

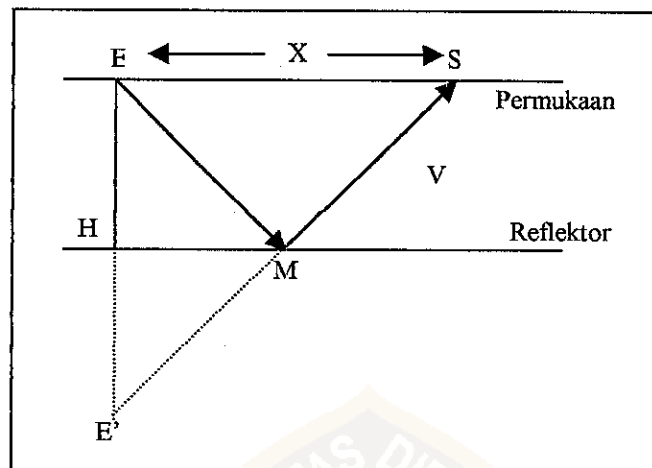
LAMPIRAN A

PENURUNAN RUMUS



PENURUNAN KONSEP KECEPATAN *NORMAL MOVE OUT* DAN KECEPATAN *ROOT MEAN SQUARE*

1. Kecepatan *Normal Move Out*



Gambar A.1 Model lapisan homogen tunggal dengan reflektor horisontal (Cordier, 1985)

Jika X adalah jarak antara sumber E dan penerima S (*offset*), V adalah kecepatan lapisan bumi di atas reflektor dan T_0 adalah waktu perambatan gelombang secara vertikal pada dua arah sepanjang EH .

Maka berlaku:

$$T_0 = \frac{2EH}{V} = \frac{EE'}{V}$$

jika T_x adalah waktu yang diberikan oleh berkas gelombang seismik sepanjang EMS , maka:

$$T_x = \frac{EMS}{V} = \frac{E'S}{V}$$

Perbedaan antara $T_x - T_0$ ini dikenal sebagai ΔT atau *normal move out* (NMO).

Dari segitiga EE'S diperoleh:

$$ES^2 + EE'^2 = E'S$$

$$\frac{ES^2}{V^2} + \frac{EE'^2}{V^2} = \frac{E'S^2}{V^2}$$

atau

$$T_x^2 = T_0^2 + \frac{x^2}{V^2} \quad (\text{A.1})$$

yang merupakan suatu persamaan hiperbola dengan v sebagai kecepatan *normal move out* (V_{NMO}).

Karena $\Delta T = T_x - T_0$, maka persamaan (A.1) menjadi:

$$\Delta T^2 + 2T_0\Delta T - \frac{x^2}{V^2}$$

$$\Delta T_1, \Delta T_2 = \frac{-2T_0 \pm \sqrt{(2T_0)^2 - 4 \cdot 1 \cdot \left(\frac{-x^2}{V^2}\right)}}{2 \cdot 1}$$

$$= \frac{-2T_0 \pm \sqrt{4T_0^2 + \frac{4x^2}{V^2}}}{2}$$

$$= \frac{-2T_0 \pm 2\sqrt{T_0^2 + \frac{x^2}{V^2}}}{2}$$

Penyelesaian yang berharga positif atau nol diberikan oleh:

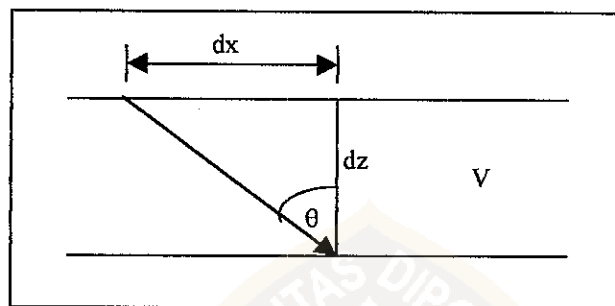
$$\Delta T = -T_0 + \left(T_0^2 + \frac{x^2}{V^2}\right)^{1/2}$$

2. Kecepatan *Root Mean Square*

Jika V adalah kecepatan interval suatu lapisan batuan dan θ adalah sudut trayektori seismik terhadap arah vertikal tersebut (gambar A.2), maka dapat dituliskan hukum Snell dalam bentuk:

$$\sin \theta = v\sqrt{c} \quad (\text{A.2})$$

dengan c adalah konstanta.



Gambar A.2 Definisi parameter pada konsep kecepatan RMS (Cordier, 1985)

Harga ΔT dapat ditentukan dengan menghitung perbedaan antara waktu tempuh gelombang yang merambat sepanjang T_x (dari sumber ke penerima pada jarak x), terhadap waktu tempuh gelombang yang diberikan sepanjang T_0 (dari jarak vertikal antara sumber dan penerima pada *zero offset*) (gambar A.3), yaitu:

$$T_x = 2 \int_0^z \frac{dz}{v \cos \theta} \quad (\text{A.3})$$

$$\Delta T = 2 \int_0^z \left(\frac{1}{\cos \theta} - 1 \right) \frac{dz}{v} \quad (\text{A.4})$$

$$x = 2 \int_0^z \tan \theta dz \quad (\text{A.5})$$

Dinyatakan bahwa $\frac{1}{\cos \theta}$ merupakan suatu deret perkalian $\sin^2 \theta$. Dari persamaan (A.2) dalam deret cv^2 , dapat ditentukan harga $\tan \theta$ dengan mengalikan deret $\frac{1}{\cos \theta}$ dan $\sin \theta = v\sqrt{c}$. Dengan memasukkan hasilnya kedalam persamaan (A.3), (A.4), (A.5), maka:

$$\overline{v_z^n} = \frac{1}{z} \int_0^z v^n dz \quad (\text{A.6})$$

($\overline{v_z^n}$ adalah kecepatan rata-rata pada kedalaman orde-n dengan berbagai variasi harga kecepatan interval).

Dengan suatu pendekatan harga x dan ΔT sebagai fungsi z , c dan kecepatan rerata pada berbagai orde, dihasilkan persamaan berbentuk:

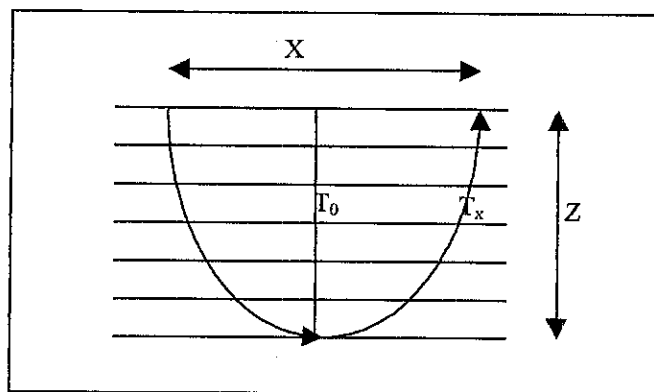
$$\Delta T = z \left[c \overline{v_z} + \frac{3}{4} c^2 \overline{v_z^3} + \frac{5}{8} c \overline{v_z^5} \right] \quad (\text{A.7})$$

$$x = 2z\sqrt{c} \left[\overline{v_z} + \frac{1}{2} c \overline{v_z^3} + \frac{3}{8} c^2 \overline{v_z^5} \right] \quad (\text{A.8})$$

$$\frac{x^2}{4z^2 \overline{v_z}^2} = c + c^2 \frac{\overline{v_z^2}}{\overline{v_z}} + c^3 \left[\frac{\overline{v_z^2}^2}{4\overline{v_z}^2} + \frac{3\overline{v_z^5}}{4\overline{v_z}} \right] \quad (\text{A.9})$$

$$\frac{\Delta T}{\overline{v_z}} = c + \frac{3}{4} \frac{\overline{v_z^3}}{\overline{v_z}} c^2 + \frac{5}{8} \frac{\overline{v_z^5}}{\overline{v_z}} c^3 \quad (\text{A.10})$$

Bentuk persamaan (A.9) dan (A.10) dipermudah dengan mengabaikan parameter c pada batas c^4 serta orde yang lebih tinggi.



Gambar A.3 Model bawah permukaan dengan n-lapisan homogen horisontal (Cordier, 1985)

Dari perhitungan di atas, dihasilkan:

$$\Delta T = \frac{z}{v_z} \left\{ \left(\frac{x}{2z} \right)^2 - \frac{1}{4} \frac{\overline{v_z^3}}{\overline{v_z}} \left(\frac{x}{2z} \right)^4 + \frac{1}{8} \left[2 \left(\frac{\overline{v_z^3}}{\overline{v_z}} \right) - \frac{\overline{v_z^5}}{\overline{v_z}} \right] \left(\frac{x}{2z} \right)^6 + \dots \right\} \quad (\text{A.11})$$

Persamaan (A.11) dapat dituliskan, dengan menempatkan harga kecepatan dari rata-rata kedalaman pada rerata waktu dari persamaan:

$$\frac{\overline{v_x^n}}{\overline{v_x}} = \frac{\overline{v_t^{n+1}}}{\overline{v_t}} \quad (\text{A.12})$$

$$\text{diperoleh: } T_x - T_0 = \Delta T = \frac{x^2}{2\overline{v_t^2} T_0} - \frac{1}{8} \frac{\overline{v_t^4} x^4}{\overline{v_t^2} T_0^3} + \left[\frac{\overline{v_t^2}}{2\overline{v_t^4}} - \frac{\overline{v_t^6}}{\overline{v_t^2}^3} \right] \frac{x^6}{16\overline{v_t^2}^3 T_0^5} + \dots \quad (\text{A.13})$$

Dengan mengkuadratkan persamaan ini, maka didapatkan suatu bentuk sebagai berikut:

$$T_x^2 = C_1 + C_2 x^2 + C_3 x^4 + \dots + C_j x^{2j-2} + \dots$$

dengan:

$$C_1 = T_0^2, C_2 = \frac{1}{\overline{v_t^2}}, C_3 = \frac{1}{4T_0^2} \left[\frac{\overline{v_t^2}^2 \overline{v_t^4}}{\overline{v_t^2}^4} \right] \quad (\text{A.14})$$

Pada persamaan diatas, v_t^2 adalah kecepatan kuadrat dengan rerata waktu pada lapisan bawah permukaan paling dasar yang diformulasikan sebagai berikut:

$$\overline{v_t^2} = \frac{1}{T_0} \int_0^{T_0} v^2 dt = v_{RMS}^2$$

yang merupakan persamaan kecepatan *root mean square* (V_{RMS}).



