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DATA COLLECTION
FINAL REPORT OP 175
FOR PANCONTINENTAL PETROLEUM LIMITED
BY GEOPHYSICAL SERVICE INC.
MARCH, 1982

*The text of this report refers
to seismic lines for:
Alice; Dingo; Highway &
Walker Creek seismic surveys*

ONSHORE



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PN82/045

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+ APRIL.

INTRODUCTION

A reflection seismic survey utilising vibroseis technology was conducted in the Amadeus Basin for PANCONTINENTAL PETROLEUM LIMITED by Geophysical Service Inc. during the period November, 1980 to April, 1982. This survey was conducted in order to enhance definition of previously known structures and to reconnoitre other areas of little or no previous knowledge.

The concession lie in the Northern Territory of Australia, south and west of Alice Springs and consists of two leases, OP178 and OP175, which may be found between latitudes 23 degrees 30' and 24 degrees 45' south of the Equator and longitudes 129 degrees 45' and 134 degrees 15' east of Greenwich. This area was divided into several sub areas, namely: Alice, Dingo, Highway, and Walker Creek, for OP 175, Undandita, Glen Edith, Johnstone and Tempe Vale for OP 178.

The Data Collection report will entail two sections:

This report which will cover the Alice, Dingo, Highway and Walker Creek Prospects which were completed by 16th April, 1981;

the second part, comprising Undandita, Glen Edith, Johnstone and Tempe Vale prospects is under separate cover.

DISCUSSION

Weathering control in this area was considered to be a major problem so dynamite shots (anzite) were taken into the main spread every 600 metres. Operationally, this necessitates the drilling of shot holes well in advance of the main crew. In general, this system worked well. The shot interval was reduced to 400 metres in places to assist interpretation of the refraction breaks.

The problem here was that the drillers started late and then after repeated break downs, the vibrator again caught and passed them. To solve this problem G.S.I. bought in an auxiliary 24 trace refraction unit to fill in the missed lines. This 24 trace system was satisfactory for most lines except for some around the Alice No. 1 Well where the weathering problem was too complex to be solved by the shorter offset cables.

KILOMETER SUMMARY

Month/Year	KMs/Month	Alice	Dingo	Highway	Walker Ck.
Dec/80	133.00	133.00			
Jan/81	201.50	95.70	105.80		
Feb/81	179.00		108.70	70.30	
Mar/81	67.14			13.80	53.34
Apr/81	73.88			46.20	27.68
TOTALS	654.52	228.70	214.50	130.30	81.02

EQUIPMENT LIST

Survey

- 2 Wilde T-2 Theodolite and accessories
- 1 Auto Ranger II EDM
- 1 100m chain and 1 x 50m chain
- 2 SR 59 Programmable Calculators with printer
- 1 770 Survey Terminal
- 2 4 x 4 Model H.J. Toyota Survey Trucks
- Drafting equipment as required
- 2 VHF Radios and 1 Stingray
- 1 Set Field Glasses
- 1 Photocopier

Vibrators

- 4 TR-3 Vibrators
- 4 Vibrator Control Units
- 1 4 x 4 Model C-70 Chevrolet Line Maintenance Truck
- 1 4 x 4 H.J. 45 Personnel Carrier

Recording

- 1 Texas Instruments DFSV 48 trace Digital Field System, complete with electrostatic camera and all necessary equipment and spares.
- 1 96 Input, 48 Output CDP Switch
- 1 Field Timap System (FT-1)
- 170 Geophone Strings, GSC 20D 10 Hz, 6/string 5m interval
- 16 CDP Cable Sections, 50m intervals, each cable of 8 x 100m sections

- 2 50m and 2 x 440m Jumper Cables
- 1 Geospace Model GS 940 Geophone Analyzer
- 1 Oscilloscope
- 1 Blasters for detonating dynamite charges
- 10 FM Radios
- 1 SSB HF Radio, 100 watt output
- 1 4 x 4 Model C-70 Chevrolet Truck complete with recording cab,
24 Kw Generator, 770 Intelligent Terminal, RCU Unit, a Plotter and
Airconditioning
- 5 4 x 4 Model H.J. 45 Toyota Line Trucks
- 2 4 x 4 Model H.J. 45 Toyota Personnel Trucks

Camp

- 1 Fully equipped Kitchen Trailer 12m x 3m
- 1 Fully equipped Mess and Rec. Trailer 12m x 3m
- 1 Fully equipped Office Trailer 12m x 3m
- 1 Fully equipped Ablution Trailer 12m x 3m
- 1 Mechanics Workshop 12m x 3m
- 5 Accommodation Trailers (55 bunks)
- 2 4 x 4 C-70 Chevrolet 1000 gallon Water Trucks
- 1 Generator Trailer with 1 70kva main and 1 45kva standby Generator
plus a 1000 gallon Fuel Tank and a 1000 gallon Water Tank
- 1 1000 gallon Fuel Truck
- 1 4 x 4 Model H.J. 45 Toyota Personnel Truck

