

|               |           |              |           |             |                 |
|---------------|-----------|--------------|-----------|-------------|-----------------|
| Depth logged: | 2700 m    | To 3038 m    | Mag decl: | 13.23 deg.  | Other services: |
| Date logged:  | 28-May-07 | To 29-May-07 | Mag dip:  | -68.86 deg. | See Remarks     |

# Bit Run Summary

|                        |          |                 |  |  |  |  |  |  |  |  |
|------------------------|----------|-----------------|--|--|--|--|--|--|--|--|
| Run number             |          | 2               |  |  |  |  |  |  |  |  |
| Bit size               | in.      | 8.5             |  |  |  |  |  |  |  |  |
| Bit start depth        | m        | 2700.0          |  |  |  |  |  |  |  |  |
| Bit end depth          | m        | 3038.0          |  |  |  |  |  |  |  |  |
| Top interval logged    | m        | 2700.0          |  |  |  |  |  |  |  |  |
| Bottom interval logged | m        | 3025.0          |  |  |  |  |  |  |  |  |
| Begin log: time        |          | 19:43           |  |  |  |  |  |  |  |  |
| Begin log: date        |          | 28-May-07       |  |  |  |  |  |  |  |  |
| End log: time          |          | 15:48:10        |  |  |  |  |  |  |  |  |
| End log: date          |          | 29-May-07       |  |  |  |  |  |  |  |  |
| Mud data               |          |                 |  |  |  |  |  |  |  |  |
| Depth                  | m        | 2800.0          |  |  |  |  |  |  |  |  |
| Type                   |          | KCl/PHPA/Glycol |  |  |  |  |  |  |  |  |
| Mud weight             | ppg      | 9.75            |  |  |  |  |  |  |  |  |
| Solids                 | %        | 6.4             |  |  |  |  |  |  |  |  |
| Chlorides              | mg/L     | 46,000          |  |  |  |  |  |  |  |  |
| Rm                     | Ohm-m@°C | 0.11 @ 21.5     |  |  |  |  |  |  |  |  |
| Rmf                    | Ohm-m@°C | 0.08 @ 21.2     |  |  |  |  |  |  |  |  |
| Rmc                    | Ohm-m@°C | 0.12 @ 21.7     |  |  |  |  |  |  |  |  |

|                            |           |            |             |         |       |  |  |  |  |  |  |
|----------------------------|-----------|------------|-------------|---------|-------|--|--|--|--|--|--|
| Potassium                  | %         | 4.2        |             |         |       |  |  |  |  |  |  |
| <b>Environmental data</b>  |           |            |             |         |       |  |  |  |  |  |  |
| <b>GR</b>                  |           |            |             |         |       |  |  |  |  |  |  |
| Mud weight                 | ppg       | 9.75       |             |         |       |  |  |  |  |  |  |
| Bit size                   | in.       | 8.5        |             |         |       |  |  |  |  |  |  |
| <b>Resistivity</b>         |           |            |             |         |       |  |  |  |  |  |  |
| <b>Neutron porosity</b>    |           |            |             |         |       |  |  |  |  |  |  |
| Hole Size                  | in        | 8.5        |             |         |       |  |  |  |  |  |  |
| Mud weight                 | ppg       | 9.75       |             |         |       |  |  |  |  |  |  |
| Temperature                | °C        | 83         |             |         |       |  |  |  |  |  |  |
| Mud salinity               | ppk       | 66.87      |             |         |       |  |  |  |  |  |  |
| Formation salinity         |           | n/a        |             |         |       |  |  |  |  |  |  |
| Recording rate 1           | SEC       | 5          |             |         |       |  |  |  |  |  |  |
| Recording rate 2           | SEC       | 10         |             |         |       |  |  |  |  |  |  |
| Filtering GR               |           | 3pt        |             |         |       |  |  |  |  |  |  |
| Filtering density          |           | 3pt        |             |         |       |  |  |  |  |  |  |
| Filtering Neutron          |           | 3pt        |             |         |       |  |  |  |  |  |  |
| Company representative     | R.Spence  | G.Campbell | T.Bassett   |         |       |  |  |  |  |  |  |
| Schlumberger D&M Personnel | G.Sparrow | A.Kohli    | C.Hibberson | C.Cocks | M.How |  |  |  |  |  |  |

|  |                               |                               |
|--|-------------------------------|-------------------------------|
| <p style="text-align: center;"><b>DISCLAIMER</b></p> <p>THE USE OF AND RELIANCE UPON THIS RECORDED-DATA BY THE HEREIN NAMED COMPANY (AND ANY OF ITS AFFILIATES, PARTNERS, REPRESENTATIVES, AGENTS, CONSULTANTS AND EMPLOYEES) IS SUBJECT TO THE TERMS AND CONDITIONS AGREED UPON BETWEEN SCHLUMBERGER AND THE COMPANY, INCLUDING: (a) RESTRICTIONS ON USE OF THE RECORDED-DATA; (b) DISCLAIMERS AND WAIVERS OF WARRANTIES AND REPRESENTATIONS REGARDING COMPANY'S USE OF AND RELIANCE UPON THE RECORDED-DATA; AND (c) CUSTOMER'S FULL AND SOLE RESPONSIBILITY FOR ANY INFERENCE DRAWN OR DECISION MADE IN CONNECTION WITH THE USE OF THIS RECORDED-DATA.</p> |                               |                               |
| <b>OTHER SERVICES FOR RUN 2</b><br>Directional Drilling<br>Directional Surveys<br>Annulus Pressure & Temperature   | <b>OTHER SERVICES FOR RUN</b> | <b>OTHER SERVICES FOR RUN</b> |
| <b>REMARKS: RUN NUMBER 2</b><br>Depth is reference to Driller's Depth.<br><br>Gamma Ray is corrected for mud weight, tool size and bit size.<br><br>Resistivity is borehole compensated and environmentally corrected.<br><br>Neutron Porosity is corrected for the effects of borehole size, bit size, temperature mud salinity and mud hydrogen index, (a factor of mud weight, mud temperature and pressure).<br><br>Neutron Porosity is calculated using a limestone matrix density of 2.71 g/cm3.<br><br>Delta-T is borehole compensated.<br><br>POOH upon reaching TD of HLA-A7A   | <b>REMARKS: RUN NUMBER</b>    | <b>REMARKS: RUN NUMBER</b>    |

| <b>EQUIPMENT DESCRIPTION</b> |            |            |
|------------------------------|------------|------------|
| <b>RUN2</b>                  | <b>RUN</b> | <b>RUN</b> |
|                              |            |            |

DOWNHOLE EQUIPMENT

|   |            |       |       |
|---|------------|-------|-------|
| 6-3/4 in. adnVISION*<br>DHS: 8.3A02<br>Blade OD: 8-1/4 in.<br>S/N: AD09                 | Neutron F  | 35.05 | 37.02 |
|   | Neutron N  | 34.90 |       |
|   | Density S  | 34.03 |       |
|   | Density L  | 33.93 |       |
|   | UltraSonic | 33.55 |       |
|   | R-O Port   | 32.79 |       |
| 6-3/4 in. sonicVISION*<br>DHS: 6.6b04<br>S/N: 607                                       | Delta-T    | 27.42 | 30.77 |
|   | R-O port   | 27.02 |       |
|   |            |       |       |
| 6-5/8 in. ILS<br>S/N: OSS061160C  |            |       | 23.16 |
|   |            |       |       |
| 6-7/8 in. PowerPulse*<br>MDC: V875<br>MEC: 1281<br>MDI: 1751<br>MGR: 146<br>DHS: 8.0C03 |            |       | 22.33 |
|   |            |       |       |
|   |            |       |       |
|   |            |       |       |
|   |            |       |       |
|   |            |       |       |
|   |            |       |       |
|   |            |       |       |
|   |            |       |       |
|   |            |       |       |
| 6-3/4 in. GeoVISION*<br>DHS: 6.2B01<br>Blade OD: 8-1/8 in.<br>S/N: 41876                | D&I        | 18.08 | 13.94 |
|   | APWD       | 14.83 |       |
|   |            |       |       |
|   |            |       |       |
|   | Shallow    | 12.44 |       |
|   | Medium     | 12.32 |       |
|   | Deep       | 12.14 |       |
|   | Ring Res   | 11.97 |       |
| 7 in. PowerPak* Motor<br>A700GT 7:8<br>S/N: N7411<br>0 deg. Bent Housing                | R-O port   | 11.83 | 10.28 |
|   | GR         | 11.61 |       |
|   |            |       |       |
| 8-1/2 in. Smith PDC Bit<br>S/N: 212954  | Bit Res    | 5.55  | 0.22  |
|   |            | 0.00  |       |

