PRECISION Wireline Technologies

SIMULTANEOUS TRIPLE INDUCTION LOG

N.E.B. COPY

COMPANY	ANADARKO CANADA CORPORATION
WELL	ANADARKO EMILE LAKE A-77
FIELD	NETLA
PROVINCE	NORTHWEST TERRITORIES

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FIELD	NETLA
WELL	ANADARKO EMILE LAKE A-77
COMPANY	ANADARKO CANADA CORPORATION

LSD A Sec. 77 Twp. ___ Rge. ___
Perm. Datum GROUND LEVEL Elev. 624.70 m
Log measured from KB , 6.10 m above Permanent Datum.

UWI 300A776046122430
Licence 1964

Other Services: SPED/CNT/UGR/DAC HBC/UGR/CAL

ELEV.K.B. 630.80 m
G.L. 624.70 m
CBF -------

Date	11-MAR-2004
Run No.	ONE
Bot. Driller	1969.0 m
Bot. Logger	1969.4 m
First Reading	1967.3 m
Last Reading	647.6 m
Meters Meas.	1319.7 m
Csg. Driller	648.0 m 244.5mm & 59.5Kg/m
Csg. Logger	647.6 m
Bit Size	215.9 mm
Fluid Type	INVERT
Dens. / Visc.	950 / 54
pH / Fluid Loss	N/A / N/A
Sample Source	FLOWLINE
Rm	N/A @ °C
Rmf	N/A @ °C
Rmc	N/A @ °C
Rm @ BHT	N/A @ °C
Max Rec.Temp	80 °C
Spacing	N/A
Operating Time	5.0 HRS
Unit #	387
Location	GRANDE PRAIRIE OH
Recorded By	S. MAXWELL
Witnessed By	H. COWAN

REMARKS Rig: AKITA 37 Service Order # 30017937

Drilling Stopped 12:45/11 Circulation Stopped 16:30/11 Tool on Bottom 01:30/12 BHT 74 °C
-STI/HBC/SPD/CNT/UGR/CAL LOGGED IN COMBINATION.

Prints: 2

CHANGES IN MUD TYPE OR NEW SAMPLE		
Date / Sample No.		
Depth - Driller		
Type Fluid in Hole		
Dens. / Visc.		
pH / Water Loss		
Source of Sample		
Rm @ Meas. Temp.	@ °C	
Rmf @ Meas. Temp.	@ °C	
Rmc @ Meas. Temp.	@ °C	
Source Rmf / Rmc		
Rm @ BHT	@ °C	
Rmf @ BHT	@ °C	
Rmc @ BHT	@ °C	

SCALE CHANGES		
Type Log	Interval	Scale

EQUIPMENT DATA			
Run No.	Tool Type	Tool No.	Other
ONE	STI	207207	38mm STANDOFFS
	UGR	211	RA-20S-335

