

**1 : 500**



**EWMR Electromagnetic Wave Resistivity  
DGR Dual Gamma Ray  
SLD Stabilized Litho-Density  
CNP Compensated Neutron Porosity**

| WELL INFORMATION                |                    |                  |                   |                    |  |
|---------------------------------|--------------------|------------------|-------------------|--------------------|--|
| MWD Run Number                  | 800                | 900              | 1000              | 1100               |  |
| Date run completed              | 27-May-05          | 28-May-05        | 31-May-05         | 04-Jun-05          |  |
| Rig Bit Number                  | 12                 | 13               | 14                | 15                 |  |
| Bit Size (mm)                   | 311                | 311              | 311               | 216                |  |
| Tool Nominal OD (mm)            | 203                | 203              | 203               | 171                |  |
| Log Start Depth (TVD, m)        | 1,145.63           | 1,156.59         | 1,272.38          | 1742.95            |  |
| Log End Depth (TVD, m)          | 1,156.59           | 1,272.38         | 1,742.95          | 1786.70            |  |
| Drill or Wipe                   | Drilling           | Drilling         | Drilling          | Drilling           |  |
| Drill/Wipe Start Date and Time  | 27-May-05 00:00    | 27-May-05 19:55  | 29-May-05 00:45   | 02-Jun-05 14:51    |  |
| Drill/Wipe End Date and Time    | 27-May-05 07:25    | 28-May-05 10:40  | 30-May-05 16:04   | 04-Jun-05 03:31    |  |
| Min Inc (deg) @ Depth (TVD, m)  | 3.91 @ 1133.6      | 5.08 @ 1165.94   | 10.53 @ 1285.3    | 76.66 @ 1748.28    |  |
| Max Inc (deg) @ Depth (TVD, m)  | 3.91 @ 1133.6      | 10.24 @ 1248.77  | 76.28 @ 1737.54   | 87.78 @ 1765.40    |  |
| Bit TFA(in2) / Bit Type         | 1.11 / HYC DS43GTS | 1.11 / Sec XL12D | 1.77 / DBS FS2663 | 0.98 / Sec FMF3553 |  |
| Flow Rate (gpm)                 | 866                | 843              | 960               | 745                |  |
| Max AV (mpm) / CV (mpm) @ MWD   | 75.4 / 178.6       | 79.3 / 164.9     | 87 / 176          | 224 / 220          |  |
| Fluid Type                      | KCl/Polymer        | KCl/Polymer      | KCl/Polymer       | Flo Pro            |  |
| Density (sg) / Viscosity (spqt) | 1.3 / 68           | 1.3 / 60         | 1.3 / 69          | 1.3 / 57           |  |
| Filtrate CL (ppm)               | 46,000             | 46,000           | 46,000            | 120,000            |  |
| pH / Fluid Loss (mptm)          | 11 / 4.4           | 10.8 / 4.2       | 8.5 / 4.6         | 9.7 / 3.8          |  |
| PV (cp) / YP (lhf2)             | 18 / 42            | 16 / 37          | 20 / 43           | 17 / 41            |  |
| % Solids / % Sand               | 12 / 0.01          | 13 / 0.1         | 14 / 0.1          | 15 / 0.25          |  |
| % Oil / Oil:Water Ratio         | N/A / N/A          | N/A / N/A        | N/A / N/A         | N/A / N/A          |  |
| Rm @ Measured Temp (degC)       | 0.11 @ 19.4        | 0.11 @ 20.0      | 0.12 @ 21.7       | 0.06 @ 23.3        |  |
| Rmf @ Measured Temp (degC)      | 0.08 @ 19.4        | 0.10 @ 20.0      | 0.09 @ 23.3       | 0.04 @ 23.9        |  |
| Rmc @ Measured Temp (degC)      | 0.28 @ 20.0        | 0.16 @ 18.9      | 0.17 @ 21.1       | 0.09 @ 20.0        |  |
| Max Tool Temp (degC) / Source   | 57.0 / EWR-P4      | 58.0 / EWR-P4    | 76.0 / HCIM       | 78.0 / EWR-P4      |  |
| Rm @ Max Tool Temp (degC)       | 0.06 @ 57.0        | 0.06 @ 58.0      | 0.05 @ 76.0       | 0.03 @ 78.0        |  |
| Lead MWD Engineer               | A.Rule             | A. Rule          | A.Rule            | A.Rule             |  |
| Customer Representative         | C.Wise             | C.Wise           | C.Wise            | R.King             |  |

## SENSOR INFORMATION

| Downhole Processor Information |                 |                 |                 |                 |  |
|--------------------------------|-----------------|-----------------|-----------------|-----------------|--|
| Tool Type                      | HCIM            | HCIM            | HCIM            | HCIM            |  |
| Software Version               | 68.18           | 68.18           | 68.18           | 68.18           |  |
| Sub Serial Number              | 198838          | 198838          | 198838          | 10630413        |  |
| Insert Serial Number           | 163155          | 163155          | 163155          | 093281          |  |
| Logging String Serial Number   | 90072522XH1WRGV | 90072522XH1WRGV | 90072522XH1WRGV | 90073263HWRG6   |  |
| Date and Time Initialized      | 26-May-05 12:49 | 27-May-05 11:11 | 28-May-05 18:32 | 02-Jun-05 09:19 |  |
| Date and Time Read             | 27-May-05 10:26 | 28-May-05 15:49 | 31-May-05 23:02 | 04-Jun-05 15:29 |  |

| Directional Sensor Information |        |        |        |            |  |
|--------------------------------|--------|--------|--------|------------|--|
| Tool Type                      | DM     | DM     | DM     | DM         |  |
| Distance From Bit (m)          | 20.91  | 22.98  | 19.97  | 8.97       |  |
| Software Version               | 3.15   | 3.15   | 3.15   | 3.15       |  |
| Sub Serial Number              | 128402 | 128402 | 128402 | Flex773864 |  |
| Sonde Serial Number            | 581139 | 581139 | 581139 | 149865     |  |
| Sensor ID Number               | N/A    | N/A    | N/A    | N/A        |  |
| Survey String Serial Number    | N/A    | N/A    | N/A    | N/A        |  |
| Toolface Offset (deg)          | 101.30 | 272.43 | N/A    | N/A        |  |

| Gamma Ray Sensor Information |        |        |        |        |  |
|------------------------------|--------|--------|--------|--------|--|
| Tool Type                    | DGR    | DGR    | DGR    | DGR    |  |
| Distance From Bit (m)        | 12.09  | 14.16  | 11.15  | 11.44  |  |
| Recorded Sample Period (sec) | 12     | 12     | 12     | 12     |  |
| Software Version             | N/A    | N/A    | N/A    | N/A    |  |
| Sub Serial Number            | 059984 | 059984 | 059984 | 078523 |  |
| Insert/Sonde Serial Number   | 151078 | 151078 | 151078 | 126021 |  |

| Resistivity Sensor Information   |        |        |        |        |  |
|----------------------------------|--------|--------|--------|--------|--|
| Tool Type                        | EWR-P4 | EWR-P4 | EWR-P4 | EWR-P4 |  |
| Distance From Bit (m)            | 14.43  | 16.50  | 13.49  | 13.78  |  |
| Recorded Sample Period (sec)     | 14     | 14     | 14     | 14     |  |
| Software Version                 | 1.38   | 1.38   | 1.38   | 1.38   |  |
| Sub Serial Number                | 96506  | 96506  | 96506  | 156219 |  |
| Receiver Insert Serial Number    | 45162  | 45162  | 45162  | 138389 |  |
| Transmitter Insert Serial Number | 123860 | 123860 | 123860 | 127877 |  |
| Receiver Orientation             | Down   | Down   | Down   | Down   |  |

| Neutron Sensor Information   |  |  |  |        |  |
|------------------------------|--|--|--|--------|--|
| Tool Type                    |  |  |  | CNP    |  |
| Distance From Bit (m)        |  |  |  | 24.52  |  |
| Recorded Sample Period (sec) |  |  |  | 16     |  |
| Sub Serial Number            |  |  |  | 74050  |  |
| Insert Serial Number         |  |  |  | 74044  |  |
| Source Serial Number         |  |  |  | 8625NK |  |
| Source Factor                |  |  |  | 1.0590 |  |
| Pin Orientation              |  |  |  | Down   |  |