LAMPIRAN B
DATA LAPANGAN




Borehole Services Division

BSD/FA.3

WELL :

COMPANY :

LOCATION :

FIELD :

COUNTRY. :

ACQUISITION DETAILS

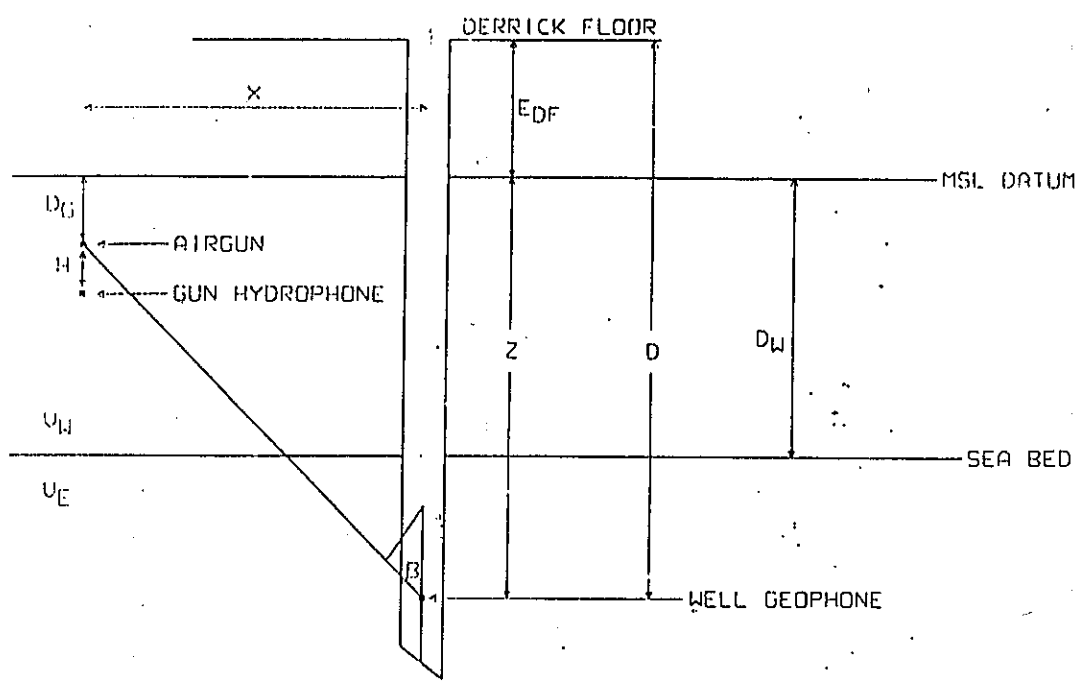
Survey Date :
 Reference Level : DF at 9.52m above MSL
 Seismic Datum : MSL
 Ground Level : 2.72m above MSL
 Well Deviation : None

Rig Source VSP Survey:

Source : Bolt Airgun 1900B, 120 cu.in. Chamber
 Location : 105m offset from wellhead,
 Source Bearing : 300 degrees N.
 Monitor : Near field hydrophone
 Source Depth : 2.72 m below Ground Level
 Monitor Depth : 1.72 m below Ground Level
 Source to monitor distance : 1.0 m

Well Geophone : GCH 100 3C
 Recording Equipment : PDAQ-1
 Sample Rate : 1 ms

SCHEMATIC CROSS-SECTION



KEY

- DF - DERRICK FLOOR
- E_{DF} - ELEVATION OF DF ABOVE DATUM
- D^* - MEASURED DEPTH OF WELL GEOPHONE BELOW DF
- D - VERTICAL DEPTH OF WELL GEOPHONE BELOW DF
- Z - VERTICAL DEPTH OF WELL GEOPHONE BELOW DATUM
- D_G - DEPTH OF GUN BELOW M. S. L.
- H - DISTANCE BETWEEN GUN AND GUN HYDROPHONE
- X - HORIZONTAL DISTANCE BETWEEN WELL GEOPHONE AND GUN
- β - INCIDENT ANGLE AT WELL GEOPHONE LEVELS
- T - TRAVEL-TIME FROM GUN HYDROPHONE TO WELL GEOPHONE
- T_U - TIME FROM GUN TO WELL GEOPHONE CORRECTED TO VERTICAL
 - (1) BY ASSUMING STRAIGHT LINE TRAVEL PATHS $\left[\left[T + \frac{H}{V_W} \right] \cos \beta \right]$
 - OR (2) BY ESTIMATING THE TRUE REFRACTED TRAVEL PATHS
- T_C - TIME CORRECTION FROM GUN TO DATUM $\left[= \frac{\text{GUN DEPTH}}{V_W} \right]$
- T_C - CORRECTED TRAVEL-TIME BETWEEN DATUM AND WELL GEOPHONE = $T_U + T_C$
- V_A - Z/T_C (AVERAGE VELOCITY)
- V_I - $\Delta Z/\Delta T_C$ (INTERVAL VELOCITY)
- D_W - DEPTH OF WATER
- V_W - WATER VELOCITY
- V_E - ELEVATION VELOCITY

Borehole Services Division



DISTANCE BETWEEN GUN
AND GUN HYDROPHONE 1.0 M

GUN DEPTH:- 2.7 M

GUN HYDROPHONE DEPTH 1.7 M

GUN OFFSET 105.0 M

EDF= 9.5 M AMSL

DF= 9.5 M AMSL

ED= MSL

EGL= 2.7 M

VW= 1524 M/S

COMPANY:

WELL:

AIRGUN COMPUTATION

T IS THE TIME MEASURED FROM THE FIRST TROUGH ON THE GUN HYDROPHONE SIGNAL TO THE FIRST TROUGH ON THE WELL GEOPHONE SIGNAL USING AN AUTOMATED TRACE ALIGNMENT PROCEDURE.

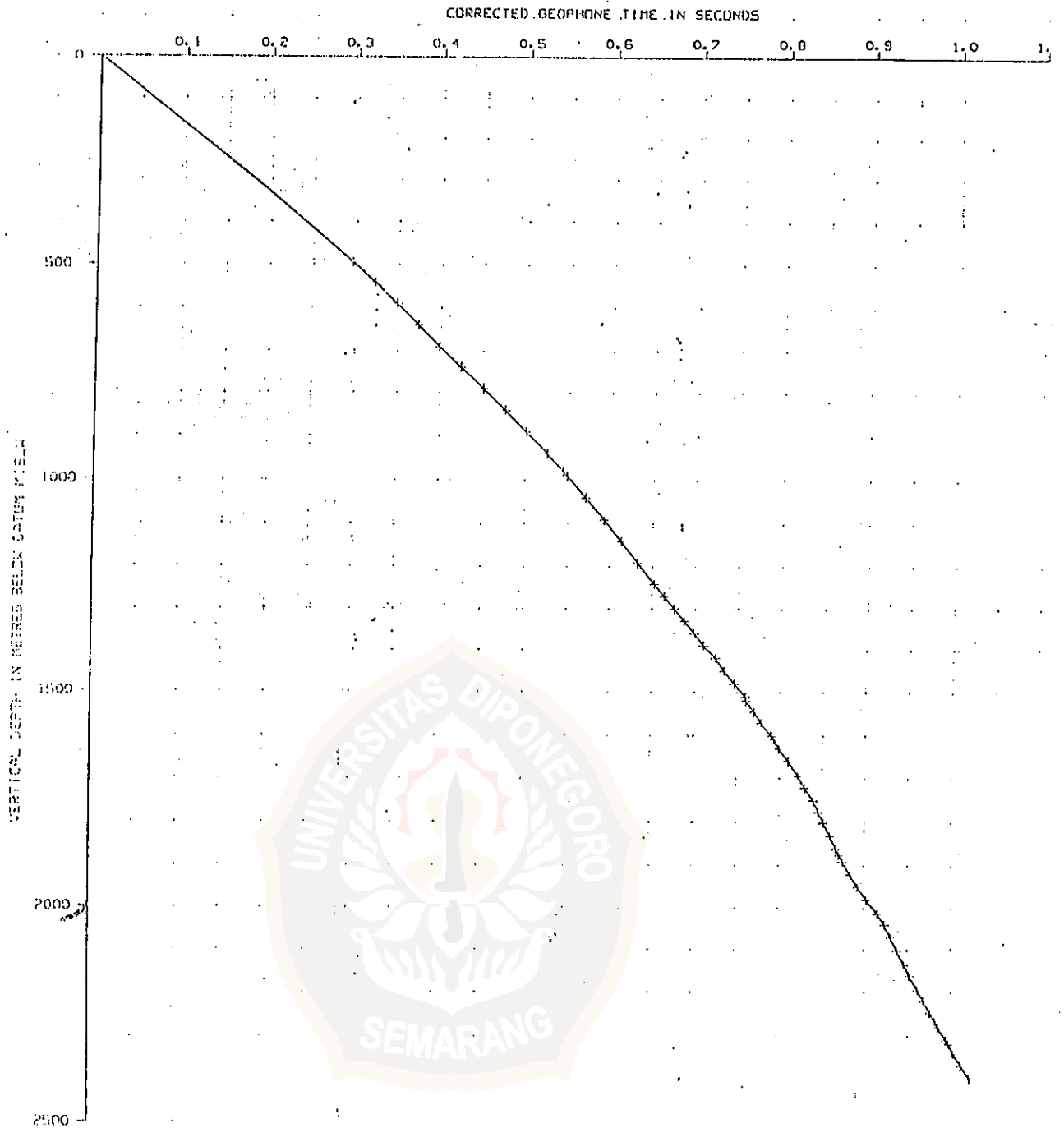
A TIME CORRECTION FOR THE DISTANCE BETWEEN GUN AND GUN HYDROPHONE AT WATER VELOCITY IS ADDED TO T BEFORE CORRECTION TO THE VERTICAL.

