

Bit Run Summary

| Type | | KCl/PHPA/Glycol | KCl/PHPA/Glycol | KCl/PHPA/Glycol | | | | | | |
|----------------------------|----------|-----------------|-----------------|-----------------|----------|----------|-----------|--|--|--|
| Mud weight | ppg | 9.60 | 9.70 | 9.85 | | | | | | |
| Solids | % | 4.2 | 5.0 | 6.0 | | | | | | |
| Chlorides | mg/L | 43000 | 45000 | 46000 | | | | | | |
| Rm | ohm.m@°C | 0.10@21.0 | 0.10@21.1 | 0.09@20.8 | | | | | | |
| Rmf | ohm.m@°C | 0.08@20.9 | 0.09@21.0 | 0.08@20.6 | | | | | | |
| Rmc | ohm.m@°C | 0.13@21.0 | 0.13@21.7 | 0.14@21.0 | | | | | | |
| Potassium | % | 8.0 | 8.0 | 8.0 | | | | | | |
| Environmental data | | | | | | | | | | |
| GR | | | | | | | | | | |
| Mud weight | ppg | 9.60 | 9.70 | 9.85 | | | | | | |
| Bit size | in. | 8.5 | 8.5 | 8.5 | | | | | | |
| Resistivity | | | | | | | | | | |
| Neutron porosity | | | | | | | | | | |
| Hole Size | in. | 8.5 | 8.5 | 8.5 | | | | | | |
| Mud weight | ppg | 9.60 | 9.70 | 9.85 | | | | | | |
| Temperature | °C | 65.0 | 68.0 | 87.0 | | | | | | |
| Mud salinity | ppm | 84775 | 76924 | 83929 | | | | | | |
| Formation salinity | | | | | | | | | | |
| Recording rate 1 | SEC | 5 sec. | 5 sec. | 5 sec. | | | | | | |
| Recording rate 2 | SEC | 5 sec. | 5 sec. | 5 sec. | | | | | | |
| Filtering GR | | 3 pt. | 3 pt. | 3 pt. | | | | | | |
| Filtering density | | 3 pt. | 3 pt. | 3 pt. | | | | | | |
| Filtering Neutron | | 3 pt. | 3 pt. | 3 pt. | | | | | | |
| Company representative | | R. Bain | M. Jackson | J. MacKinnon | | | | | | |
| Schlumberger D&M Personnel | | J. Dolan | M. Y. Tan | D. Hastie | T. Auger | C. Soper | B. Hanson | | | |

DISCLAIMER

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| | | | | | |
|--|--|---|--|--|--|
| OTHER SERVICES FOR RUN2 Xceed* RSS D&I Survey | | OTHER SERVICES FOR RUN3 Xceed* RSS D&I Survey | | OTHER SERVICES FOR RUN4 Xceed* RSS D&I Survey | |
| REMARKS: RUN NUMBER 2 8-1/2 in. hole section was drilled from 843.0 m to 1253.0 m. Depth is referenced to Driller's Depth. All data presented is from tool memory. Environmental Corrections: – GR is corrected for mud weight, tool and bit size, but not corrected for Potassium content. GVR* resistivity is corrected for bit size, mud resistivity and borehole temperature. Neutron porosity is calculated with a limestone matrix and is corrected for hole size (DCAV), borehole salinity, temperature and mud hydrogen index (derived from mud weight, temperature and pressure at depth). Surface temperature is adjusted to give a correct computed downhole temperature gradient. Neutron porosity data was processed without | | REMARKS: RUN NUMBER 3 8-1/2 in. hole section was drilled from 1253.0 m to 1902.0 m. Depth is referenced to Driller's Depth. All data presented is from tool memory. Environmental Corrections: – GR is corrected for mud weight, tool and bit size, but not corrected for Potassium content. GVR*6 resistivity is corrected for bit size, mud resistivity and borehole temperature. Neutron porosity is calculated with a limestone matrix and is corrected for hole size (DCAV), borehole salinity, temperature and mud hydrogen index (derived from mud weight, temperature and pressure at depth). Surface temperature is adjusted to give a correct computed downhole temperature gradient. Resistivity data was processed until the depth | | REMARKS: RUN NUMBER 4 8-1/2 in. hole section was drilled from 1902.0 m to 2641.0 m. Depth is referenced to Driller's Depth. All data presented is from tool memory. Environmental Corrections: – GR is corrected for mud weight, tool and bit size, but not corrected for Potassium content. GVR* resistivity is corrected for bit size, mud resistivity and borehole temperature. Neutron porosity is calculated with a limestone matrix and is corrected for hole size (DCAV), borehole salinity, temperature and mud hydrogen index (derived from mud weight, temperature and pressure at depth). Surface temperature is adjusted to give a correct computed downhole temperature gradient. Resistivity data between the interval of | |

FR11 and FR21.

of 1864.0 m MD.

1864.0 m to 1893.0 m MD was acquired by
reaming down the section.

EQUIPMENT DESCRIPTION

RUN2

RUN3

RUN4

DOWNHOLE EQUIPMENT

6-3/4 in. ADN*6C Neutron F 31.81 33.78
 S/N: 0403 Neutron N 31.66
 8-1/4 in. Stabiliser Density S 30.79
 NSR-M A202 Density L 30.69
 GSR-J A1994 UltraSonic 30.31
 Software: V8.3A02 R-O Port 29.55

6-3/4 in. Sonic*6 27.18
 S/N: 34641
 Software: V6.4B10
 Receiver Array 24.12
 R-O Port 23.72
 Transmitter 20.68

6-3/4 in. PowerPulse* 19.89
 MDC Z411
 MEC 212
 MDI 1096
 MVC 282
 Software: V8.0B96
 D&I 15.69

6-3/4 in. GVR* 11.54
 S/N: 191
 Software: V6.2B01
 Shallow 10.04
 Medium 9.92
 Deep 9.74
 Ring Res 9.57
 R-O Port 9.43
 GR 9.21

6-3/4 in. Xceed* RSS 7.89
 S/N: 060

DOWNHOLE EQUIPMENT

6-3/4 in. ADN*6C Neutron F 31.79 33.74
 S/N: FE55 Neutron N 31.64
 8-3/16 in. Stabiliser Density S 30.77
 NSR-M A202 Density L 30.67
 GSR-J A1994 UltraSonic 30.29
 Software: V8.3B02 R-O Port 29.53

6-3/4 in. Sonic*6 27.14
 S/N: 34641
 Software: V6.4B10
 Receiver Array 24.08
 R-O Port 23.68
 Transmitter 20.64

6-3/4 in. PowerPulse* 19.85
 MDC Z411
 MEC 212
 MDI 1096
 MVC 282
 Software: V8.0B96
 D&I 15.65

6-3/4 in. GVR* 11.50
 S/N: 191
 Software: V6.2B01
 Shallow 10.00
 Medium 9.88
 Deep 9.70
 Ring Res 9.53
 R-O Port 9.39
 GR 9.17

6-3/4 in. Xceed* RSS 7.85
 S/N: 060

DOWNHOLE EQUIPMENT

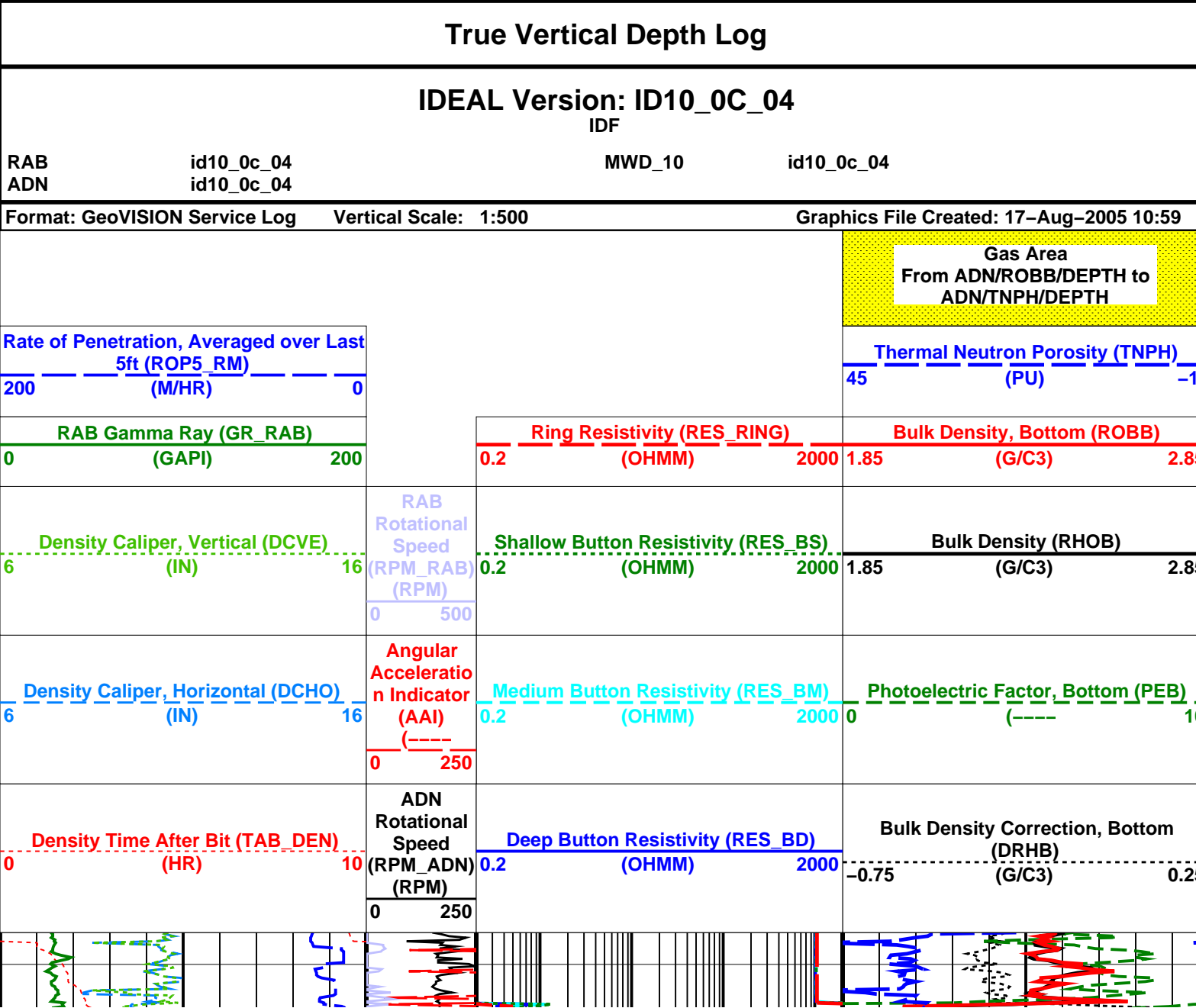
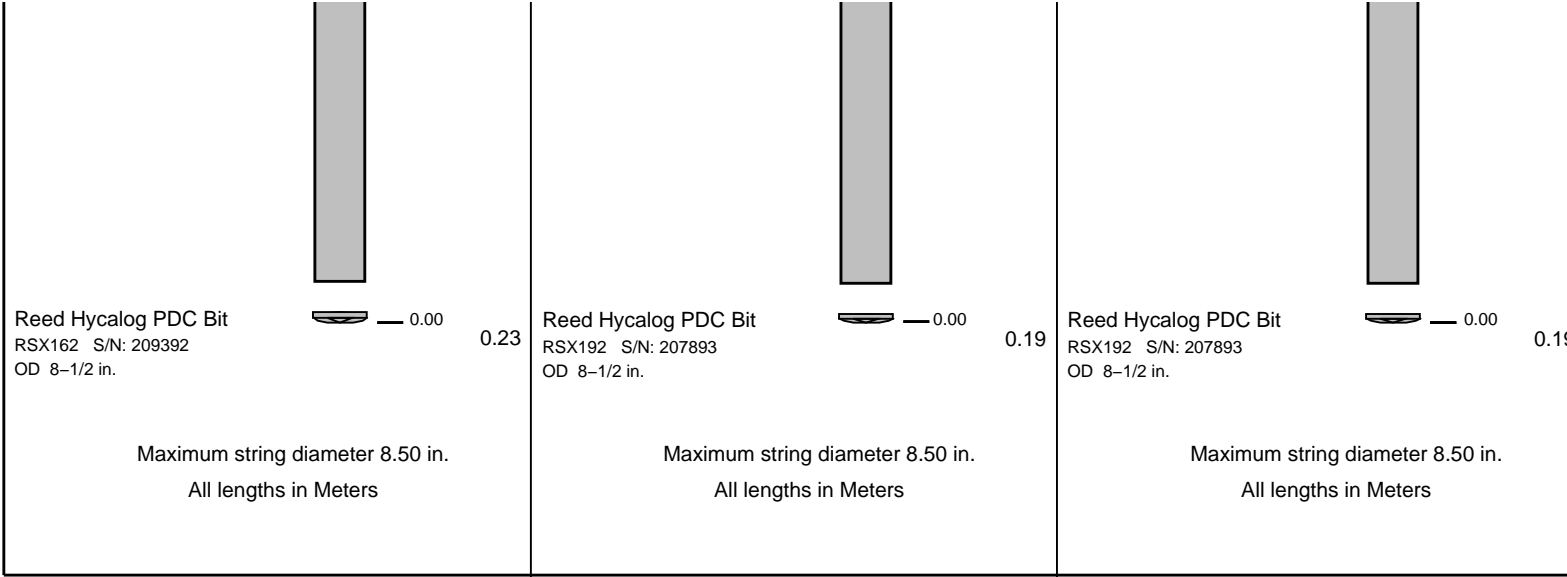
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 S/N: FE55 Neutron N 31.60
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 NSR-M A202 Density L 30.63
 GSR-J A1994 UltraSonic 30.25
 Software: V8.3B02 R-O Port 29.49

