SOUTH AUSTRALIA

DEPARTMENT OF MINES AND ENERGY

OPEN FILE ENVELOPE NO. 7034/2

PEL 5 AND PEL 6, ARCKARINGA BLOCK

ARCKARINGA BASIN

BIRRIBIANA 1

TEST REPORTS

Submitted by

Delhi Petroleum Pty Ltd

1987

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ENVELOPE 7034/2

TENEMENT: PEL 5 and PEL 6, Arckaringa Block; Arckaringa Basin, South Australia.

TENEMENT HOLDER: Delhi Petroleum Pty Ltd (operator), Santos Ltd, Vamgas Ltd, South Austrlain Oil and Gas Corporation and Hartogen Energy Ltd.

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PLAN	SADME Plan no.
Birribiana 1. Quick look log interpretation. (Logcalc plot, 8 December 1986).	7034/2-1 (not microfilmed)

DELHI/SANTOS AND PARTNERS

A report on the GEOGRAM processing of data

from the VELOCITY SURVEY of the well

BIRRIBIANA 1

FIELD :	WILDCAT
COUNTRY :	AUSTRALIA
STATE :	SOUTH AUSTRALIA
COORDINATES :	28 14' 54.9" SOUTH 135 20' 51.3" EAST
DATE OF SURVEY :	3 DEC 86
REFERENCE NUMBER :	550192 and 550193

The near surface velocity, well name, seismic line details, formation tops, borehole reference data and location map 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 interpretations, and we shall not, except in the case of gross or willful negligence on out part, be liable or responsible for any loss, costs, damages or expenses incurred or sustained by anyone resulting from any interpretations made by one 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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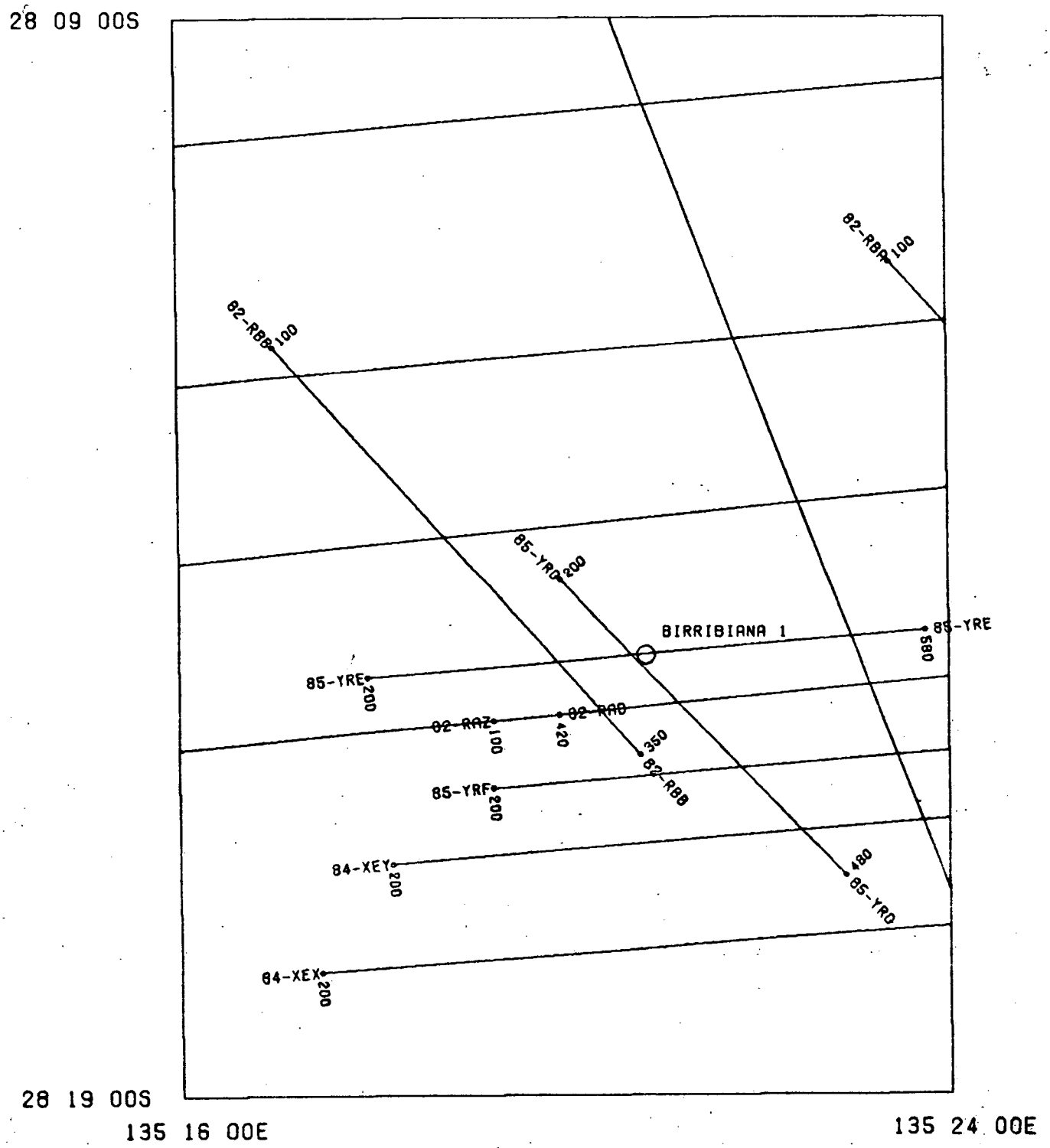
1 INTRODUCTION

A velocity check shot survey was conducted in the BIRRIBIANA 1 well on 3rd December 1986. Seventeen levels were shot, from 325 feet to 4680 feet below the Kelly Bushing, using a dynamite source. All levels have been used in the calibration of the sonic log.

2 LOCATION MAP

Figure 1 : BIRRIBIANA 1 at scale 1:100,000.



3 DATUM SURVEY

Four shots at varying source offset in addition to the checkshot survey were taken with the downhole tool locked at mean sea level, 325 feet below KB.

For each shot the reference hydrophone was at a horizontal distance of 5 feet from the source and 4.8 feet below GL. Ground level was surveyed at 310 feet above mean sea level.

Table 1 : Datum Survey Results

Stack Shot No.	Shot Depth Below Ground (feet)	Shot Offset From Wellhead (feet)	Recorded Transit Time (ms)	Shot To Datum Vertical Transit Time (ms)	Surface to Datum Vertical Transit Time (ms)
23	4.8	60.0	66.	64.8	67.7
22	4.8	75.0	64.	62.2	65.0
21	4.8	90.0	63.	60.4	63.3
20	4.8	105.0	65.	61.5	64.4
19*	5.5	135.0	65.	59.4	62.8
18	4.5	135.0	62.	56.7	59.5
17	4.5	135.0	66.	60.4	63.1

* Shot from checkshot survey with tool at MSL.

$$\text{Shot to Datum Vertical Transit Time} = \text{Recorded Transit Time} * \frac{\text{Shot Elevation}}{\sqrt{\text{Shot Elevation}^2 + \text{Shot Offset}^2}}.$$

Where Shot Elevation = GL - Shot Depth.

The Surface to Datum Static was computed using a Velocity from Source to Surface of 1640 feet/second. This velocity is from the nearest uphole survey.

Table 2 : Comparison of Seismic and Velocity Survey Statics

	Seismic Line	Velocity Survey	Difference
Ground Level (feet)	310.	310.	0.
Surface to Datum Static (millisecond)	64.	64.2	.2
Interval Velocity GL-MSL (feet/second)	4844.	4829.	15.

* The static was determined by the customer using a velocity model based on uphole information.

4 CHECKSHOT SURVEY

A number of shots were made running in to check for relaxation of the shot hole. These shots were performed with the geophone anchored at Mean Sea Level and at the top of the Cadna-Owie formation

Seventeen levels were recorded from 325 feet to 4680 feet below KB with a subsurface sampling not exceeding 500 feet.

Figure 2 : Survey Geometry

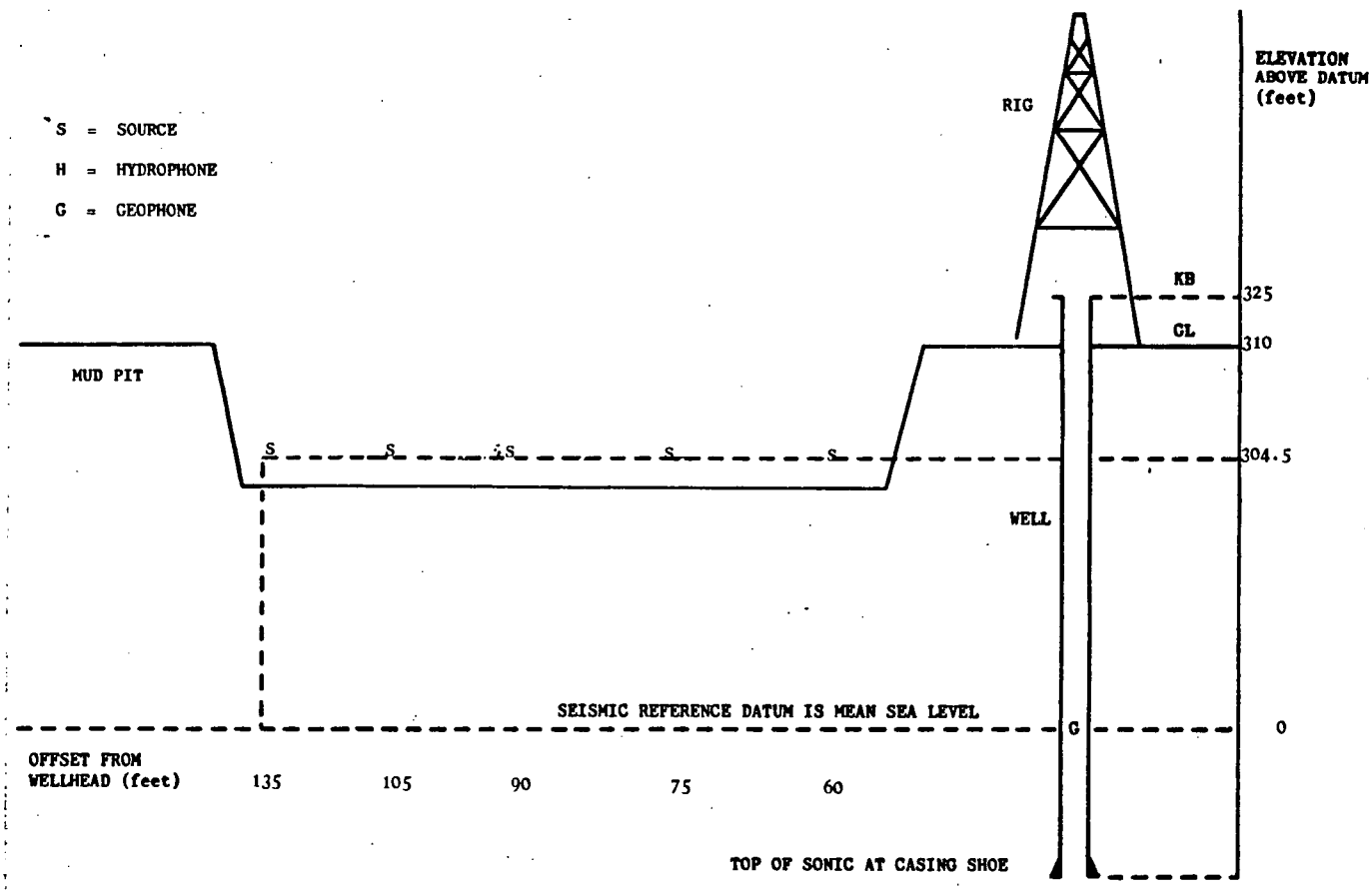
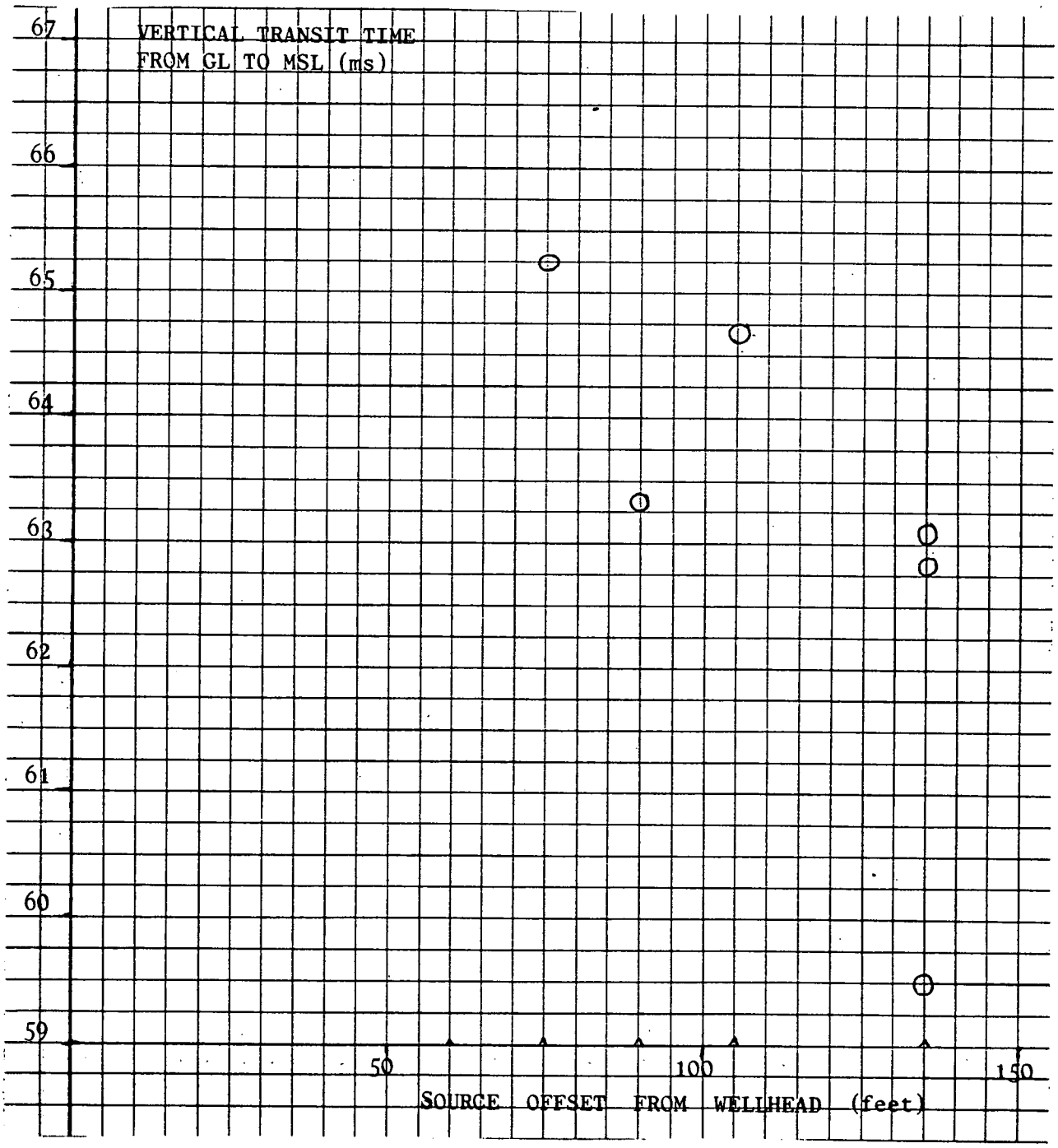


Figure 3 : Static Time

The static time from Ground Level to Mean Sea Level, when source offset is zero, is 64.2 milliseconds.