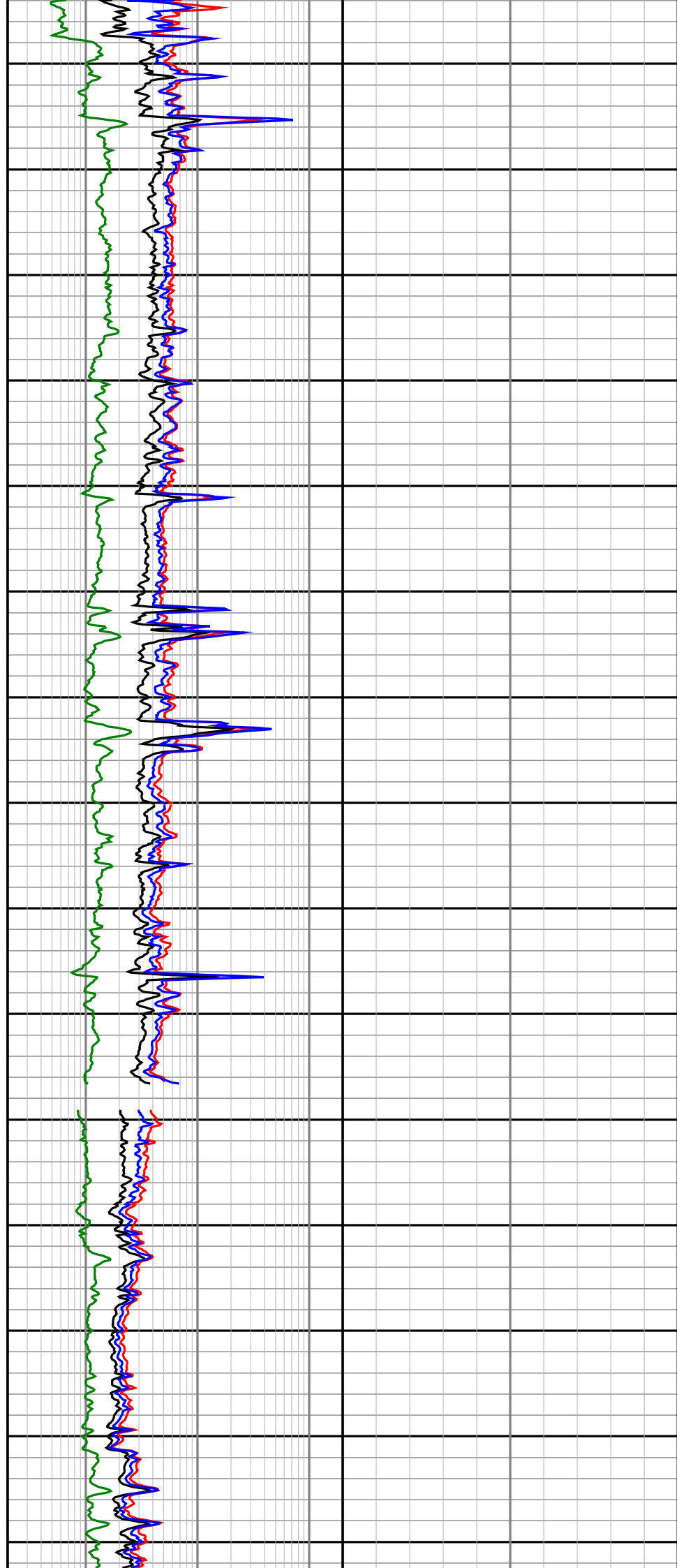
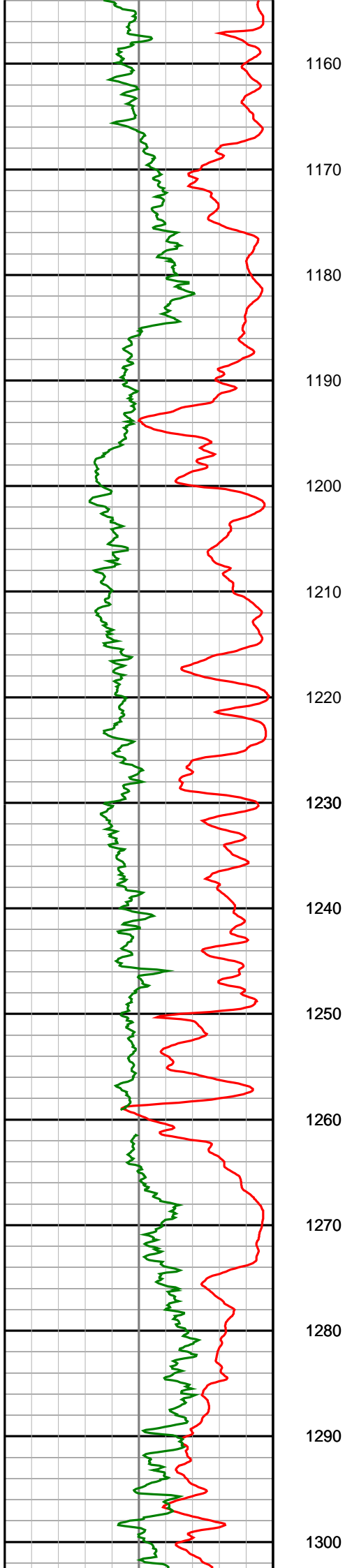
| Density Sensor Information   |  |  |  |         |  |
|------------------------------|--|--|--|---------|--|
| Tool Type                    |  |  |  | ALD     |  |
| Distance From Bit (m)        |  |  |  | 21.05   |  |
| Recorded Sample Period (sec) |  |  |  | 16      |  |
| Software Version             |  |  |  | 2.13    |  |
| Sub Serial Number            |  |  |  | 101673  |  |
| Insert Serial Number         |  |  |  | 121808  |  |
| Sensor ID Number             |  |  |  | 12012   |  |
| Source Serial Number         |  |  |  | 2579GW  |  |
| Pin Orientation              |  |  |  | Down    |  |
| Stabilizer Blade O.D. (mm)   |  |  |  | 209.550 |  |
| DPA Offset                   |  |  |  | 0       |  |

