

# Bit Run Summary

| Run number             |     | 2         | 3         | 4         |  |  |  |  |  |  |
|------------------------|-----|-----------|-----------|-----------|--|--|--|--|--|--|
| Bit size               | in. | 8.5       | 8.5       | 8.5       |  |  |  |  |  |  |
| Bit start depth        | m   | 843.0     | 1253.0    | 1902.0    |  |  |  |  |  |  |
| Bit end depth          | m   | 1253.0    | 1902.0    | 2641.0    |  |  |  |  |  |  |
| Top interval logged    | m   | 836.0     | 1221.2    | 1870.2    |  |  |  |  |  |  |
| Bottom interval logged | m   | 1243.8    | 1892.8    | 2631.8    |  |  |  |  |  |  |
| Begin log: time        |     | 19:21     | 20:56     | 06:30     |  |  |  |  |  |  |
| Begin log: date        |     | 04-Aug-05 | 06-Aug-05 | 08-Aug-05 |  |  |  |  |  |  |
| End log: time          |     | 07:49     | 16:49     | 13:05     |  |  |  |  |  |  |
| End log: date          |     | 06-Aug-05 | 07-Aug-05 | 09-Aug-05 |  |  |  |  |  |  |
| Mud data               |     |           |           |           |  |  |  |  |  |  |
| Depth                  | m   | 1192.0    | 1809.0    | 2641.0    |  |  |  |  |  |  |

| 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             |          |          |           |  |  |  |
| <b>Environmental data</b>  |          |                 |                 |                 |          |          |           |  |  |  |
| <b>GR</b>                  |          |                 |                 |                 |          |          |           |  |  |  |
| Mud weight                 | ppg      | 9.60            | 9.70            | 9.85            |          |          |           |  |  |  |
| Bit size                   | in.      | 8.5             | 8.5             | 8.5             |          |          |           |  |  |  |
| <b>Resistivity</b>         |          |                 |                 |                 |          |          |           |  |  |  |
| <b>Neutron porosity</b>    |          |                 |                 |                 |          |          |           |  |  |  |
| 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<br>Xceed* RSS<br>D&I Survey  |  | OTHER SERVICES FOR RUN3<br>Xceed* RSS<br>D&I Survey   |  | OTHER SERVICES FOR RUN4<br>Xceed* RSS<br>D&I Survey  |  |
| REMARKS: RUN NUMBER 2<br>8-1/2 in. hole section was drilled from 843.0 m to 1253.0 m.<br><br>Depth is referenced to Driller's Depth.<br><br>All data presented is from tool memory.<br><br>Environmental Corrections: –<br>GR is corrected for mud weight, tool and bit size, but not corrected for Potassium content.<br>GVR* resistivity is corrected for bit size, mud resistivity and borehole temperature.<br>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).<br>Surface temperature is adjusted to give a correct computed downhole temperature gradient.<br><br>Neutron porosity data was processed without |  | REMARKS: RUN NUMBER 3<br>8-1/2 in. hole section was drilled from 1253.0 m to 1902.0 m.<br><br>Depth is referenced to Driller's Depth.<br><br>All data presented is from tool memory.<br><br>Environmental Corrections: –<br>GR is corrected for mud weight, tool and bit size, but not corrected for Potassium content.<br>GVR*6 resistivity is corrected for bit size, mud resistivity and borehole temperature.<br>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).<br>Surface temperature is adjusted to give a correct computed downhole temperature gradient.<br><br>Resistivity data was processed until the depth |  | REMARKS: RUN NUMBER 4<br>8-1/2 in. hole section was drilled from 1902.0 m to 2641.0 m.<br><br>Depth is referenced to Driller's Depth.<br><br>All data presented is from tool memory.<br><br>Environmental Corrections: –<br>GR is corrected for mud weight, tool and bit size, but not corrected for Potassium content.<br>GVR* resistivity is corrected for bit size, mud resistivity and borehole temperature.<br>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).<br>Surface temperature is adjusted to give a correct computed downhole temperature gradient.<br><br>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

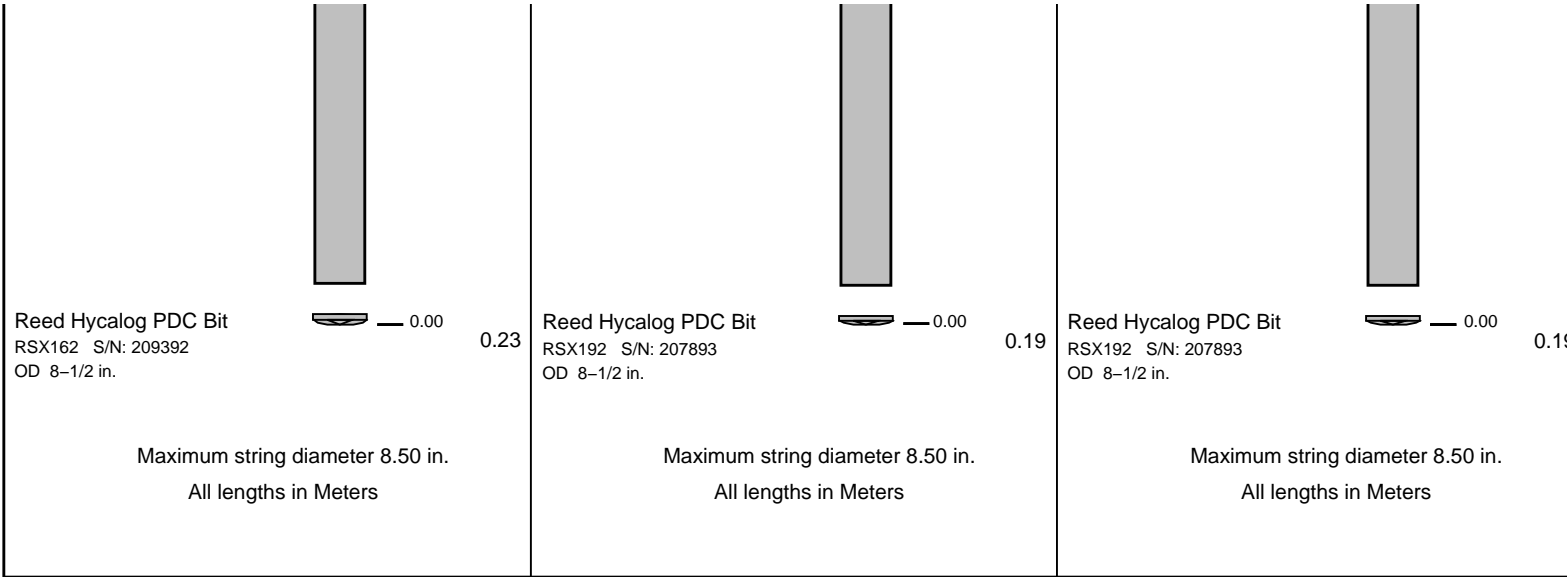
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S/N: FE55 Neutron N 31.60  
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NSR-M A202 Density L 30.63  
GSR-J A1994 UltraSonic 30.25  
Software: V8.3B02 R-O Port 29.49

6-3/4 in. Sonic\*6 27.10  
S/N: 34641  
Software: V6.2B01  
Receiver Array 24.04  
R-O Port 23.64  
Transmitter 20.60

6-3/4 in. PowerPulse\* 19.81  
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

