

See Table 2.3-5 for correct elevations of the boreholes

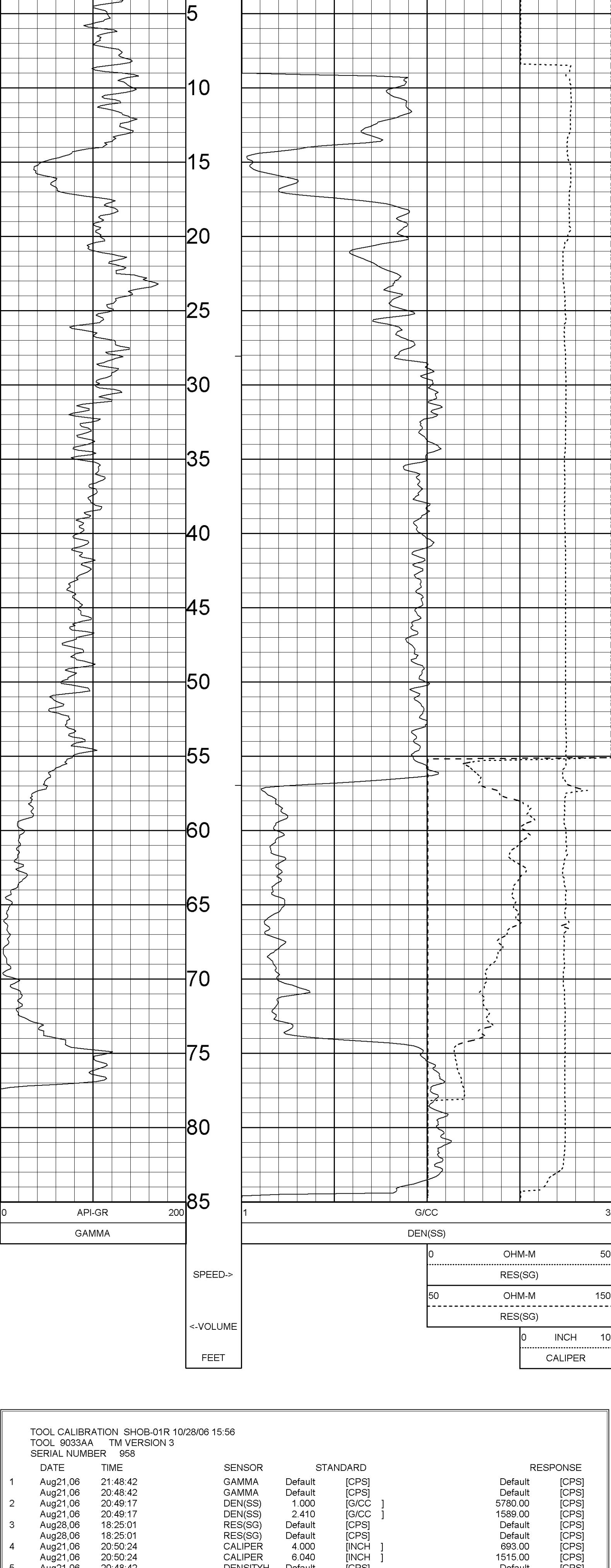
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SHOB-01R

COMPANY	GOLDER ASSOCIATES		OTHER SERVICES: N/A N/A N/A	
WELL	SHOB-01R			
FIELD	SOUTH HEART			
COUNTY	STARK			
STATE	NORTH DAKOTA			
LOCATION	N/A			
SECTION	9			
TOWNSHIP	:139N			
RANGE	:98W			
API NO.	N/A			
UNIQUE WELL ID.	N/A			
PERMANENT DATUM	:GL	ELEVATION KB N/A		
LOG MEASURED FROM	:GL	ELEVATION DF N/A		
DRL MEASURED FROM	:GL	ELEVATION GL 2630		
DATE	:10/28/06			
DEPTH DRILLER	:35			
BIT SIZE	:5.0			
LOG TOP	:1.40			
LOG BOTTOM	:34.90			
CASING OD	N/A			
CASING BOTTOM	N/A			
CASING TYPE	N/A			
BOREHOLE FLUID	:WATER			
RM TEMPERATURE	N/A			
MUD RES	N/A			
MUD WEIGHT	:0			
WITNESSED BY	J.ELLIOTT			
RECORDED BY	B.MATAS			
REMARKS 1	SW/SE QUARTER OF SECTION			
REMARKS 2	E=648268 N=5191823			
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS				



TOOL CALIBRATION SHOB-01R 10/28/06 15:56

TOOL 903AA TM VERSION 3

SERIAL NUMBER 958

	DATE	TIME	SENSOR	STANDARD	RESPONSE
1	Aug21,06	21:48:42	GAMMA	Default [CPS]	Default [CPS]
	Aug21,06	20:48:42	GAMMA	Default [CPS]	Default [CPS]
2	Aug21,06	20:49:17	DEN(SS)	1.000 [G/CC]	5780.00 [CPS]
	Aug21,06	20:49:17	DEN(SS)	2.410 [G/CC]	1589.00 [CPS]
3	Aug28,06	18:25:01	RES(SG)	Default [CPS]	Default [CPS]
	Aug28,06	18:25:01	RES(SG)	Default [CPS]	Default [CPS]
4	Aug21,06	20:50:24	CALIPER	4.000 [INCH]	693.00 [CPS]
	Aug21,06	20:50:24	CALIPER	6.040 [INCH]	1515.00 [CPS]
5	Aug21,06	20:48:42	DENSITYH	Default [CPS]	Default [CPS]
	Aug21,06	20:48:42	DENSITYH	Default [CPS]	Default [CPS]
6	Aug21,06	20:50:44	CALIPERL	4.000 [INCH]	380.00 [CPS]
	Aug21,06	20:50:44	CALIPERL	8.000 [INCH]	1125.00 [CPS]

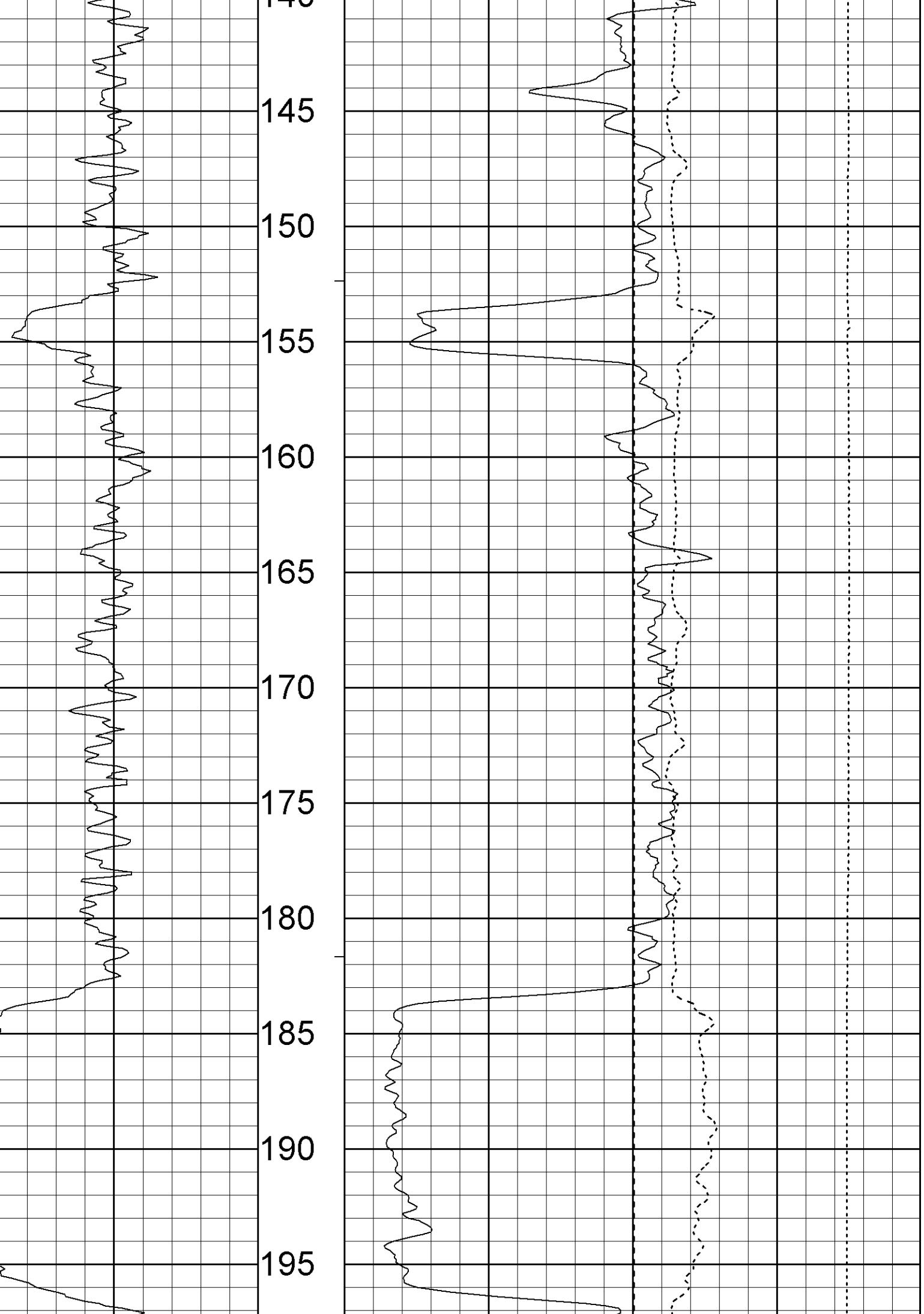
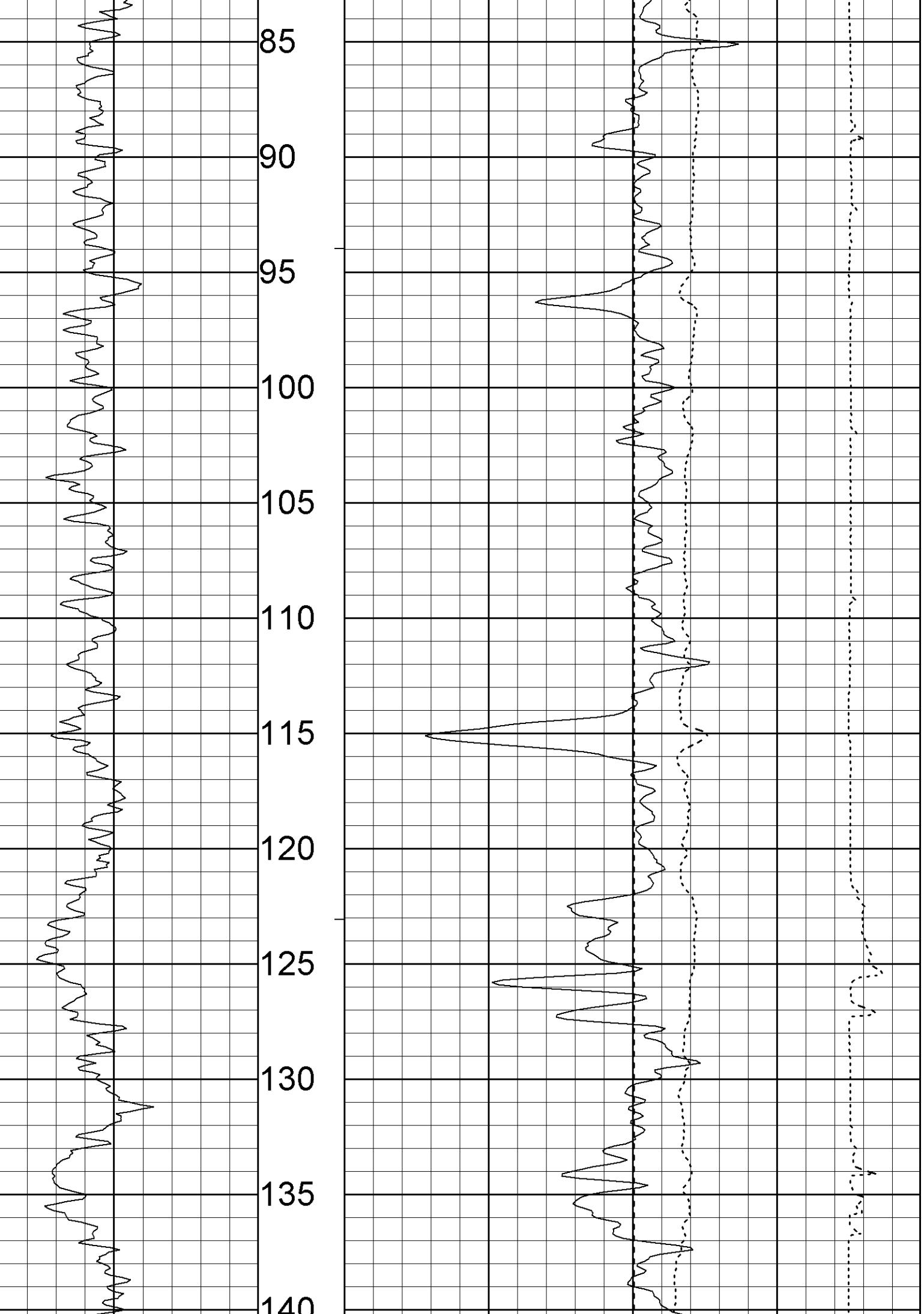
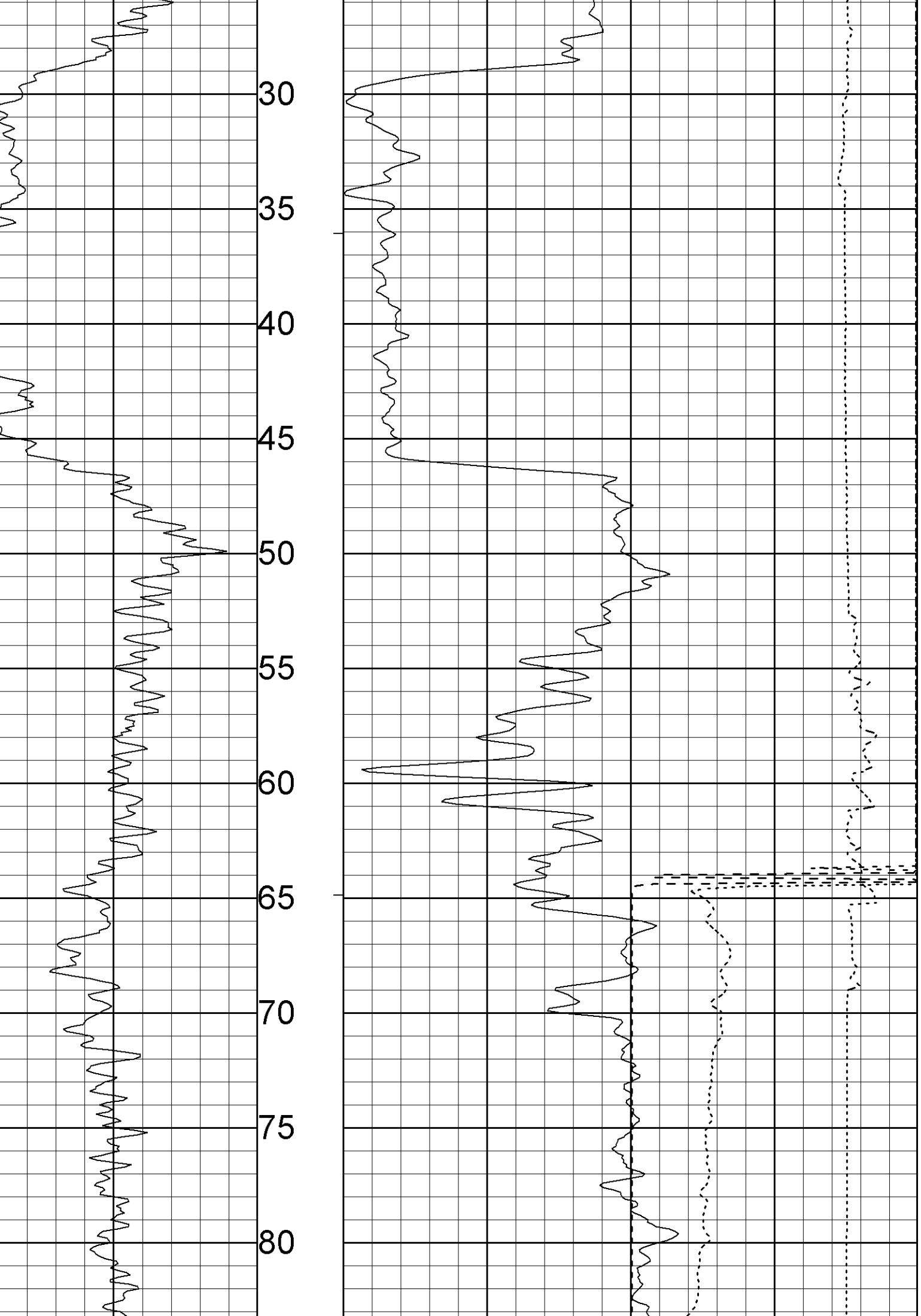
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SHOB-02R

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COMPANY	GOLDER ASSOCIATES	OTHER SERVICES:
WELL	SHOB-02R	N/A
FIELD	SOUTH HEART	N/A
COUNTY	STARK	N/A
STATE	NORTH DAKOTA	N/A
LOCATION	N/A	
SECTION	9	
TOWNSHIP	:13N	
RANGE	:9W	
API NO.	N/A	
UNIQUE WELL ID.	N/A	
PERMANENT DATUM	GL	
DATE DRILLED	10/16/06	
DEPTH DRILLER	210	
LOG TOP	:150	
BIT SIZE	5.0	
CASING BOTTOM	205.40	
CASING TYPE	N/A	
BORHOLE FLUID	WATER	
RM TEMPERATURE	N/A	
MUD RES	N/A	
MUD WEIGHT	0	
WITNESSED BY	D LEPPER	
RECORDED BY	B MATAS	
REMARKS 1	SENE QUARTER OF SECTION	
REMARKS 2	E=649070 N=5191855	



TOOL CALIBRATION SHOB-02R 10/16/06 17:39 TOOL 903AA TM VERSION 3 SERIAL NUMBER 958				RESPONSE
DATE	TIME	SENSOR	STANDARD	
1 Aug21,06	21:48:42	GAMMA	Default [CPS]	[CPS]
Aug21,06	20:48:42	GAMMA	Default [CPS]	[CPS]
2 Aug21,06	20:49:17	DEN(SS)	1.000 [G/CC]	578.00 [CPS]
Aug21,06	20:49:17	DEN(SS)	2.410 [G/CC]	1589.00 [CPS]
3 Aug26,06	18:25:01	RES(SG)	Default [CPS]	[CPS]
Aug26,06	18:25:01	RES(SG)	Default [CPS]	[CPS]
4 Aug21,06	20:50:24	CALIPER	4.000 [INCH]	693.00 [CPS]
Aug21,06	20:50:24	CALIPER	6.040 [INCH]	1515.00 [CPS]
5 Aug21,06	20:48:42	DENSITYH	Default [CPS]	[CPS]
Aug21,06	20:48:42	DENSITYH	Default [CPS]	[CPS]
6 Aug21,06	20:50:44	CALIPERL	4.000 [INCH]	380.00 [CPS]
Aug21,06	20:50:44	CALIPERL	8.000 [INCH]	1125.00 [CPS]

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GAMMA-RES-DENSITY

SHOB-03R

COMPANY	GOLDER ASSOCIATES	OTHER SERVICES:
WELL	SHOB-03R	N/A
FIELD	SOUTH HEART	N/A
COUNTY	STARK	N/A
STATE	NORTH DAKOTA	N/A
LOCATION	N/A	
SECTION	:17	
TOWNSHIP	:139N	
RANGE	:98W	
API NO.	N/A	
UNIQUE WELL ID.	N/A	
PERMANENT DATUM	GL	ELEVATION KB N/A
LOG MEASURED FROM	GL	ELEVATION DF N/A
DRL MEASURED FROM	GL	ELEVATION GL 2668
DATE	.1027/06	

CALIPER

0 INCH 10

RES(SG)

OHM-M 150

RES(SG)

OHM-M 50

0 INCH 10

RES(SG)

OHM-M 150

RES(SG)

OHM-M 50

0 INCH 10

RES(SG)

OHM-M 150

RES(SG)

OHM-M 50

0 INCH 10

RES(SG)

OHM-M 150

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0 INCH 10

RES(SG)

OHM-M 150

RES(SG)

OHM-M 50

0 INCH 10

RES(SG)

OHM-M 150

RES(SG)

OHM-M 50

0 INCH 10

RES(SG)

OHM-M 150

SHOB-04R

GAMMA-RES-DENSITY

COMPANY: GOLDER ASSOCIATES
WELL: SHOB-04R
FIELD: SOUTH HEART
COUNTY: STARK
STATE: NORTH DAKOTA

LOCATION: N/A
SECTION: 16
TOWNSHIP: 139N
RANGE: 98W
API NO.: N/A
UNIQUE WELL ID.: N/A

PERMANENT DATUM: GL

LOG MEASURED FROM: GL
DRL MEASURED FROM: GL

DATE: 10/28/06
DEPTH DRILLER: .70

BIT SIZE: 5.0
LOG TOP: 1.50

LOG BOTTOM: 69.20

CASING OD: N/A

CASING BOTTOM: N/A

CASING TYPE: N/A

BOREHOLE FLUID: WATER

RM TEMPERATURE: N/A

MUD RES: N/A

MUD WEIGHT: 0

WITNESSED BY: J. ELLIOTT

RECORDED BY: B. MATAS

REMARKS 1: NE/NW QUARTER OF SECTION

REMARKS 2: I=648679 N=5191434

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

CALIPER
0 INCH 10

RES(SG)		
50	OHM-M	150
RES(SG)		
0	OHM-M	50

DEN(SS) 3

G/CC

0 OHM-M 50

RES(SG)

50 OHM-M 150

RES(SG)

0 INCH 10

CALIPER

GAMMA

0 API-GR 200

5

10

15

20

25

30

35

40

45

50

55

60

65

70

GAMMA

0 API-GR 200

5

10

15

20

25

30

35

40

45

50

55

60

65

70

FEET
<-VOLUME
SPEED->

SPEED->

<-VOLUME

FEET

GAMMA-RES-DENSITY

SHOB-05R

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COMPANY
WELL
FIELD
COUNTY
STATE

GOLDER ASSOCIATES
SHOB-05R
SOUTH HEART
STARK
NORTH DAKOTA

OTHER SERVICES:
N/A
N/A
N/A
N/A

LOCATION
SECTION
TOWNSHIP
RANGE
API NO.
UNIQUE WELL ID.

N/A
15
139N
98W
N/A
N/A

PERMANENT DATUM GL
LOG MEASURED FROM GL
DRL MEASURED FROM GL

DATE
DEPTH DRILLER
BIT SIZE
LOG TOP
LOG BOTTOM
CASING OD
CASING BOTTOM
CASING TYPE
BOREHOLE FLUID
RM TEMPERATURE
MUD RES
MUD WEIGHT

10/29/06
.75
.50
1:50
.74.60
N/A
N/A
N/A
WATER
N/A
N/A
0

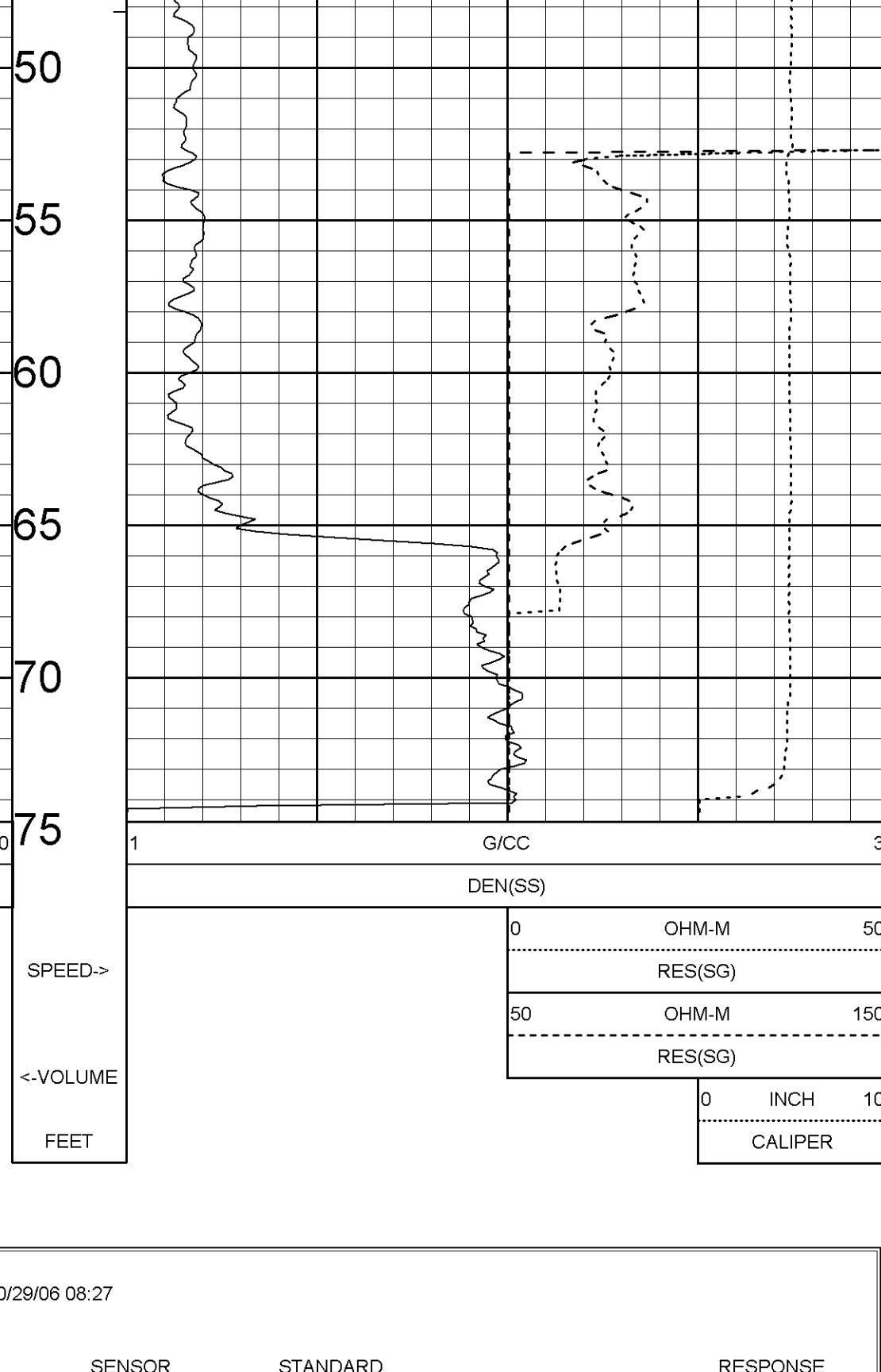
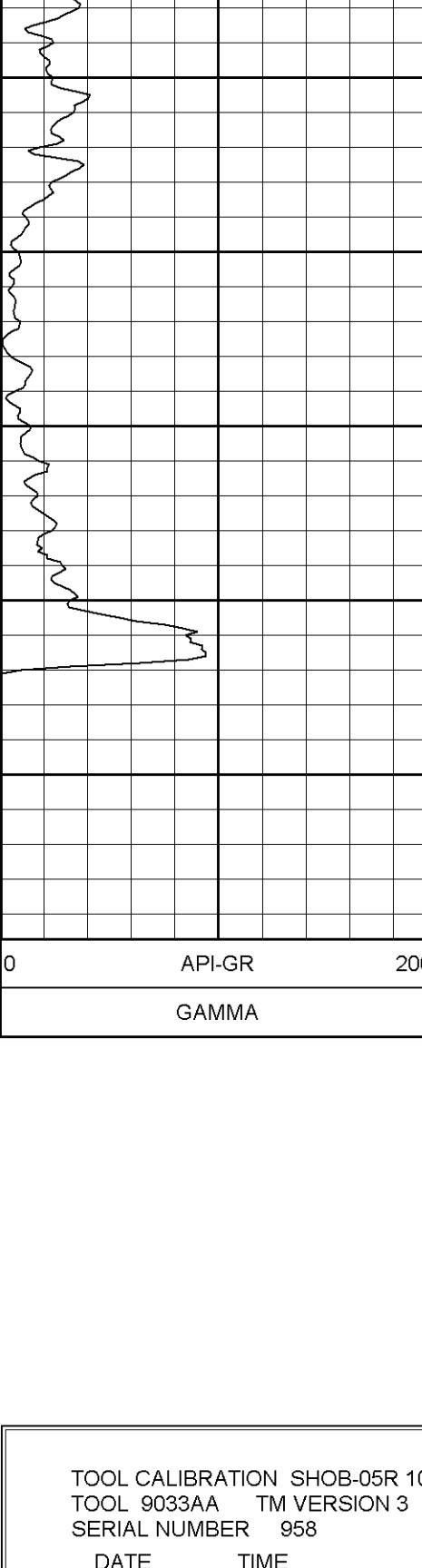
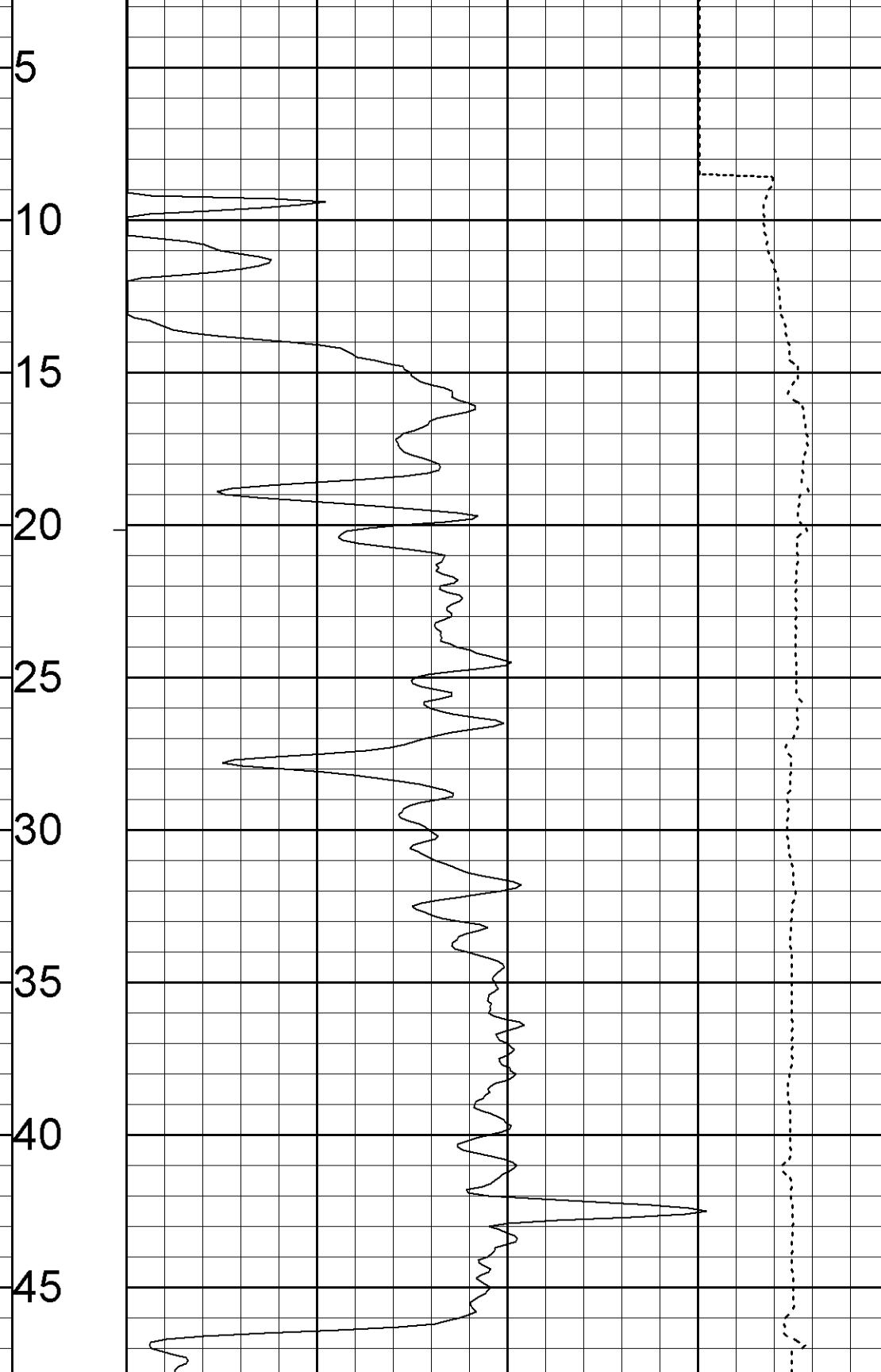
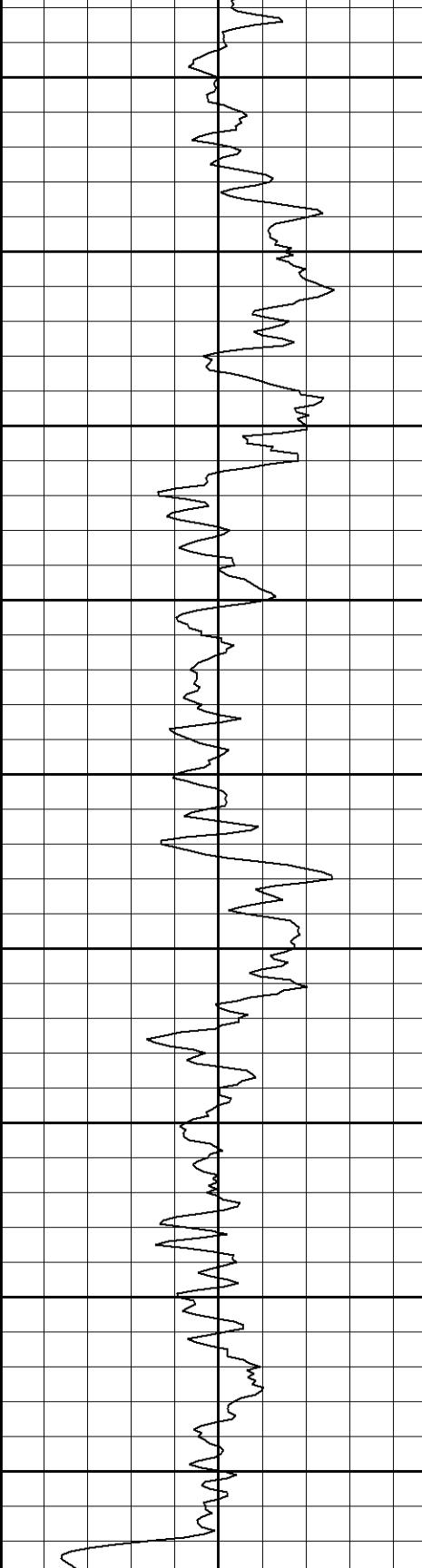
ELEVATION KB N/A
ELEVATION DF N/A
ELEVATION GL 2544

CALIPER		
0	INCH	10

RES(SG)		
50	OHM-M	150
RES(SG)		
0	OHM-M	50

DEN(SS)		
1	G/CC	3

WITNESSED BY	J. ELLIOTT
RECORDED BY	B. MATAS
REMARKS 1	NW/NW QUARTER OF SECTION
REMARKS 2	I=649482 N=5191466
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS	



DATE	TIME	SENSOR	STANDARD	RESPONSE
1 Aug21,06	20:48:42	GAMMA	Default [CPS]	[CPS]
Aug21,06	20:48:42	GAMMA	Default [CPS]	[CPS]
2 Aug21,06	20:49:17	DEN(SS)	1.000 [G/CC]	5780.00 [CPS]
Aug21,06	20:49:17	DEN(SS)	2.410 [G/CC]	1589.00 [CPS]
3 Aug28,06	18:25:01	RES(SS)	Default [CPS]	Default [CPS]
Aug28,06	18:25:01	RES(SS)	Default [CPS]	Default [CPS]
4 Aug21,06	20:50:24	CALIPER	4.000 [INCH]	693.00 [CPS]
Aug21,06	20:50:24	CALIPER	6.040 [INCH]	1515.00 [CPS]
5 Aug21,06	20:48:42	DENSITYH	Default [CPS]	Default [CPS]
Aug21,06	20:48:42	DENSITYH	Default [CPS]	Default [CPS]
6 Aug21,06	20:50:44	CALIPERL	4.000 [INCH]	380.00 [CPS]
Aug21,06	20:50:44	CALIPERL	8.000 [INCH]	1125.00 [CPS]

GAMMA-RES-DENSITY

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SHOB-06R

COMPANY

WELL

FIELD

COUNTY

STATE

LOCATION

SECTION

TOWNSHIP

RANGE

API NO.

UNIQUE WELL ID.

PERMANENT DATUM

LOG MEASURED FROM: GL

DRL MEASURED FROM: GL

DATE

DEPTH DRILLER

BIT SIZE

LOG TOP

LOG BOTTOM

CASING OD

CASING BOTTOM

CASING TYPE

BOREHOLE FLUID

RM TEMPERATURE

MUD RES

MUD WEIGHT

WITNESSED BY

RECORDED BY

REMARKS 1

REMARKS 2

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

GOLDER ASSOCIATES

SHOB-06R

SOUTH HEART

STARK

NORTH DAKOTA

N/A

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GAMMA-RES-DENSITY

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SHOB-07R

COMPANY
WELL
FIELD
COUNTY
STATE

GOLDER ASSOCIATES
SHOB-07R
SOUTH HEART
STARK
NORTH DAKOTA

OTHER SERVICES:
N/A
N/A
N/A
N/A

LOCATION
SECTION
TOWNSHIP
RANGE
APN#
UNIQUE WELL ID.

N/A
:15
139N
98W
N/A
N/A

PERMANENT DATUM
LOG MEASURED FROM GL
DRL MEASURED FROM GL

DATE

10/29/06

ELEVATION KB N/A
ELEVATION DF N/A
ELEVATION GL 2682

CALIPER
0 INCH 10

RES(SG)	
50	OHM-M
RES(SG)	
0	OHM-M

50 150 50

DEN(SS)

G/CC

3

DEN(SS)

G/CC

3

DEN(SS)

0 OHM-M

50

RES(SG)

50 OHM-M

150

RES(SG)

0 OHM-M

10

CALIPER

0 INCH 10

CALIPER	
0	INCH
50	10

50 10

GAMMA

API-GR 200

0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

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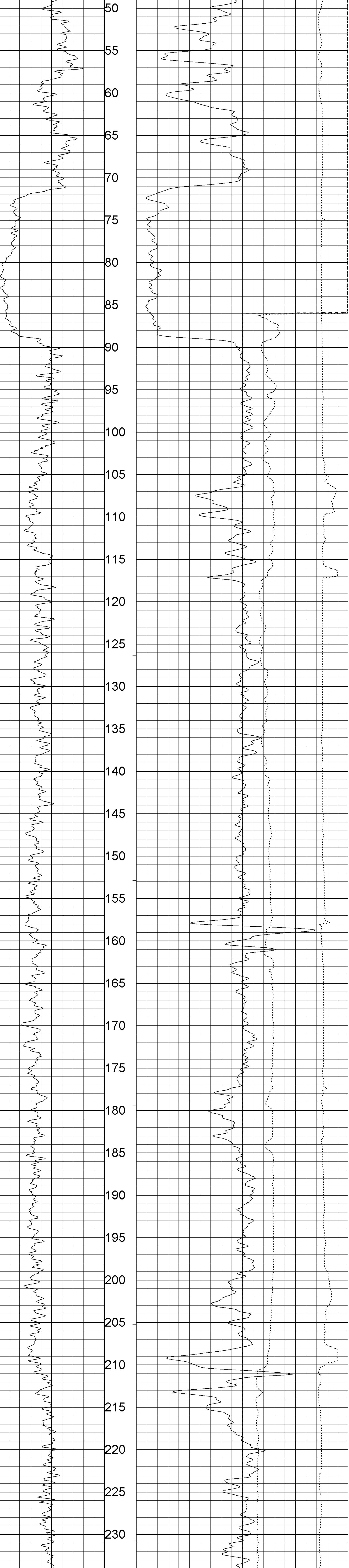
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SHOB-08R

COMPANY	GOLDER ASSOCIATES	WELL	SHOB-08R
FIELD	SOUTH HEART	SECTION	17
COUNTY	STARK	TOWNSHIP	139N
STATE	NORTH DAKOTA	RANGE	98W
LOCATION	N/A	API NO.	N/A
SECTION	N/A	UNIQUE WELL ID	N/A
TOWNSHIP	N/A	PERMANENT DATUM GL	ELEVATION KB NAD 2542
RANGE	N/A	LOG MEASURED FROM GL	ELEVATION DF N/A
DATE	10/27/06	DEPTH DRILLER	280
BIT SIZE	5.0		



TOOL CALIBRATION SHOB-08R 10/27/06 14:31			RESPONSE
TOOL 9033AA TM VERSION 3			
SERIAL NUMBER	958	SENSOR	Default [CPS]
DATE	TIME	STANDARD	[CPS]
1 Aug21,06	20:48:42	GAMMA	Default [CPS]
2 Aug21,06	20:48:42	GAMMA	5780.00 [CPS]
3 Aug21,06	20:49:17	DEN(SS)	1589.00 [CPS]
4 Aug21,06	20:49:17	DEN(SS)	1.000 [GCC]
5 Aug21,06	18:25:01	RES(G)	Default [CPS]
6 Aug21,06	18:25:01	RES(G)	2.410 [GCC]
7 Aug21,06	20:50:24	RES(G)	Default [CPS]
8 Aug21,06	20:50:24	RES(G)	4.000 [INCH]
9 Aug21,06	20:48:42	CALIPER	Default [CPS]
10 Aug21,06	20:48:42	CALIPER	6.040 [INCH]
11 Aug21,06	20:48:42	DENSITYH	Default [CPS]
12 Aug21,06	20:48:42	DENSITYH	4.000 [INCH]
13 Aug21,06	20:50:44	CALIPERL	Default [CPS]
14 Aug21,06	20:50:44	CALIPERL	8.000 [INCH]
15 Aug21,06	20:50:44		

RECORDS 1 RECORDED BY J ELLIOTT REMARKS 1 NW SE QUARTER OF SECTION E-946878 N-5-9987			RECORDS 2
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS			

Century
GEOPHYSICAL CORP.

GAMMA-RES-DENSITY

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SHOB-09R

SPEED>
<-VOLUME
FEET

CALIPER
0 INCH 10

RES(SG)
50 OHM-M 150

RES(SG)
0 OHM-M 50

DEN(SS)
1 G/CC 3

G/CC

DEN(SS)
0 OHM-M 50

RES(SG)
50 OHM-M 150

0 INCH 10

CALIPER

0 INCH 10

</div

GAMMA
OPHYSICAL CORP.

ALIPEP
INCH

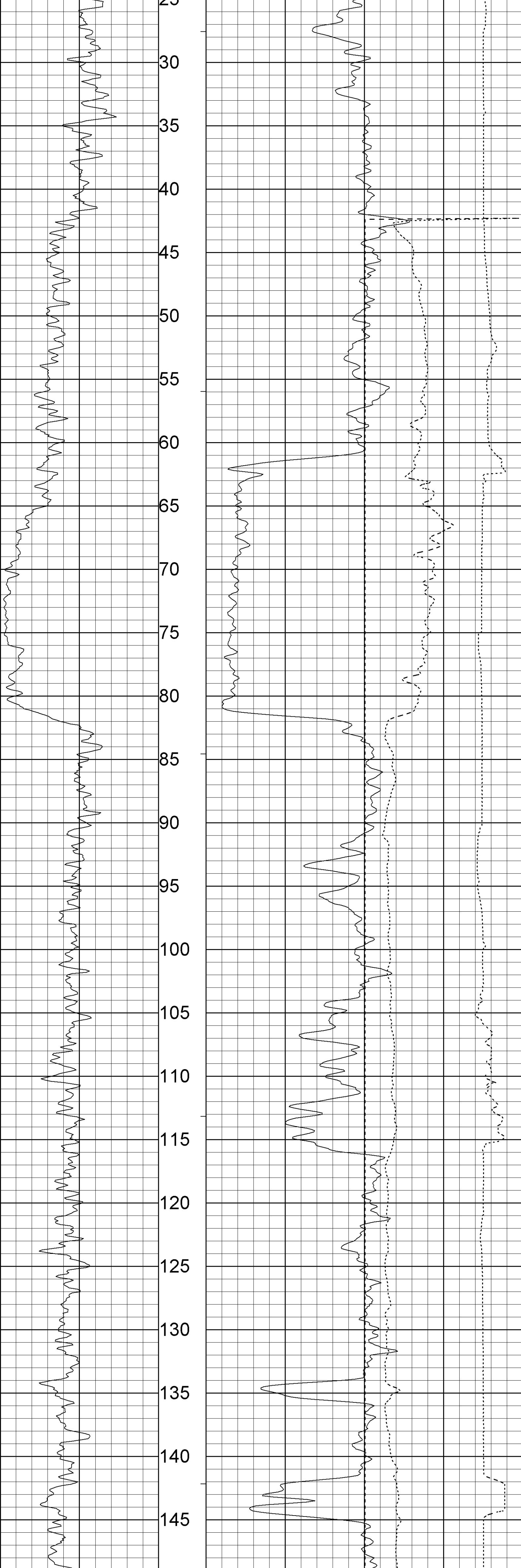
tiny.cc/mey-aeg

0 ES(S) HM-H

STATE	COUNTY	SECTION	SECTION NUMBER	WELL ID.	ELEVATION KB	ELEVATION DF
SOUTH DAKOTA	SOUTH HEART	15	139N	N/A	N/A	N/A
SOUTH DAKOTA	STARK	15	98W	N/A	N/A	N/A
ELEVATION DATUM : GL MEASURED FROM : GL						

DEN(SS)

NE E=650695 N=5191102 NAD 83
ES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



125

The figure consists of two side-by-side panels. Both panels have a vertical axis with horizontal grid lines labeled 130, 135, and 140. The left panel contains a single, highly oscillatory signal that stays mostly between the 130 and 140 marks. The right panel contains a signal that starts at a baseline, rises to a broad peak around 135, and then drops sharply to a noisy baseline around 130. A vertical dashed line is drawn at the end of the peak.

This ECG strip displays twelve leads: I, II, III, aVR, aVL, aVF, V1, V2, V3, V4, V5, and V6. The strips for leads I, II, III, aVR, aVL, aVF, V1, V2, V3, V4, and V5 are solid black lines. The strips for leads V6 and a dashed line for V7 are white with black outlines. The vertical axis on the left has markings for 145 and 150.

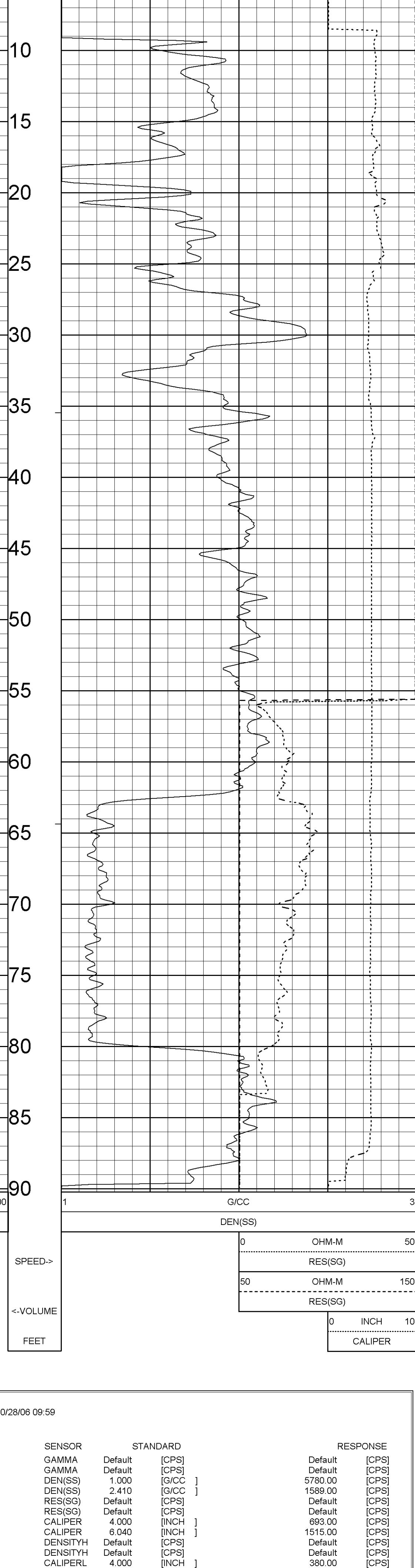
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GAMMA-RES-DENSITY

SHOB-11R

COMPANY	GOLDER ASSOCIATES	OTHER SERVICES:
WELL	SHOB-11R	N/A
FIELD	SOUTH HEART	N/A
COUNTY	STARK	N/A
STATE	NORTH DAKOTA	N/A
LOCATION	N/A	
SECTION	:17	
TOWNSHIP	:139N	
RANGE	:98W	
API NO.	N/A	
UNIQUE WELL ID.	N/A	
PERMANENT DATUM	GL	ELEVATION KB N/A
LOG MEASURED FROM	GL	ELEVATION DF N/A
DRL MEASURED FROM	GL	ELEVATION GL 2589
DATE	.102806	
DEPTH DRILLER	95	
BIT SIZE	5.0	
LOG TOP	:150	
LOG BOTTOM	:90.10	
CASING OD	N/A	
CASING BOTTOM	N/A	
CASING TYPE	N/A	
BOREHOLE FLUID	WATER	
RM TEMPERATURE	N/A	
MUD RES	0	
MUD WEIGHT		
WITNESSED BY	J.ELLIOTT	
RECORDED BY	B. MATAS	
REMARKS 1	SENE QUARTER OF SECTION	
REMARKS 2	E=647492 N=519096	
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS		



TOOL CALIBRATION SHOB-11R 10/28/06 09:59 TOOL 9033AA TM VERSION 3 SERIAL NUMBER 958					
DATE	TIME	SENSOR	STANDARD	RESPONSE	
1	Aug21,06 21:48:42	GAMMA	Default [CPS]	Default [CPS]	
	Aug21,06 20:48:42	GAMMA	Default [CPS]	Default [CPS]	
2	Aug21,06 20:49:17	DEN(SS)	1.000 [G/CC]	5780.00 [CPS]	
	Aug21,06 20:49:17	DEN(SS)	2.410 [G/CC]	1589.00 [CPS]	
3	Aug28,06 18:25:01	RES(SG)	Default [CPS]	Default [CPS]	
	Aug28,06 18:25:01	RES(SG)	Default [CPS]	Default [CPS]	
4	Aug21,06 20:50:24	CALIPER	4.000 [INCH]	693.00 [CPS]	
	Aug21,06 20:50:24	CALIPER	6.040 [INCH]	1515.00 [CPS]	
5	Aug21,06 20:48:42	DENSITYH	Default [CPS]	Default [CPS]	
	Aug21,06 20:48:42	DENSITYH	Default [CPS]	Default [CPS]	
6	Aug21,06 20:50:44	CALIPERL	4.000 [INCH]	380.00 [CPS]	
	Aug21,06 20:50:44	CALIPERL	8.000 [INCH]	1125.00 [CPS]	

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GAMMA-RES-DENSITY

SHOB-12R

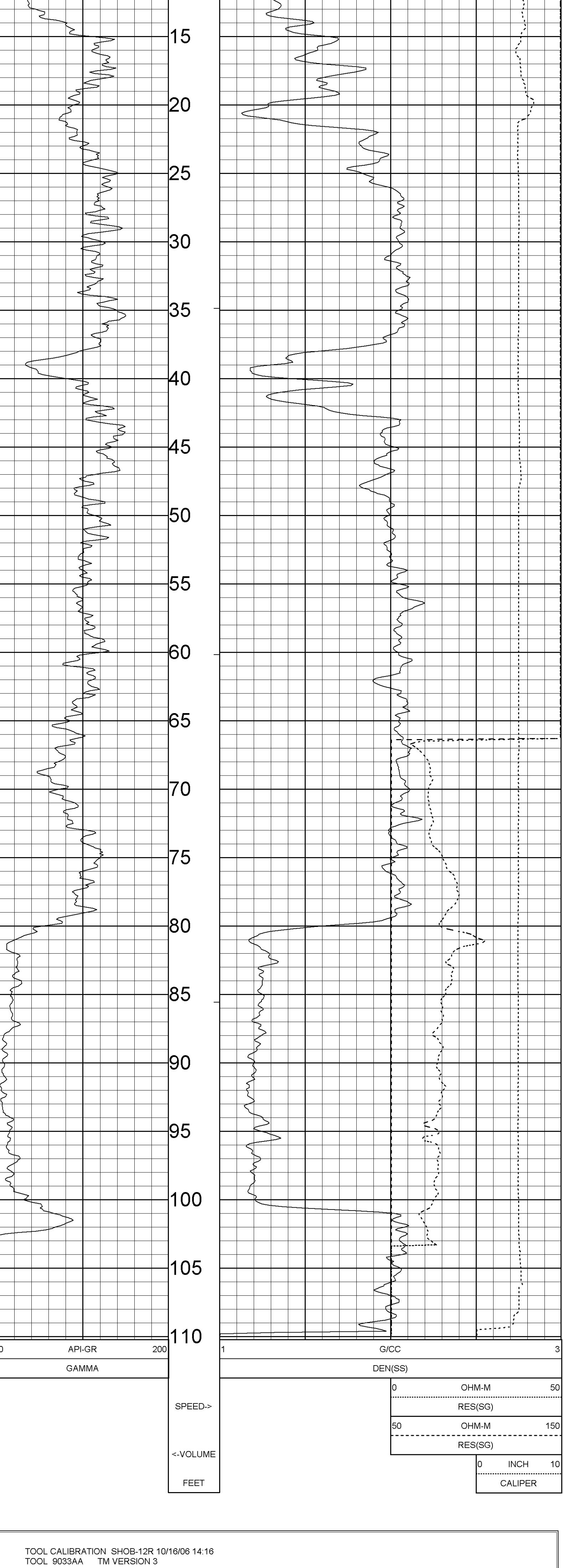
COMPANY	GOLDER ASSOCIATES
WELL	SHOB-12R
FIELD	SOUTH HEART
COUNTY	STARK
STATE	NORTH DAKOTA

LOCATION	N/A
SECTION	:16
TOWNSHIP	:36N
RANGE	98W
API NO.	N/A

UNIQUE WELL ID.	N/A
PERMANENT DATUM	GL
LOG MEASURED FROM	GL
DRI. MEASURED FROM	GL
DATE	10/16/06

ELEVATION KB N/A	[CPS]
ELEVATION DF N/A	[CPS]
ELEVATION GL 2586	[CPS]

BIT SIZE	.50
LOG TOP	:0.50
LOG BOTTOM	:10.10
CASING OD	N/A
CASING BOTTOM	N/A
CASING TYPE	N/A
BOREHOLE FLUID	WATER
RW TEMPERATURE	N/A
MUD RES	N/A
MUD WEIGHT	0
WITNESSED BY	D. LEPPERT
RECORDED BY	B. MATAS
REMARKS 1	SWIMM QUARTER OF SECTION
REMARKS 2	E=648296 N=5190618



TOOL CALIBRATION SHOB-12R 10/16/06 14:16

TOOL 9033AA TM VERSION 3

SERIAL NUMBER 958

DATE	TIME	SENSOR	STANDARD	RESPONSE
1 Aug21,06	20:48:42	GAMMA	Default [CPS]	[CPS]
2 Aug21,06	20:48:42	GAMMA	Default [CPS]	[CPS]
3 Aug21,06	20:49:17	DEN(SS)	1.000 [G/CC]	5780.00 [CPS]
4 Aug21,06	20:49:17	DEN(SS)	2.410 [G/CC]	1589.00 [CPS]
5 Aug28,06	18:25:01	RES(SG)	Default [CPS]	[CPS]
6 Aug28,06	18:25:01	RES(SG)	Default [CPS]	[CPS]
7 Aug21,06	20:50:24	CALIPER	4.000 [INCH]	693.00 [CPS]
8 Aug21,06	20:50:24	CALIPER	6.040 [INCH]	1515.00 [CPS]
9 Aug21,06	20:48:42	DENSITYH	Default [CPS]	[CPS]
10 Aug21,06	20:48:42	DENSITYH	Default [CPS]	[CPS]
11 Aug21,06	20:50:44	CALIPERL	4.000 [INCH]	380.00 [CPS]
12 Aug21,06	20:50:44	CALIPERL	8.000 [INCH]	1125.00 [CPS]

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GAMMA-RES-DENSITY

SHOB-13R

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COMPANY
WELL
FIELD
COUNTY
STATE

GOLDER ASSOCIATES
SHOB-13R
SOUTH HEART
STARK
NORTH DAKOTA

OTHER SERVICES:
N/A
N/A
N/A

LOCATION
SECTION
TOWNSHIP
RANGE
API NO.

N/A
.16
.139N
.98W
N/A

UNIQUE WELL ID.
PERMANENT DATUM
LOG MEASURED FROM GL
DRL MEASURED FROM GL

N/A
GL
ELEVATION KB N/A
ELEVATION DF N/A
ELEVATION GL 2579

DATE
DEPTH DRILLER
BIT SIZE
LOG TOP
LOG BOTTOM
CASING OD
CASING BOTTOM
CASING TYPE
BOREHOLE FLUID
RM TEMPERATURE
MUD RES
MUD WEIGHT

:10/28/06
.60
5.0
.1:40
.60.40
N/A
N/A
N/A
N/A
N/A
0
0

CALIPER
0 INCH 10

RES(SG)	150
OHM-M	50
RES(SG)	50
OHM-M	150

DEN(SS) G/CC 3

0 OHM-M 3

RES(SG) 3

0 OHM-M 3

RES(SG) 3

0 INCH 10

CALIPER

FEET
<-VOLUME

SPEED->

1 G/CC

DEN(SS)

0 OHM-M

RES(SG)

50 OHM-M

RES(SG)

0 INCH

10 CALIPER

15

20

25

30

35

40

45

50

55

60

1 G/CC

DEN(SS)

0 OHM-M

RES(SG)

50 OHM-M

RES(SG)

0 INCH

10 CALIPER

TOOL CALIBRATION SHOB-13R 10/28/06 12:50
TOOL 9033AA TM VERSION 3
SERIAL NUMBER 958

DATE TIME SENSOR STANDARD RESPONSE

1 Aug21,06 20:48:42 GAMMA Default [CPS] Default [CPS]

Aug21,06 20:48:42 GAMMA Default [CPS] Default [CPS]

2 Aug21,06 20:49:17 DEN(SS) 1.000 [G/CC] 5780.00 [CPS]

Aug21,06 20:49:17 DEN(SS) 2.410 [G/CC] 1589.00 [CPS]

3 Aug28,06 18:25:01 RES(SG) Default [CPS] Default [CPS]

Aug28,06 18:25:01 RES(SG) Default [CPS] Default [CPS]

4 Aug21,06 20:50:24 CALIPER 4.000 [INCH] 693.00 [CPS]

Aug21,06 20:50:24 CALIPER 6.040 [INCH] 1515.00 [CPS]

5 Aug21,06 20:48:42 DENSITYH Default [CPS] Default [CPS]

Aug21,06 20:48:42 DENSITYH Default [CPS] Default [CPS]

6 Aug21,06 20:50:44 CALIPERL 4.000 [INCH] 380.00 [CPS]

Aug21,06 20:50:44 CALIPERL 8.000 [INCH] 1125.00 [CPS]

WITNESSED BY J. ELLIOTT

RECORDED BY B. MATAS

REMARKS 1 SENE QUARTER OF SECTION

REMARKS 2 I=649094 N=5190648

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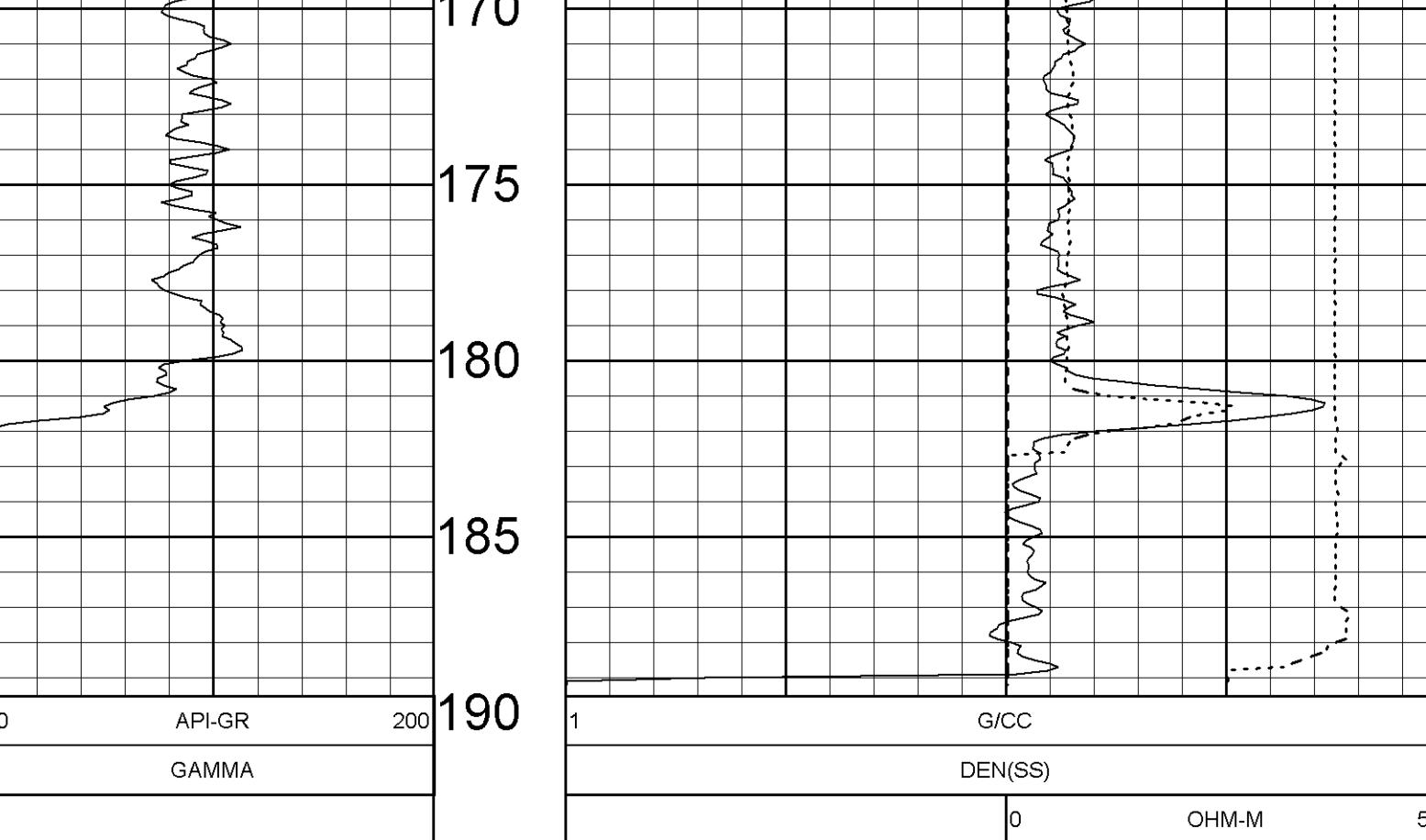
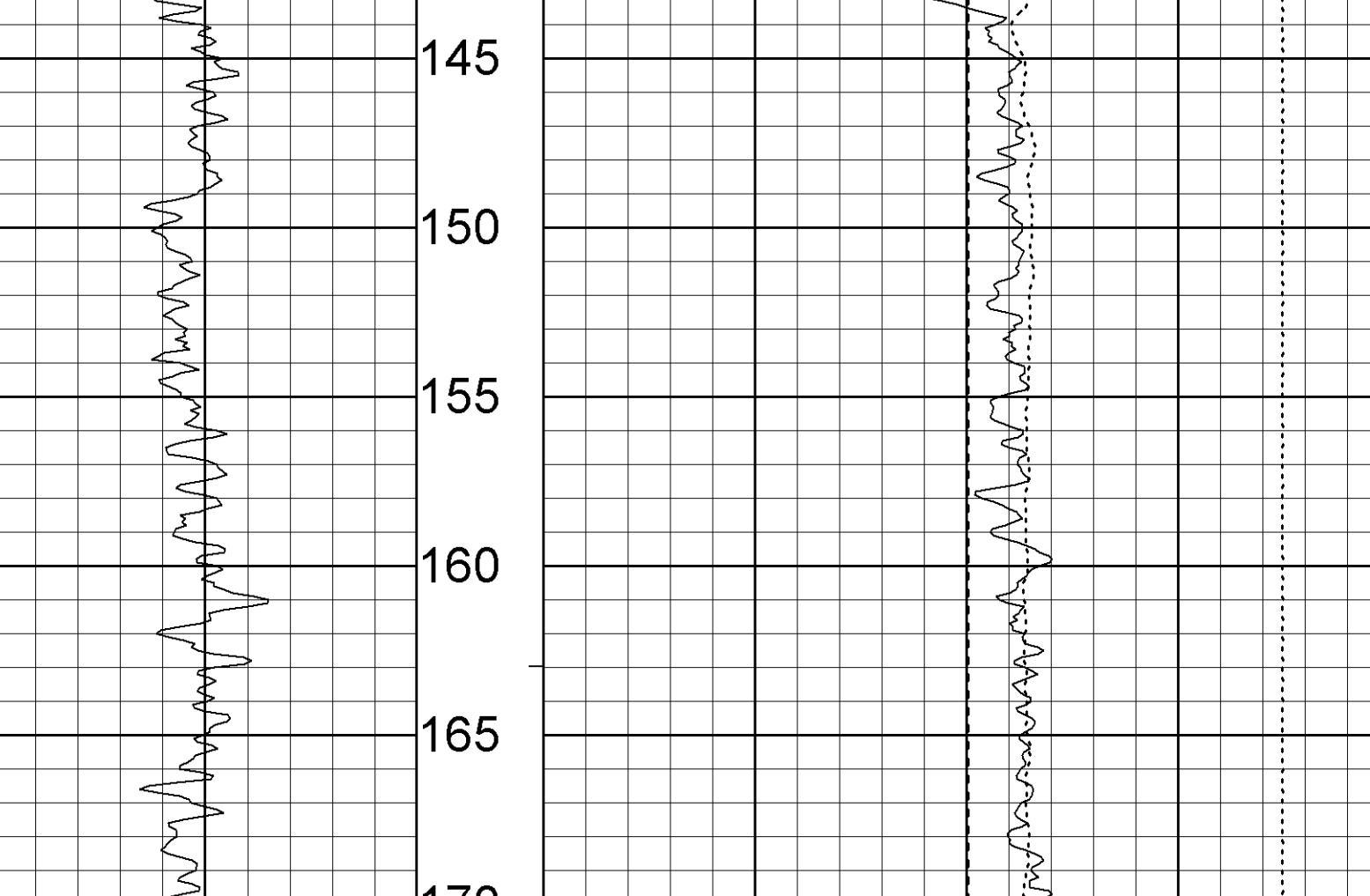
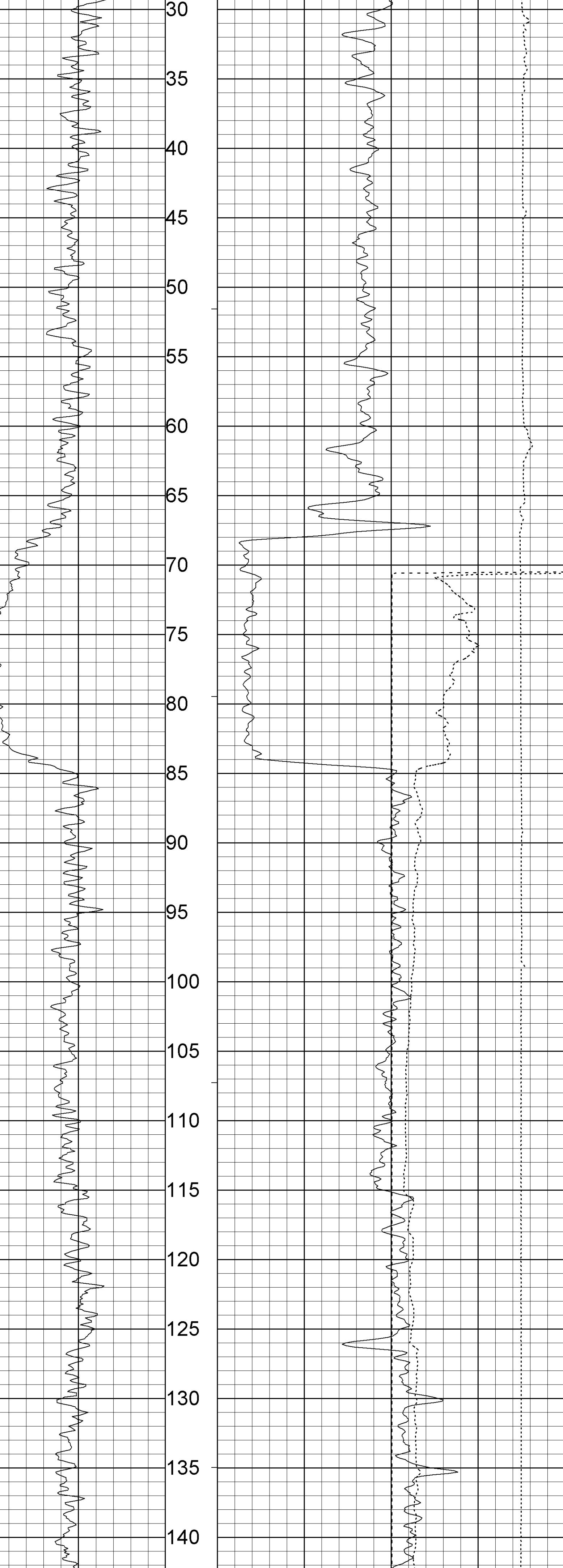
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GAMMA-RES-DENSITY

SHOB-14R

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COMPANY	GOLDER ASSOCIATES	OTHER SERVICES
WELL	SHOB-14R	N/A
FIELD	SOUTH HEART	N/A
COUNTY	STARK	N/A
STATE	NORTH DAKOTA	N/A
LOCATION	N/A	
SECTION	:15	
TOWNSHIP	:139N	
RANGE	9EW	
API NO.	N/A	
UNIQUE WELL ID.	N/A	
PERMANENT DATUM	GL	ELEVATION KB N/A
LOG MEASURED FROM	GL	ELEVATION DF N/A
DRL. MEASURED FROM	GL	ELEVATION GL 2211
DATE	10/12/06	
DEPTH DRILLER	:190	
BIT SIZE	5.0	
LOG TOP	:1.50	
LOG BOTTOM	:189.40	
CASING OD	N/A	
CASING BOTTOM	N/A	
CASING TYPE	N/A	
BOREHOLE FLUID	WATER	
RTM TEMPERATURE	N/A	
MUD RES	N/A	
MUD WEIGHT	0	
WITNESSED BY	D. LEPPERT	
RECORDED BY	B. MATAS	
REMARKS 1	N/A	
REMARKS 2	N=5190662 E=640769	



TOOL CALIBRATION SHOB-14R 10/12/06 17:08					
TOOL 9033AA TM VERSION 3					
SERIAL NUMBER 958					
DATE	TIME	SENSOR	STANDARD	RESPONSE	
1 Aug21,06	21:48:42	GAMMA	Default [CPS]	Default [CPS]	
Aug21,06	20:48:42	GAMMA	Default [CPS]	Default [CPS]	
2 Aug21,06	20:49:17	DEN(SS)	1.000 [GCC]	5780.00 [CPS]	
Aug21,06	20:49:17	DEN(SS)	2.410 [GCC]	1569.00 [CPS]	
3 Aug28,06	18:25:01	RES(SG)	Default [CPS]	Default [CPS]	
Aug28,06	18:25:01	RES(SG)	Default [CPS]	Default [CPS]	
4 Aug21,06	20:50:24	CALIPER	4.000 [INCH]	693.00 [CPS]	
Aug21,06	20:50:24	CALIPER	6.040 [INCH]	1515.00 [CPS]	
5 Aug21,06	20:48:42	DENSITYH	Default [CPS]	Default [CPS]	
Aug21,06	20:48:42	DENSITYH	Default [CPS]	Default [CPS]	
6 Aug21,06	20:50:44	CALIPERL	4.000 [INCH]	380.00 [CPS]	
Aug21,06	20:50:44	CALIPERL	8.000 [INCH]	1125.00 [CPS]	

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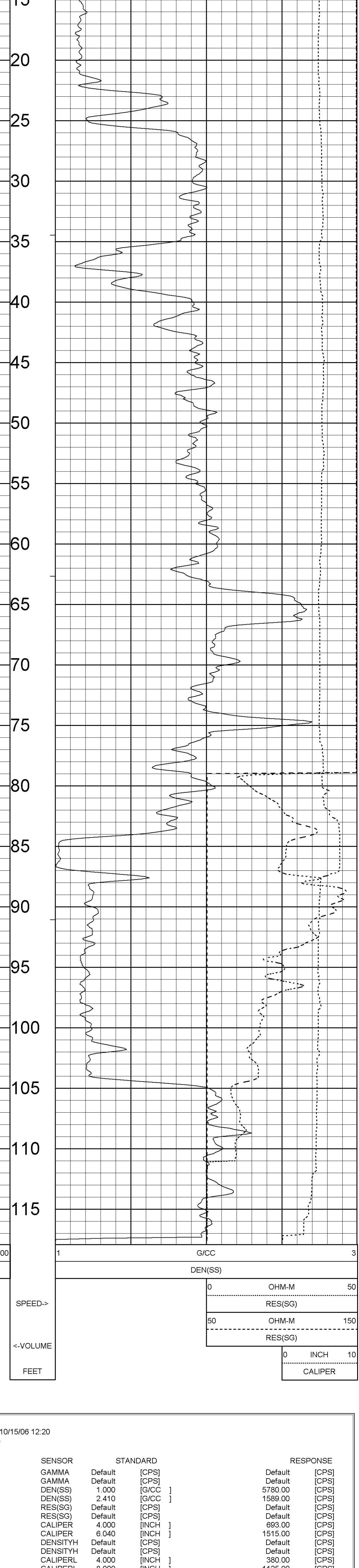
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GAMMA-RES-DENSITY

SHOB-15C

COMPANY	GOLDER ASSOCIATES	OTHER SERVICES:
WELL	SHOB-15C	N/A
FIELD	SOUTH HEART	N/A
COUNTY	STARK	N/A
STATE	NORTH DAKOTA	N/A
LOCATION	N/A	
SECTION	:15	
TOWNSHIP	:139N	
RANGE	98W	
API NO.	N/A	
UNIQUE WELL ID.	N/A	
PERMANENT DATUM	GL	
LOG MEASURED FROM	GL	
DRL MEASURED FROM	GL	

DATE	10/15/06	ELEVATION KB N/A
DEPTH DRILLER	:118	ELEVATION DF N/A
BIT SIZE	4.88	ELEVATION GL-2451



TOOL CALIBRATION SHOB-15C 10/15/06 12:20		
TOOL 9033AA TM VERSION 3		
SERIAL NUMBER 958		
DATE	TIME	SENSOR
1 Aug21,06	21:48:42	GAMMA
Aug21,06	20:48:42	GAMMA
2 Aug21,06	20:49:17	DEN(SS)
Aug21,06	20:49:17	DEN(SS)
3 Aug28,06	18:25:01	RES(SG)
Aug28,06	18:25:01	RES(SG)
4 Aug21,06	20:50:24	CALIPER
Aug21,06	20:50:24	CALIPER
5 Aug21,06	20:48:42	DENSITYH
Aug21,06	20:48:42	DENSITYH
6 Aug21,06	20:50:44	CALIPERL
Aug21,06	20:50:44	CALIPERL

DATE	TIME	SENSOR	STANDARD	RESPONSE
1 Aug21,06	21:48:42	GAMMA	Default [CPS]	[CPS]
Aug21,06	20:48:42	GAMMA	Default [CPS]	[CPS]
2 Aug21,06	20:49:17	DEN(SS)	1.000 [G/CC]	5780.00 [CPS]
Aug21,06	20:49:17	DEN(SS)	2.410 [G/CC]	1589.00 [CPS]
3 Aug28,06	18:25:01	RES(SG)	Default [CPS]	[CPS]
Aug28,06	18:25:01	RES(SG)	Default [CPS]	[CPS]
4 Aug21,06	20:50:24	CALIPER	4.000 [INCH]	693.00 [CPS]
Aug21,06	20:50:24	CALIPER	6.040 [INCH]	1515.00 [CPS]
5 Aug21,06	20:48:42	DENSITYH	Default [CPS]	[CPS]
Aug21,06	20:48:42	DENSITYH	Default [CPS]	[CPS]
6 Aug21,06	20:50:44	CALIPERL	4.000 [INCH]	380.00 [CPS]
Aug21,06	20:50:44	CALIPERL	8.000 [INCH]	1125.00 [CPS]

