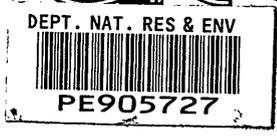


Velocity Data



WELL VELOCITY SURVEY
ENCLOSURE 3 OF WCR
CURDIE-1
W768

W 768

OIL and GAS DIVISION

27 SEP 1982

ENCLOSURE 3
(CURDIE- 1)

Well Velocity Survey

CURDIE No. 1

PEP 93
Victoria

for

BEACH PETROLEUM N.L.

Velocity Data Pty Ltd.
Brisbane, Australia
March 8, 1982

WELL VELOCITY SURVEY

CURDIE NO. 1

PEP 93

VICTORIA

for

BEACH PETROLEUM N.L.

by

VELOCITY DATA PTY LTD.

Brisbane, Australia

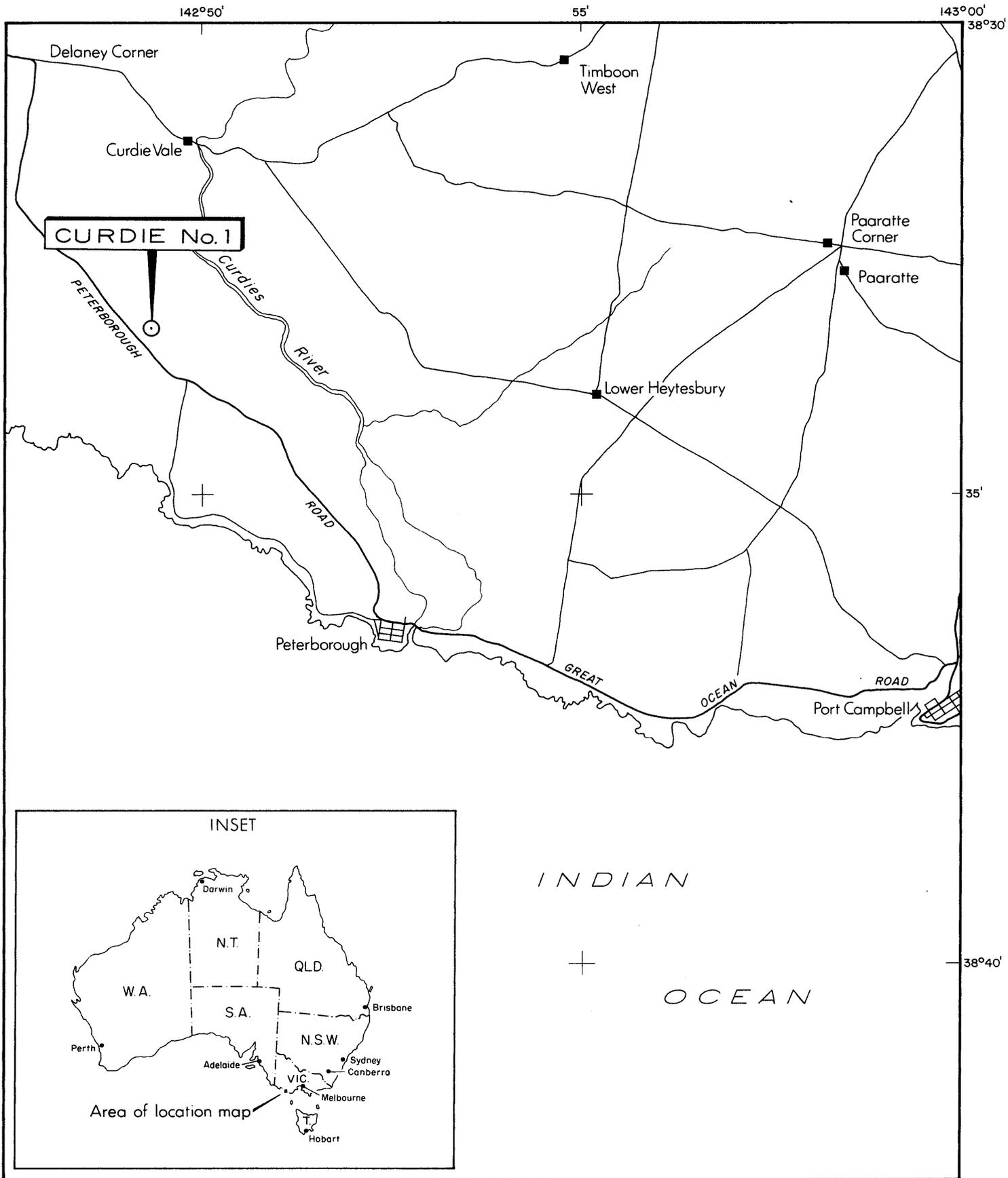
March 8, 1982

INDEX

	<u>Page</u>
SUMMARY	1
GENERAL COMMENTS	1
EQUIPMENT	2
RECORDING	2
COMPUTATIONS	3
COMPUTATION SHEETS	

Figures:

- Figure 1 Location Map
 - Figure 2 Shot Location Sketch
 - Figure 3 Time-depth points and
 velocity functions
 - Figure 4 Time-depth, average velocity
 and interval velocity curves
- Sample Records



BEACH PETROLEUM N.L.
CURDIE No.1
WELL LOCATION MAP

Scale 1:100 000

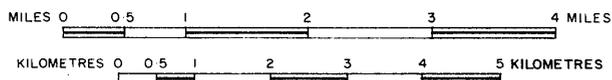
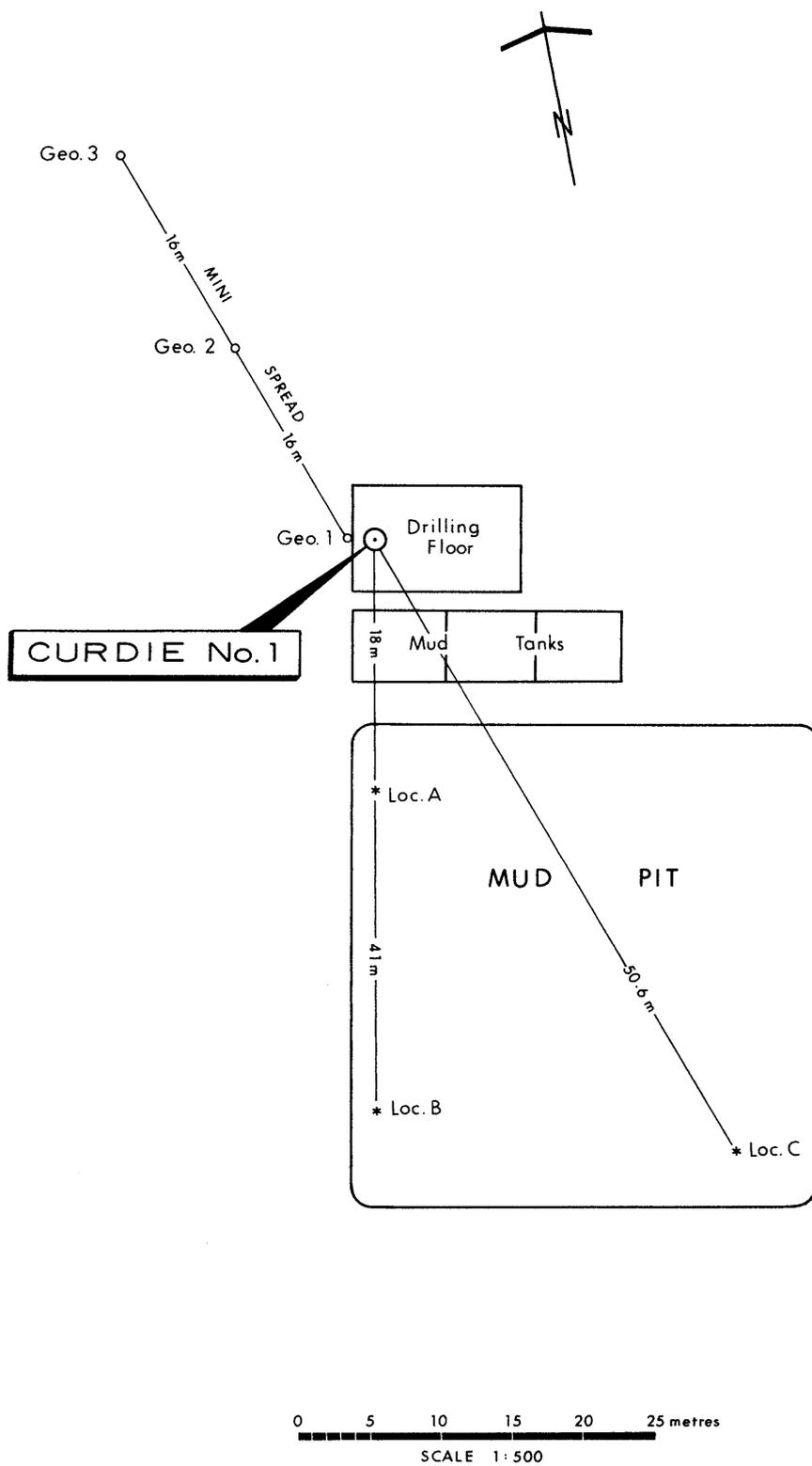