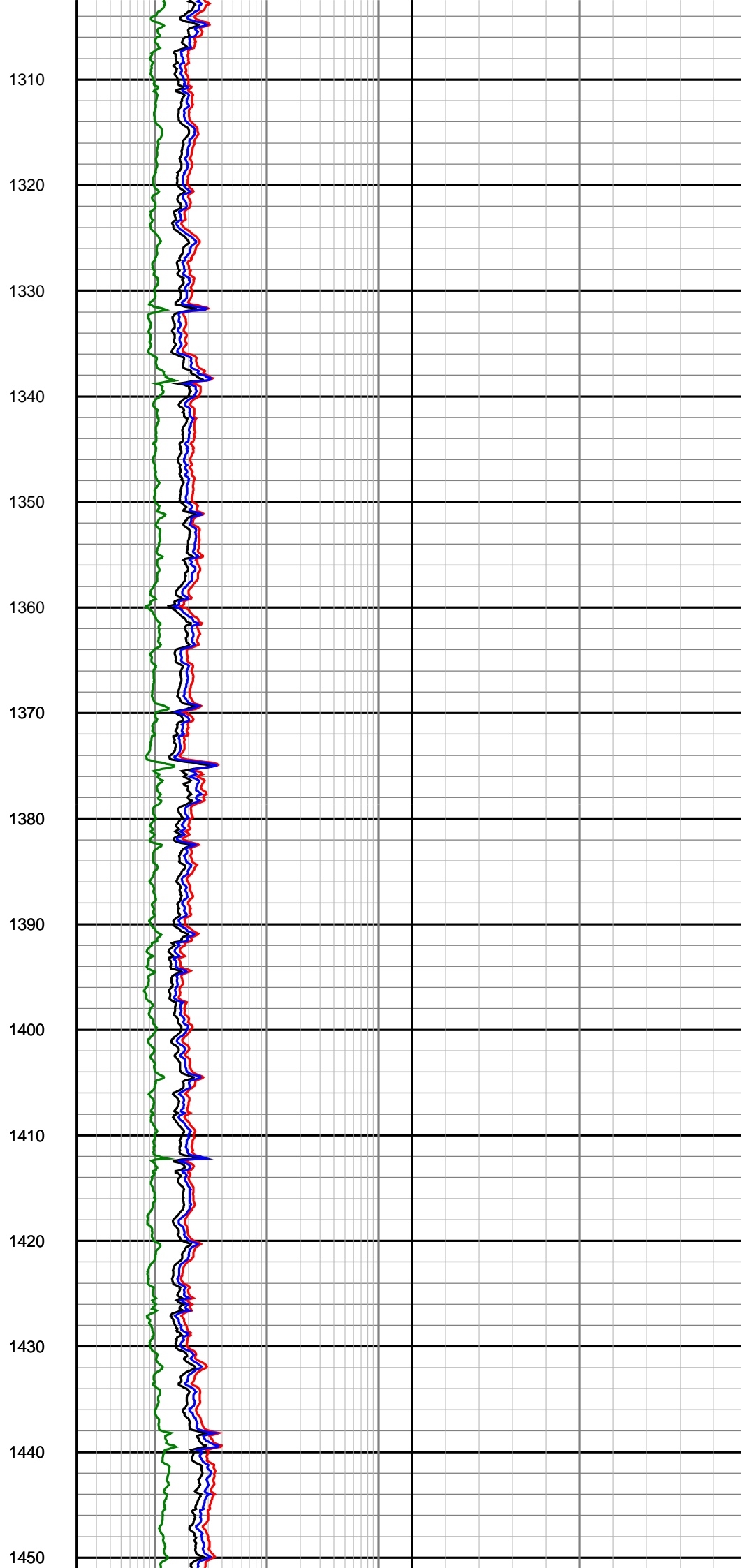
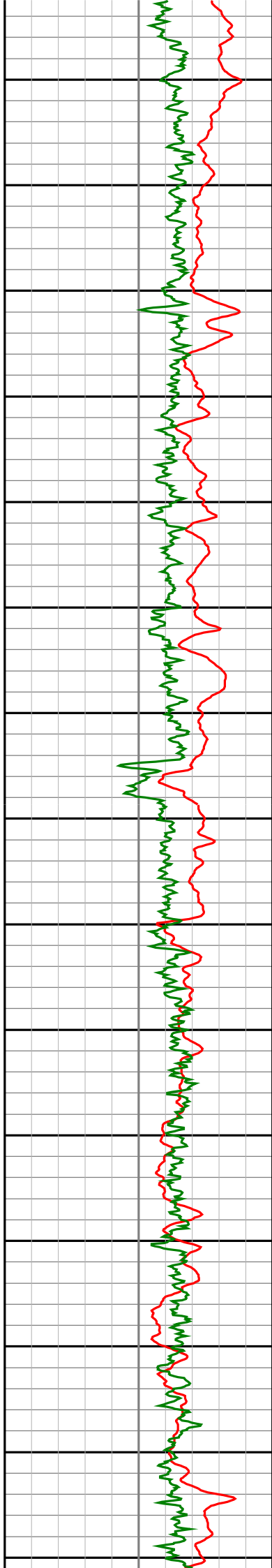
| GeoPilot Sensor Information |  |  |    |    |  |
|-----------------------------|--|--|----|----|--|
| Tool Type                   |  |  | GP | GP |  |

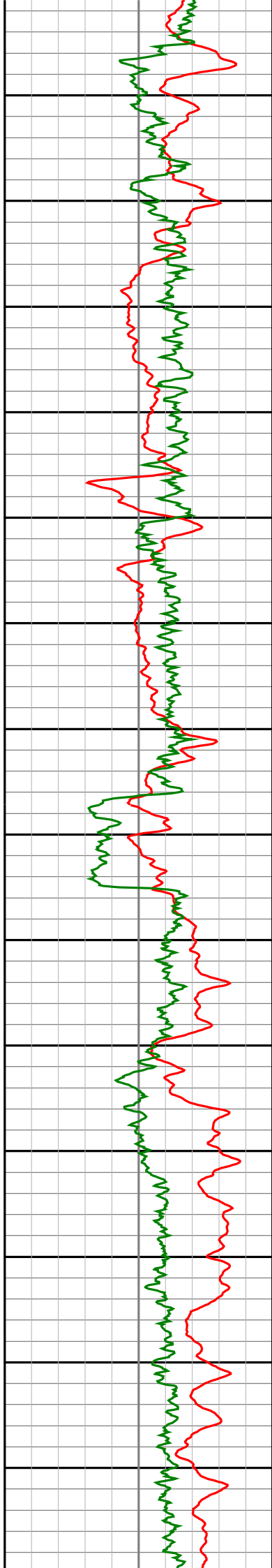
|                       |  |  |             |             |  |
|-----------------------|--|--|-------------|-------------|--|
| Distance From Bit (m) |  |  | 1.74        | 1.42        |  |
| Software Version      |  |  | 3           | 3           |  |
| Sub Serial Number     |  |  | GP1225TL062 | GP0850TL084 |  |

| REMARKS   |  |  |  |  |  |
|---|--|--|--|--|--|
| <div> <div>1. All depths are bit depths and referenced to the drillers pipe tally</div> <div>2. AV/CV is calculated at the MWD collar using the Power Law for water based muds and the Bingham's Plastic Law for oil based muds.</div> <div> <div>3. Curve mnemonics are:</div> <div> <div>SGRC - Smoothed Gamma Ray combined (Sperry)</div> <div>SEXP - Smoothed Extra Shallow Spacing Phase-Shift Derived Resistivity (Sperry)</div> <div>SESP - Smoothed Shallow Spacing Phase-Shift Derived Resistivity (Sperry)</div> <div>SEMP - Smoothed Medium Spacing Phase-Shift Derived Resistivity (Sperry)</div> <div>SEDP - Smoothed Deep Spacing Phase-Shift Derived Resistivity (Sperry)</div> <div>SROP - Smoothed Rate of Penetration (Sperry)</div> <div>SBD2 - Smoothed Rapid Sample Bulk Density (Sperry)</div> <div>NUCL - Smoothed Neutron Porosity (Sperry)</div> <div>SCO2 - Smoothed Delta Rho (Sperry)</div> <div>SHSI - Smoothed Hole Size Indicator (Sperry)</div> </div> </div> <div> <div>4. CNP data processed using the CNP-E algorithm using the following parameters and is based on a Limestone matrix:</div> <div> <div>MW = 10.5 - 10.7 ppg</div> <div>Formation Salinity = 27,000 ppm Cl</div> <div>Mud Salinity = 127,000 ppm Cl</div> <div>Matrix Density = 2.71 g/cc</div> <div>Fluid Density = 1.00 g/cc</div> </div> </div> <div>5. Casino-4DW2 was kicked off from Casino-4 at 1145.63 mTVDRT</div> </div> |  |  |  |  |  |

| WARRANTY  |   |   |  |   |  |
|---|---|---|--|---|--|
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| <div> <div>Hole Size Indicator (SHSI)</div> <div>616</div> <div>inches</div> <div>Rate of Penetration (SROP)</div> <div>1000</div> <div>m/hr</div> </div>   | <div> <div>Gamma Ray (SGRC)</div> <div>0200</div> <div>api</div> </div> | <div> <div>Depth</div> <div>TVD</div> <div>1:500</div> <div>1140</div> <div>1150</div> </div> | <div> <div>Deep Phase Resistivity (SEDP)</div> <div>0.2200</div> <div>ohmm</div> </div>      |   |  |
|   |   |   | <div> <div>Medium Phase Resistivity (SEMP)</div> <div>0.2200</div> <div>ohmm</div> </div>    | <div> <div>Delta Rho (SCO2)</div> <div>-0.750.25</div> </div>                       |  |
|   |   |   | <div> <div>Shallow Phase Resistivity (SESP)</div> <div>0.2200</div> <div>ohmm</div> </div>   | <div> <div>Bulk Density (SBD2)</div> <div>1.952.95</div> <div>g/cc</div> </div>     |  |
|   |   |   | <div> <div>X-Shallow Phase Resistivity (SEXP)</div> <div>0.2200</div> <div>ohmm</div> </div> | <div> <div>Neutron Porosity (NUCL)</div> <div>0.45-0.15</div> <div>v/v</div> </div> |  |
|   |   |   |  |   |  |