REMARKS 1	D. LEPPERT
REMARKS 2	B. MATAS
REMARKS 3	E-649909 N=5190680

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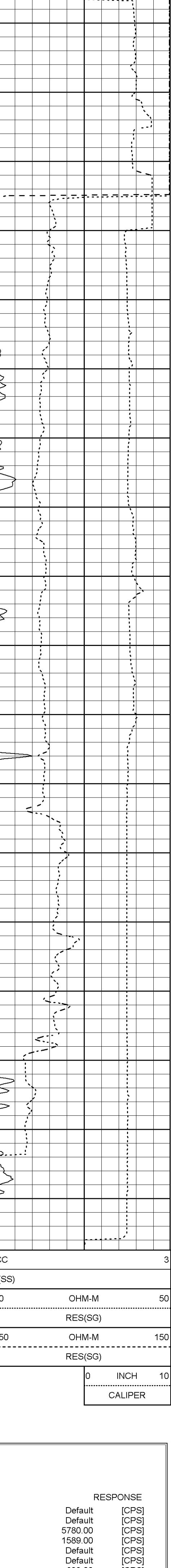
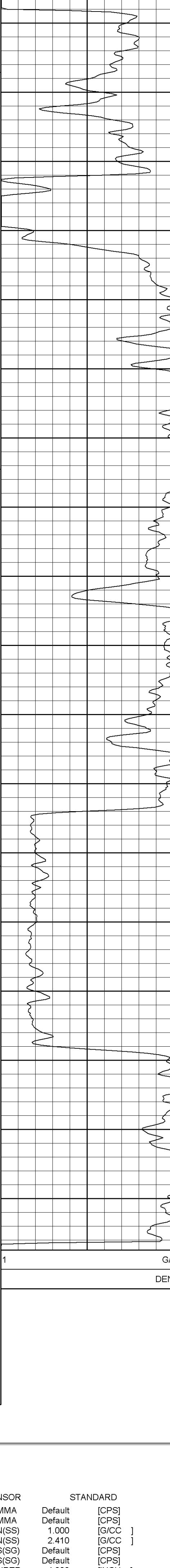
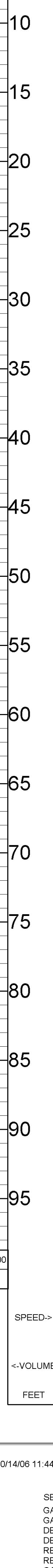
GAMMA-RES-DENSITY

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SHOB-16R

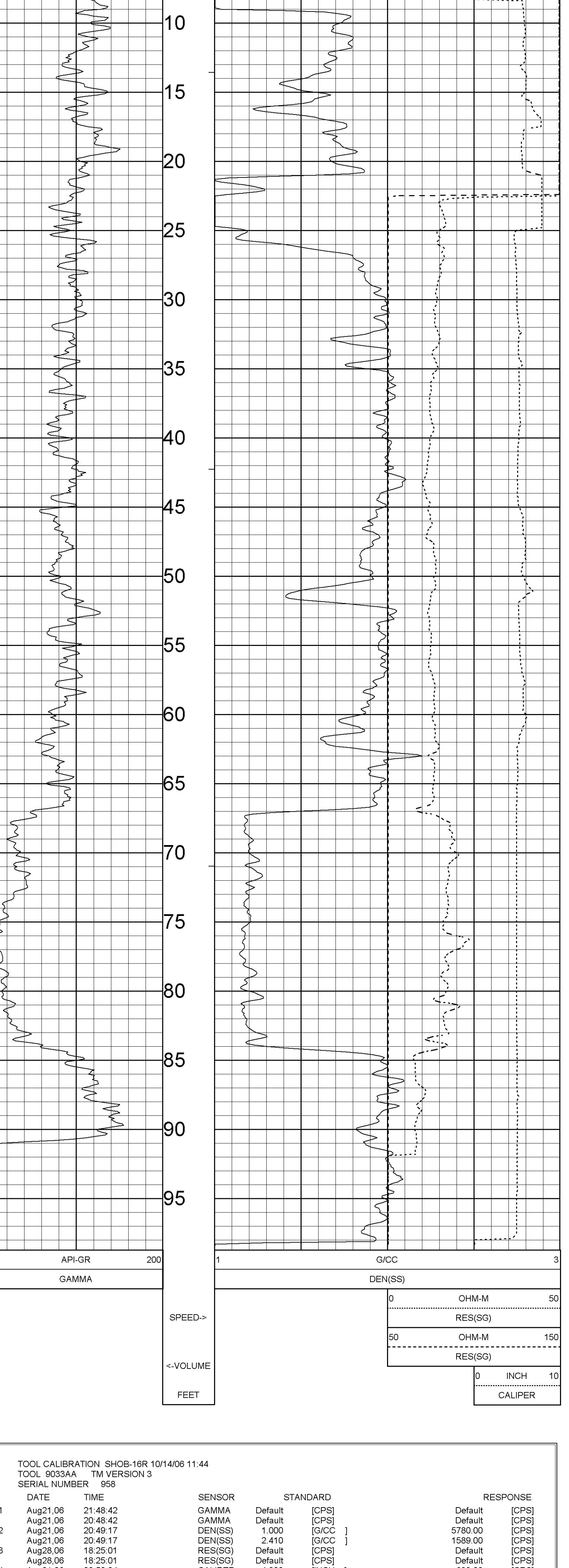
COMPANY	GOLDER ASSOCIATES	OTHER SERVICES:
WELL	SHOB-16R	N/A
FIELD	SOUTH HEART	N/A
COUNTY	STARK	N/A
STATE	NORTH DAKOTA	N/A

LOCATION	N/A	PERMANENT DATUM	GL	ELEVATION KB	N/A	CALIPER
SECTION	.15	LOG MEASURED FROM	GL	ELEVATION DF	N/A	0 INCH 10
TOWNSHIP	.139N	DRI MEASURED FROM	GL	ELEVATION GL	2652	RES(SG) OHM-M 150
RANGE	98W					RES(SG) OHM-M 50
API NO.	N/A					
UNIQUE WELL ID.	N/A					



DATE	TIME	SENSOR	STANDARD	RESPONSE
1 Aug21,06	21:48:42	GAMMA	Default [CPS]	[CPS]
Aug21,06	20:48:42	GAMMA	Default [CPS]	[CPS]
2 Aug21,06	20:49:17	DEN(SS)	1.000 [GCC]	5780.00 [CPS]
Aug21,06	20:49:17	DEN(SS)	2.410 [GCC]	1589.00 [CPS]
3 Aug28,06	18:25:01	RES(SG)	Default [CPS]	Default [CPS]
Aug28,06	18:25:01	RES(SG)	Default [CPS]	Default [CPS]
4 Aug21,06	20:50:24	CALIPER	4.000 [INCH]	693.00 [CPS]
Aug21,06	20:50:24	CALIPER	6.040 [INCH]	1515.00 [CPS]
5 Aug21,06	20:48:42	DENSITYH	Default [CPS]	Default [CPS]
Aug21,06	20:48:42	DENSITYH	Default [CPS]	Default [CPS]
6 Aug21,06	20:50:44	CALIPERL	4.000 [INCH]	380.00 [CPS]
Aug21,06	20:50:44	CALIPERL	8.000 [INCH]	1125.00 [CPS]

DATE	TIME	SENSOR	STANDARD	RESPONSE
1 Aug21,06	21:48:42	GAMMA	Default [CPS]	[CPS]
Aug21,06	20:48:42	GAMMA	Default [CPS]	[CPS]
2 Aug21,06	20:49:17	DEN(SS)	1.000 [GCC]	5780.00 [CPS]
Aug21,06	20:49:17	DEN(SS)	2.410 [GCC]	1589.00 [CPS]
3 Aug28,06	18:25:01	RES(SG)	Default [CPS]	Default [CPS]
Aug28,06	18:25:01	RES(SG)	Default [CPS]	Default [CPS]
4 Aug21,06	20:50:24	CALIPER	4.000 [INCH]	693.00 [CPS]
Aug21,06	20:50:24	CALIPER	6.040 [INCH]	1515.00 [CPS]
5 Aug21,06	20:48:42	DENSITYH	Default [CPS]	Default [CPS]
Aug21,06	20:48:42	DENSITYH	Default [CPS]	Default [CPS]
6 Aug21,06	20:50:44	CALIPERL	4.000 [INCH]	380.00 [CPS]
Aug21,06	20:50:44	CALIPERL	8.000 [INCH]	1125.00 [CPS]



DATE	TIME	SENSOR	STANDARD	RESPONSE
1 Aug21,06	21:48:42	GAMMA	Default [CPS]	[CPS]
Aug21,06	20:48:42	GAMMA	Default [CPS]	[CPS]
2 Aug21,06	20:49:17	DEN(SS)	1.000 [GCC]	5780.00 [CPS]
Aug21,06	20:49:17	DEN(SS)	2.410 [GCC]	1589.00 [CPS]
3 Aug28,06	18:25:01	RES(SG)	Default [CPS]	Default [CPS]
Aug28,06	18:25:01	RES(SG)	Default [CPS]	Default [CPS]
4 Aug21,06	20:50:24	CALIPER	4.000 [INCH]	693.00 [CPS]
Aug21,06	20:50:24	CALIPER	6.040 [INCH]	1515.00 [CPS]
5 Aug21,06	20:48:42	DENSITYH	Default [CPS]	Default [CPS]
Aug21,06	20:48:42	DENSITYH	Default [CPS]	Default [CPS]
6 Aug21,06	20:50:44	CALIPERL	4.000 [INCH]	380.00 [CPS]
Aug21,06	20:50:44	CALIPERL	8.000 [INCH]	1125.00 [CPS]

DATE	TIME	SENSOR	STANDARD	RESPONSE
1 Aug21,06	21:48:42	GAMMA	Default [CPS]	[CPS]
Aug21,06	20:48:42	GAMMA	Default [CPS]	[CPS]
2 Aug21,06	20:49:17	DEN(SS)	1.000 [GCC]	5780.00 [CPS]
Aug21,06	20:49:17	DEN(SS)	2.410 [GCC]	1589.00 [CPS]
3 Aug28,06	18:25:01	RES(SG)	Default [CPS]	Default [CPS]
Aug28,06	18:25:01	RES(SG)	Default [CPS]	Default [CPS]
4 Aug21,06	20:50:24	CALIPER	4.000 [INCH]	693.00 [CPS]
Aug21,06	20:50:24	CALIPER	6.040 [INCH]	1515.00 [CPS]
5 Aug21,06	20:48:42	DENSITYH	Default [CPS]	Default [CPS]
Aug21,06	20:48:42	DENSITYH	Default [CPS]	Default [CPS]
6 Aug21,06	20:50:44	CALIPERL	4.000 [INCH]	380.00 [CPS]
Aug21,06	20:50:44	CALIPERL	8.000 [INCH]	1125.00 [CPS]

Century

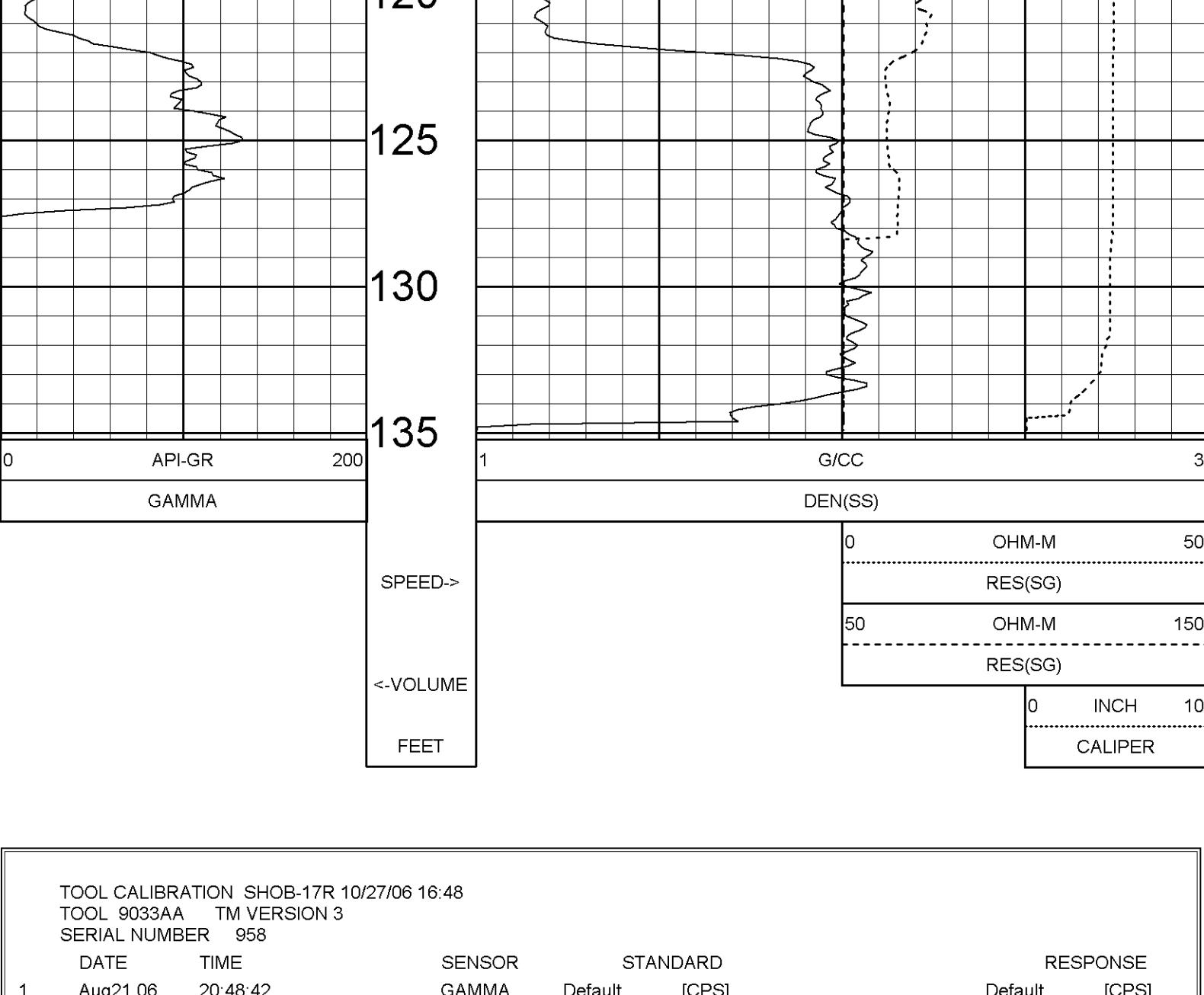
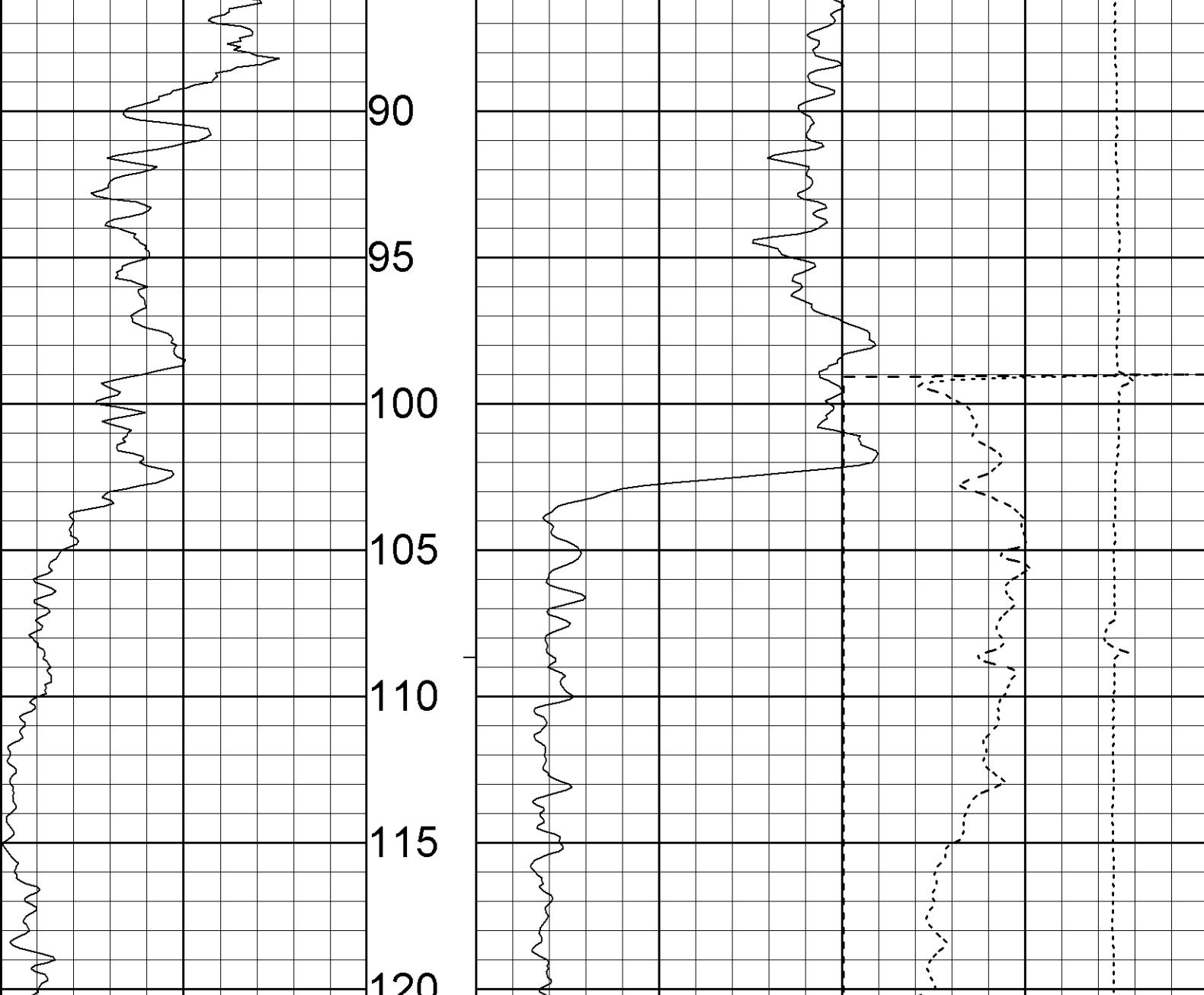
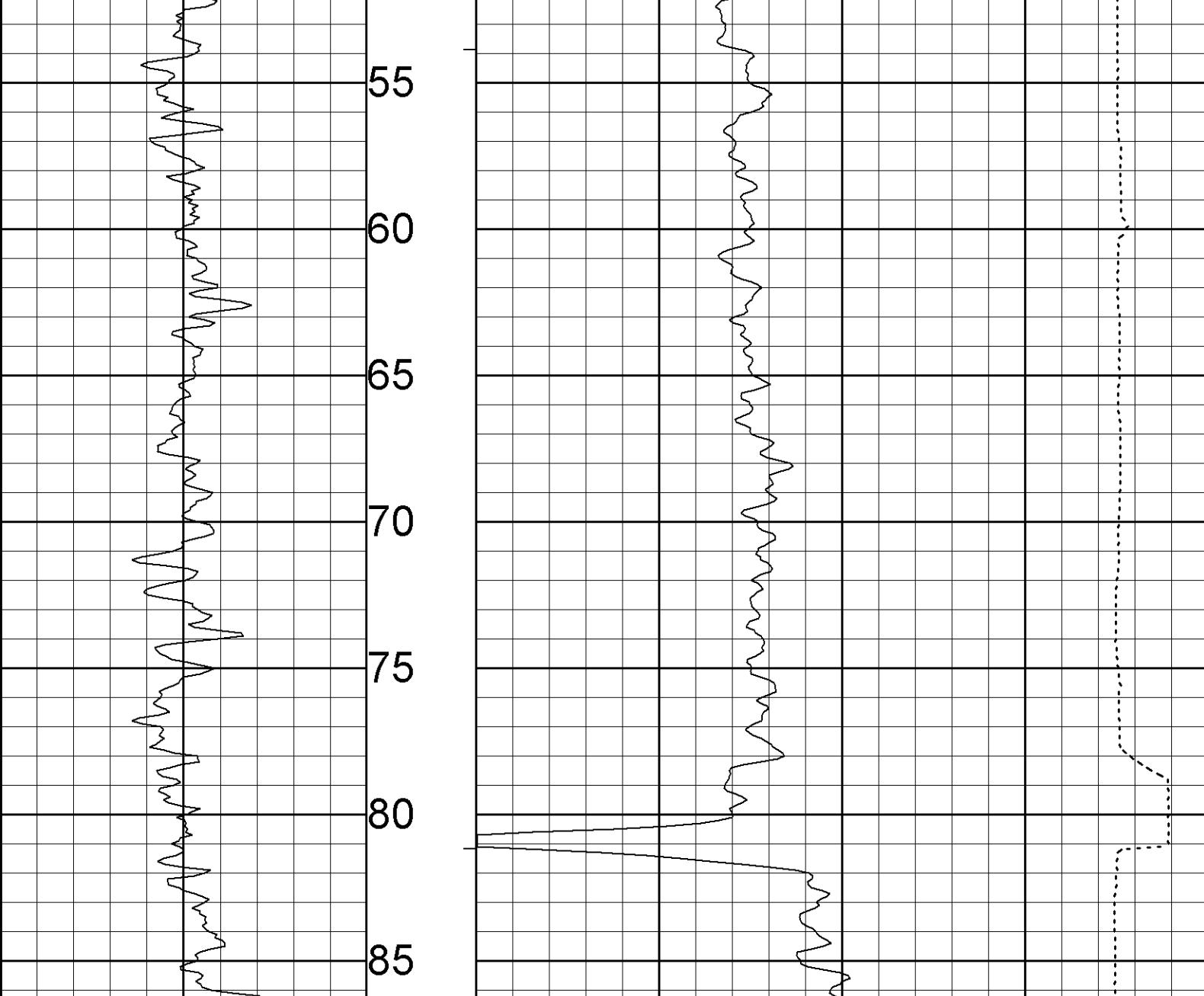
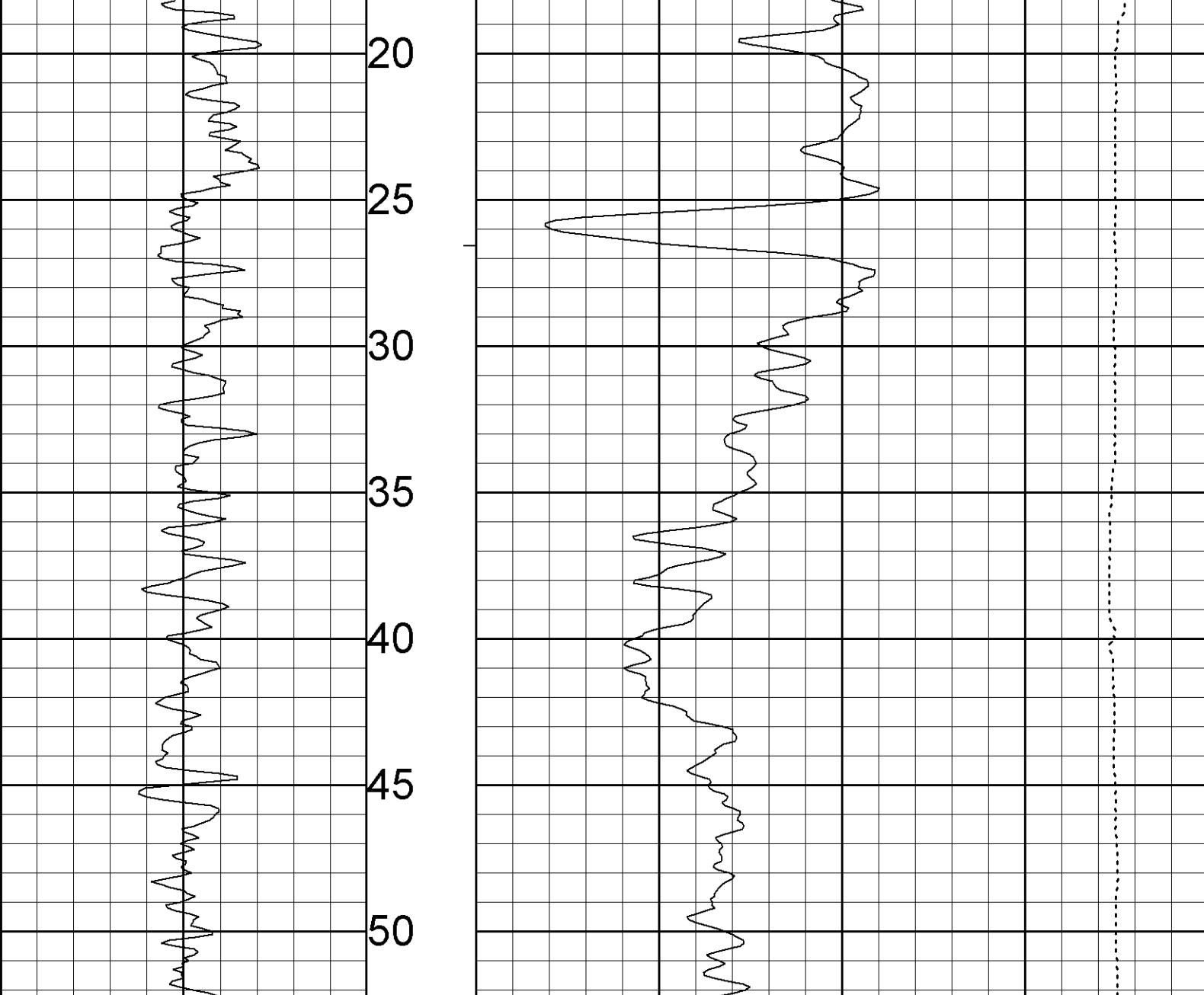
GEOPHYSICAL CORP.

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GAMMA-RES-DENSITY

SHOB-17R

COMPANY	GOLDER ASSOCIATES	OTHER SERVICES:
WELL	SHOB-17R	N/A
FIELD	SOUTH HEART	N/A
COUNTY	STARK	N/A
STATE	NORTH DAKOTA	
LOCATION	N/A	
SECTION	:17	
TOWNSHIP	:13N	
RANGE	:98W	
API NO.	N/A	
UNIQUE WELL ID.	N/A	
PERMANENT DATUM	[GL]	ELEVATION KB N/A
LOG MEASURED FROM	[GL]	ELEVATION DF N/A
DRL MEASURED FROM	[GL]	ELEVATION GL 2587
DATE	:1027/06	
DEPTH DRILLER	:135	
BIT SIZE	5.0	
LOG TOP	:140	
LOG BOTTOM	:135.10	
CASING OD	N/A	
CASING BOTTOM	N/A	
BOREHOLE FLUID	WATER	
RM TEMPERATURE	N/A	
MUD RES	N/A	
MUD WEIGHT	0	
WITNESSED BY	J ELLIOTT	
RECORDED BY	B MATAS	
REMARKS 1	SW/SE QUARTER OF SECTION	
REMARKS 2	I#646703 N=5190171	



DATE	TIME	SENSOR	STANDARD	RESPONSE
1 Aug21,06	20:48:42	GAMMA	Default [CPS]	Default [CPS]
Aug21,06	20:48:42	GAMMA	Default [CPS]	Default [CPS]
2 Aug21,06	20:49:17	DENS(SS)	1.000 [G/CC]	5780.00 [CPS]
Aug21,06	20:49:17	DENS(SS)	2.410 [G/CC]	1589.00 [CPS]
3 Aug28,06	18:25:01	RES(SG)	Default [CPS]	Default [CPS]
Aug28,06	18:25:01	RES(SG)	Default [CPS]	Default [CPS]
4 Aug21,06	20:50:24	CALIPER	4.000 [INCH]	693.00 [CPS]
Aug21,06	20:50:24	CALIPER	6.040 [INCH]	1515.00 [CPS]
5 Aug21,06	20:48:42	DENSITYH	Default [CPS]	Default [CPS]
Aug21,06	20:48:42	DENSITYH	Default [CPS]	Default [CPS]
6 Aug21,06	20:50:44	CALIPERL	4.000 [INCH]	380.00 [CPS]
Aug21,06	20:50:44	CALIPERL	8.000 [INCH]	1125.00 [CPS]

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GAMMA-RES-DENSITY

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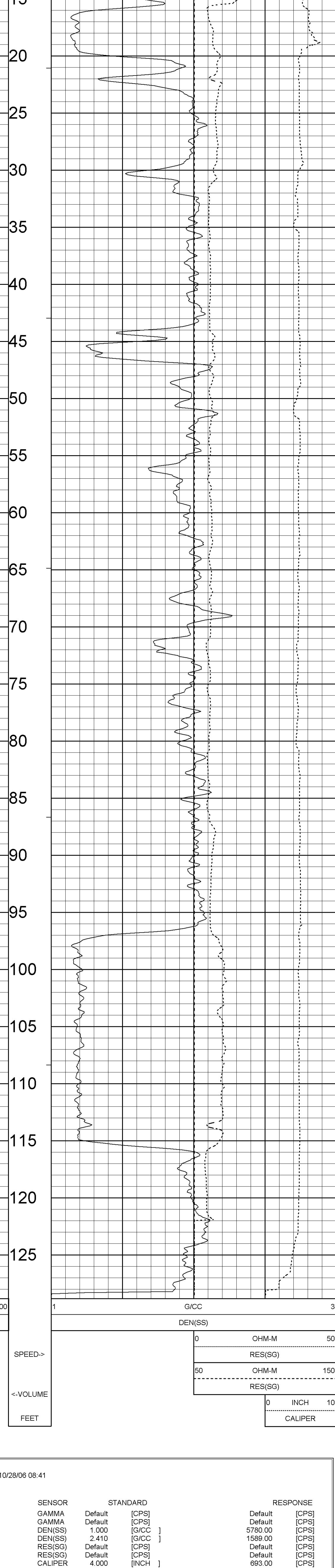
SHOB-18R

COMPANY	GOLDER ASSOCIATES
WELL	SHOB-18R
FIELD	SOUTH HEART
COUNTY	STARK
STATE	NORTH DAKOTA
LOCATION	N/A
SECTION	:17
TOWNSHIP	:139N
RANGE	:98W
API NO.	N/A
UNIQUE WELL ID.	N/A

OTHER SERVICES:
N/A
N/A
N/A

PERMANENT DATUM	:GL
LOG MEASURED FROM	:GL
DRL MEASURED FROM	:GL
DATE	:10/23/06
DEPTH DRILLER	:130
BIT SIZE	:5.0
LOG TOP	:140
LOG BOTTOM	:128.70
CASING OD	N/A
CASING BOTTOM	N/A
CASING TYPE	N/A
BOREHOLE FLUID	WATER
RIM TEMPERATURE	N/A
MUD RES	N/A
MUD WEIGHT	:0
WITNESSED BY	J. ELLIOTT
RECORDED BY	B. MATAS
REMARKS 1	SEIS/QUARTER OF SECTION
REMARKS 2	E=647106 N=5190185

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TOOL CALIBRATION SHOB-18R 10/28/06 08:41

TOOL 9033AA TM VERSION 3

SERIAL NUMBER 958

	DATE	TIME	SENSOR	STANDARD	RESPONSE
1	Aug21,06	20:48:42	GAMMA	Default [CPS]	Default [CPS]
	Aug21,06	20:48:42	GAMMA	Default [CPS]	Default [CPS]
2	Aug21,06	20:49:17	DEN(SS)	1.000 [G/CC]	5780.00 [CPS]
	Aug21,06	20:49:17	DEN(SS)	2.410 [G/CC]	1589.00 [CPS]
3	Aug28,06	18:25:01	RES(SG)	Default [CPS]	Default [CPS]
	Aug28,06	18:25:01	RES(SG)	Default [CPS]	Default [CPS]
4	Aug21,06	20:50:24	CALIPER	4.000 [INCH]	693.00 [CPS]
	Aug21,06	20:50:24	CALIPER	6.040 [INCH]	1515.00 [CPS]
5	Aug21,06	20:48:42	DENSITYH	Default [CPS]	Default [CPS]
	Aug21,06	20:48:42	DENSITYH	Default [CPS]	Default [CPS]
6	Aug21,06	20:50:44	CALIPERL	4.000 [INCH]	380.00 [CPS]
	Aug21,06	20:50:44	CALIPERL	8.000 [INCH]	1125.00 [CPS]

SHOB-19R

GAMMA-RES-DENSITY

COMPANY
WELL
FIELD
COUNTY
STATE

GOLDER ASSOCIATES
SHOB-19R
SOUTH HEART
STARK
NORTH DAKOTA

OTHER SERVICES:
N/A
N/A
N/A

LOCATION
SECTION
TOWNSHIP
RANGE
API NO.
UNIQUE WELL ID.

N/A
.16
.139N
.98W
N/A
N/A

ELEVATION KB N/A
ELEVATION DF N/A
ELEVATION GL 2647

FEET
<-VOLUME
SPEED->

CALIPER
0 INCH 10

RES(SG)		
50	OHM-M	150
RES(SG)		
0	OHM-M	50

DEN(SS)

3

1

G/CC

5

10

15

20

25

30

35

40

45

50

55

60

65

70

0

API-GR

200

GAMMA

5

10

15

20

25

30

35

40

45

50

55

60

65

70

0

API-GR

200

GAMMA

5

10

15

20

25

30

35

40

45

50

55

60

65

70

0

API-GR

200

GAMMA

5

10

15

20

25

30

35

40

45

50

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65

70

0

API-GR

200

GAMMA

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10

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35

40

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70

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API-GR

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GAMMA

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15

20

25

30

35

40

45

50

55

60

65

70

0

API-GR

200

GAMMA

5

10

15

20

25

30

35

40

45

50

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65

70

0

API-GR

200

GAMMA

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10

15

20

25

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35

40

45

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70

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API-GR

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GAMMA

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15

20

25

30

35

40

45

50

55

60

65

70

0

API-GR

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GAMMA

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15

20

25

30

35

40

45

50

55

60

65

70

0

API-GR

200

GAMMA

5

10

15

20

25

SHOB-20R

GAMMA-RES-DENSITY

COMPANY	GOLDER ASSOCIATES	OTHER SERVICES:
WELL	SHOB-20R	N/A
FIELD	SOUTH HEART	N/A
COUNTY	STARK	N/A

STATE	NORTH DAKOTA	N/A
LOCATION	N/A	
SECTION	:16	
TOWNSHIP	:139N	
RANGE	98W	
API NO.	N/A	
UNIQUE WELL ID.	N/A	

PERMANENT DATUM	GL	ELEVATION KB N/A
LOG MEASURED FROM	GL	ELEVATION DF N/A
DRL MEASURED FROM	GL	ELEVATION GL 2688

DATE	10/28/06
DEPTH DRILLER	.70

BIT SIZE	.5.0
LOG TOP	:1.50

CASING BOTTOM	:69.30
BOREHOLE FLUID	N/A

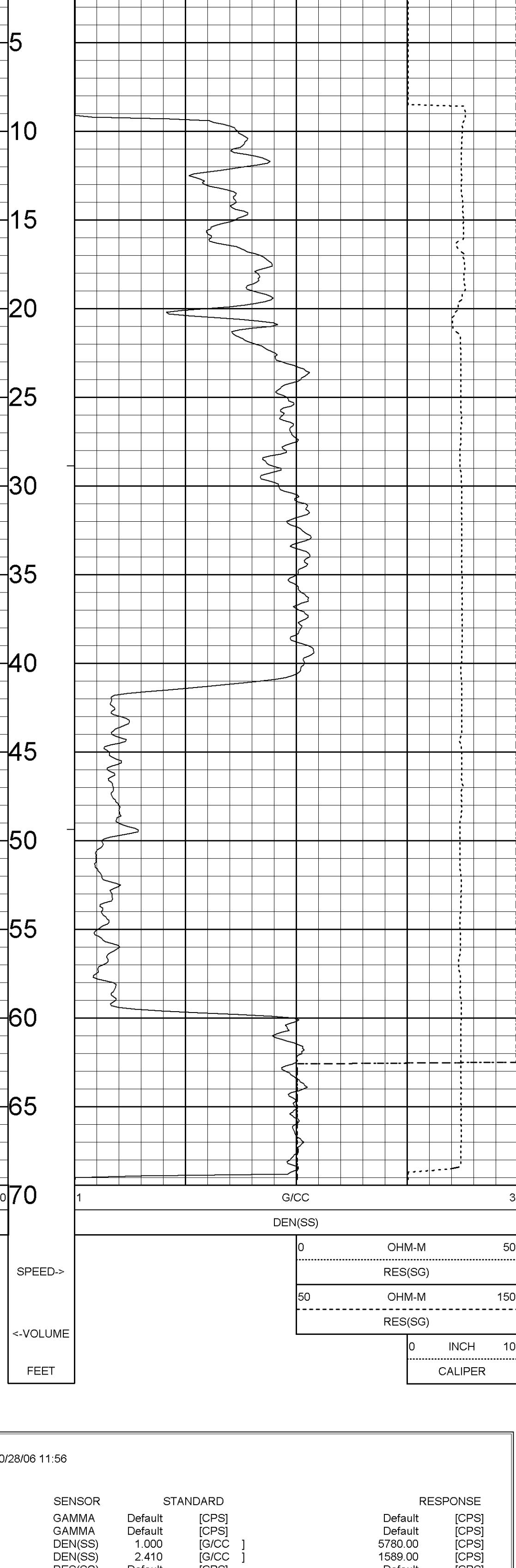
CASING TYPE	N/A
BOREHOLE FLUID	N/A

RM TEMPERATURE	N/A
MUD RES	N/A

MUD WEIGHT	0
WITNESSED BY	J. ELLIOTT

RECORDED BY	B. MATAS
REMARKS 1	SEISW QUARTER OF SECTION

REMARKS 2	I=648702 N=5190237
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TOOL CALIBRATION SHOB-20R 10/28/06 11:56

TOOL 9033AA TM VERSION 3

SERIAL NUMBER 958

DATE	TIME	SENSOR	STANDARD	RESPONSE
1 Aug21,06	20:48:42	GAMMA	Default [CPS]	[CPS]
Aug21,06	20:48:42	GAMMA	Default [CPS]	[CPS]
2 Aug21,06	20:49:17	DEN(SS)	1.000 [G/CC]	5780.00 [CPS]
Aug21,06	20:49:17	DEN(SS)	2.410 [G/CC]	1589.00 [CPS]
3 Aug28,06	18:25:01	RES(SG)	Default [CPS]	[CPS]
Aug28,06	18:25:01	RES(SG)	Default [CPS]	[CPS]
4 Aug21,06	20:50:24	CALIPER	4.000 [INCH]	693.00 [CPS]
Aug21,06	20:50:24	CALIPER	6.040 [INCH]	1515.00 [CPS]
5 Aug21,06	20:48:42	DENSITYH	Default [CPS]	[CPS]
Aug21,06	20:48:42	DENSITYH	Default [CPS]	[CPS]
6 Aug21,06	20:50:44	CALIPERL	4.000 [INCH]	380.00 [CPS]
Aug21,06	20:50:44	CALIPERL	8.000 [INCH]	1125.00 [CPS]

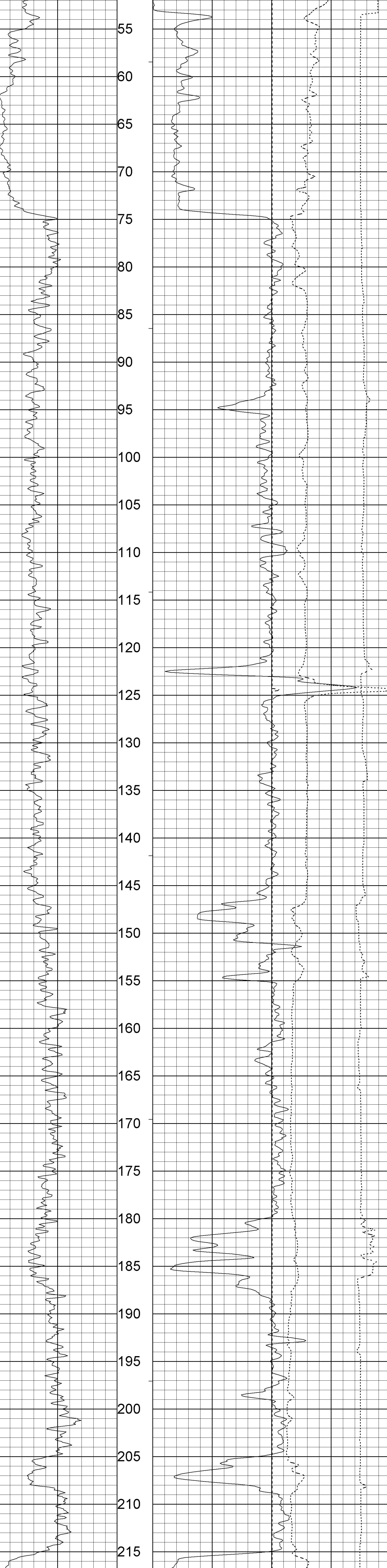
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GAMMA-RES-DENSITY
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SHOB-21R

COMPANY	SUBSIDIARIES	OTHER SERVICES:
WELL	SHOB-21R	
FIELD	SOUTH HART	
COUNTY	N/A	
STATE	STARK	
LOCATION	NORTH DAKOTA	
SECTION	N/A	
TOWNSHIP	16	
RANGE	139N	
API NO.	38W	
UNIQUE WELL ID.	N/A	
PERMANENT DATUM	GL	ELEVATION KB NIA
LOG MEASURED FROM	GL	ELEVATION OF NIA
DRI. MEASURED FROM	GL	ELEVATION GL 3064
DATE	10/15/06	
DEPTH DRILLER	250	
BIT SIZE	4.88	



TOOL CALIBRATION SHOB-21R 10/15/06 15:24			RESPONSE	
TOOL 9033AA TM VERSION 3			Default [CPS]	
SERIAL NUMBER 958			5780.00 [CPS]	
1	DATE	TIME	SENSOR	STANDARD
Aug21,06	21:48:42		GAMMA	Default [CPS]
Aug21,06	20:48:42		GAMMA	Default [CPS]
2			DEN(SS)	1.000 [G/CC]
Aug21,06	20:49:17		DEN(SS)	2.410 [G/CC]
3			RES(SS)	Default [CPS]
Aug28,06	18:25:01		RES(SS)	Default [CPS]
Aug28,06	18:25:01		RES(SS)	Default [CPS]
4			CALIPER	4.000 [INCH]
Aug21,06	20:50:24		CALIPER	6.040 [INCH]
5			DENSITYH	Default [CPS]
Aug21,06	20:50:24		DENSITYH	Default [CPS]
6			DENSITYH	Default [CPS]
Aug21,06	20:48:42		DENSITYH	Default [CPS]
Aug21,06	20:48:42		DENSITYH	Default [CPS]
7			CALIPERL	4.000 [INCH]
Aug21,06	20:50:44		CALIPERL	8.000 [INCH]
8				
Aug21,06	20:50:44			
9				
Aug21,06	20:50:44			
10				
Aug21,06	20:50:44			
11				
Aug21,06	20:50:44			
12				
Aug21,06	20:50:44			
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Aug21,06	20:50:44			
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Aug21,06	20:50:44			
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Aug21,06	20:50:44			
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Aug21,06	20:50:44			
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Aug21,06	20:50:44			
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Aug21,06	20:5			

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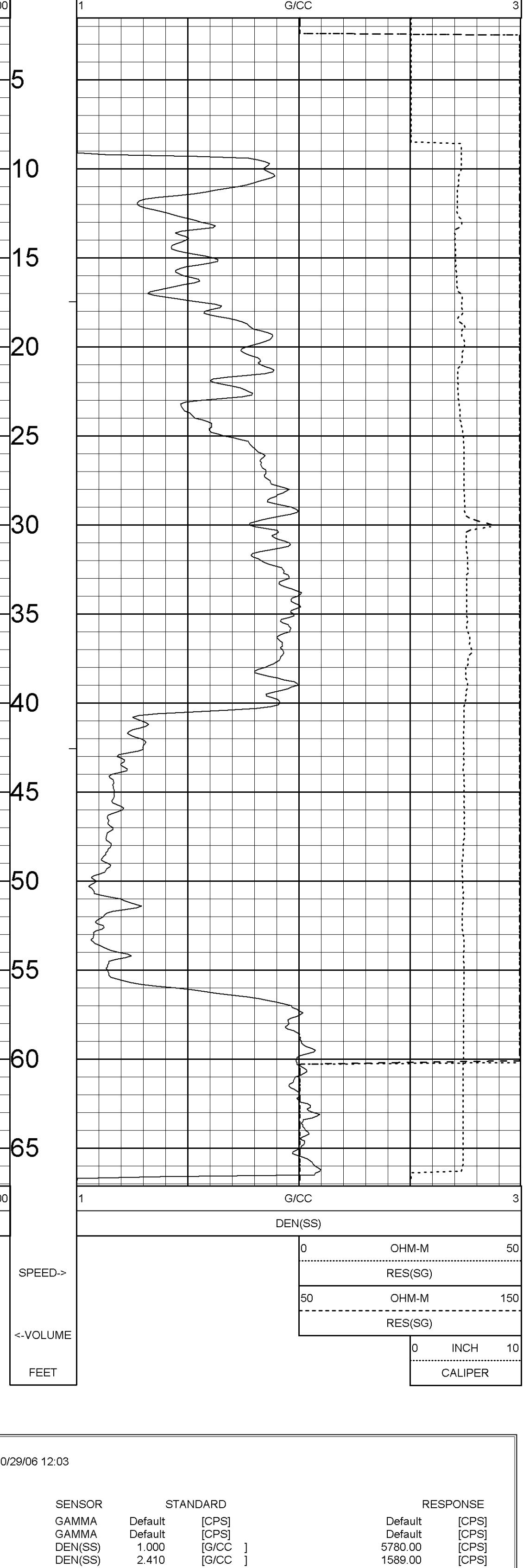
GAMMA-RES-DENSITY

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SHOB-22R

COMPANY	GOLDER ASSOCIATES	OTHER SERVICES:
WELL	SHOB-22R	N/A
FIELD	SOUTH HEART	N/A
COUNTY	STARK	N/A
STATE	NORTH DAKOTA	N/A
LOCATION	N/A	
SECTION	:15	
TOWNSHIP	:139N	
RANGE	:98W	
API NO.	N/A	
UNIQUE WELL ID.	N/A	
PERMANENT DATUM	:GL	ELEVATION KB N/A
LOG MEASURED FROM	:GL	ELEVATION DF N/A
DRL MEASURED FROM	:GL	ELEVATION GL 2743
DATE	:10/29/06	
DEPTH DRILLER	.70	
BIT SIZE	.5.0	
LOG TOP	:1.50	
LOG BOTTOM	.67.00	
CASING OD	N/A	
CASING BOTTOM	N/A	
CASING TYPE	N/A	
BOREHOLE FLUID	WATER	
RM TEMPERATURE	N/A	
MUD RES	N/A	
MUD WEIGHT	.0	
WITNESSED BY	J. ELLIOTT	
RECORDED BY	B. MATAS	
REMARKS 1	SW/SM QUARTER OF SECTION	
REMARKS 2	I-E-649511 N-5190256	

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TOOL CALIBRATION SHOB-22R 10/29/06 12:03
TOOL 9033AA TM VERSION 3
SERIAL NUMBER 958

DATE	TIME	SENSOR	STANDARD	RESPONSE
1 Aug21,06	20:48:42	GAMMA	Default [CPS]	Default [CPS]
Aug21,06	20:48:42	GAMMA	Default [CPS]	Default [CPS]
2 Aug21,06	20:49:17	DEN(SS)	1.000 [GCC]	5780.00 [CPS]
Aug21,06	20:49:17	DEN(SS)	2.410 [GCC]	1589.00 [CPS]
3 Aug28,06	18:25:01	RES(SG)	Default [CPS]	Default [CPS]
Aug28,06	18:25:01	RES(SG)	Default [CPS]	Default [CPS]
4 Aug21,06	20:50:24	CALIPER	4.000 [INCH]	693.00 [CPS]
Aug21,06	20:50:24	CALIPER	6.040 [INCH]	1515.00 [CPS]
5 Aug21,06	20:48:42	DENSITYH	Default [CPS]	Default [CPS]
Aug21,06	20:48:42	DENSITYH	Default [CPS]	Default [CPS]
6 Aug21,06	20:50:44	CALIPERL	4.000 [INCH]	380.00 [CPS]
Aug21,06	20:50:44	CALIPERL	8.000 [INCH]	1125.00 [CPS]

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GAMMA-RES-DENSITY

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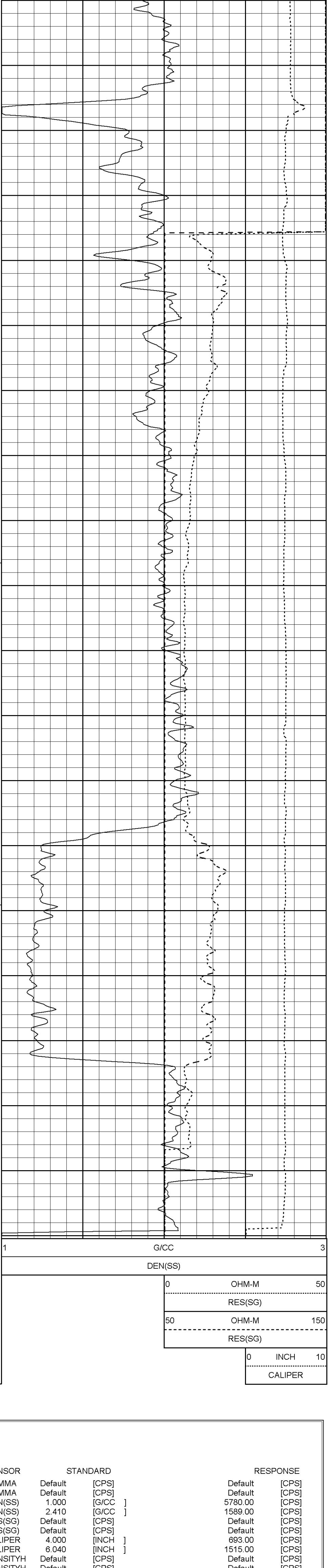
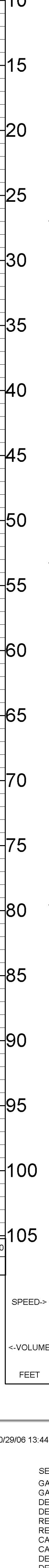
SHOB-23R

COMPANY	SOLDIER ASSOCIATES	OTHER SERVICES:
WELL	SHOB-23R	N/A
FIELD	SOUTH HEART	N/A
COUNTY	STARK	N/A
STATE	NORTH DAKOTA	N/A

LOCATION	N/A	
SECTION	:15	
TOWNSHIP	:139N	
RANGE	#8W	
API NO.	N/A	

UNIQUE WELL ID.	N/A	
PERMANENT DATUM	:GL-	ELEVATION KB N/A
LOG MEASURED FROM GL		ELEVATION DF N/A
DRL MEASURED FROM GL		ELEVATION GL 2550

DATE	:10/29/06	
DEPTH DRILLER	:105	
BIT SIZE	.50	
LOG TOP	:105.10	
LOG BOTTOM		
CASING OD		
CASING BOTTOM		
MUD RES		



MUD WEIGHT	0	
WITNESSED BY	J. ELLIOTT	
RECORDED BY	B. MATAS	
REMARKS 1	SWIPE QUARTER OF SECTION	
REMARKS 2	E=649911 N=5190274	

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TOOL CALIBRATION SHOB-23R 10/29/06 13:44

TOOL 9033AA TM VERSION 3

SERIAL NUMBER 958

	DATE	TIME	SENSOR	STANDARD	RESPONSE
1	Aug21,06	21:48:42	GAMMA	Default [CPS]	[CPS]
	Aug21,06	20:48:42	GAMMA	Default [CPS]	[CPS]
2	Aug21,06	20:49:17	DEN(SS)	1.000 [GCC]	5780.00 [CPS]
	Aug21,06	20:49:17	DEN(SS)	2.410 [GCC]	1589.00 [CPS]
3	Aug28,06	18:25:01	RES(SG)	Default [CPS]	[CPS]
	Aug28,06	18:25:01	RES(SG)	Default [CPS]	[CPS]
4	Aug21,06	20:50:24	CALIPER	4.000 [INCH]	693.00 [CPS]
	Aug21,06	20:50:24	CALIPER	6.040 [INCH]	1515.00 [CPS]
5	Aug21,06	20:48:42	DENSITYH	Default [CPS]	[CPS]
	Aug21,06	20:48:42	DENSITYH	Default [CPS]	[CPS]
6	Aug21,06	20:50:44	CALIPERL	4.000 [INCH]	380.00 [CPS]
	Aug21,06	20:50:44	CALIPERL	8.000 [INCH]	1125.00 [CPS]

Century
GEOPHYSICAL CORP.

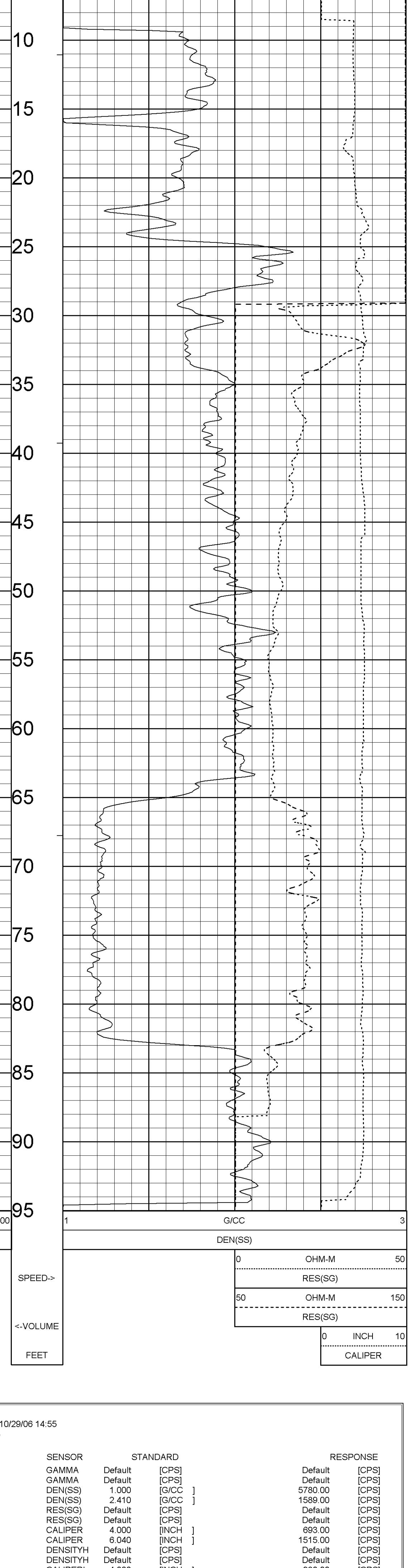
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GAMMA-RES-DENSITY

SHOB-24R

COMPANY	GOLDER ASSOCIATES	OTHER SERVICES:
WELL	SHOB-24R	N/A
FIELD	SOUTH HEART	N/A
COUNTY	STARK	N/A
STATE	NORTH DAKOTA	N/A
LOCATION	N/A	
SECTION	:15	
TOWNSHIP	:139N	
RANGE	:98W	
API NO.	N/A	
UNIQUE WELL ID.	N/A	

PERMANENT DATUM	GL	ELEVATION KB N/A
LOG MEASURED FROM	GL	ELEVATION DF N/A
DRL MEASURED FROM	GL	ELEVATION GL 2572



TOOL CALIBRATION SHOB-24R 10/29/06 14:55

TOOL 9033AA TM VERSION 3

SERIAL NUMBER 958

	DATE	TIME	SENSOR	STANDARD	RESPONSE
1	Aug21,06	20:48:42	GAMMA	Default [CPS]	Default [CPS]
2	Aug21,06	20:48:42	GAMMA	Default [CPS]	5780.00 [CPS]
3	Aug21,06	20:49:17	DEN(SS)	1.000 [G/CC]	1589.00 [CPS]
4	Aug21,06	20:49:17	DEN(SS)	2.410 [G/CC]	Default [CPS]
5	Aug28,06	18:25:01	RES(SG)	Default [CPS]	Default [CPS]
6	Aug28,06	18:25:01	RES(SG)	Default [CPS]	693.00 [CPS]
7	Aug21,06	20:50:24	CALIPER	4.000 [INCH]	1515.00 [CPS]
8	Aug21,06	20:50:24	CALIPER	6.040 [INCH]	Default [CPS]
9	Aug21,06	20:48:42	DENSITYH	Default [CPS]	Default [CPS]
10	Aug21,06	20:48:42	DENSITYH	Default [CPS]	380.00 [CPS]
11	Aug21,06	20:50:44	CALIPERL	4.000 [INCH]	1125.00 [CPS]
12	Aug21,06	20:50:44	CALIPERL	8.000 [INCH]	[CPS]

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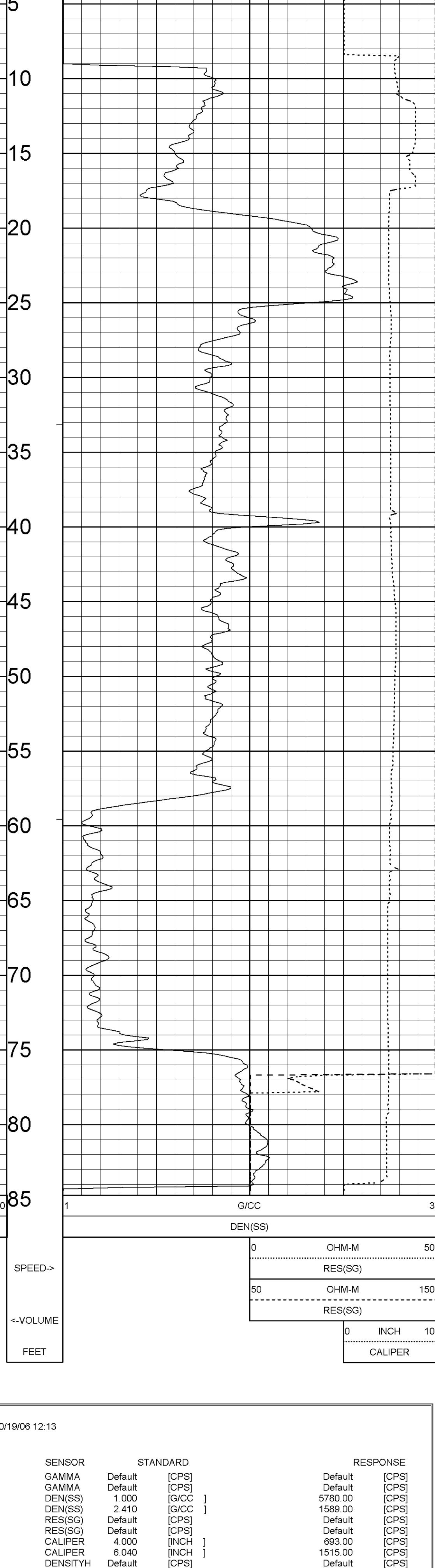
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GEOPHYSICAL CORP.

GAMMA-RES-DENSITY

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SHOB-25C

COMPANY	GOLDER ASSOCIATES	OTHER SERVICES:
WELL	SHOB-25C	N/A
FIELD	SOUTH HEART	N/A
COUNTY	STARK	N/A
STATE	NORTH DAKOTA	
LOCATION	N/A	
SECTION	21	
TOWNSHIP	139N	
RANGE	98W	
API NO.	N/A	
UNIQUE WELL ID.	N/A	
PERMANENT DATUM	GL	ELEVATION KB N/A
LOG MEASURED FROM	GL	ELEVATION DF N/A
DRL MEASURED FROM	GL	ELEVATION GL 2803
DATE	:10/19/06	
DEPTH DRILLER	35	
BIT SIZE	5.0	
LOG TOP	:1.40	
LOG BOTTOM	:34.60	
CASING OD	N/A	
CASING BOTTOM	N/A	
CASING TYPE	N/A	
BOREHOLE FLUID	WATER	
RM TEMPERATURE	N/A	
MUD RES	N/A	
MUD WEIGHT	0	
WITNESSED BY	D. LEPPERT	
RECORDED BY	B. MATAS	
REMARKS 1	NW/NE QUARTER OF SECTION	
REMARKS 2	E=648311 N=5189816	
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS		



TOOL CALIBRATION SHOB-25C 10/19/06 12:13

TOOL 9033AA TM VERSION 3

SERIAL NUMBER 958

	DATE	TIME	SENSOR	STANDARD	RESPONSE
1	Aug21,06	21:48:42	GAMMA	Default [CPS]	[CPS]
	Aug21,06	20:48:42	GAMMA	Default [CPS]	[CPS]
2	Aug21,06	20:49:17	DEN(SS)	1.000 [G/CC]	5780.00 [CPS]
	Aug21,06	20:49:17	DEN(SS)	2.410 [G/CC]	1589.00 [CPS]
3	Aug28,06	18:25:01	RES(SG)	Default [CPS]	[CPS]
	Aug28,06	18:25:01	RES(SG)	Default [CPS]	[CPS]
4	Aug21,06	20:50:24	CALIPER	4.000 [INCH]	693.00 [CPS]
	Aug21,06	20:50:24	CALIPER	6.040 [INCH]	1515.00 [CPS]
5	Aug21,06	20:48:42	DENSITYH	Default [CPS]	[CPS]
	Aug21,06	20:48:42	DENSITYH	Default [CPS]	[CPS]
6	Aug21,06	20:50:44	CALIPERL	4.000 [INCH]	380.00 [CPS]
	Aug21,06	20:50:44	CALIPERL	8.000 [INCH]	1125.00 [CPS]

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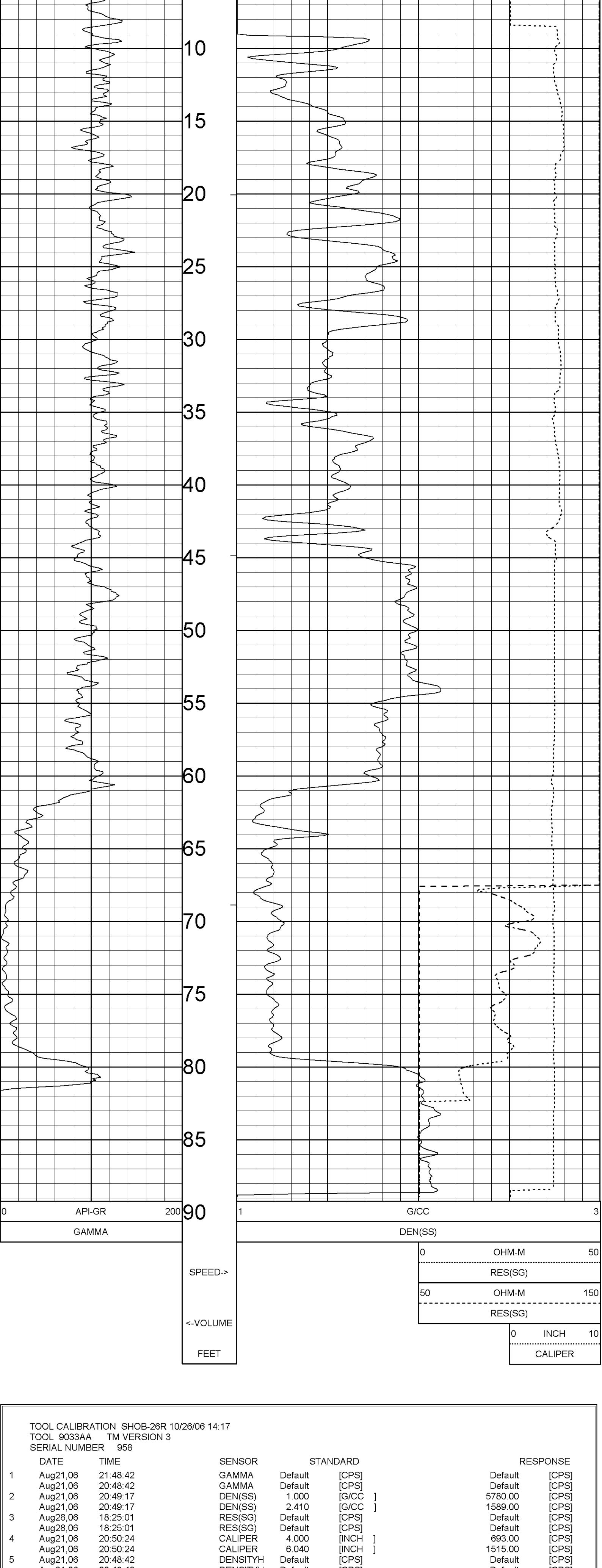
SHOB-26R

COMPANY	GOLDER ASSOCIATES
WELL	SHOB-26R
FIELD	SOUTH HEART
COUNTY	STARK
STATE	NORTH DAKOTA
LOCATION	N/A
SECTION	21
TOWNSHIP	139N
RANGE	98W
API NO.	N/A
UNIQUE WELL ID.	N/A

PERMANENT DATUM	GL	OTHER SERVICES:
LOG MEASURED FROM	GL	N/A
DRL MEASURED FROM	GL	N/A

DATE	.10/26/06	CALIPER
DEPTH DRILLER	90	0 INCH 10
BIT SIZE	5.0	
LOG TOP	:1:40	
LOG BOTTOM	:89:10	
CASING OD	N/A	
CASING BOTTOM	N/A	
CASING TYPE	N/A	
BOREHOLE FLUID	WATER	
RM TEMPERATURE	N/A	
MUD RES	0	
WITNESSED BY	J. ELLIOTT	
RECORDED BY	B. MATAS	
REMARKS 1	NEENE QUARTER OF SECTION	
REMARKS 2	E=649125 N=5189844	

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



TOOL CALIBRATION SHOB-26R 10/26/06 14:17

TOOL 903AA TM VERSION 3

SERIAL NUMBER 958

DATE	TIME	SENSOR	STANDARD	RESPONSE
1 Aug21,06	21:48:42	GAMMA	Default [CPS]	[CPS]
Aug21,06	20:48:42	GAMMA	Default [CPS]	[CPS]
2 Aug21,06	20:49:17	DEN(SS)	1.000 [G/CC]	5780.00 [CPS]
Aug21,06	20:49:17	DEN(SS)	2.410 [G/CC]	1589.00 [CPS]
3 Aug28,06	18:25:01	RES(SG)	Default [CPS]	[CPS]
Aug28,06	18:25:01	RES(SG)	Default [CPS]	[CPS]
4 Aug21,06	20:50:24	CALIPER	4.000 [INCH]	693.00 [CPS]
Aug21,06	20:50:24	CALIPER	6.040 [INCH]	1515.00 [CPS]
5 Aug21,06	20:48:42	DENSITYH	Default [CPS]	[CPS]
Aug21,06	20:48:42	DENSITYH	Default [CPS]	[CPS]
Aug21,06	20:50:44	CALIPERL	4.000 [INCH]	380.00 [CPS]
Aug21,06	20:50:44	CALIPERL	8.000 [INCH]	1125.00 [CPS]

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SHOB-27R

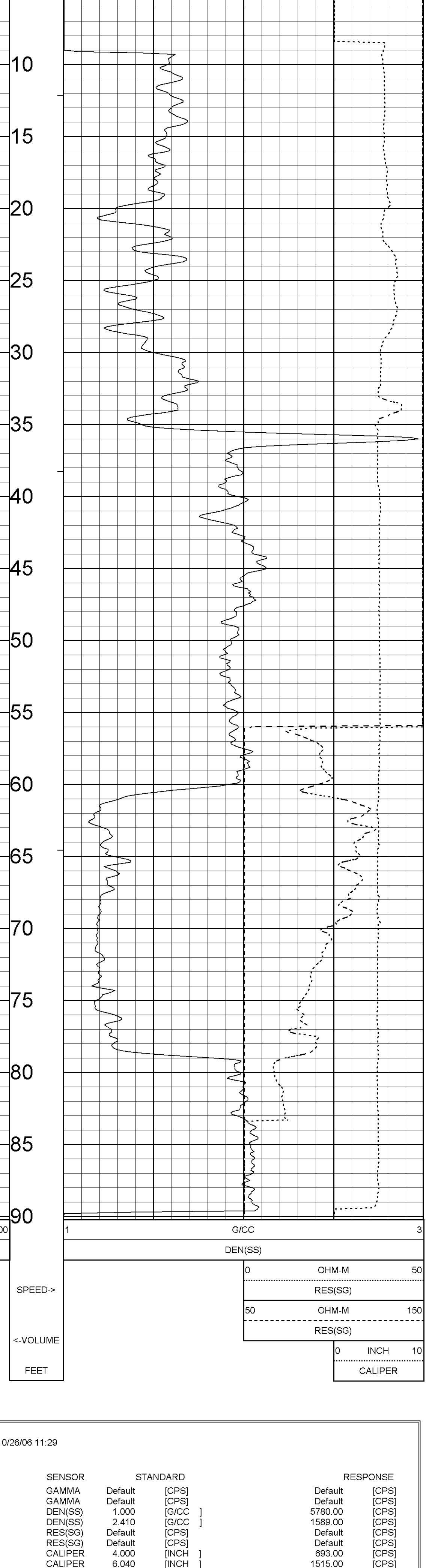
COMPANY	GOLDER ASSOCIATES
WELL	SHOB-27R
FIELD	SOUTH HEART
COUNTY	STARK
STATE	NORTH DAKOTA
LOCATION	N/A
SECTION	22
TOWNSHIP	139N
RANGE	98W
API NO.	N/A
UNIQUE WELL ID.	N/A

PERMANENT DATUM	GL	OTHER SERVICES:
LOG MEASURED FROM	GL	N/A
DRL MEASURED FROM	GL	N/A
DATE	.102606	

DEPTH DRILLER	\$0	ELEVATION KB	N/A
BIT SIZE	5.0	ELEVATION DF	N/A
LOG TOP	:1.40	ELEVATION GL	2732

LOG BOTTOM	.90.10	LOG BOTTOM	1.02606
CASING OD	N/A	CASING OD	N/A
CASING BOTTOM	N/A	CASING BOTTOM	N/A
CASING TYPE	N/A	CASING TYPE	N/A
BOREHOLE FLUID	WATER	BOREHOLE FLUID	WATER
RM TEMPERATURE	N/A	RM TEMPERATURE	N/A
MUD RES	0	MUD RES	0
WITNESSED BY	J.ELLIOTT	WITNESSED BY	J.ELLIOTT
RECORDED BY	B. MATAS	RECORDED BY	B. MATAS
REMARKS 1	NW/NW QUARTER OF SECTION	REMARKS 2	E=649525 N=5189854

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



TOOL CALIBRATION SHOB-27R 10/26/06 11:29

TOOL 903AA TM VERSION 3

SERIAL NUMBER 958

DATE	TIME	SENSOR	STANDARD	RESPONSE
1 Aug21,06	21:48:42	GAMMA	Default [CPS]	Default [CPS]
1 Aug21,06	20:48:42	GAMMA	Default [CPS]	Default [CPS]
2 Aug21,06	20:49:17	DEN(SS)	1.000 [G/CC]	5780.00 [CPS]
2 Aug21,06	20:49:17	DEN(SS)	2.410 [G/CC]	1589.00 [CPS]
3 Aug28,06	18:25:01	RES(SG)	Default [CPS]	Default [CPS]
3 Aug28,06	18:25:01	RES(SG)	Default [CPS]	Default [CPS]
4 Aug21,06	20:50:24	CALIPER	4.000 [INCH]	693.00 [CPS]
4 Aug21,06	20:50:24	CALIPER	6.040 [INCH]	1515.00 [CPS]
5 Aug21,06	20:48:42	DENSITYH	Default [CPS]	Default [CPS]
5 Aug21,06	20:48:42	DENSITYH	Default [CPS]	Default [CPS]
6 Aug21,06	20:50:44	CALIPERL	4.000 [INCH]	380.00 [CPS]
6 Aug21,06	20:50:44	CALIPERL	8.000 [INCH]	1125.00 [CPS]

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SHOB-28R

COMPANY: GOLDRIDGE ASSOCIATES
WELL: SHOB-28R
FIELD: SOUTH HEART
COUNTY: STARK
STATE: NORTH DAKOTA

LOCATION: N/A

SECTION: 22

TOWNSHIP: 139N

RANGE: 98W

APINO: N/A

UNIQUE WELL ID: N/A

PERMANENT DATUM: :GL-

LOG MEASURED FROM: GL-

DRL MEASURED FROM: GL-

ELEVATION KB: N/A

ELEVATION DF: N/A

ELEVATION GL: 2617

DATE: 10/26/06

DEPTH DRILLER: 105

BIT SIZE: .50

LOG TOP: 140

LOG BOTTOM: 10500

CASING OD: N/A

CASING BOTTOM: N/A

LOG TYPE: N/A

BOREHOLE FLUID: WATER

RM TEMPERATURE: N/A

MUD RES: N/A

MUD WEIGHT: 0

WITNESSED BY: J. ELLIOTT

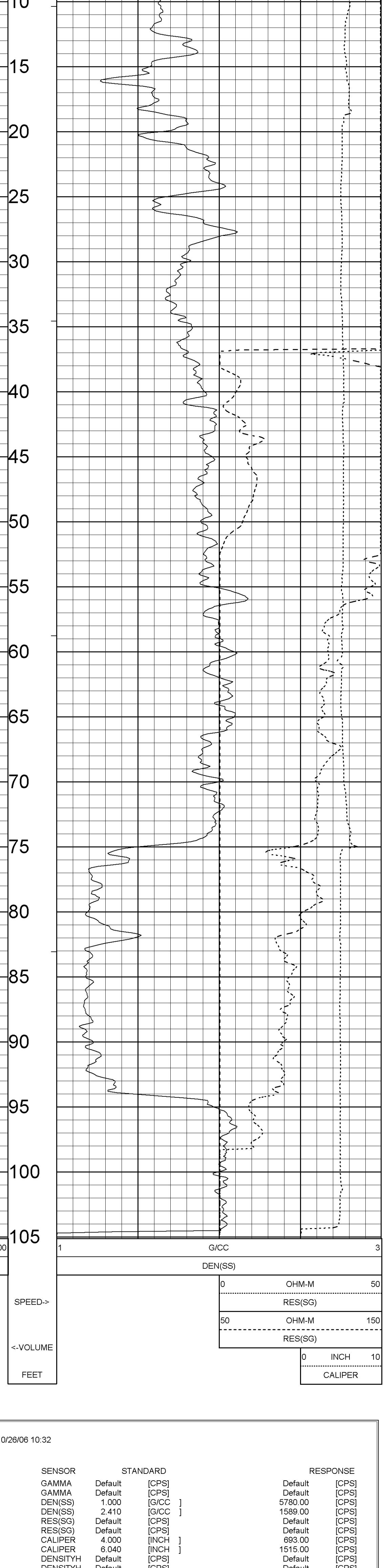
RECORDED BY: B. MATAS

REMARKS 1: N/WNE QUARTER OF SECTION

REMARKS 2: E=649930 N=589863

COMPANY	GOLDRIDGE ASSOCIATES		OTHER SERVICES:
WELL	SHOB-28R		N/A
FIELD	SOUTH HEART		N/A
COUNTY	STARK		N/A
STATE	NORTH DAKOTA		N/A
LOCATION	N/A		
SECTION	22		
TOWNSHIP	139N		
RANGE	98W		
APINO	N/A		
UNIQUE WELL ID.	N/A		
PERMANENT DATUM	:GL-		
LOG MEASURED FROM: GL-	ELEVATION KB: N/A		
DRL MEASURED FROM: GL-	ELEVATION DF: N/A		
ELEVATION GL: 2617			
DATE	10/26/06		
DEPTH DRILLER	105		
BIT SIZE	.50		
LOG TOP	140		
LOG BOTTOM	10500		
CASING OD	N/A		
CASING BOTTOM	N/A		
LOG TYPE	N/A		
BOREHOLE FLUID	WATER		
RM TEMPERATURE	N/A		
MUD RES	N/A		
MUD WEIGHT	0		
WITNESSED BY	J. ELLIOTT		
RECORDED BY	B. MATAS		
REMARKS 1	N/WNE QUARTER OF SECTION		
REMARKS 2	E=649930 N=589863		

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



TOOL CALIBRATION SHOB-28R 10/26/06 10:32

TOOL 9033AA TM VERSION 3

SERIAL NUMBER 958

DATE	TIME	SENSOR	STANDARD	RESPONSE
1 Aug21,06	20:48:42	GAMMA	Default [CPS]	[CPS]
Aug21,06	20:48:42	GAMMA	Default [CPS]	[CPS]
2 Aug21,06	20:49:17	DEN(SS)	1.000 [GCC]	5780.00 [CPS]
Aug21,06	20:49:17	DEN(SS)	2.410 [GCC]	1589.00 [CPS]
3 Aug28,06	18:25:01	RES(SG)	Default [CPS]	[CPS]
Aug28,06	18:25:01	RES(SG)	Default [CPS]	[CPS]
4 Aug21,06	20:50:24	CALIPER	4.000 [INCH]	693.00 [CPS]
Aug21,06	20:50:24	CALIPER	6.040 [INCH]	1515.00 [CPS]
5 Aug21,06	20:48:42	DENSITYH	Default [CPS]	[CPS]
Aug21,06	20:48:42	DENSITYH	Default [CPS]	[CPS]
6 Aug21,06	20:50:44	CALIPERL	4.000 [INCH]	380.00 [CPS]
Aug21,06	20:50:44	CALIPERL	8.000 [INCH]	1125.00 [CPS]

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SHOB-29R

COMPANY	GOLDER ASSOCIATES	OTHER SERVICES:
WELL	SHOB-29R	N/A
FIELD	SOUTH HEART	N/A
COUNTY	STARK	N/A
STATE	NORTH DAKOTA	N/A

LOCATION	N/A	PERMANENT DATUM	:GL	ELEVATION KB	N/A	CALIPER	0	INCH	10
SECTION	22	LOG MEASURED FROM	:GL	ELEVATION DF	N/A	RES(SG)	50	OHM-M	150
TOWNSHIP	:139N	DRL MEASURED FROM	:GL	ELEVATION GL	2639	RES(SG)	0	OHM-M	50
RANGE	:98W					RES(SG)	50	OHM-M	150
API NO.	N/A					RES(SG)	0	OHM-M	50
UNIQUE WELL ID.	N/A					RES(SG)	50	OHM-M	150

DATE	:10/26/06	DEPTH DRILLER	:85	LOG TOP	:35.00	LOG BOTTOM	:N/A	CASING OD	:N/A	CASING BOTTOM	:N/A	CASING TYPE	:N/A	BOREHOLE FLUID	:WATER	RM TEMPERATURE	:N/A	MUD RES	:N/A	MUD WEIGHT	:0	WITNESSED BY	J.ELLIOTT	RECORDED BY	:B.MATAS	REMARKS 1	NE/NW QUARTER OF SECTION	REMARKS 2	E=650324	N=5189880
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS																														

DATE	:10/26/06	DEPTH DRILLER	:85	LOG TOP	:35.00	LOG BOTTOM	:N/A	CASING OD	:N/A	CASING BOTTOM	:N/A	CASING TYPE	:N/A	BOREHOLE FLUID	:WATER	RM TEMPERATURE	:N/A	MUD RES	:N/A	MUD WEIGHT	:0	WITNESSED BY	J.ELLIOTT	RECORDED BY	:B.MATAS	REMARKS 1	NE/NW QUARTER OF SECTION	REMARKS 2	E=650324	N=5189880
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS																														

