

# GEOGRAM\*

(Synthetic Seismogram)

\* A Mark of Schlumberger

Company: BHP PETROLEUM  
 Well: MINERVA 1  
 Field: EXPLORATION  
 Country: AUSTRALIA  
 Reference No: 560896 Interval: 2405.00 to 551.00  
 Date Logged: 05-04-93 Date Processed: 20-04-94  
 Location: 38 42' 12.23" S 142 57' 12.34" E  
 Elevations: KB: 25.30 DF: 25.00 GL: -57.00  
 Permanent Datum: MSL Depth Units: METRES

**LOG INFORMATION**

FIELD RECORDING Engineer: M HELWIG Location: VEA Program Version: 32.4

COMPUTATION: Analyst: A WIBISONO Centre: SYJ Baseline: 55

**ELEVATION ABOVE MEAN SEA LEVEL**

Logging Datum: 25.00  
 Seismic Reference Datum: 0.00

Sonic Calibration By Check Shots: YES Sonic Edited By Analyst: YES

Two-Way Time Sample Interval: 2 ms Environment: offshore

True Vertical Depth Corrections Applied: YES  
 Source of True Vertical Depth Data:  
 Maximum Hole Deviation: 14 DEG

Run	Date	Tool Type	Bit Size/Depth	Casing Size/Depth	Top Depth	Bottom Depth
1	14-03-93	AS			1183 M	551 M
2	21-03-93	AS			1793 M	1195 M
3	25-03-93	AS			2084 M	1793 M
4	05-04-93	AS			2112 M	2084 M

VSP Run	Date	Gun Offset	Hydro Offset	Gun Elevation	Hydro Elevation	Gun Azimuth	Hydro Azimuth
1	14-03-93	47 M	47 M	7 M BELOW MSL	14 M BELOW MSL	50	50
2	22-03-93	47 M	47 M	7 M BELOW MSL	14 M BELOW MSL	50	50

**GEOGRAM MODEL ASSUMPTIONS**

Equal time slice model of horizontal plane layers.  
 Plane acoustic waves at normal incidence.  
 No intrinsic attenuation

**POLARITY**

An upgoing wave, reflected by an increase in acoustic impedance with depth, is displayed as a white trough under normal polarity.

**SIGNATURES**

All signatures displayed in the Geogram results correspond to a wavelet convolved with a reflection coefficient of -0.5 (A decrease in acoustic impedance with depth).