1460

1470

1480

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1500

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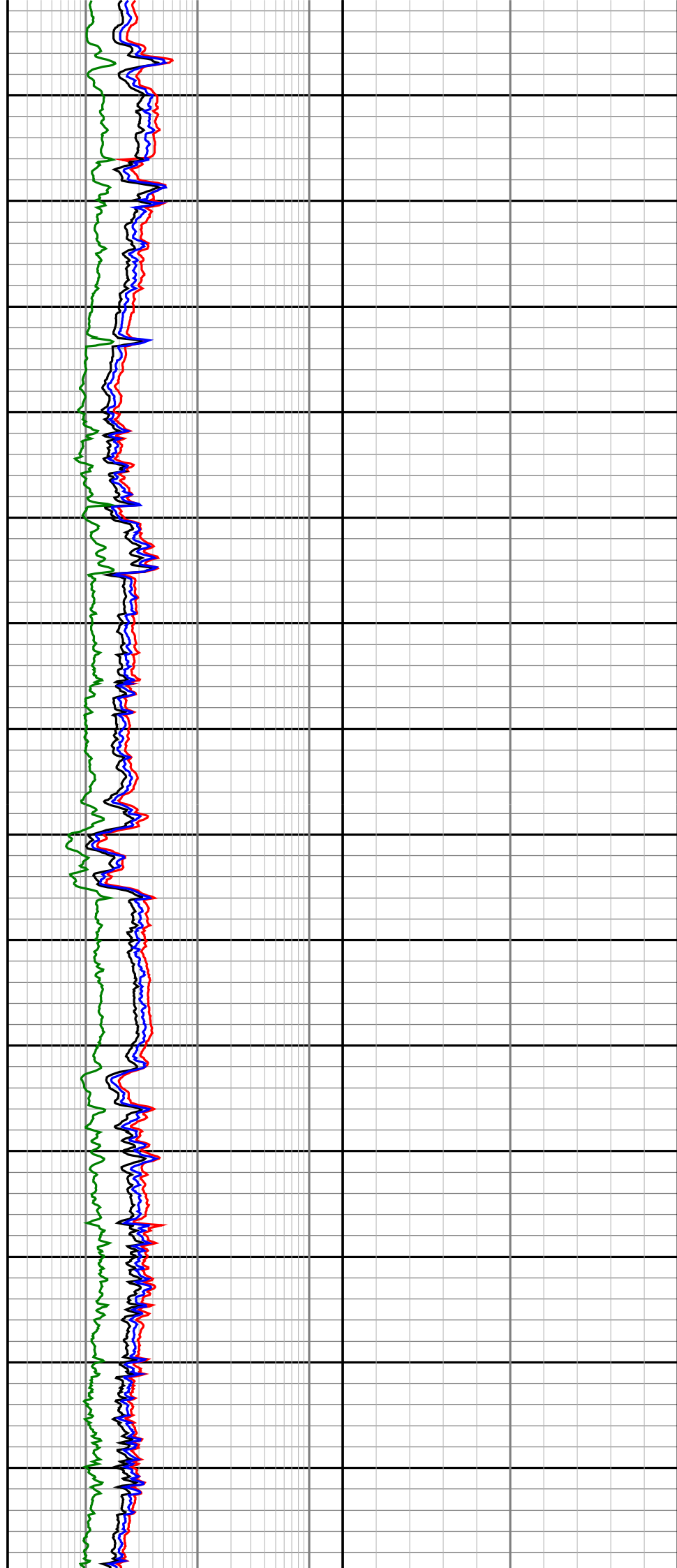
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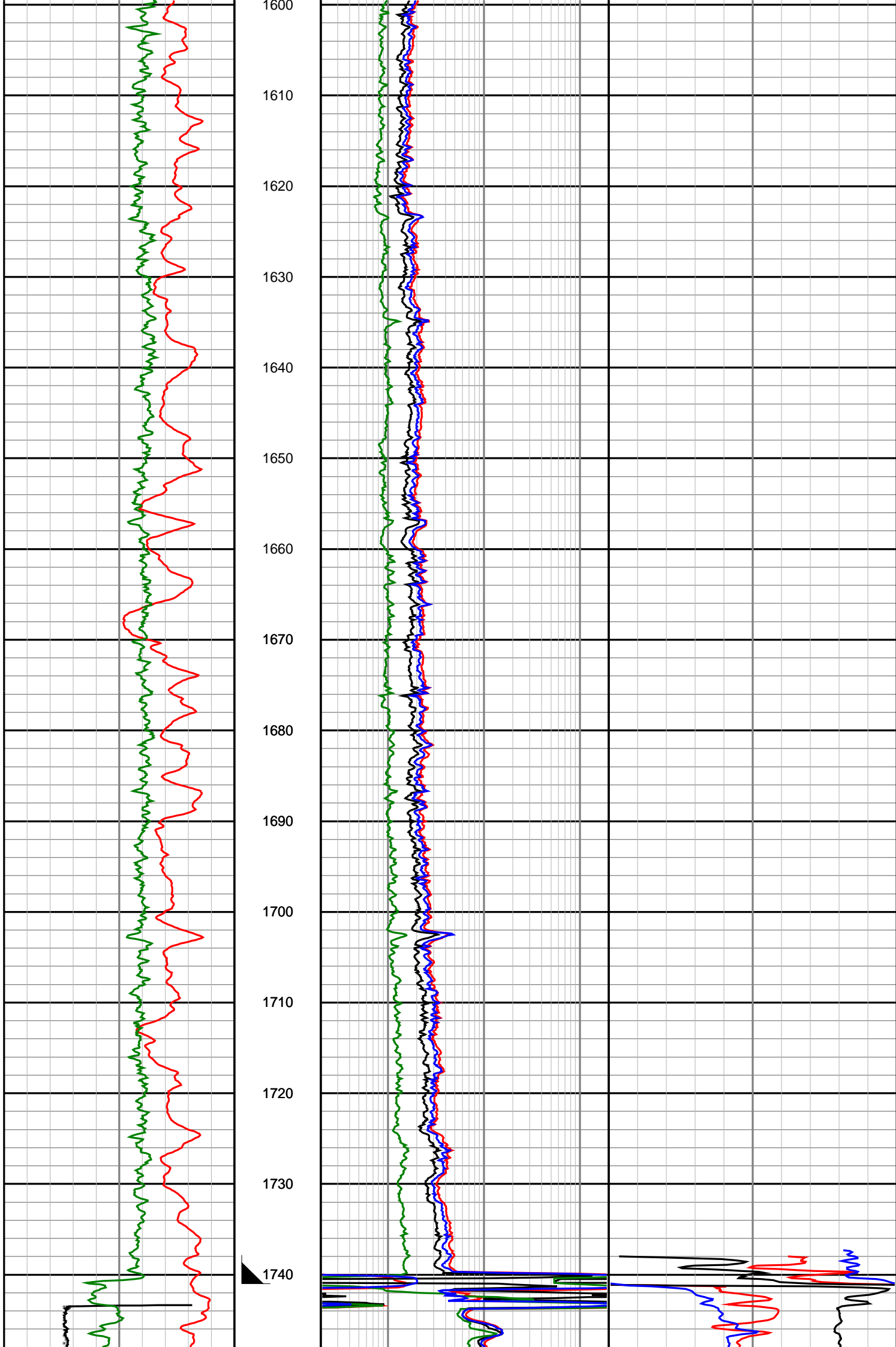
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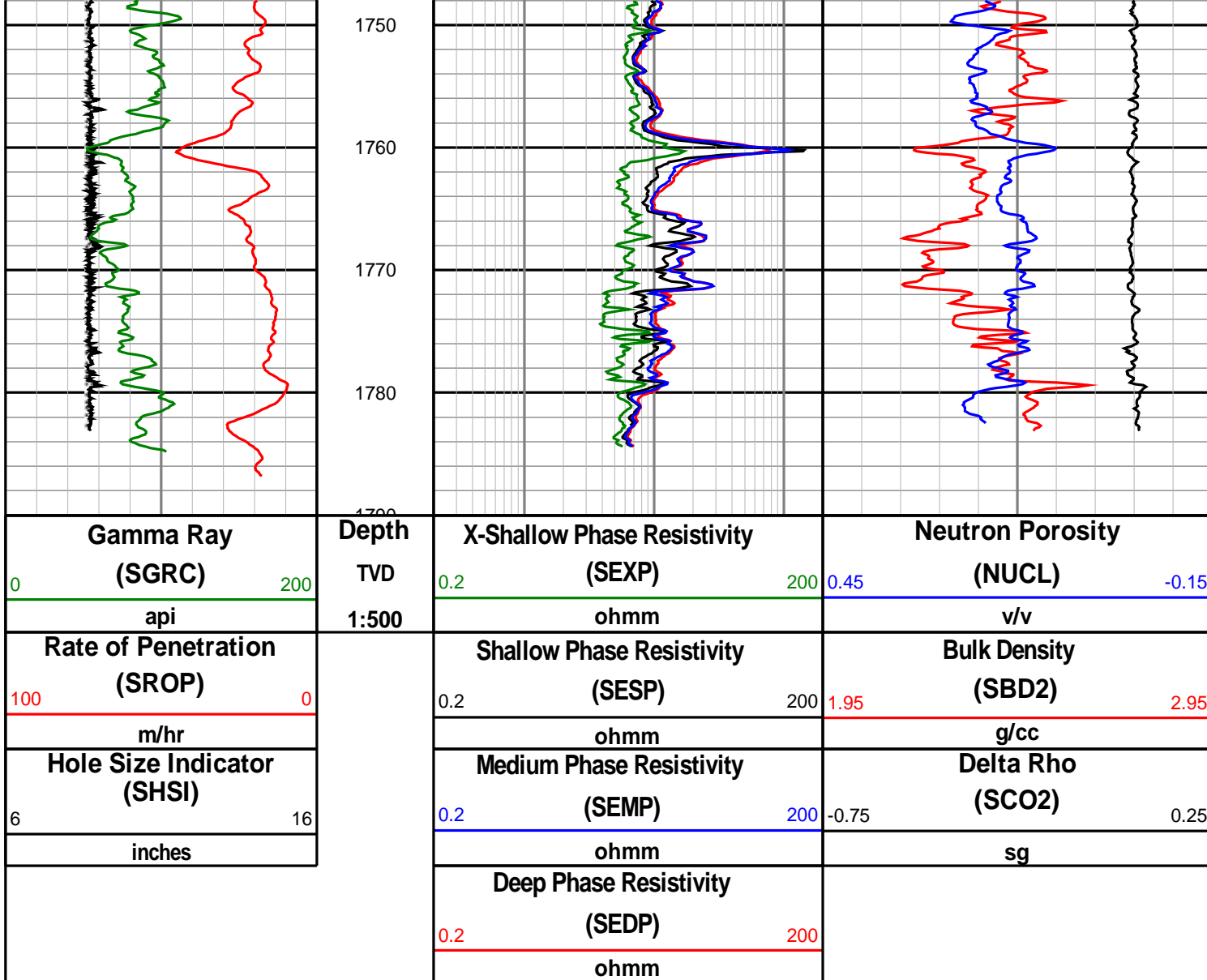
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1590