To impose this static time a recorded transit time, 66.508 milliseconds, is imposed when the geophone is anchored at Mean Sea Level.



5 SONIC CALIBRATION

A drift curve is obtained using the sonic log and the vertical check times. The term drift is defined as the seismic time (from check shots) minus the sonic time (from integration of the sonic log).

The gradient of drift, that is the slope of the drift curve, can be negative or positive or zero.

For a negative gradient of the drift curve the change in drift divided by the change in depth is less than zero, the sonic time is greater than the seismic time over a certain section of the log.

For a positive gradient of the drift curve the change in drift divided by the change in depth is greater than zero, the sonic time is less than the seismic time over a certain section of the log.

The drift curve, between two levels, is an indication of the error on the integrated sonic as we assume checkshot times give us the absolute time/depth correspondence at the well. Drift defines the correction to be applied to the sonic to have the TTI (integrated transit time) of the corrected sonic match the check shot times within a predefined error limit.

Two methods of correction to the sonic log are used.

- Uniform or block shift.

  This method applies a uniform correction to all the sonic values over the interval. This uniform correction is applied in the case of positive drift and is represented by the drift curve gradient expressed in microseconds/foot.

- DELTA-t Minimum.

  In the case of negative drift a different method is used. This method applies a differential correction to the sonic log, it is empirically proven that the greatest transit time error is caused by the lower velocity sections on the log. Over a given interval the method will correct only DELTA-t values which are higher than a threshold, the DELTA-t-min. Values of DELTA-t which are lower than the threshold are not corrected. The correction is a reduction based on the criteria (DELTA-t) minus (DELTA-t-min)

  (DELTA-t) minus (DELTA-t-min) is reduced through multiplication by a reduction coefficient which remains constant over the interval. This reduction coefficient, named G, is defined as:

$$G = 1 + \frac{\text{DRIFT}}{\int (\text{DELTA-t} - \text{DELTA-t-min})dZ}$$

Where "DRIFT" is the drift over the interval to be corrected and the value "$\int$(DELTA-t - DELTA-t-min)dZ" is the time difference between the integrals of the two curves DELTA-t and DELTA-t-min, only over the intervals where DELTA-t is greater than DELTA-t-min.

Hence the corrected sonic:

$$\text{DELTA-t}_{\text{corrected}} = G * (\text{DELTA-t} - \text{DELTA-t-min}) + \text{DELTA-t-min}.$$

6 SONIC CALIBRATION PROCESSING

6.1 Open Hole Logs

Both the sonic and density logs used have been edited and depth matched prior to input into the processing chain for Well Seismic Calibration.

A constant density reading of 2.1 grams/cubic centimeter has been imposed over the interval above the top of the density log. Generally the hole was in good condition and hence the density data is reliable through most of the logged interval. Minor zones of cycle skipping have been edited.

Density log interval	:	4690-592 feet below KB.
Sonic log interval	:	4690-325 feet below KB. (sonic actually went above MSL to 75 feet below KB but it is not used for the seismogram)

6.2 Correction To Datum

The checkshots taken with the geophone anchored at Mean Sea Level gave the source to datum static as 60.8 milliseconds (i.e. subtract ground level to source elevation static of 3.4 milliseconds from ground level to datum static, from Figure 3). This was used as the vertical correction to datum.

6.3 Sonic Calibration Results

The top of the sonic log (325 feet below KB) is taken as the start point for the calibration drift curve.

The drift curve indicates a number of corrections to be made to the sonic log. Knees (which seperate zones of adjustment) have been selected at major formation changes, including the CADNA-OWIE formation as indicated by the log data.

The imposed drift curve follows the calculated drift as indicated by the corrected shot times. There are no anomalous shots. A list of shifts used on the sonic data is given in the sonic adjustment parameter report.

The adjusted sonic curve is considered to be the best result using the available data.

6.4 Drift Tie Point

The drift curve was shifted to impose zero drift at the CADNA-OWIE formation.

6.5 Processing Without Drift Correction

To generate a seismogram from data that has not been drift corrected the top of the sonic log was kept at the time from the checkshot survey and a dummy shot was imposed at TD to equal the total integrated time from the sonic. Then a bulk shift was applied to this seismogram to tie it with the drift corrected seismogram at the CADNA-OWIE formation.

7 GEOGRAM PROCESSING

GEOGRAM plots were generated using a 10-55 Hz Klauder wavelet with phase rotations of 0, 90, 180 and 270 degrees.

The presentations include both normal and reverse polarity at 5 inches/second.

GEOGRAM processing produces synthetic seismic traces based on reflection coefficients generated from sonic and density measurements in the wellbore. The steps in the processing chain are the following:

Time to depth conversion
Reflection coefficients
Attenuation coefficients
Convolution
Output.

7.1 Time To Depth Conversion

Open hole logs are recorded from the bottom to top with a depth index. This data is converted to a two-way time index and read from the top to bottom in order to match the seismic section.

7.2 Primary Reflection Coefficients

Sonic and density data are averaged over chosen time intervals (normally 2 or 4 milliseconds). Reflection coefficients are then computed using:

$$R = \frac{(\text{density}(2) * \text{velocity}(2)) - (\text{density}(1) * \text{velocity}(1))}{(\text{density}(2) * \text{velocity}(2)) + (\text{density}(1) * \text{velocity}(1))}$$

where

- density(1) = density of the layer above the reflection interface
- density(2) = density of the layer below the reflection interface
- velocity(1) = compressional wave velocity of the layer above the reflection interface
- velocity(2) = compressional wave velocity of the layer below the reflection interface

This computation is done for each time interval to generate a set of primary reflection coefficients without transmission losses.

7.3 Primaries With Transmission Loss

Transmission loss on two-way attenuation coefficients are computed using:

$$A(n) = (1 - R(1)^2) \cdot (1 - R(2)^2) \cdot (1 - R(3)^2) \ldots (1 - R(n)^2)$$

A set of primary reflection coefficients with transmission loss is generated using:

$$\text{Primary}(n) = R(n) \cdot A(n)-1$$

7.4 Primaries Plus Multiples

Multiples are computed from these input reflection coefficients using the transform technique from the top of the well to obtain the total (Primaries + Multiples) impulse response of the earth. The transform outputs primaries plus multiples.

7.5 Wavelet

A theoretical wavelet is chosen to use for convolution with the reflection coefficients previously generated. Choices available include:

Klauder wavelet
Ricker zero phase wavelet
Ricker minimum phase wavelet
User defined wavelet.

All wavelets can be chosen with or without Butterworth filtering and with user defined center frequencies. Polarity conventions are shown on the plots of the synthetic seismograms. A time variant filter can be applied.

7.6 Convolution

Standard procedure of convolution of wavelet with reflection coefficients. The output is the synthetic seismogram.

8 DATA ACQUISITION

Table 3 : Field Equipment and Survey Parameters

Elevation SRD	0 feet above MSL
Elevation KB	325 feet above MSL
Elevation RT/DF	324 feet above MSL
Elevation GL	310 feet above MSL
No. of Levels	17
Well Deviation	Nil
Total Depth	4690 feet below KB
Energy Source	Dynamite 300grams, Anzomex Boosters
Source Offset	135 feet from well
Source Depth	5.5 feet below Ground Level
Source Azimuth	0 degrees from magnetic north
Reference Sensor	Hydrophone
Sensor Offset	5 feet
Sensor Depth	5.5 feet below Ground Level
Sensor Azimuth	0 degrees
Downhole Geophone	Geospace HS-1 High Temp. (350 F) Coil Resist. 225 ohms Natural Freq. 8-12 hertz Sensitivity 0.45 V/in/sec Maximum tilt angle 60

Recording was made on the Schlumberger Cyber Service Unit (CSU) using LIS format.

9 SUMMARY OF GEOPHYSICAL LISTINGS

The geophysical data listings show the detail of the data analysis. Following is a brief description of the format of each listing and the mnemonics.

9.1 Checkshot Survey Report

1. Level number : the level number starting from the top level (includes any imposed shots).

2. Vertical depth from RT : DRT, the depth in feet from rotary table.

3. Vertical depth from SRD : DSRD, the depth in feet from seismic reference datum.

4. Vertical depth from GL : DGL, the depth in feet from ground level.

5. Observed travel time HYD to GEO : TIMO, the transit time picked from the stacked data by subtracting the surface sensor first break time from the downhole sensor first break time.

6. Vertical travel time SRC to GEO : TIMV, is corrected for source to hydrophone distance and for source offset.

7. Vertical travel time SRD to GEO : SHTM, is TIMV corrected for the vertical distance between source and datum.

8. Average velocity SRD to GEO : the average seismic velocity from datum to the corresponding checkshot level, DRSD / SHTM.

9. Delta depth between shots : DELTA depth, the vertical distance between each level.

10. DELTA-time between shots : DELTA-time, the difference in vertical travel time (SHTM) between each level.

11. Interval velocity between shots : the average seismic velocity between each level, DELTA depth / DELTA-time.

9.2 Drift Computation Report

1. Level number : the level number starting from the top level (includes any imposed shots).

2. Vertical depth from RT : the depth in feet from rotary table.

3. Vertical depth from SRD : the depth in feet from seismic reference datum.

4. Vertical depth from GL : the depth in feet from ground level.

5. Vertical travel time SRD to GEO : the calculated vertical travel time from datum to downhole geophone (see column 7, Checkshot Survey Report).

6. Integrated raw sonic time : the raw sonic log is integrated from top to bottom and listed at each level. An initial value at the top of the sonic log is set equal to the checkshot time at that level. This may be an imposed shot if a shot was not taken at the top of the sonic.

7. Computed drift at level : the checkshot time minus the integrated raw sonic time.

8. Computed blk - shft correction : the drift gradient between any two checkshot levels (DELTA drift / DELTA depth).

9.3 Sonic Adjustment Parameter Report

1. Knee number : the knee number starting from the highest knee. (The first knees listed will generally be at SRD and the top of sonic. The drift imposed at these knees will normally be zero.)

2. Vertical depth from RT : the depth in feet from rotary table.

3. Vertical depth from SRD : the depth in feet from seismic reference datum.

4. Vertical depth from GL : the depth in feet from ground level.

5. Drift at knee : the value of drift imposed at each knee.

6. Blockshift used : the change in drift divided by the change in depth between any two levels.

7. DELTA-t minimum used : see the sonic calibration section.

8. Reduction factor : see the sonic calibration section.

9. Equivalent blockshift : the gradient of the imposed drift curve.

9.4 Velocity Report

1. Level number : the level number starting from the top level (includes any imposed shots).

2. Vertical depth from RT : the depth in feet from rotary table

3. Vertical depth from SRD : the depth in feet from seismic reference datum

4. Vertical depth from GL : the depth in feet from ground level

5. Vertical travel time SRD to GEOPH : the vertical travel time from SRD to downhole geophone (see column 7, Checkshot Survey Report)

6. Integrated adjusted sonic time : the adjusted sonic log is integrated from top to bottom. An initial value at the the top of the sonic is set equal the checkshot time at that level. (The adjusted sonic log is the drift corrected sonic log.)

7. Drift=shot time - raw son : the check shot time minus the raw integrated sonic time.

8. Residual=shot time - adj son : the check shot time minus the adjusted integrated sonic time. This is the difference between calculated drift and the imposed drift.

9. Adjusted interval velocity : the interval velocity calculated from the integrated adjusted sonic time at each level.

9.5 Time Converted Velocity Report

The data in this listing has been resampled in time.

1. Two way travel time from SRD : This is the index for the data in this listing. The first value is at SRD (0 milliseconds) and the sampling rate is 2 milliseconds.

2. Measured depth from RT : the depth from RT at each corresponding value of two way time.

3. Vertical depth from SRD : the vertical depth from SRD at each corresponding value of two way time.

4. Average velocity SRD to GEO : the vertical depth from SRD divided by half the two way time.

5. RMS velocity : the root mean square velocity from datum to the corresponding value of two way time.

$$V_rms^2 = \sum_{i=1}^{n} Vi^2 . Ti \Big/ \sum_{i=1}^{n} Ti$$

   where Vi is the velocity between each 2 milliseconds interval.

6. First normal moveout : the correction time in milliseconds to be applied to the two way travel time for a specified moveout distance (default = 3000 feet).

7. Second normal moveout : the correction time in milliseconds to be applied to the two way travel time for a specified moveout distance (default = 4500 feet)

8. Third normal moveout : the correction time in milliseconds to be applied to the two way travel time for a specified moveout distance (default = 6000 feet).

9. Interval velocity : the velocity between each sampled depth. Typically, the sampling rate is 2 milliseconds two way time, (1 millisec one way time) therefore the interval velocity will be equal to the depth increment divided by 0.001. It is equivalent to column 9 from the the Velocity Report.

NOTE:

The checkshot at mean sea level gave a vertical transit time from ground level to datum of 62.8 milliseconds (see table 1, DATUM SURVEY section). This was changed to the correct vertical transit time of 64.2 milliseconds (see table 2, DATUM SURVEY section).

An artificial transit time was specified with the receiver anchored at datum, to impose a vertical transit time from ground level to datum of 64.2 milliseconds (see CHECKSHOT SURVEY section). This results in a vertical transit time from source to datum of 60.8 milliseconds shown in the CHECKSHOT SURVEY REPORT.