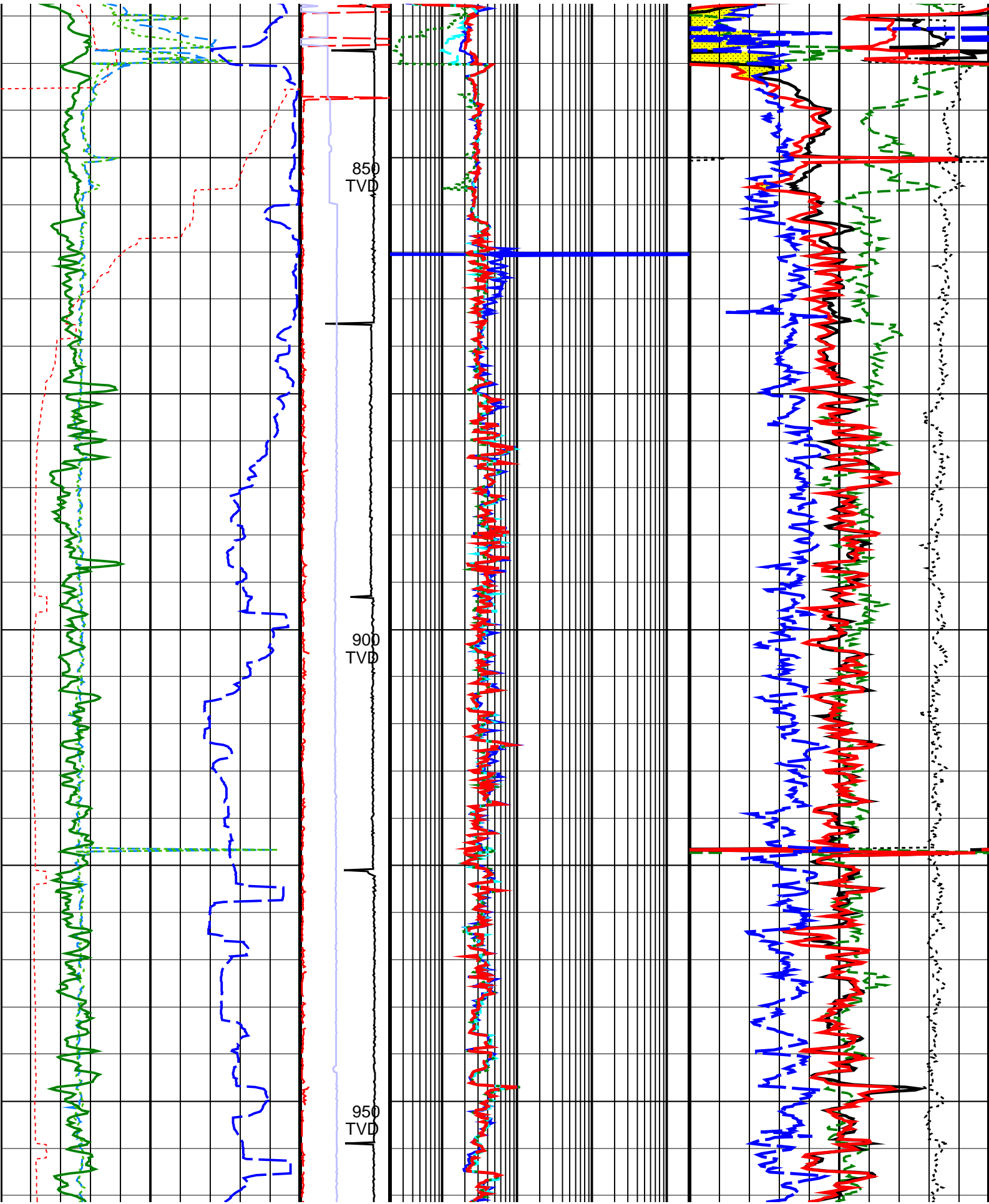
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 R-O Port 23.64
 Transmitter 20.60

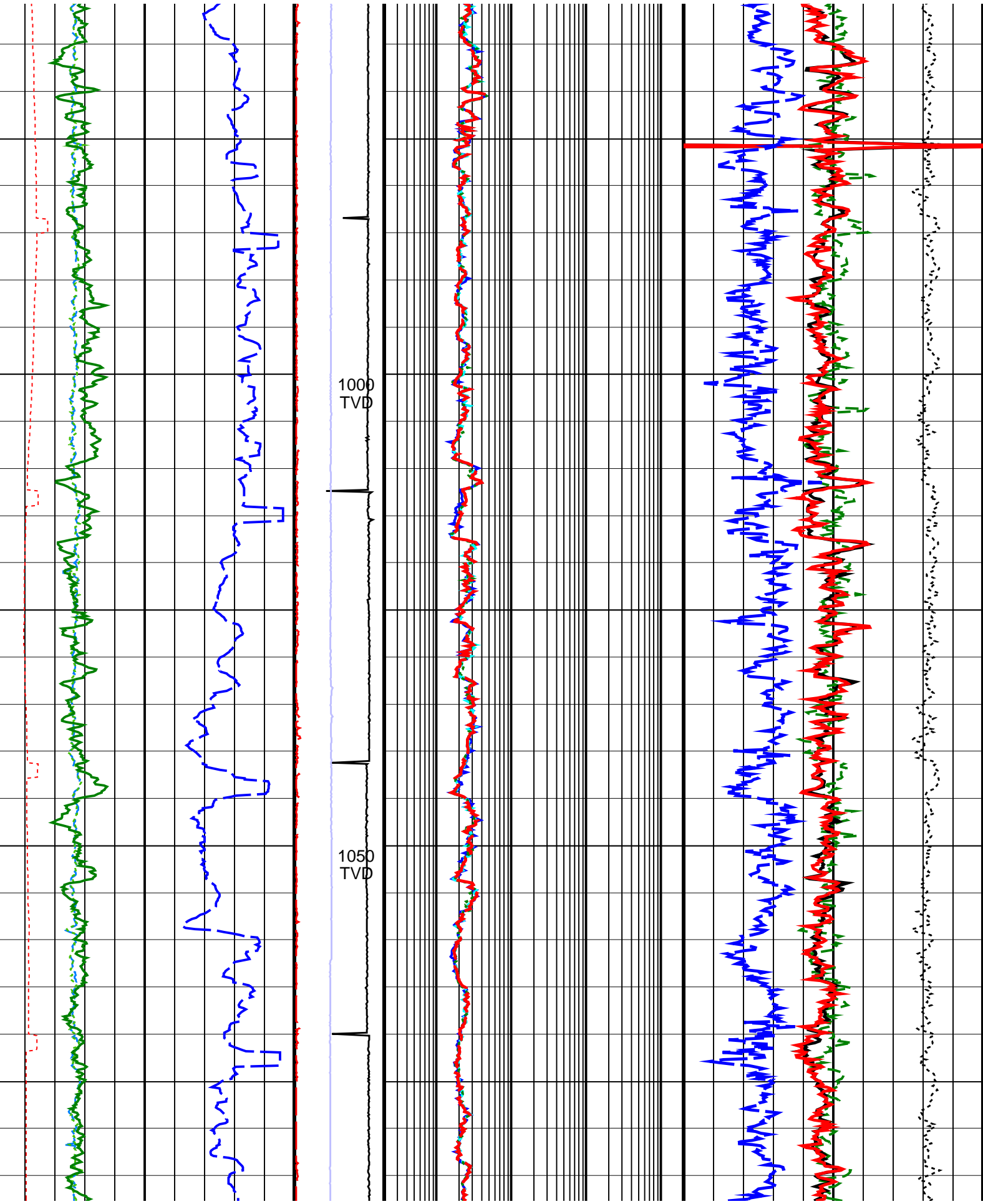
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 MDC Z411
 MEC 212
 MDI 1096
 MVC 282
 Software: V8.0B96
 D&I 15.61

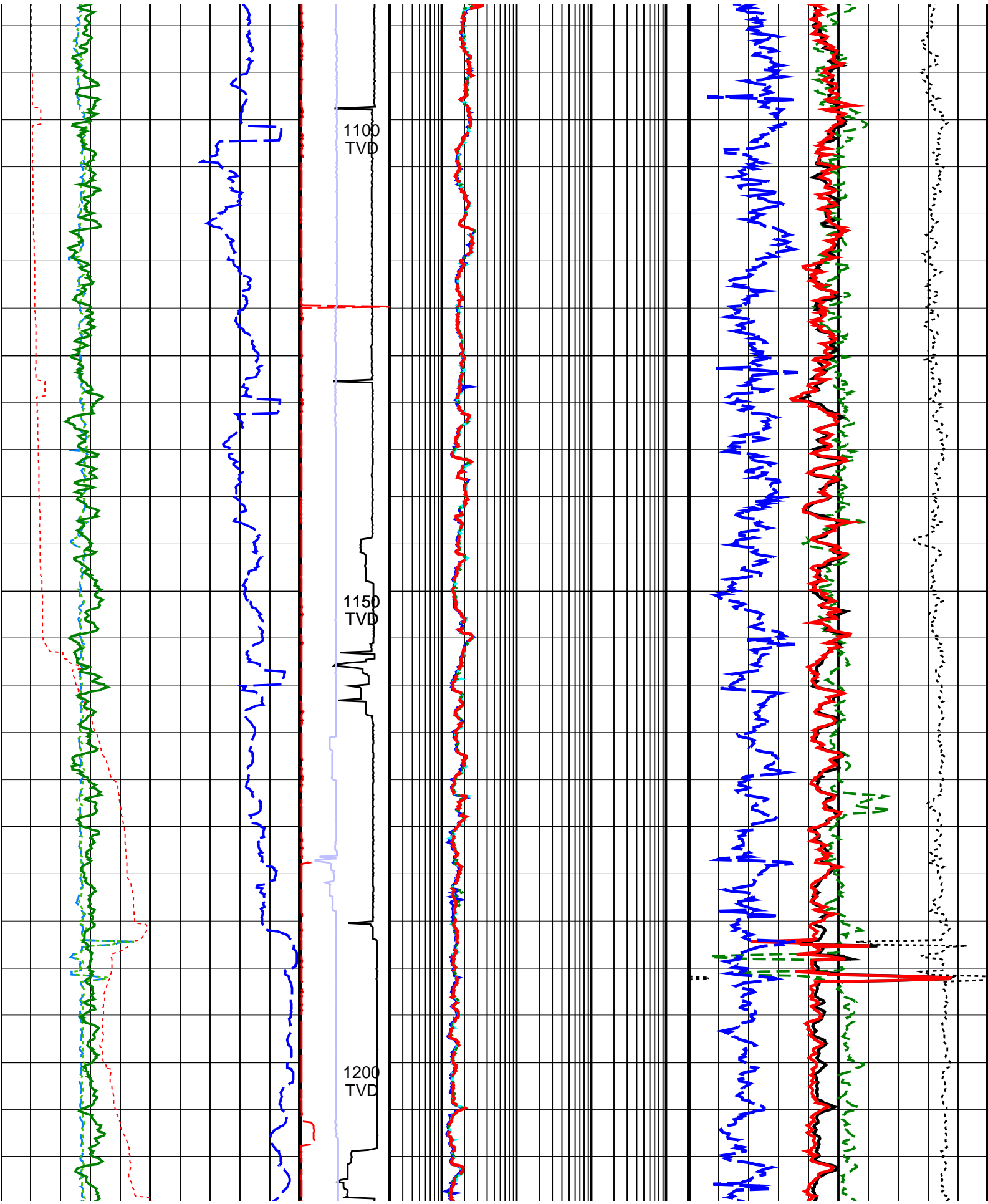
6-3/4 in. GVR* 11.46
 S/N: 147
 Software: V6.2B01
 Shallow 9.99
 Medium 9.87
 Deep 9.69
 Ring Res 9.52
 R-O Port 9.38
 GR 9.16

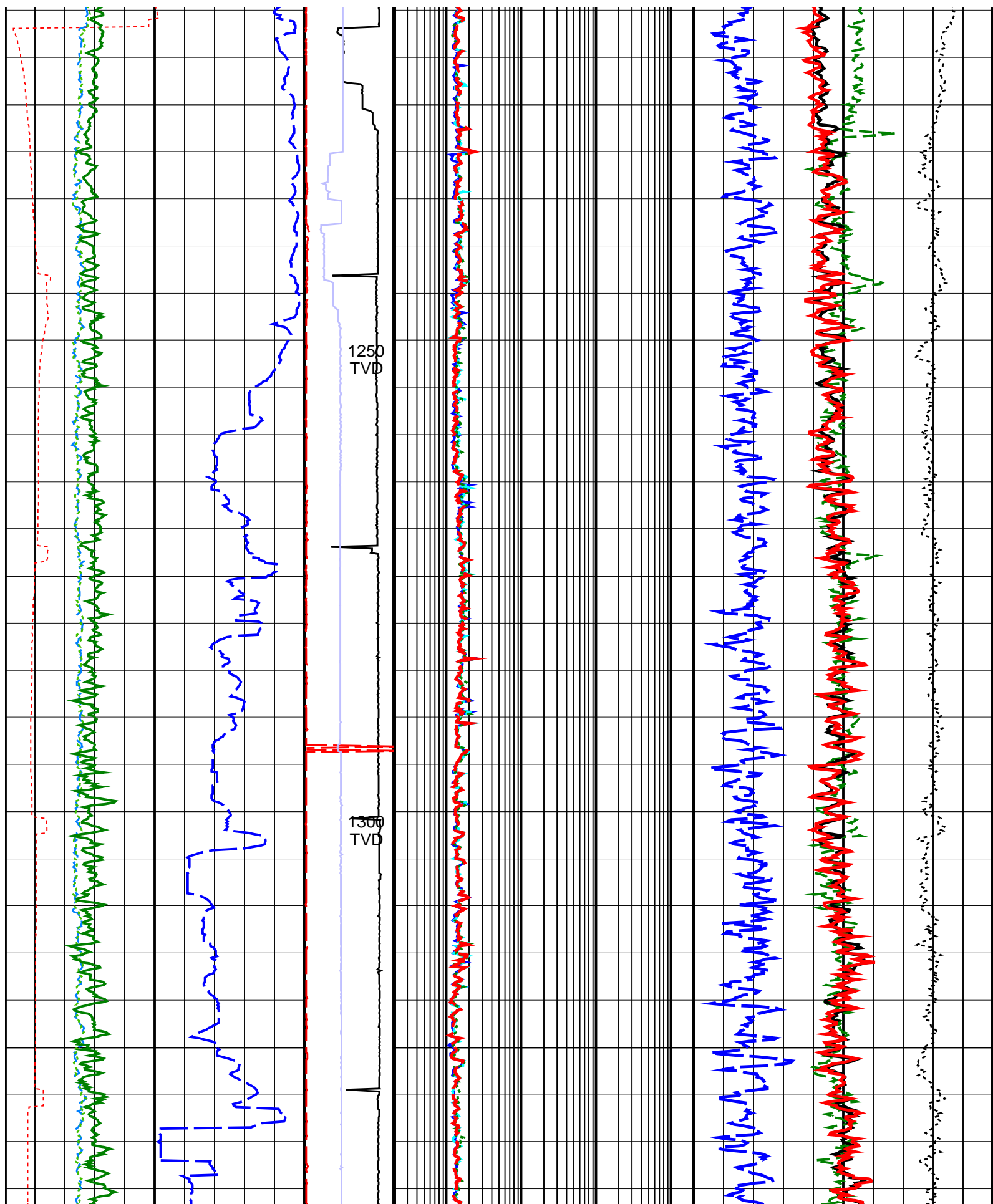
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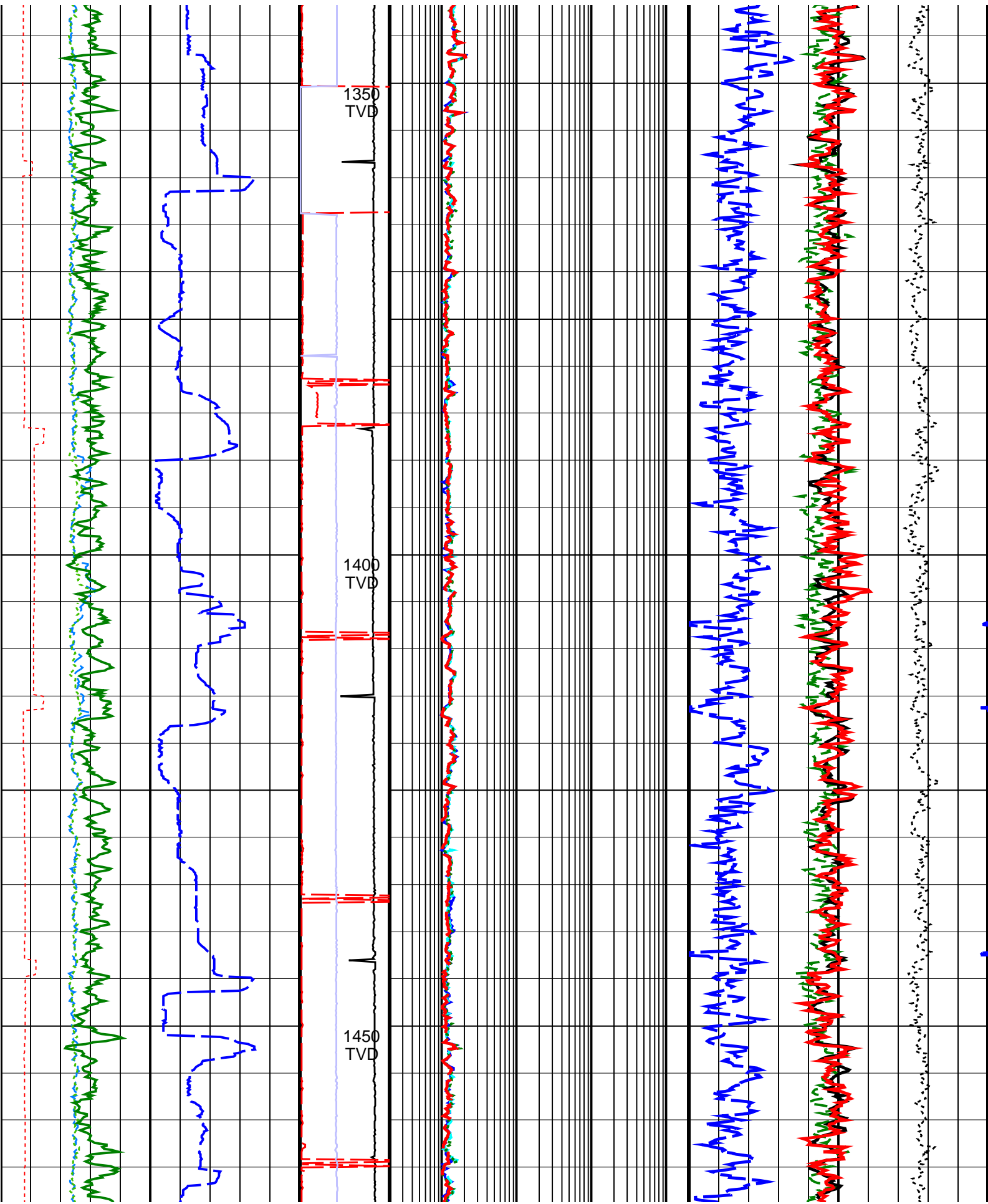


