Weatherford®

COMPENSATED SONIC WITH INTEGRATED TRANSIT TIME

COMPANY	REDLAND RESOURCES, INC.
WELL	HUMPHREYS #6-2
FIELD	WILDCAT
PROVINCE/COUNTY	HODGEMAN
COUNTRY/STATE	U.S.A. / KANSAS
LOCATION	1252' FNL & 2336' FEL

SEC	TWP	RGE	Other Services
6	24S	24W	MAI/MFE MPD/MDN
			MML

API Number 15-083-21797
Permit Number

Permanent Datum GL, Elevation 2498 feet
Log Measured From KB
Drilling Measured From KB

Elevations:	feet
KB	2506.00
DF	2504.00
GL	2498.00

Date	03-AUG-2012			
Run Number	ONE			
Depth Driller	4950.00	feet		
Depth Logger	4941.00	feet		
First Reading	4928.00	feet		
Last Reading	4600.00	feet		
Casing Driller	222.00	feet		
Casing Logger	221.00	feet		
Bit Size	7.875	inches		
Hole Fluid Type	CHEMICAL			
Density / Viscosity	9.55 lb/USg	50.00 CP		
PH / Fluid Loss	9.50	15.20 ml/30Min		
Sample Source	MUDPIT			
Rm @ Measured Temp	0.67 @ 91.0	ohm-m		
Rmf @ Measured Temp	0.54 @ 91.0	ohm-m		
Rmc @ Measured Temp	0.80 @ 91.0	ohm-m		
Source Rmf / Rmc	CALC	CALC		
Rm @ BHT	0.56 @111.0	ohm-m		
Time Since Circulation	4 HOURS			
Max Recorded Temp	111.00	deg F		
Equipment Name	COMPACT			
Equipment / Base	13096	LIB		
Recorded By	ADAM SILL			
Witnessed By	MIKE POLLOK		MATT MAYES	
S.O. # / JOB #	3534510		LB12-201	

BOREHOLE RECORD

Last Edited: 03-AUG-2012 15:27

Bit Size inches	Depth From feet	Depth To feet
7.875	222.00	4950.00

CASING RECORD

Type	Size inches	Depth From feet	Shoe Depth feet	Weight pounds/ft
SURFACE	8.625	0.00	222.00	24.00

REMARKS

- SOFTWARE ISSUE: WLS 13.02.6600.
- MCG, MML, MDN, MPD, MFE, MSS, MAI RAN IN COMBINATION.
  - HARDWARE: DUAL BOWSPRING USED ON MDN.
  0.5 INCH STANDOFF USED ON MFE.
  TWO 0.5 INCH STANDOFFS USED ON MSS.
  0.5 INCH STANDOFF USED ON MAI.
- 2.71 G/CC LIMESTONE DENSITY MATRIX USED TO CALCULATE POROSITY.
- BOREHOLE RUGOSITY, TIGHT PULLS, AND WASHOUTS WILL AFFECT DATA QUALITY.
- ALL INTERVALS LOGGED AND SCALED PER CUSTOMER'S REQUEST.
- ANNULAR HOLE VOLUME WITH 4.5 INCH CASING: 83 CU. FT.
- SERVICE ORDER # 3534510.

- RIG: DUKE #2.

