

Company: Southwestern Energy Production Company

Well: Diamond T Sheep 7-92 1-26

Field: Sand Wash Basin/Niobrara

County: Moffat State: Colorado

Platform Express

Triple Combo

Density 1

County: Moffat  
Field: Sand Wash Basin/Niobrara  
Location: NWNW Sec 26-T7N-R92W  
Well: Diamond T Sheep 7-92 1-26  
Company: Southwestern Energy Production Company

|                                 |          |                          |  |                  |  |
|---------------------------------|----------|--------------------------|--|------------------|--|
| Location:                       |          | Elev.:                   |  | K.B.             |  |
| NWNW Sec 26-T7N-R92W            |          | SHL: 660' FNL X 930' FWL |  | 6702.00 ft       |  |
| Lat/Long: 40.534283/-107.693039 |          | G.L.                     |  | 6680.00 ft       |  |
| Permanent Datum:                |          | Ground Level             |  | 6680.00 f        |  |
| Log Measured From:              |          | Kelly Bushing            |  | 22.00 ft         |  |
| Drilling Measured From:         |          | Kelly Bushing            |  | above Perm.Datum |  |
| API Serial No.                  | Section: | Township:                |  | Range:           |  |
| 05-081-07804-0000               | 26       | 7N                       |  | 92W              |  |

|                             |                        |             |              |          |  |
|-----------------------------|------------------------|-------------|--------------|----------|--|
| Logging Date                | 11-Sep-2014            |             |              |          |  |
| Run Number                  | One                    |             |              |          |  |
| Depth Driller               | 5681.00 ft             |             |              |          |  |
| Schlumberger Depth          | 5680.00 ft             |             |              |          |  |
| Bottom Log Interval         | 5680.00 ft             |             |              |          |  |
| Top Log Interval            | 1296.00 ft             |             |              |          |  |
| Casing Driller Size @ Depth | 13.375 in @ 1296.00 ft |             |              |          |  |
| Casing Schlumberger         | 1296 ft                |             |              |          |  |
| Bit Size                    | 12.25 in               |             |              |          |  |
| Type Fluid In Hole          | Water Based Mud        |             |              |          |  |
| Mud                         | Density                | 9 lbm/gal   | 44 s         |          |  |
|                             | Fluid Loss             | PH          | 8.6          |          |  |
| Source of Sample            |                        | Active Tank |              |          |  |
| RM @ Meas Temp              | 0.15 ohm.m @           |             | 85 degF      |          |  |
| RMF @ Meas Temp             | 0.12 ohm.m @           |             | 85 degF      |          |  |
| RMC @ Meas Temp             | 2 ohm.m @              |             | 85 degF      |          |  |
| Source RMF                  | RMC                    | Calculated  | Calculated   |          |  |
| RM @ BHT                    | RMF @ BHT              | 0.08 @ 160  | 0.07 @ 160   |          |  |
| Max Recorded Temperatures   |                        |             | 160 degF     |          |  |
| Circulation Stopped         |                        | Time        | 11-Sep-2014  | 04:00:00 |  |
| Logger on Bottom            |                        | Time        | 11-Sep-2014  | 18:30:00 |  |
| Unit Number                 | Location:              | 9103        | Elk City, OK |          |  |
| Recorded By                 | Avery Becker           |             |              |          |  |
| Witnessed By                | Sweta Bose             |             |              |          |  |

Disclaimer

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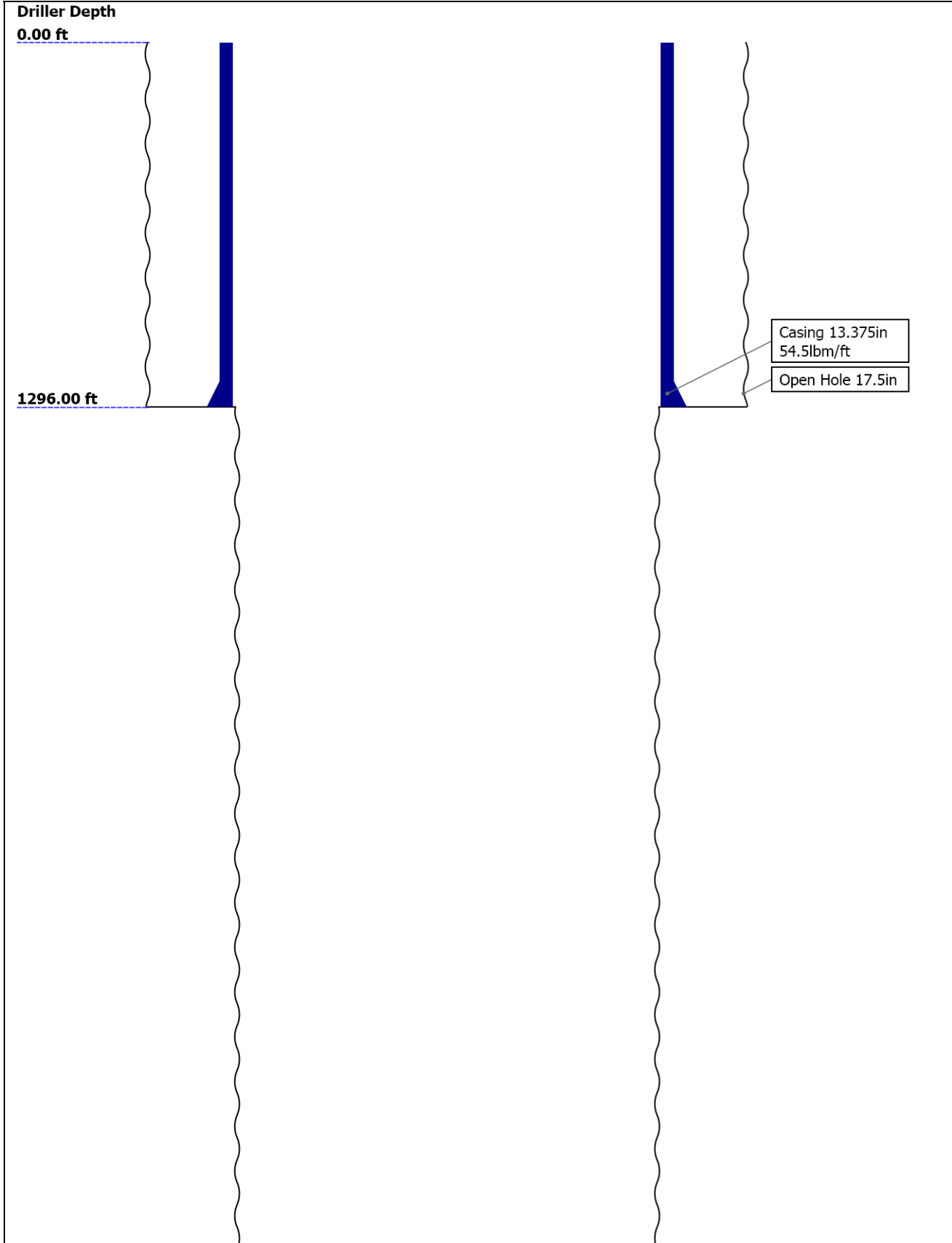
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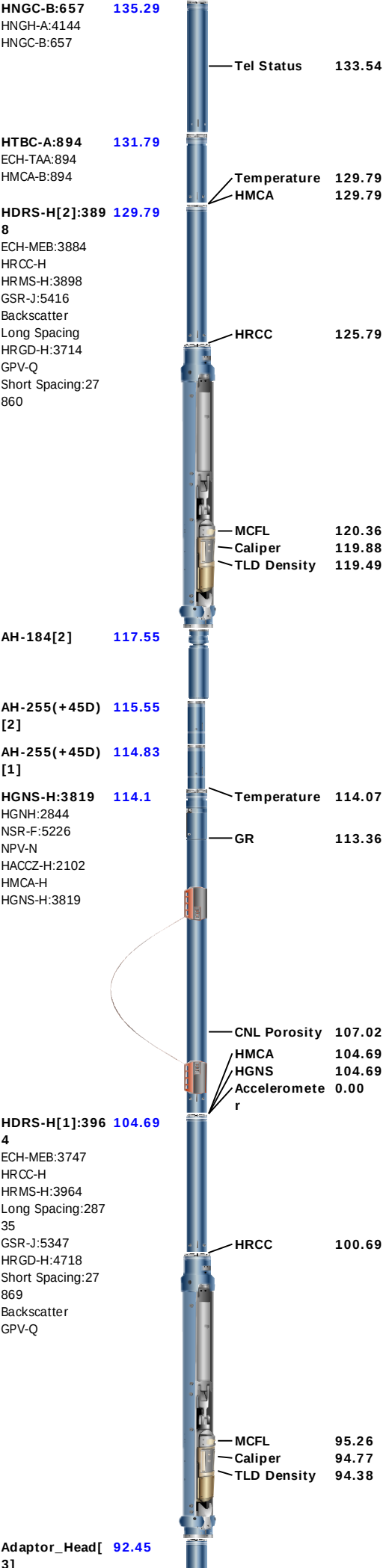
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Well Sketch







AH-184[1]:274 88.45  
6

PPC-B[2]:8671 86.45  
PPC-B:8671

PPC-B Calipers 85.3

AH-255(-45D) 79.93

MAST-B:8159 79.2  
ECH-SF:8143  
MAPC-BA:8143  
MAMS-BA:8159  
MASS-BA:8079  
MAXS-BA:8045

MAMS 63.76



PPC-B[1]:8007 37.92  
PPC-B:8007

MAXS 37.92

PPC-B Calipers 36.77

Adaptor\_Head[2] 31.4

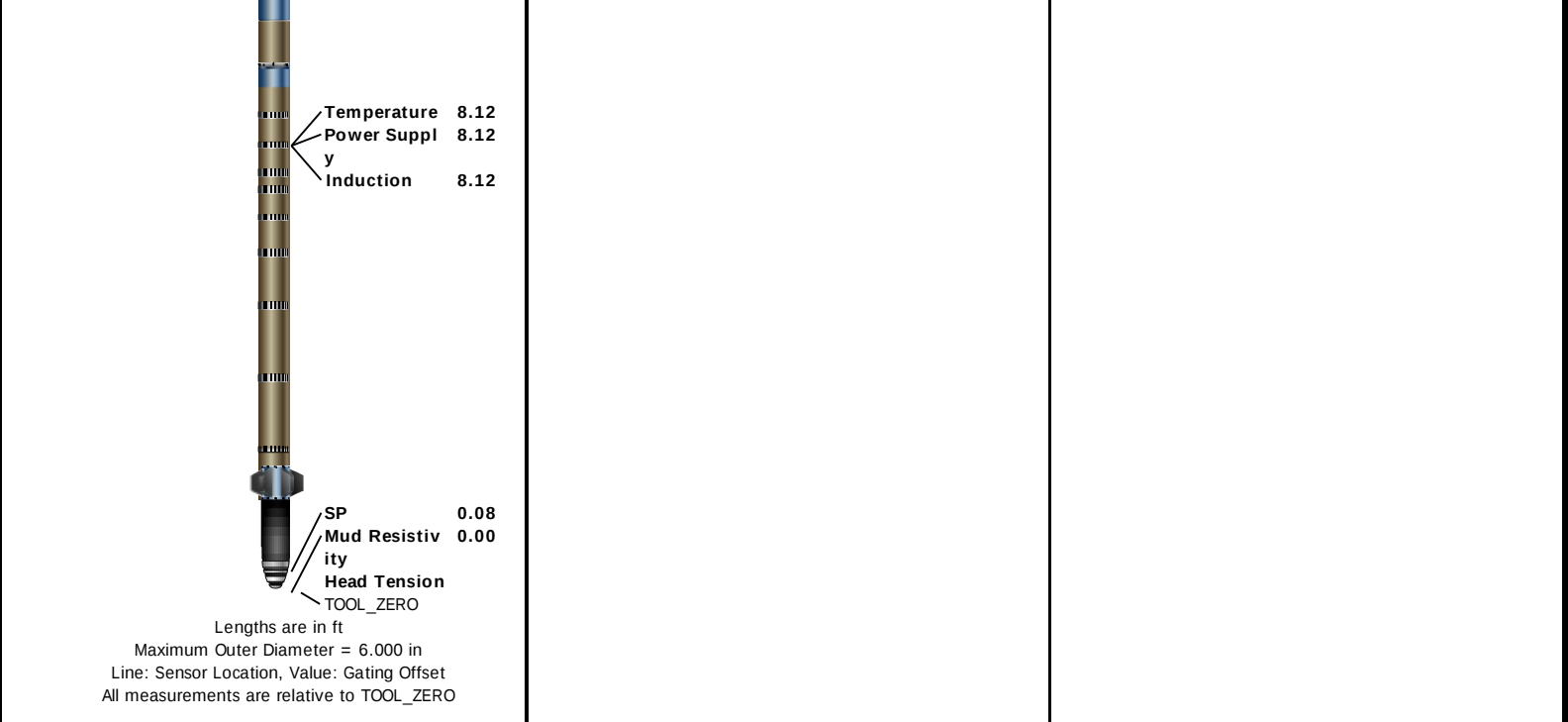
GPIT-F 27.4  
GPIH-B:3808  
GPIC-F  
DHRU-F

GPIT-F Inclinator 25.98

Adaptor\_Head[1] 23.4

GPIT 0.00

ZAIT-E:99 19.4  
AZIS:99  
AZRM



|                                    |                             |                                                              |              |
|------------------------------------|-----------------------------|--------------------------------------------------------------|--------------|
| Depth Summary                      |                             |                                                              |              |
|                                    | One                         |                                                              |              |
| Depth Measuring Device             |                             |                                                              |              |
| Type                               | IDW-B                       |                                                              |              |
| Serial Number                      | 5824                        |                                                              |              |
| Calibration Date                   | 23-Jul-2014                 |                                                              |              |
| Calibrator Serial Number           |                             |                                                              |              |
| Calibration Cable Type             | 7-46A-XS                    |                                                              |              |
| Wheel Correction 1                 | 1                           |                                                              |              |
| Wheel Correction 2                 | 1                           |                                                              |              |
| Tension Device                     |                             |                                                              |              |
| Type                               | CMTD-B/A                    |                                                              |              |
| Serial Number                      | 2576                        |                                                              |              |
| Calibration Date                   | 15-Aug-2014                 |                                                              |              |
| Calibrator Serial Number           | 1018                        |                                                              |              |
| Number of Calibration Points       | 10                          |                                                              |              |
| Calibration Root Mean Square Error | 13                          |                                                              |              |
| Calibration Peak Error             | 20                          |                                                              |              |
| Logging Cable                      |                             |                                                              |              |
| Type                               | 7-46A-XS                    |                                                              |              |
| Serial Number                      | U714050                     |                                                              |              |
| Length                             | 30000.00 ft                 |                                                              |              |
| Conveyance Type                    | Wireline                    |                                                              |              |
| Rig Type                           | Land                        |                                                              |              |
| One:Depth Control Parameters       |                             | Depth Control Remarks                                        |              |
| Log Sequence                       | First Log In the Well       | First run in well depth control procedures followed          |              |
| Rig Up Length At Surface           |                             | IDW used as primary depth device, z-chart used for secondary |              |
| Rig Up Length At Bottom            |                             |                                                              |              |
| Rig Up Length Correction           |                             |                                                              |              |
| Stretch Correction                 | 5.00 ft                     |                                                              |              |
| Tool Zero Check At Surface         |                             |                                                              |              |
| Survey Record                      |                             |                                                              |              |
| Survey Calculation                 |                             |                                                              |              |
| Method :                           | Minimum Radius of Curvature | DLS Method :                                                 | Lubinski     |
| North Reference :                  | True North                  | Total Correction Formula :                                   | Magnetic Dec |

| Rig Location             |            |               |               |                   |                     |               |               |               |                 |                    |                  |                    |    |    |    |
|--------------------------|------------|---------------|---------------|-------------------|---------------------|---------------|---------------|---------------|-----------------|--------------------|------------------|--------------------|----|----|----|
| Latitude :               |            |               |               | 40.534283 degrees |                     |               |               | Longitude :   |                 |                    |                  | -107.69303 degrees |    |    |    |
| Tie In Point             |            |               |               |                   |                     |               |               |               |                 |                    |                  |                    |    |    |    |
| Measured Depth:          |            | 1350.00 ft    |               |                   | Inclination:        |               | 0.00 deg      |               |                 | Azimuth:           |                  | 0.00 deg           |    |    |    |
| True Vertical Depth:     |            | 0.00 ft       |               |                   | North Displacement: |               | 0.00 ft       |               |                 | East Displacement: |                  | 0.00 ft            |    |    |    |
| Survey Quality Index     |            |               |               |                   |                     |               |               |               |                 |                    |                  |                    |    |    |    |
| 9 : Manual               |            |               |               | 28 : Tie-In Point |                     |               |               |               |                 |                    |                  |                    |    |    |    |
| Survey Correction Index  |            |               |               |                   |                     |               |               |               |                 |                    |                  |                    |    |    |    |
| 0 : No correction        |            |               |               |                   |                     |               |               |               |                 |                    |                  |                    |    |    |    |
| Survey Description Index |            |               |               |                   |                     |               |               |               |                 |                    |                  |                    |    |    |    |
| 0 : Not Flagged Survey   |            |               |               |                   |                     |               |               |               |                 |                    |                  |                    |    |    |    |
| Seq                      | MD<br>(ft) | Incl<br>(deg) | Azim<br>(deg) | Course<br>(ft)    | TVD<br>(ft)         | V Sec<br>(ft) | N/ -S<br>(ft) | E/ -W<br>(ft) | Closure<br>(ft) | at Azim<br>(deg)   | DLS<br>deg/100ft | Tool Type          | QI | CI | DI |
| 1                        | 1350.00    | 0.00          | 0.00          | - - - -           | 0.00                | 0.00          | 0.00          | 0.00          | 0.00            | 90.00              | 0.00             | TIP                | 28 | 0  | 0  |
| 2                        | 1365.50    | 1.85          | 215.64        | 15.50             | 15.50               | -0.20         | -0.20         | -0.15         | 0.26            | 215.64             | 11.95            | GPIT-F             | 9  | 0  | 0  |
| 3                        | 1395.50    | 1.76          | 217.28        | 30.00             | 45.48               | -0.96         | -0.96         | -0.71         | 1.18            | 216.27             | 0.36             | GPIT-F             | 9  | 0  | 0  |
| 4                        | 1425.50    | 1.82          | 220.93        | 30.00             | 75.47               | -1.69         | -1.69         | -1.30         | 2.13            | 217.53             | 0.43             | GPIT-F             | 9  | 0  | 0  |
| 5                        | 1455.50    | 1.83          | 218.59        | 30.00             | 105.45              | -2.42         | -2.42         | -1.91         | 3.08            | 218.22             | 0.25             | GPIT-F             | 9  | 0  | 0  |
| 6                        | 1485.50    | 1.76          | 221.24        | 30.00             | 135.44              | -3.15         | -3.15         | -2.51         | 4.04            | 218.61             | 0.36             | GPIT-F             | 9  | 0  | 0  |
| 7                        | 1515.50    | 1.82          | 220.12        | 30.00             | 165.42              | -3.86         | -3.86         | -3.12         | 4.95            | 219.00             | 0.23             | GPIT-F             | 9  | 0  | 0  |
| 8                        | 1545.50    | 1.87          | 223.06        | 30.00             | 195.41              | -4.58         | -4.58         | -3.77         | 5.94            | 219.42             | 0.36             | GPIT-F             | 9  | 0  | 0  |
| 9                        | 1575.50    | 1.96          | 219.94        | 30.00             | 225.39              | -5.33         | -5.33         | -4.43         | 6.92            | 219.72             | 0.46             | GPIT-F             | 9  | 0  | 0  |
| 10                       | 1605.50    | 2.05          | 224.53        | 30.00             | 255.37              | -6.11         | -6.11         | -5.14         | 7.97            | 220.06             | 0.60             | GPIT-F             | 9  | 0  | 0  |
| 11                       | 1635.50    | 2.16          | 225.18        | 30.00             | 285.35              | -6.89         | -6.89         | -5.91         | 9.09            | 220.64             | 0.39             | GPIT-F             | 9  | 0  | 0  |
| 12                       | 1665.50    | 2.27          | 227.40        | 30.00             | 315.33              | -7.69         | -7.69         | -6.75         | 10.24           | 221.28             | 0.45             | GPIT-F             | 9  | 0  | 0  |
| 13                       | 1695.50    | 2.58          | 225.70        | 30.00             | 345.30              | -8.56         | -8.56         | -7.67         | 11.48           | 221.85             | 1.08             | GPIT-F             | 9  | 0  | 0  |
| 14                       | 1725.50    | 2.69          | 227.58        | 30.00             | 375.27              | -9.51         | -9.51         | -8.67         | 12.86           | 222.37             | 0.45             | GPIT-F             | 9  | 0  | 0  |
| 15                       | 1755.50    | 2.90          | 226.80        | 30.00             | 405.24              | -10.50        | -10.50        | -9.75         | 14.34           | 222.86             | 0.73             | GPIT-F             | 9  | 0  | 0  |
| 16                       | 1785.50    | 3.02          | 228.45        | 30.00             | 435.20              | -11.55        | -11.55        | -10.89        | 15.88           | 223.32             | 0.50             | GPIT-F             | 9  | 0  | 0  |
| 17                       | 1815.50    | 3.15          | 226.58        | 30.00             | 465.15              | -12.64        | -12.64        | -12.08        | 17.49           | 223.71             | 0.54             | GPIT-F             | 9  | 0  | 0  |
| 18                       | 1845.50    | 3.08          | 227.19        | 30.00             | 495.11              | -13.76        | -13.76        | -13.27        | 19.13           | 223.98             | 0.26             | GPIT-F             | 9  | 0  | 0  |
| 19                       | 1875.50    | 3.09          | 225.28        | 30.00             | 525.06              | -14.87        | -14.87        | -14.44        | 20.73           | 224.16             | 0.34             | GPIT-F             | 9  | 0  | 0  |
| 20                       | 1905.50    | 2.93          | 224.08        | 30.00             | 555.02              | -15.99        | -15.99        | -15.55        | 22.31           | 224.19             | 0.57             | GPIT-F             | 9  | 0  | 0  |
| 21                       | 1935.50    | 3.28          | 220.32        | 30.00             | 584.98              | -17.20        | -17.20        | -16.64        | 23.92           | 224.05             | 1.36             | GPIT-F             | 9  | 0  | 0  |
| 22                       | 1965.50    | 3.15          | 221.94        | 30.00             | 614.93              | -18.46        | -18.46        | -17.74        | 25.59           | 223.86             | 0.54             | GPIT-F             | 9  | 0  | 0  |
| 23                       | 1995.50    | 3.09          | 221.36        | 30.00             | 644.89              | -19.68        | -19.68        | -18.83        | 27.23           | 223.73             | 0.21             | GPIT-F             | 9  | 0  | 0  |
| 24                       | 2025.50    | 3.26          | 220.40        | 30.00             | 674.84              | -20.94        | -20.94        | -19.92        | 28.90           | 223.56             | 0.57             | GPIT-F             | 9  | 0  | 0  |
| 25                       | 2055.50    | 3.21          | 221.53        | 30.00             | 704.79              | -22.22        | -22.22        | -21.02        | 30.58           | 223.42             | 0.26             | GPIT-F             | 9  | 0  | 0  |
| 26                       | 2085.50    | 3.30          | 222.96        | 30.00             | 734.74              | -23.48        | -23.48        | -22.17        | 32.28           | 223.36             | 0.42             | GPIT-F             | 9  | 0  | 0  |
| 27                       | 2115.50    | 3.28          | 222.99        | 30.00             | 764.70              | -24.74        | -24.74        | -23.34        | 34.02           | 223.34             | 0.10             | GPIT-F             | 9  | 0  | 0  |
| 28                       | 2145.50    | 3.23          | 224.30        | 30.00             | 794.65              | -25.97        | -25.97        | -24.52        | 35.73           | 223.35             | 0.30             | GPIT-F             | 9  | 0  | 0  |
| 29                       | 2175.50    | 3.05          | 226.29        | 30.00             | 824.60              | -27.13        | -27.13        | -25.68        | 37.37           | 223.44             | 0.69             | GPIT-F             | 9  | 0  | 0  |
| 30                       | 2205.50    | 3.07          | 226.32        | 30.00             | 854.56              | -28.23        | -28.23        | -26.84        | 38.94           | 223.55             | 0.05             | GPIT-F             | 9  | 0  | 0  |
| 31                       | 2235.50    | 2.90          | 223.79        | 30.00             | 884.52              | -29.34        | -29.34        | -27.95        | 40.52           | 223.61             | 0.71             | GPIT-F             | 9  | 0  | 0  |
| 32                       | 2265.50    | 2.86          | 226.99        | 30.00             | 914.48              | -30.39        | -30.39        | -29.02        | 42.03           | 223.68             | 0.55             | GPIT-F             | 9  | 0  | 0  |
| 33                       | 2295.50    | 2.81          | 226.60        | 30.00             | 944.44              | -31.41        | -31.41        | -30.10        | 43.50           | 223.78             | 0.19             | GPIT-F             | 9  | 0  | 0  |
| 34                       | 2325.50    | 2.82          | 226.08        | 30.00             | 974.41              | -32.43        | -32.43        | -31.17        | 44.98           | 223.87             | 0.10             | GPIT-F             | 9  | 0  | 0  |
| 35                       | 2355.50    | 2.69          | 226.79        | 30.00             | 1004.37             | -33.42        | -33.42        | -32.21        | 46.42           | 223.95             | 0.45             | GPIT-F             | 9  | 0  | 0  |
| 36                       | 2385.50    | 2.70          | 225.65        | 30.00             | 1034.34             | -34.40        | -34.40        | -33.23        | 47.83           | 224.01             | 0.18             | GPIT-F             | 9  | 0  | 0  |
| 37                       | 2415.50    | 2.30          | 226.72        | 30.00             | 1064.31             | -35.30        | -35.30        | -34.18        | 49.15           | 224.07             | 1.33             | GPIT-F             | 9  | 0  | 0  |
| 38                       | 2445.50    | 2.60          | 226.33        | 30.00             | 1094.28             | -36.19        | -36.19        | -35.11        | 50.43           | 224.13             | 0.99             | GPIT-F             | 9  | 0  | 0  |
| 39                       | 2475.50    | 2.59          | 224.53        | 30.00             | 1124.25             | -37.14        | -37.14        | -36.08        | 51.77           | 224.17             | 0.27             | GPIT-F             | 9  | 0  | 0  |
| 40                       | 2505.50    | 2.48          | 227.53        | 30.00             | 1154.22             | -38.06        | -38.06        | -37.03        | 53.12           | 224.21             | 0.58             | GPIT-F             | 9  | 0  | 0  |
| 41                       | 2535.50    | 2.45          | 228.06        | 30.00             | 1184.20             | -38.93        | -38.93        | -37.99        | 54.40           | 224.30             | 0.13             | GPIT-F             | 9  | 0  | 0  |
| 42                       | 2565.50    | 2.43          | 226.37        | 30.00             | 1214.17             | -39.80        | -39.80        | -38.92        | 55.68           | 224.36             | 0.24             | GPIT-F             | 9  | 0  | 0  |

|    |         |      |        |       |         |        |        |        |        |        |      |        |   |   |   |
|----|---------|------|--------|-------|---------|--------|--------|--------|--------|--------|------|--------|---|---|---|
| 43 | 2595.50 | 2.33 | 233.05 | 30.00 | 1244.14 | -40.60 | -40.60 | -39.87 | 56.92  | 224.48 | 0.99 | GPIT-F | 9 | 0 | 0 |
| 44 | 2625.50 | 2.37 | 232.45 | 30.00 | 1274.12 | -41.35 | -41.35 | -40.85 | 58.14  | 224.65 | 0.15 | GPIT-F | 9 | 0 | 0 |
| 45 | 2655.50 | 2.20 | 231.98 | 30.00 | 1304.09 | -42.08 | -42.08 | -41.80 | 59.32  | 224.81 | 0.55 | GPIT-F | 9 | 0 | 0 |
| 46 | 2685.50 | 2.15 | 238.55 | 30.00 | 1334.07 | -42.73 | -42.73 | -42.73 | 60.43  | 225.00 | 0.85 | GPIT-F | 9 | 0 | 0 |
| 47 | 2715.50 | 2.12 | 243.68 | 30.00 | 1364.05 | -43.27 | -43.27 | -43.71 | 61.52  | 225.29 | 0.64 | GPIT-F | 9 | 0 | 0 |
| 48 | 2745.50 | 1.93 | 238.48 | 30.00 | 1394.03 | -43.78 | -43.78 | -44.64 | 62.53  | 225.55 | 0.89 | GPIT-F | 9 | 0 | 0 |
| 49 | 2775.50 | 2.03 | 232.65 | 30.00 | 1424.01 | -44.37 | -44.37 | -45.49 | 63.55  | 225.72 | 0.76 | GPIT-F | 9 | 0 | 0 |
| 50 | 2805.50 | 2.36 | 232.10 | 30.00 | 1453.99 | -45.07 | -45.07 | -46.40 | 64.70  | 225.83 | 1.08 | GPIT-F | 9 | 0 | 0 |
| 51 | 2835.50 | 2.52 | 230.91 | 30.00 | 1483.97 | -45.86 | -45.86 | -47.40 | 65.94  | 225.94 | 0.56 | GPIT-F | 9 | 0 | 0 |
| 52 | 2865.50 | 2.63 | 228.77 | 30.00 | 1513.93 | -46.73 | -46.73 | -48.43 | 67.29  | 226.02 | 0.50 | GPIT-F | 9 | 0 | 0 |
| 53 | 2895.50 | 2.78 | 228.24 | 30.00 | 1543.90 | -47.67 | -47.67 | -49.49 | 68.70  | 226.07 | 0.49 | GPIT-F | 9 | 0 | 0 |
| 54 | 2925.50 | 3.05 | 228.63 | 30.00 | 1573.86 | -48.68 | -48.68 | -50.63 | 70.24  | 226.12 | 0.91 | GPIT-F | 9 | 0 | 0 |
| 55 | 2955.50 | 3.01 | 226.25 | 30.00 | 1603.82 | -49.75 | -49.75 | -51.79 | 71.82  | 226.15 | 0.44 | GPIT-F | 9 | 0 | 0 |
| 56 | 2985.50 | 2.60 | 224.06 | 30.00 | 1633.78 | -50.79 | -50.79 | -52.84 | 73.29  | 226.13 | 1.41 | GPIT-F | 9 | 0 | 0 |
| 57 | 3015.50 | 2.59 | 229.01 | 30.00 | 1663.75 | -51.72 | -51.72 | -53.82 | 74.64  | 226.14 | 0.75 | GPIT-F | 9 | 0 | 0 |
| 58 | 3045.50 | 2.76 | 232.08 | 30.00 | 1693.72 | -52.61 | -52.61 | -54.90 | 76.05  | 226.22 | 0.73 | GPIT-F | 9 | 0 | 0 |
| 59 | 3075.50 | 2.84 | 229.96 | 30.00 | 1723.69 | -53.53 | -53.53 | -56.04 | 77.49  | 226.31 | 0.45 | GPIT-F | 9 | 0 | 0 |
| 60 | 3105.50 | 2.96 | 230.62 | 30.00 | 1753.65 | -54.50 | -54.50 | -57.21 | 79.00  | 226.39 | 0.40 | GPIT-F | 9 | 0 | 0 |
| 61 | 3135.50 | 2.90 | 228.48 | 30.00 | 1783.61 | -55.49 | -55.49 | -58.37 | 80.54  | 226.45 | 0.42 | GPIT-F | 9 | 0 | 0 |
| 62 | 3165.50 | 3.14 | 225.76 | 30.00 | 1813.57 | -56.57 | -56.57 | -59.53 | 82.12  | 226.46 | 0.93 | GPIT-F | 9 | 0 | 0 |
| 63 | 3195.50 | 3.51 | 226.28 | 30.00 | 1843.52 | -57.78 | -57.78 | -60.78 | 83.86  | 226.45 | 1.25 | GPIT-F | 9 | 0 | 0 |
| 64 | 3225.50 | 3.12 | 221.25 | 30.00 | 1873.47 | -59.02 | -59.02 | -61.98 | 85.60  | 226.40 | 1.61 | GPIT-F | 9 | 0 | 0 |
| 65 | 3255.50 | 2.93 | 223.34 | 30.00 | 1903.42 | -60.20 | -60.20 | -63.05 | 87.17  | 226.33 | 0.75 | GPIT-F | 9 | 0 | 0 |
| 66 | 3285.50 | 2.96 | 218.34 | 30.00 | 1933.38 | -61.36 | -61.36 | -64.06 | 88.71  | 226.23 | 0.86 | GPIT-F | 9 | 0 | 0 |
| 67 | 3315.50 | 2.73 | 213.68 | 30.00 | 1963.35 | -62.56 | -62.56 | -64.93 | 90.16  | 226.06 | 1.09 | GPIT-F | 9 | 0 | 0 |
| 68 | 3345.50 | 2.68 | 214.36 | 30.00 | 1993.31 | -63.73 | -63.73 | -65.72 | 91.54  | 225.88 | 0.18 | GPIT-F | 9 | 0 | 0 |
| 69 | 3375.50 | 2.80 | 215.25 | 30.00 | 2023.28 | -64.91 | -64.91 | -66.54 | 92.95  | 225.71 | 0.43 | GPIT-F | 9 | 0 | 0 |
| 70 | 3405.50 | 2.71 | 215.69 | 30.00 | 2053.25 | -66.09 | -66.09 | -67.38 | 94.39  | 225.55 | 0.30 | GPIT-F | 9 | 0 | 0 |
| 71 | 3435.50 | 2.24 | 214.50 | 30.00 | 2083.22 | -67.15 | -67.15 | -68.13 | 95.67  | 225.41 | 1.57 | GPIT-F | 9 | 0 | 0 |
| 72 | 3465.50 | 1.86 | 211.35 | 30.00 | 2113.20 | -68.05 | -68.05 | -68.71 | 96.72  | 225.28 | 1.34 | GPIT-F | 9 | 0 | 0 |
| 73 | 3495.50 | 1.76 | 208.22 | 30.00 | 2143.18 | -68.87 | -68.87 | -69.18 | 97.60  | 225.13 | 0.47 | GPIT-F | 9 | 0 | 0 |
| 74 | 3525.50 | 1.74 | 207.42 | 30.00 | 2173.17 | -69.68 | -69.68 | -69.61 | 98.49  | 224.97 | 0.09 | GPIT-F | 9 | 0 | 0 |
| 75 | 3555.50 | 1.73 | 205.96 | 30.00 | 2203.16 | -70.49 | -70.49 | -70.02 | 99.34  | 224.81 | 0.15 | GPIT-F | 9 | 0 | 0 |
| 76 | 3585.50 | 1.79 | 203.99 | 30.00 | 2233.14 | -71.33 | -71.33 | -70.41 | 100.23 | 224.63 | 0.27 | GPIT-F | 9 | 0 | 0 |
| 77 | 3615.50 | 1.83 | 201.56 | 30.00 | 2263.13 | -72.20 | -72.20 | -70.77 | 101.12 | 224.43 | 0.30 | GPIT-F | 9 | 0 | 0 |
| 78 | 3645.50 | 1.85 | 200.61 | 30.00 | 2293.11 | -73.10 | -73.10 | -71.12 | 102.00 | 224.21 | 0.12 | GPIT-F | 9 | 0 | 0 |
| 79 | 3675.50 | 1.85 | 196.14 | 30.00 | 2323.09 | -74.02 | -74.02 | -71.42 | 102.85 | 223.98 | 0.48 | GPIT-F | 9 | 0 | 0 |
| 80 | 3705.50 | 1.78 | 201.86 | 30.00 | 2353.08 | -74.91 | -74.91 | -71.73 | 103.71 | 223.76 | 0.65 | GPIT-F | 9 | 0 | 0 |
| 81 | 3735.50 | 2.05 | 205.19 | 30.00 | 2383.06 | -75.83 | -75.83 | -72.13 | 104.66 | 223.57 | 0.96 | GPIT-F | 9 | 0 | 0 |
| 82 | 3765.50 | 2.20 | 203.12 | 30.00 | 2413.04 | -76.85 | -76.85 | -72.59 | 105.71 | 223.37 | 0.57 | GPIT-F | 9 | 0 | 0 |
| 83 | 3795.50 | 2.16 | 199.88 | 30.00 | 2443.02 | -77.91 | -77.91 | -73.01 | 106.76 | 223.14 | 0.43 | GPIT-F | 9 | 0 | 0 |
| 84 | 3825.50 | 2.02 | 206.17 | 30.00 | 2473.00 | -78.91 | -78.91 | -73.43 | 107.81 | 222.94 | 0.89 | GPIT-F | 9 | 0 | 0 |
| 85 | 3855.50 | 2.31 | 209.56 | 30.00 | 2502.98 | -79.91 | -79.91 | -73.96 | 108.89 | 222.79 | 1.03 | GPIT-F | 9 | 0 | 0 |
| 86 | 3885.50 | 2.43 | 205.15 | 30.00 | 2532.95 | -81.02 | -81.02 | -74.53 | 110.07 | 222.61 | 0.74 | GPIT-F | 9 | 0 | 0 |
| 87 | 3915.50 | 2.36 | 204.06 | 30.00 | 2562.93 | -82.15 | -82.15 | -75.05 | 111.29 | 222.41 | 0.30 | GPIT-F | 9 | 0 | 0 |
| 88 | 3945.50 | 2.30 | 212.20 | 30.00 | 2592.90 | -83.23 | -83.23 | -75.63 | 112.47 | 222.26 | 1.12 | GPIT-F | 9 | 0 | 0 |
| 89 | 3975.50 | 2.62 | 212.42 | 30.00 | 2622.88 | -84.32 | -84.32 | -76.32 | 113.71 | 222.15 | 1.05 | GPIT-F | 9 | 0 | 0 |
| 90 | 4005.50 | 2.73 | 210.75 | 30.00 | 2652.84 | -85.51 | -85.51 | -77.05 | 115.09 | 222.02 | 0.46 | GPIT-F | 9 | 0 | 0 |
| 91 | 4035.50 | 2.77 | 210.34 | 30.00 | 2682.81 | -86.75 | -86.75 | -77.78 | 116.50 | 221.88 | 0.16 | GPIT-F | 9 | 0 | 0 |
| 92 | 4065.50 | 2.73 | 207.98 | 30.00 | 2712.77 | -88.01 | -88.01 | -78.48 | 117.91 | 221.73 | 0.40 | GPIT-F | 9 | 0 | 0 |
| 93 | 4095.50 | 2.52 | 203.21 | 30.00 | 2742.74 | -89.24 | -89.24 | -79.08 | 119.23 | 221.54 | 1.01 | GPIT-F | 9 | 0 | 0 |
| 94 | 4125.50 | 2.30 | 204.00 | 30.00 | 2772.72 | -90.40 | -90.40 | -79.58 | 120.44 | 221.36 | 0.75 | GPIT-F | 9 | 0 | 0 |
| 95 | 4155.50 | 2.61 | 208.85 | 30.00 | 2802.69 | -91.55 | -91.55 | -80.16 | 121.69 | 221.20 | 1.24 | GPIT-F | 9 | 0 | 0 |
| 96 | 4185.50 | 2.83 | 208.00 | 30.00 | 2832.65 | -92.80 | -92.80 | -80.83 | 123.06 | 221.06 | 0.76 | GPIT-F | 9 | 0 | 0 |