REMARKS

MAIN PASS
1:600 SCALE
CONDUCTIVITY PRESENTATION

DEPTH SCALE: **1:600** VERSION: **2004.02.11.263**

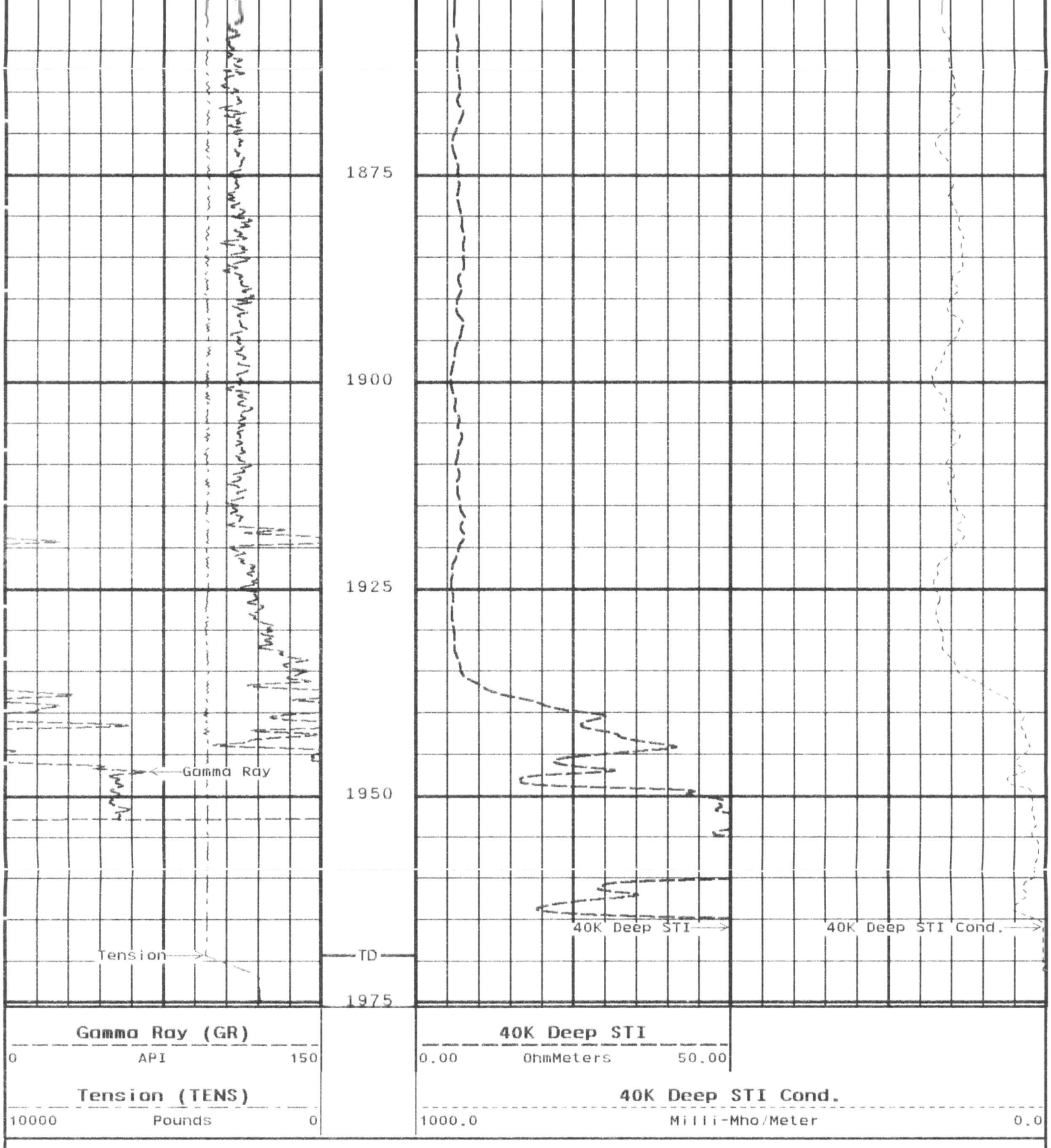
MAIN PASS

30017937 STIMP1

FINISH DEPTH: **0.0** Meters DIRECTION: **UP** DATE: TIME: MODE: **TRACE PLAYBACK**

875
900
925
950
975
1000
1025
1050
1075
1100
1125
1150
1175
1200
1225
1250
1275
1300
1325
1350


1375
1400
1425
1450
1475
1500
1525
1550
1575
1600
1625
1650
1675
1700
1725
1750
1775
1800
1825
1850



FINISH DEPTH: **1975.6** DIRECTION: **UP** DATE: **03/12/2004** TIME: **03:29** MODE: **TRACE PLAYBACK**

30017937 STIMP1

MAIN PASS

DEPTH SCALE: **1:600** VERSION: **2004.02.11.263**

SYSTEM CONSTANTS

NAME	DESCRIPTION	VALUE	UNITS
TDL	TD-Logger	1969.40	Meters
CSIZ	Casing Size	244.5	Millimeters
CWEI	Casing Weight	59.52	Kilograms/Meter
BS	Bit Size	215.9	Millimeters
BHT	Bottom Hole Temp	80.0	DegreesCentigrade
SFT	Mean Annual Surf Temp	5.0	DegreesCentigrade
SPDD	SP Drift Corr. mV	0	Millivolts
SPBR	SP Bridle Depth Offset	0.00	Meters
SPTL	Log With SP From	STI	
STIB	STI SFL Chassis Return	ON	
STI4	STI 4 Level Average	OFF	
STIS	STI SFL Log Mode On	ON	
SACC	Accumulation Time	100	Seconds
BARI	Barite Correction	OFF	
MW	Mud Weight	950.0	Kilograms/Cu.Meter
MDEN	Matrix Density	2710	Kilograms/Cu.Meter
FD	Fluid Density	1000	Kilograms/Cu.Meter
SPVS	SPeD Valve Status	IN	
NGAI	K Factor-NEU	1.000	
BHS	Open/Cased Hole	Open	
BSAL	Borehole Salinity	0	Parts/Million
FSAL	Formation Salinity	0	Parts/Million
NBCS	Bitsize/Calp Sel-CNT	Caliper	
NTLS	Tool Type-CNT	CNT-S	
TGRD	Temperature Gradient	0.555	DegC/100Meters
NTMS	Temp Source-CNT	Gradient	
NCOT	Constant Temp-CNT	21.0	DegreesCentigrade
NCOR	Cnt Ch Corr Offset	OFF	
OCOR	Cnt Environ.correction	OFF	
SWAN	Sheave Wheel Angle	0.00	Degrees
NCAL	LIS Caliper Name-CNT	X Caliper	
SCAL	Density BH Diam Source	X Caliper	

REMARKS

MAIN PASS
1:240 SCALE

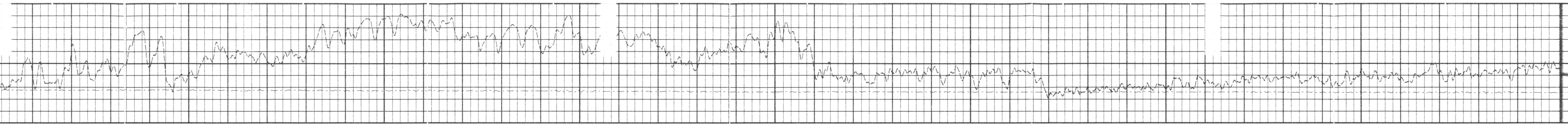
DEPTH SCALE: **1:240** VERSION: **2004.02.11.263**