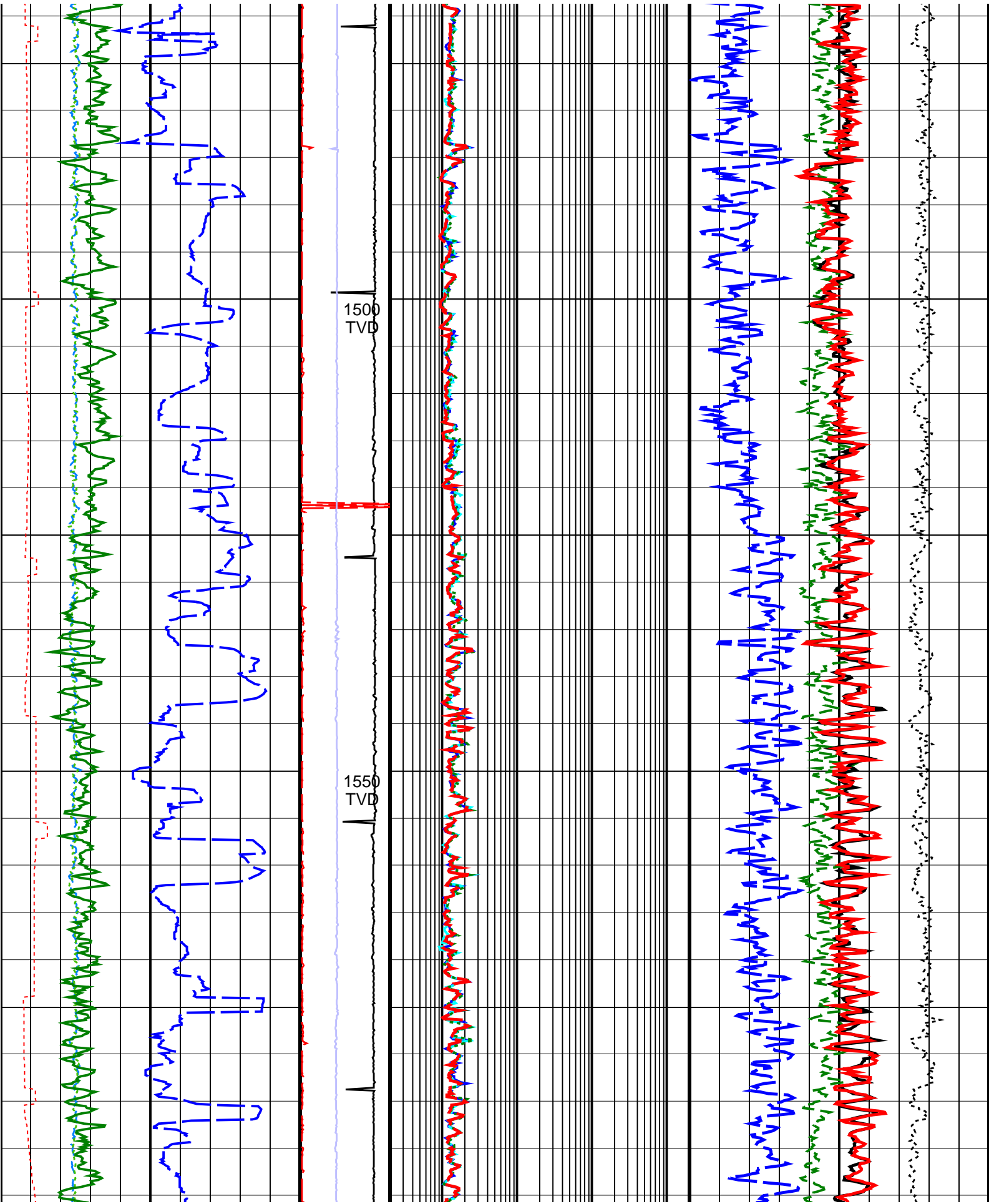


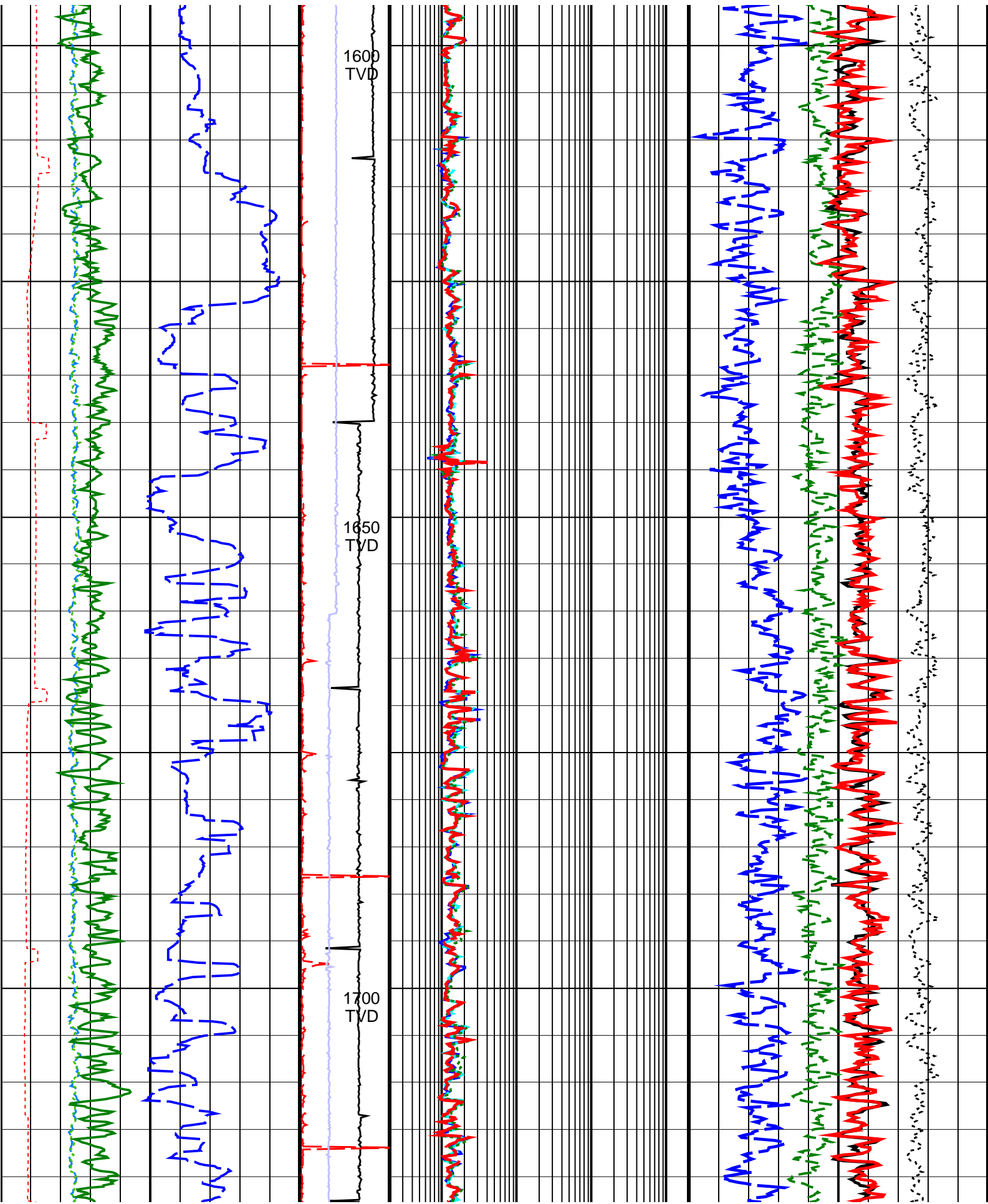


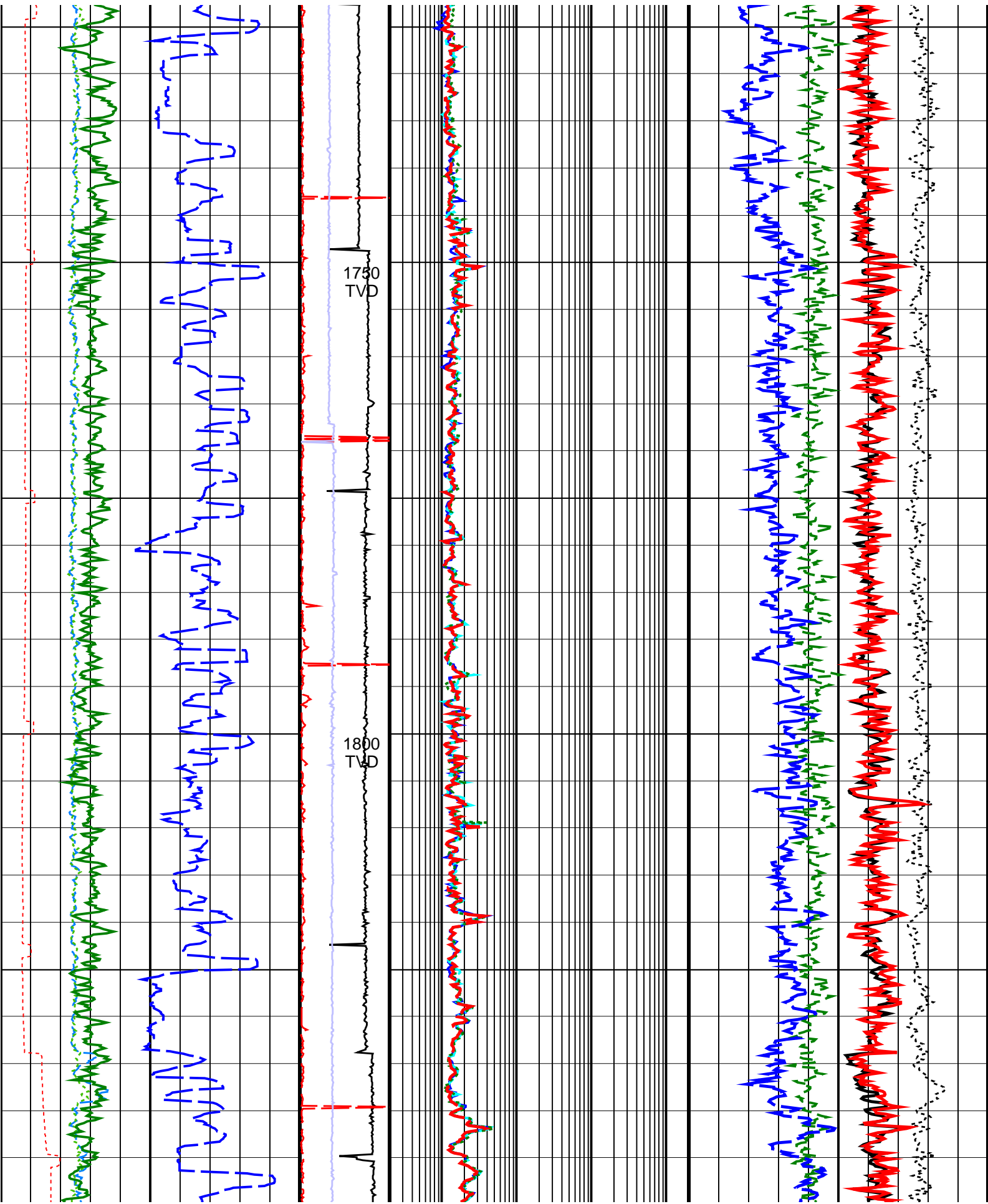


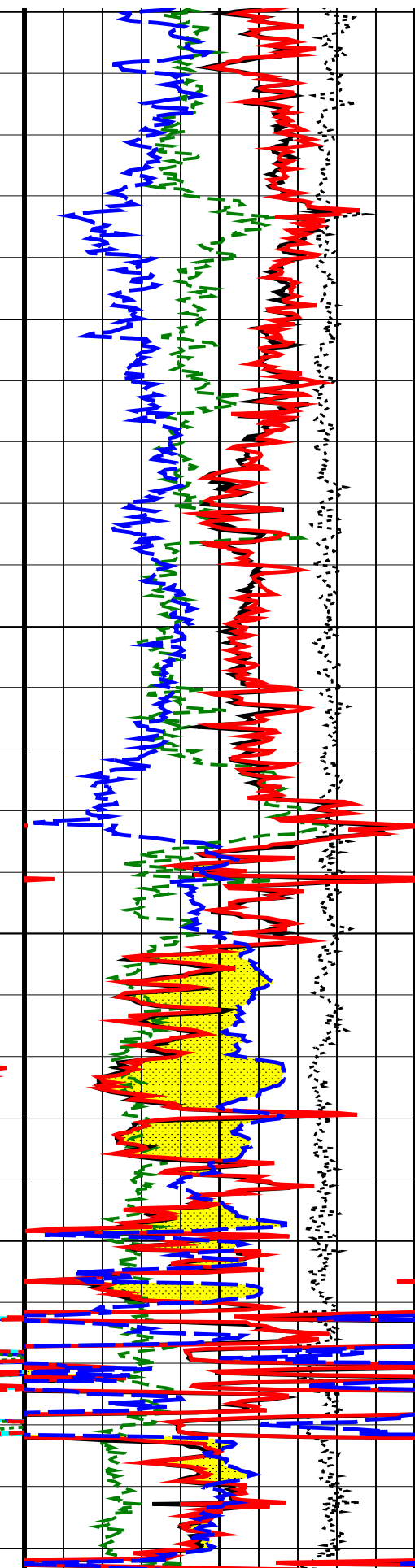