|     |         |      |        |       |         |         |         |         |        |        |      |        |   |   |   |
|-----|---------|------|--------|-------|---------|---------|---------|---------|--------|--------|------|--------|---|---|---|
| 96  | 4185.50 | 2.83 | 208.66 | 30.00 | 2832.63 | -92.80  | -92.80  | -86.83  | 123.00 | 221.00 | 0.70 | GPIT-F | 9 | 0 | 0 |
| 97  | 4215.50 | 2.86 | 206.03 | 30.00 | 2862.62 | -94.13  | -94.13  | -81.51  | 124.51 | 220.89 | 0.34 | GPIT-F | 9 | 0 | 0 |
| 98  | 4245.50 | 2.66 | 209.88 | 30.00 | 2892.58 | -95.40  | -95.40  | -82.18  | 125.92 | 220.74 | 0.90 | GPIT-F | 9 | 0 | 0 |
| 99  | 4275.50 | 2.57 | 211.12 | 30.00 | 2922.55 | -96.58  | -96.58  | -82.88  | 127.26 | 220.63 | 0.35 | GPIT-F | 9 | 0 | 0 |
| 100 | 4305.50 | 2.36 | 204.08 | 30.00 | 2952.52 | -97.72  | -97.72  | -83.48  | 128.51 | 220.51 | 1.23 | GPIT-F | 9 | 0 | 0 |
| 101 | 4335.50 | 2.29 | 200.40 | 30.00 | 2982.50 | -98.84  | -98.84  | -83.94  | 129.66 | 220.34 | 0.54 | GPIT-F | 9 | 0 | 0 |
| 102 | 4365.50 | 2.37 | 202.10 | 30.00 | 3012.47 | -99.98  | -99.98  | -84.38  | 130.84 | 220.16 | 0.36 | GPIT-F | 9 | 0 | 0 |
| 103 | 4395.50 | 2.46 | 204.78 | 30.00 | 3042.45 | -101.14 | -101.14 | -84.88  | 132.05 | 220.01 | 0.48 | GPIT-F | 9 | 0 | 0 |
| 104 | 4425.50 | 2.53 | 206.97 | 30.00 | 3072.42 | -102.32 | -102.32 | -85.46  | 133.30 | 219.87 | 0.40 | GPIT-F | 9 | 0 | 0 |
| 105 | 4455.50 | 2.58 | 208.12 | 30.00 | 3102.39 | -103.50 | -103.50 | -86.07  | 134.61 | 219.75 | 0.23 | GPIT-F | 9 | 0 | 0 |
| 106 | 4485.50 | 2.63 | 208.38 | 30.00 | 3132.36 | -104.71 | -104.71 | -86.72  | 135.96 | 219.63 | 0.18 | GPIT-F | 9 | 0 | 0 |
| 107 | 4515.50 | 2.65 | 207.00 | 30.00 | 3162.33 | -105.93 | -105.93 | -87.36  | 137.30 | 219.51 | 0.22 | GPIT-F | 9 | 0 | 0 |
| 108 | 4545.50 | 2.68 | 206.33 | 30.00 | 3192.29 | -107.18 | -107.18 | -87.99  | 138.68 | 219.38 | 0.13 | GPIT-F | 9 | 0 | 0 |
| 109 | 4575.50 | 2.72 | 206.88 | 30.00 | 3222.26 | -108.44 | -108.44 | -88.62  | 140.06 | 219.26 | 0.18 | GPIT-F | 9 | 0 | 0 |
| 110 | 4605.50 | 2.66 | 206.09 | 30.00 | 3252.23 | -109.70 | -109.70 | -89.25  | 141.44 | 219.13 | 0.23 | GPIT-F | 9 | 0 | 0 |
| 111 | 4635.50 | 2.44 | 207.86 | 30.00 | 3282.20 | -110.89 | -110.89 | -89.86  | 142.72 | 219.02 | 0.79 | GPIT-F | 9 | 0 | 0 |
| 112 | 4665.50 | 2.35 | 208.76 | 30.00 | 3312.17 | -112.00 | -112.00 | -90.45  | 143.96 | 218.92 | 0.34 | GPIT-F | 9 | 0 | 0 |
| 113 | 4695.50 | 2.37 | 205.88 | 30.00 | 3342.15 | -113.09 | -113.09 | -91.02  | 145.18 | 218.83 | 0.40 | GPIT-F | 9 | 0 | 0 |
| 114 | 4725.50 | 2.53 | 203.85 | 30.00 | 3372.12 | -114.26 | -114.26 | -91.55  | 146.42 | 218.71 | 0.61 | GPIT-F | 9 | 0 | 0 |
| 115 | 4755.50 | 2.66 | 205.49 | 30.00 | 3402.09 | -115.49 | -115.49 | -92.12  | 147.74 | 218.58 | 0.51 | GPIT-F | 9 | 0 | 0 |
| 116 | 4785.50 | 2.75 | 206.98 | 30.00 | 3432.05 | -116.76 | -116.76 | -92.75  | 149.11 | 218.46 | 0.38 | GPIT-F | 9 | 0 | 0 |
| 117 | 4815.50 | 2.74 | 207.61 | 30.00 | 3462.02 | -118.04 | -118.04 | -93.41  | 150.52 | 218.36 | 0.11 | GPIT-F | 9 | 0 | 0 |
| 118 | 4845.50 | 2.35 | 205.15 | 30.00 | 3491.99 | -119.23 | -119.23 | -94.00  | 151.84 | 218.25 | 1.34 | GPIT-F | 9 | 0 | 0 |
| 119 | 4875.50 | 2.13 | 202.74 | 30.00 | 3521.97 | -120.30 | -120.30 | -94.48  | 152.95 | 218.14 | 0.78 | GPIT-F | 9 | 0 | 0 |
| 120 | 4905.50 | 2.17 | 203.48 | 30.00 | 3551.95 | -121.33 | -121.33 | -94.92  | 154.04 | 218.04 | 0.14 | GPIT-F | 9 | 0 | 0 |
| 121 | 4935.50 | 2.30 | 206.73 | 30.00 | 3581.92 | -122.39 | -122.39 | -95.42  | 155.18 | 217.94 | 0.62 | GPIT-F | 9 | 0 | 0 |
| 122 | 4965.50 | 2.52 | 209.71 | 30.00 | 3611.90 | -123.50 | -123.50 | -96.01  | 156.43 | 217.86 | 0.86 | GPIT-F | 9 | 0 | 0 |
| 123 | 4995.50 | 2.80 | 212.06 | 30.00 | 3641.86 | -124.70 | -124.70 | -96.73  | 157.81 | 217.80 | 0.99 | GPIT-F | 9 | 0 | 0 |
| 124 | 5025.50 | 2.99 | 212.80 | 30.00 | 3671.83 | -125.98 | -125.98 | -97.54  | 159.32 | 217.75 | 0.63 | GPIT-F | 9 | 0 | 0 |
| 125 | 5055.50 | 3.17 | 212.82 | 30.00 | 3701.78 | -127.33 | -127.33 | -98.42  | 160.93 | 217.70 | 0.60 | GPIT-F | 9 | 0 | 0 |
| 126 | 5085.50 | 3.34 | 213.52 | 30.00 | 3731.73 | -128.76 | -128.76 | -99.35  | 162.63 | 217.65 | 0.59 | GPIT-F | 9 | 0 | 0 |
| 127 | 5115.50 | 3.46 | 212.18 | 30.00 | 3761.68 | -130.25 | -130.25 | -100.31 | 164.40 | 217.60 | 0.47 | GPIT-F | 9 | 0 | 0 |
| 128 | 5145.50 | 3.44 | 208.63 | 30.00 | 3791.63 | -131.80 | -131.80 | -101.22 | 166.17 | 217.52 | 0.71 | GPIT-F | 9 | 0 | 0 |
| 129 | 5175.50 | 3.54 | 206.97 | 30.00 | 3821.57 | -133.42 | -133.42 | -102.08 | 167.98 | 217.42 | 0.46 | GPIT-F | 9 | 0 | 0 |
| 130 | 5205.50 | 3.47 | 208.35 | 30.00 | 3851.52 | -135.04 | -135.04 | -102.93 | 169.78 | 217.31 | 0.37 | GPIT-F | 9 | 0 | 0 |
| 131 | 5235.50 | 3.39 | 210.73 | 30.00 | 3881.46 | -136.60 | -136.60 | -103.81 | 171.59 | 217.23 | 0.54 | GPIT-F | 9 | 0 | 0 |
| 132 | 5265.50 | 3.23 | 207.58 | 30.00 | 3911.41 | -138.11 | -138.11 | -104.65 | 173.29 | 217.15 | 0.79 | GPIT-F | 9 | 0 | 0 |
| 133 | 5295.50 | 3.07 | 203.71 | 30.00 | 3941.37 | -139.60 | -139.60 | -105.37 | 174.90 | 217.04 | 0.89 | GPIT-F | 9 | 0 | 0 |
| 134 | 5325.50 | 2.98 | 202.68 | 30.00 | 3971.32 | -141.06 | -141.06 | -105.99 | 176.44 | 216.92 | 0.36 | GPIT-F | 9 | 0 | 0 |
| 135 | 5355.50 | 2.66 | 198.89 | 30.00 | 4001.29 | -142.44 | -142.44 | -106.52 | 177.85 | 216.79 | 1.23 | GPIT-F | 9 | 0 | 0 |
| 136 | 5385.50 | 2.49 | 192.70 | 30.00 | 4031.26 | -143.73 | -143.73 | -106.89 | 179.13 | 216.64 | 1.09 | GPIT-F | 9 | 0 | 0 |
| 137 | 5415.50 | 2.57 | 193.61 | 30.00 | 4061.23 | -145.02 | -145.02 | -107.19 | 180.35 | 216.47 | 0.30 | GPIT-F | 9 | 0 | 0 |
| 138 | 5445.50 | 2.68 | 195.83 | 30.00 | 4091.20 | -146.35 | -146.35 | -107.54 | 181.59 | 216.31 | 0.51 | GPIT-F | 9 | 0 | 0 |
| 139 | 5475.50 | 2.86 | 200.02 | 30.00 | 4121.16 | -147.73 | -147.73 | -107.99 | 182.97 | 216.17 | 0.89 | GPIT-F | 9 | 0 | 0 |
| 140 | 5505.50 | 3.02 | 201.11 | 30.00 | 4151.12 | -149.16 | -149.16 | -108.53 | 184.48 | 216.04 | 0.56 | GPIT-F | 9 | 0 | 0 |
| 141 | 5535.50 | 3.10 | 200.95 | 30.00 | 4181.08 | -150.66 | -150.66 | -109.10 | 186.02 | 215.91 | 0.28 | GPIT-F | 9 | 0 | 0 |
| 142 | 5565.50 | 3.17 | 200.51 | 30.00 | 4211.04 | -152.19 | -152.19 | -109.68 | 187.60 | 215.78 | 0.26 | GPIT-F | 9 | 0 | 0 |
| 143 | 5595.50 | 3.26 | 200.30 | 30.00 | 4240.99 | -153.77 | -153.77 | -110.27 | 189.21 | 215.64 | 0.28 | GPIT-F | 9 | 0 | 0 |
| 144 | 5625.50 | 3.36 | 200.53 | 30.00 | 4270.94 | -155.39 | -155.39 | -110.87 | 190.88 | 215.51 | 0.34 | GPIT-F | 9 | 0 | 0 |
| 145 | 5655.50 | 3.50 | 196.09 | 30.00 | 4300.88 | -157.10 | -157.10 | -111.44 | 192.62 | 215.35 | 1.00 | GPIT-F | 9 | 0 | 0 |

One

2" Main

|                  |  |
|------------------|--|
| Software Version |  |
|------------------|--|

|                    |                                                                     |                                                |                  |
|--------------------|---------------------------------------------------------------------|------------------------------------------------|------------------|
| Acquisition System |                                                                     | Version                                        |                  |
| MaxWell            |                                                                     | 4.0.9163.3000                                  |                  |
| Application Patch  |                                                                     | Patch-SP-10767_18214-4.0.9163.3001             |                  |
|                    |                                                                     | Patch-Hotfix_AIT_Akima_SP2-22990-4.0.9434.3002 |                  |
| Computation        | Description                                                         |                                                | Version          |
| HENVIR             | Computation Ensemble for the HGNS Neutron environmental corrections |                                                | 4.0.9360.3000    |
| DepthCorrection    | DepthCorrection                                                     |                                                | 4.0.9433.3000    |
| Tool Elements      | Description                                                         | Software Version                               | Firmware Version |
| AZIS               | Array Induction Sonde - Z                                           | 4.0.9427.3000                                  |                  |
| HGNS-H             | HILT Gamma-Ray and Neutron Sonde, 150 degC                          | 4.0.9385.3000                                  | 2.0              |
| HRGD-H             | HILT Resistivity Gamma-Ray Density Device, 150 degC                 | 4.0.9385.3000                                  | 3.0              |
| EDTC-B             | Enhanced Digital Telemetry Cartridge - B                            | 4.0.9433.3000                                  |                  |

## Pass Summary

| Run Name | Pass Objective | Direction | Top        | Bottom     | Start                     | Stop                       | DSC Mode | Depth Shift | Include Parallel Data |
|----------|----------------|-----------|------------|------------|---------------------------|----------------------------|----------|-------------|-----------------------|
| One      | Log[3]:Up      | Up        | 1028.68 ft | 5681.24 ft | 11-Sep-2014<br>6:55:18 PM | 11-Sep-2014<br>10:26:12 PM | ON       | 0.00 ft     | No                    |

All depths are referenced to toolstring zero

## Log

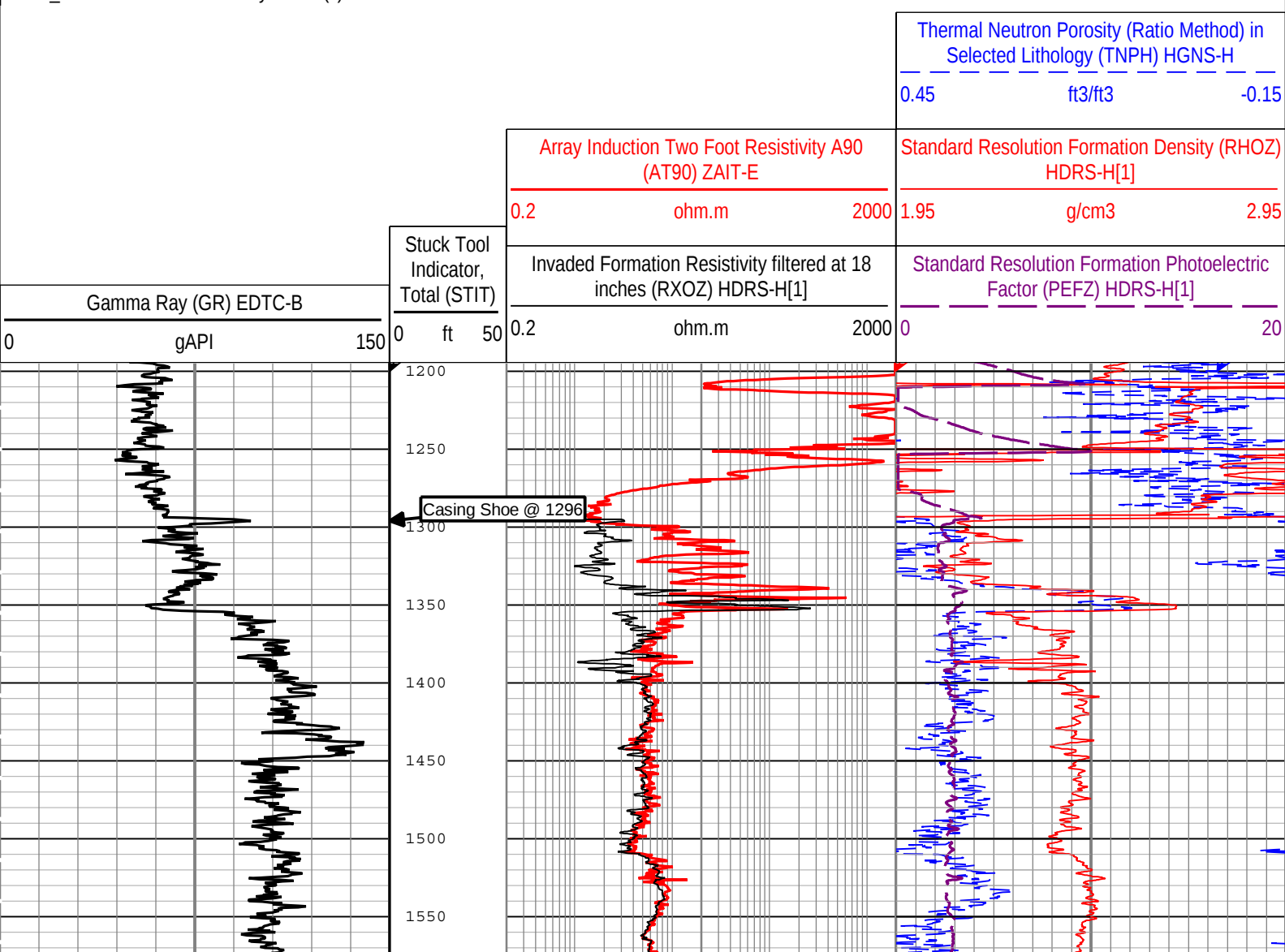
Company:Southwestern Energy Production Company

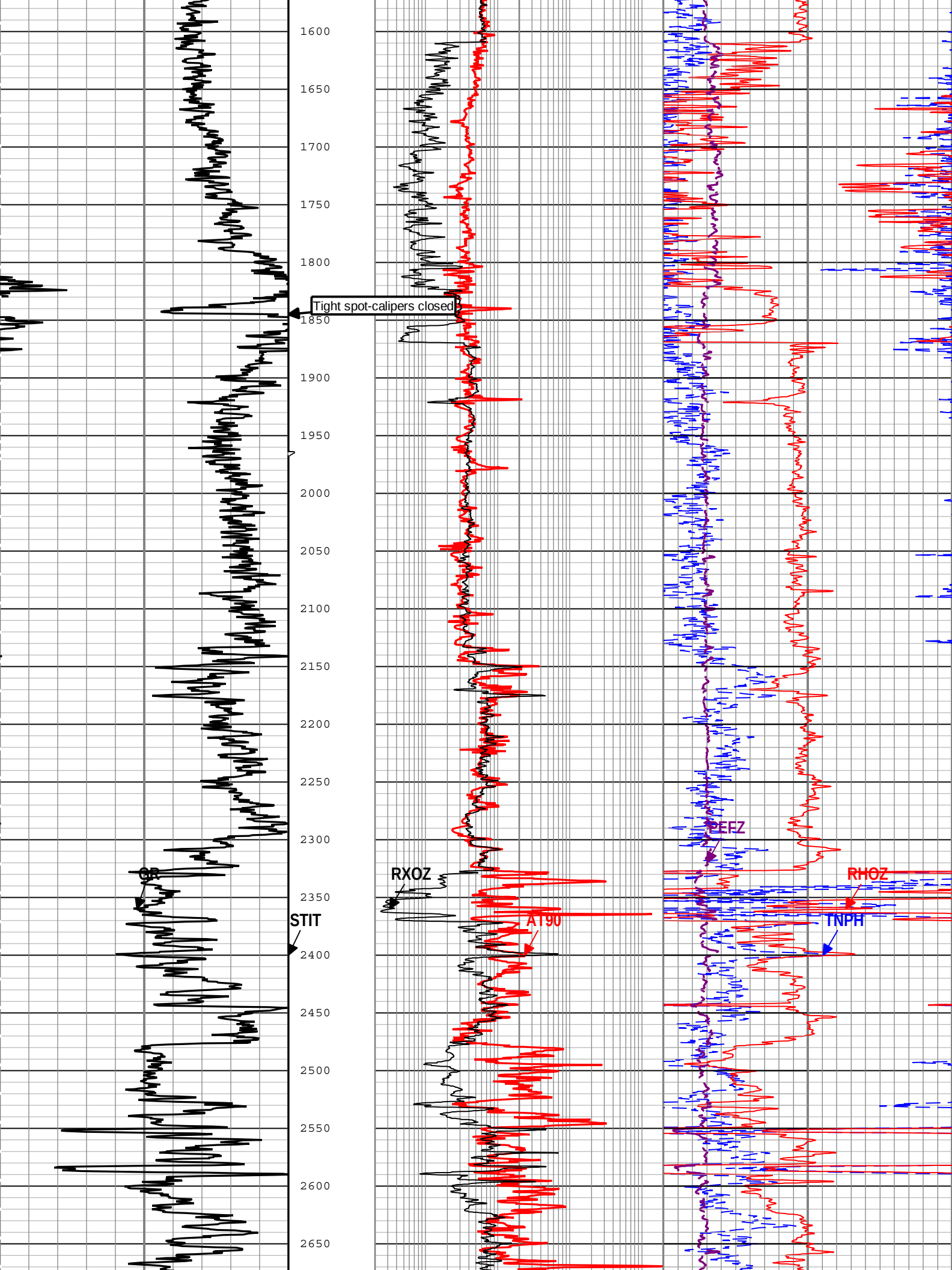
Well:Diamond T Sheep 7-92 1-26

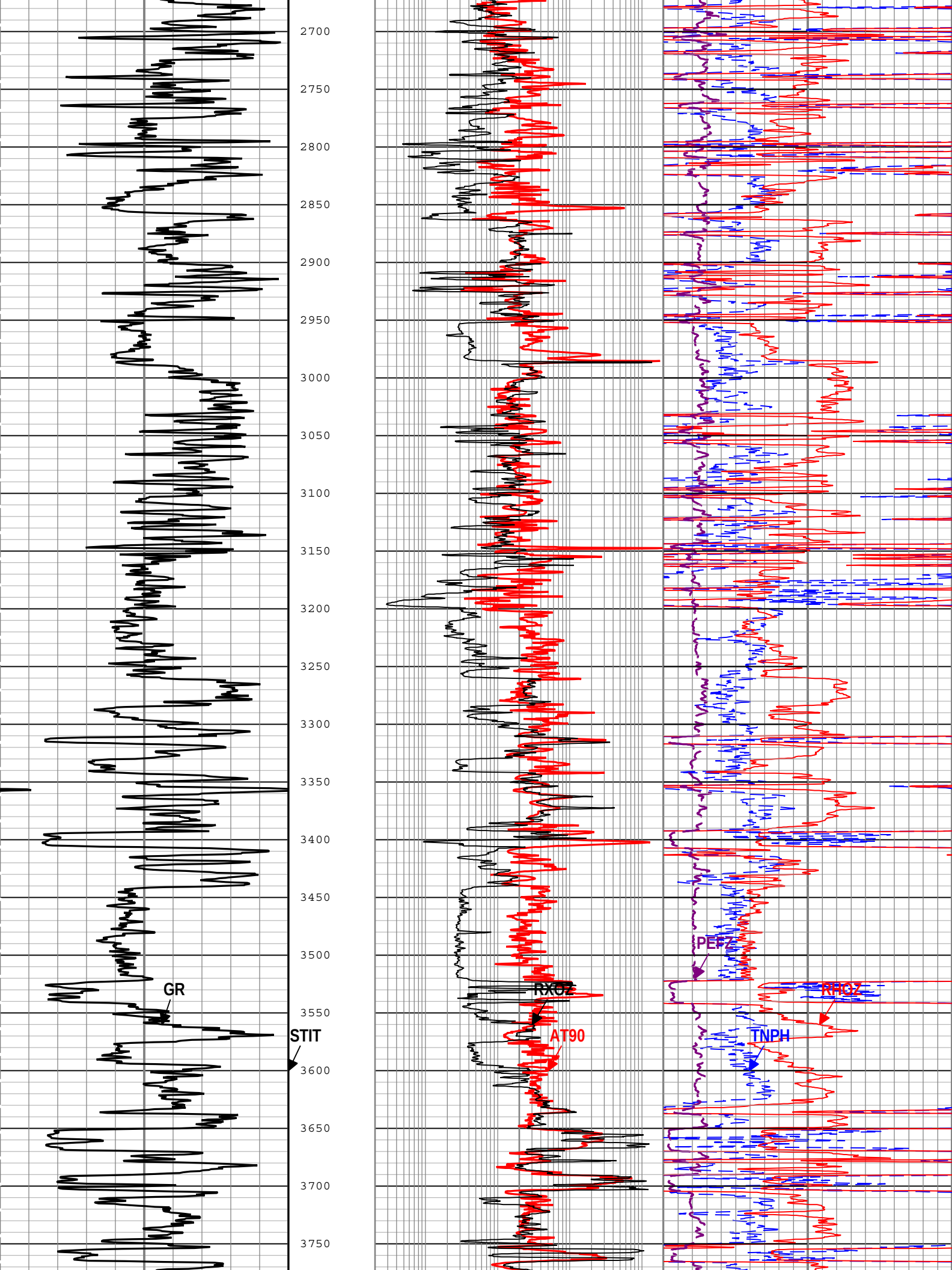
One: Log[3]:Up:S011

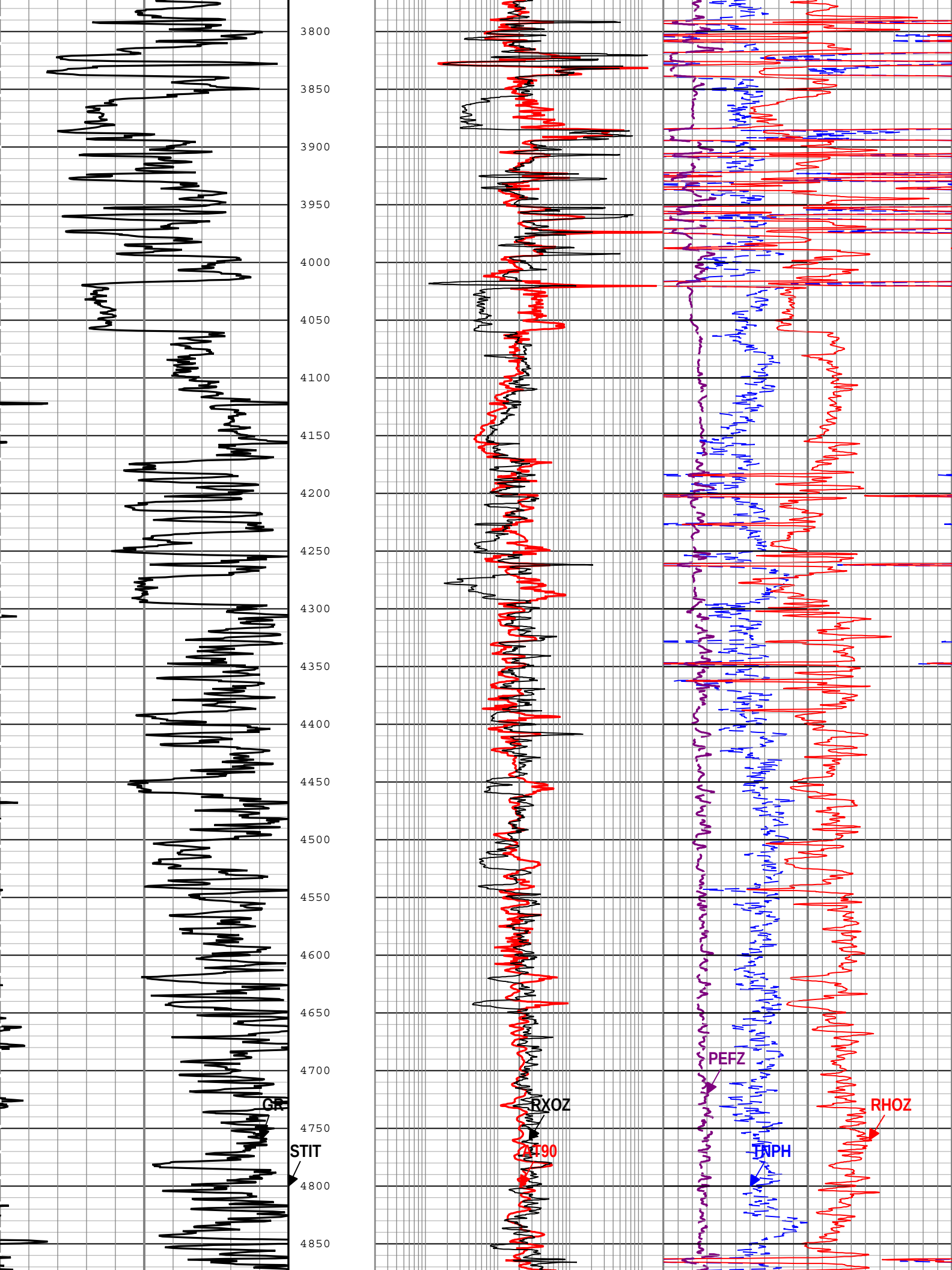
Description: HGNS standard resolution porosities for Platform Express    Format: Log ( 1inMainSpecial1 )    Index Scale: 1 in per 100 ft    Index Unit: ft    Index Type: Measured Depth    Creation Date: 12-Sep-2014 00:40:05

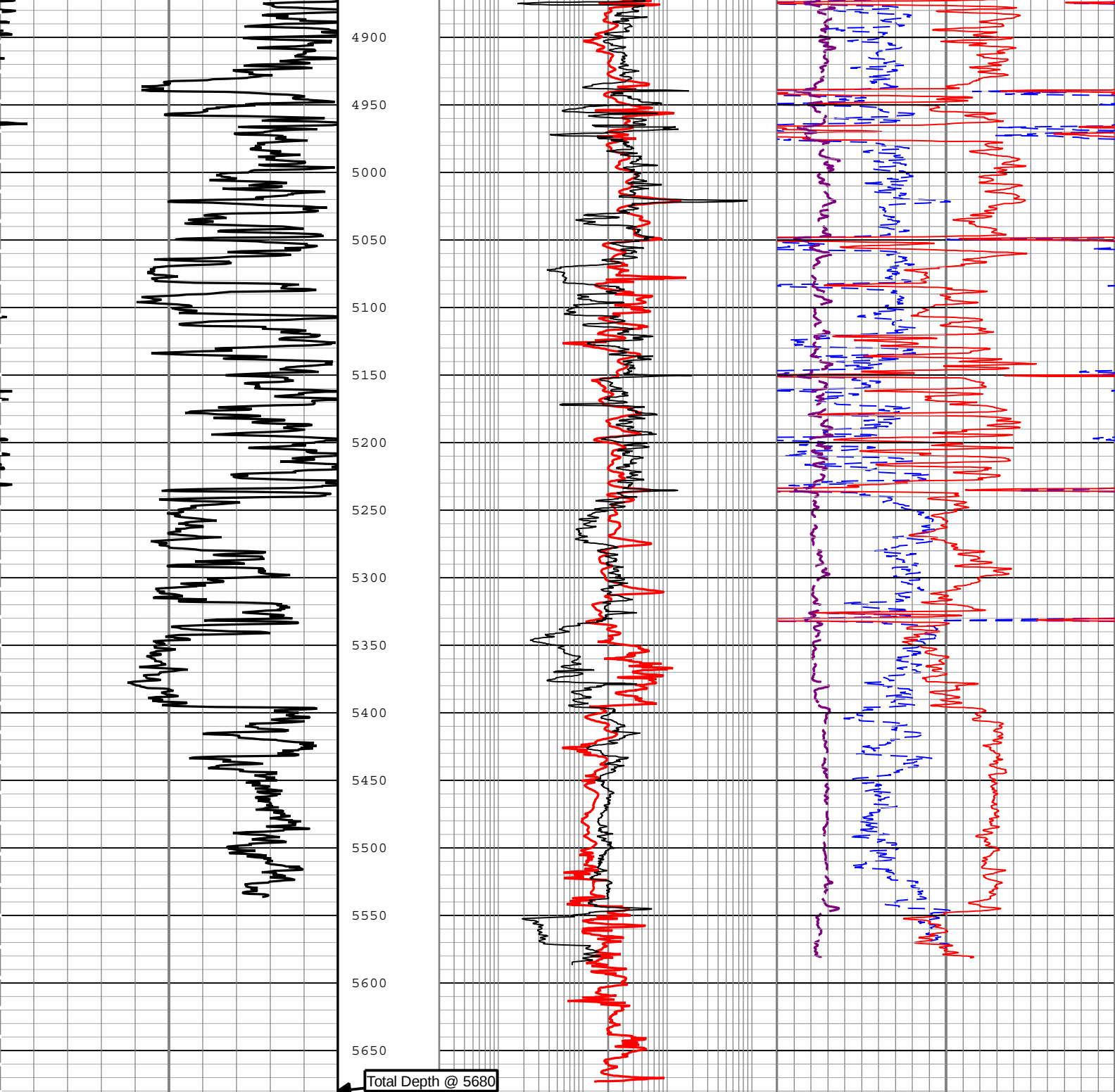
TIME 1900 - Time Marked every 60.00 (s)