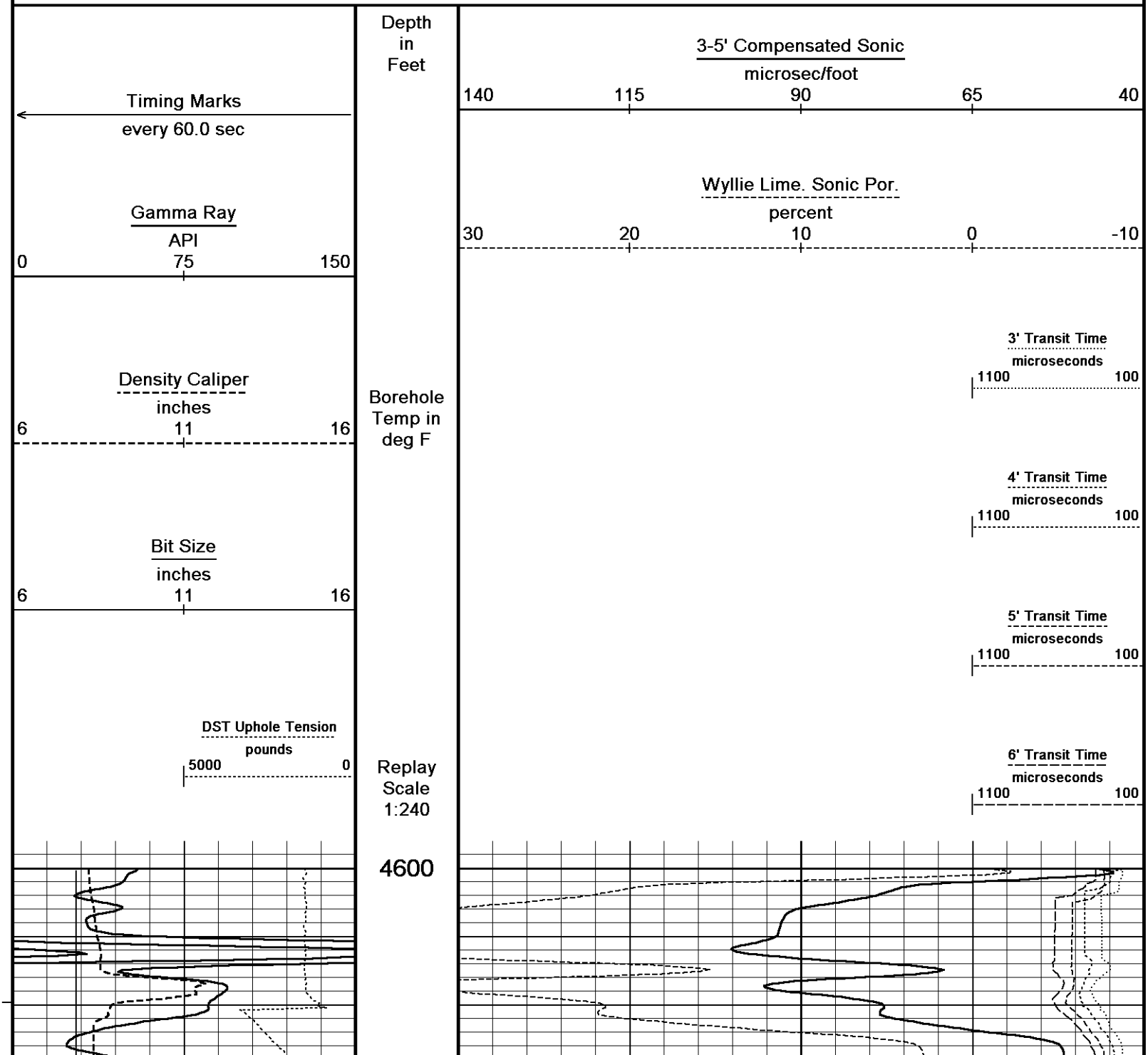
- ENGINEER: A. SILL.