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Computer Resources Company

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*   SCHLUMBERGER    *
*                   *
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CHECKSHOT SURVEY REPORT

COMPANY : DELHI/SANTOS & PARTNERS
WELL : BIRRIBIANA 1
FIELD : WILDCAT
REFERENCE: 550193

Schlumberger

ANALYST: C. BUTTERWORTH. 23-MAR-87 13:38:17 PROGRAM: GSHOT 007.E08

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*                 *
*   SCHLUMBERGER  *
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CHECKSHOT SURVEY REPORT

COMPANY : DELHI/SANTOS & PARTNERS
WELL   : BIRRIBIANA 1
FIELD   : WILDCAT
REFERENCE: 550193

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LONG DEFINITIONS

GLOBAL

KB - ELEVATION OF THE KELLY-BUSHING ABOVE MSL OR MWL
SRD - ELEVATION OF THE SEISMIC REFERENCE DATUM ABOVE MSL OR MWL
EKB - ELEVATION OF KELLY BUSHING
GL - ELEVATION OF USER'S REFERENCE (GENERALLY GROUND LEVEL) ABOVE SRD
VELHYD - VELOCITY OF THE MEDIUM BETWEEN THE SOURCE AND THE HYDROPHONE
VELSUR - VELOCITY OF THE MEDIUM BETWEEN THE SOURCE AND THE SRD

MATRIX

GUNELZ - SOURCE ELEVATION ABOVE SRD (ONE FOR THE WHOLE JOB; OR ONE PER SHOT)
GUNEWZ - SOURCE DISTANCE FROM THE BOREHOLE AXIS IN EW DIRECTION (CF. GUNELZ)
GUNNSZ - SOURCE DISTANCE FROM THE BOREHOLE AXIS IN NS DIRECTION (CF. GUNELZ)
HYDELZ - HYDROPHONE ELEVATION ABOVE SRD (CF. GUNELZ)
HYDEWZ - HYDROPHONE DISTANCE FROM THE BOREH AXIS IN EW DIRECTION (CF GUNELZ)
HYDNSZ - HYDROPHONE DISTANCE FROM THE BOREH AXIS IN NS DIRECTION (CF GUNELZ)
TRTHYD - TRAVEL TIME FROM THE HYDROPHONE TO THE SOURCE
TRTSRD - TRAVEL TIME FROM THE SOURCE TO THE SRD
DEVWEL - DEVIATED WELL DATA PER SHOT : MEAS. DEPTH, VERT. DEPTH, EW, NS

SAMPLED

SHOT.GSH - SHOT NUMBER
DKB.GSH - MEASURED DEPTH FROM KELLY-BUSHING
DSRD.GSH - DEPTH FROM SRD
DGL.GSH - VERTICAL DEPTH RELATIVE TO GROUND LEVEL (USER'S REFERENCE)
TIMO.GSH - MEASURED TRAVEL TIME FROM HYDROPHONE TO GEOPHONE
TIMV.GSH - VERTICAL TRAVEL TIME FROM THE SOURCE TO THE GEOPHONE
SHTM.GSH - SHOT TIME (WST)
AVGV.GSH - AVERAGE SEISMIC VELOCITY
DELZ.GSH - DEPTH INTERVAL BETWEEN SUCCESSIVE SHOTS
DELT.GSH - TRAVEL TIME INTERVAL BETWEEN SUCCESSIVE SHOTS
INTV.GSH - INTERNAL VELOCITY, AVERAGE

(GLOBAL PARAMETERS)			(VALUE)	
ELEV OF KB AB. MSL (WST)	KB	:	325.000	FT
ELEV OF SRD AB. MSL(WST)	SRD	:	0	FT
ELEVATION OF KELLY BUSHI	EKB	:	325.000	FT
ELEV OF GL AB. SRD(WST)	GL	:	310.000	FT
VEL SOURCE-HYDRO(WST)	VELHYD	:	5000.00	FT/S
VEL SOURCE-SRD (WST)	VELSUR	:	5008.22	FT/S

(MATRIX PARAMETERS)

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	SOURCE ELV FT	SOURCE EW FT	SOURCE NS FT	HYDRO ELEV FT	HYDRO EW FT	HYDRO NS FT
1	304.5	0	135.0	304.5	0	135.0

	TRT HYD-SC MS	TRT SC-SRD MS
1	0	-60.80

	MD @ KB FT	VD @ KB FT	VD @ SRD FT	E-W COORD FT	N-S COORD FT
1	325.0	325.0	0	0	0
2	341.0	341.0	16.0	0	0
3	431.0	431.0	106.0	0	0
4	621.0	621.0	296.0	0	0
5	720.0	720.0	395.0	0	0
6	1000.0	1000.0	675.0	0	0
7	1500.0	1500.0	1175.0	0	0
8	1800.0	1800.0	1475.0	0	0
9	2129.0	2129.0	1804.0	0	0
10	2369.0	2369.0	2044.0	0	0
11	2600.0	2600.0	2275.0	0	0
12	3000.0	3000.0	2675.0	0	0
13	3500.0	3500.0	3175.0	0	0
14	3830.0	3830.0	3505.0	0	0
15	4000.0	4000.0	3675.0	0	0
16	4534.0	4534.0	4209.0	0	0
17	4680.0	4680.0	4355.0	0	0

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LEVEL NUMBER	MEASUR DEPTH FROM KB FT	VERTIC DEPTH FROM SRD FT	VERTIC DEPTH FROM GL FT	OBSERV TRAVEL TIME HYD/GEO MS	VERTIC TRAVEL TIME SRC/GEO MS	VERTIC TRAVEL TIME SRD/GEO MS	AVERAGE VELOC SRD/GEO FT/S	DELTA DEPTH BETWEEN SHOTS FT	DELTA TIME BETWEEN SHOTS MS	INTERV VELOC BETWEEN SHOTS FT/S
1	325.0	0	310.0	66.51	60.80	0				
								16.0	1.87	8568
2	341.0	16.0	326.0	68.00	62.67	1.87	8568			
								90.0	14.28	6303
3	431.0	106.0	416.0	81.00	76.95	16.15	6565			
								190.0	24.52	7748
4	621.0	296.0	606.0	104.00	101.47	40.67	7279			
								99.0	15.38	6438
5	720.0	395.0	705.0	119.00	116.84	56.04	7048			
								280.0	37.70	7428
6	1000.0	675.0	985.0	156.00	154.54	93.74	7201			
								500.0	63.55	7867
7	1500.0	1175.0	1485.0	219.00	218.09	157.29	7470			
								300.0	35.18	8528
8	1800.0	1475.0	1785.0	254.00	253.27	192.47	7663			
								329.0	35.14	9363
9	2129.0	1804.0	2114.0	289.00	288.41	227.61	7926			
								240.0	29.07	8257
10	2369.0	2044.0	2354.0	318.00	317.48	256.68	7963			
								231.0	23.06	10018
11	2600.0	2275.0	2585.0	341.00	340.53	279.73	8133			
								400.0	37.08	10788
12	3000.0	2675.0	2985.0	378.00	377.61	316.81	8443			
								500.0	41.07	12174
13	3500.0	3175.0	3485.0	419.00	418.69	357.88	8872			
								330.0	26.04	12675
14	3830.0	3505.0	3815.0	445.00	444.72	383.92	9129			
								170.0	14.02	12130
15	4000.0	3675.0	3985.0	459.00	458.74	397.94	9235			
								534.0	45.04	11857
16	4534.0	4209.0	4519.0	504.00	503.77	442.97	9502			
								146.0	9.01	16204
17	4680.0	4355.0	4665.0	513.00	512.78	451.98	9635			

Computer Resources Company

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ANALYST: C. BUTTERWORTH. 23-MAR-87 13:45:23

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DRIFT COMPUTATION REPORT

COMPANY : DELHI/SANTOS & PARTNERS
WELL   : BIRRIBIANA 1
FIELD   : WILDCAT
REFERENCE: 550193

Computer Resources Company

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ANALYST: C. BUTTERWORTH. 23-MAR-87 13:45:23

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DRIFT COMPUTATION REPORT

COMPANY : DELHI/SANTOS & PARTNERS
WELL   : BIRRIBIANA 1
FIELD   : WILDCAT
REFERENCE: 550193

Computer Resources Company

LONG DEFINITIONS

GLOBAL

KB - ELEVATION OF THE KELLY-BUSHING ABOVE MSL OR MWL
SRD - ELEVATION OF THE SEISMIC REFERENCE DATUM ABOVE MSL OR MWL
EKB - ELEVATION OF KELLY BUSHING
GL - ELEVATION OF USER'S REFERENCE (GENERALLY GROUND LEVEL) ABOVE SRD
XSTART - TOP OF ZONE PROCESSED BY WST
XSTOP - BOTTOM OF ZONE PROCESSED BY WST
GAD001 - RAW SONIC CHANNEL NAME USED FOR WST SONIC ADJUSTMENT
UNFDEN - UNIFORM DENSITY VALUE

ZONE

LOFDEN - LAYER OPTION FLAG FOR DENSITY : -1=NONE; 0=UNIFORM; 1=UNIFORM+LAYER
LAYDEN - USER SUPPLIED DENSITY DATA

SAMPLED

SHOT - SHOT NUMBER
DKB - MEASURED DEPTH FROM KELLY-BUSHING
DSRD - DEPTH FROM SRD
DGL - VERTICAL DEPTH RELATIVE TO GROUND LEVEL (USER'S REFERENCE)
SHTM - SHOT TIME (WST)
RAWS - RAW SONIC (WST)
SHDR - DRIFT AT SHOT OR KNEE
BLSH - BLOCK SHIFT BETWEEN SHOTS OR KNEE

(GLOBAL PARAMETERS)			(VALUE)	
ELEV OF KB AB. MSL (WST)	KB	:	325.000	FT
ELEV OF SRD AB. MSL(WST)	SRD	:	0	FT
ELEVATION OF KELLY BUSHI	EKB	:	325.000	FT
ELEV OF GL AB. SRD(WST)	GL	:	310.000	FT
TOP OF ZONE PROCD (WST)	XSTART	:	0	FT
BOT OF ZONE PROCD (WST)	XSTOP	:	0	FT
RAW SONIC CH NAME (WST)	GAD001	:	DT.ATT.002.FLP.*	
UNIFORM DENSITY VALUE	UNFDEN	:	2.30000	G/C3

(ZONED PARAMETERS)			(VALUE)		(LIMITS)		
LAYER OPTION FLAG DENS	LOFDEN	:	1.000000		99999.0	-	0
USER SUPPLIED DENSITY DA	LAYDEN	:	-999.2500	G/C3	99999.0	-	0

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COMPANY : DELHI/SANTOS & PARTNERS WELL : BIRRIBIANA 1

LEVEL NUMBER	MEASURED DEPTH FROM KB FT	VERTICAL DEPTH FROM SRD FT	VERTICAL DEPTH FROM GL FT	VERTICAL TRAVEL TIME SRD/GEO MS	INTEGRATED RAW SONIC TIME MS	COMPUTED DRIFT AT LEVEL MS	COMPUTED BLK-SHFT CORRECTION US/F
2	325.0	0	310.0	0	0	0	0
3	341.0	16.0	326.0	1.87	2.72	-.85	-53.38
4	431.0	106.0	416.0	16.15	15.26	.89	19.36
5	621.0	296.0	606.0	40.67	40.33	.34	-2.91
6	720.0	395.0	705.0	56.04	54.37	1.67	13.49
7	1000.0	675.0	985.0	93.74	91.51	2.23	1.99
8	1500.0	1175.0	1485.0	157.29	153.63	3.66	2.87
9	1800.0	1475.0	1785.0	192.47	186.88	5.60	6.45
10	2129.0	1804.0	2114.0	227.61	221.61	6.00	1.23
11	2369.0	2044.0	2354.0	256.68	249.86	6.82	3.41
12	2600.0	2275.0	2585.0	279.73	272.79	6.95	.55
13	3000.0	2675.0	2985.0	316.81	309.48	7.33	.97
14	3500.0	3175.0	3485.0	357.88	351.06	6.82	-1.02
15	3830.0	3505.0	3815.0	383.92	376.78	7.14	.96
16	4000.0	3675.0	3985.0	397.94	390.49	7.45	1.81
17	4534.0	4209.0	4519.0	442.97	436.03	6.95	-.93
18	4680.0	4355.0	4665.0	451.98	444.73	7.26	2.14
19	4690.0	4365.0	4675.0	452.57	445.31	7.26	0

Computer Resources Company

ANALYST: C. BUTTERWORTH. 20-MAY-87 13:18:58

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SONIC ADJUSTMENT PARAMETER REPORT

COMPANY : DELHI/SANTOS & PARTNERS
WELL   : BIRRIBIANA 1
FIELD   : WILDCAT
REFERENCE: 550193

Computer Resources Company

Schlumberger

ANALYST: C. BUTTERWORTH. 20-MAY-87 13:18:58

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SONIC ADJUSTMENT PARAMETER REPORT

COMPANY : DELHI/SANTOS & PARTNERS
WELL   : BIRRIBIANA 1
FIELD   : WILDCAT
REFERENCE: 550193

Computer Resources Company

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LONG DEFINITIONS

GLOBAL

SRCDRF - ORIGIN OF ADJUSTMENT DATA
CONADJ - CONSTANT ADJUSTMENT TO AUTOMATIC DELTA-T MINIMUM = 7.5 US/F
UNERTH - UNIFORM EARTH VELOCITY (GTRFRM)

ZONE

ZDRIFT - USER DRIFT AT BOTTOM OF THE ZONE
ADJOPZ - TYPE OF ADJUSTMNENT IN THE DRIFT ZONE : 0=DELTA-T MIN, 1=BLOCKSHIFT
ADJUSZ - DELTA-T MINIMUM USED FOR ADJUSTMENT IN THE DRIFT ZONE
LOFVEL - LAYER OPTION FLAG FOR VELOCITY: -1=NONE; 0=UNIFORM; 1=UNIFORM+LAYER
LAYVEL - USER SUPPLIED VELOCITY DATA

SAMPLED

SHOT - SHOT NUMBER
VDKB - VERTICAL DEPTH RELATIVE TO KB
DSRD - DEPTH FROM SRD
DGL - VERTICAL DEPTH RELATIVE TO GROUND LEVEL (USER'S REFERENCE)
KNEE - KNEE
BLSH - BLOCK SHIFT BETWEEN SHOTS OR KNEE
DTMI - VALUE OF DELTA-T MINIMUM USED
COEF - DELTA-T MIN COEFFICIENT USED IN THE DRIFT ZONE
DRGR - GRADIENT OF DRIFT CURVE

(GLOBAL PARAMETERS)			(VALUE)	
ORIG OF ADJ DATA (WST)	SRCDRF	:	2.00000	
CONS SONIC ADJST (WST)	CONADJ	:	7.50000	US/F
UNIFORM EARTH VELOCITY	UNERTH	:	7000.00	FT/S

(ZONED PARAMETERS)			(VALUE)		(LIMITS)		
USER DRIFT ZONE (WST)	ZDRIFT	:	7.000000	MS	4690.00	-	2369.00
			7.000000		2369.00		340.000
			0		340.000		325.000
			0		325.000		0
ADJUSMNT MODE (WST)	ADJOPZ	:	-999.2500		99999.0	-	0
USER DELTA-T MIN (WST)	ADJUSZ	:	-999.2500	US/F	99999.0	-	0
LAYER OPTION FLAG VELOC	LOFVEL	:	1.000000		99999.0	-	0
USER VELOC (WST)	LAYVEL	:	5000.000	FT/S	99999.0	-	0

Computer Resources Company

COMPANY : DELHI/SANTOS & PARTNERS WELL : BIRRIBIANA 1

KNEE NUMBER	VERTICAL DEPTH FROM KB FT	VERTICAL DEPTH FROM SRD FT	VERTICAL DEPTH FROM GL FT	DRIFT AT KNEE MS	BLOCKSHIFT USED US/F	DELTA-T MINIMUM USED US/F	REDUCTION FACTOR G	EQUIVALENT BLOCKSHIFT US/F
2	325.0	0	310.0	0	0			0
3	340.0	15.0	325.0	0	0			0
4	2369.0	2044.0	2354.0	7.00	3.45			3.45
5	4690.0	4365.0	4675.0	7.00	0			0

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Computer Resources Company

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LONG DEFINITIONS

GLOBAL

KB - ELEVATION OF THE KELLY-BUSHING ABOVE MSL OR MWL
SRD - ELEVATION OF THE SEISMIC REFERENCE DATUM ABOVE MSL OR MWL
EKB - ELEVATION OF KELLY BUSHING
GL - ELEVATION OF USER'S REFERENCE (GENERALLY GROUND LEVEL) ABOVE SRD
UNERTH - UNIFORM EARTH VELOCITY (GTRFRM)

ZONE

LOFVEL - LAYER OPTION FLAG FOR VELOCITY: -1=NONE; 0=UNIFORM; 1=UNIFORM+LAYER
LAYVEL - USER SUPPLIED VELOCITY DATA

SAMPLED

SHOT - SHOT NUMBER
DKB - MEASURED DEPTH FROM KELLY-BUSHING
DSRD - DEPTH FROM SRD
DGL - VERTICAL DEPTH RELATIVE TO GROUND LEVEL (USER'S REFERENCE)
SHTM - SHOT TIME (WST)
ADJS - ADJUSTED SONIC TRAVEL TIME
SHDR - DRIFT AT SHOT OR KNEE
REST - RESIDUAL TRAVEL TIME AT KNEE
INTV - INTERNAL VELOCITY, AVERAGE

(GLOBAL PARAMETERS)			(VALUE)	
ELEV OF KB AB. MSL (WST)	KB	:	325.000	FT
ELEV OF SRD AB. MSL(WST)	SRD	:	0	FT
ELEVATION OF KELLY BUSHI	EKB	:	325.000	FT
ELEV OF GL AB. SRD(WST)	GL	:	310.000	FT
UNIFORM EARTH VELOCITY	UNERTH	:	7000.00	FT/S