TV IS THE TIME FROM THE GUN TO THE WELL GEOPHONE CORRECTED TO THE VERTICAL BY ASSUMING STRAIGHT LINE TRAVEL PATHS.

RECORD NO	D		Z		X		T		TV	TE	TC	AVERAGE VELOCITY	INTERVAL DEPTH	INTERVAL TIME	INTERVAL VELOCITY
	M	M	M	M	M	M	S	S	S	S	S	M/S	M	S	M/S
57	503.0	503.0	493.5	105.0	0.3023	0.2963	0.0000	0.2963	0.2963	0.0000	0.2963	1665	97.0	0.0525	1849
55	550.0	550.0	540.5	105.0	0.3281	0.3227	0.0000	0.3227	0.3227	0.0000	0.3227	1675			
65	600.0	600.0	590.5	105.0	0.3536	0.3488	0.0000	0.3488	0.3488	0.0000	0.3488	1693			
64	650.0	650.0	640.5	105.0	0.3785	0.3742	0.0000	0.3742	0.3742	0.0000	0.3742	1712	100.0	0.0498	2008
63	700.0	700.0	690.5	105.0	0.4025	0.3986	0.0000	0.3986	0.3986	0.0000	0.3986	1732			
62	750.0	750.0	740.5	105.0	0.4277	0.4241	0.0000	0.4241	0.4241	0.0000	0.4241	1746	100.0	0.0518	1930
61	800.0	800.0	790.5	105.0	0.4537	0.4504	0.0000	0.4504	0.4504	0.0000	0.4504	1755			
60	850.0	850.0	840.5	105.0	0.4789	0.4759	0.0000	0.4759	0.4759	0.0000	0.4759	1766	100.0	0.0500	2000
59	900.0	900.0	890.5	105.0	0.5032	0.5004	0.0000	0.5004	0.5004	0.0000	0.5004	1780			
58	950.0	950.0	940.5	105.0	0.5277	0.5251	0.0000	0.5251	0.5251	0.0000	0.5251	1791			
57	990.0	990.0	980.5	105.0	0.5470	0.5445	0.0000	0.5445	0.5445	0.0000	0.5445	1801	100.0	0.0485	2062
56	1000.0	1000.0	990.5	105.0	0.5513	0.5489	0.0000	0.5489	0.5489	0.0000	0.5489	1805			
55	1050.0	1050.0	1040.5	105.0	0.5733	0.5711	0.0000	0.5711	0.5711	0.0000	0.5711	1822	100.0	0.0436	2292
54	1100.0	1100.0	1090.5	105.0	0.5946	0.5925	0.0000	0.5925	0.5925	0.0000	0.5925	1840			
53	1150.0	1150.0	1140.5	105.0	0.6148	0.6129	0.0000	0.6129	0.6129	0.0000	0.6129	1861	100.0	0.0399	2507
52	1200.0	1200.0	1190.5	105.0	0.6342	0.6324	0.0000	0.6324	0.6324	0.0000	0.6324	1882			
51	1250.0	1250.0	1240.5	105.0	0.6538	0.6521	0.0000	0.6521	0.6521	0.0000	0.6521	1902			
50	1280.0	1280.0	1270.5	105.0	0.6652	0.6636	0.0000	0.6636	0.6636	0.0000	0.6636	1915			
49	1310.0	1310.0	1300.5	105.0	0.6771	0.6756	0.0000	0.6756	0.6756	0.0000	0.6756	1925	110.0	0.0432	2549
48	1340.0	1340.0	1330.5	105.0	0.6889	0.6874	0.0000	0.6874	0.6874	0.0000	0.6874	1935			
47	1370.0	1370.0	1360.5	105.0	0.7002	0.6988	0.0000	0.6988	0.6988	0.0000	0.6988	1947			
46	1400.0	1400.0	1390.5	105.0	0.7110	0.7096	0.0000	0.7096	0.7096	0.0000	0.7096	1959			

RECORD NO	D	M	Z	X	T	TV	TE	TC	AVERAGE VELOCITY	INTERVAL DEPTH	INTERVAL TIME	INTERVAL VELOCITY
	M	M	M	M	S	S	S	S	M/S	M	S	M/S
45	1430.0	1430.0	1420.5	105.0	0.7247	0.7234	0.0000	0.7234	1964			
44	1460.0	1460.0	1450.5	105.0	0.7348	0.7335	0.0000	0.7335	1977			
43	1490.0	1490.0	1480.5	105.0	0.7459	0.7457	0.0000	0.7457	1985			
42	1520.0	1520.0	1510.5	105.0	0.7600	0.7588	0.0000	0.7588	1991			
41	1530.0	1530.0	1520.5	105.0	0.7606	0.7594	0.0000	0.7594	2002	125.0	0.0457	2735
40	1555.0	1555.0	1545.5	105.0	0.7702	0.7691	0.0000	0.7691	2010			
39	1580.0	1580.0	1570.5	105.0	0.7790	0.7779	0.0000	0.7779	2019			
38	1610.0	1610.0	1600.5	105.0	0.7908	0.7898	0.0000	0.7898	2027			
37	1619.0	1619.0	1609.5	105.0	0.7940	0.7930	0.0000	0.7930	2030			
36	1640.0	1640.0	1630.5	105.0	0.8001	0.7991	0.0000	0.7991	2040			
35	1670.0	1670.0	1660.5	105.0	0.8110	0.8100	0.0000	0.8100	2050	115.0	0.0410	2808
34	1704.0	1704.0	1694.5	105.0	0.8220	0.8211	0.0000	0.8211	2064			
33	1730.0	1730.0	1720.5	105.0	0.8301	0.8292	0.0000	0.8292	2075			
32	1760.0	1760.0	1750.5	105.0	0.8398	0.8389	0.0000	0.8389	2087			
31	1785.0	1785.0	1775.5	105.0	0.8460	0.8452	0.0000	0.8452	2101	140.0	0.0413	3392
30	1810.0	1810.0	1800.5	105.0	0.8521	0.8513	0.0000	0.8513	2115			
29	1840.0	1840.0	1830.5	105.0	0.8600	0.8592	0.0000	0.8592	2130			
28	1870.0	1870.0	1860.5	105.0	0.8673	0.8666	0.0000	0.8666	2147			
27	1885.0	1885.0	1875.5	105.0	0.8708	0.8701	0.0000	0.8701	2155			
26	1900.0	1900.0	1890.5	105.0	0.8750	0.8743	0.0000	0.8743	2162	121.0	0.0322	3754
25	1931.0	1931.0	1921.5	105.0	0.8842	0.8835	0.0000	0.8835	2175			
24	1960.0	1960.0	1950.5	105.0	0.8929	0.8923	0.0000	0.8923	2186			
23	1990.0	1990.0	1980.5	105.0	0.9031	0.9025	0.0000	0.9025	2194			
3	2024.0	2024.0	2014.5	105.0	0.9162	0.9156	0.0000	0.9156	2200	119.0	0.0397	2998

RECORD NO	D		Z	X	Y	TV	TE	TC	AVERAGE		INTERVAL		INTERVAL VELOCITY
	M	M							VELOCITY	DEPTH	TIME	VELOCITY	
17	2050.0	2050.0	2040.5	105.0	0.9238	0.9232	0.0000	0.9232	2210				
16	2080.0	2080.0	2070.5	105.0	0.9310	0.9305	0.0000	0.9305	2225				
15	2110.0	2110.0	2100.5	105.0	0.9380	0.9375	0.0000	0.9375	2241				
14	2143.0	2143.0	2133.5	105.0	0.9460	0.9455	0.0000	0.9455	2256	120.0	0.0284	4226	
13	2170.0	2170.0	2160.5	105.0	0.9521	0.9516	0.0000	0.9516	2270				
12	2205.0	2205.0	2195.5	105.0	0.9611	0.9607	0.0000	0.9607	2285				
11	2230.0	2230.0	2220.5	105.0	0.9680	0.9676	0.0000	0.9676	2295				
10	2257.0	2257.0	2247.5	105.0	0.9755	0.9751	0.0000	0.9751	2305				
9	2275.0	2275.0	2265.5	105.0	0.9809	0.9805	0.0000	0.9805	2311	120.0	0.0330	3639	
8	2290.0	2290.0	2280.5	105.0	0.9850	0.9846	0.0000	0.9846	2316				
7	2320.0	2320.0	2310.5	105.0	0.9939	0.9935	0.0000	0.9935	2326				
6	2329.0	2329.0	2319.5	105.0	0.9968	0.9964	0.0000	0.9964	2328				
5	2351.0	2351.0	2341.5	105.0	1.0022	1.0018	0.0000	1.0018	2337				
4	2380.0	2380.0	2370.5	105.0	1.0113	1.0110	0.0000	1.0110	2345	120.0	0.0361	3327	
3	2410.0	2410.0	2400.5	105.0	1.0210	1.0207	0.0000	1.0207	2352				



TIME-DEPTH CURVE
WELL :



DESCRIPTION OF SHIFTS USED IN VELOCITY LOG CALIBRATION

TWO TYPES OF SHIFT MAY BE APPLIED :

(1) SHIFTS TO LOWER VELOCITIES WHICH ARE APPLIED LINEARLY.