Maximum string diameter 8.50 in.  
All lengths in Meters

| Variable Name                 | Variable Description                                 | Run Name & Value |
|-------------------------------|--|------------------|
| Run Number                    |  | 2                |
| General Information           |  |                  |
| BHT_RM                        | Bottom Hole Temperature (RM)                         | 82.999994        |
| BSAL_RM                       | Mud Salinity (RM)                                    | 74.300003        |
| BS_RM                         | Bit Size (RM)  | 8.500000         |
| COEF_M                        | User Defined FEXP in Clean Sand                      | 1.650000         |
| C_WS                          | Overpressure correction to Sw and M                  | 1.000000         |
| FEXP                          | Formation Factor Exponent(RM)                        | 2.000000         |
| FNUM                          | Formation Factor Enumerator(RM)                      | 1.000000         |
| FPHI_RM                       | Formation Factor Porosity Source (RM)                | XPLOT            |
| MST_RM                        | Mud Sample temperature (RM)                          | 21.49999         |
| MW_RM                         | Mud Weight (RM)                                      | 9.750000         |
| OBMF_RM                       | Oil Based Mud (RM)                                   | NO               |
| RHOF_RM                       | Mud Filtrate Density (RM)                            | 1.000000         |
| RHOM_RM                       | Matrix density (RM)                                  | 2.710000         |
| RMS_RM                        | Resistivity of Mud Sample (RM)                       | 0.109900         |
| RWA_COMP_M                    | Rwa computation model                                | BASIC            |
| RWA_DEN_AD                    | Rwa Density Input ADN                                | RHOB             |
| RWA_DEN_CD                    | Rwa Density Input CDN                                | RHOB             |
| RWA_DEN_IN                    | Rwa Density Input                                    | RHOB             |
| RWA_FORM_M                    | Rwa computation formation model                      | CLASTIC          |
| RWA_RES_IN                    | Rwa computation resistivity input                    | RT               |
| RWS_RM                        | Resistivity of Connate Water (RM)                    | 1.000000         |
| SHT_RM                        | Surface Hole Temperature (RM)                        |                  |
| TD_RM                         | Total Measured Depth (RM)                            | 3038.000000      |
| TWS_RM                        | Temperature of Connate Water (RM)                    | 75.000000        |
| VF_ILLI                       | Fraction of illite in shales                         | 0.500000         |
| VF_KAOL                       | Fraction of kaolinite in shales                      | 0.500000         |
| VF_MONT                       | Fraction of montmorillonite in shales                | 0.000000         |
| XPDM_RM                       | Cross plot density porosity multiplier               | 0.675000         |
| XPNM_RM                       | Cross plot neutron porosity multiplier               | 0.325000         |
| ISONIC                        |  |                  |
| FP_SD                         | First Sample delay                                   | 400.00           |
| STC_CF                        | Center frequency of Filter                           | 13.00            |
| STC_BW                        | Bandwidth (kHz)                                      | Default          |
| STC_RWI                       | Receiver waveform ignored                            | None             |
| PM_TOFF                       | Tool Time offset from surface system                 | 0.00             |
| DT_COH                        | Delta-T Coherence Cutoff Value                       | 0.70             |
| PPC_PF                        | Porosity Formula                                     | Raymer-Hunt      |
| PPC_PS                        | Sonic Porosity Source                                | DTRA             |
| PPC_MDT                       | Matrix Delta-T                                       | 47.60            |
| PPC_FDT                       | Fluid Delta-T  | 189.00           |
| RAB                           |  |                  |
| LWD_RM/STATION_FILE/PARAMETER | Station Time-frame file name                         | Station          |
| RAB/BTN_SLV_SIZE/PARAMETER    | RAB: Button Sleeve Diameter                          | RAB6:            |
| RAB/STAB_SIZE/PARAMETER       | RAB: Stabilizer Diameter                             | RAB6:            |
| BDBHCA                        | RAB: Button Deep Borehole A Factor                   | 0.003550         |
| BDBHCB                        | RAB: Button Deep Borehole B Factor                   | 0.000000         |
| BHA_COEF_V                    | RAB: BHA Coef Generator Version                      | 62012.000000     |
| BITBHCA                       | RAB: Bit A Borehole Factor                           | 0.057576         |
| BITBHCB                       | RAB: Bit B Borehole Factor                           | 0.000000         |
| BIT_K_FACT                    | RAB: Bit K Factor                                    | 14.546491        |
| BMBHCA                        | RAB: Button Medium Borehole A Factor                 | 0.022474         |
| BMBHCB                        | RAB: Button Medium Borehole B Factor                 | 0.000000         |
| BSBHCA                        | RAB: Button Shallow Borehole A Factor                | 0.021984         |
| BSBHCB                        | RAB: Button Shallow Borehole B Factor                | 0.000000         |
| BUT_KIMP_A                    | RAB: Button Impedance Coeff A                        | 0.000000         |
| BUT_KIMP_B                    | RAB: Button Impedance Coeff B                        | 0.000000         |
| DBUTTON_K                     | RAB: Button Deep K factor                            | 0.004594         |
| DHS_VERSION                   | RAB: DownHole Software Version                       | 6.200100         |
| GR_BHC_TOO                    | RAB: Gamma-Ray Borehole Coeff 1                      | 6.750000         |
| HI_CSDEPTH                    | RAB: Allow Hi-Resolution CS_DEPTH Image Data Output  | NO               |
| HI_DLIS_OU                    | RAB: Allow Hi-Resolution DLIS Image Data Output      | NO               |
| HI_RIVER_O                    | RAB: Allow Hi-Resolution River for Image Data Output | NO               |
| IMAGE_MAX                     | RAB: GR Image Maximum Scale Value                    | 120.000000       |
| IMAGE_MAX                     | RAB: Image Maximum Resistivity Value                 | 100.000000       |
| IMAGE_MIN                     | RAB: GR Image Minimum Scale Value                    | 20.000000        |
| IMAGE_MIN                     | RAB: Image Minimum Resistivity Value                 | 1.000000         |
| JSD_RAB                       | RAB Acquisition start date                           | 1.000000         |
| MAG_DECL_R                    | RAB: Magnetic Declination                            | 13.229998        |
| MAG_INCL_R                    | RAB: Magnetic Dip                                    | -68.859993       |
| MBUTTON_K                     | RAB: Button Medium K Factor                          | 0.005264         |
| OBM                           | RAB: Oil base Mud                                    | NO               |
| ORIENTATIO                    | Rab Image Orientation                                | TOH              |
| RABBDA0                       | RAB: Button Deep A0 Coeff                            | -0.049562        |
| RABBDA1                       | RAB: Button Deep A1 Coeff                            | 0.019485         |
| RABBDA2                       | RAB: Button Deep A2 Coeff                            | -0.004357        |
| RABBDA3                       | RAB: Button Deep A3 Coeff                            | 0.000455         |
| RABBDA4                       | RAB: Button Deep A4 Coeff                            | -0.000017        |
| RABBDA5                       | RAB: Button Deep A5 Coeff                            | 0.000000         |
| RABBDMIN                      | RAB: Button Deep Minimum Value                       | 0.051084         |
| RABBITA0                      | RAB: Bit A0 Coeff                                    | 3.851055         |
| RABBITA1                      | RAB: Bit A1 Coeff                                    | -4.225814        |
| RABBITA2                      | RAB: Bit A2 Coeff                                    | 11.365308        |
| RABBITA3                      | RAB: Bit A3 Coeff                                    | -11.825766       |
| RABBITA4                      | RAB: Bit A4 Coeff                                    | 4.766129         |
| RABBITA5                      | RAB: Bit A5 Coeff                                    | 0.000000         |

|            |   |               |
|------------|---|---------------|
| RABBITMIN  | RAB: Bit Minimum Value  | 21.114918     |
| RABBMA0    | RAB: Button Medium A0 Coeff                                   | -0.059887     |
| RABBMA1    | RAB: Button Medium A1 Coeff                                   | 0.025592      |
| RABBMA2    | RAB: Button Medium A2 Coeff                                   | -0.005948     |
| RABBMA3    | RAB: Button Medium A3 Coeff                                   | 0.000628      |
| RABBMA4    | RAB: Button Medium A4 Coeff                                   | -0.000024     |
| RABBMA5    | RAB: Button Medium A5 Coeff                                   | 0.000000      |
| RABBMIN    | RAB: Button Medium Minimum Value                              | 0.059503      |
| RABBSA0    | RAB: Button Shallow A0 Coeff                                  | -0.071674     |
| RABBSA1    | RAB: Button Shallow A1 Coeff                                  | 0.030295      |
| RABBSA2    | RAB: Button Shallow A2 Coeff                                  | -0.006843     |
| RABBSA3    | RAB: Button Shallow A3 Coeff                                  | 0.000699      |
| RABBSA4    | RAB: Button Shallow A4 Coeff                                  | -0.000026     |
| RABBSA5    | RAB: Button Shallow A5 Coeff                                  | 0.000000      |
| RABBSMIN   | RAB: Button Shallow Minimum Value                             | 0.086483      |
| RABDHS     | RAB Down Hole Software  | 4.000000      |
| RABEC      | RAB: Resistivity Env-Cor                                      | YES           |
| RABRNGA0   | RAB: RING A0 Coeff  | -0.045451     |
| RABRNGA1   | RAB: RING A1 Coeff  | 0.017730      |
| RABRNGA2   | RAB: RING A2 Coeff  | -0.004016     |
| RABRNGA3   | RAB: RING A3 Coeff  | 0.000426      |
| RABRNGA4   | RAB: RING A4 Coeff  | -0.000016     |
| RABRNGA5   | RAB: RING A5 Coeff  | 0.000000      |
| RABRNGMIN  | RAB: Ring Minimum Value                                       | 1.696958      |
| RAB_BIT_EC | Bit Resistivity for ECAL_RAB?                                 | YES           |
| RAB_BIT_IN | Input Bit Resistivity for Inversion? (Recommended at the bit) | YES           |
| RAB_CALIPE | Compute ECAL_RAB?   | NO            |
| RAB_DEEPBT | Deep Button Resistivity for ECAL_RAB?                         | YES           |
| RAB_DEEPBT | Input Deep Button Resistivity for Inversion?                  | YES           |
| RAB_INVERS | Perform Rt Inversion?   | NO            |
| RAB_INVERS | RAB Bit Sensor Weight for Inversion[0,1]                      | 1.000000      |
| RAB_INVERS | Ending Depth for GR Cutoff in Zone1                           | 100000.000000 |
| RAB_INVERS | Continuity Multiplier[0,1]                                    | 0.500000      |
| RAB_INVERS | RAB Deep Button Sensor Weight for Inversion[0,1]              | 1.000000      |
| RAB_INVERS | RAB inversion for Dh?   | YES           |
| RAB_INVERS | RAB inversion for Di?   | YES           |
| RAB_INVERS | GR Cutoff for Shale Formation                                 | 75.000000     |
| RAB_INVERS | GR Cutoff for Shale Formation in Zone1                        | 75.000000     |
| RAB_INVERS | GR Cutoff in Zone10   | 75.000000     |
| RAB_INVERS | GR Cutoff in Zone2  | 75.000000     |
| RAB_INVERS | GR Cutoff in Zone3  | 75.000000     |
| RAB_INVERS | GR Cutoff in Zone4  | 75.000000     |
| RAB_INVERS | GR Cutoff in Zone5  | 75.000000     |
| RAB_INVERS | GR Cutoff in Zone6  | 75.000000     |
| RAB_INVERS | GR Cutoff in Zone7  | 75.000000     |
| RAB_INVERS | GR Cutoff in Zone8  | 75.000000     |
| RAB_INVERS | GR Cutoff in Zone9  | 75.000000     |
| RAB_INVERS | RAB Medium Button Sensor Weight for Inversion[0,1]            | 1.000000      |
| RAB_INVERS | Resistivity Cutoff for Shale Formation                        | 2.000000      |
| RAB_INVERS | Resistive Invasion Allowed                                    | NO            |
| RAB_INVERS | RAB Ring Sensor Weight for Inversion[0,1]                     | 1.000000      |
| RAB_INVERS | RAB inversion for Rmud?                                       | NO            |
| RAB_INVERS | RAB inversion for Rt?   | YES           |
| RAB_INVERS | Rt to R-deepest separation penalty multiplier[0,1]            | 0.500000      |
| RAB_INVERS | RAB inversion for Rxo?  | YES           |
| RAB_INVERS | RAB Shallow Button Sensor Weight for Inversion[0,1]           | 1.000000      |
| RAB_INVERS | Inversion Threshold[0, 0.3]                                   | 0.010000      |
| RAB_INVERS | Formation Water Resistivity                                   | 0.100000      |
| RAB_INVERS | Formation Water Temperature                                   | 150.000000    |
| RAB_MEDIUM | Medium Button Resistivity for ECAL_RAB?                       | YES           |
| RAB_MEDIUM | Input Medium Button Resistivity for Inversion?                | YES           |
| RAB_QUAD   | RAB: Process Quadrant data ?                                  | YES           |
| RAB_RIGMOD | Bit on Bottom?  | YES           |
| RAB_RING_E | Ring Resistivity for ECAL_RAB?                                | YES           |
| RAB_RING_I | Input RING Resistivity for Inversion?                         | YES           |
| RAB_SHALLO | Shallow Button Resistivity for ECAL_RAB?                      | YES           |
| RAB_SHALLO | Input Shallow Button Resistivity for Inversion?               | YES           |
| RAB_TAB    | RAB: Compute TAB ?  | YES           |
| RAB_TECHLO | RAB: Generate Techlog ?                                       | YES           |
| RAB_TEMP_S | RAB Temperature Selection                                     | MEASURED      |
| RAB_TICKS  | RAB: Generate Ticks ?   | YES           |
| READOUT_PO | RAB: ROP to Bit Face Distance                                 | 38.812336     |
| RINGBHCA   | RAB: Ring Borehole A Factor                                   | 0.159086      |
| RINGBHCB   | RAB: Ring Borehole B Factor                                   | 0.000000      |
| RING_KIMP_ | RAB: Ring Impedance Coeff A                                   | 0.000000      |
| RING_KIMP_ | RAB: Ring Impedance Coeff B                                   | 0.000000      |
| RING_K_FAC | RAB: Ring K Factor  | 0.153558      |
| SBUTTON_K  | RAB: Button Shallow K Factor                                  | 0.007135      |
| SCALE_IMAG | RAB: Process Image Data                                       | YES           |
| SHT_RM     | Ground Level Temperature (Mud-Line When Offshore ) (RM)       | 25.000000     |
| STAB       | RAB: Run with Stabilizer                                      | YES           |
| TFF_OFFSET | RAB Time-Frame File Time Offset                               | 0.000000      |
| TIMEFRAME_ | RAB: Time Frame File Name                                     | 0.000000      |
| TOOLTYPE   | RAB: Azimuthal Tool   | YES           |
| TS_VERSION | RAB: ToolScope Software Version                               | 0.000000      |
| VRAB6      | Rab Tool type (ENP/PILOT)                                     | RAB6_C_SERIES |
| WIN_SIZE_D | RAB: Window Size for Scaling Dynamic Image                    | 3.000000      |

