



**COMPENSATED
DENSITY / NEUTRON
LOG**

Company CHARTER ENERGY, INC.

Well KLUG #1

Field SUNFLOWER

County BARTON State KANSAS

Location: API # : 15-009-26291-0000

2025' FSL & 1890' FWL
SE - NW - NE - SW

Other Services
DIL/MEI

SEC 8 TWP 17S RGE 12W

Elevation

Permanent Datum GROUND LEVEL Elevation 1904
Log Measured From KELLY BUSHING 8' A.G.L.
Drilling Measured From KELLY BUSHING

K.B. 1912
D.F. 1910
G.L. 1904

| | |
|------------------------------|---------------|
| Date | 10/12/20 |
| Run Number | ONE |
| Depth Driller | 3490 |
| Depth Logger | 3490 |
| Bottom Logged Interval | 3466 |
| Top Log Interval | 2800 |
| Casing Driller | 8 5/8"@400' |
| Casing Logger | 400 |
| Bit Size | 7 7/8" |
| Type Fluid in Hole | CHEMICAL MUD |
| Density / Viscosity | 9.1/54 |
| PH / Fluid Loss | 9.5/9.2 |
| Source of Sample | FLOWLINE |
| Rm @ Meas. Temp | .570@84F |
| Rmf @ Meas. Temp | .428@84F |
| Rmc @ Meas. Temp | .684@84F |
| Source of Rmf / Rmc | MEASUREMENT |
| Rm @ BHT | .431@111F |
| Time Circulation Stopped | 2 HOURS |
| Time Logger on Bottom | 1:30 P.M. |
| Maximum Recorded Temperature | 111F |
| Equipment Number | 922339 |
| Location | HAYS, KANSAS |
| Recorded By | JEFF LUEBBERS |
| Witnessed By | JIM MUSGROVE |

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All interpretations are opinions based on inferences from electrical or other measurements and we cannot and do not guarantee the accuracy or correctness of any interpretation, and we shall not, except in the case of gross or willful negligence on our part, be liable or responsible for any loss, costs, damages, or expenses incurred or sustained by anyone resulting from any interpretation made by any of our officers, agents or employees. These interpretations are also subject to our general terms and conditions set out in our current Price Schedule.

15-009-26291-0000

Comments

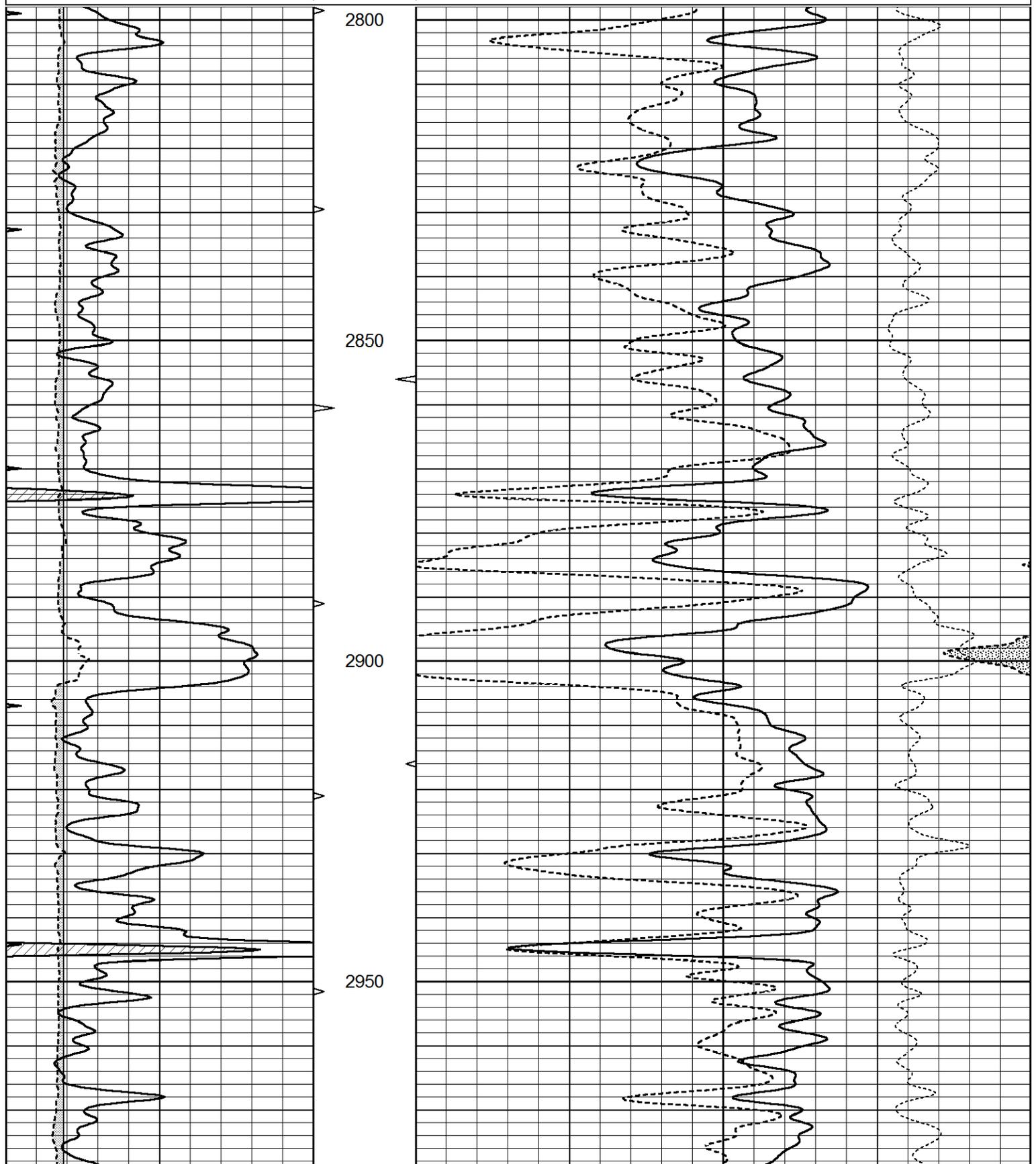
THANK YOU FOR USING E.L.I. WIRELINE SERVICES HAYS, KANSAS (785)628-6395
DIRECTIONS
BEAVER, KS., 4S., 1/2W., N. INTO

