

SANTOS & PARTNERS

WELL NAME: MARTHA-1  
ZERO OFFSET VSP SURVEY

ENCLOSURE 6A

VSP PROCESSING SEQUENCES DISPLAY

SHOT BY BAKER ATLAS  
PROCESSED BY VSFUSION  
VSFUSION PROJECT CODE SNT03

01 NOVEMBER, 2004  
NOVEMBER, 2004

ACQUISITION INFORMATION

-CABLE-

ROTARY TABLE (RT) ELEVATION 21.5 M ABOVE MSL  
WATER DEPTH 54.66 M BELOW MSL  
MINIMUM DEPTH (RT) 75.0 M  
MAXIMUM DEPTH (RT) 1785.0 M

-SOURCE-

ENERGY SOURCE SLEEVE GUN ARRAY  
NUMBER OF GUN 2 X 150 CU IN  
TOTAL GUN VOLUME 300 CU IN  
GUN DEPTH 5.0 M BELOW MSL  
SOURCE DISTANCE FROM WELLHEAD 48.3 M  
SOURCE AZIMUTH FROM WELLHEAD 328.0 DEG. N

-INSTRUMENTS-

RECORDING SYSTEM SA2D  
SAMPLING INTERVAL 1 MS  
RECORD LENGTH 4.0 SECONDS  
DOWNHOLE RECEIVER TYPE AWS 1300 GM  
ELECTRIC LOGGING COMPANY BAKER ATLAS

VSP PROCESSING SEQUENCE

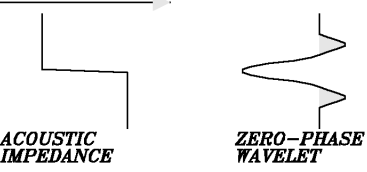
1. CONVERT FROM SEG-Y FORMAT TO SEISLINK-X FORMAT
2. EDIT/SUM/PICK ARRIVALS
3. GEOMETRY SURVEY APPLIED
4. VELOCITY ANALYSIS
5. FK ANALYSIS TO DETERMINE FREQUENCY CONTENTS
6. SPHERICAL DIVERGENCE-GEOMETRY SPREADING CORRECTION: T\*\*1.5
7. TUBEWAVE SUBTRACTION USING DIP MEDIAN FILTER
8. ESTIMATION OF DOWNGOING P-WAVES FROM VERTICAL COMPONENT  
FIRST BREAK ALIGNED AT 200 MSEC.
9. EXTRACT OF DOWNGOING P-WAVES WITH 7-POINT MEDIAN FILTER
10. ZERO BANDPASS FILTER 5/10 - 80/120HZ
11. SHIFT UPGOING WAVES TO TWO-WAY VERTICAL TIME BELOW DATUM
12. VSP DECONVOLUTION OF UPGOING WAVES :  
DECON OPERATOR DESIGNED USING 800 MSEC OF DOWNWAVES  
TO SHAPE WAVETRAIN TO A SPIKE
13. ZERO BANDPASS FILTER 5/10 - 50/75 HZ
14. ENHANCEMENT OF DECONVOLVED UPWAVES WITH 7-POINT MEDIAN FILTER