Figure 1



BEACH PETROLEUM N.L.
CURDIE No.1
 SHOT POINT LOCATION SKETCH

Figure 2

SUMMARY

Velocity Data Pty Ltd. conducted a velocity survey for Beach Petroleum N.L. in the Curdie No. 1 well, PEP 93, Victoria. The date of the survey was March 8, 1982.

Fifteen shots were taken over 8 levels in the well. Record quality was fair to good and the results are considered reliable. Explosives were used as an energy source with charges being fired in the mud pit at a depth of two metres and offset 50.6 metres from the well head. Charge size varied up to 6 sticks of AN60.

The results have been used to calibrate the sonic logs and have been related to the seismic section. Depth functions have been determined to fit the time-depth curve.

The well was surveyed to a depth of 2502 metres below K.B.

GENERAL

The operator and the equipment travelled by air from Brisbane. The shooter was a local contractor.

Name of Well	:	Curdie No. 1
Location	:	PEP 93, Victoria
Co-ordinates	:	Latitude 38°33'14"S Longitude 142°49'19"E
Date of Survey	:	March 8, 1982
Elevation K.B.	:	42.8 metres ASL
Elevation Datum	:	Sea Level
Logging	:	Schlumberger
Weather	:	Overcast and windy
Sonic Log Interval	:	158 - 2592.5 metres below K.B.
Depth Surveyed	:	2502 metres below K.B.
Operator	:	B. Husband

EQUIPMENT

Energy Source : Explosives - AN60

Recording Instruments : VDA software controlled Digital Recording System using SIE OPA-10 Floating Point Seismic Amplifiers and LSI 11 CPU Processor

Downhole Geophone : Geospace WLS1050 Wall-lock

Reference Geophone : Hall Sears HS1

RECORDING

Charge Size : 1 to 6 (4 oz.) sticks

Depth of shots : 2 metres

Shot offset : 50.6 metres

Reference sensors : Refer Figure 2

Downhole sensor:

6HS1 4.5 Hz-215 ohm, high temperature detectors in series parallel. Frequency response 8-300Hz within 3db.

Preamplifier -48db fixed gain. Frequency response 5-200Hz within 3db.

Records were produced photographically, recorded on a digital cassette tape and later transcribed to a nine track tape in Velocity Data's Brisbane centre. Print-outs of the shots used are included with this report. Times were picked from playouts using the numerical value of the signal strength. The sampling rate was 1 ms. with $\frac{1}{2}$ ms. sampling over a 200 ms. window encompassing the first arrivals. Analog records were also obtained. The scale of graphic display varies with signal strength and is noted on each playout.

COMPUTING

Sonic times are adjusted to check-shot times using two methods.

- 1) A linear correction

$$\frac{(t_{L_2} - t_{R_2}) - (t_{L_1} - t_{R_1})}{Z_2 - Z_1} = \text{correction in } \mu\text{secs./ft.}$$

- 11) A differential correction

$$100 \left(1 - \frac{(t_{R_2} - t_{R_1})}{(t_{L_2} - t_{L_1})} \right) = \% \text{ decrease in interval time}$$

where t_L = sonic log time

t_R = record time

and $Z_2 - Z_1$ = depth interval

Where check-shot interval times are longer than corresponding sonic interval times, errors are assumed to be instrumental and are adjusted using the linear correction. However, if formation characteristics, such as high porosity or the presence of gas are suspected, the differential correction is used.

The differential correction is also applied where check-shot interval times are shorter than corresponding sonic times and these differences are assumed to arise from caving or mud cake effects.