Total Depth @ 5680

|                       |      |                                    |         |                                                                      |       |                                                                             |                    |
|-----------------------|------|------------------------------------|---------|----------------------------------------------------------------------|-------|-----------------------------------------------------------------------------|--------------------|
| Gamma Ray (GR) EDTC-B |      | Stuck Tool Indicator, Total (STIT) |         | Array Induction Two Foot Resistivity A90 (AT90) ZAIT-E               |       | Thermal Neutron Porosity (Ratio Method) in Selected Lithology (TNPH) HGNS-H |                    |
| 0                     | gAPI | 150                                | 0 ft 50 | 0.2                                                                  | ohm.m | 2000                                                                        | 0.45 ft3/ft3 -0.15 |
|                       |      |                                    |         | Invaded Formation Resistivity filtered at 18 inches (RXOZ) HDRS-H[1] |       | Standard Resolution Formation Density (RHOZ) HDRS-H[1]                      |                    |
|                       |      |                                    |         | 0.2                                                                  | ohm.m | 2000                                                                        | 1.95 g/cm3 2.95    |
|                       |      |                                    |         |                                                                      |       | Standard Resolution Formation Photoelectric Factor (PEFZ) HDRS-H[1]         |                    |
|                       |      |                                    |         |                                                                      |       | 0                                                                           | 20                 |

TIME\_1900 - Time Marked every 60.00 (s)

Description: HGNS standard resolution porosities for Platform Express Format: Log ( 1inMainSpecial1 ) Index Scale: 1 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 12-Sep-2014 00:40:05

Channel Processing Parameters

| Parameter      | Description                                                                      | Tool            | Value                         | Unit    |
|----------------|----------------------------------------------------------------------------------|-----------------|-------------------------------|---------|
| ABHME          | Array Induction Extended Borehole Correction Mode                                | ZAIT-E          | Compute Standoff              |         |
| ACDE           | Array Induction Casing Detection Enable                                          | ZAIT-E          | No                            |         |
| AOFFX          | X Accelerometer Offset                                                           | GPIT-F          | 0                             | ft/s2   |
| AOFFY          | Y Accelerometer Offset                                                           | GPIT-F          | 0.01                          | ft/s2   |
| AOFFZ          | Z Accelerometer Offset                                                           | GPIT-F          | 0                             | ft/s2   |
| AROT           | Array Induction Rotation Selector                                                | ZAIT-E          | North                         |         |
| ASTA           | Array Induction Tool Standoff                                                    | ZAIT-E          | 1                             | in      |
| BARI           | Barite Mud Presence Flag                                                         | Borehole        | Yes                           |         |
| BHS            | Borehole Status (Open or Cased Hole)                                             | Borehole        | Open                          |         |
| BHT            | Bottom Hole Temperature                                                          | Borehole        | 160                           | degF    |
| BS             | Bit Size                                                                         | WLSESSION       | Depth Zoned                   | in      |
| BSAL           | Borehole Salinity                                                                | Borehole        | 20000                         | ppm     |
| CALI_SHIFT.1   | CALI Supplementary Offset                                                        | HDRS-H          | 1.51                          | in      |
| CALI_SHIFT.2   | CALI Supplementary Offset                                                        | HDRS-H          | 0.535                         | in      |
| CBLO           | Casing Bottom (Logger)                                                           | WLSESSION       | 1296                          | ft      |
| CDEN           | Cement Density                                                                   | EDTC-B          | 2                             | g/cm3   |
| DC_MODE        | Depth Correction Mode                                                            | DepthCorrection | Real-time                     |         |
| DFD            | Drilling Fluid Density                                                           | Borehole        | 9                             | lbm/gal |
| DFT            | Drilling Fluid Type                                                              | Borehole        | Water                         |         |
| DFT_WATER      | Drilling Fluid Water Type                                                        | Borehole        | Water Based Mud               |         |
| DHC            | Density Hole Correction                                                          | HDRS-H          | Bit Size                      |         |
| FOFFX          | X Magnetometer Offset                                                            | GPIT-F          | 0                             | mT      |
| FOFFY          | Y Magnetometer Offset                                                            | GPIT-F          | 0                             | mT      |
| FOFFZ          | Z Magnetometer Offset                                                            | GPIT-F          | 0                             | mT      |
| FSAL           | Formation Salinity                                                               | Borehole        | 0                             | ppm     |
| GCSE_DOWN_PASS | Generalized Caliper Selection for WL Log Down Passes                             | Borehole        | BS                            |         |
| GCSE_UP_PASS   | Generalized Caliper Selection for WL Log Up Passes                               | Borehole        | CALI                          |         |
| GRSE           | Generalized Mud Resistivity Selection, from Measured or Computed Mud Resistivity | Borehole        | AMF                           |         |
| GTSE           | Generalized Temperature Selection, from Measured or Computed Temperature         | Borehole        | CTEM                          |         |
| HSCO           | Hole Size Correction Option                                                      | HGNS-H          | Yes                           |         |
| ICMO           | Inclinometry Computation Mode                                                    | GPIT-F          | Automatic Selection           |         |
| LOG_SPEED_RNG  | Logging Speed Range                                                              | GPIT-F          | Normal (600 ft/h - 3600 ft/h) |         |
| MATR           | Rock Matrix for Neutron Porosity Corrections                                     | Borehole        | LIMESTONE                     |         |
| MFST           | Mud Filtrate Sample Temperature                                                  | Borehole        | 85                            | degF    |
| NPRM           | HRDD Nuclear Processing Mode                                                     | HDRS-H          | Standard Resolution           |         |
| RMFS           | Resistivity of Mud Filtrate Sample                                               | Borehole        | 0.12                          | ohm.m   |
| TD             | Total Measured Depth                                                             | Borehole        | 5680                          | ft      |
| USER_LOCB      | User-supplied values for Magnetic Flux Density                                   | WLSESSION       | 52426.19                      | nT      |
| USER_MDEC      | User-supplied values for Magnetic Declination                                    | WLSESSION       | 10                            | deg     |
| USER_MDIP      | User-supplied values for Magnetic Dip Angle                                      | WLSESSION       | 66.53                         | deg     |

Depth Zone Parameters

| Parameter             | Value | Start ( ft ) | Stop ( ft ) |
|-----------------------|-------|--------------|-------------|
| BS                    | 17.5  | 1195         | 1296        |
| BS                    | 12.25 | 1296         | 5680        |
| All depth are actual. |       |              |             |

Tool Control Parameters

| Parameter | Description | Tool | Value | Unit |
|-----------|-------------|------|-------|------|
|-----------|-------------|------|-------|------|

|               |                                  |           |            |      |
|---------------|----------------------------------|-----------|------------|------|
| HMCA_BRD_TYPE | HMCA Board Type                  | HGNS-H    | 1          |      |
| HRGD_BRD_TYPE | HRGD Board Type                  | HDRS-H    | WITH_HET   |      |
| MAX_LOG_SPEED | Toolstring Maximum Logging Speed | WLSESSION | Time Zoned | ft/h |

| Time Zone Parameters |       |                      |                      |                    |                   |
|----------------------|-------|----------------------|----------------------|--------------------|-------------------|
| Parameter            | Value | Start Time           | Stop Time            | Start Depth ( ft ) | Stop Depth ( ft ) |
| MAX_LOG_SPEED        | 1510  | 11-Sep-2014 18:55:18 | 11-Sep-2014 19:26:20 | 5681.24            | 5073.22           |
| MAX_LOG_SPEED        | 1424  | 11-Sep-2014 19:26:20 | 11-Sep-2014 19:33:33 | 5073.22            | 4912.83           |
| MAX_LOG_SPEED        | 1497  | 11-Sep-2014 19:33:33 | 11-Sep-2014 20:15:39 | 4912.83            | 3974.29           |
| MAX_LOG_SPEED        | 1607  | 11-Sep-2014 20:15:39 | 11-Sep-2014 20:16:41 | 3974.29            | 3951.4            |
| MAX_LOG_SPEED        | 1482  | 11-Sep-2014 20:16:41 | 11-Sep-2014 20:19:46 | 3951.4             | 3882.42           |
| MAX_LOG_SPEED        | 1557  | 11-Sep-2014 20:19:46 | 11-Sep-2014 20:29:01 | 3882.42            | 3674.98           |
| MAX_LOG_SPEED        | 1477  | 11-Sep-2014 20:29:01 | 11-Sep-2014 20:33:09 | 3674.98            | 3582.47           |
| MAX_LOG_SPEED        | 1555  | 11-Sep-2014 20:33:09 | 11-Sep-2014 20:40:21 | 3582.47            | 3420.78           |
| MAX_LOG_SPEED        | 1453  | 11-Sep-2014 20:40:21 | 11-Sep-2014 20:47:33 | 3420.78            | 3257.57           |
| MAX_LOG_SPEED        | 1535  | 11-Sep-2014 20:47:33 | 11-Sep-2014 21:04:58 | 3257.57            | 2844.12           |
| MAX_LOG_SPEED        | 1628  | 11-Sep-2014 21:04:58 | 11-Sep-2014 21:06:00 | 2844.12            | 2818.63           |
| MAX_LOG_SPEED        | 1532  | 11-Sep-2014 21:06:00 | 11-Sep-2014 21:09:05 | 2818.63            | 2741.13           |
| MAX_LOG_SPEED        | 1628  | 11-Sep-2014 21:09:05 | 11-Sep-2014 21:25:29 | 2741.13            | 2333.69           |
| MAX_LOG_SPEED        | 1732  | 11-Sep-2014 21:25:29 | 11-Sep-2014 21:28:34 | 2333.69            | 2256.68           |
| MAX_LOG_SPEED        | 1635  | 11-Sep-2014 21:28:34 | 11-Sep-2014 21:31:39 | 2256.68            | 2179.52           |
| MAX_LOG_SPEED        | 1724  | 11-Sep-2014 21:31:39 | 11-Sep-2014 22:16:41 | 2179.52            | 1389.73           |
| MAX_LOG_SPEED        | 1582  | 11-Sep-2014 22:16:41 | 11-Sep-2014 22:26:12 | 1389.73            | 1028.67           |

|                             |  |  |  |  |  |
|-----------------------------|--|--|--|--|--|
| All depth are at tool zero. |  |  |  |  |  |
| One                         |  |  |  |  |  |
| 2" Main                     |  |  |  |  |  |

| Software Version   |                                                |
|--------------------|------------------------------------------------|
| Acquisition System | Version                                        |
| MaxWell            | 4.0.9163.3000                                  |
| Application Patch  | Patch-SP-10767_18214-4.0.9163.3001             |
|                    | Patch-Hotfix_AIT_Akima_SP2-22990-4.0.9434.3002 |

| Computation     | Description                                                         |                  | Version          |
|-----------------|---------------------------------------------------------------------|------------------|------------------|
| HENVIR          | Computation Ensemble for the HGNS Neutron environmental corrections |                  | 4.0.9360.3000    |
| DepthCorrection | DepthCorrection                                                     |                  | 4.0.9433.3000    |
| Tool Elements   | Description                                                         | Software Version | Firmware Version |
| AZIS            | Array Induction Sonde - Z                                           | 4.0.9427.3000    |                  |
| HGNS-H          | HILT Gamma-Ray and Neutron Sonde, 150 degC                          | 4.0.9385.3000    | 2.0              |
| HRGD-H          | HILT Resistivity Gamma-Ray Density Device, 150 degC                 | 4.0.9385.3000    | 3.0              |
| EDTC-B          | Enhanced Digital Telemetry Cartridge - B                            | 4.0.9433.3000    |                  |

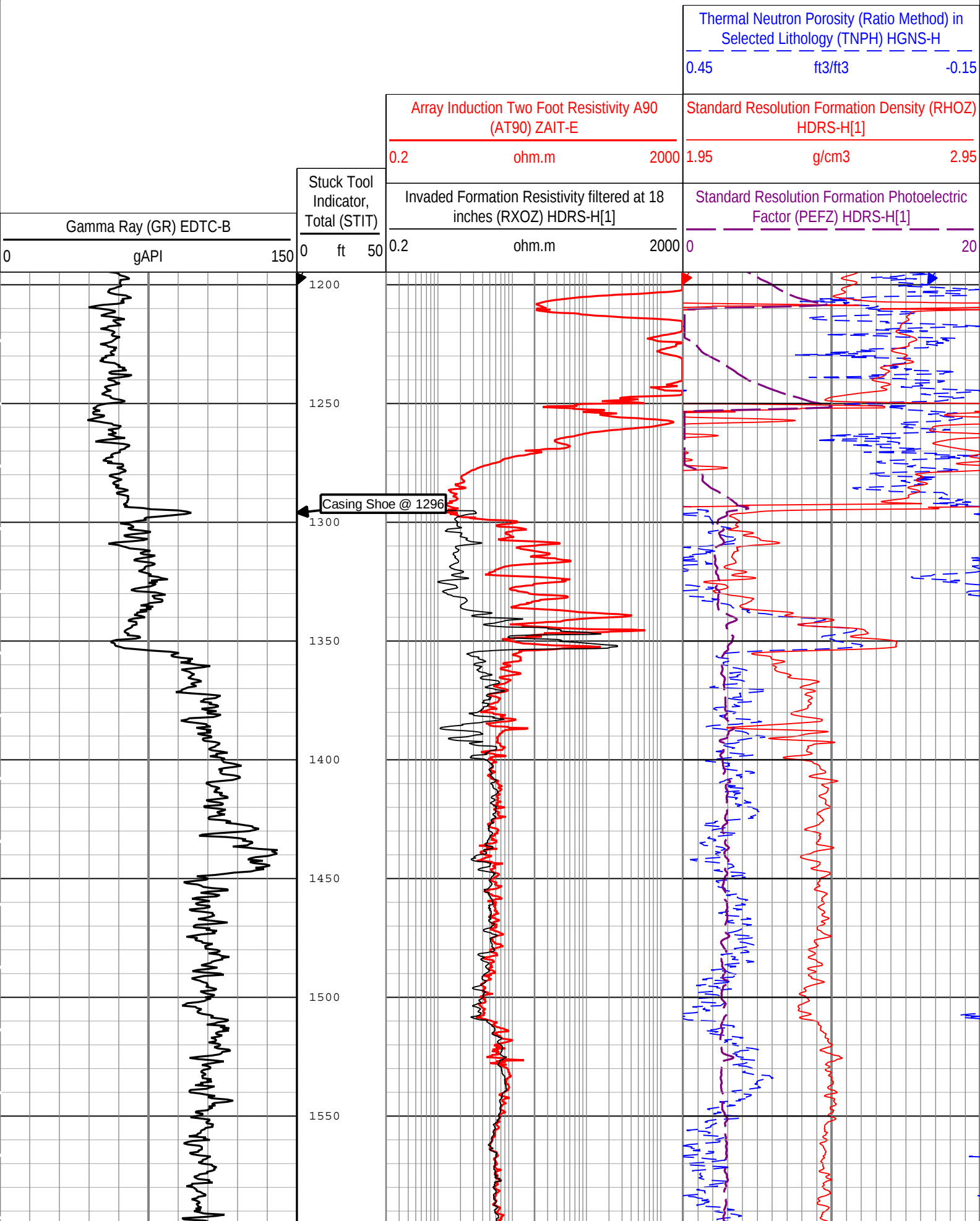
| Pass Summary |                |           |            |            |                        |                         |          |             |                       |
|--------------|----------------|-----------|------------|------------|------------------------|-------------------------|----------|-------------|-----------------------|
| Run Name     | Pass Objective | Direction | Top        | Bottom     | Start                  | Stop                    | DSC Mode | Depth Shift | Include Parallel Data |
| One          | Log[3]:Up      | Up        | 1028.68 ft | 5681.24 ft | 11-Sep-2014 6:55:18 PM | 11-Sep-2014 10:26:12 PM | ON       | 0.00 ft     | No                    |

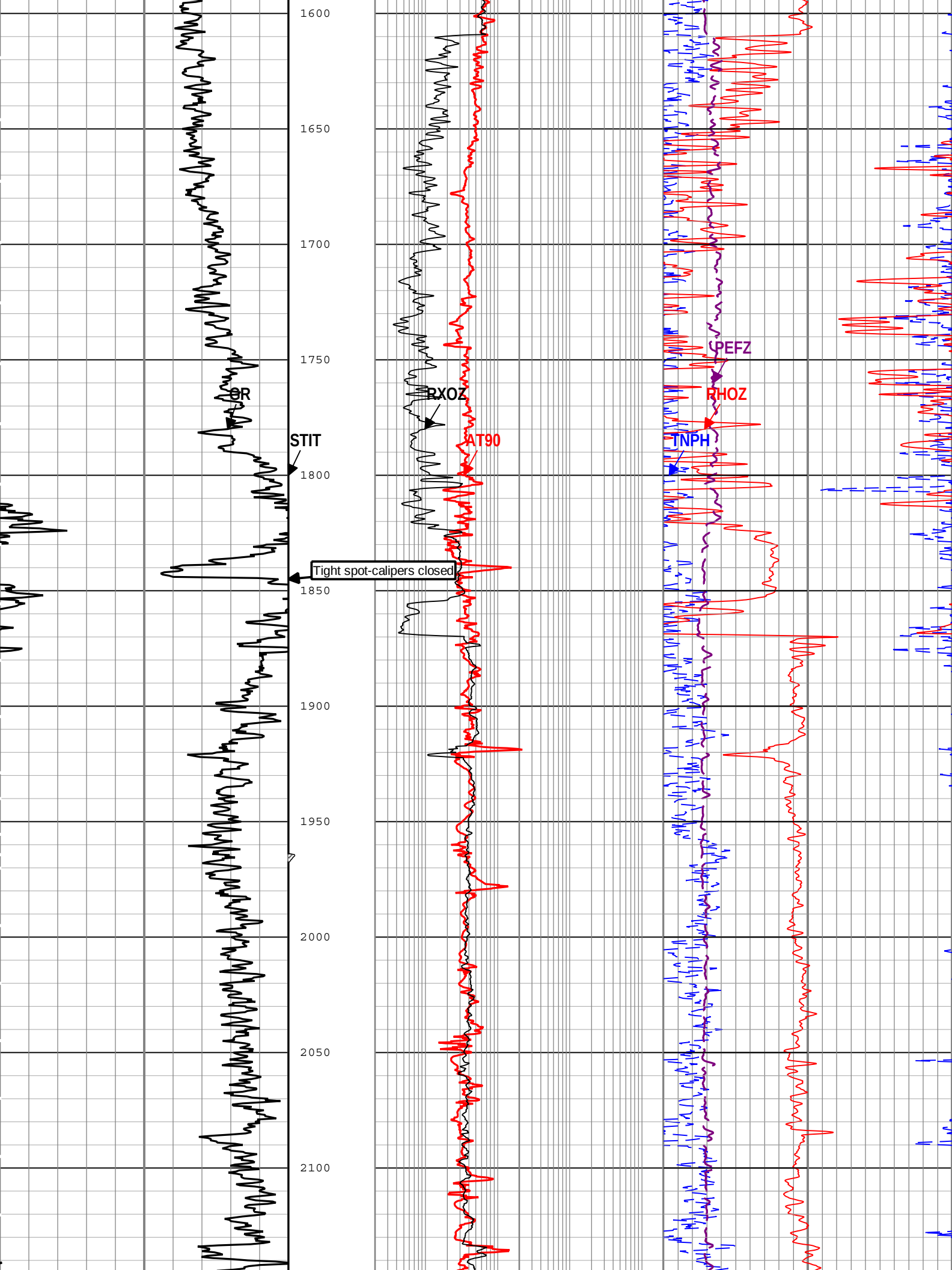
|                                              |  |  |  |  |  |  |  |  |  |
|----------------------------------------------|--|--|--|--|--|--|--|--|--|
| All depths are referenced to toolstring zero |  |  |  |  |  |  |  |  |  |
|----------------------------------------------|--|--|--|--|--|--|--|--|--|

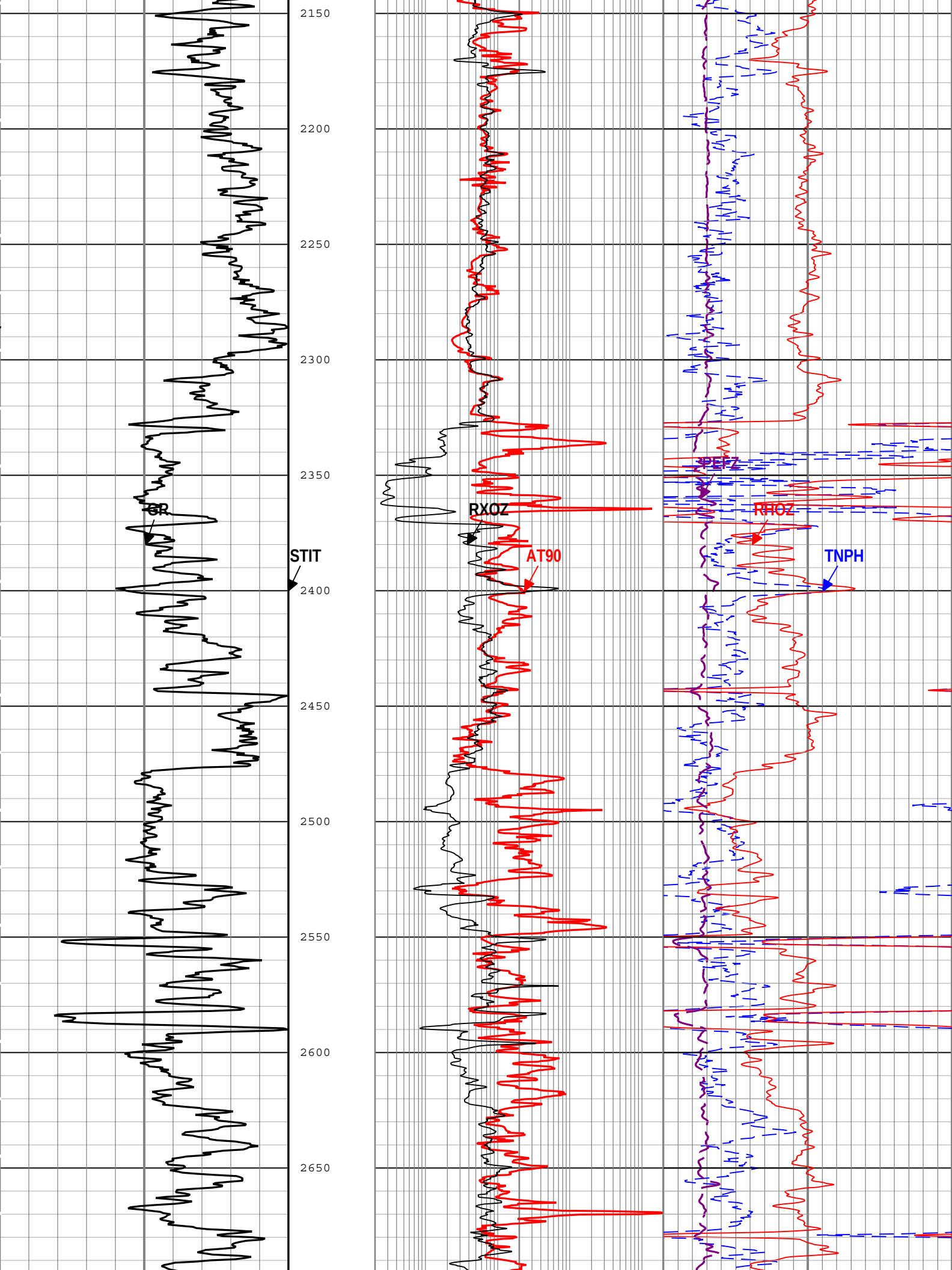
|     |                                                |  |  |  |  |  |                                |  |  |
|-----|------------------------------------------------|--|--|--|--|--|--------------------------------|--|--|
| Log | Company:Southwestern Energy Production Company |  |  |  |  |  | Well:Diamond T Sheep 7-92 1-26 |  |  |
|-----|------------------------------------------------|--|--|--|--|--|--------------------------------|--|--|

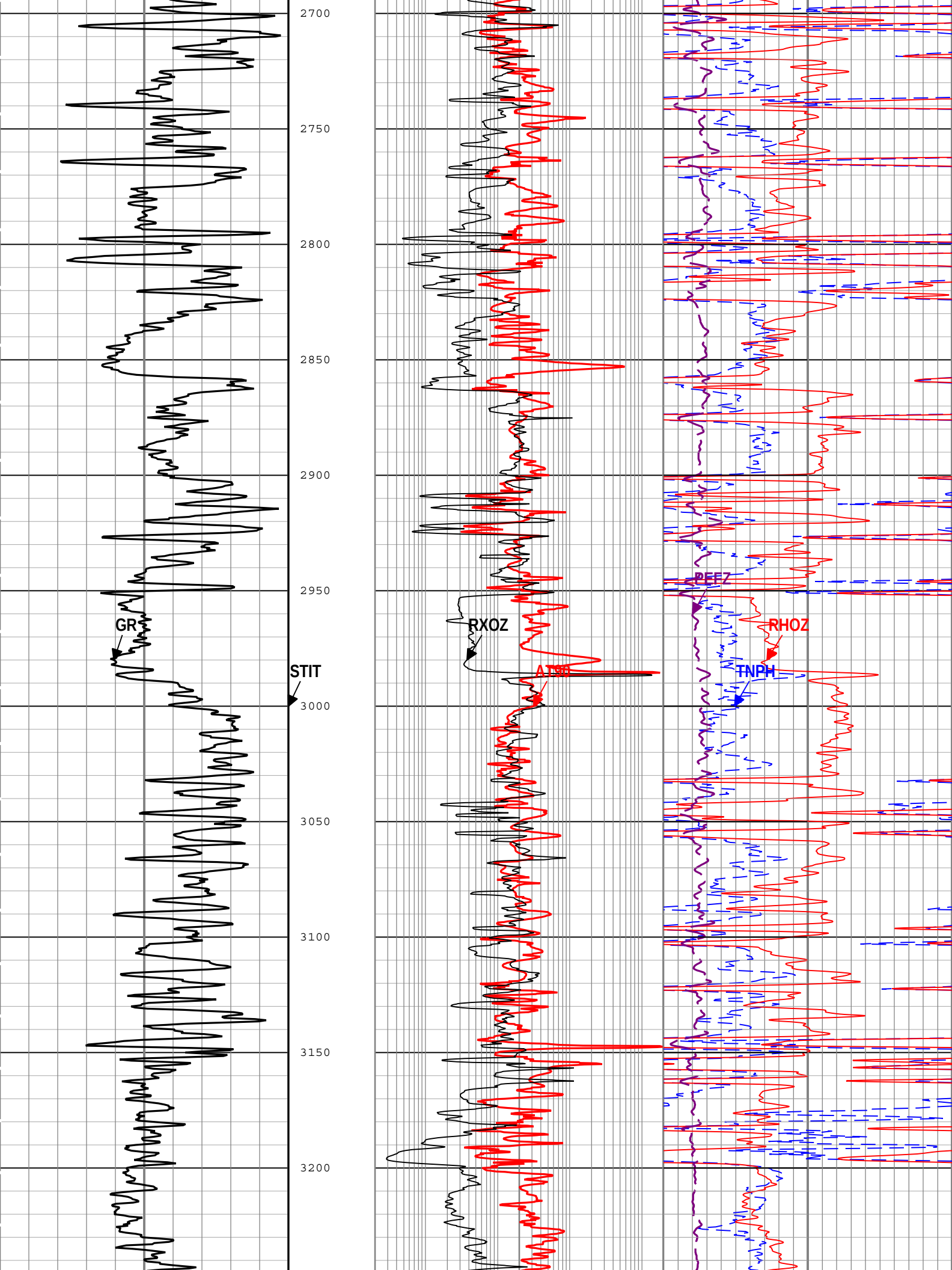
Description: HGNS standard resolution porosities for Platform Express    Format: Log ( 2inMainSpecial1 )    Index Scale: 2 in per 100 ft    Index Unit: ft    Index Type: Measured Depth    Creation Date: 12-Sep-2014 00:40:09

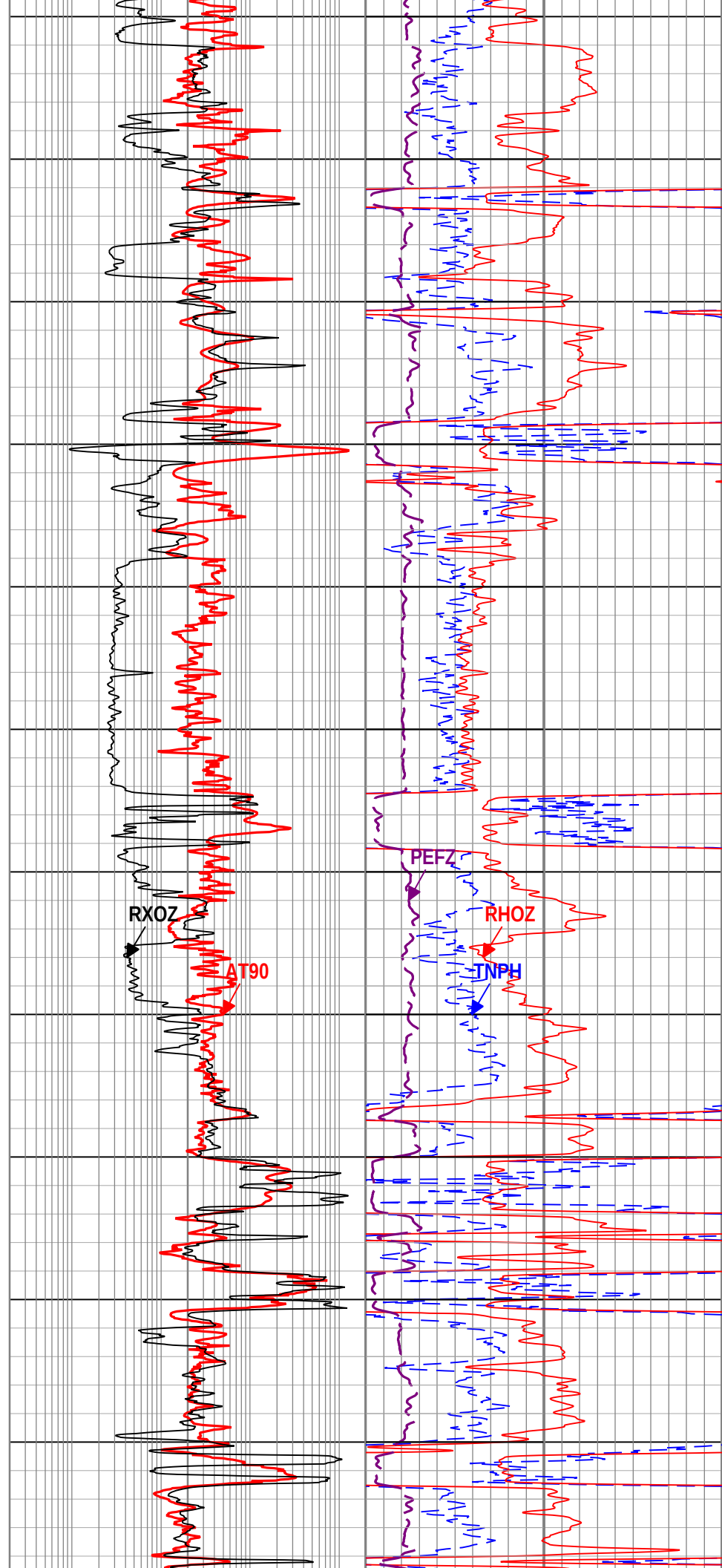
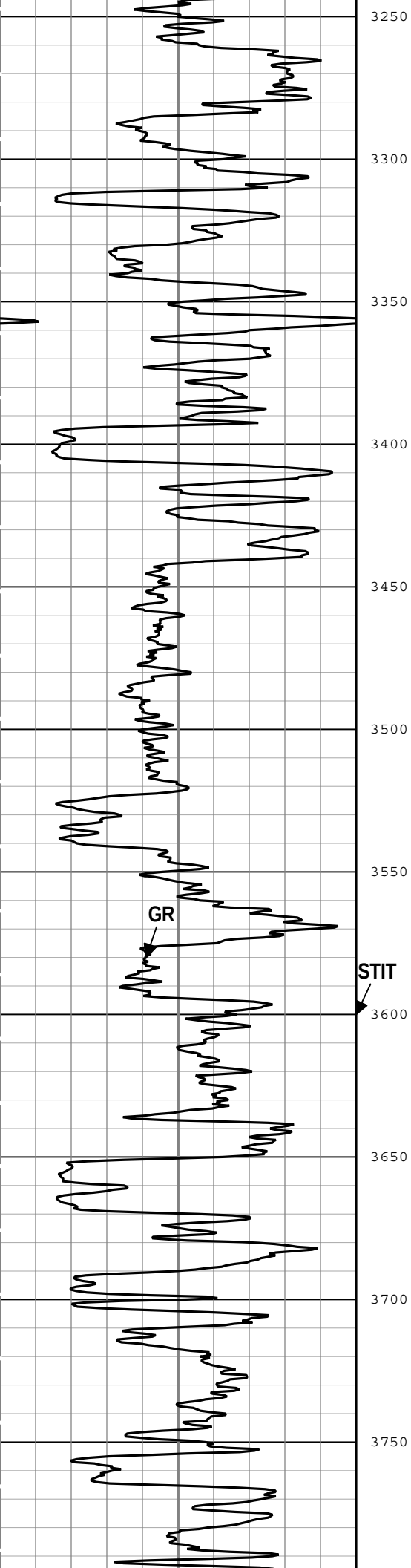
TIME\_1900 - Time Marked every 60.00 (s)