## ADN

|            |  |     |
|------------|--|-----|
| ADN_CHASSI | ADN Chassis Type String                                | ADN |
| ADN_COLLAR | ADN Collar Type String                                 | ADN |
| ADN_STAB_S | ADN Stabilizer Type String                             | ADN |
| ALPHA_COMP | Perform Density Enhanced Vertical Resolution process ? | NO  |
| ALPHA_COMP | Perform Neutron Enhanced Vertical Resolution process ? | NO  |
| AVE ADN    | ADN/Array Channels: perform averaging (RM) :           | YES |
| A_DHS      | ADN Down Hole Software Version String                  | YES |

|            |  |            |
|------------|--|------------|
| A_DNS      | ADN Down Hole Software Version String                  | 1.25       |
| CHI_RM     | Caliper High limit from BS (RM)                        | 3.000000   |
| CLO_RM     | Caliper Low limit from BS (RM)                         | 0.000000   |
| DEVI       | Well Section Deviation                                 | 35.820000  |
| DTIK_SEL   | ADN: Density Tick Channel Name                         | LSAZ       |
| DTMUD      | Delta-T for Mud  | 188.449997 |
| DYN_IMG_CO | Generate Dynamic Normalized Image?                     | YES        |
| ECC_CORR_A | Perform Eccentering Correction for TNPH?               | YES        |
| ENVCOR     | Neutron Quadrant Processing: Environmental Correction? | YES        |
| EVRL       | EVR Process averaging number of samples (RM)           | 49         |
| FCD        | Future Casing (Outer) Diameter                         | 0.000000   |
| GCSE       | Generalized Caliper Selection                          | BS         |
| HPS        | ADSE-EB (High Pressure Inconel Chassis)?               | NO         |
| IBS        | Intergal Blade Stabilizer Collar?                      | YES        |
| IDQT       | Image Derived Quality Threshold                        | 2.000000   |
| IHVS       | Integrated Hole Volume Start Value (RM)                | 0.000000   |
| IMAGE_MAX  | Image SOA (Quadrant) Right Scale                       | 2.500000   |
| IMAGE_MAX  | Image PEF (Segment) Right Scale                        | 6.000000   |
| IMAGE_MAX  | Image RHOB (Segment) Right Scale                       | 2.650000   |
| IMAGE_MIN  | Image SOA (Quadrant) Left Scale                        | 0.000000   |
| IMAGE_MIN  | Image PEF (Segment) Left Scale                         | 2.000000   |
| IMAGE_MIN  | Image RHOB (Segment) Left Scale                        | 2.050000   |
| LITHO_TYPE | Lithology (RM)   | LIME       |
| N1FTU_6_RM | ADN: Neutron Bank 1 Far Tubes used :                   | 1-2-3      |
| N2FTU_6_RM | ADN: Neutron Bank 2 Far Tubes used :                   | 1-2-3      |
| NNTU_RM    | ADN Neutron Near Banks Used                            | 1-2        |
| NTIK_SEL   | ADN: Neutron Tick Channel Name                         | FR11       |
| SOCNL      | Standoff Distance of the CNL Tool                      | 1.000000   |
| SSIZ_ADN   | ADN Stabilizer Size                                    | 8.250000   |
| STOH       | ADN Density Top of Hole Sector (Left Boundary):        | SECTOR_0   |
| TRPM_RM    | Average Tool Rotational Speed                          | 20.000000  |
| USMIN_RM   | ADN: Minimum Ultrasonic standoff (RM)                  | 0.180000   |
| USWF_RM    | ADN: Process Ultrasonic Waveform?                      | YES        |
| VERS_ADN   | ADN Downhole Software Version                          | 8.300000   |
| WSDI       | Window Size of Dynamic Normalization Image             | 15.000000  |