DATE	:10/26/06	DEPTH DRILLER	:85	LOG TOP	:35.00	LOG BOTTOM	:N/A	CASING OD	:N/A	CASING BOTTOM	:N/A	CASING TYPE	:N/A	BOREHOLE FLUID	:WATER	RM TEMPERATURE	:N/A	MUD RES	:N/A	MUD WEIGHT	:0	WITNESSED BY	J.ELLIOTT	RECORDED BY	:B.MATAS	REMARKS 1	NE/NW QUARTER OF SECTION	REMARKS 2	E=650324	N=5189880
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS																														

DATE	:10/26/06	DEPTH DRILLER	:85	LOG TOP	:35.00	LOG BOTTOM	:N/A	CASING OD	:N/A	CASING BOTTOM	:N/A	CASING TYPE	:N/A	BOREHOLE FLUID	:WATER	RM TEMPERATURE	:N/A	MUD RES	:N/A	MUD WEIGHT	:0	WITNESSED BY	J.ELLIOTT	RECORDED BY	:B.MATAS	REMARKS 1	NE/NW QUARTER OF SECTION	REMARKS 2	E=650324	N=5189880
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS																														

DATE	:10/26/06	DEPTH DRILLER	:85	LOG TOP	:35.00	LOG BOTTOM	:N/A	CASING OD	:N/A	CASING BOTTOM	:N/A	CASING TYPE	:N/A	BOREHOLE FLUID	:WATER	RM TEMPERATURE	:N/A	MUD RES	:N/A	MUD WEIGHT	:0	WITNESSED BY	J.ELLIOTT	RECORDED BY	:B.MATAS	REMARKS 1	NE/NW QUARTER OF SECTION	REMARKS 2	E=650324	N=5189880
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS																														

DATE	:10/26/06	DEPTH DRILLER	:85	LOG TOP	:35.00	LOG BOTTOM	:N/A	CASING OD	:N/A	CASING BOTTOM	:N/A	CASING TYPE	:N/A	BOREHOLE FLUID	:WATER	RM TEMPERATURE	:N/A	MUD RES	:N/A	MUD WEIGHT	:0	WITNESSED BY	J.ELLIOTT	RECORDED BY	:B.MATAS	REMARKS 1	NE/NW QUARTER OF SECTION	REMARKS 2	E=650324	N=5189880
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS																														

DATE	:10/26/06	DEPTH DRILLER	:85	LOG TOP	:35.00	LOG BOTTOM	:N/A	CASING OD	:N/A	CASING BOTTOM	:N/A	CASING TYPE	:N/A	BOREHOLE FLUID	:WATER	RM TEMPERATURE	:N/A	MUD RES	:N/A	MUD WEIGHT	:0	WITNESSED BY	J.ELLIOTT	RECORDED BY	:B.MATAS	REMARKS 1	NE/NW QUARTER OF SECTION	REMARKS 2	E=650324	N=5189880
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS																														

DATE	:10/26/06	DEPTH DRILLER	:85	LOG TOP	:35.00	LOG BOTTOM	:N/A	CASING OD	:N/A	CAS

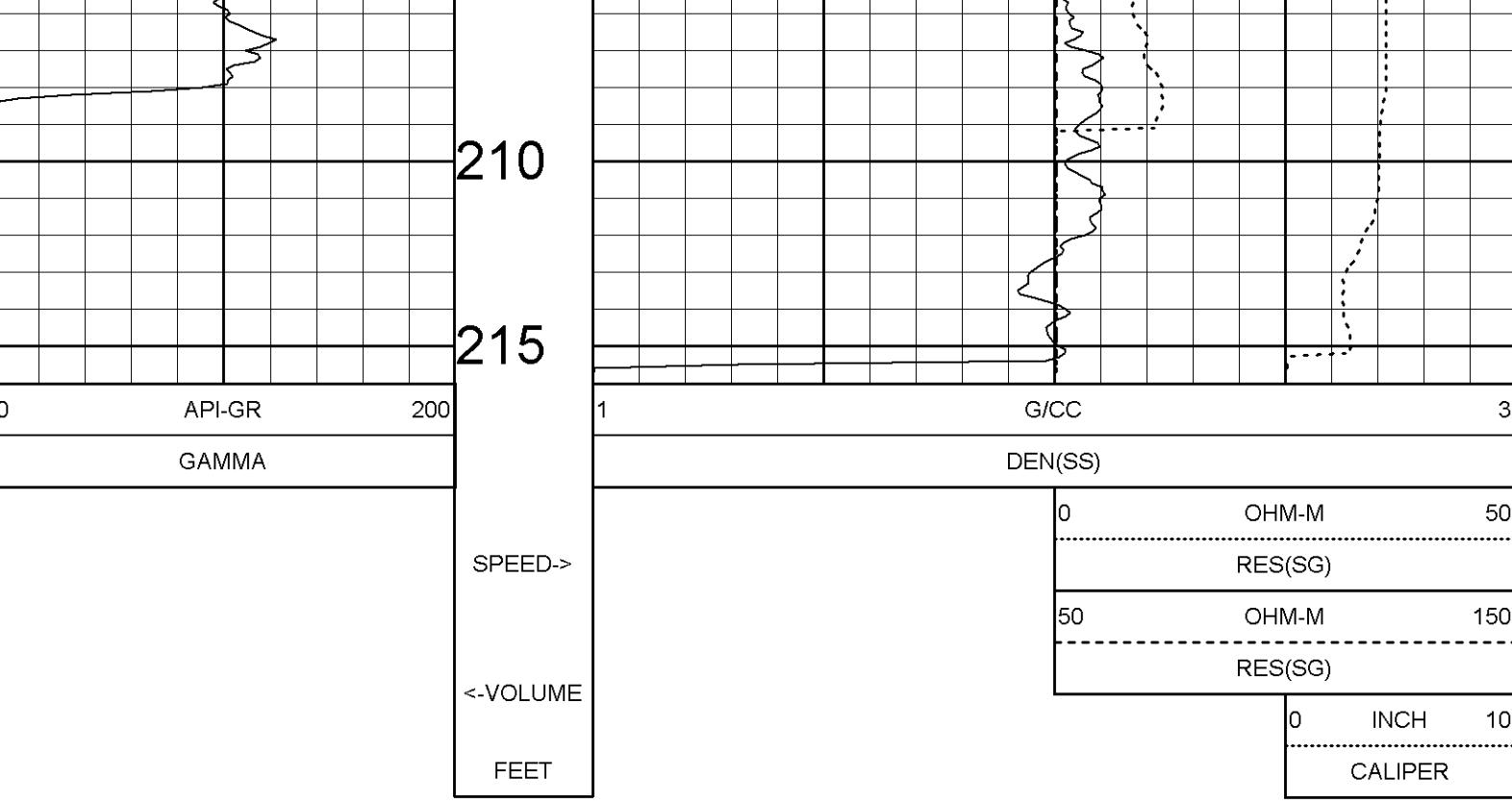
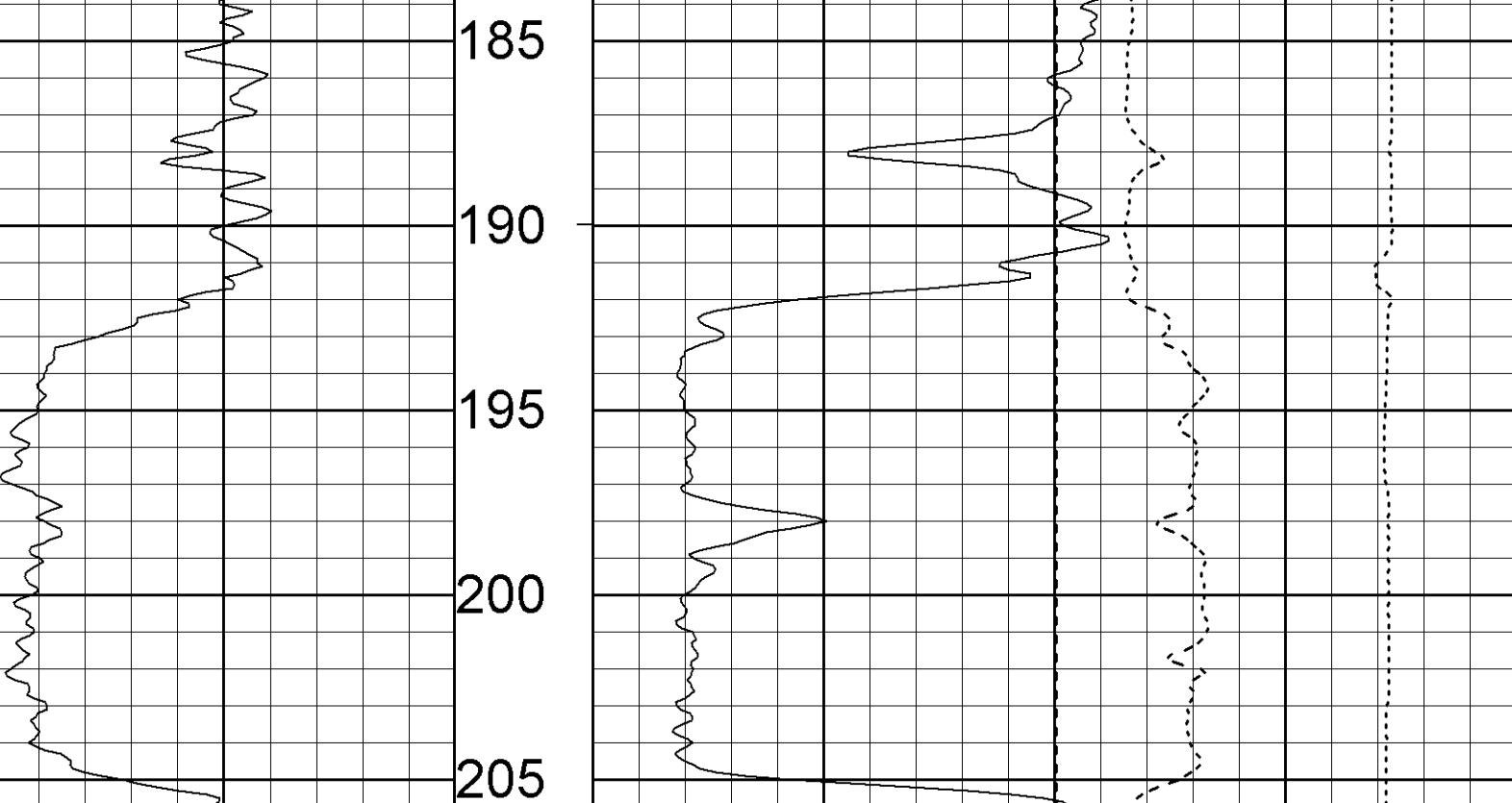
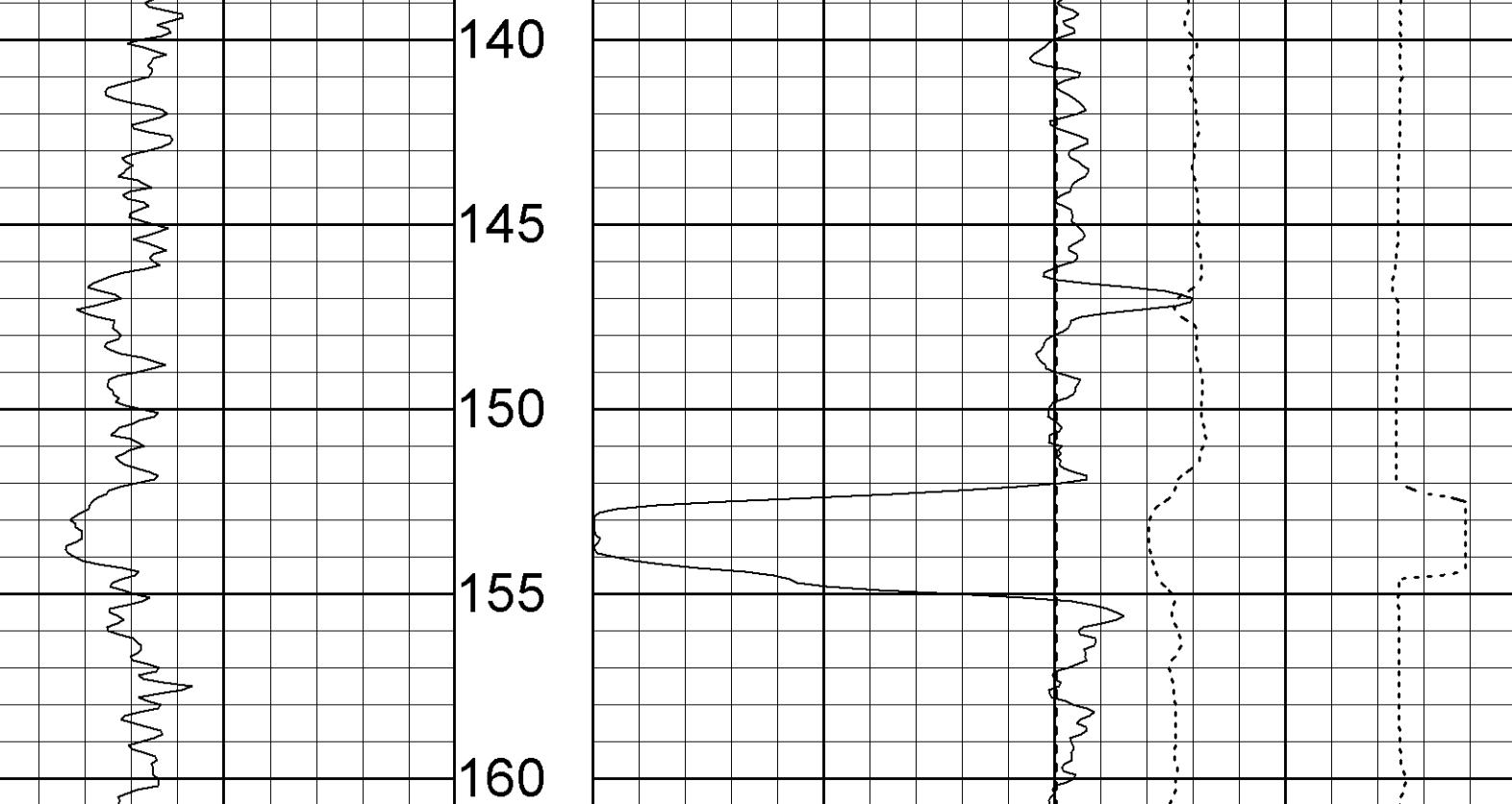
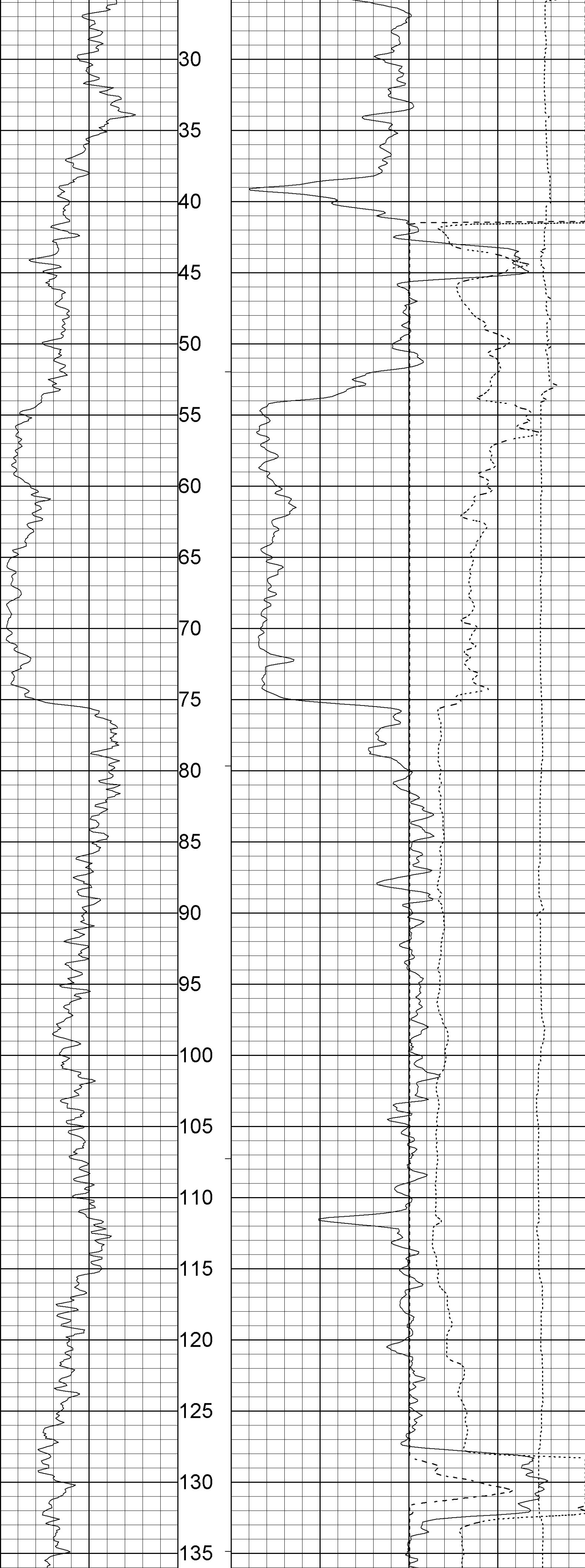
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SHOB-30C

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COMPANY	GOLDER ASSOCIATES	OTHER SERVICES
WELL	SHOB-30C	N/A
FIELD	SOUTH HEART	N/A
COUNTY	STARK	N/A
STATE	NORTH DAKOTA	
LOCATION	N/A	
SECTION	23	
TOWNSHIP	135N	
RANGE	98W	
API NO.	N/A	
UNIQUE WELL ID	N/A	
PERMANENT DATUM	GL	
LOC MEASURED FROM	SL	
DATE	10/20/06	
DEPTH DRILLER	220	
BIT SIZE	.5.0	
LOG TOP	1:40	
CASING DD	2:15:90	
CASING BOTTOM	N/A	
CASING TYPE	N/A	
BOREHOLE FLUID	WATER	
RM TEMPERATURE	N/A	
MUD RES	N/A	
MUD WEIGHT	0	
RECORDED BY	D. LEPPERT	
REMARKS 1	N/M/N QUARTER OF SECTION	
REMARKS 2	E=651937 N=5188937	
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS		



TOOL CALIBRATION SHOB-30C 10/20/06 11:39			RESPONSE		
DATE	TIME	SENSOR	STANDARD	Default	[CPS]
1	Aug21,06	21:48:42	GAMMA	Default	[CPS]
	Aug21,06	20:48:42	GAMMA	Default	[CPS]
2	Aug21,06	20:49:17	DEN(SS)	1.000	[G/CC]
	Aug21,06	20:49:17	DEN(SS)	2.410	[G/CC]
3	Aug28,06	18:25:01	RES(SG)	Default	[CPS]
	Aug28,06	18:25:01	RES(SG)	Default	[CPS]
4	Aug21,06	20:50:24	CALIPER	4.000	[INCH]
	Aug21,06	20:50:24	CALIPER	6.040	[INCH]
5	Aug21,06	20:48:42	DENSITYH	Default	[CPS]
	Aug21,06	20:48:42	DENSITYH	Default	[CPS]
6	Aug21,06	20:50:44	CALIPERL	4.000	[INCH]
	Aug21,06	20:50:44	CALIPERL	8.000	[INCH]

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SHOB-31R

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COMPANY	SOLIDER ASSOCIATES	OTHER SERVICES:
WELL	SHOB-31R	N/A
FIELD	SOUTH HEART	N/A
COUNTY	STARK	N/A
STATE	NORTH DAKOTA	N/A

LOCATION	N/A	SECTION	21	TOWNSHIP	:139N
RANGE	39W				
API NO.	N/A				
UNIQUE WELL ID.	N/A				

PERMANENT DATUM	GL	ELEVATION KB	N/A
LOG MEASURED FROM	GL	ELEVATION DF	N/A
DRL MEASURED FROM	GL	ELEVATION GL	2494

DATE	:10/27/06
DEPTH DRILLER	:150

FEET <-VOLUME SPEED->

SPEED-> FEET

<-VOLUME

FEET

CALIPER 0 INCH 10

RES(SG) 50 OHM-M 150

RES(SG) 0 OHM-M 50

DEN(SS) G/CC 3

GAMMA API-GR 200

TOOL CALIBRATION SHOB-31R 10/27/06 11:35 TOOL 9033AA TM VERSION 3 SERIAL NUMBER 958	
DATE	TIME
1 Aug21,06	20:48:42
2 Aug21,06	20:48:42
3 Aug21,06	20:49:17
4 Aug28,06	18:25:01
5 Aug21,06	20:50:24
6 Aug21,06	20:48:42
7 Aug21,06	20:48:42
8 Aug21,06	20:50:44
9 Aug21,06	20:50:44
10 Aug21,06	20:50:44
11 Aug21,06	20:50:44
12 Aug21,06	20:50:44
13 Aug21,06	20:50:44
14 Aug21,06	20:50:44
15 Aug21,06	20:50:44
16 Aug21,06	20:50:44
17 Aug21,06	20:50:44
18 Aug21,06	20:50:44
19 Aug21,06	20:50:44
20 Aug21,06	20:50:44
21 Aug21,06	20:50:44
22 Aug21,06	20:50:44
23 Aug21,06	20:50:44
24 Aug21,06	20:50:44
25 Aug21,06	20:50:44
26 Aug21,06	20:50:44
27 Aug21,06	20:50:44
28 Aug21,06	20:50:44
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78 Aug21,06	20:50:44
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81 Aug21,06	20:50:44
82 Aug21,06	20:50:44
83 Aug21,06	20:50:44
84 Aug21,06	20:50:44
85 Aug21,06	20:50:44
86 Aug21,06	20:50:44
87 Aug21,06	20:50:44
88 Aug21,06	20:50:44
89 Aug21,06	20:50:44
90 Aug21,06	20:50:44
91 Aug21,06	20:50:44
92 Aug21,06	20:50:44
93 Aug21,06	20:50:44
94 Aug21,06	20:50:44
95 Aug21,06	20:50:44
96 Aug21,06	20:50:44
97 Aug21,06	20:50:44
98 Aug21,06	20:50:44
99 Aug21,06	20:50:44
100 Aug21,06	20:50:44
101 Aug21,06	20:50:44
102 Aug21,06	20:50:44
103 Aug21,06	20:50:44
104 Aug21,06	20:50:44
105 Aug21,06	20:50:44
106 Aug21,06	20:50:44
107 Aug21,06	20:50:44
108 Aug21,06	20:50:44
109 Aug21,06	20:50:44
110 Aug21,06	20:50:44
111 Aug21,06	20:50:44
112 Aug21,06	20:50:44
113 Aug21,06	20:50:44
114 Aug21,06	20:50:44
115 Aug21,06	20:50:44
116 Aug21,06	20:50:44
117 Aug21,06	20:50:44
118 Aug21,06	20:50:44
119 Aug21,06	20:50:44
120 Aug21,06	20:50:44
121 Aug21,06	20:50:44
122 Aug21,06	20:50:44
123 Aug21,06	20:50:44
124 Aug21,06	20:50:44
125 Aug21,06	20:50:44
126 Aug21,06	20:50:44
127 Aug21,06	20:50:44
128 Aug21,06	20:50:44
129 Aug21,06	20:50:44
130 Aug21,06	20:50:44
131 Aug21,06	20:50:44

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GEOPHYSICAL CORP.

GAMMA-RES-DENSITY

SHOB-32R

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COMPANY	GOLDER ASSOCIATES	OTHER SERVICES:
WELL	SHOB-32R	N/A
FIELD	SOUTH HEART	N/A
COUNTY	STARK	N/A
STATE	NORTH DAKOTA	N/A

LOCATION	21	SECTION	139N
TOWNSHIP		RANGE	98W
RANGE		API NO.	N/A
API NO.		UNIQUE WELL ID	N/A

PERMANENT DATUM GL
LOG MEASURED FROM GL
DRL MEASURED FROM GL

DATE

:10/26/06

DEPTH DRILLER

:155

BIT SIZE

:5.0

LOG TOP

:155.00

LOG BOTTOM

:155.00

CASING OD

:N/A

CASING BOTTOM

:N/A

CASING TYPE

:N/A

BOREHOLE FLUID

:WATER

RM TEMPERATURE

:N/A

MUD RES

:N/A

MUD WEIGHT

:0

WITNESSED BY

:J ELLIOTT

RECORDED BY

:B MATAS

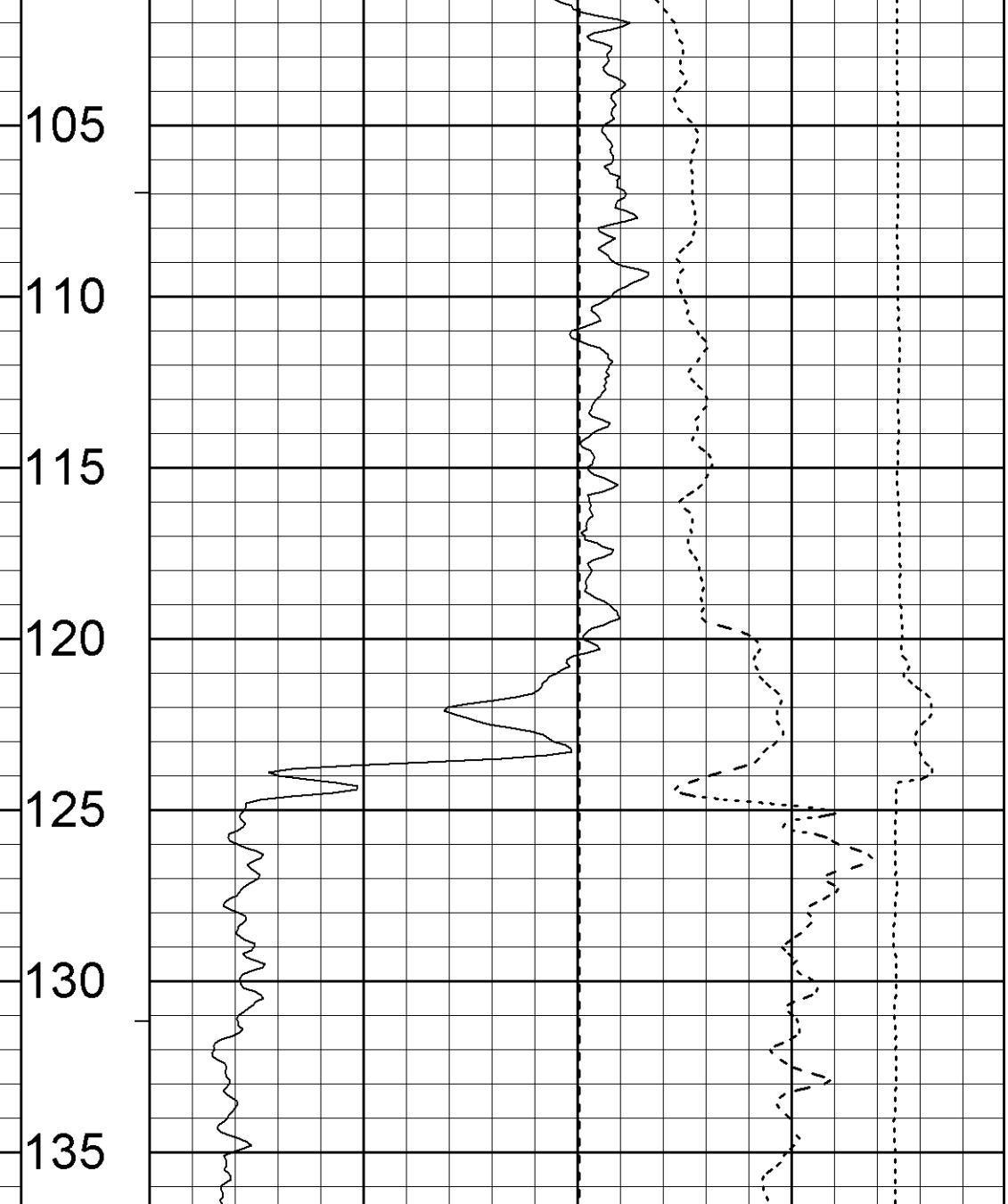
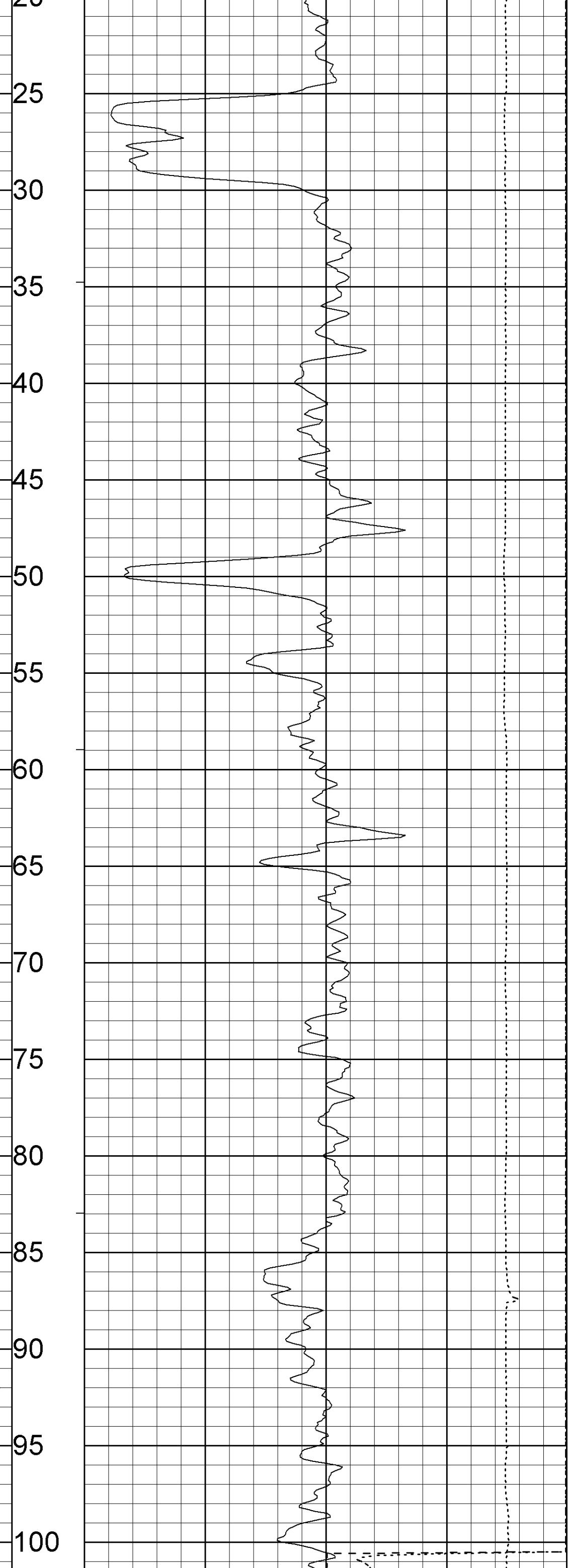
REMARKS 1

:NEW QUARTER OF SECTION

E=648729 N=5189436

REMARKS 2

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



TOOL CALIBRATION SHOB-32R 10/26/06 16:09			
TOOL 9033AA TM VERSION 3			
SERIAL NUMBER 958			
DATE	TIME	SENSOR	STANDARD
1 Aug21,06	20:48:42	GAMMA	Default [CPS]
Aug21,06	20:48:42	GAMMA	Default [CPS]
2 Aug21,06	20:49:17	DEN(SS)	1.000 [G/CC]
Aug21,06	20:49:17	DEN(SS)	2.410 [G/CC]
3 Aug28,06	18:25:01	RES(SG)	Default [CPS]
Aug28,06	18:25:01	RES(SG)	Default [CPS]
4 Aug21,06	20:50:24	CALIPER	4.000 [INCH]
Aug21,06	20:50:24	CALIPER	6.040 [INCH]
5 Aug21,06	20:48:42	DENSITYH	Default [CPS]
Aug21,06	20:48:42	DENSITYH	Default [CPS]
6 Aug21,06	20:50:44	CALIPERL	4.000 [INCH]
Aug21,06	20:50:44	CALIPERL	8.000 [INCH]

RESPONSE [CPS]

Default [CPS]

5780.00 [CPS]

1589.00 [CPS]

Default [CPS]

693.00 [CPS]

1515.00 [CPS]

Default [CPS]

Default [CPS]

380.00 [CPS]

1125.00 [CPS]

CALIPER

Century
GEOPHYSICAL CORP.

GAMMA-RES-DENSITY

century-geo.com

SHOB-33R

COMPANY
WELL
FIELD
COUNTY
STATE

GOLDER ASSOCIATES
SHOB-33R
SOUTH HEART
STARK
NORTH DAKOTA

OTHER SERVICES:
N/A
N/A
N/A
N/A

LOCATION
SECTION
TOWNSHIP
RANGE
API NO.
UNIQUE WELL ID.

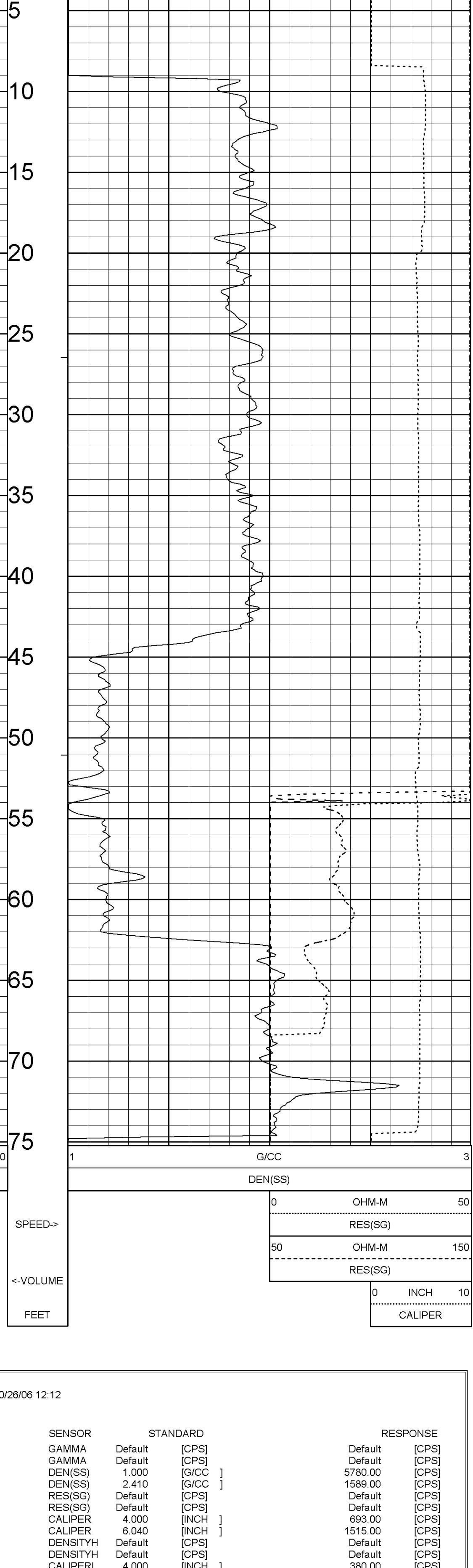
N/A
22
139N
98W
N/A
N/A

PERMANENT DATUM
LOG MEASURED FROM
DRL MEASURED FROM

GL
GL
GL

ELEVATION KB
ELEVATION DF
ELEVATION GL

N/A
N/A
2557



TOOL CALIBRATION SHOB-33R 10/26/06 12:12

TOOL 9033AA TM VERSION 3

SERIAL NUMBER 958

	DATE	TIME	SENSOR	STANDARD	RESPONSE
1	Aug21,06	21:48:42	GAMMA	Default [CPS]	[CPS]
	Aug21,06	20:48:42	GAMMA	Default [CPS]	[CPS]
2	Aug21,06	20:49:17	DEN(SS)	1.000 [G/CC]	5780.00 [CPS]
	Aug21,06	20:49:17	DEN(SS)	2.410 [G/CC]	1589.00 [CPS]
3	Aug28,06	18:25:01	RES(SG)	Default [CPS]	Default [CPS]
	Aug28,06	18:25:01	RES(SG)	Default [CPS]	Default [CPS]
4	Aug21,06	20:50:24	CALIPER	4.000 [INCH]	693.00 [CPS]
	Aug21,06	20:50:24	CALIPER	6.040 [INCH]	1515.00 [CPS]
5	Aug21,06	20:48:42	DENSITYH	Default [CPS]	Default [CPS]
	Aug21,06	20:48:42	DENSITYH	Default [CPS]	Default [CPS]
6	Aug21,06	20:50:44	CALIPERL	4.000 [INCH]	380.00 [CPS]
	Aug21,06	20:50:44	CALIPERL	8.000 [INCH]	1125.00 [CPS]

WITNESSED BY J. ELLIOTT
RECORDED BY J.B. MATAS
REMARKS 1 NW/SW QUARTER OF SECTION
REMARKS 2 E#649529 N#5189461

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

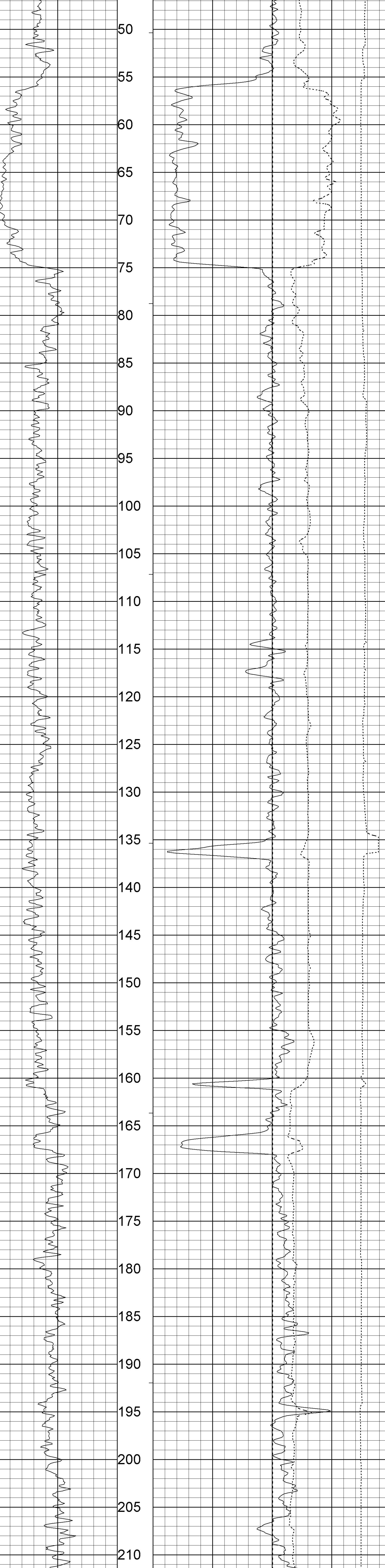
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GAMMA-RES-DENSITY

SHOB-34R

COMPANY	SOLBER ASSOCIATES	OTHER SERVICES:
WELL	SHOB-34R	
FIELD	SOUTH HEART	N/A
COUNTY	STARK	N/A
STATE	NORTH DAKOTA	N/A
LOCATION		
SECTION	22	
TOWNSHIP	139N	
RANGE	58W	
API NO.	N/A	
UNIQUE WELL ID.	N/A	
PERMANENT DATUM: GL	ELEVATION: KG N/A	
LOG MEASURED FROM: GL	ELEVATION: DF N/A	
DRILLED MEASURED FROM: GL	ELEVATION: GL 2750	



TOOL CALIBRATION SHOB-34R 10/20/06 14:17		
TM VERSION 3		
SERIAL NUMBER	958	
DATE	TIME	SENSOR STANDARD RESPONSE
1 Aug21,06	21:48:42	GAMMA Default [CPS] [CPS]
2 Aug21,06	20:48:42	GAMMA Default [CPS] [CPS]
3 Aug21,06	20:49:17	DEN(SS) 1.000 [G/CC] [CPS]
4 Aug21,06	18:25:01	DEN(SS) 2.410 [G/CC] [CPS]
5 Aug21,06	20:50:24	RES(SG) Default [CPS] [CPS]
6 Aug21,06	20:48:42	CALIPER 4.000 [INCH] [CPS]
		DENSITYH Default [CPS] [CPS]
		CALIPERL 4.000 [INCH] [CPS]
		CALIPERL 8.000 [INCH] [CPS]

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SHOB-35R

COMPANY	GOLDER ASSOCIATES	OTHER SERVICES:
WELL	SHOB-35R	N/A
FIELD	SOUTH HEART	N/A
COUNTY	STARK	N/A
STATE	NORTH DAKOTA	N/A

LOCATION
SECTION
TOWNSHIP
RANGE
API NO.
UNIQUE WELL ID.

N/A
23
1139N
#88W
N/A
N/A

PERMANENT DATUM
LOG MEASURED FROM
DRL MEASURED FROM
DATE

:3GL
:3GL
:3GL
:10/25/06

ELEVATION KB
ELEVATION DF
ELEVATION GL

N/A
N/A
2571

CALIPER

0 INCH 10

RES(SG)

OHM-M 150

RES(SG)

OHM-M 50

0 INCH 10

RES(SG)

OHM-M 150

RES(SG)

OHM-M 50

0 INCH 10

CALIPER

GAMMA
0 API-GR 200

GAMMA
0 API

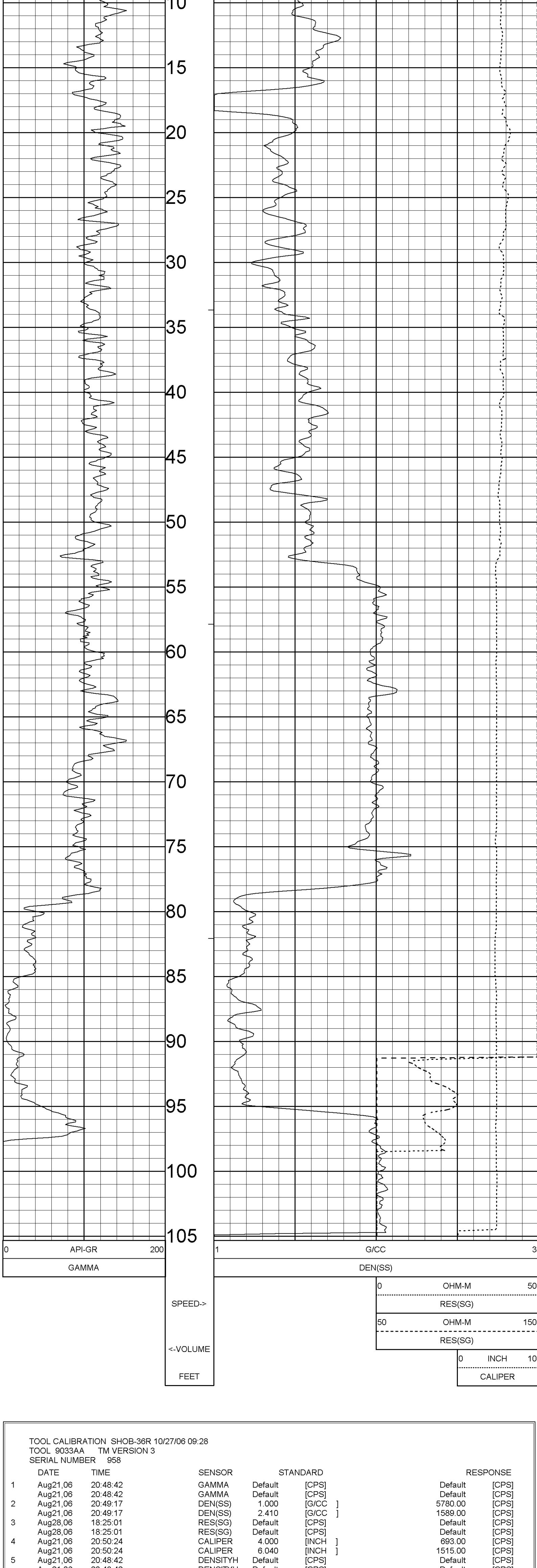
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GAMMA-RES-DENSITY

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SHOB-36R

COMPANY	SOLDIER ASSOCIATES	OTHER SERVICES:
WELL	SHOB-36R	N/A
FIELD	SOUTH HEART	N/A
COUNTY	STARK	N/A
STATE	NORTH DAKOTA	N/A
LOCATION		
SECTION	21	
TOWNSHIP	:139N	
RANGE	:98W	
APINO.	N/A	
UNIQUE WELL ID.	N/A	
PERMANENT DATUM	:GL-	ELEVATION KB N/A
LOG MEASURED FROM GL		ELEVATION DF N/A
DRL MEASURED FROM GL		ELEVATION GL 2565
DATE	:10/27/06	
DEPTH DRILLER	:105	
BIT SIZE	.50	
LOG TOP	:105.20	
LOG BOTTOM		
CASING OD		
CASING BOTTOM		
CASING TYPE	N/A	
BOREHOLE FLUID	:WATER	
RM TEMPERATURE	N/A	
MUD RES	N/A	
MUD WEIGHT	0	
WITNESSED BY	J. ELLIOTT	
RECORDED BY	B. MATAS	
REMARKS 1	:SWINE QUARTER OF SECTION	
REMARKS 2	I-E-648333 N=5 89017	
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS		



TOOL CALIBRATION SHOB-36R 10/27/06 09:28		
TOOL 9033AA TM VERSION 3		
SERIAL NUMBER 958		
DATE	TIME	SENSOR
1 Aug21,06	20:48:42	GAMMA
Aug21,06	20:48:42	GAMMA
2 Aug21,06	20:49:17	DEN(SS)
Aug21,06	20:49:17	DEN(SS)
3 Aug28,06	18:25:01	RES(SG)
Aug28,06	18:25:01	RES(SG)
4 Aug21,06	20:50:24	CALIPER
Aug21,06	20:50:24	CALIPER
5 Aug21,06	20:48:42	DENSITYH
Aug21,06	20:48:42	DENSITYH
6 Aug21,06	20:50:44	CALIPERL
Aug21,06	20:50:44	CALIPERL
RESPONSE		
		[CPS]
		[CPS]
		1.000 [GCC]
		2.410 [GCC]
		[CPS]
		[CPS]
		4.000 [INCH]
		6.040 [INCH]
		[CPS]
		[CPS]
		4.000 [INCH]
		8.000 [INCH]
		[CPS]
		[CPS]
		5780.00 [CPS]
		1589.00 [CPS]
		Default [CPS]
		693.00 [CPS]
		1515.00 [CPS]
		Default [CPS]
		380.00 [CPS]
		1125.00 [CPS]
		[CPS]
		[CPS]
		0 INCH 10
		CALIPER

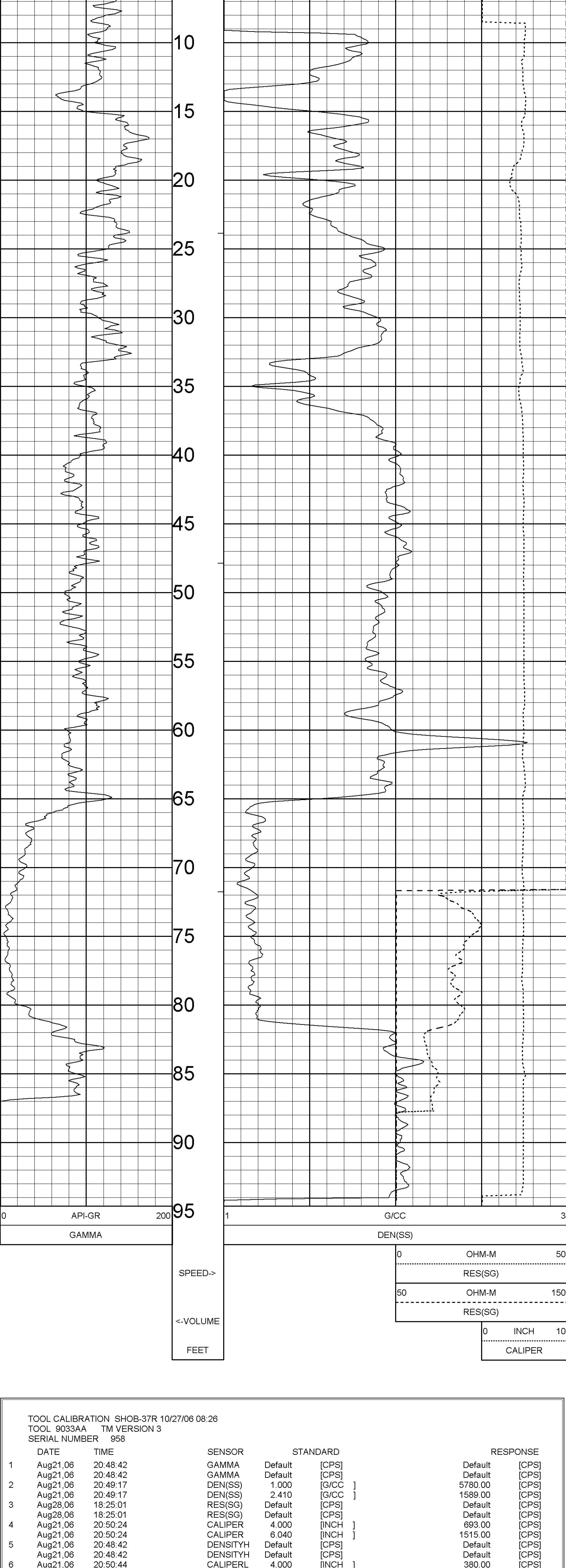
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GAMMA-RES-DENSITY

SHOB-37R

COMPANY	GOLDER ASSOCIATES	OTHER SERVICES:
WELL	SHOB-37R	N/A
FIELD	SOUTH HEART	N/A
COUNTY	STARK	N/A
STATE	NORTH DAKOTA	N/A
LOCATION	N/A	
SECTION	21	
TOWNSHIP	139N	
RANGE	98W	
API NO.	N/A	
UNIQUE WELL ID.	N/A	
PERMANENT DATUM	GL	ELEVATION KB N/A
LOG MEASURED FROM	GL	ELEVATION DF N/A
DRL MEASURED FROM	GL	ELEVATION GL 2566
DATE	10/27/06	
DEPTH DRILLER	95	
BIT SIZE	5.0	
LOG TOP	:150	
LOG BOTTOM	94.50	
CASING OD	N/A	
CASING BOTTOM	N/A	
CASING TYPE	N/A	
BOREHOLE FLUID	WATER	
RM TEMPERATURE	N/A	
MUD RES	N/A	
MUD WEIGHT	0	
WITNESSED BY	J. ELLIOTT	
RECORDED BY	B. MATAS	
REMARKS 1	SENE QUARTER OF SECTION	
REMARKS 2	E-649138 N-5189043	
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS		



TOOL CALIBRATION SHOB-37R 10/27/06 08:26

TOOL 9033AA TM VERSION 3

SERIAL NUMBER 958

	DATE	TIME	SENSOR	STANDARD	RESPONSE
1	Aug21,06	20:48:42	GAMMA	Default [CPS]	Default [CPS]
	Aug21,06	20:48:42	GAMMA	Default [CPS]	Default [CPS]
2	Aug21,06	20:49:17	DEN(SS)	1.000 [G/CC]	5780.00 [CPS]
	Aug21,06	20:49:17	DEN(SS)	2.410 [G/CC]	1589.00 [CPS]
3	Aug28,06	18:25:01	RES(SG)	Default [CPS]	Default [CPS]
	Aug28,06	18:25:01	RES(SG)	Default [CPS]	Default [CPS]
4	Aug21,06	20:50:24	CALIPER	4.000 [INCH]	693.00 [CPS]
	Aug21,06	20:50:24	CALIPER	6.040 [INCH]	1515.00 [CPS]
5	Aug21,06	20:48:42	DENSITYH	Default [CPS]	Default [CPS]
	Aug21,06	20:48:42	DENSITYH	Default [CPS]	Default [CPS]
6	Aug21,06	20:50:44	CALIPERL	4.000 [INCH]	380.00 [CPS]
	Aug21,06	20:50:44	CALIPERL	8.000 [INCH]	1125.00 [CPS]

SHOB-38R

GAMMA-RES-DENSITY

COMPANY
WELL
FIELD
COUNTY
STATE

GOLDER ASSOCIATES
SHOB-38R
SOUTH HEART
STARK
NORTH DAKOTA

OTHER SERVICES:
N/A
N/A
N/A

LOCATION
SECTION
TOWNSHIP
RANGE
API NO.
UNIQUE WELL ID.

N/A
22
139N
98W
N/A
N/A

PERMANENT DATUM
LOG MEASURED FROM: GL
DRL MEASURED FROM: GL

ELEVATION KB N/A
ELEVATION DF N/A
ELEVATION GL 2736

FEET
<-VOLUME
SPEED->

CALIPER
0 INCH 10

RES(SG)		
50	OHM-M	150
RES(SG)		
0	OHM-M	50

DEN(SS)

3

G/CC

GAMMA

0 API-GR 200

5

10

15

20

25

30

35

40

45

50

55

60

65

70

SPEED->
<-VOLUME
FEET

GAMMA

0 API-GR 200

5

10

15

20

25

30

35

40

45

50

55

60

65

70

GAMMA

0 API-GR 200

G/CC

3

DEN(SS)

0

RES(SG)

50

OHM-M

150

RES(SG)

0

INCH

10

CALIPER

GAMMA

0 API-GR 200

G/CC

3

DEN(SS)

0

RES(SG)

50

OHM-M

150

RES(SG)

0

INCH

10

CALIPER

GAMMA

0 API-GR 200

G/CC

3

DEN(SS)

0

RES(SG)

50

OHM-M

150

RES(SG)

0

INCH

10

CALIPER

GAMMA

0 API-GR 200

G/CC

3

DEN(SS)

0

RES(SG)

50

OHM-M

150

RES(SG)

0

INCH

10

CALIPER

GAMMA

0 API-GR 200

G/CC

3

DEN(SS)

0

RES(SG)

50

OHM-M

150

RES(SG)

0

INCH

10

CALIPER

GAMMA

0 API-GR 200

G/CC

3

DEN(SS)

0

RES(SG)

50

OHM-M

150

RES(SG)

0

INCH

10

CALIPER

GAMMA

0 API-GR 200

G/CC

3

DEN(SS)

0

RES(SG)

50

OHM-M

150

RES(SG)

0

INCH

10

CALIPER

GAMMA

0 API-GR 200

G/CC

3

DEN(SS)

0

RES(SG)

50

OHM-M

150

RES(SG)

0

INCH

10

CALIPER

GAMMA

0 API-GR 200

G/CC

3

DEN(SS)

0

RES(SG)

50

OHM-M

150

RES(SG)

0

INCH

10

CALIPER

GAMMA

0 API-GR 200

G/CC

3

DEN(SS)

0

RES(SG)

50

OHM-M

150

RES(SG)

0

INCH

GAMMA-RES-DENSITY

SHOB-39R

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COMPANY: GOLDER ASSOCIATES
WELL: SHOB-39R
FIELD: SOUTH HEART
COUNTY: STARK
STATE: NORTH DAKOTA

OTHER SERVICES:
N/A
N/A
N/A

LOCATION: N/A
SECTION: 23
TOWNSHIP: 139N
RANGE: 9&W
API NO.: N/A
UNIQUE WELL ID.: N/A

PERMANENT DATUM: GL
LOG MEASURED FROM: GL
DRL MEASURED FROM: GL

ELEVATION KB: N/A
ELEVATION DF: N/A
ELEVATION GL: 2587

DATE: 10/25/06

FEET

<-VOLUME

SPEED->

1

GAMMA

API-GR 200

5

10

15

20

25

30

35

40

45

50

55

60

65

70

75

80

1

GAMMA

API-GR 200

SPEED->

<-VOLUME

FEET

CALIPER

0 INCH 10

RES(SG)

50 OHM-M 150

RES(SG)

0 OHM-M 50

DEN(SS)

3 G/CC

1

G/CC

3

DEN(SS)

1

G/CC

3

DEN(SS)

0 OHM-M 50

RES(SG)

50 OHM-M 150

RES(SG)

0 OHM-M 50

CALIPER

0 INCH 10

CALIPER

TOOL CALIBRATION SHOB-39R 10/25/06 10:14
TOOL 9033AA TM VERSION 3
SERIAL NUMBER 958

DATE	TIME	SENSOR	STANDARD	RESPONSE
1 Aug21,06	21:48:42	GAMMA	Default [CPS]	[CPS]
Aug21,06	20:48:42	GAMMA	Default [CPS]	[CPS]
2 Aug21,06	20:49:17	DEN(SS)	1.000 [G/CC]	5780.00 [CPS]
Aug21,06	20:49:17	DEN(SS)	2.410 [G/CC]	1589.00 [CPS]
3 Aug28,06	18:25:01	RES(SG)	Default [CPS]	Default [CPS]
Aug28,06	18:25:01	RES(SG)	Default [CPS]	Default [CPS]
4 Aug21,06	20:50:24	CALIPER	4.000 [INCH]	693.00 [CPS]
Aug21,06	20:50:24	CALIPER	6.040 [INCH]	1515.00 [CPS]
5 Aug21,06	20:48:42	DENSITYH	Default [CPS]	Default [CPS]
Aug21,06	20:48:42	DENSITYH	Default [CPS]	Default [CPS]
6 Aug21,06	20:50:44	CALIPERL	4.000 [INCH]	380.00 [CPS]
Aug21,06	20:50:44	CALIPERL	8.000 [INCH]	1125.00 [CPS]

WITNESSED BY: J. ELLIOTT
RECORDED BY: B. MATAS
REMARKS 1: SE/NW QUARTER OF SECTION
REMARKS 2: E=651965 N=5189129

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

TOOL CALIBRATION SHOB-39R 10/25/06 10:14				
TOOL 9033AA TM VERSION 3				
SERIAL NUMBER 958				
DATE	TIME	SENSOR	STANDARD	RESPONSE
1 Aug21,06	21:48:42	GAMMA	Default [CPS]	[CPS]
Aug21,06	20:48:42	GAMMA	Default [CPS]	[CPS]
2 Aug21,06	20:49:17	DEN(SS)	1.000 [G/CC]	5780.00 [CPS]
Aug21,06	20:49:17	DEN(SS)	2.410 [G/CC]	1589.00 [CPS]
3 Aug28,06	18:25:01	RES(SG)	Default [CPS]	Default [CPS]
Aug28,06	18:25:01	RES(SG)	Default [CPS]	Default [CPS]
4 Aug21,06	20:50:24	CALIPER	4.000 [INCH]	693.00 [CPS]
Aug21,06	20:50:24	CALIPER	6.040 [INCH]	1515.00 [CPS]
5 Aug21,06	20:48:42	DENSITYH	Default [CPS]	Default [CPS]
Aug21,06	20:48:42	DENSITYH	Default [CPS]	Default [CPS]
6 Aug21,06	20:50:44	CALIPERL	4.000 [INCH]	380.00 [CPS]
Aug21,06	20:50:44	CALIPERL	8.000 [INCH]	1125.00 [CPS]

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GEOPHYSICAL CORP.

GAMMA-RES-DENSITY

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SHOB-40R

COMPANY :GOLDER ASSOCIATES
WELL :SHOB-40R
FIELD :SOUTH HEART
COUNTY :STARK
STATE :NORTH DAKOTA

OTHER SERVICES:
N/A
N/A
N/A

CALIPER		
0	INCH	10

RES(SG)

50	OHM-M	150
----	-------	-----

RES(SG)

0	OHM-M	50
---	-------	----

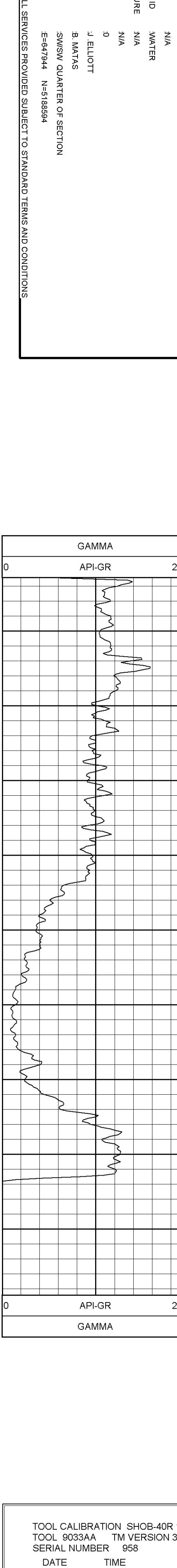
DEN(SS)

G/CC

3

FEET
<-VOLUME
SPEED->

LOCATION	N/A	PERMANENT DATUM	:GL	ELEVATION KB	N/A
SECTION	21	LOG MEASURED FROM	:GL	ELEVATION DF	N/A
TOWNSHIP	:139N	DRL MEASURED FROM	:GL	ELEVATION GL	2494
RANGE	:98W				
API NO.	N/A				
UNIQUE WELL ID.	N/A				



TOOL CALIBRATION SHOB-40R 10/27/06 10:10
TOOL 9033AA TM VERSION 3
SERIAL NUMBER 958

DATE	TIME	SENSOR	STANDARD	RESPONSE
1 Aug21,06	20:48:42	GAMMA	Default [CPS]	Default [CPS]
Aug21,06	20:48:42	GAMMA	Default [CPS]	Default [CPS]
2 Aug21,06	20:49:17	DEN(SS)	1.000 [G/CC]	5780.00 [CPS]
Aug21,06	20:49:17	DEN(SS)	2.410 [G/CC]	1589.00 [CPS]
3 Aug28,06	18:25:01	RES(SG)	Default [CPS]	Default [CPS]
Aug28,06	18:25:01	RES(SG)	Default [CPS]	Default [CPS]
4 Aug21,06	20:50:24	CALIPER	4.000 [INCH]	693.00 [CPS]
Aug21,06	20:50:24	CALIPER	6.040 [INCH]	1515.00 [CPS]
5 Aug21,06	20:48:42	DENSITYH	Default [CPS]	Default [CPS]
Aug21,06	20:48:42	DENSITYH	Default [CPS]	Default [CPS]
6 Aug21,06	20:50:44	CALIPERL	4.000 [INCH]	380.00 [CPS]
Aug21,06	20:50:44	CALIPERL	8.000 [INCH]	1125.00 [CPS]

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

Century
GEOPHYSICAL CORP.

GAMMA-RES-DENSITY

century-geo.com

SHOB-41R

10

5

0

-5

-10

-15

-20

-25

-30

-35

-40

-45

-50

-55

-60

-65

-70

-75

-80

-85

-90

-95

-100

-105

-110

-115

-120

-125

-130

-135

-140

-145

-150

-155

-160

-165

-170

-175

-180

-185

-190

-195

-200

-205

-210

-215

-220

-225

-230

-235

-240

-245

-250

-255

-260

-265

-270

-275

-280

-285

-290

-295

-300

-305

-310

-315

-320

-325

-330

-335

-340

-345

-350

-355

-360

-365

-370

-375

-380

-385

-390

-395

-400

-405

-410

-415

-420

-425

-430

-435

-440

-445

-450

-455

-460

-465

-470

-475

-480

-485

-490

-495

-500

-505

-510

-515

-520

-525

-530

-535

-540

-545

-550

-555

-560

-565

-570

-575

-580

-585

-590

-595

-600

-605

-610

-615

-620

-625

-630

-635

-640

-645

-650

-655

-660

-665

-670

-675

-680

-685

-690

-695

-700

-705

-710

-715

-720

-725

-730

-735

-740

-745

-750

-755

-760

-765

-770

-775

-780

-785

-790

-795

-800

-805

-810

-815

-820

-825

-830

-835

-840

-845

-850

-855

-860

-865

-870

-875

-880

-885

-890

-895

-900

-905

-910

-915

-920

-925

-930

-935

-940

-945

-950

-955

-960

-965

-970

-975

-980

-985

-990

-995

-1000

-1005

-1010

-1015

-

Century
GEO PHYSICAL CORP.

century-geo.com

SHOB-42R

GAMMA-RES-DENSITY

COMPANY: GOLDER ASSOCIATES
WELL: SHOB-42R
FIELD: SOUTH HEART
COUNTY: STARK
STATE: NORTH DAKOTA

OTHER SERVICES:
N/A
N/A
N/A

LOCATION: N/A
SECTION: 23
TOWNSHIP: 139N
RANGE: 98W
API NO.: N/A

UNIQUE WELL ID: N/A
PERMANENT DATUM: GL
LOG MEASURED FROM: GL
DRL MEASURED FROM: GL

ELEVATION KB: N/A
ELEVATION DF: N/A
ELEVATION GL: 2455

FEET
<-VOLUME
SPEED->

CALIPER
0 INCH 10

RES(SG)		
50	OHM-M	150
RES(SG)		
0	OHM-M	50

DEN(SS) 3

G/CC

1

DEN(SS) 3

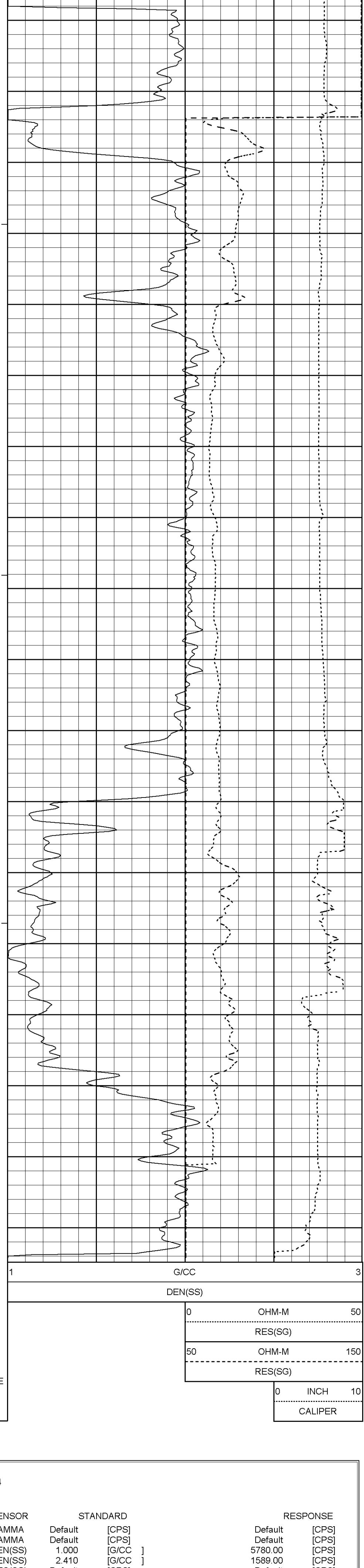
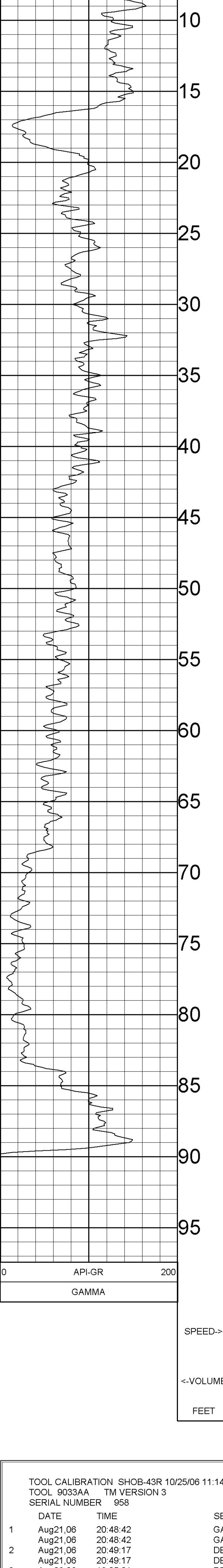
Century
EOPHYSICAL CORP.

century-geo.com

CENSISITY

12(2)

RVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



Aug 21, 06 20:50:44 C

Century
GEOPHYSICAL CORP.

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GAMMA-RES-DENSITY

SHOB-44R

COMPANY	GOLDER ASSOCIATES	OTHER SERVICES:
WELL	SHOB-44R	N/A
FIELD	SOUTH HEART	N/A
COUNTY	STARK	N/A
STATE	NORTH DAKOTA	N/A
LOCATION		
TOWNSHIP		
SECTION	27	
RANGE	38W	
API NO.	N/A	
UNIQUE WELL ID.	N/A	

PERMANENT DATUM GL
LOG MEASURED FROM GL
DRL MEASURED FROM GL

ELEVATION KB N/A
ELEVATION DF N/A
ELEVATION GL 2520

DATE
DEPTH DRILLER
LOG TOP
LOG BOTTOM
CASING OD

BIT SIZE
N/A
1:50
160.00
N/A

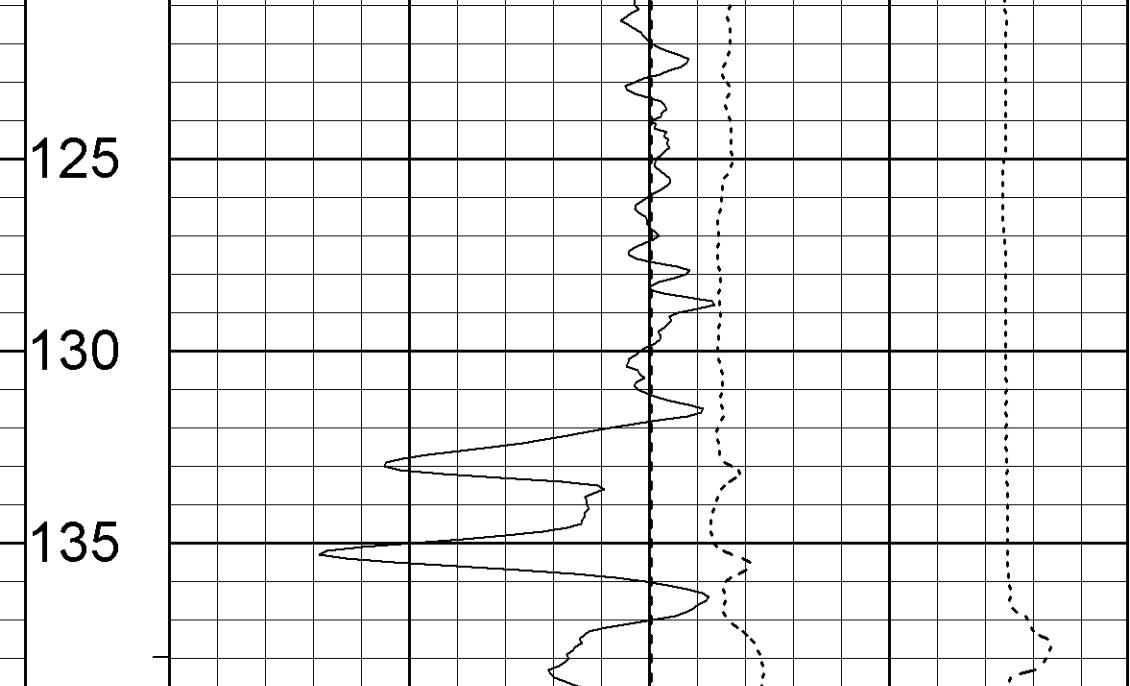
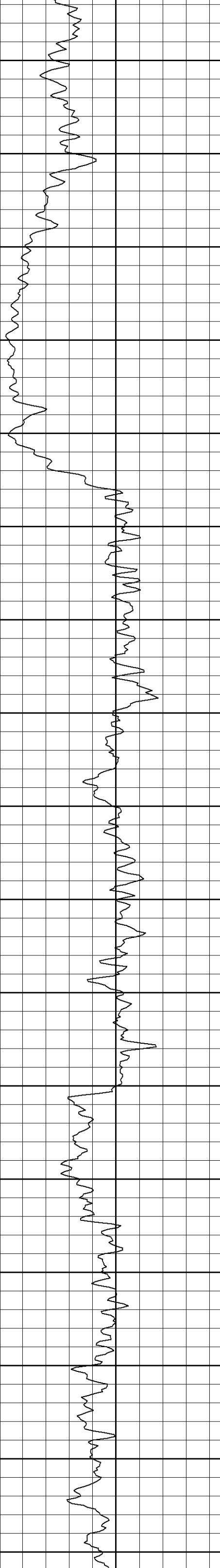
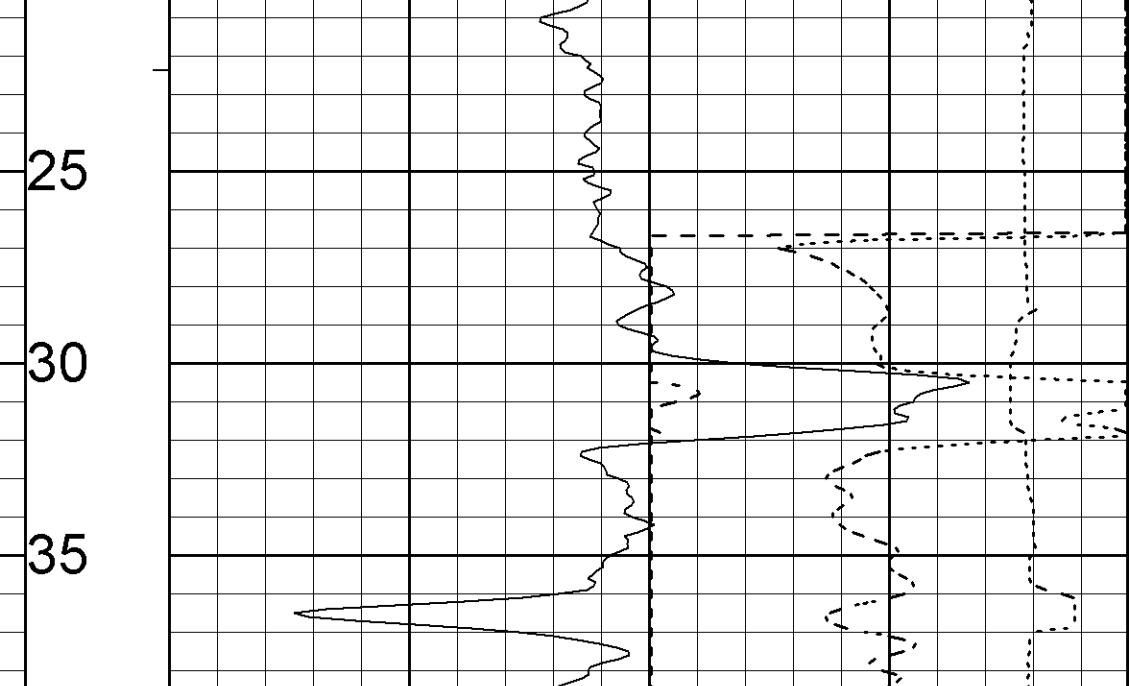
CASING BOTTOM
TIME
CASING TYPE
BOREHOLE FLUID
RM TEMPERATURE
MUD RES

N/A
WATER
N/A
0
0
N/A

RECORDED BY
REMARKS 1
REMARKS 2

D. LEPPERT
B. MATAS
N/A
E=650799 N=5188283

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



TOOL CALIBRATION SHOB-44R 10/11/06 13:57		
TOOL 9033AA TM VERSION 3		
SERIAL NUMBER 958		
DATE	TIME	SENSOR
1 Aug21,06	21:48:42	GAMMA Default [CPS]
Aug21,06	20:48:42	GAMMA Default [CPS]
2 Aug21,06	20:49:17	DEN(SS) 1.000 [G/CC]
Aug21,06	20:49:17	DEN(SS) 2.410 [G/CC]
3 Aug28,06	18:25:01	RES(G) Default [CPS]
Aug28,06	18:25:01	RES(G) Default [CPS]
4 Aug21,06	20:50:24	CALIPER 4.000 [INCH]
Aug21,06	20:50:24	CALIPER 6.040 [INCH]
5 Aug21,06	20:48:42	DENSITYH Default [CPS]
Aug21,06	20:48:42	DENSITYH Default [CPS]
Aug21,06	20:50:44	CALIPERL 4.000 [INCH]
Aug21,06	20:50:44	CALIPERL 8.000 [INCH]
		RESPONSE
		Default [CPS]
		Default [CPS]
		5780.00 [CPS]
		1589.00 [CPS]
		Default [CPS]
		693.00 [CPS]
		1515.00 [CPS]
		Default [CPS]
		Default [CPS]
		380.00 [CPS]
		1125.00 [CPS]

TOOL CALIBRATION SHOB-44R 10/11/06 13:57		
TOOL 9033AA TM VERSION 3		
SERIAL NUMBER 958		
DATE	TIME	SENSOR
1 Aug21,06	21:48:42	GAMMA Default [CPS]
Aug21,06	20:48:42	GAMMA Default [CPS]
2 Aug21,06	20:49:17	DEN(SS) 1.000 [G/CC]
Aug21,06	20:49:17	DEN(SS) 2.410 [G/CC]
3 Aug28,06	18:25:01	RES(G) Default [CPS]
Aug28,06	18:25:01	RES(G) Default [CPS]
4 Aug21,06	20:50:24	CALIPER 4.000 [INCH]
Aug21,06	20:50:24	CALIPER 6.040 [INCH]
5 Aug21,06	20:48:42	DENSITYH Default [CPS]
Aug21,06	20:48:42	DENSITYH Default [CPS]
Aug21,06	20:50:44	CALIPERL 4.000 [INCH]
Aug21,06	20:50:44	CALIPERL 8.000 [INCH]
		RESPONSE
		Default [CPS]
		Default [CPS]
		5780.00 [CPS]
		1589.00 [CPS]
		Default [CPS]
		693.00 [CPS]
		1515.00 [CPS]
		Default [CPS]
		Default [CPS]
		380.00 [CPS]
		1125.00 [CPS]

SHOB-45R

GAMMA-RES-DENSITY

COMPANY
WELL
FIELD
COUNTY
STATE

GOLDER ASSOCIATES
SHOB-45R
SOUTH HEART
STARK
NORTH DAKOTA

OTHER SERVICES:
N/A
N/A
N/A

LOCATION
SECTION
TOWNSHIP
RANGE
API NO.
UNIQUE WELL ID.