(ZONED PARAMETERS)			(VALUE)		(LIMITS)		
LAYER OPTION FLAG VELOC	LOFVEL	:	1.000000		99999.0	-	0
USER VELOC (WST)	LAYVEL	:	5000.000	FT/S	99999.0	-	0

Computer Resources Company

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COMPANY : DELHI/SANTOS & PARTNERS WELL : BIRRIBIANA 1

LEVEL NUMBER	MEASURED DEPTH FROM KB FT	VERTICAL DEPTH FROM SRD FT	VERTICAL DEPTH FROM GL FT	VERTICAL TRAVEL TIME SRD/GEOPH MS	INTEGRATED ADJUSTED SONIC TIME MS	DRIFT = SHOT TIME - RAW SON MS	RESIDUAL = SHOT TIME - ADJ SON MS	ADJUSTED INTERVAL VELOCITY FT/S
2	325.0	0	310.0	0	0	0	0	6419
3	341.0	16.0	326.0	1.87	2.73	-.85	-.86	5871
4	431.0	106.0	416.0	16.15	15.57	.89	.57	7006
5	621.0	296.0	606.0	40.67	41.30	.34	-.63	7385
6	720.0	395.0	705.0	56.04	55.68	1.67	.36	6884
7	1000.0	675.0	985.0	93.74	93.79	2.23	-.05	7348
8	1500.0	1175.0	1485.0	157.29	157.63	3.66	-.34	7831
9	1800.0	1475.0	1785.0	192.47	191.91	5.60	.56	8752
10	2129.0	1804.0	2114.0	227.61	227.78	6.00	-.17	9172
11	2369.0	2044.0	2354.0	256.68	256.86	6.82	-.18	8254
12	2600.0	2275.0	2585.0	279.73	279.79	6.95	-.05	10074
13	3000.0	2675.0	2985.0	316.81	316.48	7.33	.33	10902
14	3500.0	3175.0	3485.0	357.88	358.06	6.82	-.18	12024
15	3830.0	3505.0	3815.0	383.92	383.78	7.14	.14	12831
16	4000.0	3675.0	3985.0	397.94	397.49	7.45	.45	12402
17	4534.0	4209.0	4519.0	442.97	443.03	6.95	-.05	11727
18	4680.0	4355.0	4665.0	451.98	451.73	7.26	.26	16785
19	4690.0	4365.0	4675.0	452.57	452.31	7.26	.26	17151

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ANALYST: C. BUTTERWORTH. 20-MAY-87 13:19:19

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VELOCITY REPORT

COMPANY : DELHI/SANTOS & PARTNERS
WELL   : BIRRIBIANA 1
FIELD   : WILDCAT
REFERENCE: 550193

Computer Resources Company

Schlumberger

ANALYST: C. BUTTERWORTH. 20-MAY-87 13:19:19

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VELOCITY REPORT

COMPANY : DELHI/SANTOS & PARTNERS
WELL   : BIRRIBIANA 1
FIELD   : WILDCAT
REFERENCE: 550193

Computer Resources Company

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ANALYST: C. BUTTERWORTH. 20-MAY-87 13:29:20

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TIME CONVERTED VELOCITY REPORT

COMPANY : DELHI/SANTOS & PARTNERS
WELL : BIRRIBIANA 1
FIELD : WILDCAT
REFERENCE: 550193

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ANALYST: C. BUTTERWORTH. 20-MAY-87 13:29:20

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TIME CONVERTED VELOCITY REPORT

COMPANY : DELHI/SANTOS & PARTNERS
WELL   : BIRRIBIANA 1
FIELD   : WILDCAT
REFERENCE: 550193

Computer Resources Company

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LONG DEFINITIONS

GLOBAL

KB - ELEVATION OF THE KELLY-BUSHING ABOVE MSL OR MWL
SRD - ELEVATION OF THE SEISMIC REFERENCE DATUM ABOVE MSL OR MWL
GL - ELEVATION OF USER'S REFERENCE (GENERALLY GROUND LEVEL) ABOVE SRD
UNERTH - UNIFORM EARTH VELOCITY (GTRFRM)
UNFDEN - UNIFORM DENSITY VALUE

MATRIX

MVODIS - MOVE-OUT DISTANCE FROM BOREHOLE

ZONE

LOFVEL - LAYER OPTION FLAG FOR VELOCITY: -1=NONE; 0=UNIFORM; 1=UNIFORM+LAYER
LAYVEL - USER SUPPLIED VELOCITY DATA
LOFDEN - LAYER OPTION FLAG FOR DENSITY : -1=NONE; 0=UNIFORM; 1=UNIFORM+LAYER
LAYDEN - USER SUPPLIED DENSITY DATA

SAMPLED

TWOT - TWO WAY TRAVEL TIME (RELATIVE TO THE SEISMIC REFERENCE
DKB - MEASURED DEPTH FROM KELLY-BUSHING
DSRD - DEPTH FROM SRD
AVGV - AVERAGE SEISMIC VELOCITY
RMSV - ROOT MEAN SQUARE VELOCITY (SEISMIC)
MVOT - NORMAL MOVE-OUT
MVOT - NORMAL MOVE-OUT
MVOT - NORMAL MOVE-OUT
INTV - INTERNAL VELOCITY, AVERAGE

(GLOBAL PARAMETERS)			(VALUE)	
ELEV OF KB AB. MSL (WST)	KB	:	325.000	FT
ELEV OF SRD AB. MSL(WST)	SRD	:	0	FT
ELEV OF GL AB. SRD(WST)	GL	:	310.000	FT
UNIFORM EARTH VELOCITY	UNERTH	:	7000.00	FT/S
UNIFORM DENSITY VALUE	UNFDEN	:	2.30000	G/C3

(MATRIX PARAMETERS)

	MVOUT DIST FT
1	3000.0
2	4500.0
3	6000.0

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(ZONED PARAMETERS)

		(VALUE)		(LIMITS)		
LAYER OPTION FLAG VELOC	LOFVEL	: 1.000000		99999.0	-	0
USER VELOC (WST)	LAYVEL	: 5000.000	FT/S	99999.0	-	0
LAYER OPTION FLAG DENS	LOFDEN	: 1.000000		99999.0	-	0
USER SUPPLIED DENSITY DA	LAYDEN	:-999.2500	G/C3	99999.0	-	0

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TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB FT	VERTICAL DEPTH FROM SRD FT	AVERAGE VELOCITY SRD/GEO FT/S	RMS VELOCITY FT/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY FT/S
2.00	330.9	5.9	5862	5869	509.21	764.80	1020.40	5869
4.00	336.7	11.7	5844	5847	509.09	765.62	1022.16	5826
6.00	342.7	17.7	5903	5905	502.04	756.03	1010.02	6021
8.00	350.6	25.6	6392	6450	457.21	689.76	922.32	7859
10.00	357.9	32.9	6578	6633	442.36	668.45	894.56	7323
12.00	364.9	39.9	6650	6697	436.10	660.02	883.97	7008
14.00	372.1	47.1	6730	6774	429.11	650.48	871.89	7215
16.00	378.9	53.9	6741	6779	426.82	648.00	869.21	6817
18.00	386.1	61.1	6788	6823	422.05	641.76	861.54	7166
20.00	392.7	67.7	6770	6802	421.53	641.91	862.37	6604
22.00	399.5	74.5	6777	6806	419.36	639.59	859.91	6845
24.00	406.3	81.3	6775	6801	417.75	638.08	858.52	6754
26.00	413.0	88.0	6770	6795	416.29	636.80	857.43	6715
28.00	419.9	94.9	6775	6798	414.19	634.54	855.05	6842
30.00	426.6	101.6	6776	6798	412.35	632.68	853.18	6791
32.00	434.4	109.4	6840	6864	406.23	624.38	842.71	7793
34.00	442.6	117.6	6915	6944	399.37	614.94	830.73	8117
36.00	450.5	125.5	6972	7003	393.87	607.55	821.48	7946
38.00	457.8	132.8	6991	7021	390.98	604.06	817.42	7330
40.00	465.1	140.1	7007	7036	388.26	600.84	813.72	7311
42.00	472.4	147.4	7017	7045	385.93	598.17	810.76	7218
44.00	479.8	154.8	7037	7064	382.96	594.55	806.52	7461
46.00	487.1	162.1	7049	7075	380.53	591.73	803.33	7307
48.00	494.5	169.5	7064	7089	377.92	588.63	799.78	7402

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COMPANY : DELHI/SANTOS & PARTNERS WELL : BIRRIBIANA 1 PAGE 4

TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB FT	VERTICAL DEPTH FROM SRD FT	AVERAGE VELOCITY SRD/GEO FT/S	RMS VELOCITY FT/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY FT/S
50.00	501.8	176.8	7071	7095	375.76	586.19	797.11	7252
52.00	509.1	184.1	7082	7105	373.41	583.46	794.04	7351
54.00	516.4	191.4	7090	7113	371.22	580.97	791.29	7302
56.00	523.8	198.8	7101	7123	368.87	578.23	788.19	7398
58.00	530.9	205.9	7101	7123	367.17	576.45	786.39	7109
60.00	538.2	213.2	7105	7126	365.27	574.37	784.17	7213
62.00	545.7	220.7	7120	7141	362.69	571.25	780.56	7574
64.00	553.2	228.2	7132	7152	360.34	568.47	777.41	7488
66.00	560.5	235.5	7138	7157	358.33	566.21	774.93	7328
68.00	568.2	243.2	7152	7171	355.82	563.17	771.42	7630
70.00	575.6	250.6	7160	7178	353.74	560.78	768.77	7413
72.00	582.9	257.9	7165	7183	351.80	558.59	766.38	7349
74.00	590.3	265.3	7169	7187	349.94	556.50	764.13	7318
76.00	597.5	272.5	7170	7187	348.26	554.69	762.24	7211
78.00	604.7	279.7	7171	7188	346.60	552.91	760.39	7198
80.00	612.0	287.0	7175	7192	344.75	550.81	758.12	7346
82.00	619.1	294.1	7173	7190	343.25	549.25	756.56	7104
84.00	625.6	300.6	7157	7173	342.57	548.93	756.65	6466
86.00	632.5	307.5	7151	7167	341.32	547.73	755.56	6906
88.00	639.3	314.3	7142	7159	340.22	546.75	754.77	6779
90.00	646.4	321.4	7141	7157	338.71	545.15	753.14	7097
92.00	653.3	328.3	7137	7152	337.43	543.87	751.94	6923
94.00	660.4	335.4	7136	7151	335.92	542.25	750.28	7104
96.00	667.1	342.1	7127	7142	334.87	541.32	749.54	6714

Computer Resources Company

TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB FT	VERTICAL DEPTH FROM SRD FT	AVERAGE VELOCITY SRD/GEO FT/S	RMS VELOCITY FT/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY FT/S
98.00	673.5	348.5	7113	7128	334.13	540.86	749.42	6413
100.00	680.5	355.5	7110	7125	332.76	539.44	748.01	6974
102.00	687.6	362.6	7109	7125	331.26	537.80	746.32	7096
104.00	693.7	368.7	7091	7107	330.76	537.69	746.66	6126
106.00	700.1	375.1	7078	7094	329.95	537.10	746.35	6427
108.00	707.5	382.5	7083	7099	328.17	535.01	744.04	7347
110.00	714.9	389.9	7089	7104	326.36	532.88	741.67	7385
112.00	722.3	397.3	7095	7111	324.48	530.63	739.13	7477
114.00	729.7	404.7	7100	7116	322.74	528.59	736.86	7365
116.00	736.9	411.9	7102	7118	321.15	526.77	734.90	7228
118.00	743.7	418.7	7096	7111	320.06	525.72	733.95	6717
120.00	750.1	425.1	7085	7100	319.22	525.02	733.49	6439
122.00	757.1	432.1	7084	7099	317.86	523.54	731.97	6999
124.00	764.2	439.2	7084	7099	316.42	521.91	730.25	7104
126.00	771.5	446.5	7087	7102	314.79	520.01	728.15	7306
128.00	778.9	453.9	7092	7107	313.12	518.02	725.93	7377
130.00	786.2	461.2	7095	7109	311.55	516.18	723.91	7282
132.00	793.5	468.5	7099	7113	309.91	514.23	721.74	7375
134.00	801.0	476.0	7105	7119	308.19	512.15	719.39	7483
136.00	808.7	483.7	7113	7128	306.32	509.81	716.69	7686
138.00	816.4	491.4	7122	7137	304.43	507.46	713.97	7724
140.00	823.7	498.7	7124	7139	302.96	505.74	712.09	7258
142.00	829.9	504.9	7112	7127	302.26	505.20	711.79	6247
144.00	837.4	512.4	7117	7132	300.61	503.19	709.53	7487

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TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB FT	VERTICAL DEPTH FROM SRD FT	AVERAGE VELOCITY SRD/GEO FT/S	RMS VELOCITY FT/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY FT/S
146.00	844.7	519.7	7119	7134	299.14	501.46	707.62	7287
148.00	851.9	526.9	7120	7134	297.79	499.89	705.94	7150
150.00	859.0	534.0	7121	7135	296.42	498.29	704.20	7191
152.00	866.0	541.0	7118	7133	295.23	496.96	702.83	6951
154.00	873.4	548.4	7122	7136	293.70	495.10	700.74	7423
156.00	880.9	555.9	7127	7141	292.13	493.17	698.56	7495
158.00	888.5	563.5	7133	7147	290.52	491.17	696.28	7573
160.00	895.8	570.8	7135	7149	289.13	489.51	694.43	7294
162.00	903.4	578.4	7141	7155	287.51	487.48	692.11	7627
164.00	911.1	586.1	7148	7162	285.84	485.37	689.67	7720
166.00	918.9	593.9	7156	7170	284.13	483.19	687.11	7814
168.00	926.8	601.8	7165	7179	282.38	480.93	684.47	7896
170.00	934.7	609.7	7173	7188	280.65	478.70	681.84	7903
172.00	942.6	617.6	7182	7197	278.95	476.51	679.27	7890
174.00	950.4	625.4	7189	7204	277.32	474.43	676.85	7812
176.00	957.5	632.5	7187	7202	276.19	473.12	675.46	7043
178.00	964.1	639.1	7181	7196	275.29	472.16	674.55	6654
180.00	971.7	646.7	7186	7201	273.84	470.33	672.45	7600
182.00	979.0	654.0	7187	7201	272.61	468.85	670.82	7241
184.00	986.4	661.4	7189	7204	271.30	467.22	669.00	7401
186.00	994.2	669.2	7195	7210	269.77	465.25	666.70	7785
188.00	1001.6	676.6	7198	7212	268.46	463.63	664.88	7427
190.00	1008.6	683.6	7196	7211	267.39	462.36	663.53	7036
192.00	1016.0	691.0	7197	7212	266.16	460.86	661.85	7318