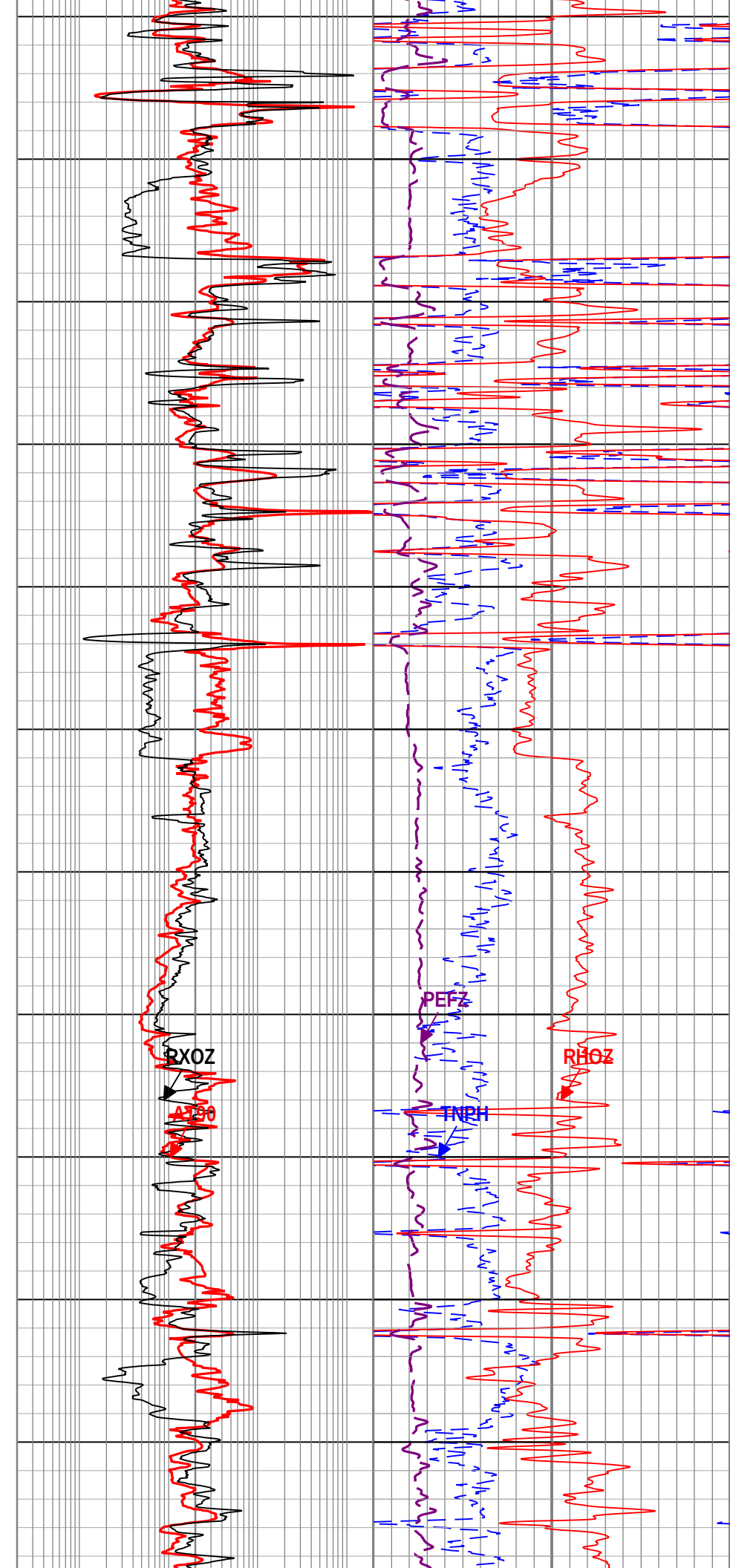
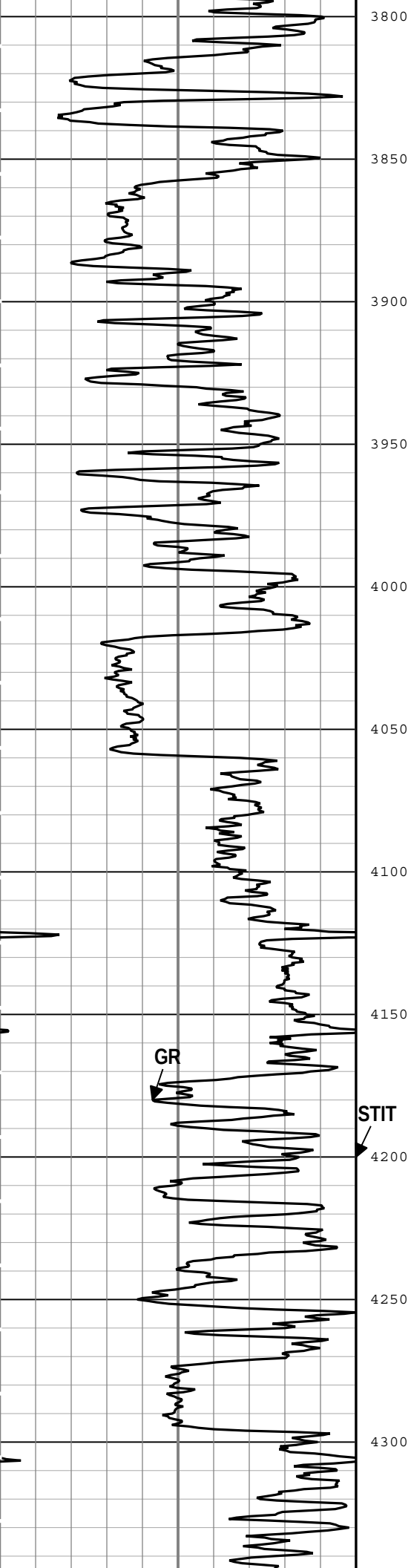


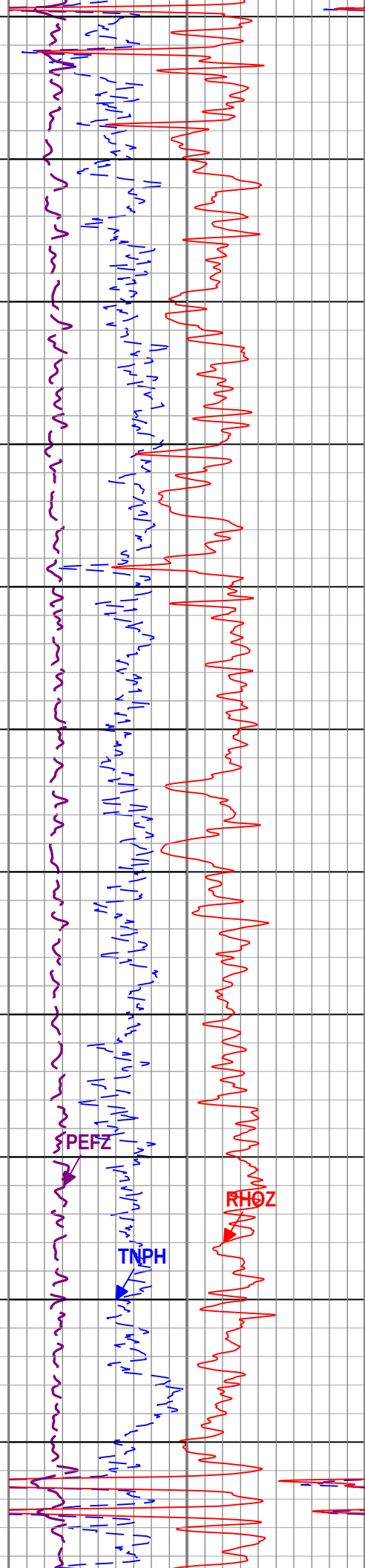
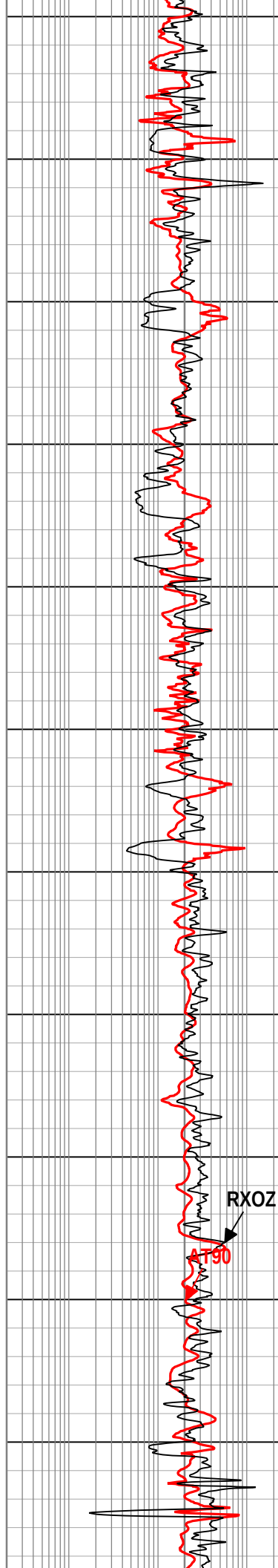
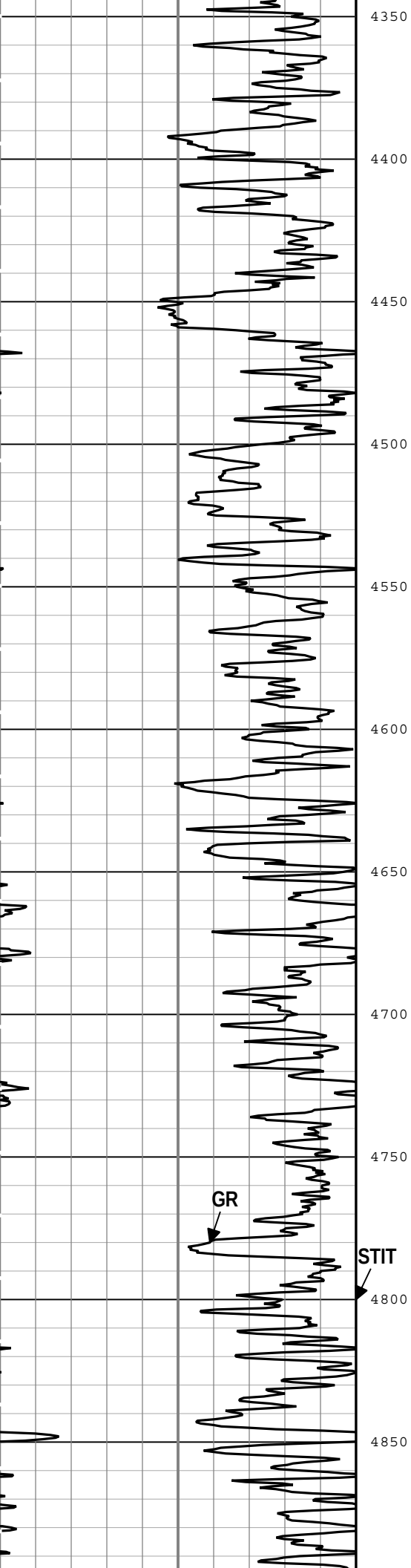


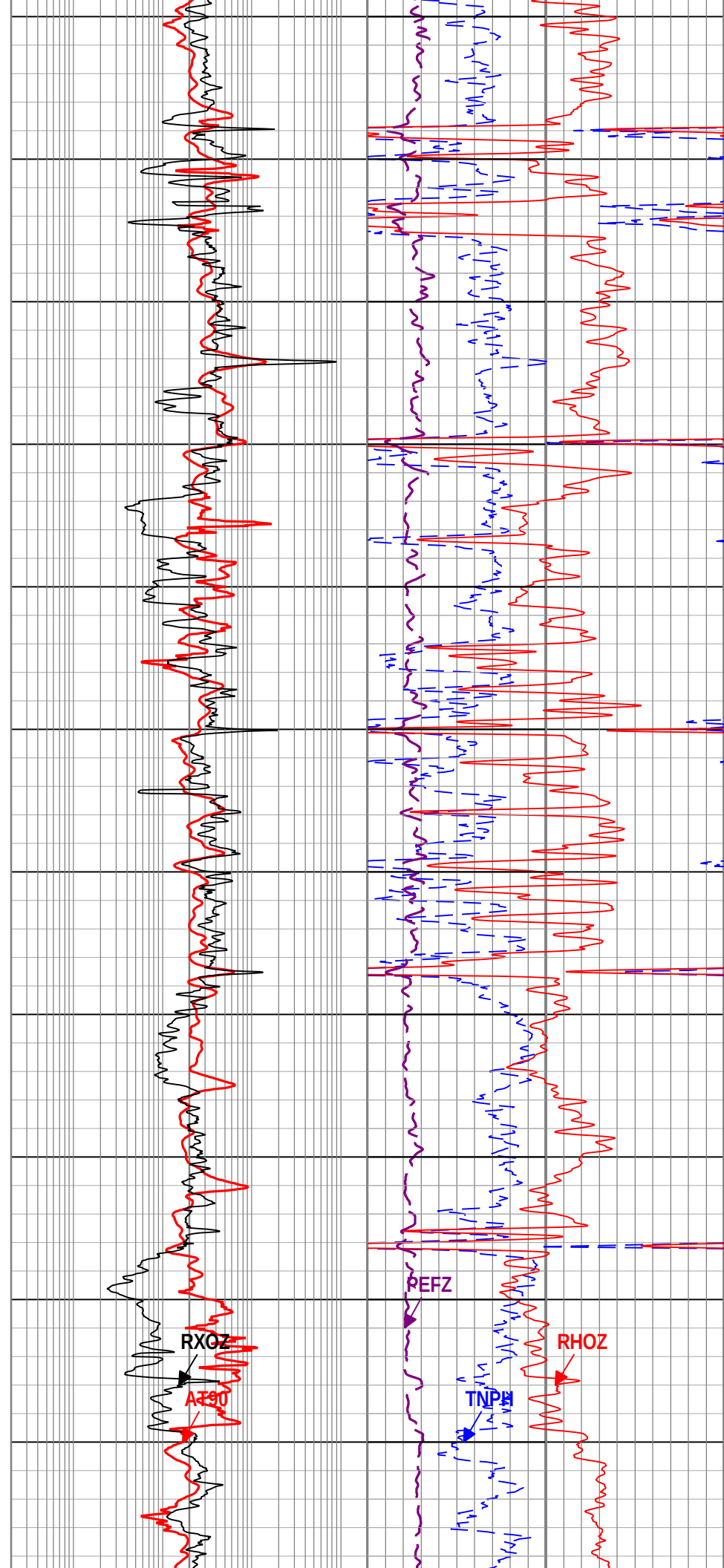
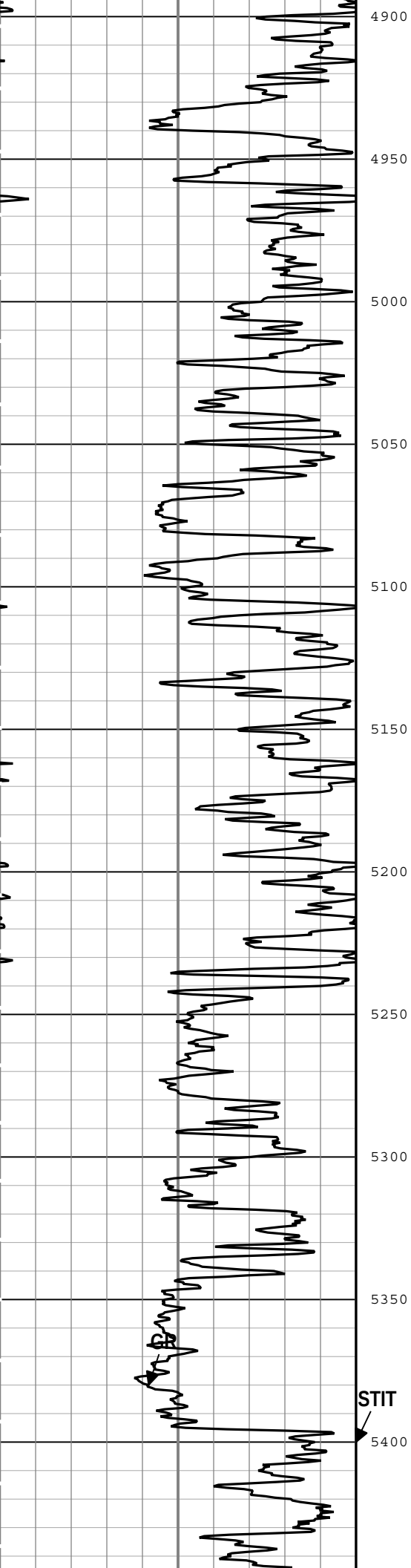


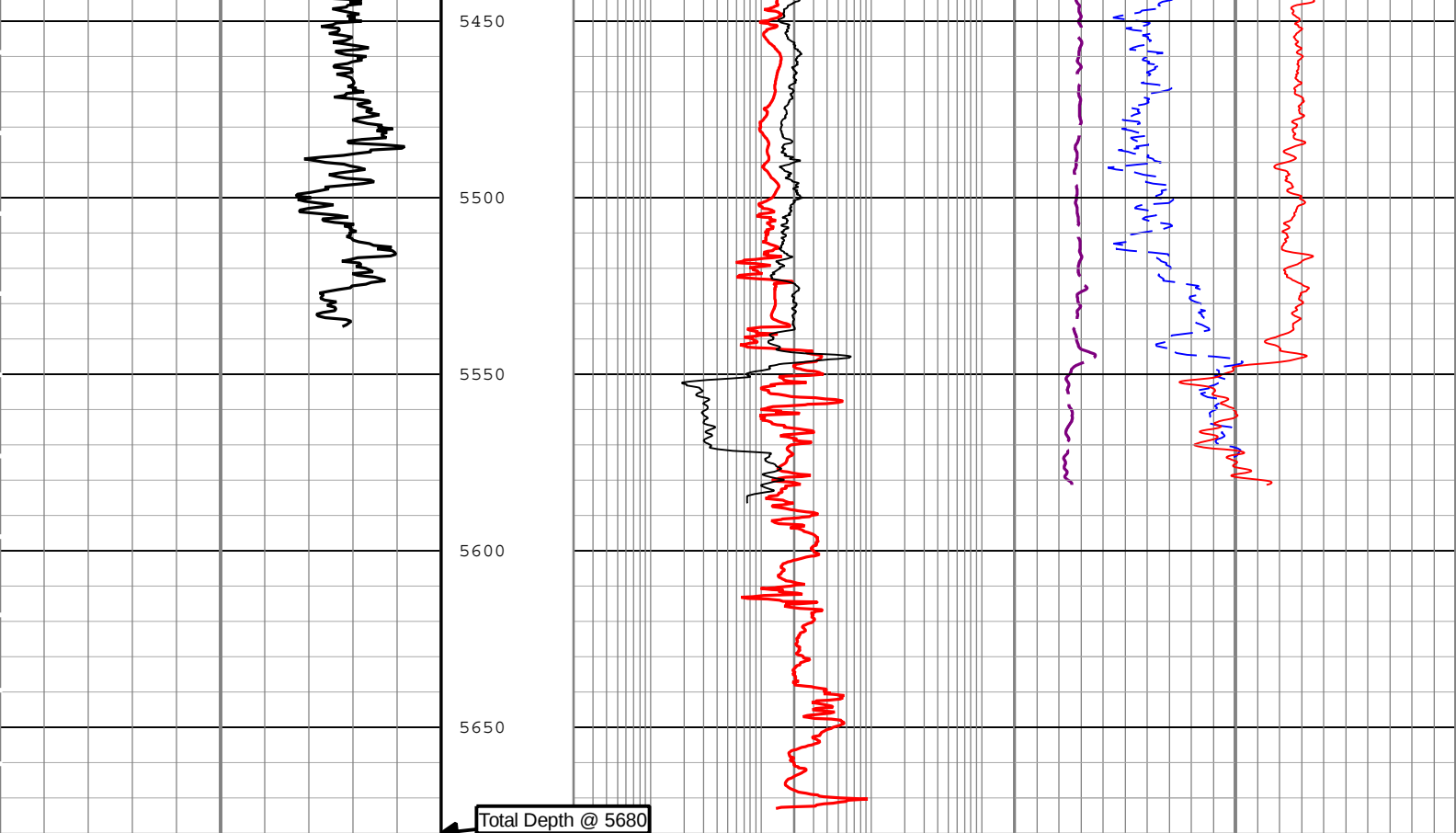












|                       |      |                                    |                                                        |                                                                      |       |                                                                             |      |         |       |
|-----------------------|------|------------------------------------|--------------------------------------------------------|----------------------------------------------------------------------|-------|-----------------------------------------------------------------------------|------|---------|-------|
| Gamma Ray (GR) EDTC-B |      | Stuck Tool Indicator, Total (STIT) | Array Induction Two Foot Resistivity A90 (AT90) ZAIT-E |                                                                      |       | Thermal Neutron Porosity (Ratio Method) in Selected Lithology (TNPH) HGNS-H |      |         |       |
| 0                     | gAPI |                                    | 150                                                    | 0.2                                                                  | ohm.m | 2000                                                                        | 0.45 | ft3/ft3 | -0.15 |
|                       |      |                                    | 0                                                      | Invaded Formation Resistivity filtered at 18 inches (RXOZ) HDRS-H[1] |       | Standard Resolution Formation Density (RHOZ) HDRS-H[1]                      |      |         |       |
|                       |      |                                    |                                                        | 0.2                                                                  | ohm.m | 2000                                                                        | 1.95 | g/cm3   | 2.95  |
|                       |      |                                    |                                                        |                                                                      |       | Standard Resolution Formation Photoelectric Factor (PEFZ) HDRS-H[1]         |      |         |       |
|                       |      |                                    |                                                        |                                                                      |       | 0                                                                           | 20   |         |       |

TIME\_1900 - Time Marked every 60.00 (s)

Description: HGNS standard resolution porosities for Platform Express    Format: Log ( 2inMainSpecial1 )    Index Scale: 2 in per 100 ft    Index Unit: ft    Index Type: Measured Depth    Creation Date: 12-Sep-2014 00:40:09

| Channel Processing Parameters |                                                   |           |                  |       |
|-------------------------------|---------------------------------------------------|-----------|------------------|-------|
| Parameter                     | Description                                       | Tool      | Value            | Unit  |
| ABHME                         | Array Induction Extended Borehole Correction Mode | ZAIT-E    | Compute Standoff |       |
| ACDE                          | Array Induction Casing Detection Enable           | ZAIT-E    | No               |       |
| AOFFX                         | X Accelerometer Offset                            | GPIT-F    | 0                | ft/s2 |
| AOFFY                         | Y Accelerometer Offset                            | GPIT-F    | 0.01             | ft/s2 |
| AOFFZ                         | Z Accelerometer Offset                            | GPIT-F    | 0                | ft/s2 |
| AROT                          | Array Induction Rotation Selector                 | ZAIT-E    | North            |       |
| ASTA                          | Array Induction Tool Standoff                     | ZAIT-E    | 1                | in    |
| BARI                          | Barite Mud Presence Flag                          | Borehole  | Yes              |       |
| BHS                           | Borehole Status (Open or Cased Hole)              | Borehole  | Open             |       |
| BHT                           | Bottom Hole Temperature                           | Borehole  | 160              | degF  |
| BS                            | Bit Size                                          | WLSESSION | Depth Zoned      | in    |
| BSAL                          | Borehole Salinity                                 | Borehole  | 20000            | ppm   |
| CALI_SHIFT.1                  | CALI Supplementary Offset                         | HDRS-H    | 1.51             | in    |

|                |                                                                                  |                 |                               |         |
|----------------|----------------------------------------------------------------------------------|-----------------|-------------------------------|---------|
| CALI_SHIFT.2   | CALI Supplementary Offset                                                        | HDRS-H          | 0.535                         | in      |
| CBLO           | Casing Bottom (Logger)                                                           | WLSESSION       | 1296                          | ft      |
| CDEN           | Cement Density                                                                   | EDTC-B          | 2                             | g/cm3   |
| DC_MODE        | Depth Correction Mode                                                            | DepthCorrection | Real-time                     |         |
| DFD            | Drilling Fluid Density                                                           | Borehole        | 9                             | lbm/gal |
| DFT            | Drilling Fluid Type                                                              | Borehole        | Water                         |         |
| DFT_WATER      | Drilling Fluid Water Type                                                        | Borehole        | Water Based Mud               |         |
| DHC            | Density Hole Correction                                                          | HDRS-H          | Bit Size                      |         |
| FOFFX          | X Magnetometer Offset                                                            | GPIT-F          | 0                             | mT      |
| FOFFY          | Y Magnetometer Offset                                                            | GPIT-F          | 0                             | mT      |
| FOFFZ          | Z Magnetometer Offset                                                            | GPIT-F          | 0                             | mT      |
| FSAL           | Formation Salinity                                                               | Borehole        | 0                             | ppm     |
| GCSE_DOWN_PASS | Generalized Caliper Selection for WL Log Down Passes                             | Borehole        | BS                            |         |
| GCSE_UP_PASS   | Generalized Caliper Selection for WL Log Up Passes                               | Borehole        | CALI                          |         |
| GRSE           | Generalized Mud Resistivity Selection, from Measured or Computed Mud Resistivity | Borehole        | AMF                           |         |
| GTSE           | Generalized Temperature Selection, from Measured or Computed Temperature         | Borehole        | CTEM                          |         |
| HSCO           | Hole Size Correction Option                                                      | HGNS-H          | Yes                           |         |
| ICMO           | Inclinometry Computation Mode                                                    | GPIT-F          | Automatic Selection           |         |
| LOG_SPEED_RNG  | Logging Speed Range                                                              | GPIT-F          | Normal (600 ft/h - 3600 ft/h) |         |
| MATR           | Rock Matrix for Neutron Porosity Corrections                                     | Borehole        | LIMESTONE                     |         |
| MFST           | Mud Filtrate Sample Temperature                                                  | Borehole        | 85                            | degF    |
| NPRM           | HRDD Nuclear Processing Mode                                                     | HDRS-H          | Standard Resolution           |         |
| RMFS           | Resistivity of Mud Filtrate Sample                                               | Borehole        | 0.12                          | ohm.m   |
| TD             | Total Measured Depth                                                             | Borehole        | 5680                          | ft      |
| USER_LOCB      | User-supplied values for Magnetic Flux Density                                   | WLSESSION       | 52426.19                      | nT      |
| USER_MDEC      | User-supplied values for Magnetic Declination                                    | WLSESSION       | 10                            | deg     |
| USER_MDIP      | User-supplied values for Magnetic Dip Angle                                      | WLSESSION       | 66.53                         | deg     |

## Depth Zone Parameters

| Parameter | Value | Start ( ft ) | Stop ( ft ) |
|-----------|-------|--------------|-------------|
| BS        | 17.5  | 1195         | 1296        |
| BS        | 12.25 | 1296         | 5680        |

All depth are actual.

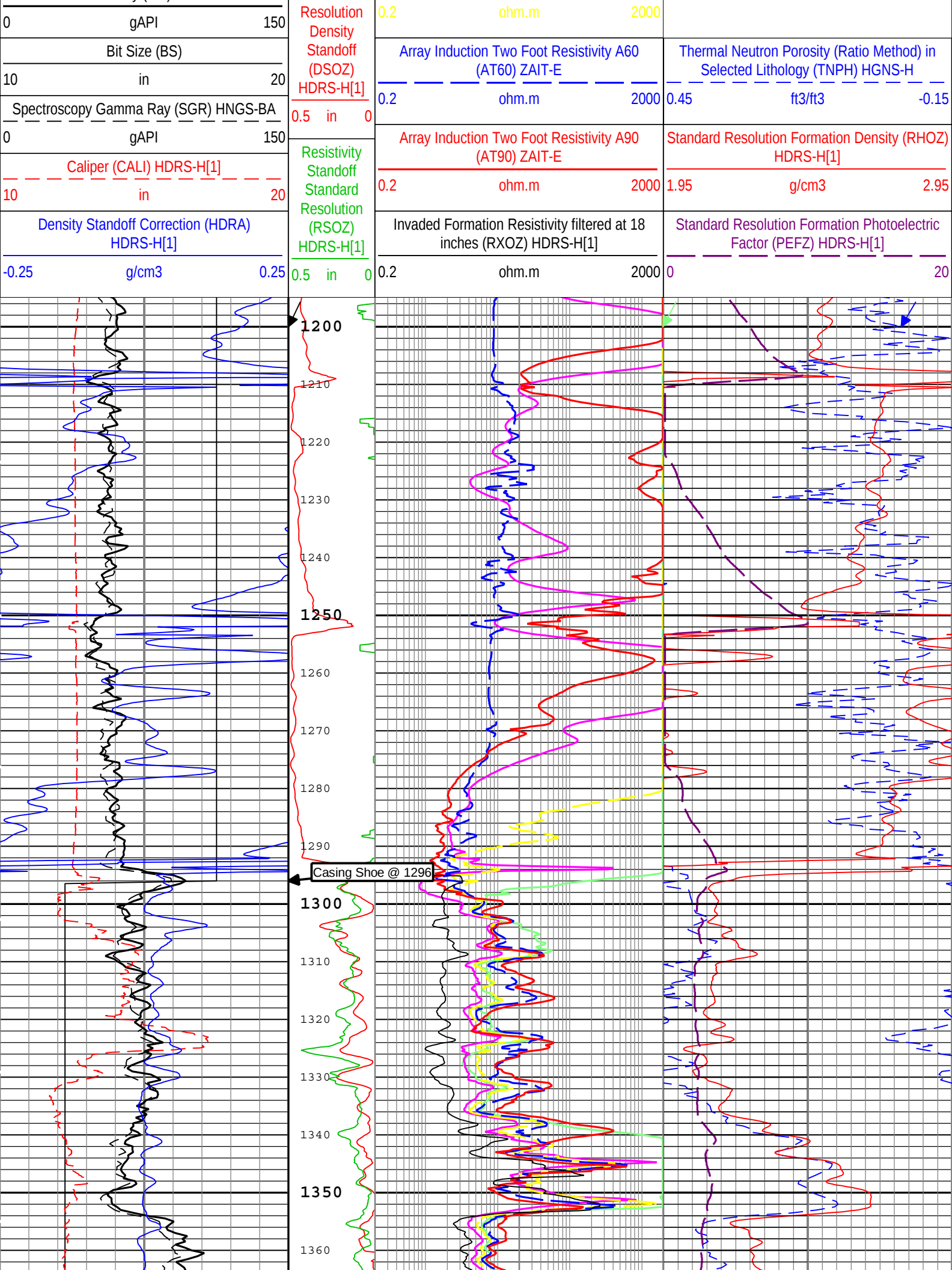
## Tool Control Parameters

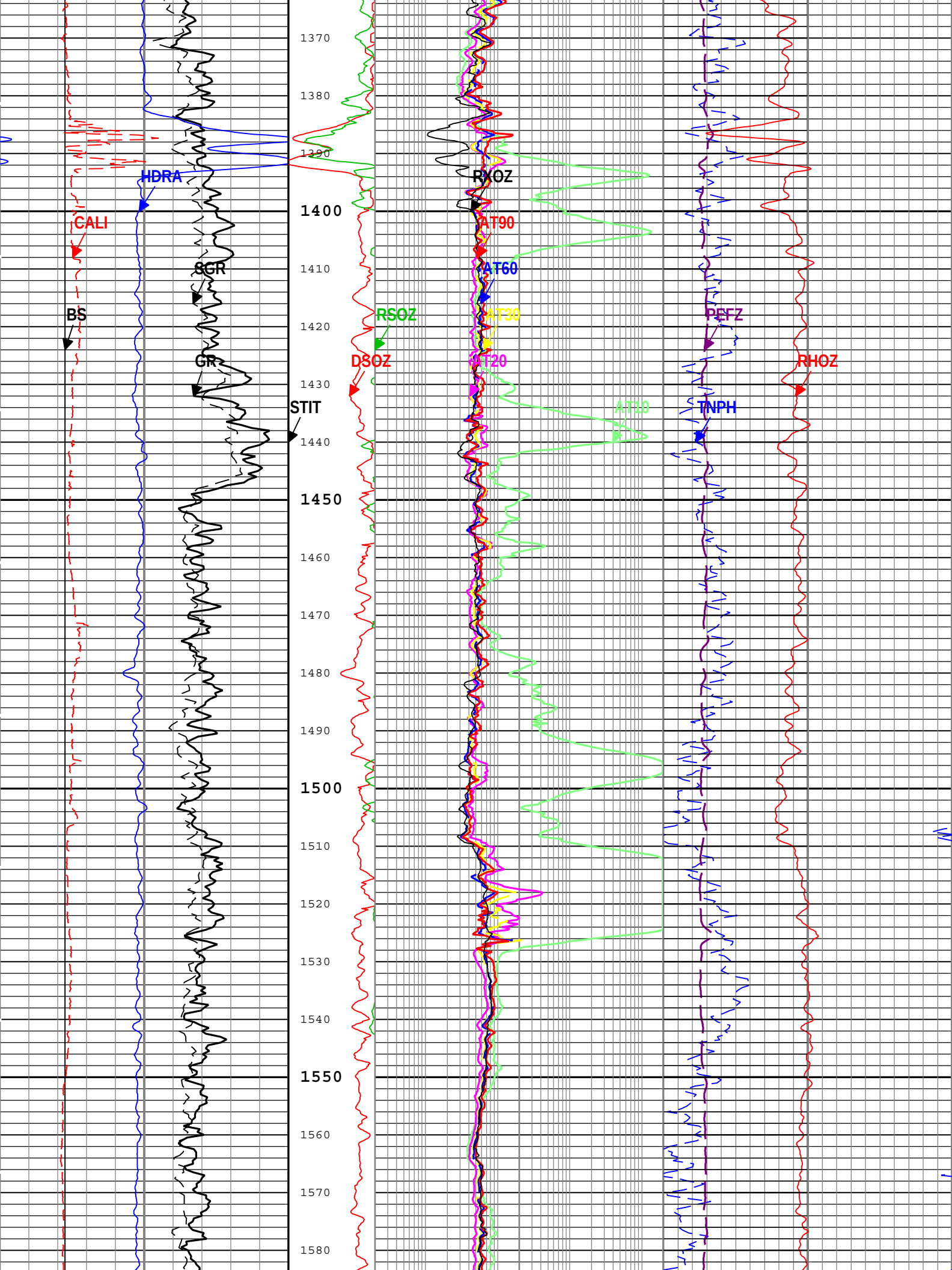
| Parameter     | Description                      | Tool      | Value      | Unit |
|---------------|----------------------------------|-----------|------------|------|
| HMCA_BRD_TYPE | HMCA Board Type                  | HGNS-H    | 1          |      |
| HRGD_BRD_TYPE | HRGD Board Type                  | HDRS-H    | WITH_HET   |      |
| MAX_LOG_SPEED | Toolstring Maximum Logging Speed | WLSESSION | Time Zoned | ft/h |