N/A
27
139N
98W
N/A
N/A

PERMANENT DATUM
LOG MEASURED FROM: GL
DRL MEASURED FROM: GL

GL
ELEVATION KB N/A
ELEVATION DF N/A
ELEVATION GL 2414

FEET
<-VOLUME
SPEED->

CALIPER
0 INCH 10

RES(SG)		
50	OHM-M	150
RES(SG)		
0	OHM-M	50

DEN(SS)

3

G/CC

3

GAMMA

0 API-GR 200

5

10

15

20

25

30

35

40

45

50

55

60

65

70

SPEED->

<-VOLUME

FEET

G/CC

3

DEN(SS)

3

0 OHM-M 50

RES(SG)

50 OHM-M 150

RES(SG)

0 INCH 10

CALIPER

GAMMA

0 API-GR 200

5

10

15

20

25

30

35

40

45

50

55

60

65

70

SPEED->

<-VOLUME

FEET

G/CC

3

DEN(SS)

3

0 OHM-M 50

RES(SG)

50 OHM-M 150

RES(SG)

0 INCH 10

CALIPER

WITNESSED BY J.ELLIOTT
RECORDED BY B.MATAS
REMARKS 1 SW/NW QUARTER OF SECTION
REMARKS 2 E=649571 N=5187449

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

TOOL CALIBRATION SHOB-45R 10/26/06 08:08

TOOL 9033AA TM VERSION 3

SERIAL NUMBER 958

DATE	TIME	SENSOR	STANDARD	RESPONSE
1 Aug21,06	20:48:42	GAMMA	Default [CPS]	[CPS]
Aug21,06	20:48:42	GAMMA	Default [CPS]	[CPS]
2 Aug21,06	20:49:17	DEN(SS)	1.000 [G/CC]	5780.00 [CPS]
Aug21,06	20:49:17	DEN(SS)	2.410 [G/CC]	1589.00 [CPS]
3 Aug28,06	18:25:01	RES(SG)	Default [CPS]	[CPS]
Aug28,06	18:25:01	RES(SG)	Default [CPS]	[CPS]
4 Aug21,06	20:50:24	CALIPER	4.000 [INCH]	693.00 [CPS]
Aug21,06	20:50:24	CALIPER	6.040 [INCH]	1515.00 [CPS]
5 Aug21,06	20:48:42	DENSITYH	Default [CPS]	[CPS]
Aug21,06	20:48:42	DENSITYH	Default [CPS]	[CPS]
6 Aug21,06	20:50:44	CALIPERL	4.000 [INCH]	380.00 [CPS]
Aug21,06	20:50:44	CALIPERL	8.000 [INCH]	1125.00 [CPS]

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GAMMA-RES-DENSITY

SHOB-46R

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COMPANY
GOLDER ASSOCIATES
WELL
SHOB-46R
FIELD
SOUTH HEART
COUNTY
STARK
STATE
NORTH DAKOTA

OTHER SERVICES:
N/A
N/A
N/A

LOCATION
SECTION
TOWNSHIP
RANGE
APN#
UNIQUE WELL ID.

N/A
27
139N
98W
N/A
N/A

PERMANENT DATUM
LOG MEASURED FROM GL
DRI MEASURED FROM GL

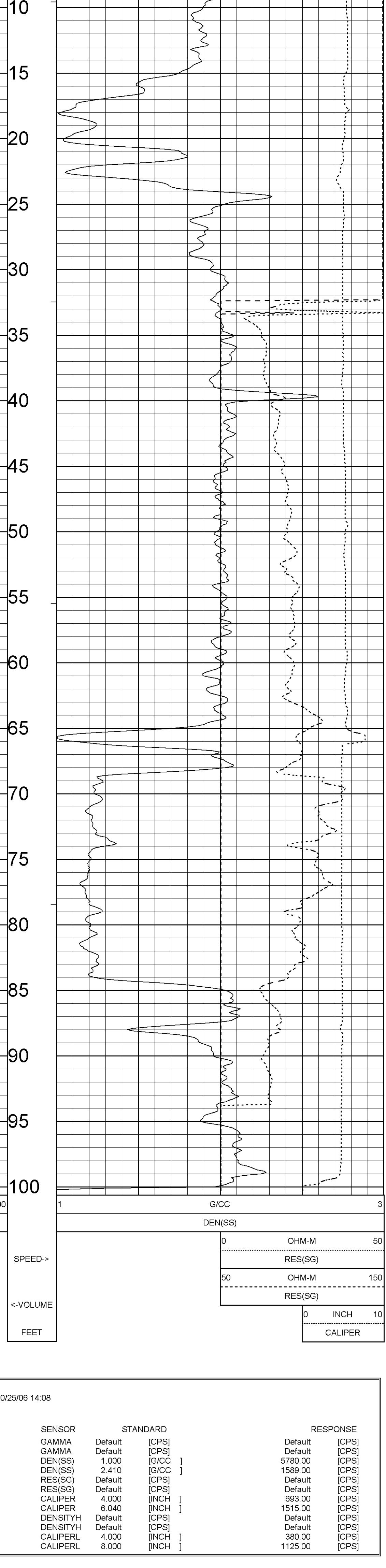
GL
ELEVATION KB N/A
ELEVATION DF N/A
ELEVATION GL 2395

DATE
DEPTH DRILLER
BIT SIZE
LOG TOP

:10/25/06
:100
5.0
:1.50

MUD WEIGHT
WITNESSED BY
RECORDED BY
REMARKS 1
REMARKS 2

0
J. ELLIOTT
B. MATAS
SENW QUARTER OF SECTION
E-650391
N=5187471
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



TOOL CALIBRATION SHOB-46R 10/25/06 14:08

TOOL 9033AA TM VERSION 3

SERIAL NUMBER 958

	DATE	TIME	SENSOR	STANDARD	RESPONSE
1	Aug21,06	20:48:42	GAMMA	Default [CPS]	[CPS]
	Aug21,06	20:48:42	GAMMA	Default [CPS]	[CPS]
2	Aug21,06	20:49:17	DEN(SS)	1.000 [G/CC]	5780.00 [CPS]
	Aug21,06	20:49:17	DEN(SS)	2.410 [G/CC]	1589.00 [CPS]
3	Aug28,06	18:25:01	RES(SG)	Default [CPS]	[CPS]
	Aug28,06	18:25:01	RES(SG)	Default [CPS]	[CPS]
4	Aug21,06	20:50:24	CALIPER	4.000 [INCH]	693.00 [CPS]
	Aug21,06	20:50:24	CALIPER	6.040 [INCH]	1515.00 [CPS]
5	Aug21,06	20:48:42	DENSITYH	Default [CPS]	[CPS]
	Aug21,06	20:48:42	DENSITYH	Default [CPS]	[CPS]
6	Aug21,06	20:50:44	CALIPERL	4.000 [INCH]	380.00 [CPS]
	Aug21,06	20:50:44	CALIPERL	8.000 [INCH]	1125.00 [CPS]

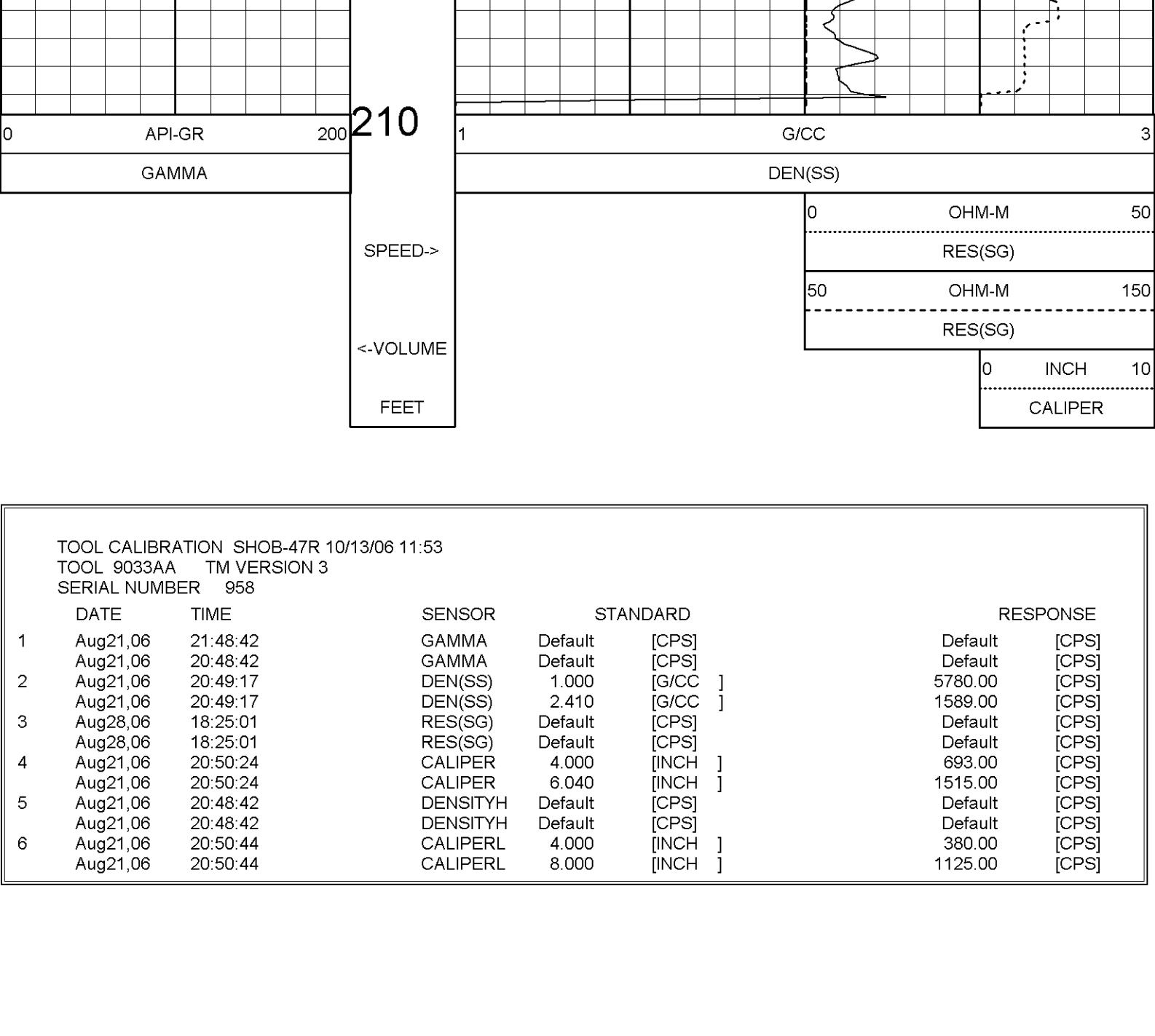
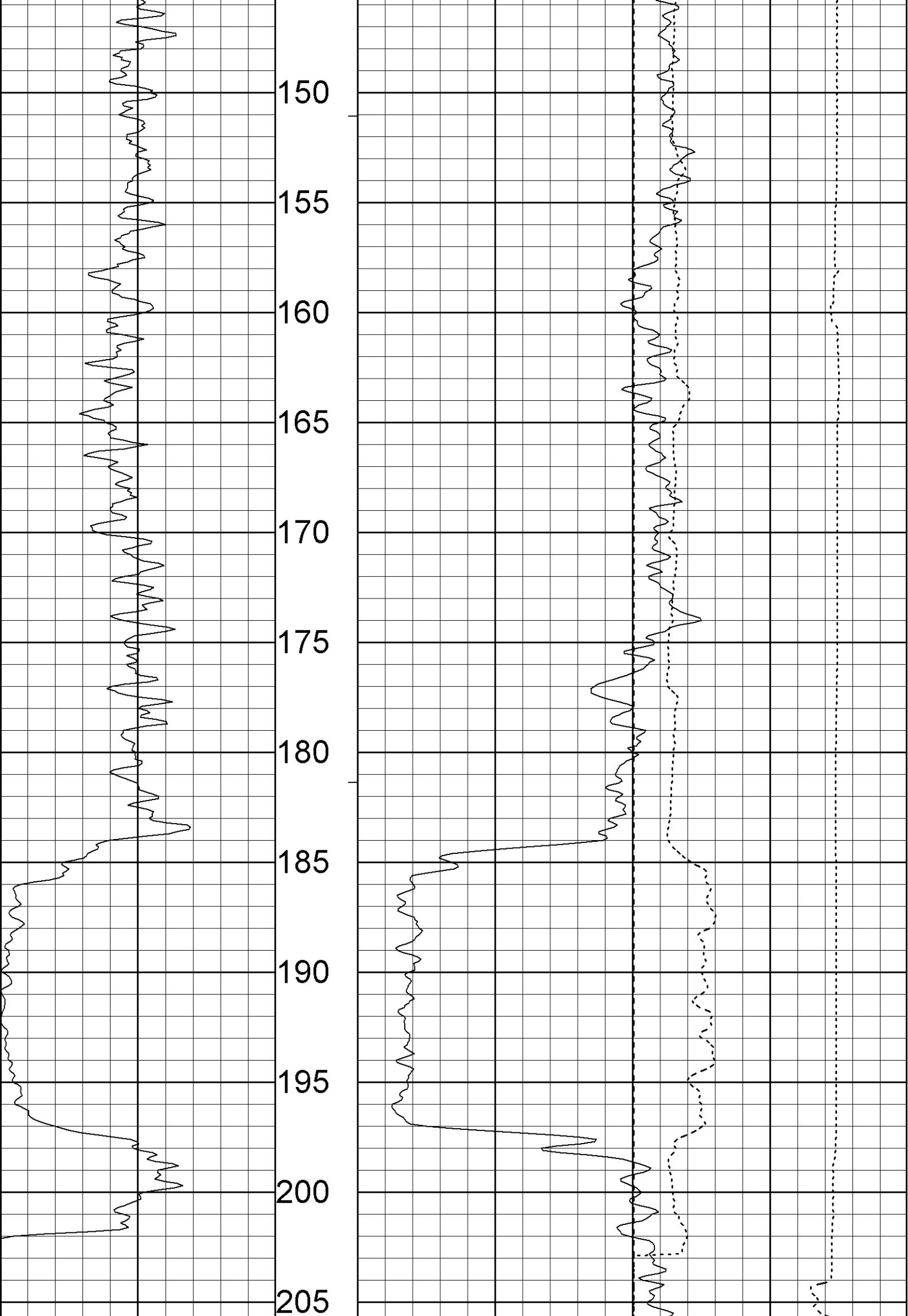
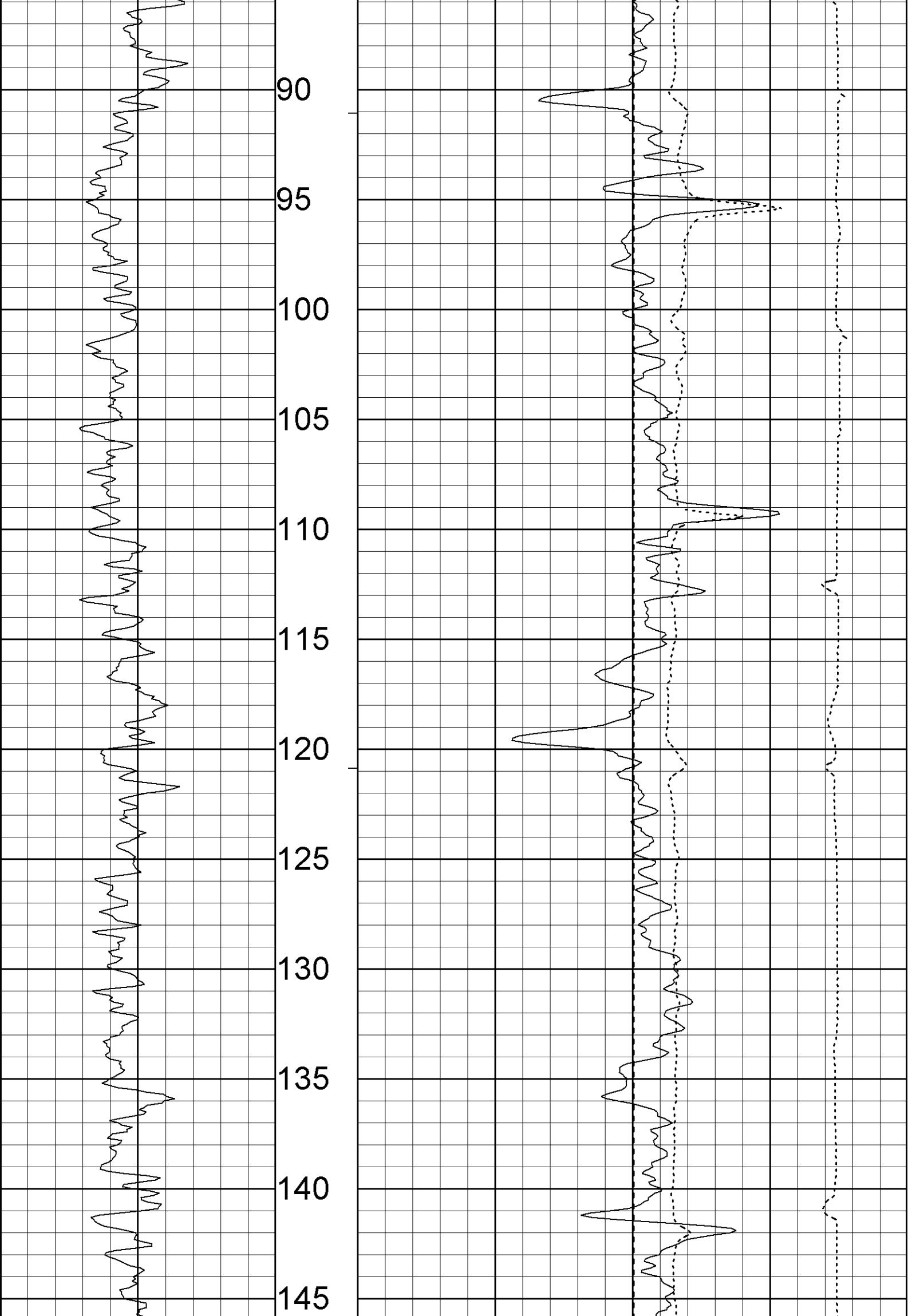
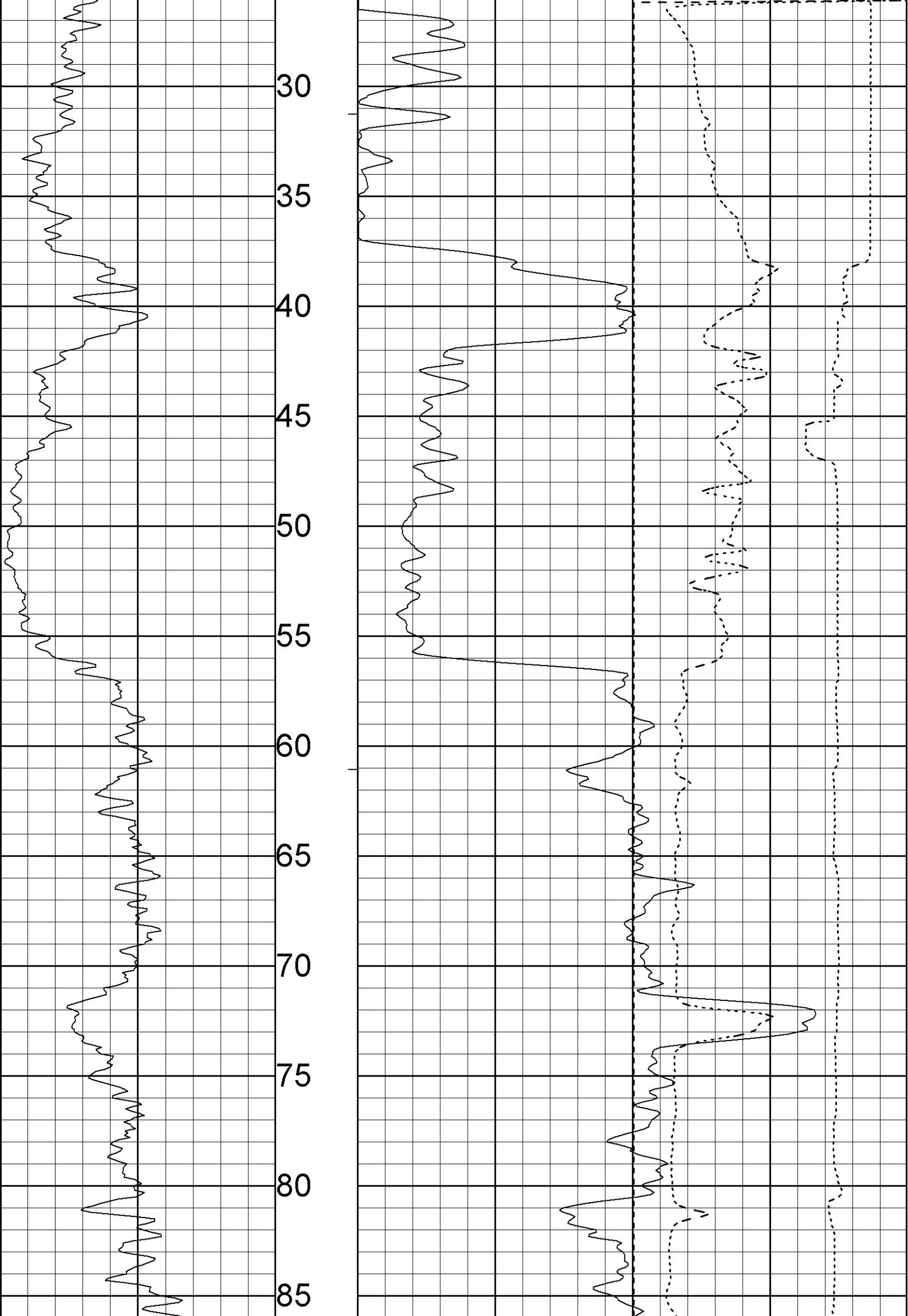
Century
GEOPHYSICAL CORP.

century-geo.com

GAMMA-RES-DENSITY

SHOB-47R

COMPANY	GOLDER ASSOCIATES	OTHER SERVICES:
WELL	SHOB-47R	N/A
FIELD	SOUTH HEART	N/A
COUNTY	STARK	N/A
STATE	NORTH DAKOTA	
LOCATION	N/A	
SECTION	27	
TOWNSHIP	:13N	
RANGE	:98W	
API NO.	N/A	
UNIQUE WELL ID	N/A	
PERMANENT WELL ID		
DATE	10/13/06	
DEPTH DRILLER	210	
DRL MEASURED FROM GL		
LOG BOTTOM	206.60	
BIT SIZE	5.0	
LOG TOP	1:40	



TOOL CALIBRATION SHOB-47R 10/13/06 11:53				RESPONSE
DATE	TIME	SENSOR	STANDARD	
1	Aug21,06	21:48:42	GAMMA	Default [CPS]
	Aug21,06	20:48:42	GAMMA	Default [CPS]
2	Aug21,06	20:49:17	DEN(SS)	Default [CPS]
	Aug21,06	20:49:17	DEN(SS)	1.000 [G/CC]
3	Aug28,06	18:25:01	RES(SG)	Default [CPS]
	Aug28,06	18:25:01	RES(SG)	2.410 [G/CC]
4	Aug21,06	20:50:24	CALIPER	Default [INCH]
	Aug21,06	20:50:24	CALIPER	4.000 [INCH]
5	Aug21,06	20:48:42	DENSITYH	Default [CPS]
	Aug21,06	20:48:42	DENSITYH	6.040 [INCH]
6	Aug21,06	20:50:44	CALIPERL	Default [CPS]
	Aug21,06	20:50:44	CALIPERL	4.000 [INCH]
				Default [CPS]
				380.00 [CPS]
				1125.00 [CPS]

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

REMARKS 1
REMARKS 2
RECORDED BY
WITNESSED BY
MUD RES
RM TEMPERATURE
CASING TYPE
CASING OD
LOG BOTTOM
BIT SIZE
SPEED-->
<-VOLUME
FEET

N=5187065
E=649988

SWSE QUARTER OF SECTION

Century
GEOPHYSICAL CORP.

GAMMA-RES-DENSITY

SHOB-48R

century-geo.com

COMPANY	SOLIDER ASSOCIATES	OTHER SERVICES
WELL	SHOB-48R	N/A
FIELD	SOUTH HEART	N/A
COUNTY	STARK	N/A
STATE	NORTH DAKOTA	N/A

LOCATION

N/A

SECTION

27

TOWNSHIP

139N

RANGE

39W

API NO.

N/A

UNIQUE WELL ID.

N/A

PERMANENT DATUM

GL

LOG MEASURED FROM GL

ELEVATION DF N/A

DRL MEASURED FROM GL

ELEVATION GL 2546

DATE

:10/25/06

DEPTH DRILLER

:150

BIT SIZE

5.0

LOG TOP

:1:40

LOG BOTTOM

:149:70

CASING OD

N/A

MUD RES

N/A

CASING BOTTOM

N/A

CASING TYPE

N/A

BOREHOLE FLUID

WATER

R/W TEMPERATURE

N/A

RECORDED BY

B. MATAS

REMARKS 1

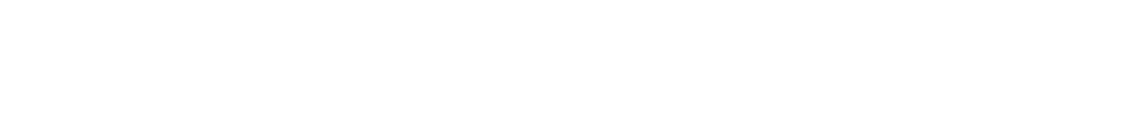
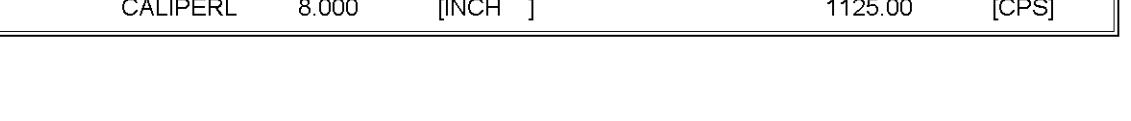
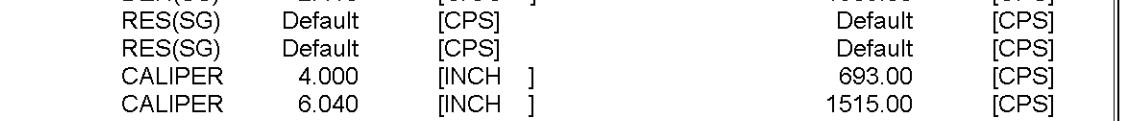
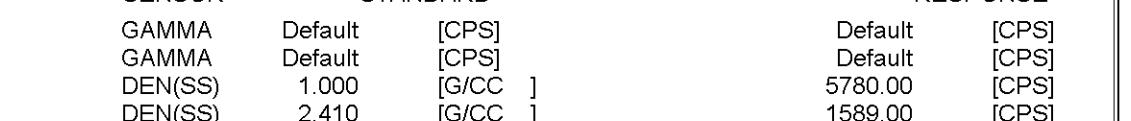
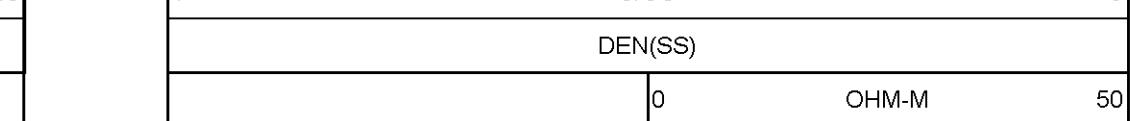
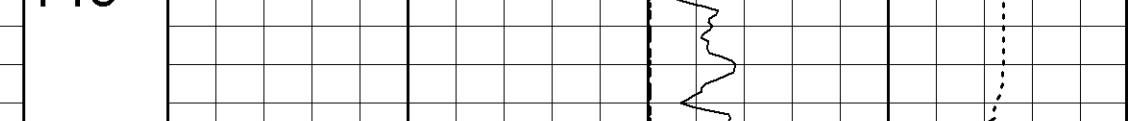
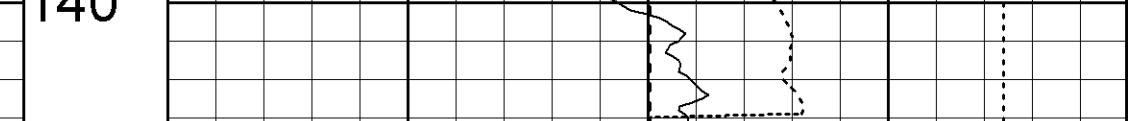
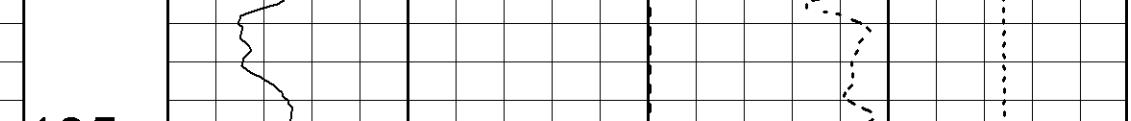
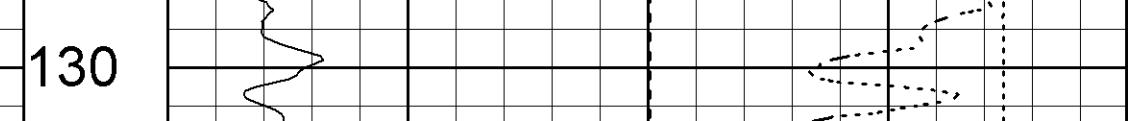
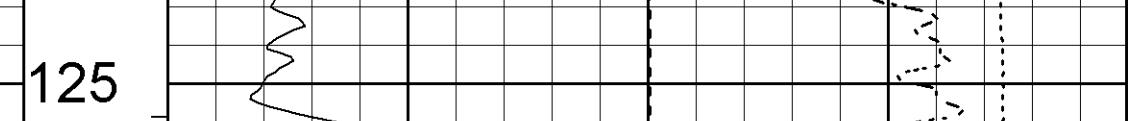
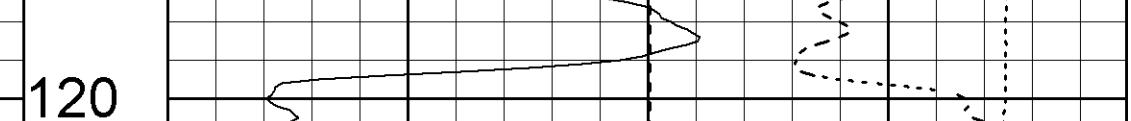
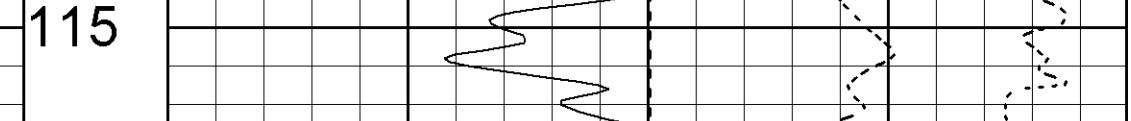
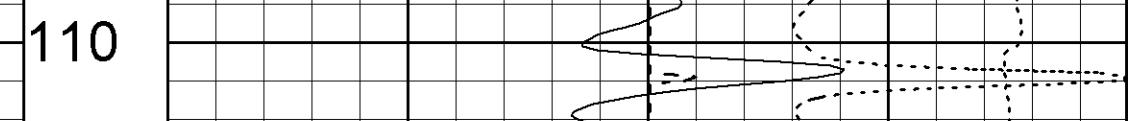
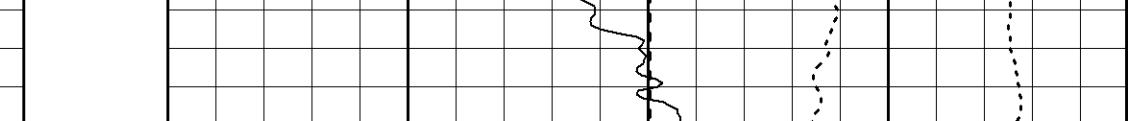
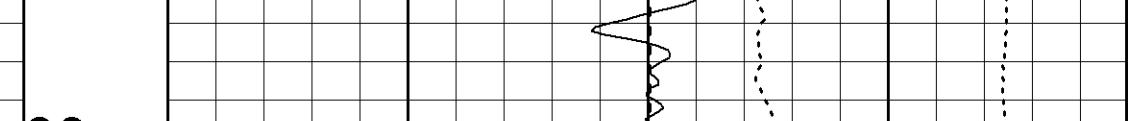
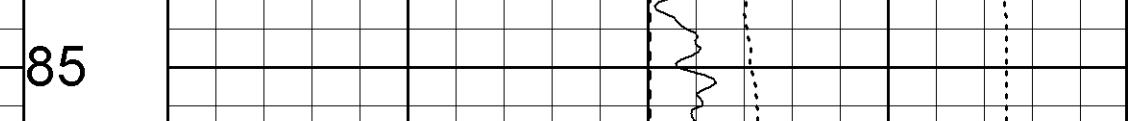
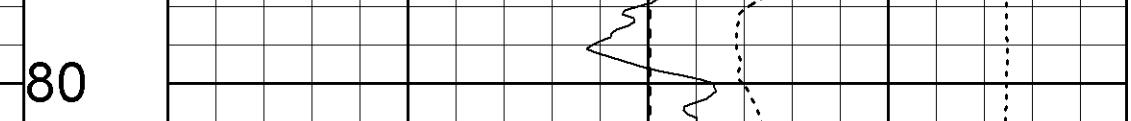
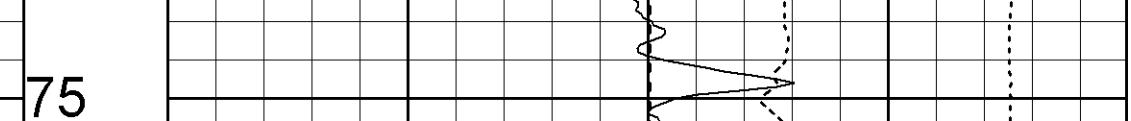
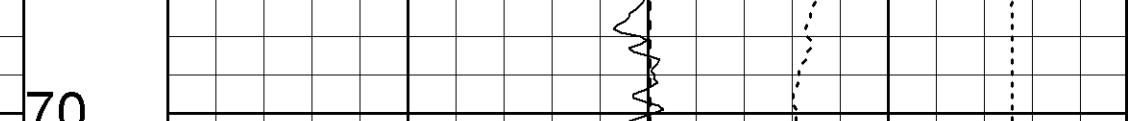
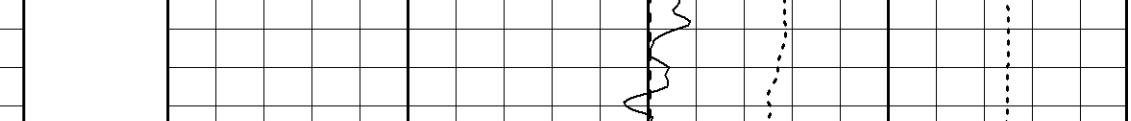
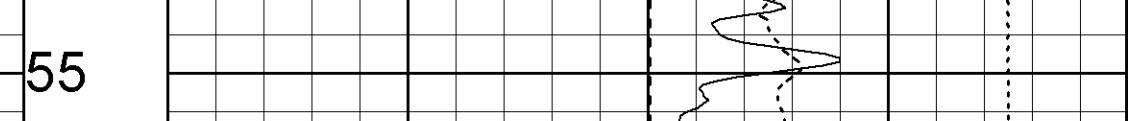
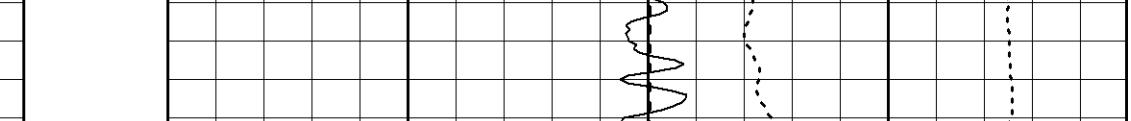
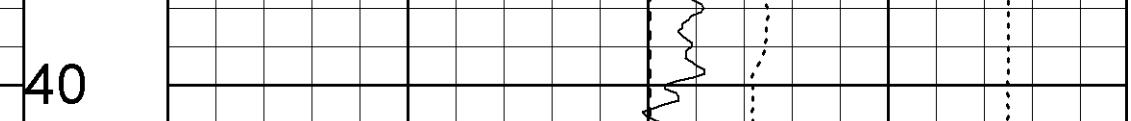
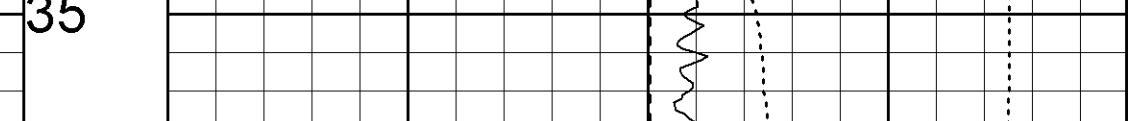
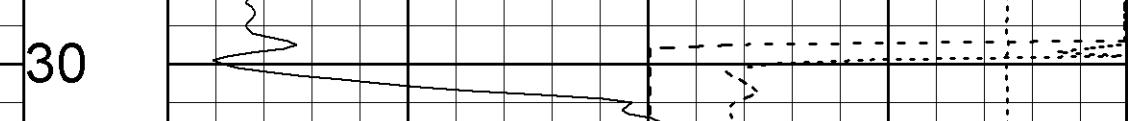
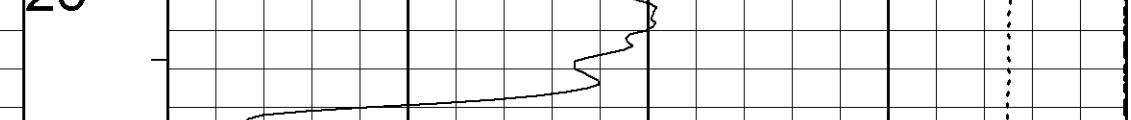
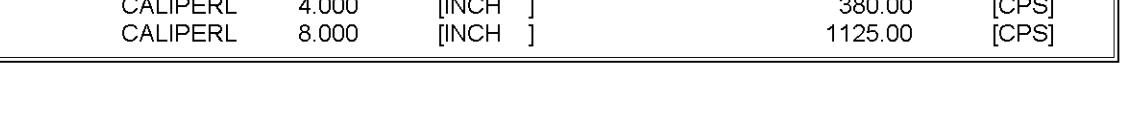
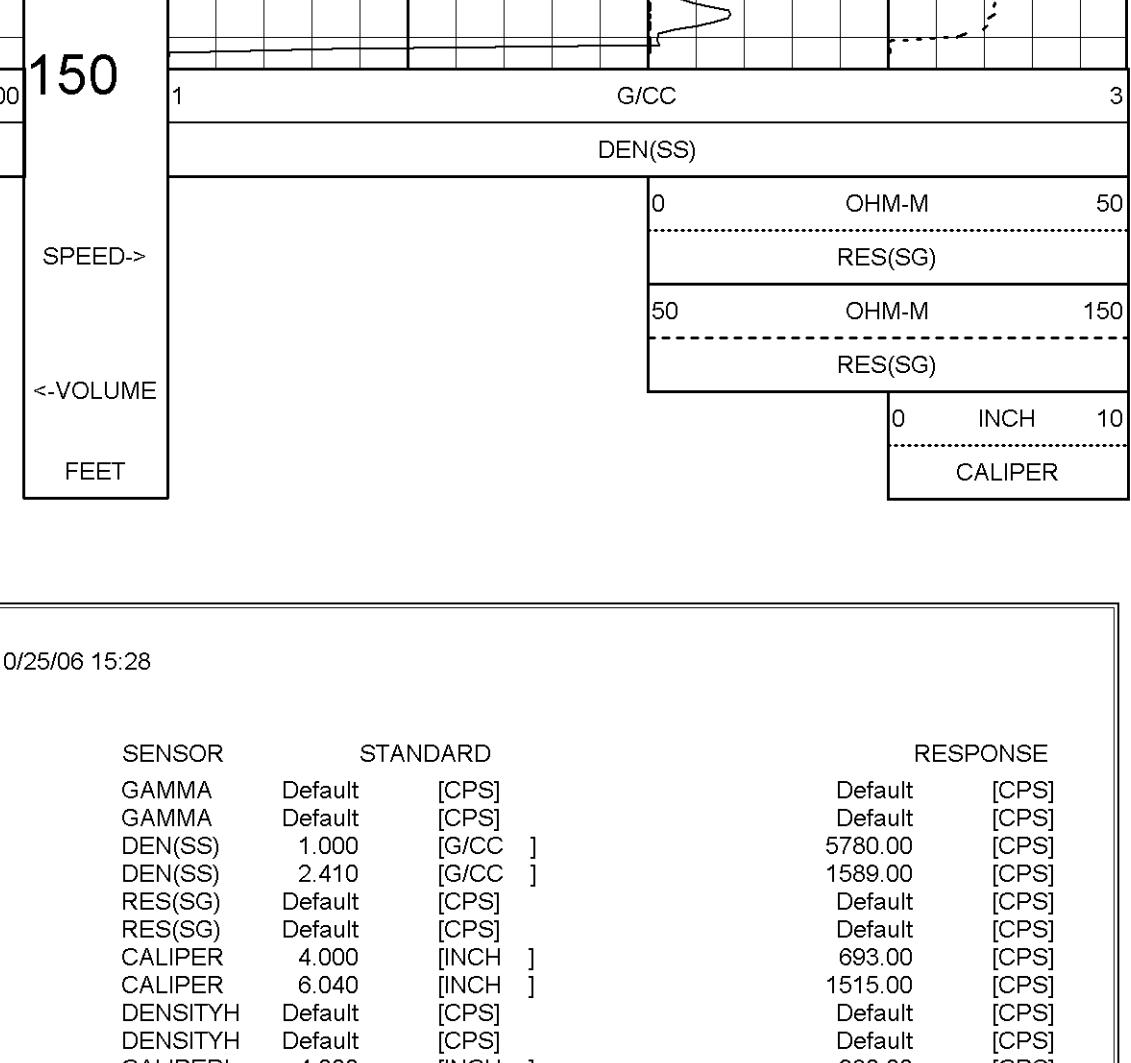
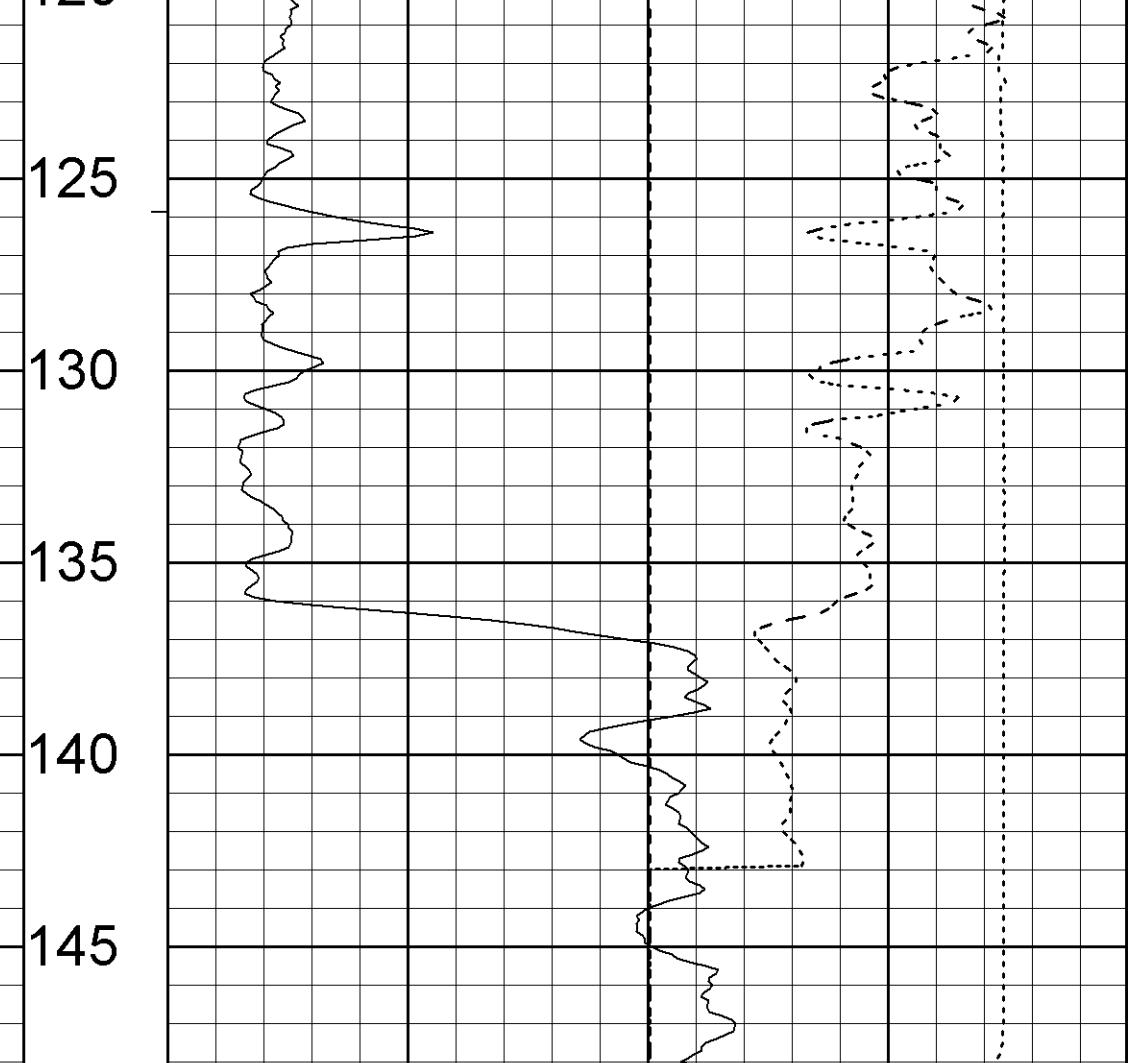
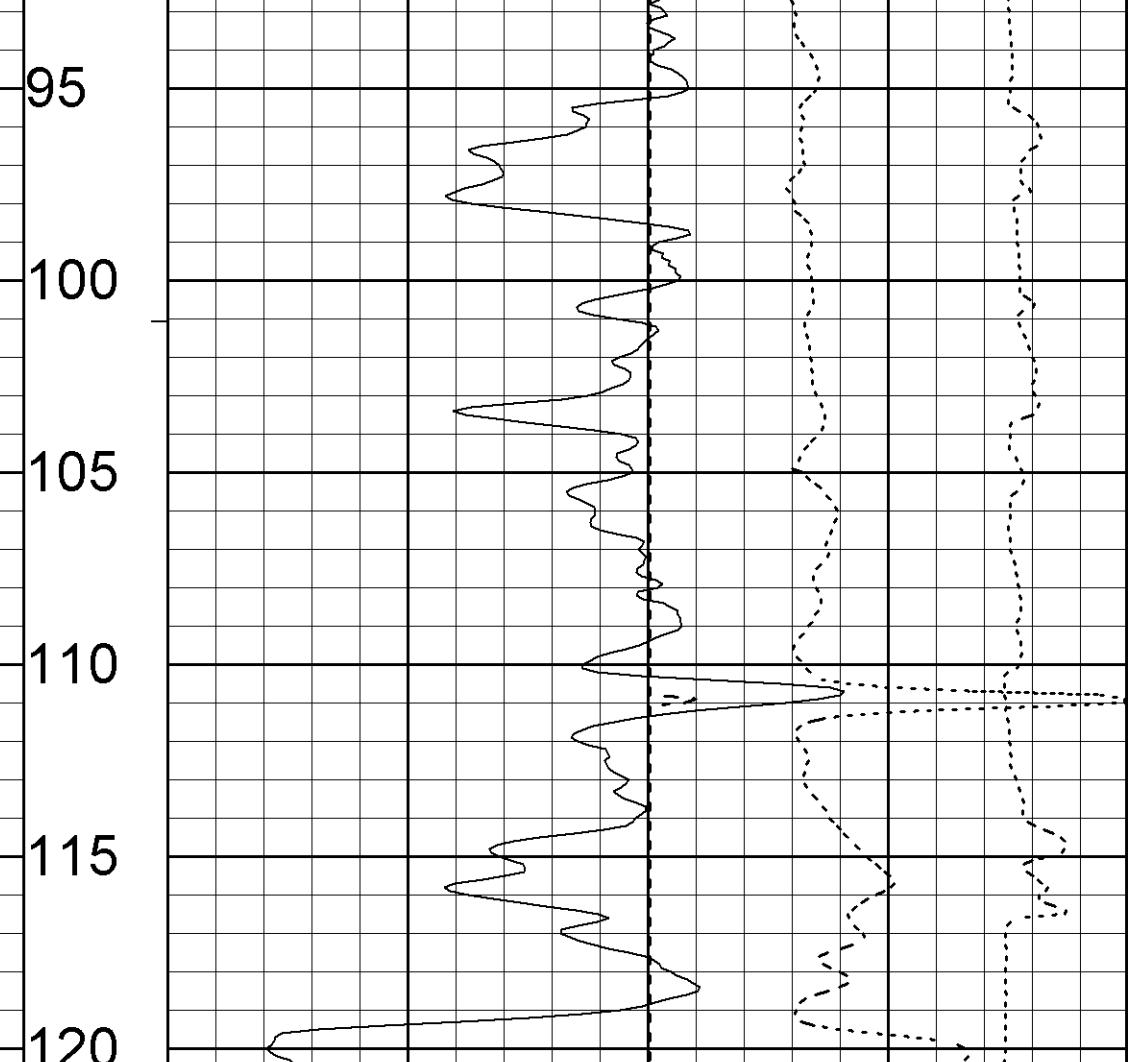
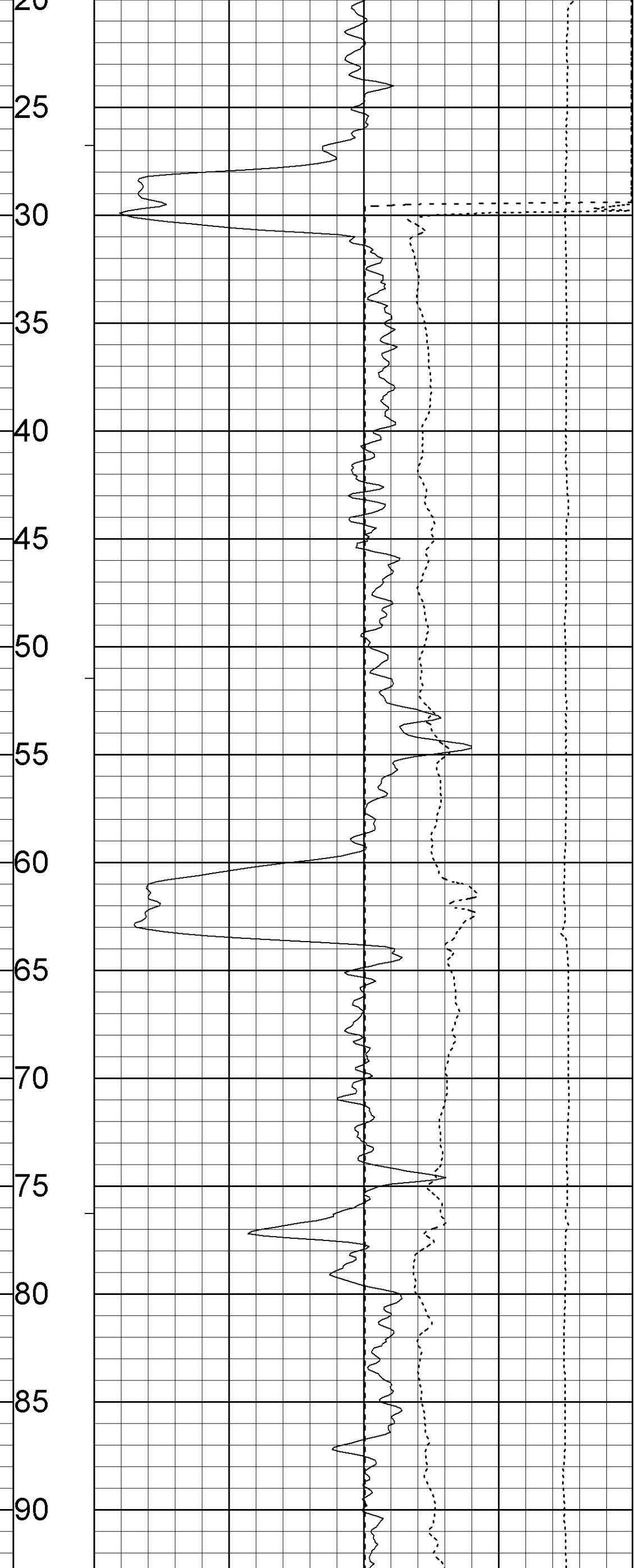
SEDE QUARTER OF SECTION

E=650802

N=187078

REMARKS 2

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



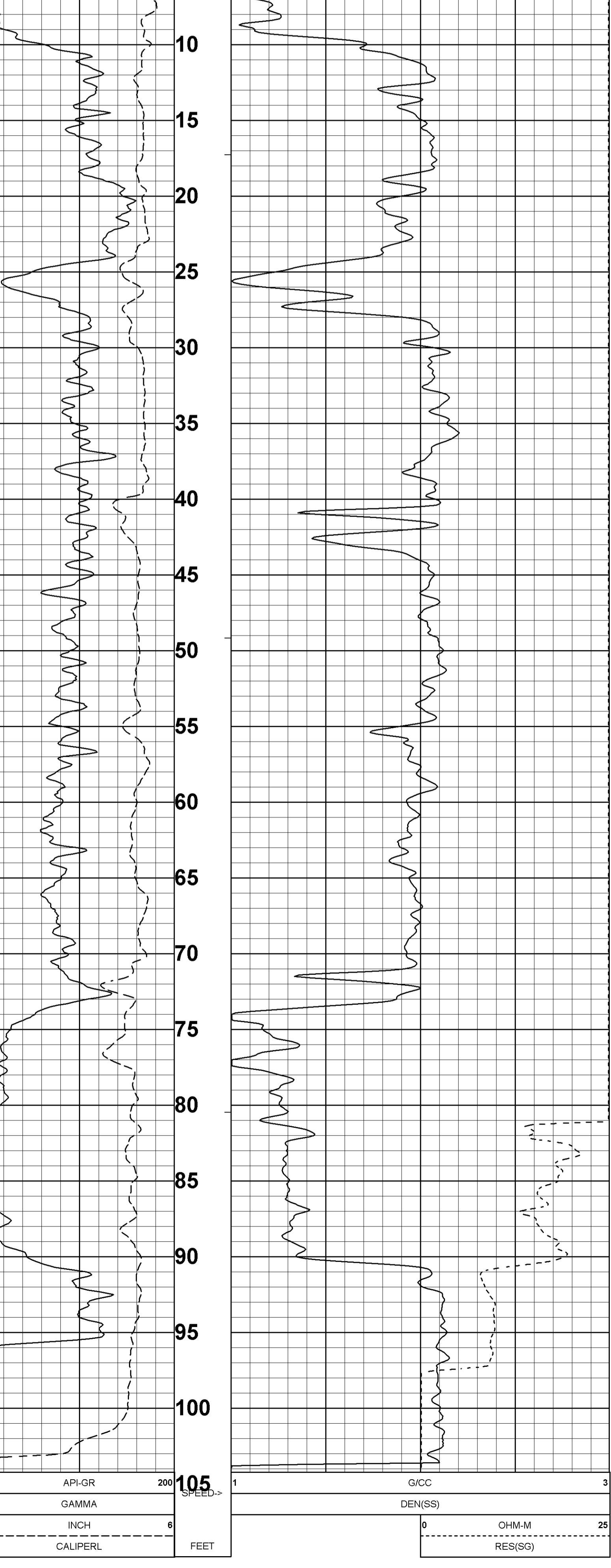
TOOL CALIBRATION SHOB-48R 10/25/06 15:28
TOOL 9033AA TM VERSION 3
SERIAL NUMBER 958

DATE	TIME	SENSOR	STANDARD	RESPONSE
1 Aug21,06	20:48:42	GAMMA	Default [CPS]	[CPS]
Aug21,06	20:48:42	GAMMA	Default [CPS]	[CPS]
2 Aug21,06	20:49:17	DEN(SS)	1.000 [G/CC]	5780.00 [CPS]
Aug21,06	20:49:17	DEN(SS)	2.410 [G/CC]	1589.00 [CPS]
3 Aug28,06	18:25:01	RES(SG)	Default [CPS]	[CPS]
Aug28,06	18:25:01	RES(SG)	Default [CPS]	[CPS]
4 Aug21,06	20:50:24	CALIPER	4.000 [INCH]	693.00 [CPS]
Aug21,06	20:50:24			

Century
WIRELINE SERVICES

GAMMA-RES-DENSITY
GOLDER
SHOB-101

COMPANY	GOLDER ASSOCIATES, INC.	
WELL	SHOB-101	
FIELD	SHP	
COUNTY	STARK	
STATE	NORTH DAKOTA	
LOCATION	:	
SECTION	N/A	
TOWNSHIP	N/A	
RANGE	N/A	
API NO.	N/A	
UNIQUE WELL ID.	N/A	
PERMANENT DATUM	GL	
LOG MEASURED FROM	GL	
DRL MEASURED FROM	GL	
DATE	10/07/07	
DEPTH DRILLER	:105	
BIT SIZE	.50	
LOG TOP	:4.50	
CASING OD	N/A	
CASING BOTTOM	N/A	
CASING TYPE	N/A	
BOREHOLE FLUID	WATER	
RM TEMPERATURE	N/A	
MUD RES	N/A	
MUD WEIGHT	8.5	
WITNESSED BY	J. ELLIOT	
RECORDED BY	M. SUTTON	
REMARKS 1	:	
REMARKS 2	:	
OTHER SERVICES: NONE		



ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

GAMMA-RES-DENSITY
GOLDER
SHOB-102

COMPANY	GOLDER ASSOCIATES, INC.
WELL	SHOB-102
FIELD	SHP
COUNTY	STARK
STATE	NORTH DAKOTA
LOCATION	:
SECTION	N/A
TOWNSHIP	N/A
RANGE	N/A
API NO.	N/A
UNIQUE WELL ID.	N/A
PERMANENT DATUM	GL
LOG MEASURED FROM	GL
DRL MEASURED FROM	GL
DATE	10/08/07
DEPTH DRILLER	65
BIT SIZE	.5.0
LOG TOP	:4.10
LOG BOTTOM	63.70
CASING OD	N/A
CASING BOTTOM	N/A
CASING TYPE	N/A
BOREHOLE FLUID	WATER
RM TEMPERATURE	N/A
MUD RES	N/A
MUD WEIGHT	8.5
WITNESSED BY	J. ELLIOT
RECORDED BY	M. SUTTON
REMARKS 1	:
REMARKS 2	:

OTHER SERVICES:
NONE

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

GDR SHOB-102 10/08/07

LOG PARAMETERS

MATRIX DENSITY : 2.65

NEUTRON MATRIX : SANDSTONE

MATRIX DELTA T : 54

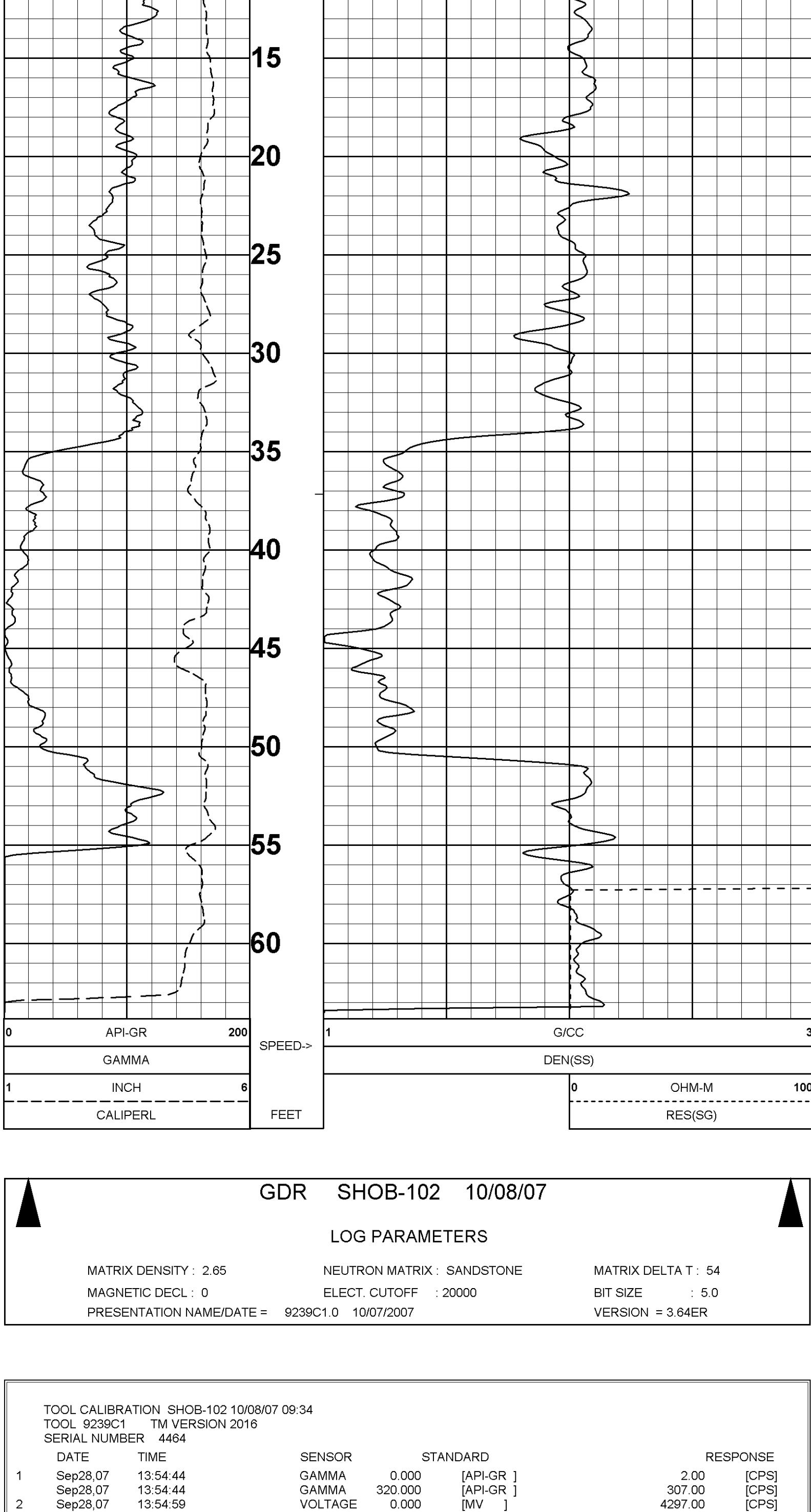
MAGNETIC DECL : 0

ELECT. CUTOFF : 20000

BIT SIZE : 5.0

PRESENTATION NAME/DATE = 9239C1.0 10/07/2007

VERSION = 3.64ER



GDR SHOB-102 10/08/07

LOG PARAMETERS

MATRIX DENSITY : 2.65

NEUTRON MATRIX : SANDSTONE

MATRIX DELTA T : 54

MAGNETIC DECL : 0

ELECT. CUTOFF : 20000

BIT SIZE : 5.0

PRESENTATION NAME/DATE = 9239C1.0 10/07/2007

VERSION = 3.64ER

DATE	TIME	SENSOR	STANDARD	RESPONSE
1 Sep28,07	13:54:44	GAMMA	0.000 [API-GR]	2.00 [CPS]
1 Sep28,07	13:54:44	GAMMA	320.000 [API-GR]	307.00 [CPS]
2 Sep28,07	13:54:59	VOLTAGE	0.000 [MV]	4297.00 [CPS]
2 Sep28,07	13:54:59	VOLTAGE	1989.000 [MV]	268540.00 [CPS]
3 Sep28,07	13:55:03	CALIPER	4.000 [INCH]	155679.00 [CPS]
3 Sep28,07	13:55:03	CALIPER	8.000 [INCH]	426280.00 [CPS]
4 Sep28,07	13:55:08	DEN(LS)	1.000 [G/CC]	26203.00 [CPS]
4 Sep28,07	13:55:08	DEN(LS)	2.383 [G/CC]	2230.00 [CPS]
5 Sep28,07	13:55:14	DEN(SS)	1.000 [G/CC]	46913.00 [CPS]
5 Sep28,07	13:55:14	DEN(SS)	2.383 [G/CC]	15843.00 [CPS]
6 Sep28,07	13:55:20	CALIPERL	4.000 [INCH]	102730.00 [CPS]
6 Sep28,07	13:55:20	CALIPERL	12.000 [INCH]	357523.00 [CPS]
7 Sep28,07	13:55:24	CURRENT	0.000 [UA]	3639.00 [CPS]
7 Sep28,07	13:55:24	CURRENT	284.960 [UA]	27413.00 [CPS]
8 Sep28,07	13:14:43	F	Default [CPS]	
8 Sep28,07	13:14:43	X	Default [CPS]	

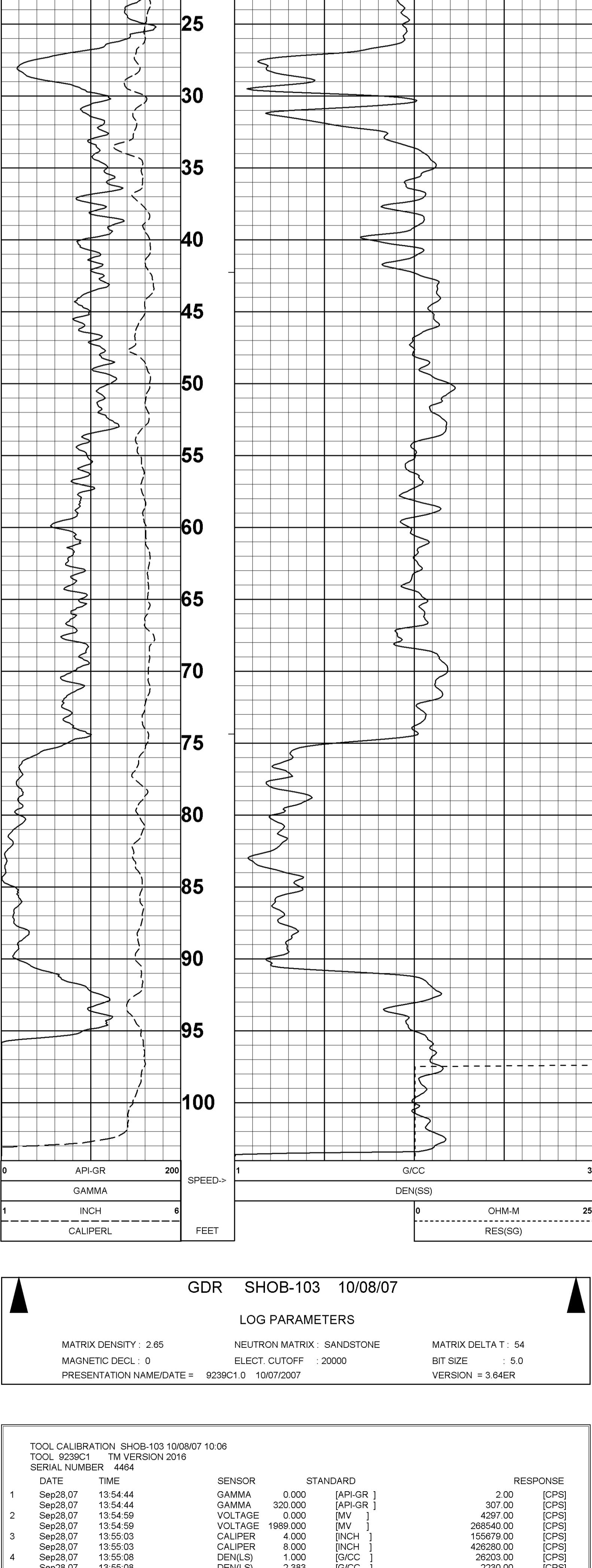
GAMMA-RES-DENSITY
GOLDER
SHOB-103

COMPANY	GOLDER ASSOCIATES, INC.	
WELL	SHOB-103	
FIELD	SHP	
COUNTY	STARK	
STATE	NORTH DAKOTA	
LOCATION	:	
SECTION	N/A	
TOWNSHIP	N/A	
RANGE	N/A	
API NO.	N/A	
UNIQUE WELL ID.		
PERMANENT DATUM	GL	
LOG MEASURED FROM	GL	
DRL MEASURED FROM	GL	
DATE	10/08/07	
DEPTH DRILLER	:105	
BIT SIZE		
LOG TOP	:4,10	
LOG BOTTOM	:105.90	
CASING OD	N/A	
CASING BOTTOM	N/A	
CALIPERL		
INCH	6	
GAMMA		
API-GR	200	
FEET		
RES(SG)		
OHM-M		
25		

GDR SHOB-103 10/08/07

LOG PARAMETERS

MATRIX DENSITY : 2.65	NEUTRON MATRIX : SANDSTONE	MATRIX DELTA T : 54
MAGNETIC DECL : 0	ELECT. CUTOFF : 20000	BIT SIZE : 5.0
PRESENTATION NAME/DATE = 9239C1.0 10/07/2007		VERSION = 3.64ER



GDR SHOB-103 10/08/07

LOG PARAMETERS

MATRIX DENSITY : 2.65	NEUTRON MATRIX : SANDSTONE	MATRIX DELTA T : 54
MAGNETIC DECL : 0	ELECT. CUTOFF : 20000	BIT SIZE : 5.0
PRESENTATION NAME/DATE = 9239C1.0 10/07/2007		VERSION = 3.64ER

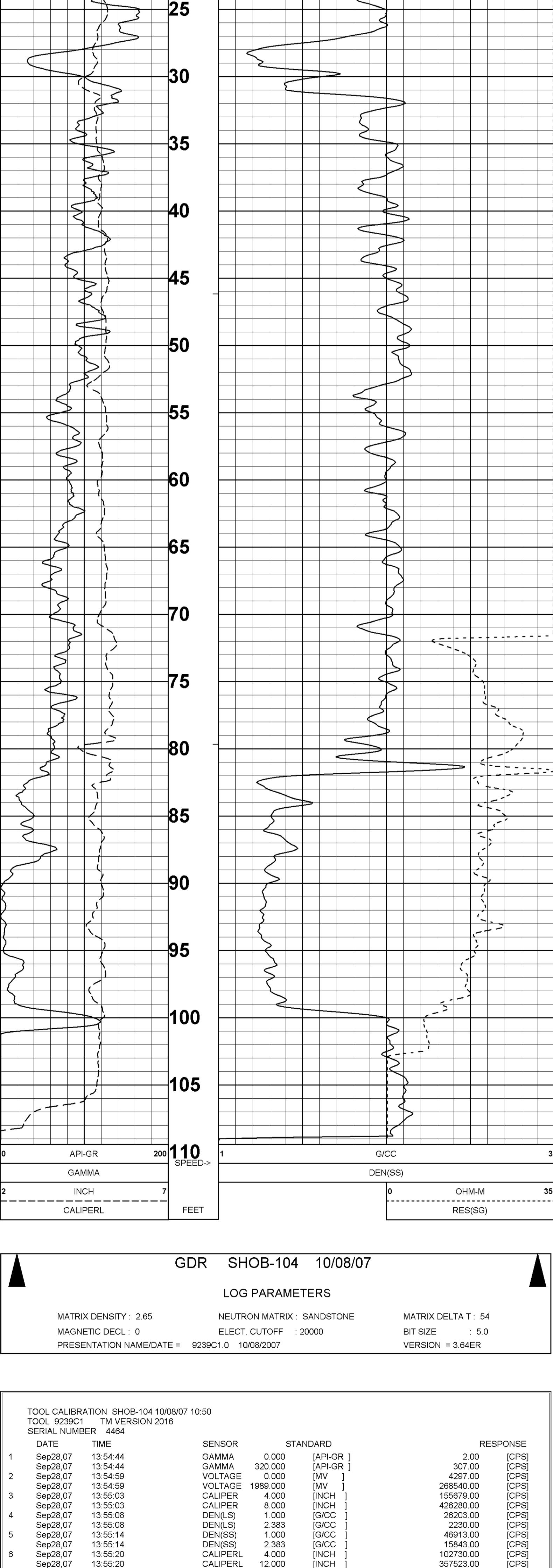
TOOL CALIBRATION SHOB-103 10/08/07 10:06
TOOL 9239C1 TM VERSION 2016
SERIAL NUMBER 4464

DATE	TIME	SENSOR	STANDARD	RESPONSE
1 Sep28,07	13:54:44	GAMMA	0.000 [API-GR]	2.00 [CPS]
1 Sep28,07	13:54:44	GAMMA	320.000 [API-GR]	307.00 [CPS]
2 Sep28,07	13:54:59	VOLTAGE	0.000 [MV]	4297.00 [CPS]
2 Sep28,07	13:54:59	VOLTAGE	1989.000 [MV]	268540.00 [CPS]
3 Sep28,07	13:55:03	CALIPER	4.000 [INCH]	155679.00 [CPS]
3 Sep28,07	13:55:03	CALIPER	8.000 [INCH]	426280.00 [CPS]
4 Sep28,07	13:55:08	DEN(LS)	1.000 [G/CC]	26203.00 [CPS]
4 Sep28,07	13:55:08	DEN(LS)	2.383 [G/CC]	2230.00 [CPS]
5 Sep28,07	13:55:14	DEN(SS)	1.000 [G/CC]	46913.00 [CPS]
5 Sep28,07	13:55:14	DEN(SS)	2.383 [G/CC]	15843.00 [CPS]
6 Sep28,07	13:55:20	CALIPERL	4.000 [INCH]	102730.00 [CPS]
6 Sep28,07	13:55:20	CALIPERL	12.000 [INCH]	357523.00 [CPS]
7 Sep28,07	13:55:24	CURRENT	0.000 [UA]	3639.00 [CPS]
7 Sep28,07	13:55:24	CURRENT	284.960 [UA]	27413.00 [CPS]
8 Sep28,07	13:14:43	F	Default [CPS]	
8 Sep28,07	13:14:43	X	Default [CPS]	

GAMMA-RES-DENSITY
GOLDER
SHOB-104

COMPANY	GOLDER ASSOCIATES, INC.	
WELL	SHOB-104	
FIELD	SHP	
COUNTY	STARK	
STATE	NORTH DAKOTA	
LOCATION		
SECTION	N/A	
TOWNSHIP	N/A	
RANGE	N/A	
API NO.	N/A	
UNIQUE WELL ID.	N/A	
PERMANENT DATUM	GL	
LOG MEASURED FROM	GL	
DRL MEASURED FROM	GL	
ELEVATION KB	N/A	
ELEVATION DF	N/A	
ELEVATION GL	N/A	
OTHER SERVICES:	None	

GDR SHOB-104 10/08/07		
LOG PARAMETERS		
MATRIX DENSITY : 2.65	NEUTRON MATRIX : SANDSTONE	MATRIX DELTA T : 54
MAGNETIC DECL : 0	ELECT. CUTOFF : 20000	BIT SIZE : 5.0
PRESENTATION NAME/DATE = 9239C1.0 10/08/2007		VERSION = 3.64ER



ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

REMARKS 1

REMARKS 2

REMARKS 3

REMARKS 4

REMARKS 5

REMARKS 6

REMARKS 7

REMARKS 8

REMARKS 9

REMARKS 10

REMARKS 11

REMARKS 12

REMARKS 13

REMARKS 14

REMARKS 15

REMARKS 16

REMARKS 17

REMARKS 18

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REMARKS 116

REMARKS 117

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REMARKS 127

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REMARKS 133

REMARKS 134

REMARKS 135

REMARKS 136

REMARKS 137

REMARKS 138

REMARKS 139

REMARKS 140

REMARKS 141

REMARKS 142

REMARKS 143

REMARKS 144

REMARKS 145

REMARKS 146

REMARKS 147

REMARKS 148

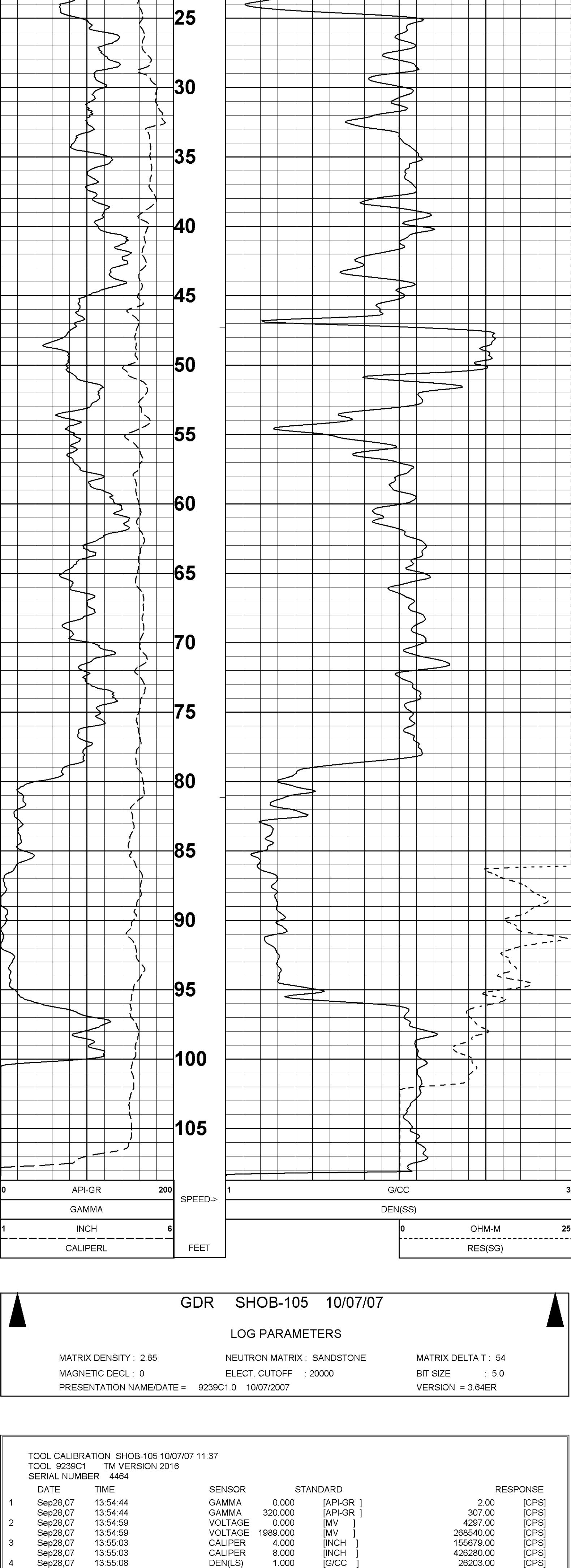
REMARKS 149

Century
WIRELINE SERVICES

GAMMA-RES-DENSITY
GOLDER
SHOB-105

COMPANY	GOLDER ASSOCIATES, INC.	
WELL	SHOB-105	
FIELD	SHP	
COUNTY	STARK	
STATE	NORTH DAKOTA	
LOCATION		
SECTION	N/A	
TOWNSHIP	N/A	
RANGE	N/A	
API NO.	N/A	
UNIQUE WELL ID.		
PERMANENT DATUM	[GL]	ELEVATION KB N/A
LOG MEASURED FROM	[GL]	ELEVATION DF N/A
DRL MEASURED FROM	[GL]	
DATE	10/07/07	
DEPTH DRILLER	:110	
BIT SIZE	.5.0	
LOG TOP	:4.20	
LOG BOTTOM	:108.60	
CASING OD	N/A	
CASING BOTTOM	N/A	
CASING TYPE	N/A	
BOREHOLE FLUID	WATER	
RM TEMPERATURE	N/A	
MUD RES	N/A	
MUD WEIGHT	8.5	
WITNESSED BY	J. ELLIOT	
RECORDED BY	M. SUTTON	
REMARKS 1		
REMARKS 2		