**HALLIBURTON**

## DIRECTIONAL SURVEY REPORT

Santos Ltd  
Casino-4DW2  
Casino  
Victoria  
Australia

AU-FE-0003735541

RT to LAT = 22.0m. All surveys corrected for BHA sag.

| Measured Depth (metres) | Inclination (degrees) | Direction (degrees) | Vertical Depth (metres) | Latitude (metres) | Departure (metres) | Vertical Section (metres) | Dogleg (deg/30m) |
|-------------------------|-----------------------|---------------------|-------------------------|-------------------|--------------------|---------------------------|------------------|
| 1146.000                | 4.50                  | 204.71              | 1145.630                | 2.700 S           | 1.750 E            | -2.565                    | TIE-IN           |
| 1166.380                | 5.08                  | 197.94              | 1165.939                | 4.285 S           | 1.138 E            | -2.528                    | 1.19             |
| 1196.520                | 6.90                  | 204.40              | 1195.913                | 7.203 S           | 0.021 W            | -2.432                    | 1.93             |
| 1225.280                | 9.13                  | 213.00              | 1224.392                | 10.691 S          | 1.978 W            | -1.779                    | 2.63             |
| 1250.010                | 10.24                 | 216.17              | 1248.769                | 14.111 S          | 4.344 W            | -0.719                    | 1.49             |
| 1257.460                | 10.16                 | 218.79              | 1256.101                | 15.158 S          | 5.146 W            | -0.320                    | 1.90             |
| 1287.270                | 10.53                 | 234.54              | 1285.433                | 18.788 S          | 9.013 W            | 2.080                     | 2.86             |
| 1314.960                | 11.47                 | 254.15              | 1312.623                | 21.009 S          | 13.724 W           | 5.754                     | 4.16             |
| 1342.920                | 12.82                 | 274.39              | 1339.969                | 21.531 S          | 19.494 W           | 11.002                    | 4.76             |
| 1371.810                | 14.63                 | 289.92              | 1368.043                | 20.042 S          | 26.123 W           | 17.741                    | 4.25             |