Schlumberger Drilling &amp; Measurements

Parameter Insert Header Software version 2.0c

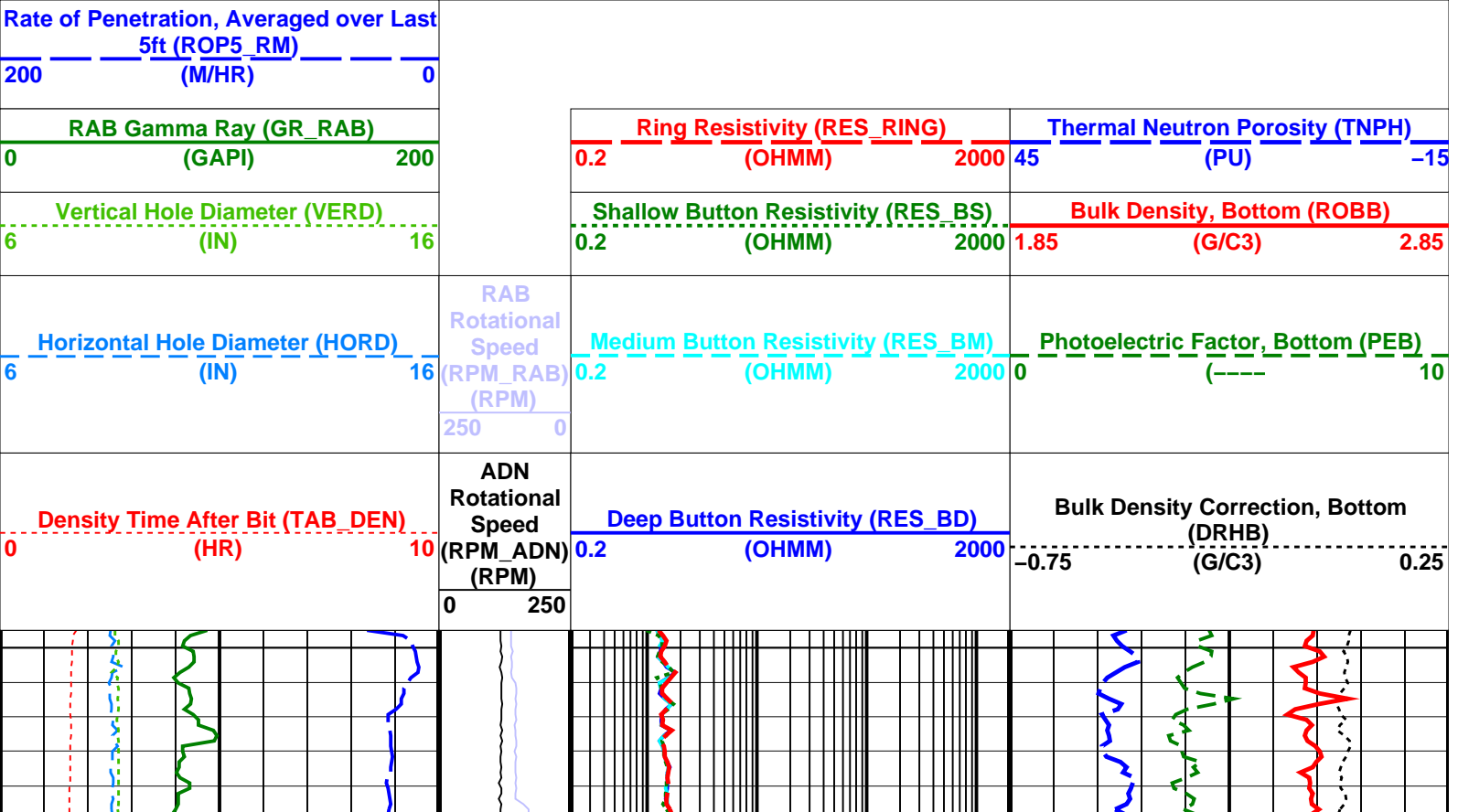
## True Vertical Depth Log

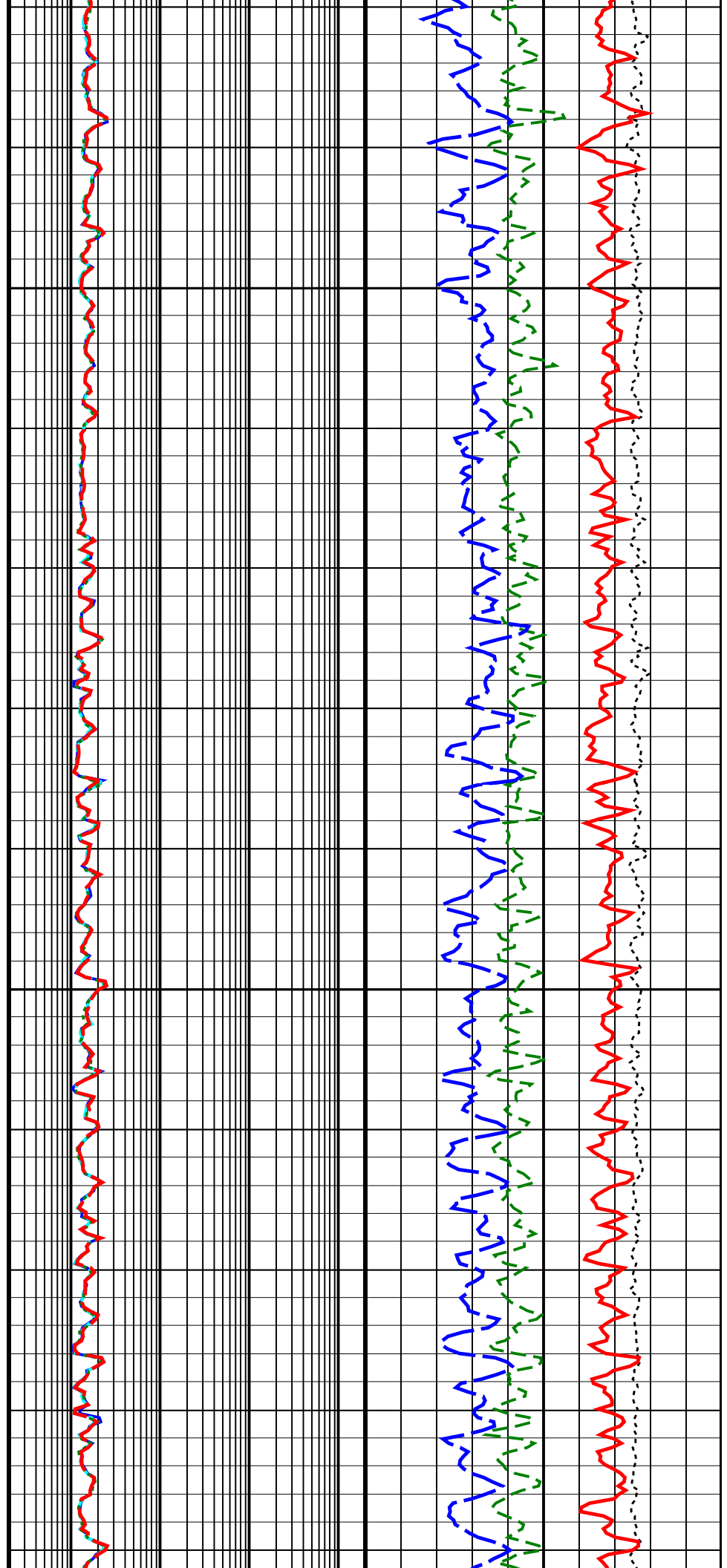
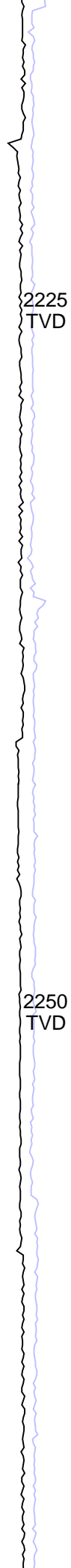
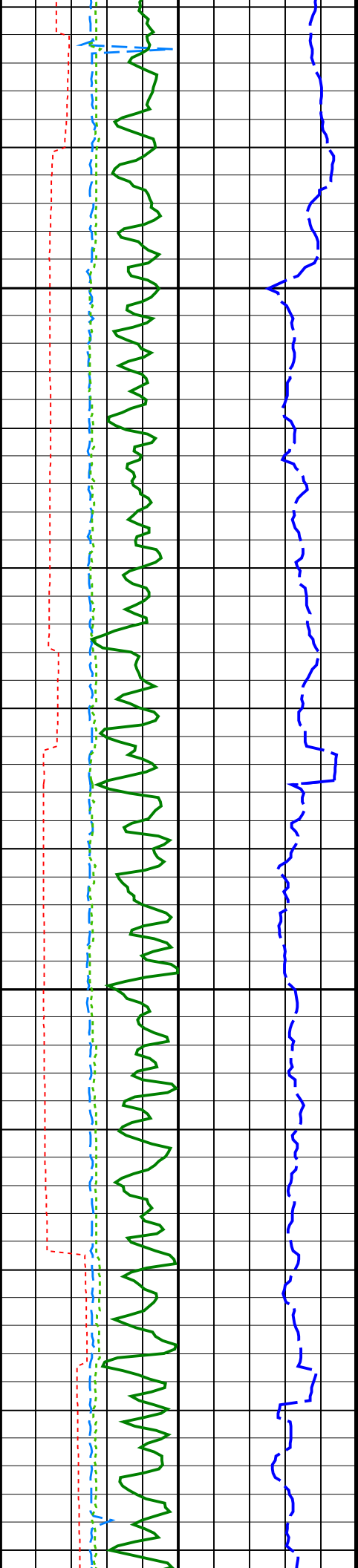
### IDEAL Version: ID12\_0C\_09

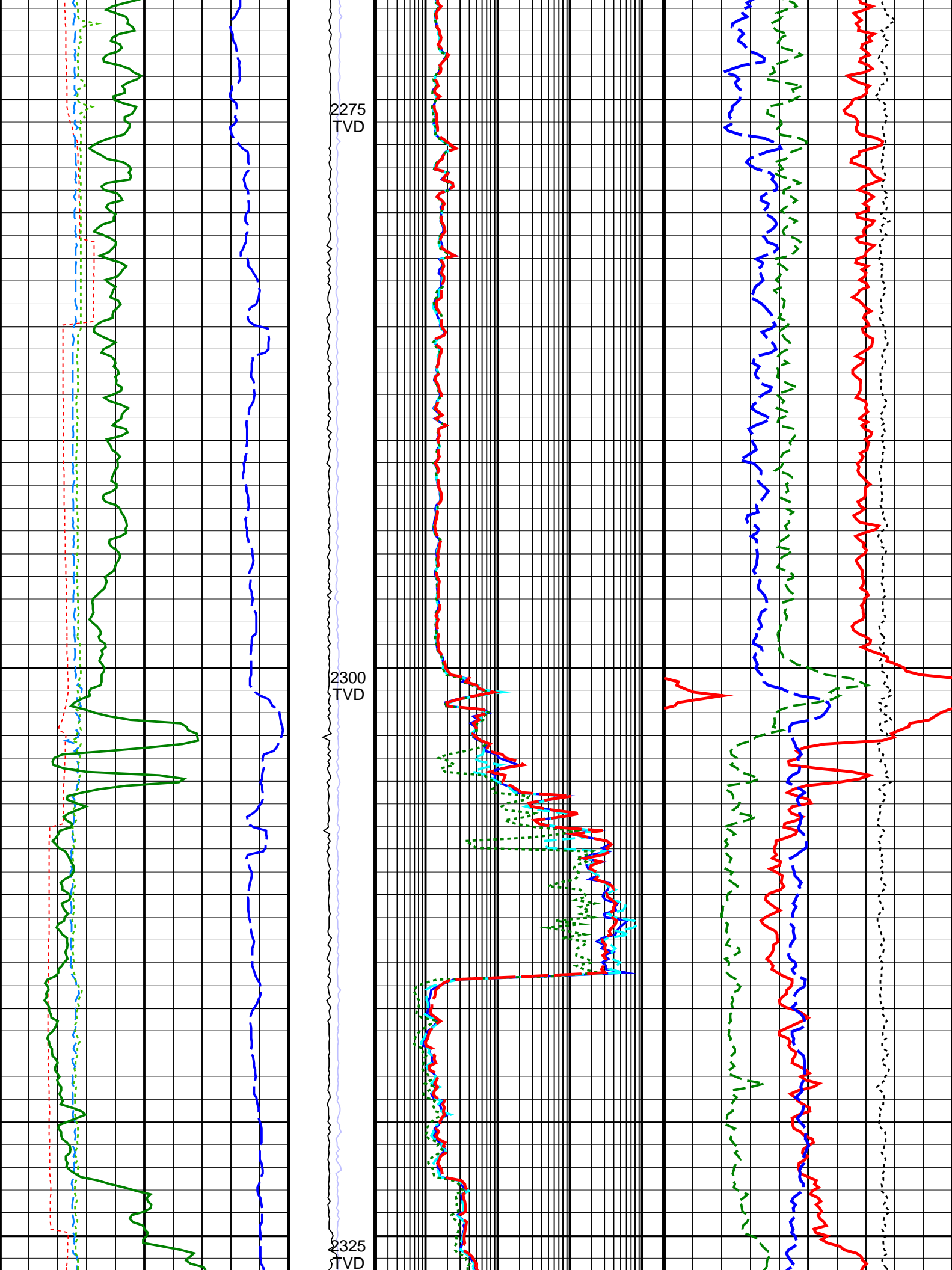
IDF

|        |            |        |            |
|--------|------------|--------|------------|
| RAB    | id12_0c_01 | MWD_10 | id12_0c_01 |
| SON675 | id12_0c_01 | ADN    | id12_0c_01 |