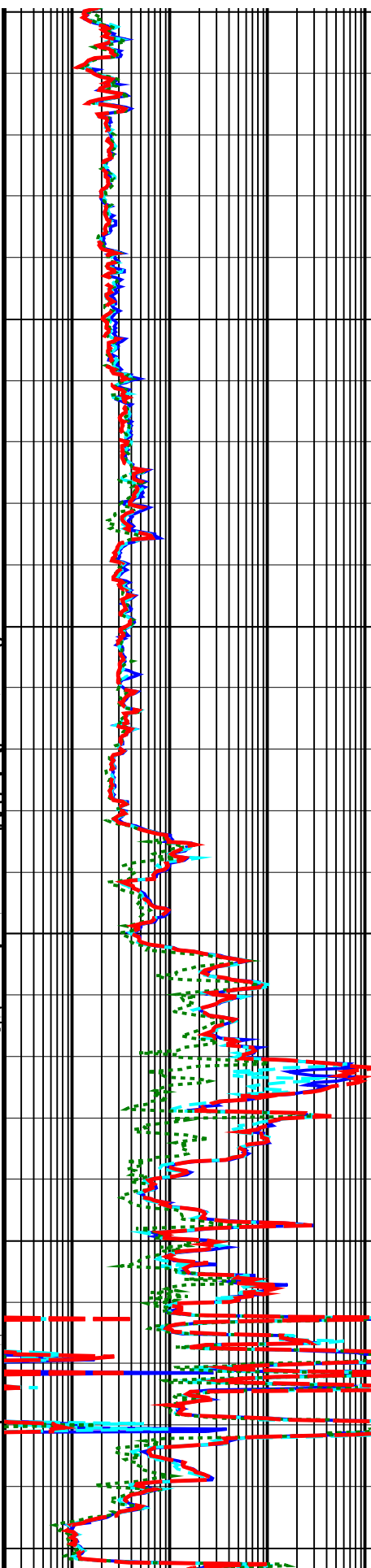
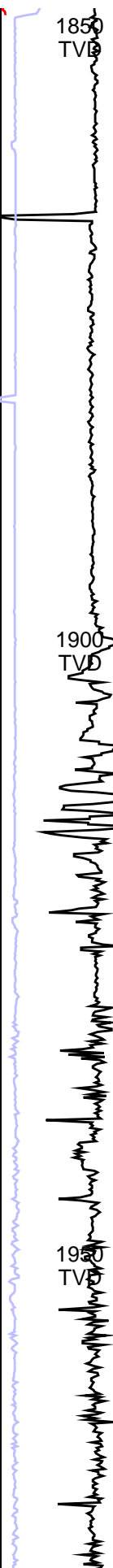
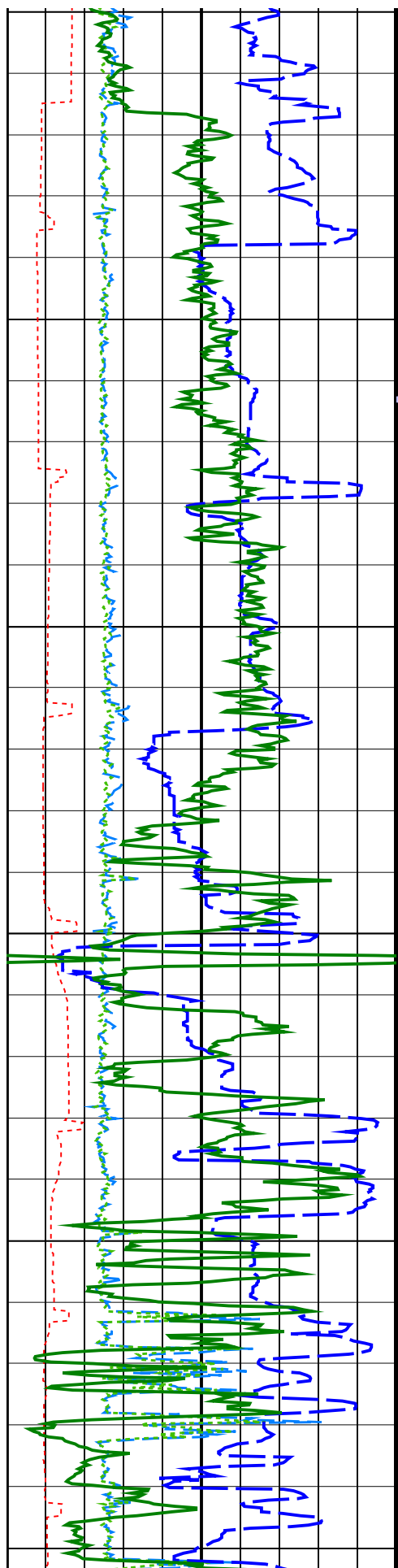


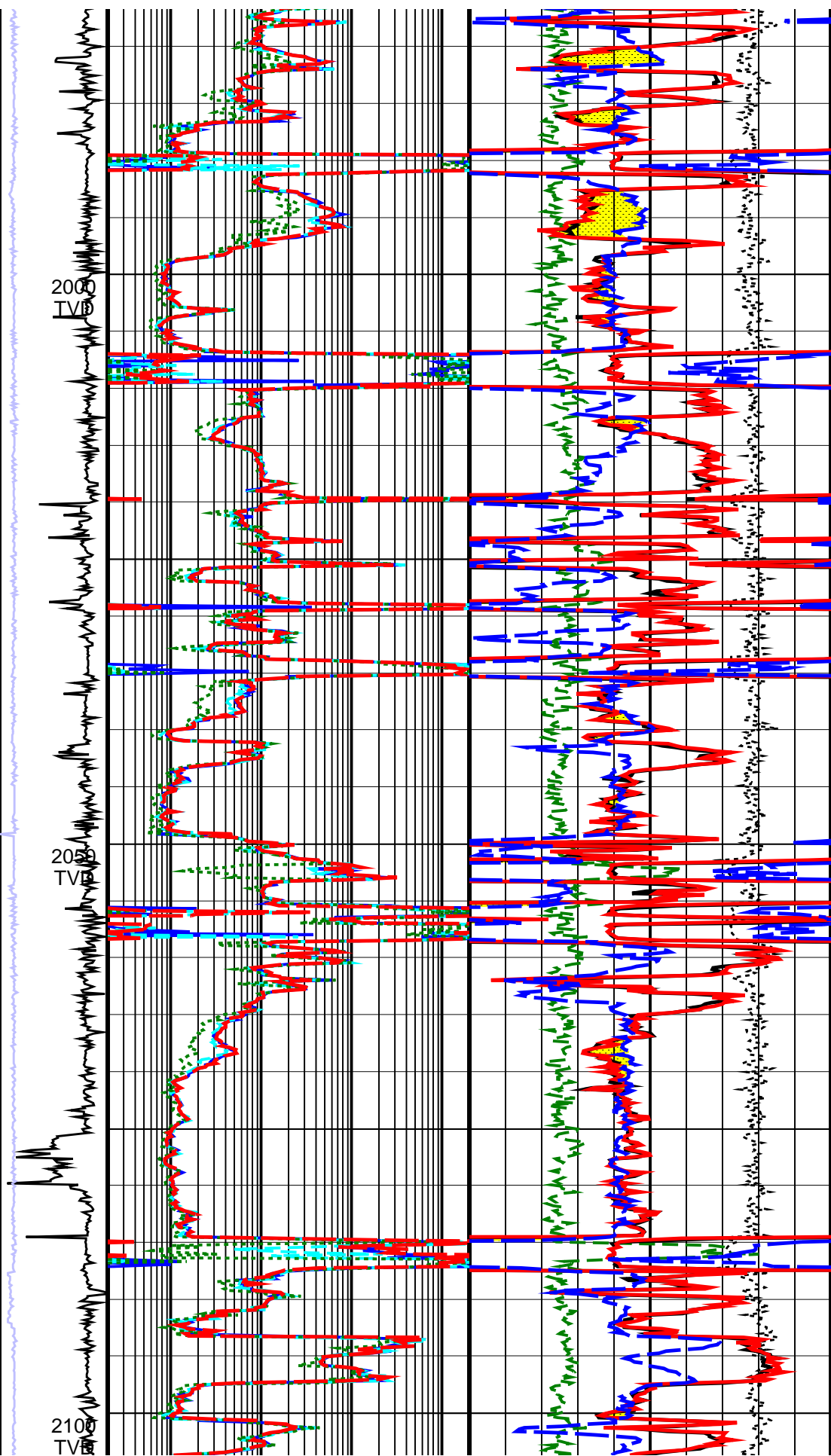
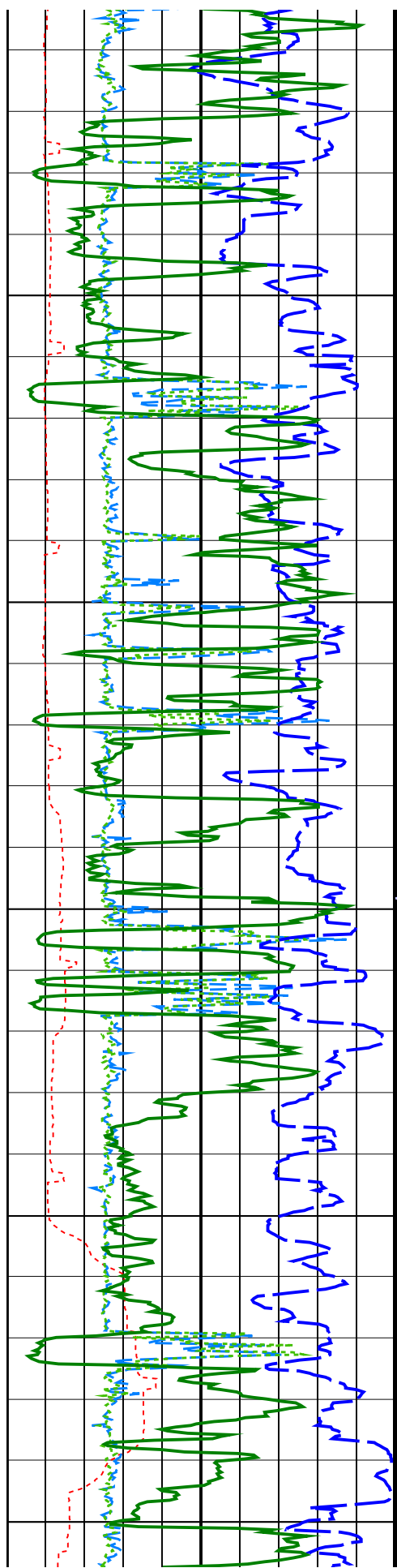