GDR SHOB-105 10/07/07		
LOG PARAMETERS		
MATRIX DENSITY : 2.65	NEUTRON MATRIX : SANDSTONE	MATRIX DELTA T : 54
MAGNETIC DECL : 0	ELECT. CUTOFF : 20000	BIT SIZE : 5.0
PRESENTATION NAME/DATE = 9239C1.0 10/07/2007		VERSION = 3.64ER



TOOL CALIBRATION SHOB-105 10/07/07 11:37		
TOOL 9239C1 TM VERSION 2016		
SERIAL NUMBER 4464		
DATE	TIME	SENSOR
1 Sep28,07	13:54:44	GAMMA 0.000 [API-GR]
1 Sep28,07	13:54:44	GAMMA 320.000 [API-GR]
2 Sep28,07	13:54:59	VOLTAGE 0.000 [MV]
2 Sep28,07	13:54:59	VOLTAGE 1989.000 [MV]
3 Sep28,07	13:55:03	CALIPER 4.000 [INCH]
3 Sep28,07	13:55:03	CALIPER 8.000 [INCH]
4 Sep28,07	13:55:08	DEN(LS) 1.000 [G/CC]
4 Sep28,07	13:55:08	DEN(LS) 2.383 [G/CC]
5 Sep28,07	13:55:14	DEN(SS) 1.000 [G/CC]
5 Sep28,07	13:55:14	DEN(SS) 2.383 [G/CC]
6 Sep28,07	13:55:20	CALIPERL 4.000 [INCH]
6 Sep28,07	13:55:20	CALIPERL 12.000 [INCH]
7 Sep28,07	13:55:24	CURRENT 0.000 [UA]
7 Sep28,07	13:55:24	CURRENT 284.960 [UA]
8 Sep28,07	13:14:43	F Default [CPS]
8 Sep28,07	13:14:43	X Default [CPS]
9 Sep28,07	13:14:43	

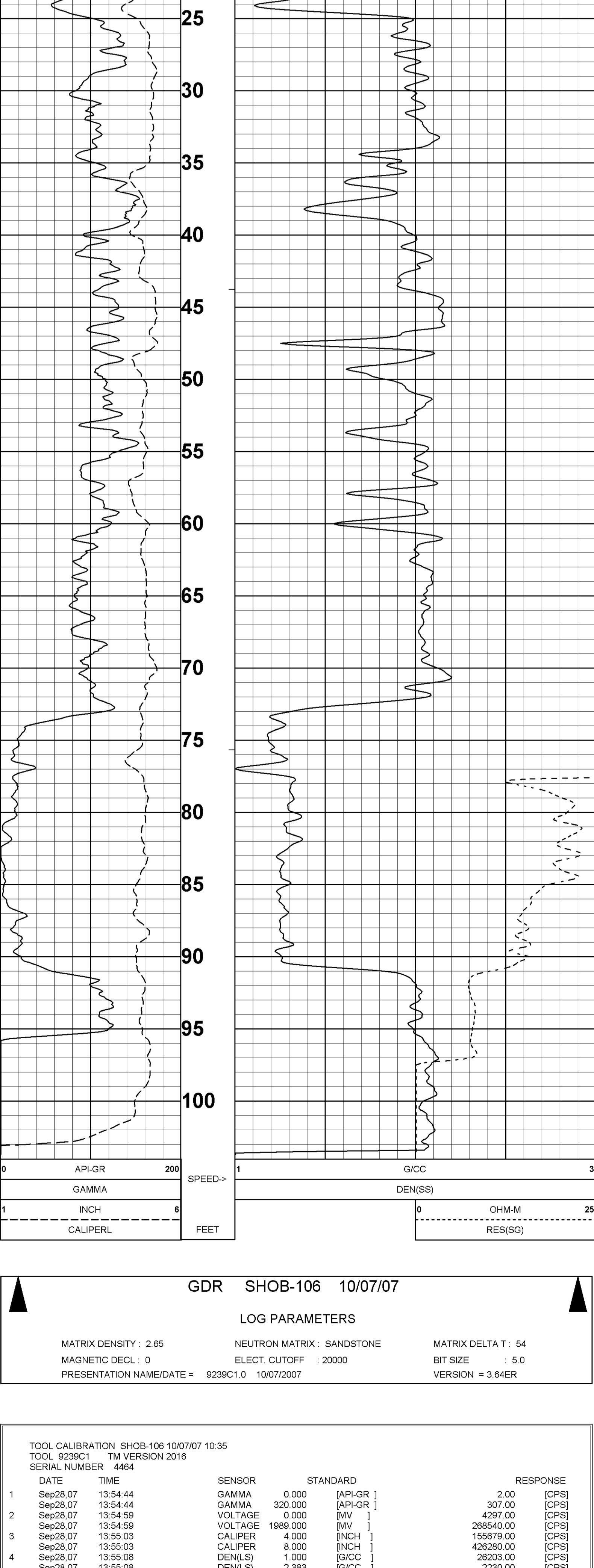
GAMMA-RES-DENSITY
GOLDER
SHOB-106

COMPANY	GOLDER ASSOCIATES, INC.	
WELL	SHOB-106	
FIELD	SHP	
COUNTY	STARK	
STATE	NORTH DAKOTA	
LOCATION	:	
SECTION	N/A	
TOWNSHIP	N/A	
RANGE	N/A	
API NO.	N/A	
UNIQUE WELL ID.	N/A	
PERMANENT DATUM	GL	ELEVATION KB N/A
LOG MEASURED FROM	GL	ELEVATION DF N/A
DRL MEASURED FROM	GL	ELEVATION GL N/A
DATE	10/07/07	
DEPTH DRILLER	:105	
BIT SIZE		
LOG TOP	:4.00	
LOG BOTTOM	:105.90	
CASING OD	N/A	
CASING BOTTOM	N/A	
CASING TYPE	N/A	
BOROEHOLE FLUID	WATER	
RM TEMPERATURE	N/A	
MUD RES	N/A	
MUD WEIGHT	8.5	
WITNESSED BY	J. ELLIOT	
RECORDED BY	M. SUTTON	
REMARKS 1	:	
REMARKS 2	:	

GDR SHOB-106 10/07/07

LOG PARAMETERS

MATRIX DENSITY : 2.65 NEUTRON MATRIX : SANDSTONE MATRIX DELTA T : 54
MAGNETIC DECL : 0 ELECT. CUTOFF : 20000 BIT SIZE : 5.0
PRESENTATION NAME/DATE = 9239C1.0 10/07/2007 VERSION = 3.64ER



TOOL CALIBRATION SHOB-106 10/07/07 10:35
TOOL 9239C1 TM VERSION 2016
SERIAL NUMBER 4464

DATE	TIME	SENSOR	STANDARD	RESPONSE
1 Sep28,07	13:54:44	GAMMA	0.000 [API-GR]	2.00 [CPS]
2 Sep28,07	13:54:44	GAMMA	320.000 [API-GR]	307.00 [CPS]
2 Sep28,07	13:54:59	VOLTAGE	0.000 [MV]	4297.00 [CPS]
3 Sep28,07	13:55:03	VOLTAGE	1989.000 [MV]	268540.00 [CPS]
3 Sep28,07	13:55:03	CALIPER	4.000 [INCH]	155679.00 [CPS]
4 Sep28,07	13:55:08	CALIPER	8.000 [INCH]	426280.00 [CPS]
4 Sep28,07	13:55:08	DEN(LS)	1.000 [G/CC]	26203.00 [CPS]
5 Sep28,07	13:55:14	DEN(LS)	2.383 [G/CC]	2230.00 [CPS]
5 Sep28,07	13:55:14	DEN(SS)	1.000 [G/CC]	46913.00 [CPS]
6 Sep28,07	13:55:20	DEN(SS)	2.383 [G/CC]	15843.00 [CPS]
6 Sep28,07	13:55:20	CALIPERL	4.000 [INCH]	102730.00 [CPS]
7 Sep28,07	13:55:24	CALIPERL	12.000 [INCH]	357523.00 [CPS]
7 Sep28,07	13:55:24	CURRENT	0.000 [UA]	3639.00 [CPS]
8 Sep28,07	13:55:24	CURRENT	284.960 [UA]	27413.00 [CPS]
8 Sep28,07	13:14:43	F	Default [CPS]	
9 Sep28,07	13:14:43	X	Default [CPS]	

Century
WIRELINE SERVICES

GAMMA-RES-DENSITY
GOLDER
SHOB-107

COMPANY	GOLDER ASSOCIATES, INC.	OTHER SERVICES:
WELL	SHOB-107	
FIELD	SHP	
COUNTY	STARK	
STATE	NORTH DAKOTA	
LOCATION	:	
SECTION	N/A	
TOWNSHIP	N/A	
RANGE	N/A	
API NO.	N/A	
UNIQUE WELL ID.	N/A	
PERMANENT DATUM	GL	ELEVATION KB N/A
LOG MEASURED FROM	GL	ELEVATION DF N/A
DRL MEASURED FROM	GL	ELEVATION GL N/A
DATE	10/07/07	
DEPTH DRILLER	120	
BIT SIZE	5.0	
LOG TOP	:4.50	
LOG BOTTOM	:117.60	
CASING OD	N/A	
CASING BOTTOM	N/A	
CASING TYPE	N/A	
BORERHOLE FLUID	WATER	
RM TEMPERATURE	N/A	
MUD RES	N/A	
MUD WEIGHT	8.5	
WITNESSED BY	J. ELLIOT	
RECORDED BY	M SUTTON	
REMARKS 1	:	
REMARKS 2	:	
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS		

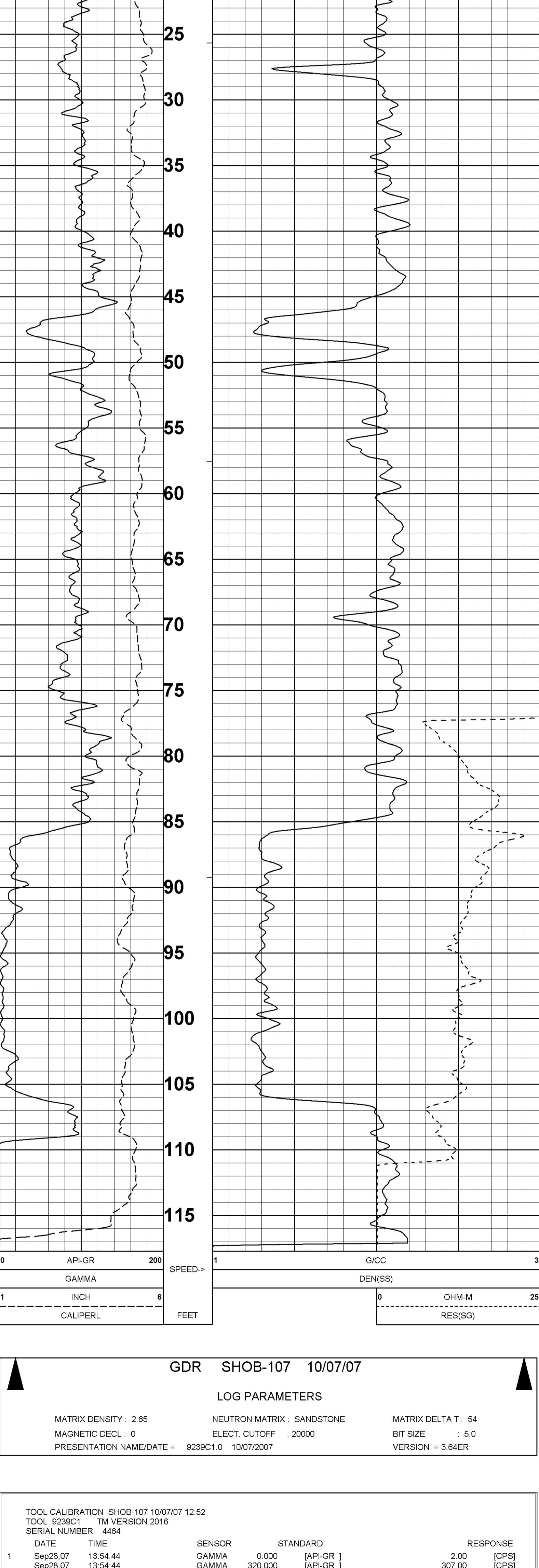
GDR SHOB-107 10/07/07

LOG PARAMETERS

MATRIX DENSITY : 2.65
MAGNETIC DECL : 0
PRESENTATION NAME/DATE = 9239C1.0 10/07/2007

NEUTRON MATRIX : SANDSTONE

MATRIX DELTA T : 54
BIT SIZE : 5.0
VERSION = 3.64ER



MATRIX DENSITY : 2.65

NEUTRON MATRIX : SANDSTONE

MATRIX DELTA T : 54

MAGNETIC DECL : 0

ELECT. CUTOFF : 20000

BIT SIZE : 5.0

PRESENTATION NAME/DATE = 9239C1.0 10/07/2007

VERSION = 3.64ER

TOOL CALIBRATION SHOB-107 10/07/07 12:52

TOOL 9239C1 TM VERSION 2016

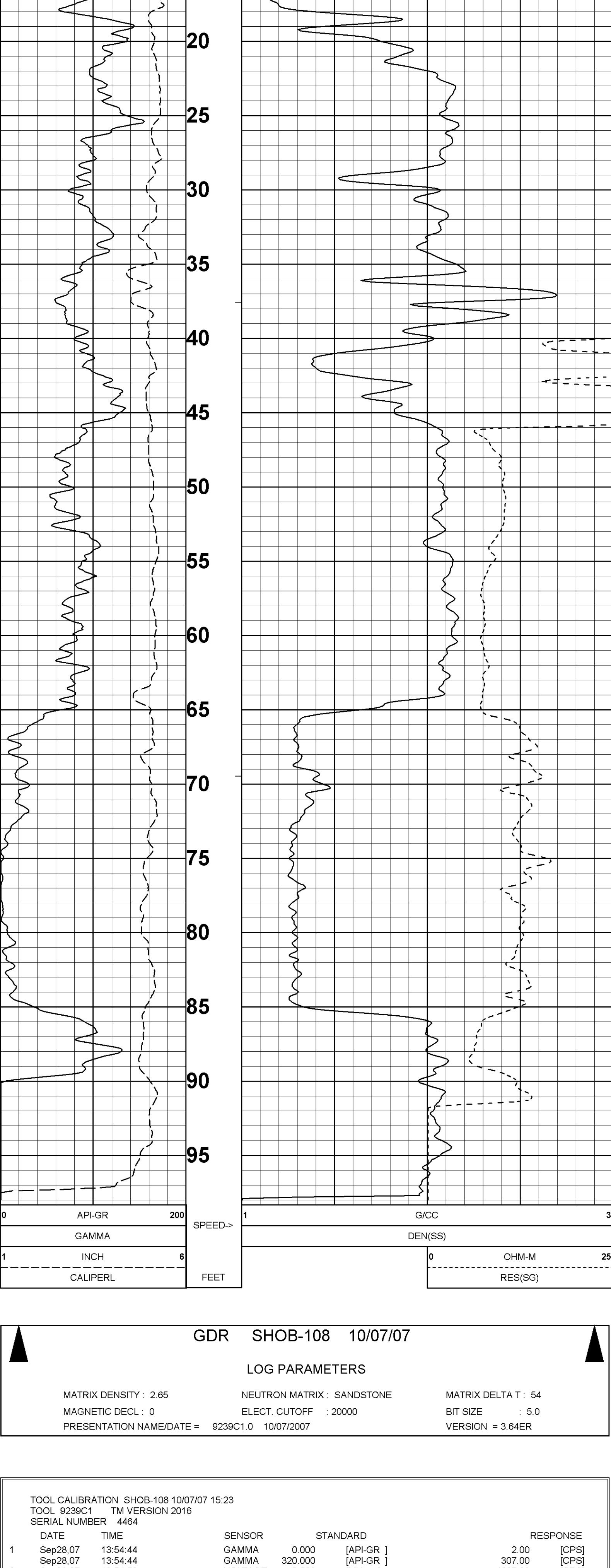
SERIAL NUMBER 4464

	DATE	TIME	SENSOR	STANDARD	RESPONSE
1	Sep28,07	13:54:44	GAMMA	0.000 [API-GR]	2.00 [CPS]
	Sep28,07	13:54:44	GAMMA	320.000 [API-GR]	307.00 [CPS]
2	Sep28,07	13:54:59	VOLTAGE	0.000 [MV]	4297.00 [CPS]
	Sep28,07	13:54:59	VOLTAGE	1989.000 [MV]	268540.00 [CPS]
3	Sep28,07	13:55:03	CALIPER	4.000 [INCH]	155679.00 [CPS]
	Sep28,07	13:55:03	CALIPER	8.000 [INCH]	426280.00 [CPS]
4	Sep28,07	13:55:08	DEN(LS)	1.000 [G/CC]	26203.00 [CPS]
	Sep28,07	13:55:08	DEN(LS)	2.383 [G/CC]	2230.00 [CPS]
5	Sep28,07	13:55:14	DEN(SS)	1.000 [G/CC]	46913.00 [CPS]
	Sep28,07	13:55:14	DEN(SS)	2.383 [G/CC]	15843.00 [CPS]
6	Sep28,07	13:55:20	CALIPERL	4.000 [INCH]	102730.00 [CPS]
	Sep28,07	13:55:20	CALIPERL	12.000 [INCH]	357523.00 [CPS]
7	Sep28,07	13:55:24	CURRENT	0.000 [UA]	3639.00 [CPS]
	Sep28,07	13:55:24	CURRENT	284.960 [UA]	27413.00 [CPS]
8	Sep28,07	13:14:43	F	Default [CPS]	
9	Sep28,07	13:14:43	X	Default [CPS]	

GAMMA-RES-DENSITY
GOLDER
SHOB-108

COMPANY	GOLDER ASSOCIATES, INC.	
WELL	SHOB-108	
FIELD	SHIP	
COUNTY	STARK	
STATE	NORTH DAKOTA	
LOCATION		
SECTION	N/A	
TOWNSHIP	N/A	
RANGE	N/A	
API NO.	N/A	
UNIQUE WELL ID.	N/A	
PERMANENT DATUM	GL	ELEVATION KB N/A
LOG MEASURED FROM GL		ELEVATION DF N/A
DRL MEASURED FROM GL		ELEVATION GL N/A
DATE	10/07/07	
DEPTH DRILLER	:100	
BIT SIZE	.50	
LOG TOP	:4.10	
LOG BOTTOM	98.20	
CASING OD	N/A	
CASING BOTTOM	N/A	
CASING TYPE	N/A	
BOREHOLE FLUID	WATER	
RM TEMPERATURE	N/A	
MUD RES	N/A	
MUD WEIGHT	8.5	
WITNESSED BY	J. ELLIOT	
RECORDED BY	M. SUTTON	
REMARKS 1		
REMARKS 2		

GDR SHOB-108 10/07/07		
LOG PARAMETERS		
MATRIX DENSITY : 2.65	NEUTRON MATRIX : SANDSTONE	MATRIX DELTA T : 54
MAGNETIC DECL : 0	ELECT. CUTOFF : 20000	BIT SIZE : 5.0
PRESENTATION NAME/DATE = 9239C1.0 10/07/2007		VERSION = 3.64ER



TOOL CALIBRATION SHOB-108 10/07/07 15:23			SENSOR			STANDARD		RESPONSE	
TOOL	9239C1	TM VERSION	2016						
SERIAL NUMBER	4464								
DATE	TIME								
1	Sep28,07	13:54:44	GAMMA	0.000	[API-GR]			2.00	[CPS]
	Sep28,07	13:54:44	GAMMA	320.000	[API-GR]			307.00	[CPS]
2	Sep28,07	13:54:59	VOLTAGE	0.000	[MV]			4297.00	[CPS]
	Sep28,07	13:54:59	VOLTAGE	1989.000	[MV]			268540.00	[CPS]
3	Sep28,07	13:55:03	CALIPER	4.000	[INCH]			155679.00	[CPS]
	Sep28,07	13:55:03	CALIPER	8.000	[INCH]			426280.00	[CPS]
4	Sep28,07	13:55:08	DEN(LS)	1.000	[GCC]			26203.00	[CPS]
	Sep28,07	13:55:08	DEN(LS)	2.383	[GCC]			2230.00	[CPS]
5	Sep28,07	13:55:14	DEN(SS)	1.000	[GCC]			46913.00	[CPS]
	Sep28,07	13:55:14	DEN(SS)	2.383	[GCC]			15843.00	[CPS]
6	Sep28,07	13:55:20	CALIPERL	4.000	[INCH]			102730.00	[CPS]
	Sep28,07	13:55:20	CALIPERL	12.000	[INCH]			357523.00	[CPS]
7	Sep28,07	13:55:24	CURRENT	0.000	[UA]			3639.00	[CPS]
	Sep28,07	13:55:24	CURRENT	284.960	[UA]			27413.00	[CPS]
8	Sep28,07	13:14:43	F	Default	[CPS]				
	Sep28,07	13:14:43	X	Default	[CPS]				

GAMMA-RES-DENSITY
GOLDER
SHOB-109

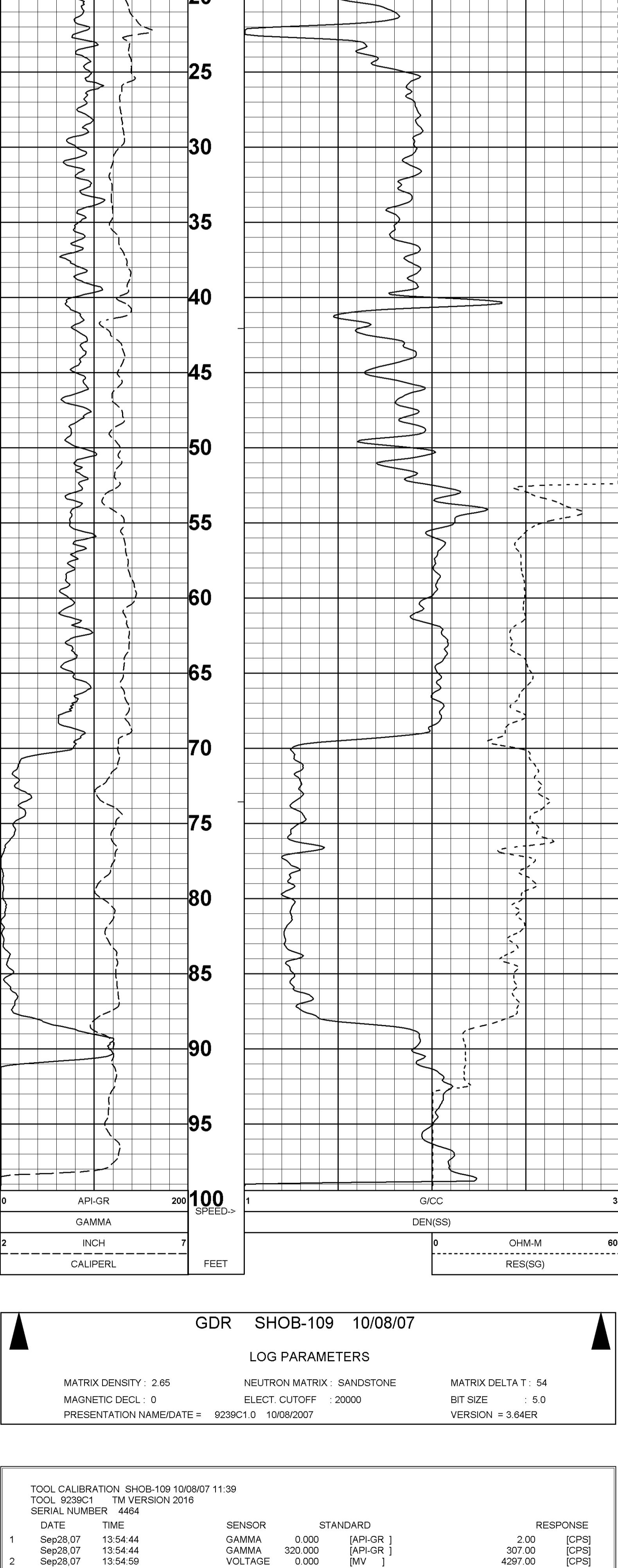
COMPANY	GOLDER ASSOCIATES, INC.	
WELL	SHOB-109	
FIELD	SHP	
COUNTY	STARK	
STATE	NORTH DAKOTA	
LOCATION		
SECTION	N/A	
TOWNSHIP	N/A	
RANGE	N/A	
API NO.	N/A	
UNIQUE WELL ID.	N/A	
PERMANENT DATUM	[GL]	ELEVATION KB N/A
LOG MEASURED FROM	[GL]	ELEVATION DF N/A
DRL MEASURED FROM	[GL]	ELEVATION GL N/A
DATE	:10/08/07	
DEPTH DRILLER	:100	
BIT SIZE	:5.0	
CASING BOTTOM	N/A	
LOG TOP	:4.00	
LOG BOTTOM	:99.30	
CASING OD	N/A	
MUD RES	N/A	
CASING TYPE	N/A	
BOREHOLE FLUID	WATER	
RM TEMPERATURE	N/A	
MUD WEIGHT	8.5	
WITNESSED BY	J. ELLIOT	
RECORDED BY	M. SUTTON	
REMARKS 1		
REMARKS 2		

GDR SHOB-109 10/08/07

LOG PARAMETERS

MATRIX DENSITY : 2.65
MAGNETIC DECL : 0
PRESENTATION NAME/DATE = 9239C1.0 10/08/2007

MATRIX DELTA T : 54
BIT SIZE : 5.0
VERSION = 3.64ER



GDR SHOB-109 10/08/07

LOG PARAMETERS

MATRIX DENSITY : 2.65
MAGNETIC DECL : 0
PRESENTATION NAME/DATE = 9239C1.0 10/08/2007

MATRIX DELTA T : 54
BIT SIZE : 5.0
VERSION = 3.64ER

	DATE	TIME	SENSOR	STANDARD	RESPONSE
1	Sep28,07	13:54:44	GAMMA	0.000 [API-GR]	2.00 [CPS]
	Sep28,07	13:54:44	GAMMA	320.000 [API-GR]	307.00 [CPS]
2	Sep28,07	13:54:59	VOLTAGE	0.000 [MV]	4297.00 [CPS]
	Sep28,07	13:54:59	VOLTAGE	1989.000 [MV]	268540.00 [CPS]
3	Sep28,07	13:55:03	CALIPER	4.000 [INCH]	155679.00 [CPS]
	Sep28,07	13:55:03	CALIPER	8.000 [INCH]	426280.00 [CPS]
4	Sep28,07	13:55:08	DEN(LS)	1.000 [GCC]	26203.00 [CPS]
	Sep28,07	13:55:08	DEN(LS)	2.383 [GCC]	2230.00 [CPS]
5	Sep28,07	13:55:14	DEN(SS)	1.000 [GCC]	46913.00 [CPS]
	Sep28,07	13:55:14	DEN(SS)	2.383 [GCC]	15843.00 [CPS]
6	Sep28,07	13:55:20	CALIPERL	4.000 [INCH]	102730.00 [CPS]
	Sep28,07	13:55:20	CALIPERL	12.000 [INCH]	357523.00 [CPS]
7	Sep28,07	13:55:24	CURRENT	0.000 [UA]	3639.00 [CPS]
	Sep28,07	13:55:24	CURRENT	284.960 [UA]	27413.00 [CPS]
8	Sep28,07	13:14:43	F	Default [CPS]	
9	Sep28,07	13:14:43	X	Default [CPS]	

TOOL CALIBRATION SHOB-109 10/08/07 11:39

TOOL 9239C1 TM VERSION 2016

SERIAL NUMBER 4464

Century
WIRELINE SERVICES

GAMMA-RES-DENSITY
GOLDER
SHOB-110

COMPANY	GOLDER ASSOCIATES, INC.
WELL	SHOB-110
FIELD	SHP
COUNTY	STARK
STATE	NORTH DAKOTA
LOCATION	:
SECTION	N/A
TOWNSHIP	N/A
RANGE	N/A
API NO.	N/A
UNIQUE WELL ID.	N/A
PERMANENT DATUM	GL
LOG MEASURED FROM	GL
DRI. MEASURED FROM	GL

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

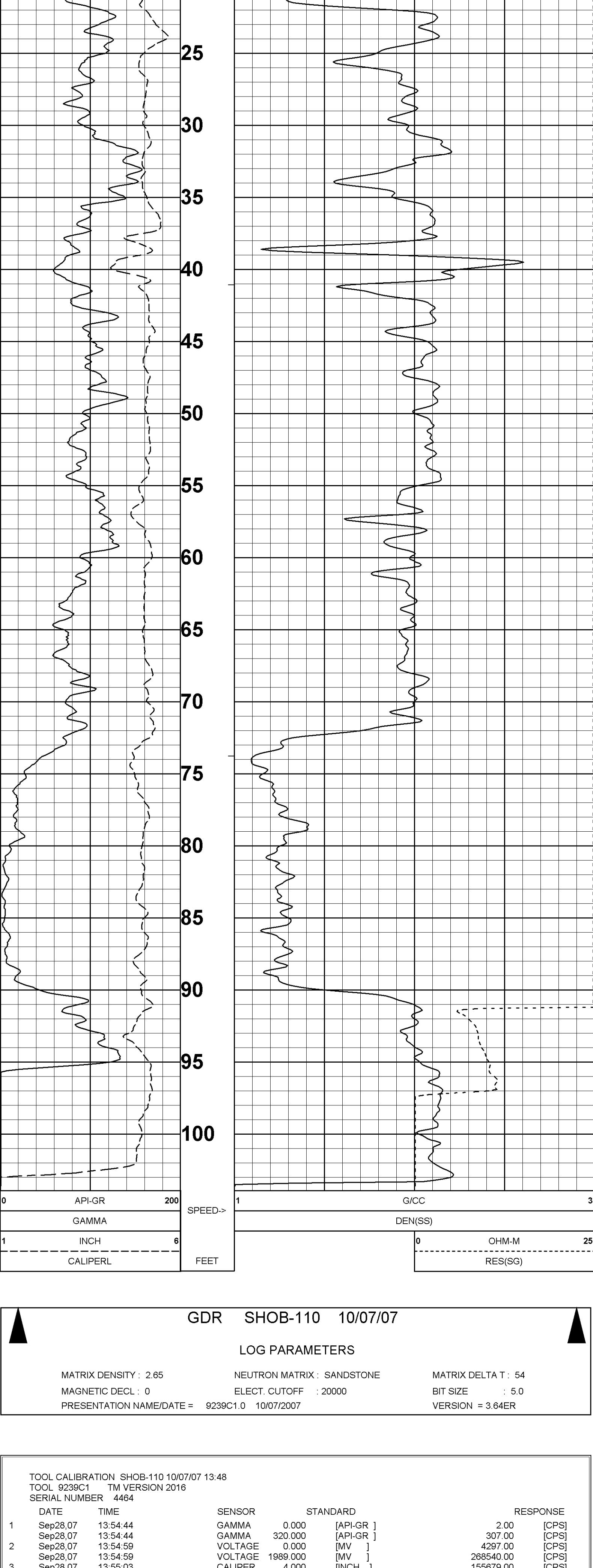
GDR SHOB-110 10/07/07

LOG PARAMETERS

MATRIX DENSITY : 2.65
MAGNETIC DECL : 0
PRESENTATION NAME/DATE = 9239C1.0 10/07/2007

NEUTRON MATRIX : SANDSTONE
ELECT. CUTOFF : 20000

MATRIX DELTA T : 54
BIT SIZE : 5.0
VERSION = 3.64ER



TOOL CALIBRATION SHOB-110 10/07/07 13:48

TOOL 9239C1 TM VERSION 2016

SERIAL NUMBER 4464

	DATE	TIME	SENSOR	STANDARD	RESPONSE
1	Sep28,07	13:54:44	GAMMA	0.000 [API-GR]	2.00 [CPS]
	Sep28,07	13:54:44	GAMMA	320.000 [API-GR]	307.00 [CPS]
2	Sep28,07	13:54:59	VOLTAGE	0.000 [MV]	4297.00 [CPS]
	Sep28,07	13:54:59	VOLTAGE	1989.000 [MV]	268540.00 [CPS]
3	Sep28,07	13:55:03	CALIPER	4.000 [INCH]	155679.00 [CPS]
	Sep28,07	13:55:03	CALIPER	8.000 [INCH]	426280.00 [CPS]
4	Sep28,07	13:55:08	DEN(LS)	1.000 [G/CC]	26203.00 [CPS]
	Sep28,07	13:55:08	DEN(LS)	2.383 [G/CC]	2230.00 [CPS]
5	Sep28,07	13:55:14	DEN(SS)	1.000 [G/CC]	46913.00 [CPS]
	Sep28,07	13:55:14	DEN(SS)	2.383 [G/CC]	15843.00 [CPS]
6	Sep28,07	13:55:20	CALIPERL	4.000 [INCH]	102730.00 [CPS]
	Sep28,07	13:55:20	CALIPERL	12.000 [INCH]	357523.00 [CPS]
7	Sep28,07	13:55:24	CURRENT	0.000 [UA]	3639.00 [CPS]
	Sep28,07	13:55:24	CURRENT	284.960 [UA]	27413.00 [CPS]
8	Sep28,07	13:14:43	F	Default [CPS]	
9	Sep28,07	13:14:43	X	Default [CPS]	

MATRIX DENSITY : 2.65
MAGNETIC DECL : 0
PRESENTATION NAME/DATE = 9239C1.0 10/07/2007

NEUTRON MATRIX : SANDSTONE
ELECT. CUTOFF : 20000

MATRIX DELTA T : 54
BIT SIZE : 5.0
VERSION = 3.64ER

GAMMA-RES-DENSITY
GOLDER
SHOB-111

COMPANY	GOLDER ASSOCIATES, INC.
WELL	SHOB-111
FIELD	SHP
COUNTY	STARK
STATE	NORTH DAKOTA
LOCATION	:
SECTION	N/A
TOWNSHIP	N/A
RANGE	N/A
API NO.	N/A
UNIQUE WELL ID.	N/A

OTHER SERVICES:

NONE

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

GDR SHOB-111 10/07/07

LOG PARAMETERS

MATRIX DENSITY : 2.65

NEUTRON MATRIX : SANDSTONE

MATRIX DELTA T : 54

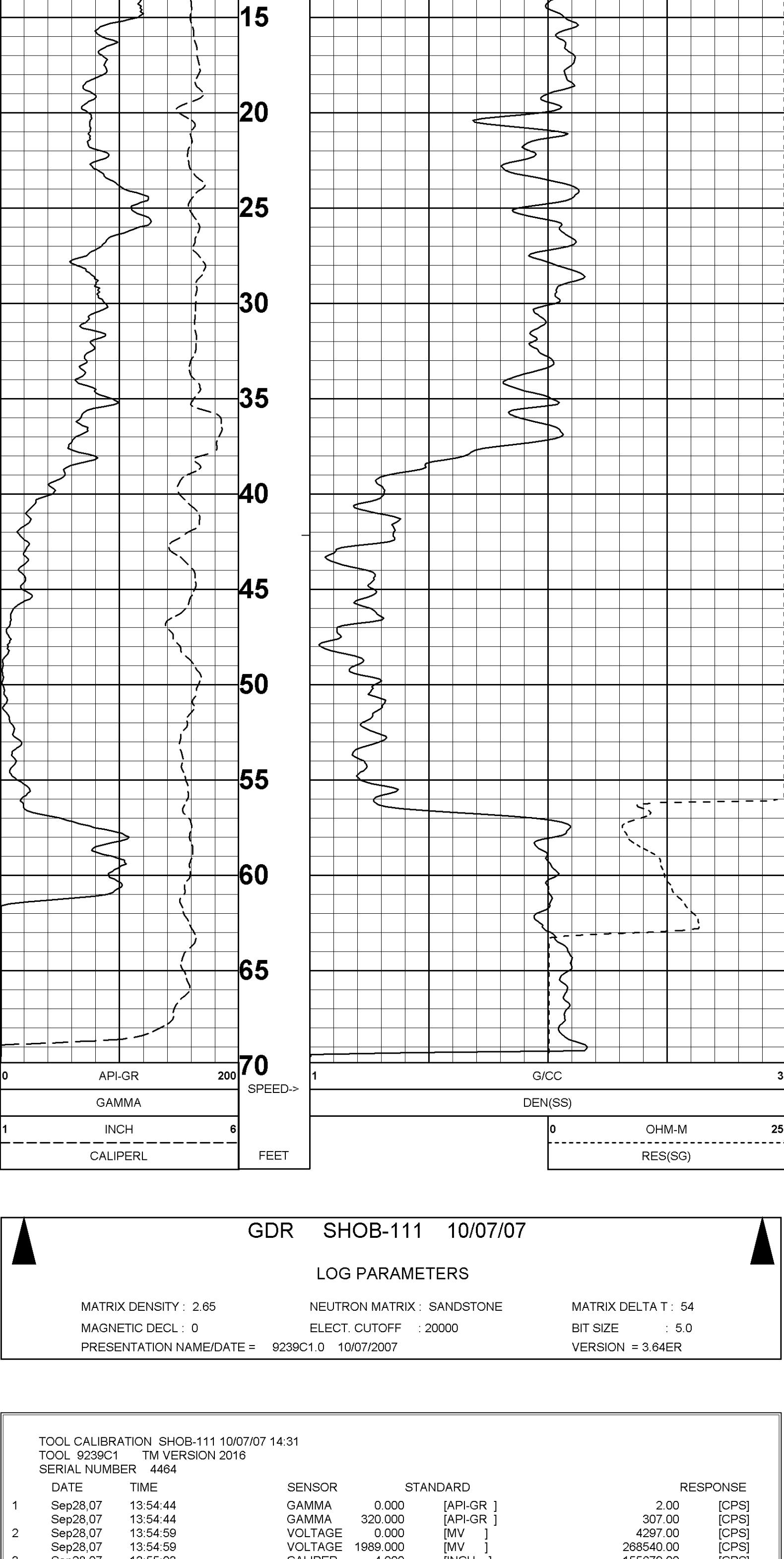
MAGNETIC DECL : 0

ELECT. CUTOFF : 20000

BIT SIZE : 5.0

PRESENTATION NAME/DATE = 9239C1.0 10/07/2007

VERSION = 3.64ER



GDR SHOB-111 10/07/07

LOG PARAMETERS

MATRIX DENSITY : 2.65

NEUTRON MATRIX : SANDSTONE

MATRIX DELTA T : 54

MAGNETIC DECL : 0

ELECT. CUTOFF : 20000

BIT SIZE : 5.0

PRESENTATION NAME/DATE = 9239C1.0 10/07/2007

VERSION = 3.64ER

TOOL CALIBRATION SHOB-111 10/07/07 14:31

TOOL 9239C1 TM VERSION 2016

SERIAL NUMBER 4464

	DATE	TIME	SENSOR	STANDARD	RESPONSE
1	Sep28,07	13:54:44	GAMMA	0.000 [API-GR]	2.00 [CPS]
	Sep28,07	13:54:44	GAMMA	320.000 [API-GR]	307.00 [CPS]
2	Sep28,07	13:54:59	VOLTAGE	0.000 [MV]	4297.00 [CPS]
	Sep28,07	13:54:59	VOLTAGE	1989.000 [MV]	268540.00 [CPS]
3	Sep28,07	13:55:03	CALIPER	4.000 [INCH]	155679.00 [CPS]
	Sep28,07	13:55:03	CALIPER	8.000 [INCH]	426280.00 [CPS]
4	Sep28,07	13:55:08	DEN(LS)	1.000 [G/CC]	26203.00 [CPS]
	Sep28,07	13:55:08	DEN(LS)	2.383 [G/CC]	2230.00 [CPS]
5	Sep28,07	13:55:14	DEN(SS)	1.000 [G/CC]	46913.00 [CPS]
	Sep28,07	13:55:14	DEN(SS)	2.383 [G/CC]	15843.00 [CPS]
6	Sep28,07	13:55:20	CALIPER	4.000 [INCH]	102730.00 [CPS]
	Sep28,07	13:55:20	CALIPER	12.000 [INCH]	357523.00 [CPS]
7	Sep28,07	13:55:24	CURRENT	0.000 [UA]	3639.00 [CPS]
	Sep28,07	13:55:24	CURRENT	284.960 [UA]	27413.00 [CPS]
8	Sep28,07	13:14:43	F	Default [CPS]	
9	Sep28,07	13:14:43	X	Default [CPS]	

Century
WIRELINE SERVICES

GAMMA-RES-DENSITY
GOLDER

SHOB-112

COMPANY	GOLDER ASSOCIATES, INC.	OTHER SERVICES:
WELL	SHOB-112	
FIELD	SHIP	
COUNTY	STARK	
STATE	NORTH DAKOTA	
LOCATION	:	
SECTION	N/A	
TOWNSHIP	N/A	
RANGE	N/A	
API NO.	N/A	
UNIQUE WELL ID.	N/A	
PERMANENT DATUM	:GL	ELEVATION KB N/A
LOG MEASURED FROM	:GL	ELEVATION DF N/A
DRL MEASURED FROM	:GL	ELEVATION GL N/A
DATE	:10/08/07	
DEPTH DRILLER	:120	
BIT SIZE	.5.0	
LOG TOP	:4.40	
LOG BOTTOM	:119.40	
CASING OD	N/A	
CASING BOTTOM	N/A	
CALIPERL		
INCH	7	
GAMMA		
API-GR	200	
SPEED-->		
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Century
WIRELINE SERVICES

GAMMA-RES-DENSITY

GOLDER
SHOB-113

COMPANY	GOLDER ASSOCIATES, INC.	OTHER SERVICES:
WELL	SHOB-113	
FIELD	SHIP	
COUNTY	STARK	
STATE	NORTH DAKOTA	
LOCATION	:	NONE
SECTION	N/A	
TOWNSHIP	N/A	
RANGE	N/A	
API NO.	N/A	
UNIQUE WELL ID.	N/A	
PERMANENT DATUM	:GL	ELEVATION KB N/A
LOG MEASURED FROM	:GL	ELEVATION DF N/A
DRL MEASURED FROM	:GL	ELEVATION GL N/A
DATE	:10/07/07	
DEPTH DRILLER	:120	
BIT SIZE	.5.0	
LOG TOP	:4.30	
LOG BOTTOM	:119.90	
CASING OD	N/A	
CASING BOTTOM	N/A	
CALIPERL		FEET
INCH		6
GAMMA		SPEED->
API-GR	200	0
FEET		25
0		3
1		25

GDR SHOB-113 10/07/07

LOG PARAMETERS

MATRIX DENSITY : 2.65

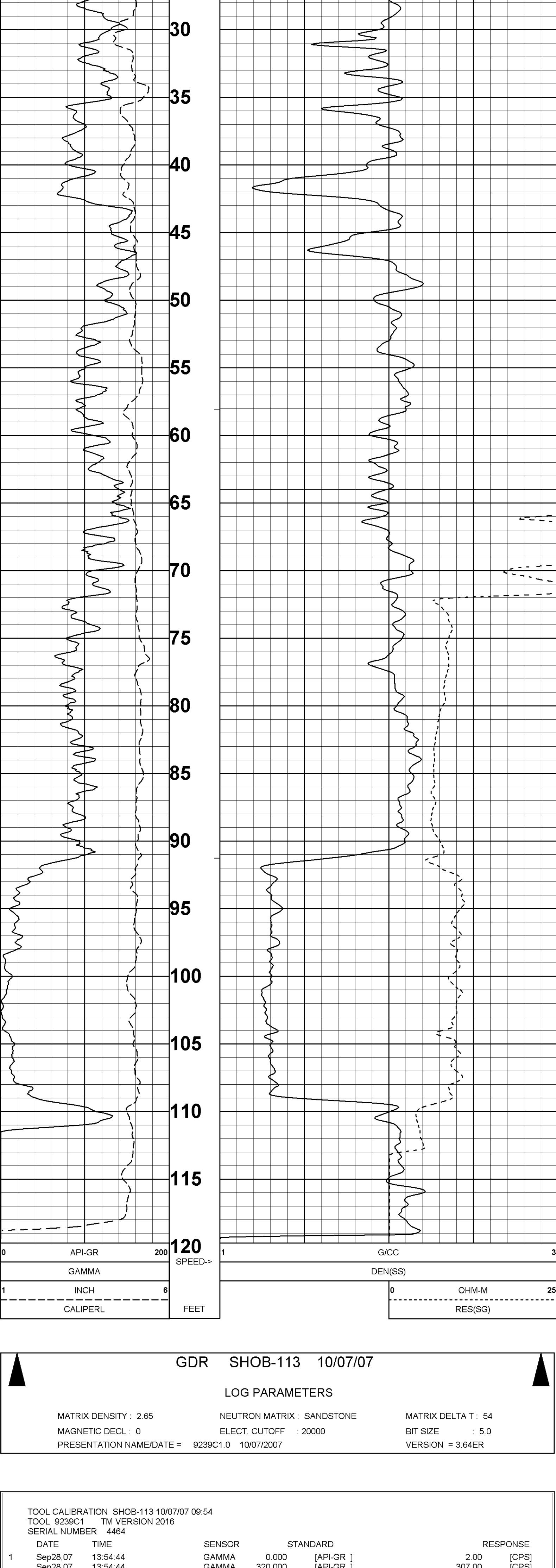
MAGNETIC DECL : 0

PRESENTATION NAME/DATE = 9239C1.0 10/07/2007

MATRIX DELTA T : 54

BIT SIZE : 5.0

VERSION = 3.64ER



GDR SHOB-113 10/07/07

LOG PARAMETERS

MATRIX DENSITY : 2.65

MAGNETIC DECL : 0

PRESENTATION NAME/DATE = 9239C1.0 10/07/2007

MATRIX DELTA T : 54

BIT SIZE : 5.0

VERSION = 3.64ER

TOOL CALIBRATION SHOB-113 10/07/07 09:54		SENSOR		STANDARD		RESPONSE	
1	Sep28,07	13:54:44	GAMMA	0.000	[API-GR]	2.00	[CPS]
	Sep28,07	13:54:44	GAMMA	320.000	[API-GR]	307.00	[CPS]
2	Sep28,07	13:54:59	VOLTAGE	0.000	[MV]	4297.00	[CPS]
	Sep28,07	13:54:59	VOLTAGE	1989.000	[MV]	268540.00	[CPS]
3	Sep28,07	13:55:03	CALIPER	4.000	[INCH]	155679.00	[CPS]
	Sep28,07	13:55:03	CALIPER	8.000	[INCH]	426280.00	[CPS]
4	Sep28,07	13:55:08	DEN(LS)	1.000	[G/CC]	26203.00	[CPS]
	Sep28,07	13:55:08	DEN(LS)	2.383	[G/CC]	46913.00	[CPS]
5	Sep28,07	13:55:14	DEN(SS)	1.000	[G/CC]	15843.00	[CPS]
	Sep28,07	13:55:14	DEN(SS)	2.383	[G/CC]	102730.00	[CPS]
6	Sep28,07	13:55:20	CALIPERL	4.000	[INCH]	357523.00	[CPS]
	Sep28,07	13:55:20	CALIPERL	12.000	[INCH]	3639.00	[CPS]
7	Sep28,07	13:55:24	CURRENT	0.000	[UA]	27413.00	[CPS]
	Sep28,07	13:55:24	CURRENT	284.960	[UA]		
8	Sep28,07	13:14:43	F	Default	[CPS]		
9	Sep28,07	13:14:43	X	Default	[CPS]		

TOOL CALIBRATION SHOB-113 10/07/07 09:54		SENSOR		STANDARD		RESPONSE	
1	Sep28,07	13:54:44	GAMMA	0.000	[API-GR]	2.00	[CPS]
	Sep28,07	13:54:44	GAMMA	320.000	[API-GR]	307.00	[CPS]
2	Sep28,07	13:54:59	VOLTAGE	0.000	[MV]	4297.00	[CPS]
	Sep28,07	13:54:59	VOLTAGE	1989.000	[MV]	268540.00	[CPS]
3	Sep28,07	13:55:03	CALIPER	4.000	[INCH]	155679.00	[CPS]
	Sep28,07	13:55:03	CALIPER	8.000	[INCH]	426280.00	[CPS]
4	Sep28,07	13:55:08	DEN(LS)	1.000	[G/CC]	26203.00	[CPS]
	Sep28,07	13:55:08	DEN(LS)	2.383	[G/CC]	46913.00	[CPS]
5	Sep28,07	13:55:14	DEN(SS)	1.000	[G/CC]	15843.00	[CPS]
	Sep28,07	13:55:14	DEN(SS)	2.383	[G/CC]	102730.00	[CPS]
6	Sep28,07	13:55:20	CALIPERL	4.000	[INCH]	357523.00	[CPS]
	Sep28,07	13:55:20	CALIPERL	12.000	[INCH]	3639.00	[CPS]
7	Sep28,07	13:55:24	CURRENT	0.000	[UA]	27413.00	[CPS]
	Sep28,07	13:55:24	CURRENT	284.960	[UA]		
8	Sep28,07	13:14:43	F	Default	[CPS]		
9	Sep28,07	13:14:43	X	Default	[CPS]		

Century
WIRELINE SERVICES

GAMMA-RES-DENSITY
GOLDER
SHOB-114

COMPANY	GOLDER ASSOCIATES, INC.	
WELL	SHOB-114	
FIELD	SHP	
COUNTY	STARK	
STATE	NORTH DAKOTA	
LOCATION	:	
SECTION	N/A	
TOWNSHIP	N/A	
RANGE	N/A	
API NO.	N/A	
UNIQUE WELL ID.	N/A	
PERMANENT DATUM	:GL	ELEVATION KB N/A
LOG MEASURED FROM	:GL	ELEVATION DF N/A
DRL MEASURED FROM	:GL	ELEVATION GL N/A
DATE	:10/06/07	
DEPTH DRILLER	:80	
BIT SIZE	5.625	
LOG TOP	:4.20	
LOG BOTTOM	:74.90	
CASING OD	N/A	
CASING BOTTOM	N/A	
CASING TYPE	N/A	
BOREHOLE FLUID	:WATER	
RM TEMPERATURE	N/A	
MUD RES	N/A	
MUD WEIGHT	:8.5	
WITNESSED BY	J. ELLIOT	
RECORDED BY	M. SUTTON	
REMARKS 1	:	
REMARKS 2	:	

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

GDR SHOB-114 10/06/07

LOG PARAMETERS

MATRIX DENSITY : 2.65

MAGNETIC DECL : 0

PRESENTATION NAME/DATE = 9239C1.0 10/07/2007

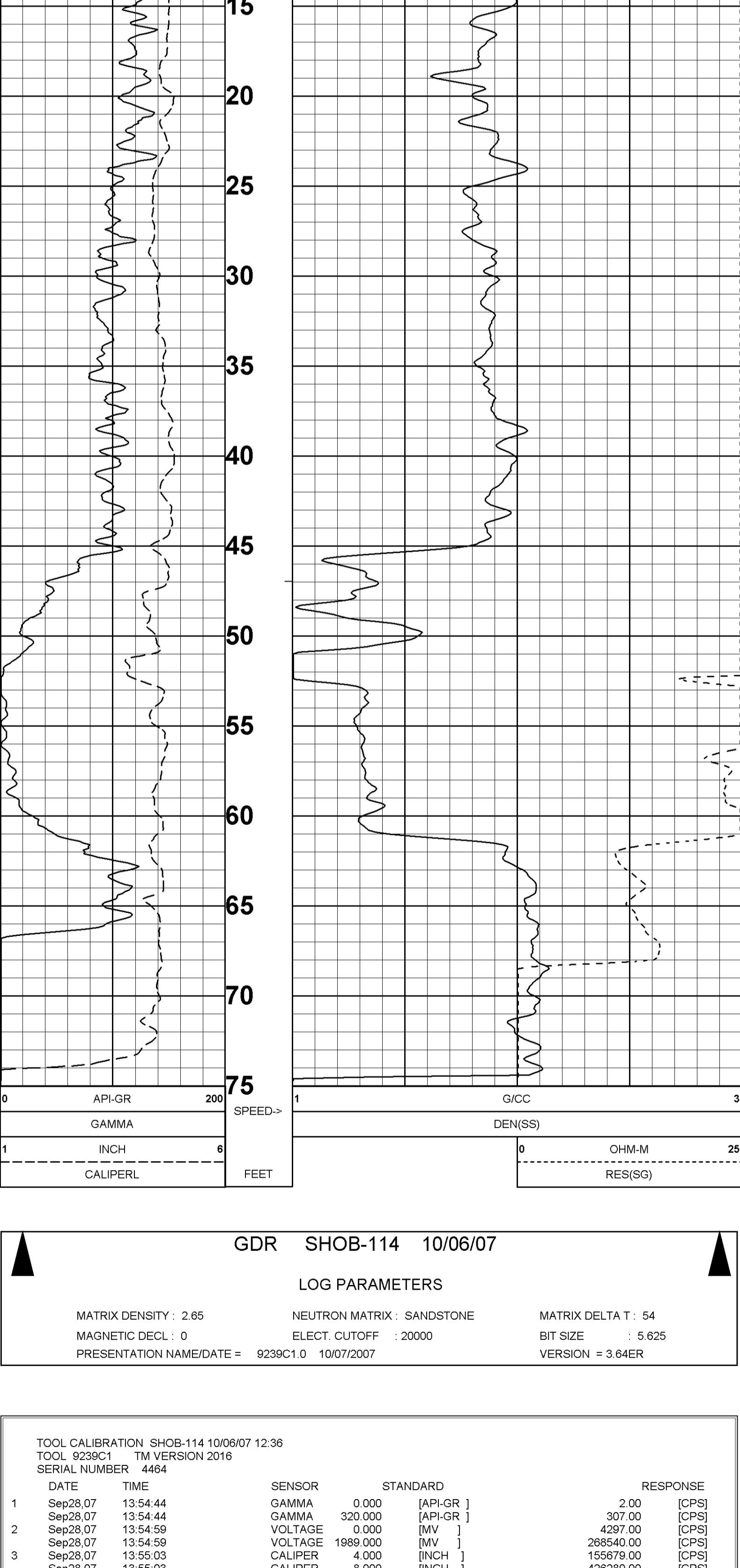
NEUTRON MATRIX : SANDSTONE

ELECT. CUTOFF : 20000

MATRIX DELTA T : 54

BIT SIZE : 5.625

VERSION = 3.64ER



TOOL CALIBRATION SHOB-114 10/06/07 12:36

TOOL 9239C1 TM VERSION 2016

SERIAL NUMBER 4464

DATE	TIME	SENSOR	STANDARD	RESPONSE
1 Sep28,07	13:54:44	GAMMA	0.000 [API-GR]	2.00 [CPS]
1 Sep28,07	13:54:44	GAMMA	320.000 [API-GR]	307.00 [CPS]
2 Sep28,07	13:54:59	VOLTAGE	0.000 [MV]	4297.00 [CPS]
2 Sep28,07	13:54:59	VOLTAGE	1989.000 [MV]	268540.00 [CPS]
3 Sep28,07	13:55:03	CALIPER	4.000 [INCH]	155679.00 [CPS]
3 Sep28,07	13:55:03	CALIPER	8.000 [INCH]	426280.00 [CPS]
4 Sep28,07	13:55:08	DEN(LS)	1.000 [G/CC]	26203.00 [CPS]
4 Sep28,07	13:55:08	DEN(LS)	2.383 [G/CC]	2230.00 [CPS]
5 Sep28,07	13:55:14	DEN(SS)	1.000 [G/CC]	46913.00 [CPS]
5 Sep28,07	13:55:14	DEN(SS)	2.383 [G/CC]	15843.00 [CPS]
6 Sep28,07	13:55:20	CALIPERL	4.000 [INCH]	102730.00 [CPS]
6 Sep28,07	13:55:20	CALIPERL	12.000 [INCH]	357523.00 [CPS]
7 Sep28,07	13:55:24	CURRENT	0.000 [UA]	3639.00 [CPS]
7 Sep28,07	13:55:24	CURRENT	284.960 [UA]	27413.00 [CPS]
8 Sep28,07	13:14:43	F	Default [CPS]	
8 Sep28,07	13:14:43	X	Default [CPS]	
9 Sep28,07	13:14:43			

GAMMA-RES-DENSITY
GOLDER
SHOB-115

COMPANY	GOLDER ASSOCIATES, INC.	
WELL	SHOB-115	
FIELD	SHP	
COUNTY		
STATE	STARK	
LOCATION	NORTH DAKOTA	
SECTION	N/A	
TOWNSHIP	N/A	
RANGE	N/A	
API NO.	N/A	
UNIQUE WELL ID.	N/A	
PERMANENT DATUM	GL	ELEVATION KB N/A
LOG MEASURED FROM	GL	ELEVATION DF N/A
DRI. MEASURED FROM	GL	ELEVATION GL N/A
DATE	10/08/07	
DEPTH DRILLER	90	
BIT SIZE	5.0	
LOG TOP	-4.10	
LOG BOTTOM	89.20	
CASING OD	N/A	
CASING BOTTOM	N/A	
CASING TYPE	API-GR	200
MUD RES	N/A	
MUD WEIGHT	8.5	
WITNESSED BY	J. ELLIOT	
RECORDED BY	M. SUTTON	
REMARKS 1		
REMARKS 2		

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

GDR SHOB-115 10/08/07

LOG PARAMETERS

MATRIX DENSITY : 2.65

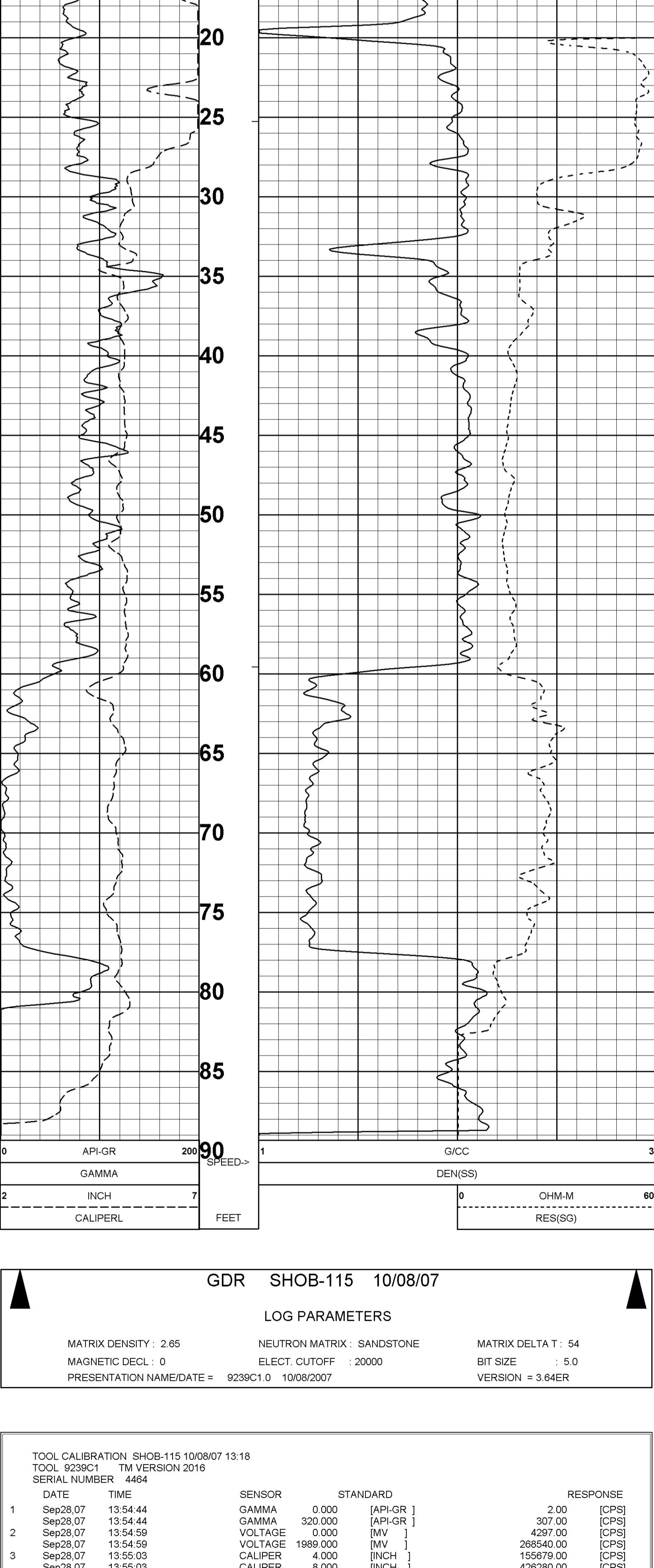
MAGNETIC DECL : 0

PRESENTATION NAME/DATE = 9239C1.0 10/08/2007

MATRIX DELTA T : 54

BIT SIZE : 5.0

VERSION = 3.64ER



GDR SHOB-115 10/08/07

LOG PARAMETERS

MATRIX DENSITY : 2.65

MAGNETIC DECL : 0

PRESENTATION NAME/DATE = 9239C1.0 10/08/2007

MATRIX DELTA T : 54

BIT SIZE : 5.0

VERSION = 3.64ER

TOOL CALIBRATION SHOB-115 10/08/07 13:18			
TOOL 9239C1 TM VERSION 2016			
SERIAL NUMBER 4464			
DATE	TIME	SENSOR	STANDARD
1 Sep28,07	13:54:44	GAMMA	0.000 [API-GR]
1 Sep28,07	13:54:44	GAMMA	320.000 [API-GR]
2 Sep28,07	13:54:59	VOLTAGE	0.000 [MV]
2 Sep28,07	13:54:59	VOLTAGE	1989.000 [MV]
3 Sep28,07	13:55:03	CALIPER	4.000 [INCH]
3 Sep28,07	13:55:03	CALIPER	8.000 [INCH]
4 Sep28,07	13:55:08	DEN(LS)	1.000 [G/CC]
4 Sep28,07	13:55:08	DEN(LS)	2.383 [G/CC]
5 Sep28,07	13:55:14	DEN(SS)	1.000 [G/CC]
5 Sep28,07	13:55:14	DEN(SS)	2.383 [G/CC]
6 Sep28,07	13:55:20	CALIPERL	4.000 [INCH]
6 Sep28,07	13:55:20	CALIPERL	12.000 [INCH]
7 Sep28,07	13:55:24	CURRENT	0.000 [UA]
7 Sep28,07	13:55:24	CURRENT	284.960 [UA]
8 Sep28,07	13:55:24	F	Default [CPS]
8 Sep28,07	13:55:24	X	Default [CPS]
9 Sep28,07	13:14:43		
9 Sep28,07	13:14:43		

RESPONSE

2.00 [CPS]

307.00 [CPS]

4297.00 [CPS]

268540.00 [CPS]

155679.00 [CPS]

426280.00 [CPS]

26203.00 [CPS]

2230.00 [CPS]

46913.00 [CPS]

15843.00 [CPS]

102730.00 [CPS]

357523.00 [CPS]

3639.00 [CPS]

27413.00 [CPS]

Century
WIRELINE SERVICES

GAMMA-RES-DENSITY
GOLDER
SHOB-116

COMPANY	GOLDER ASSOCIATES, INC.
WELL	SHOB-116
FIELD	.SHP
COUNTY	STARK
STATE	NORTH DAKOTA
LOCATION	
SECTION	N/A
TOWNSHIP	N/A
RANGE	N/A
API NO.	N/A
UNIQUE WELL ID.	N/A
PERMANENT DATUM	[GL]
LOG MEASURED FROM	[GL]
DRL MEASURED FROM	[GL]
DATE	10/03/07
DEPTH DRILLER	.70
BIT SIZE	5.625
LOG TOP	0.00
LOG BOTTOM	68.60
CASING OD	N/A
CASING BOTTOM	N/A
CASING TYPE	N/A
BOREHOLE FLUID	WATER
RM TEMPERATURE	N/A
MUD RES	N/A
MUD WEIGHT	8.5
WITNESSED BY	J. ELLIOT
RECORDED BY	M. SUTTON
REMARKS 1	:
REMARKS 2	:

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS.

GDR SHOB-116 10/03/07

LOG PARAMETERS

MATRIX DENSITY : 2.65

NEUTRON MATRIX : SANDSTONE

MATRIX DELTA T : 54

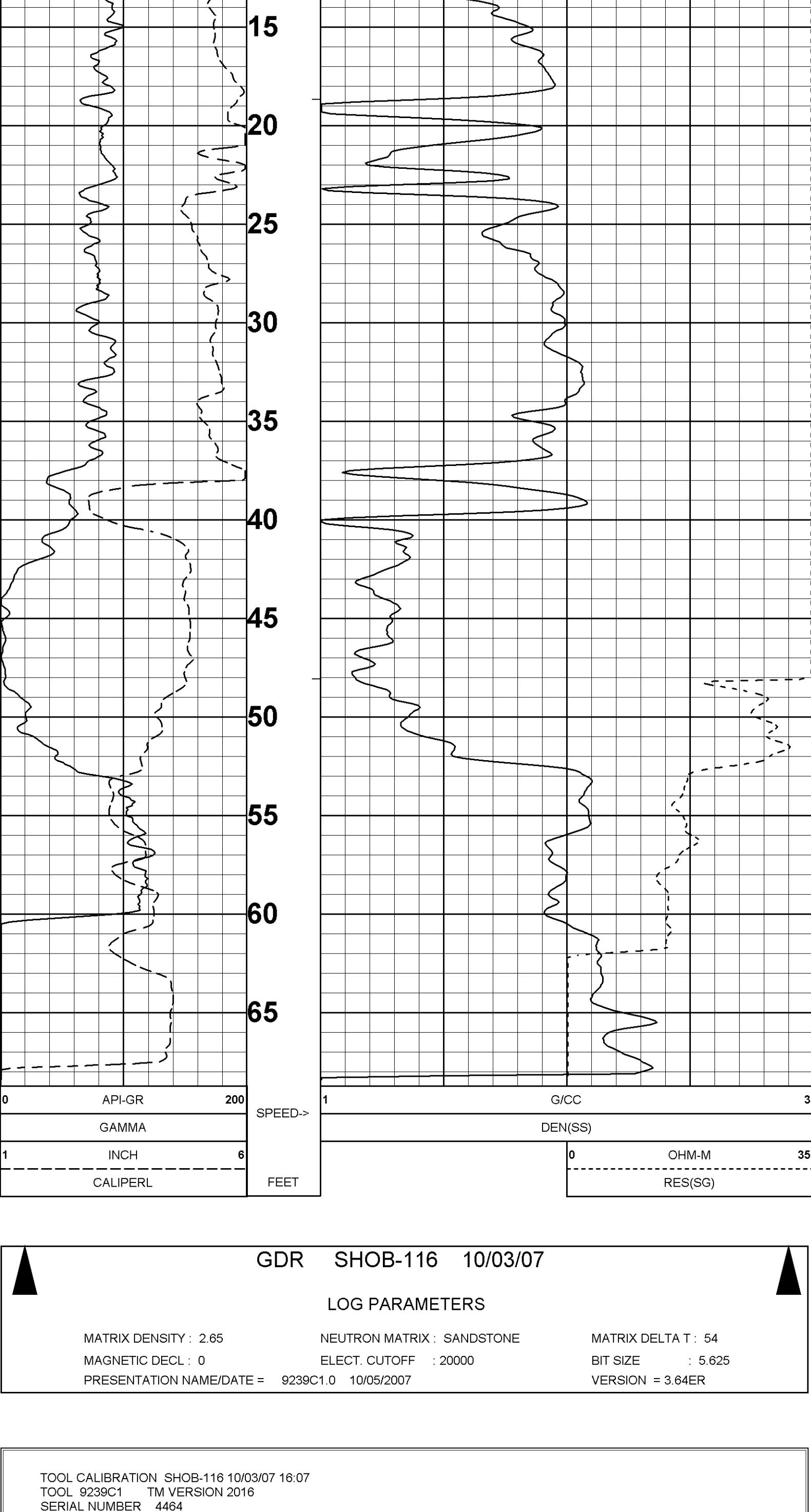
MAGNETIC DECL : 0

ELECT. CUTOFF : 20000

BIT SIZE : 5.625

PRESENTATION NAME/DATE = 9239C1.0 10/05/2007

VERSION = 3.64ER



GDR SHOB-116 10/03/07

LOG PARAMETERS

MATRIX DENSITY : 2.65

NEUTRON MATRIX : SANDSTONE

MATRIX DELTA T : 54

MAGNETIC DECL : 0

ELECT. CUTOFF : 20000

BIT SIZE : 5.625

PRESENTATION NAME/DATE = 9239C1.0 10/05/2007

VERSION = 3.64ER

TOOL CALIBRATION SHOB-116 10/03/07 16:07			STANDARD			RESPONSE	
1	Sep28,07	13:54:44	GAMMA	0.000	[API-GR]	2.00	[CPS]
	Sep28,07	13:54:44	GAMMA	320.000	[API-GR]	307.00	[CPS]
2	Sep28,07	13:54:59	VOLTAGE	0.000	[MV]	4297.00	[CPS]
	Sep28,07	13:54:59	VOLTAGE	1989.000	[MV]	268540.00	[CPS]
3	Sep28,07	13:55:03	CALIPER	4.000	[INCH]	155679.00	[CPS]
	Sep28,07	13:55:03	CALIPER	8.000	[INCH]	426280.00	[CPS]
4	Sep28,07	13:55:08	DEN(LS)	1.000	[G/CC]	26203.00	[CPS]
	Sep28,07	13:55:08	DEN(LS)	2.383	[G/CC]	2230.00	[CPS]
5	Sep28,07	13:55:14	DEN(SS)	1.000	[G/CC]	46913.00	[CPS]
	Sep28,07	13:55:14	DEN(SS)	2.383	[G/CC]	15843.00	[CPS]
6	Sep28,07	13:55:20	CALIPER	4.000	[INCH]	102730.00	[CPS]
	Sep28,07	13:55:20	CALIPER	12.000	[INCH]	357523.00	[CPS]
7	Sep28,07	13:55:24	CURRENT	0.000	[UA]	3639.00	[CPS]
	Sep28,07	13:55:24	CURRENT	284.960	[UA]	27413.00	[CPS]
8	Sep28,07	13:14:43	F	Default	[CPS]		
9	Sep28,07	13:14:43	X	Default	[CPS]		

Century
WIRELINE SERVICES

GAMMA-RES-DENSITY
GOLDER
SHOB-117

COMPANY	GOLDER ASSOCIATES, INC.
WELL	SHOB-117
FIELD	SHP
COUNTY	STARK
STATE	NORTH DAKOTA

OTHER SERVICES:
NONE

REMARKS 2 :
RECORDED BY : J. ELLIOT
REMARKS 1 : M. SUTTON
WITNESSED BY :

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

GDR SHOB-117 10/05/07

LOG PARAMETERS

MATRIX DENSITY : 2.65

NEUTRON MATRIX : SANDSTONE

MATRIX DELTA T : 54

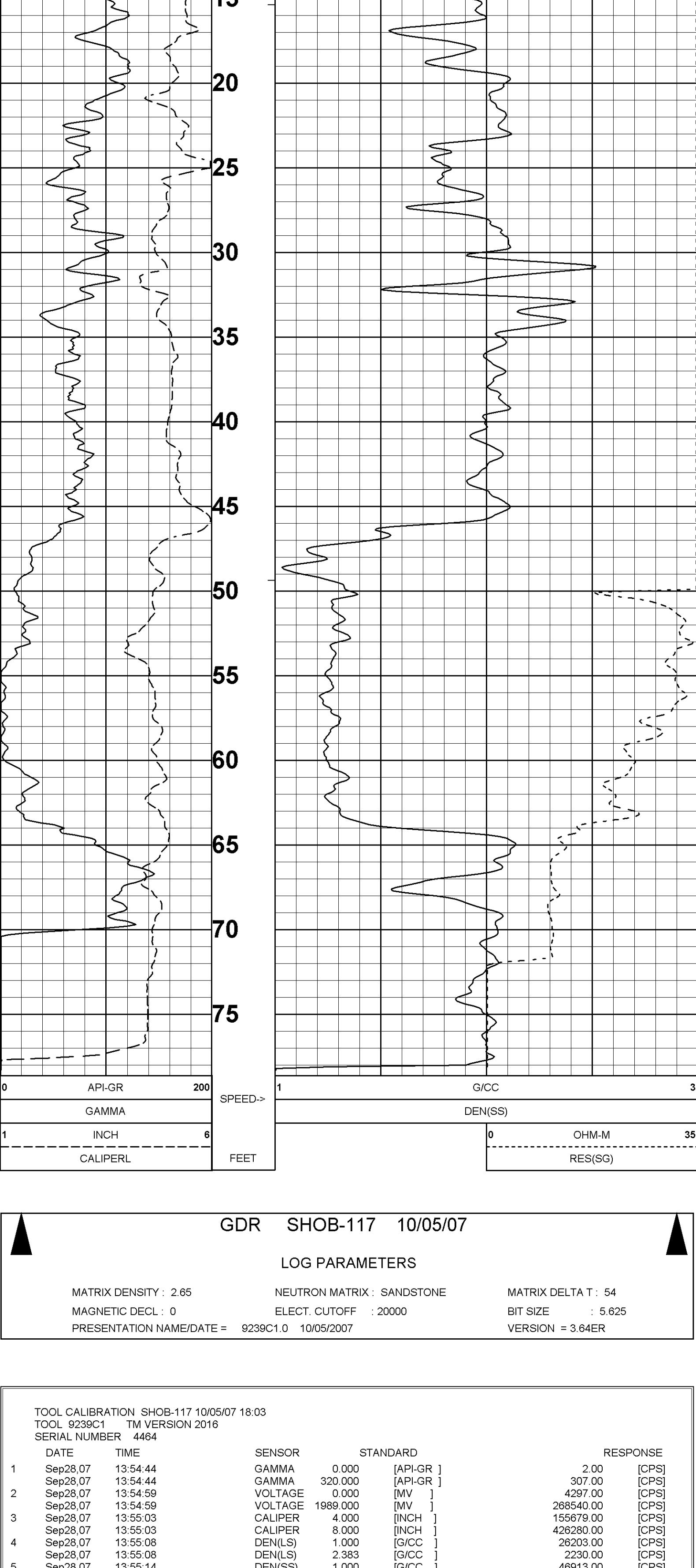
MAGNETIC DECL : 0

ELECT. CUTOFF : 20000

BIT SIZE : 5.625

PRESENTATION NAME/DATE = 9239C1.0 10/05/2007

VERSION = 3.64ER



GDR SHOB-117 10/05/07

LOG PARAMETERS

MATRIX DENSITY : 2.65

NEUTRON MATRIX : SANDSTONE

MATRIX DELTA T : 54

MAGNETIC DECL : 0

ELECT. CUTOFF : 20000

BIT SIZE : 5.625

PRESENTATION NAME/DATE = 9239C1.0 10/05/2007

VERSION = 3.64ER

TOOL CALIBRATION SHOB-117 10/05/07 18:03
TOOL 9239C1 TM VERSION 2016
SERIAL NUMBER 4464

	DATE	TIME	SENSOR	STANDARD	RESPONSE
1	Sep28,07	13:54:44	GAMMA	0.000 [API-GR]	2.00 [CPS]
	Sep28,07	13:54:44	GAMMA	320.000 [API-GR]	307.00 [CPS]
2	Sep28,07	13:54:59	VOLTAGE	0.000 [MV]	4297.00 [CPS]
	Sep28,07	13:54:59	VOLTAGE	1989.000 [MV]	268540.00 [CPS]
3	Sep28,07	13:55:03	CALIPER	4.000 [INCH]	155679.00 [CPS]
	Sep28,07	13:55:03	CALIPER	8.000 [INCH]	426280.00 [CPS]
4	Sep28,07	13:55:08	DEN(LS)	1.000 [G/CC]	26203.00 [CPS]
	Sep28,07	13:55:08	DEN(LS)	2.383 [G/CC]	2230.00 [CPS]
5	Sep28,07	13:55:14	DEN(SS)	1.000 [G/CC]	46913.00 [CPS]
	Sep28,07	13:55:14	DEN(SS)	2.383 [G/CC]	15843.00 [CPS]
6	Sep28,07	13:55:20	CALIPER	4.000 [INCH]	102730.00 [CPS]
	Sep28,07	13:55:20	CALIPER	12.000 [INCH]	357523.00 [CPS]
7	Sep28,07	13:55:24	CURRENT	0.000 [UA]	3639.00 [CPS]
	Sep28,07	13:55:24	CURRENT	284.960 [UA]	27413.00 [CPS]
8	Sep28,07	13:14:43	F	Default [CPS]	
9	Sep28,07	13:14:43	X	Default [CPS]	