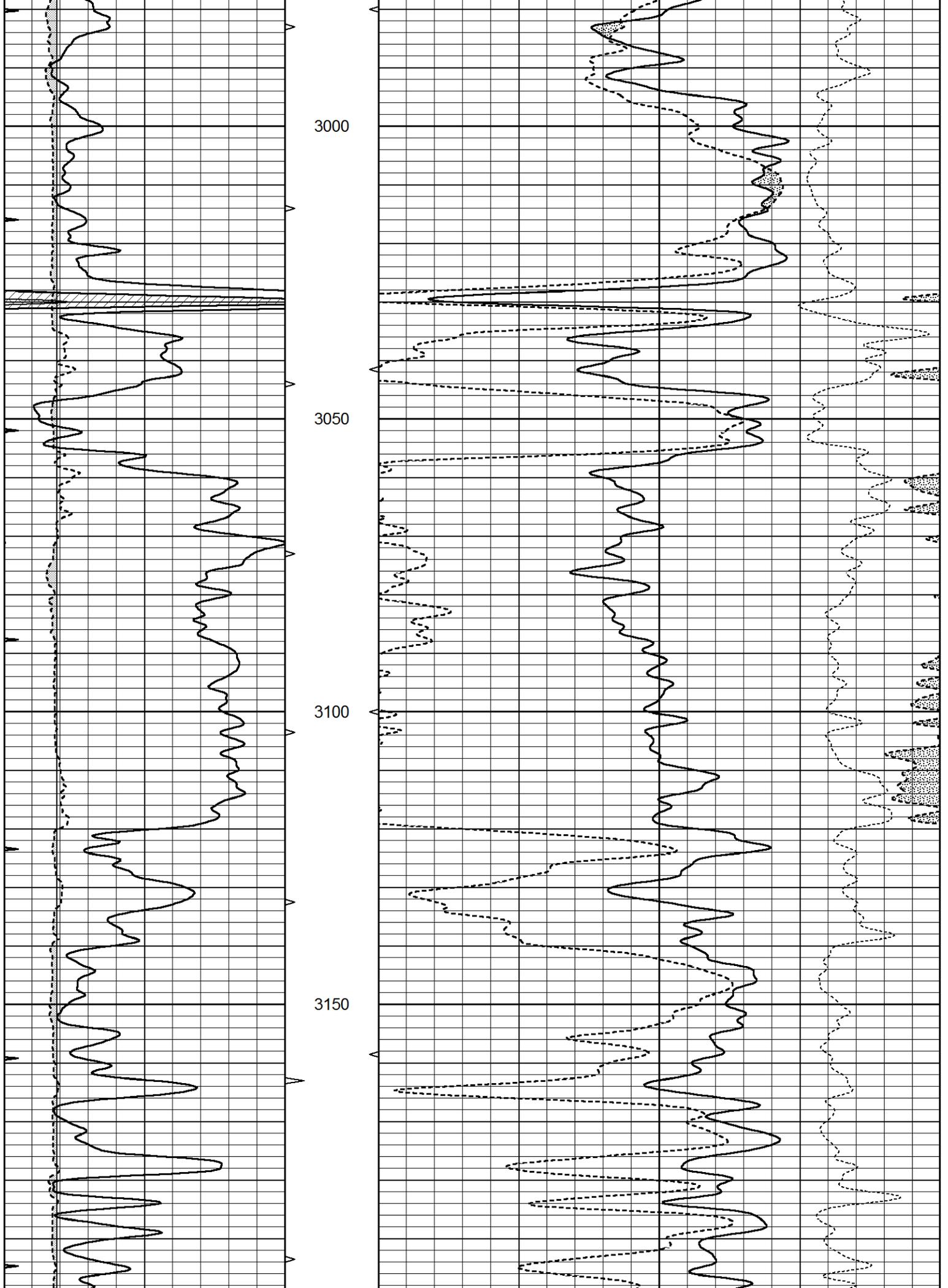


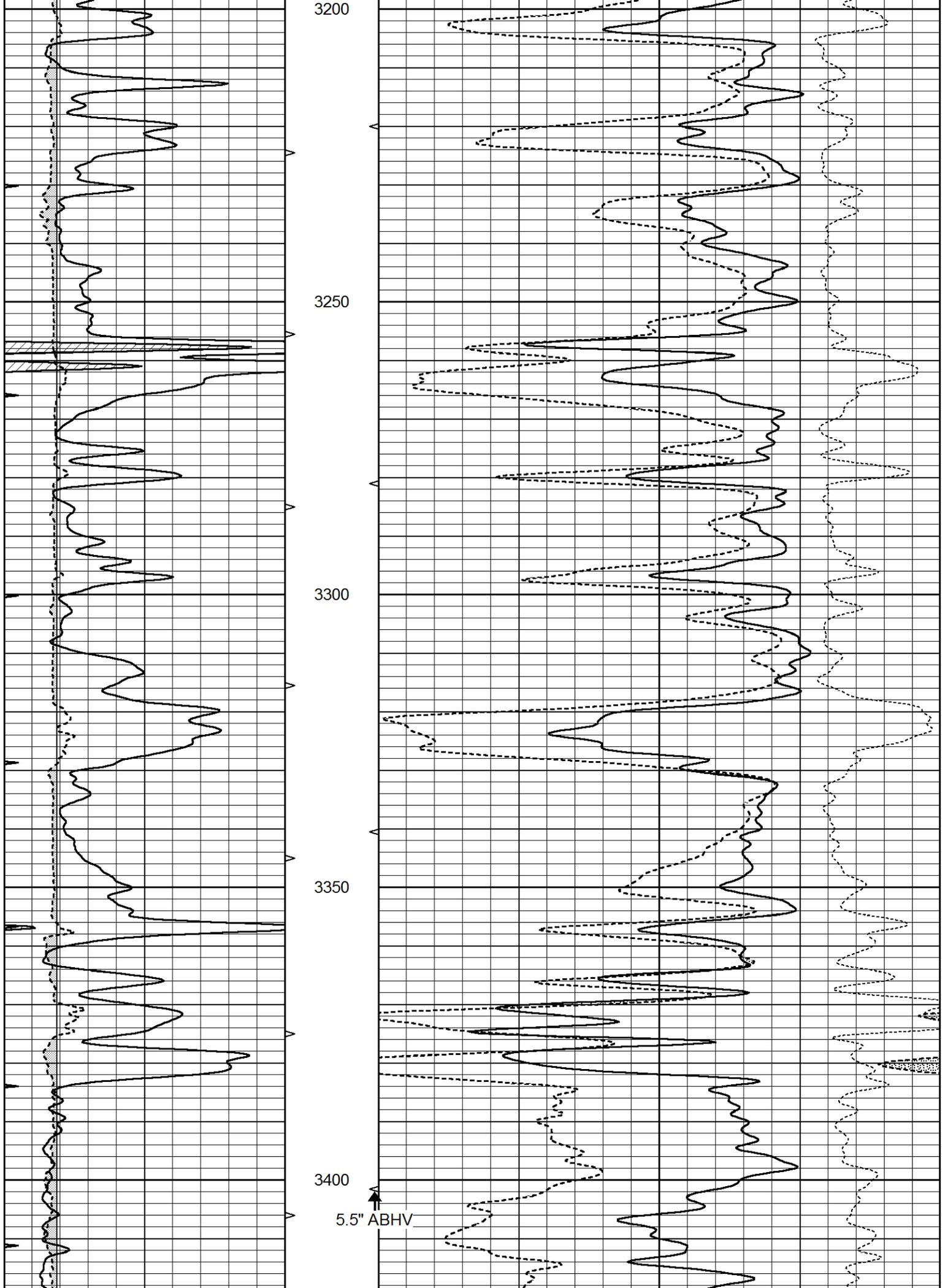
MAIN SECTION

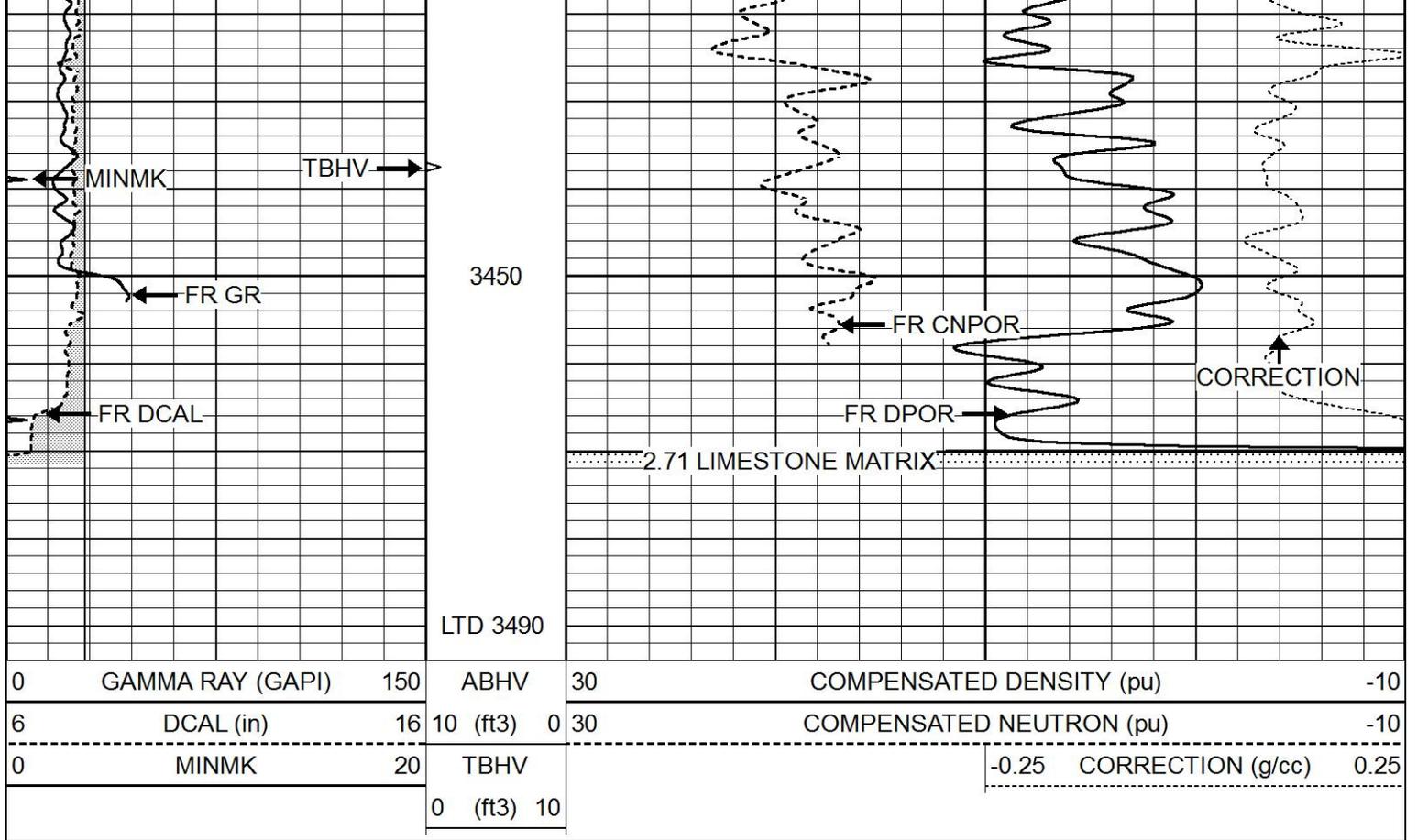
Database File 4812ddn.db
 Dataset Pathname pass3.8
 Presentation Format den_neu
 Dataset Creation Mon Oct 12 14:36:11 2020
 Charted by Depth in Feet scaled 1:240

| | | | | | | |
|---|------------------|-----|----------|----|--------------------------|------|
| 0 | GAMMA RAY (GAPI) | 150 | ABHV | 30 | COMPENSATED DENSITY (pu) | -10 |
| 6 | DCAL (in) | 16 | 10 (ft3) | 0 | COMPENSATED NEUTRON (pu) | -10 |
| 0 | MINMK | 20 | TBHV | | -0.25 CORRECTION (g/cc) | 0.25 |
| | | | 0 (ft3) | 10 | | |