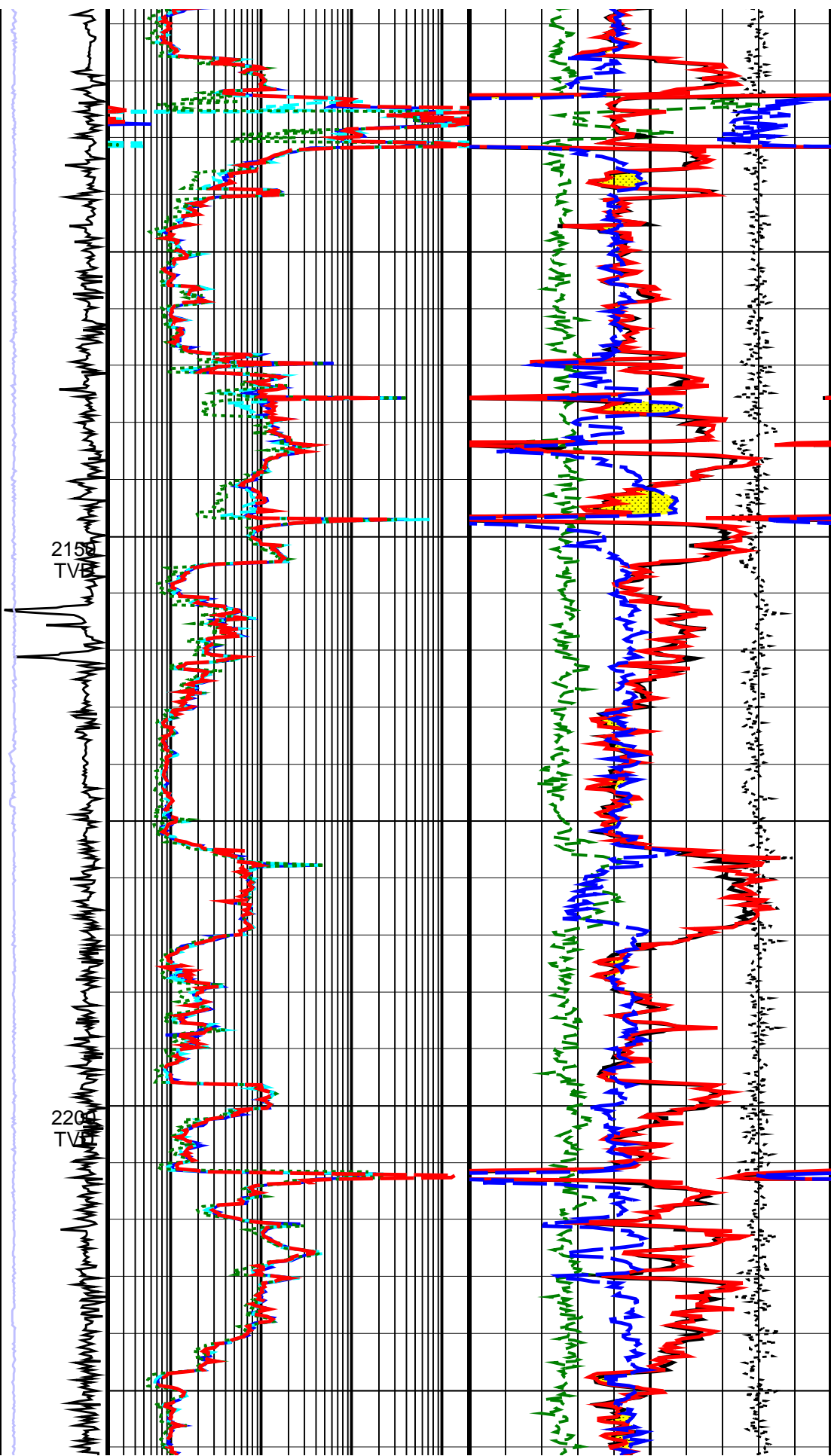
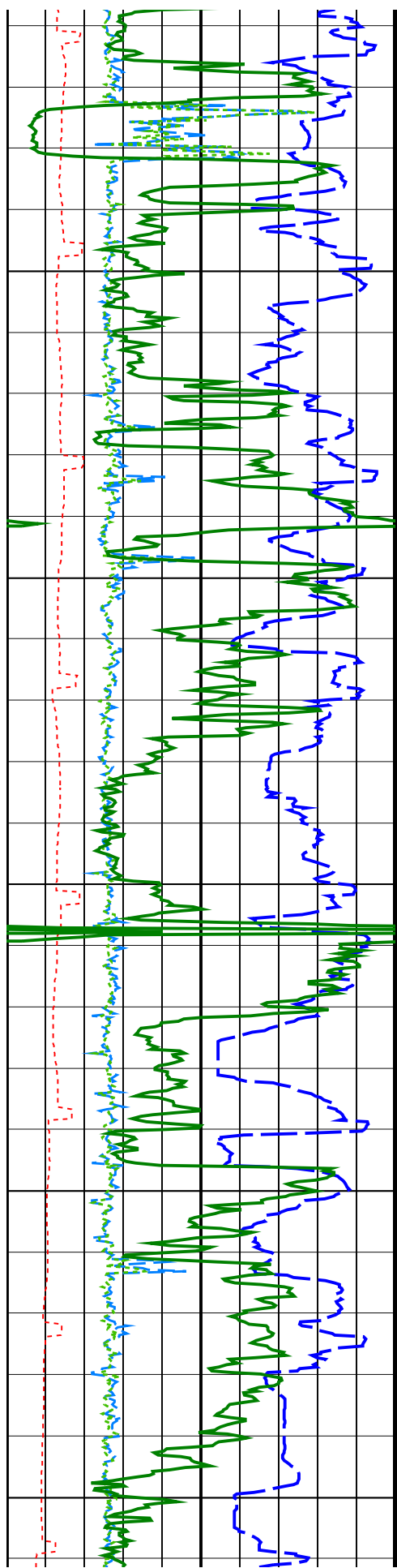


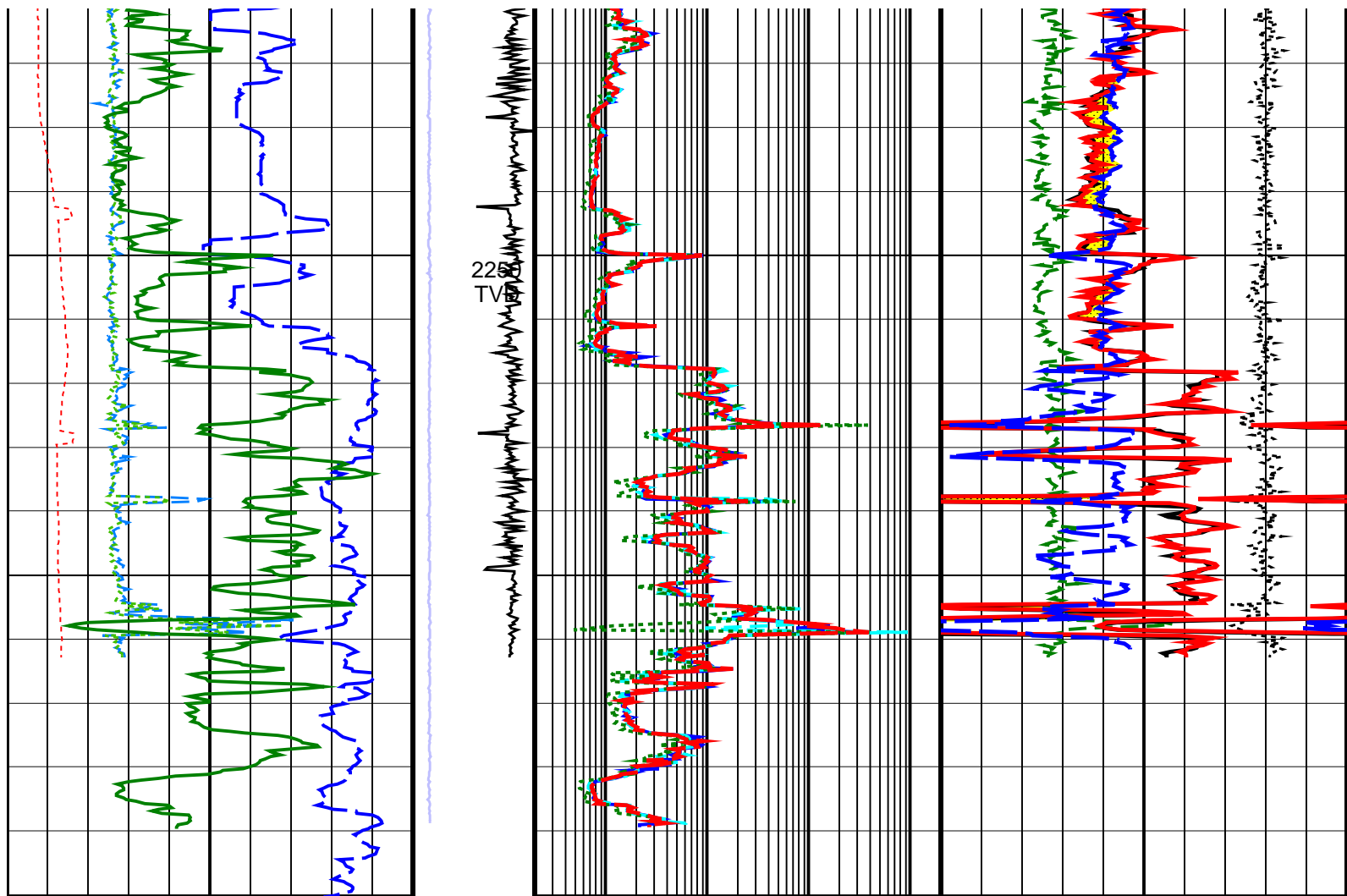












| | | | |
|--|---|--|---|
| Density Time After Bit (TAB_DEN) (HR) | ADN Rotational Speed (RPM_ADN) (RPM) | Deep Button Resistivity (RES_BD) (OHMM) | Bulk Density Correction, Bottom (DRHB) (G/C3) |
| 0 10 | 0 250 | 0.2 2000 | -0.75 0.25 |
| Density Caliper, Horizontal (DCHO) (IN) | Angular Acceleration Indicator (AAI) (----) | Medium Button Resistivity (RES_BM) (OHMM) | Photoelectric Factor, Bottom (PEB) (----) |
| 6 16 | 0 250 | 0.2 2000 | 0 10 |
| Density Caliper, Vertical (DCVE) (IN) | RAB Rotational Speed (RPM_RAB) (RPM) | Shallow Button Resistivity (RES_BS) (OHMM) | Bulk Density (RHOB) (G/C3) |
| 6 16 | 0 500 | 0.2 2000 | 1.85 2.85 |
| RAB Gamma Ray (GR_RAB) (GAPI) | | Ring Resistivity (RES_RING) (OHMM) | Bulk Density, Bottom (ROBB) (G/C3) |
| 0 200 | | 0.2 2000 | 1.85 2.85 |
| Rate of Penetration, Averaged over Last 5ft (ROP5_RM) (M/HR) | | | Thermal Neutron Porosity (TNPH) (PU) |
| 200 0 | | | 45 -15 |
| Gas Area From ADN/ROBB/DEPTH to | | | |

IDEAL Version: ID10_0C_04

IDF

RAB id10_0c_04 MWD_10 id10_0c_04
ADN id10_0c_04

True Vertical Depth Log

6.75-in. Azimuthal Density Neutron / Equipment Identification




Primary Equipment:
Tool Name and Serial Number
Collar Type and Serial Number
Chassis Type and Serial Number
Stabilizer Type and Serial Number
Neutron Logging Source
Density Logging Source
Stabilizer Size
Calibration Status

ADN6 – CA 0403
ADDC – AA 0403
ADSE – EA 18
Clamp-On 689198
NSR – M 202
GSR – J/Z 1994
8.25 – in.
Valid

Master: 21-Jun-2005 11:22

6.75-in. Azimuthal Density Neutron Calibration




Density: Magnesium Block

| Phase | LS window 3 – Mg CPS | Value | Phase | SS window 1 – Mg CPS | Value | Phase | SS window 3 – Mg CPS | Value |
|--------|---|-------|--------|---|-------|--------|---|-------|
| Master |  | 1052 | Master |  | 2361 | Master |  | 6156 |
| | 250.0 (Minimum) 4125 (Nominal) 8000 (Maximum) | | | 700.0 (Minimum) 9350 (Nominal) 18000 (Maximum) | | | 2500 (Minimum) 23750 (Nominal) 45000 (Maximum) | |

Master: 21-Jun-2005 11:22

6.75-in. Azimuthal Density Neutron Calibration




Density: Aluminum Block

| Phase | LS window 3 – Al CPS | Value | Phase | SS window 1 – Al CPS | Value | Phase | SS window 3 – Al CPS | Value |
|--------|---|-------|--------|---|-------|--------|---|-------|
| Master |  | 163.3 | Master |  | 1238 | Master |  | 3922 |
| | 50.00 (Minimum) 725.0 (Nominal) 1400 (Maximum) | | | 500.0 (Minimum) 4250 (Nominal) 8000 (Maximum) | | | 1500 (Minimum) 15750 (Nominal) 30000 (Maximum) | |

Master: 21-Jun-2005 11:22

6.75-in. Azimuthal Density Neutron Calibration



Density: Background

| Phase | LS window 3 – Background CPS | Value | Phase | SS window 1 – Background CPS | Value | Phase | SS window 3 – Background CPS | Value |
|--------|---|-------|--------|---|-------|--------|---|-------|
| Master |  | 33.84 | Master |  | 106.5 | Master |  | 474.2 |
| | 15.00 (Minimum) 82.50 (Nominal) 150.0 (Maximum) | | | 40.00 (Minimum) 220.0 (Nominal) 400.0 (Maximum) | | | 150.0 (Minimum) 825.0 (Nominal) 1500 (Maximum) | |

Master: 21-Jun-2005 11:22

6.75-in. Azimuthal Density Neutron Calibration




Density: Water Block Check

| Phase | Long spacing water density G/C3 | Value | Phase | Short spacing water density G/C3 | Value |
|--------|---|-------|--------|---|-------|
| Master |  | 1.030 | Master |  | 1.120 |
| | 1.024 (Minimum) 1.039 (Nominal) 1.054 (Maximum) | | | 1.096 (Minimum) 1.126 (Nominal) 1.156 (Maximum) | |


Master: 21-Jun-2005 11:22

6.75-in. Azimuthal Density Neutron Calibration

Neutron: 3-Point Calibration

| Phase | Far 1 tube 1 Air Point Measure CPS | Value | Phase | Far 1 tube 1 Rod Point Measure CPS | Value | Phase | Far 1 tube 1 H2O Point Measure CPS | Value |
|--------|---|-------|--------|---|-------|--------|---|-------|
| Master |  | 17.01 | Master |  | 4.142 | Master |  | 2.060 |
| | 15.00 (Minimum) 19.05 (Nominal) 21.00 (Maximum) | | | 4.000 (Minimum) 4.857 (Nominal) 5.500 (Maximum) | | | 1.900 (Minimum) 2.363 (Nominal) 2.700 (Maximum) | |
| Phase | Far 1 tube 2 Air Point Measure CPS | Value | Phase | Far 1 tube 2 Rod Point Measure CPS | Value | Phase | Far 1 tube 2 H2O Point Measure CPS | Value |