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

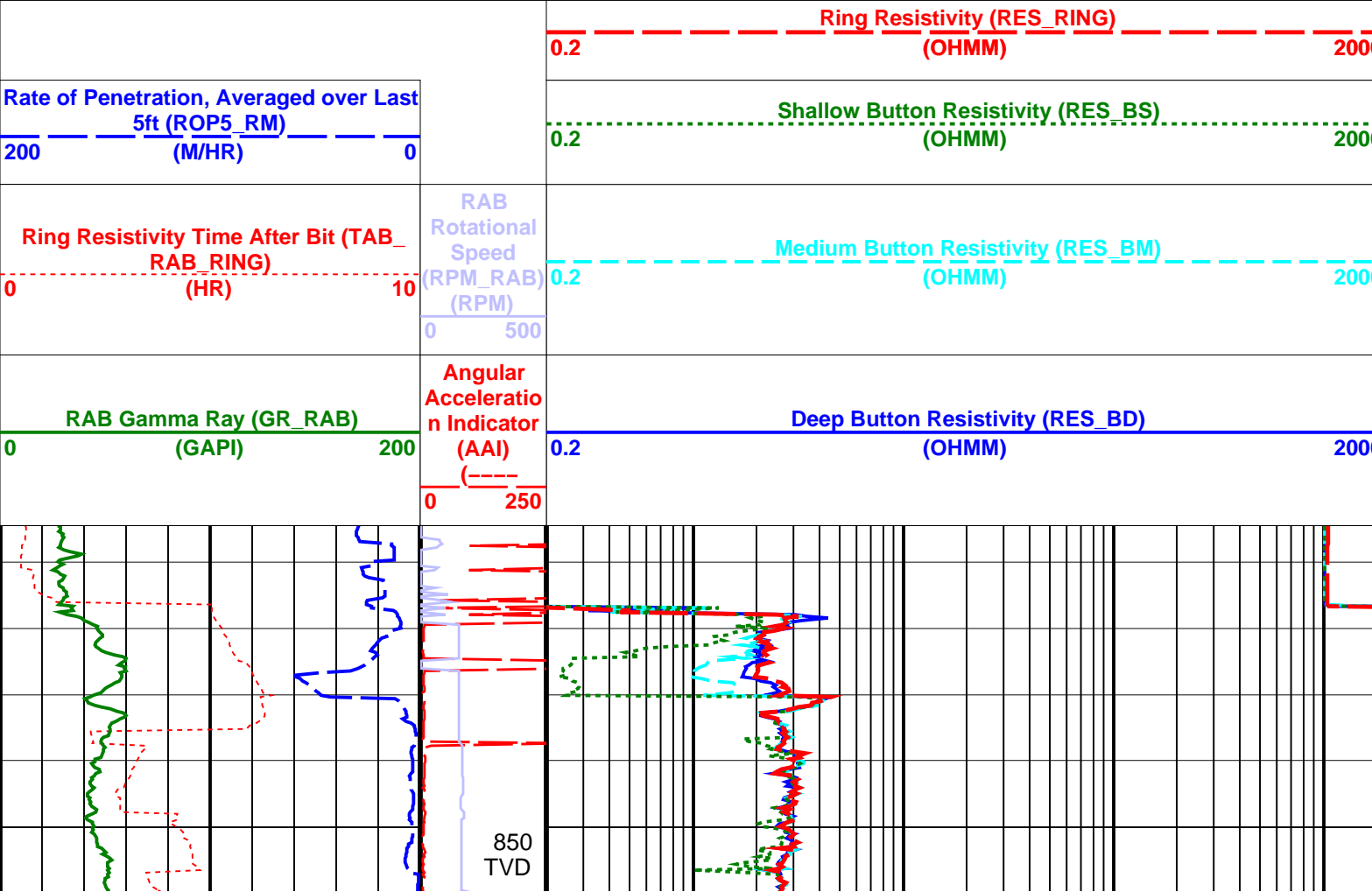


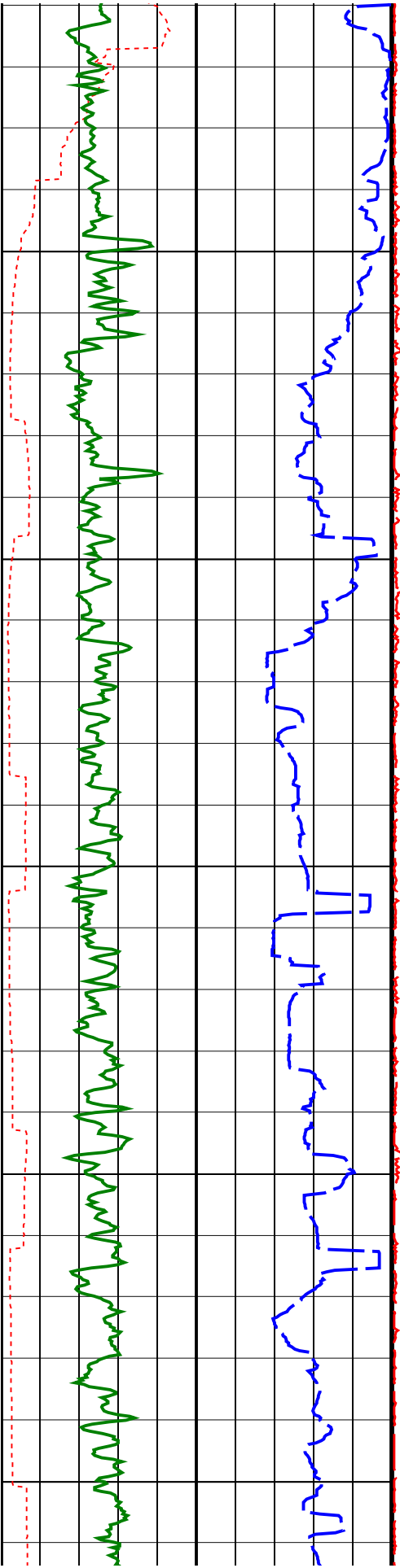
True Vertical Depth Log

IDEAL Version: ID10\_0C\_04  
IDF

RAB id10\_0c\_04 MWD\_10 id10\_0c\_04  
ADN id10\_0c\_04

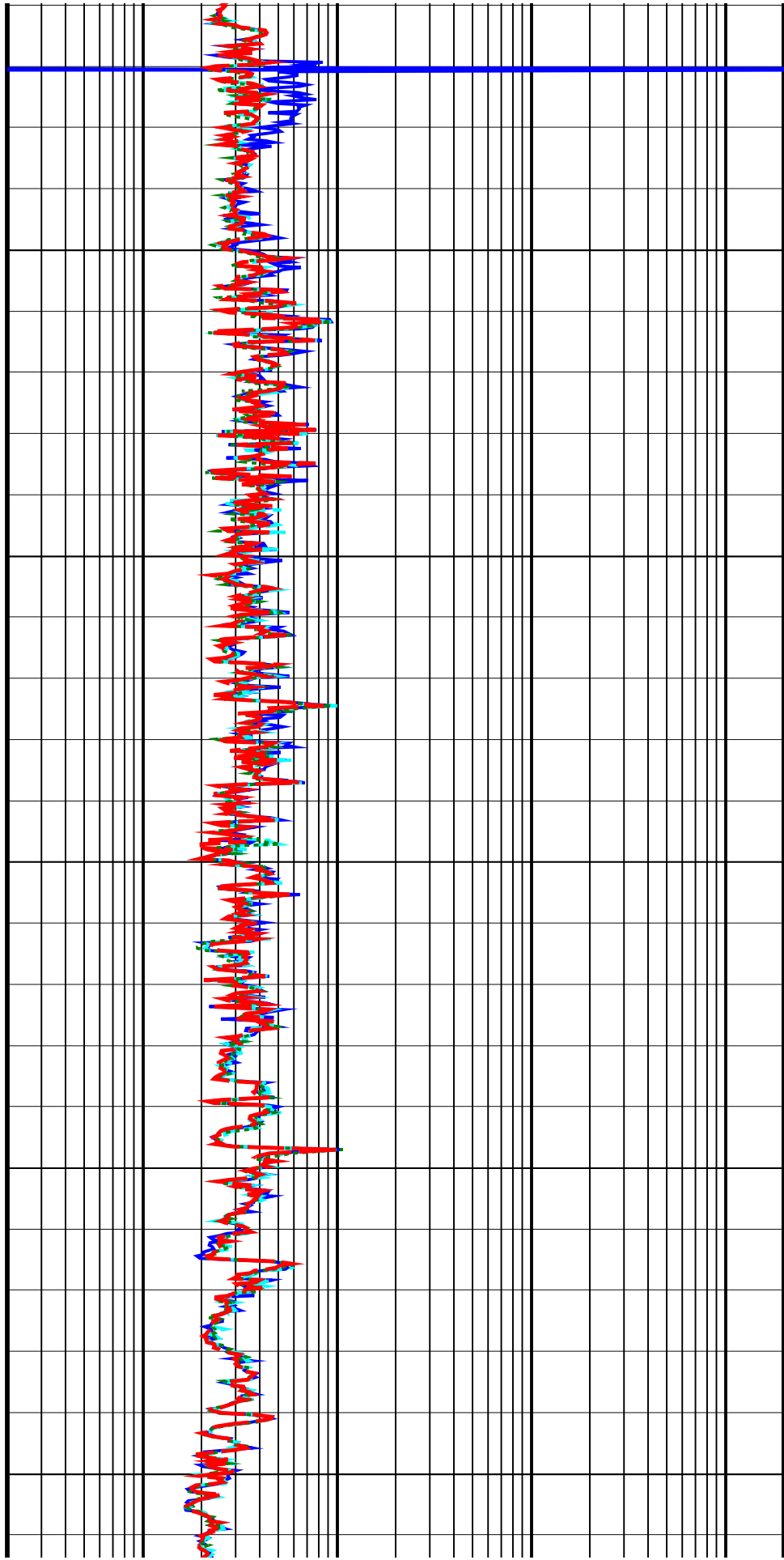
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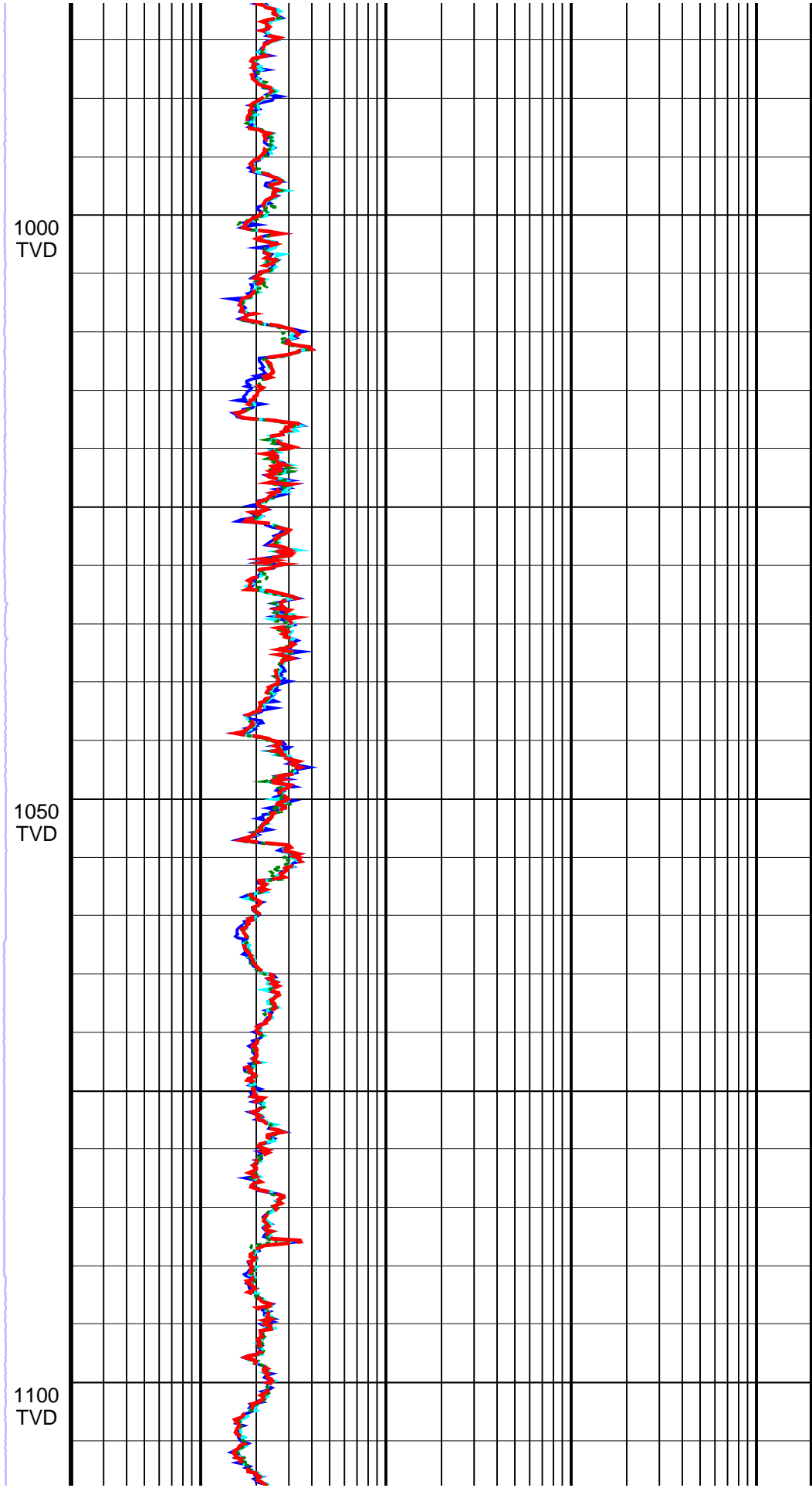
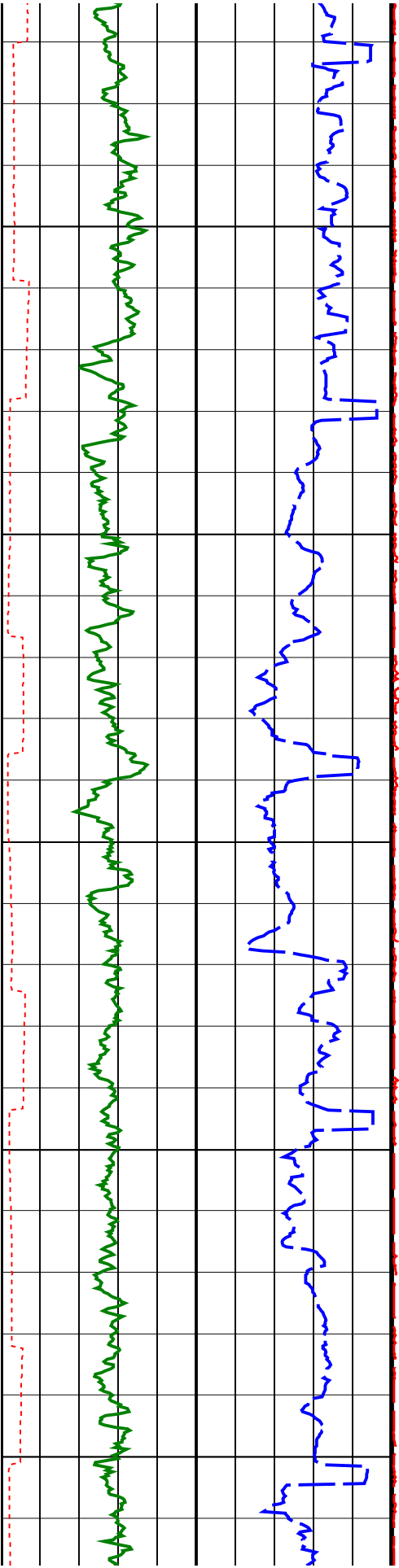