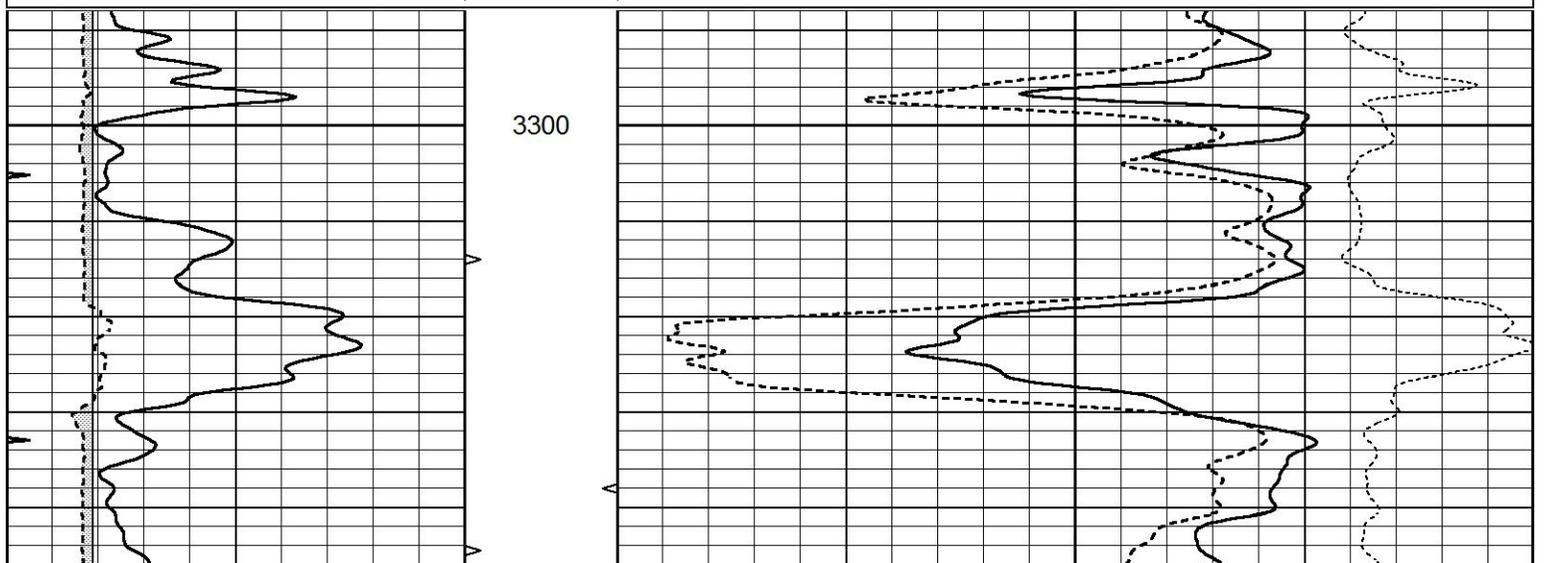


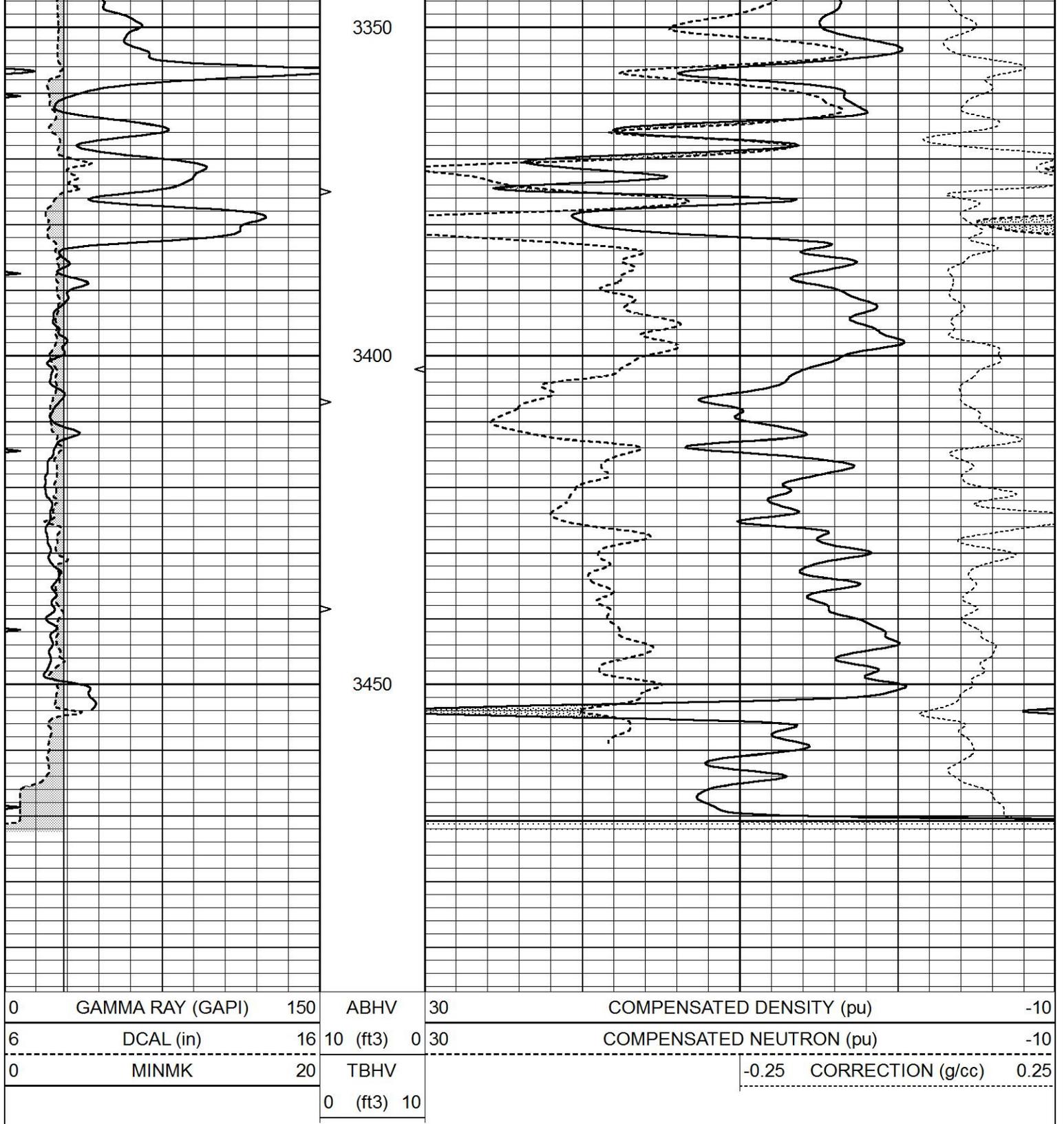


REPEAT SECTION

Database File 4812ddn.db
 Dataset Pathname pass2.5R
 Presentation Format den_neu
 Dataset Creation Mon Oct 12 13:48:22 2020
 Charted by Depth in Feet scaled 1:240

| | | | | | | |
|---|------------------|-----|----------|------|--------------------------|------|
| 0 | GAMMA RAY (GAPI) | 150 | ABHV | 30 | COMPENSATED DENSITY (pu) | -10 |
| 6 | DCAL (in) | 16 | 10 (ft3) | 0 30 | COMPENSATED NEUTRON (pu) | -10 |
| 0 | MINMK | 20 | TBHV | | -0.25 CORRECTION (g/cc) | 0.25 |
| | | | 0 (ft3) | 10 | | |