| | | | | | | | | | | | |
|--------------------|---------------------------------|--------------------|--------------------|------------------------|---------------------------------|--------------------|------------------------|--------------------|---------------------------------|-----|-------|
| Master | <div><div></div></div> | 18.12 | Master | <div><div></div></div> | 4.335 | Master | <div><div></div></div> | 2.137 | | | |
| 16.00 (Minimum) | 19.05 (Nominal) | 22.00 (Maximum) | 4.000 (Minimum) | 4.857 (Nominal) | 5.500 (Maximum) | 1.900 (Minimum) | 2.363 (Nominal) | 2.800 (Maximum) | | | |
| Phase | Far 1 tube 3 Air Point Measure | CPS | Value | Phase | Far 1 tube 3 Rod Point Measure | CPS | Value | Phase | Far 1 tube 3 H2O Point Measure | CPS | Value |
| Master | <div><div></div></div> | 17.15 | Master | <div><div></div></div> | 4.188 | Master | <div><div></div></div> | 2.066 | | | |
| 15.00 (Minimum) | 19.05 (Nominal) | 21.00 (Maximum) | 4.000 (Minimum) | 4.857 (Nominal) | 5.500 (Maximum) | 1.900 (Minimum) | 2.363 (Nominal) | 2.700 (Maximum) | | | |
| Phase | Far 2 tube 1 Air Point Measure | CPS | Value | Phase | Far 2 tube 1 Rod Point Measure | CPS | Value | Phase | Far 2 tube 1 H2O Point Measure | CPS | Value |
| Master | <div><div></div></div> | 17.52 | Master | <div><div></div></div> | 4.365 | Master | <div><div></div></div> | 2.173 | | | |
| 15.00 (Minimum) | 19.05 (Nominal) | 21.00 (Maximum) | 4.000 (Minimum) | 4.857 (Nominal) | 5.500 (Maximum) | 1.900 (Minimum) | 2.363 (Nominal) | 2.700 (Maximum) | | | |
| Phase | Far 2 tube 2 Air Point Measure | CPS | Value | Phase | Far 2 tube 2 Rod Point Measure | CPS | Value | Phase | Far 2 tube 2 H2O Point Measure | CPS | Value |
| Master | <div><div></div></div> | 18.07 | Master | <div><div></div></div> | 4.211 | Master | <div><div></div></div> | 1.982 | | | |
| 16.00 (Minimum) | 19.05 (Nominal) | 22.00 (Maximum) | 4.000 (Minimum) | 4.857 (Nominal) | 5.500 (Maximum) | 1.900 (Minimum) | 2.363 (Nominal) | 2.800 (Maximum) | | | |
| Phase | Far 2 tube 3 Air Point Measure | CPS | Value | Phase | Far 2 tube 3 Rod Point Measure | CPS | Value | Phase | Far 2 tube 3 H2O Point Measure | CPS | Value |
| Master | <div><div></div></div> | 17.03 | Master | <div><div></div></div> | 4.348 | Master | <div><div></div></div> | 2.060 | | | |
| 15.00 (Minimum) | 19.05 (Nominal) | 21.00 (Maximum) | 4.000 (Minimum) | 4.857 (Nominal) | 5.500 (Maximum) | 1.900 (Minimum) | 2.363 (Nominal) | 2.700 (Maximum) | | | |
| Phase | Near 1 tube 1 Air Point Measure | CPS | Value | Phase | Near 1 tube 1 Rod Point Measure | CPS | Value | Phase | Near 1 tube 1 H2O Point Measure | CPS | Value |
| Master | <div><div></div></div> | 458.8 | Master | <div><div></div></div> | 722.7 | Master | <div><div></div></div> | 319.9 | | | |
| 400.0 (Minimum) | 487.5 (Nominal) | 540.0 (Maximum) | 610.0 (Minimum) | 768.8 (Nominal) | 850.0 (Maximum) | 270.0 (Minimum) | 343.7 (Nominal) | 390.0 (Maximum) | | | |
| Phase | Near 2 tube 1 Air Point Measure | CPS | Value | Phase | Near 2 tube 1 Rod Point Measure | CPS | Value | Phase | Near 2 tube 1 H2O Point Measure | CPS | Value |
| Master | <div><div></div></div> | 454.0 | Master | <div><div></div></div> | 727.3 | Master | <div><div></div></div> | 320.0 | | | |
| 400.0 (Minimum) | 487.5 (Nominal) | 540.0 (Maximum) | 610.0 (Minimum) | 768.8 (Nominal) | 850.0 (Maximum) | 270.0 (Minimum) | 343.7 (Nominal) | 390.0 (Maximum) | | | |

| | | | | | | | | | |
|--|--|--------------------|--|--|--|--|--|--------------------|-------|
| Master: 21-Jun-2005 11:22 | | | | | | | | | |
| 6.75-in. Azimuthal Density Neutron Calibration | | | | | | | | | |
| Neutron: Water Block Check | | | | | | | | | |
| Phase | Far Neutron water porosity PU | | | | | | | | Value |
| Master |  | | | | | | | | 92.83 |
| | 90.00 (Minimum) | 100.0 (Nominal) | | | | | | 125.0 (Maximum) | |

| | | |
|--|-----------|-----|
| 6.75-in. Resistivity At-the-Bit / Equipment Identification | | |
| Primary Equipment: | | |
| Tool Name and Serial Number | RAB6 – CA | 191 |
| Calibration Status | Valid | |

| | | | | | | | | | | | | | | | | | | | | | |
|---|---------------------|--|--|--|--------------------|--------------------|---------------------|--|--|--|---------------------|--------|-------------------|--|--|--------------------|--------------------|--|--|--|--|
| Master: 29-Jul-2005 15:21 | | | | | | | | | | | | | | | | | | | | | |
| 6.75-in. Resistivity At-the-Bit Calibration | | | | | | | | | | | | | | | | | | | | | |
| Resistivity: Fixture | | | | | | | | | | | | | | | | | | | | | |
| Phase | Ring/T1 factor ---- | | | | Value | Phase | Ring/T2 factor ---- | | | | Value | Phase | M0/T1 factor ---- | | | | Value | | | | |
| Master | | | | | 0.9949 | Master | | | | | 0.9924 | Master | | | | | 1.006 | | | | |
| 0.9750 (Minimum) | | | | | 1.000 (Nominal) | 1.025 (Maximum) | | | | | 0.9750 (Minimum) | | | | | 1.000 (Nominal) | 1.025 (Maximum) | | | | |
| Phase | M0/T2 factor ---- | | | | Value | Phase | M2/T1 factor ---- | | | | Value | Phase | M2/T2 factor ---- | | | | Value | | | | |
| Master | | | | | 1.003 | Master | | | | | 1.007 | Master | | | | | 1.003 | | | | |

| | | | | | | | | | | | | | | |
|--|--|--|--|--|--------|--|--|--|--------|--------|--|--|--|--------|
| <div><div></div><div></div><div></div></div> <div>0.9750 (Minimum)1.000 (Nominal)1.025 (Maximum)</div> | | | | <div><div></div><div></div><div></div></div> <div>0.9750 (Minimum)1.000 (Nominal)1.025 (Maximum)</div> | | | | <div><div></div><div></div><div></div></div> <div>0.9750 (Minimum)1.000 (Nominal)1.025 (Maximum)</div> | | | | | | |
| Phase | BTN shallow/T1 factor ---- | | | Value | Phase | BTN shallow/T2 factor ---- | | | Value | Phase | BTN medium/T1 factor ---- | | | Value |
| Master | <div><div></div><div></div><div></div></div> | | | 1.002 | Master | <div><div></div><div></div><div></div></div> | | | 0.9996 | Master | <div><div></div><div></div><div></div></div> | | | 0.9951 |
| <div><div></div><div></div><div></div></div> <div>0.9750 (Minimum)1.000 (Nominal)1.025 (Maximum)</div> | | | | <div><div></div><div></div><div></div></div> <div>0.9750 (Minimum)1.000 (Nominal)1.025 (Maximum)</div> | | | | <div><div></div><div></div><div></div></div> <div>0.9750 (Minimum)1.000 (Nominal)1.025 (Maximum)</div> | | | | | | |
| Phase | BTN medium/T2 factor ---- | | | Value | Phase | BTN deep/T1 factor ---- | | | Value | Phase | BTN deep/T2 factor ---- | | | Value |
| Master | <div><div></div><div></div><div></div></div> | | | 0.9922 | Master | <div><div></div><div></div><div></div></div> | | | 1.012 | Master | <div><div></div><div></div><div></div></div> | | | 1.009 |
| <div><div></div><div></div><div></div></div> <div>0.9750 (Minimum)1.000 (Nominal)1.025 (Maximum)</div> | | | | <div><div></div><div></div><div></div></div> <div>0.9750 (Minimum)1.000 (Nominal)1.025 (Maximum)</div> | | | | <div><div></div><div></div><div></div></div> <div>0.9750 (Minimum)1.000 (Nominal)1.025 (Maximum)</div> | | | | | | |

| | | | | | | | | | | | |
|---|-----------------------|--|--|--------------------|--|--|--|--|--------------------|--|--|
| Master: 29-Jul-2005 15:21 | | | | | | | | | | | |
| 6.75-in. Resistivity At-the-Bit Calibration | | | | | | | | | | | |
| Gamma Ray: Blanket | | | | | | | | | | | |
| Phase | Gamma ray factor ---- | | | | | | | | Value | | |
| Master | | | | | | | | | 0.9256 | | |
| | 0.7500 (Minimum) | | | 1.000 (Nominal) | | | | | 1.250 (Maximum) | | |

| 6.75-in. Azimuthal Density Neutron / Equipment Identification | | |
|---|--------------|------|
| Primary Equipment: | | |
| Tool Name and Serial Number | ADN6 - CA | FE55 |
| Collar Type and Serial Number | ADDC - AA | FE35 |
| Chassis Type and Serial Number | ADSE - EA | 380 |
| Stabilizer Type and Serial Number | IBS | |
| Neutron Logging Source | NSB - M | 202 |
| Density Logging Source | GSP - JZ | 1994 |
| Stabilizer Size | 8-3/16 - in. | |
| Calibration Status | Valid | |

























| | | | | | | | | | | | |
|--|----------------------|-------------------|-------------------|--------|----------------------|-------------------|--------------------|--------|----------------------|--------------------|--------------------|
| Master: 19-Jun-2005 14:46 | | | | | | | | | | | |
| 6.75-in. Azimuthal Density Neutron Calibration | | | | | | | | | | | |
| Density: Magnesium Block | | | | | | | | | | | |
| Phase | LS window 3 - Mg CPS | | Value | Phase | SS window 1 - Mg CPS | | Value | Phase | SS window 3 - Mg CPS | | Value |
| Master | | | 1069 | Master | | | 2586 | Master | | | 6392 |
| | 250.0 (Minimum) | 4125 (Nominal) | 8000 (Maximum) | | 700.0 (Minimum) | 9350 (Nominal) | 18000 (Maximum) | | 2500 (Minimum) | 23750 (Nominal) | 45000 (Maximum) |


| | | | | | | | | | | | |
|--|----------------------|--------------------|-------------------|--------|----------------------|-------------------|-------------------|--------|----------------------|--------------------|--------------------|
| Master: 19-Jun-2005 14:46 | | | | | | | | | | | |
| 6.75-in. Azimuthal Density Neutron Calibration | | | | | | | | | | | |
| Density: Aluminum Block | | | | | | | | | | | |
| Phase | LS window 3 - Al CPS | | Value | Phase | SS window 1 - Al CPS | | Value | Phase | SS window 3 - Al CPS | | Value |
| Master | | | 160.3 | Master | | | 1306 | Master | | | 4004 |
| | 50.00 (Minimum) | 725.0 (Nominal) | 1400 (Maximum) | | 500.0 (Minimum) | 4250 (Nominal) | 8000 (Maximum) | | 1500 (Minimum) | 15750 (Nominal) | 30000 (Maximum) |

| | | | | | | | | | | | |
|--|------------------------------|--------------------|--------------------|--------|------------------------------|--------------------|--------------------|--------|------------------------------|--------------------|-------------------|
| Master: 19-Jun-2005 14:46 | | | | | | | | | | | |
| 6.75-in. Azimuthal Density Neutron Calibration | | | | | | | | | | | |
| Density: Background | | | | | | | | | | | |
| Phase | LS window 3 - Background CPS | | Value | Phase | SS window 1 - Background CPS | | Value | Phase | SS window 3 - Background CPS | | Value |
| Master | | | 50.02 | Master | | | 127.9 | Master | | | 555.3 |
| | 15.00 (Minimum) | 82.50 (Nominal) | 150.0 (Maximum) | | 40.00 (Minimum) | 220.0 (Nominal) | 400.0 (Maximum) | | 150.0 (Minimum) | 825.0 (Nominal) | 1500 (Maximum) |













| | | | | | | | | | | | |
|--|---------------------------------|--------------------|--------------------|-------|--------|----------------------------------|--------------------|--------------------|-------|--|--|
| Master: 19-Jun-2005 14:46 | | | | | | | | | | | |
| 6.75-in. Azimuthal Density Neutron Calibration | | | | | | | | | | | |
| Density: Water Block Check | | | | | | | | | | | |
| Phase | Long spacing water density G/C3 | | | Value | Phase | Short spacing water density G/C3 | | | Value | | |
| Master | | | | 1.031 | Master | | | | 1.130 | | |
| | 1.024 (Minimum) | 1.039 (Nominal) | 1.054 (Maximum) | | | 1.096 (Minimum) | 1.126 (Nominal) | 1.156 (Maximum) | | | |


| | | | | | |
|-----------|-----------|-----------|-----------|-----------|-----------|
| (Minimum) | (Nominal) | (Maximum) | (Minimum) | (Nominal) | (Maximum) |
|-----------|-----------|-----------|-----------|-----------|-----------|