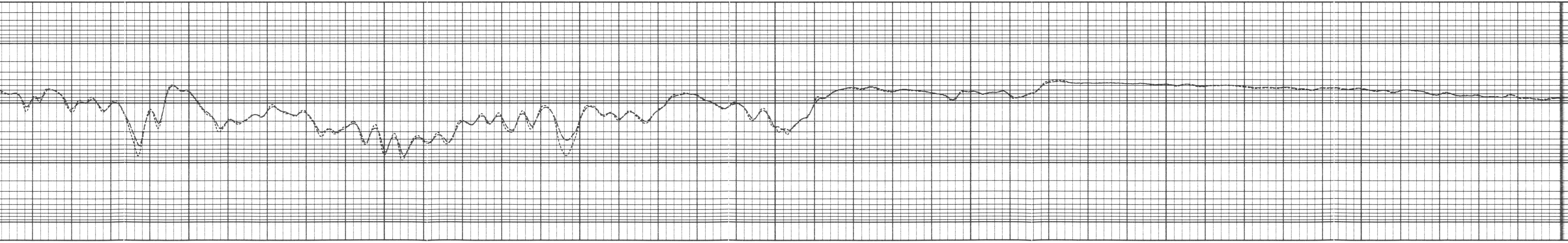
MAIN PASS

30017937 STIMP1

FINISH DEPTH: **0.0** Meters DIRECTION: **UP** DATE: TIME: MODE: **TRACE PLAYBACK**

750
775
800
825
850
875
900
925


1100
1075
1050
1025
1000
975
950

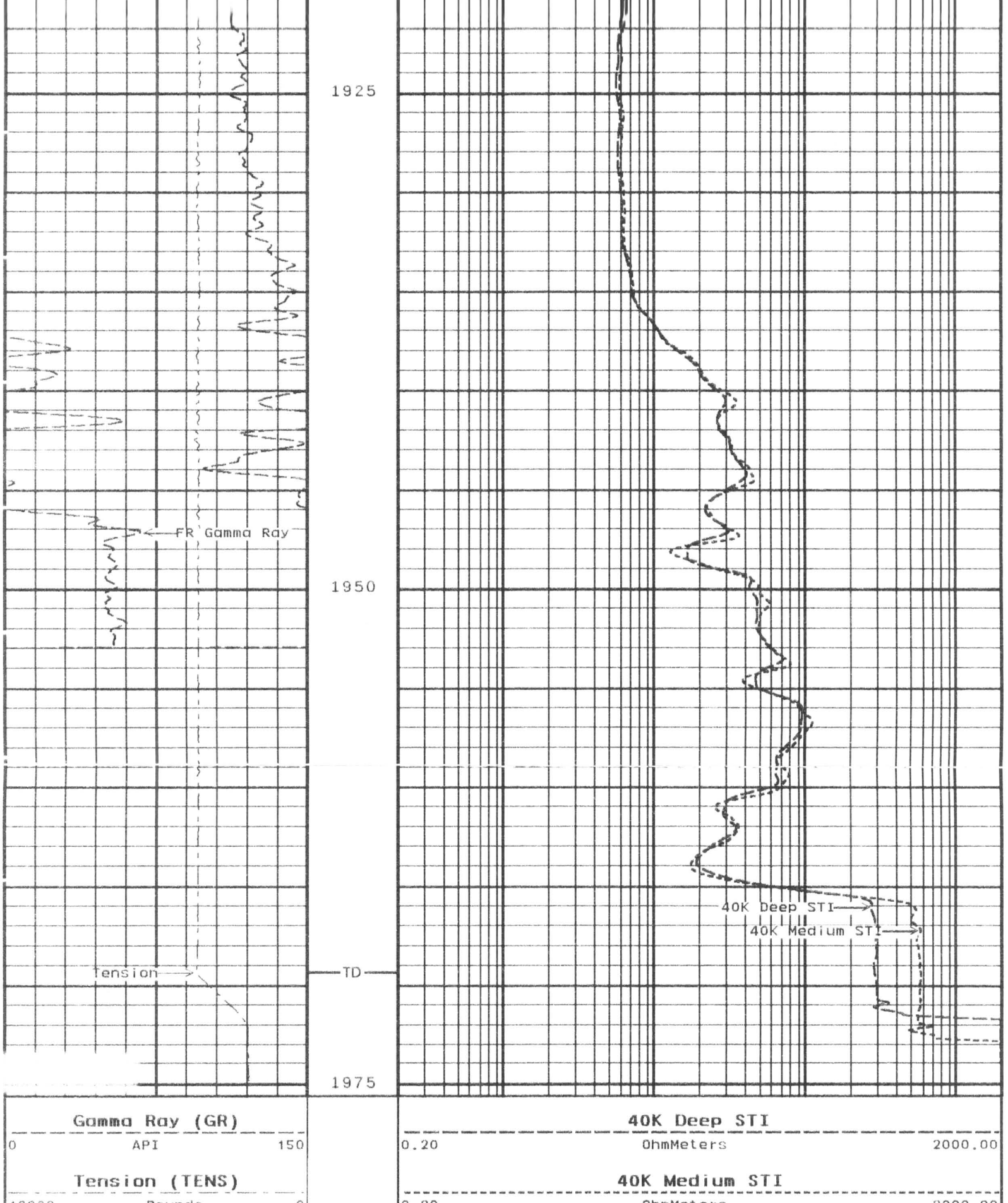



1125
1150
1175
1200
1225
1250
1275
1300


1325
1350
1375
1400
1425
1450
1475
1500

1700
1675
1650
1625
1600
1575
1550
1525

1725
1750
1775
1800
1825
1850
1875
1900



START DEPTH: **1975.6** DIRECTION: **UP** DATE: **03/12/2004** TIME: **03:29** MODE: **TRACE PLAYBACK**

30017937 STIMP1

MAIN PASS

DEPTH SCALE: **1:240** VERSION: **2004.02.11.263**

SYSTEM CONSTANTS

NAME	DESCRIPTION	VALUE	UNITS
TDL	TD-Logger	1969.40	Meters
CSIZ	Casing Size	244.5	Millimeters
CWEI	Casing Weight	59.52	Kilograms/Meter
BS	Bit Size	215.9	Millimeters
BHT	Bottom Hole Temp	80.0	DegreesCentigrade
SFT	Mean Annual Surf Temp	5.0	DegreesCentigrade
SPDD	SP Drift Corr. mV	0	Millivolts
SPBR	SP Bridle Depth Offset	0.00	Meters
SPTL	Log With SP From	STI	
STIB	STI SFL Chassis Return	ON	
STI4	STI 4 Level Average	OFF	
STIS	STI SFL Log Mode On	ON	
SACC	Accumulation Time	100	Seconds
BARI	Barite Correction	OFF	
MW	Mud Weight	950.0	Kilograms/Cu.Meter
MDEN	Matrix Density	2710	Kilograms/Cu.Meter
FD	Fluid Density	1000	Kilograms/Cu.Meter
SPVS	SPeD Valve Status	IN	
NGAI	K Factor-NEU	1.000	
BHS	Open/Cased Hole	Open	
BSAL	Borehole Salinity	0	Parts/Million
FSAL	Formation Salinity	0	Parts/Million
NBCS	Bitsize/Calp Sel-CNT	Caliper	
NTLS	Tool Type-CNT	CNT-S	
TGRD	Temperature Gradient	0.555	DegC/100Meters
NTMS	Temp Source-CNT	Gradient	
NCOT	Constant Temp-CNT	21.0	DegreesCentigrade
NCOR	Cnt Ch Corr Offset	OFF	
OCOR	Cnt Environ.correction	OFF	
SWAN	Sheave Wheel Angle	0.00	Degrees
NCAL	LIS Caliper Name-CNT	X Caliper	
SCAL	Density BH Diam Source	X Caliper	