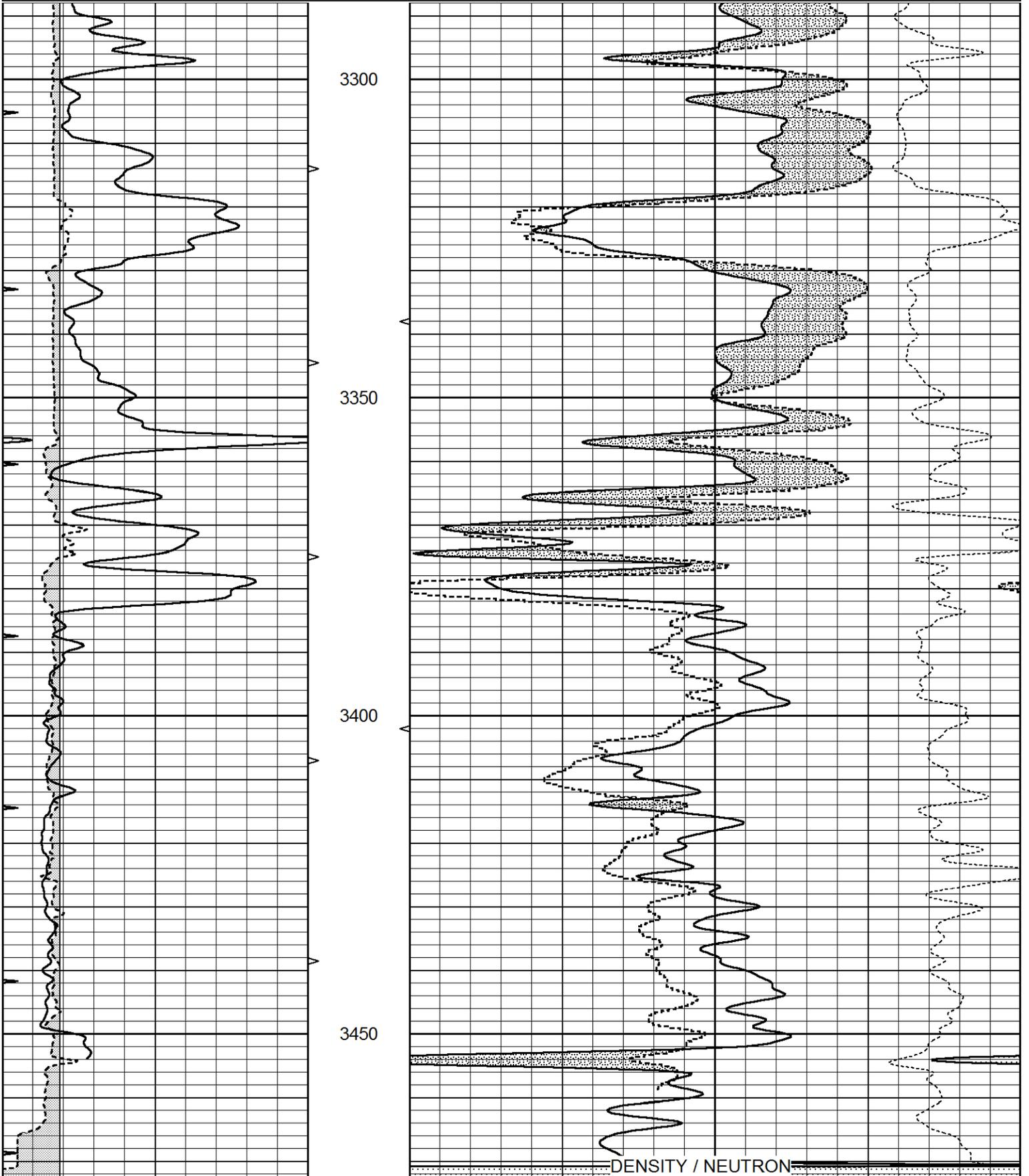


DOLOMITE MATRIX

Database File 4812ddn.db
 Dataset Pathname pass2.5D
 Presentation Format den_neu
 Dataset Creation Mon Oct 12 13:51:00 2020
 Charted by Depth in Feet scaled 1:240



| | | | | | | |
|---|-----------|----|----------|------|--------------------------|------|
| 6 | DCAL (in) | 16 | 10 (ft3) | 0 30 | COMPENSATED NEUTRON (pu) | -10 |
| 0 | MINMK | 20 | TBHV | | -0.25 CORRECTION (g/cc) | 0.25 |
| | | | 0 (ft3) | 10 | | |



2.81 ARBUCKLE DOLOMITE MATRIX

| | | | | | | | | | | |
|---|------------------|-----|----------|----|--------------------------|--------------------------|-------------------|--|------|-----|
| 0 | GAMMA RAY (GAPI) | 150 | ABHV | 30 | COMPENSATED DENSITY (pu) | | | | -10 | |
| 6 | DCAL (in) | 16 | 10 (ft3) | 0 | 30 | COMPENSATED NEUTRON (pu) | | | | -10 |
| 0 | MINMK | 20 | TBHV | | | -0.25 | CORRECTION (g/cc) | | 0.25 | |
| | | | 0 (ft3) | 10 | | | | | | |

Calibration Report

Database File 4812ddn.db
Dataset Pathname pass3.8
Dataset Creation Mon Oct 12 14:36:11 2020

Dual Induction Calibration Report

Serial-Model: PROBE7-DILG
Surface Cal Performed: Mon Oct 12 13:20:50 2020
Downhole Cal Performed: Thu Mar 12 11:45:10 2020
After Survey Verification Performed: Thu Mar 12 11:45:00 2020

Surface Calibration

| Loop: | Readings | | | | References | | | Results | |
|-----------|----------|-------|---|-------|------------|--------|---------|---------|---|
| | Air | Loop | | | Air | Loop | | m | b |
| Deep | -0.014 | 0.629 | V | 0.000 | 400.000 | mmho/m | 620.000 | 4.000 | |
| Medium | 0.039 | 0.728 | V | 0.000 | 464.000 | mmho/m | 675.000 | -54.000 | |
| Internal: | Zero | Cal | | Zero | Cal | | m | b | |
| Deep | 0.011 | 0.610 | V | 0.000 | 400.000 | mmho/m | 667.135 | -7.256 | |
| Medium | 0.005 | 0.712 | V | 0.000 | 464.000 | mmho/m | 655.677 | -3.102 | |

Downhole Calibration

| | Readings | | | | References | | | Results | |
|--------|----------|--------|--------|---------|------------|--------|-------|---------|----|
| | Zero | Cal | | | Zero | Cal | | m' | b' |
| Deep | 0.000 | 0.000 | mmho/m | 14.508 | 388.384 | mmho/m | 1.000 | 0.000 | |
| Medium | 0.000 | 0.000 | mmho/m | 166.367 | 504.400 | mmho/m | 1.000 | 0.000 | |
| LL3 | | 7.500 | V | | 1400.000 | Ohm-m | | | |
| | | 0.000 | V | | 20.000 | Ohm-m | | | |
| | | -7.200 | V | | 4000.000 | mmho-m | | | |