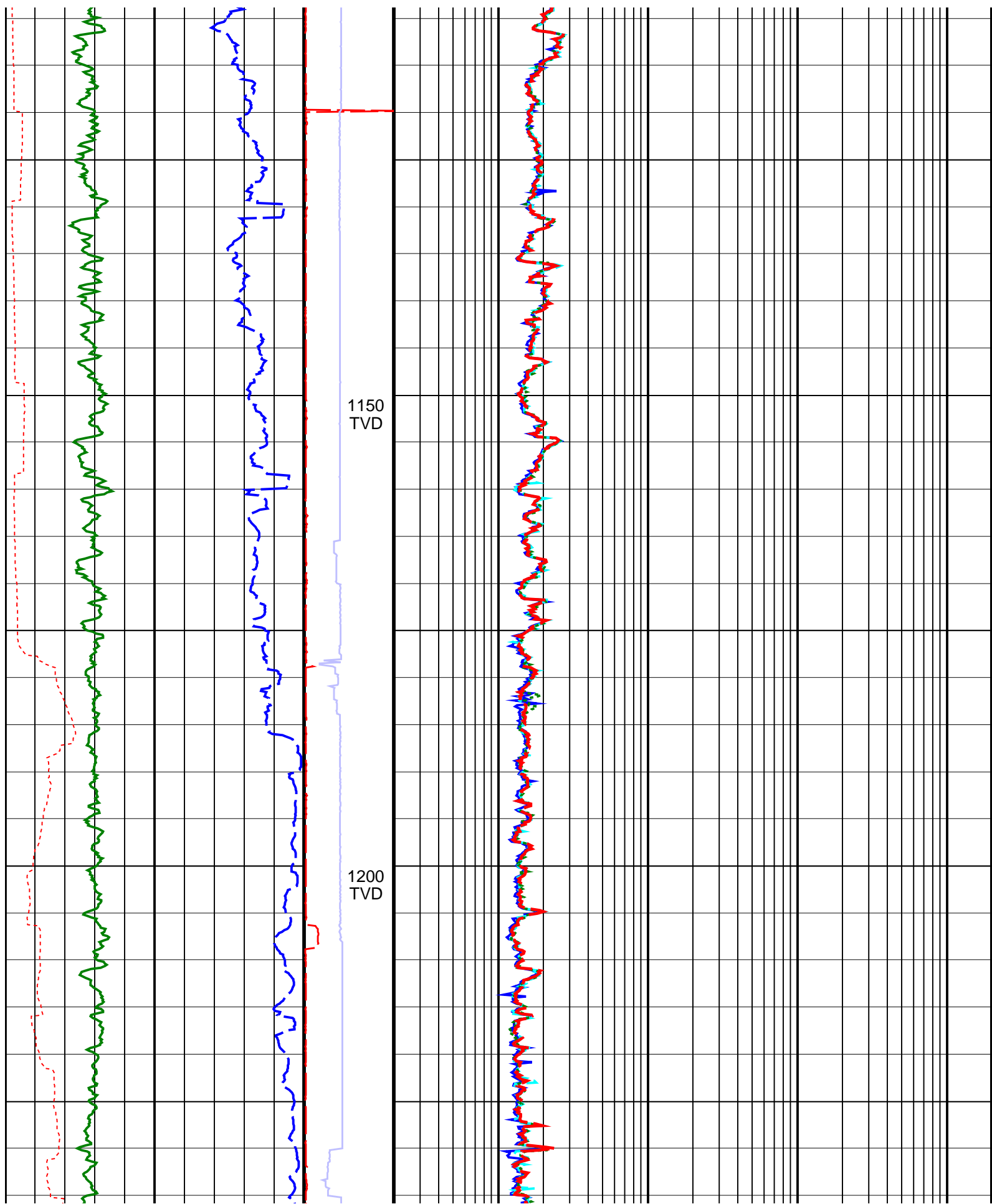


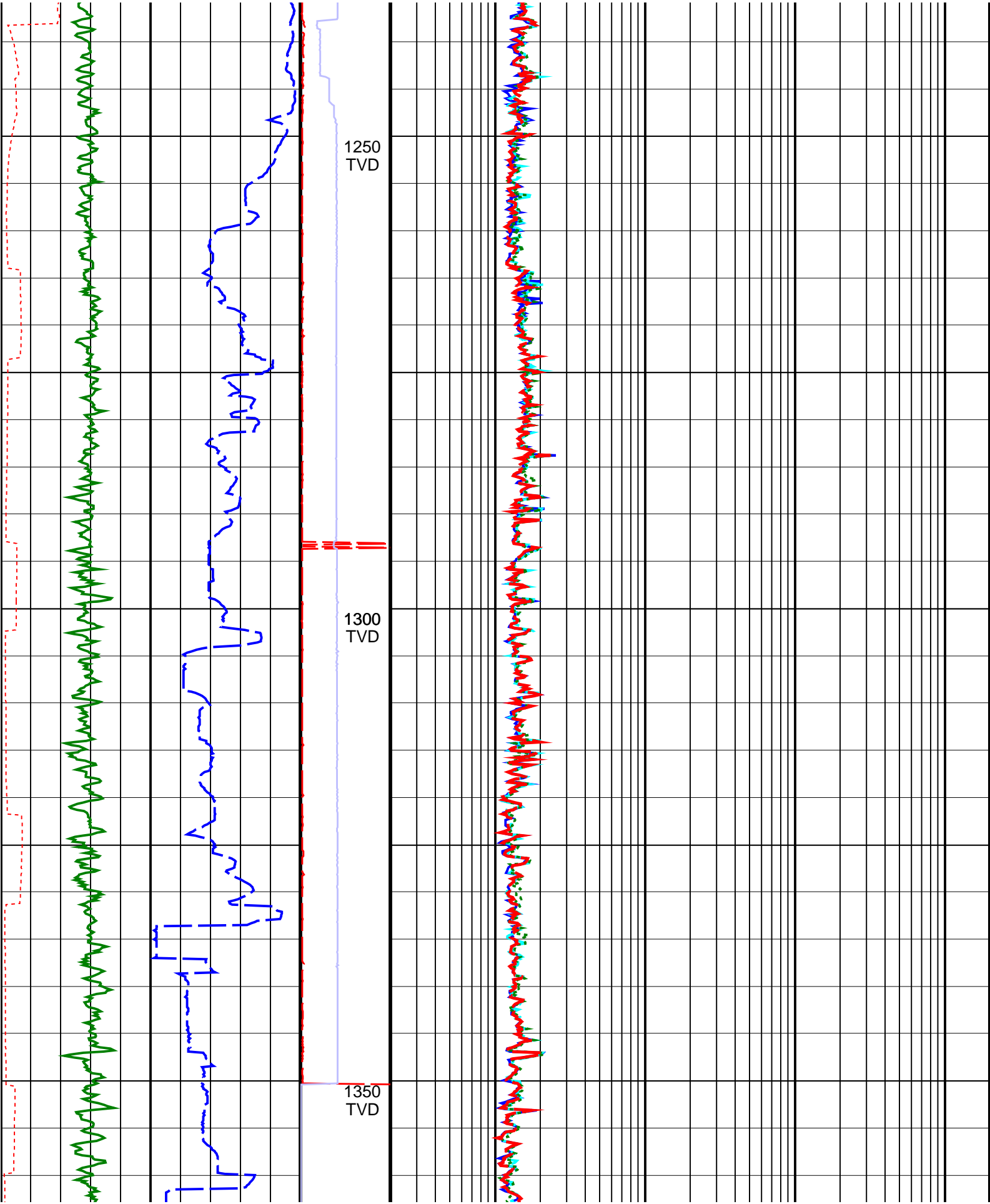
900  
TVD

950  
TVD

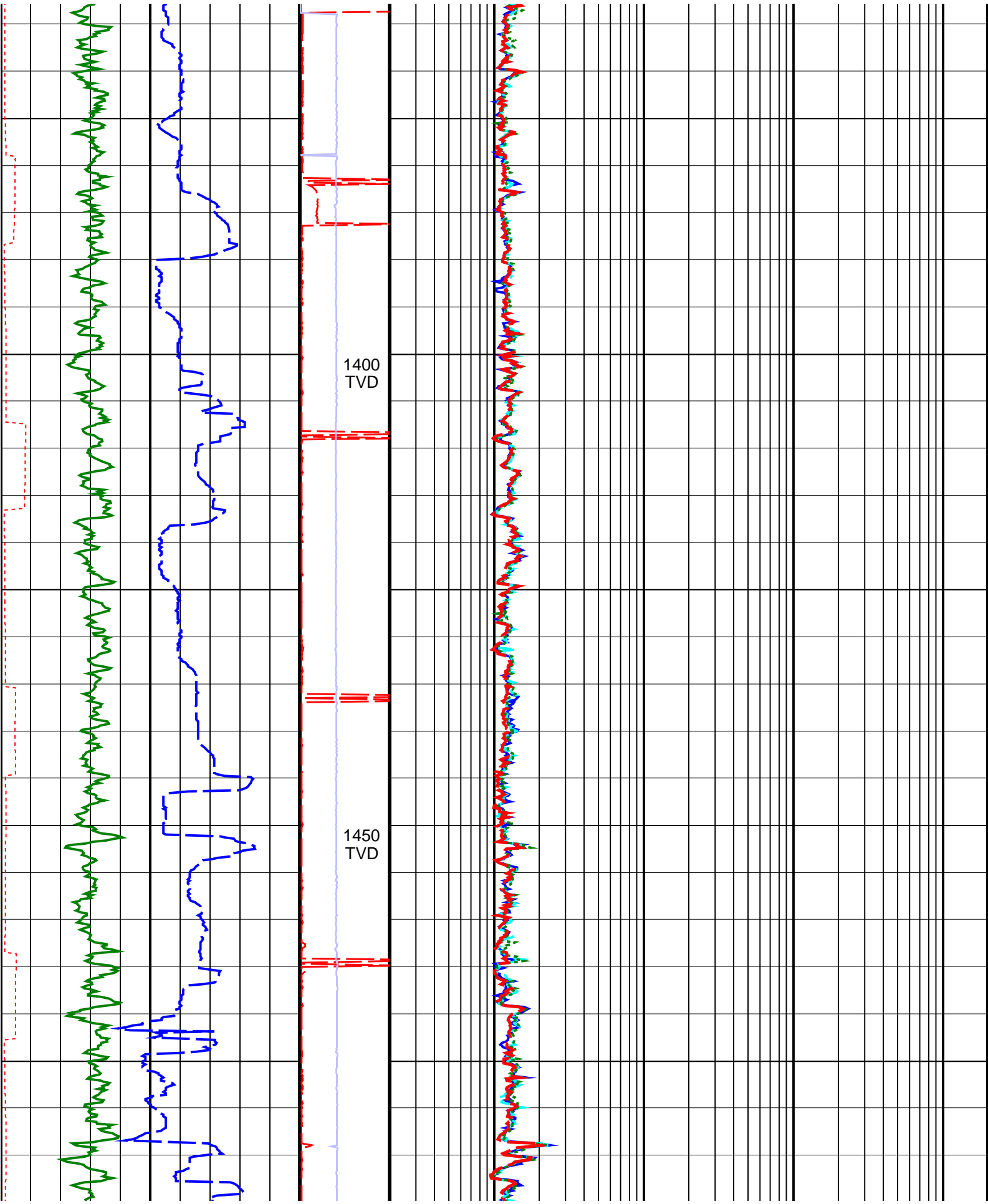


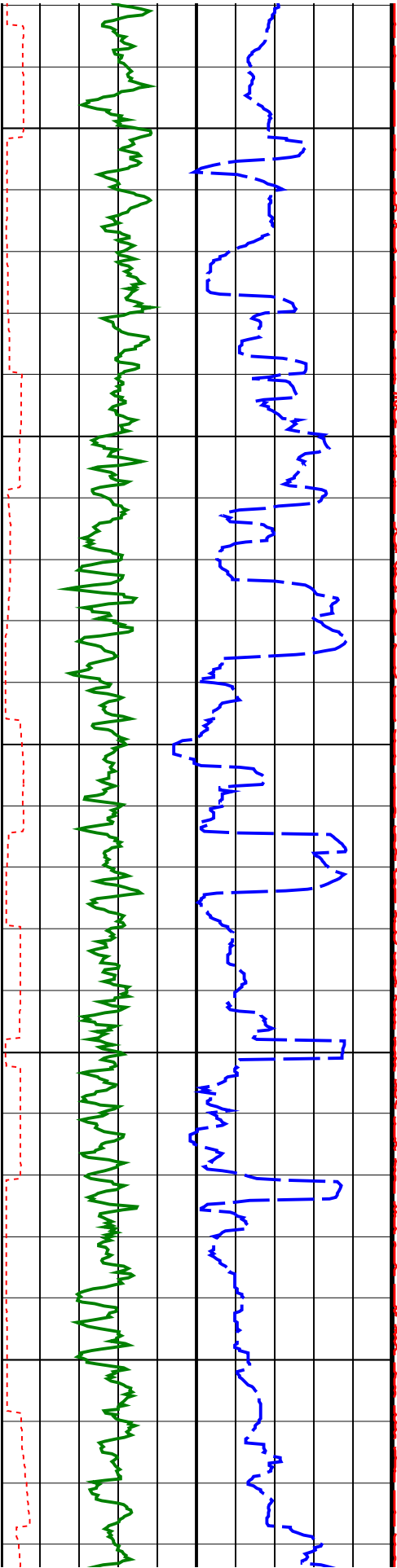