MONTHLY SUMMARIES

The Alice, Dingo, Highway and Walker Creek Prospects

From December, 1980 until April, 1981

December, 1980

Noise analysis began on the second with the main crew commencing production on the fifth and although production was low, it increased to a more respectable level as experience with the area, conditions and new crew increased. The dozer had a good lead on recording, but the drill was several days behind schedule due to its late arrival. Richard Schroder and Lou Keating from Pancontinental Petroleum visited this month for the noise analysis and start up tests, and along with John Wardell from G.S.I. set up the recording parameters for the Alice/Dingo prospects.

January, 1981

The Alice Prospect was completed this period and work commenced on the Dingo area. Production increased this month due to several factors, removal of labour problem ringleaders, change over of vibrator tyres to enhance mobility over sand dunes and in boggy areas and an incentive bonus of free liquid refreshments. Dozing maintained a good lead, survey pulled ahead of recording and chaining was right on top of the dozers. We had two visitors this month from Pancontinental, Doug White and Eugene Urchel, as well as Tony Eritty from the Department of Mines. It was also at this time that the Central Land Council (C.L.C.) began requesting knowledge of line cutting plans in advance of line clearance.

February, 1981

The Dingo Prospect was completed this month and work proceeded on the Highway Prospect. Rain and its consequences hampered both line clearance and weathering (refraction and drills). The drillers were also plagued with break-downs and lack of parts but another rig has also been employed to boost production. The C.L.C. withheld approval on some line cutting which further reduced production. Rain also took its toll on recording adding to instrument problems and cable leakage.

March, 1981

Recording this month was at an all time low, and for several reasons. FT-1 and DFSV problems, urgent priority changes and camp moves, weather and rough terrain not to mention slow line clearance. Line cutting in Walker Creek was affected by numerous washouts as well as mechanical problems leading to several down days. As a result of the above, one can easily rationalize low productivity in refraction and survey. Visitors for this month were Richard Schroder, Charles Mann, Bevin Warris and Doug White all from Pancontinental, as well as Dionel Fuselier from G.S.I. Singapore.

April, 19881

The recording crew completed the Walker Creek Prospect on 7th April and returned to the Highway area to finish up a few remaining lines. By 16th April, Highway had been completed and a move was made into the Unandita area which will be covered in the second part of this final report. Visitors for the first half of this period were Paul Fuller and Doug White from Pancontinental.

RECORDING PARAMETERS

Source Array

	Alice	Dingo	Highway	Walker	Ck.
No. of Vib in Line	3	3	3	3	
Spacing of Vib	12m	12m	12m	12m	
Move Up	6m	6m	6m	9m	
No. of Sweeps/Pattern	8	8	8	8	
Sweep Length	16 sec	16 sec	16 sec	16 sec	
Listening Time	4 sec	4 sec	4 sec	4 sec	
Taper	0.7 sec	0.7 sec	0.7 sec	0.7 sec	
Recording	4 ms	4 ms	4 ms	4 ms	
Sweep Frequency	12-80 Hz	12-80 Hz	12-80 Hz	15-80 Hz	
Filters	8-90 Hz	8-90 Hz	8-90 Hz	8-90 Hz	
Fold	12	12	12	12	

Receiver Array

	Alice	Dingo	Highway	Walker	Ck.
Phones in Line	24	24	24	24	
Spacing	3	3	3	4	
Group Interval	50	50	50	40	
Station Gap	6	6	6	6	

KEY PERSONNEL

	<u>December 1980</u>	<u>April 1981</u>
Supervisor	Bill Pailthorpe	Bill Pailthorpe
Party Manager	John Derickx	John Derickx
Assistant Party Manager	Terry Atkins	Terry Atkins
Administration	Len Haack	Len Haack
Seismology	Ross McCartney	Ross McCartney
Observers	Terry Quayle John Prichett	Terry Quayle John Prichett
Junior Observers	Ray Bracewell Barry Powell Mike Heuson	Ray Bracewell Barry Powell Mike Heuson
Surveyors	Andy Strachan Mel Ridge	Andy Strachan Mel Ridge
Vibrator Mechanics	Ken Swenson Des Williams	Ken Swenson Neil Scott
Client Representatives	Andrew Bainbridge	Andrew Bainbridge
Line Cutting and Drilling	Dussin Construction(dozer) D W Exploration (drill)	Dussin Construction D W Exploration Gorey & Cole
Area Geophysicist	J Wardell	J Wardell