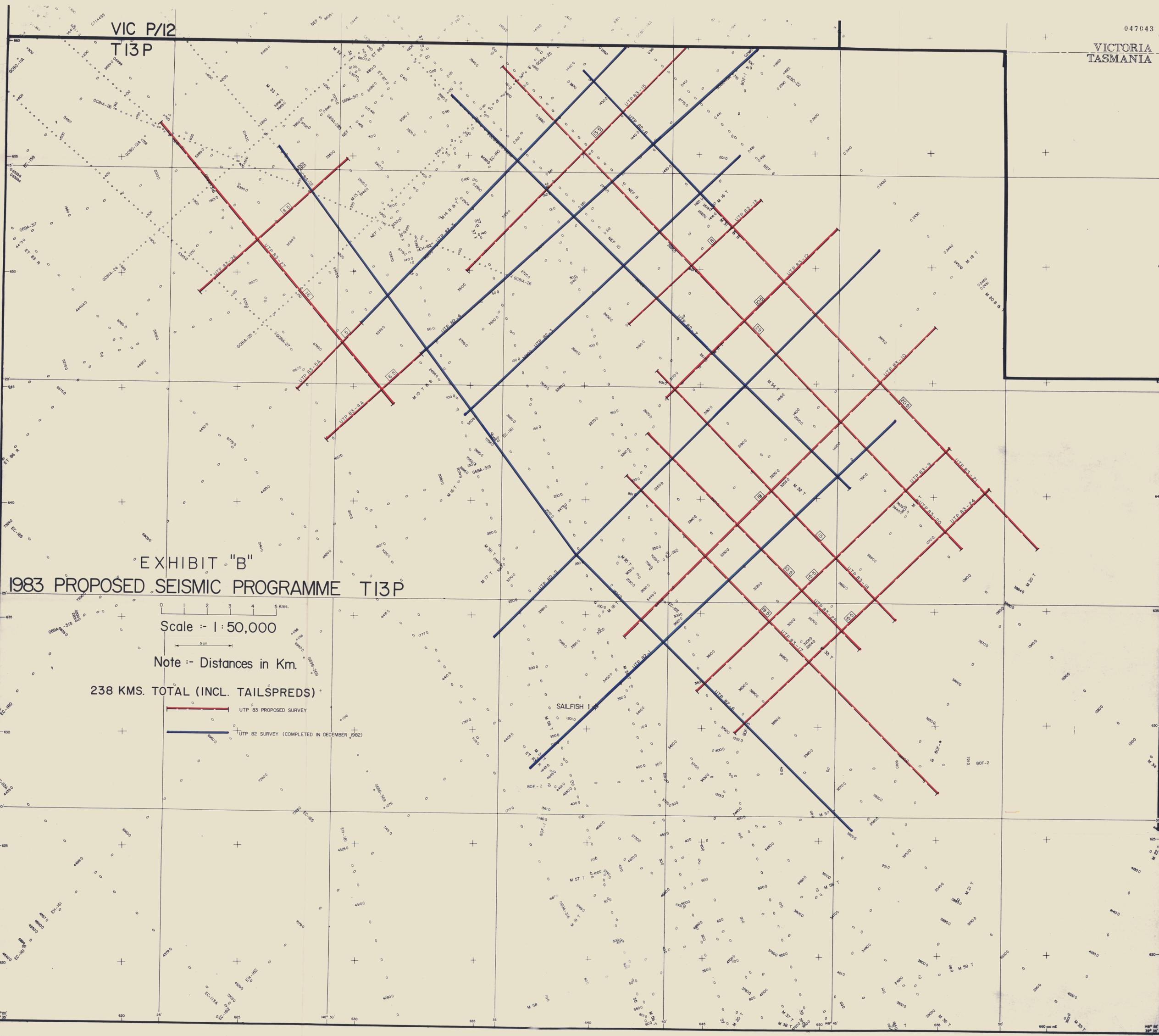


EXHIBIT "B"

1983 PROPOSED SEISMIC PROGRAMME T13P

Scale :- 1 : 50,000  
5 cm

Note :- Distances in Km.

238 KMS. TOTAL (INCL. TAILSPREDS)

UTP 83 PROPOSED SURVEY  
UTP 82 SURVEY (COMPLETED IN DECEMBER 1982)

SAILFISH 1