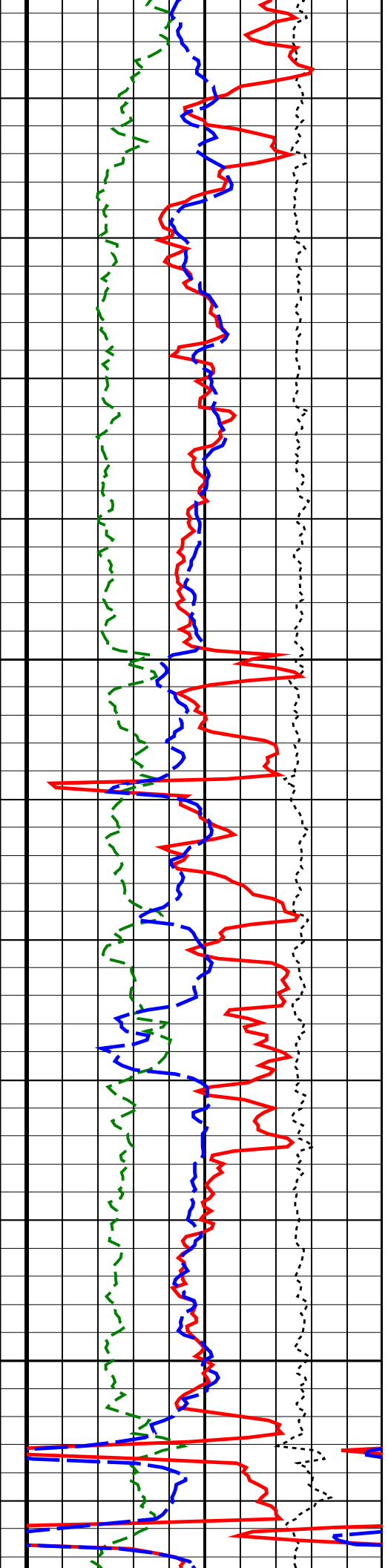
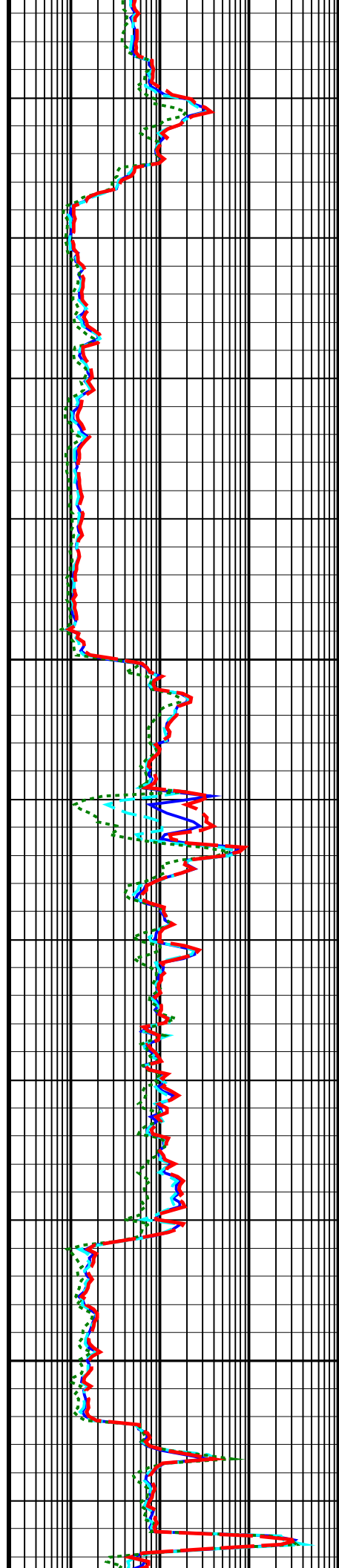
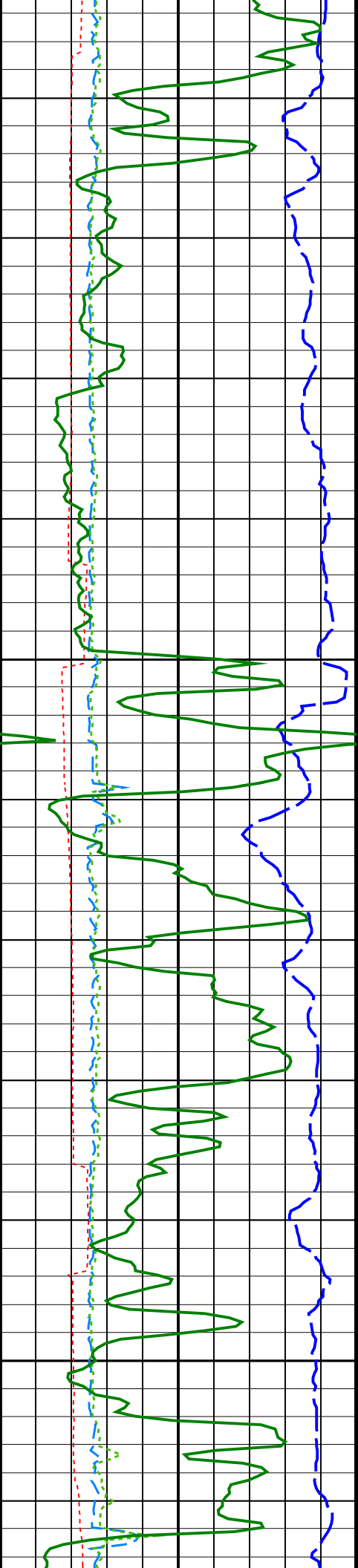
|                                 |                       |  |
|---------------------------------|-----------------------|--|
| Format: GeoVISION Service Log_1 | Vertical Scale: 1:200 | Graphics File Created: 06-Jun-2007 20:27 |
|---------------------------------|-----------------------|--|

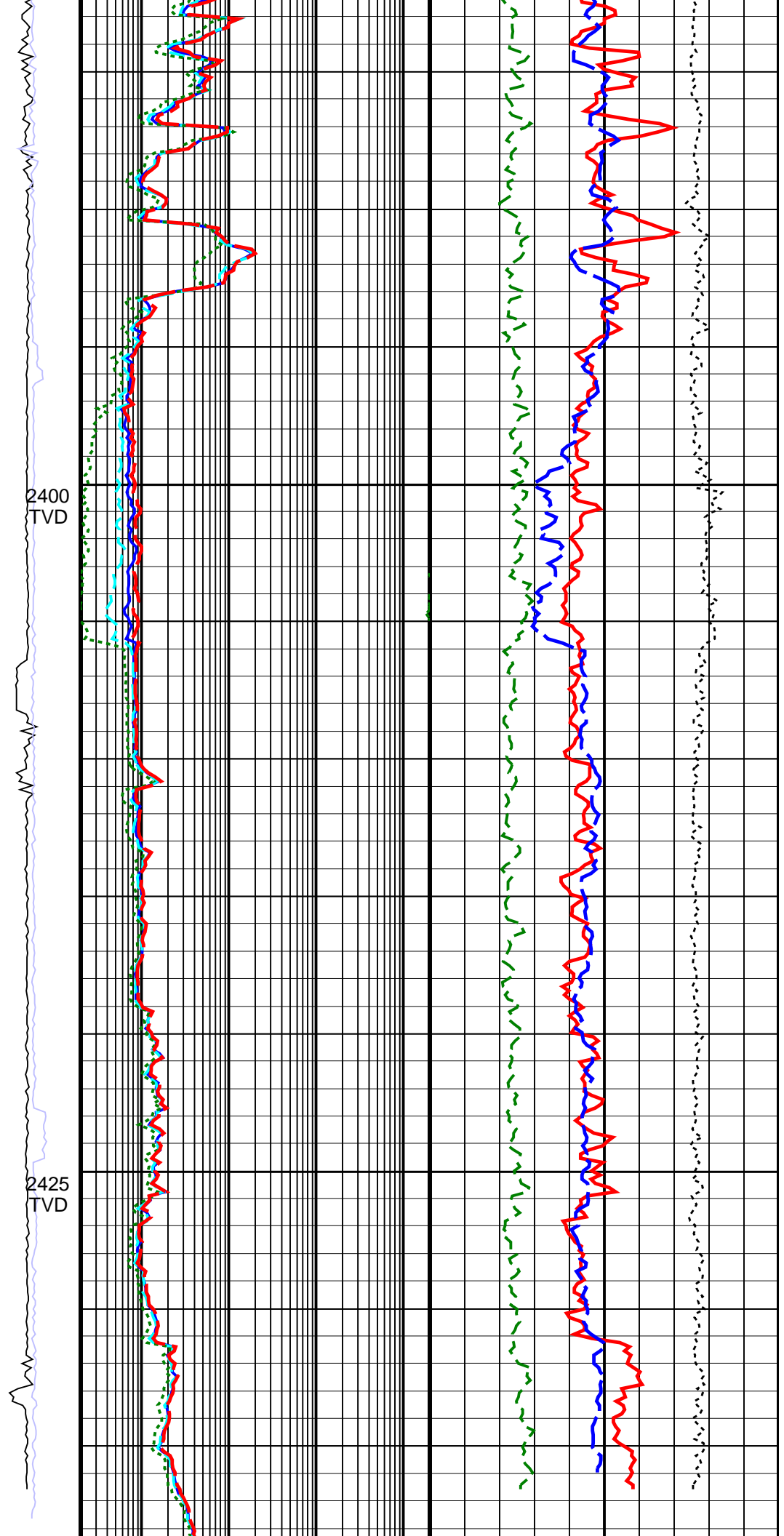
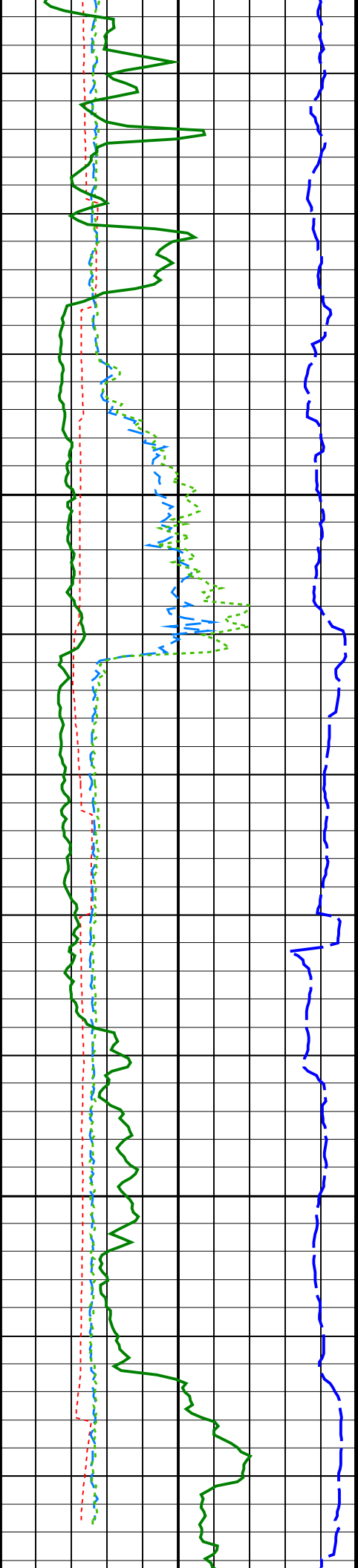