THESE SHIFTS ARE CALCULATED USING THE FORMULA :-

$$\frac{(T_L - T_C)_2 - (T_L - T_C)_1}{Z_2 - Z_1} \times 10^3$$

WHERE T_L AND T_C ARE THE TRAVEL TIMES TO A GIVEN CHECK LEVEL, MEASURED FROM THE VELOCITY LOG AND WELL GEOPHONE DATA RESPECTIVELY; AND WHERE Z IS THE DEPTH OF THE CHECK LEVEL BELOW DATUM. $(T_L - T_C)$ IS EXPRESSED IN MS (AS ON THE CALIBRATION CURVE) AND THE RESULTING LINEAR SHIFT IS EXPRESSED IN μ S/FT.

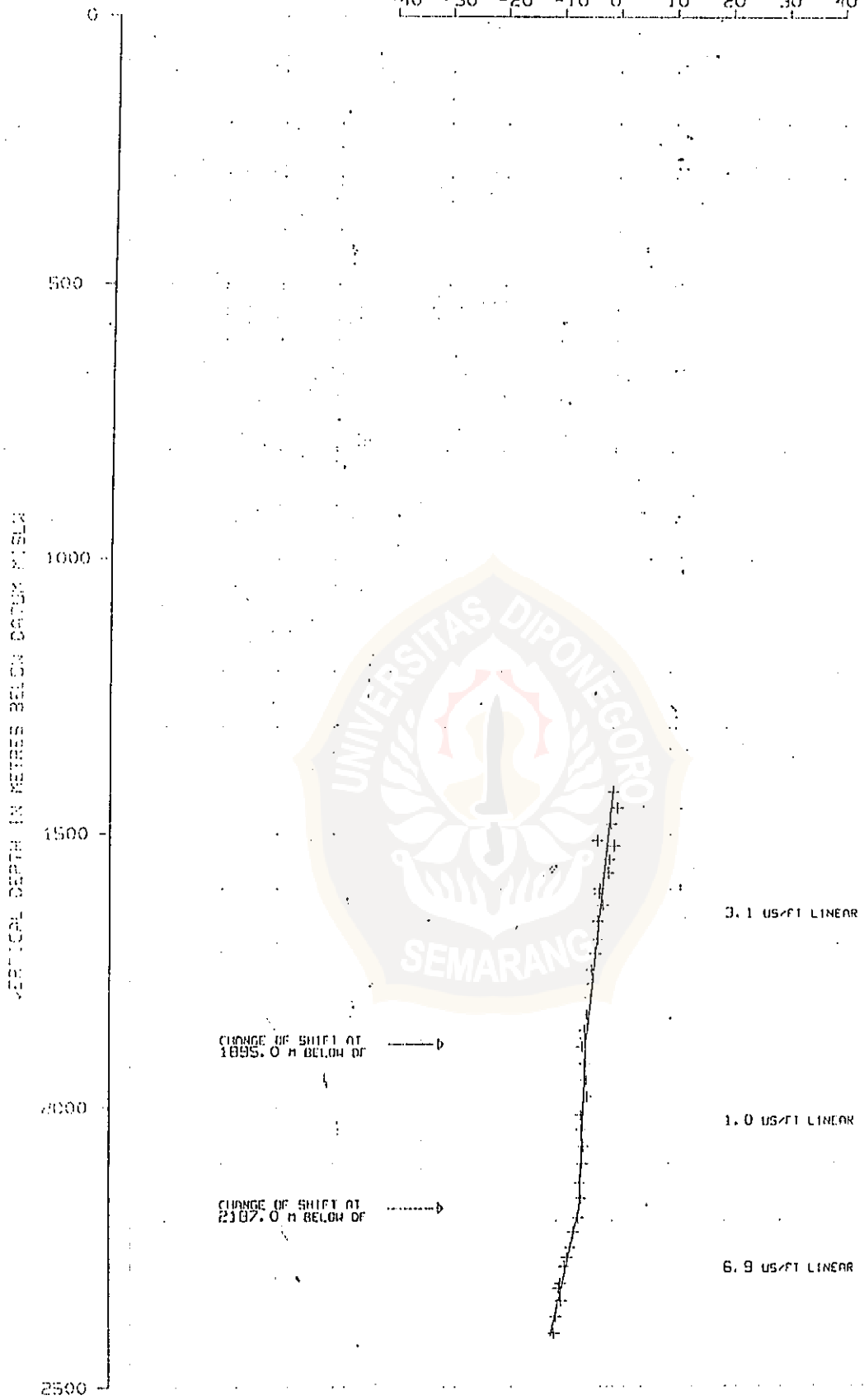
(2) SHIFTS TO HIGHER VELOCITIES WHICH ARE APPLIED DIFFERENTIALLY IN ORDER TO APPLY LARGER CORRECTIONS TO LOWER VELOCITY SECTIONS OF LOG. THIS IS BASED ON THE ASSUMPTION THAT LOWER VELOCITY SECTIONS OF LOG CONTRIBUTE MORE TRANSIT TIME ERRORS THAN HIGHER VELOCITY SECTIONS DUE TO CAVING AND OTHER BOREHOLE EFFECTS. ADDITIONALLY, THIS TYPE OF SHIFT MAY BE RESTRICTED BY DEFINING A BASELINE VALUE SUCH THAT SECTIONS OF LOG RECORDED AT A HIGHER VELOCITY THAN THAT OF THE BASELINE WILL RECEIVE NO SHIFT.

RESTRICTED DIFFERENTIAL SHIFTS (UNRESTRICTED SHIFTS WILL HAVE A BASELINE VALUE OF ZERO) ARE CALCULATED USING THE FORMULA :-

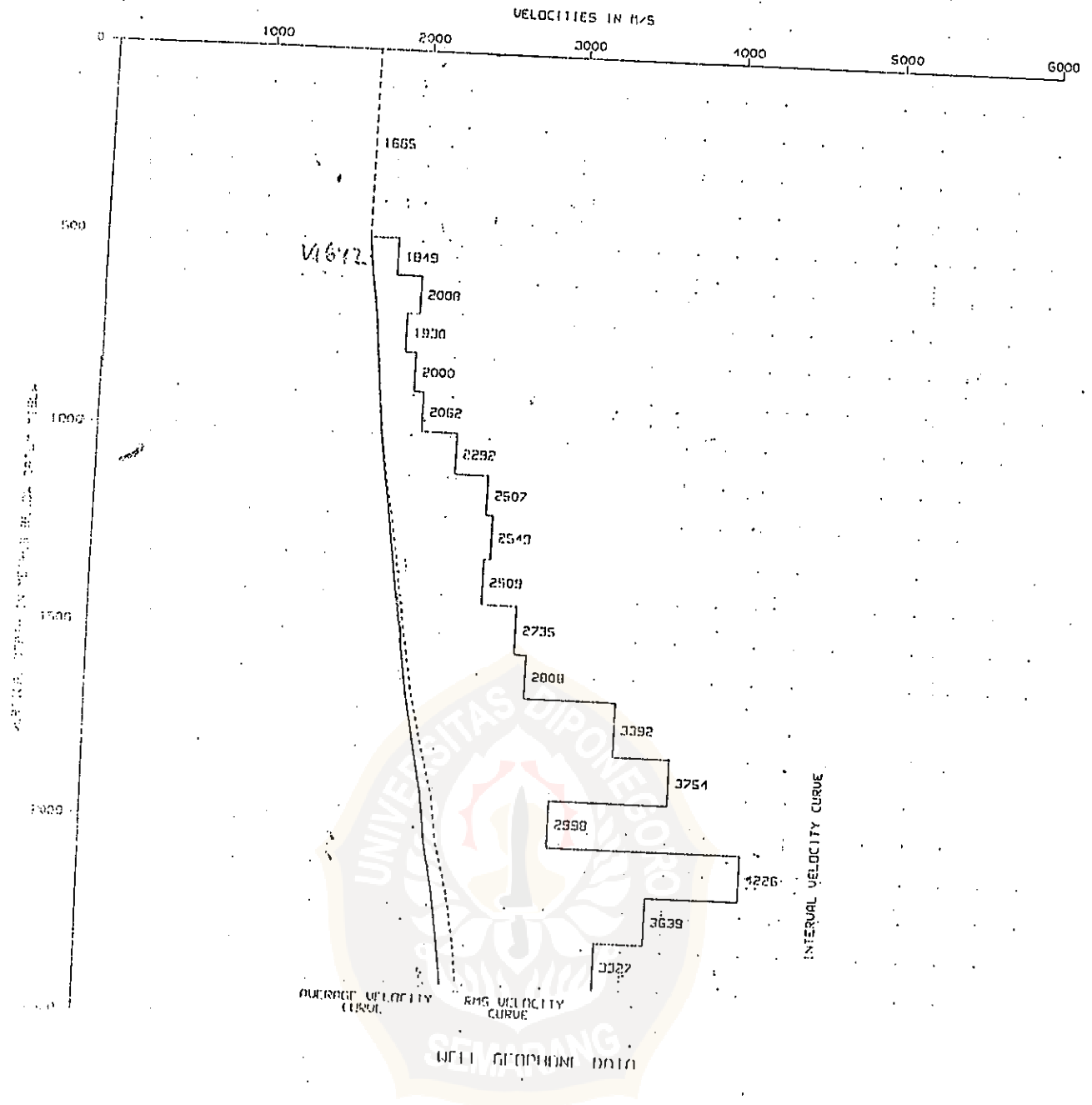
$$\left[\frac{(T_{C2} - T_{C1}) - (Z_2 - Z_1) \times \text{BASELINE VALUE} \times 10^{-6}}{(T_{L2} - T_{L1}) - (Z_2 - Z_1) \times \text{BASELINE VALUE} \times 10^{-6}} \right] \times 100\%$$