Five shots were taken at datum from varying offset distances. The vertical times from three shots at the longer offsets have been averaged to give a datum correction time of $-.030^0$ secs. No other corrections have been applied when relating the results to the seismic section.

Shot 14 at the 950m. level was N/R. All other shots have been used in the calculations. Where more than one satisfactory shot was taken at a level, times have been averaged. The first tie between a shot and the sonic log was at the 950m. level. Velocities above this level are based on the unadjusted sonic times.

The discrepancies between the shot interval times and the corresponding sonic interval times are small, the largest discrepancy being 9 μ secs/metre.

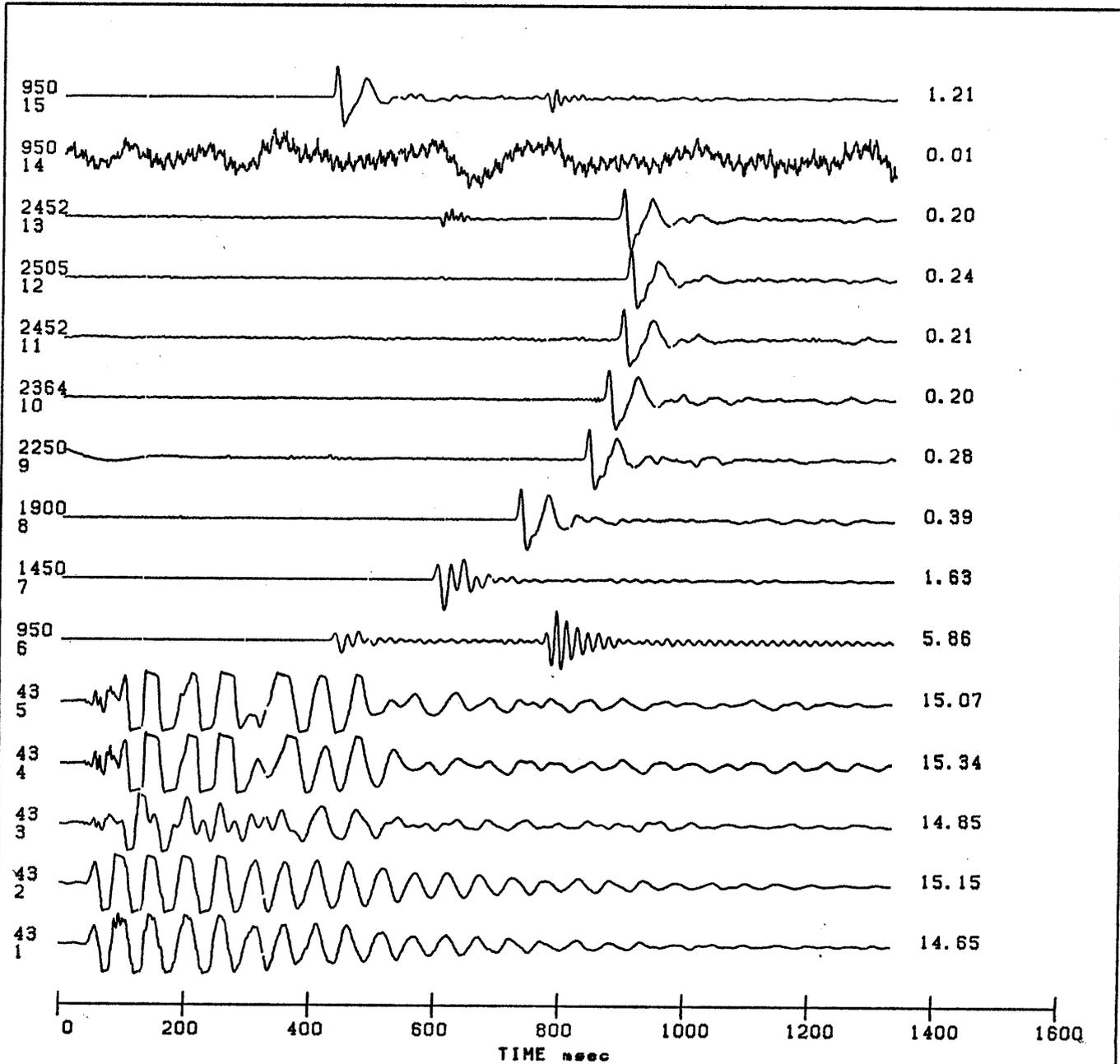
Generally, shot interval times are shorter than the sonic times, the one exception being over the Belfast mudstones, where the shot interval time is the longer. In aggregate, shot interval times are .001⁸ secs. shorter than the sonic times over the gross interval, 1900 - 2502 metres.