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TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB FT	VERTICAL DEPTH FROM SRD FT	AVERAGE VELOCITY SRD/GEO FT/S	RMS VELOCITY FT/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY FT/S
194.00	1022.5	697.5	7191	7205	265.35	459.99	661.04	6543
196.00	1029.8	704.8	7192	7207	264.12	458.47	659.34	7339
198.00	1037.3	712.3	7195	7209	262.84	456.85	657.50	7466
200.00	1045.1	720.1	7201	7215	261.40	454.99	655.32	7762
202.00	1053.0	728.0	7208	7223	259.87	452.97	652.92	7959
204.00	1060.6	735.6	7211	7226	258.59	451.33	651.05	7532
206.00	1068.1	743.1	7215	7229	257.31	449.70	649.18	7545
208.00	1074.8	749.8	7210	7224	256.44	448.70	648.17	6736
210.00	1082.4	757.4	7213	7228	255.16	447.06	646.28	7580
212.00	1089.8	764.8	7215	7229	254.01	445.60	644.63	7354
214.00	1097.1	772.1	7216	7230	252.86	444.15	642.99	7362
216.00	1105.3	780.3	7225	7240	251.28	442.01	640.42	8212
218.00	1112.7	787.7	7226	7241	250.18	440.62	638.85	7310
220.00	1120.2	795.2	7229	7244	248.97	439.04	637.04	7558
222.00	1127.7	802.7	7232	7246	247.78	437.51	635.27	7520
224.00	1134.7	809.7	7229	7243	246.87	436.41	634.10	6927
226.00	1142.1	817.1	7231	7245	245.75	434.97	632.46	7416
228.00	1149.7	824.7	7235	7249	244.52	433.35	630.57	7663
230.00	1156.7	831.7	7233	7247	243.59	432.21	629.34	7000
232.00	1164.4	839.4	7236	7250	242.38	430.61	627.46	7670
234.00	1172.1	847.1	7240	7254	241.17	429.00	625.58	7689
236.00	1179.8	854.8	7244	7258	239.97	427.41	623.71	7687
238.00	1187.1	862.1	7245	7259	238.93	426.07	622.18	7344
240.00	1195.1	870.1	7251	7265	237.64	424.31	620.08	7945

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TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB FT	VERTICAL DEPTH FROM SRD FT	AVERAGE VELOCITY SRD/GEO FT/S	RMS VELOCITY FT/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY FT/S
242.00	1202.6	877.6	7253	7267	236.52	422.84	618.37	7562
244.00	1210.7	885.7	7260	7274	235.20	421.02	616.19	8064
246.00	1218.7	893.7	7266	7280	233.92	419.27	614.08	8002
248.00	1226.4	901.4	7270	7284	232.77	417.72	612.26	7719
250.00	1234.1	909.1	7273	7287	231.64	416.19	610.46	7711
252.00	1242.0	917.0	7277	7292	230.46	414.59	608.56	7833
254.00	1249.7	924.7	7281	7295	229.35	413.10	606.80	7687
256.00	1256.9	931.9	7281	7295	228.42	411.89	605.43	7255
258.00	1264.8	939.8	7286	7300	227.24	410.26	603.48	7924
260.00	1272.8	947.8	7291	7306	226.04	408.60	601.47	8004
262.00	1280.8	955.8	7296	7311	224.86	406.97	599.51	7969
264.00	1288.5	963.5	7299	7314	223.80	405.53	597.81	7682
266.00	1296.3	971.3	7303	7318	222.70	404.01	596.00	7829
268.00	1304.4	979.4	7309	7324	221.49	402.32	593.94	8121
270.00	1312.6	987.6	7315	7330	220.30	400.64	591.90	8125
272.00	1320.5	995.5	7320	7335	219.18	399.07	590.01	7972
274.00	1328.5	1003.5	7325	7340	218.06	397.52	588.13	7973
276.00	1336.5	1011.5	7329	7345	216.96	395.98	586.28	7955
278.00	1344.5	1019.5	7335	7350	215.83	394.38	584.33	8083
280.00	1352.4	1027.4	7339	7354	214.78	392.91	582.56	7887
282.00	1360.8	1035.8	7346	7362	213.57	391.18	580.42	8353
284.00	1368.8	1043.8	7351	7367	212.49	389.65	578.58	8016
286.00	1377.0	1052.0	7356	7372	211.37	388.06	576.63	8156
288.00	1385.7	1060.7	7366	7383	210.04	386.11	574.18	8783

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TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB FT	VERTICAL DEPTH FROM SRD FT	AVERAGE VELOCITY SRD/GEO FT/S	RMS VELOCITY FT/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY FT/S
290.00	1393.7	1068.7	7370	7387	209.02	384.66	572.43	7958
292.00	1401.8	1076.8	7375	7392	207.96	383.16	570.59	8073
294.00	1410.3	1085.3	7383	7401	206.75	381.38	568.37	8577
296.00	1418.5	1093.5	7389	7406	205.69	379.86	566.51	8158
298.00	1426.8	1101.8	7395	7413	204.60	378.28	564.55	8285
300.00	1435.0	1110.0	7400	7418	203.53	376.74	562.66	8228
302.00	1443.4	1118.4	7407	7425	202.42	375.12	560.64	8411
304.00	1451.7	1126.7	7413	7431	201.35	373.56	558.72	8308
306.00	1460.1	1135.1	7419	7438	200.27	371.98	556.75	8395
308.00	1469.3	1144.3	7430	7451	198.94	369.98	554.19	9164
310.00	1477.8	1152.8	7437	7458	197.85	368.37	552.19	8491
312.00	1486.2	1161.2	7444	7465	196.79	366.79	550.22	8460
314.00	1494.6	1169.6	7450	7471	195.76	365.28	548.33	8371
316.00	1503.1	1178.1	7456	7477	194.71	363.73	546.39	8460
318.00	1511.4	1186.4	7461	7483	193.72	362.27	544.59	8300
320.00	1519.7	1194.7	7467	7488	192.74	360.83	542.79	8292
322.00	1528.2	1203.2	7473	7495	191.71	359.30	540.87	8500
324.00	1536.8	1211.8	7480	7502	190.67	357.74	538.91	8585
326.00	1545.0	1220.0	7485	7507	189.72	356.33	537.16	8294
328.00	1553.3	1228.3	7489	7512	188.80	354.97	535.46	8229
330.00	1561.4	1236.4	7493	7516	187.91	353.66	533.83	8136
332.00	1569.8	1244.8	7499	7521	186.96	352.25	532.08	8359
334.00	1578.3	1253.3	7505	7527	185.99	350.79	530.24	8496
336.00	1586.9	1261.9	7511	7534	185.01	349.30	528.35	8596

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TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB FT	VERTICAL DEPTH FROM SRD FT	AVERAGE VELOCITY SRD/GEO FT/S	RMS VELOCITY FT/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY FT/S
338.00	1596.0	1271.0	7520	7544	183.89	347.58	526.14	9095
340.00	1604.5	1279.5	7527	7551	182.93	346.14	524.31	8552
342.00	1613.1	1288.1	7533	7557	181.99	344.70	522.50	8554
344.00	1621.6	1296.6	7538	7563	181.05	343.28	520.69	8554
346.00	1630.3	1305.3	7545	7570	180.09	341.81	518.83	8671
348.00	1639.1	1314.1	7552	7578	179.11	340.30	516.90	8806
350.00	1647.8	1322.8	7559	7585	178.16	338.85	515.05	8701
352.00	1656.9	1331.9	7568	7594	177.10	337.21	512.92	9151
354.00	1665.7	1340.7	7575	7601	176.17	335.77	511.08	8741
356.00	1675.2	1350.2	7585	7613	175.05	334.00	508.77	9494
358.00	1683.9	1358.9	7592	7620	174.14	332.60	506.98	8710
360.00	1692.8	1367.8	7599	7627	173.20	331.14	505.11	8863
362.00	1701.5	1376.5	7605	7634	172.30	329.75	503.32	8752
364.00	1710.3	1385.3	7612	7641	171.40	328.35	501.52	8785
366.00	1719.1	1394.1	7618	7648	170.51	326.97	499.74	8787
368.00	1728.0	1403.0	7625	7655	169.59	325.52	497.87	8951
370.00	1738.3	1413.3	7639	7672	168.35	323.53	495.22	10239
372.00	1747.2	1422.2	7646	7679	167.46	322.13	493.41	8915
374.00	1755.6	1430.6	7650	7683	166.69	320.94	491.90	8411
376.00	1764.5	1439.5	7657	7690	165.83	319.58	490.13	8883
378.00	1773.7	1448.7	7665	7699	164.89	318.08	488.18	9248
380.00	1782.8	1457.8	7673	7707	164.00	316.68	486.34	9061
382.00	1791.8	1466.8	7679	7714	163.14	315.31	484.56	8994
384.00	1800.8	1475.8	7686	7721	162.28	313.94	482.78	9007

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TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB FT	VERTICAL DEPTH FROM SRD FT	AVERAGE VELOCITY SRD/GEO FT/S	RMS VELOCITY FT/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY FT/S
386.00	1810.2	1485.2	7695	7731	161.34	312.43	480.79	9416
388.00	1819.0	1494.0	7701	7737	160.55	311.19	479.18	8764
390.00	1828.3	1503.3	7709	7746	159.65	309.73	477.26	9340
392.00	1837.1	1512.1	7715	7751	158.87	308.50	475.67	8774
394.00	1846.0	1521.0	7721	7757	158.08	307.25	474.03	8869
396.00	1854.9	1529.9	7727	7764	157.29	305.98	472.37	8936
398.00	1864.8	1539.8	7738	7776	156.30	304.36	470.21	9901
400.00	1873.7	1548.7	7744	7782	155.53	303.12	468.59	8922
402.00	1882.6	1557.6	7749	7788	154.76	301.89	466.98	8911
404.00	1891.6	1566.6	7755	7794	154.00	300.66	465.37	8945
406.00	1900.7	1575.7	7762	7802	153.20	299.37	463.66	9158
408.00	1909.9	1584.9	7769	7809	152.42	298.09	461.98	9128
410.00	1919.1	1594.1	7776	7816	151.62	296.80	460.27	9225
412.00	1929.2	1604.2	7787	7829	150.66	295.20	458.12	10094
414.00	1938.3	1613.3	7794	7835	149.90	293.97	456.50	9105
416.00	1947.4	1622.4	7800	7842	149.16	292.76	454.89	9093
418.00	1956.5	1631.5	7806	7849	148.41	291.53	453.26	9154
420.00	1965.9	1640.9	7814	7857	147.62	290.24	451.54	9393
422.00	1975.3	1650.3	7821	7865	146.85	288.97	449.85	9348
424.00	1984.7	1659.7	7829	7873	146.08	287.70	448.15	9388
426.00	1993.6	1668.6	7834	7878	145.39	286.57	446.65	8985
428.00	2003.0	1678.0	7841	7886	144.64	285.33	444.99	9352
430.00	2012.3	1687.3	7848	7893	143.90	284.10	443.35	9354
432.00	2021.6	1696.6	7854	7900	143.19	282.92	441.78	9211

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TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB FT	VERTICAL DEPTH FROM SRD FT	AVERAGE VELOCITY SRD/GEO FT/S	RMS VELOCITY FT/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY FT/S
434.00	2031.5	1706.5	7864	7910	142.36	281.54	439.90	9910
436.00	2041.0	1716.0	7871	7918	141.62	280.29	438.23	9509
438.00	2050.5	1725.5	7879	7926	140.87	279.05	436.56	9530
440.00	2060.0	1735.0	7887	7934	140.14	277.82	434.90	9533
442.00	2069.6	1744.6	7894	7942	139.41	276.60	433.26	9520
444.00	2079.1	1754.1	7901	7950	138.69	275.38	431.61	9569
446.00	2088.5	1763.5	7908	7957	138.00	274.23	430.05	9387
448.00	2097.5	1772.5	7913	7962	137.38	273.20	428.68	8973
450.00	2106.0	1781.0	7916	7965	136.83	272.30	427.49	8516
452.00	2114.0	1789.0	7916	7965	136.36	271.53	426.50	8037
454.00	2122.3	1797.3	7918	7966	135.86	270.71	425.42	8270
456.00	2130.8	1805.8	7920	7969	135.33	269.84	424.27	8446
458.00	2138.6	1813.6	7919	7968	134.90	269.14	423.37	7799
460.00	2146.4	1821.4	7919	7967	134.46	268.43	422.45	7855
462.00	2154.4	1829.4	7919	7967	134.00	267.69	421.49	7985
464.00	2162.6	1837.6	7921	7968	133.53	266.91	420.47	8162
466.00	2171.0	1846.0	7923	7970	133.02	266.07	419.36	8430
468.00	2179.4	1854.4	7925	7972	132.52	265.23	418.24	8450
470.00	2187.9	1862.9	7927	7975	132.01	264.38	417.12	8491
472.00	2196.4	1871.4	7930	7977	131.51	263.54	416.00	8495
474.00	2204.9	1879.9	7932	7979	131.02	262.72	414.90	8435
476.00	2213.4	1888.4	7934	7981	130.51	261.88	413.78	8521
478.00	2221.6	1896.6	7935	7982	130.06	261.13	412.79	8182
480.00	2229.8	1904.8	7937	7983	129.60	260.35	411.76	8276

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TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB FT	VERTICAL DEPTH FROM SRD FT	AVERAGE VELOCITY SRD/GEO FT/S	RMS VELOCITY FT/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY FT/S
482.00	2238.1	1913.1	7938	7985	129.14	259.58	410.74	8277
484.00	2246.5	1921.5	7940	7986	128.67	258.79	409.69	8393
486.00	2254.9	1929.9	7942	7988	128.19	258.00	408.62	8426
488.00	2263.2	1938.2	7943	7989	127.74	257.24	407.62	8271
490.00	2271.6	1946.6	7945	7991	127.28	256.47	406.58	8394
492.00	2280.1	1955.1	7947	7993	126.81	255.67	405.51	8477
494.00	2288.1	1963.1	7948	7993	126.41	254.99	404.61	7985
496.00	2296.2	1971.2	7948	7994	125.99	254.29	403.68	8095
498.00	2304.4	1979.4	7950	7995	125.55	253.55	402.70	8269
500.00	2312.7	1987.7	7951	7996	125.12	252.82	401.71	8288
502.00	2321.8	1996.8	7955	8000	124.59	251.91	400.47	9057
504.00	2330.3	2005.3	7957	8002	124.14	251.14	399.43	8499
506.00	2338.6	2013.6	7959	8004	123.71	250.41	398.45	8306
508.00	2346.5	2021.5	7958	8003	123.33	249.78	397.61	7877
510.00	2354.3	2029.3	7958	8003	122.95	249.14	396.76	7896
512.00	2362.3	2037.3	7958	8003	122.57	248.49	395.91	7951
514.00	2370.6	2045.6	7960	8004	122.15	247.78	394.94	8327
516.00	2382.9	2057.9	7976	8025	121.19	246.04	392.45	12279
518.00	2393.9	2068.9	7988	8038	120.45	244.71	390.57	10967
520.00	2404.1	2079.1	7996	8048	119.82	243.59	388.99	10192
522.00	2414.3	2089.3	8005	8057	119.18	242.46	387.40	10278
524.00	2424.7	2099.7	8014	8067	118.54	241.32	385.79	10361
526.00	2434.9	2109.9	8022	8076	117.94	240.24	384.27	10164
528.00	2445.1	2120.1	8031	8086	117.33	239.16	382.74	10213