REMARKS

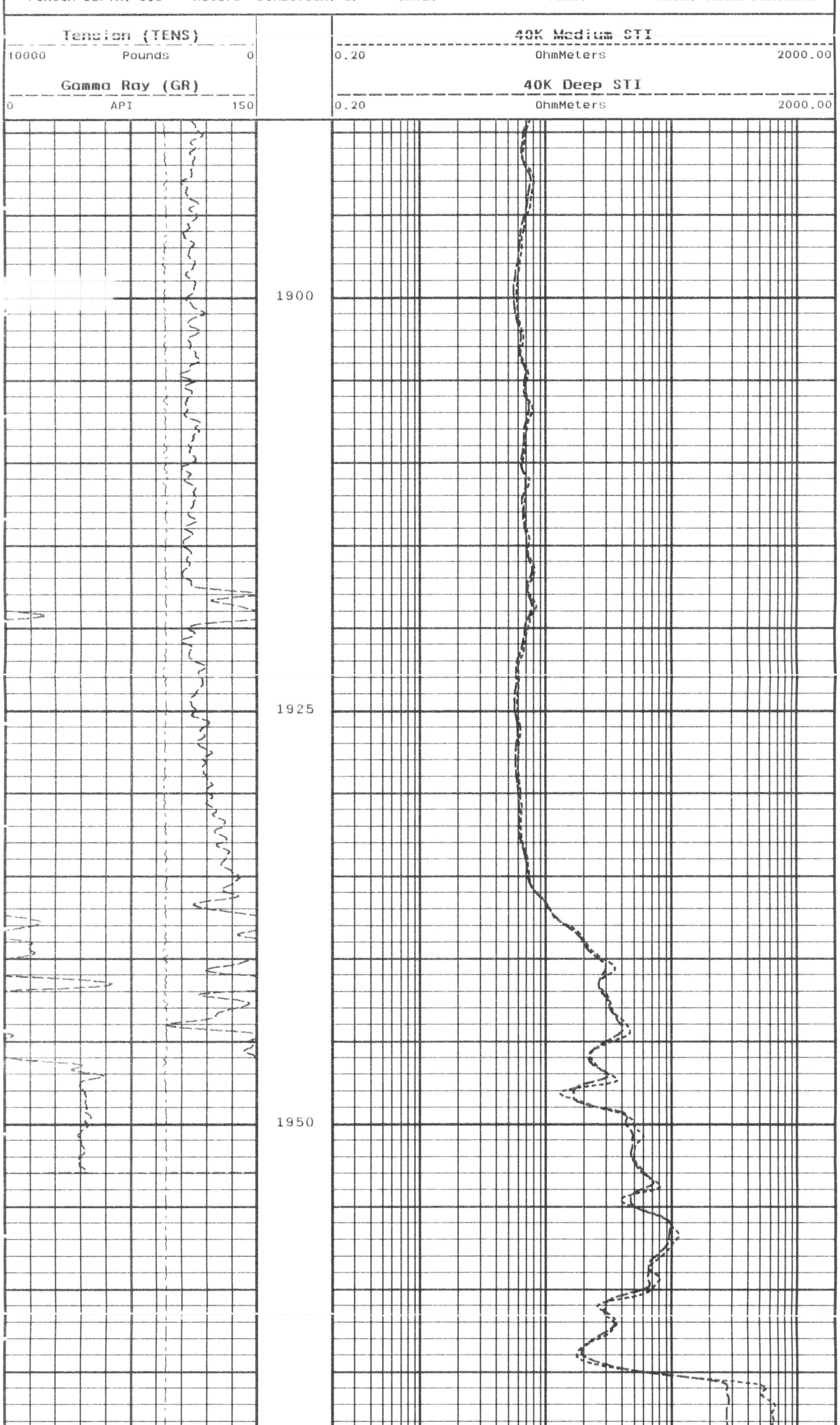
REPEAT PASS
1:240 SCALE

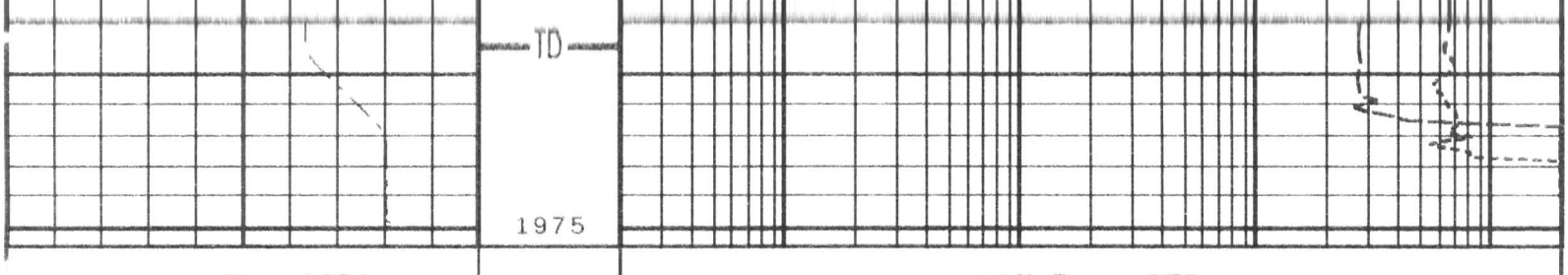
DEPTH SCALE: **1:240** VERSION: **2004.02.11.263**

REPEAT PASS

30017937 STIRP

FINISH DEPTH: **0.0** Meters DIRECTION: **UP** DATE: TIME: MODE: **TRACE PLAYBACK**





Ray (GR)			40K Deep STI		
0	API	150	0.20	OhmMeters	2000.00
Tension (TENS)			**40K Medium STI**		
10000	Pounds	0	0.20	OhmMeters	2000.00

START DEPTH: **1974.8** DIRECTION: **UP** DATE: **03/12/2004** TIME: **01:50** MODE: **TRACE PLAYBACK**

30017937 STIRP

REPEAT PASS

DEPTH SCALE: **1:240** VERSION: **2004.02.11.263**

SYSTEM CONSTANTS

NAME	DESCRIPTION	VALUE	UNITS
TDL	TD-Logger	1969.40	Meters
CSIZ	Casing Size	244.5	Millimeters
CWEI	Casing Weight	59.52	Kilograms/Meter
BS	Bit Size	215.9	Millimeters
BHT	Bottom Hole Temp	74.0	DegreesCentigrade
SFT	Mean Annual Surf Temp	5.0	DegreesCentigrade