Century
WIRELINE SERVICES

GAMMA-RES-DENSITY
GOLDER
SHOB-118

COMPANY	GOLDER ASSOCIATES, INC.	
WELL	SHOB-118	
FIELD	SHP	
COUNTY	STARK	
STATE	NORTH DAKOTA	
LOCATION		
SECTION	N/A	
TOWNSHIP	N/A	
RANGE	N/A	
API NO.	N/A	
UNIQUE WELL ID.	N/A	
PERMANENT DATUM	GL	ELEVATION KB N/A
LOG MEASURED FROM	GL	ELEVATION DF N/A
DRL MEASURED FROM	GL	ELEVATION GL N/A
DATE	10/06/07	
DEPTH DRILLER	8.0	
BIT SIZE	5.625	
LOG TOP	:4:30	
LOG BOTTOM	83.90	
CASING DD	N/A	
CASING BOTTOM	N/A	
CASING TYPE	N/A	
BOREHOLE FLUID	WATER	
RM TEMPERATURE	N/A	
MUD RES	N/A	
MUD WEIGHT	8.5	
WITNESSED BY	J. ELLIOT	
RECORDED BY	M. SUTTON	
REMARKS 1	:	
REMARKS 2	:	
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS		

GDR SHOB-118 10/06/07

LOG PARAMETERS

MATRIX DENSITY : 2.65

MAGNETIC DECL : 0

PRESENTATION NAME/DATE = 9239C1.0 10/07/2007

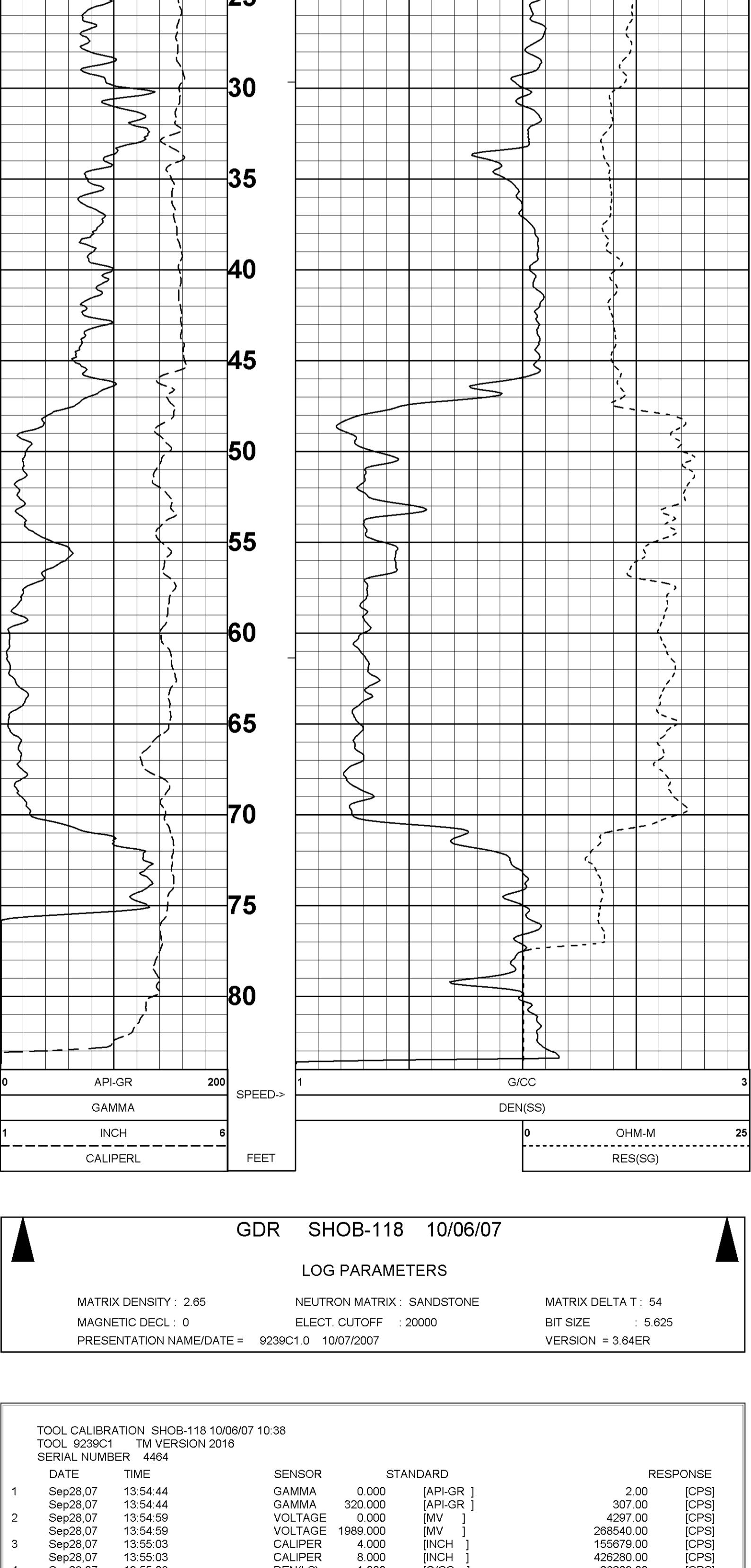
NEUTRON MATRIX : SANDSTONE

ELECT. CUTOFF : 20000

MATRIX DELTA T : 54

BIT SIZE : 5.625

VERSION = 3.64ER



GDR SHOB-118 10/06/07

LOG PARAMETERS

MATRIX DENSITY : 2.65

MAGNETIC DECL : 0

PRESENTATION NAME/DATE = 9239C1.0 10/07/2007

NEUTRON MATRIX : SANDSTONE

ELECT. CUTOFF : 20000

MATRIX DELTA T : 54

BIT SIZE : 5.625

VERSION = 3.64ER

TOOL CALIBRATION SHOB-118 10/06/07 10:38
TOOL 9239C1 TM VERSION 2016
SERIAL NUMBER 4464

DATE	TIME	SENSOR	STANDARD	RESPONSE
1 Sep28,07	13:54:44	GAMMA	0.000 [API-GR]	2.00 [CPS]
1 Sep28,07	13:54:44	GAMMA	320.000 [API-GR]	307.00 [CPS]
2 Sep28,07	13:54:44	VOLTAGE	0.000 [MV]	4297.00 [CPS]
2 Sep28,07	13:54:59	VOLTAGE	1989.000 [MV]	268540.00 [CPS]
3 Sep28,07	13:55:03	CALIPER	4.000 [INCH]	155679.00 [CPS]
3 Sep28,07	13:55:03	CALIPER	8.000 [INCH]	426280.00 [CPS]
4 Sep28,07	13:55:08	DEN(LS)	1.000 [G/CC]	26203.00 [CPS]
4 Sep28,07	13:55:08	DEN(LS)	2.383 [G/CC]	2230.00 [CPS]
5 Sep28,07	13:55:14	DEN(SS)	1.000 [G/CC]	46913.00 [CPS]
5 Sep28,07	13:55:14	DEN(SS)	2.383 [G/CC]	15843.00 [CPS]
6 Sep28,07	13:55:20	CALIPERL	4.000 [INCH]	102730.00 [CPS]
6 Sep28,07	13:55:20	CALIPERL	12.000 [INCH]	357523.00 [CPS]
7 Sep28,07	13:55:24	CURRENT	0.000 [UA]	3639.00 [CPS]
7 Sep28,07	13:55:24	CURRENT	284.960 [UA]	27413.00 [CPS]
8 Sep28,07	13:14:43	F	Default [CPS]	
8 Sep28,07	13:14:43	X	Default [CPS]	

GAMMA-RES-DENSITY
GOLDER
SHOB-119

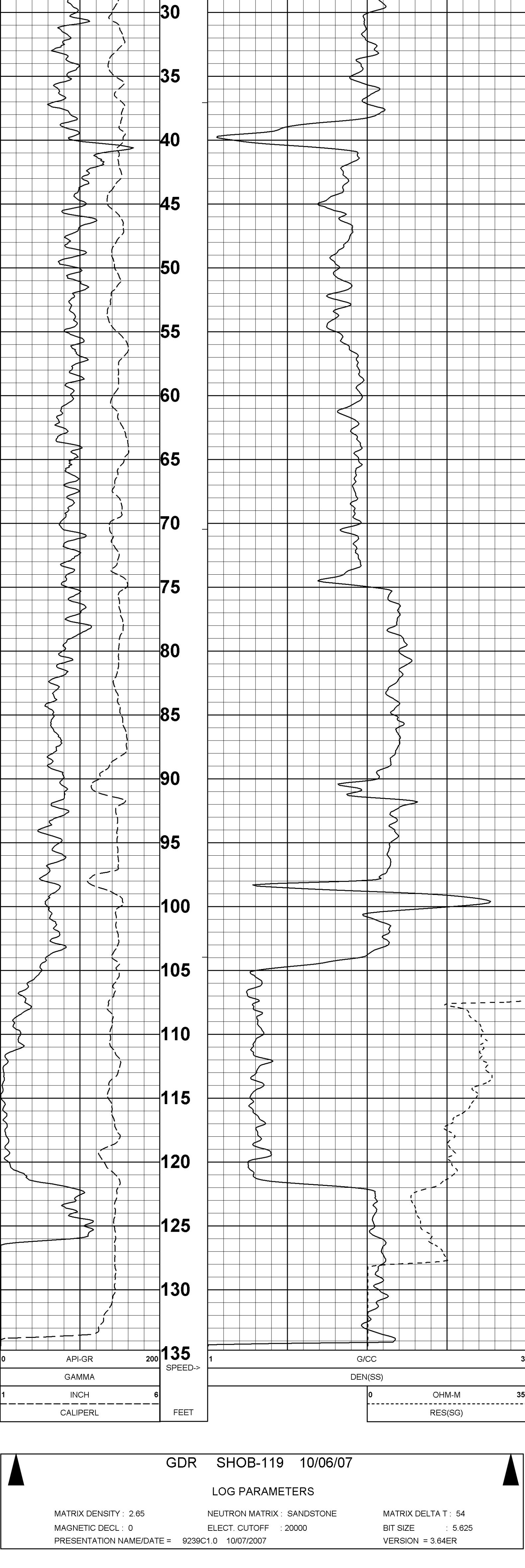
COMPANY	GOLDER ASSOCIATES, INC.	OTHER SERVICES:
WELL	SHOP-119	
FIELD	SHP	
COUNTY	STARK	
STATE	NORTH DAKOTA	NONE
LOCATION	:	
SECTION	N/A	
TOWNSHIP	N/A	
RANGE	N/A	
API NO.	N/A	
UNIQUE WELL ID.	N/A	
PERMANENT DATUM	[GL]	
LOG MEASURED FROM	GL	ELEVATION KB N/A
DRL MEASURED FROM	GL	ELEVATION DF N/A
DATE	10/06/07	
DEPTH DRILLER	:135	

GDR SHOB-119 10/06/07

LOG PARAMETERS

MATRIX DENSITY : 2.65
MAGNETIC DECL : 0
PRESENTATION NAME/DATE = 9239C1.0 10/07/2007

MATRIX DELTA T : 54
BIT SIZE : 5.625
VERSION = 3.64ER



GDR SHOB-119 10/06/07

LOG PARAMETERS

MATRIX DENSITY : 2.65
MAGNETIC DECL : 0
PRESENTATION NAME/DATE = 9239C1.0 10/07/2007

MATRIX DELTA T : 54
BIT SIZE : 5.625
VERSION = 3.64ER

TOOL CALIBRATION SHOB-119 10/06/07 16:30		SENSOR		STANDARD		RESPONSE	
1	Sep28,07	13:54:44	GAMMA	0.000	[API-GR]	2.00	[CPS]
2	Sep28,07	13:54:44	GAMMA	320.000	[API-GR]	307.00	[CPS]
3	Sep28,07	13:54:59	VOLTAGE	0.000	[MV]	4297.00	[CPS]
4	Sep28,07	13:55:03	VOLTAGE	1989.000	[MV]	268540.00	[CPS]
5	Sep28,07	13:55:08	CALIPER	4.000	[INCH]	155679.00	[CPS]
6	Sep28,07	13:55:14	CALIPER	8.000	[INCH]	426280.00	[CPS]
7	Sep28,07	13:55:20	DEN(LS)	1.000	[G/CC]	26203.00	[CPS]
8	Sep28,07	13:55:24	DEN(LS)	2.383	[G/CC]	2230.00	[CPS]
9	Sep28,07	13:55:24	DEN(SS)	1.000	[G/CC]	46913.00	[CPS]
			DEN(SS)	2.383	[G/CC]	15843.00	[CPS]
			CALIPERL	4.000	[INCH]	102730.00	[CPS]
			CALIPERL	12.000	[INCH]	357523.00	[CPS]
			CURRENT	0.000	[UA]	3639.00	[CPS]
			CURRENT	284.960	[UA]	27413.00	[CPS]
			X	Default	[CPS]		
			X	Default	[CPS]		

GAMMA-RES-DENSITY
GOLDER
SHOB-120

COMPANY	GOLDER ASSOCIATES, INC.	
WELL	SHOB-120	OTHER SERVICES:
FIELD	SHP	
COUNTY	STARK	
STATE	NORTH DAKOTA	
LOCATION		
SECTION	N/A	
TOWNSHIP	N/A	
RANGE	N/A	
API NO.	N/A	
UNIQUE WELL ID.	N/A	
PERMANENT DATUM	GL	ELEVATION KB N/A
LOG MEASURED FROM	GL	ELEVATION DF N/A
DRL MEASURED FROM	GL	ELEVATION GL N/A
DATE	10/03/07	
DEPTH DRILLER	.80	
LOG TOP	:4.00	
LOG BOTTOM	.99.80	
BIT SIZE	.5.625	
CASING OD	N/A	
CASING BOTTOM	N/A	
CALIPER	7	
BOREHOLE FLUID	WATER	
RM TEMPERATURE	N/A	
MUD RES	N/A	
MUD WEIGHT	8.5	
WITNESSED BY	J. ELLIOT	
RECORDED BY	M. SUTTON	
REMARKS 1		
REMARKS 2		

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

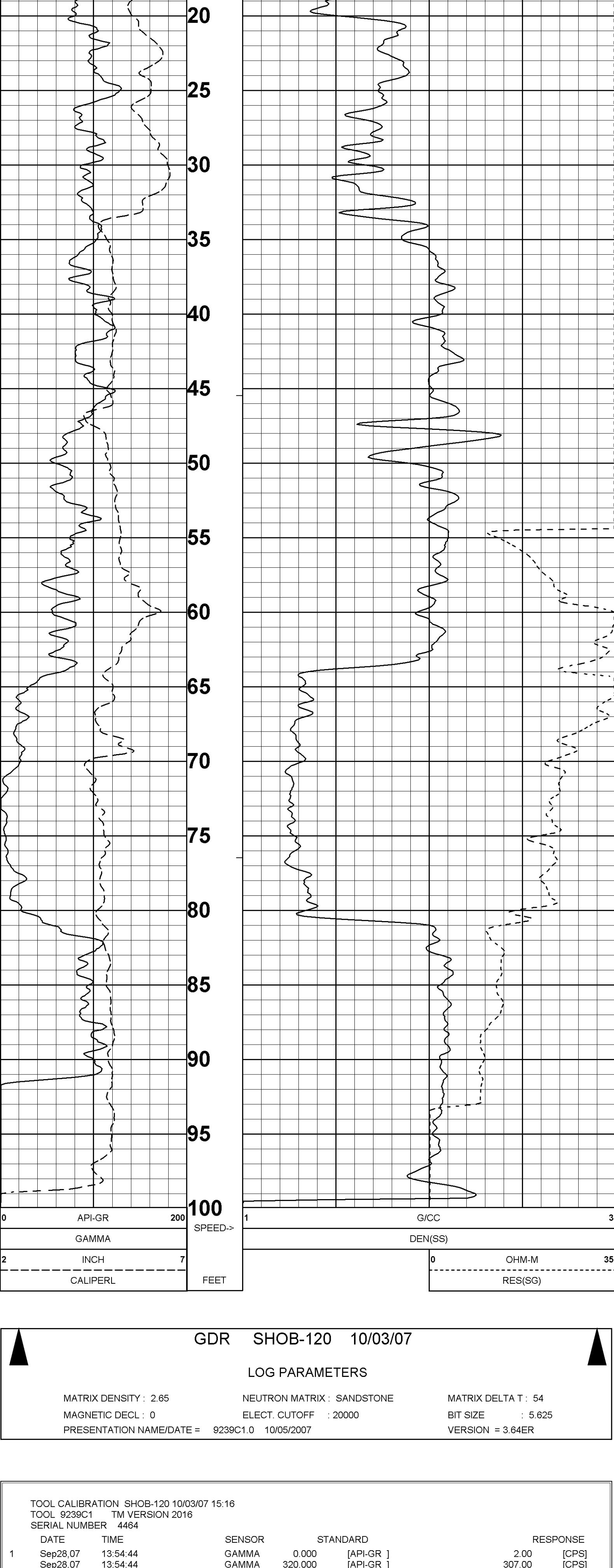
GDR SHOB-120 10/03/07

LOG PARAMETERS

MATRIX DENSITY : 2.65
MAGNETIC DECL : 0
PRESENTATION NAME/DATE = 9239C1.0 10/05/2007

NEUTRON MATRIX : SANDSTONE
ELECT. CUTOFF : 20000

MATRIX DELTA T : 54
BIT SIZE : 5.625
VERSION = 3.64ER



GDR SHOB-120 10/03/07

LOG PARAMETERS

MATRIX DENSITY : 2.65

MAGNETIC DECL : 0

PRESENTATION NAME/DATE = 9239C1.0 10/05/2007

MATRIX DELTA T : 54

BIT SIZE : 5.625

VERSION = 3.64ER

DATE	TIME	SENSOR	STANDARD	RESPONSE
1 Sep28,07	13:54:44	GAMMA	0.000 [API-GR]	2.00 [CPS]
1 Sep28,07	13:54:44	GAMMA	320.000 [API-GR]	307.00 [CPS]
2 Sep28,07	13:54:59	VOLTAGE	0.000 [MV]	4297.00 [CPS]
2 Sep28,07	13:54:59	VOLTAGE	1989.000 [MV]	268540.00 [CPS]
3 Sep28,07	13:55:03	CALIPER	4.000 [INCH]	155679.00 [CPS]
3 Sep28,07	13:55:03	CALIPER	8.000 [INCH]	426280.00 [CPS]
4 Sep28,07	13:55:08	DEN(LS)	1.000 [GCC]	26203.00 [CPS]
4 Sep28,07	13:55:08	DEN(LS)	2.383 [GCC]	2230.00 [CPS]
5 Sep28,07	13:55:14	DEN(SS)	1.000 [GCC]	46913.00 [CPS]
5 Sep28,07	13:55:14	DEN(SS)	2.383 [GCC]	15843.00 [CPS]
6 Sep28,07	13:55:20	CALIPER	4.000 [INCH]	102730.00 [CPS]
6 Sep28,07	13:55:20	CALIPER	12.000 [INCH]	357523.00 [CPS]
7 Sep28,07	13:55:24	CURRENT	0.000 [UA]	3639.00 [CPS]
7 Sep28,07	13:55:24	CURRENT	284.960 [UA]	27413.00 [CPS]
8 Sep28,07	13:14:43	F	Default [CPS]	
9 Sep28,07	13:14:43	X	Default [CPS]	

Century
WIRELINE SERVICES

GAMMA-RES-DENSITY

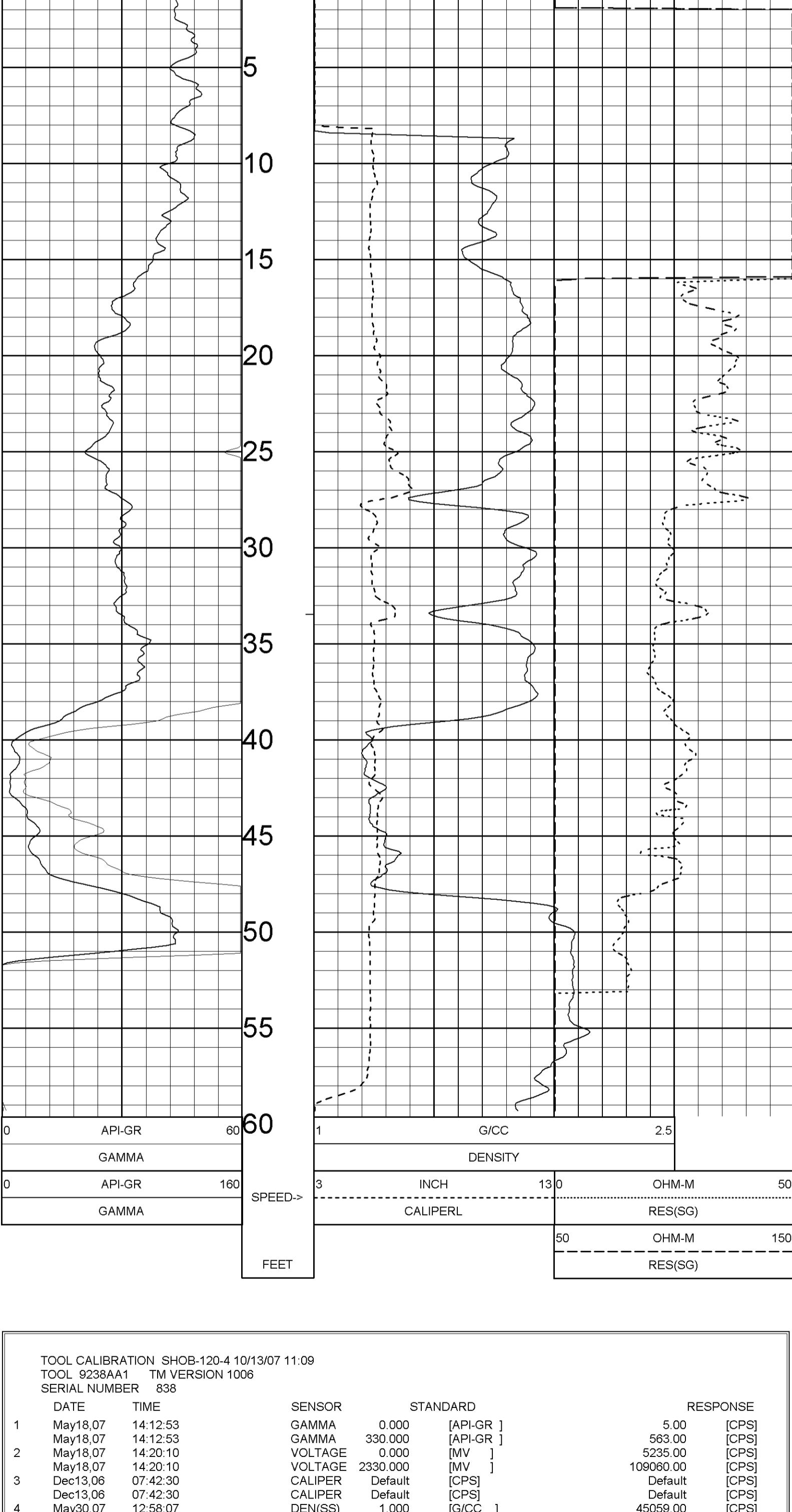
SHOB-120-4

COMPANY	SOLDER ASSOCIATES
WELL	SHOB-120-4
FIELD	SOUTH HEART
COUNTY	STARK
STATE	NORTH DAKOTA
LOCATION	N/A
SECTION	:
TOWNSHIP	:
RANGE	:
API NO.	N/A
UNIQUE WELL ID.	N/A

PERMANENT DATUM	:GL	ELEVATION KB	N/A
LOG MEASURED FROM	:GL	ELEVATION DF	N/A
DRL MEASURED FROM	:GL	ELEVATION GL:	

DATE	:10/13/07	DEPTH DRILLER	:60
BIT SIZE	:5.0	LOG TOP	:0.00
CASING OD	:N/A	LOG BOTTOM	:59.50
CASING BOTTOM	:N/A	CALIPERL	:3
CASING TYPE	:N/A	INCH	:130
BOREHOLE FLUID	:AIR	DENSITY	
RM TEMPERATURE	:N/A	G/CC	:2.5
MUD RES	:N/A		
MUD WEIGHT	:0		
WITNESSED BY	:S. HARKINS		
RECORDED BY	:B. MATAS		
REMARKS 1	:		
REMARKS 2	:		

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



TOOL CALIBRATION SHOB-120-4 10/13/07 11:09

TOOL 9238AA1 TM VERSION 1006

SERIAL NUMBER 838

	DATE	TIME	SENSOR	STANDARD	RESPONSE
1	May18,07	14:12:53	GAMMA	0.000 [API-GR]	5.00 [CPS]
	May18,07	14:12:53	GAMMA	330.000 [API-GR]	563.00 [CPS]
2	May18,07	14:20:10	VOLTAGE	0.000 [MV]	5235.00 [CPS]
	May18,07	14:20:10	VOLTAGE	2330.000 [MV]	109060.00 [CPS]
3	Dec13,06	07:42:30	CALIPER	Default [CPS]	Default [CPS]
	Dec13,06	07:42:30	CALIPER	Default [CPS]	Default [CPS]
4	May30,07	12:58:07	DEN(SS)	1.000 [G/CC]	45059.00 [CPS]
	May30,07	12:58:07	DEN(SS)	2.383 [G/CC]	17124.00 [CPS]
5	May18,07	14:10:50	CALIPERL	4.000 [INCH]	51020.00 [CPS]
	May18,07	14:10:50	CALIPERL	8.000 [INCH]	66952.00 [CPS]
6	May18,07	14:20:15	CURRENT	0.000 [UA]	5036.00 [CPS]
	May18,07	14:20:15	CURRENT	333.800 [UA]	38177.00 [CPS]
7	Dec13,06	07:42:30	X	Default [CPS]	
	Dec13,06	07:42:30	Y	Default [CPS]	

Century
WIRELINE SERVICES

GAMMA-RES-DENSITY

SHOB-120-5

COMPANY	GOLDER ASSOCIATES	OTHER SERVICES:
WELL	SHOB-120-5	N/A
FIELD	SOUTH HEART	N/A
COUNTY	STARK	N/A
STATE	NORTH DAKOTA	N/A

LOCATION
SECTION
TOWNSHIP
RANGE
API NO.
UNIQUE WELL ID.

N/A
N/A
N/A
N/A
N/A
N/A

ELEVATION KB
ELEVATION DF
ELEVATION GL

:GL
LOG MEASURED FROM :GL
DRL MEASURED FROM :GL

DATE

:10/13/07

DEPTH DRILLER

:60

LOG TOP

:0.40

CASING OD

:5.0

CASING BOTTOM

:56.30

BOREHOLE FLUID

:AIR

RM TEMPERATURE

:N/A

MUD RES

:N/A

MUD WEIGHT

:0

WTNESSED BY

:S. HARKINS

RECORDED BY

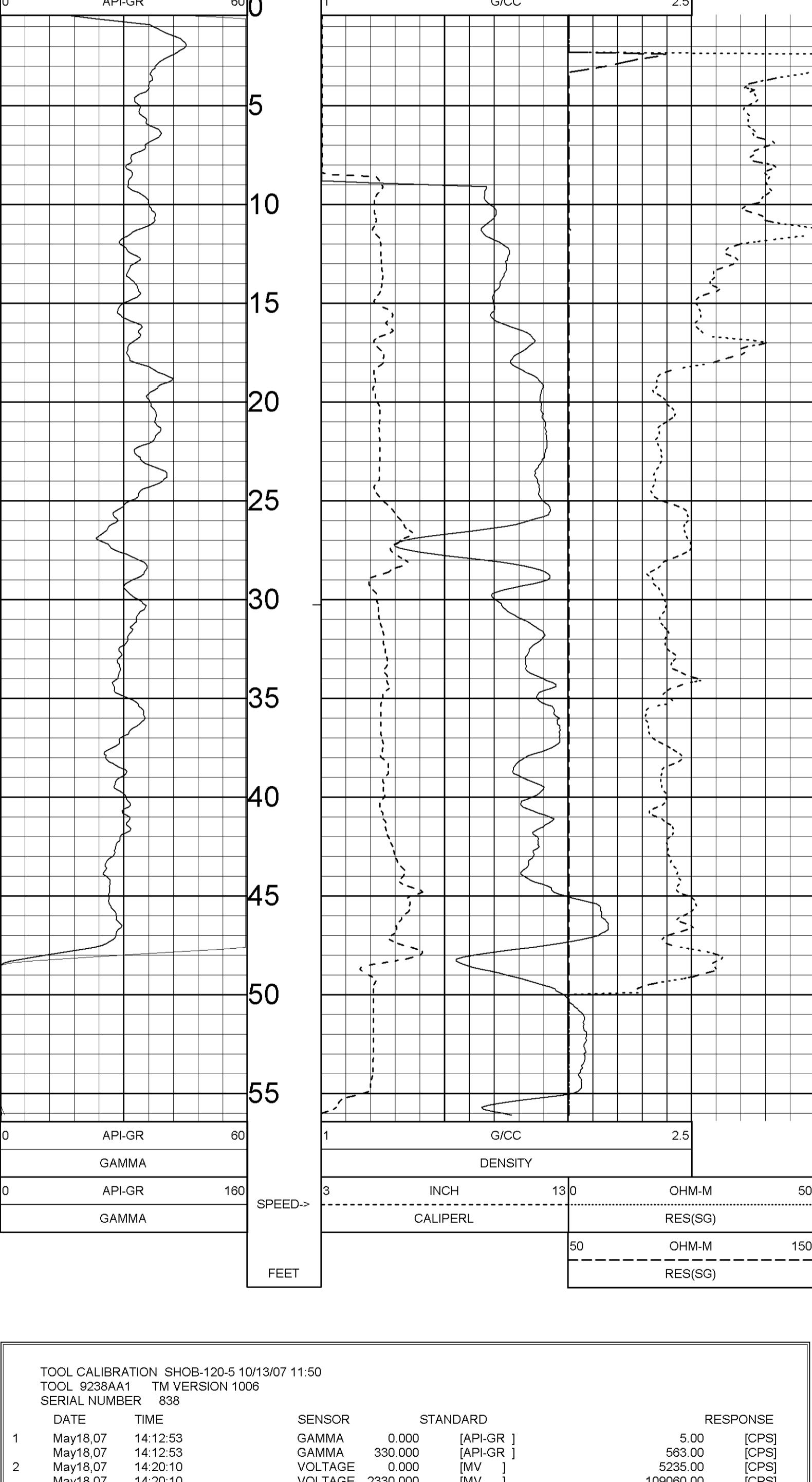
:B. MATAS

REMARKS 1

:

REMARKS 2

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



TOOL CALIBRATION SHOB-120-5 10/13/07 11:50

TOOL 9238AA1 TM VERSION 1006

SERIAL NUMBER 838

DATE	TIME	SENSOR	STANDARD	RESPONSE
1 May18,07	14:12:53	GAMMA	0.000 [API-GR]	5.00 [CPS]
1 May18,07	14:12:53	GAMMA	330.000 [API-GR]	563.00 [CPS]
2 May18,07	14:20:10	VOLTAGE	0.000 [MV]	5235.00 [CPS]
2 May18,07	14:20:10	VOLTAGE	2330.000 [MV]	109060.00 [CPS]
3 Dec13,06	07:42:30	CALIPER	Default [CPS]	Default [CPS]
3 Dec13,06	07:42:30	CALIPER	Default [CPS]	Default [CPS]
4 May30,07	12:58:07	DEN(SS)	1.000 [G/CC]	45059.00 [CPS]
4 May30,07	12:58:07	DEN(SS)	2.383 [G/CC]	17124.00 [CPS]
5 May18,07	14:10:50	CALIPERL	4.000 [INCH]	51020.00 [CPS]
5 May18,07	14:10:50	CALIPERL	8.000 [INCH]	66952.00 [CPS]
6 May18,07	14:20:15	CURRENT	0.000 [UA]	5036.00 [CPS]
6 May18,07	14:20:15	CURRENT	333.800 [UA]	38177.00 [CPS]
7 Dec13,06	07:42:30	X	Default [CPS]	
7 Dec13,06	07:42:30	Y	Default [CPS]	

Century
WIRELINE SERVICES

GAMMA-RES-DENSITY

SHOB-120-6

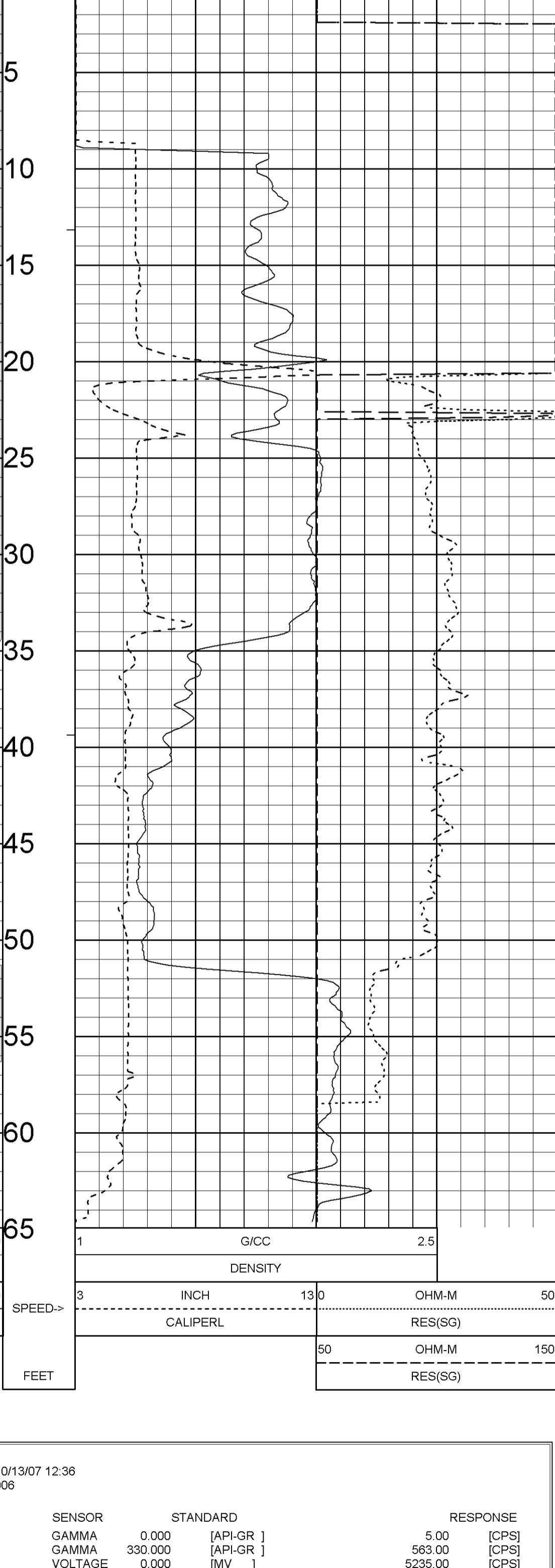
COMPANY	GOLDER ASSOCIATES	OTHER SERVICES:
WELL	SHOB-120-6	N/A
FIELD	SOUTH HEART	N/A
COUNTY	STARK	N/A
STATE	NORTH DAKOTA	N/A

LOCATION	N/A
SECTION	:
TOWNSHIP	:
RANGE	:
API NO.	N/A

UNIQUE WELL ID. N/A

PERMANENT DATUM :GL
LOG MEASURED FROM :GL
DRL MEASURED FROM :GL

ELEVATION KB :N/A
ELEVATION DF :N/A
ELEVATION GL :



ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

TOOL CALIBRATION SHOB-120-6 10/13/07 12:36

TOOL 9238AA1 TM VERSION 1006

SERIAL NUMBER 838

	DATE	TIME	SENSOR	STANDARD	RESPONSE
1	May18,07	14:12:53	GAMMA	0.000 [API-GR]	5.00 [CPS]
	May18,07	14:12:53	GAMMA	330.000 [API-GR]	563.00 [CPS]
2	May18,07	14:20:10	VOLTAGE	0.000 [MV]	5235.00 [CPS]
	May18,07	14:20:10	VOLTAGE	2330.000 [MV]	109060.00 [CPS]
3	Dec13,06	07:42:30	CALPER	Default [CPS]	Default [CPS]
	Dec13,06	07:42:30	CALPER	Default [CPS]	Default [CPS]
4	May30,07	12:58:07	DEN(SS)	1.000 [G/CC]	45059.00 [CPS]
	May30,07	12:58:07	DEN(SS)	2.383 [G/CC]	17124.00 [CPS]
5	May18,07	14:10:50	CALPERL	4.000 [INCH]	51020.00 [CPS]
	May18,07	14:10:50	CALPERL	8.000 [INCH]	66952.00 [CPS]
6	May18,07	14:20:15	CURRENT	0.000 [UA]	5036.00 [CPS]
	May18,07	14:20:15	CURRENT	333.800 [UA]	38177.00 [CPS]
7	Dec13,06	07:42:30	X	Default [CPS]	
8	Dec13,06	07:42:30	Y	Default [CPS]	

Century
WIRELINE SERVICES

GAMMA-RES-DENSITY
GOLDER
SHOB-121

COMPANY	GOLDER ASSOCIATES, INC.
WELL	SHOB-121
FIELD	SHIP
COUNTY	STARK
STATE	NORTH DAKOTA
LOCATION	:
SECTION	n/a
TOWNSHIP	n/a
RANGE	n/a
API NO.	n/a
UNIQUE WELL ID.	n/a
PERMANENT DATUM	GL
LOG MEASURED FROM	GL
DRL MEASURED FROM	GL
DATE	:10/03/07
DEPTH DRILLER	80
BIT SIZE	.625
LOG TOP	4.10
LOG BOTTOM	77.60
CASING OD	n/a
CASING BOTTOM	n/a
CASING TYPE	n/a
BOREHOLE FLUID	WATER
RM TEMPERATURE	n/a
MUD RES	n/a
MUD WEIGHT	8.5
WITNESSED BY	J. ELLIOT
RECORDED BY	M. SUTTON
REMARKS 1	:
REMARKS 2	:

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

GDR SHOB-121 10/03/07

LOG PARAMETERS

MATRIX DENSITY : 2.65

NEUTRON MATRIX : SANDSTONE

MATRIX DELTA T : 54

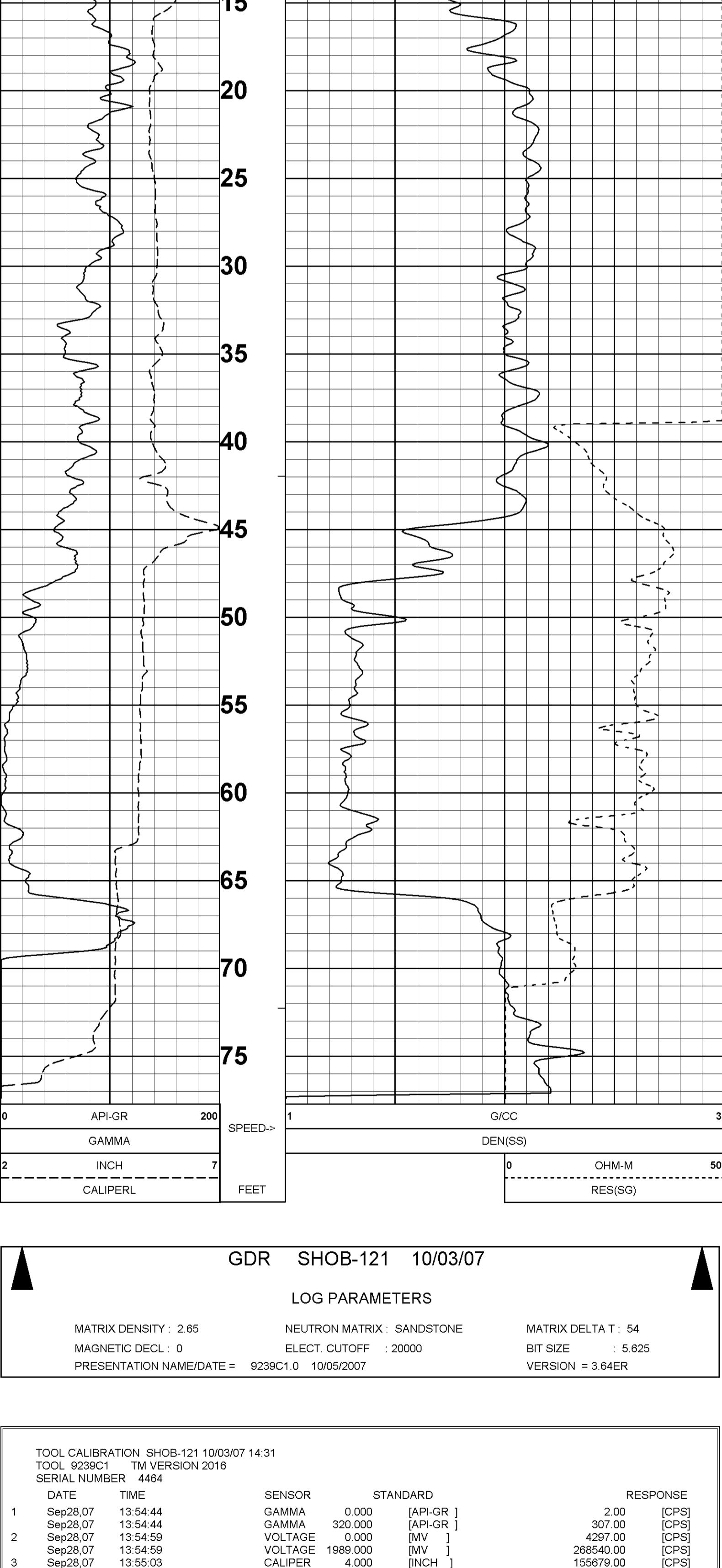
MAGNETIC DECL : 0

ELECT. CUTOFF : 20000

BIT SIZE : 5.625

PRESENTATION NAME/DATE = 9239C1.0 10/05/2007

VERSION = 3.64ER



GDR SHOB-121 10/03/07

LOG PARAMETERS

MATRIX DENSITY : 2.65

NEUTRON MATRIX : SANDSTONE

MATRIX DELTA T : 54

MAGNETIC DECL : 0

ELECT. CUTOFF : 20000

BIT SIZE : 5.625

PRESENTATION NAME/DATE = 9239C1.0 10/05/2007

VERSION = 3.64ER

TOOL CALIBRATION SHOB-121 10/03/07 14:31
TOOL 9239C1 TM VERSION 2016
SERIAL NUMBER 4464

DATE	TIME	SENSOR	STANDARD	RESPONSE
1 Sep28,07	13:54:44	GAMMA	0.000 [API-GR]	2.00 [CPS]
1 Sep28,07	13:54:44	GAMMA	320.000 [API-GR]	307.00 [CPS]
2 Sep28,07	13:54:59	VOLTAGE	0.000 [MV]	4297.00 [CPS]
2 Sep28,07	13:54:59	VOLTAGE	1989.000 [MV]	268540.00 [CPS]
3 Sep28,07	13:55:03	CALIPER	4.000 [INCH]	155679.00 [CPS]
3 Sep28,07	13:55:03	CALIPER	8.000 [INCH]	426280.00 [CPS]
4 Sep28,07	13:55:08	DEN(LS)	1.000 [G/CC]	26203.00 [CPS]
4 Sep28,07	13:55:08	DEN(LS)	2.383 [G/CC]	2230.00 [CPS]
5 Sep28,07	13:55:14	DEN(SS)	1.000 [G/CC]	46913.00 [CPS]
5 Sep28,07	13:55:14	DEN(SS)	2.383 [G/CC]	15843.00 [CPS]
6 Sep28,07	13:55:20	CALIPERL	4.000 [INCH]	102730.00 [CPS]
6 Sep28,07	13:55:20	CALIPERL	12.000 [INCH]	357523.00 [CPS]
7 Sep28,07	13:55:24	CURRENT	0.000 [UA]	3639.00 [CPS]
7 Sep28,07	13:55:24	CURRENT	284.960 [UA]	27413.00 [CPS]
8 Sep28,07	13:14:43	F	Default [CPS]	
8 Sep28,07	13:14:43	X	Default [CPS]	

GAMMA-RES-DENSITY
GOLDER
SHOB-122

COMPANY	: GOLDER ASSOCIATES, INC.	OTHER SERVICES:
WELL	: SHOB-122	
FIELD	: SHP	
COUNTY	: STARK	
STATE	: NORTH DAKOTA	
LOCATION	:	
SECTION	: N/A	
TOWNSHIP	: N/A	
RANGE	: N/A	
API NO.	: N/A	
UNIQUE WELL ID.	: N/A	
PERMANENT DATUM	: GL	ELEVATION KB N/A
LOG MEASURED FROM	: GL	ELEVATION DF N/A
DRL MEASURED FROM	: GL	ELEVATION GL N/A
DATE	: 10/03/07	
DEPTH DRILLER	: 60	
BIT SIZE	: 5.625	
LOG TOP	: 3.70	
LOG BOTTOM	: 58.50	
CASING OD	: N/A	
CASING BOTTOM	: N/A	
CASING TYPE	: N/A	
BOREHOLE FLUID	: WATER	
RM TEMPERATURE	: N/A	
MUD RES	: N/A	
MUD WEIGHT	: 8.5	
WTNESSED BY	: J. ELLIOT	
RECORDED BY	: M. SUTTON	
REMARKS 1	:	
REMARKS 2	:	

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

GDR SHOB-122 10/03/07

LOG PARAMETERS

MATRIX DENSITY : 2.65

MAGNETIC DECL : 0

PRESENTATION NAME/DATE = 9239C1.0 10/05/2007

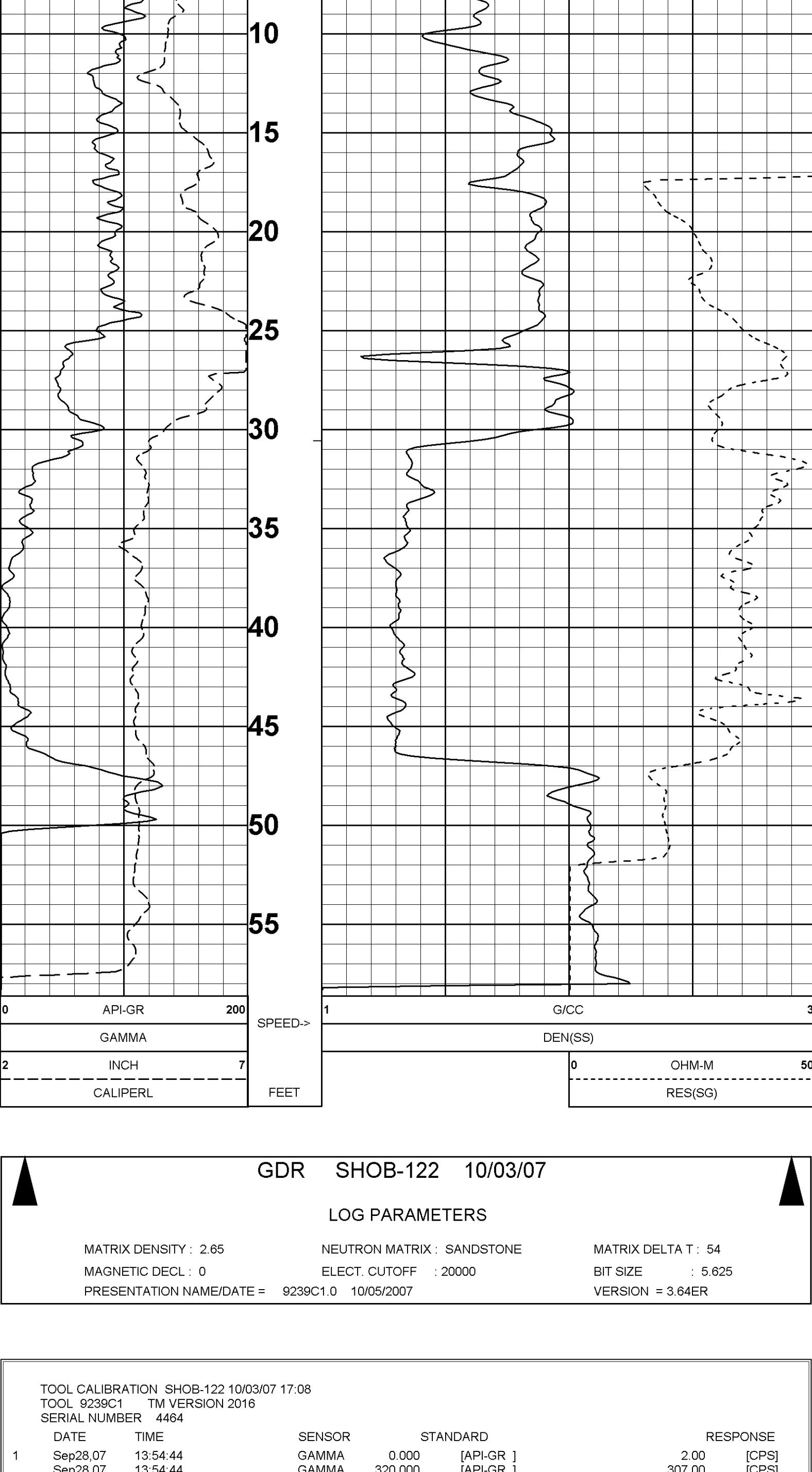
NEUTRON MATRIX : SANDSTONE

ELECT. CUTOFF : 20000

MATRIX DELTA T : 54

BIT SIZE : 5.625

VERSION = 3.64ER



GDR SHOB-122 10/03/07

LOG PARAMETERS

MATRIX DENSITY : 2.65

MAGNETIC DECL : 0

PRESENTATION NAME/DATE = 9239C1.0 10/05/2007

MATRIX DELTA T : 54

BIT SIZE : 5.625

VERSION = 3.64ER

DATE	TIME	SENSOR	STANDARD		RESPONSE
			[API-GR]	[CPS]	
1 Sep28,07	13:54:44	GAMMA	0.000	[API-GR]	2.00 [CPS]
Sep28,07	13:54:44	GAMMA	320.000	[API-GR]	307.00 [CPS]
2 Sep28,07	13:54:59	VOLTAGE	0.000	[MV]	4297.00 [CPS]
Sep28,07	13:54:59	VOLTAGE	1989.000	[MV]	268540.00 [CPS]
3 Sep28,07	13:55:03	CALIPER	4.000	[INCH]	155679.00 [CPS]
Sep28,07	13:55:03	CALIPER	8.000	[INCH]	426280.00 [CPS]
4 Sep28,07	13:55:08	DEN(LS)	1.000	[G/CC]	26203.00 [CPS]
Sep28,07	13:55:08	DEN(LS)	2.383	[G/CC]	2230.00 [CPS]
5 Sep28,07	13:55:14	DEN(SS)	1.000	[G/CC]	46913.00 [CPS]
Sep28,07	13:55:14	DEN(SS)	2.383	[G/CC]	15843.00 [CPS]
6 Sep28,07	13:55:20	CALIPERL	4.000	[INCH]	102730.00 [CPS]
Sep28,07	13:55:20	CALIPERL	12.000	[INCH]	357523.00 [CPS]
7 Sep28,07	13:55:24	CURRENT	0.000	[UA]	3639.00 [CPS]
Sep28,07	13:55:24	CURRENT	284.960	[UA]	27413.00 [CPS]
8 Sep28,07	13:14:43	L	Default	[CPS]	
Sep28,07	13:14:43	X	Default	[CPS]	

Century
WIRELINE SERVICES

GAMMA-RES-DENSITY
GOLDER
SHOB-123

COMPANY	GOLDER ASSOCIATES, INC.	
WELL	SHOB-123	
FIELD	SHP	
COUNTY	STARK	
STATE	NORTH DAKOTA	
LOCATION	:	
SECTION	N/A	
TOWNSHIP	N/A	
RANGE	N/A	
API NO.	N/A	
UNIQUE WELL ID.	N/A	
PERMANENT DATUM	: GL	ELEVATION KB N/A
LOG MEASURED FROM	: GL	ELEVATION DF N/A
DRL MEASURED FROM	: GL	ELEVATION GL N/A
DATE	: 10/05/07	
DEPTH DRILLER	: 80	
BIT SIZE	: 5.625	
LOG TOP	: 4.10	
LOG BOTTOM	: 79.70	
CASING O/D	N/A	
CASING BOTTOM	N/A	
CASING TYPE	N/A	
BOREHOLE FLUID	WATER	
RM TEMPERATURE	N/A	
MUD RES	N/A	
MUD WEIGHT	: 8.5	
WITNESSED BY	J. ELLIOT	
RECORDED BY	M. SUTTON	
REMARKS 1	:	
REMARKS 2	:	
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS		

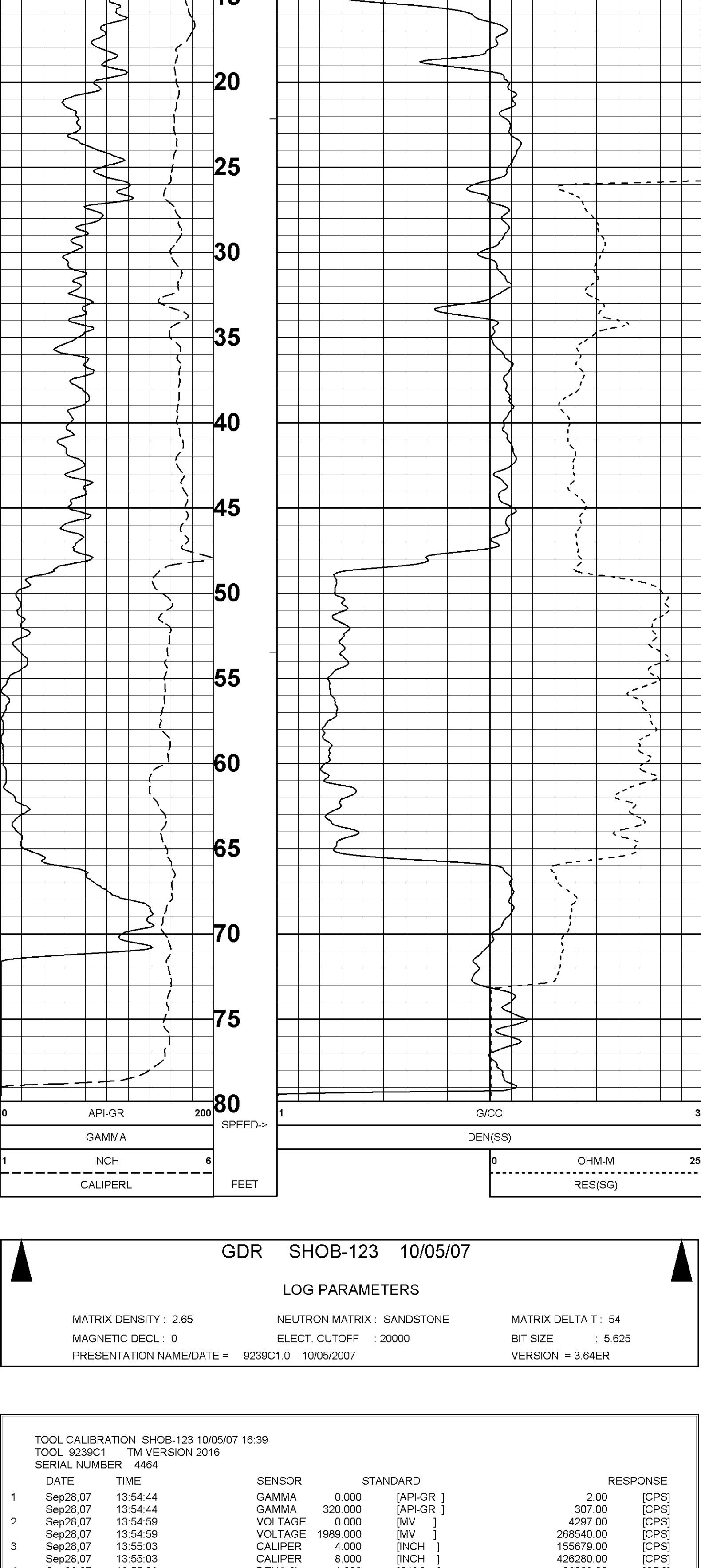
GDR SHOB-123 10/05/07

LOG PARAMETERS

MATRIX DENSITY : 2.65
MAGNETIC DECL : 0
PRESENTATION NAME/DATE = 9239C1.0 10/05/2007

NEUTRON MATRIX : SANDSTONE
ELECT. CUTOFF : 20000

MATRIX DELTA T : 54
BIT SIZE : 5.625
VERSION = 3.64ER



GDR SHOB-123 10/05/07

LOG PARAMETERS

MATRIX DENSITY : 2.65
MAGNETIC DECL : 0
PRESENTATION NAME/DATE = 9239C1.0 10/05/2007

NEUTRON MATRIX : SANDSTONE
ELECT. CUTOFF : 20000

MATRIX DELTA T : 54
BIT SIZE : 5.625
VERSION = 3.64ER

DATE	TIME	SENSOR	STANDARD	RESPONSE
1 Sep28,07	13:54:44	GAMMA	0.000 [API-GR]	2.00 [CPS]
1 Sep28,07	13:54:44	GAMMA	320.000 [API-GR]	307.00 [CPS]
2 Sep28,07	13:54:59	VOLTAGE	0.000 [MV]	4297.00 [CPS]
2 Sep28,07	13:54:59	VOLTAGE	1989.000 [MV]	268540.00 [CPS]
3 Sep28,07	13:55:03	CALIPER	4.000 [INCH]	155679.00 [CPS]
3 Sep28,07	13:55:03	CALIPER	8.000 [INCH]	426280.00 [CPS]
4 Sep28,07	13:55:08	DEN(LS)	1.000 [G/CC]	26203.00 [CPS]
4 Sep28,07	13:55:08	DEN(LS)	2.383 [G/CC]	2230.00 [CPS]
5 Sep28,07	13:55:14	DEN(SS)	1.000 [G/CC]	46913.00 [CPS]
5 Sep28,07	13:55:14	DEN(SS)	2.383 [G/CC]	15843.00 [CPS]
6 Sep28,07	13:55:20	CALIPER	4.000 [INCH]	102730.00 [CPS]
6 Sep28,07	13:55:20	CALIPER	12.000 [INCH]	357523.00 [CPS]
7 Sep28,07	13:55:24	CURRENT	0.000 [UA]	3639.00 [CPS]
7 Sep28,07	13:55:24	CURRENT	284.960 [UA]	27413.00 [CPS]
8 Sep28,07	13:14:43	F	Default [CPS]	
9 Sep28,07	13:14:43	X	Default [CPS]	

Century
WIRELINE SERVICES

GAMMA-RES-DENSITY
GOLDER
SHOB-124

COMPANY	GOLDER ASSOCIATES, INC.	
WELL	SHOB-124	
FIELD	SHP	
COUNTY	STARK	
STATE	NORTH DAKOTA	
LOCATION	:	
SECTION	N/A	
TOWNSHIP	N/A	
RANGE	N/A	
API NO.	N/A	
UNIQUE WELL ID.	N/A	
PERMANENT DATUM	GL	ELEVATION KB N/A
LOG MEASURED FROM	GL	ELEVATION DF N/A
DRL MEASURED FROM	GL	ELEVATION GL N/A
DATE		
DEPTH DRILLER	.80	
BIT SIZE	.5-625	
LOG TOP	.4-20	
LOG BOTTOM	.79.60	
CASING O/D	N/A	
CASING BOTTOM	N/A	
CASING TYPE	N/A	
BOREHOLE FLUID	WATER	
RM TEMPERATURE	N/A	
MUD RES	N/A	
MUD WEIGHT	.8.5	
WITNESSED BY	J. ELLIOT	
RECORDED BY	M. SUTTON	
REMARKS 1	:	
REMARKS 2	:	
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS		

GDR SHOB-124 10/05/07

LOG PARAMETERS

MATRIX DENSITY : 2.65

MAGNETIC DECL : 0

PRESENTATION NAME/DATE = 9239C1.0 10/05/2007

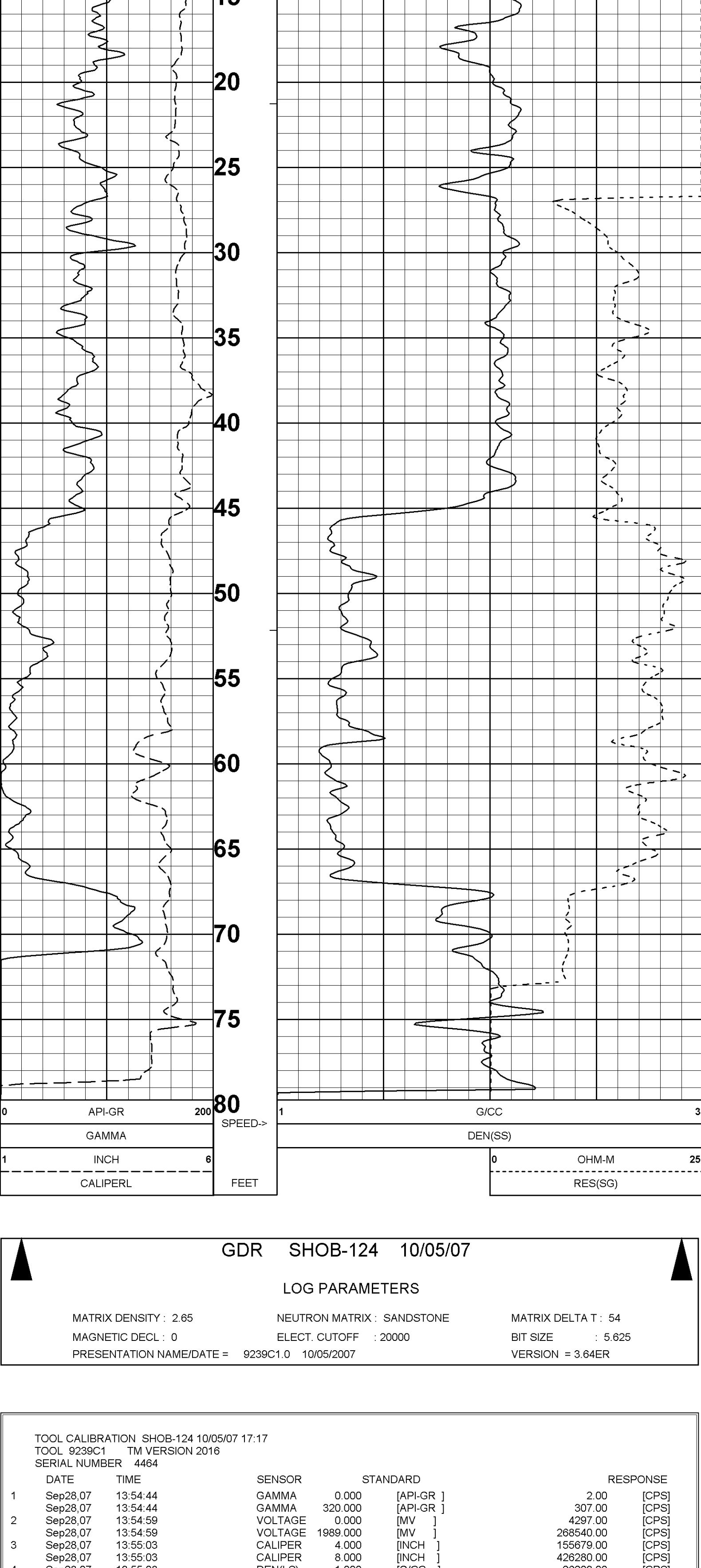
NEUTRON MATRIX : SANDSTONE

ELECT. CUTOFF : 20000

MATRIX DELTA T : 54

BIT SIZE : 5.625

VERSION = 3.64ER



GDR SHOB-124 10/05/07

LOG PARAMETERS

MATRIX DENSITY : 2.65

MAGNETIC DECL : 0

PRESENTATION NAME/DATE = 9239C1.0 10/05/2007

NEUTRON MATRIX : SANDSTONE

ELECT. CUTOFF : 20000

MATRIX DELTA T : 54

BIT SIZE : 5.625

VERSION = 3.64ER

TOOL CALIBRATION SHOB-124 10/05/07 17:17					
TOOL 9239C1 TM VERSION 2016					
SERIAL NUMBER 4464					
DATE	TIME	SENSOR	STANDARD	RESPONSE	
1 Sep28,07	13:54:44	GAMMA	0.000 [API-GR]	2.00 [CPS]	
1 Sep28,07	13:54:44	GAMMA	320.000 [API-GR]	307.00 [CPS]	
2 Sep28,07	13:54:59	VOLTAGE	0.000 [MV]	4297.00 [CPS]	
2 Sep28,07	13:54:59	VOLTAGE	1989.000 [MV]	268540.00 [CPS]	
3 Sep28,07	13:55:03	CALIPER	4.000 [INCH]	155679.00 [CPS]	
3 Sep28,07	13:55:03	CALIPER	8.000 [INCH]	426280.00 [CPS]	
4 Sep28,07	13:55:08	DEN(LS)	1.000 [G/CC]	26203.00 [CPS]	
4 Sep28,07	13:55:08	DEN(LS)	2.383 [G/CC]	2230.00 [CPS]	
5 Sep28,07	13:55:14	DEN(SS)	1.000 [G/CC]	46913.00 [CPS]	
5 Sep28,07	13:55:14	DEN(SS)	2.383 [G/CC]	15843.00 [CPS]	
6 Sep28,07	13:55:20	CALIPER	4.000 [INCH]	102730.00 [CPS]	
6 Sep28,07	13:55:20	CALIPER	12.000 [INCH]	357523.00 [CPS]	
7 Sep28,07	13:55:24	CURRENT	0.000 [UA]	3639.00 [CPS]	
7 Sep28,07	13:55:24	CURRENT	284.960 [UA]	27413.00 [CPS]	
8 Sep28,07	13:14:43	F	Default [CPS]		
8 Sep28,07	13:14:43	X	Default [CPS]		

GAMMA-RES-DENSITY
GOLDER
SHOB-126

COMPANY	GOLDER ASSOCIATES, INC.	
WELL	SHOB-126	SHOB-126
FIELD	STARK	SHOB-126
COUNTY	NORTH DAKOTA	SHOB-126
STATE		SHOB-126
LOCATION		SHOB-126
TOWNSHIP	N/A	SHOB-126
RANGE	N/A	SHOB-126
SECTION	N/A	SHOB-126
API NO.	N/A	SHOB-126
UNIQUE WELL ID	N/A	SHOB-126
PERMANENT DATUM	GL	SHOB-126
LOG MEASURED FROM	GL	SHOB-126
DRL MEASURED FROM	GL	SHOB-126
DATE	10/06/07	SHOB-126
DEPTH DRILLER	:145	SHOB-126
BIT SIZE	5.0	SHOB-126
LOG TOP	:4.20	SHOB-126
LOG BOTTOM	:143.90	SHOB-126
CASING OD	N/A	SHOB-126
CASING BOTTOM	N/A	SHOB-126
CASING TYPE	N/A	SHOB-126
BOREHOLE FLUID	WATER	SHOB-126
RM TEMPERATURE	N/A	SHOB-126
MUD RES	N/A	SHOB-126
MUD WEIGHT	8.5	SHOB-126
WITNESSED BY	J. ELLIOT	SHOB-126
RECORDED BY	M. SUTTON	SHOB-126
REMARKS 1		SHOB-126
REMARKS 2		SHOB-126

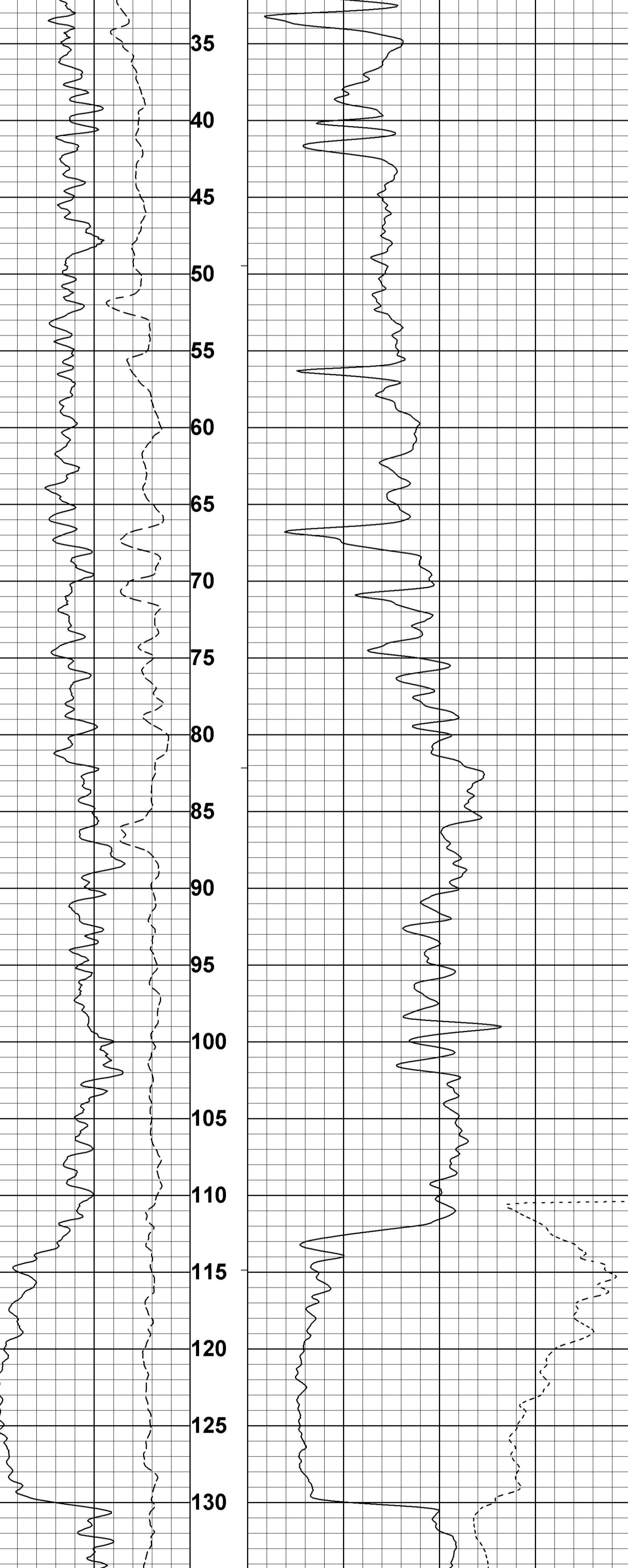
GDR SHOB-126 10/06/07

LOG PARAMETERS

MATRIX DENSITY : 2.65
MAGNETIC DECL : 0
PRESENTATION NAME/DATE =

NEUTRON MATRIX : SANDSTONE
ELECT. CUTOFF : 20000
9239C1.0 10/07/2007

MATRIX DELTA T : 54
BIT SIZE : 5.0
VERSION = 3.64ER



GDR SHOB-126 10/06/07

LOG PARAMETERS

MATRIX DENSITY : 2.65
MAGNETIC DECL : 0
PRESENTATION NAME/DATE =

NEUTRON MATRIX : SANDSTONE
ELECT. CUTOFF : 20000
9239C1.0 10/07/2007

MATRIX DELTA T : 54
BIT SIZE : 5.0
VERSION = 3.64ER

DATE	TIME	SENSOR	STANDARD		RESPONSE
			GAMMA	[API-GR]	
1 Sep28,07	13:54:44	GAMMA	0.000	[API-GR]	2.00 [CPS]
2 Sep28,07	13:54:44	GAMMA	320.000	[API-GR]	307.00 [CPS]
3 Sep28,07	13:54:59	VOLTAGE	0.000	[MV]	4297.00 [CPS]
4 Sep28,07	13:54:59	VOLTAGE	1989.000	[MV]	268540.00 [CPS]
5 Sep28,07	13:55:03	CALIPER	4.000	[INCH]	155679.00 [CPS]
6 Sep28,07	13:55:08	CALIPER	8.000	[INCH]	426280.00 [CPS]
7 Sep28,07	13:55:08	DEN(LS)	1.000	[G/CC]	26203.00 [CPS]
8 Sep28,07	13:55:14	DEN(LS)	2.383	[G/CC]	2230.00 [CPS]
9 Sep28,07	13:55:14	DEN(SS)	1.000	[G/CC]	46913.00 [CPS]
10 Sep28,07	13:55:20	DEN(SS)	2.383	[G/CC]	15843.00 [CPS]
11 Sep28,07	13:55:20	CALIPER	4.000	[INCH]	102730.00 [CPS]
12 Sep28,07	13:55:24	CALIPER	12.000	[INCH]	357523.00 [CPS]
13 Sep28,07	13:55:24	CURRENT	0.000	[UA]	3639.00 [CPS]
14 Sep28,07	13:55:24	CURRENT	284.960	[UA]	27413.00 [CPS]
15 Sep28,07	13:14:43	F	Default	[CPS]	
16 Sep28,07	13:14:43	X	Default	[CPS]	

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

Century
WIRELINE SERVICES

GAMMA-RES-DENSITY
GOLDER
SHOB-127

COMPANY	GOLDER ASSOCIATES, INC.
WELL	SHOB-127
FIELD	SHP
COUNTY	STARK
STATE	NORTH DAKOTA

OTHER SERVICES:
NONE

GDR SHOB-127 10/03/07

LOG PARAMETERS

MATRIX DENSITY : 2.65

NEUTRON MATRIX : SANDSTONE

MATRIX DELTA T : 54

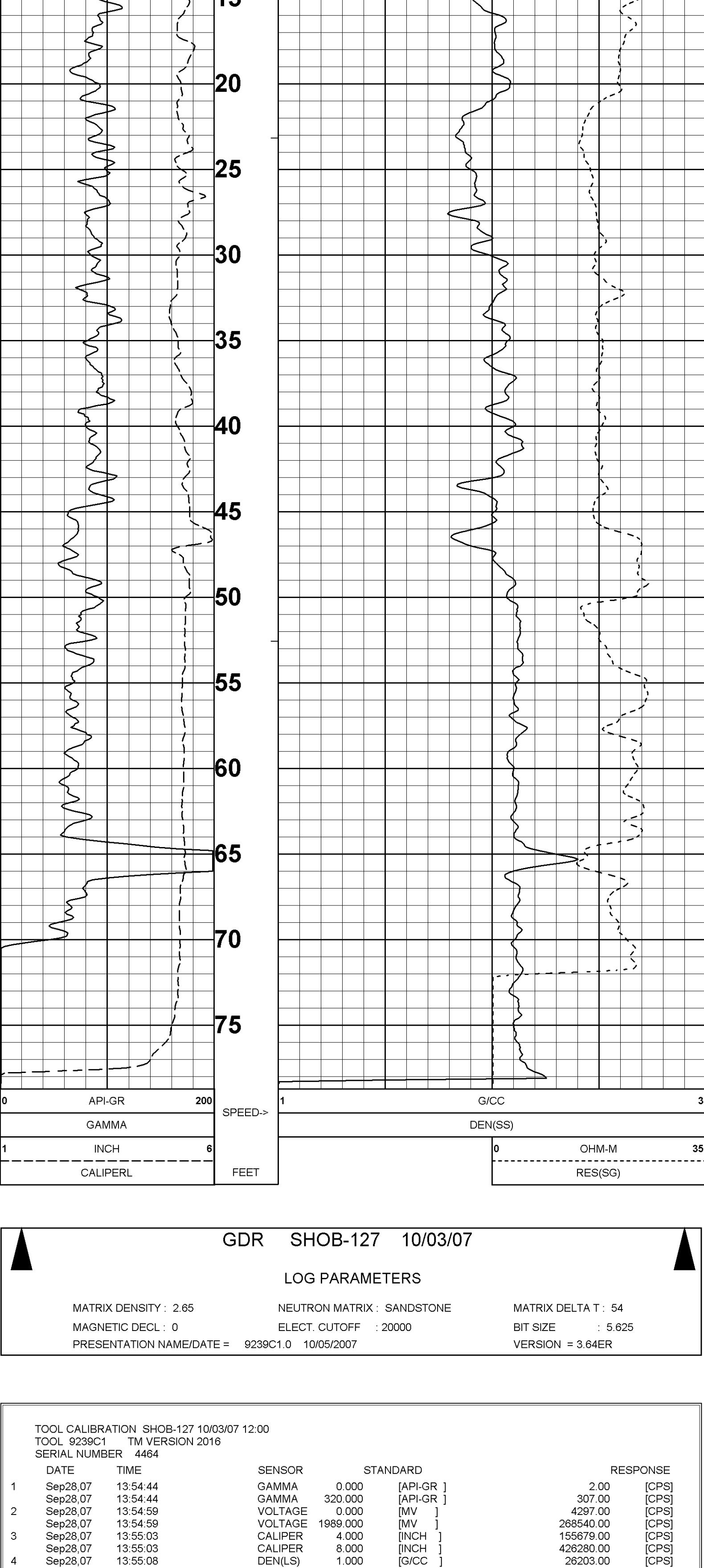
MAGNETIC DECL : 0

ELECT. CUTOFF : 20000

BIT SIZE : 5.625

PRESENTATION NAME/DATE = 9239C1.0 10/05/2007

VERSION = 3.64ER



TOOL CALIBRATION SHOB-127 10/03/07 12:00

TOOL 9239C1 TM VERSION 2016

SERIAL NUMBER 4464

DATE	TIME	SENSOR	STANDARD	RESPONSE
1 Sep28,07	13:54:44	GAMMA	0.000 [API-GR]	2.00 [CPS]
1 Sep28,07	13:54:44	GAMMA	320.000 [API-GR]	307.00 [CPS]
2 Sep28,07	13:54:59	VOLTAGE	0.000 [MV]	4297.00 [CPS]
2 Sep28,07	13:54:59	VOLTAGE	1989.000 [MV]	268540.00 [CPS]
3 Sep28,07	13:55:03	CALIPER	4.000 [INCH]	155679.00 [CPS]
3 Sep28,07	13:55:03	CALIPER	8.000 [INCH]	426280.00 [CPS]
4 Sep28,07	13:55:08	DEN(LS)	1.000 [G/CC]	26203.00 [CPS]
4 Sep28,07	13:55:08	DEN(LS)	2.383 [G/CC]	2230.00 [CPS]
5 Sep28,07	13:55:14	DEN(SS)	1.000 [G/CC]	46913.00 [CPS]
5 Sep28,07	13:55:14	DEN(SS)	2.383 [G/CC]	15843.00 [CPS]
6 Sep28,07	13:55:20	CALIPERL	4.000 [INCH]	102730.00 [CPS]
6 Sep28,07	13:55:20	CALIPERL	12.000 [INCH]	357523.00 [CPS]
7 Sep28,07	13:55:24	CURRENT	0.000 [UA]	3639.00 [CPS]
7 Sep28,07	13:55:24	CURRENT	284.960 [UA]	27413.00 [CPS]
8 Sep28,07	13:14:43	F	Default [CPS]	
8 Sep28,07	13:14:43	X	Default [CPS]	