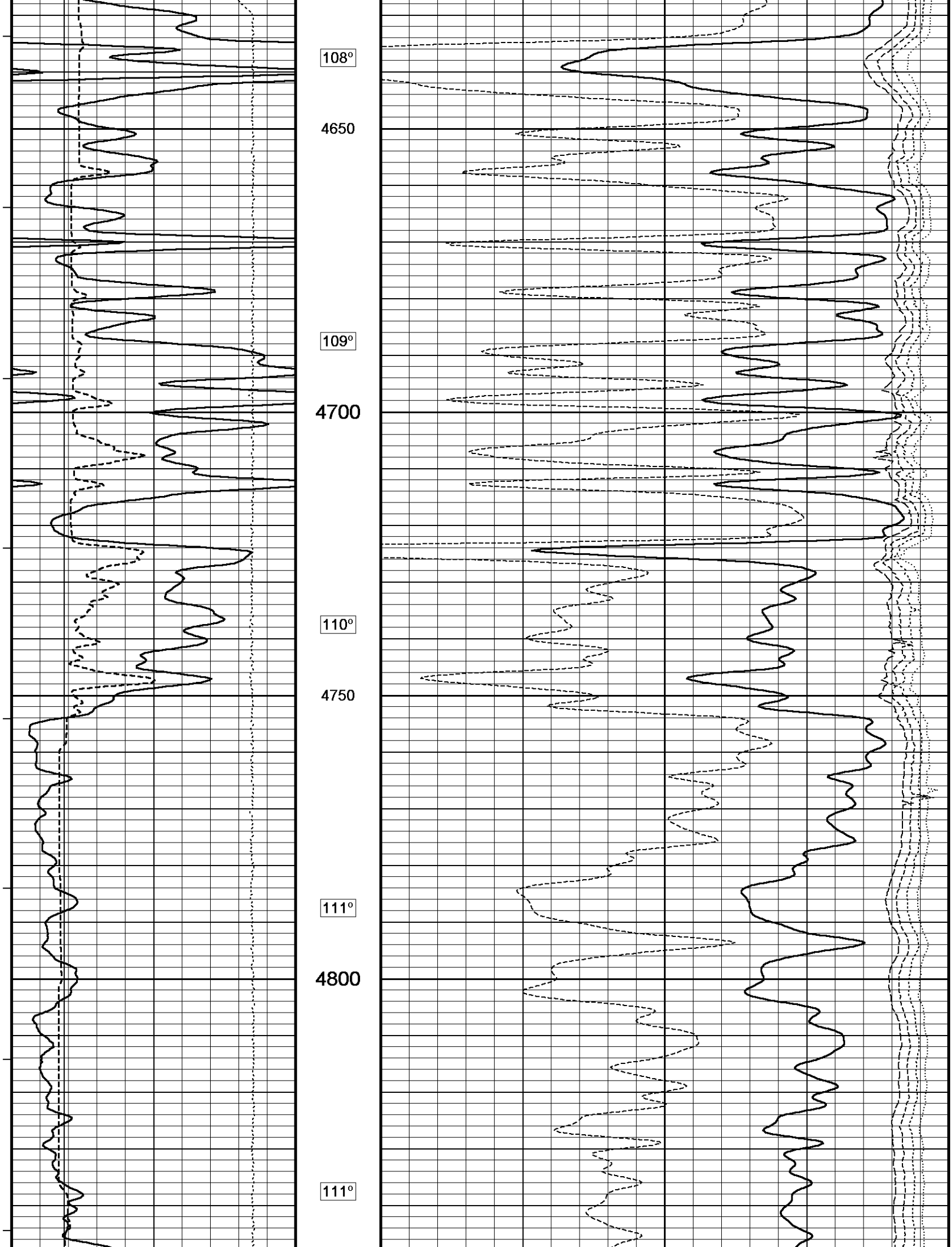
- OPERATOR(S): R. VENEGAS.