SPDD	SP Drift Corr. mV	0	Millivolts
SPBR	SP Bridle Depth Offset	0.00	Meters
SPTL	Log With SP From	STI	
STIB	STI SFL Chassis Return	ON	
STI4	STI 4 Level Average	OFF	
STIS	STI SFL Log Mode On	ON	
SACC	Accumulation Time	100	Seconds
BARI	Barite Correction	OFF	
MW	Mud Weight	950.0	Kilograms/Cu.Meter
MDEN	Matrix Density	2710	Kilograms/Cu.Meter
FD	Fluid Density	1000	Kilograms/Cu.Meter
SPVS	SPeD Valve Status	OUT	
NGAI	K Factor-NEU	1.000	
BHS	Open/Cased Hole	Open	
BSAL	Borehole Salinity	0	Parts/Million
FSAL	Formation Salinity	0	Parts/Million
NBCS	Bitsize/Calp Sel-CNT	Caliper	
NTLS	Tool Type-CNT	CNT-S	
TGRD	Temperature Gradient	0.555	DegC/100Meters
NTMS	Temp Source-CNT	Gradient	
NCOT	Constant Temp-CNT	21.0	DegreesCentigrade
NCOR	Cnt Ch Corr Offset	OFF	
OCOR	Cnt Environ.correction	OFF	
SWAN	Sheave Wheel Angle	0.00	Degrees
NCAL	LIS Caliper Name-CNT	X Caliper	
SCAL	Density BH Diam Source	X Caliper	