## Casino-4DW2

| Measured Depth (metres) | Inclination (degrees) | Direction (degrees) | Vertical Depth (metres) | Latitude (metres) | Departure (metres) | Vertical Section (metres) | Dogleg (deg/30m) |
|-------------------------|-----------------------|---------------------|-------------------------|-------------------|--------------------|---------------------------|------------------|
| 1403.350                | 16.96                 | 298.16              | 1398.394                | 16.513 S          | 33.925 W           | 26.279                    | 3.07             |
| 1430.210                | 19.64                 | 303.85              | 1423.895                | 12.148 S          | 41.130 W           | 34.539                    | 3.59             |
| 1460.580                | 23.39                 | 309.06              | 1452.146                | 5.504 S           | 50.054 W           | 45.191                    | 4.15             |
| 1487.440                | 26.26                 | 311.42              | 1476.522                | 1.789 N           | 58.651 W           | 55.758                    | 3.39             |
| 1515.920                | 30.69                 | 310.65              | 1501.551                | 10.696 N          | 68.895 W           | 68.422                    | 4.68             |
| 1544.450                | 35.01                 | 308.80              | 1525.514                | 20.572 N          | 80.803 W           | 82.981                    | 4.66             |
| 1574.020                | 39.48                 | 307.90              | 1549.047                | 31.668 N          | 94.839 W           | 99.955                    | 4.57             |
| 1601.660                | 43.46                 | 306.39              | 1569.754                | 42.710 N          | 109.431 W          | 117.434                   | 4.45             |
| 1630.500                | 47.12                 | 305.12              | 1590.041                | 54.678 N          | 126.065 W          | 137.148                   | 3.92             |
| 1659.470                | 51.07                 | 302.67              | 1609.008                | 66.872 N          | 144.241 W          | 158.390                   | 4.52             |
| 1688.150                | 54.91                 | 300.23              | 1626.271                | 78.807 N          | 163.778 W          | 180.823                   | 4.50             |
| 1716.830                | 59.06                 | 298.06              | 1641.895                | 90.507 N          | 184.781 W          | 204.554                   | 4.74             |
| 1745.430                | 62.89                 | 296.17              | 1655.770                | 101.895 N         | 207.039 W          | 229.359                   | 4.38             |
| 1775.140                | 65.13                 | 291.82              | 1668.794                | 112.742 N         | 231.430 W          | 255.986                   | 4.55             |
| 1803.180                | 66.82                 | 288.55              | 1680.212                | 121.573 N         | 255.465 W          | 281.591                   | 3.67             |
| 1832.100                | 67.00                 | 288.55              | 1691.554                | 130.036 N         | 280.686 W          | 308.187                   | 0.19             |
| 1861.050                | 70.00                 | 287.81              | 1702.163                | 138.438 N         | 306.274 W          | 335.107                   | 3.19             |
| 1889.710                | 70.27                 | 288.54              | 1711.901                | 146.845 N         | 331.884 W          | 362.049                   | 0.77             |
| 1918.350                | 71.02                 | 288.14              | 1721.393                | 155.348 N         | 357.532 W          | 389.061                   | 0.88             |
| 1946.760                | 73.24                 | 288.85              | 1730.111                | 163.925 N         | 383.173 W          | 416.090                   | 2.45             |
| 1975.040                | 76.28                 | 287.89              | 1737.544                | 172.522 N         | 409.065 W          | 443.362                   | 3.37             |
| 2020.940                | 76.66                 | 287.87              | 1748.282                | 186.223 N         | 451.536 W          | 487.960                   | 0.25             |
| 2049.610                | 78.96                 | 288.67              | 1754.336                | 195.009 N         | 478.144 W          | 515.971                   | 2.54             |
| 2078.360                | 82.52                 | 288.53              | 1758.961                | 204.058 N         | 505.033 W          | 544.334                   | 3.72             |
| 2107.040                | 86.73                 | 289.13              | 1761.647                | 213.272 N         | 532.053 W          | 572.876                   | 4.45             |
| 2135.830                | 87.47                 | 289.13              | 1763.104                | 222.695 N         | 559.218 W          | 601.627                   | 0.77             |
| 2164.510                | 87.78                 | 290.18              | 1764.292                | 232.333 N         | 586.203 W          | 630.281                   | 1.14             |
| 2193.210                | 87.78                 | 290.62              | 1765.404                | 242.330 N         | 613.083 W          | 658.959                   | 0.46             |
| 2221.710                | 87.29                 | 289.70              | 1766.630                | 252.143 N         | 639.812 W          | 687.432                   | 1.10             |
| 2250.280                | 85.93                 | 289.24              | 1768.319                | 261.649 N         | 666.700 W          | 715.950                   | 1.51             |
| 2279.030                | 86.30                 | 289.25              | 1770.267                | 271.104 N         | 693.781 W          | 744.632                   | 0.39             |
| 2307.850                | 85.37                 | 288.38              | 1772.360                | 280.374 N         | 720.988 W          | 773.370                   | 1.32             |
| 2336.650                | 82.20                 | 287.82              | 1775.478                | 289.268 N         | 748.198 W          | 801.983                   | 3.35             |
| 2365.230                | 80.01                 | 287.52              | 1779.897                | 297.838 N         | 775.101 W          | 830.196                   | 2.32             |
| 2394.210                | 79.83                 | 287.71              | 1784.969                | 306.473 N         | 802.296 W          | 858.706                   | 0.27             |
| 2404.000                | 79.83                 | 287.71              | 1786.697                | 309.404 N         | 811.475 W          | 868.335                   | 0.00             |

### CALCULATION BASED ON MINIMUM CURVATURE METHOD



SURVEY COORDINATES RELATIVE TO WELL SYSTEM REFERENCE POINT  
TVD VALUES GIVEN RELATIVE TO DRILLING MEASUREMENT POINT

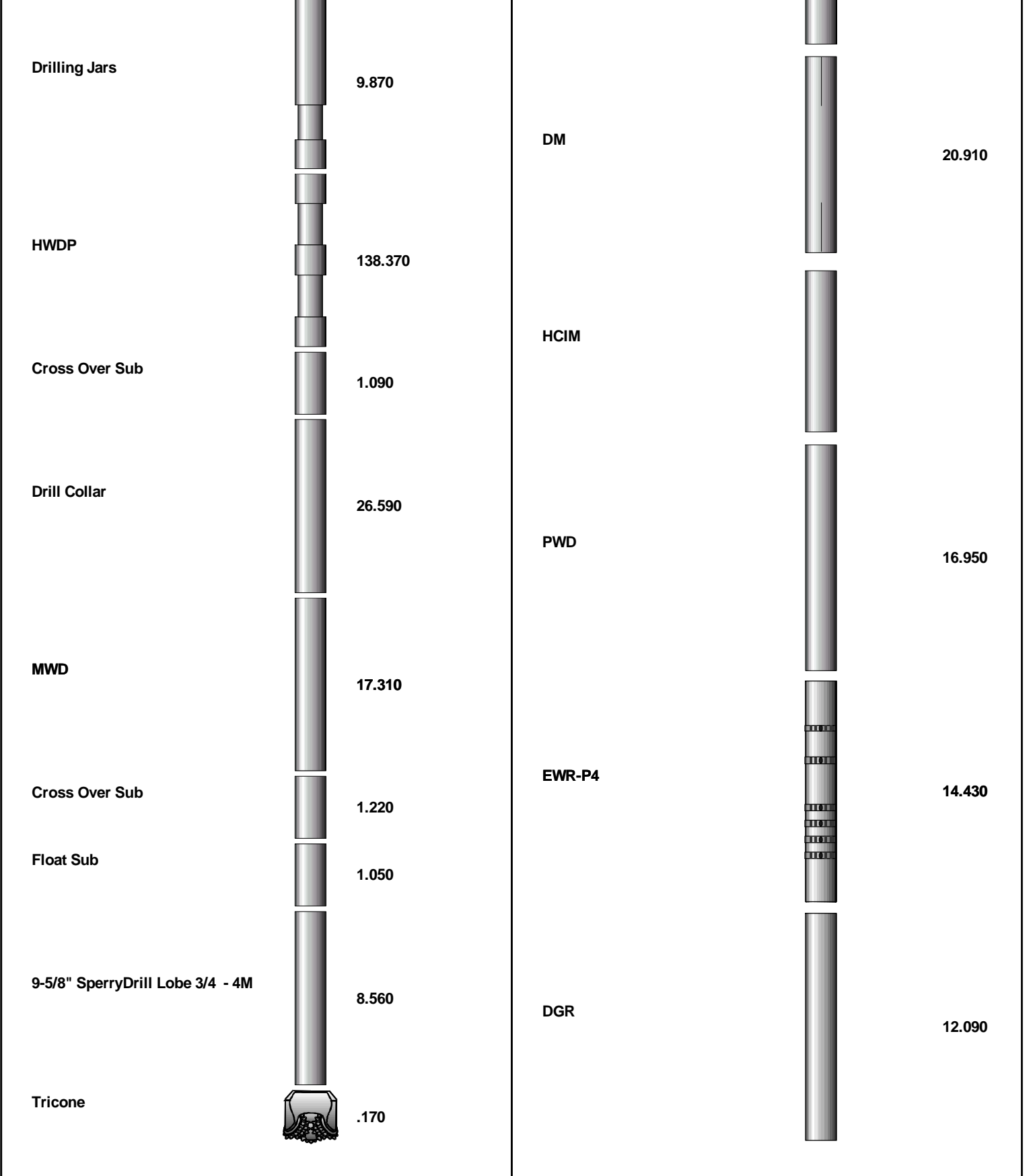
VERTICAL SECTION RELATIVE TO WELL HEAD  
VERTICAL SECTION IS COMPUTED ALONG A DIRECTION OF 289.90 DEGREES (GRID)  
A TOTAL CORRECTION OF 12.01 DEG FROM MAGNETIC NORTH TO GRID NORTH HAS BEEN APPLIED