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

GAMMA-RES-DENSITY
GOLDER
SHOB-128

COMPANY	: GOLDER ASSOCIATES, INC.	OTHER SERVICES: NONE
WELL	: SHOB-128	
FIELD	: SHP	
COUNTY	: STARK	
STATE	: NORTH DAKOTA	
LOCATION	:	
SECTION	: N/A	
TOWNSHIP	: N/A	
RANGE	: N/A	
API NO.	: N/A	
UNIQUE WELL ID.	: N/A	
PERMANENT DATUM	: GL	ELEVATION KB N/A
LOG MEASURED FROM	: GL	ELEVATION DF N/A
DRL MEASURED FROM	: GL	ELEVATION GL N/A
DATE	: 10/03/07	
DEPTH DRILLER	: 60	
BIT SIZE	: 5.625	
LOG TOP	: 2.70	
LOG BOTTOM	: 58.10	
CASING OD	: N/A	
CASING BOTTOM	: N/A	
CASING TYPE	: N/A	
BOREHOLE FLUID	: WATER	
RM TEMPERATURE	: N/A	
MUD RES	: N/A	
MUD WEIGHT	: 8.5	
WITNESSED BY	: J. ELLIOT	
RECORDED BY	: M. SUTTON	
REMARKS 1	:	
REMARKS 2	:	

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

GDR SHOB-128 10/03/07

LOG PARAMETERS

MATRIX DENSITY : 2.65

MAGNETIC DECL : 0

PRESENTATION NAME/DATE = 9239C1.0 10/05/2007

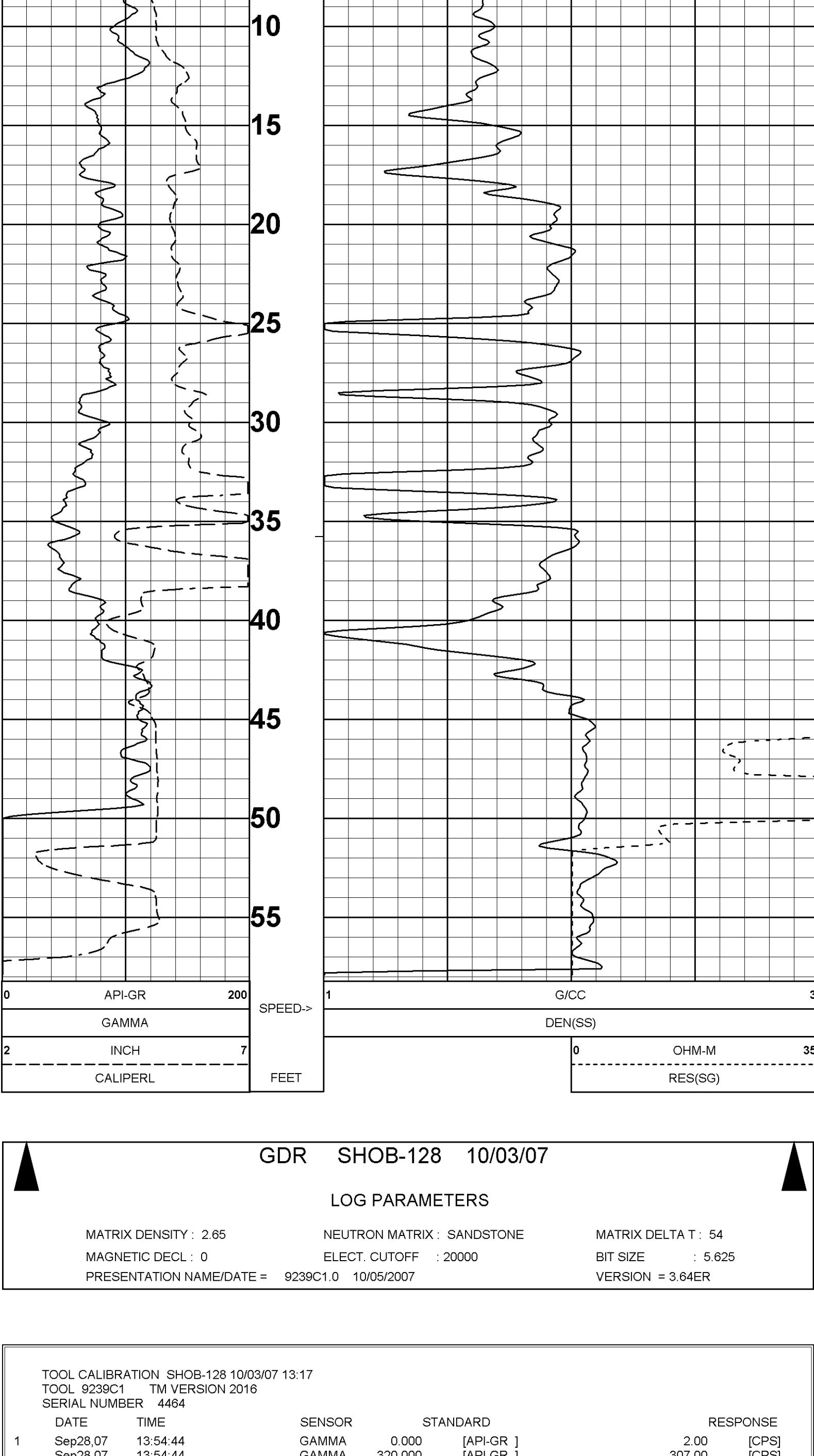
NEUTRON MATRIX : SANDSTONE

ELECT. CUTOFF : 20000

MATRIX DELTA T : 54

BIT SIZE : 5.625

VERSION = 3.64ER



GDR SHOB-128 10/03/07

LOG PARAMETERS

MATRIX DENSITY : 2.65

MAGNETIC DECL : 0

PRESENTATION NAME/DATE = 9239C1.0 10/05/2007

NEUTRON MATRIX : SANDSTONE

ELECT. CUTOFF : 20000

MATRIX DELTA T : 54

BIT SIZE : 5.625

VERSION = 3.64ER

DATE	TIME	SENSOR	STANDARD		RESPONSE
			GAMMA	[API-GR]	
1 Sep28,07	13:54:44	GAMMA	0.000	[API-GR]	2.00 [CPS]
Sep28,07	13:54:44	GAMMA	320.000	[API-GR]	307.00 [CPS]
2 Sep28,07	13:54:59	VOLTAGE	0.000	[MV]	4297.00 [CPS]
Sep28,07	13:54:59	VOLTAGE	1989.000	[MV]	268540.00 [CPS]
3 Sep28,07	13:55:03	CALIPER	4.000	[INCH]	155679.00 [CPS]
Sep28,07	13:55:03	CALIPER	8.000	[INCH]	426280.00 [CPS]
4 Sep28,07	13:55:08	DEN(LS)	1.000	[G/CC]	26203.00 [CPS]
Sep28,07	13:55:08	DEN(LS)	2.383	[G/CC]	2230.00 [CPS]
5 Sep28,07	13:55:14	DEN(SS)	1.000	[G/CC]	46913.00 [CPS]
Sep28,07	13:55:14	DEN(SS)	2.383	[G/CC]	15843.00 [CPS]
6 Sep28,07	13:55:20	CALIPERL	4.000	[INCH]	102730.00 [CPS]
Sep28,07	13:55:20	CALIPERL	12.000	[INCH]	357523.00 [CPS]
7 Sep28,07	13:55:24	CURRENT	0.000	[UA]	3639.00 [CPS]
Sep28,07	13:55:24	CURRENT	284.960	[UA]	27413.00 [CPS]
8 Sep28,07	13:14:43	F	Default	[CPS]	
Sep28,07	13:14:43	X	Default	[CPS]	



A-RES-DENSITY

6

COMPANY	GOLDER ASSOCIATES, INC.	OTHER SERVICES:
WELL	:SHOB-129	
FIELD	:SHP	
COUNTY	STARK	NONE
STATE	NORTH DAKOTA	
LOCATION	:	
SECTION	N/A	
TOWNSHIP	N/A	
RANGE	N/A	
API NO.	N/A	
UNIQUE WELL ID.	N/A	
PERMANENT DATUM	:GL	ELEVATION KB N/A
LOG MEASURED FROM	:GL	ELEVATION DF N/A
DRL MEASURED FROM	:GL	ELEVATION GL N/A
DATE	:10/04/07	
DEPTH DRILLER	:60	
BIT SIZE	:5.625	
LOG TOP	:3.70	
LOG BOTTOM	:46.80	
CASING OD	N/A	
CASING BOTTOM	N/A	
CASING TYPE	N/A	
BOREHOLE FLUID	:WATER	
RM TEMPERATURE	N/A	
MUD RES	N/A	
MUD WEIGHT	:8.5	
WITNESSED BY	J. ELLIOT	
RECORDED BY	M. SUTTON	
REMARKS 1	:	
REMARKS 2	:	
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS		

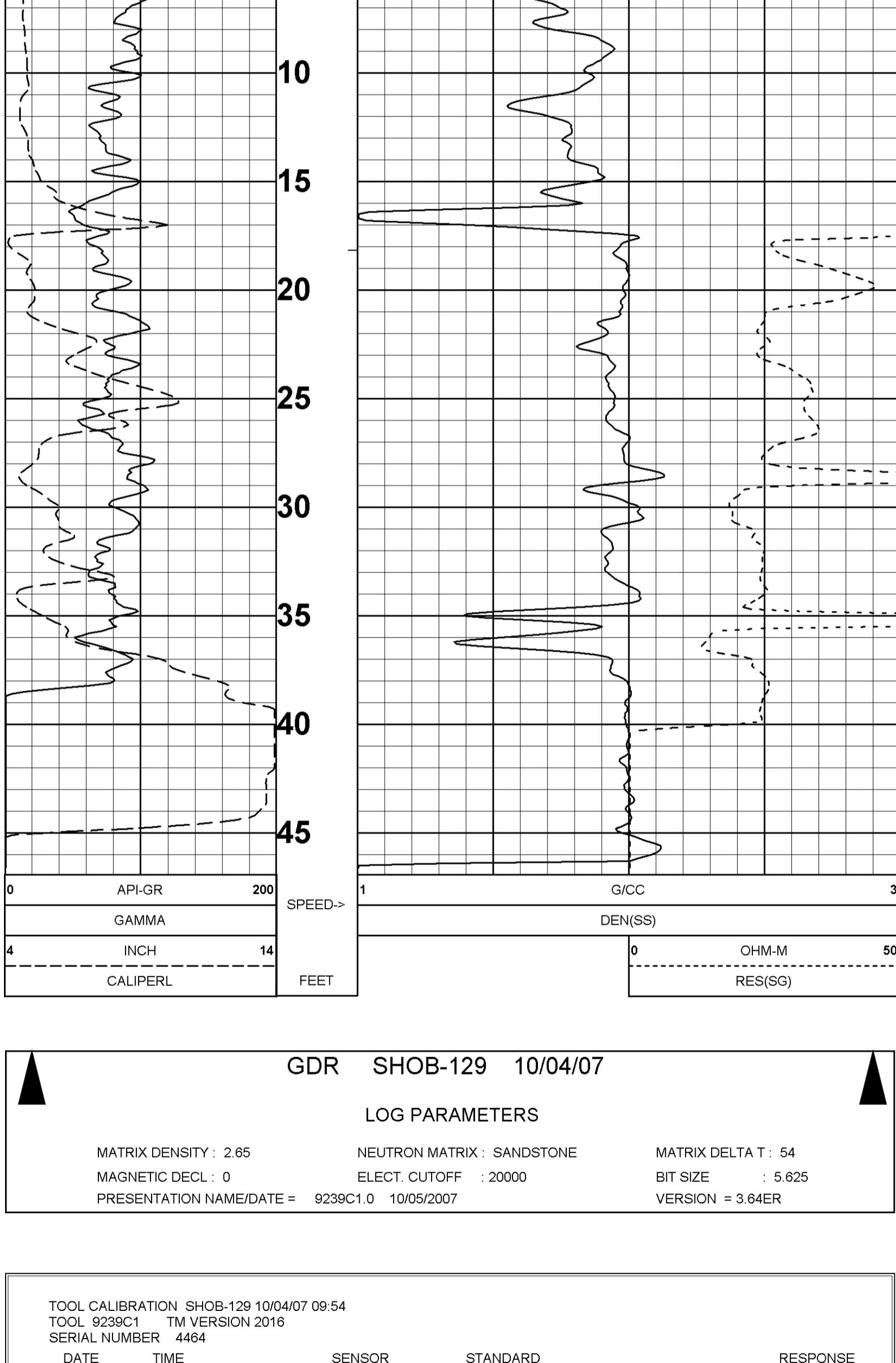
FEET

— 1 —

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S

(Signature) _____



VOLTAGE 1989.000 [MV]
CALIPER 4.000 [INCH]
CALIPER 8.000 [INCH]

N(LS) 2.383 [G/C]
N(SS) 1.000 [G/C]
N(ES) 5.555 [G/C]

28,07 13:55:20

ALIPERL 4.000 [INCH]
ALIPERL 12.000 [INCH]
APPEND 3.000 [INCH]

102730.00
357523.00
-6222.00

28,07 13:55:24
28,07 13:55:24
28,07 13:55:24

CURRENT 284.960

3639.00
27413.00

28,07 13:14:43
28,07 13:14:43

Default
Default

6	Sep28,07	13:55:20	CALIPERL	4.000	[INCH]	102730.00	[CPS]
	Sep28,07	13:55:20	CALIPERL	12.000	[INCH]	357523.00	[CPS]
7	Sep28,07	13:55:24	CURRENT	0.000	[UA]	3639.00	[CPS]
	Sep28,07	13:55:24	CURRENT	284.960	[UA]	27413.00	[CPS]
8	Sep28,07	13:14:43	F	Default	[CPS]		
9	Sep28,07	13:14:43	X	Default	[CPS]		

GAMMA-RES-DENSITY
GOLDER
SHOB-130

COMPANY	GOLDER ASSOCIATES, INC.	OTHER SERVICES:
WELL	SHOB-130	
FIELD	SHP	
COUNTY	STARK	
STATE	NORTH DAKOTA	
LOCATION	:	
SECTION	N/A	
TOWNSHIP	N/A	
RANGE	N/A	
API NO.	N/A	
UNIQUE WELL ID.	N/A	
PERMANENT DATUM	:GL	ELEVATION KB N/A
LOG MEASURED FROM	:GL	ELEVATION DF N/A
DRL MEASURED FROM	:GL	ELEVATION GL N/A
DATE	10/05/07	
DEPTH DRILLER	60	
BIT SIZE	5.625	
LOG TOP	:1.80	
LOG BOTTOM	:59.20	
CASING OD	N/A	
CASING BOTTOM	N/A	
CASING TYPE	N/A	
BOREHOLE FLUID	WATER	
RM TEMPERATURE	N/A	
MUD RES	N/A	
MUD WEIGHT	8.5	
WITNESSED BY	J. ELLIOT	
RECORDED BY	M. SUTTON	
REMARKS 1	:	
REMARKS 2	:	

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

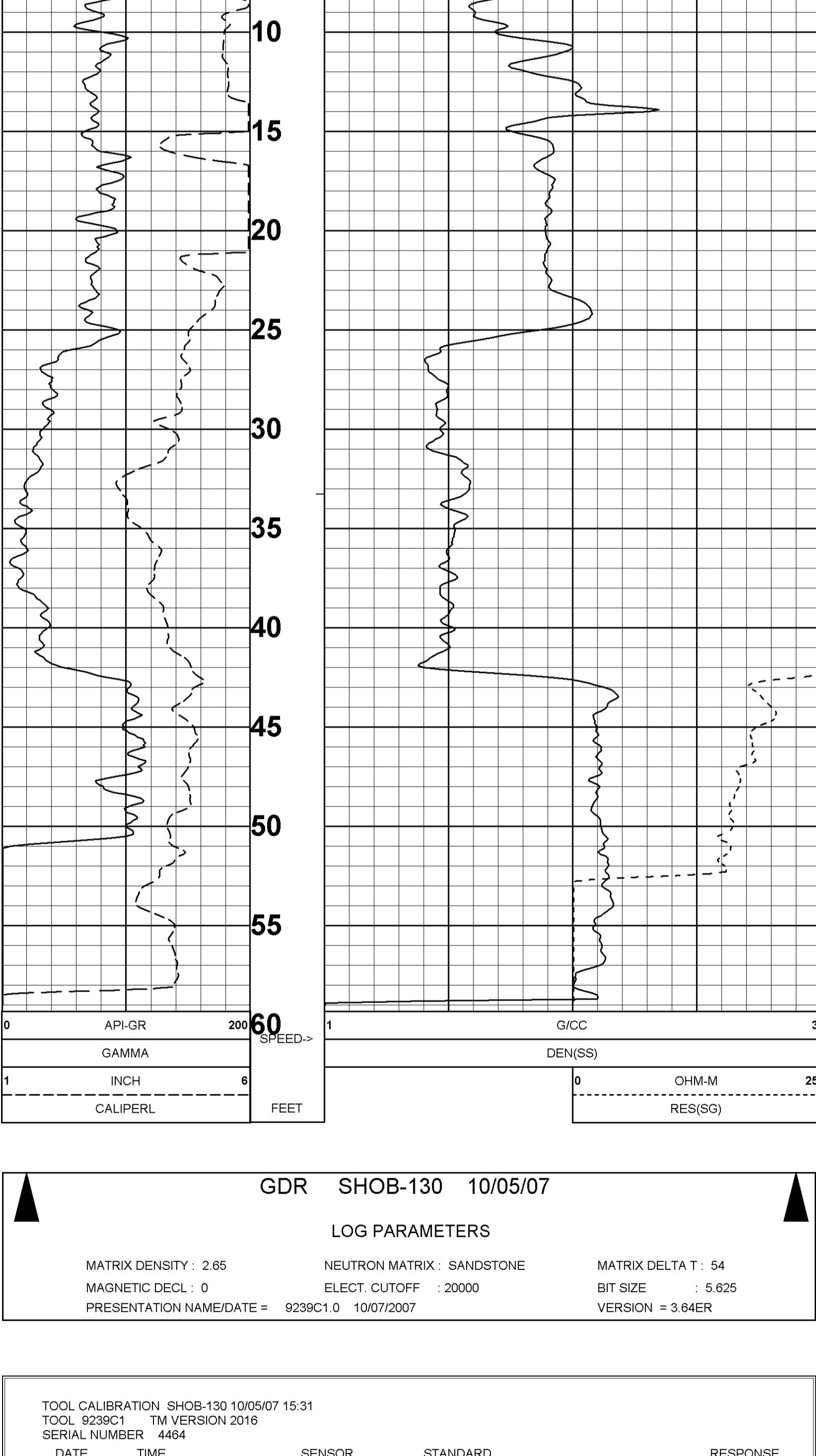
GDR SHOB-130 10/05/07

LOG PARAMETERS

MATRIX DENSITY : 2.65
MAGNETIC DECL : 0
PRESENTATION NAME/DATE = 9239C1.0 10/07/2007

NEUTRON MATRIX : SANDSTONE
ELECT. CUTOFF : 20000
DRL MEASURED FROM :GL

MATRIX DELTA T : 54
BIT SIZE : 5.625
VERSION = 3.64ER



GDR SHOB-130 10/05/07

LOG PARAMETERS

MATRIX DENSITY : 2.65
MAGNETIC DECL : 0
PRESENTATION NAME/DATE = 9239C1.0 10/07/2007

NEUTRON MATRIX : SANDSTONE
ELECT. CUTOFF : 20000
DRL MEASURED FROM :GL

MATRIX DELTA T : 54
BIT SIZE : 5.625
VERSION = 3.64ER

DATE	TIME	SENSOR	STANDARD	RESPONSE
1 Sep28,07	13:54:44	GAMMA	0.000 [API-GR]	2.00 [CPS]
Sep28,07	13:54:44	GAMMA	320.000 [API-GR]	307.00 [CPS]
2 Sep28,07	13:54:59	VOLTAGE	0.000 [MV]	4297.00 [CPS]
Sep28,07	13:54:59	VOLTAGE	1989.000 [MV]	268540.00 [CPS]
3 Sep28,07	13:55:03	CALIPER	4.000 [INCH]	155679.00 [CPS]
Sep28,07	13:55:03	CALIPER	8.000 [INCH]	426280.00 [CPS]
4 Sep28,07	13:55:08	DEN(LS)	1.000 [G/CC]	26203.00 [CPS]
Sep28,07	13:55:08	DEN(LS)	2.383 [G/CC]	2230.00 [CPS]
5 Sep28,07	13:55:14	DEN(SS)	1.000 [G/CC]	46913.00 [CPS]
Sep28,07	13:55:14	DEN(SS)	2.383 [G/CC]	15843.00 [CPS]
6 Sep28,07	13:55:20	CALIPERL	4.000 [INCH]	102730.00 [CPS]
Sep28,07	13:55:20	CALIPERL	12.000 [INCH]	357523.00 [CPS]
7 Sep28,07	13:55:24	CURRENT	0.000 [UA]	3639.00 [CPS]
Sep28,07	13:55:24	CURRENT	284.960 [UA]	27413.00 [CPS]
8 Sep28,07	13:14:43	F	Default [CPS]	
Sep28,07	13:14:43	X	Default [CPS]	

Century
WIRELINE SERVICES

GAMMA-RES-DENSITY
GOLDER
SHOB-131

COMPANY	GOLDER ASSOCIATES, INC.	OTHER SERVICES:
WELL	SHOB-131	
FIELD	SHP	
COUNTY	STARK	
STATE	NORTH DAKOTA	
LOCATION	:	
SECTION	N/A	
TOWNSHIP	N/A	
RANGE	N/A	
API NO.	N/A	
UNIQUE WELL ID.	N/A	
PERMANENT DATUM	GL	ELEVATION KB N/A
LOG MEASURED FROM	GL	ELEVATION OF N/A
DRL MEASURED FROM	GL	ELEVATION GL N/A
DATE	10/06/07	
DEPTH DRILLER	120	
BIT SIZE	5.625	
LOG TOP	:4.50	
LOG BOTTOM	:114.70	
CASING OD	N/A	
CASING BOTTOM	N/A	
CALIPERL		FEET
INCH		FEET
GAMMA		SPEED->
API-GR	200	
0	0	
1	5	
2	10	
3	15	
4	20	
5	25	
6	30	
7	35	
8	40	
9	45	
10	50	
11	55	
12	60	
13	65	
14	70	
15	75	
16	80	
17	85	
18	90	
19	95	
20	100	
21	105	
22	110	
23	115	
24		
25		
26		
27		
28		
29		
30		
31		
32		
33		
34		
35		

GDR SHOB-131 10/06/07

LOG PARAMETERS

MATRIX DENSITY : 2.65

NEUTRON MATRIX : SANDSTONE

MATRIX DELTA T : 54

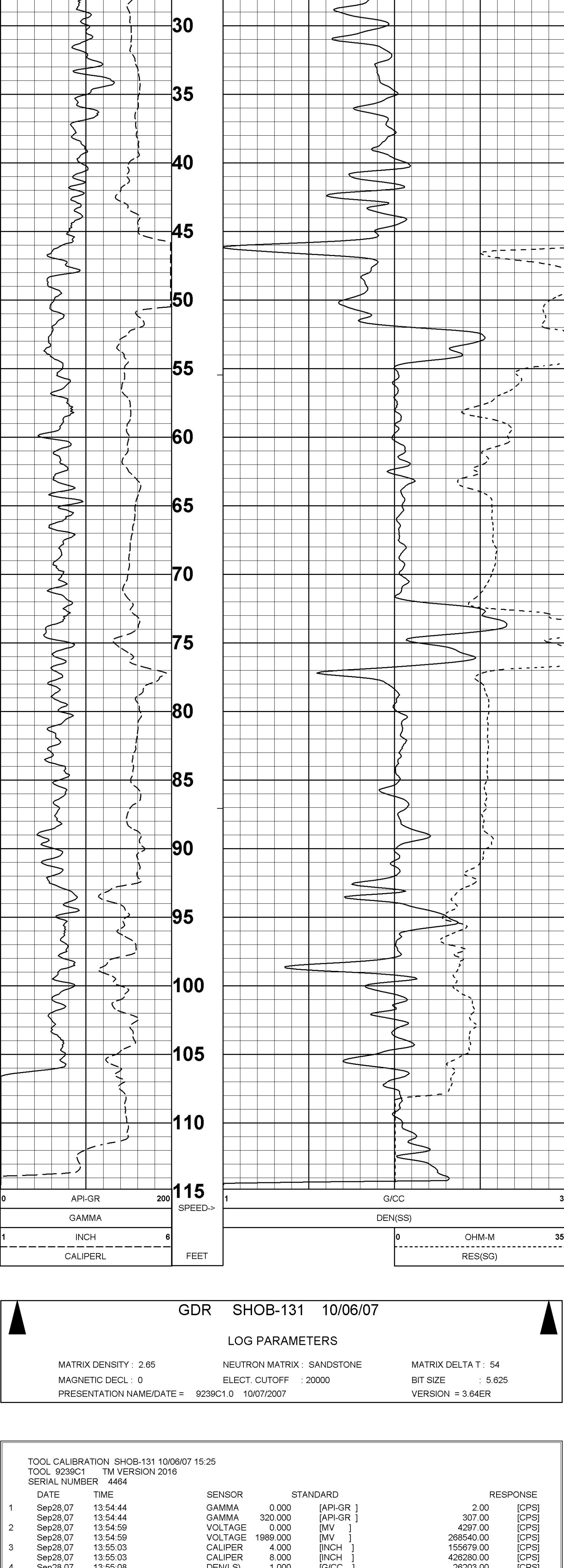
MAGNETIC DECL : 0

ELECT. CUTOFF : 20000

BIT SIZE : 5.625

PRESENTATION NAME/DATE = 9239C1.0 10/07/2007

VERSION = 3.64ER



MATRIX DENSITY : 2.65

NEUTRON MATRIX : SANDSTONE

MATRIX DELTA T : 54

MAGNETIC DECL : 0

ELECT. CUTOFF : 20000

BIT SIZE : 5.625

PRESENTATION NAME/DATE = 9239C1.0 10/07/2007

VERSION = 3.64ER

DATE	TIME	SENSOR	STANDARD	RESPONSE
1	Sep28,07 13:54:44	GAMMA	0.000 [API-GR]	2.00 [CPS]
	Sep28,07 13:54:44	GAMMA	320.000 [API-GR]	307.00 [CPS]
2	Sep28,07 13:54:59	VOLTAGE	0.000 [MV]	4297.00 [CPS]
	Sep28,07 13:54:59	VOLTAGE	1989.000 [MV]	268540.00 [CPS]
3	Sep28,07 13:55:03	CALIPER	4.000 [INCH]	155679.00 [CPS]
	Sep28,07 13:55:03	CALIPER	8.000 [INCH]	426280.00 [CPS]
4	Sep28,07 13:55:08	DEN(LS)	1.000 [G/CC]	2230.00 [CPS]
	Sep28,07 13:55:08	DEN(LS)	2.383 [G/CC]	46913.00 [CPS]
5	Sep28,07 13:55:14	DEN(SS)	1.000 [G/CC]	15843.00 [CPS]
	Sep28,07 13:55:14	DEN(SS)	2.383 [G/CC]	102730.00 [CPS]
6	Sep28,07 13:55:20	CALIPERL	4.000 [INCH]	357523.00 [CPS]
	Sep28,07 13:55:20	CALIPERL	12.000 [INCH]	3639.00 [CPS]
7	Sep28,07 13:55:24	CURRENT	0.000 [UA]	27413.00 [CPS]
	Sep28,07 13:55:24	CURRENT	284.960 [UA]	
8	Sep28,07 13:14:43	F	Default [CPS]	
9	Sep28,07 13:14:43	X	Default [CPS]	

Century
WIRELINE SERVICES

GAMMA-RES-DENSITY
GOLDER
SHOB-132

COMPANY	GOLDER ASSOCIATES, INC.	
WELL	SHOB-132	
FIELD	SHP	
COUNTY	STARK	
STATE	NORTH DAKOTA	
LOCATION	:	
SECTION	N/A	
TOWNSHIP	N/A	
RANGE	N/A	
AP NO.	N/A	
UNIQUE WELL ID.	N/A	
PERMANENT DATUM	GL	ELEVATION KB N/A
LOG MEASURED FROM	GL	ELEVATION DF N/A
DRL MEASURED FROM	GL	ELEVATION GL N/A
DATE	10/06/07	
DEPTH DRILLER	8.6	
BIT SIZE	5.625	
LOG TOP	:4.40	
LOG BOTTOM	84.60	
CASING OD	N/A	
CASING BOTTOM	N/A	
CASING TYPE	N/A	
BOREHOLE FLUID	WATER	
RM TEMPERATURE	N/A	
MUD RES	N/A	
MUD WEIGHT	8.5	
WITNESSED BY	J. ELLIOT	
RECORDED BY	M. SUTTON	
REMARKS 1	:	
REMARKS 2	:	
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS		

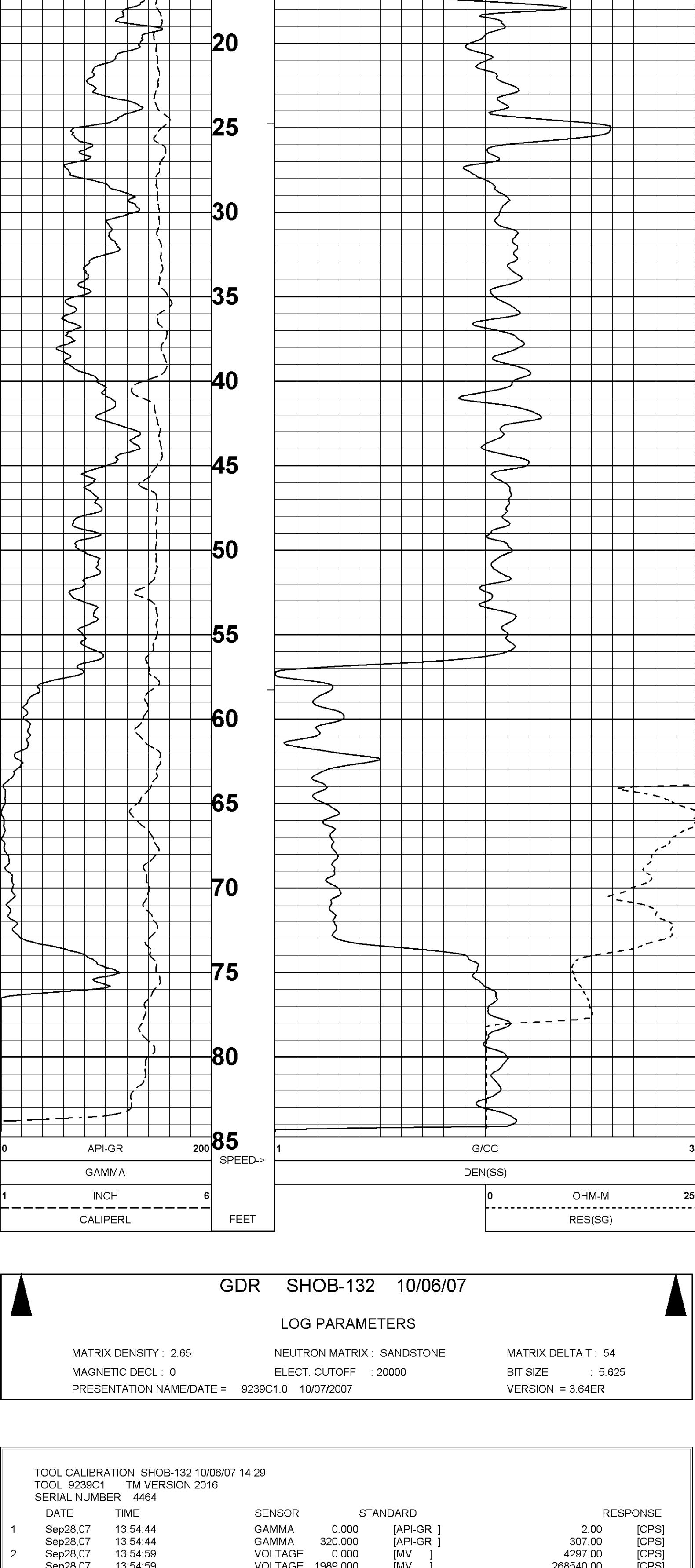
GDR SHOB-132 10/06/07

LOG PARAMETERS

MATRIX DENSITY : 2.65
MAGNETIC DECL : 0
PRESENTATION NAME/DATE = 9239C1.0 10/07/2007

NEUTRON MATRIX : SANDSTONE
ELECT. CUTOFF : 20000

MATRIX DELTA T : 54
BIT SIZE : 5.625
VERSION = 3.64ER



TOOL CALIBRATION SHOB-132 10/06/07 14:29

TOOL 9239C1 TM VERSION 2016

SERIAL NUMBER 4464

DATE	TIME	SENSOR	STANDARD	RESPONSE
1 Sep28,07	13:54:44	GAMMA	0.000 [API-GR]	2.00 [CPS]
1 Sep28,07	13:54:44	GAMMA	320.000 [API-GR]	307.00 [CPS]
2 Sep28,07	13:54:59	VOLTAGE	0.000 [MV]	4297.00 [CPS]
2 Sep28,07	13:54:59	VOLTAGE	1989.000 [MV]	268540.00 [CPS]
3 Sep28,07	13:55:03	CALIPER	4.000 [INCH]	155679.00 [CPS]
3 Sep28,07	13:55:03	CALIPER	8.000 [INCH]	426280.00 [CPS]
4 Sep28,07	13:55:08	DEN(LS)	1.000 [G/CC]	26203.00 [CPS]
4 Sep28,07	13:55:08	DEN(LS)	2.383 [G/CC]	2230.00 [CPS]
5 Sep28,07	13:55:14	DEN(SS)	1.000 [G/CC]	46913.00 [CPS]
5 Sep28,07	13:55:14	DEN(SS)	2.383 [G/CC]	15843.00 [CPS]
6 Sep28,07	13:55:20	CALIPERL	4.000 [INCH]	102730.00 [CPS]
6 Sep28,07	13:55:20	CALIPERL	12.000 [INCH]	357523.00 [CPS]
7 Sep28,07	13:55:24	CURRENT	0.000 [UA]	3639.00 [CPS]
7 Sep28,07	13:55:24	CURRENT	284.960 [UA]	27413.00 [CPS]
8 Sep28,07	13:14:43	F	Default [CPS]	
8 Sep28,07	13:14:43	X	Default [CPS]	
9 Sep28,07	13:14:43			

GDR SHOB-132 10/06/07

LOG PARAMETERS

MATRIX DENSITY : 2.65
MAGNETIC DECL : 0
PRESENTATION NAME/DATE = 9239C1.0 10/07/2007

MATRIX DELTA T : 54
BIT SIZE : 5.625
VERSION = 3.64ER

Century
WIRELINE SERVICES

GAMMA-RES-DENSITY
GOLDER
SHOB-133

COMPANY	GOLDER ASSOCIATES, INC.
WELL	SHOB-133
FIELD	SHP
COUNTY	STARK
STATE	NORTH DAKOTA
SECTION	N/A
TOWNSHIP	N/A
RANGE	N/A
API NO.	N/A
UNIQUE WELL ID.	N/A

OTHER SERVICES:

NONE

LOCATION	:	
SECTION	:	N/A
TOWNSHIP	:	N/A
RANGE	:	N/A
API NO.	:	N/A
UNIQUE WELL ID.	:	N/A
PERMANENT DATUM	:	GL
LOG MEASURED FROM	:	GL
DRL MEASURED FROM	:	GL
DATE	:	10/03/07
DEPTH DRILLER	:	.75
BIT SIZE	:	.5625
LOG TOP	:	.360
LOG BOTTOM	:	.71.40
CASING OD	:	N/A
CASING BOTTOM	:	N/A
CASING TYPE	:	N/A
BOREHOLE FLUID	:	WATER
RM TEMPERATURE	:	N/A
MUD RES	:	N/A
MUD WEIGHT	:	13.5
WITNESSED BY	:	J. ELLIOT
RECORDED BY	:	M. SUTTON
REMARKS 1	:	
REMARKS 2	:	

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

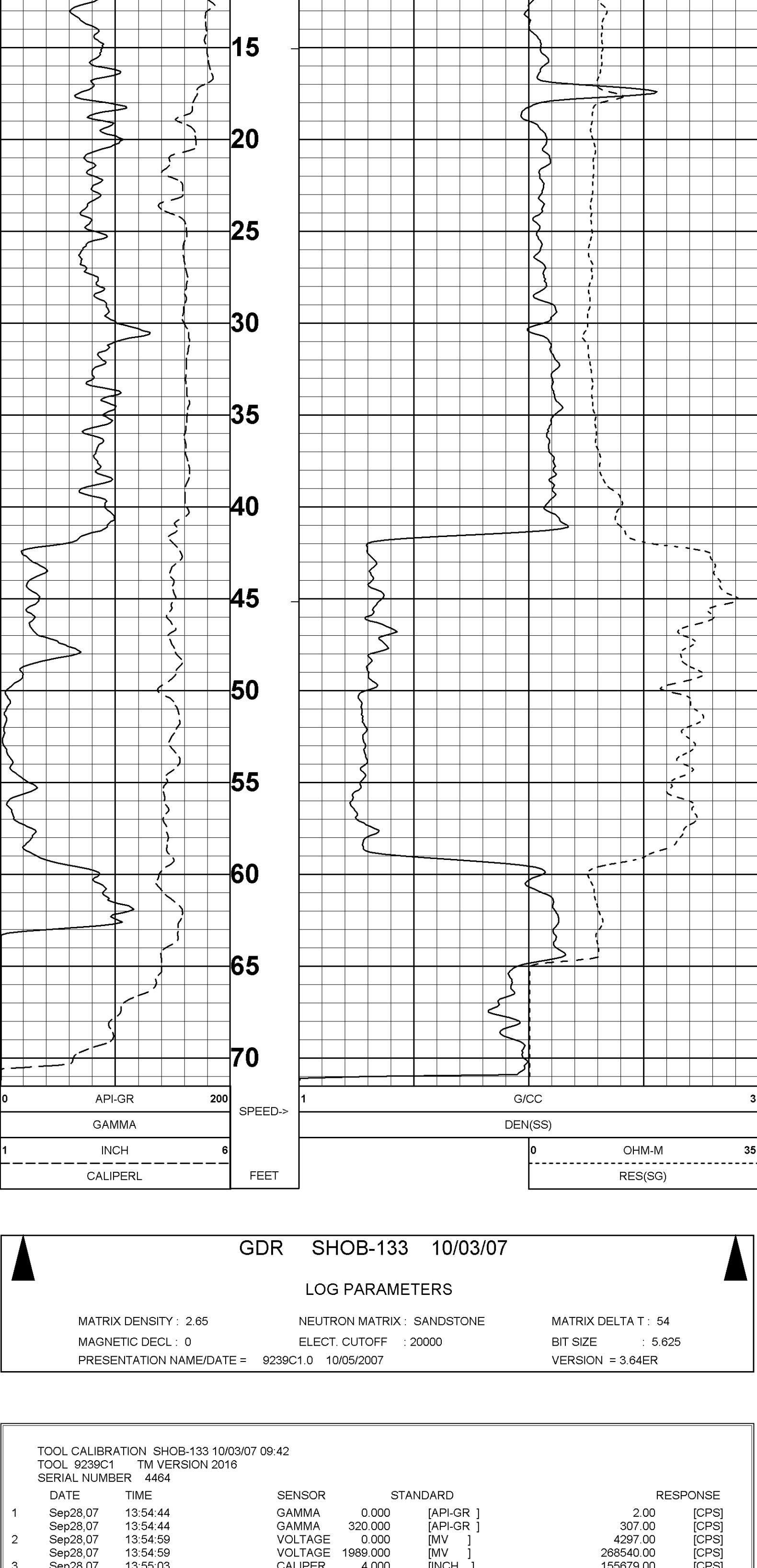
GDR SHOB-133 10/03/07

LOG PARAMETERS

MATRIX DENSITY : 2.65
MAGNETIC DECL : 0
PRESENTATION NAME/DATE = 9239C1.0 10/05/2007

NEUTRON MATRIX : SANDSTONE
ELECT. CUTOFF : 20000

MATRIX DELTA T : 54
BIT SIZE : 5.625
VERSION = 3.64ER



GDR SHOB-133 10/03/07

LOG PARAMETERS

MATRIX DENSITY : 2.65

MAGNETIC DECL : 0

PRESENTATION NAME/DATE = 9239C1.0 10/05/2007

MATRIX DELTA T : 54
BIT SIZE : 5.625

VERSION = 3.64ER

TOOL CALIBRATION SHOB-133 10/03/07 09:42

TOOL 9239C1 TM VERSION 2016

SERIAL NUMBER 4464

DATE	TIME	SENSOR	STANDARD	RESPONSE
1 Sep28,07	13:54:44	GAMMA	0.000 [API-GR]	2.00 [CPS]
1 Sep28,07	13:54:44	GAMMA	320.000 [API-GR]	307.00 [CPS]
2 Sep28,07	13:54:59	VOLTAGE	0.000 [MV]	268540.00 [CPS]
2 Sep28,07	13:54:59	VOLTAGE	1989.000 [MV]	155679.00 [CPS]
3 Sep28,07	13:55:03	CALIPER	4.000 [INCH]	426280.00 [CPS]
3 Sep28,07	13:55:03	CALIPER	8.000 [INCH]	26203.00 [CPS]
4 Sep28,07	13:55:08	DEN(LS)	1.000 [G/CC]	2230.00 [CPS]
4 Sep28,07	13:55:08	DEN(LS)	2.383 [G/CC]	46913.00 [CPS]
5 Sep28,07	13:55:14	DEN(SS)	1.000 [G/CC]	15843.00 [CPS]
5 Sep28,07	13:55:14	DEN(SS)	2.383 [G/CC]	357523.00 [CPS]
6 Sep28,07	13:55:20	CALIPER	4.000 [INCH]	3639.00 [CPS]
6 Sep28,07	13:55:20	CALIPER	12.000 [INCH]	27413.00 [CPS]
7 Sep28,07	13:55:24	CURRENT	0.000 [UA]	
7 Sep28,07	13:55:24	CURRENT	284.960 [UA]	
8 Sep28,07	13:14:43	F	Default [CPS]	
8 Sep28,07	13:14:43	X	Default [CPS]	

Century
WIRELINE SERVICES

GAMMA-RES-DENSITY
NORWEST
SHOB-133-1

COMPANY	GOLDER ASSOCIATES, INC.	
WELL	SHOB-133-1	
FIELD	SHP	
COUNTY	STARK	
STATE	NORTH DAKOTA	
LOCATION	:	
SECTION	N/A	
TOWNSHIP	N/A	
RANGE	N/A	
API NO.	N/A	
UNIQUE WELL ID.	N/A	
PERMANENT DATUM	GL	ELEVATION KB N/A
LOG MEASURED FROM	GL	ELEVATION DF N/A
DRL MEASURED FROM	GL	ELEVATION GL N/A
DATE	10/11/07	
DEPTH DRILLER	80	
BIT SIZE	5.0	
LOG TOP	:3.80	
LOG BOTTOM	.79.50	
CASING O/D	N/A	
CASING BOTTOM	N/A	
CASING TYPE	N/A	
BOREHOLE FLUID	WATER	
RM TEMPERATURE	N/A	
MUD RES	N/A	
MUD WEIGHT	8.5	
WITNESSED BY	S. HARKINS	
RECORDED BY	M. SUTTON	
REMARKS 1	:	
REMARKS 2	:	
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS		

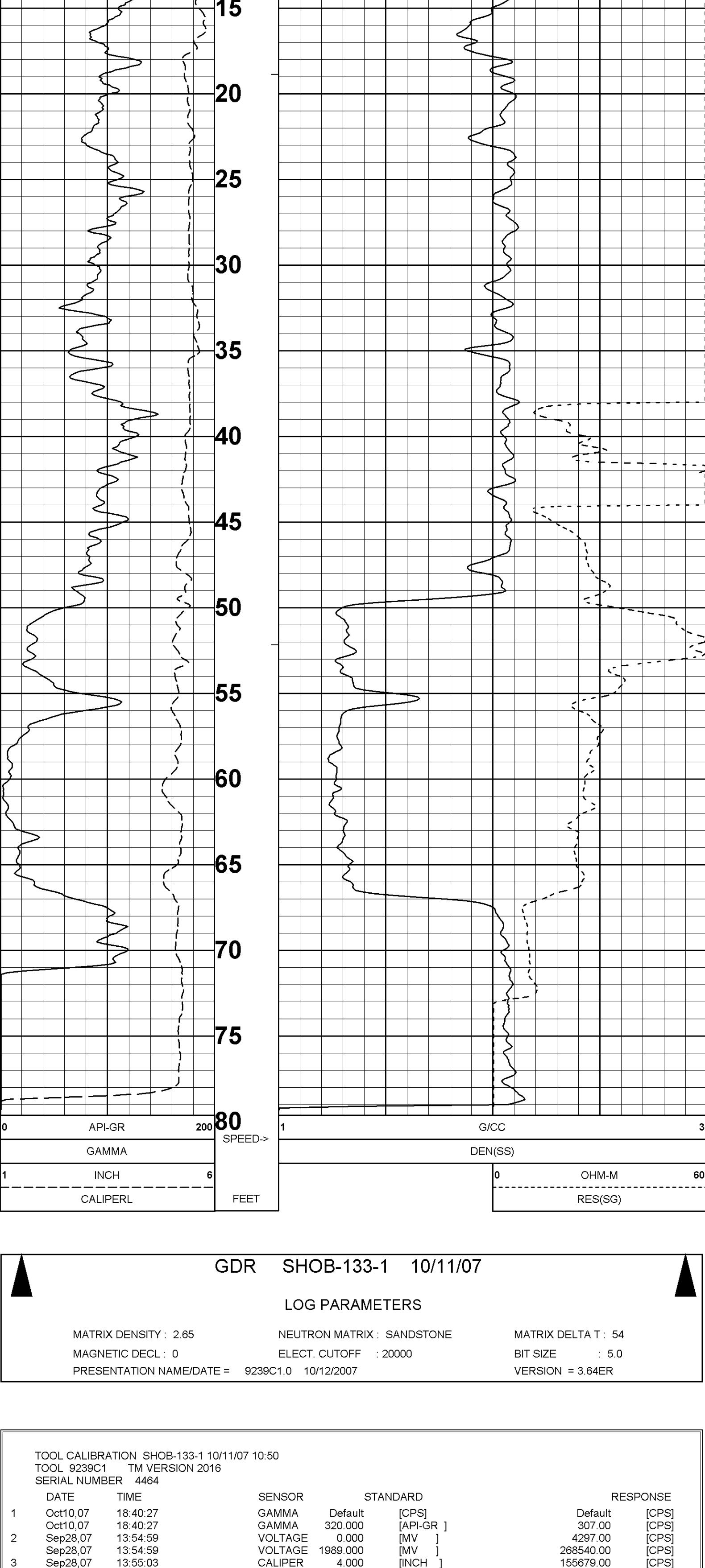
GDR SHOB-133-1 10/11/07

LOG PARAMETERS

MATRIX DENSITY : 2.65
MAGNETIC DECL : 0
PRESENTATION NAME/DATE = 9239C1.0 10/12/2007

NEUTRON MATRIX : SANDSTONE
ELECT. CUTOFF : 20000

MATRIX DELTA T : 54
BIT SIZE : 5.0
VERSION = 3.64ER



GDR SHOB-133-1 10/11/07

LOG PARAMETERS

MATRIX DENSITY : 2.65
MAGNETIC DECL : 0
PRESENTATION NAME/DATE = 9239C1.0 10/12/2007

NEUTRON MATRIX : SANDSTONE
ELECT. CUTOFF : 20000

MATRIX DELTA T : 54
BIT SIZE : 5.0
VERSION = 3.64ER

TOOL CALIBRATION SHOB-133-1 10/11/07 10:50
TOOL 9239C1 TM VERSION 2016
SERIAL NUMBER 4464

	DATE	TIME	SENSOR	STANDARD	RESPONSE
1	Oct10,07	18:40:27	GAMMA	Default [CPS]	Default [CPS]
1	Oct10,07	18:40:27	GAMMA	320.000 [API-GR]	307.00 [CPS]
2	Sep28,07	13:54:59	VOLTAGE	0.000 [MV]	4297.00 [CPS]
2	Sep28,07	13:54:59	VOLTAGE	1989.000 [MV]	268540.00 [CPS]
3	Sep28,07	13:55:03	CALIPER	4.000 [INCH]	155679.00 [CPS]
3	Sep28,07	13:55:03	CALIPER	8.000 [INCH]	426280.00 [CPS]
4	Sep28,07	13:55:08	DEN(LS)	1.000 [G/CC]	26203.00 [CPS]
4	Sep28,07	13:55:08	DEN(LS)	2.383 [G/CC]	2230.00 [CPS]
5	Sep28,07	13:55:14	DEN(SS)	1.000 [G/CC]	46913.00 [CPS]
5	Sep28,07	13:55:14	DEN(SS)	2.383 [G/CC]	15843.00 [CPS]
6	Sep28,07	13:55:20	CALIPERL	4.000 [INCH]	102730.00 [CPS]
6	Sep28,07	13:55:20	CALIPERL	12.000 [INCH]	357523.00 [CPS]
7	Sep28,07	13:55:24	CURRENT	0.000 [UA]	3639.00 [CPS]
7	Sep28,07	13:55:24	CURRENT	284.960 [UA]	27413.00 [CPS]
8	Sep28,07	13:14:43	F	Default [CPS]	
8	Sep28,07	13:14:43	X	Default [CPS]	

	DATE	TIME	SENSOR	STANDARD	RESPONSE
1	Oct10,07	18:40:27	GAMMA	Default [CPS]	Default [CPS]
1	Oct10,07	18:40:27	GAMMA	320.000 [API-GR]	307.00 [CPS]
2	Sep28,07	13:54:59	VOLTAGE	0.000 [MV]	4297.00 [CPS]
2	Sep28,07	13:54:59	VOLTAGE	1989.000 [MV]	268540.00 [CPS]
3	Sep28,07	13:55:03	CALIPER	4.000 [INCH]	155679.00 [CPS]
3	Sep28,07	13:55:03	CALIPER	8.000 [INCH]	426280.00 [CPS]
4	Sep28,07	13:55:08	DEN(LS)	1.000 [G/CC]	26203.00 [CPS]
4	Sep28,07	13:55:08	DEN(LS)	2.383 [G/CC]	2230.00 [CPS]
5	Sep28,07	13:55:14	DEN(SS)	1.000 [G/CC]	46913.00 [CPS]
5	Sep28,07	13:55:14	DEN(SS)	2.383 [G/CC]	15843.00 [CPS]
6	Sep28,07	13:55:20	CALIPERL	4.000 [INCH]	102730.00 [CPS]
6	Sep28,07	13:55:20	CALIPERL	12.000 [INCH]	357523.00 [CPS]
7	Sep28,07	13:55:24	CURRENT	0.000 [UA]	3639.00 [CPS]
7	Sep28,07	13:55:24	CURRENT	284.960 [UA]	27413.00 [CPS]
8	Sep28,07	13:14:43	F	Default [CPS]	
8	Sep28,07	13:14:43	X	Default [CPS]	

Century
WIRELINE SERVICES

GAMMA-RES-DENSITY
NORWEST
SHOB-133-2

COMPANY	GOLDER ASSOCIATES, INC.
WELL	SHOB-133-2
FIELD	SHP
COUNTY	STARK
STATE	NORTH DAKOTA
LOCATION	:
SECTION	N/A
TOWNSHIP	N/A
RANGE	N/A
API NO.	N/A
UNIQUE WELL ID.	N/A

PERMANENT DATUM	GL	ELEVATION KB	N/A
LOG MEASURED FROM	GL	ELEVATION DF	N/A
DRL MEASURED FROM	GL	ELEVATION GL	N/A

DATE	10/11/07
DEPTH DRILLER	85
BIT SIZE	.50
LOG TOP	~4.90
LOG BOTTOM	~3.90
CASING OD	N/A
CASING BOTTOM	N/A
CASING TYPE	N/A
BOREHOLE FLUID	WATER
RM TEMPERATURE	N/A
MUD RES	N/A
MUD WEIGHT	.85
WITNESSED BY	S. HARKINS
RECORDED BY	M. SUTTON
REMARKS 1	:
REMARKS 2	:

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

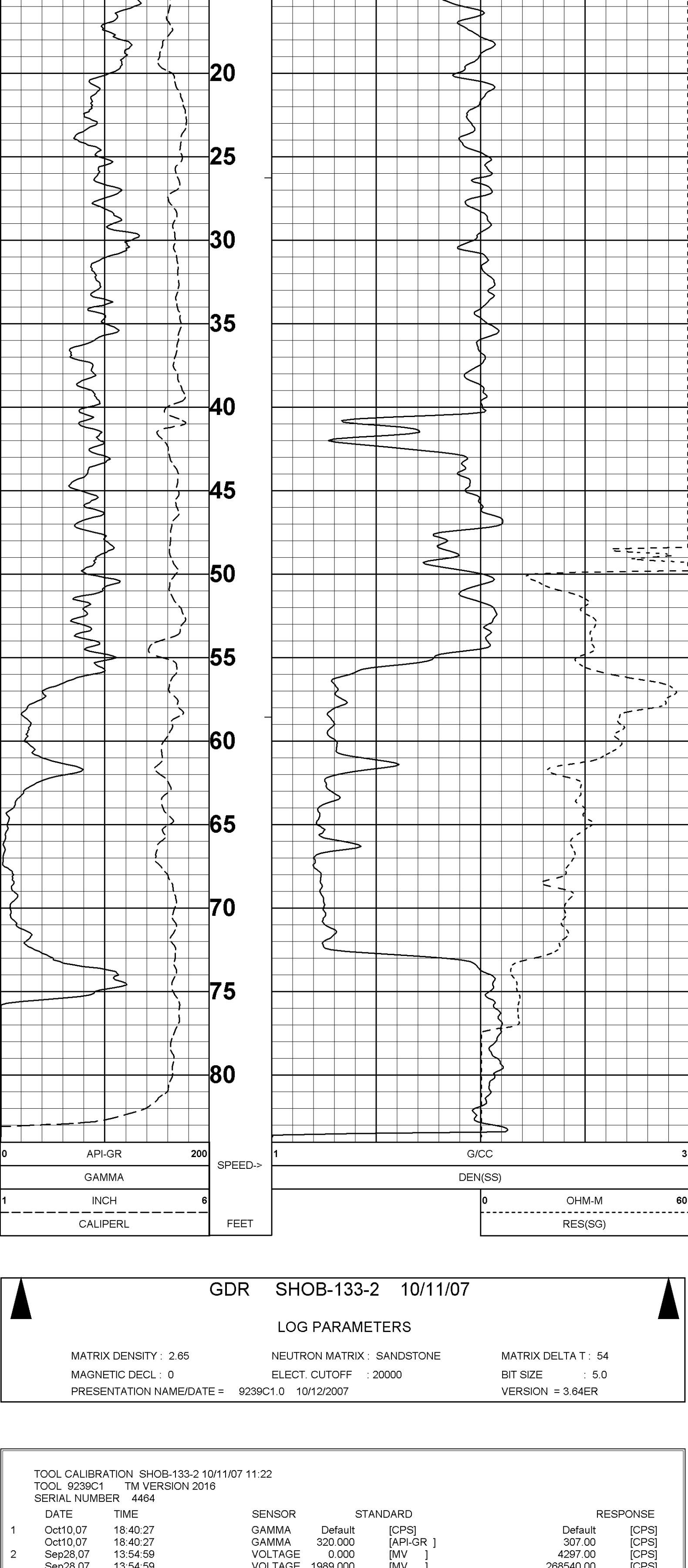
GDR SHOB-133-2 10/11/07

LOG PARAMETERS

MATRIX DENSITY : 2.65
MAGNETIC DECL : 0
PRESENTATION NAME/DATE = 9239C1.0 10/12/2007

NEUTRON MATRIX : SANDSTONE
ELECT. CUTOFF : 20000

MATRIX DELTA T : 54
BIT SIZE : 5.0
VERSION = 3.64ER



GDR SHOB-133-2 10/11/07

LOG PARAMETERS

MATRIX DENSITY : 2.65

NEUTRON MATRIX : SANDSTONE

MATRIX DELTA T : 54

MAGNETIC DECL : 0

ELECT. CUTOFF : 20000

BIT SIZE : 5.0

PRESENTATION NAME/DATE = 9239C1.0 10/12/2007

VERSION = 3.64ER

TOOL CALIBRATION SHOB-133-2 10/11/07 11:22			
TOOL 9239C1 TM VERSION 2016			
SERIAL NUMBER 4464			
DATE	TIME	SENSOR	STANDARD
1 Oct10,07	18:40:27	GAMMA	Default [CPS]
Oct10,07	18:40:27	GAMMA	320.000 [API-GR]
2 Sep28,07	13:54:59	VOLTAGE	0.000 [MV]
Sep28,07	13:54:59	VOLTAGE	1989.000 [MV]
3 Sep28,07	13:55:03	CALIPER	4.000 [INCH]
Sep28,07	13:55:03	CALIPER	8.000 [INCH]
4 Sep28,07	13:55:08	DEN(LS)	1.000 [G/CC]
Sep28,07	13:55:08	DEN(LS)	2.383 [G/CC]
Sep28,07	13:55:14	DEN(SS)	1.000 [G/CC]
Sep28,07	13:55:14	DEN(SS)	2.383 [G/CC]
6 Sep28,07	13:55:20	CALIPERL	4.000 [INCH]
Sep28,07	13:55:20	CALIPERL	12.000 [INCH]
7 Sep28,07	13:55:24	CURRENT	0.000 [UA]
Sep28,07	13:55:24	CURRENT	284.960 [UA]
8 Sep28,07	13:14:43	F	Default [CPS]
Sep28,07	13:14:43	X	Default [CPS]

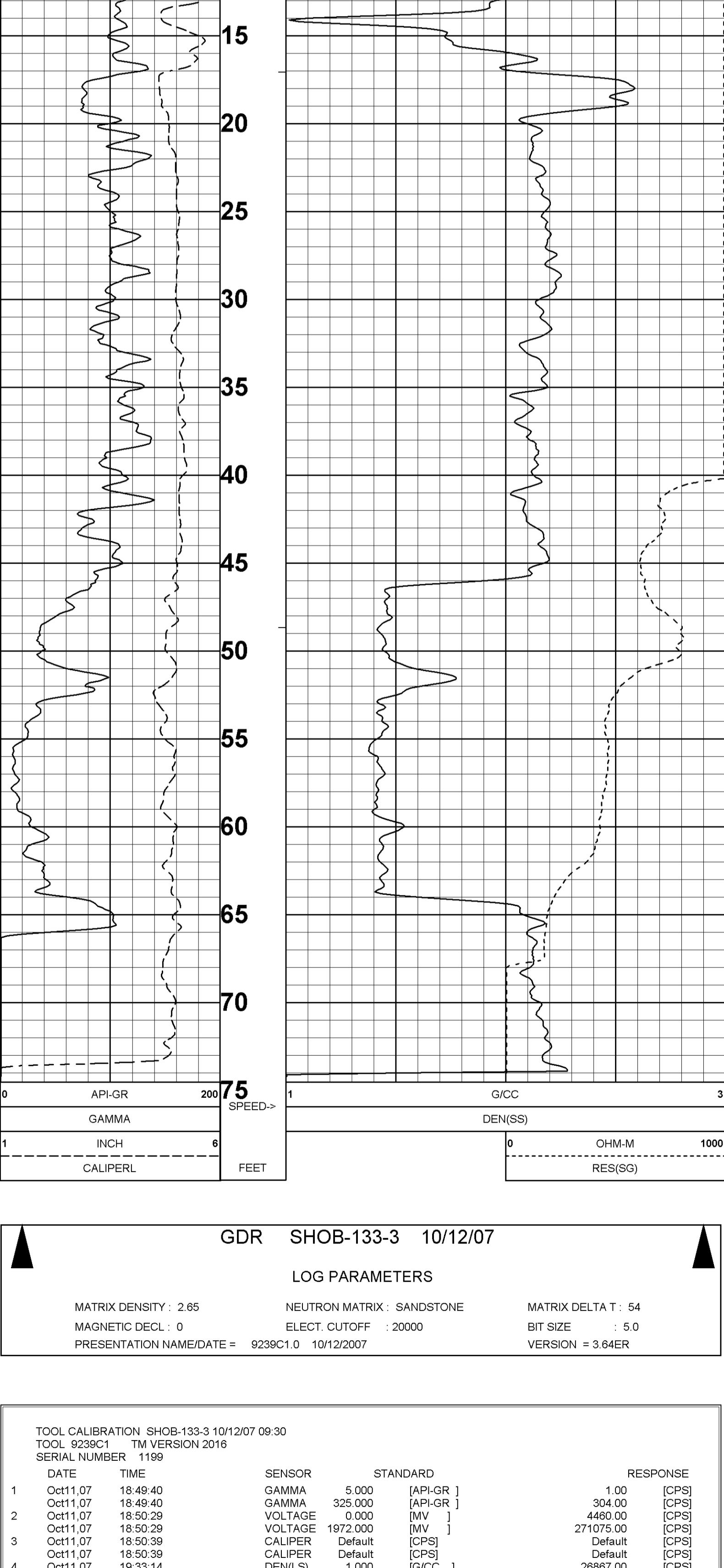
Century
WIRELINE SERVICES

GAMMA-RES-DENSITY
NORWEST
SHOB-133-3

COMPANY	GOLDER ASSOCIATES, INC.
WELL	SHOB-133-3
FIELD	SHP
COUNTY	STARK
STATE	NORTH DAKOTA
LOCATION	:
SECTION	N/A
TOWNSHIP	N/A
RANGE	N/A
API NO.	N/A
UNIQUE WELL ID.	N/A
PERMANENT DATUM	:GL
LOG MEASURED FROM	:GL
DRL MEASURED FROM	:GL
DATE	:10/12/07

OTHER SERVICES:
NONE

GDR SHOB-133-3 10/12/07
LOG PARAMETERS
MATRIX DENSITY : 2.65 NEUTRON MATRIX : SANDSTONE MATRIX DELTA T : 54
MAGNETIC DECL : 0 ELECT. CUTOFF : 20000 BIT SIZE : 5.0
PRESENTATION NAME/DATE = 9239C1.0 10/12/2007 VERSION = 3.64ER



MATRIX DENSITY : 2.65 NEUTRON MATRIX : SANDSTONE MATRIX DELTA T : 54
MAGNETIC DECL : 0 ELECT. CUTOFF : 20000 BIT SIZE : 5.0
PRESENTATION NAME/DATE = 9239C1.0 10/12/2007 VERSION = 3.64ER

TOOL CALIBRATION SHOB-133-3 10/12/07 09:30
TOOL 9239C1 TM VERSION 2016
SERIAL NUMBER 1199

	DATE	TIME	SENSOR	STANDARD	RESPONSE
1	Oct11,07	18:49:40	GAMMA	5.000 [API-GR]	1.00 [CPS]
	Oct11,07	18:49:40	GAMMA	325.000 [API-GR]	304.00 [CPS]
2	Oct11,07	18:50:29	VOLTAGE	0.000 [MV]	4460.00 [CPS]
	Oct11,07	18:50:29	VOLTAGE	1972.000 [MV]	271075.00 [CPS]
3	Oct11,07	18:50:39	CALIPER	Default [CPS]	Default [CPS]
	Oct11,07	18:50:39	CALIPER	Default [CPS]	Default [CPS]
4	Oct11,07	19:33:14	DEN(LS)	1.000 [G/CC]	26867.00 [CPS]
	Oct11,07	19:33:14	DEN(LS)	2.410 [G/CC]	2220.00 [CPS]
5	Oct11,07	19:33:33	DEN(SS)	1.000 [G/CC]	44518.00 [CPS]
	Oct11,07	19:33:33	DEN(SS)	2.410 [G/CC]	16572.00 [CPS]
6	Oct11,07	18:52:41	CALIPERL	5.800 [INCH]	170520.00 [CPS]
	Oct11,07	18:52:41	CALIPERL	10.000 [INCH]	299225.00 [CPS]
7	Oct11,07	18:53:47	CURRENT	0.000 [UA]	3120.00 [CPS]
	Oct11,07	18:53:47	CURRENT	283.000 [UA]	26400.00 [CPS]
8	Oct11,07	18:48:16	F	Default [CPS]	
	Oct11,07	18:48:16	X	Default [CPS]	

Century
WIRELINE SERVICES

GAMMA-RES-DENSITY
NORWEST
SHOB-133-4

COMPANY	GOLDER ASSOCIATES, INC.
WELL	SHOB-133-4
FIELD	SHP
COUNTY	STARK
STATE	NORTH DAKOTA
LOCATION	:
SECTION	N/A
TOWNSHIP	N/A
RANGE	N/A
API NO.	N/A
UNIQUE WELL ID.	N/A

OTHER SERVICES:
NONE

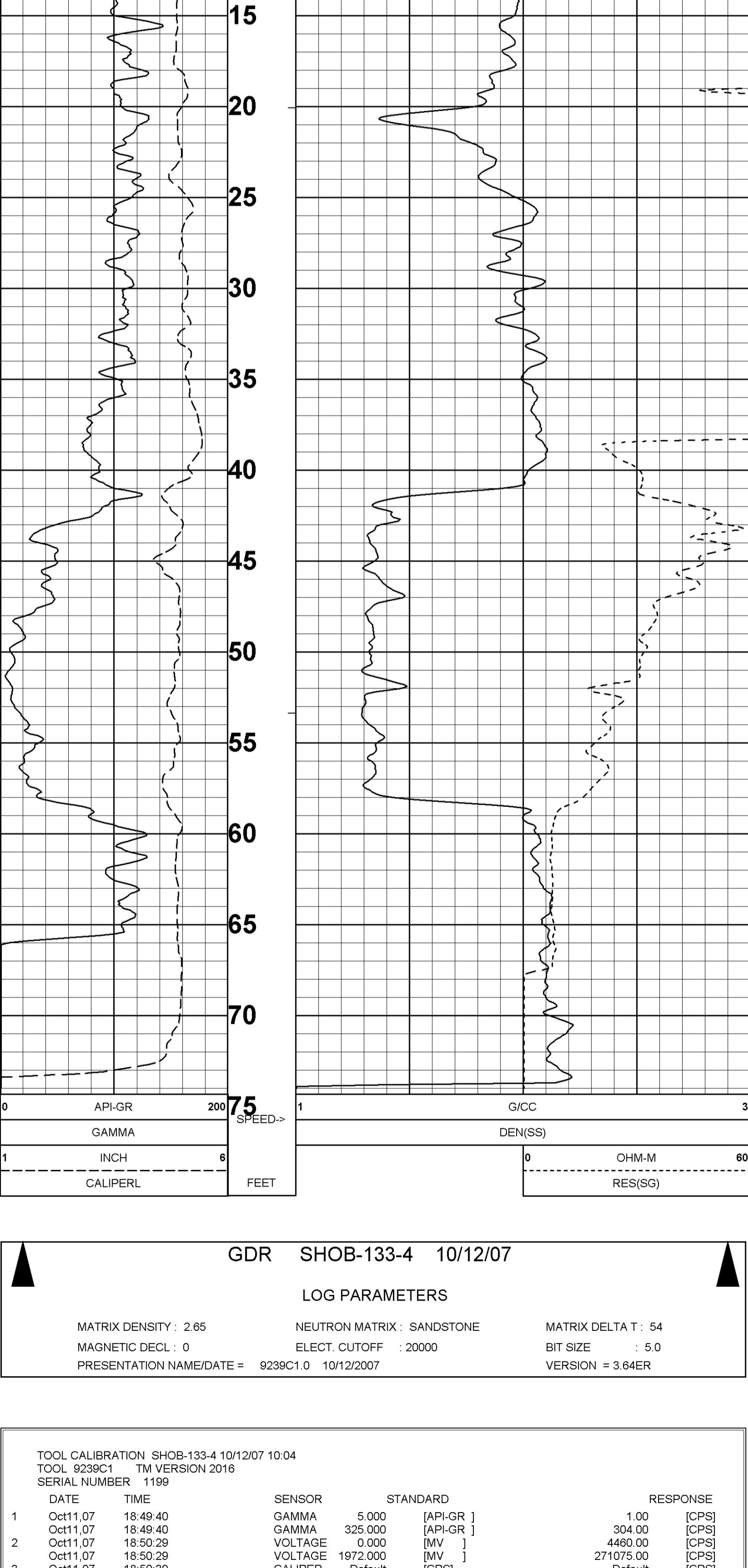
GDR SHOB-133-4 10/12/07

LOG PARAMETERS

MATRIX DENSITY : 2.65
MAGNETIC DECL : 0
PRESENTATION NAME/DATE = 9239C1.0 10/12/2007

NEUTRON MATRIX : SANDSTONE
ELECT. CUTOFF : 20000

MATRIX DELTA T : 54
BIT SIZE : 5.0
VERSION = 3.64ER



GAMMA-RES-DENSITY
NORWEST
SHOB-133-5

COMPANY	GOLDER ASSOCIATES, INC.
WELL	SHOB-133-5
FIELD	SHP
COUNTY	STARK
STATE	NORTH DAKOTA
LOCATION	:
SECTION	N/A
TOWNSHIP	N/A
RANGE	N/A
API NO.	N/A
UNIQUE WELL ID.	N/A
PERMANENT DATUM	GL
LOG MEASURED FROM	GL
DRL MEASURED FROM	GL

OTHER SERVICES:
NONE

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

GDR SHOB-133-5 10/12/07

LOG PARAMETERS

MATRIX DENSITY : 2.65

NEUTRON MATRIX : SANDSTONE

MATRIX DELTA T : 54

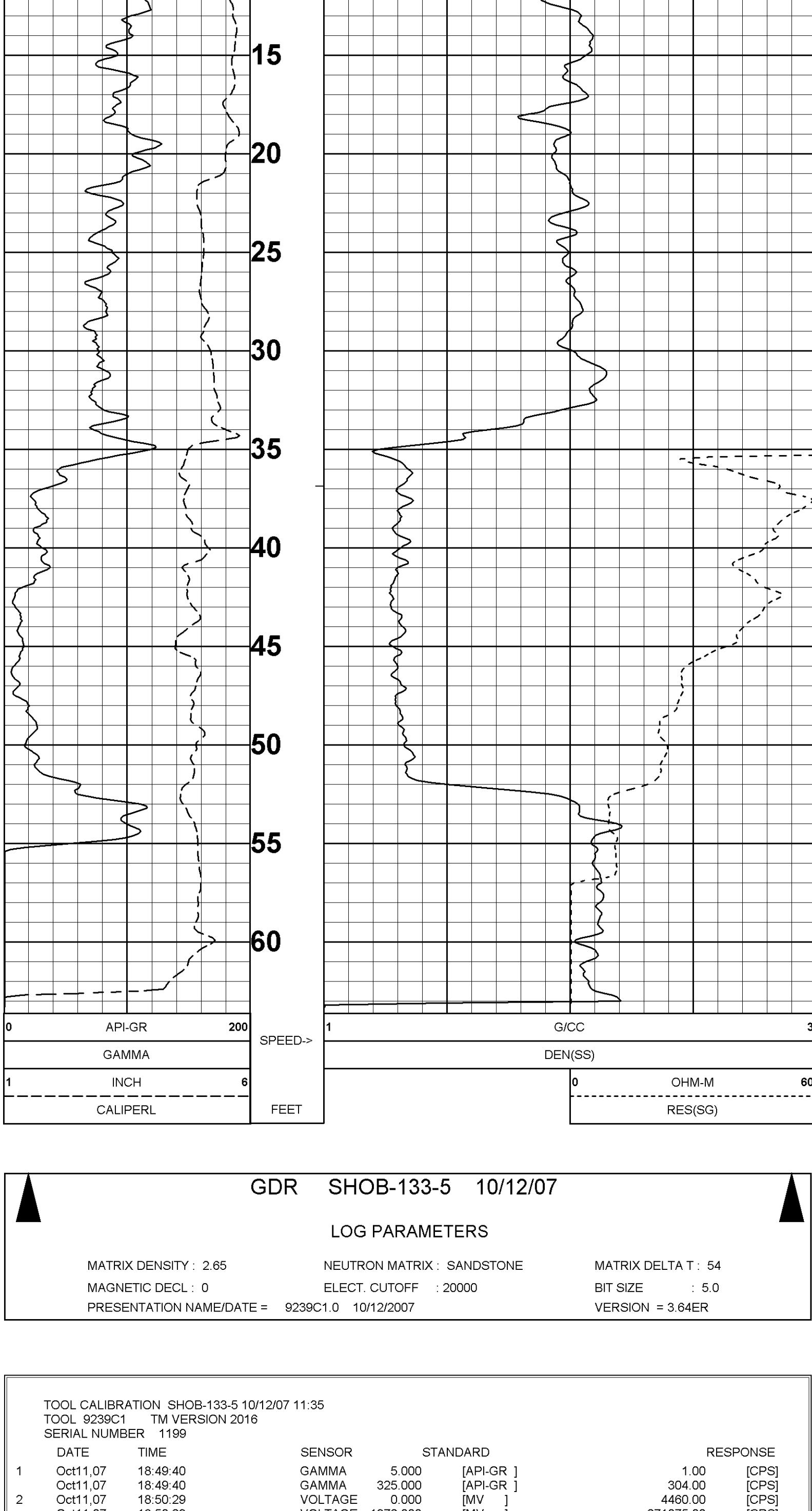
MAGNETIC DECL : 0

ELECT. CUTOFF : 20000

BIT SIZE : 5.0

PRESENTATION NAME/DATE = 9239C1.0 10/12/2007

VERSION = 3.64ER



GDR SHOB-133-5 10/12/07

LOG PARAMETERS

MATRIX DENSITY : 2.65

NEUTRON MATRIX : SANDSTONE

MATRIX DELTA T : 54

MAGNETIC DECL : 0

ELECT. CUTOFF : 20000

BIT SIZE : 5.0

PRESENTATION NAME/DATE = 9239C1.0 10/12/2007

VERSION = 3.64ER

TOOL CALIBRATION SHOB-133-5 10/12/07 11:35

TOOL 9239C1 TM VERSION 2016

SERIAL NUMBER 1199

	DATE	TIME	SENSOR	STANDARD	RESPONSE
1	Oct11,07	18:49:40	GAMMA	5.000 [API-GR]	1.00 [CPS]
	Oct11,07	18:49:40	GAMMA	325.000 [API-GR]	304.00 [CPS]
2	Oct11,07	18:50:29	VOLTAGE	0.000 [MV]	4460.00 [CPS]
	Oct11,07	18:50:29	VOLTAGE	1972.000 [MV]	271075.00 [CPS]
3	Oct11,07	18:50:39	CALIPER	Default [CPS]	Default [CPS]
	Oct11,07	18:50:39	CALIPER	Default [CPS]	Default [CPS]
4	Oct11,07	19:33:14	DEN(LS)	1.000 [G/CC]	26867.00 [CPS]
	Oct11,07	19:33:14	DEN(LS)	2.410 [G/CC]	2220.00 [CPS]
5	Oct11,07	19:33:33	DEN(SS)	1.000 [G/CC]	44518.00 [CPS]
	Oct11,07	19:33:33	DEN(SS)	2.410 [G/CC]	16572.00 [CPS]
6	Oct11,07	18:52:41	CALIPER	5.800 [INCH]	170520.00 [CPS]
	Oct11,07	18:52:41	CALIPER	10.000 [INCH]	299225.00 [CPS]
7	Oct11,07	18:53:47	CURRENT	0.000 [UA]	3120.00 [CPS]
	Oct11,07	18:53:47	CURRENT	283.000 [UA]	26400.00 [CPS]
8	Oct11,07	18:48:16	F	Default [CPS]	
	Oct11,07	18:48:16	X	Default [CPS]	
9	Oct11,07	18:48:16			

Century
WIRELINE SERVICES

GAMMA-RES-DENSITY
GOLDER
SHOB-134

COMPANY	GOLDER ASSOCIATES, INC.	
WELL	SHOB-134	
FIELD	SHP	
COUNTY	STARK	
STATE	NORTH DAKOTA	
LOCATION		
SECTION		
TOWNSHIP		
RANGE		
API NO.	N/A	
UNIQUE WELL ID.	N/A	
PERMANENT DATUM	GL	ELEVATION KB N/A
LOG MEASURED FROM	GL	ELEVATION DF N/A
DRL MEASURED FROM	GL	ELEVATION GL
DATE	10/02/07	
DEPTH DRILLER	80	
BIT SIZE	5.625	
LOG TOP	~1.70	
LOG BOTTOM	.79.40	
CASING O/D	N/A	
CASING BOTTOM	N/A	
CASING TYPE	N/A	
BOREHOLE FLUID	WATER	
RM TEMPERATURE	N/A	
MUD RES	N/A	
MUD WEIGHT	.8.5	
WITNESSED BY	J. ELLIOT	
RECORDED BY	M. SUTTON	
REMARKS 1	:	
REMARKS 2	:	
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS		