After Survey Verification

| | Readings | | | | Targets | | | Results | |
|--------|----------|-------|--------|-------|----------|--------|-------|---------|----|
| | Zero | Cal | | | Zero | Cal | | m' | b' |
| Deep | 0.000 | 0.000 | mmho/m | 0.000 | 0.000 | mmho/m | 0.000 | 0.000 | |
| Medium | 0.000 | 0.000 | mmho/m | 0.000 | 0.000 | mmho/m | 0.000 | 0.000 | |
| LL3 | | 1.000 | Ohm-m | | 1.000 | Ohm-m | | | |
| | | 0.000 | Ohm-m | | 0.000 | Ohm-m | | | |
| | | 0.000 | mmho-m | | 4000.000 | mmho-m | | | |

Litho Density Calibration Report

Serial: 003 Model: PRB

Master Calibration

Performed Mon May 11 11:11:10 2020

| | Background | Magnesium | Aluminum | Aluminum+Fe | |
|----------|------------|-----------|----------|-------------|-----|
| Window 1 | 6088.4 | 14971.1 | 8028.3 | 7691.8 | cps |
| Window 2 | 5948.0 | 13017.2 | 7488.0 | 7264.1 | cps |
| Window 3 | 1282.1 | 5830.7 | 2242.8 | 2125.4 | cps |
| Window 4 | 365.4 | 367.2 | 362.0 | 364.6 | cps |

| | | | | | |
|-------------|-----|--------|--------|--------|------|
| Long Space | 0.0 | 7069.2 | 1540.0 | 1316.1 | cps |
| Short Space | 1.8 | 2869.4 | 1829.2 | 1548.1 | cps |
| Rho | | 1.7100 | 2.5900 | 0.0000 | g/cc |
| Pe | | 2.0000 | 2.7500 | 5.7900 | |

| | | | | | |
|-------------|--------|-------------|---------|---------------------|---------|
| Rib Angle | : 43.5 | Rib Slope | : 0.950 | Density/Spine Ratio | : 0.554 |
| Spine Angle | : 73.5 | Spine Slope | : 3.385 | Spine Intercept | : -18.1 |

Before Survey Verification

Performed Wed Dec 31 18:00:00 1969

| | | | | | |
|---------------------|-----|--------|--------|--------|------|
| Window 1 | 0.0 | 0.0 | 0.0 | 0.0 | cps |
| Window 2 | 0.0 | 0.0 | 0.0 | 0.0 | cps |
| Window 3 | 0.0 | 0.0 | 0.0 | 0.0 | cps |
| Window 4 | 0.0 | 0.0 | 0.0 | 0.0 | cps |
| Long Space | 0.0 | 0.0 | 0.0 | 0.0 | cps |
| Short Space | 0.0 | 0.0 | 0.0 | 0.0 | cps |
| Measured Rho | | 0.0000 | 0.0000 | 0.0000 | g/cc |
| Measured Correction | | 0.0000 | 0.0000 | 0.0000 | g/cc |
| Measured Pe | | | 0.0000 | 0.0000 | |

After Survey Verification

Performed Wed Dec 31 18:00:00 1969

| | | | | | |
|---------------------|-----|--------|--------|--------|------|
| Window 1 | 0.0 | 0.0 | 0.0 | 0.0 | cps |
| Window 2 | 0.0 | 0.0 | 0.0 | 0.0 | cps |
| Window 3 | 0.0 | 0.0 | 0.0 | 0.0 | cps |
| Window 4 | 0.0 | 0.0 | 0.0 | 0.0 | cps |
| Long Space | 0.0 | 0.0 | 0.0 | 0.0 | cps |
| Short Space | 0.0 | 0.0 | 0.0 | 0.0 | cps |
| Measured Rho | | 0.0000 | 0.0000 | 0.0000 | g/cc |
| Measured Correction | | 0.0000 | 0.0000 | 0.0000 | g/cc |
| Measured Pe | | | 0.0000 | 0.0000 | |

Compensated Neutron Calibration Report

Serial Number: 070808PMC
Tool Model: NABORS

PRE-SURVEY VERIFICATION

| Detector | Readings | Measured | Target |
|-------------|----------|----------|--------|
| Short Space | cps | | |
| Long Space | cps | pu | pu |

POST-SURVEY VERIFICATION

| Detector | Readings | Measured | Target |
|-------------|----------|----------|--------|
| Short Space | cps | | |
| Long Space | cps | pu | pu |

Gamma Ray Calibration Report

Serial Number: 070558
Tool Model: OPEN_GR
Performed: Wed Jul 03 10:25:53 2019

Calibrator Value: 1.0 GAPI

Background Reading: 0.0 cps
Calibrator Reading: 1.0 cps

Calibrator Reading:

1.0

cps

Sensitivity:

0.3000

GAPI/cps