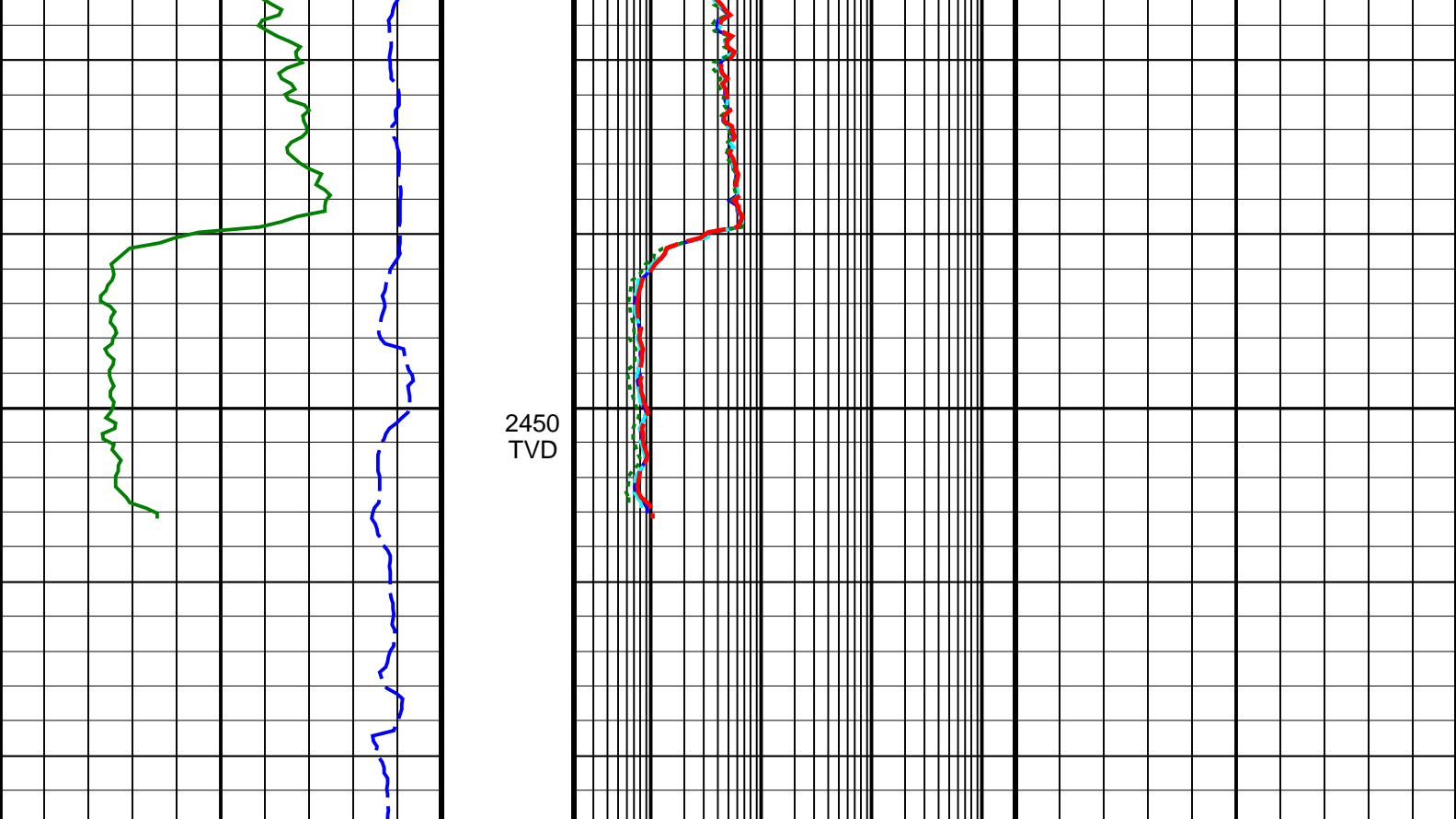












|  |   |  |   |
|--|---|--|---|
| <b>Density Time After Bit (TAB_DEN)</b><br>(HR)                        | <b>ADN Rotational Speed</b><br>(RPM_ADN)<br>(RPM) | <b>Deep Button Resistivity (RES_BD)</b><br>(OHMM)    | <b>Bulk Density Correction, Bottom (DRHB)</b><br>(G/C3) |
| 0 10   | 0 250   | 0.2 2000   | -0.75 0.25  |
| <b>Horizontal Hole Diameter (HORD)</b><br>(IN)                         | <b>RAB Rotational Speed</b><br>(RPM_RAB)<br>(RPM) | <b>Medium Button Resistivity (RES_BM)</b><br>(OHMM)  | <b>Photoelectric Factor, Bottom (PEB)</b><br>(----      |
| 6 16   | 250 0   | 0.2 2000   | 0 10  |
| <b>Vertical Hole Diameter (VERD)</b><br>(IN)                           |   | <b>Shallow Button Resistivity (RES_BS)</b><br>(OHMM) | <b>Bulk Density, Bottom (ROBB)</b><br>(G/C3)            |
| 6 16   |   | 0.2 2000   | 1.85 2.85   |
| <b>RAB Gamma Ray (GR_RAB)</b><br>(GAPI)                                |   | <b>Ring Resistivity (RES_RING)</b><br>(OHMM)         | <b>Thermal Neutron Porosity (TNPH)</b><br>(PU)          |
| 0 200  |   | 0.2 2000   | 45 -15  |
| <b>Rate of Penetration, Averaged over Last 5ft (ROP5_RM)</b><br>(M/HR) |   |  |   |
| 200 0  |   |  |   |

IDEAL Version: ID12\_0C\_09  
IDF




|        |            |        |            |
|--------|------------|--------|------------|
| RAB    | id12_0c_01 | MWD_10 | id12_0c_01 |
| SON675 | id12_0c_01 | ADN    | id12_0c_01 |




True Vertical Depth Log




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



6.75-in. Azimuthal Density Neutron / Equipment Identification






















|            |      |
|------------|------|
| ADN6 - CA  | 425  |
| ADDC - AA  | AD09 |
| ADSE - EA  | 425  |
|            | 1    |
| NSR - M    | 202  |
| GSR - JZ   | 1994 |
| 8.25 - in. |      |
| AUTO -     |      |

|  |   |           |           |       |           |   |           |  |       |           |   |           |  |       |
|--|---|-----------|-----------|-------|-----------|---|-----------|--|-------|-----------|---|-----------|--|-------|
| Master: 20-Mar-2007 21:54                      |   |           |           |       |           |   |           |  |       |           |   |           |  |       |
| 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   |  |           |           | 1012  | Master    |  |           |  | 2517  | Master    |  |           |  | 6234  |
|  | 250.0   | 4125      | 8000      |       | 700.0     | 9350  | 18000     |  |       | 2500      | 23750   | 45000     |  |       |
|  | (Minimum)   | (Nominal) | (Maximum) |       | (Minimum) | (Nominal)   | (Maximum) |  |       | (Minimum) | (Nominal)   | (Maximum) |  |       |

|  |   |           |           |       |           |   |           |  |       |           |   |           |  |       |
|--|---|-----------|-----------|-------|-----------|---|-----------|--|-------|-----------|---|-----------|--|-------|
| Master: 20-Mar-2007 21:54                      |   |           |           |       |           |   |           |  |       |           |   |           |  |       |
| 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   |  |           |           | 151.7 | Master    |  |           |  | 1277  | Master    |  |           |  | 3906  |
|  | 50.00   | 725.0     | 1400      |       | 500.0     | 4250  | 8000      |  |       | 1500      | 15750   | 30000     |  |       |
|  | (Minimum)   | (Nominal) | (Maximum) |       | (Minimum) | (Nominal)   | (Maximum) |  |       | (Minimum) | (Nominal)   | (Maximum) |  |       |

|  |   |           |           |       |           |   |           |     |       |           |   |           |     |       |
|--|---|-----------|-----------|-------|-----------|---|-----------|-----|-------|-----------|---|-----------|-----|-------|
| Master: 20-Mar-2007 21:54                      |   |           |           |       |           |   |           |     |       |           |   |           |     |       |
| 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   |  |           |           | 47.18 | Master    |  |           |     | 117.5 | Master    |  |           |     | 522.7 |
|  | 15.00   | 82.50     | 150.0     |       | 40.00     | 220.0   | 400.0     |     |       | 150.0     | 825.0   | 1500      |     |       |
|  | (Minimum)   | (Nominal) | (Maximum) |       | (Minimum) | (Nominal)   | (Maximum) |     |       | (Minimum) | (Nominal)   | (Maximum) |     |       |

|  |   |  |           |       |        |   |  |           |           |
|--|---|--|-----------|-------|--------|---|--|-----------|-----------|
| Master: 20-Mar-2007 21:54                      |   |  |           |       |        |   |  |           |           |
| 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   |  |  |           | 1.033 | Master |  |  |           | 1.129     |
|  | 1.024   |  | 1.039     |       |        | 1.096   |  | 1.126     | 1.156     |
|  | (Minimum)   |  | (Nominal) |       |        | (Minimum)   |  | (Nominal) | (Maximum) |

|  |   |           |           |        |   |           |           |        |   |           |           |
|--|---|-----------|-----------|--------|---|-----------|-----------|--------|---|-----------|-----------|
| Master: 20-Mar-2007 21:54                      |   |           |           |        |   |           |           |        |   |           |           |
| 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   |  |           | 17.74     | Master |  |           | 4.514     | Master |  |           | 2.086     |
|  | 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  | 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   |  |           | 18.39     | Master |  |           | 4.543     | Master |  |           | 2.188     |
|  | 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 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   |  |           | 17.65     | Master |  |           | 4.641     | Master |  |           | 2.186     |
|  | 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  | 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   |  |           | 18.10     | Master |  |           | 4.770     | Master |  |           | 2.193     |
|  | 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  | 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   |  |           | 17.65     | Master |  |           | 4.512     | Master |  |           | 2.138     |
|  | 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   |  |           | 17.20     | Master |  |           | 4.435     | Master |  |           | 2.121     |
|  | 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   |  |           | 472.7     | Master |  |           | 753.5     | Master |  |           | 330.2     |
|  | 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) |

```
----- Geomagnetic data -----
Magnetic model.....: BGGM version 2006
Magnetic date.....: 21-May-2007
Magnetic field strength..: 1199.13 HCNT
```