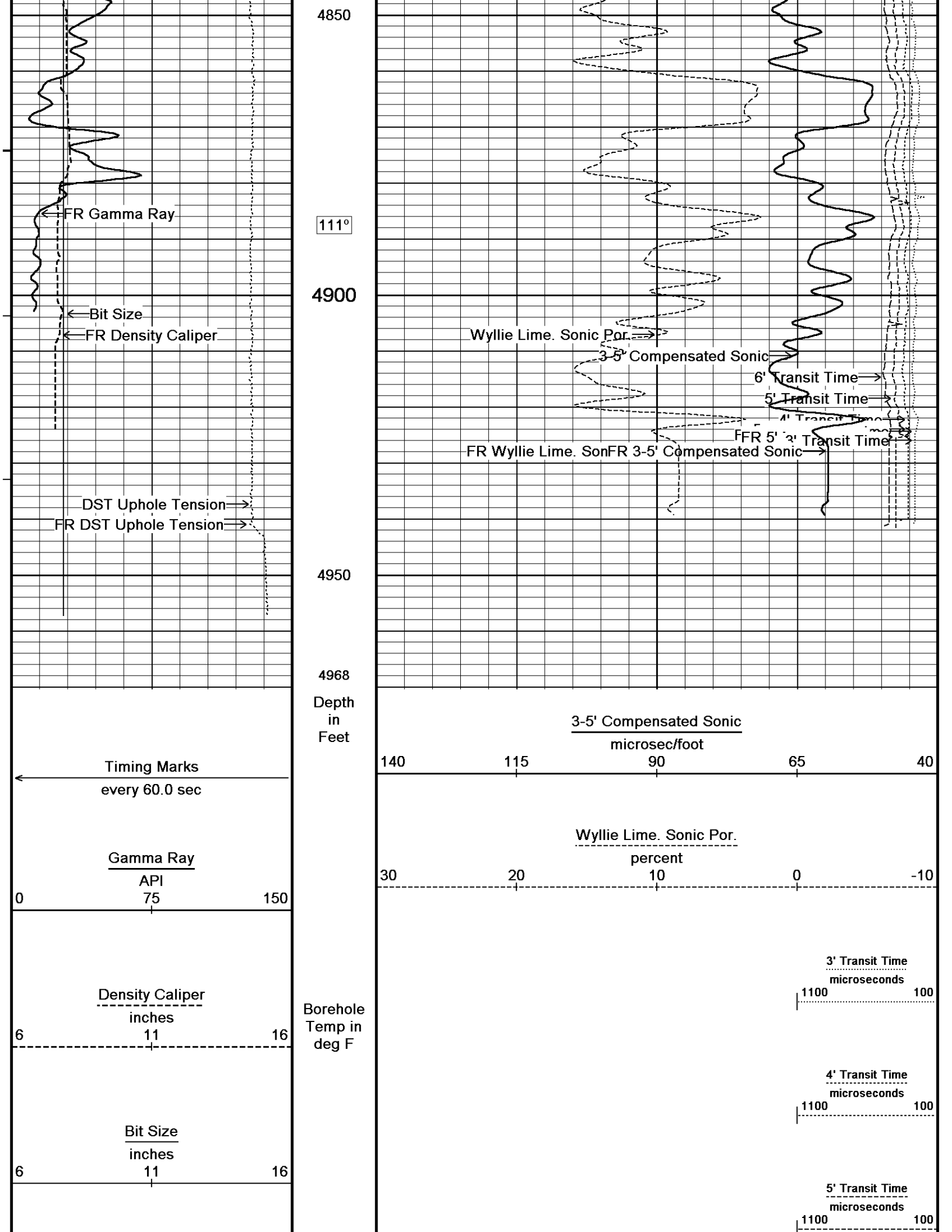
**** PULLED TIGHT AT 4600 FT. ON REPEAT PASS CAUSING CALIPER ARM TO BEND AND WAS INSTRUCTED TO DISCONTINUE LOGGING. ****

5 INCH MAIN

Depth Based Data - Maximum Sampling Increment 10.0cm — Plotted on 03-AUG-2012 19:54
Filename: C:\Minimus 13.02.6600\Data\Redland Humphreys #6-2\Redland Humphreys #6-2_001.dta — Recorded on 03-AUG-2012 17:34
System Versions: Logged with 13.02.6600 Plotted with 13.02.6600




108°
4650
109°
4700
110°
4750
111°
4800
111°


4850
FR Gamma Ray
111°
4900
Bit Size
FR Density Caliper
Wyllie Lime. Sonic Por.
3-5' Compensated Sonic
6' Transit Time
5' Transit Time
FR 5' Transit Time
FR Wyllie Lime. Son
FR 3-5' Compensated Sonic
DST Uphole Tension
FR DST Uphole Tension
4950
4968
Depth in Feet
3-5' Compensated Sonic
microsec/foot
140
115
90
65
40
Timing Marks
every 60.0 sec
Wyllie Lime. Sonic Por.
percent
30
20
10
0
-10
Gamma Ray
API
0
75
150
3' Transit Time
microseconds
1100
100
Density Caliper
inches
6
11
16
Borehole Temp in deg F
4' Transit Time
microseconds
1100
100
Bit Size
inches
6
11
16
5' Transit Time
microseconds
1100
100