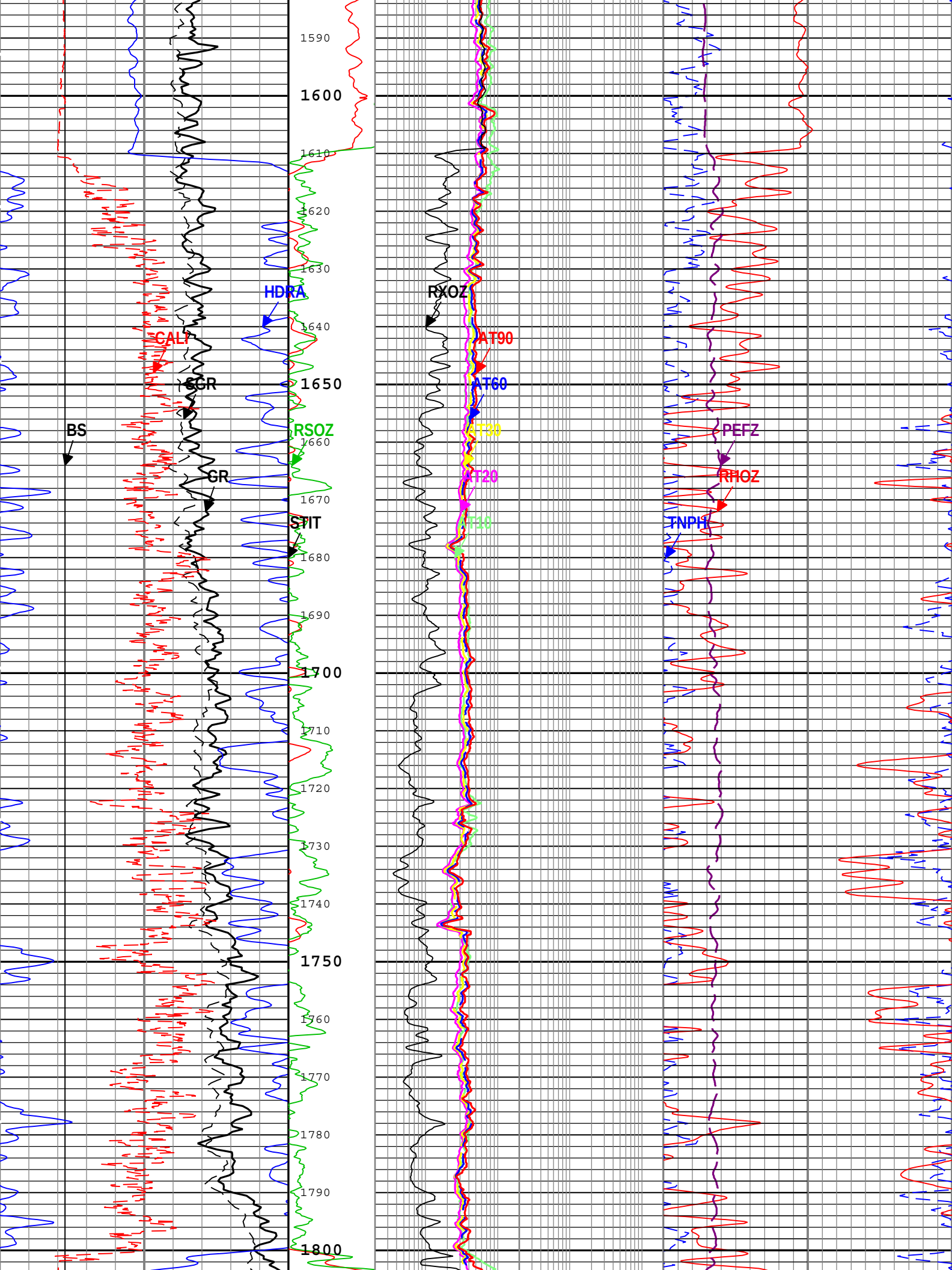
## Time Zone Parameters

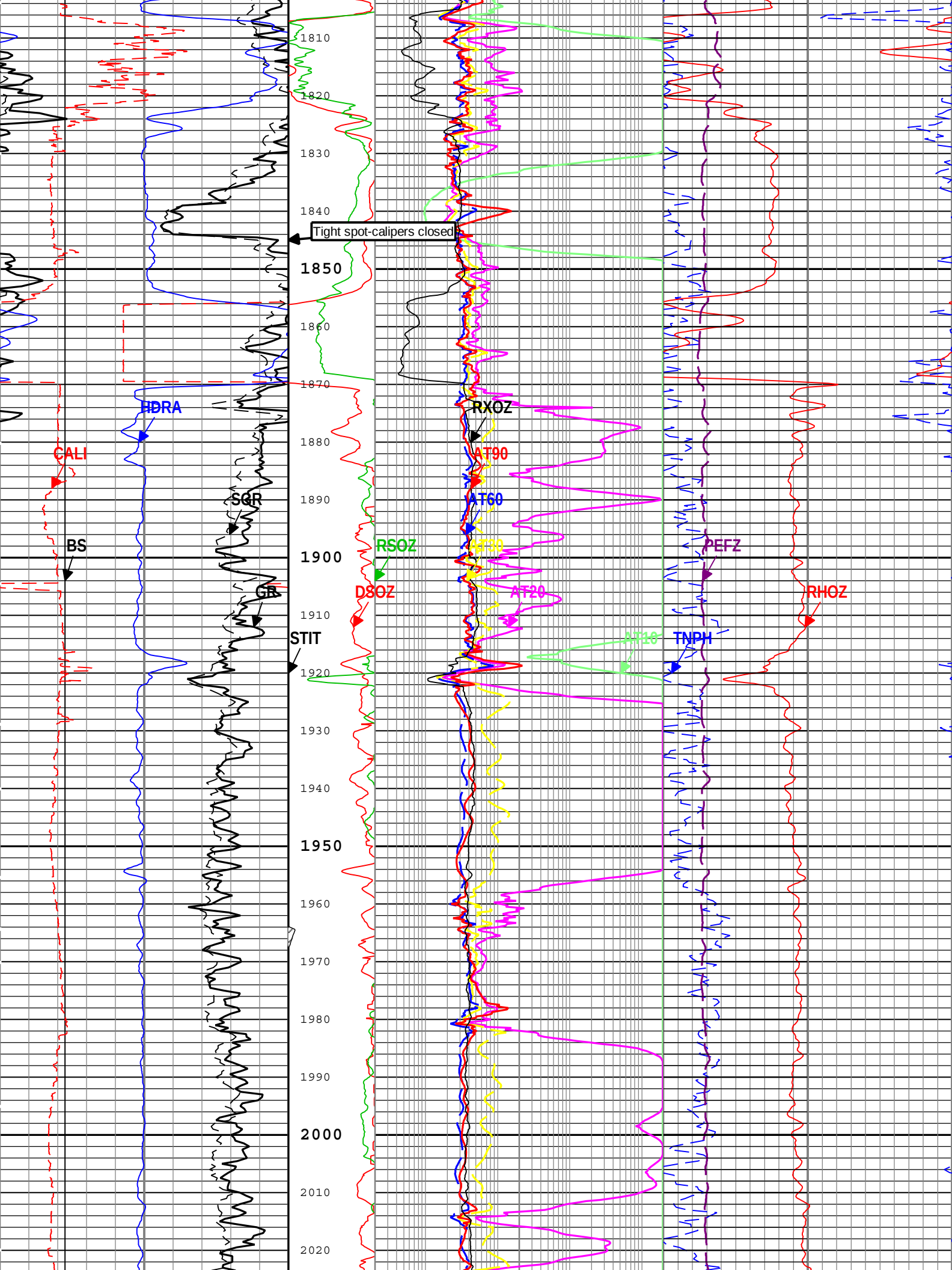
| Parameter     | Value | Start Time           | Stop Time            | Start Depth ( ft ) | Stop Depth ( ft ) |
|---------------|-------|----------------------|----------------------|--------------------|-------------------|
| MAX_LOG_SPEED | 1510  | 11-Sep-2014 18:55:18 | 11-Sep-2014 19:26:20 | 5681.24            | 5073.22           |
| MAX_LOG_SPEED | 1424  | 11-Sep-2014 19:26:20 | 11-Sep-2014 19:33:33 | 5073.22            | 4912.83           |
| MAX_LOG_SPEED | 1497  | 11-Sep-2014 19:33:33 | 11-Sep-2014 20:15:39 | 4912.83            | 3974.29           |
| MAX_LOG_SPEED | 1607  | 11-Sep-2014 20:15:39 | 11-Sep-2014 20:16:41 | 3974.29            | 3951.4            |
| MAX_LOG_SPEED | 1482  | 11-Sep-2014 20:16:41 | 11-Sep-2014 20:19:46 | 3951.4             | 3882.42           |
| MAX_LOG_SPEED | 1557  | 11-Sep-2014 20:19:46 | 11-Sep-2014 20:29:01 | 3882.42            | 3674.98           |
| MAX_LOG_SPEED | 1477  | 11-Sep-2014 20:29:01 | 11-Sep-2014 20:33:09 | 3674.98            | 3582.47           |
| MAX_LOG_SPEED | 1555  | 11-Sep-2014 20:33:09 | 11-Sep-2014 20:40:21 | 3582.47            | 3420.78           |

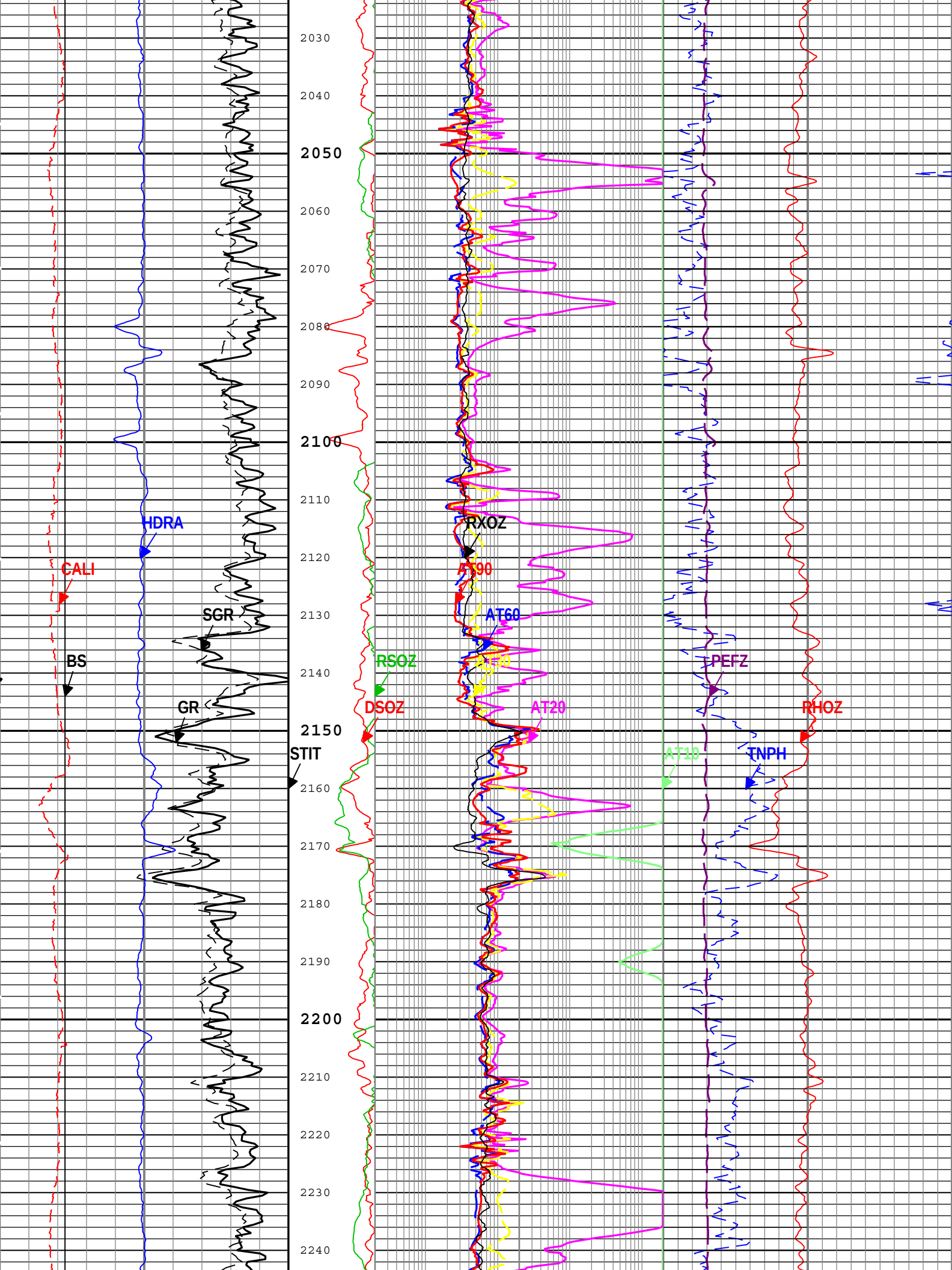


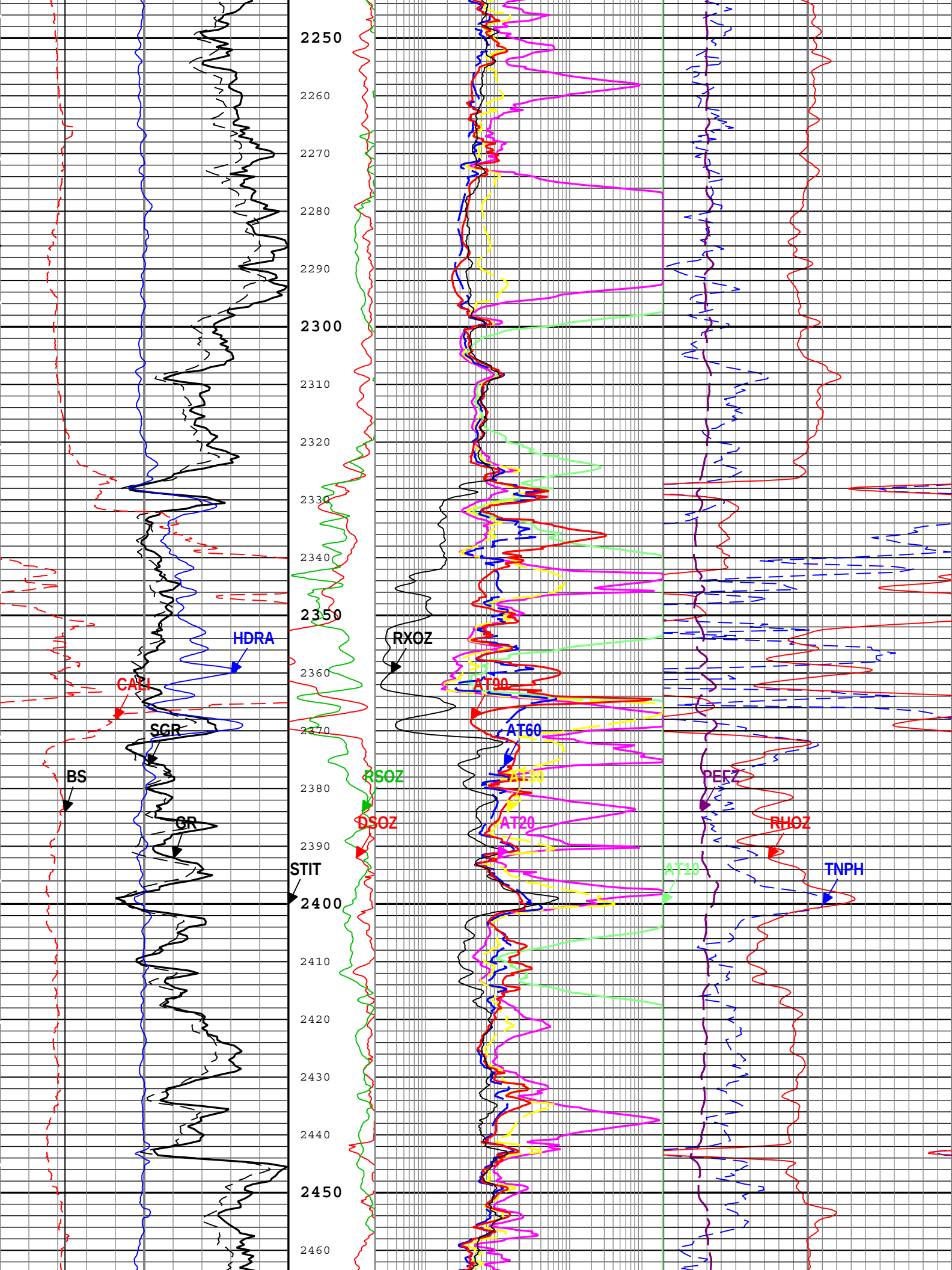


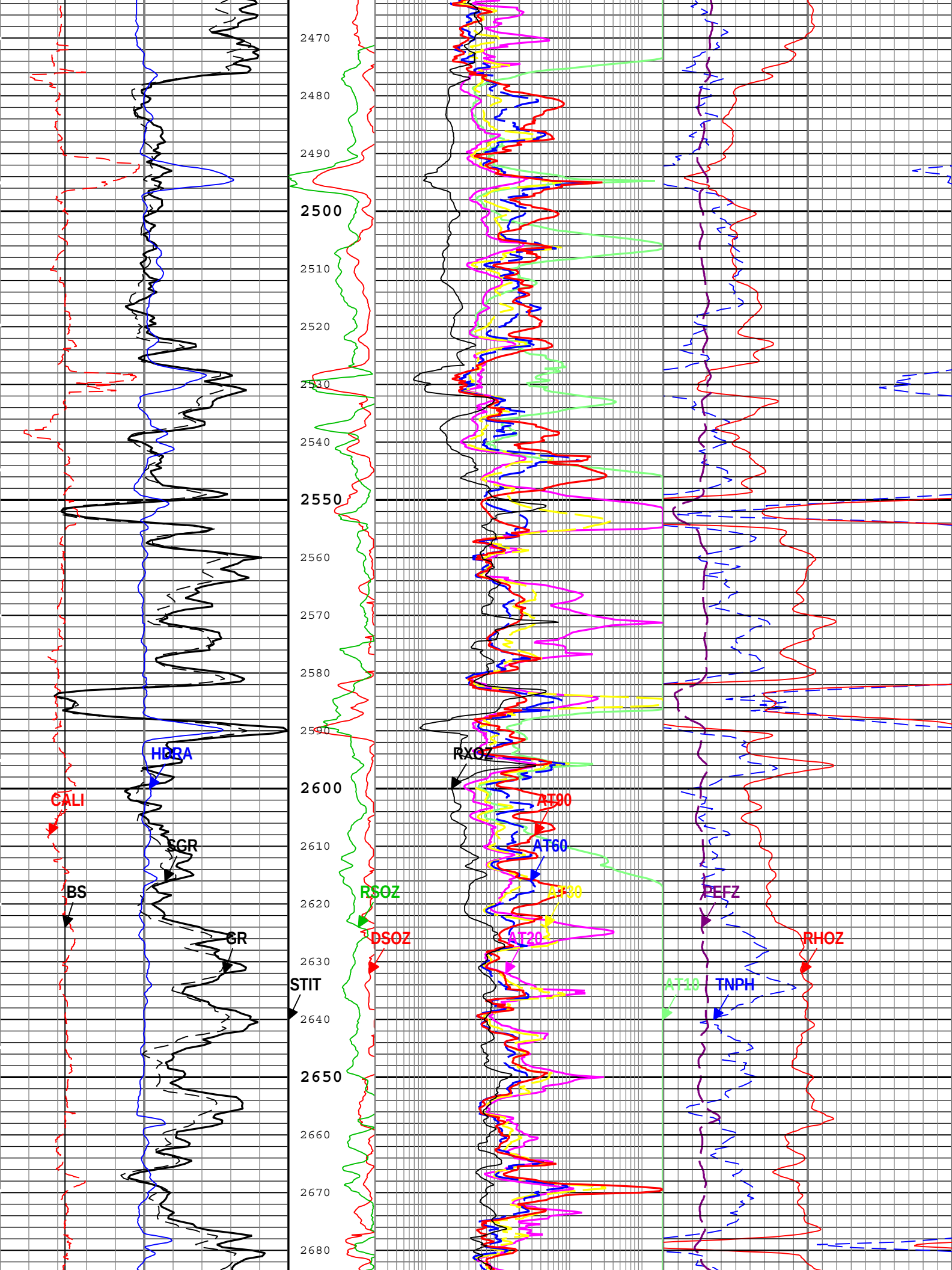


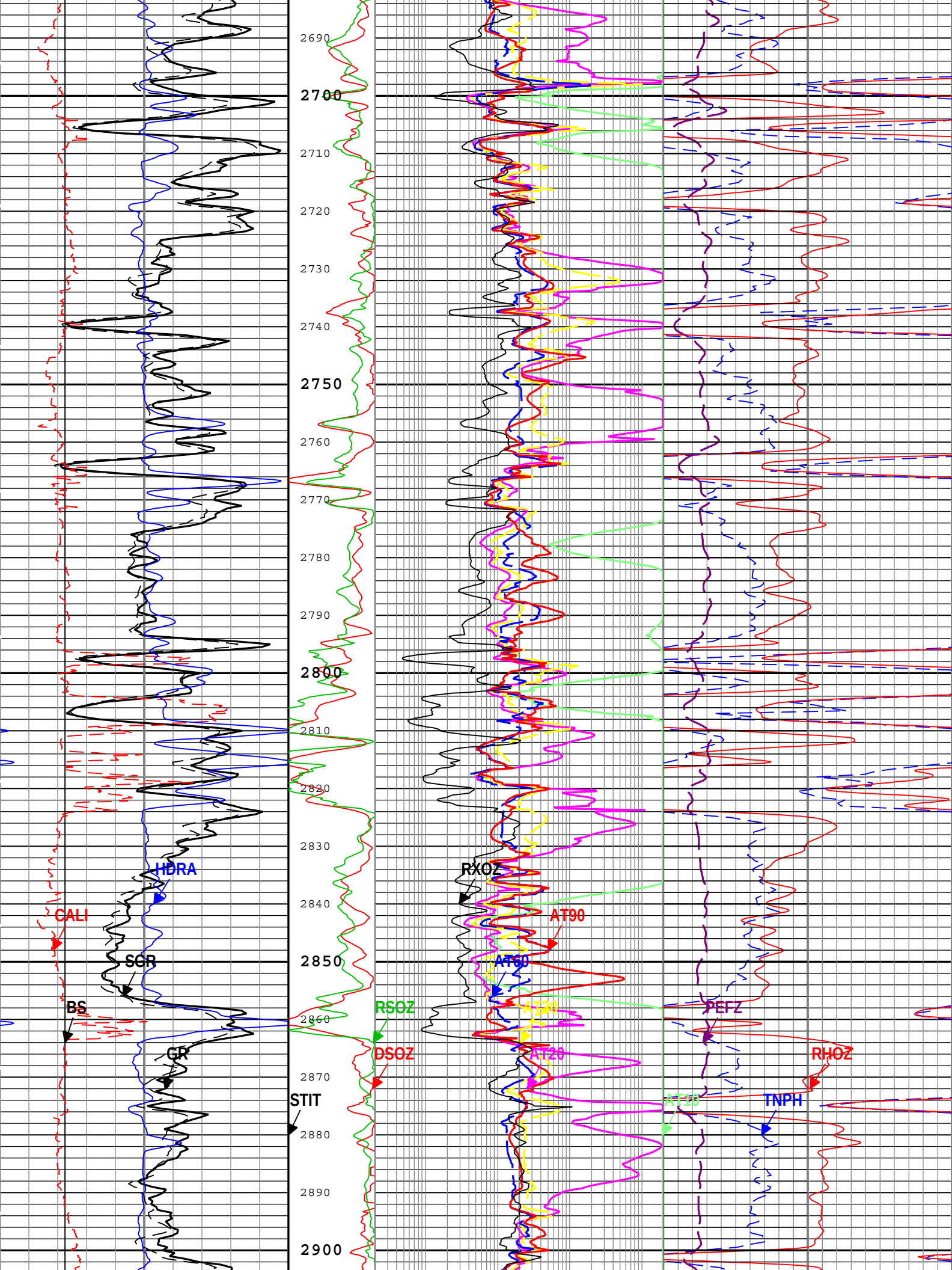


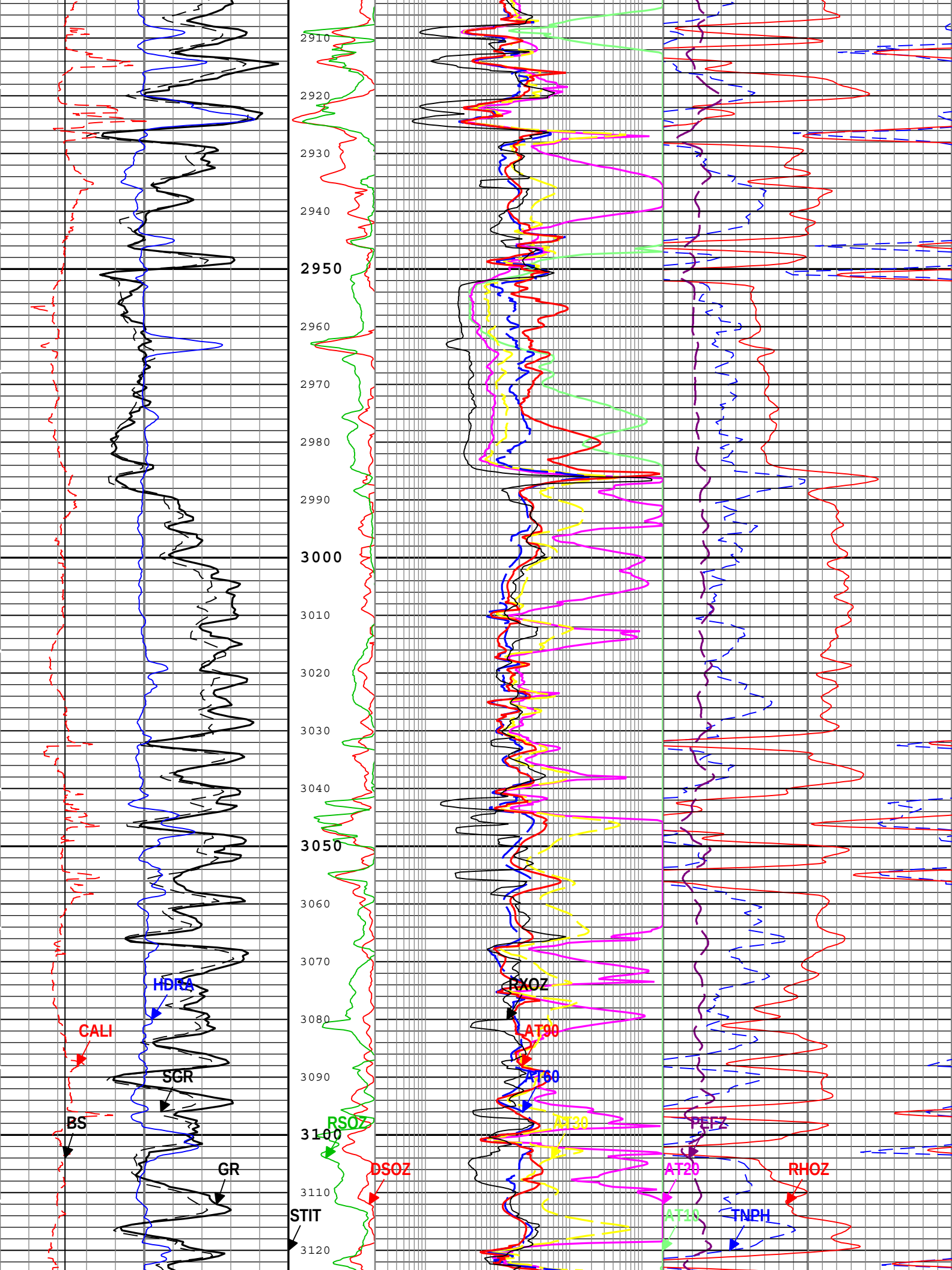


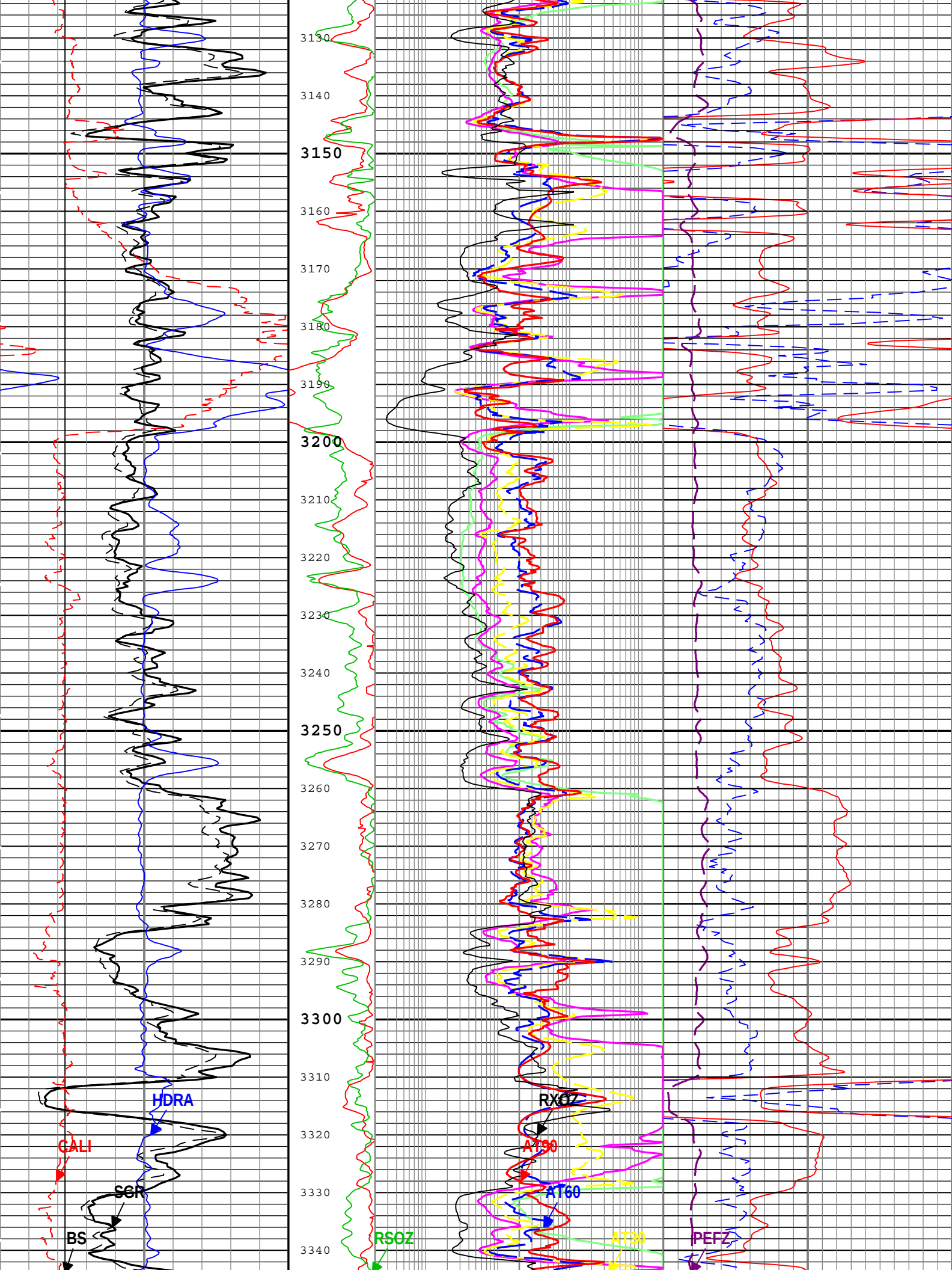


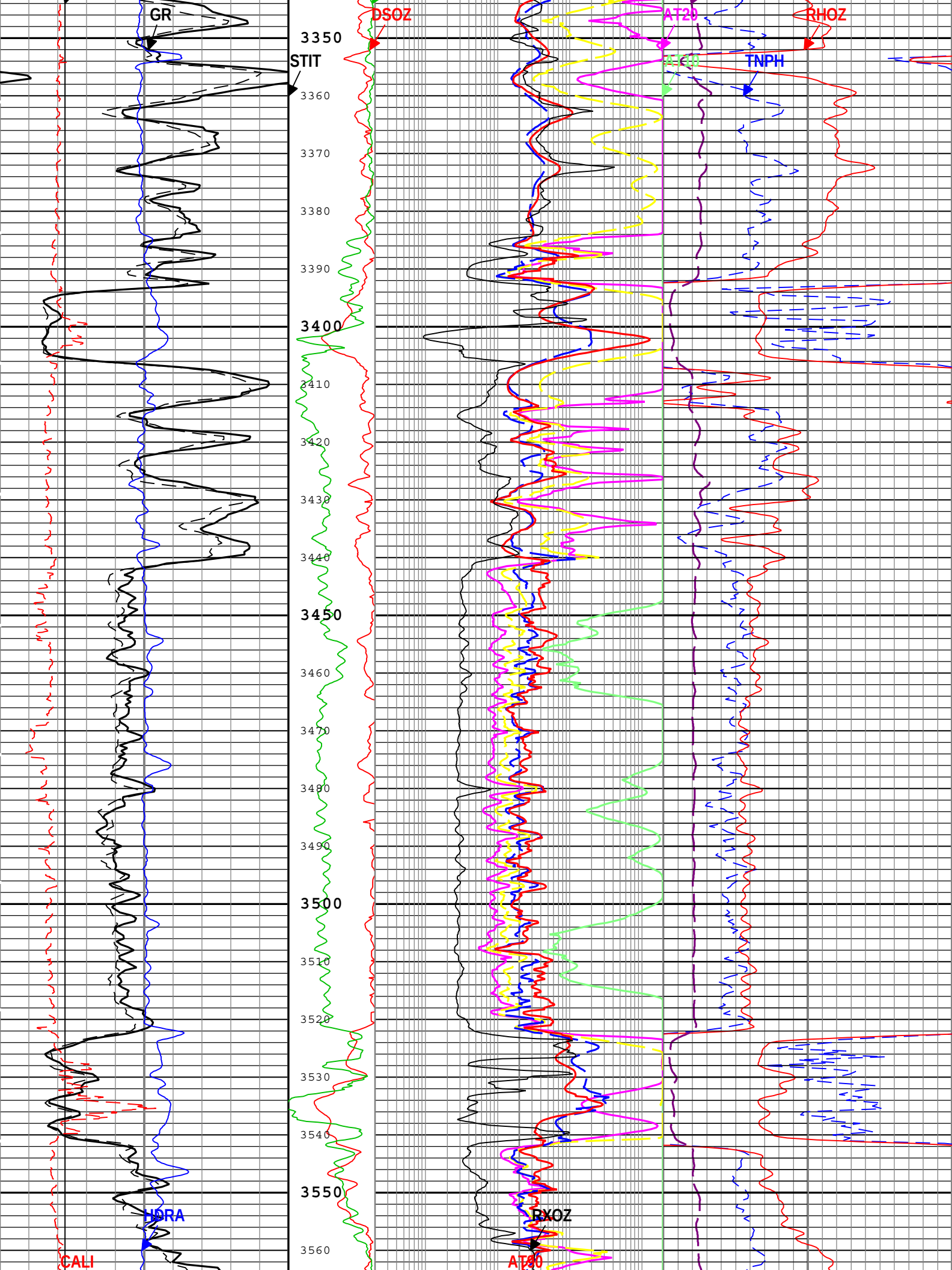


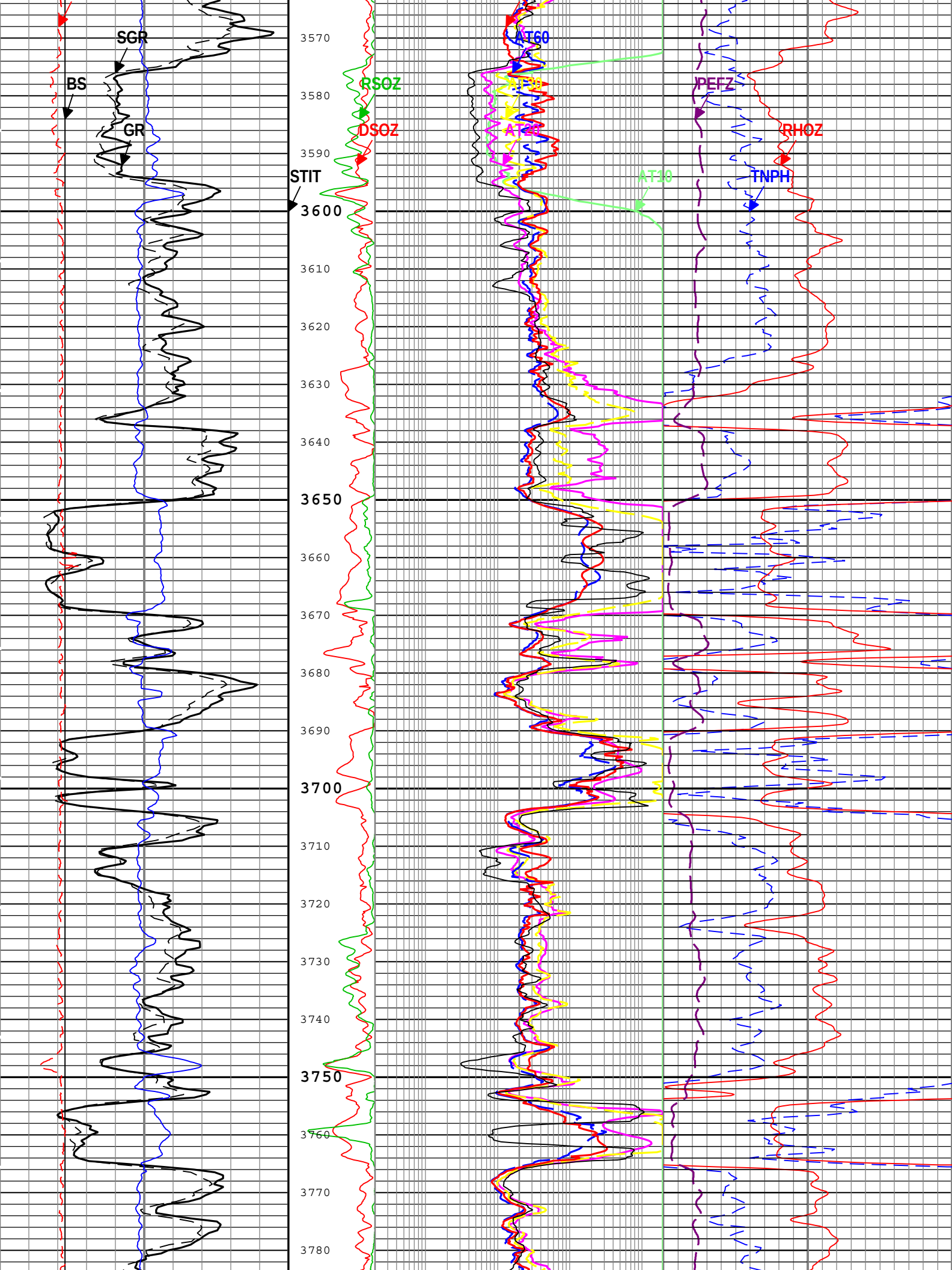


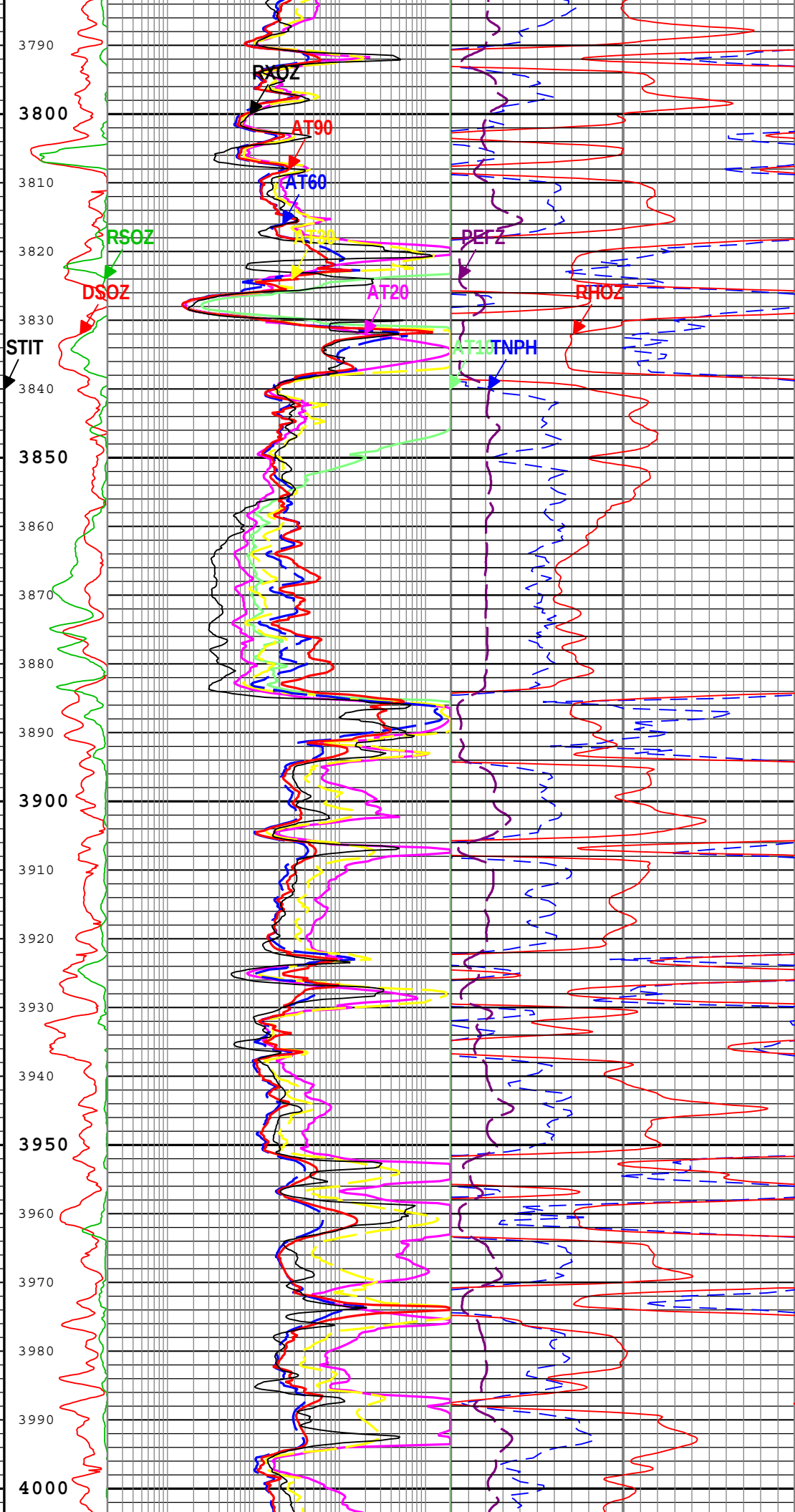
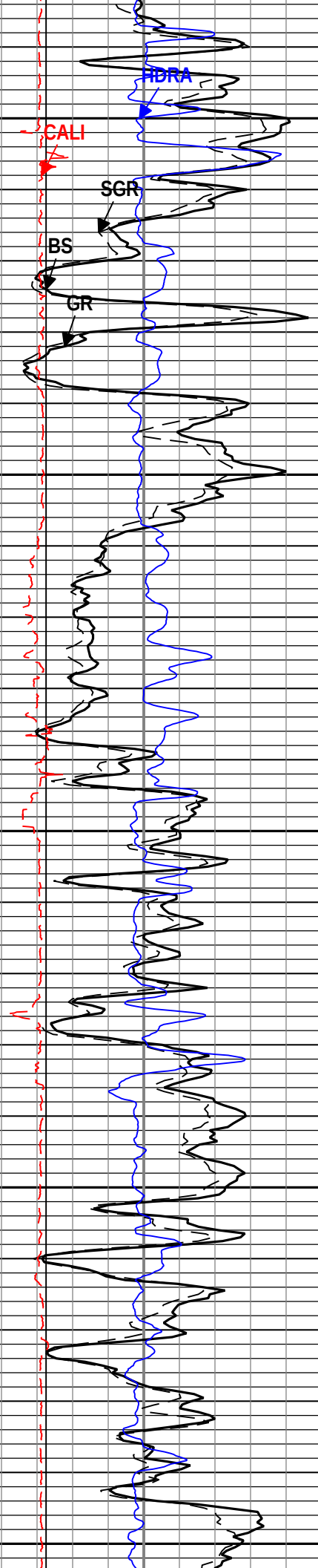