WHERE T_C AND T_L ARE EXPRESSED IN SECONDS AND THE BASELINE VALUE IS EXPRESSED IN μ S/FT.

$T_L - T_C$ IN MILLISECONDS
 T_C = TOTAL TRAVEL TIME FROM VERTICAL UNCORRECTED LOG
-40 -30 -20 -10 0 10 20 30 40



LOG CALIBRATION CURVE
WELL :



COMPANY :

WELL :

LISTING OF CALIBRATED VELOCITY LOG DATA
AT 0.001 SECONDS TWO-WAY TIME INTERVALS

LISTING SHOWS :

TWO-WAY TRAVEL TIME IN SECONDS BELOW DATUM OF MSL

MEASURED DEPTH(D) IN M BELOW OF AT 9.52 M ABOVE DATUM OF MSL

VERTICAL DEPTH(D) IN M BELOW OF AT 9.52 M ABOVE DATUM OF MSL

VERTICAL DEPTH(Z) IN M BELOW DATUM OF MSL

INTERVAL, AVERAGE AND RMS VELOCITIES IN M/SEC

REFLECTION COEFFICIENTS

TWO-WAY TRANSMISSION LOSS

NOTE : THE FIRST INTERVAL VELOCITY IS CALCULATED BETWEEN DATUM AND THE FIRST TIME SAMPLE. SUBSEQUENT INTERVAL VELOCITIES ARE CALCULATED BETWEEN THE CURRENT TIME SAMPLE AND THE PRECEDING TIME SAMPLE.

TIME	DEPTH(D')	DEPTH(D)	DEPTH(Z)	INT. VEL.	AVG. VEL.	RMS. VEL.	REF. CFT.	TRN. LOSS
1.4480	1431.6	1431.6	1422.0	1964.2	1964.2	1964.2		
1.4500	1434.4	1434.4	1424.9	2814.1	1965.3	1965.6	0.1779	0.0316
1.4520	1436.6	1436.6	1427.1	2253.5	1965.7	1966.0	-0.1106	0.0435
1.4540	1439.3	1439.3	1429.8	2676.5	1966.7	1967.2	0.0858	0.0505
1.4560	1442.2	1442.2	1432.7	2869.0	1967.9	1968.7	0.0347	0.0517
1.4580	1444.8	1444.8	1435.3	2623.8	1968.8	1969.7	-0.0446	0.0536
1.4600	1447.5	1447.5	1437.9	2662.4	1969.8	1970.8	0.0073	0.0536
1.4620	1450.2	1450.2	1440.6	2688.0	1970.8	1972.0	0.0048	0.0536
1.4640	1452.9	1452.9	1443.4	2772.1	1971.9	1973.3	0.0154	0.0539
1.4660	1455.6	1455.6	1446.1	2660.3	1972.8	1974.4	-0.0206	0.0543
1.4680	1458.1	1458.1	1448.6	2535.3	1973.6	1975.3	-0.0241	0.0548
1.4700	1460.8	1460.8	1451.3	2677.6	1974.5	1976.4	0.0273	0.0555
1.4720	1463.7	1463.7	1454.2	2894.7	1975.8	1977.9	0.0390	0.0569
1.4740	1466.5	1466.5	1456.9	2773.9	1976.9	1979.2	-0.0213	0.0574
1.4760	1469.0	1469.0	1459.5	2529.3	1977.6	1980.1	-0.0461	0.0594
1.4780	1471.5	1471.5	1462.0	2476.7	1978.3	1980.9	-0.0105	0.0595
1.4800	1473.9	1473.9	1464.4	2467.0	1978.9	1981.6	-0.0020	0.0595
1.4820	1476.6	1476.6	1467.1	2653.9	1979.9	1982.6	0.0365	0.0607
1.4840	1479.2	1479.2	1469.7	2647.6	1980.8	1983.7	-0.0012	0.0607
1.4860	1482.0	1482.0	1472.5	2761.0	1981.8	1984.9	0.0210	0.0612
1.4880	1484.7	1484.7	1475.2	2721.2	1982.8	1986.1	-0.0073	0.0612
1.4900	1487.2	1487.2	1477.7	2506.7	1983.5	1986.9	-0.0410	0.0628
1.4920	1489.9	1489.9	1480.4	2653.7	1984.4	1988.0	0.0285	0.0635
1.4940	1492.8	1492.8	1483.3	2943.6	1985.7	1989.5	0.0518	0.0661
1.4960	1495.8	1495.8	1486.3	2982.9	1987.0	1991.2	0.0066	0.0661
1.4980	1498.2	1498.2	1488.7	2431.9	1987.6	1991.9	-0.1018	0.0758
1.5000	1501.0	1501.0	1491.5	2767.7	1988.7	1993.1	0.0646	0.0796
1.5020	1503.9	1503.9	1494.3	2848.8	1989.8	1994.5	0.0144	0.0798
1.5040	1506.3	1506.3	1496.8	2417.7	1990.4	1995.1	-0.0818	0.0860
1.5060	1508.9	1508.9	1499.3	2589.4	1991.2	1996.0	0.0343	0.0871
1.5080	1511.7	1511.7	1502.2	2847.0	1992.3	1997.4	0.0474	0.0891
1.5100	1514.4	1514.4	1504.9	2707.8	1993.2	1998.5	-0.0251	0.0897
1.5120	1517.0	1517.0	1507.5	2613.3	1994.1	1999.4	-0.0178	0.0900
1.5140	1519.8	1519.8	1510.3	2771.1	1995.1	2000.6	0.0293	0.0907
1.5160	1522.5	1522.5	1512.9	2652.7	1996.0	2001.6	-0.0218	0.0912
1.5180	1525.0	1525.0	1515.5	2579.1	1996.7	2002.5	-0.0141	0.0914
1.5200	1527.8	1527.8	1518.3	2745.0	1997.7	2003.7	0.0312	0.0922
1.5220	1530.7	1530.7	1521.2	2911.5	1998.9	2005.1	0.0294	0.0930
1.5240	1533.4	1533.4	1523.9	2696.7	1999.8	2006.2	-0.0383	0.0944
1.5260	1535.9	1535.9	1526.4	2500.1	2000.5	2006.9	-0.0378	0.0957
1.5280	1538.6	1538.6	1529.1	2707.8	2001.4	2008.0	0.0399	0.0971
1.5300	1541.5	1541.5	1532.0	2893.3	2002.6	2009.4	0.0331	0.0981
1.5320	1544.2	1544.2	1534.7	2727.3	2003.5	2010.5	-0.0295	0.0989
1.5340	1546.9	1546.9	1537.4	2698.1	2004.4	2011.6	-0.0054	0.0989