Depth Based Data - Maximum Sampling Increment 10.0cm
Plotted on 03-AUG-2012 19:54
Filename: C:\Minimus 13.02.6600\Data\Redland Humphreys #6-2\Redland Humphreys #6-2_001.dta
Recorded on 03-AUG-2012 17:34
System Versions: Logged with 13.02.6600 Plotted with 13.02.6600

5 INCH MAIN

BEFORE SURVEY CALIBRATION

C:\Minimus 13.02.6600\Data\Redland Humphreys #6-2\Redland Humphreys #6-2_001.dta

General Constants All 000

Last Edited on 03-AUG-2012,15:34

General Parameters		
Mud Resistivity	0.670	ohm-metres
Mud Resistivity Temperature	91.000	degrees F
Water Level	0.000	feet
Density/Neutron Processing	Wet Hole	
Hole/Annular Volume and Differential Caliper Parameters		
HVOL Method	Single Caliper	
HVOL Caliper 1	Density Caliper	
HVOL Caliper 2	N/A	
Annular Volume Diameter	4.500	inches
Caliper for Differential Caliper	None	
Rwa Parameters		
Porosity used	Base Density Porosity	
Resistivity used	Array Ind. Four Res Rt	
RWA Constant A	0.610	
RWA Constant M	2.150	

Down-hole Tension Calibration SMS 0

Field Calibration on 25-JUL-2012 21:44

Reading No	Measured	Calibrated (lbs)
1	15962.51	0.00
2	17047.62	562.20

Gamma Calibration MCG-D.K 442

Field Calibration on 03-AUG-2012 11:08

	Measured	Calibrated (API)
Background	71	48
Calibrator (Gross)	1154	773
Calibrator (Net)	1083	725

Gamma Constants MCG-D.K 442

Last Edited on 03-AUG-2012,15:34

Gamma Calibrator Number	GRC38	
Mud Density	1.15	gm/cc
Caliper Source for Processing	Density Caliper	
Tool Position	Eccentred	
Concentration of KCl	0.00	kppm

SP Calibration MCG-D.K 442

Field Calibration on 17-JUL-2012 16:34

	Measured	Calibrated (mV)
Reference 1	100.2	100.0
Reference 2	-99.9	-100.0

High Resolution Temperature Calibration MCG-D.K 442

Field Calibration on 17-JUL-2012,16:35

	Measured	Calibrated(Deg F)
Lower	50.00	50.00
Upper	100.00	100.00

High Resolution Temperature Constants MCG-D.K 442

Last Edited on

Pre-filter Length	11

Caliper Calibration MML-A 16

Base Calibration on 17-JUL-2012 16:12
Field Calibration on 03-AUG-2012 10:57

Base Calibration

Reading No	Measured	Calibrator Size (in)
1	14596	5.98
2	17798	7.97
3	21110	9.86
4	25111	11.92
5	0	0.00
6	N/A	N/A

Field Calibration

Measured Caliper (in)	Actual Caliper (in)
5.96	5.98

Micro Normal and Micro Inverse Calibration MML-A 16

Base Calibration on 17-JUL-2012 16:16
Field Check on 03-AUG-2012 10:51

Base Calibration

	Measured		Calibrated (ohm-m)	
Channel	Resistor 1	Resistor 2	Resistor 1	Resistor 2
Micro Normal	12.2	60.2	5.0	25.0
Micro Inverse	15.6	78.3	5.0	25.0

Channel	Base Check (ohm-m)	Field Check (ohm-m)
Micro Normal	62.9	62.9
Micro Inverse	48.2	48.2

Micro Normal and Micro Inverse Constants MML-A 16

Last Edited on 03-AUG-2012,15:34

Pad Type	8-12 in Soft Rubber Inflatable 006-9011-159	
Micro Normal K Factor	1.0000	
Micro Inverse K Factor	1.0000	
Standoff Offset	N/A	inches