COMMENTS

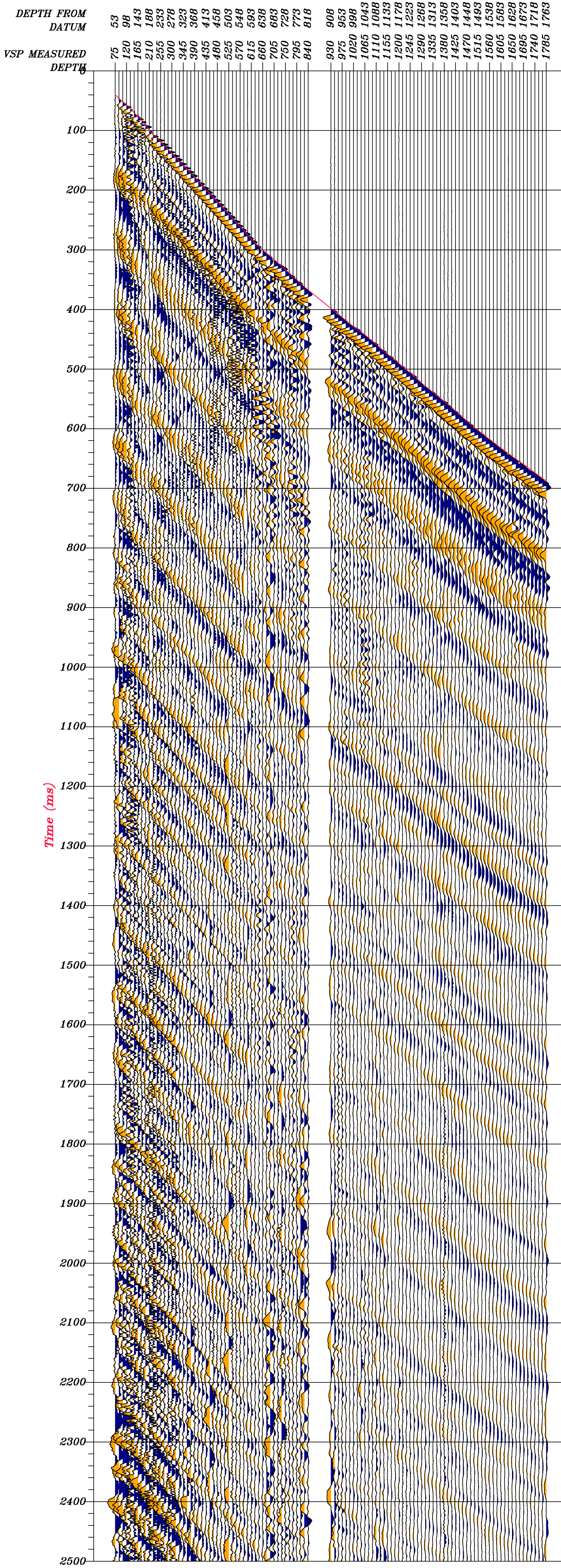
SEISMIC REFERENCE DATUM IS MSL  
REPLACEMENT VELOCITY = 1500 M/SEC.  
TWO-WAY VERTICAL TIME IS REFERENCED BELOW DATUM OF MSL  
TWO-WAY VERTICAL TIME SCALE IS 20 CM/SEC.