----- Depth reference -----  
Permanent datum.....: Mean Sea Level  
Depth reference.....: Drillers Depth  
GL above permanent.....: -73.00 m  
KB above permanent.....: TopDrive  
DF above permanent.....: 29.40 m

----- Vertical section origin-----  
Latitude (+N/S-).....: -5.21 m  
Departure (+E/W-).....: 9.70 m

Magnetic dec (+E/W-).....: 13.22 degrees  
Magnetic dip.....: -68.86 degrees

----- MWD survey Reference Criteria -----  
Reference G.....: 1000.04 mGal  
Reference H.....: 1199.13 HCNT  
Reference Dip.....: -68.86 degrees  
Tolerance of G.....: (+/-) 2.50 mGal  
Tolerance of H.....: (+/-) 6.00 HCNT  
Tolerance of Dip.....: (+/-) 0.45 degrees

----- Corrections -----  
Magnetic dec (+E/W-).....: 13.23 degrees  
Grid convergence (+E/W-)..: -0.82 degrees  
Total az corr (+E/W-).....: 14.05 degrees  
(Total az corr = magnetic dec - grid conv)

Azimuth from Vsect Origin to target: 164.58 degrees

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<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>10m) | Srvy<br>tool<br>type | Tool<br>Corr<br>(deg) |
|----------|--------------------------|------------------------|---------------------------|-------------------------|---------------------|----------------------------|-----------------------|-----------------------|-----------------------|---------------------|----------------------|----------------------|-----------------------|
| 1        | 552.00                   | 17.11                  | 141.77                    | 0.00                    | 547.71              | 41.16                      | -41.87                | 31.57                 | 52.44                 | 142.98              | 0.00                 | TIP                  | None                  |
| 2        | 680.34                   | 28.29                  | 165.03                    | 128.34                  | 666.15              | 89.21                      | -86.31                | 51.21                 | 100.35                | 149.32              | 1.10                 | MWD                  | None                  |
| 3        | 709.44                   | 29.61                  | 165.51                    | 29.10                   | 691.61              | 103.30                     | -99.93                | 54.79                 | 113.96                | 151.27              | 0.46                 | MWD                  | None                  |
| 4        | 738.64                   | 32.13                  | 165.79                    | 29.20                   | 716.67              | 118.28                     | -114.44               | 58.50                 | 128.53                | 152.93              | 0.86                 | MWD                  | None                  |
| 5        | 767.94                   | 33.00                  | 166.40                    | 29.30                   | 741.37              | 134.04                     | -129.75               | 62.29                 | 143.93                | 154.36              | 0.32                 | MWD                  | None                  |
| 6        | 797.26                   | 33.94                  | 165.47                    | 29.32                   | 765.82              | 150.21                     | -145.44               | 66.22                 | 159.80                | 155.52              | 0.37                 | MWD                  | None                  |
| 11       | 943.43                   | 33.02                  | 164.23                    | 29.42                   | 887.80              | 230.74                     | -222.94               | 88.10                 | 239.72                | 158.44              | 0.09                 | MWD                  | None                  |
| 12       | 972.49                   | 33.29                  | 164.46                    | 29.06                   | 912.13              | 246.63                     | -238.25               | 92.39                 | 255.53                | 158.80              | 0.10                 | MWD                  | None                  |
| 13       | 1001.57                  | 33.30                  | 164.17                    | 29.08                   | 936.44              | 262.60                     | -253.62               | 96.71                 | 271.43                | 159.13              | 0.05                 | MWD                  | None                  |
| 14       | 1030.51                  | 35.30                  | 165.27                    | 28.94                   | 960.34              | 278.90                     | -269.35               | 101.00                | 287.66                | 159.44              | 0.72                 | MWD                  | None                  |
| 15       | 1059.91                  | 38.30                  | 166.14                    | 29.40                   | 983.88              | 296.51                     | -286.41               | 105.34                | 305.17                | 159.81              | 1.04                 | MWD                  | None                  |
| 16       | 1089.48                  | 41.46                  | 165.81                    | 29.57                   | 1006.57             | 315.46                     | -304.80               | 109.94                | 324.02                | 160.17              | 1.07                 | MWD                  | None                  |
| 17       | 1118.56                  | 41.79                  | 165.62                    | 29.08                   | 1028.31             | 334.77                     | -323.52               | 114.71                | 343.26                | 160.48              | 0.12                 | MWD                  | None                  |
| 18       | 1147.81                  | 42.11                  | 165.37                    | 29.25                   | 1050.06             | 354.32                     | -342.45               | 119.60                | 362.74                | 160.75              | 0.12                 | MWD                  | None                  |
| 19       | 1177.07                  | 42.24                  | 164.11                    | 29.26                   | 1071.75             | 373.97                     | -361.40               | 124.77                | 382.34                | 160.95              | 0.29                 | MWD                  | None                  |
| 20       | 1206.26                  | 41.56                  | 163.55                    | 29.19                   | 1093.47             | 393.46                     | -380.13               | 130.20                | 401.81                | 161.09              | 0.27                 | MWD                  | None                  |
| 21       | 1235.41                  | 41.52                  | 163.70                    | 29.15                   | 1115.29             | 412.79                     | -398.67               | 135.65                | 421.12                | 161.21              | 0.04                 | MWD                  | None                  |
| 22       | 1264.68                  | 41.00                  | 165.90                    | 29.27                   | 1137.29             | 432.09                     | -417.30               | 140.71                | 440.38                | 161.37              | 0.53                 | MWD                  | None                  |
| 23       | 1293.45                  | 40.97                  | 165.76                    | 28.77                   | 1159.01             | 450.95                     | -435.59               | 145.33                | 459.20                | 161.55              | 0.03                 | MWD                  | None                  |
| 24       | 1322.62                  | 40.85                  | 165.35                    | 29.17                   | 1181.06             | 470.05                     | -454.09               | 150.10                | 478.26                | 161.71              | 0.10                 | MWD                  | None                  |
| 25       | 1351.88                  | 41.75                  | 165.88                    | 29.26                   | 1203.04             | 489.36                     | -472.80               | 154.89                | 497.52                | 161.86              | 0.33                 | MWD                  | None                  |
| 26       | 1381.11                  | 41.68                  | 165.73                    | 29.23                   | 1224.86             | 508.81                     | -491.65               | 159.66                | 516.93                | 162.01              | 0.04                 | MWD                  | None                  |
| 27       | 1410.48                  | 41.62                  | 165.83                    | 29.37                   | 1246.80             | 528.32                     | -510.57               | 164.46                | 536.41                | 162.15              | 0.03                 | MWD                  | None                  |
| 28       | 1439.66                  | 41.44                  | 165.89                    | 29.18                   | 1268.65             | 547.66                     | -529.33               | 169.19                | 555.71                | 162.28              | 0.06                 | MWD                  | None                  |
| 29       | 1468.60                  | 42.24                  | 165.47                    | 28.94                   | 1290.21             | 566.96                     | -548.04               | 173.96                | 574.99                | 162.39              | 0.29                 | MWD                  | None                  |
| 30       | 1497.78                  | 42.38                  | 165.73                    | 29.18                   | 1311.79             | 586.60                     | -567.06               | 178.85                | 594.60                | 162.50              | 0.08                 | MWD                  | None                  |