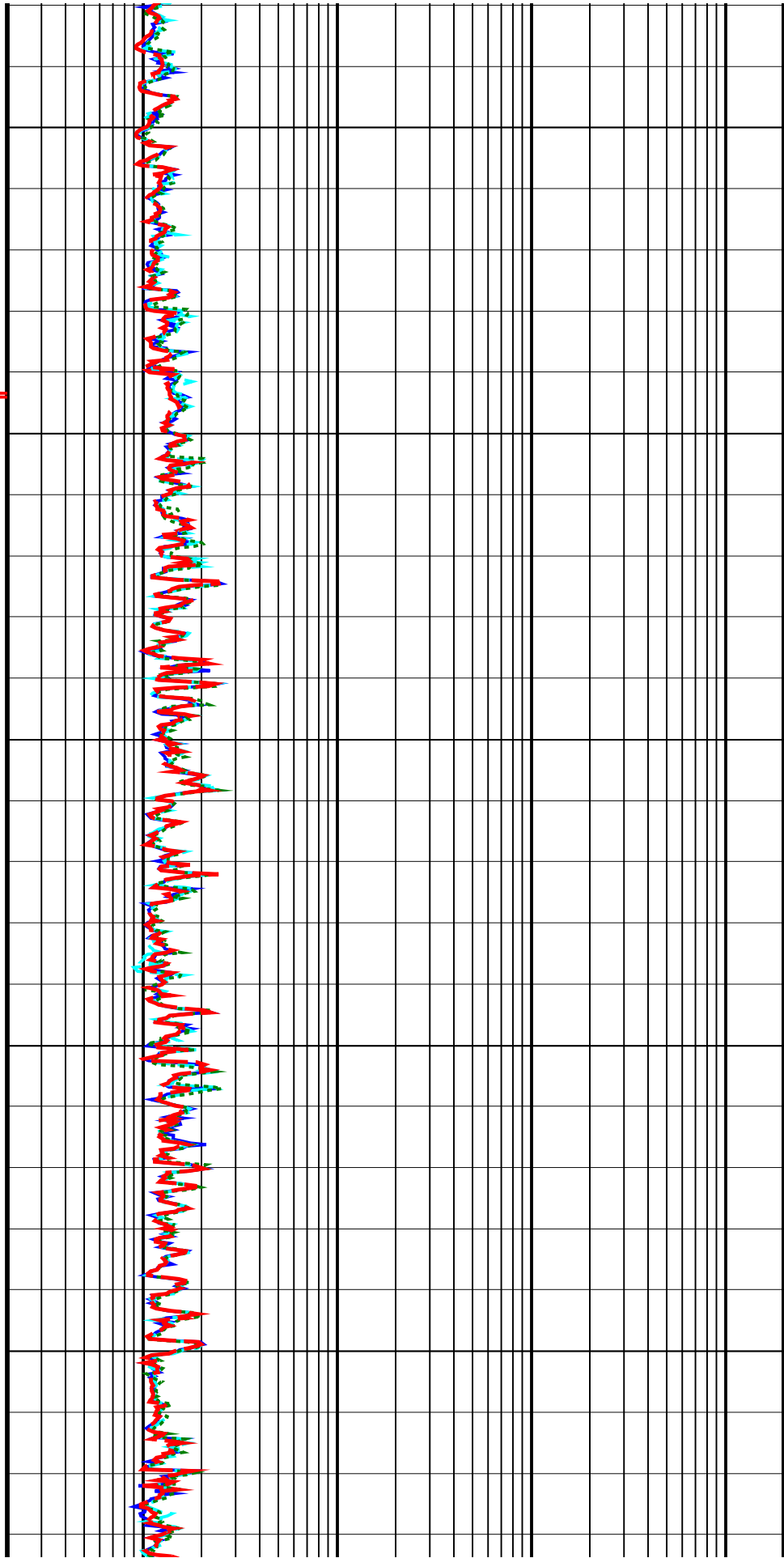


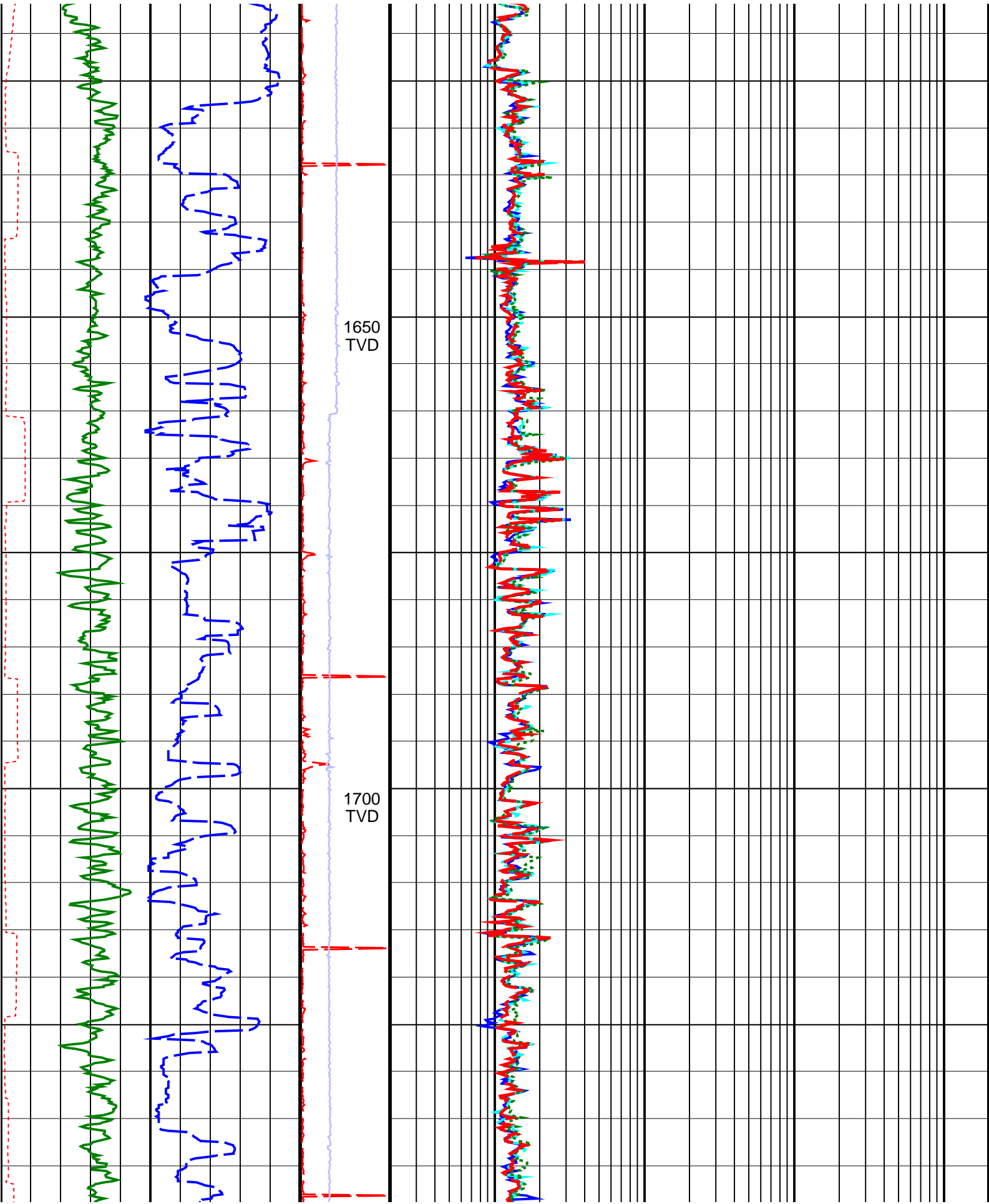


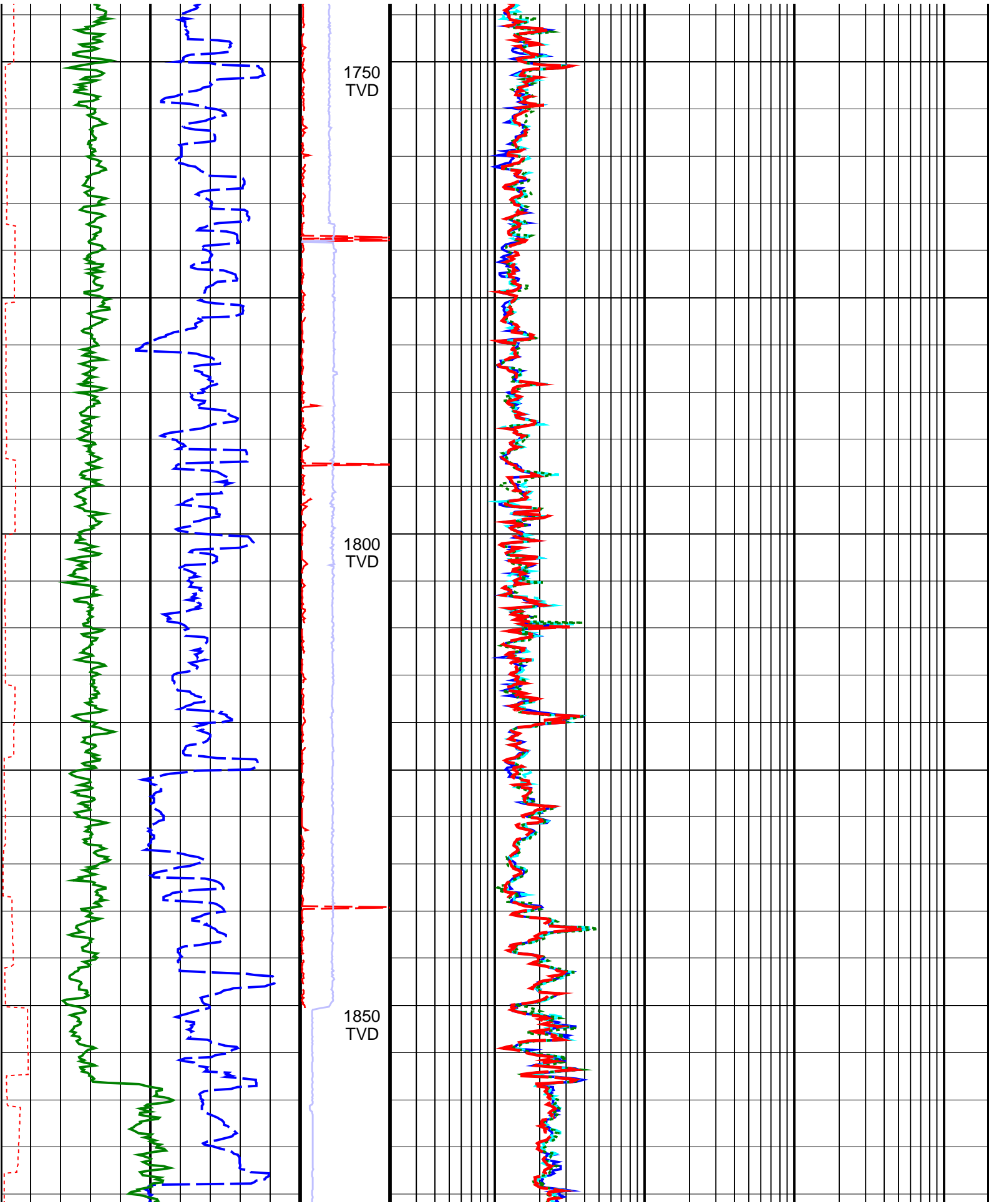
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TVD