TIME	DEPTH(D')	DEPTH(D)	DEPTH(Z)	INT. VEL.	AVG. VEL.	RMS. VEL.	REF. CFT.	TRN. LOSS
1.5360	1550.0	1550.0	1540.5	3081.7	2005.8	2013.3	0.0664	0.1029
1.5380	1552.8	1552.8	1543.3	2819.8	2006.9	2014.6	-0.0444	0.1046
1.5400	1555.5	1555.5	1546.0	2694.9	2007.8	2015.6	-0.0226	0.1051
1.5420	1558.3	1558.3	1548.8	2793.2	2008.8	2016.8	0.0179	0.1054
1.5440	1561.1	1561.1	1551.6	2781.6	2009.8	2018.0	-0.0021	0.1054
1.5460	1564.1	1564.1	1554.5	2971.6	2011.0	2019.5	0.0330	0.1064
1.5480	1566.8	1566.8	1557.3	2726.3	2012.0	2020.6	-0.0430	0.1080
1.5500	1569.5	1569.5	1560.0	2762.6	2012.9	2021.7	0.0066	0.1080
1.5520	1572.6	1572.6	1563.1	3064.1	2014.3	2023.4	0.0517	0.1104
1.5540	1575.5	1575.5	1566.0	2934.9	2015.5	2024.8	-0.0215	0.1108
1.5560	1578.2	1578.2	1568.6	2617.9	2016.3	2025.7	-0.0571	0.1137
1.5580	1580.9	1580.9	1571.4	2726.8	2017.2	2026.8	0.0204	0.1141
1.5600	1583.9	1583.9	1574.4	3000.4	2018.4	2028.3	0.0478	0.1161
1.5620	1586.7	1586.7	1577.2	2813.4	2019.4	2029.5	-0.0322	0.1171
1.5640	1589.4	1589.4	1579.9	2744.5	2020.4	2030.6	-0.0124	0.1172
1.5660	1592.1	1592.1	1582.6	2679.8	2021.2	2031.6	-0.0119	0.1173
1.5680	1595.0	1595.0	1585.5	2843.0	2022.3	2032.8	0.0296	0.1181
1.5700	1597.7	1597.7	1588.1	2687.3	2023.1	2033.8	-0.0282	0.1188
1.5720	1600.5	1600.5	1591.0	2863.9	2024.2	2035.0	0.0318	0.1197
1.5740	1603.6	1603.6	1594.1	3046.9	2025.5	2036.6	0.0310	0.1205
1.5760	1606.5	1606.5	1597.0	2925.3	2026.6	2038.0	-0.0204	0.1209
1.5780	1609.2	1609.2	1599.7	2687.9	2027.5	2039.0	-0.0423	0.1225
1.5800	1611.9	1611.9	1602.3	2675.9	2028.3	2039.9	-0.0022	0.1225
1.5820	1614.8	1614.8	1605.3	2970.8	2029.5	2041.3	0.0522	0.1249
1.5840	1617.4	1617.4	1607.9	2615.5	2030.2	2042.2	-0.0636	0.1284
1.5860	1620.6	1620.6	1611.0	3123.2	2031.6	2043.9	0.0885	0.1352
1.5880	1623.7	1623.7	1614.2	3168.9	2033.0	2045.7	0.0073	0.1353
1.5900	1626.8	1626.8	1617.2	3023.9	2034.3	2047.2	-0.0234	0.1357
1.5920	1629.7	1629.7	1620.2	2949.5	2035.4	2048.6	-0.0125	0.1359
1.5940	1632.8	1632.8	1623.3	3080.9	2036.7	2050.2	0.0218	0.1363
1.5950	1635.7	1635.7	1626.2	2936.0	2037.9	2051.6	-0.0241	0.1368
1.5980	1638.4	1638.4	1628.9	2705.1	2038.7	2052.5	-0.0409	0.1382
1.6000	1641.2	1641.2	1631.7	2792.1	2039.6	2053.6	0.0158	0.1384
1.6020	1644.3	1644.3	1634.8	3082.3	2040.9	2055.2	0.0494	0.1405
1.6040	1647.4	1647.4	1637.9	3120.4	2042.3	2056.9	0.0061	0.1406
1.6060	1651.2	1651.2	1641.7	3817.5	2044.5	2060.0	0.1005	0.1493
1.6080	1654.2	1654.2	1644.7	2924.7	2045.6	2061.3	-0.1324	0.1642
1.6100	1656.7	1656.7	1647.2	2522.3	2046.2	2062.0	-0.0739	0.1687
1.6120	1659.3	1659.3	1649.8	2646.5	2046.9	2062.8	0.0240	0.1692
1.6140	1661.9	1661.9	1652.4	2596.4	2047.6	2063.5	-0.0095	0.1693
1.6160	1664.6	1664.6	1655.1	2701.4	2048.4	2064.4	0.0198	0.1696
1.6180	1667.5	1667.5	1658.0	2896.6	2049.5	2065.7	0.0349	0.1706
1.6200	1670.3	1670.3	1660.8	2791.7	2050.4	2066.7	-0.0184	0.1709
1.6220	1673.1	1673.1	1663.6	2751.2	2051.2	2067.7	-0.0073	0.1710

TIME	DEPTH(D')	DEPTH(D)	DEPTH(Z)	INT. VEL.	AVG. VEL.	RMS. VEL.	REF. CFT.	TRN. LOSS
1.6240	1675.8	1675.8	1666.3	2731.0	2052.1	2068.7	-0.0037	0.1710
1.6260	1678.5	1678.5	1669.0	2690.9	2052.9	2069.5	-0.0074	0.1710
1.6280	1681.4	1681.4	1671.9	2948.9	2054.0	2070.9	0.0457	0.1727
1.6300	1684.5	1684.5	1674.9	3009.5	2055.1	2072.3	0.0102	0.1728
1.6320	1687.4	1687.4	1677.9	2917.5	2056.2	2073.5	-0.0155	0.1730
1.6340	1690.4	1690.4	1680.9	3062.7	2057.4	2075.0	0.0243	0.1735
1.6360	1694.0	1694.0	1684.5	3607.7	2059.3	2077.6	0.0817	0.1790
1.6380	1697.1	1697.1	1687.6	3094.7	2060.6	2079.1	-0.0765	0.1838
1.6400	1700.1	1700.1	1690.6	2954.0	2061.7	2080.4	-0.0233	0.1843
1.6420	1703.3	1703.3	1693.8	3189.3	2063.0	2082.1	0.0383	0.1855
1.6440	1706.6	1706.6	1697.1	3312.3	2064.6	2084.1	0.0189	0.1858
1.6460	1709.9	1709.9	1700.4	3312.0	2066.1	2086.0	0.0000	0.1858
1.6480	1713.1	1713.1	1703.6	3206.3	2067.5	2087.7	-0.0162	0.1860
1.6500	1716.4	1716.4	1706.8	3248.8	2068.9	2089.5	0.0066	0.1860
1.6520	1719.5	1719.5	1710.0	3165.0	2070.2	2091.2	-0.0131	0.1862
1.6540	1722.6	1722.6	1713.1	3112.1	2071.5	2092.7	-0.0084	0.1862
1.6560	1725.8	1725.8	1716.3	3207.8	2072.9	2094.4	0.0151	0.1864
1.6580	1729.3	1729.3	1719.7	3421.3	2074.5	2096.5	0.0322	0.1872
1.6600	1733.1	1733.1	1723.6	3817.1	2076.6	2099.4	0.0547	0.1897
1.6620	1736.0	1736.0	1726.4	2874.3	2077.5	2100.5	-0.1409	0.2058
1.6640	1738.8	1738.8	1729.3	2888.5	2078.5	2101.7	0.0025	0.2058
1.6660	1742.0	1742.0	1732.5	3130.7	2079.8	2103.2	-0.0402	0.2071
1.6680	1745.1	1745.1	1735.6	3138.4	2081.1	2104.7	0.0012	0.2071
1.6700	1748.3	1748.3	1738.7	3136.5	2082.3	2106.3	-0.0003	0.2071
1.6720	1751.3	1751.3	1741.8	3027.1	2083.4	2107.6	-0.0177	0.2073
1.6740	1754.7	1754.7	1745.1	3380.6	2085.0	2109.6	0.0552	0.2097
1.6760	1757.9	1757.9	1748.3	3205.4	2086.3	2111.2	-0.0266	0.2103
1.6780	1761.0	1761.0	1751.5	3147.6	2087.6	2112.8	-0.0091	0.2103
1.6800	1763.9	1763.9	1754.4	2931.8	2088.6	2113.9	-0.0355	0.2113
1.6820	1767.2	1767.2	1757.6	3210.4	2089.9	2115.6	0.0454	0.2130
1.6840	1770.8	1770.8	1761.3	3628.1	2091.8	2118.0	0.0611	0.2159
1.6860	1775.1	1775.1	1765.6	4319.3	2094.4	2122.0	0.0870	0.2218
1.6880	1779.4	1779.4	1769.9	4314.0	2097.0	2125.9	-0.0006	0.2218
1.6900	1783.7	1783.7	1774.2	4278.0	2099.6	2129.8	-0.0042	0.2218
1.6920	1787.7	1787.7	1778.2	3978.0	2101.8	2132.9	-0.0363	0.2229
1.6940	1792.1	1792.1	1782.6	4445.8	2104.6	2137.1	0.0555	0.2253
1.6960	1796.2	1796.2	1786.7	4074.1	2106.9	2140.4	-0.0436	0.2267
1.6980	1800.3	1800.3	1790.8	4088.9	2109.3	2143.7	0.0018	0.2267
1.7000	1804.2	1804.2	1794.6	3875.1	2111.3	2146.6	-0.0268	0.2273
1.7020	1808.1	1808.1	1798.6	3968.5	2113.5	2149.6	0.0119	0.2274
1.7040	1812.4	1812.4	1802.9	4322.4	2116.1	2153.5	0.0427	0.2288
1.7060	1816.0	1816.0	1806.5	3577.4	2117.8	2155.7	-0.0943	0.2357
1.7080	1819.5	1819.5	1810.0	3519.3	2119.5	2157.8	-0.0082	0.2357
1.7100	1823.3	1823.3	1813.8	3724.1	2121.3	2160.3	0.0283	0.2363

