

044001

TPR
OR-095

3679/81.

4-5-'81

PETROLEUM EXPLORATION PERMIT T. 13/P

Annual Report for Permit Year 2

4th April, 1980 to 3rd April, 1981

T/13/P Part 4

OTTER EXPLORATION NL
169 MILLER STREET
NORTH SYDNEY 2060

H D Kennedy

H D KENNEDY
DIRECTOR

CONTENTS

Annual Report: *period 4/04/1980 to 3/04/1981*

- Introduction
- Survey Objectives
- Survey Parameters
- Navigation
- Weather
- T 13/P Processing
- Future Programme
- Data Summary
- Expenditure

Quarterly Report: *period 4/10/1980 to 3/01/1981*

PETROLEUM EXPLORATION PERMIT T 13/PANNUAL REPORT FOR PERMIT YEAR 2INTRODUCTION

The Flinders 1980 Seismic Survey comprising 400.475 line kilometres, was carried out within T 13/P from 6th to 8th May, by the M/V "Eugene McDermott II". The Survey was designed to investigate structural leads indicated from earlier surveys and to determine whether a prospective sedimentary section is present in the southern part of the permit.

SURVEY OBJECTIVES

The primary objective of the survey was to obtain better definition of the structure (a major down to the east north-south trending fault), in the eastern portion of the permit, which had been indicated by earlier surveys. To do this, the program was designed in the form of a broad "zig zag" of 13 profiles tied in the north to a seismic survey due to be carried out in Victorian waters, which in turn is to be tied to existing wells of Esso/BHP.

The Flinders 1980 Seismic Survey was also designed to cross a number of structural anomalies in the vicinity of the fault (both on the upthrown and downthrown sides) to indicate whether future detailed work is warranted.

The final survey objective was to investigate the southern portion of the permit, where only extremely limited poor quality data was available. The programmed lines should be sufficient to determine whether a prospective sedimentary section is present in this part of the permit.

SURVEY PARAMETERS

The reflection seismic survey, operated by Geophysical Service International (G.S.I.) consisted of 2m/sec, 96 trace data, shot utilising a 2400 metre streamer, under continuous tow in conjunction with a Pneumatic Acoustic Energy Source. The shot-point interval was 25 metres with the airguns being fired every 25 metres to give a 48 fold coverage.

A Texas Instruments Digital Field System V (DFS V) with two tape transports, and a record length of 4 sec. with a sample rate of 2 m/sec. was used for all recordings. A Servo Writer Profiler was utilised to obtain 100% (Near Trace Gather), sub-surface coverage, (uncorrected section) of 4 seconds duration directly from monitor recording of trace number 94 (the shipboard section).

NAVIGATION

Prime contractor and operator of the 1980 Seismic Survey was G.S.I., who provided and operated a C.M.S. (Configurable Marine System) navigational system. Interfaced with this was a Maxiran Radio-positioning System provided by Offshore Navigation System Inc. so all production recording was computer controlled and the survey lines were accurately positioned. The system consisted of three base station units and a mobile unit.

Unstable and weak Maxiran signals occasionally caused problems with navigation. Lines affected were :

80-F-4 : 11 shotpoints were missed when signals from Cape Portland were lost

80-F-11

and 80-F-11a: Lines were terminated due to weak or non existant Maxiran signals, causing shotpoints to be missed and erratic track plotter movement

80-F-13 : Line was terminated when unstable Maxiran signals caused the CMS to start the line before schedule. At shotpoint 377, the C.M.S. C.P.U. idled and a re-set and re-initialisation was necessary, and another turn around resulted.

WEATHER

Weather conditions throughout the survey period were excellent, with sea states of 2-3, and this contributed significantly to the timely and successful completion of the survey on 8th May 1980.