92598
Computer Resources Company
Schlumberger

COMPANY : DELHI/SANTOS & PARTNERS WELL : BIRRIBIANA 1

TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB FT	VERTICAL DEPTH FROM SRD FT	AVERAGE VELOCITY SRD/GEO FT/S	RMS VELOCITY FT/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY FT/S
530.00	2454.9	2129.9	8037	8093	116.78	238.17	381.36	9827
532.00	2464.3	2139.3	8043	8098	116.28	237.29	380.13	9396
534.00	2472.5	2147.5	8043	8098	115.91	236.66	379.27	8181
536.00	2482.7	2157.7	8051	8107	115.32	235.60	377.77	10245
538.00	2492.0	2167.0	8056	8112	114.85	234.76	376.60	9285
540.00	2501.0	2176.0	8059	8116	114.40	233.98	375.52	9030
542.00	2510.6	2185.6	8065	8121	113.91	233.10	374.28	9540
544.00	2520.1	2195.1	8070	8127	113.42	232.23	373.06	9497
546.00	2529.8	2204.8	8076	8133	112.92	231.33	371.78	9710
548.00	2539.3	2214.3	8081	8139	112.44	230.48	370.59	9471
550.00	2549.4	2224.4	8089	8147	111.89	229.49	369.19	10138
552.00	2559.4	2234.4	8096	8154	111.37	228.54	367.84	10043
554.00	2570.3	2245.3	8106	8166	110.75	227.41	366.22	10861
556.00	2580.9	2255.9	8115	8176	110.16	226.35	364.69	10640
558.00	2592.1	2267.1	8126	8189	109.52	225.16	362.99	11203
560.00	2602.1	2277.1	8132	8196	109.02	224.26	361.71	9943
562.00	2612.5	2287.5	8141	8205	108.48	223.28	360.30	10394
564.00	2623.5	2298.5	8151	8216	107.87	222.17	358.70	11007
566.00	2634.8	2309.8	8162	8229	107.25	221.02	357.03	11262
568.00	2645.3	2320.3	8170	8238	106.71	220.03	355.61	10514
570.00	2656.2	2331.2	8180	8249	106.14	218.98	354.09	10900
572.00	2667.8	2342.8	8192	8263	105.48	217.77	352.33	11662
574.00	2677.8	2352.8	8198	8270	105.02	216.92	351.12	9981
576.00	2687.2	2362.2	8202	8274	104.61	216.18	350.06	9428

Computer Resources Company

TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB FT	VERTICAL DEPTH FROM SRD FT	AVERAGE VELOCITY SRD/GEO FT/S	RMS VELOCITY FT/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY FT/S
578.00	2697.2	2372.2	8208	8281	104.15	215.34	348.86	9983
580.00	2707.9	2382.9	8217	8290	103.63	214.38	347.48	10646
582.00	2719.1	2394.1	8227	8302	103.05	213.31	345.91	11265
584.00	2730.4	2405.4	8238	8314	102.48	212.24	344.35	11297
586.00	2739.5	2414.5	8240	8317	102.12	211.59	343.44	9020
588.00	2748.4	2423.4	8243	8319	101.78	210.97	342.56	8925
590.00	2758.2	2433.2	8248	8325	101.35	210.19	341.44	9844
592.00	2768.6	2443.6	8255	8333	100.89	209.33	340.18	10399
594.00	2780.1	2455.1	8266	8345	100.31	208.26	338.62	11477
596.00	2792.6	2467.6	8281	8362	99.64	206.99	336.74	12497
598.00	2804.6	2479.6	8293	8377	99.03	205.84	335.05	11985
600.00	2816.7	2491.7	8306	8392	98.41	204.68	333.34	12113
602.00	2826.7	2501.7	8311	8398	98.00	203.91	332.23	10056
604.00	2837.3	2512.3	8319	8406	97.55	203.07	331.01	10529
606.00	2848.1	2523.1	8327	8415	97.08	202.19	329.72	10800
608.00	2859.5	2534.5	8337	8427	96.56	201.21	328.28	11377
610.00	2871.3	2546.3	8348	8440	96.00	200.16	326.72	11827
612.00	2881.9	2556.9	8356	8448	95.56	199.33	325.51	10646
614.00	2892.9	2567.9	8364	8458	95.09	198.46	324.22	10928
616.00	2904.2	2579.2	8374	8469	94.59	197.51	322.83	11377
618.00	2918.2	2593.2	8392	8493	93.84	196.06	320.65	14012
620.00	2928.8	2603.8	8399	8500	93.42	195.28	319.51	10552
622.00	2939.7	2614.7	8407	8509	92.98	194.44	318.27	10922
624.00	2950.6	2625.6	8415	8518	92.54	193.61	317.05	10904

92598
Computer Resources Company
Schlumberger

COMPANY : DELHI/SANTOS & PARTNERS WELL : BIRRIBIANA 1

TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB FT	VERTICAL DEPTH FROM SRD FT	AVERAGE VELOCITY SRD/GEO FT/S	RMS VELOCITY FT/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY FT/S
626.00	2961.5	2636.5	8423	8526	92.11	192.80	315.85	10896
628.00	2972.1	2647.1	8430	8534	91.70	192.03	314.72	10594
630.00	2983.6	2658.6	8440	8545	91.22	191.12	313.38	11515
632.00	2994.3	2669.3	8447	8552	90.82	190.36	312.24	10704
634.00	3005.9	2680.9	8457	8564	90.35	189.45	310.90	11588
636.00	3016.6	2691.6	8464	8571	89.95	188.70	309.79	10680
638.00	3027.4	2702.4	8471	8579	89.55	187.94	308.66	10795
640.00	3038.1	2713.1	8479	8587	89.15	187.19	307.55	10744
642.00	3048.7	2723.7	8485	8593	88.78	186.48	306.50	10535
644.00	3059.1	2734.1	8491	8600	88.42	185.79	305.49	10382
646.00	3070.6	2745.6	8500	8610	87.97	184.94	304.22	11514
648.00	3081.3	2756.3	8507	8618	87.59	184.22	303.14	10762
650.00	3092.6	2767.6	8516	8627	87.17	183.41	301.94	11313
652.00	3103.8	2778.8	8524	8636	86.77	182.64	300.79	11115
654.00	3115.0	2790.0	8532	8645	86.36	181.85	299.61	11288
656.00	3126.5	2801.5	8541	8655	85.94	181.04	298.40	11489
658.00	3138.9	2813.9	8553	8669	85.45	180.10	296.97	12394
660.00	3154.1	2829.1	8573	8696	84.72	178.67	294.80	15174
662.00	3167.6	2842.6	8588	8715	84.16	177.57	293.12	13497
664.00	3180.5	2855.5	8601	8731	83.64	176.58	291.61	12943
666.00	3193.9	2868.9	8615	8748	83.10	175.52	290.01	13372
668.00	3206.0	2881.0	8626	8760	82.67	174.68	288.73	12109
670.00	3218.7	2893.7	8638	8774	82.20	173.76	287.34	12660
672.00	3231.4	2906.4	8650	8789	81.73	172.84	285.95	12690

Computer Resources Company

TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB FT	VERTICAL DEPTH FROM SRD FT	AVERAGE VELOCITY SRD/GEO FT/S	RMS VELOCITY FT/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY FT/S
674.00	3243.9	2918.9	8661	8802	81.28	171.97	284.62	12486
676.00	3256.9	2931.9	8674	8817	80.79	171.02	283.17	13048
678.00	3269.7	2944.7	8687	8832	80.33	170.11	281.79	12831
680.00	3282.3	2957.3	8698	8845	79.89	169.24	280.48	12591
682.00	3294.8	2969.8	8709	8858	79.46	168.40	279.20	12496
684.00	3307.1	2982.1	8720	8870	79.05	167.60	277.98	12272
686.00	3319.0	2994.0	8729	8881	78.66	166.85	276.84	11947
688.00	3330.4	3005.4	8737	8889	78.32	166.18	275.82	11407
690.00	3341.5	3016.5	8744	8896	78.00	165.55	274.87	11063
692.00	3353.6	3028.6	8753	8907	77.61	164.80	273.73	12111
694.00	3365.3	3040.3	8762	8916	77.26	164.11	272.68	11652
696.00	3376.8	3051.8	8769	8925	76.92	163.45	271.68	11476
698.00	3388.8	3063.8	8779	8935	76.55	162.73	270.57	12033
700.00	3399.9	3074.9	8785	8942	76.24	162.12	269.65	11117
702.00	3411.5	3086.5	8793	8951	75.91	161.46	268.65	11561
704.00	3423.4	3098.4	8802	8961	75.55	160.76	267.58	11985
706.00	3436.2	3111.2	8814	8974	75.15	159.97	266.36	12739
708.00	3448.4	3123.4	8823	8985	74.79	159.25	265.26	12234
710.00	3460.8	3135.8	8833	8996	74.42	158.52	264.14	12363
712.00	3473.0	3148.0	8843	9007	74.06	157.81	263.06	12256
714.00	3485.8	3160.8	8854	9019	73.67	157.05	261.87	12782
716.00	3499.1	3174.1	8866	9034	73.26	156.22	260.60	13298
718.00	3512.9	3187.9	8880	9051	72.82	155.34	259.24	13769
720.00	3526.2	3201.2	8892	9065	72.41	154.53	257.98	13309

92598
Computer Resources Company
Schlumberger

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COMPANY : DELHI/SANTOS & PARTNERS WELL : BIRRIBIANA 1

TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB FT	VERTICAL DEPTH FROM SRD FT	AVERAGE VELOCITY SRD/GEO FT/S	RMS VELOCITY FT/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY FT/S
722.00	3539.7	3214.7	8905	9081	71.99	153.70	256.70	13544
724.00	3553.3	3228.3	8918	9097	71.58	152.87	255.41	13610
726.00	3566.1	3241.1	8929	9109	71.21	152.15	254.29	12800
728.00	3579.2	3254.2	8940	9122	70.84	151.40	253.13	13095
730.00	3592.5	3267.5	8952	9136	70.46	150.63	251.95	13239
732.00	3605.4	3280.4	8963	9148	70.10	149.92	250.83	12945
734.00	3618.0	3293.0	8973	9160	69.76	149.24	249.79	12593
736.00	3629.8	3304.8	8980	9168	69.47	148.66	248.90	11768
738.00	3641.6	3316.6	8988	9176	69.18	148.08	248.00	11848
740.00	3653.4	3328.4	8996	9184	68.89	147.51	247.12	11768
742.00	3665.1	3340.1	9003	9192	68.61	146.95	246.25	11739
744.00	3677.0	3352.0	9011	9200	68.32	146.39	245.38	11817
746.00	3688.5	3363.5	9017	9207	68.06	145.85	244.56	11530
748.00	3700.5	3375.5	9025	9215	67.77	145.28	243.67	11966
750.00	3712.6	3387.6	9034	9225	67.48	144.69	242.76	12152
752.00	3726.5	3401.5	9046	9240	67.10	143.93	241.56	13866
754.00	3739.4	3414.4	9057	9252	66.77	143.28	240.54	12895
756.00	3753.2	3428.2	9069	9267	66.40	142.53	239.38	13803
758.00	3766.5	3441.5	9080	9280	66.06	141.85	238.31	13325
760.00	3779.5	3454.5	9091	9291	65.74	141.20	237.30	13021
762.00	3792.6	3467.6	9101	9304	65.42	140.55	236.28	13126
764.00	3805.7	3480.7	9112	9315	65.10	139.91	235.28	13024
766.00	3819.2	3494.2	9123	9329	64.77	139.23	234.22	13519
768.00	3832.8	3507.8	9135	9342	64.43	138.55	233.14	13608

Computer Resources Company

TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB FT	VERTICAL DEPTH FROM SRD FT	AVERAGE VELOCITY SRD/GEO FT/S	RMS VELOCITY FT/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY FT/S
770.00	3845.6	3520.6	9145	9353	64.13	137.95	232.21	12840
772.00	3857.6	3532.6	9152	9361	63.88	137.44	231.41	11947
774.00	3871.1	3546.1	9163	9374	63.55	136.78	230.37	13546
776.00	3883.8	3558.8	9172	9384	63.27	136.21	229.48	12677
778.00	3897.6	3572.6	9184	9398	62.94	135.54	228.42	13794
780.00	3907.9	3582.9	9187	9400	62.76	135.18	227.86	10287
782.00	3919.0	3594.0	9192	9405	62.55	134.76	227.21	11120
784.00	3932.5	3607.5	9203	9418	62.24	134.13	226.22	13450
786.00	3945.4	3620.4	9212	9428	61.96	133.56	225.32	12945
788.00	3956.0	3631.0	9216	9431	61.78	133.19	224.74	10578
790.00	3967.8	3642.8	9222	9438	61.54	132.72	224.01	11864
792.00	3980.0	3655.0	9230	9446	61.30	132.23	223.24	12147
794.00	3993.0	3668.0	9239	9457	61.03	131.67	222.35	12996
796.00	4007.3	3682.3	9252	9472	60.70	130.99	221.28	14281
798.00	4018.6	3693.6	9257	9477	60.49	130.58	220.64	11300
800.00	4029.4	3704.4	9261	9481	60.31	130.21	220.05	10862
802.00	4042.1	3717.1	9269	9490	60.05	129.70	219.24	12626
804.00	4053.6	3728.6	9275	9496	59.85	129.27	218.58	11572
806.00	4065.2	3740.2	9281	9501	59.64	128.85	217.92	11539
808.00	4075.9	3750.9	9284	9505	59.46	128.50	217.37	10722
810.00	4086.9	3761.9	9289	9509	59.28	128.12	216.78	11026
812.00	4097.1	3772.1	9291	9510	59.12	127.80	216.28	10198
814.00	4107.7	3782.7	9294	9513	58.95	127.47	215.75	10556
816.00	4118.1	3793.1	9297	9515	58.79	127.13	215.24	10457

92598
Computer Resources Company
Schlumberger

COMPANY : DELHI/SANTOS & PARTNERS WELL : BIRRIBIANA 1

TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB FT	VERTICAL DEPTH FROM SRD FT	AVERAGE VELOCITY SRD/GEO FT/S	RMS VELOCITY FT/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY FT/S
818.00	4128.3	3803.3	9299	9517	58.64	126.83	214.76	10140
820.00	4138.4	3813.4	9301	9518	58.49	126.52	214.28	10084
822.00	4148.7	3823.7	9303	9521	58.33	126.20	213.78	10362
824.00	4159.2	3834.2	9306	9523	58.17	125.88	213.28	10450
826.00	4169.8	3844.8	9309	9526	58.00	125.55	212.75	10616
828.00	4180.6	3855.6	9313	9529	57.83	125.20	212.21	10799
830.00	4191.6	3866.6	9317	9533	57.66	124.84	211.65	11034
832.00	4202.6	3877.6	9321	9537	57.48	124.49	211.09	11014
834.00	4213.5	3888.5	9325	9540	57.31	124.14	210.55	10916
836.00	4224.6	3899.6	9329	9544	57.14	123.79	209.99	11038
838.00	4235.8	3910.8	9334	9549	56.96	123.43	209.42	11195
840.00	4247.3	3922.3	9339	9554	56.78	123.05	208.82	11487
842.00	4258.9	3933.9	9344	9559	56.59	122.66	208.21	11627
844.00	4270.5	3945.5	9350	9564	56.40	122.28	207.60	11626
846.00	4282.4	3957.4	9355	9571	56.21	121.88	206.97	11845
848.00	4294.5	3969.5	9362	9577	56.00	121.47	206.31	12143
850.00	4306.8	3981.8	9369	9585	55.80	121.04	205.64	12329
852.00	4319.2	3994.2	9376	9592	55.59	120.61	204.95	12407
854.00	4331.9	4006.9	9384	9601	55.37	120.17	204.24	12663
856.00	4344.6	4019.6	9392	9609	55.16	119.73	203.54	12666
858.00	4357.4	4032.4	9399	9618	54.94	119.28	202.83	12789
860.00	4368.1	4043.1	9403	9621	54.79	118.97	202.34	10787
862.00	4380.2	4055.2	9409	9627	54.60	118.58	201.71	12093
864.00	4392.8	4067.8	9416	9635	54.39	118.16	201.03	12595