Neutron Calibration MDN-A.B 66

Base Calibration on 17-JUL-2012 10:54
Field Check on 03-AUG-2012 11:12

Base Calibration

	Measured		Calibrated (cps)	
	Near	Far	Near	Far
	3220	101	3714	110
Ratio	31.859		33.764	

Field Calibrator at Base

	Calibrated (cps)	
	1595	2289
Ratio	0.696	

Field Check

	Calibrated (cps)	
	1600	2270
Ratio	0.705	

Neutron Constants MDN-A.B 66

Last Edited on 03-AUG-2012,15:34

Neutron Source Id	P0204NN	
Neutron Jig Number	5824NE	
Epithermal Neutron	No	
Caliper Source for Processing	Density Caliper	
Stand-off	0.00	inches
Mud Density	1.00	gm/cc
Limestone Sigma	7.10	cu
Sandstone Sigma	4.26	cu
Dolomite Sigma	4.70	cu
Formation Pressure Source	Constant Value	
Formation Pressure	0.00	kpsi
Temperature Source	Constant Value	
Temperature	68.00	degrees F
Mud Salinity	0.00	kppm
Salinity Correction	Not Applied	
Formation Fluid Salinity Source	Constant Value	
Formation Fluid Salinity	0.00	kppm

Barite Mud Correction	Not Applied	

FE Calibration MFE-B.J 353

Base Calibration on 17-JUL-2012 15:58
Field Check on 03-AUG-2012 10:50

Base Calibration

	Measured	Calibrated (ohm-m)
Reference 1	0.0	0.0
Reference 2	964.8	126.8
Base Check		280.6
Field Check		280.8

FE Constants MFE-B.J 353

Last Edited on 03-AUG-2012,15:33

Running Mode	No Sleeve	
MFE K Factor	0.1268	
Caliper Source for FE correction	Density Caliper	
Caliper Value for FE correction	N/A	inches
Rm Source for FE correction	Temperature Corr	
Temp. for Rm Corr.	MCG External Temperature	
Stand-off	0.5	inches

Sonic Constants MSS-C.K 330

Last Edited on 03-AUG-2012,15:33

Maximum Boundary Contrast	100.00	micro-sec/ft
Fluid Transit Time	189.00	micro-sec/ft
Limestone Transit Time	47.50	micro-sec/ft
Sandstone Transit Time	55.50	micro-sec/ft
Dolomite Transit Time	43.50	micro-sec/ft
Sonic used for Porosities	3-5' Compensated	
Correction for Sonde Skew	Applied	
Cycle Stretch Algorithm	Applied	
MN3FT	0.00	micro-sec
MX3FT	1500.00	micro-sec
Hunt-Raymer Constant	83.13	micro-sec/ft
Sonde Mode	Compensated	
Hole Type	Open Hole	

Sonde Parameters

	Measured	Calibrated
Offset	0.0000	0.0000
Free Pipe	0.0000	0.0000

Peak Amplitude Source 0

Waveform	Start Time (micro-sec)	Width (micro-sec)	Pre Gain	Start Gain	Discriminator (mV)
3'	N/A	N/A	N/A	N/A	N/A
4'	N/A	N/A	N/A	N/A	N/A
5'	N/A	N/A	N/A	N/A	N/A
6'	N/A	N/A	N/A	N/A	N/A

Processed Fixed Gate Parameters

Waveform Used For Processing N/A

Start Time (micro-sec)	End Time (micro-sec)	Discriminator (mV)	Depth (ft)
0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00
0.00	0.00	0.00	

Full Waveform Parameters

Use 3' Waveform to derive TR	No	
Use 4' Waveform to derive TR	No	
Use 5' Waveform to derive TR	No	
Use 6' Waveform to derive TR	No	
3' Waveform Discriminator Level	0.30	mV
4' Waveform Discriminator Level	0.30	mV
5' Waveform Discriminator Level	0.15	mV
6' Waveform Discriminator Level	0.15	mV

3' Waveform Filter	0	
4' Waveform Filter	0	
5' Waveform Filter	0	
6' Waveform Filter	0	
Semblance Level	0.50	
Semblance Window Width	120.00	micro-sec
Sonic 1 Despiker	100.00	micro-sec/ft
Sonic 2 Despiker	100.00	micro-sec/ft