A depth function $Z = 2915t^{1.268}$ is a satisfactory general function to fit the time-depth curve.

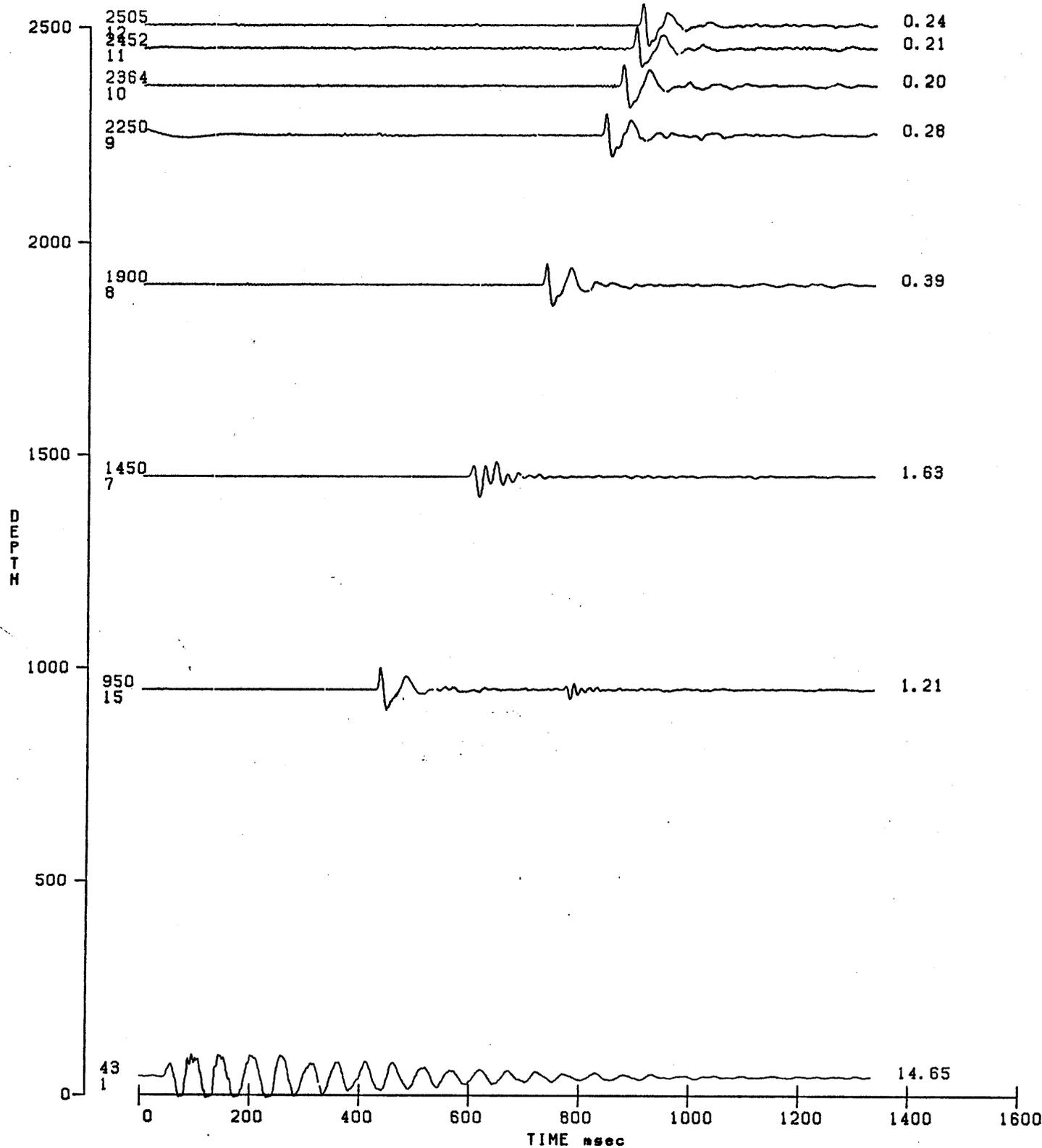
Time-depth and velocity curves accompany this report along with computer playouts of the individual shots and a plot to scale of the recorded traces.