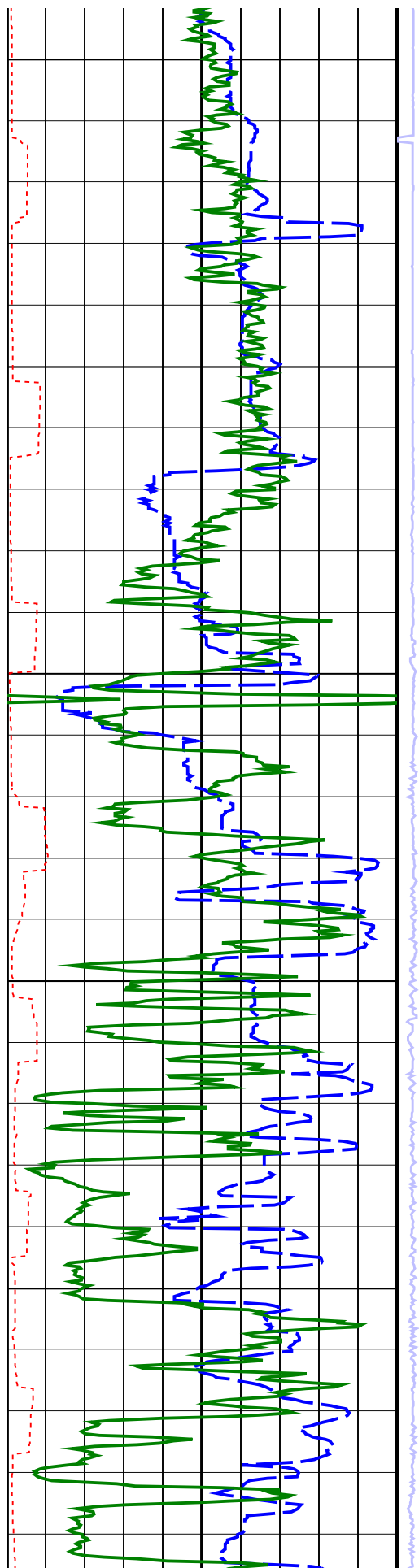
1550  
TVD

1600  
TVD



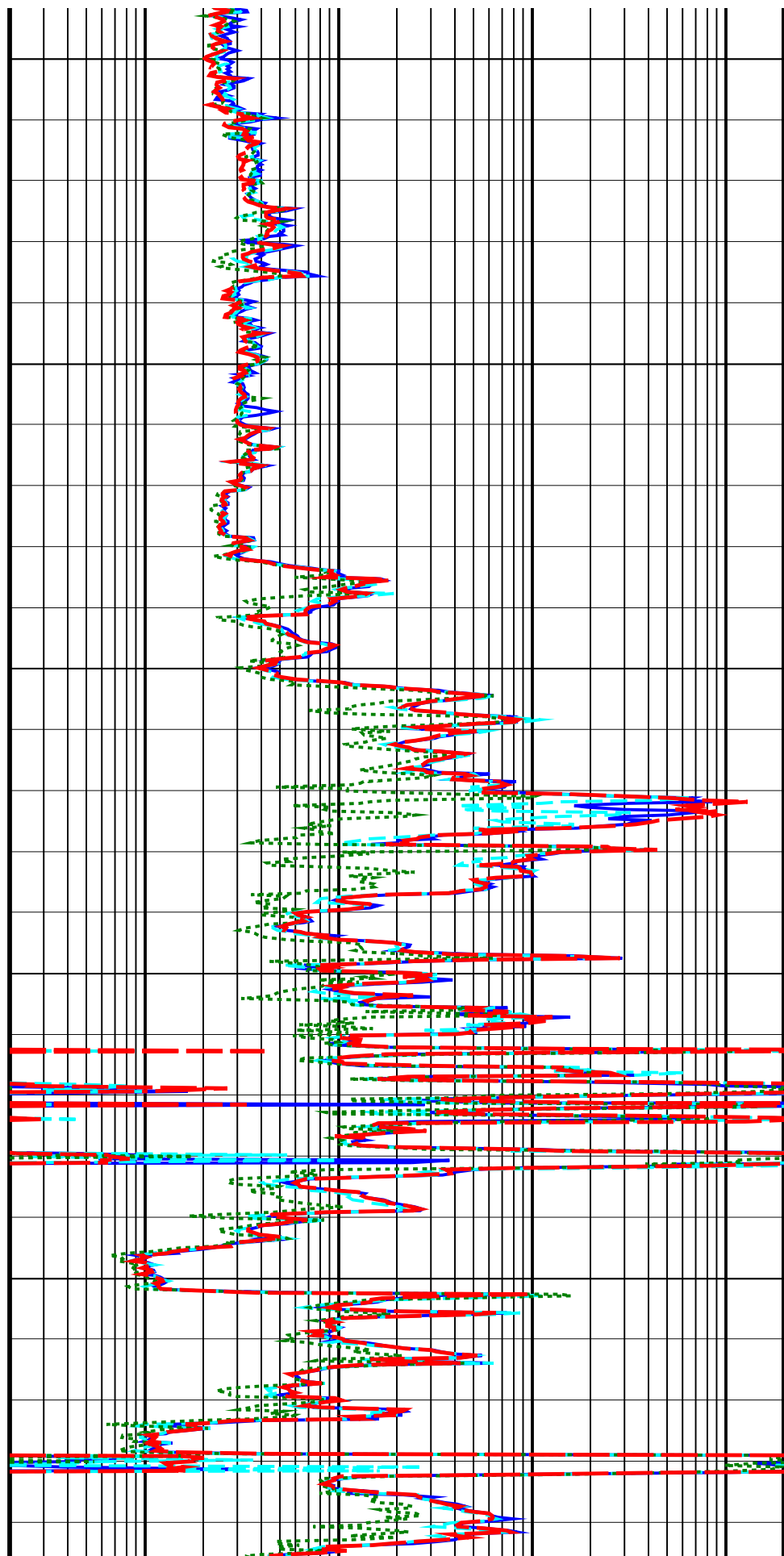


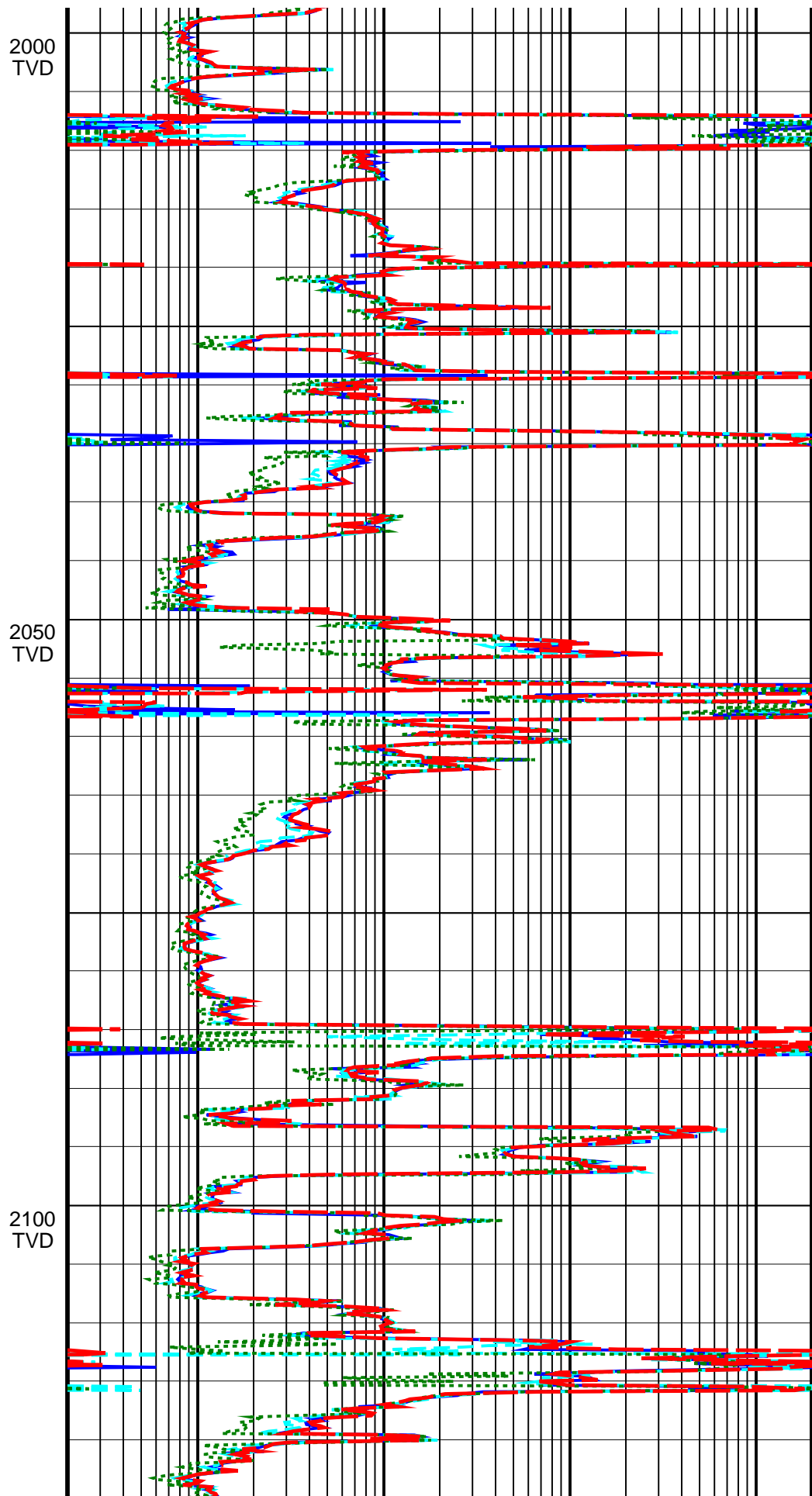
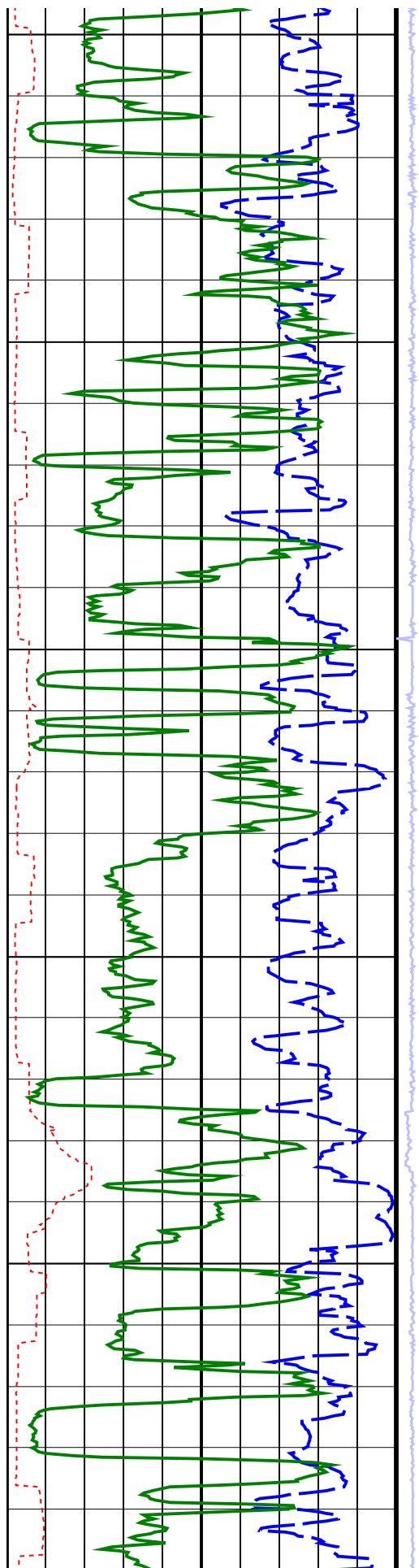