DISPLAY CONVENTION

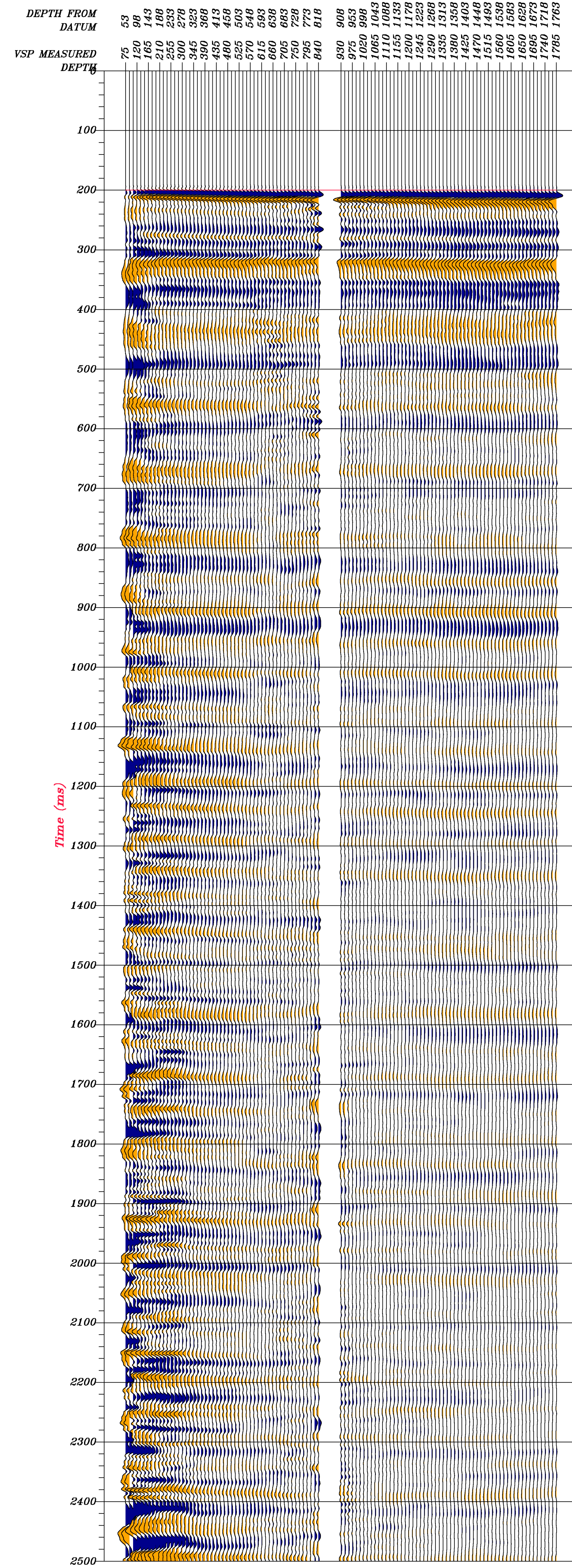
NORMAL POLARITY  
AN INCREASE IN ACOUSTIC IMPEDANCE  
IS DISPLAYED AS A TROUGH



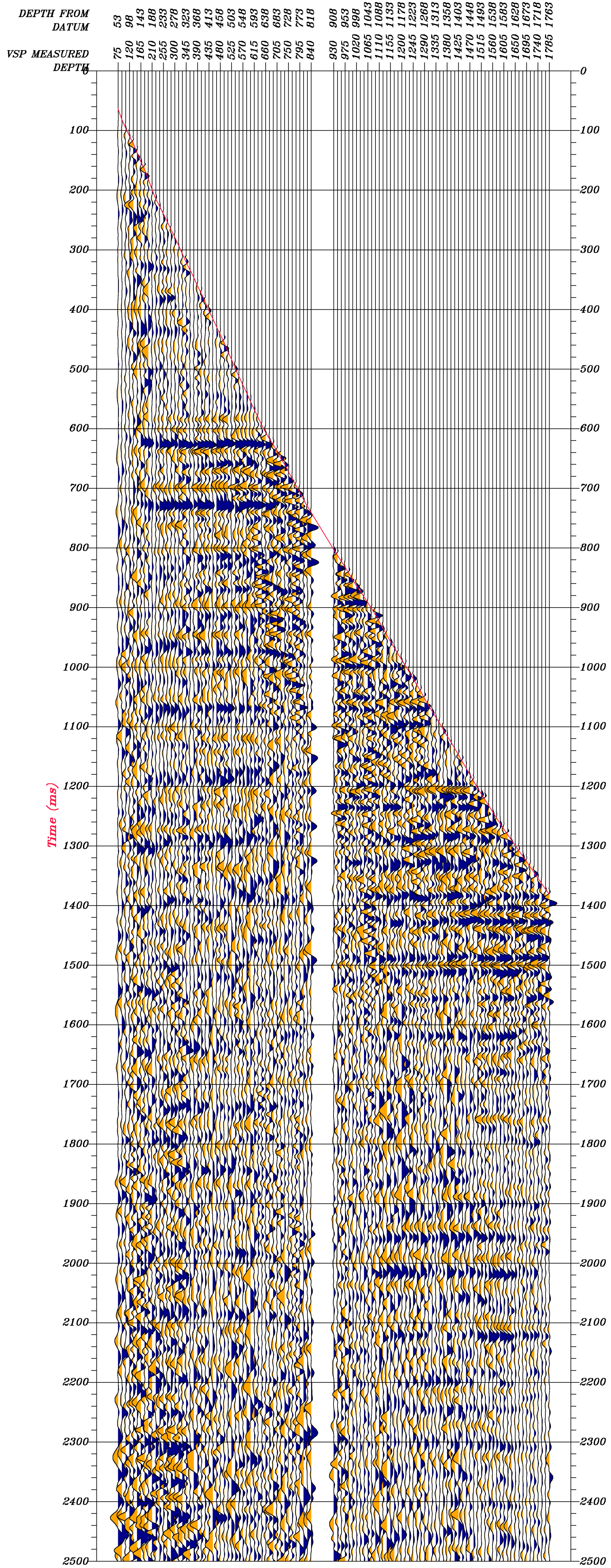
TOTAL WAVEFIELD - VSP STACKED DATA  
RECORDED ONE-WAY TIME (MSEC)