REMARKS

CASING CHECK
1:240 SCALE

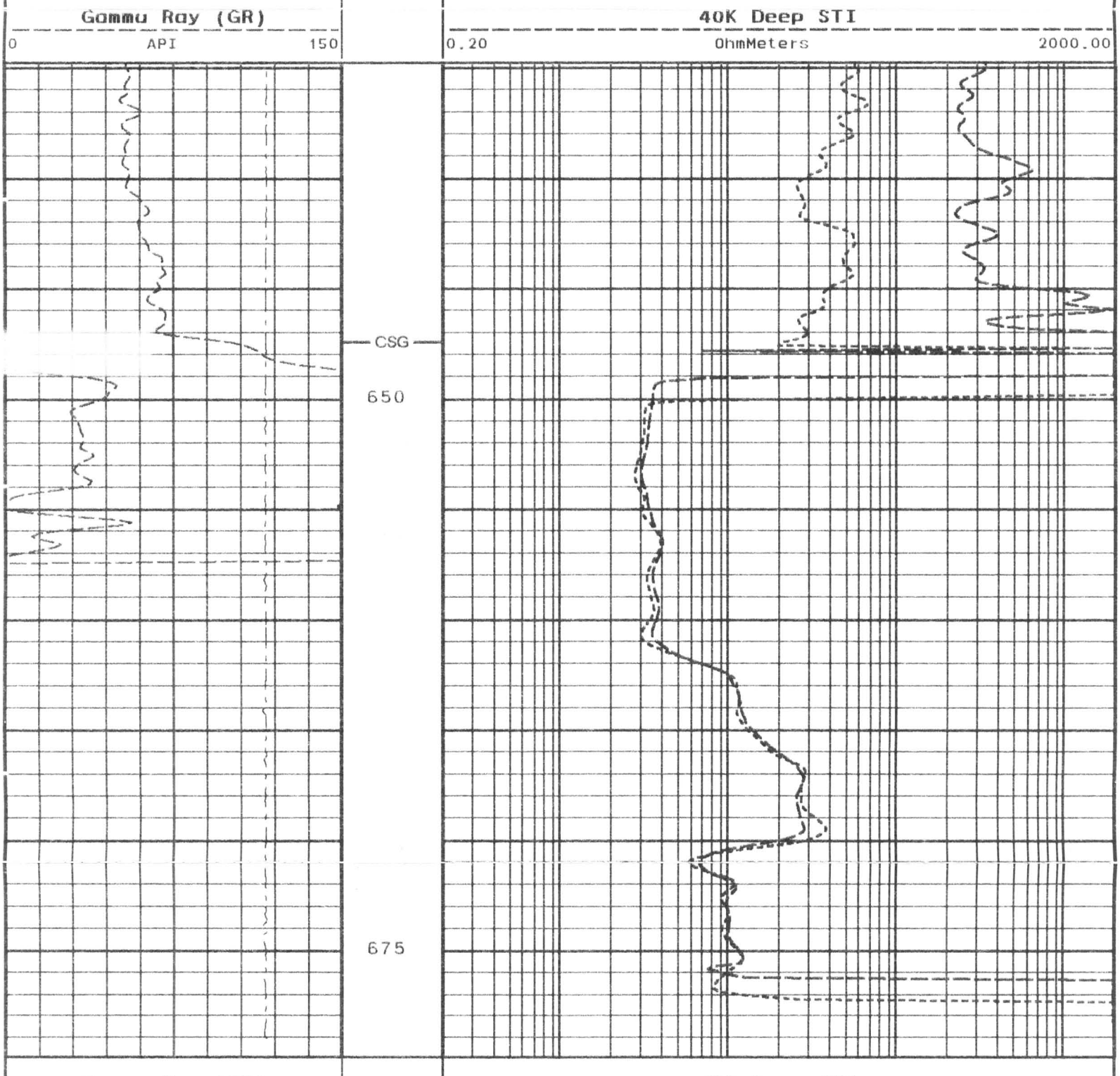
DEPTH SCALE: **1:240** VERSION: **2004.02.11.263**

MAIN PASS

30017937 CSGCHK

FINISH DEPTH: **0.0** Meters DIRECTION: **UP** DATE: TIME: MODE: **TRACE PLAYBACK**

Tension (TENS)			40K Medium STI		
10000	Pounds	0	0.20	OhmMeters	2000.00
Gamma Ray (GR)			**40K Deep STI**		
0	API	150	0.20	OhmMeters	2000.00



Gamma Ray (GR)			40K Deep STI		
0	API	150	0.20	OhmMeters	2000.00
Tension (TENS)			**40K Medium STI**		
10000	Pounds	0	0.20	OhmMeters	2000.00

START DEPTH: **679.1** DIRECTION: **UP** DATE: **03/12/2004** TIME: **01:40** MODE: **TRACE PLAYBACK**

30017937 CSGCHK

MAIN PASS

DEPTH SCALE: **1:240** VERSION: **2004.02.11.263**

SYSTEM CONSTANTS

NAME	DESCRIPTION	VALUE	UNITS
TDL	TD-Logger	1969.40	Meters
CSIZ	Casing Size	244.5	Millimeters
CWEI	Casing Weight	59.52	Kilograms/Meter
BS	Bit Size	215.9	Millimeters
BHT	Bottom Hole Temp	74.0	DegreesCentigrade
SFT	Mean Annual Surf Temp	5.0	DegreesCentigrade
SPDD	SP Drift Corr. mV	0	Millivolts
SPBR	SP Bridle Depth Offset	0.00	Meters
SPTL	Log With SP From	STI	
STIB	STI SFL Chassis Return	ON	
STI4	STI 4 Level Average	OFF	
STIS	STI SFL Log Mode On	ON	
SACC	Accumulation Time	100	Seconds
BARI	Barite Correction	OFF	
MW	Mud Weight	950.0	Kilograms/Cu.Meter
MDEN	Matrix Density	2710	Kilograms/Cu.Meter
FD	Fluid Density	1000	Kilograms/Cu.Meter
SPVS	SPeD Valve Status	IN	
NGAI	K Factor-NEU	1.000	
BHS	Open/Cased Hole	Open	
BSAL	Borehole Salinity	0	Parts/Million
FSAL	Formation Salinity	0	Parts/Million
NBCS	Bitsize/Calp Sel-CNT	Caliper	
NTLS	Tool Type-CNT	CNT-S	
TGRD	Temperature Gradient	0.555	DegC/100Meters
NTMS	Temp Source-CNT	Gradient	
NCOT	Constant Temp-CNT	21.0	DegreesCentigrade
NCOR	Cnt Ch Corr Offset	OFF	
OCOR	Cnt Environ.correction	OFF	
SWAN	Sheave Wheel Angle	0.00	Degrees
NCAL	LIS Caliper Name-CNT	X Caliper	
SCAL	Density BH Diam Source	X Caliper	