Computer Resources Company

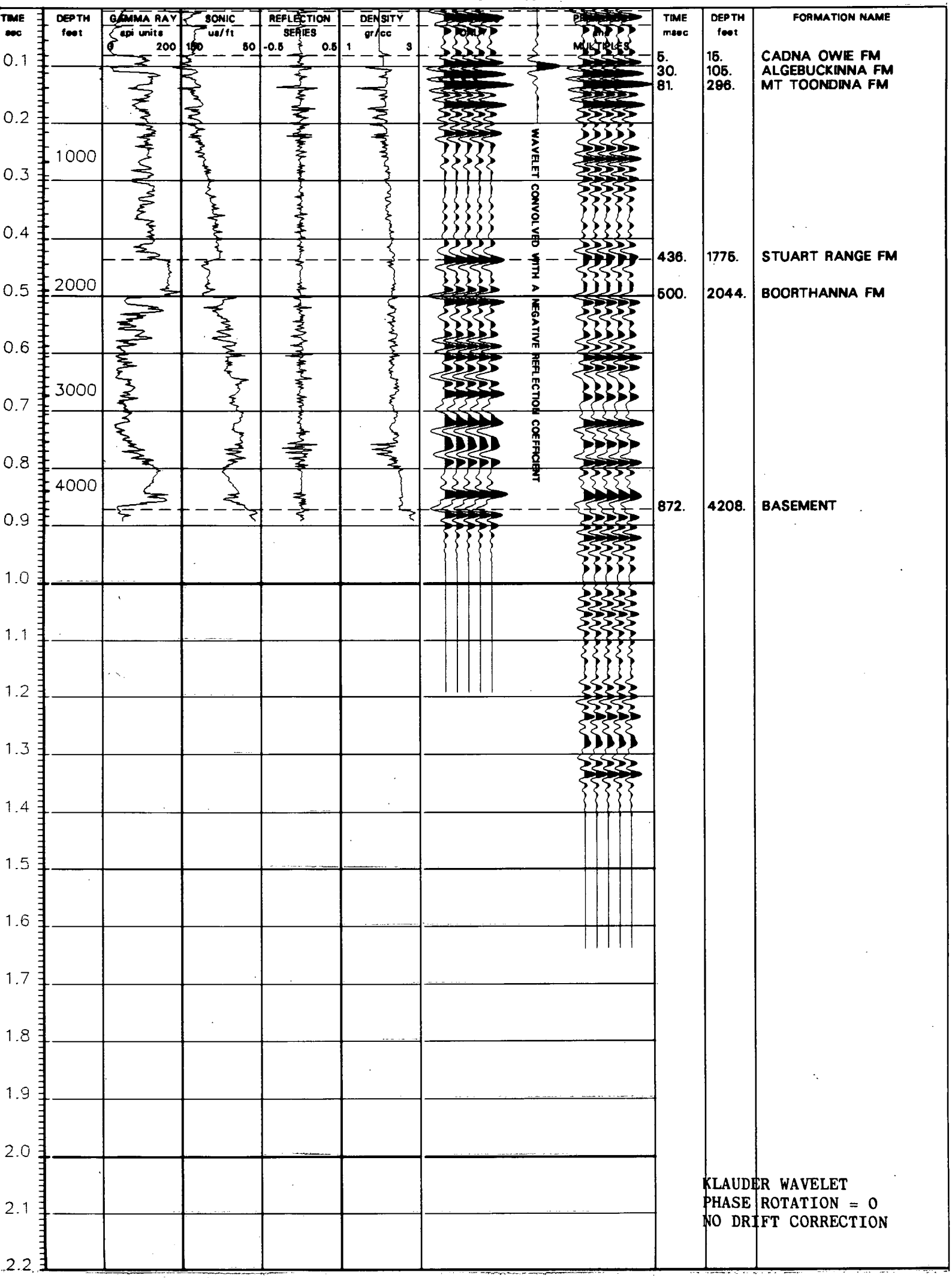
TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB FT	VERTICAL DEPTH FROM SRD FT	AVERAGE VELOCITY SRD/GEO FT/S	RMS VELOCITY FT/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY FT/S
866.00	4403.3	4078.3	9419	9637	54.25	117.87	200.58	10473
868.00	4413.5	4088.5	9420	9638	54.12	117.60	200.15	10180
870.00	4425.1	4100.1	9425	9643	53.95	117.25	199.59	11594
872.00	4436.5	4111.5	9430	9648	53.79	116.91	199.06	11412
874.00	4449.5	4124.5	9438	9657	53.57	116.47	198.35	12958
876.00	4461.9	4136.9	9445	9664	53.38	116.08	197.72	12403
878.00	4476.0	4151.0	9456	9676	53.13	115.56	196.88	14169
880.00	4490.0	4165.0	9466	9688	52.89	115.06	196.08	13944
882.00	4504.2	4179.2	9477	9701	52.64	114.55	195.25	14231
884.00	4518.8	4193.8	9488	9715	52.38	114.01	194.38	14647
886.00	4533.6	4208.6	9500	9729	52.13	113.47	193.50	14710
888.00	4550.9	4225.9	9518	9753	51.77	112.72	192.29	17334
890.00	4568.6	4243.6	9536	9778	51.40	111.95	191.03	17702
892.00	4586.7	4261.7	9555	9805	51.02	111.15	189.73	18149
894.00	4603.3	4278.3	9571	9825	50.71	110.50	188.67	16555
896.00	4618.7	4293.7	9584	9841	50.44	109.94	187.76	15407
898.00	4634.7	4309.7	9599	9859	50.15	109.34	186.79	16037
900.00	4650.8	4325.8	9613	9877	49.87	108.74	185.82	16064
902.00	4667.4	4342.4	9628	9897	49.57	108.12	184.80	16575
904.00	4684.7	4359.7	9645	9920	49.25	107.44	183.69	17330

92598
Computer Resources Company
Schlumberger

Company: DELHI/SANTOS & PARTNERS
Well: BIRRIBIANA #1
Field: WILDCAT
Location: LINE:85-YRE STN:390

KLAUDER WAVELET
PHASE ROTATION = 0
REFLECTION SERIES FROM SONIC * DENSITY
NO DRIFT CORRECTION APPLIED.

Schlumberger

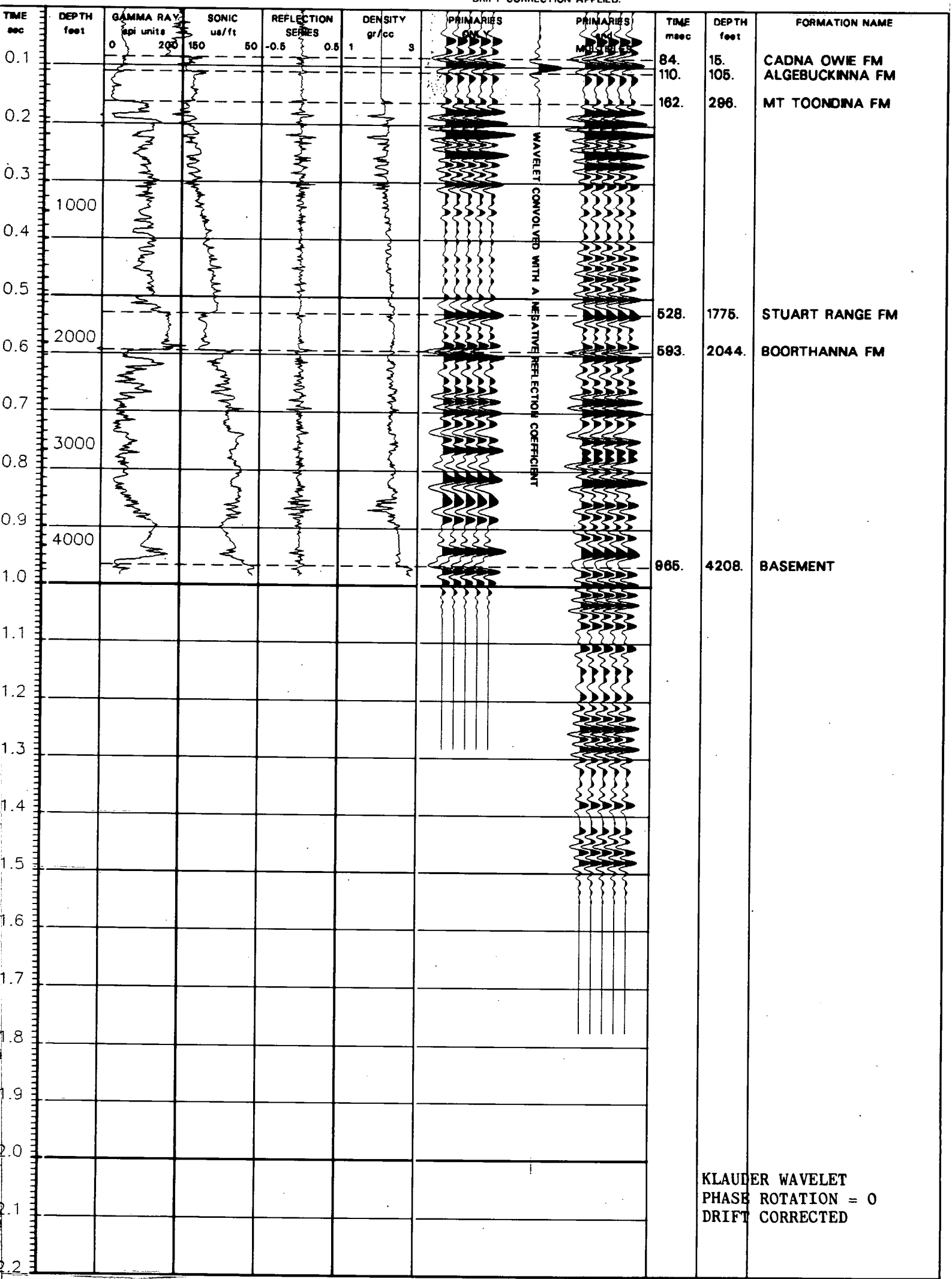


KLAUDER WAVELET
PHASE ROTATION = 0
NO DRIFT CORRECTION

Company: DELHI/SANTOS & PARTNERS
Well: BIRRIBIANA #1
Field: WILDCAT
Location: LINE:85-YRE STN:390

KLAUDER WAVELET
PHASE ROTATION = 0
REFLECTION SERIES FROM SONIC • DENSITY
DRIFT CORRECTION APPLIED.

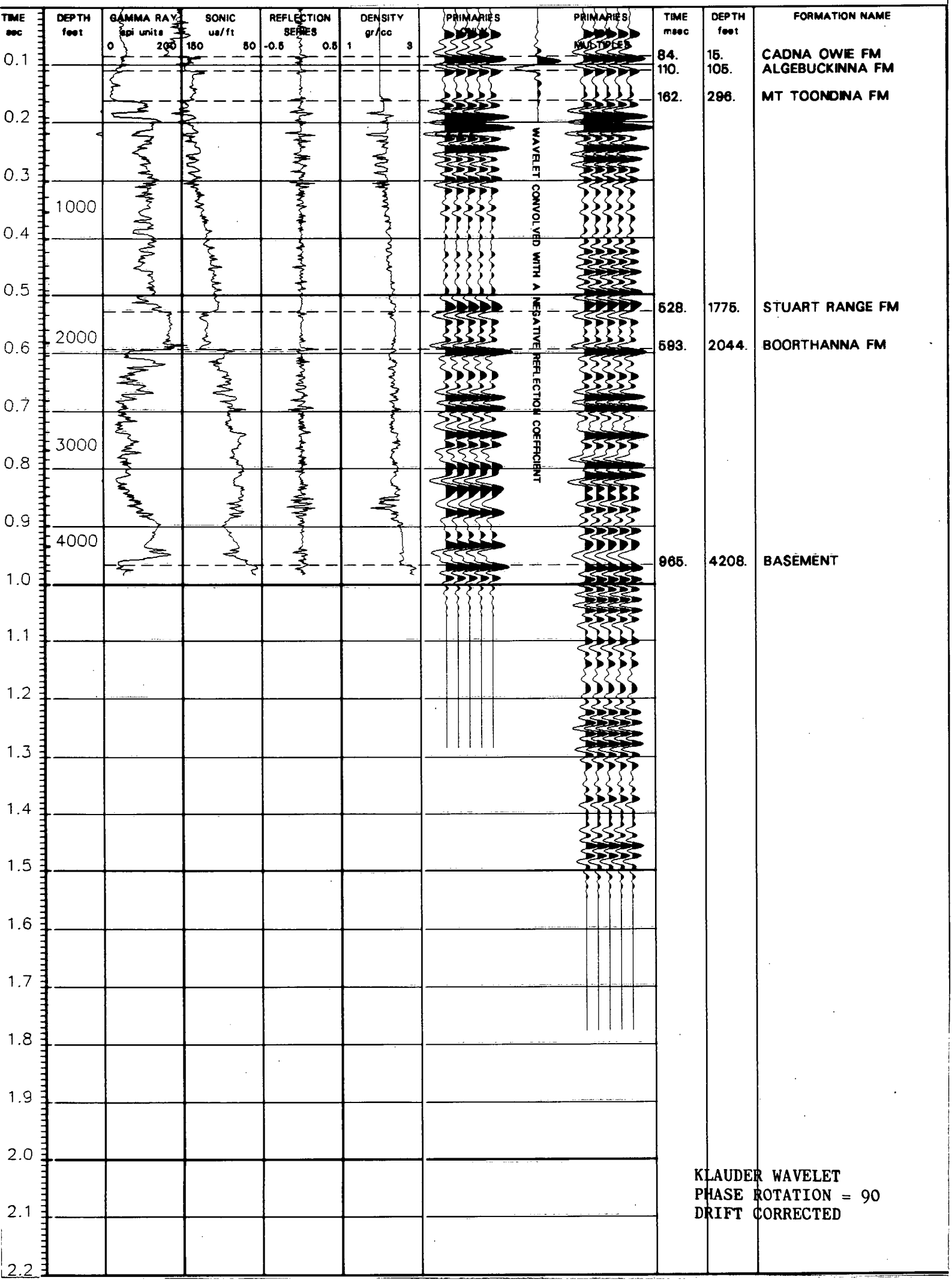
Schlumberger



Company: DELHI/SANTOS & PARTNERS
Well: BIRRIBIANA #1
Field: WILDCAT
Location: LINE:85-YRE STN:390

KLAUDER WAVELET
PHASE ROTATION = 90
REFLECTION SERIES FROM SONIC • DENSITY
DRIFT CORRECTION APPLIED.