GDR SHOB-134 10/02/07

LOG PARAMETERS

MATRIX DENSITY : 2.65

MAGNETIC DECL : 0

PRESENTATION NAME/DATE = 9239C1.0 10/05/2007

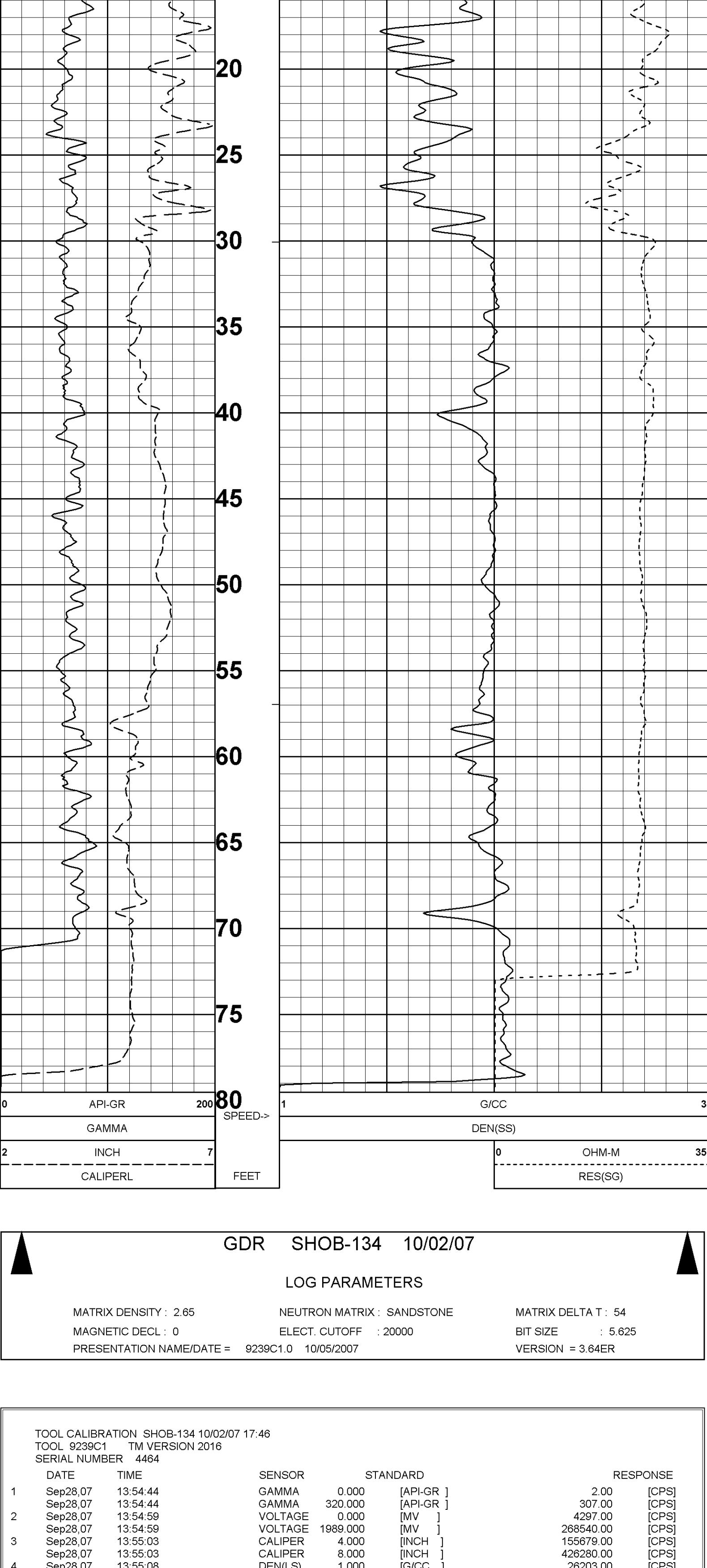
NEUTRON MATRIX : SANDSTONE

ELECT. CUTOFF : 20000

MATRIX DELTA T : 54

BIT SIZE : 5.625

VERSION = 3.64ER



GDR SHOB-134 10/02/07

LOG PARAMETERS

MATRIX DENSITY : 2.65

MAGNETIC DECL : 0

PRESENTATION NAME/DATE = 9239C1.0 10/05/2007

MATRIX DELTA T : 54

BIT SIZE : 5.625

VERSION = 3.64ER

TOOL CALIBRATION SHOB-134 10/02/07 17:46
TOOL 9239C1 TM VERSION 2016
SERIAL NUMBER 4464

	DATE	TIME	SENSOR	STANDARD	RESPONSE
1	Sep28,07	13:54:44	GAMMA	0.000 [API-GR]	2.00 [CPS]
	Sep28,07	13:54:44	GAMMA	320.000 [API-GR]	307.00 [CPS]
2	Sep28,07	13:54:59	VOLTAGE	0.000 [MV]	4297.00 [CPS]
	Sep28,07	13:54:59	VOLTAGE	1989.000 [MV]	268540.00 [CPS]
3	Sep28,07	13:55:03	CALIPER	4.000 [INCH]	155679.00 [CPS]
	Sep28,07	13:55:03	CALIPER	8.000 [INCH]	426280.00 [CPS]
4	Sep28,07	13:55:08	DEN(LS)	1.000 [G/CC]	26203.00 [CPS]
	Sep28,07	13:55:08	DEN(LS)	2.383 [G/CC]	2230.00 [CPS]
5	Sep28,07	13:55:14	DEN(SS)	1.000 [G/CC]	46913.00 [CPS]
	Sep28,07	13:55:14	DEN(SS)	2.383 [G/CC]	15843.00 [CPS]
6	Sep28,07	13:55:20	CALIPERL	4.000 [INCH]	102730.00 [CPS]
	Sep28,07	13:55:20	CALIPERL	12.000 [INCH]	357523.00 [CPS]
7	Sep28,07	13:55:24	CURRENT	0.000 [UA]	3639.00 [CPS]
	Sep28,07	13:55:24	CURRENT	284.960 [UA]	27413.00 [CPS]
8	Sep28,07	13:14:43	F	Default [CPS]	
9	Sep28,07	13:14:43	X	Default [CPS]	

GAMMA-RES-DENSITY
GOLDER
SHOB-135

COMPANY	GOLDER ASSOCIATES, INC.	
WELL	SHOB-135	OTHER SERVICES:
FIELD	SHP	
COUNTY	STARK	
STATE	NORTH DAKOTA	
LOCATION	:	
SECTION	N/A	
TOWNSHIP	N/A	
RANGE	N/A	
API NO.	N/A	
UNIQUE WELL ID.	N/A	
PERMANENT DATUM	GL	ELEVATION KB N/A
LOG MEASURED FROM	GL	ELEVATION DF N/A
DRL MEASURED FROM	GL	ELEVATION GL N/A
DATE	10/04/07	
DEPTH DRILLER	.70	
BIT SIZE	.5625	
LOG TOP	:2.40	
CASING BOTTOM	.5950	
CASING OD	N/A	
CASING BOTTOM	0	
CASING TYPE	N/A	
BOREHOLE FLUID	WATER	
RM TEMPERATURE	N/A	
MUD RES	N/A	
MUD WEIGHT	8.5	
WITNESSED BY	J. ELLIOT	
RECORDED BY	M. SUTTON	
REMARKS 1	:	
REMARKS 2	:	

10-4-07 SHOB-135 10/04/07

LOG PARAMETERS

MATRIX DENSITY : 2.65

NEUTRON MATRIX : SANDSTONE

MATRIX DELTA T : 54

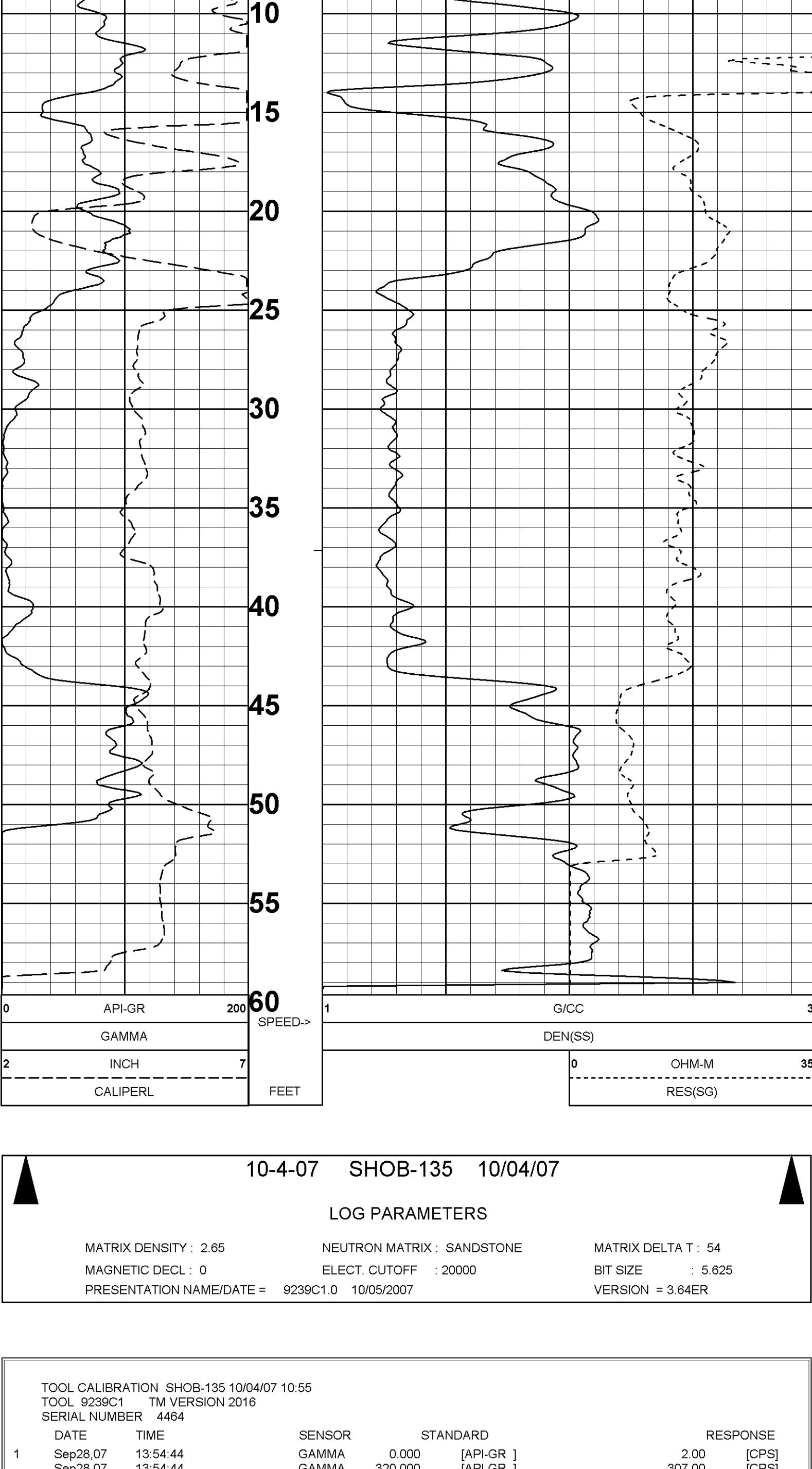
MAGNETIC DECL : 0

ELECT. CUTOFF : 20000

BIT SIZE : 5.625

PRESENTATION NAME/DATE = 9239C1.0 10/05/2007

VERSION = 3.64ER



10-4-07 SHOB-135 10/04/07

LOG PARAMETERS

MATRIX DENSITY : 2.65

NEUTRON MATRIX : SANDSTONE

MATRIX DELTA T : 54

MAGNETIC DECL : 0

ELECT. CUTOFF : 20000

BIT SIZE : 5.625

PRESENTATION NAME/DATE = 9239C1.0 10/05/2007

VERSION = 3.64ER

TOOL CALIBRATION SHOB-135 10/04/07 10:55

TOOL 9239C1 TM VERSION 2016

SERIAL NUMBER 4464

DATE	TIME	SENSOR	STANDARD	RESPONSE
1 Sep28,07	13:54:44	GAMMA	0.000 [API-GR]	2.00 [CPS]
Sep28,07	13:54:44	GAMMA	320.000 [API-GR]	307.00 [CPS]
2 Sep28,07	13:54:59	VOLTAGE	0.000 [MV]	4297.00 [CPS]
Sep28,07	13:54:59	VOLTAGE	1989.000 [MV]	268540.00 [CPS]
3 Sep28,07	13:55:03	CALIPER	4.000 [INCH]	155679.00 [CPS]
Sep28,07	13:55:03	CALIPER	8.000 [INCH]	426280.00 [CPS]
4 Sep28,07	13:55:08	DEN(LS)	1.000 [G/CC]	26203.00 [CPS]
Sep28,07	13:55:08	DEN(LS)	2.383 [G/CC]	2230.00 [CPS]
5 Sep28,07	13:55:14	DEN(SS)	1.000 [G/CC]	46913.00 [CPS]
Sep28,07	13:55:14	DEN(SS)	2.383 [G/CC]	15843.00 [CPS]
6 Sep28,07	13:55:20	CALIPERL	4.000 [INCH]	102730.00 [CPS]
Sep28,07	13:55:20	CALIPERL	12.000 [INCH]	357523.00 [CPS]
7 Sep28,07	13:55:24	CURRENT	0.000 [UA]	3639.00 [CPS]
Sep28,07	13:55:24	CURRENT	284.960 [UA]	27413.00 [CPS]
8 Sep28,07	13:55:24	F	Default [CPS]	
Sep28,07	13:14:43	X	Default [CPS]	
9 Sep28,07	13:14:43			

Century
WIRELINE SERVICES

GAMMA-RES-DENSITY
GOLDER
SHOB-136

COMPANY	GOLDER ASSOCIATES, INC.
WELL	SHOB-136
FIELD	SHP
COUNTY	STARK
STATE	NORTH DAKOTA
LOCATION	:
SECTION	N/A
TOWNSHIP	N/A
RANGE	N/A
API NO.	N/A
UNIQUE WELL ID.	N/A
PERMANENT DATUM	: GL
LOG MEASURED FROM	: GL
DRL MEASURED FROM	: GL
DATE	: 10/04/07
DEPTH DRILLER	: 60
BIT SIZE	: 5.625
LOG TOP	: 4.00
LOG BOTTOM	: 73.90
CASING OD	: N/A
CASING BOTTOM	: N/A
CASING TYPE	: N/A
BOREHOLE FLUID	: WATER
RM TEMPERATURE	: N/A
MUD RES	: N/A
MUD WEIGHT	: 8.5
WITNESSED BY	: J. ELLIOT
RECORDED BY	: M. SUTTON
REMARKS 1	:
REMARKS 2	:

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

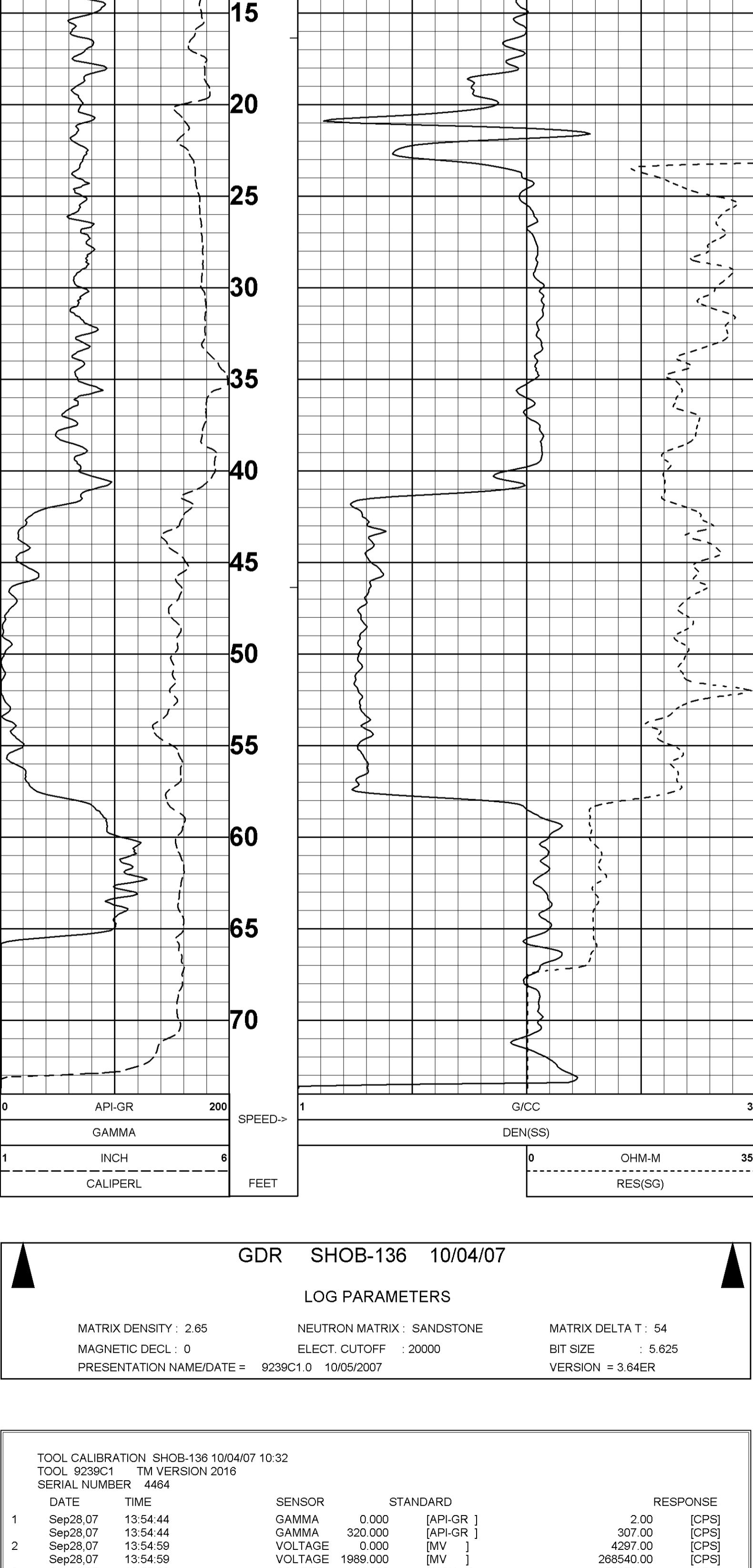
GDR SHOB-136 10/04/07

LOG PARAMETERS

MATRIX DENSITY : 2.65
MAGNETIC DECL : 0
PRESENTATION NAME/DATE = 9239C1.0 10/05/2007

NEUTRON MATRIX : SANDSTONE
ELECT. CUTOFF : 20000

MATRIX DELTA T : 54
BIT SIZE : 5.625
VERSION = 3.64ER



GDR SHOB-136 10/04/07

LOG PARAMETERS

MATRIX DENSITY : 2.65

MAGNETIC DECL : 0

PRESENTATION NAME/DATE = 9239C1.0 10/05/2007

MATRIX DELTA T : 54

BIT SIZE : 5.625

VERSION = 3.64ER

TOOL CALIBRATION SHOB-136 10/04/07 10:32		SENSOR	STANDARD	RESPONSE
1	Sep28,07 13:54:44	GAMMA	0.000 [API-GR]	2.00 [CPS]
1	Sep28,07 13:54:44	GAMMA	320.000 [API-GR]	307.00 [CPS]
2	Sep28,07 13:54:59	VOLTAGE	0.000 [MV]	4297.00 [CPS]
2	Sep28,07 13:54:59	VOLTAGE	1989.000 [MV]	268540.00 [CPS]
3	Sep28,07 13:55:03	CALIPER	4.000 [INCH]	155679.00 [CPS]
3	Sep28,07 13:55:03	CALIPER	8.000 [INCH]	426280.00 [CPS]
4	Sep28,07 13:55:08	DEN(LS)	1.000 [G/CC]	20230.00 [CPS]
4	Sep28,07 13:55:08	DEN(LS)	2.383 [G/CC]	2230.00 [CPS]
5	Sep28,07 13:55:14	DEN(SS)	1.000 [G/CC]	46913.00 [CPS]
5	Sep28,07 13:55:14	DEN(SS)	2.383 [G/CC]	15843.00 [CPS]
6	Sep28,07 13:55:20	CALIPERL	4.000 [INCH]	102730.00 [CPS]
6	Sep28,07 13:55:20	CALIPERL	12.000 [INCH]	357523.00 [CPS]
7	Sep28,07 13:55:24	CURRENT	0.000 [UA]	3639.00 [CPS]
7	Sep28,07 13:55:24	CURRENT	284.960 [UA]	27413.00 [CPS]
8	Sep28,07 13:14:43	F	Default [CPS]	
9	Sep28,07 13:14:43	X	Default [CPS]	

Century
WIRELINE SERVICES

GAMMA-RES-DENSITY
GOLDER
SHOB-137

COMPANY	GOLDER ASSOCIATES
WELL	SHOB-137
FIELD	SHP
COUNTY	STARK
STATE	NORTH DAKOTA
LOCATION	
SECTION	
TOWNSHIP	
RANGE	
API NO.	N/A
UNIQUE WELL ID.	N/A
PERMANENT DATUM	GL
LOG MEASURED FROM	GL
DRL MEASURED FROM	GL

OTHER SERVICES:
NONE

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

GDR SHOB-137 10/02/07

LOG PARAMETERS

MATRIX DENSITY : 2.65

NEUTRON MATRIX : SANDSTONE

MATRIX DELTA T : 54

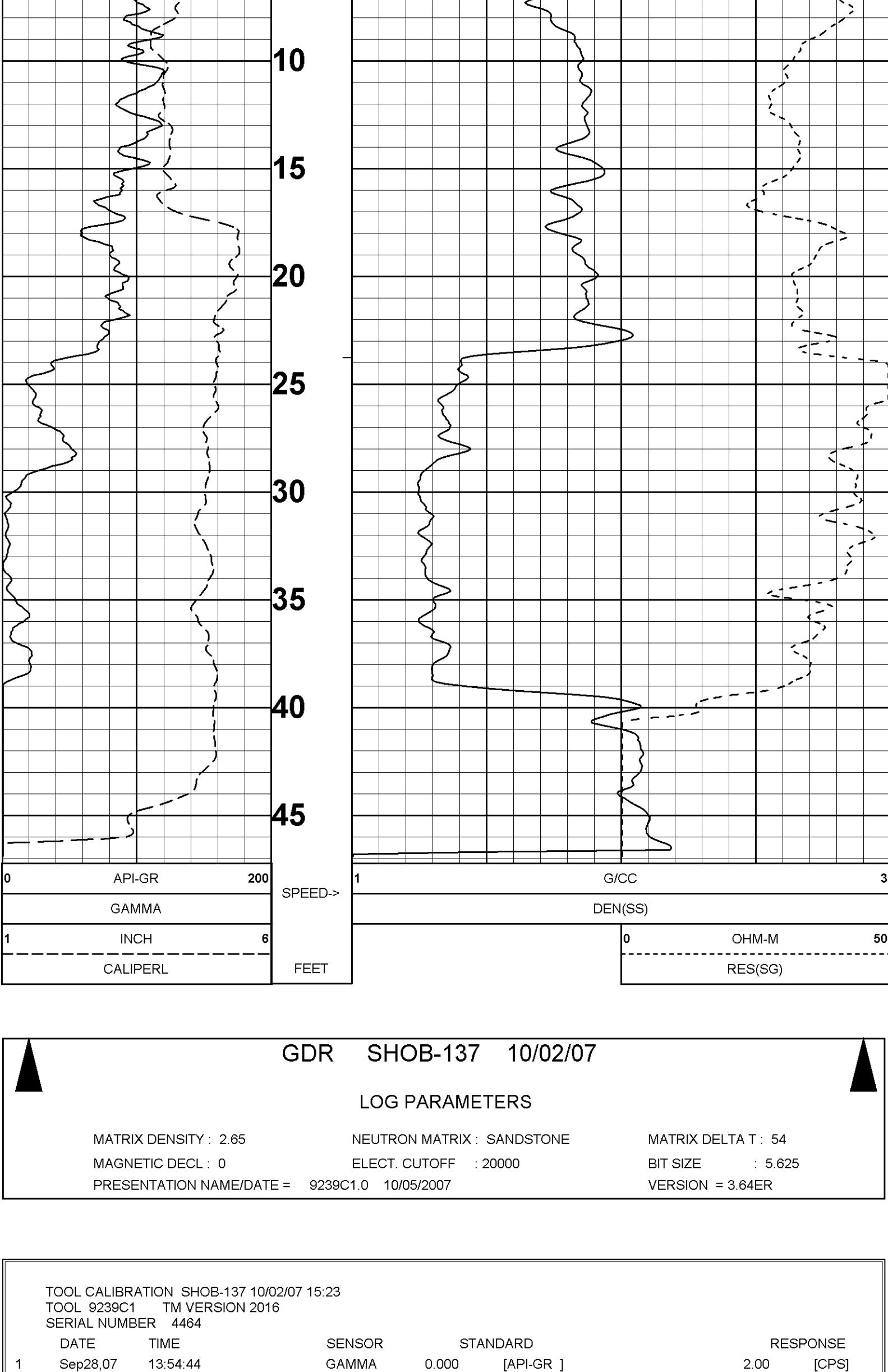
MAGNETIC DECL : 0

ELECT. CUTOFF : 20000

BIT SIZE : 5.625

PRESENTATION NAME/DATE = 9239C1.0 10/05/2007

VERSION = 3.64ER



TOOL CALIBRATION SHOB-137 10/02/07 15:23

TOOL 9239C1 TM VERSION 2016

SERIAL NUMBER 4464

	DATE	TIME	SENSOR	STANDARD	RESPONSE
1	Sep28,07	13:54:44	GAMMA	0.000 [API-GR]	2.00 [CPS]
	Sep28,07	13:54:44	GAMMA	320.000 [API-GR]	307.00 [CPS]
2	Sep28,07	13:54:59	VOLTAGE	0.000 [MV]	4297.00 [CPS]
	Sep28,07	13:54:59	VOLTAGE	1989.000 [MV]	268540.00 [CPS]
3	Sep28,07	13:55:03	CALIPER	4.000 [INCH]	155679.00 [CPS]
	Sep28,07	13:55:03	CALIPER	8.000 [INCH]	426280.00 [CPS]
4	Sep28,07	13:55:08	DEN(LS)	1.000 [G/CC]	26203.00 [CPS]
	Sep28,07	13:55:08	DEN(LS)	2.383 [G/CC]	2230.00 [CPS]
5	Sep28,07	13:55:14	DEN(SS)	1.000 [G/CC]	46913.00 [CPS]
	Sep28,07	13:55:14	DEN(SS)	2.383 [G/CC]	15843.00 [CPS]
6	Sep28,07	13:55:20	CALIPERL	4.000 [INCH]	102730.00 [CPS]
	Sep28,07	13:55:20	CALIPERL	12.000 [INCH]	357523.00 [CPS]
7	Sep28,07	13:55:24	CURRENT	0.000 [UA]	3639.00 [CPS]
	Sep28,07	13:55:24	CURRENT	284.960 [UA]	27413.00 [CPS]
8	Sep28,07	13:14:43	F	Default [CPS]	
9	Sep28,07	13:14:43	X	Default [CPS]	

Century
WIRELINE SERVICES

GAMMA-RES DENSITY
GOLDER
SHOB-138

COMPANY	GOLDER ASSOCIATES, INC.	OTHER SERVICES:
WELL	SHOB-138	
FIELD	SHP	
COUNTY	STARK	
STATE	NORTH DAKOTA	

REMARKS 1 :
REMARKS 2 :
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

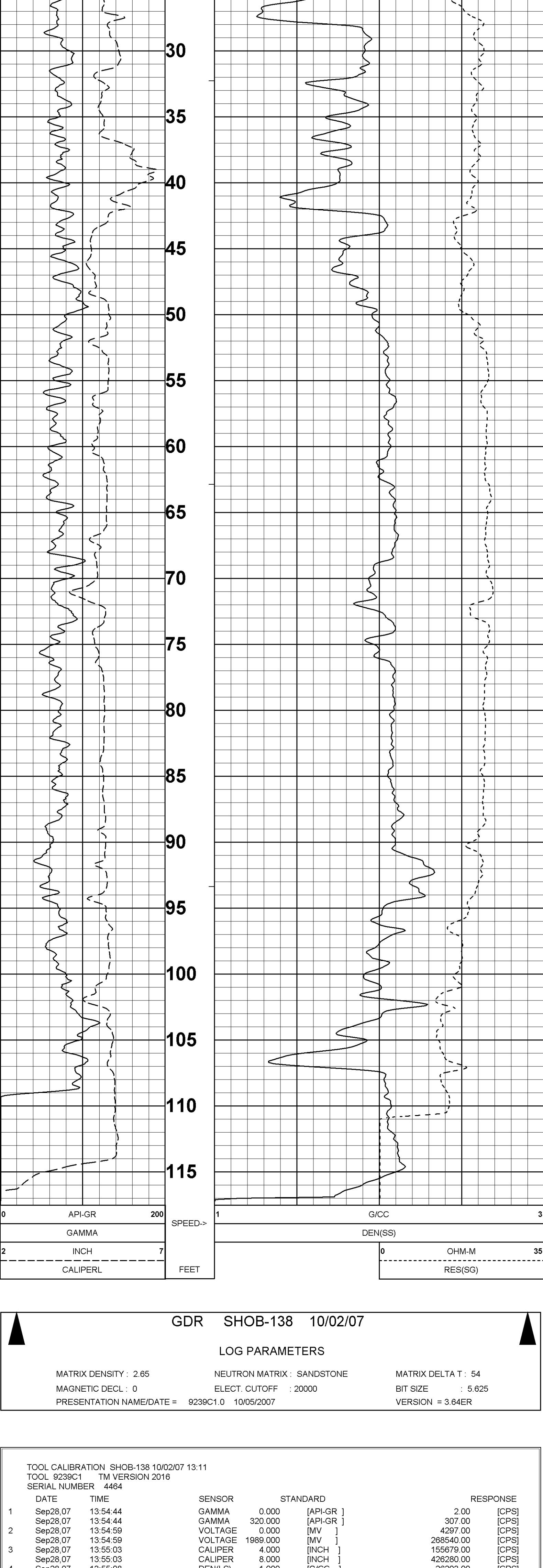
GDR SHOB-138 10/02/07

LOG PARAMETERS

MATRIX DENSITY : 2.65
MAGNETIC DECL : 0
PRESENTATION NAME/DATE = 9239C1.0 10/05/2007

NEUTRON MATRIX : SANDSTONE
ELECT. CUTOFF : 20000

MATRIX DELTA T : 54
BIT SIZE : 5.625
VERSION = 3.64ER



TOOL CALIBRATION SHOB-138 10/02/07 13:11
TOOL 9239C1 TM VERSION 2016
SERIAL NUMBER 4464

DATE	TIME	SENSOR	STANDARD	RESPONSE
1 Sep28,07	13:54:44	GAMMA	0.000 [API-GR]	2.00 [CPS]
2 Sep28,07	13:54:44	GAMMA	320.000 [API-GR]	307.00 [CPS]
2 Sep28,07	13:54:59	VOLTAGE	0.000 [MV]	4297.00 [CPS]
2 Sep28,07	13:54:59	VOLTAGE	1989.000 [MV]	268540.00 [CPS]
3 Sep28,07	13:55:03	CALIPER	4.000 [INCH]	155679.00 [CPS]
3 Sep28,07	13:55:03	CALIPER	8.000 [INCH]	426280.00 [CPS]
4 Sep28,07	13:55:08	DEN(LS)	1.000 [G/CC]	26203.00 [CPS]
4 Sep28,07	13:55:08	DEN(LS)	2.383 [G/CC]	2230.00 [CPS]
5 Sep28,07	13:55:14	DEN(SS)	1.000 [G/CC]	46913.00 [CPS]
5 Sep28,07	13:55:14	DEN(SS)	2.383 [G/CC]	15843.00 [CPS]
6 Sep28,07	13:55:20	CALIPER	4.000 [INCH]	102730.00 [CPS]
6 Sep28,07	13:55:20	CALIPER	12.000 [INCH]	357523.00 [CPS]
7 Sep28,07	13:55:24	CURRENT	0.000 [UA]	3639.00 [CPS]
7 Sep28,07	13:55:24	CURRENT	284.960 [UA]	27413.00 [CPS]
8 Sep28,07	13:14:43	F	Default [CPS]	
8 Sep28,07	13:14:43	X	Default [CPS]	

Century
WIRELINE SERVICES

GAMMA-RES-DENSITY
GOLDER
SHOB-139

COMPANY	GOLDER ASSOCIATES
WELL	SHOB-139
FIELD	SHP
COUNTY	STARK

OTHER SERVICES:
NONE

LOCATION :
SECTION :
TOWNSHIP :
RANGE :
API NO. :
UNIQUE WELL ID. :
PERMANENT DATUM : GL
LOG MEASURED FROM : GL
DRL MEASURED FROM : GL
DATE : 10/02/07
DEPTH DRILLER : 80
BIT SIZE : 5.625
LOG TOP : 3.80
LOG BOTTOM : 78.10
CASING OD : N/A
CASING BOTTOM : N/A
CASING TYPE : N/A
BOREHOLE FLUID : WATER
RM TEMPERATURE : N/A
MUD RES : N/A
MUD WEIGHT : 8.5
WITNESSED BY : J. ELLIOT
RECORDED BY : M. SUTTON
REMARKS 1 :
REMARKS 2 :

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

GDR SHOB-139 10/02/07

LOG PARAMETERS

MATRIX DENSITY : 2.65

NEUTRON MATRIX : SANDSTONE

MATRIX DELTA T : 54

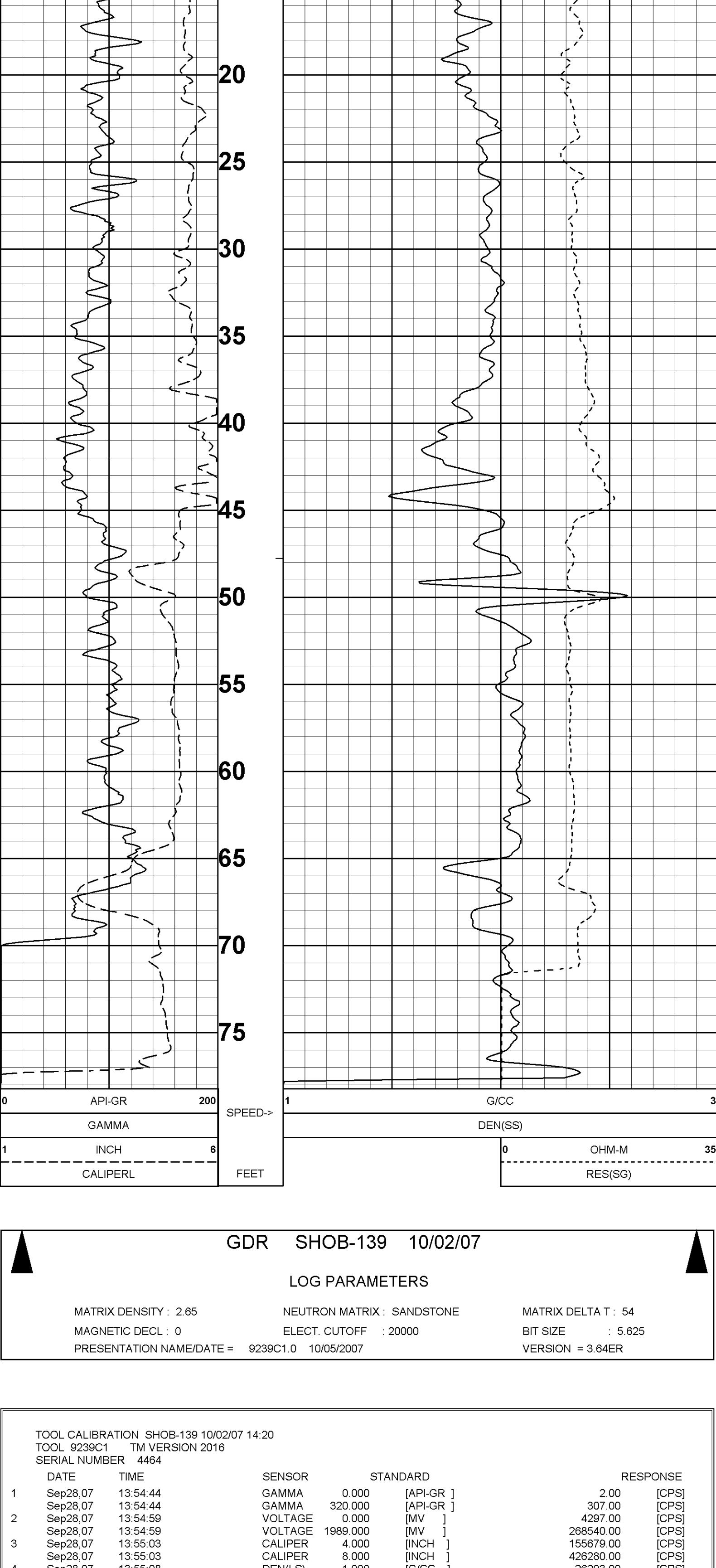
MAGNETIC DECL : 0

ELECT. CUTOFF : 20000

BIT SIZE : 5.625

PRESENTATION NAME/DATE = 9239C1.0 10/05/2007

VERSION = 3.64ER



GDR SHOB-139 10/02/07

LOG PARAMETERS

MATRIX DENSITY : 2.65

NEUTRON MATRIX : SANDSTONE

MATRIX DELTA T : 54

MAGNETIC DECL : 0

ELECT. CUTOFF : 20000

BIT SIZE : 5.625

PRESENTATION NAME/DATE = 9239C1.0 10/05/2007

VERSION = 3.64ER

TOOL CALIBRATION SHOB-139 10/02/07 14:20
TOOL 9239C1 TM VERSION 2016
SERIAL NUMBER 4464

DATE	TIME	SENSOR	STANDARD	RESPONSE
1 Sep28,07	13:54:44	GAMMA	0.000 [API-GR]	2.00 [CPS]
1 Sep28,07	13:54:44	GAMMA	320.000 [API-GR]	307.00 [CPS]
2 Sep28,07	13:54:59	VOLTAGE	0.000 [MV]	4297.00 [CPS]
2 Sep28,07	13:54:59	VOLTAGE	1989.000 [MV]	268540.00 [CPS]
3 Sep28,07	13:55:03	CALIPER	4.000 [INCH]	155679.00 [CPS]
3 Sep28,07	13:55:03	CALIPER	8.000 [INCH]	426280.00 [CPS]
4 Sep28,07	13:55:08	DEN(LS)	1.000 [G/CC]	26203.00 [CPS]
4 Sep28,07	13:55:08	DEN(LS)	2.383 [G/CC]	2230.00 [CPS]
5 Sep28,07	13:55:14	DEN(SS)	1.000 [G/CC]	46913.00 [CPS]
5 Sep28,07	13:55:14	DEN(SS)	2.383 [G/CC]	15843.00 [CPS]
6 Sep28,07	13:55:20	CALIPERL	4.000 [INCH]	102730.00 [CPS]
6 Sep28,07	13:55:20	CALIPERL	12.000 [INCH]	357523.00 [CPS]
7 Sep28,07	13:55:24	CURRENT	0.000 [UA]	3639.00 [CPS]
7 Sep28,07	13:55:24	CURRENT	284.960 [UA]	27413.00 [CPS]
8 Sep28,07	13:14:43	F	Default [CPS]	
8 Sep28,07	13:14:43	X	Default [CPS]	

GAMMA-RES-DENSITY
GOLDER
SHOB-140

COMPANY	GOLDER ASSOCIATES, INC.	
WELL	SHOB-140	
FIELD	SHP	
COUNTY	STARK	
STATE	NORTH DAKOTA	
LOCATION		
SECTION		
TOWNSHIP		
RANGE		
API NO.	N/A	
UNIQUE WELL ID.	N/A	
PERMANENT DATUM	GL	ELEVATION KB N/A
LOG MEASURED FROM	GL	ELEVATION DF N/A
DRL MEASURED FROM	GL	ELEVATION GL:
DATE	10/02/07	
DEPTH DRILLER	80	
BIT SIZE	5.625	
LOG TOP	:3.20	
LOG BOTTOM	.79.50	
CASING O/D	N/A	
CASING BOTTOM	N/A	
CASING TYPE	N/A	
BOREHOLE FLUID	WATER	
RM TEMPERATURE	N/A	
MUD RES	N/A	
MUD WEIGHT	8.5	
WITNESSED BY	J. ELLIOT	
RECORDED BY	M. SUTTON	
REMARKS 1	:	
REMARKS 2	:	
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS		

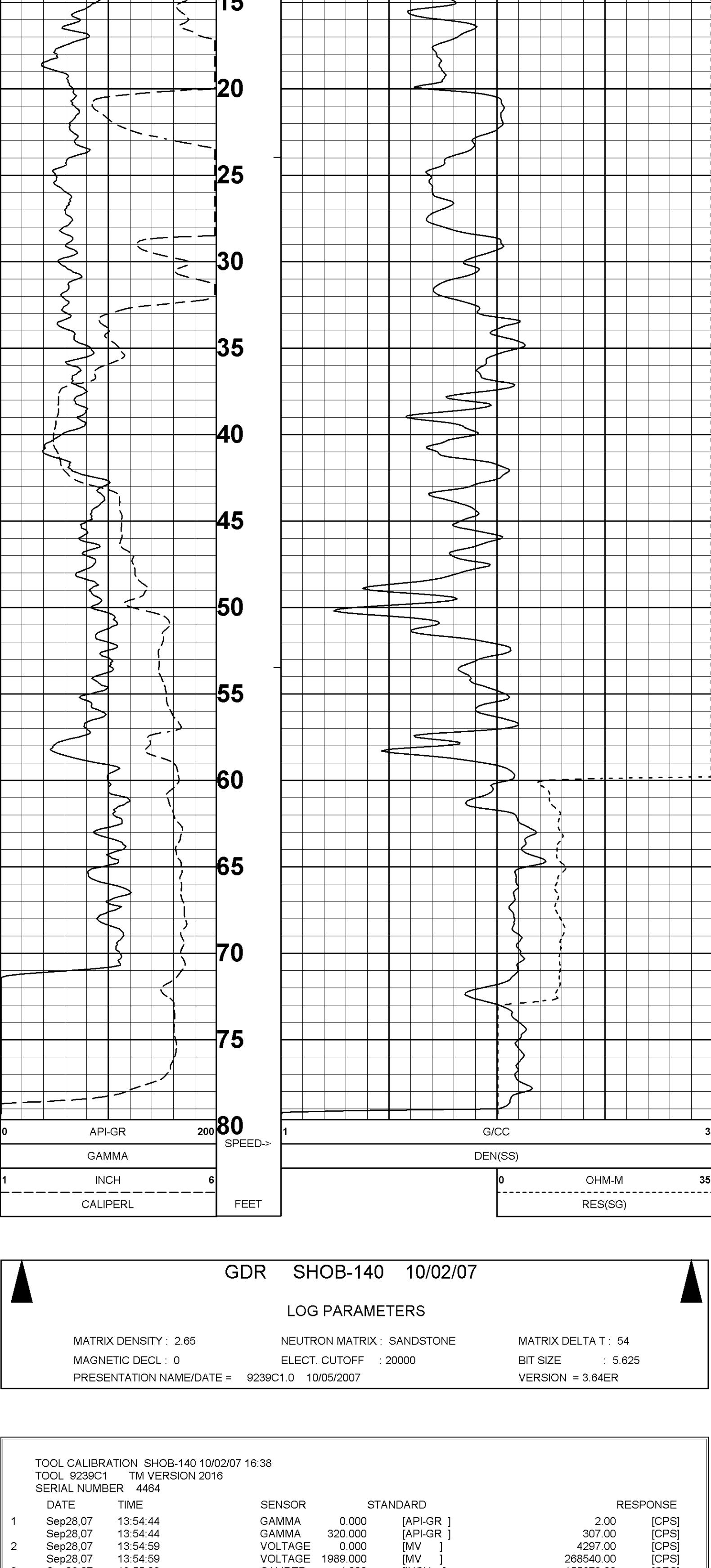
GDR SHOB-140 10/02/07

LOG PARAMETERS

MATRIX DENSITY : 2.65
MAGNETIC DECL : 0
PRESENTATION NAME/DATE = 9239C1.0 10/05/2007

NEUTRON MATRIX : SANDSTONE
ELECT. CUTOFF : 20000

MATRIX DELTA T : 54
BIT SIZE : 5.625
VERSION = 3.64ER



GDR SHOB-140 10/02/07

LOG PARAMETERS

MATRIX DENSITY : 2.65
MAGNETIC DECL : 0
PRESENTATION NAME/DATE = 9239C1.0 10/05/2007

NEUTRON MATRIX : SANDSTONE
ELECT. CUTOFF : 20000

MATRIX DELTA T : 54
BIT SIZE : 5.625
VERSION = 3.64ER

DATE	TIME	SENSOR	STANDARD	RESPONSE
1 Sep28,07	13:54:44	GAMMA	0.000 [API-GR]	2.00 [CPS]
1 Sep28,07	13:54:44	GAMMA	320.000 [API-GR]	307.00 [CPS]
2 Sep28,07	13:54:59	VOLTAGE	0.000 [MV]	4297.00 [CPS]
2 Sep28,07	13:54:59	VOLTAGE	1989.000 [MV]	268540.00 [CPS]
3 Sep28,07	13:55:03	CALIPER	4.000 [INCH]	155679.00 [CPS]
3 Sep28,07	13:55:03	CALIPER	8.000 [INCH]	426280.00 [CPS]
4 Sep28,07	13:55:08	DEN(LS)	1.000 [G/CC]	26203.00 [CPS]
4 Sep28,07	13:55:08	DEN(LS)	2.383 [G/CC]	2230.00 [CPS]
5 Sep28,07	13:55:14	DEN(SS)	1.000 [G/CC]	46913.00 [CPS]
5 Sep28,07	13:55:14	DEN(SS)	2.383 [G/CC]	15843.00 [CPS]
6 Sep28,07	13:55:20	CALIPERL	4.000 [INCH]	102730.00 [CPS]
6 Sep28,07	13:55:20	CALIPERL	12.000 [INCH]	357523.00 [CPS]
7 Sep28,07	13:55:24	CURRENT	0.000 [UA]	3639.00 [CPS]
7 Sep28,07	13:55:24	CURRENT	284.960 [UA]	27413.00 [CPS]
8 Sep28,07	13:14:43	F	Default [CPS]	
8 Sep28,07	13:14:43	X	Default [CPS]	

GAMMA-RES-DENSITY
GOLDER
SHOB-141

COMPANY	GOLDER ASSOCIATES, INC.	
WELL	SHOB-141	
FIELD	SHP	
COUNTY	STARK	
STATE	NORTH DAKOTA	
LOCATION		
SECTION	N/A	
TOWNSHIP	N/A	
RANGE	N/A	
API NO.	N/A	
UNIQUE WELL ID.	N/A	
PERMANENT DATUM	[GL]	ELEVATION KB N/A
LOG MEASURED FROM	[GL]	ELEVATION DF N/A
DRL MEASURED FROM	[GL]	ELEVATION GL N/A
DATE	10/04/07	
DEPTH DRILLER	:110	
BIT SIZE	5.625	
LOG TOP	:3.80	
LOG BOTTOM	:109.30	
CASING OD	N/A	
CASING BOTTOM	N/A	
CASING TYPE	N/A	
BOREHOLE FLUID	WATER	
RM TEMPERATURE	N/A	
MUD RES	N/A	
MUD WEIGHT	8.5	
WITNESSED BY	J. ELLIOT	
RECORDED BY	M. SUTTON	
REMARKS 1		
REMARKS 2		
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS		

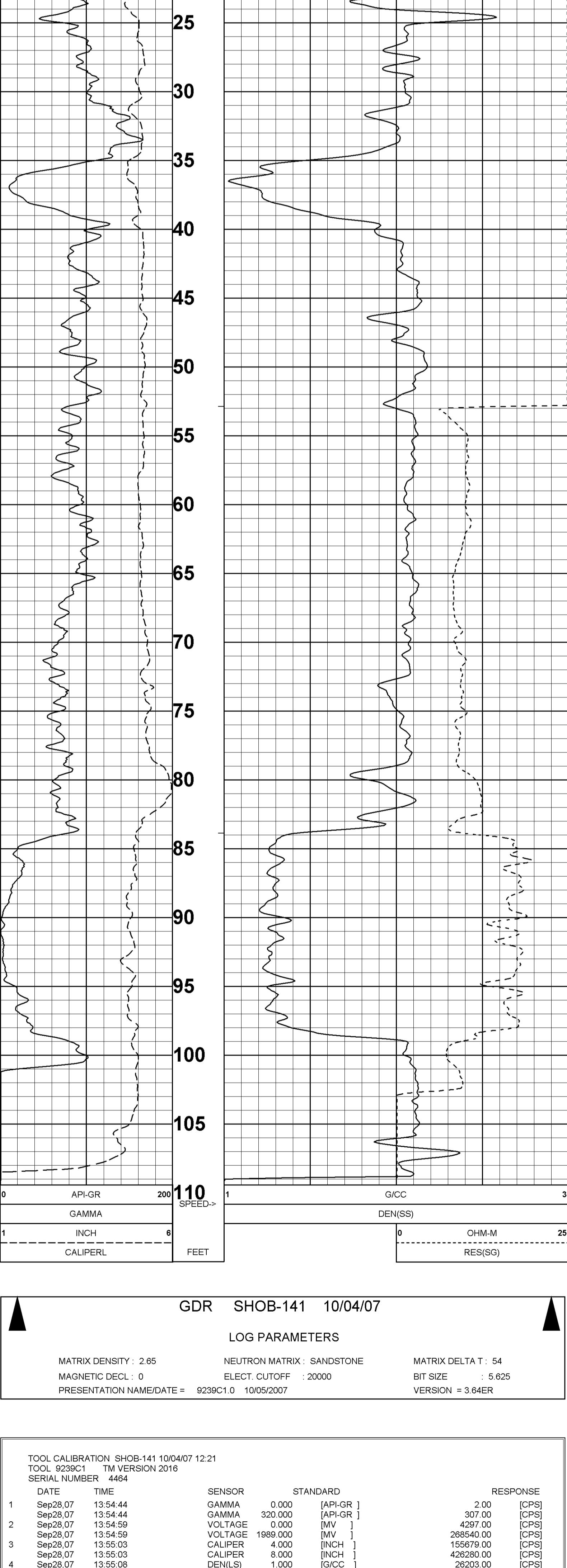
GDR SHOB-141 10/04/07

LOG PARAMETERS

MATRIX DENSITY : 2.65
MAGNETIC DECL : 0
PRESENTATION NAME/DATE = 9239C1.0 10/05/2007

NEUTRON MATRIX : SANDSTONE
ELECT. CUTOFF : 20000

MATRIX DELTA T : 54
BIT SIZE : 5.625
VERSION = 3.64ER



GDR SHOB-141 10/04/07

LOG PARAMETERS

MATRIX DENSITY : 2.65

NEUTRON MATRIX : SANDSTONE

MATRIX DELTA T : 54

MAGNETIC DECL : 0

ELECT. CUTOFF : 20000

BIT SIZE : 5.625

PRESENTATION NAME/DATE = 9239C1.0 10/05/2007

VERSION = 3.64ER

TOOL CALIBRATION SHOB-141 10/04/07 12:21		STANDARD		RESPONSE	
DATE	TIME	SENSOR			
1	Sep28,07 13:54:44	GAMMA	0.000	[API-GR]	2.00 [CPS]
Sep28,07	13:54:44	GAMMA	320.000	[API-GR]	307.00 [CPS]
2	Sep28,07 13:54:59	VOLTAGE	0.000	[MV]	4297.00 [CPS]
Sep28,07	13:54:59	VOLTAGE	1989.000	[MV]	268540.00 [CPS]
3	Sep28,07 13:55:03	CALIPER	4.000	[INCH]	155679.00 [CPS]
Sep28,07	13:55:03	CALIPER	8.000	[INCH]	426280.00 [CPS]
4	Sep28,07 13:55:08	DEN(LS)	1.000	[G/CC]	26203.00 [CPS]
Sep28,07	13:55:08	DEN(LS)	2.383	[G/CC]	2230.00 [CPS]
5	Sep28,07 13:55:14	DEN(SS)	1.000	[G/CC]	46913.00 [CPS]
Sep28,07	13:55:14	DEN(SS)	2.383	[G/CC]	15843.00 [CPS]
6	Sep28,07 13:55:20	CALIPERL	4.000	[INCH]	102730.00 [CPS]
Sep28,07	13:55:20	CALIPERL	12.000	[INCH]	357523.00 [CPS]
7	Sep28,07 13:55:24	CURRENT	0.000	[UA]	3639.00 [CPS]
Sep28,07	13:55:24	CURRENT	284.960	[UA]	27413.00 [CPS]
8	Sep28,07 13:14:43	F	Default	[CPS]	
9	Sep28,07 13:14:43	X	Default	[CPS]	

Century
WIRELINE SERVICES

GAMMA-RES-DENSITY
GOLDER
SHOB-142

COMPANY	GOLDER ASSOCIATES, INC.
WELL	SHOB-142
FIELD	SHIP
COUNTY	STARK
STATE	NORTH DAKOTA
LOCATION	:
SECTION	n/a
TOWNSHIP	n/a
RANGE	n/a
API NO.	n/a
UNIQUE WELL ID.	n/a
PERMANENT DATUM	GL
LOG MEASURED FROM	GL
DRL MEASURED FROM	GL
DATE	:10/05/07
DEPTH DRILLER	80
BIT SIZE	.625
LOG TOP	2.40
CASING BOTTOM	77.60
CASING OD	n/a
CASING TYPE	n/a
BOREHOLE FLUID	WATER
RM TEMPERATURE	n/a
MUD RES	n/a
MUD WEIGHT	8.5
WITNESSED BY	J. ELLIOT
RECORDED BY	M. SUTTON
REMARKS 1	:
REMARKS 2	:

OTHER SERVICES:
NONE

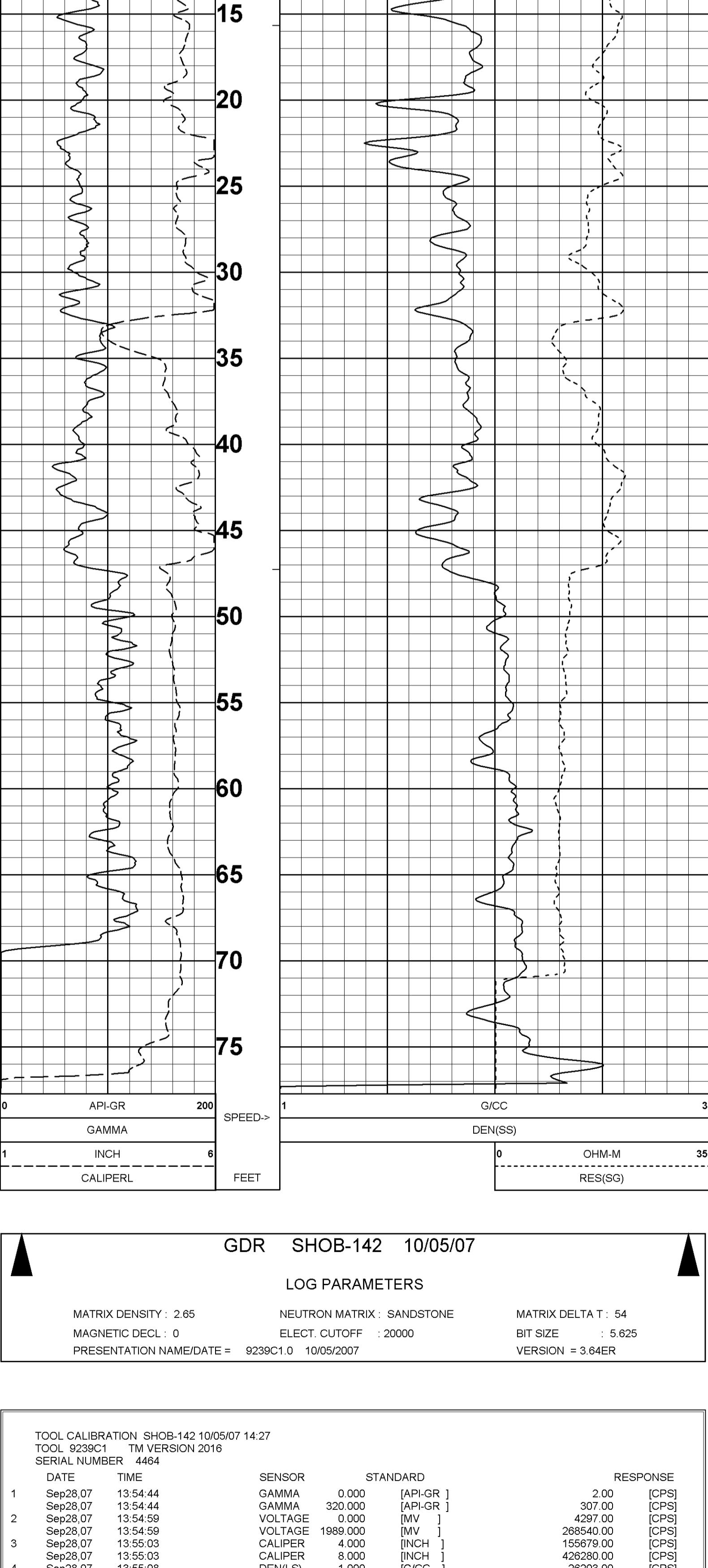
GDR SHOB-142 10/05/07

LOG PARAMETERS

MATRIX DENSITY : 2.65
MAGNETIC DECL : 0
PRESENTATION NAME/DATE = 9239C1.0 10/05/2007

NEUTRON MATRIX : SANDSTONE
ELECT. CUTOFF : 20000

MATRIX DELTA T : 54
BIT SIZE : 5.625
VERSION = 3.64ER



GDR SHOB-142 10/05/07

LOG PARAMETERS

MATRIX DENSITY : 2.65 NEUTRON MATRIX : SANDSTONE MATRIX DELTA T : 54
MAGNETIC DECL : 0 ELECT. CUTOFF : 20000 BIT SIZE : 5.625
PRESENTATION NAME/DATE = 9239C1.0 10/05/2007 VERSION = 3.64ER

TOOL CALIBRATION SHOB-142 10/05/07 14:27
TOOL 9239C1 TM VERSION 2016
SERIAL NUMBER 4464

	DATE	TIME	SENSOR	STANDARD	RESPONSE
1	Sep28,07	13:54:44	GAMMA	0.000 [API-GR]	2.00 [CPS]
	Sep28,07	13:54:44	GAMMA	320.000 [API-GR]	307.00 [CPS]
2	Sep28,07	13:54:59	VOLTAGE	0.000 [MV]	4297.00 [CPS]
	Sep28,07	13:54:59	VOLTAGE	1989.000 [MV]	268540.00 [CPS]
3	Sep28,07	13:55:03	CALIPER	4.000 [INCH]	155679.00 [CPS]
	Sep28,07	13:55:03	CALIPER	8.000 [INCH]	426280.00 [CPS]
4	Sep28,07	13:55:08	DEN(LS)	1.000 [G/CC]	26203.00 [CPS]
	Sep28,07	13:55:08	DEN(LS)	2.383 [G/CC]	2230.00 [CPS]
5	Sep28,07	13:55:14	DEN(SS)	1.000 [G/CC]	46913.00 [CPS]
	Sep28,07	13:55:14	DEN(SS)	2.383 [G/CC]	15843.00 [CPS]
6	Sep28,07	13:55:20	CALIPER	4.000 [INCH]	102730.00 [CPS]
	Sep28,07	13:55:20	CALIPER	12.000 [INCH]	357523.00 [CPS]
7	Sep28,07	13:55:24	CURRENT	0.000 [UA]	3639.00 [CPS]
	Sep28,07	13:55:24	CURRENT	284.960 [UA]	27413.00 [CPS]
8	Sep28,07	13:14:43	F	Default [CPS]	
9	Sep28,07	13:14:43	X	Default [CPS]	

GAMMA-RES-DENSITY
GOLDER
SHOB-143

COMPANY	GOLDER ASSOCIATES, INC.	
WELL	SHOB-143	
FIELD	SHIP	
COUNTY	STARK	
STATE	NORTH DAKOTA	
LOCATION		
SECTION	N/A	
TOWNSHIP	N/A	
RANGE	N/A	
API NO.	N/A	
UNIQUE WELL ID.	N/A	
PERMANENT DATUM	:GL	ELEVATION KB N/A
LOG MEASURED FROM	:GL	ELEVATION DF N/A
DRI MEASURED FROM	:GL	ELEVATION GL N/A
DATE	:10/06/07	
DEPTH DRILLER	:100	
BIT SIZE	\$625	
LOG TOP	:460	
LOG BOTTOM	\$3.50	
CASING OD	N/A	
CASING BOTTOM	N/A	
CASING TYPE	N/A	
BOREHOLE FLUID	WATER	
RM TEMPERATURE	N/A	
MUD RES	N/A	
MUD WEIGHT	3.5	
WITNESSED BY	J. ELLIOT	
RECORDED BY	M SUTTON	
REMARKS 1		
REMARKS 2		

GDR SHOB-143 10/06/07

LOG PARAMETERS

MATRIX DENSITY : 2.65

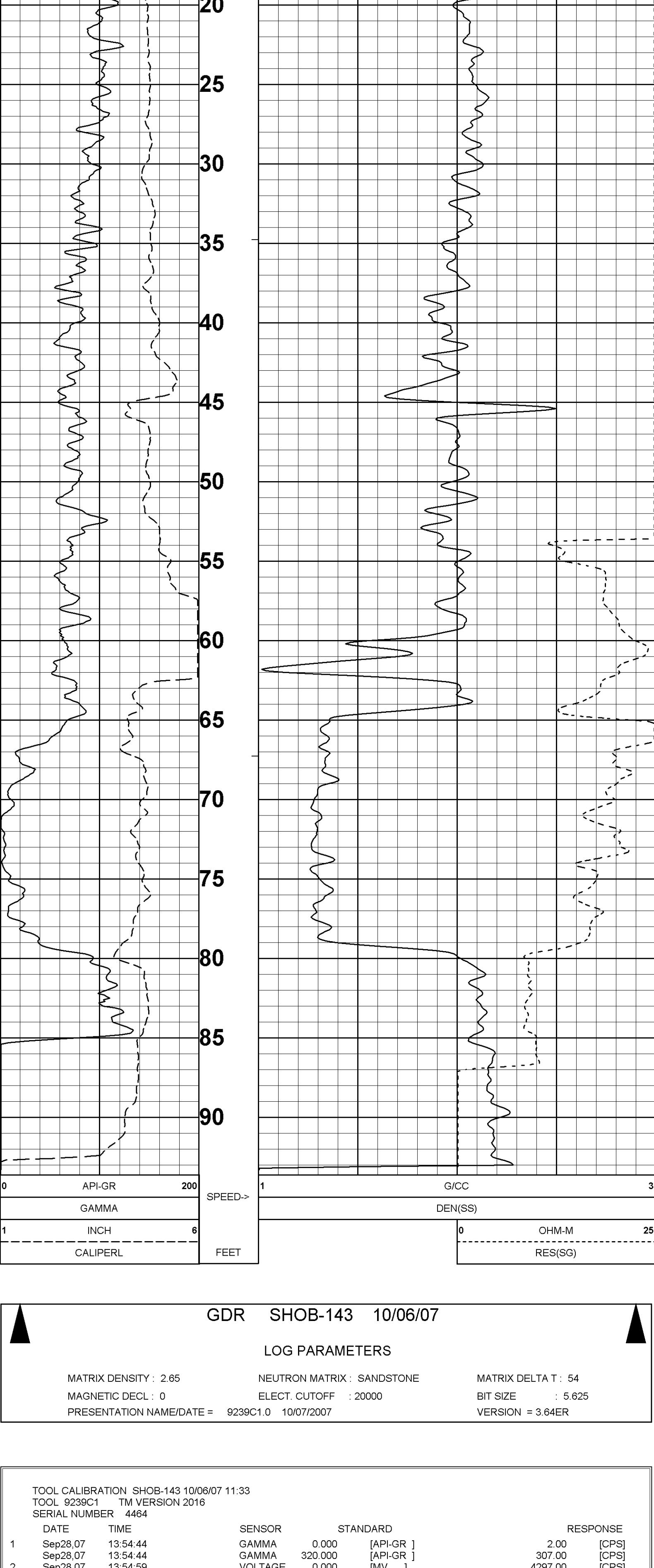
MAGNETIC DECL : 0

PRESENTATION NAME/DATE = 9239C1.0 10/07/2007

MATRIX DELTA T : 54

BIT SIZE : 5.625

VERSION = 3.64ER



GDR SHOB-143 10/06/07

LOG PARAMETERS

MATRIX DENSITY : 2.65

MAGNETIC DECL : 0

PRESENTATION NAME/DATE = 9239C1.0 10/07/2007

MATRIX DELTA T : 54

BIT SIZE : 5.625

VERSION = 3.64ER

DATE	TIME	SENSOR	STANDARD	RESPONSE
1 Sep28,07	13:54:44	GAMMA	0.000 [API-GR]	2.00 [CPS]
1 Sep28,07	13:54:44	GAMMA	320.000 [API-GR]	307.00 [CPS]
2 Sep28,07	13:54:59	VOLTAGE	0.000 [MV]	4297.00 [CPS]
2 Sep28,07	13:54:59	VOLTAGE	1989.000 [MV]	268540.00 [CPS]
3 Sep28,07	13:55:03	CALIPER	4.000 [INCH]	155679.00 [CPS]
3 Sep28,07	13:55:03	CALIPER	8.000 [INCH]	426280.00 [CPS]
4 Sep28,07	13:55:08	DEN(LS)	1.000 [G/CC]	26203.00 [CPS]
4 Sep28,07	13:55:08	DEN(LS)	2.383 [G/CC]	2230.00 [CPS]
5 Sep28,07	13:55:14	DEN(SS)	1.000 [G/CC]	46913.00 [CPS]
5 Sep28,07	13:55:14	DEN(SS)	2.383 [G/CC]	15843.00 [CPS]
6 Sep28,07	13:55:20	CALIPERL	4.000 [INCH]	102730.00 [CPS]
6 Sep28,07	13:55:20	CALIPERL	12.000 [INCH]	357523.00 [CPS]
7 Sep28,07	13:55:24	CURRENT	0.000 [UA]	3639.00 [CPS]
7 Sep28,07	13:55:24	CURRENT	284.960 [UA]	27413.00 [CPS]
8 Sep28,07	13:14:43	F	Default [CPS]	
8 Sep28,07	13:14:43	X	Default [CPS]	

TOOL CALIBRATION SHOB-143 10/06/07 11:33
TOOL 9239C1 TM VERSION 2016
SERIAL NUMBER 4464

Century
WIRELINE SERVICES

GAMMA-RES-DENSITY
GOLDER
SHOB-144

COMPANY	GOLDER ASSOCIATES, INC.	
WELL	SHOB-144	
FIELD	SHP	
COUNTY	STARK	
STATE	NORTH DAKOTA	
LOCATION	N/A	
SECTION	N/A	
TOWNSHIP	N/A	
RANGE	N/A	
API NO.	N/A	
UNIQUE WELL ID.	N/A	
PERMANENT DATUM	GL	ELEVATION KB N/A
LOG MEASURED FROM	GL	ELEVATION DF N/A
DRI. MEASURED FROM	GL	ELEVATION GL N/A
DATE	10/05/07	
DEPTH DRILLER	:100	
BIT SIZE	5.625	
LOG TOP	-2.70	
LOG BOTTOM	87.90	
CASING OD	N/A	
CASING BOTTOM	N/A	
CASING TYPE	N/A	
BOREHOLE FLUID	WATER	
RM TEMPERATURE	N/A	
MUD RES	N/A	
MUD WEIGHT	8.5	
WITNESSED BY	J. ELLIOT	
RECORDED BY	M. SUTTON	
REMARKS 1		
REMARKS 2		

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

GDR SHOB-144 10/05/07

LOG PARAMETERS

MATRIX DENSITY : 2.65

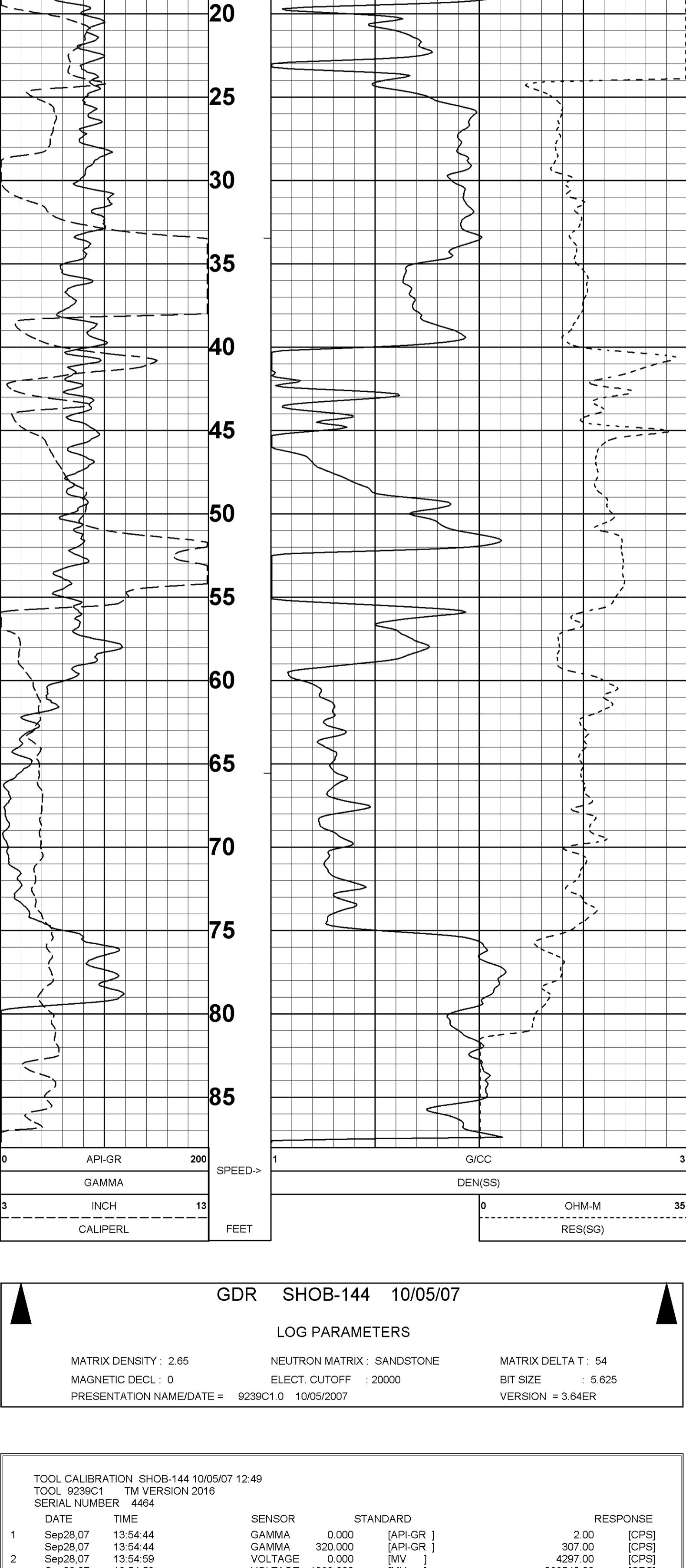
MAGNETIC DECL : 0

PRESENTATION NAME/DATE = 9239C1.0 10/05/2007

MATRIX DELTA T : 54

BIT SIZE : 5.625

VERSION = 3.64ER



TOOL CALIBRATION SHOB-144 10/05/07 12:49

TOOL 9239C1 TM VERSION 2016

SERIAL NUMBER 4464

	DATE	TIME	SENSOR	STANDARD	RESPONSE
1	Sep28,07	13:54:44	GAMMA	0.000 [API-GR]	2.00 [CPS]
	Sep28,07	13:54:44	GAMMA	320.000 [API-GR]	307.00 [CPS]
2	Sep28,07	13:54:59	VOLTAGE	0.000 [MV]	4297.00 [CPS]
	Sep28,07	13:54:59	VOLTAGE	1989.000 [MV]	268540.00 [CPS]
3	Sep28,07	13:55:03	CALIPER	4.000 [INCH]	155679.00 [CPS]
	Sep28,07	13:55:03	CALIPER	8.000 [INCH]	426280.00 [CPS]
4	Sep28,07	13:55:08	DEN(LS)	1.000 [G/CC]	26203.00 [CPS]
	Sep28,07	13:55:08	DEN(LS)	2.383 [G/CC]	2230.00 [CPS]
5	Sep28,07	13:55:14	DEN(SS)	1.000 [G/CC]	46913.00 [CPS]
	Sep28,07	13:55:14	DEN(SS)	2.383 [G/CC]	15843.00 [CPS]
6	Sep28,07	13:55:20	CALIPERL	4.000 [INCH]	102730.00 [CPS]
	Sep28,07	13:55:20	CALIPERL	12.000 [INCH]	357523.00 [CPS]
7	Sep28,07	13:55:24	CURRENT	0.000 [UA]	3639.00 [CPS]
	Sep28,07	13:55:24	CURRENT	284.960 [UA]	27413.00 [CPS]
8	Sep28,07	13:14:43	F	Default [CPS]	
9	Sep28,07	13:14:43	X	Default [CPS]	

GDR SHOB-144 10/05/07

LOG PARAMETERS

MATRIX DENSITY : 2.65

MAGNETIC DECL : 0

PRESENTATION NAME/DATE = 9239C1.0 10/05/2007

MATRIX DELTA T : 54

BIT SIZE : 5.625

VERSION = 3.64ER

BRAUN
INTERTEC

Geophysical E-Logging Division
820 South 18th Street
Bismarck, ND 58504
701.255.7180

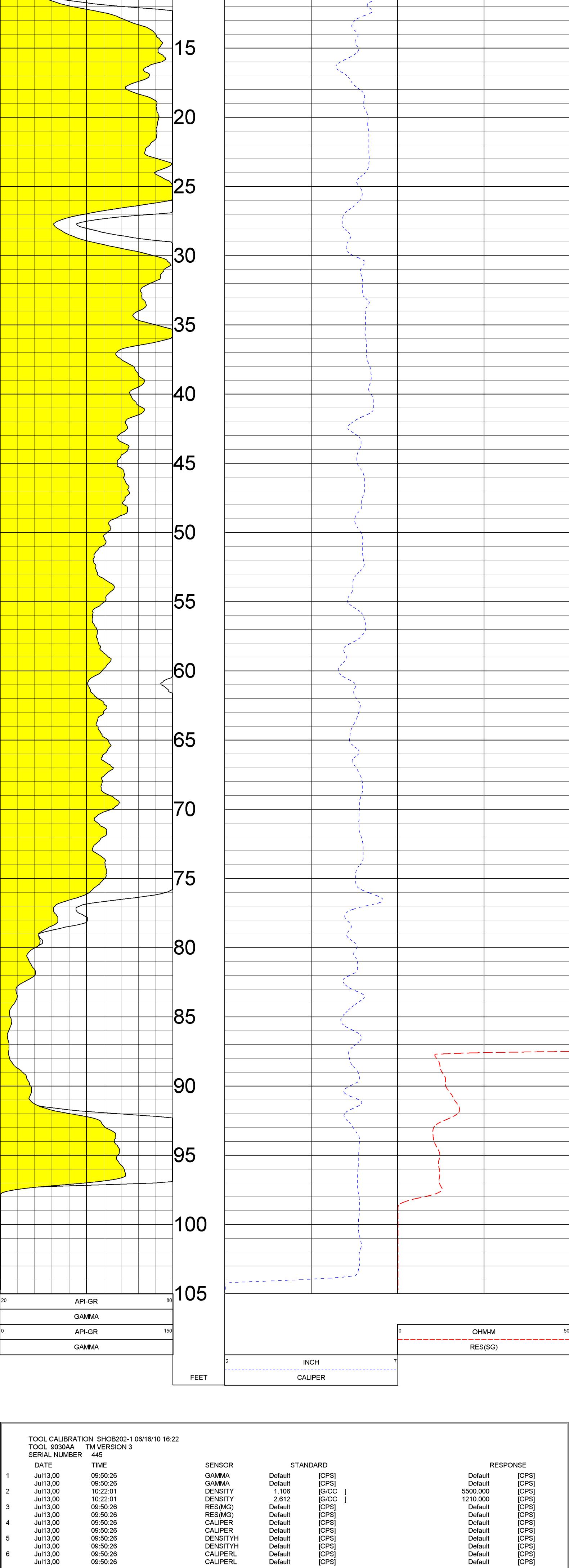
SOUTH HEART COAL LLC.
SOUTH HEART
SHOB202-1

GAMMA-RES-DENSITY

COMPANY : South Heart
WELL : SHOB202-1GAMMA-RES-DENSITY
FIELD : GAMMA-RES-DENSITY
COUNTY :
STATE : ND
LOCATION : NE 1/4
SECTION : 16
TOWNSHIP : 139N
RANGE : 98W
API NO. : 1234567819999999
UNIQUE WELL ID. :

OTHER SERVICES:

PERMANENT DATUM : GL
LOG MEASURED FROM: GL
DRL MEASURED FROM: GL
DATE : 06/16/10
DEPTH DRILLER : 110
BIT SIZE : 4.5
LOG TOP : 160
LOG BOTTOM : 104.90
CASING OD :
CASING BOTTOM :
CASING TYPE :
BOREHOLE FLUID : WATER
RM TEMPERATURE :
MUD RES : .179
WITNESSED BY :
RECORDED BY : SANFORD TAN
REMARKS 1 :
REMARKS 2 :
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS.



TOOL CALIBRATION SHOB202-1 06/16/10 16:22				RESPONSE	
TOOL 9030AA TM VERSION 3					
SERIAL NUMBER 445					
DATE	TIME	SENSOR	STANDARD		
1	Jul13.00	09:50:26	GAMMA	Default	[CPS]
	Jul13.00	09:50:26	GAMMA	Default	[CPS]
2	Jul13.00	10:22:01	DENSITY	1.106	[G/CC]
	Jul13.00	10:22:01	DENSITY	2.612	[G/CC]
3	Jul13.00	09:50:26	RES(MG)	Default	[CPS]
	Jul13.00	09:50:26	RES(MG)	Default	[CPS]
4	Jul13.00	09:50:26	CALIPER	Default	[CPS]
	Jul13.00	09:50:26	CALIPER	Default	[CPS]
5	Jul13.00	09:50:26	DENSITYH	Default	[CPS]
	Jul13.00	09:50:26	DENSITYH	Default	[CPS]
6	Jul13.00	09:50:26	CALIPERL	Default	[CPS]
	Jul13.00	09:50:26	CALIPERL	Default	[CPS]