High Resolution Temperature Calibration MAI-A.A 167

Field Calibration on 17-JUL-2012,13:53

	Measured	Calibrated(Deg F)
Lower	1.00	33.80
Upper	11.00	51.80

High Resolution Temperature Constants MAI-A.A 167

Last Edited on 17-JUL-2012,13:49

Pre-filter Length	11

Induction Calibration MAI-A.A 167

Base Calibration on 17-JUL-2012,13:55
Field Check on 03-AUG-2012 10:48

Base Calibration

Test Loop Calibration

Channel	Measured Low	Measured High	Calibrated (mmho/m) Low	Calibrated (mmho/m) High
1	17.3	474.2	9.3	966.2
2	6.3	388.4	7.6	821.4
3	3.3	259.4	5.2	566.0
4	1.9	133.0	2.6	279.2

Array Temperature 76.8 Deg F

Channel	Base Check (mmho/m) Low	Base Check (mmho/m) High	Field Check (mmho/m) Low	Field Check (mmho/m) High
1	0.0	0.0	13.8	3838.5
2	0.0	0.0	29.8	3475.8
3	0.0	0.0	29.2	3051.8
4	0.0	0.0	19.8	2081.0
Deep	0.0	0.0	18.7	2048.2
Medium	0.0	0.0	42.3	3989.3
Shallow	0.0	0.0	43.2	5052.4
Array Temperature	0.0		85.6	Deg F

Induction Constants MAI-A.A 167

Last Edited on 03-AUG-2012,15:33

Induction Model	RtAP-WBM	
Caliper for Borehole Corr.	Density Caliper	
Hole Size for Borehole Correction	N/A	inches
Tool Centred	No	
Stand-off Type	Fins	
Stand-off	0.50	inches
Number of Fins on Stand-off	8.0000	
Stand-off Fin Angle	45.00	degrees
Stand-off Fin Width	0.5000	inches
Borehole Corr. Rm Source	Temperature Corr	
Temp. for Rm Corr.	MCG External Temperature	
Squasher Start	0.0020	mhos/metre
Squasher Offset	N/A	mhos/metre

Borehole Normalisation

DRM1	0.0000	DRC1	0.0000
DRM2	0.0000	DRC2	0.0000
MRM1	0.0000	MRC1	0.0000
MRM2	0.0000	MRC2	0.0000
SRM1	0.0000	SRC1	0.0000
SRM2	0.0000	SRC2	0.0000

Calibration Site Corrections

Channel 1	0.00	mmhos/metre
Channel 2	0.00	mmhos/metre
Channel 3	0.00	mmhos/metre

Channel 4	0.00	mmhos/metre

Apparent Porosity and Water Saturation Constants		
Archie Constant (A)	1.00	
Cementation Exponent (M)	2.00	
Saturation Exponent (N)	2.00	
Saturation of Water for Apor	100.00	percent
Resistivity of Water for Apor and Sw	0.05	ohm-m
Resistivity of Mud Filtrate for Sw	0.00	ohm-m
Source for Rt	0.00	
Source for Rxo	0.00	

Caliper Calibration MPD-B 64

Base Calibration on 17-JUL-2012 14:43
Field Calibration on 03-AUG-2012 11:00

Base Calibration

Reading No	Measured	Calibrator Size (in)
1	13949	3.99
2	22435	5.98
3	31057	7.97
4	39360	9.86
5	48766	11.92
6	N/A	N/A

Field Calibration

Measured Caliper (in)	Actual Caliper (in)
6.04	5.98

Photo Density Calibration MPD-B 64

Base Calibration on 17-JUL-2012 15:04
Field Check on 03-AUG-2012 10:55

Density Calibration

Base Calibration	Measured		Calibrated (sdu)	
	Near	Far	Near	Far
Reference 1	59921	33969	59556	30836
Reference 2	25388	2962	24941	2541