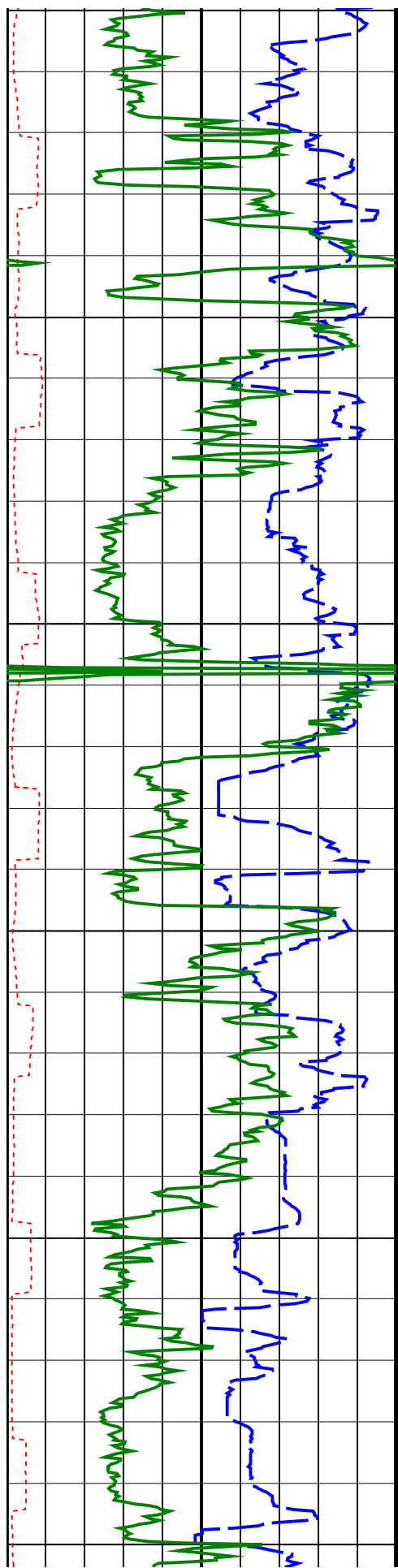


1900  
TVD

1950  
TVD



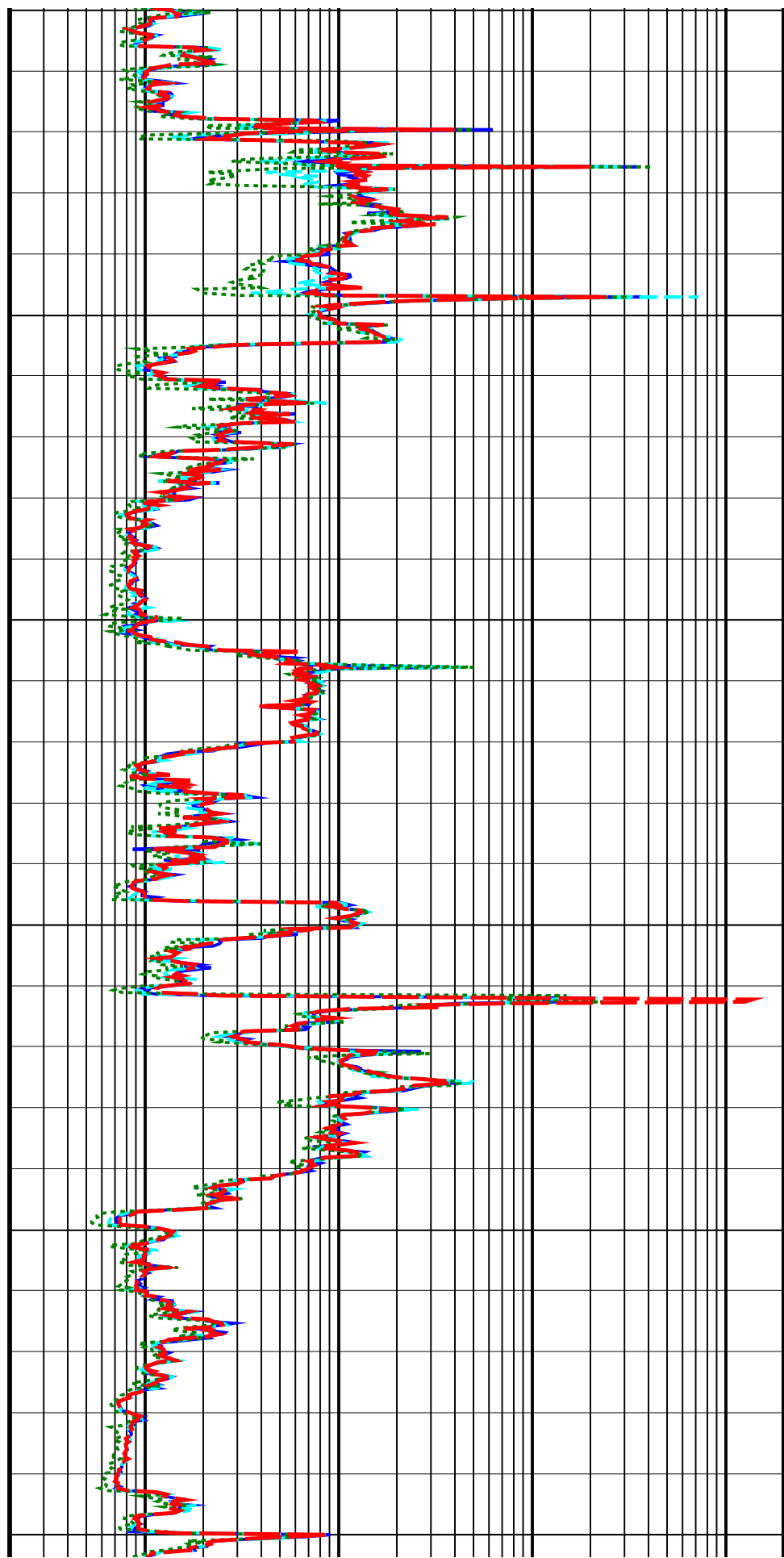


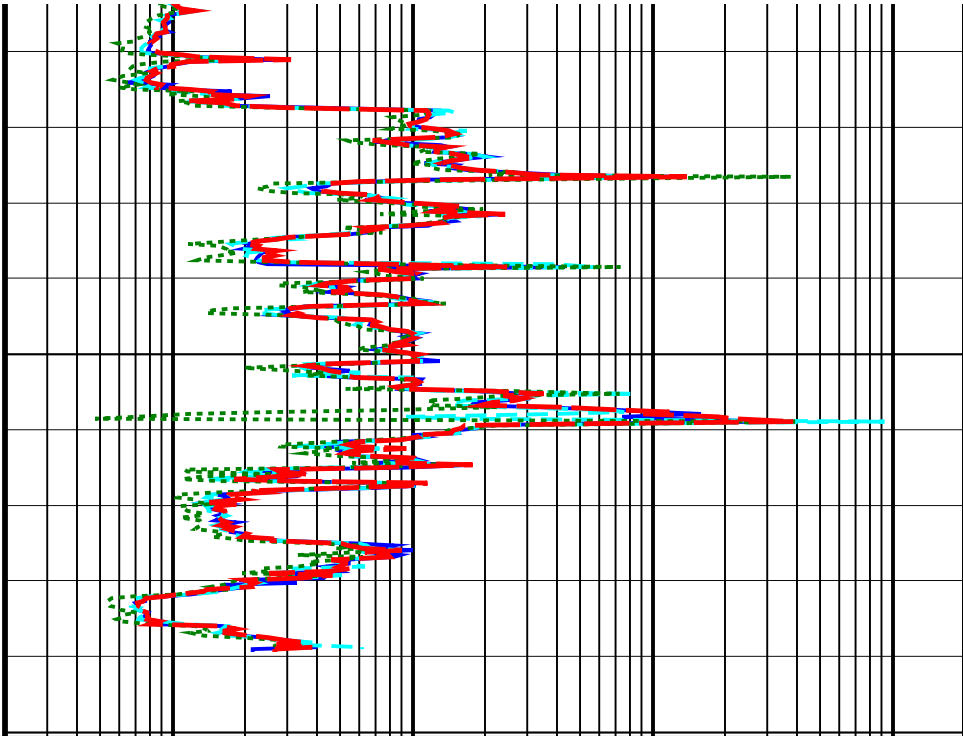
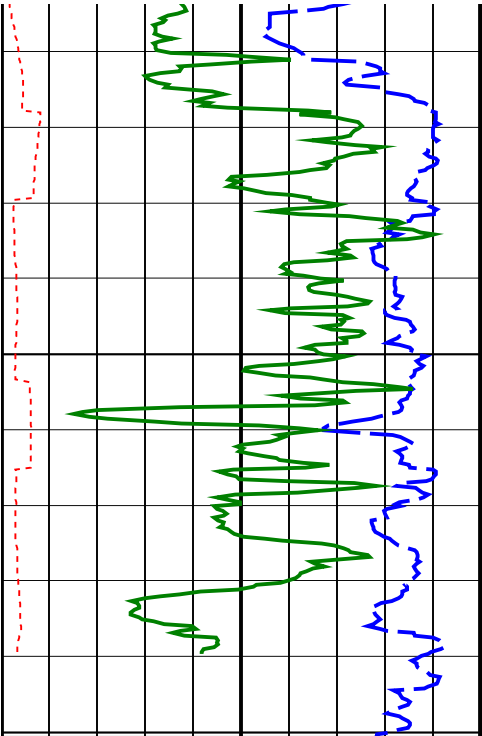


2150  
TVD

2200  
TVD

2250





|   |     |  |
|---|-----|--|
| RAB Gamma Ray (GR_RAB)<br>(GAPI)                                |     |  |
| 0   | 200 |  |
| Ring Resistivity Time After Bit (TAB_RAB_RING)<br>(HR)          |     |  |
| 0   | 10  |  |
| Rate of Penetration, Averaged over Last 5ft (ROP5_RM)<br>(M/HR) |     |  |
| 200   | 0   |  |

|   |             |
|---|-------------|
| Angular Acceleration Indicator (AAI)<br>(-----) | 2300<br>TVD |
| 0   | 250         |
| RAB Rotational Speed (RPM_RAB)<br>(RPM)         |             |
| 0   | 500         |

|   |      |  |
|---|------|--|
| Deep Button Resistivity (RES_BD)<br>(OHMM)    |      |  |
| 0.2   | 2000 |  |
| Medium Button Resistivity (RES_BM)<br>(OHMM)  |      |  |
| 0.2   | 2000 |  |
| Shallow Button Resistivity (RES_BS)<br>(OHMM) |      |  |
| 0.2   | 2000 |  |
| Ring Resistivity (RES_RING)<br>(OHMM)         |      |  |
| 0.2   | 2000 |  |

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  
NSB - M 202  
GSK - JZ 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<br>(Minimum)  | 4125<br>(Nominal) | 8000<br>(Maximum) |       | 700.0<br>(Minimum) | 9350<br>(Nominal)   | 18000<br>(Maximum) |  |       | 2500<br>(Minimum) | 23750<br>(Nominal)  | 45000<br>(Maximum) |  |       |



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| 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<br>(Minimum)  | 725.0<br>(Nominal) | 1400<br>(Maximum) |       | 500.0<br>(Minimum) | 4250<br>(Nominal)   | 8000<br>(Maximum) |  |       | 1500<br>(Minimum) | 15750<br>(Nominal)  | 30000<br>(Maximum) |  |       |



















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

| 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<br>(Minimum)  | 82.50<br>(Nominal) | 150.0<br>(Maximum) |       |        | 40.00<br>(Minimum)  | 220.0<br>(Nominal) | 400.0<br>(Maximum) |       |        | 150.0<br>(Minimum)  | 825.0<br>(Nominal) | 1500<br>(Maximum) |       |

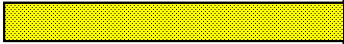
Master: 21-Jun-2005 11:22

| 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<br>(Minimum)   | 1.039<br>(Nominal) | 1.054<br>(Maximum) |        | 1.096<br>(Minimum)   | 1.126<br>(Nominal) | 1.156<br>(Maximum) |  |













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| 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<br>(Minimum)  | 19.05<br>(Nominal) | 21.00<br>(Maximum) |        | 4.000<br>(Minimum)  | 4.857<br>(Nominal) | 5.500<br>(Maximum) |        | 1.900<br>(Minimum)  | 2.363<br>(Nominal) | 2.700<br>(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   |  |                    | 18.12              | Master |  |                    | 4.335              | Master |  |                    | 2.137              |
|  | 16.00<br>(Minimum)  | 19.05<br>(Nominal) | 22.00<br>(Maximum) |        | 4.000<br>(Minimum)  | 4.857<br>(Nominal) | 5.500<br>(Maximum) |        | 1.900<br>(Minimum)  | 2.363<br>(Nominal) | 2.800<br>(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   |  |                    | 17.15              | Master |  |                    | 4.188              | Master |  |                    | 2.066              |
|  | 15.00<br>(Minimum)  | 19.05<br>(Nominal) | 21.00<br>(Maximum) |        | 4.000<br>(Minimum)  | 4.857<br>(Nominal) | 5.500<br>(Maximum) |        | 1.900<br>(Minimum)  | 2.363<br>(Nominal) | 2.700<br>(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   |  |                    | 17.52              | Master |  |                    | 4.365              | Master |  |                    | 2.173              |