TIME	DEPTH(D')	DEPTH(D)	DEPTH(Z)	INT. VEL.	AVG. VEL.	RMS. VEL.	REF. CFT.	TRN. LOSS
1.7120	1827.6	1827.6	1818.1	4362.8	2124.0	2164.2	-0.0790	0.2411
1.7140	1831.9	1831.9	1822.3	4224.5	2126.4	2167.7	-0.0161	0.2413
1.7160	1836.0	1836.0	1826.5	4152.6	2128.8	2171.1	-0.0086	0.2414
1.7180	1840.6	1840.6	1831.1	4617.9	2131.7	2175.5	0.0531	0.2435
1.7200	1844.9	1844.9	1835.4	4269.7	2134.2	2179.1	-0.0392	0.2447
1.7220	1848.9	1848.9	1839.3	3971.7	2136.3	2182.1	-0.0362	0.2456
1.7240	1852.9	1852.9	1843.4	4078.7	2138.5	2185.2	0.0133	0.2458
1.7260	1857.1	1857.1	1847.6	4174.9	2140.9	2188.6	0.0117	0.2459
1.7280	1861.5	1861.5	1852.0	4371.8	2143.5	2192.4	0.0230	0.2463
1.7300	1865.2	1865.2	1855.7	3697.0	2145.3	2194.7	-0.0836	0.2516
1.7320	1869.4	1869.4	1859.9	4253.9	2147.7	2198.2	0.0700	0.2552
1.7340	1872.8	1872.8	1863.3	3355.0	2149.1	2199.9	-0.1181	0.2656
1.7360	1877.6	1877.6	1868.0	4755.2	2152.1	2204.5	0.1727	0.2875
1.7380	1881.1	1881.1	1871.6	3515.7	2153.7	2206.5	-0.1499	0.3035
1.7400	1885.0	1885.0	1875.5	3962.9	2155.8	2209.3	0.0598	0.3060
1.7420	1889.7	1889.7	1880.1	4620.4	2158.6	2213.6	0.0766	0.3101
1.7440	1893.9	1893.9	1884.4	4274.9	2161.0	2217.0	-0.0388	0.3111
1.7460	1897.6	1897.6	1888.1	3705.7	2162.8	2219.3	-0.0713	0.3146
1.7480	1900.9	1900.9	1891.3	3225.0	2164.0	2220.7	-0.0694	0.3179
1.7500	1904.0	1904.0	1894.5	3179.1	2165.2	2222.1	-0.0072	0.3180
1.7520	1907.2	1907.2	1897.7	3185.1	2166.3	2223.4	0.0009	0.3180
1.7540	1910.6	1910.6	1901.1	3367.8	2167.7	2225.0	0.0279	0.3185
1.7560	1913.9	1913.9	1904.4	3313.4	2169.0	2226.6	-0.0081	0.3185
1.7580	1917.0	1917.0	1907.5	3070.7	2170.0	2227.7	-0.0380	0.3195
1.7600	1920.1	1920.1	1910.6	3143.6	2171.1	2229.0	0.0117	0.3196
1.7620	1923.3	1923.3	1913.7	3147.8	2172.2	2230.2	0.0007	0.3196
1.7640	1926.5	1926.5	1917.0	3243.4	2173.5	2231.6	0.0150	0.3198
1.7660	1929.4	1929.4	1919.8	2843.9	2174.2	2232.4	-0.0656	0.3227
1.7680	1932.3	1932.3	1922.8	2935.5	2175.1	2233.4	0.0159	0.3229
1.7700	1935.5	1935.5	1926.0	3210.7	2176.2	2234.7	0.0448	0.3242
1.7720	1939.2	1939.2	1929.7	3688.7	2178.0	2236.9	0.0693	0.3275
1.7740	1941.8	1941.8	1932.2	2571.0	2178.4	2237.3	-0.1785	0.3489
1.7760	1945.2	1945.2	1935.7	3481.9	2179.9	2239.1	0.1505	0.3636
1.7780	1948.6	1948.6	1939.1	3398.3	2181.2	2240.7	-0.0122	0.3637
1.7800	1951.9	1951.9	1942.4	3297.7	2182.5	2242.2	-0.0150	0.3639
1.7820	1955.1	1955.1	1945.6	3207.4	2183.6	2243.5	-0.0139	0.3640
1.7840	1958.1	1958.1	1948.5	2908.1	2184.5	2244.4	-0.0489	0.3655
1.7860	1961.0	1961.0	1951.5	2940.7	2185.3	2245.3	0.0056	0.3655
1.7880	1964.0	1964.0	1954.4	2961.2	2186.2	2246.2	0.0035	0.3656
1.7900	1966.9	1966.9	1957.4	2945.6	2187.0	2247.1	-0.0026	0.3656
1.7920	1969.8	1969.8	1960.3	2900.1	2187.8	2247.9	-0.0078	0.3656
1.7940	1972.6	1972.6	1963.1	2814.2	2188.5	2248.6	-0.0150	0.3657
1.7960	1975.4	1975.4	1965.9	2762.1	2189.2	2249.3	-0.0093	0.3658
1.7980	1978.3	1978.3	1968.7	2877.7	2189.9	2250.1	0.0205	0.3661

TIME	DEPTH(D')	DEPTH(D)	DEPTH(Z)	INT. VEL.	AVG. VEL.	RMS. VEL.	REF. CFT.	TRN. LOSS
1.8000	1981.2	1981.2	1971.7	2917.2	2190.7	2250.9	0.0068	0.3661
1.8020	1984.1	1984.1	1974.5	2885.3	2191.5	2251.7	-0.0055	0.3661
1.8040	1986.8	1986.8	1977.3	2783.3	2192.2	2252.4	-0.0180	0.3663
1.8060	1989.7	1989.7	1980.2	2839.1	2192.9	2253.1	0.0099	0.3664
1.8080	1992.5	1992.5	1983.0	2810.5	2193.6	2253.8	-0.0051	0.3664
1.8100	1995.3	1995.3	1985.8	2842.9	2194.3	2254.5	0.0057	0.3664
1.8120	1998.2	1998.2	1988.7	2882.2	2195.0	2255.3	0.0069	0.3664
1.8140	2001.1	2001.1	1991.6	2861.2	2195.8	2256.1	-0.0037	0.3665
1.8160	2003.9	2003.9	1994.4	2823.7	2196.5	2256.8	-0.0066	0.3665
1.8180	2006.7	2006.7	1997.2	2800.5	2197.1	2257.5	-0.0041	0.3665
1.8200	2009.5	2009.5	2000.0	2827.4	2197.8	2258.2	0.0048	0.3665
1.8220	2012.4	2012.4	2002.9	2861.5	2198.5	2258.9	0.0060	0.3665
1.8240	2015.1	2015.1	2005.6	2743.2	2199.1	2259.5	-0.0211	0.3668
1.8260	2017.9	2017.9	2008.3	2725.6	2199.7	2260.1	-0.0032	0.3668
1.8280	2020.7	2020.7	2011.2	2877.6	2200.5	2260.8	0.0271	0.3673
1.8300	2023.3	2023.3	2013.8	2572.4	2200.9	2261.2	-0.0560	0.3693
1.8320	2026.4	2026.4	2016.9	3091.8	2201.8	2262.3	0.0917	0.3746
1.8340	2029.6	2029.6	2020.1	3191.2	2202.9	2263.5	0.0158	0.3747
1.8360	2032.3	2032.3	2022.8	2732.7	2203.5	2264.1	-0.0774	0.3785
1.8380	2035.5	2035.5	2026.0	3168.3	2204.5	2265.2	-0.0738	0.3819
1.8400	2038.6	2038.6	2029.1	3099.0	2205.5	2266.3	-0.0111	0.3819
1.8420	2041.7	2041.7	2032.2	3123.5	2206.5	2267.4	0.0039	0.3819
1.8440	2045.5	2045.5	2036.0	3790.3	2208.2	2269.6	0.0964	0.3877
1.8460	2049.8	2049.8	2040.3	4310.8	2210.5	2272.8	0.0643	0.3902
1.8480	2052.8	2052.8	2043.3	2996.6	2211.4	2273.7	-0.1798	0.4099
1.8500	2055.1	2055.1	2045.5	2249.8	2211.4	2273.7	-0.1424	0.4219
1.8520	2058.5	2058.5	2048.9	3395.3	2212.7	2275.2	0.2029	0.4457
1.8540	2063.3	2063.3	2053.8	4834.5	2215.5	2279.5	0.1749	0.4627
1.8560	2066.9	2066.9	2057.4	3593.3	2217.0	2281.3	-0.1473	0.4743
1.8580	2071.2	2071.2	2061.7	4296.1	2219.2	2284.5	0.0891	0.4785
1.8600	2075.8	2075.8	2066.2	4582.0	2221.8	2288.2	0.0322	0.4790
1.8620	2080.8	2080.8	2071.3	5035.9	2224.8	2292.9	0.0472	0.4802
1.8640	2084.8	2084.8	2075.2	3950.9	2226.6	2295.3	-0.1207	0.4878
1.8660	2088.6	2088.6	2079.1	3891.4	2228.4	2297.6	-0.0076	0.4878
1.8680	2092.7	2092.7	2083.2	4070.1	2230.4	2300.3	0.0224	0.4881
1.8700	2097.3	2097.3	2087.7	4544.7	2232.9	2303.8	0.0551	0.4896
1.8720	2101.9	2101.9	2092.4	4624.0	2235.4	2307.5	0.0087	0.4896
1.8740	2106.5	2106.5	2097.0	4656.7	2238.0	2311.3	0.0035	0.4897
1.8760	2110.8	2110.8	2101.3	4310.3	2240.2	2314.4	-0.0386	0.4904
1.8780	2114.6	2114.6	2105.1	3788.1	2241.9	2316.4	-0.0645	0.4925
1.8800	2118.3	2118.3	2108.8	3705.6	2243.4	2318.4	-0.0110	0.4926
1.8820	2122.5	2122.5	2113.0	4171.9	2245.5	2321.1	0.0592	0.4944
1.8840	2126.9	2126.9	2117.4	4356.7	2247.7	2324.2	0.0217	0.4946
1.8860	2131.5	2131.5	2122.0	4632.6	2250.2	2327.9	0.0307	0.4951