Field Check at Base

1193.4	1388.8

Field Check

1186.0	1379.5

PE Calibration

Base Calibration	Measured			Calibrated
	WS	WH	Ratio	Ratio
Background	214	1064		
Reference 1	22602	59722	0.382	0.371
Reference 2	6872	25249	0.275	0.272

Field Check at Base

214.1	1063.8

Field Check

216.2	1057.4

Density Constants MPD-B 64

Last Edited on 03-AUG-2012,15:33

Density Source Id	18235B	
Nylon Calibrator Number	DNCE695	
Aluminium Calibrator Number	DACD698	
Density Shoe Profile	8 inch	
Caliper Source for Processing	Density Caliper	
PE Correction to Density	Not Applied	
Mud Density	1.15	gm/cc
Mud Density Z/A Multiplier	1.11	
Mud Filtrate Density	1.00	gm/cc
Dry Hole Mud Filtrate Density	1.00	gm/cc
DNCT	0.00	gm/cc
CRCT	0.00	gm/cc
Density Z/A Correction	Hybrid	

Matrix Density (gm/cc)	Depth (ft)
2.87	

0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00

DOWNHOLE EQUIPMENT

C:\Minimus 13.02.6600\Data\Redland Humphreys #6-2\Redland Humphreys #6-2_001.dta

Compact Comms Gamma
MCG-D.K 442 LG: 8.70 ft WT: 63.9 lb OD: 2.24 in

Compact Micro-log
MML-A 16 LG: 7.97 ft WT: 81.6 lb OD: 2.24 in

Compact Neutron
MDN-A.B 66 LG: 5.04 ft WT: 50.7 lb OD: 2.24 in

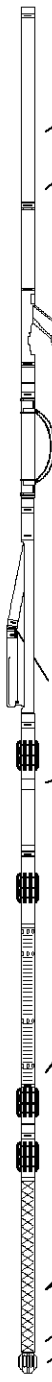
Compact Density/Caliper
MPD-B 64 LG: 9.59 ft WT: 90.4 lb OD: 2.45 in

Compact Focussed Electric
MFE-B.J 353 LG: 6.05 ft WT: 48.5 lb OD: 2.24 in

Compact Sonic
MSS-C.K 330 LG: 12.52 ft WT: 72.8 lb OD: 2.24 in

Compact Induction
MAI-A.A 167 LG: 10.81 ft WT: 48.5 lb OD: 2.24 in

Total Length: 60.68 ft Weight: 456.4 lb



55.39 ft	GRGC - Gamma Ray
52.48 ft	CGXT - MCG External Temperature
45.76 ft	MINV - Micro-inverse
45.76 ft	MNRL - Micro-normal
46.76 ft	MLTC - MML Caliper
40.97 ft	NPRL - Limestone Neutron Por.
33.73 ft	CLDC - Density Caliper
31.80 ft	DPRL - Limestone Density Por.
31.80 ft	DEN - Compensated Density
31.80 ft	DCOR - Density Correction
31.74 ft	PDPE - PE
26.24 ft	FEFE - Shallow FE
12.96 ft	DT35 - 3-5' Compensated Sonic
12.96 ft	SPRL - Wyllie Lime. Sonic Por.
3.34 ft	R40O - Array Ind. One Res 40
3.34 ft	RTAO - Array Ind. One Res Rt
3.34 ft	R60O - Array Ind. One Res 60
0.23 ft	SPCG - Spontaneous Potential
Tool Zero	(0.13ft from bottom)
-0.13 ft	SMTU - DST Uphole Tension

All measurements relative to tool zero.

COMPANY	REDLAND RESOURCES, INC.
WELL	HUMPHREYS #6-2
FIELD	WILDCAT
PROVINCE/COUNTY	HODGEMAN
COUNTRY/STATE	U.S.A. / KANSAS

COUNTRY/STATE U.S.A. / ARKANSAS

Elevation Kelly Bushing	2506.00	feet	First Reading	4928.00	feet
Elevation Drill Floor	2504.00	feet	Depth Driller	4950.00	feet
Elevation Ground Level	2498.00	feet	Depth Logger	4941.00	feet

Weatherford®

COMPENSATED SONIC
WITH INTEGRATED TRANSIT TIME