|  | 15.00<br>(Minimum)  | 19.05<br>(Nominal) | 21.00<br>(Maximum) |        | 4.000<br>(Minimum)  | 4.857<br>(Nominal) | 5.500<br>(Maximum) |        | 1.900<br>(Minimum)  | 2.363<br>(Nominal) | 2.700<br>(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   |  |                    | 18.07              | Master |  |                    | 4.211              | Master |  |                    | 1.982              |
|  | 16.00<br>(Minimum)  | 19.05<br>(Nominal) | 22.00<br>(Maximum) |        | 4.000<br>(Minimum)  | 4.857<br>(Nominal) | 5.500<br>(Maximum) |        | 1.900<br>(Minimum)  | 2.363<br>(Nominal) | 2.800<br>(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   |  |                    | 17.03              | Master |  |                    | 4.348              | Master |  |                    | 2.060              |
|  | 15.00<br>(Minimum)  | 19.05<br>(Nominal) | 21.00<br>(Maximum) |        | 4.000<br>(Minimum)  | 4.857<br>(Nominal) | 5.500<br>(Maximum) |        | 1.900<br>(Minimum)  | 2.363<br>(Nominal) | 2.700<br>(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 |  |                    | 458.8              | Master |  |                    | 722.7              | Master |  |                    | 319.9              |
|        | 400.0<br>(Minimum)  | 487.5<br>(Nominal) | 540.0<br>(Maximum) |        | 610.0<br>(Minimum)  | 768.8<br>(Nominal) | 850.0<br>(Maximum) |        | 270.0<br>(Minimum)  | 343.7<br>(Nominal) | 390.0<br>(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 |  |                    | 454.0              | Master |  |                    | 727.3              | Master |  |                    | 320.0              |
|        | 400.0<br>(Minimum)  | 487.5<br>(Nominal) | 540.0<br>(Maximum) |        | 610.0<br>(Minimum)  | 768.8<br>(Nominal) | 850.0<br>(Maximum) |        | 270.0<br>(Minimum)  | 343.7<br>(Nominal) | 390.0<br>(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<br>(Minimum)  |  | 100.0<br>(Nominal) |  |  |  | 125.0<br>(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<br>(Minimum)   | 1.000<br>(Nominal) | 1.025<br>(Maximum) |        | 0.9750<br>(Minimum)   | 1.000<br>(Nominal) | 1.025<br>(Maximum) |        | 0.9750<br>(Minimum)   | 1.000<br>(Nominal) | 1.025<br>(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              |
|   | 0.9750<br>(Minimum)   | 1.000<br>(Nominal) | 1.025<br>(Maximum) |        | 0.9750<br>(Minimum)   | 1.000<br>(Nominal) | 1.025<br>(Maximum) |        | 0.9750<br>(Minimum)   | 1.000<br>(Nominal) | 1.025<br>(Maximum) |
| Phase                                       | BTN shallow/T1 factor ----  |                    | Value              | Phase  | BTN shallow/T2 factor ----  |                    | Value              | Phase  | BTN medium/T1 factor ----   |                    | Value              |
| Master                                      |  |                    | 1.002              | Master |  |                    | 0.9996             | Master |  |                    | 0.9951             |
|   | 0.9750<br>(Minimum)   | 1.000<br>(Nominal) | 1.025<br>(Maximum) |        | 0.9750<br>(Minimum)   | 1.000<br>(Nominal) | 1.025<br>(Maximum) |        | 0.9750<br>(Minimum)   | 1.000<br>(Nominal) | 1.025<br>(Maximum) |
| Phase                                       | BTN medium/T2 factor ----   |                    | Value              | Phase  | BTN deep/T1 factor ----   |                    | Value              | Phase  | BTN deep/T2 factor ----   |                    | Value              |
| Master                                      |  |                    | 0.9922             | Master |  |                    | 1.012              | Master |  |                    | 1.009              |
|   | 0.9750<br>(Minimum)   | 1.000<br>(Nominal) | 1.025<br>(Maximum) |        | 0.9750<br>(Minimum)   | 1.000<br>(Nominal) | 1.025<br>(Maximum) |        | 0.9750<br>(Minimum)   | 1.000<br>(Nominal) | 1.025<br>(Maximum) |