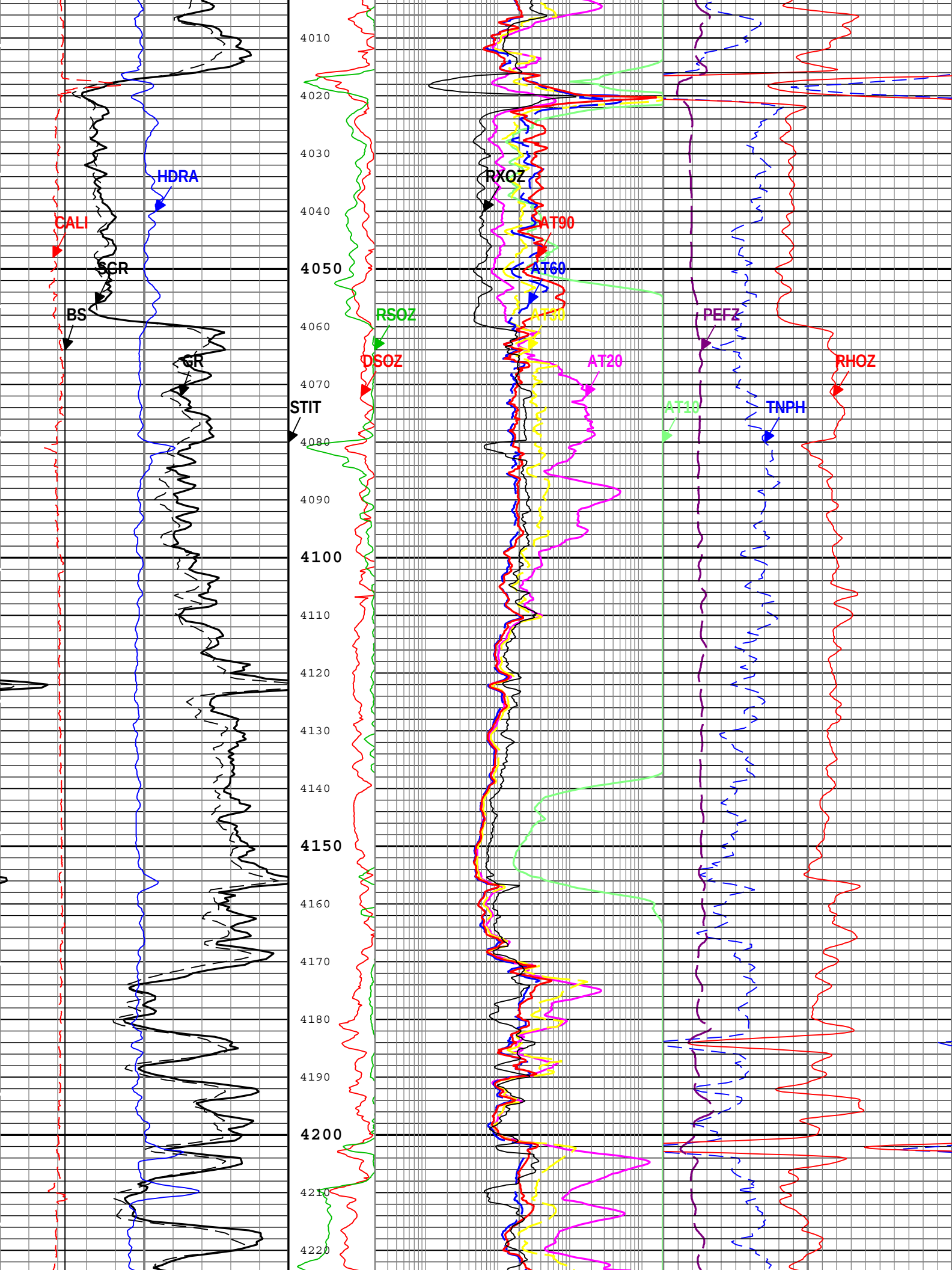


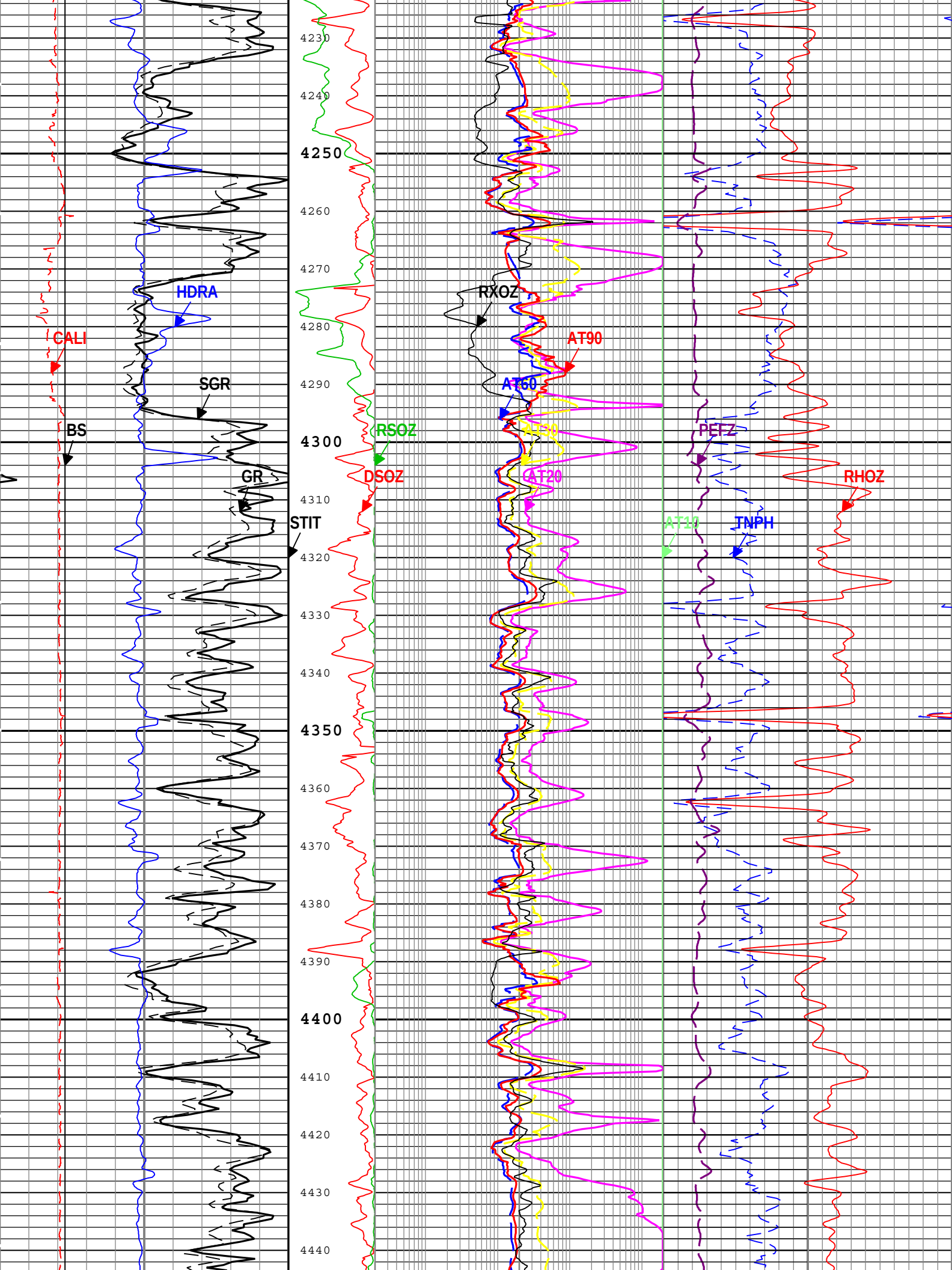


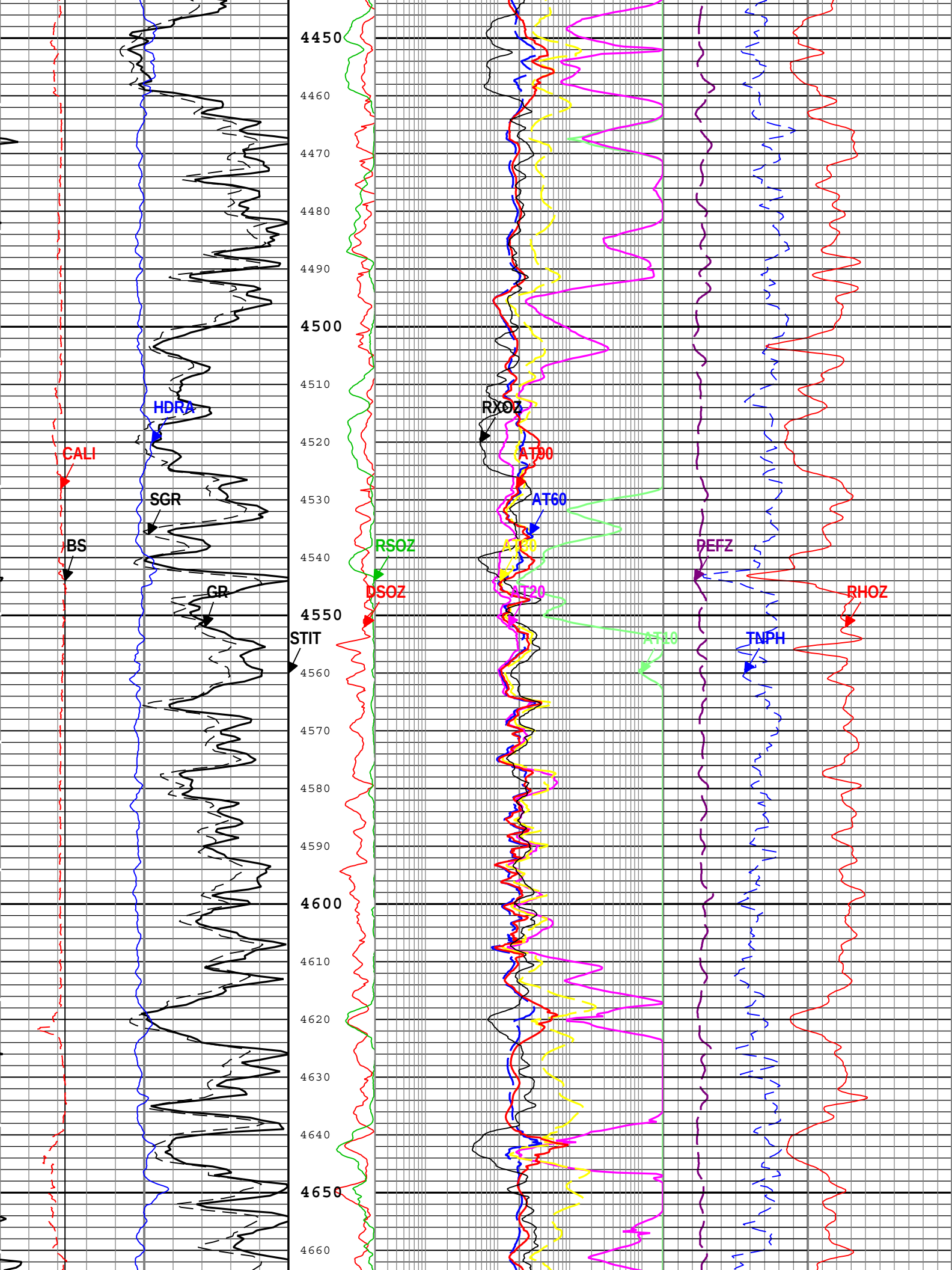


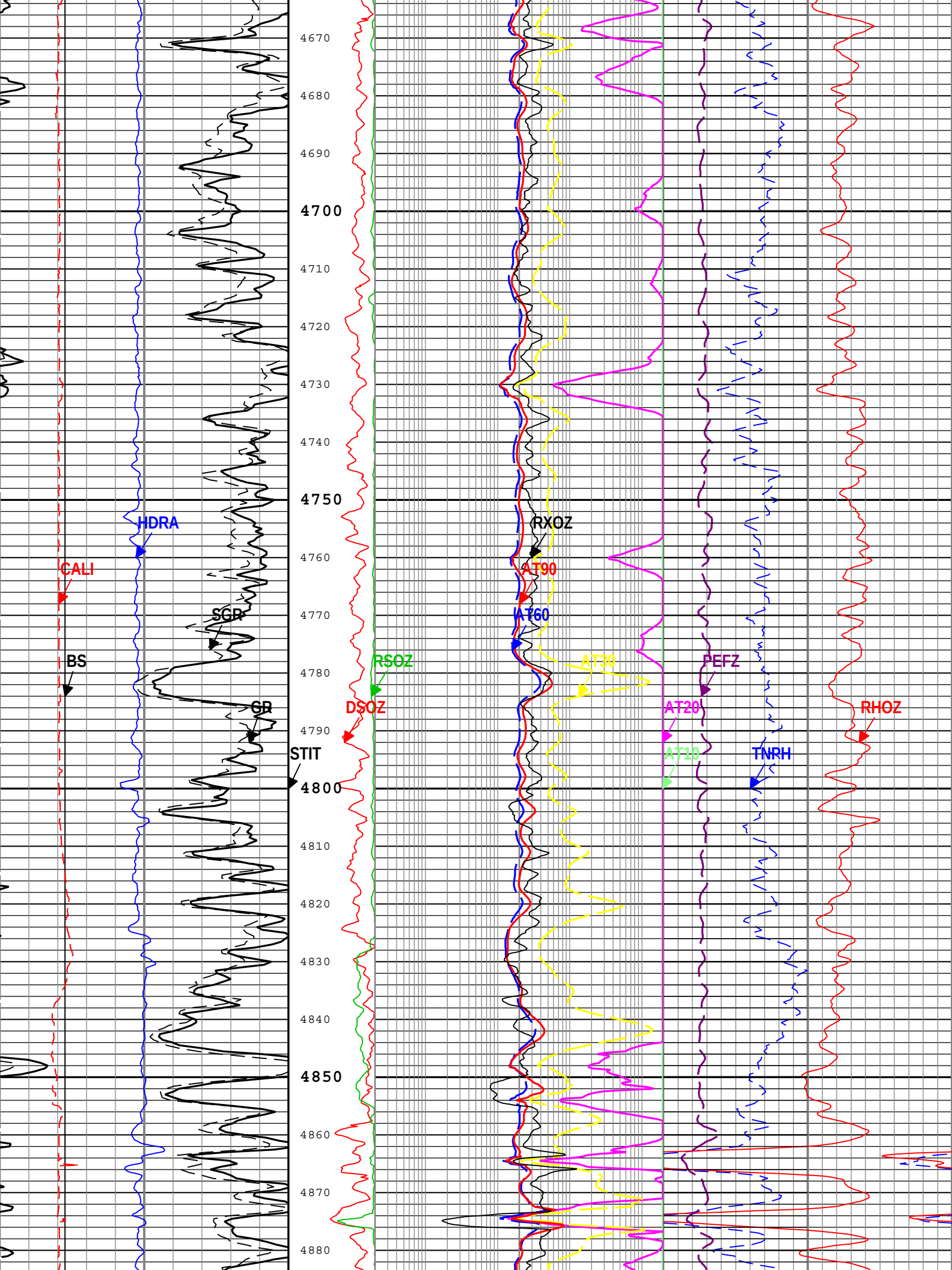


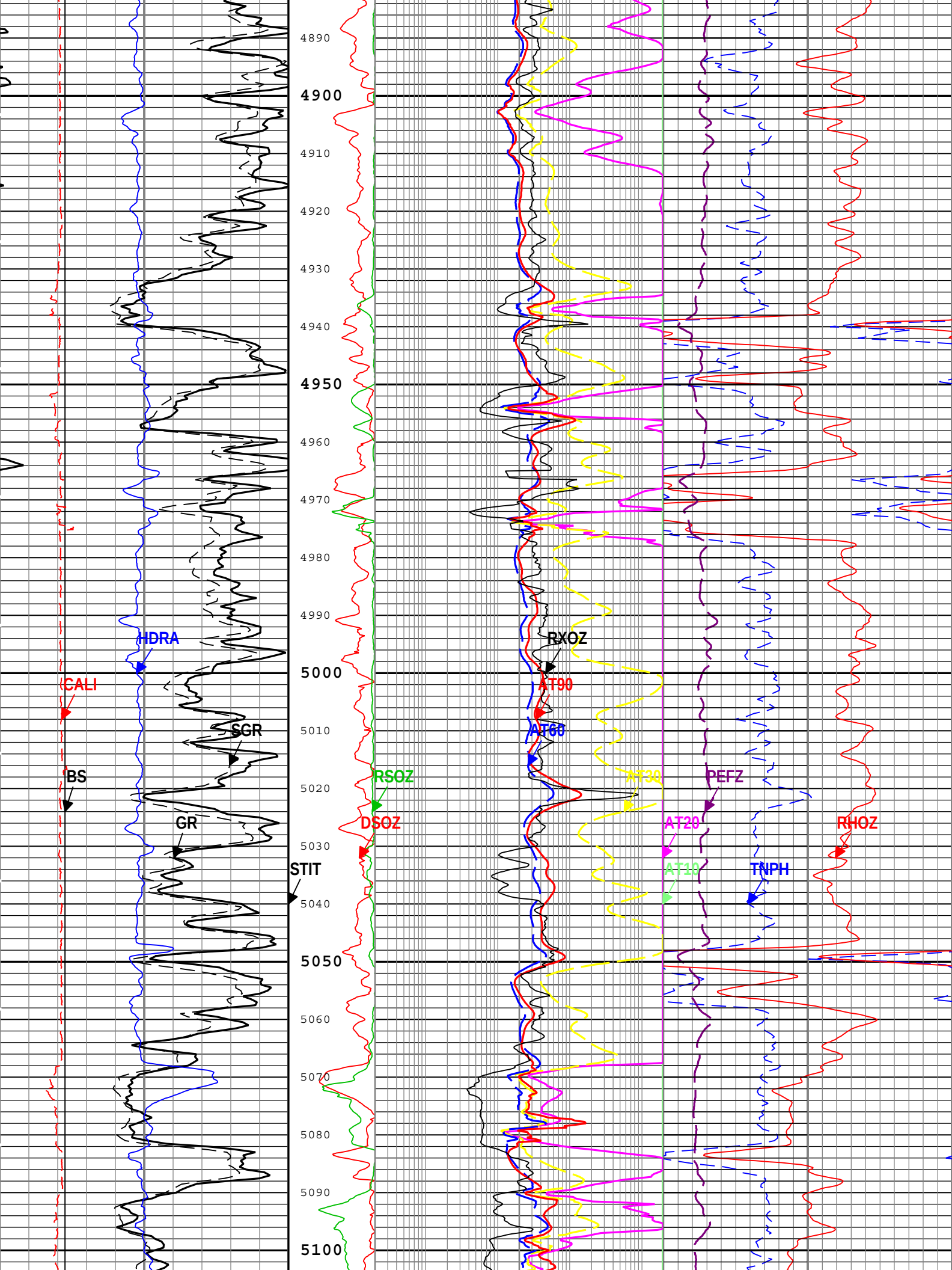


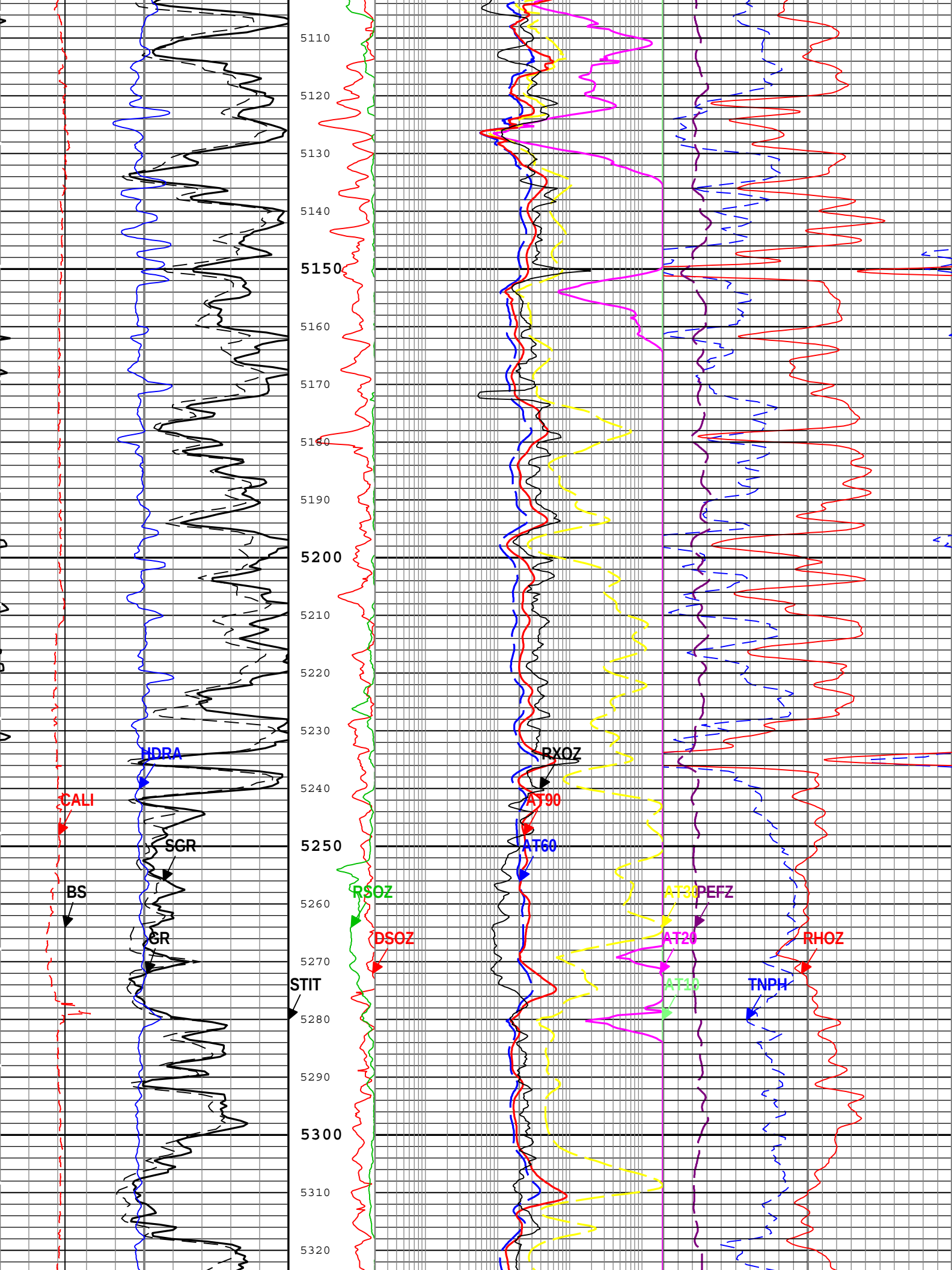


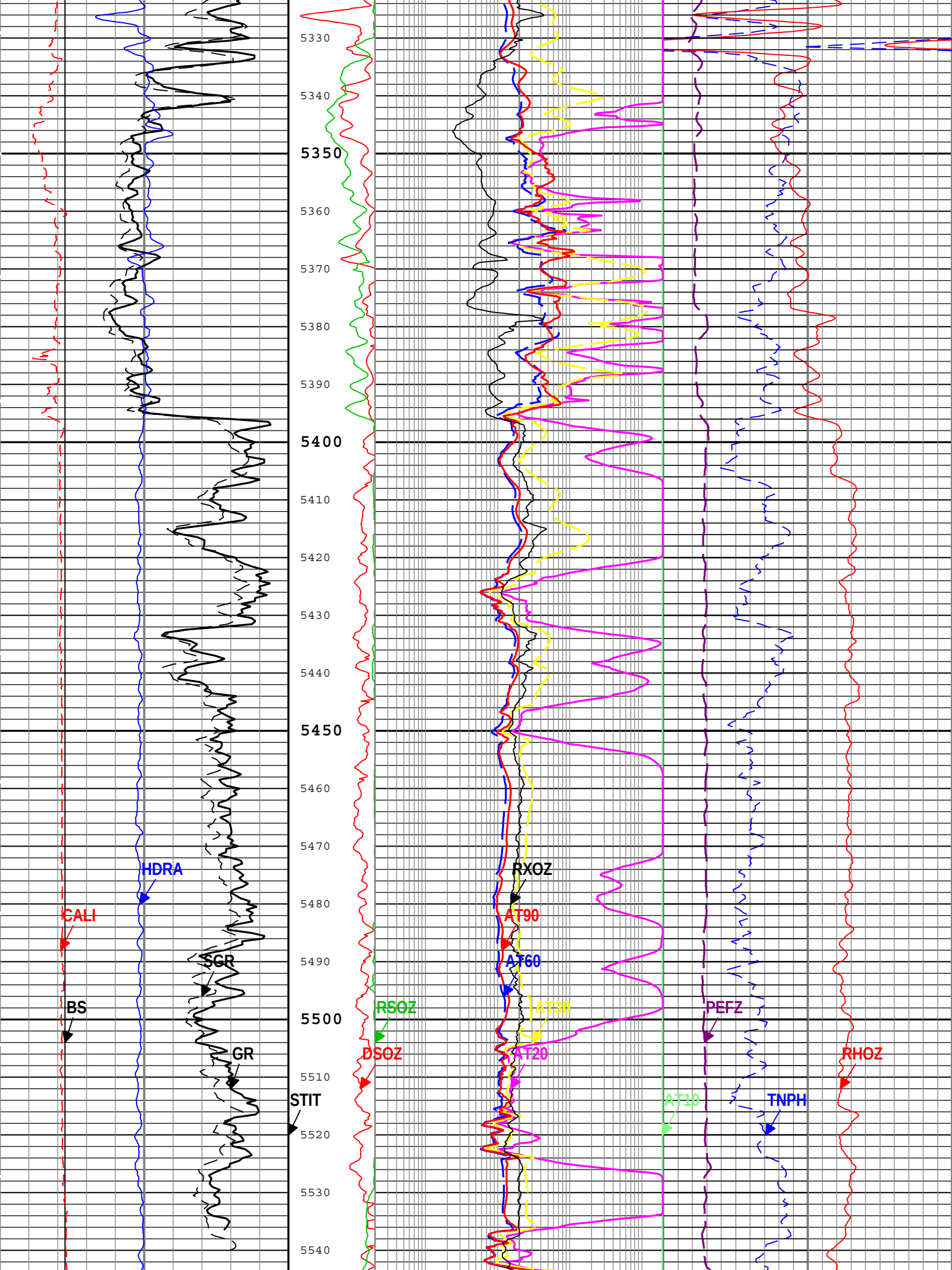


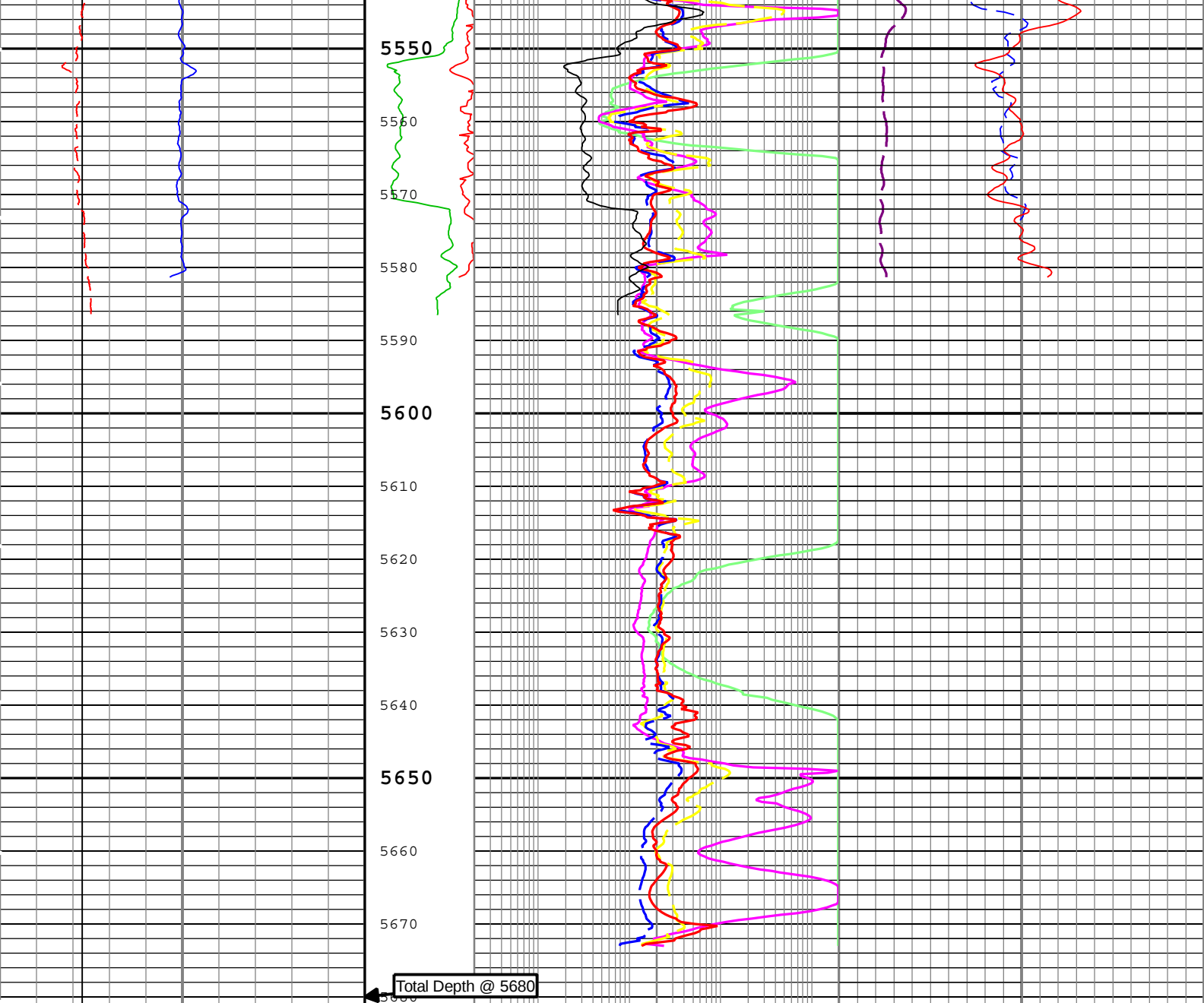












|                                              |       |      |                                                           |                                                        |       |      |                                                                             |         |       |  |  |  |
|----------------------------------------------|-------|------|-----------------------------------------------------------|--------------------------------------------------------|-------|------|-----------------------------------------------------------------------------|---------|-------|--|--|--|
| Gamma Ray (GR) EDTC-B                        |       |      | Stuck Tool Indicator, Total (STIT)                        | Array Induction Two Foot Resistivity A10 (AT10) ZAIT-E |       |      | Thermal Neutron Porosity (Ratio Method) in Selected Lithology (TNPH) HGNS-H |         |       |  |  |  |
| 0                                            | gAPI  | 150  |                                                           | 0.2                                                    | ohm.m | 2000 | 0.45                                                                        | ft3/ft3 | -0.15 |  |  |  |
| Bit Size (BS)                                |       |      | 0 ft 50                                                   | Array Induction Two Foot Resistivity A20 (AT20) ZAIT-E |       |      | Standard Resolution Formation Density (RHOZ) HDRS-H[1]                      |         |       |  |  |  |
| 10                                           | in    | 20   | Standard Resolution Density Standoff (DSOZ) HDRS-H[1]     | 0.2                                                    | ohm.m | 2000 | 1.95                                                                        | g/cm3   | 2.95  |  |  |  |
| Spectroscopy Gamma Ray (SGR) HNGS-BA         |       |      |                                                           | Array Induction Two Foot Resistivity A30 (AT30) ZAIT-E |       |      | Standard Resolution Formation Photoelectric Factor (PEFZ) HDRS-H[1]         |         |       |  |  |  |
| 0                                            | gAPI  | 150  | 0.5 in 0                                                  | 0.2                                                    | ohm.m | 2000 | 0                                                                           |         | 20    |  |  |  |
| Caliper (CALI) HDRS-H[1]                     |       |      | Resistivity Standoff Standard Resolution (RSOZ) HDRS-H[1] | Array Induction Two Foot Resistivity A60 (AT60) ZAIT-E |       |      | Invaded Formation Resistivity filtered at 18 inches (RXOZ) HDRS-H[1]        |         |       |  |  |  |
| 10                                           | in    | 20   |                                                           | 0.2                                                    | ohm.m | 2000 |                                                                             |         |       |  |  |  |
| Density Standoff Correction (HDRA) HDRS-H[1] |       |      | 0.5 in 0                                                  | Array Induction Two Foot Resistivity A90 (AT90) ZAIT-E |       |      |                                                                             |         |       |  |  |  |
| -0.25                                        | g/cm3 | 0.25 |                                                           | 0.2                                                    | ohm.m | 2000 |                                                                             |         |       |  |  |  |
|                                              |       |      |                                                           |                                                        |       |      |                                                                             |         |       |  |  |  |