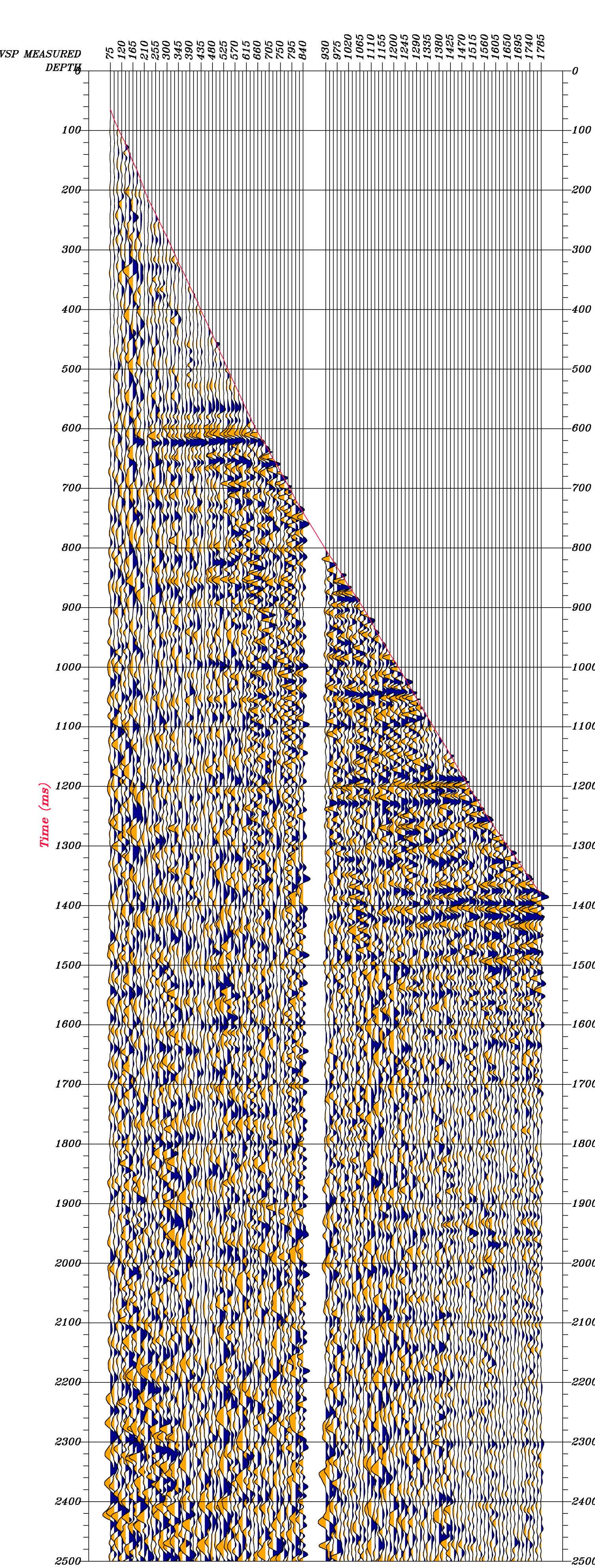
DOWNGOING WAVE  
ALIGNED AT 200 MSEC



UNENHANCED UNDECONVOLVED UPWAVE  
TWO-WAY TIME BELOW MSL (MSEC)



UNENHANCED DECONVOLVED UPWAVE  
TWO-WAY TIME BELOW MSL (MSEC)



ENHANCED DECONVOLVED UPWAVE  
TWO-WAY TIME BELOW MSL (MSEC)