T 13/P PROCESSING :

All processing of the survey was done by G.S.I. in Sydney. However, due to prior commitments and other problems encountered by G.S.I., the processing schedule was delayed so that final sections for all lines were not available until January 1981. Following is a summary of the processing timetable :

- June : Shipboard sections received by Otter and examined for optimum location of velocity analyses and processing parameter tests. Lengthy discussion and research on merits of application of replacement status.
- August : Test processing data received by Otter and evaluated. Supplementary tests requested.
- September : Supplementary tests received by Otter and evaluated.
- October : First batch of interpreted velocity analyses (Velscans) received by Otter for review. Locations selected for trial Demult Velscans in order to (i) test applicability of Demult deconvolution process and (ii) improve velocity analysis.
- November : Balance of interpreted Velscans received by Otter and reviewed. Further trial Demult Velscan locations selected. G.S.I. later advised Demult Velscans could not be run due to a program restriction applicable to the decimated data in use. This resulted in several weeks delay. Decision made to complete processing using Velscans without Demult. First line received by Otter in final form.

December
and January : Balance of lines received by Otter in final form.

Interpretation of the above data was commenced in February 1981 and was still in progress at the end of the permit year. This work is being carried out by Mr A Sabitay and a preliminary interpretation is expected to be completed by early May.

Due to severe data quality problems, largely related to sea-bottom irregularities, final interpretation in some areas of interest will depend on further high effort processing of the data. This work may include such techniques as migration before stack in order to improve reflection continuity beneath sea floor channeling etc.

FUTURE PROGRAMME :

On completion of interpretation of data from the Flinders 1980 Marine Seismic Survey, and previous work within the permit, it is intended to carry out further detailed seismic work over potential drilling targets indicated from the above work. The extent of this detailed seismic will be dependent on the interpretation but is anticipated to be in the order of 250 line kilometres. Both G.S.I. and Western Geophysical anticipate having at least one survey vessel working in Bass Strait during the 1981-82 summer field session and have informed us that they should be able to carry out our survey at that time.

DATA SUMMARY

The following data are already held by the Tasmanian Mining Department :

1 sepia & paper print of the reprocessed following seismic lines :

- Magellan East Gippsland Survey 1969
✓ lines M15 T, ✓M22 T, ✓M33 T, ✓M35 T, ✓M39 T
- Magellan Tasman-Bass Strait Survey 1969
✓ lines M55 T, ✓M56 T, ✓M57 T, ✓M58 T, ✓M59 T, ✓M60 T
- NSW Oil & Gas Sailfish Survey 1971
✓ lines G7, ✓G35, ✓G37, ✓G39

✓ 2 copies of the program map for the Flinders 1980 Survey on which the position of structural leads has been noted.

- ✓ 1 sepia & paper print of the final sections of the Flinders 1980 Seismic Survey.
- ✓ 2 copies of the Final Report (Flinders 1980 Seismic Survey) by Offshore Navigation Inc (ONI) for GSI.
- ✓ 2 copies of the Operations Report (Flinders 1980 Seismic Survey) by GSI for Otter Exploration NL.
- ✓ 2 copies of a set of shot point location maps (Flinders 1980 Seismic Survey) prepared by WESCOM.

The following data are enclosed with this Annual Report :

- ? 1 post plot shot point listings (WESCOM)
- 1 Microfilm + 1 duplicate of Velocity Analyses.

EXPENDITURE

Expenditure for 12 months ended 3 April 1981

Technical studies & supervision	\$12017
Seismic re-processing	300264
Data acquisition, drafting & plan printing	4029
Administration	817
	<hr/>
	\$317127
	<hr/>

044008

1698/81.

2-3-81

T 13/P

Quarterly Report for the Period

October 4, 1980 to January 3, 1981

1. No field operations were carried out in the subject area during the quarter.
2. Processing of the data from the Flinders 1980 Seismic Survey, carried out in T13/P during May 1980 has now been completed, and final sections for all lines are to hand.
3. Interpretation of the seismic survey has now commenced.
4. Enclosed are :
 - 1 complete set of sepias of the final stacks of the Flinders 1980 Seismic Survey.
 - 1 complete set of paper prints of the Flinders 1980 Seismic Survey final stacks.
 - 2 copies of the final report by O.N.I. for G.S.I.
 - 2 copies of the Operations Report by G.S.I. for Otter Exploration N.L.
5. Copies of the reprocessed data will be forwarded to you next week.

T13 P Part 3