| | | | | | | | | | | | |
|--|---|--------------------|--------------------|--------|---|--------------------|--------------------|--------|---|--------------------|--------------------|
| Master: 19-Jun-2005 14:46 | | | | | | | | | | | |
| 6.75-in. Azimuthal Density Neutron Calibration | | | | | | | | | | | |
| Neutron: 3-Point Calibration | | | | | | | | | | | |
| Phase | Far 1 tube 1 Air Point Measure | CPS | Value | Phase | Far 1 tube 1 Rod Point Measure | CPS | Value | Phase | Far 1 tube 1 H2O Point Measure | CPS | Value |
| Master |  | | 17.72 | Master |  | | 4.474 | Master |  | | 2.147 |
| | 15.00 (Minimum) | 19.05 (Nominal) | 21.00 (Maximum) | | 4.000 (Minimum) | 4.857 (Nominal) | 5.500 (Maximum) | | 1.900 (Minimum) | 2.363 (Nominal) | 2.700 (Maximum) |
| Phase | Far 1 tube 2 Air Point Measure | CPS | Value | Phase | Far 1 tube 2 Rod Point Measure | CPS | Value | Phase | Far 1 tube 2 H2O Point Measure | CPS | Value |
| Master |  | | 18.93 | Master |  | | 4.707 | Master |  | | 2.299 |
| | 16.00 (Minimum) | 19.05 (Nominal) | 22.00 (Maximum) | | 4.000 (Minimum) | 4.857 (Nominal) | 5.500 (Maximum) | | 1.900 (Minimum) | 2.363 (Nominal) | 2.800 (Maximum) |
| Phase | Far 1 tube 3 Air Point Measure | CPS | Value | Phase | Far 1 tube 3 Rod Point Measure | CPS | Value | Phase | Far 1 tube 3 H2O Point Measure | CPS | Value |
| Master |  | | 18.55 | Master |  | | 4.486 | Master |  | | 2.279 |
| | 15.00 (Minimum) | 19.05 (Nominal) | 21.00 (Maximum) | | 4.000 (Minimum) | 4.857 (Nominal) | 5.500 (Maximum) | | 1.900 (Minimum) | 2.363 (Nominal) | 2.700 (Maximum) |
| Phase | Far 2 tube 1 Air Point Measure | CPS | Value | Phase | Far 2 tube 1 Rod Point Measure | CPS | Value | Phase | Far 2 tube 1 H2O Point Measure | CPS | Value |
| Master |  | | 17.65 | Master |  | | 4.416 | Master |  | | 2.151 |
| | 15.00 (Minimum) | 19.05 (Nominal) | 21.00 (Maximum) | | 4.000 (Minimum) | 4.857 (Nominal) | 5.500 (Maximum) | | 1.900 (Minimum) | 2.363 (Nominal) | 2.700 (Maximum) |
| Phase | Far 2 tube 2 Air Point Measure | CPS | Value | Phase | Far 2 tube 2 Rod Point Measure | CPS | Value | Phase | Far 2 tube 2 H2O Point Measure | CPS | Value |
| Master |  | | 18.97 | Master |  | | 4.543 | Master |  | | 2.222 |
| | 16.00 (Minimum) | 19.05 (Nominal) | 22.00 (Maximum) | | 4.000 (Minimum) | 4.857 (Nominal) | 5.500 (Maximum) | | 1.900 (Minimum) | 2.363 (Nominal) | 2.800 (Maximum) |
| Phase | Far 2 tube 3 Air Point Measure | CPS | Value | Phase | Far 2 tube 3 Rod Point Measure | CPS | Value | Phase | Far 2 tube 3 H2O Point Measure | CPS | Value |
| Master |  | | 18.19 | Master |  | | 4.596 | Master |  | | 2.253 |
| | 15.00 (Minimum) | 19.05 (Nominal) | 21.00 (Maximum) | | 4.000 (Minimum) | 4.857 (Nominal) | 5.500 (Maximum) | | 1.900 (Minimum) | 2.363 (Nominal) | 2.700 (Maximum) |
| Phase | Near 1 tube 1 Air Point Measure | CPS | Value | Phase | Near 1 tube 1 Rod Point Measure | CPS | Value | Phase | Near 1 tube 1 H2O Point Measure | CPS | Value |
| Master |  | | 455.2 | Master |  | | 728.7 | Master |  | | 326.1 |
| | 400.0 (Minimum) | 487.5 (Nominal) | 540.0 (Maximum) | | 610.0 (Minimum) | 768.8 (Nominal) | 850.0 (Maximum) | | 270.0 (Minimum) | 343.7 (Nominal) | 390.0 (Maximum) |
| Phase | Near 2 tube 1 Air Point Measure | CPS | Value | Phase | Near 2 tube 1 Rod Point Measure | CPS | Value | Phase | Near 2 tube 1 H2O Point Measure | CPS | Value |
| Master |  | | 474.0 | Master |  | | 746.7 | Master |  | | 342.4 |
| | 400.0 (Minimum) | 487.5 (Nominal) | 540.0 (Maximum) | | 610.0 (Minimum) | 768.8 (Nominal) | 850.0 (Maximum) | | 270.0 (Minimum) | 343.7 (Nominal) | 390.0 (Maximum) |

| | | | | | | | | | | | |
|--|---|--|--|--------------------|--|--|--------------------|--|--|-------|--|
| Master: 19-Jun-2005 14:46 | | | | | | | | | | | |
| 6.75-in. Azimuthal Density Neutron Calibration | | | | | | | | | | | |
| Neutron: Water Block Check | | | | | | | | | | | |
| Phase | Far Neutron water porosity PU | | | | | | | | | Value | |
| Master |  | | | | | | | | | 94.31 | |
| | 90.00 (Minimum) | | | 100.0 (Nominal) | | | 125.0 (Maximum) | | | | |

| | | | |
|--|---------------|--|--|
| 6.75-in. Resistivity At-the-Bit / Equipment Identification | | | |
| Primary Equipment: | | | |
| Tool Name and Serial Number | RAB6 – CA 147 | | |
| Calibration Status | Valid | | |

| | | | | | | | | | | | | | | |
|---|---|--------------------|--------------------|-------|---------------------|---|--------------------|--|---------------------|--------------------|---|--|--------|--------|
| Master: 29-Jul-2005 17:20 | | | | | | | | | | | | | | |
| 6.75-in. Resistivity At-the-Bit Calibration | | | | | | | | | | | | | | |
| Resistivity: Fixture | | | | | | | | | | | | | | |
| Phase | Ring/T1 factor ---- | | | Value | Phase | Ring/T2 factor ---- | | | Value | Phase | M0/T1 factor ---- | | | Value |
| Master |  | | | 1.012 | Master |  | | | 1.011 | Master |  | | | 1.002 |
| | 0.9750 (Minimum) | 1.000 (Nominal) | 1.025 (Maximum) | | 0.9750 (Minimum) | 1.000 (Nominal) | 1.025 (Maximum) | | 0.9750 (Minimum) | 1.000 (Nominal) | 1.025 (Maximum) | | 1.002 | |
| Phase | M0/T2 factor ---- | | | Value | Phase | M2/T1 factor ---- | | | Value | Phase | M2/T2 factor ---- | | | Value |
| Master |  | | | 1.002 | Master |  | | | 0.9986 | Master |  | | | 0.9982 |
| | 0.9750 (Minimum) | 1.000 (Nominal) | 1.025 (Maximum) | | 0.9750 (Minimum) | 1.000 (Nominal) | 1.025 (Maximum) | | 0.9750 (Minimum) | 1.000 (Nominal) | 1.025 (Maximum) | | 0.9982 | |
| Phase | BTN shallow/T1 factor ---- | | | Value | Phase | BTN shallow/T2 factor ---- | | | Value | Phase | BTN medium/T1 factor ---- | | | Value |
| Master |  | | | 1.009 | Master |  | | | 1.009 | Master |  | | | 1.002 |
| | 0.9750 (Minimum) | 1.000 (Nominal) | 1.025 (Maximum) | | 0.9750 (Minimum) | 1.000 (Nominal) | 1.025 (Maximum) | | 0.9750 (Minimum) | 1.000 (Nominal) | 1.025 (Maximum) | | 1.002 | |
| Phase | BTN medium/T2 factor ---- | | | Value | Phase | BTN deep/T1 factor ---- | | | Value | Phase | BTN deep/T2 factor ---- | | | Value |
| Master |  | | | 1.001 | Master |  | | | 1.001 | Master |  | | | 0.9999 |
| | 0.9750 (Minimum) | 1.000 (Nominal) | 1.025 (Maximum) | | 0.9750 (Minimum) | 1.000 (Nominal) | 1.025 (Maximum) | | 0.9750 (Minimum) | 1.000 (Nominal) | 1.025 (Maximum) | | 0.9999 | |

| | | | | | | | | | |
|---|---|--|--------------------|--|--------------------|--|--|--|--------|
| Master: 29-Jul-2005 17:20 | | | | | | | | | |
| 6.75-in. Resistivity At-the-Bit Calibration | | | | | | | | | |
| Gamma Ray: Blanket | | | | | | | | | |
| Phase | Gamma ray factor ---- | | | | | | | | Value |
| Master |  | | | | | | | | 0.9611 |
| | 0.7500 (Minimum) | | 1.000 (Nominal) | | 1.250 (Maximum) | | | | |

SCHLUMBERGER

Survey report

9-Aug-2005 16:39:27

Page 1 of 5

Client..... ESSO Australia Pty. Ltd.
Field..... Bream B

Well..... BMB-B16
API number.....
Engineer..... J.Dolan, M.Y.Tan, D.Hastie

RIG:..... ENSCO 102
STATE:..... Victoria

Spud date..... 05-Jul-2005
Last survey date..... 09-Aug-05
Total accepted surveys... 92
MD of first survey..... 0.00 m
MD of last survey..... 2641.00 m

----- Survey calculation methods-----
Method for positions..... Minimum curvature
Method for DLS..... Mason & Taylor

----- Depth reference -----
Permanent datum..... Mean Sea Level
Depth reference..... Driller's Depth
GL above permanent..... -61.00 m
KB above permanent..... Top Drive
DF above permanent..... 47.17 m

----- Vertical section origin-----
Latitude (+N/S-)..... -7.80 m
Departure (+E/W-)..... -0.30 m

----- Platform reference point-----
Latitude (+N/S-).....
Departure (+E/W-).....

Azimuth from Vsect Origin to target: 119.19 degrees

----- Geomagnetic data -----
Magnetic model..... BGGM version 2005
Magnetic date..... 29-Jul-2005
Magnetic field strength... 1203.00 HCNT
Magnetic dec (+E/W-)..... 13.10 degrees
Magnetic dip..... -69.05 degrees

----- MWD survey Reference Criteria -----
Reference G..... 1000.05 mGal
Reference H..... 1203.00 HCNT
Reference Dip..... -69.05 degrees
Tolerance of G..... (+/-) 2.50 mGal
Tolerance of H..... (+/-) 6.00 HCNT
Tolerance of Dip..... (+/-) 0.45 degrees

----- Corrections -----
Magnetic dec (+E/W-)..... 13.10 degrees
Grid convergence (+E/W-).. -0.52 degrees
Total az corr (+E/W-)..... 13.62 degrees
(Total az corr = magnetic dec - grid conv)

Survey Correction Type ...
I=Sag Corrected Inclination
M=Schlumberger Magnetic Correction
S=Shell Magnetic Correction
F=Failed Axis Correction
R=Magnetic Resonance Tool Correction
D=Dmag Magnetic Correction

| Seq # | Measured depth (m) | Incl angle (deg) | Azimuth angle (deg) | Course length (m) | TVD depth (m) | Vertical section (m) | Displ +N/S- (m) | Displ +E/W- (m) | Total displ (m) | At Azim (deg) | DLS (deg/ 100f) | Srvy tool type | Tool Corr (deg) |
|----------|--------------------------|------------------------|---------------------------|-------------------------|---------------------|----------------------------|-----------------------|-----------------------|-----------------------|---------------------|-----------------------|----------------------|-----------------------|
| 1 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | -7.80 | -0.30 | 7.81 | 182.20 | 0.00 | TIP | None |
| 2 | 107.50 | 0.00 | 0.00 | 107.50 | 107.50 | 0.00 | -7.80 | -0.30 | 7.81 | 182.20 | 0.00 | GYR | None |
| 3 | 110.30 | 0.15 | 158.53 | 2.80 | 110.30 | 0.00 | -7.80 | -0.30 | 7.81 | 182.19 | 1.63 | GYR | None |
| 4 | 138.80 | 0.18 | 157.67 | 28.50 | 138.80 | 0.07 | -7.88 | -0.27 | 7.88 | 181.95 | 0.03 | GYR | None |
| 5 | 157.60 | 0.16 | 154.47 | 18.80 | 157.60 | 0.11 | -7.93 | -0.25 | 7.93 | 181.77 | 0.04 | GYR | None |
| 6 | 174.50 | 0.11 | 156.53 | 16.90 | 174.50 | 0.14 | -7.97 | -0.23 | 7.97 | 181.65 | 0.09 | GYR | None |
| 7 | 183.49 | 0.57 | 272.31 | 8.99 | 183.49 | 0.11 | -7.97 | -0.27 | 7.98 | 181.94 | 2.12 | GYR | None |
| 8 | 214.10 | 2.13 | 263.97 | 30.61 | 214.09 | -0.49 | -8.03 | -0.99 | 8.09 | 187.02 | 1.56 | GYR | None |
| 9 | 244.30 | 4.13 | 267.49 | 30.20 | 244.24 | -1.87 | -8.13 | -2.63 | 8.55 | 197.94 | 2.03 | GYR | None |
| 10 | 273.44 | 6.20 | 258.68 | 29.14 | 273.26 | -3.96 | -8.49 | -5.22 | 9.97 | 211.61 | 2.31 | GYR | None |
| 11 | 302.32 | 6.79 | 248.99 | 28.88 | 301.96 | -6.24 | -9.41 | -8.35 | 12.58 | 221.59 | 1.31 | GYR | None |
| 12 | 320.98 | 6.50 | 238.20 | 18.66 | 320.49 | -7.46 | -10.36 | -10.27 | 14.59 | 224.77 | 2.09 | MWD | None |
| 13 | 360.36 | 6.56 | 225.35 | 39.38 | 359.62 | -9.17 | -13.11 | -13.77 | 19.02 | 226.40 | 1.13 | GYR | None |
| 14 | 389.61 | 6.38 | 219.35 | 29.25 | 388.69 | -9.92 | -15.54 | -15.99 | 22.30 | 225.81 | 0.73 | GYR | None |
| 15 | 418.79 | 6.26 | 225.03 | 29.18 | 417.69 | -10.64 | -17.92 | -18.14 | 25.50 | 225.35 | 0.66 | GYR | None |
| 16 | 447.48 | 6.24 | 222.63 | 28.69 | 446.21 | -11.43 | -20.18 | -20.30 | 28.62 | 225.18 | 0.28 | GYR | None |
| 17 | 476.58 | 6.16 | 224.05 | 29.10 | 475.14 | -12.20 | -22.46 | -22.46 | 31.77 | 225.00 | 0.18 | GYR | None |
| 18 | 505.66 | 6.06 | 219.91 | 29.08 | 504.05 | -12.88 | -24.76 | -24.53 | 34.85 | 224.73 | 0.47 | GYR | None |
| 19 | 534.65 | 6.06 | 217.45 | 28.99 | 532.88 | -13.39 | -27.15 | -26.44 | 37.90 | 224.25 | 0.27 | GYR | None |
| 20 | 563.70 | 6.02 | 217.76 | 29.05 | 561.77 | -13.83 | -29.57 | -28.31 | 40.94 | 223.75 | 0.05 | GYR | None |
| 21 | 592.73 | 5.72 | 226.27 | 29.03 | 590.65 | -14.49 | -31.77 | -30.29 | 43.90 | 223.63 | 0.97 | GYR | None |
| 22 | 621.85 | 5.72 | 231.95 | 29.12 | 619.62 | -15.47 | -33.67 | -32.48 | 46.78 | 223.97 | 0.59 | GYR | None |
| 23 | 650.71 | 5.56 | 228.28 | 28.86 | 648.34 | -16.49 | -35.49 | -34.65 | 49.60 | 224.32 | 0.42 | GYR | None |
| 24 | 680.04 | 5.51 | 231.33 | 29.33 | 677.54 | -17.48 | -37.31 | -36.81 | 52.41 | 224.61 | 0.31 | GYR | None |
| 25 | 697.53 | 5.50 | 228.98 | 17.49 | 694.95 | -18.08 | -38.39 | -38.10 | 54.08 | 224.78 | 0.39 | MWD | None |
| 26 | 726.22 | 5.50 | 228.97 | 28.69 | 723.50 | -19.01 | -40.19 | -40.17 | 56.82 | 224.99 | 0.00 | MWD | None |
| 27 | 755.02 | 5.47 | 224.63 | 28.80 | 752.17 | -19.84 | -42.07 | -42.18 | 59.57 | 225.07 | 0.44 | MWD | None |
| 28 | 784.05 | 5.45 | 220.42 | 29.03 | 781.07 | -20.48 | -44.11 | -44.04 | 62.33 | 224.96 | 0.42 | MWD | None |
| 29 | 812.94 | 5.55 | 224.13 | 28.89 | 809.83 | -21.11 | -46.15 | -45.91 | 65.10 | 224.85 | 0.39 | MWD | None |
| 30 | 856.11 | 5.52 | 225.75 | 43.17 | 852.80 | -22.24 | -49.10 | -48.85 | 69.26 | 224.85 | 0.11 | MWD | None |