**REMARKS**

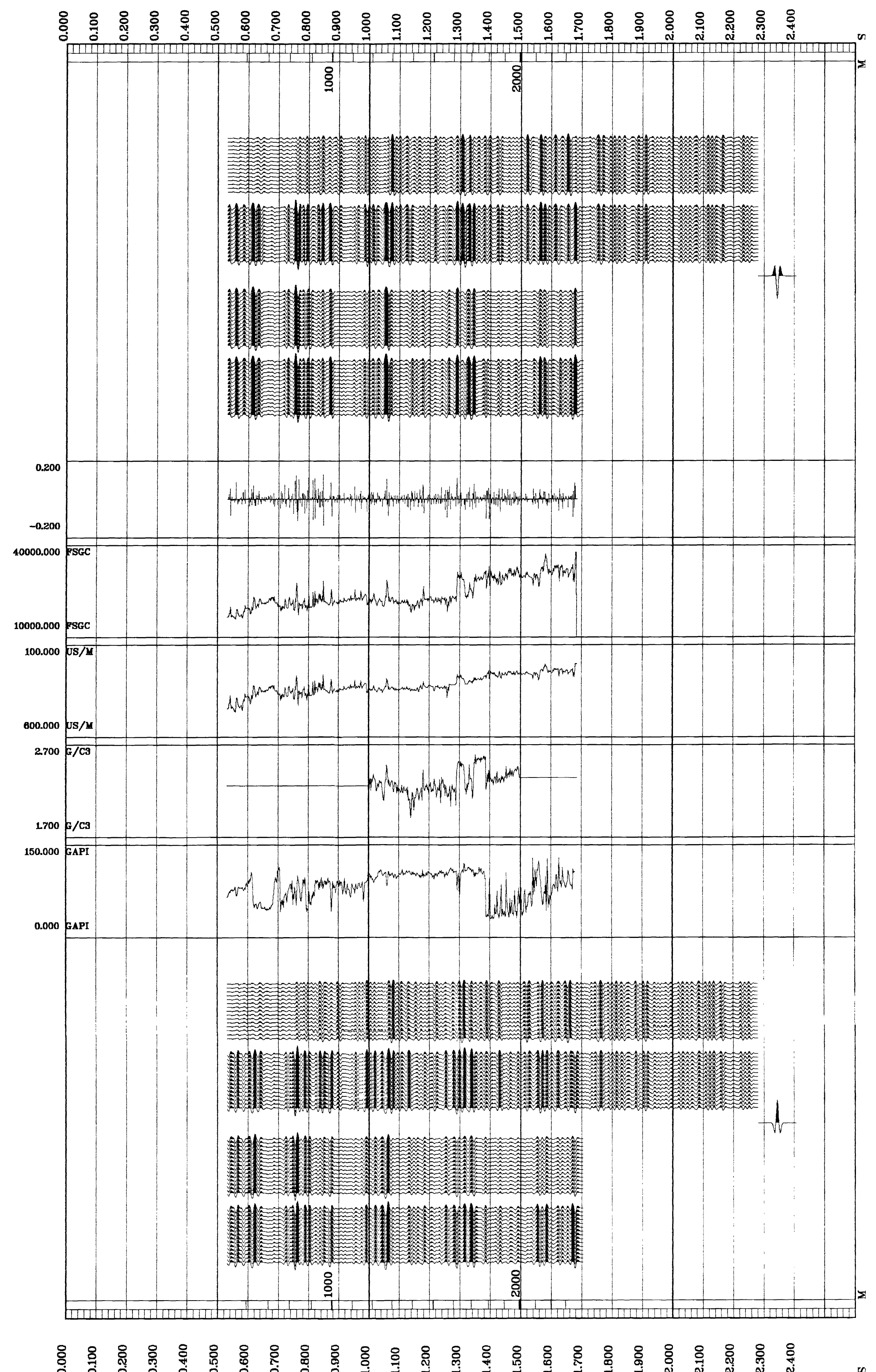
The well name, location and borehole reference data were furnished by the customer.

All interpretations are opinions based on inferences from electrical or other measurements and we cannot, and do not guarantee the accuracy or correctness of any interpretation, and we shall not, except in the case of gross or willful negligence on our part, be liable or responsible for any loss, costs, damages or expenses incurred or sustained by any third party, including any third party, arising from any interpretation made by any of our officers, agents or employees. These interpretations are also subject to Clause 4 of our General Terms and Conditions as set out in our current Price Schedule.

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**\*\* GEOGRAM \*\***  
**45 HERTZ ZERO PHASE**  
**RICKER WAVELET**  
**VERTICAL SCALE = 10 CM/SEC**

- MULTIPLES ONLY  
REVERSE POLARITY
- PRIMARIES AND MULTIPLES  
REVERSE POLARITY
- PRIMARIES WITH TRANSMISSION LOSS  
REVERSE POLARITY
- PRIMARIES  
REVERSE POLARITY
- REFLECTION
- ACOUSTIC  
IMPEDANCE
- SONIC
- DENSITY
- GAMMA RAY
- MULTIPLES ONLY  
NORMAL POLARITY
- PRIMARIES AND MULTIPLES  
NORMAL POLARITY
- PRIMARIES WITH TRANSMISSION LOSS  
NORMAL POLARITY
- PRIMARIES  
NORMAL POLARITY



COMPANY BHP PETROLEUM  
 FIELD EXPLORATION  
 WELL MINERVA 1  
 COUNTRY AUSTRALIA