HORIZONTAL DISPLACEMENT IS RELATIVE TO THE WELL HEAD.  
HORIZONTAL DISPLACEMENT(CLOSURE) AT 2404.000 METRES  
IS 868.460 METRES ALONG 290.87 DEGREES (GRID)

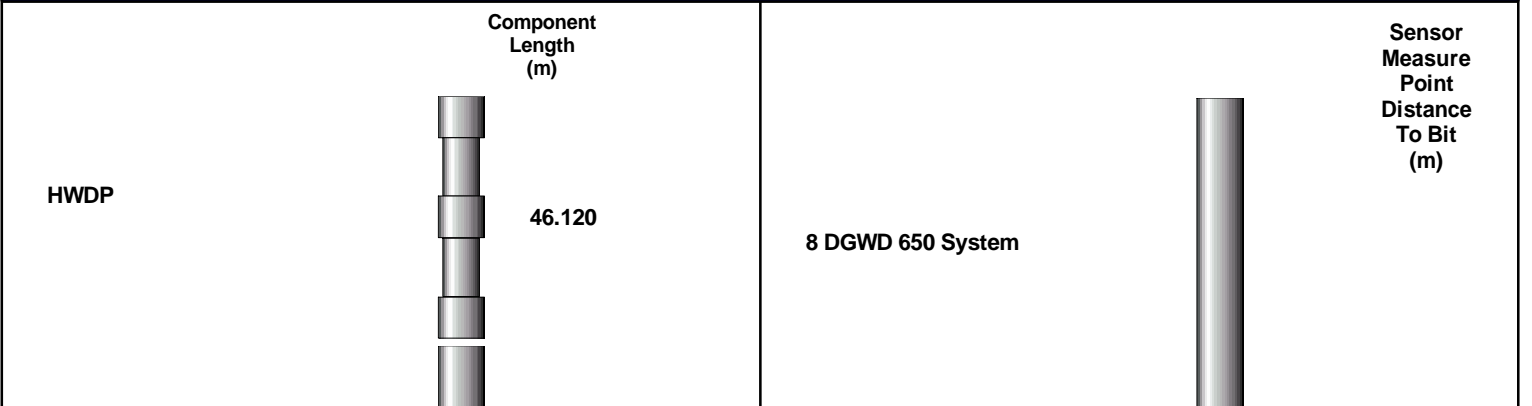
## MWD RUN 800 - BHA

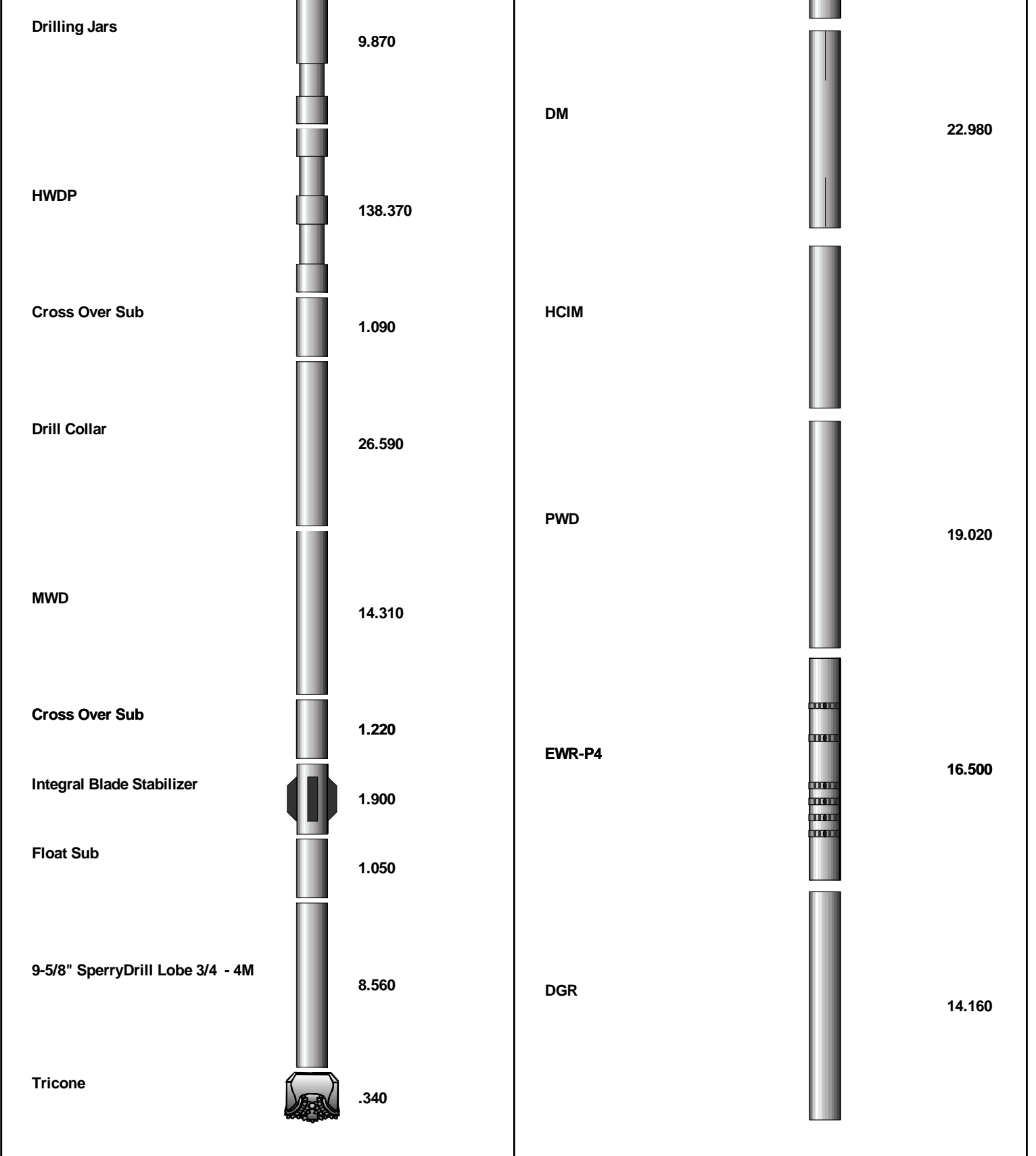
## MWD RUN 800 - MWD

| Component Length (m)  | Sensor Measure Point Distance To Bit (m)   |
|---|--|
| <p>HWDP</p>  <p>46.120</p> |  <p>8 DGWD 650 System</p> |