L.W. Pfitzner



Client : BEACH OIL
 Well : CURDIE#1
 Survey date : 08:03:82
 Survey units : METRES



Client : BEACH OIL
 Well : CURDIE#1
 Survey date : 08:03:82
 Survey units : METRES

PE905724

This is an enclosure indicator page.
The enclosure PE905724 is enclosed within the
container PE905727 at this location in this
document.

The enclosure PE905724 has the following characteristics:

ITEM_BARCODE = PE905724
CONTAINER_BARCODE = PE905727
NAME = Time depth Points and Velocity Function
BASIN =

OTWAY BASIN

PERMIT = PEP/93
TYPE = WELL
SUBTYPE = VELOCITY_CHART
DESCRIPTION = Time Depth Points and Velocity Function
chart (from enclosure 3--Velocity
Survey--of WCR) for Curdie-1
REMARKS =
DATE_CREATED = 8/03/82
DATE_RECEIVED = 27/09/82
W_NO = W768
WELL_NAME = CURDIE-1
CONTRACTOR = VELOCITY DATA PTY LTD.
CLIENT_OP_CO = BEACH PETROLEUM PTY LTD.

(Inserted by DNRE - Vic Govt Mines Dept)

PE905725

This is an enclosure indicator page.
The enclosure PE905725 is enclosed within the
container PE905727 at this location in this
document.

The enclosure PE905725 has the following characteristics:

ITEM_BARCODE = PE905725
CONTAINER_BARCODE = PE905727
NAME = Table of Depth vs. Time for Curdie-1
BASIN = OTWAY BASIN
PERMIT = PEP/93
TYPE = WELL
SUBTYPE = VELOCITY_CHART
DESCRIPTION = Velocity Table Showing Time vs. Depth,
table 2 of 2, (from enclosure
3--Velocity Survey--of WCR) for
Curdie-1
REMARKS =
DATE_CREATED = 8/03/82
DATE_RECEIVED = 27/09/82
W_NO = W768
WELL_NAME = CURDIE-1
CONTRACTOR = VELOCITY DATA PTY LTD.
CLIENT_OP_CO = BEACH PETROLEUM PTY LTD.

(Inserted by DNRE - Vic Govt Mines Dept)

PE905726

This is an enclosure indicator page.
The enclosure PE905726 is enclosed within the
container PE905727 at this location in this
document.

The enclosure PE905726 has the following characteristics:

ITEM_BARCODE = PE905726
CONTAINER_BARCODE = PE905727
 NAME = Table of Depth vs. Time for Curdie-1
 BASIN = OTWAY BASIN
 PERMIT = PEP/93
 TYPE = WELL
 SUBTYPE = VELOCITY_CHART
DESCRIPTION = Velocity Table Showing Time vs. Depth,
 table 1 of 2, (from enclosure
 3--Velocity Survey--of WCR) for
 Curdie-1
REMARKS =
DATE_CREATED = 8/03/82
DATE_RECEIVED = 27/09/82
 W_NO = W768
 WELL_NAME = CURDIE-1
CONTRACTOR = VELOCITY DATA PTY LTD.
CLIENT_OP_CO = BEACH PETROLEUM PTY LTD.

(Inserted by DNRE - Vic Govt Mines Dept)

PE905723

This is an enclosure indicator page.
The enclosure PE905723 is enclosed within the
container PE905727 at this location in this
document.

The enclosure PE905723 has the following characteristics:

ITEM_BARCODE = PE905723
CONTAINER_BARCODE = PE905727
 NAME = Well Velocity Survey Data Printouts
 BASIN = OTWAY BASIN
 PERMIT = PEP/93
 TYPE = WELL
 SUBTYPE = VELOCITY_CHART
DESCRIPTION = Well Velocity Survey Data Printouts
 (from enclosure 3--Velocity Survey--of
 WCR) for Curdie-1
REMARKS =
DATE_CREATED = 8/03/82
DATE_RECEIVED = 27/09/82
 W_NO = W768
 WELL_NAME = CURDIE-1
CONTRACTOR = VELOCITY DATA PTY LTD.
CLIENT_OP_CO = BEACH PETROLEUM PTY LTD.

(Inserted by DNRE - Vic Govt Mines Dept)