|   |  |   |  |                    |  |  |  |                    |  |        |  |
|---|--|---|--|--------------------|--|--|--|--------------------|--|--------|--|
| 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<br>(Minimum)   |  | 1.000<br>(Nominal) |  |  |  | 1.250<br>(Maximum) |  |        |  |

# 6.75-in. Azimuthal Density Neutron / Equipment Identification

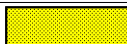
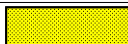
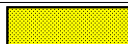
Primary Equipment:  
Tool Name and Serial Number  
Collar Type and Serial Number  
Chassis Type and Serial Number  
Stabilizer Type and Serial Number  
Neutron Logging Source  
Density Logging Source  
Stabilizer Size  
Calibration Status

ADN6 - CA  
ADD6 - AA  
ADSE - EA  
IBS  
NSR - M  
GSP - J/Z  
8-3/16 - in.  
Valid  
EE55  
FE35  
380  
202  
1994

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<br>(Minimum)  | 4125<br>(Nominal) | 8000<br>(Maximum) |       | 700.0<br>(Minimum) | 9350<br>(Nominal)   | 18000<br>(Maximum) |  |       | 2500<br>(Minimum) | 23750<br>(Nominal)  | 45000<br>(Maximum) |  |       |

Master: 19-Jun-2005 14:46

## 6.75-in. Azimuthal Density Neutron Calibration




### Density: Aluminum Block

| Phase  | LS window 3 – AI CPS  |                    | Value             | Phase  | SS window 1 – AI CPS  |                   | Value             | Phase  | SS window 3 – AI CPS  |                    | Value              |
|--------|---|--------------------|-------------------|--------|---|-------------------|-------------------|--------|---|--------------------|--------------------|
| Master |  |                    | 160.3             | Master |  |                   | 1306              | Master |  |                    | 4004               |
|        | 50.00<br>(Minimum)  | 725.0<br>(Nominal) | 1400<br>(Maximum) |        | 500.0<br>(Minimum)  | 4250<br>(Nominal) | 8000<br>(Maximum) |        | 1500<br>(Minimum)   | 15750<br>(Nominal) | 30000<br>(Maximum) |

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## 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<br>(Minimum)  | 82.50<br>(Nominal) | 150.0<br>(Maximum) |       |        | 40.00<br>(Minimum)  | 220.0<br>(Nominal) | 400.0<br>(Maximum) |       |        | 150.0<br>(Minimum)  | 825.0<br>(Nominal) | 1500<br>(Maximum) |       |

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## 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<br>(Minimum)  | 1.039<br>(Nominal) | 1.054<br>(Maximum) |       |        | 1.096<br>(Minimum)  | 1.126<br>(Nominal) | 1.156<br>(Maximum) |       |


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## 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<br>(Minimum)  | 19.05<br>(Nominal) | 21.00<br>(Maximum) |        | 4.000<br>(Minimum)  | 4.857<br>(Nominal) | 5.500<br>(Maximum) |        | 1.900<br>(Minimum)  | 2.363<br>(Nominal) | 2.700<br>(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<br>(Minimum)  | 19.05<br>(Nominal) | 22.00<br>(Maximum) |        | 4.000<br>(Minimum)  | 4.857<br>(Nominal) | 5.500<br>(Maximum) |        | 1.900<br>(Minimum)  | 2.363<br>(Nominal) | 2.800<br>(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<br>(Minimum)  | 19.05<br>(Nominal) | 21.00<br>(Maximum) |        | 4.000<br>(Minimum)  | 4.857<br>(Nominal) | 5.500<br>(Maximum) |        | 1.900<br>(Minimum)  | 2.363<br>(Nominal) | 2.700<br>(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<br>(Minimum)  | 19.05<br>(Nominal) | 21.00<br>(Maximum) |        | 4.000<br>(Minimum)  | 4.857<br>(Nominal) | 5.500<br>(Maximum) |        | 1.900<br>(Minimum)  | 2.363<br>(Nominal) | 2.700<br>(Maximum) |

| (Minimum) | (Nominal)   | (Maximum) |       | (Minimum) | (Nominal)   | (Maximum) |       | (Minimum) | (Nominal)   | (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     | 19.05   | 22.00     |       | 4.000     | 4.857   | 5.500     |       | 1.900     | 2.363   | 2.800     |       |
| (Minimum) | (Nominal)   | (Maximum) |       | (Minimum) | (Nominal)   | (Maximum) |       | (Minimum) | (Nominal)   | (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     | 19.05   | 21.00     |       | 4.000     | 4.857   | 5.500     |       | 1.900     | 2.363   | 2.700     |       |
| (Minimum) | (Nominal)   | (Maximum) |       | (Minimum) | (Nominal)   | (Maximum) |       | (Minimum) | (Nominal)   | (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     | 487.5   | 540.0     |       | 610.0     | 768.8   | 850.0     |       | 270.0     | 343.7   | 390.0     |       |
| (Minimum) | (Nominal)   | (Maximum) |       | (Minimum) | (Nominal)   | (Maximum) |       | (Minimum) | (Nominal)   | (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     | 487.5   | 540.0     |       | 610.0     | 768.8   | 850.0     |       | 270.0     | 343.7   | 390.0     |       |
| (Minimum) | (Nominal)   | (Maximum) |       | (Minimum) | (Nominal)   | (Maximum) |       | (Minimum) | (Nominal)   | (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   |  |  |  | 100.0     |  |  |  |  | 125.0     |  |
|  | (Minimum)   |  |  |  | (Nominal) |  |  |  |  | (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                                      | 1.000   | 1.025     |       | 0.9750    | 1.000   | 1.025     |        | 0.9750    | 1.000   | 1.025     |        |
| (Minimum)                                   | (Nominal)   | (Maximum) |       | (Minimum) | (Nominal)   | (Maximum) |        | (Minimum) | (Nominal)   | (Maximum) |        |
| 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                                      | 1.000   | 1.025     |       | 0.9750    | 1.000   | 1.025     |        | 0.9750    | 1.000   | 1.025     |        |
| (Minimum)                                   | (Nominal)   | (Maximum) |       | (Minimum) | (Nominal)   | (Maximum) |        | (Minimum) | (Nominal)   | (Maximum) |        |
| 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                                      | 1.000   | 1.025     |       | 0.9750    | 1.000   | 1.025     |        | 0.9750    | 1.000   | 1.025     |        |
| (Minimum)                                   | (Nominal)   | (Maximum) |       | (Minimum) | (Nominal)   | (Maximum) |        | (Minimum) | (Nominal)   | (Maximum) |        |
| 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                                      | 1.000   | 1.025     |       | 0.9750    | 1.000   | 1.025     |        | 0.9750    | 1.000   | 1.025     |        |
| (Minimum)                                   | (Nominal)   | (Maximum) |       | (Minimum) | (Nominal)   | (Maximum) |        | (Minimum) | (Nominal)   | (Maximum) |        |

## 6.75-in. Resistivity At-the-Bit Calibration

Gamma Ray: Blanket

| Phase  | Gamma ray factor ----   |                    |                    | Value  |
|--------|---|--------------------|--------------------|--------|
| Master |  |                    |                    | 0.9611 |
|        | 0.7500<br>(Minimum)   | 1.000<br>(Nominal) | 1.250<br>(Maximum) |        |

## SCHLUMBERGER

Survey report

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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

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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 |
|-------|--------------------|------------------|---------------------|-------------------|---------------|----------------------|-----------------|-----------------|-----------------|---------------|----------------|----------------|-----------|
| 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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| 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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SCHLUMBERGER Survey Report

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| Seq<br># | Measured<br>depth<br>(m) | Incl<br>angle<br>(deg) | Azimuth<br>angle<br>(deg) | Course<br>length<br>(m) | TVD<br>depth<br>(m) | Vertical<br>section<br>(m) | Displ<br>+N/S-<br>(m) | Displ<br>+E/W-<br>(m) | Total<br>displ<br>(m) | At<br>Azim<br>(deg) | DLS<br>(deg/<br>100f) | Srvy<br>tool<br>type | Tool<br>Corr<br>(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 Resistivity  
1:500 True Vertical Depth  
Recorded Mode Log**