|                                                                                                                                                                                                                                 |                                                                                  | 0.2             | ohm.m                         | 2000    |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|-----------------|-------------------------------|---------|
| TIME_1900 - Time Marked every 60.00 (s)                                                                                                                                                                                         |                                                                                  |                 |                               |         |
| Description: HGNS standard resolution porosities for Platform Express    Format: Log ( 5inMainSpecial1 )    Index Scale: 5 in per 100 ft    Index Unit: ft    Index Type: Measured Depth    Creation Date: 12-Sep-2014 00:40:14 |                                                                                  |                 |                               |         |
| Channel Processing Parameters                                                                                                                                                                                                   |                                                                                  |                 |                               |         |
| Parameter                                                                                                                                                                                                                       | Description                                                                      | Tool            | Value                         | Unit    |
| ABHME                                                                                                                                                                                                                           | Array Induction Extended Borehole Correction Mode                                | ZAIT-E          | Compute Standoff              |         |
| ACDE                                                                                                                                                                                                                            | Array Induction Casing Detection Enable                                          | ZAIT-E          | No                            |         |
| AOFFX                                                                                                                                                                                                                           | X Accelerometer Offset                                                           | GPIT-F          | 0                             | ft/s2   |
| AOFFY                                                                                                                                                                                                                           | Y Accelerometer Offset                                                           | GPIT-F          | 0.01                          | ft/s2   |
| AOFFZ                                                                                                                                                                                                                           | Z Accelerometer Offset                                                           | GPIT-F          | 0                             | ft/s2   |
| AROT                                                                                                                                                                                                                            | Array Induction Rotation Selector                                                | ZAIT-E          | North                         |         |
| ASTA                                                                                                                                                                                                                            | Array Induction Tool Standoff                                                    | ZAIT-E          | 1                             | in      |
| BARI                                                                                                                                                                                                                            | Barite Mud Presence Flag                                                         | Borehole        | Yes                           |         |
| BHK                                                                                                                                                                                                                             | Drilling Fluid Potassium Concentration                                           | Borehole        | 0                             | %       |
| BHS                                                                                                                                                                                                                             | Borehole Status (Open or Cased Hole)                                             | Borehole        | Open                          |         |
| BHT                                                                                                                                                                                                                             | Bottom Hole Temperature                                                          | Borehole        | 160                           | degF    |
| BS                                                                                                                                                                                                                              | Bit Size                                                                         | WLSESSION       | Depth Zoned                   | in      |
| BSAL                                                                                                                                                                                                                            | Borehole Salinity                                                                | Borehole        | 20000                         | ppm     |
| CALI_SHIFT.1                                                                                                                                                                                                                    | CALI Supplementary Offset                                                        | HDRS-H          | 0.535                         | in      |
| CALI_SHIFT.2                                                                                                                                                                                                                    | CALI Supplementary Offset                                                        | HDRS-H          | 1.51                          | in      |
| CBLO                                                                                                                                                                                                                            | Casing Bottom (Logger)                                                           | WLSESSION       | 1296                          | ft      |
| CDEN                                                                                                                                                                                                                            | Cement Density                                                                   | EDTC-B          | 2                             | g/cm3   |
| DBCC                                                                                                                                                                                                                            | Barite Constant Correction Flag                                                  | HNGS-BA         | None                          |         |
| DC_MODE                                                                                                                                                                                                                         | Depth Correction Mode                                                            | DepthCorrection | Real-time                     |         |
| DFD                                                                                                                                                                                                                             | Drilling Fluid Density                                                           | Borehole        | 9                             | lbm/gal |
| DFT                                                                                                                                                                                                                             | Drilling Fluid Type                                                              | Borehole        | Water                         |         |
| DFT_WATER                                                                                                                                                                                                                       | Drilling Fluid Water Type                                                        | Borehole        | Water Based Mud               |         |
| DHC                                                                                                                                                                                                                             | Density Hole Correction                                                          | HDRS-H          | Bit Size                      |         |
| FOFFX                                                                                                                                                                                                                           | X Magnetometer Offset                                                            | GPIT-F          | 0                             | mT      |
| FOFFY                                                                                                                                                                                                                           | Y Magnetometer Offset                                                            | GPIT-F          | 0                             | mT      |
| FOFFZ                                                                                                                                                                                                                           | Z Magnetometer Offset                                                            | GPIT-F          | 0                             | mT      |
| FSAL                                                                                                                                                                                                                            | Formation Salinity                                                               | Borehole        | 0                             | ppm     |
| GCSE_DOWN_PASS                                                                                                                                                                                                                  | Generalized Caliper Selection for WL Log Down Passes                             | Borehole        | BS                            |         |
| GCSE_UP_PASS                                                                                                                                                                                                                    | Generalized Caliper Selection for WL Log Up Passes                               | Borehole        | CALI                          |         |
| GRSE                                                                                                                                                                                                                            | Generalized Mud Resistivity Selection, from Measured or Computed Mud Resistivity | Borehole        | AMF                           |         |
| GTSE                                                                                                                                                                                                                            | Generalized Temperature Selection, from Measured or Computed Temperature         | Borehole        | CTEM                          |         |
| HCRB                                                                                                                                                                                                                            | Apply Borehole Potassium Correction                                              | HNGS-BA         | None                          |         |
| HEMA                                                                                                                                                                                                                            | Hematite Presence Flag                                                           | Borehole        | No                            |         |
| HSCO                                                                                                                                                                                                                            | Hole Size Correction Option                                                      | HGNS-H          | Yes                           |         |
| ICMO                                                                                                                                                                                                                            | Inclinometry Computation Mode                                                    | GPIT-F          | Automatic Selection           |         |
| LOG_SPEED_RNG                                                                                                                                                                                                                   | Logging Speed Range                                                              | GPIT-F          | Normal (600 ft/h - 3600 ft/h) |         |
| MATR                                                                                                                                                                                                                            | Rock Matrix for Neutron Porosity Corrections                                     | Borehole        | LIMESTONE                     |         |
| MFST                                                                                                                                                                                                                            | Mud Filtrate Sample Temperature                                                  | Borehole        | 85                            | degF    |
| NPRM                                                                                                                                                                                                                            | HRDD Nuclear Processing Mode                                                     | HDRS-H          | Standard Resolution           |         |
| RMFS                                                                                                                                                                                                                            | Resistivity of Mud Filtrate Sample                                               | Borehole        | 0.12                          | ohm.m   |
| SGRC                                                                                                                                                                                                                            | Standard Gamma Ray Correction Flag                                               | HNGS-BA         | Yes                           |         |
| TD                                                                                                                                                                                                                              | Total Measured Depth                                                             | Borehole        | 5680                          | ft      |
| USER_LOCB                                                                                                                                                                                                                       | User-supplied values for Magnetic Flux Density                                   | WLSESSION       | 52426.19                      | nT      |

|           |                                               |           |       |     |
|-----------|-----------------------------------------------|-----------|-------|-----|
| USER_MDEC | User-supplied values for Magnetic Declination | WLSESSION | 10    | deg |
| USER_MDIP | User-supplied values for Magnetic Dip Angle   | WLSESSION | 66.53 | deg |

## Depth Zone Parameters

| Parameter | Value | Start ( ft ) | Stop ( ft ) |
|-----------|-------|--------------|-------------|
| BS        | 17.5  | 1195         | 1296        |
| BS        | 12.25 | 1296         | 5680        |

All depth are actual.

## Tool Control Parameters

| Parameter     | Description                      | Tool      | Value      | Unit |
|---------------|----------------------------------|-----------|------------|------|
| HMCA_BRD_TYPE | HMCA Board Type                  | HGNS-H    | 1          |      |
| HRGD_BRD_TYPE | HRGD Board Type                  | HDRS-H    | WITH_HET   |      |
| MAX_LOG_SPEED | Toolstring Maximum Logging Speed | WLSESSION | Time Zoned | ft/h |

## Time Zone Parameters

| Parameter     | Value | Start Time           | Stop Time            | Start Depth ( ft ) | Stop Depth ( ft ) |
|---------------|-------|----------------------|----------------------|--------------------|-------------------|
| MAX_LOG_SPEED | 1510  | 11-Sep-2014 18:55:18 | 11-Sep-2014 19:26:20 | 5681.24            | 5073.22           |
| MAX_LOG_SPEED | 1424  | 11-Sep-2014 19:26:20 | 11-Sep-2014 19:33:33 | 5073.22            | 4912.83           |
| MAX_LOG_SPEED | 1497  | 11-Sep-2014 19:33:33 | 11-Sep-2014 20:15:39 | 4912.83            | 3974.29           |
| MAX_LOG_SPEED | 1607  | 11-Sep-2014 20:15:39 | 11-Sep-2014 20:16:41 | 3974.29            | 3951.4            |
| MAX_LOG_SPEED | 1482  | 11-Sep-2014 20:16:41 | 11-Sep-2014 20:19:46 | 3951.4             | 3882.42           |
| MAX_LOG_SPEED | 1557  | 11-Sep-2014 20:19:46 | 11-Sep-2014 20:29:01 | 3882.42            | 3674.98           |
| MAX_LOG_SPEED | 1477  | 11-Sep-2014 20:29:01 | 11-Sep-2014 20:33:09 | 3674.98            | 3582.47           |
| MAX_LOG_SPEED | 1555  | 11-Sep-2014 20:33:09 | 11-Sep-2014 20:40:21 | 3582.47            | 3420.78           |
| MAX_LOG_SPEED | 1453  | 11-Sep-2014 20:40:21 | 11-Sep-2014 20:47:33 | 3420.78            | 3257.57           |
| MAX_LOG_SPEED | 1535  | 11-Sep-2014 20:47:33 | 11-Sep-2014 21:04:58 | 3257.57            | 2844.12           |
| MAX_LOG_SPEED | 1628  | 11-Sep-2014 21:04:58 | 11-Sep-2014 21:06:00 | 2844.12            | 2818.63           |
| MAX_LOG_SPEED | 1532  | 11-Sep-2014 21:06:00 | 11-Sep-2014 21:09:05 | 2818.63            | 2741.13           |
| MAX_LOG_SPEED | 1628  | 11-Sep-2014 21:09:05 | 11-Sep-2014 21:25:29 | 2741.13            | 2333.69           |
| MAX_LOG_SPEED | 1732  | 11-Sep-2014 21:25:29 | 11-Sep-2014 21:28:34 | 2333.69            | 2256.68           |
| MAX_LOG_SPEED | 1635  | 11-Sep-2014 21:28:34 | 11-Sep-2014 21:31:39 | 2256.68            | 2179.52           |
| MAX_LOG_SPEED | 1724  | 11-Sep-2014 21:31:39 | 11-Sep-2014 22:16:41 | 2179.52            | 1389.73           |
| MAX_LOG_SPEED | 1582  | 11-Sep-2014 22:16:41 | 11-Sep-2014 22:26:12 | 1389.73            | 1028.67           |

All depth are at tool zero.

## One

## 5" 3600 ft/hr

## Software Version

| Acquisition System | Version                                        |
|--------------------|------------------------------------------------|
| MaxWell            | 4.0.9163.3000                                  |
| Application Patch  | Patch-SP-10767_18214-4.0.9163.3001             |
|                    | Patch-Hotfix_AIT_Akima_SP2-22990-4.0.9434.3002 |

| Computation     | Description                                                         | Version       |
|-----------------|---------------------------------------------------------------------|---------------|
| Borehole        | Borehole Ensemble provides common Borehole Parameters and Channels  | 4.0.9433.3000 |
| HENVIR          | Computation Ensemble for the HGNS Neutron environmental corrections | 4.0.9360.3000 |
| DepthCorrection | DepthCorrection                                                     | 4.0.9433.3000 |

| Tool Elements | Description | Software Version | Firmware Version |
|---------------|-------------|------------------|------------------|
|---------------|-------------|------------------|------------------|

|         |                                                     |               |     |
|---------|-----------------------------------------------------|---------------|-----|
| HRCC-H  | HILT High-Resolution Control Cartridge, 150 degC    | 4.0.9385.3000 | 2.0 |
| AZIS    | Array Induction Sonde - Z                           | 4.0.9427.3000 |     |
| HGNS-H  | HILT Gamma-Ray and Neutron Sonde, 150 degC          | 4.0.9385.3000 | 2.0 |
| HRGD-H  | HILT Resistivity Gamma-Ray Density Device, 150 degC | 4.0.9385.3000 | 3.0 |
| HNGS-BA | HNGS Sonde Element                                  | 4.0.9360.3000 | 2.0 |
| EDTC-B  | Enhanced Digital Telemetry Cartridge - B            | 4.0.9433.3000 |     |

Pass Summary

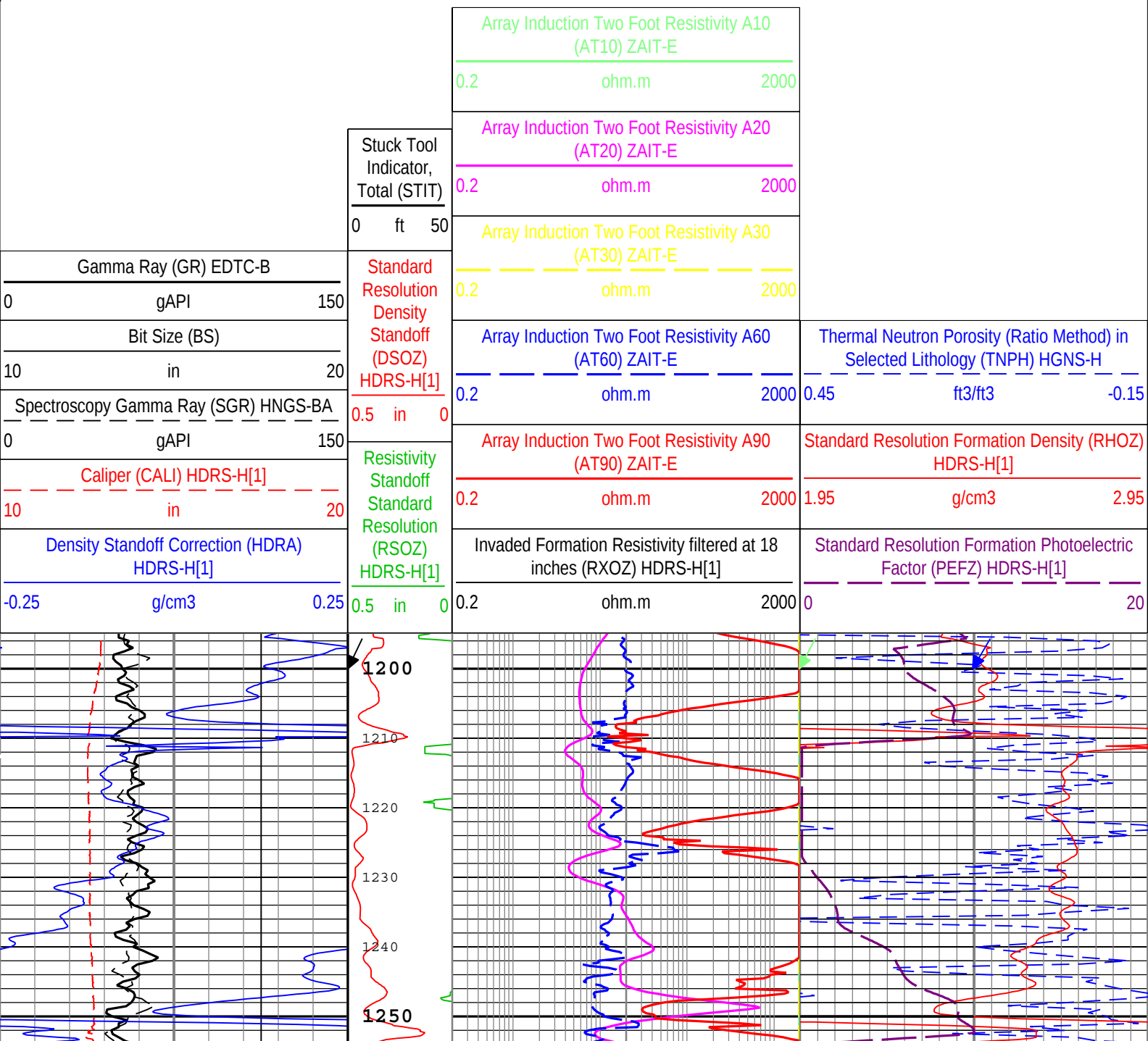
| Run Name | Pass Objective | Direction | Top       | Bottom     | Start                   | Stop                    | DSC Mode | Depth Shift | Include Parallel Data |
|----------|----------------|-----------|-----------|------------|-------------------------|-------------------------|----------|-------------|-----------------------|
| One      | Log[4]:Up      | Up        | 590.28 ft | 5695.80 ft | 11-Sep-2014 11:00:13 PM | 12-Sep-2014 12:27:58 AM | OFF      | 1.50 ft     | No                    |

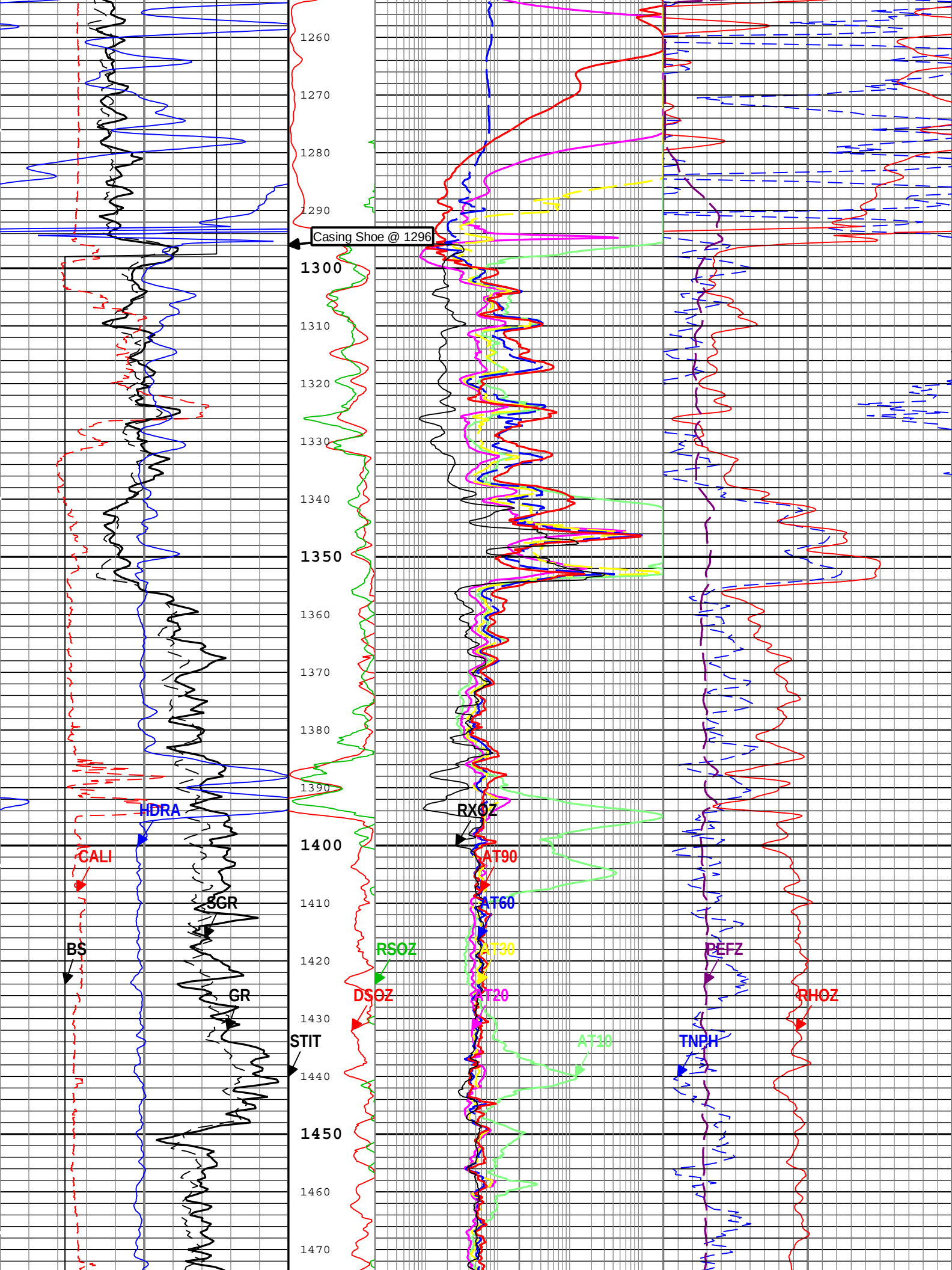
All depths are referenced to toolstring zero

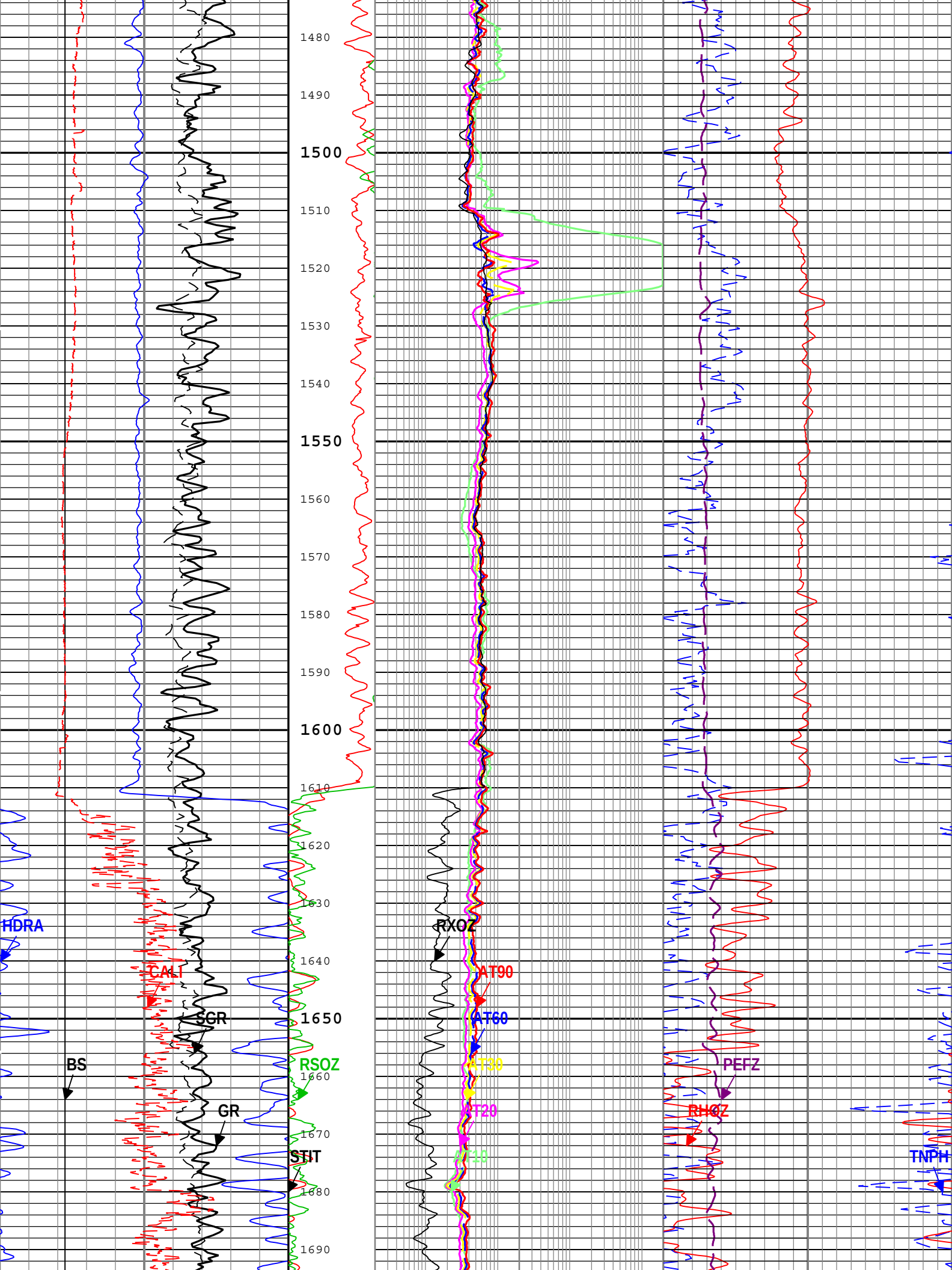
Log

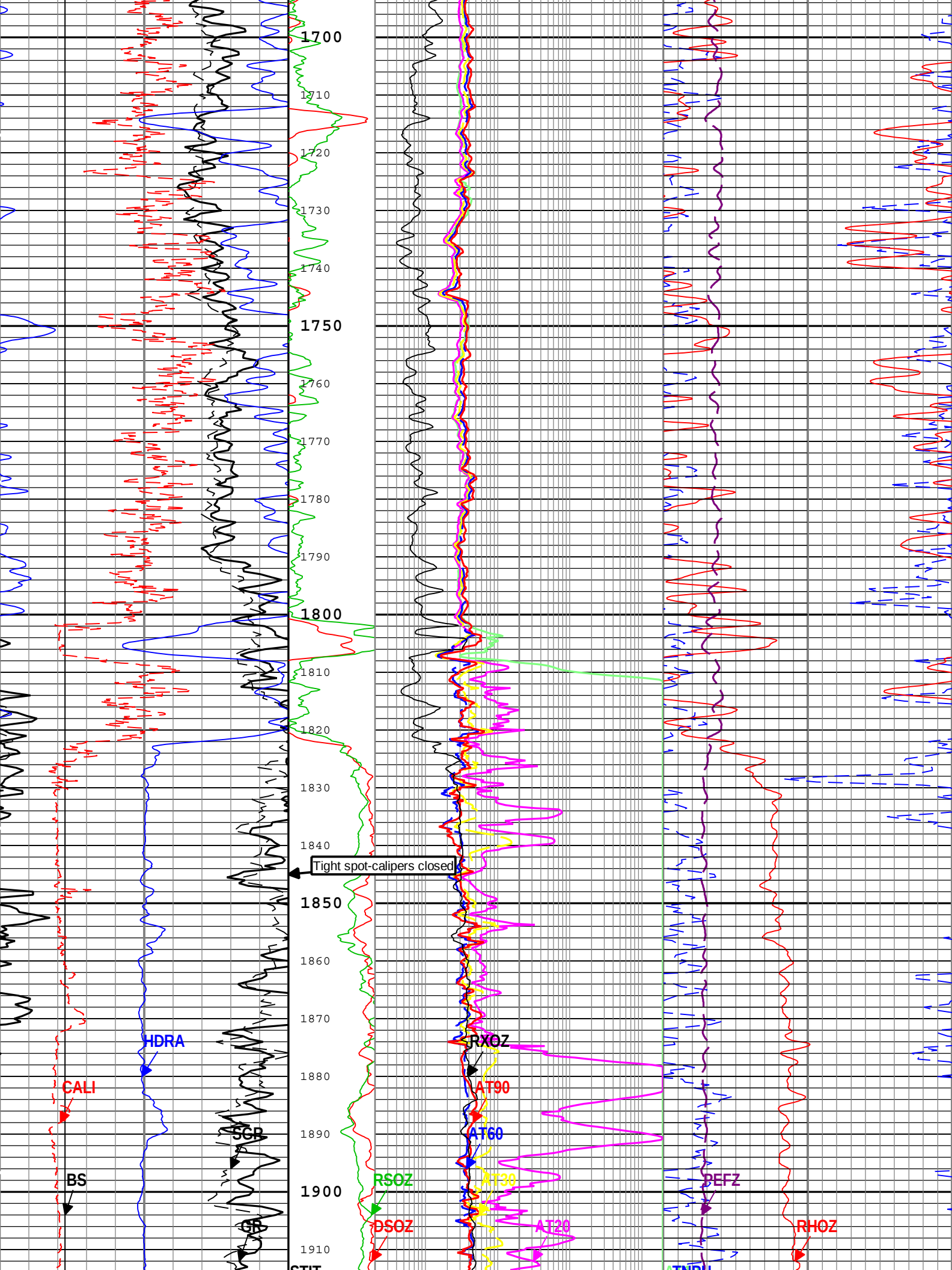
Company:Southwestern Energy Production Company      Well:Diamond T Sheep 7-92 1-26  
One: Log[4]:Up:S011

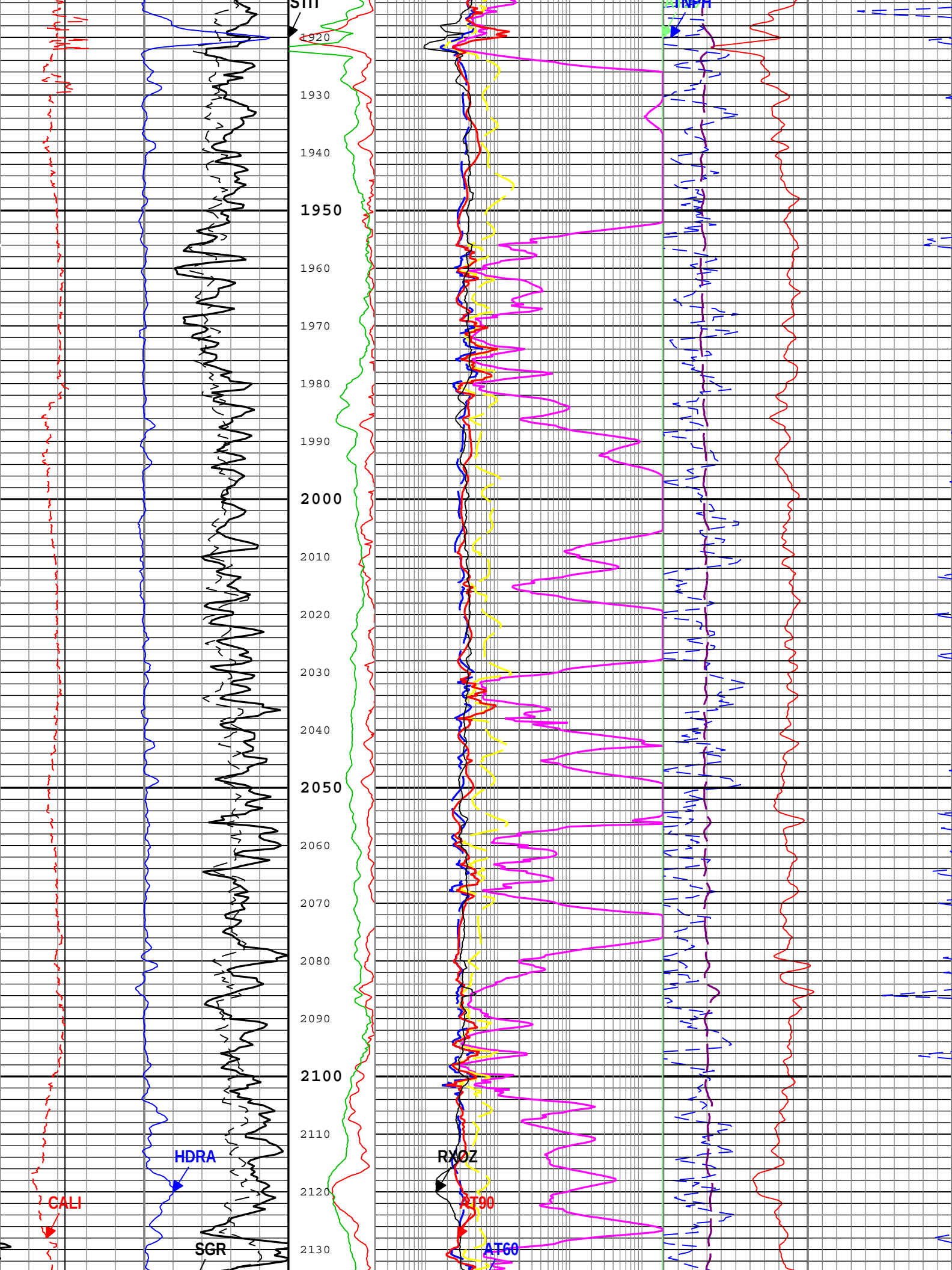
Description: HGNS standard resolution porosities for Platform Express    Format: Log ( 5inMainSpecial1 )    Index Scale: 5 in per 100 ft    Index Unit: ft    Index Type: Measured Depth    Creation Date: 12-Sep-2014 00:40:19  
TIME\_1900 - Time Marked every 60.00 (s)