03/11/04 21:42 0.0 M Ver 40211263 Job 30017937

Gamma Ray Before Survey Calibration

Tool Type: UGR-JA Serial No: UGRJ211
Calibrator No: RA-20S-335

Background	Calibrator	Standard	Units
118.6	734.7	140.0	API

Delta Counts Per Sec: 616.1 CPS/API = 4.401

02/04/04 09:13 0.0 M Ver 30725245 Job shop

SIMULTANEOUS TRIPLE INDUCTION SHOP CALIBRATION

TOOL TYPE: STI-AC SONDE SERIAL NO: STSB207
ELECTRONICS SERIAL NO: STCB207

LOOP CALIBRATION: Gain and Phase Error of Internal Reference

	10KHz		20KHz		40KHz	
	DEEP	MEDIUM	DEEP	MEDIUM	DEEP	MEDIUM
Gain:	1.014	0.996	1.040	1.017	1.035	1.004
Upper Limit:	1.100	1.100	1.100	1.100	1.100	1.100
Lower Limit:	0.900	0.900	0.900	0.900	0.900	0.900
Phase Error(degrees):	0.12	-0.25	0.88	0.02	1.21	0.14
Upper Limit:	10.00	10.00	10.00	10.00	10.00	10.00
Lower Limit:	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00

SONDE ERROR:

	10KHz		20KHz		40KHz	
	R	X	R	X	R	X
Deep:	8.2	-15.5	-0.0	-10.9	2.2	-13.2
Upper Limit:	20.0	100.0	20.0	100.0	20.0	100.0

Lower Limit:	-20.0	-100.0	-20.0	-100.0	-20.0	-100.0
Medium:	-5.9	-89.9	-2.5	-63.6	1.2	-70.5
Upper Limit:	20.0	150.0	20.0	150.0	20.0	150.0
Lower Limit:	-20.0	-150.0	-20.0	-150.0	-20.0	-150.0

SHOP ELECTRONICS CALIBRATION:

	10KHz		20KHz		40KHz	
	R	X	R	X	R	X
			DEEP			
Zero Error(mmho/m):	-10.5	7.4	1.0	10.4	1.9	10.0
Upper Limit:	100.0	100.0	100.0	100.0	100.0	100.0
Lower Limit:	-100.0	-100.0	-100.0	-100.0	-100.0	-100.0
Gain:	0.994	0.999	1.002	0.995	1.008	0.996
Upper Limit:	1.100	1.100	1.100	1.100	1.100	1.100
Lower Limit:	0.900	0.900	0.900	0.900	0.900	0.900
Phase Error(degrees):	-1.17	-0.36	0.67	-0.62	2.53	-0.18
Upper Limit:	10.00	10.00	10.00	10.00	10.00	10.00
Lower Limit:	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00
			MEDIUM			
Zero Error(mmho/m):	-10.0	7.8	1.3	10.7	3.1	10.4
Upper Limit:	100.0	100.0	100.0	100.0	100.0	100.0
Lower Limit:	-100.0	-100.0	-100.0	-100.0	-100.0	-100.0
Gain:	0.994	0.999	0.998	0.995	0.998	0.996
Upper Limit:	1.100	1.100	1.100	1.100	1.100	1.100
Lower Limit:	0.900	0.900	0.900	0.900	0.900	0.900
Phase Error(degrees):	-1.16	-0.38	0.07	-0.63	1.51	-0.21
Upper Limit:	10.00	10.00	10.00	10.00	10.00	10.00
Lower Limit:	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00

SFL CALIBRATIONS:

	OFFSET	MIN	MAX	UNITS	GAIN	MIN	MAX
Voltage:	-2.1	-100.0	100.0	uV	1.050	0.800	1.200
Current:	-0.5	-25.0	25.0	uA	1.042	0.800	1.200

03/12/04 00:44 245.0 M Ver 40211263 Job 30017937

SIMULTANEOUS TRIPLE INDUCTION BEFORE SURVEY CALIBRATION

TOOL TYPE: STI-AC

SONDE SERIAL NO: STSB207
ELECTRONICS SERIAL NO: STCB207

	10KHz		20KHz		40KHz	
	R	X	R	X	R	X
			DEEP			
Zero Error(mmho/m):	-15.1	7.1	0.2	8.6	2.5	9.8
Upper Limit:	100.0	100.0	100.0	100.0	100.0	100.0
Lower Limit:	-100.0	-100.0	-100.0	-100.0	-100.0	-100.0
Gain:	0.992	0.999	1.002	0.996	1.009	0.997
Upper Limit:	1.100	1.100	1.100	1.100	1.100	1.100
Lower Limit:	0.900	0.900	0.900	0.900	0.900	0.900
Phase Error(degrees):	-1.35	-0.43	0.36	-0.66	1.93	-0.28
Upper Limit:	10.00	10.00	10.00	10.00	10.00	10.00
Lower Limit:	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00
			MEDIUM			
Zero Error(mmho/m):	-14.5	7.3	0.8	9.3	3.4	9.9
Upper Limit:	100.0	100.0	100.0	100.0	100.0	100.0
Lower Limit:	-100.0	-100.0	-100.0	-100.0	-100.0	-100.0
Gain:	0.993	0.999	0.998	0.995	0.999	0.997
Upper Limit:	1.100	1.100	1.100	1.100	1.100	1.100
Lower Limit:	0.900	0.900	0.900	0.900	0.900	0.900
Phase Error(degrees):	-1.29	-0.46	-0.27	-0.67	0.89	-0.29
Upper Limit:	10.00	10.00	10.00	10.00	10.00	10.00
Lower Limit:	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00

SFL CALIBRATIONS:

	OFFSET	MIN	MAX	UNITS	GAIN	MIN	MAX
Voltage:	-2.0	-100.0	100.0	uV	1.054	0.800	1.200
Current:	-0.4	-25.0	25.0	uA	1.046	0.800	1.200