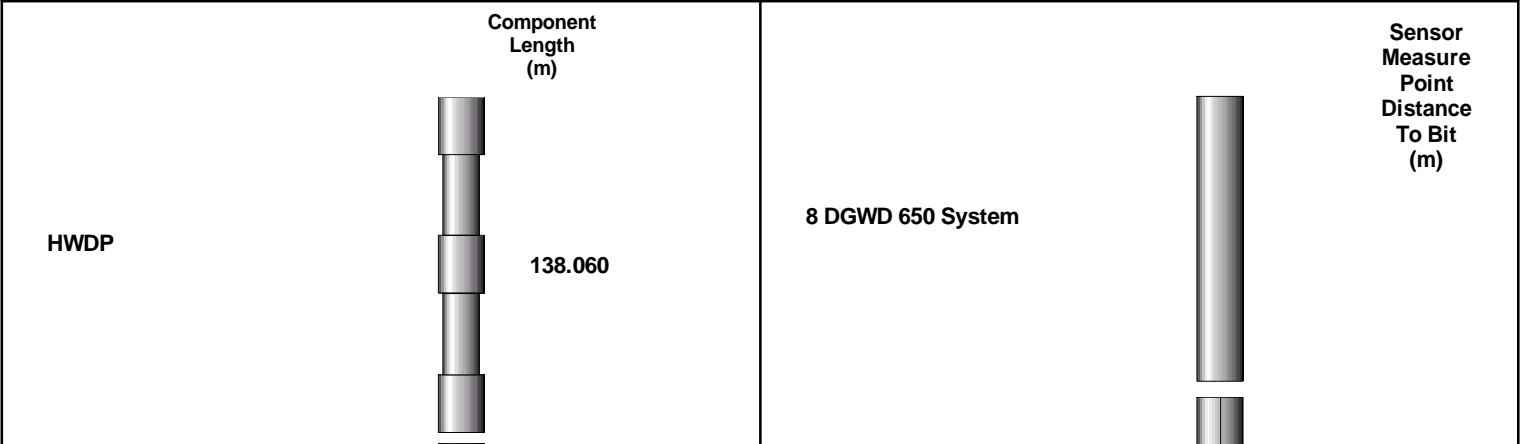


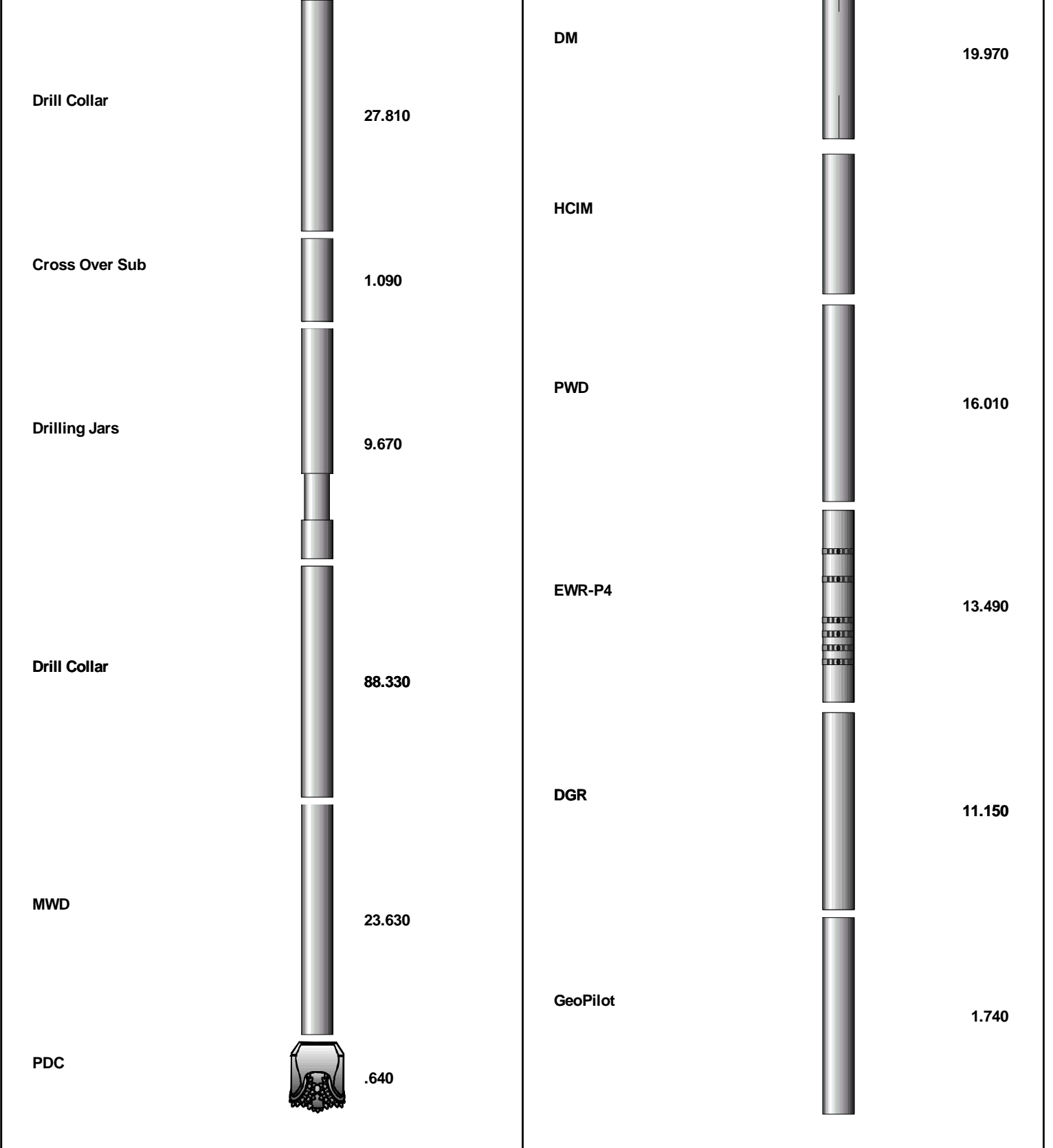
|                   |                   |
|-------------------|-------------------|
| MWD RUN 900 - BHA | MWD RUN 900 - MWD |
|-------------------|-------------------|



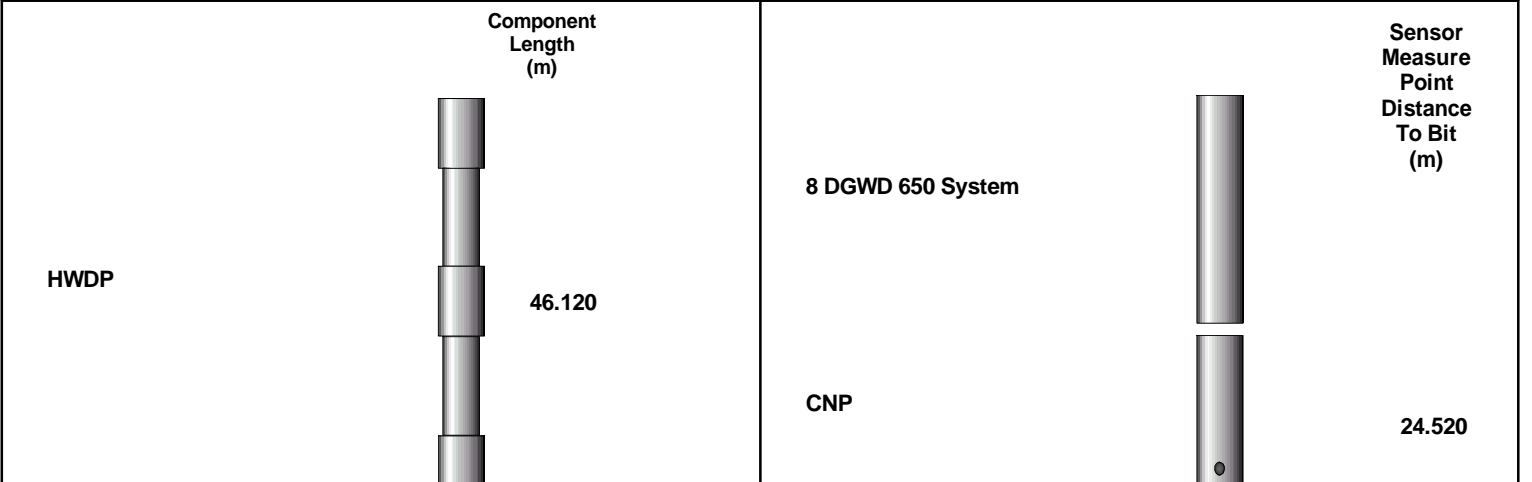


|                    |                    |
|--------------------|--------------------|
| MWD RUN 1000 - BHA | MWD RUN 1000 - MWD |
|--------------------|--------------------|





|                    |                    |
|--------------------|--------------------|
| MWD RUN 1100 - BHA | MWD RUN 1100 - MWD |
|--------------------|--------------------|





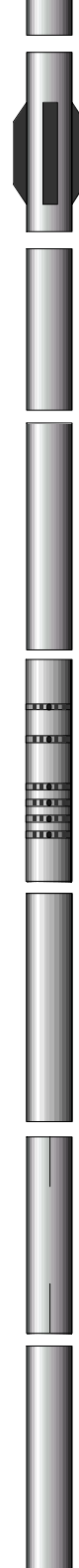
**55.280**

**.790**

**28.670**

**.420**

## GeoPilot



**1.420**