

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: 5.5
 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

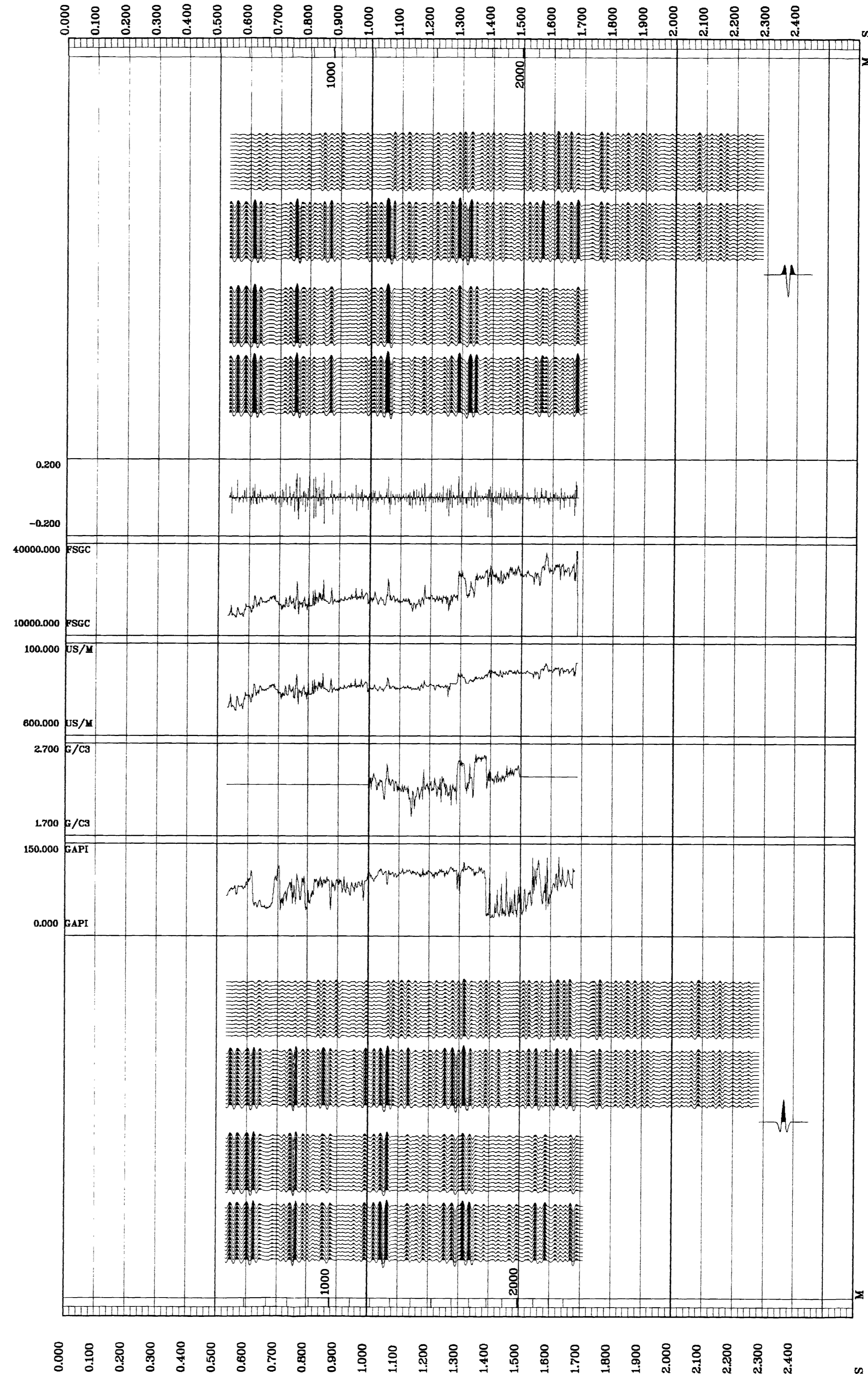
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All interpretations are opinions based on information from electrical or other measurements and we cannot, and do not guarantee the accuracy or correctness of any interpretations, and we shall not, except in the case of gross or willful negligence on our part, be liable or responsible for any loss, costs, damages or expenses incurred or sustained by anyone resulting from any interpretations 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.

**** GEOGRAM ****
35 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