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SCHLUMBERGER Survey Report

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| Seq # | Measured depth (m) | Incl angle (deg) | Azimuth angle (deg) | Course length (m) | TVD depth (m) | Vertical section (m) | Displ +N/S- (m) | Displ +E/W- (m) | Total displ (m) | At Azim (deg) | DLS (deg/ 100f) | Srvy tool type | Tool Corr (deg) |
|----------|--------------------------|------------------------|---------------------------|-------------------------|---------------------|----------------------------|-----------------------|-----------------------|-----------------------|---------------------|-----------------------|----------------------|-----------------------|
| 31 | 885.50 | 5.60 | 224.98 | 29.39 | 882.05 | -23.03 | -51.10 | -50.87 | 72.11 | 224.87 | 0.11 | MWD | None |
| 32 | 914.67 | 5.60 | 223.80 | 29.17 | 911.08 | -23.78 | -53.14 | -52.86 | 74.95 | 224.85 | 0.12 | MWD | None |
| 33 | 943.84 | 5.47 | 223.94 | 29.17 | 940.11 | -24.49 | -55.16 | -54.81 | 77.77 | 224.82 | 0.14 | MWD | None |
| 34 | 972.77 | 5.37 | 223.05 | 28.93 | 968.91 | -25.17 | -57.15 | -56.69 | 80.50 | 224.77 | 0.14 | MWD | None |
| 35 | 1001.99 | 5.46 | 223.36 | 29.22 | 998.00 | -25.83 | -59.16 | -58.58 | 83.26 | 224.72 | 0.10 | MWD | None |
| 36 | 1030.57 | 5.41 | 224.95 | 28.58 | 1026.46 | -26.53 | -61.10 | -60.47 | 85.96 | 224.70 | 0.17 | MWD | None |
| 37 | 1059.72 | 5.32 | 225.10 | 29.15 | 1055.48 | -27.28 | -63.03 | -62.40 | 88.69 | 224.71 | 0.10 | MWD | None |
| 38 | 1088.71 | 5.11 | 226.63 | 28.99 | 1084.35 | -28.03 | -64.86 | -64.29 | 91.32 | 224.75 | 0.26 | MWD | None |
| 39 | 1117.66 | 5.03 | 225.28 | 28.95 | 1113.18 | -28.77 | -66.64 | -66.13 | 93.88 | 224.78 | 0.15 | MWD | None |
| 40 | 1146.60 | 5.09 | 226.31 | 28.94 | 1142.01 | -29.50 | -68.42 | -67.96 | 96.43 | 224.81 | 0.11 | MWD | None |
| 41 | 1175.41 | 5.01 | 225.26 | 28.81 | 1170.71 | -30.22 | -70.19 | -69.77 | 98.97 | 224.83 | 0.13 | MWD | None |
| 42 | 1204.65 | 4.90 | 227.98 | 29.24 | 1199.84 | -30.98 | -71.92 | -71.61 | 101.49 | 224.87 | 0.27 | MWD | None |
| 43 | 1233.79 | 4.85 | 227.90 | 29.14 | 1228.87 | -31.78 | -73.58 | -73.45 | 103.96 | 224.95 | 0.05 | MWD | None |
| 44 | 1262.27 | 5.07 | 228.33 | 28.48 | 1257.25 | -32.57 | -75.22 | -75.28 | 106.42 | 225.02 | 0.24 | MWD | None |
| 45 | 1291.51 | 5.31 | 229.22 | 29.24 | 1286.37 | -33.46 | -76.97 | -77.27 | 109.06 | 225.11 | 0.26 | MWD | None |
| 46 | 1320.64 | 5.99 | 219.17 | 29.13 | 1315.36 | -34.19 | -79.03 | -79.25 | 111.92 | 225.08 | 1.25 | MWD | None |
| 47 | 1349.52 | 7.66 | 193.37 | 28.88 | 1344.04 | -33.92 | -82.07 | -80.65 | 115.06 | 224.50 | 3.64 | MWD | None |
| 48 | 1378.46 | 10.94 | 165.80 | 28.94 | 1372.61 | -31.51 | -86.61 | -80.42 | 118.19 | 222.88 | 5.73 | MWD | None |
| 49 | 1407.52 | 13.12 | 139.65 | 29.06 | 1401.05 | -26.52 | -91.80 | -77.61 | 120.21 | 220.21 | 6.09 | MWD | None |
| 50 | 1436.56 | 14.26 | 126.97 | 29.04 | 1429.27 | -19.89 | -96.46 | -72.61 | 120.74 | 216.97 | 3.36 | MWD | None |
| 51 | 1465.33 | 14.22 | 127.37 | 28.77 | 1457.16 | -12.88 | -100.74 | -66.97 | 120.97 | 213.62 | 0.11 | MWD | None |
| 52 | 1494.32 | 13.91 | 123.06 | 28.99 | 1485.28 | -5.88 | -104.80 | -61.22 | 121.37 | 210.29 | 1.15 | MWD | None |
| 53 | 1523.35 | 13.91 | 114.26 | 29.03 | 1513.46 | 1.08 | -108.14 | -55.12 | 121.38 | 207.01 | 2.22 | MWD | None |
| 54 | 1552.33 | 13.77 | 107.16 | 28.98 | 1541.60 | 7.93 | -110.59 | -48.64 | 120.82 | 203.74 | 1.79 | MWD | None |
| 55 | 1581.19 | 13.47 | 106.93 | 28.86 | 1569.65 | 14.57 | -112.58 | -42.15 | 120.21 | 200.52 | 0.32 | MWD | None |
| 56 | 1610.23 | 13.22 | 106.90 | 29.04 | 1597.90 | 21.12 | -114.53 | -35.73 | 119.98 | 197.33 | 0.26 | MWD | None |
| 57 | 1639.24 | 12.97 | 106.76 | 29.01 | 1626.16 | 27.54 | -116.43 | -29.44 | 120.10 | 194.19 | 0.26 | MWD | None |
| 58 | 1668.40 | 14.75 | 106.71 | 29.16 | 1654.47 | 34.36 | -118.45 | -22.75 | 120.61 | 190.87 | 1.86 | MWD | None |
| 59 | 1697.46 | 18.56 | 110.49 | 29.06 | 1682.31 | 42.55 | -121.13 | -14.88 | 122.04 | 187.00 | 4.15 | MWD | None |
| 60 | 1726.01 | 22.22 | 113.20 | 28.55 | 1709.06 | 52.41 | -124.85 | -5.65 | 124.98 | 182.59 | 4.03 | MWD | None |

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| Seq # | Measured depth (m) | Incl angle (deg) | Azimuth angle (deg) | Course length (m) | TVD depth (m) | Vertical section (m) | Displ +N/S- (m) | Displ +E/W- (m) | Total displ (m) | At Azim (deg) | DLS (deg/ 100f) | Srvy tool type | Tool Corr (deg) |
|----------|--------------------------|------------------------|---------------------------|-------------------------|---------------------|----------------------------|-----------------------|-----------------------|-----------------------|---------------------|-----------------------|----------------------|-----------------------|
|----------|--------------------------|------------------------|---------------------------|-------------------------|---------------------|----------------------------|-----------------------|-----------------------|-----------------------|---------------------|-----------------------|----------------------|-----------------------|

| | | | | | | | | | | | | | |
|----|---------|-------|--------|-------|---------|--------|---------|--------|--------|--------|------|-----|------|
| 61 | 1755.12 | 25.46 | 114.56 | 29.11 | 1735.69 | 64.12 | -129.62 | 5.10 | 129.72 | 177.75 | 3.44 | MWD | None |
| 62 | 1784.08 | 28.71 | 115.07 | 28.96 | 1761.47 | 77.27 | -135.15 | 17.06 | 136.23 | 172.80 | 3.43 | MWD | None |
| 63 | 1813.12 | 32.21 | 113.25 | 29.04 | 1786.50 | 91.93 | -141.17 | 30.50 | 144.42 | 167.81 | 3.80 | MWD | None |
| 64 | 1842.22 | 35.30 | 112.90 | 29.10 | 1810.69 | 108.01 | -147.50 | 45.37 | 154.32 | 162.90 | 3.24 | MWD | None |
| 65 | 1871.31 | 38.11 | 113.30 | 29.09 | 1834.01 | 125.29 | -154.32 | 61.36 | 166.08 | 158.32 | 2.95 | MWD | None |
| 66 | 1899.95 | 41.20 | 113.37 | 28.64 | 1856.05 | 143.47 | -161.56 | 78.14 | 179.47 | 154.19 | 3.29 | MWD | None |
| 67 | 1929.05 | 45.21 | 113.03 | 29.10 | 1877.26 | 163.28 | -169.41 | 96.45 | 194.94 | 150.35 | 4.21 | MWD | None |
| 68 | 1958.45 | 49.07 | 111.54 | 29.40 | 1897.26 | 184.67 | -177.57 | 116.39 | 212.32 | 146.76 | 4.16 | MWD | None |
| 69 | 1987.31 | 52.44 | 109.37 | 28.86 | 1915.51 | 206.75 | -185.37 | 137.33 | 230.70 | 143.47 | 3.98 | MWD | None |
| 70 | 2016.22 | 56.23 | 108.21 | 28.91 | 1932.37 | 229.85 | -192.93 | 159.56 | 250.36 | 140.41 | 4.12 | MWD | None |
| 71 | 2044.75 | 58.13 | 107.85 | 28.53 | 1947.83 | 253.37 | -200.35 | 182.36 | 270.91 | 137.69 | 2.06 | MWD | None |
| 72 | 2073.75 | 56.68 | 107.89 | 29.00 | 1963.45 | 277.33 | -207.84 | 205.61 | 292.36 | 135.31 | 1.52 | MWD | None |
| 73 | 2102.65 | 56.17 | 107.47 | 28.90 | 1979.43 | 300.92 | -215.16 | 228.55 | 313.89 | 133.27 | 0.65 | MWD | None |
| 74 | 2131.41 | 55.69 | 106.87 | 28.76 | 1995.54 | 324.22 | -222.19 | 251.32 | 335.45 | 131.48 | 0.73 | MWD | None |
| 75 | 2160.35 | 55.85 | 106.48 | 28.94 | 2011.82 | 347.58 | -229.06 | 274.24 | 357.31 | 129.87 | 0.38 | MWD | None |
| 76 | 2189.30 | 54.86 | 106.25 | 28.95 | 2028.28 | 370.80 | -235.77 | 297.09 | 379.27 | 128.44 | 1.06 | MWD | None |
| 77 | 2218.83 | 53.99 | 105.47 | 29.53 | 2045.46 | 394.17 | -242.33 | 320.19 | 401.56 | 127.12 | 1.11 | MWD | None |
| 78 | 2247.97 | 53.59 | 105.31 | 29.14 | 2062.68 | 417.01 | -248.57 | 342.86 | 423.49 | 125.94 | 0.44 | MWD | None |
| 79 | 2277.03 | 54.85 | 105.22 | 29.06 | 2079.67 | 439.89 | -254.78 | 365.60 | 445.62 | 124.87 | 1.32 | MWD | None |
| 80 | 2306.49 | 53.74 | 104.80 | 29.46 | 2096.86 | 463.08 | -260.97 | 388.71 | 468.19 | 123.88 | 1.20 | MWD | None |
| 81 | 2335.48 | 53.21 | 104.61 | 28.99 | 2114.11 | 485.64 | -266.89 | 411.24 | 490.25 | 122.98 | 0.58 | MWD | None |
| 82 | 2364.40 | 53.21 | 104.10 | 28.92 | 2131.43 | 508.03 | -272.63 | 433.68 | 512.25 | 122.16 | 0.43 | MWD | None |
| 83 | 2393.21 | 51.92 | 103.86 | 28.81 | 2148.94 | 530.10 | -278.16 | 455.88 | 534.04 | 121.39 | 1.38 | MWD | None |
| 84 | 2422.27 | 52.23 | 104.37 | 29.06 | 2166.81 | 552.23 | -283.75 | 478.11 | 555.97 | 120.69 | 0.53 | MWD | None |
| 85 | 2451.33 | 52.61 | 104.69 | 29.06 | 2184.53 | 574.52 | -289.53 | 500.40 | 578.12 | 120.05 | 0.48 | MWD | None |
| 86 | 2480.33 | 52.86 | 105.28 | 29.00 | 2202.09 | 596.89 | -295.49 | 522.70 | 600.44 | 119.48 | 0.56 | MWD | None |
| 87 | 2509.25 | 51.86 | 105.68 | 28.92 | 2219.75 | 619.14 | -301.60 | 544.77 | 622.68 | 118.97 | 1.11 | MWD | None |
| 88 | 2538.42 | 52.71 | 106.56 | 29.17 | 2237.59 | 641.61 | -308.01 | 566.93 | 645.20 | 118.52 | 1.15 | MWD | None |
| 89 | 2567.49 | 53.16 | 106.46 | 29.07 | 2255.11 | 664.24 | -314.60 | 589.17 | 667.91 | 118.10 | 0.48 | MWD | None |
| 90 | 2596.48 | 52.44 | 107.42 | 28.99 | 2272.64 | 686.81 | -321.33 | 611.26 | 690.58 | 117.73 | 1.10 | MWD | None |

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| Seq # | Measured depth (m) | Incl angle (deg) | Azimuth angle (deg) | Course length (m) | TVD depth (m) | Vertical section (m) | Displ +N/S- (m) | Displ +E/W- (m) | Total displ (m) | At Azim (deg) | DLS (deg/100f) | Srvy tool type | Tool Corr (deg) |
|-------|--------------------|------------------|---------------------|-------------------|---------------|----------------------|-----------------|-----------------|-----------------|---------------|----------------|------------------|-----------------|
| 91 | 2623.96 | 51.70 | 107.50 | 27.48 | 2289.53 | 708.03 | -327.83 | 631.94 | 711.91 | 117.42 | 0.82 | MWD | None |
| 92 | 2641.00 | 51.70 | 107.50 | 17.04 | 2300.10 | 721.13 | -331.86 | 644.69 | 725.09 | 117.24 | 0.00 | Projection to TD | |

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Company: **ESSO Australia Pty. Ltd.**

Schlumberger

Well: **BMB-B16**

Field: **Bream B**

Rig: **ENSCO 102**

8.5 in. Section

State: **Victoria**

**GeoVISION Service
1:500 True Vertical Depth
Recorded Mode Log**