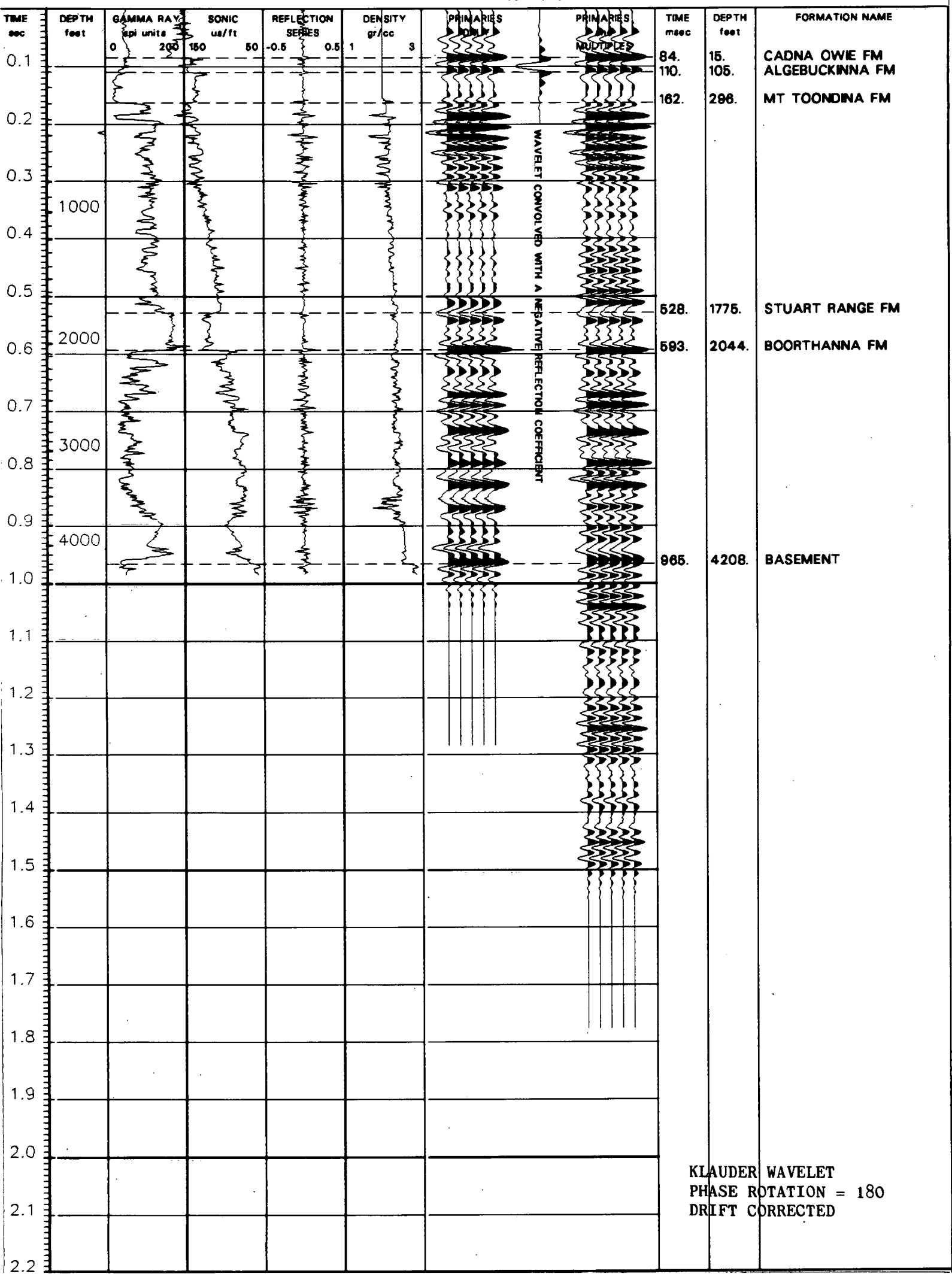
Schlumberger



Company: DELHI/SANTOS & PARTNERS
Well: BIRRIBIANA #1
Field: WILDCAT
Location: LINE:85-YRE STN:390

KLAUDER WAVELET
PHASE ROTATION = 180
REFLECTION SERIES FROM SONIC • DENSITY
DRIFT CORRECTION APPLIED.

Schlumberger

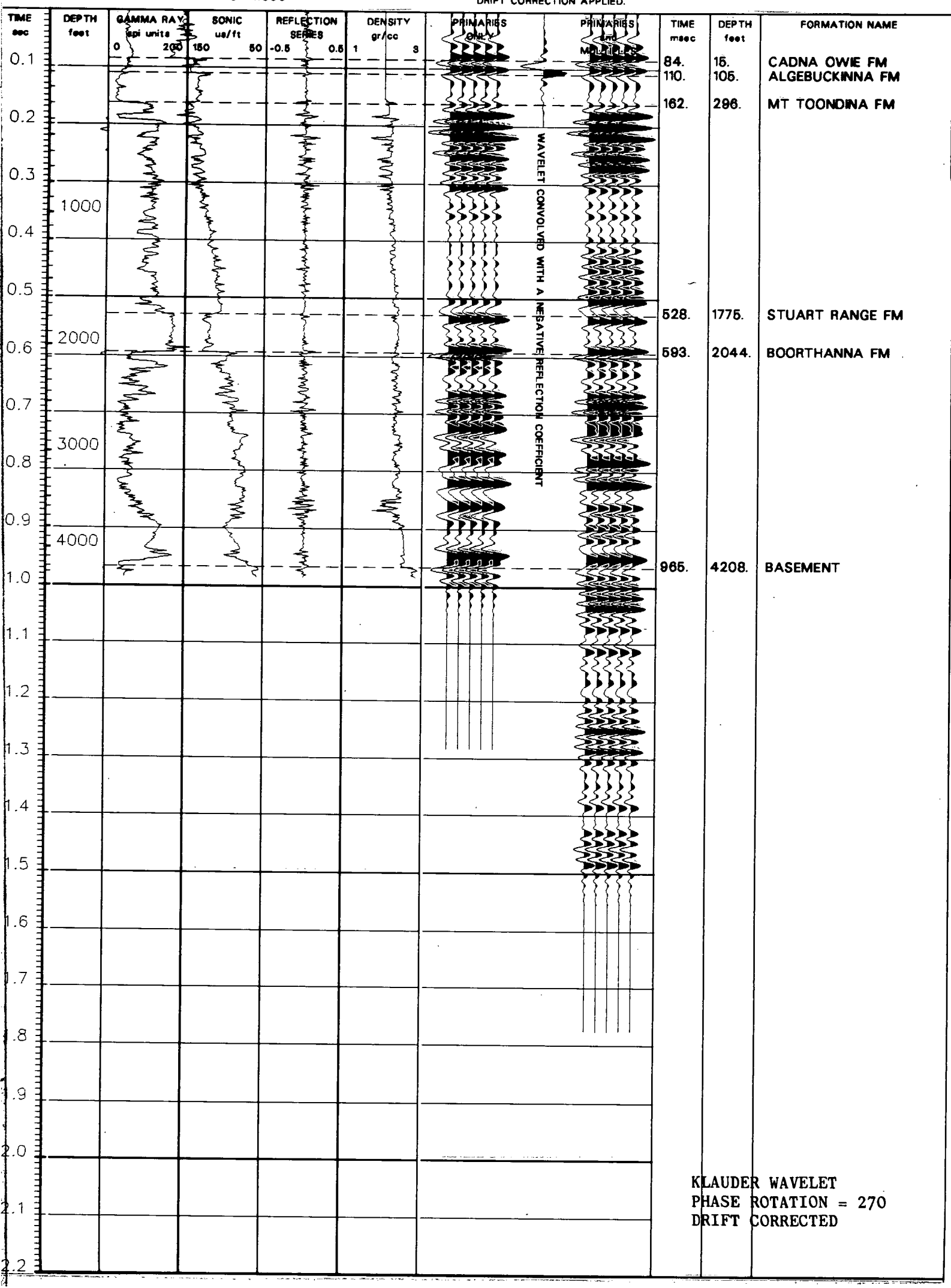


KLAUDER WAVELET
PHASE ROTATION = 180
DRIFT CORRECTED

Company: ELF SAN OS & ARTNERS
Well: BIRRIBIANA #1
Field: WILDCAT
Location: LINE:85-YRE STN:390

KLAUDER WAVELET
PHASE ROTATION = 270
REFLECTION SERIES FROM SONIC * DENSITY
DRIFT CORRECTION APPLIED.

Schlumberger



Schlumberger

ADELAIDE LOG INTERPRETATION CENTRE

SEISMIC CALIBRATION LOG

(Adjusted Continuous Velocity Log)

Company: DELHI/SANTOS & PARTNERS

Well: BIRRIBIANA #1

Field: WILDCAT

Country: AUSTRALIA

Reference No: 550193 Interval: 0.00 to 4365.00

Date Logged: 3 DEC 86 Date Processed: 10 DEC 86

Location: 028° 14' 54.9" S 135° 20' 51.3" E

Elevations: KB: 325 ft DF: 324 ft GL: 310 ft

Permanent Datum: MSL Depth Units: FEET

FIELD RECORDING: Engineer: G SANSOM Location: LEA Program Version: 28.4

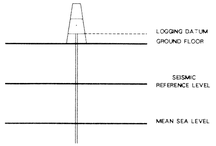
COMPUTATION: Analysis: BUTTERWORTH Centre: EAJ Baseline: 14.14X4

ELEVATION ABOVE MEAN SEA LEVEL

Logging Datum: 325 ft

Seismic Reference Datum: MSL

Ground Level (floor) 310 ft



Total Number of VSP Levels 17 (325 - 4680 ft below KB)

VSP Depth Reference SRD

VSP Time Reference SRD

Run	Date	Tool Type	Bit Size/ Depth	Casing Size/ Depth	Top Depth	Bottom Depth
1	3 DEC 86	SLS	12.25" @ 722 ft 8.5" @ 4677 ft	9.625" @ 722 ft	325 ft	4680 ft

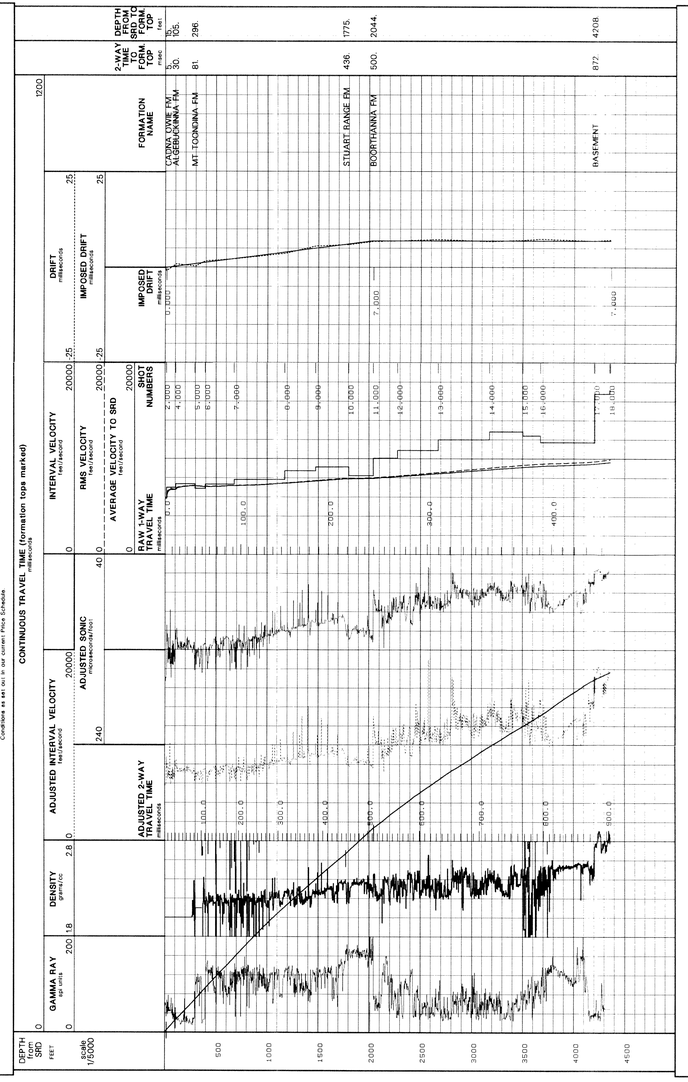
VSP Run	Date	Gun Offset	Hydro. Offset	Gun Elevation	Hydrophone Elevation	Gun Azimuth	Hydro. Azimuth
1	3 DEC 86	106 ft	106 ft	99.5 ft above SRD	99.5 ft above SRD	0°	0°

REMARKS

FOLD HERE

The well name, location and location 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 be liable or responsible for any loss, costs, damages or expenses incurred or sustained by anyone resulting from any interpretation made by any of our officers, agents or employees. These interpretations are also subject to Clause 9 of our General Terms and Conditions as set out in our current Price Schedule.



Company DELHI/SANTOS & PARTNERS

Well BIRRIBIANA #1

Field WILDCAT

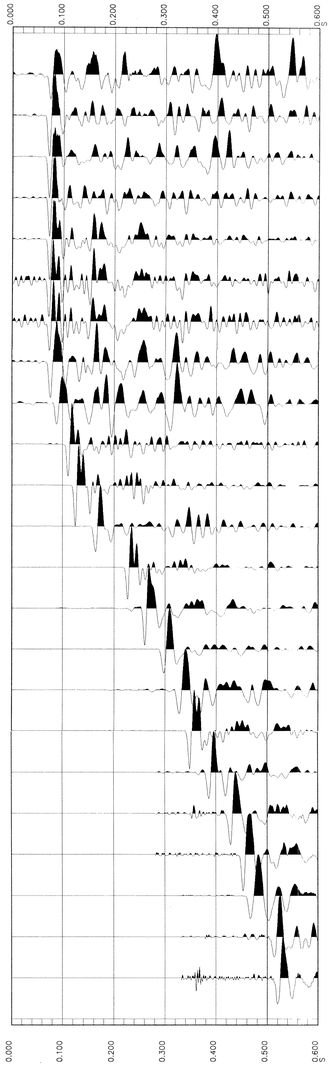
Schlumberger

CLIENT : DELHI/SANTOS & PRTNRS
WELL : BIRRIBIANA 1
LOCATION : LINE:85-YRE STN:390

STACKED DATA

SHOTS WITH LOW SIGNAL/NOISE RATIO HAVE BEEN ELIMINATED PRIOR TO STACKING

RAW DEPTH FT	TRANSIT TIME S	SOURCE OFFSET FT	LEVEL NO	MIN AMPLITUDE	MAX AMPLITUDE
325.0	0.066	60.0	23	-8470.33	13961.67
325.0	0.066	75.0	22	-27609.14	27574.86
325.0	0.064	90.0	21	-28197.58	20138.42
325.0	0.063	105.0	20	-26840.53	28455.47
325.0	0.065	135.0	19	-30469.70	28954.31
325.0	0.065	135.0	18	-16601.25	18470.75
325.0	0.062	135.0	17	-10776.82	14591.18
341.0	0.066	135.0	16	-22055.39	25112.62
431.0	0.068	135.0	15	-23015.29	27560.71
621.0	0.081	135.0	14	-16597.98	21162.02
720.0	0.104	135.0	13	-13399.89	13040.11
1000.0	0.119	135.0	12	-7751.53	12144.48
1500.0	0.156	135.0	11	-4948.10	6315.90
1800.0	0.219	135.0	10	-2596.82	2889.18
2129.0	0.254	135.0	9	-1586.67	2696.33
2369.0	0.289	135.0	8	-895.58	1538.42
2600.0	0.318	135.0	7	-1434.21	1553.79
3000.0	0.341	135.0	6	-1143.27	1812.73
3500.0	0.378	135.0	5	-786.25	1032.75
3830.0	0.445	135.0	4	-597.15	670.85
4000.0	0.459	135.0	3	-450.75	740.25
4534.0	0.504	135.0	2	-362.31	738.69
4680.0	0.513	135.0	1	-423.81	666.19



7034/2-1

COMPLETION 1

CONTINUOUS WAVE

TEST: CONTINUOUS WAVE, DRILL STEM TEST

WELL: 7034/2-1

TEST: DRILL STEM TEST NO. 1

INTERPRETATION BY WELLSITE GEOLOGIST

WELL NUMBER	TEST NO.
7034/2-1	1

1 - DRILLING	10
2 - CORING	11
3 - TESTING	12
4 - PRESS	13
5 - FLOW	14
6 - SHUT	15
7 - TEST	16
8 - STRESS	17
9 - SPECIAL	18

WELL DATA FROM A DRILL-STEM TEST
0 - DRILL-PIPE
1 - DRILL-COLLAR