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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>10m) | Srvy<br>tool<br>type | Tool<br>Corr<br>(deg) |
|----------|--------------------------|------------------------|---------------------------|-------------------------|---------------------|----------------------------|-----------------------|-----------------------|-----------------------|---------------------|----------------------|----------------------|-----------------------|
| 31       | 1527.56                  | 42.72                  | 165.81                    | 29.78                   | 1333.73             | 606.74                     | -586.58               | 183.80                | 614.70                | 162.60              | 0.12                 | MWD                  | None                  |
| 32       | 1556.60                  | 42.79                  | 166.01                    | 29.04                   | 1355.05             | 626.45                     | -605.71               | 188.59                | 634.39                | 162.71              | 0.05                 | MWD                  | None                  |
| 33       | 1585.63                  | 42.76                  | 165.16                    | 29.03                   | 1376.36             | 646.16                     | -624.80               | 193.50                | 654.08                | 162.79              | 0.20                 | MWD                  | None                  |
| 34       | 1614.64                  | 42.34                  | 164.38                    | 29.01                   | 1397.73             | 665.77                     | -643.73               | 198.66                | 673.68                | 162.85              | 0.23                 | MWD                  | None                  |
| 35       | 1643.92                  | 41.77                  | 163.89                    | 29.28                   | 1419.47             | 685.39                     | -662.59               | 204.02                | 693.29                | 162.89              | 0.22                 | MWD                  | None                  |
| 36       | 1673.13                  | 41.66                  | 163.29                    | 29.21                   | 1441.27             | 704.82                     | -681.24               | 209.51                | 712.73                | 162.91              | 0.14                 | MWD                  | None                  |
| 37       | 1702.00                  | 41.12                  | 163.82                    | 28.87                   | 1462.93             | 723.91                     | -699.55               | 214.91                | 731.81                | 162.92              | 0.22                 | MWD                  | None                  |
| 38       | 1731.54                  | 41.27                  | 163.73                    | 29.54                   | 1485.16             | 743.36                     | -718.23               | 220.35                | 751.27                | 162.94              | 0.05                 | MWD                  | None                  |
| 39       | 1760.34                  | 41.34                  | 163.49                    | 28.80                   | 1506.80             | 762.37                     | -736.46               | 225.71                | 770.28                | 162.96              | 0.06                 | MWD                  | None                  |
| 40       | 1790.23                  | 40.88                  | 164.28                    | 29.89                   | 1529.32             | 782.02                     | -755.34               | 231.17                | 789.93                | 162.98              | 0.23                 | MWD                  | None                  |
| 41       | 1819.22                  | 40.91                  | 165.98                    | 28.99                   | 1551.23             | 800.99                     | -773.69               | 236.04                | 808.89                | 163.03              | 0.38                 | MWD                  | None                  |
| 42       | 1848.32                  | 41.04                  | 166.36                    | 29.10                   | 1573.20             | 820.07                     | -792.21               | 240.60                | 827.94                | 163.11              | 0.10                 | MWD                  | None                  |
| 43       | 1877.46                  | 41.80                  | 166.71                    | 29.14                   | 1595.05             | 839.34                     | -810.96               | 245.09                | 847.19                | 163.18              | 0.27                 | MWD                  | None                  |
| 44       | 1906.62                  | 42.18                  | 166.88                    | 29.16                   | 1616.73             | 858.83                     | -829.96               | 249.54                | 866.66                | 163.27              | 0.14                 | MWD                  | None                  |
| 45       | 1935.86                  | 42.33                  | 165.89                    | 29.24                   | 1638.37             | 878.48                     | -849.06               | 254.17                | 886.29                | 163.33              | 0.23                 | MWD                  | None                  |
| 46       | 1965.15                  | 41.93                  | 165.80                    | 29.29                   | 1660.09             | 898.12                     | -868.12               | 258.98                | 905.92                | 163.39              | 0.14                 | MWD                  | None                  |
| 47       | 1994.33                  | 41.59                  | 165.57                    | 29.18                   | 1681.86             | 917.55                     | -886.95               | 263.78                | 925.34                | 163.44              | 0.13                 | MWD                  | None                  |
| 48       | 2023.63                  | 41.94                  | 165.77                    | 29.30                   | 1703.71             | 937.07                     | -905.86               | 268.61                | 944.84                | 163.48              | 0.13                 | MWD                  | None                  |
| 49       | 2052.91                  | 41.60                  | 166.22                    | 29.28                   | 1725.55             | 956.57                     | -924.78               | 273.33                | 964.33                | 163.53              | 0.15                 | MWD                  | None                  |
| 50       | 2082.02                  | 41.88                  | 166.48                    | 29.11                   | 1747.27             | 975.94                     | -943.61               | 277.91                | 983.69                | 163.59              | 0.11                 | MWD                  | None                  |
| 51       | 2111.07                  | 41.44                  | 165.65                    | 29.05                   | 1768.97             | 995.24                     | -962.35               | 282.56                | 1002.98               | 163.64              | 0.24                 | MWD                  | None                  |
| 52       | 2140.43                  | 41.49                  | 165.44                    | 29.36                   | 1790.98             | 1014.68                    | -981.18               | 287.41                | 1022.41               | 163.67              | 0.05                 | MWD                  | None                  |
| 53       | 2169.61                  | 41.37                  | 165.29                    | 29.18                   | 1812.85             | 1033.98                    | -999.86               | 292.29                | 1041.71               | 163.70              | 0.05                 | MWD                  | None                  |
| 54       | 2199.00                  | 41.28                  | 165.36                    | 29.39                   | 1834.93             | 1053.39                    | -1018.64              | 297.20                | 1061.11               | 163.73              | 0.03                 | MWD                  | None                  |
| 55       | 2228.01                  | 41.21                  | 164.90                    | 29.01                   | 1856.74             | 1072.51                    | -1037.12              | 302.11                | 1080.23               | 163.76              | 0.11                 | MWD                  | None                  |

|    |         |       |        |       |         |         |          |        |         |        |      |     |      |
|----|---------|-------|--------|-------|---------|---------|----------|--------|---------|--------|------|-----|------|
| 56 | 2256.68 | 41.72 | 165.89 | 28.67 | 1878.22 | 1091.50 | -1055.49 | 306.90 | 1099.20 | 163.79 | 0.29 | MWD | None |
| 57 | 2286.49 | 41.77 | 165.89 | 29.81 | 1900.46 | 1111.34 | -1074.74 | 311.74 | 1119.04 | 163.82 | 0.02 | MWD | None |
| 58 | 2314.89 | 41.71 | 166.05 | 28.40 | 1921.65 | 1130.24 | -1093.08 | 316.32 | 1137.93 | 163.86 | 0.04 | MWD | None |
| 59 | 2344.75 | 41.75 | 165.91 | 29.86 | 1943.94 | 1150.11 | -1112.37 | 321.13 | 1157.79 | 163.90 | 0.03 | MWD | None |
| 60 | 2373.85 | 41.67 | 165.80 | 29.10 | 1965.66 | 1169.47 | -1131.14 | 325.87 | 1177.15 | 163.93 | 0.04 | MWD | None |

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| Seq<br>#<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>10m) | Srvy<br>tool<br>type | Tool<br>Corr<br>(deg) |
|---------------|--------------------------|------------------------|---------------------------|-------------------------|---------------------|----------------------------|-----------------------|-----------------------|-----------------------|---------------------|----------------------|----------------------|-----------------------|
| 61            | 2403.24                  | 41.63                  | 165.76                    | 29.39                   | 1987.62             | 1189.00                    | -1150.08              | 330.66                | 1196.67               | 163.96              | 0.02                 | MWD                  | None                  |
| 62            | 2432.55                  | 41.61                  | 165.56                    | 29.31                   | 2009.53             | 1208.46                    | -1168.94              | 335.49                | 1216.13               | 163.99              | 0.05                 | MWD                  | None                  |
| 63            | 2461.53                  | 41.50                  | 165.17                    | 28.98                   | 2031.22             | 1227.68                    | -1187.54              | 340.34                | 1235.34               | 164.01              | 0.10                 | MWD                  | None                  |
| 64            | 2490.81                  | 41.94                  | 165.15                    | 29.28                   | 2053.08             | 1247.17                    | -1206.37              | 345.33                | 1254.83               | 164.03              | 0.15                 | MWD                  | None                  |
| 65            | 2520.14                  | 41.75                  | 165.39                    | 29.33                   | 2074.93             | 1266.73                    | -1225.29              | 350.31                | 1274.39               | 164.04              | 0.08                 | MWD                  | None                  |
| 66            | 2549.14                  | 41.61                  | 165.11                    | 29.00                   | 2096.58             | 1286.01                    | -1243.94              | 355.22                | 1293.67               | 164.06              | 0.08                 | MWD                  | None                  |
| 67            | 2578.40                  | 41.49                  | 164.85                    | 29.26                   | 2118.48             | 1305.42                    | -1262.69              | 360.25                | 1313.07               | 164.08              | 0.07                 | MWD                  | None                  |
| 68            | 2607.57                  | 41.91                  | 165.27                    | 29.17                   | 2140.26             | 1324.82                    | -1281.44              | 365.25                | 1332.47               | 164.09              | 0.17                 | MWD                  | None                  |
| 69            | 2636.75                  | 41.85                  | 165.11                    | 29.18                   | 2161.99             | 1344.30                    | -1300.27              | 370.23                | 1351.95               | 164.11              | 0.04                 | MWD                  | None                  |
| 70            | 2665.91                  | 41.73                  | 165.00                    | 29.16                   | 2183.73             | 1363.73                    | -1319.04              | 375.24                | 1371.38               | 164.12              | 0.05                 | MWD                  | None                  |
| 71            | 2678.92                  | 41.58                  | 165.07                    | 13.01                   | 2193.45             | 1372.38                    | -1327.40              | 377.47                | 1380.03               | 164.13              | 0.12                 | MWD                  | None                  |
| 72            | 2695.05                  | 41.49                  | 164.79                    | 16.13                   | 2205.52             | 1383.08                    | -1337.73              | 380.25                | 1390.72               | 164.13              | 0.13                 | MWD                  | None                  |
| 73            | 2724.67                  | 41.37                  | 165.09                    | 29.62                   | 2227.73             | 1402.68                    | -1356.65              | 385.35                | 1410.32               | 164.14              | 0.08                 | MWD                  | None                  |
| 74            | 2752.94                  | 41.14                  | 165.43                    | 28.27                   | 2248.98             | 1421.32                    | -1374.68              | 390.09                | 1428.96               | 164.16              | 0.11                 | MWD                  | None                  |
| 75            | 2782.04                  | 40.96                  | 165.71                    | 29.10                   | 2270.93             | 1440.42                    | -1393.19              | 394.85                | 1448.06               | 164.18              | 0.09                 | MWD                  | None                  |
| 76            | 2810.51                  | 40.76                  | 165.74                    | 28.47                   | 2292.46             | 1459.04                    | -1411.24              | 399.44                | 1466.68               | 164.20              | 0.07                 | MWD                  | None                  |
| 77            | 2839.39                  | 40.92                  | 165.91                    | 28.88                   | 2314.31             | 1477.93                    | -1429.55              | 404.07                | 1485.56               | 164.22              | 0.07                 | MWD                  | None                  |
| 78            | 2868.67                  | 41.23                  | 165.97                    | 29.28                   | 2336.38             | 1497.16                    | -1448.21              | 408.74                | 1504.79               | 164.24              | 0.11                 | MWD                  | None                  |
| 79            | 2897.47                  | 41.60                  | 166.15                    | 28.80                   | 2357.98             | 1516.20                    | -1466.70              | 413.33                | 1523.83               | 164.26              | 0.13                 | MWD                  | None                  |
| 80            | 2926.34                  | 42.00                  | 166.28                    | 28.87                   | 2379.50             | 1535.44                    | -1485.39              | 417.92                | 1543.06               | 164.29              | 0.14                 | MWD                  | None                  |
| 81            | 2955.29                  | 41.78                  | 166.14                    | 28.95                   | 2401.05             | 1554.76                    | -1504.16              | 422.53                | 1562.38               | 164.31              | 0.08                 | MWD                  | None                  |
| 82            | 2984.43                  | 41.64                  | 165.94                    | 29.14                   | 2422.81             | 1574.14                    | -1522.98              | 427.20                | 1581.76               | 164.33              | 0.07                 | MWD                  | None                  |
| 83            | 3013.60                  | 42.16                  | 166.05                    | 29.17                   | 2444.52             | 1593.62                    | -1541.88              | 431.92                | 1601.23               | 164.35              | 0.18                 | MWD                  | None                  |
| 84            | 3038.00                  | 42.20                  | 166.05                    | 24.40                   | 2462.60             | 1610.00                    | -1557.78              | 435.87                | 1617.61               | 164.37              | 0.02                 | Proj.                | to TD                 |

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

Well: **HLA A7A**  
Field: **Halibut**  
Rig: **ISDL 453**  
State: **Victoria**

**Schlumberger**

**GeoVISION Service**  
**1:200 True Vertical depth**  
**Recorded Mode Log**