03/12/04 03:26 562.0 M Ver 40211263 Job 30017937

SIMULTANEOUS TRIPLE INDUCTION AFTER SURVEY CALIBRATION

TOOL TYPE: STI-AC

SONDE SERIAL NO: STSB207
ELECTRONICS SERIAL NO: STCB207

	10KHz		20KHz		40KHz	
	R	X	R	X	R	X
			DEEP			
Zero Error(mmho/m):	-4.5	5.7	0.8	9.8	2.5	11.4
Upper Limit:	100.0	100.0	100.0	100.0	100.0	100.0
Lower Limit:	-100.0	-100.0	-100.0	-100.0	-100.0	-100.0
Gain:	0.994	0.999	1.001	0.995	1.006	0.994
Upper Limit:	1.100	1.100	1.100	1.100	1.100	1.100
Lower Limit:	0.900	0.900	0.900	0.900	0.900	0.900
Phase Error(degrees):	-1.22	-0.29	0.53	-0.60	2.53	-0.11
Upper Limit:	10.00	10.00	10.00	10.00	10.00	10.00
Lower Limit:	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00
			MEDIUM			
Zero Error(mmho/m):	-4.1	5.8	1.1	10.0	3.1	11.7
Upper Limit:	100.0	100.0	100.0	100.0	100.0	100.0
Lower Limit:	-100.0	-100.0	-100.0	-100.0	-100.0	-100.0
Gain:	0.994	0.999	0.998	0.995	0.997	0.994
Upper Limit:	1.100	1.100	1.100	1.100	1.100	1.100
Lower Limit:	0.900	0.900	0.900	0.900	0.900	0.900
Phase Error(degrees):	-1.22	-0.31	-0.19	-0.60	1.12	-0.11
Upper Limit:	10.00	10.00	10.00	10.00	10.00	10.00
Lower Limit:	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00

SFL CALIBRATIONS:

	OFFSET	MIN	MAX	UNITS	GAIN	MIN	MAX
Voltage:	-1.9	-100.0	100.0	uV	1.062	0.800	1.200
Current:	-0.4	-25.0	25.0	uA	1.051	0.800	1.200

O.H. Adaptor Head

Weight 18.0 kg
Length 0.74 m
Max. Diameter 8.9 cm

Total Stack Weight 793.9 kg in air
Total Stack Length 32.34 m

Crossover

Weight 6.8 kg
Length 0.27 m

Downhole Tension/Compression

Weight 34.9 kg
Length 1.47 m
Max. Diameter 8.6 cm

Wireline Communications Cartridge

Weight 53.6 kg
Length 2.31 m
Max. Diameter 8.6 cm

2-Arm Caliper

Weight 79.4 kg
Length 2.40 m
Max. Diameter 10.2 cm

SPeD 400 Electronics

Weight 56.7 kg
Length 2.92 m
Max. Diameter 8.6 cm

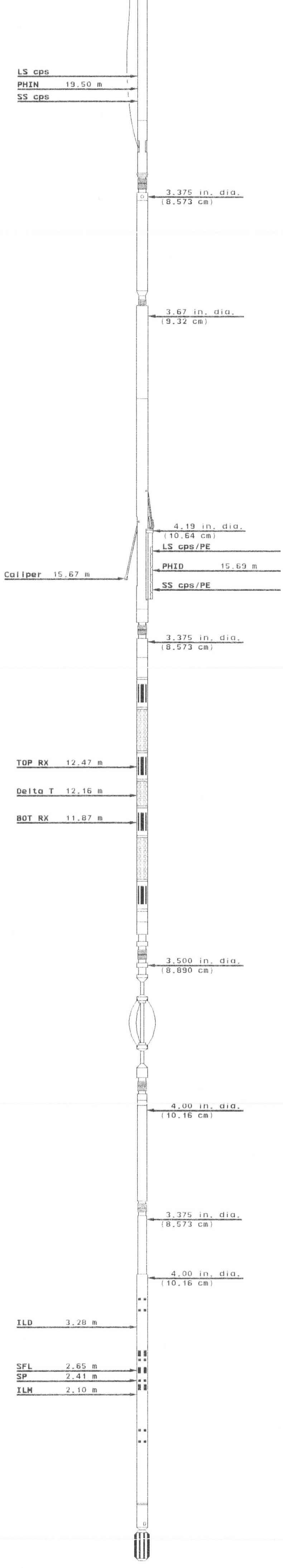
Universal GR

Weight 37.3 kg
Length 1.40 m
Max. Diameter 8.6 cm

Mandrel Neutron

Weight 45.4 kg
Length 2.07 m
Max. Diameter 10.2 cm

Max. Diameter 8.6 CM



Offset Joint

Weight	3.0 kg
Length	0.36 m
Max. Diameter	8.6 cm

SPeD 400 Pad Section

Weight	141.5 kg
Length	3.38 m
Max. Diameter	11.4 cm

Borehole Compensated Sonic

Weight	104.0 kg
Length	4.67 m
Max. Diameter	8.6 cm

Centralizer

Weight	30.9 kg
Length	1.39 m
Max. Diameter	8.9 cm

Simultaneous Triple Induction

Weight	176.9 kg
Length	8.75 m
Max. Diameter	10.2 cm

Stand - Off

Weight	5.5 kg
Length	0.20 m

COMPANY ANADARKO CANADA CORPORATION

WELL ANADARKO EMILE LAKE A-77

FIELD NETLA PROVINCE N.W.T.

PRECISION
Wireline Technologies