TIME	DEPTH(D')	DEPTH(D)	DEPTH(Z)	INT. VEL.	AVG. VEL.	RMS. VEL.	REF. CFT.	TRN. LOSS
1.8880	2136.3	2136.3	2126.7	4747.1	2252.9	2331.8	0.0122	0.4952
1.8900	2141.1	2141.1	2131.6	4840.3	2255.6	2335.9	0.0097	0.4952
1.8920	2144.4	2144.4	2134.8	3259.5	2256.7	2337.0	-0.1952	0.5144
1.8940	2148.7	2148.7	2139.1	4313.0	2258.9	2340.0	0.1391	0.5238
1.8960	2153.4	2153.4	2143.9	4709.5	2261.4	2343.8	0.0439	0.5248
1.8980	2158.2	2158.2	2148.6	4784.7	2264.1	2347.7	0.0079	0.5248
1.9000	2162.0	2162.0	2152.5	3841.8	2265.8	2349.7	-0.1093	0.5305
1.9020	2165.7	2165.7	2156.1	3662.8	2267.2	2351.5	-0.0238	0.5307
1.9040	2170.8	2170.8	2161.2	5089.4	2270.2	2356.0	0.1630	0.5432
1.9060	2175.6	2175.6	2166.1	4897.7	2273.0	2360.1	-0.0192	0.5434
1.9080	2179.9	2179.9	2170.4	4239.3	2275.0	2362.9	-0.0721	0.5457
1.9100	2184.1	2184.1	2174.6	4218.8	2277.1	2365.6	-0.0024	0.5457
1.9120	2188.0	2188.0	2178.4	3849.4	2278.7	2367.6	-0.0458	0.5467
1.9140	2190.8	2190.8	2181.2	2799.8	2279.2	2368.1	-0.1578	0.5580
1.9160	2193.9	2193.9	2184.3	3104.5	2280.1	2369.0	0.0516	0.5592
1.9180	2197.8	2197.8	2188.3	3953.6	2281.9	2371.2	0.1203	0.5655
1.9200	2202.3	2202.3	2192.7	4452.6	2284.1	2374.3	0.0594	0.5671
1.9220	2205.2	2205.2	2195.7	2908.7	2284.8	2375.0	-0.2097	0.5861
1.9240	2207.9	2207.9	2198.4	2717.8	2285.2	2375.3	-0.0339	0.5866
1.9260	2211.9	2211.9	2202.4	4002.4	2287.0	2377.6	0.1912	0.6017
1.9280	2215.6	2215.6	2206.0	3655.8	2288.4	2379.3	-0.0453	0.6025
1.9300	2219.2	2219.2	2209.7	3655.5	2289.8	2381.0	0.0013	0.6025
1.9320	2223.2	2223.2	2213.7	3962.4	2291.6	2383.2	0.0389	0.6031
1.9340	2227.1	2227.1	2217.6	3960.9	2293.3	2385.3	-0.0002	0.6031
1.9360	2231.8	2231.8	2222.2	4618.4	2295.7	2388.7	0.0766	0.6054
1.9380	2235.0	2235.0	2225.5	3270.3	2296.7	2389.8	-0.1709	0.6170
1.9400	2238.3	2238.3	2228.8	3297.1	2297.7	2390.9	0.0041	0.6170
1.9420	2242.5	2242.5	2233.0	4188.2	2299.7	2393.5	0.1190	0.6224
1.9440	2246.5	2246.5	2237.0	3992.9	2301.4	2395.7	-0.0239	0.6226
1.9460	2250.1	2250.1	2240.5	3556.9	2302.7	2397.1	-0.0578	0.6239
1.9480	2254.2	2254.2	2244.7	4170.7	2304.6	2399.6	0.0794	0.6263
1.9500	2257.0	2257.0	2247.5	2743.9	2305.1	2400.0	-0.2063	0.6422
1.9520	2260.0	2260.0	2250.5	3022.2	2305.8	2400.7	0.0483	0.6430
1.9540	2263.2	2263.2	2253.7	3242.9	2306.8	2401.7	0.0352	0.6434
1.9560	2267.3	2267.3	2257.8	4026.9	2308.5	2404.0	0.1078	0.6476
1.9580	2271.0	2271.0	2261.5	3776.1	2310.0	2405.8	-0.0321	0.6480
1.9600	2273.9	2273.9	2264.4	2876.2	2310.6	2406.3	-0.1353	0.6544
(1.9620)	2277.1	2277.1	2267.6	3175.3	2311.5	2407.2	0.0494	0.6552
1.9640	2280.2	2280.2	2270.6	3070.3	2312.3	2408.0	-0.0168	0.6553
1.9660	2283.5	2283.5	2274.0	3371.3	2313.3	2409.1	0.0467	0.6561
1.9680	2288.4	2288.4	2278.8	4811.5	2315.9	2412.8	0.1760	0.6667
1.9700	2292.4	2292.4	2282.9	4043.0	2317.6	2415.0	-0.0868	0.6693
1.9720	2296.6	2296.6	2287.0	4163.3	2319.5	2417.4	0.0147	0.6693
1.9740	2299.6	2299.6	2290.1	3029.3	2320.2	2418.1	-0.1577	0.6775

TIME	DEPTH(D')	DEPTH(D)	DEPTH(Z)	INT. VEL.	AVG. VEL.	RMS. VEL.	REF. CFT.	TRN. LOSS
1.9760	2302.9	2302.9	2293.4	3333.3	2321.3	2419.2	0.0478	0.6783
1.9780	2306.5	2306.5	2297.0	3585.7	2322.5	2420.7	0.0365	0.6787
1.9800	2309.9	2309.9	2300.3	3358.6	2323.6	2421.8	-0.0327	0.6791
1.9820	2312.9	2312.9	2303.4	3078.4	2324.3	2422.6	-0.0435	0.6797
1.9840	2316.2	2316.2	2306.7	3246.8	2325.3	2423.5	0.0266	0.6799
1.9860	2319.6	2319.6	2310.1	3384.3	2326.3	2424.7	0.0207	0.6800
1.9880	2322.2	2322.2	2312.7	2632.6	2326.6	2424.9	-0.1249	0.6850
1.9900	2325.8	2325.8	2316.2	3560.1	2327.9	2426.3	0.1498	0.6921
1.9920	2329.0	2329.0	2319.5	3278.6	2328.8	2427.3	-0.0412	0.6926
1.9940	2332.5	2332.5	2322.9	3407.0	2329.9	2428.5	0.0192	0.6927
1.9960	2335.6	2335.6	2326.1	3135.7	2330.7	2429.3	-0.0415	0.6932
1.9980	2338.4	2338.4	2328.9	2851.8	2331.3	2429.8	-0.0474	0.6939
2.0000	2342.2	2342.2	2332.7	3798.1	2332.7	2431.5	0.1423	0.7001
2.0020	2346.5	2346.5	2336.9	4229.5	2334.6	2434.0	0.0537	0.7010
2.0040	2350.1	2350.1	2340.6	3606.2	2335.9	2435.5	-0.0795	0.7029
2.0060	2353.2	2353.2	2343.7	3112.8	2336.7	2436.2	-0.0734	0.7045
2.0080	2356.7	2356.7	2347.2	3504.2	2337.8	2437.5	0.0591	0.7055
2.0100	2360.7	2360.7	2351.2	3981.0	2339.5	2439.5	0.0637	0.7067
2.0120	2364.3	2364.3	2354.8	3621.3	2340.7	2441.0	-0.0473	0.7074
2.0140	2367.6	2367.6	2358.0	3260.0	2341.6	2441.9	-0.0525	0.7082
2.0160	2370.5	2370.5	2361.0	2922.9	2342.2	2442.5	-0.0545	0.7091
2.0180	2373.0	2373.0	2363.4	2491.2	2342.4	2442.5	-0.0797	0.7109
2.0200	2376.0	2376.0	2366.5	3008.3	2343.0	2443.1	0.0940	0.7135
2.0220	2379.7	2379.7	2370.2	3739.7	2344.4	2444.8	0.1084	0.7168
2.0240	2382.5	2382.5	2373.0	2779.1	2344.8	2445.1	-0.1474	0.7230
2.0260	2385.7	2385.7	2376.2	3237.8	2345.7	2446.0	0.0762	0.7246
2.0280	2388.6	2388.6	2379.0	2834.2	2346.2	2446.4	-0.0665	0.7258
2.0300	2391.5	2391.5	2382.0	2932.9	2346.8	2447.0	0.0171	0.7259
2.0320	2395.1	2395.1	2385.6	3573.7	2348.0	2448.3	0.0985	0.7285
2.0340	2397.8	2397.8	2388.3	2709.0	2348.3	2448.6	-0.1376	0.7337
2.0360	2400.5	2400.5	2391.0	2746.6	2348.7	2448.9	0.0069	0.7337
2.0380	2402.9	2402.9	2393.4	2416.7	2348.8	2448.9	-0.0639	0.7348
2.0400	2406.0	2406.0	2396.5	3045.7	2349.5	2449.5	0.1151	0.7383
2.0420	2409.0	2409.0	2399.5	3029.8	2350.1	2450.2	-0.0026	0.7383
2.0440	2412.3	2412.3	2402.7	3242.7	2351.0	2451.1	0.0339	0.7386
2.0460	2415.2	2415.2	2405.7	2933.3	2351.6	2451.6	-0.0501	0.7393