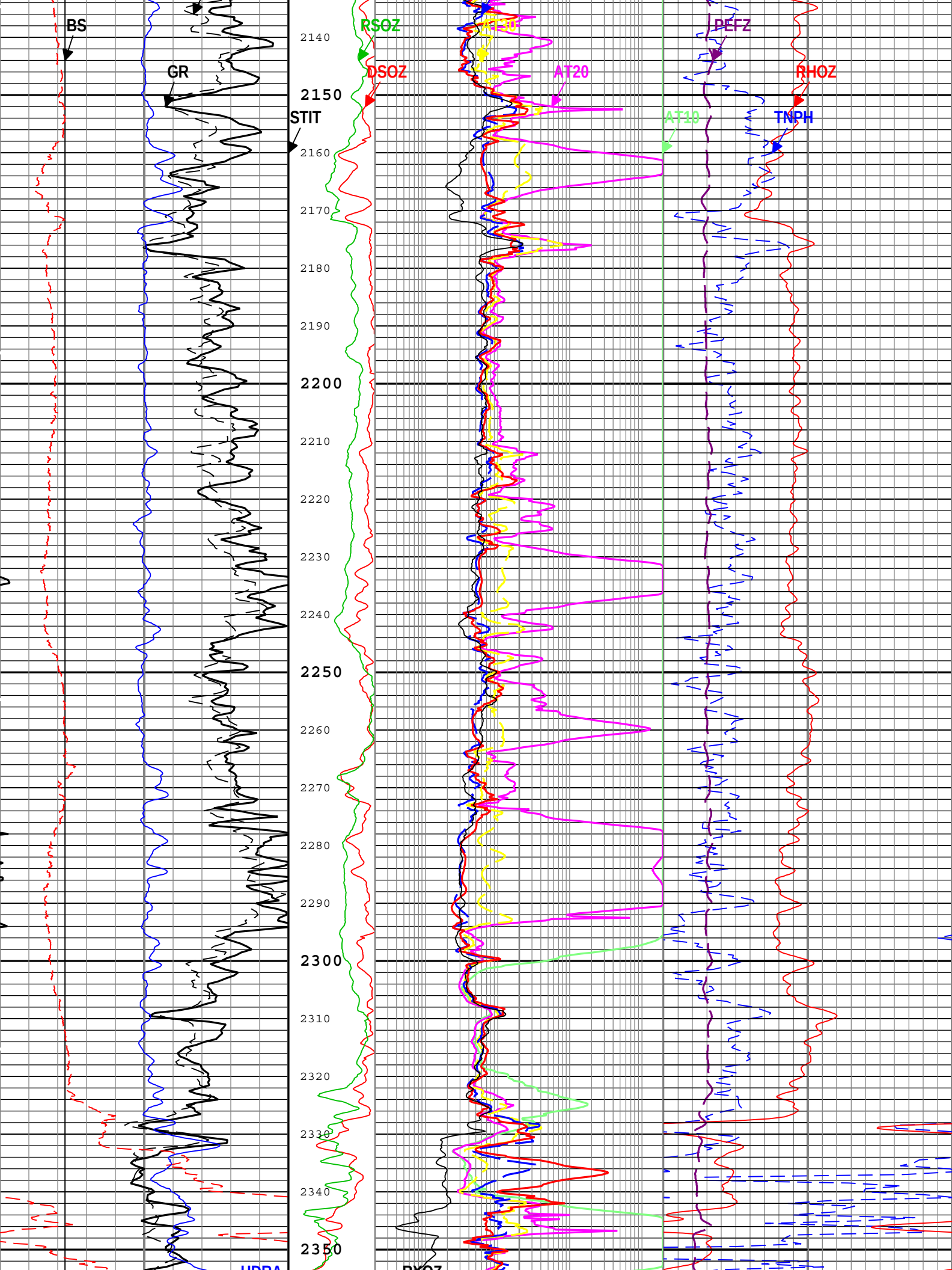


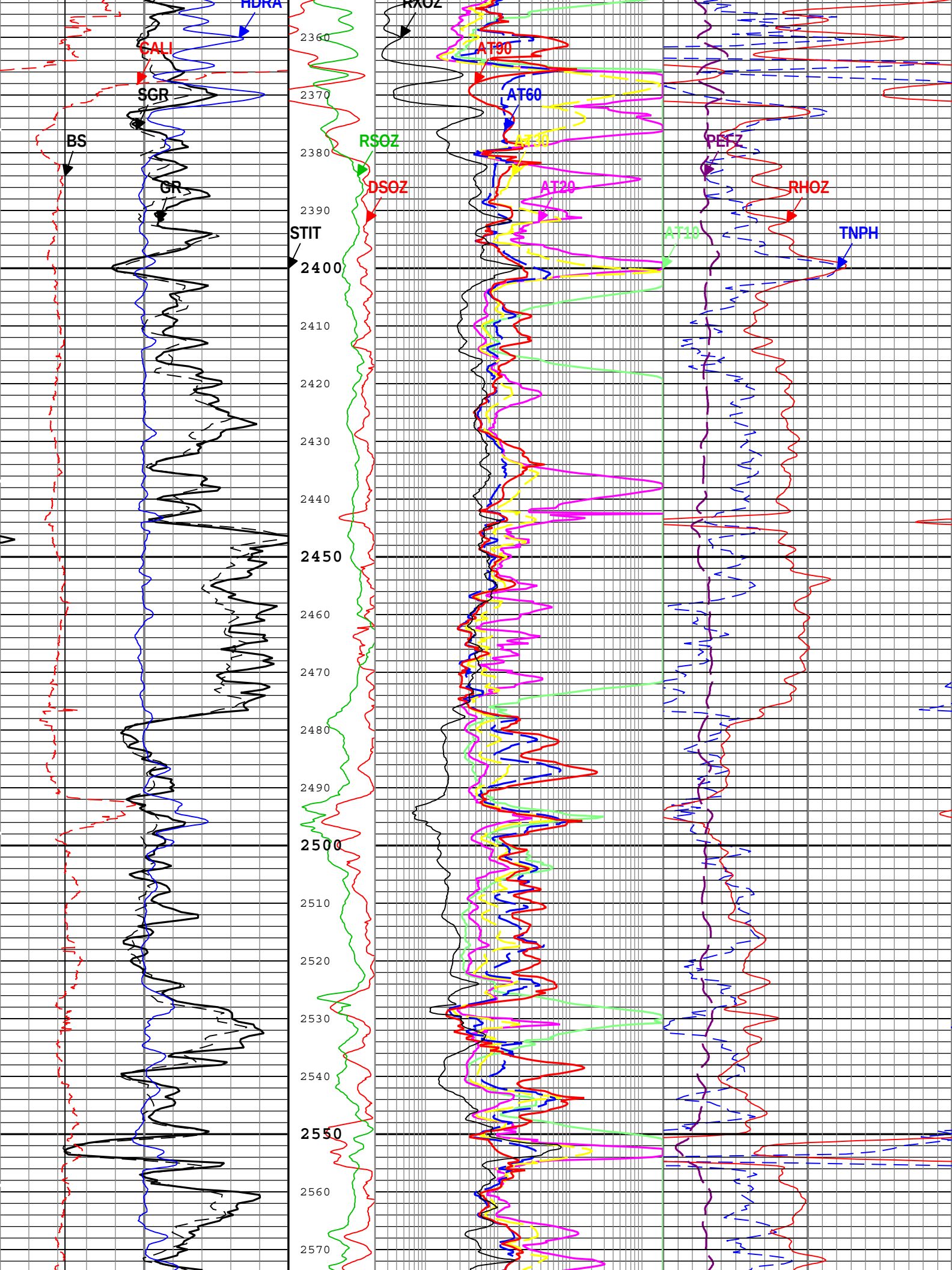


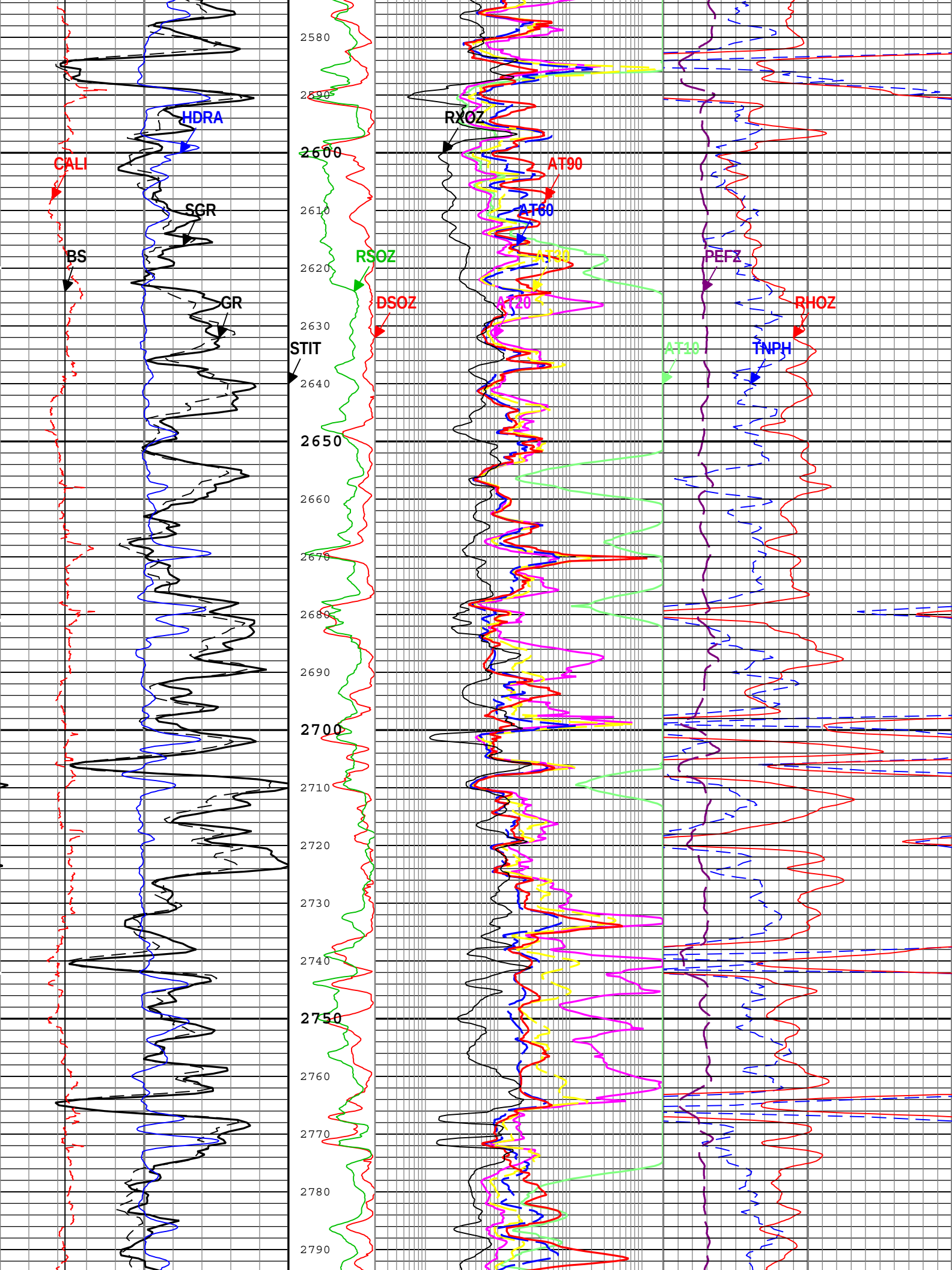


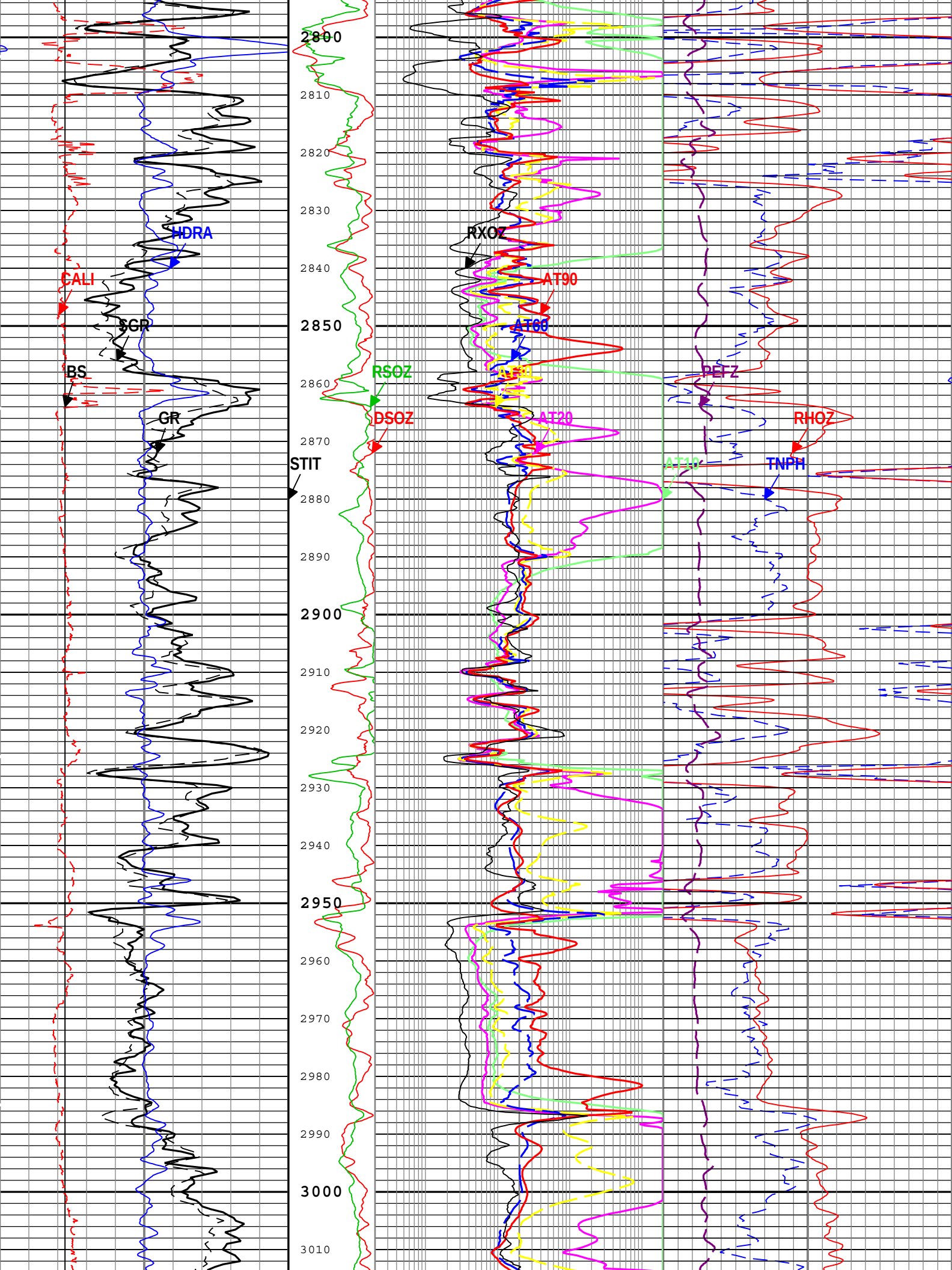


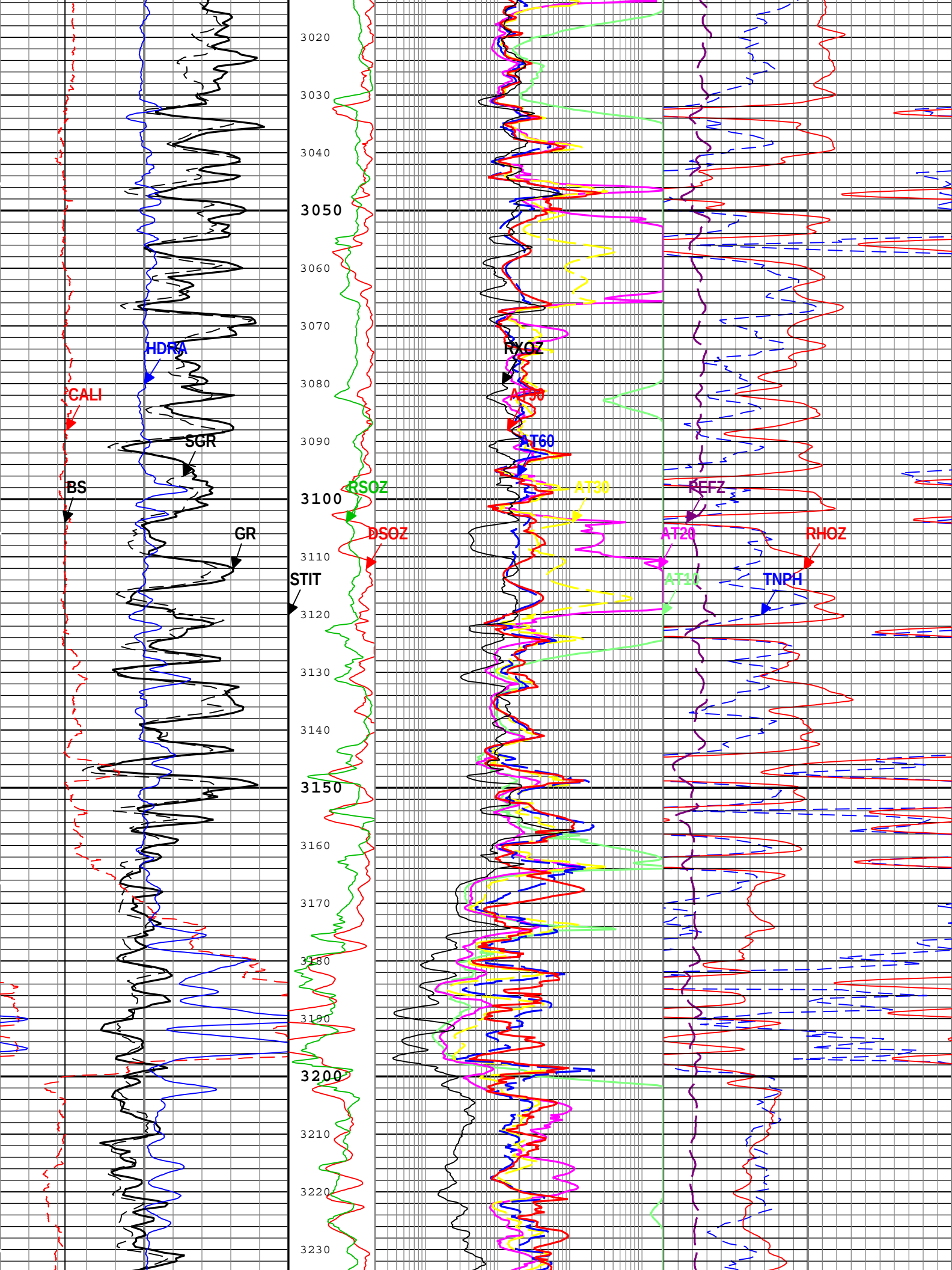


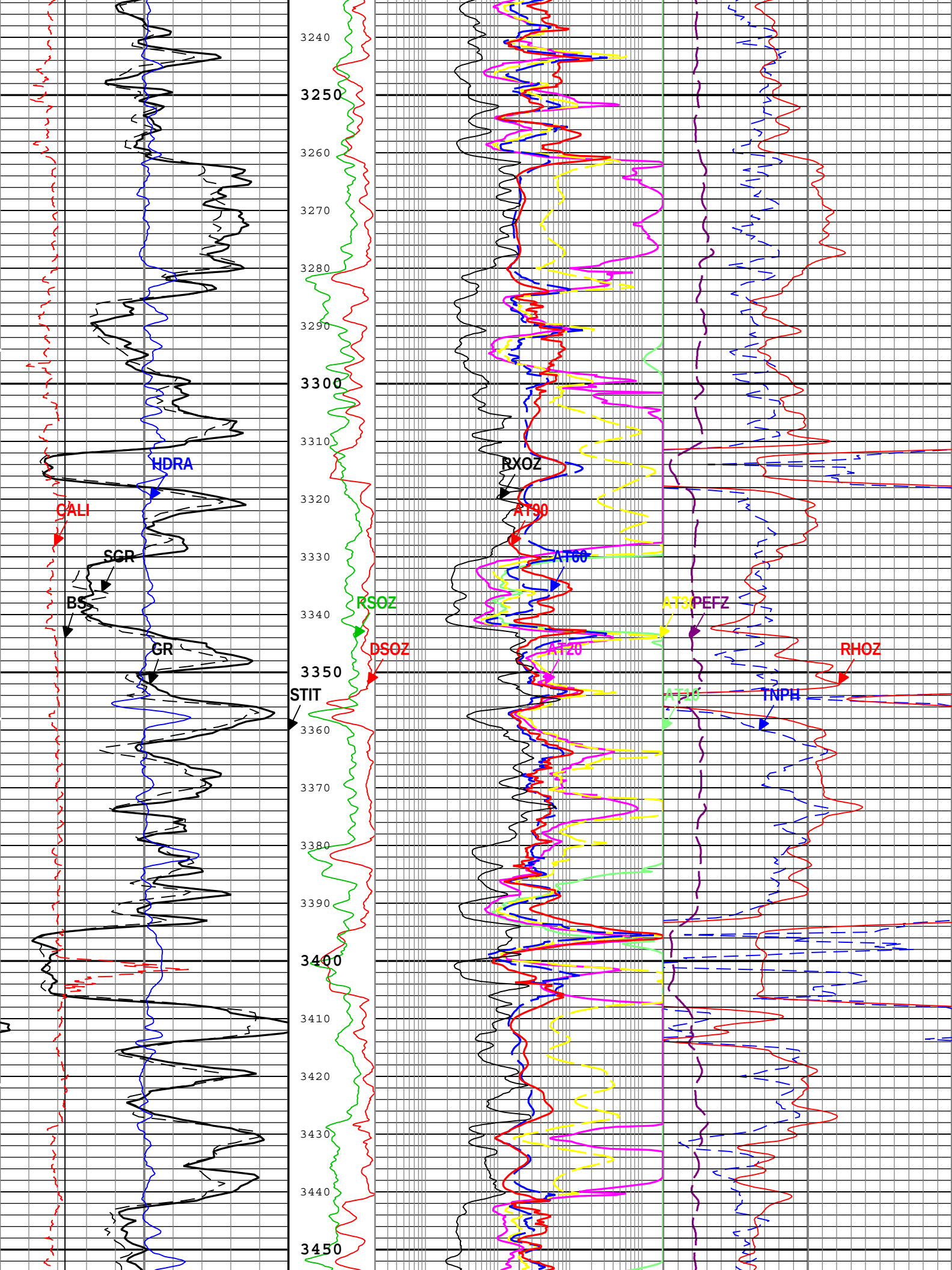


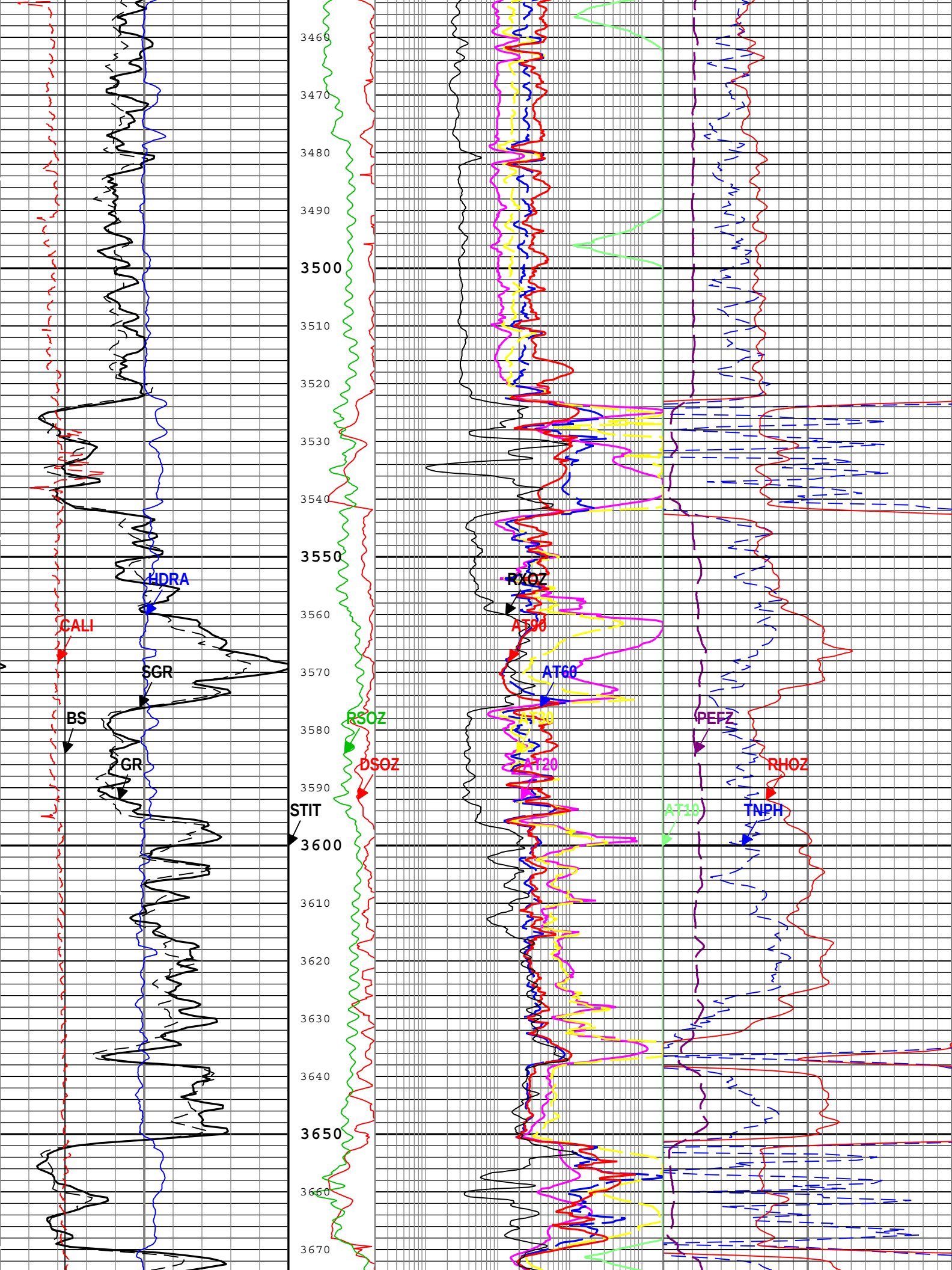


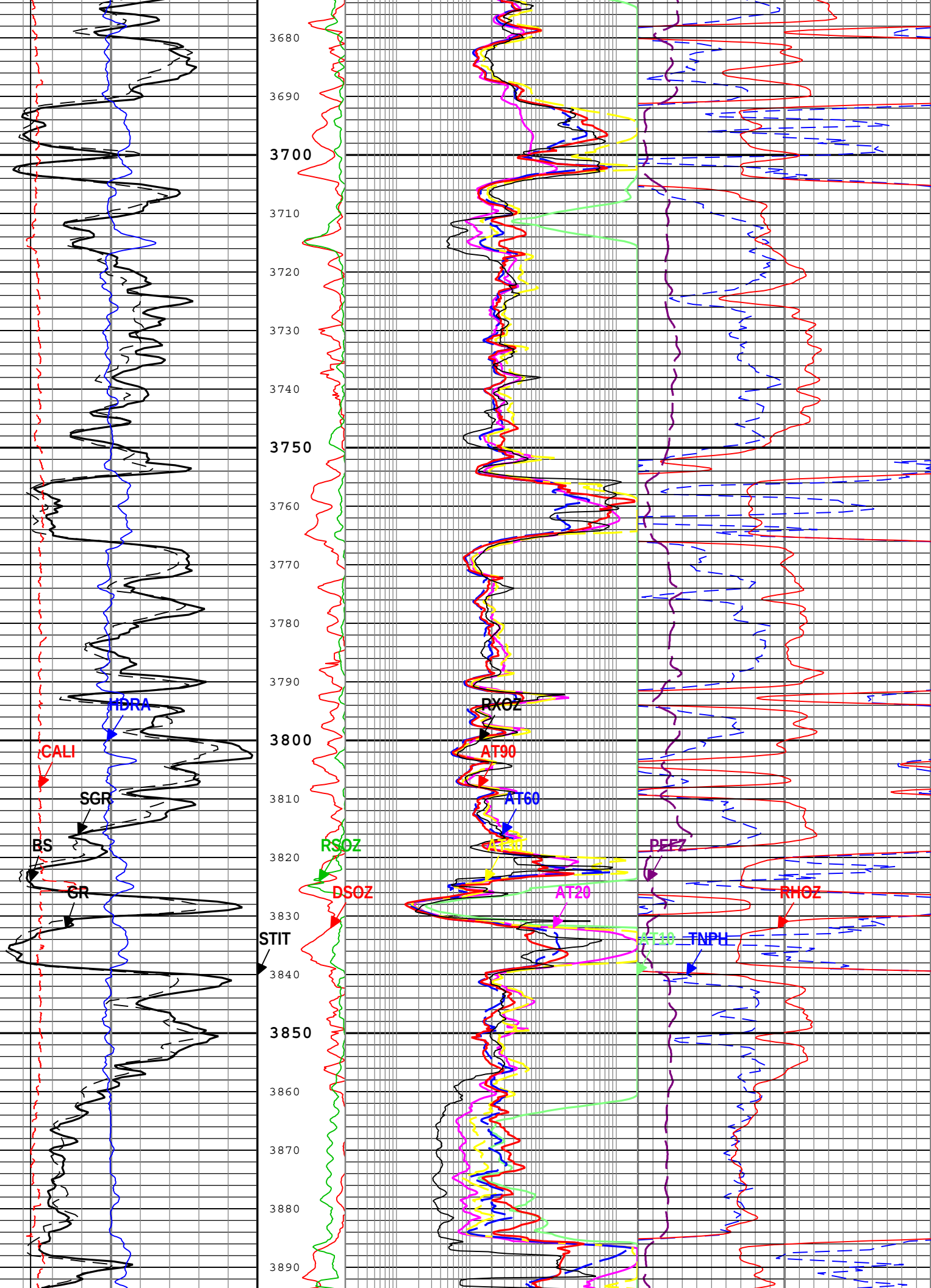


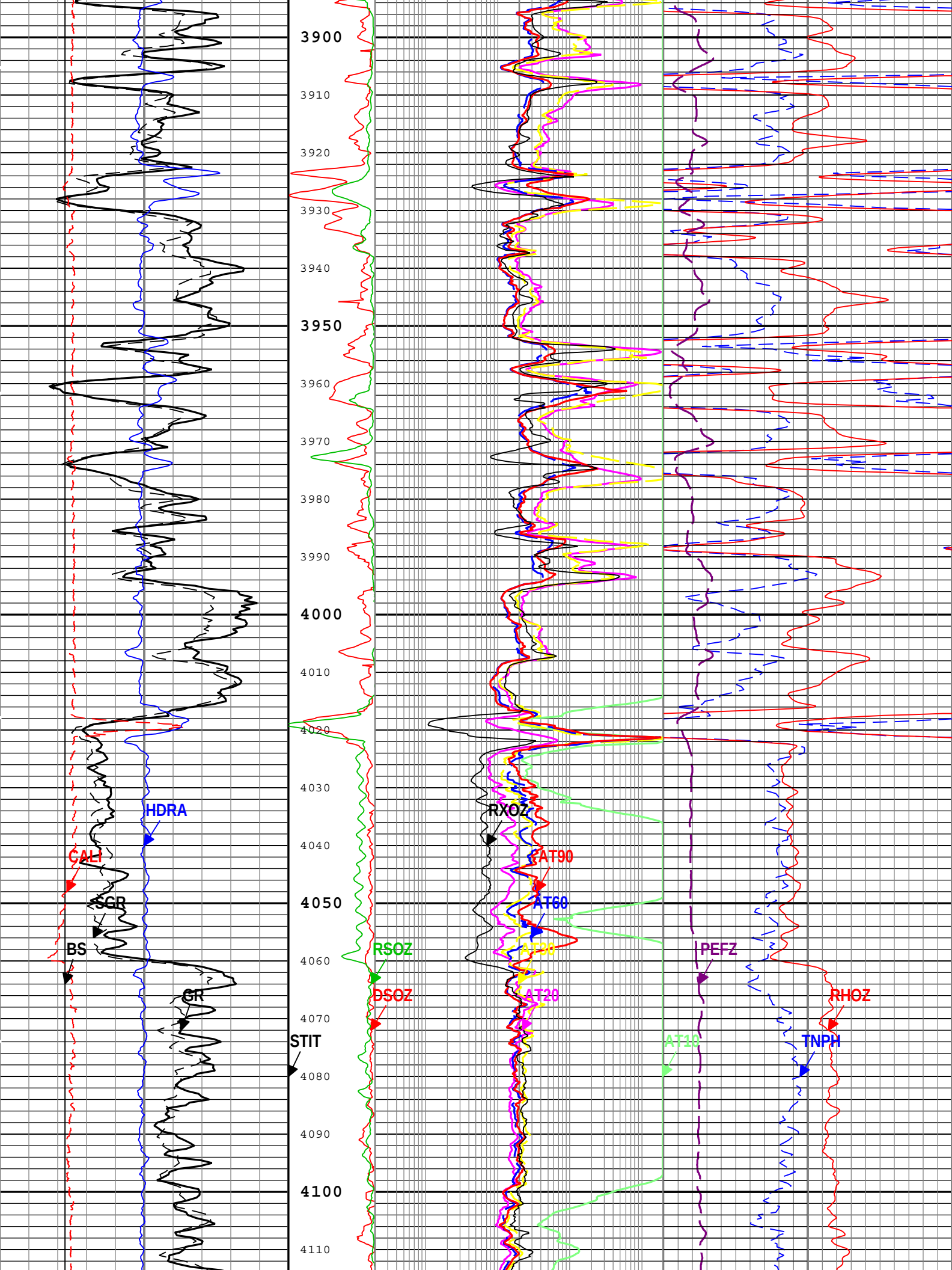


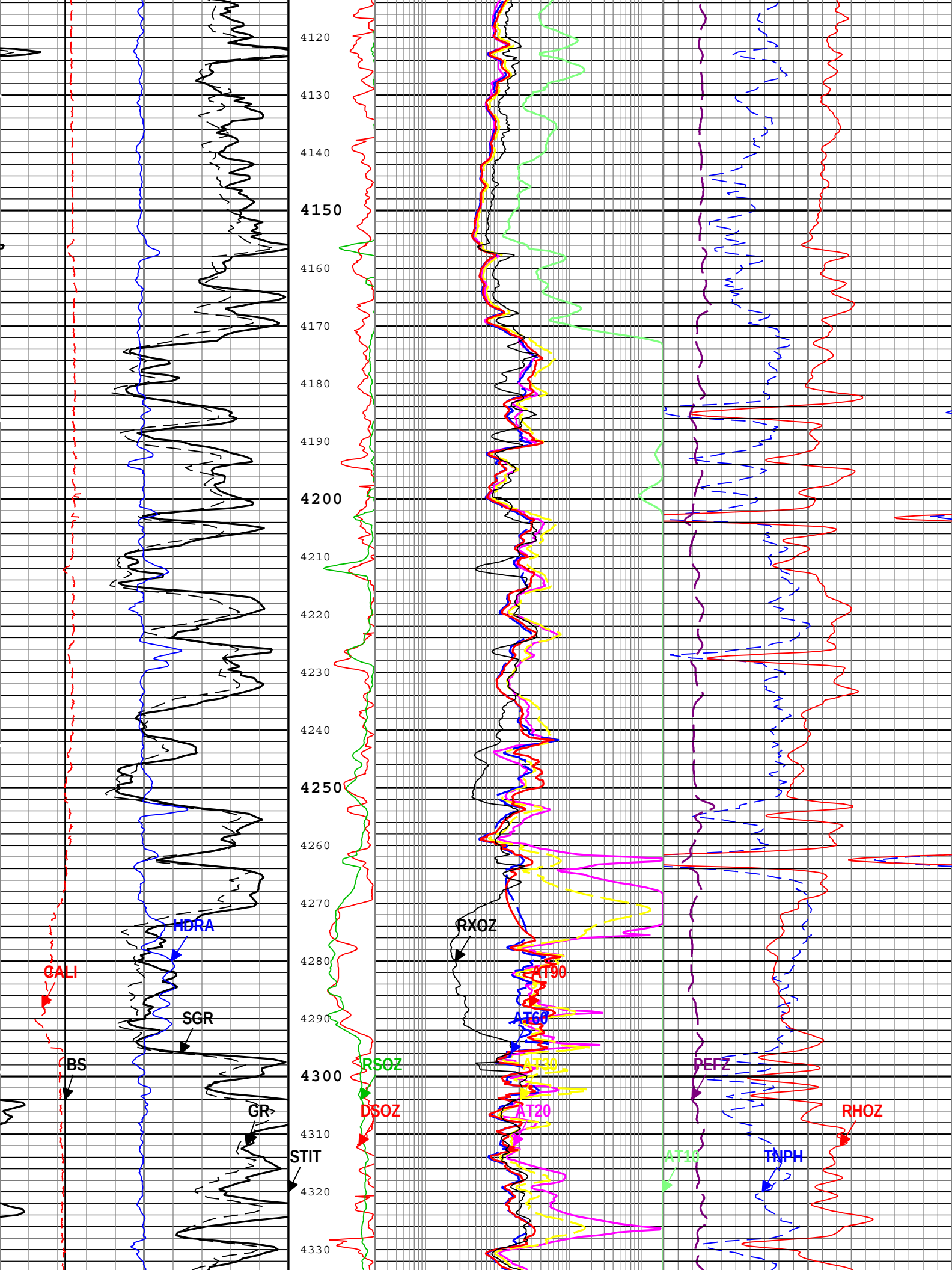


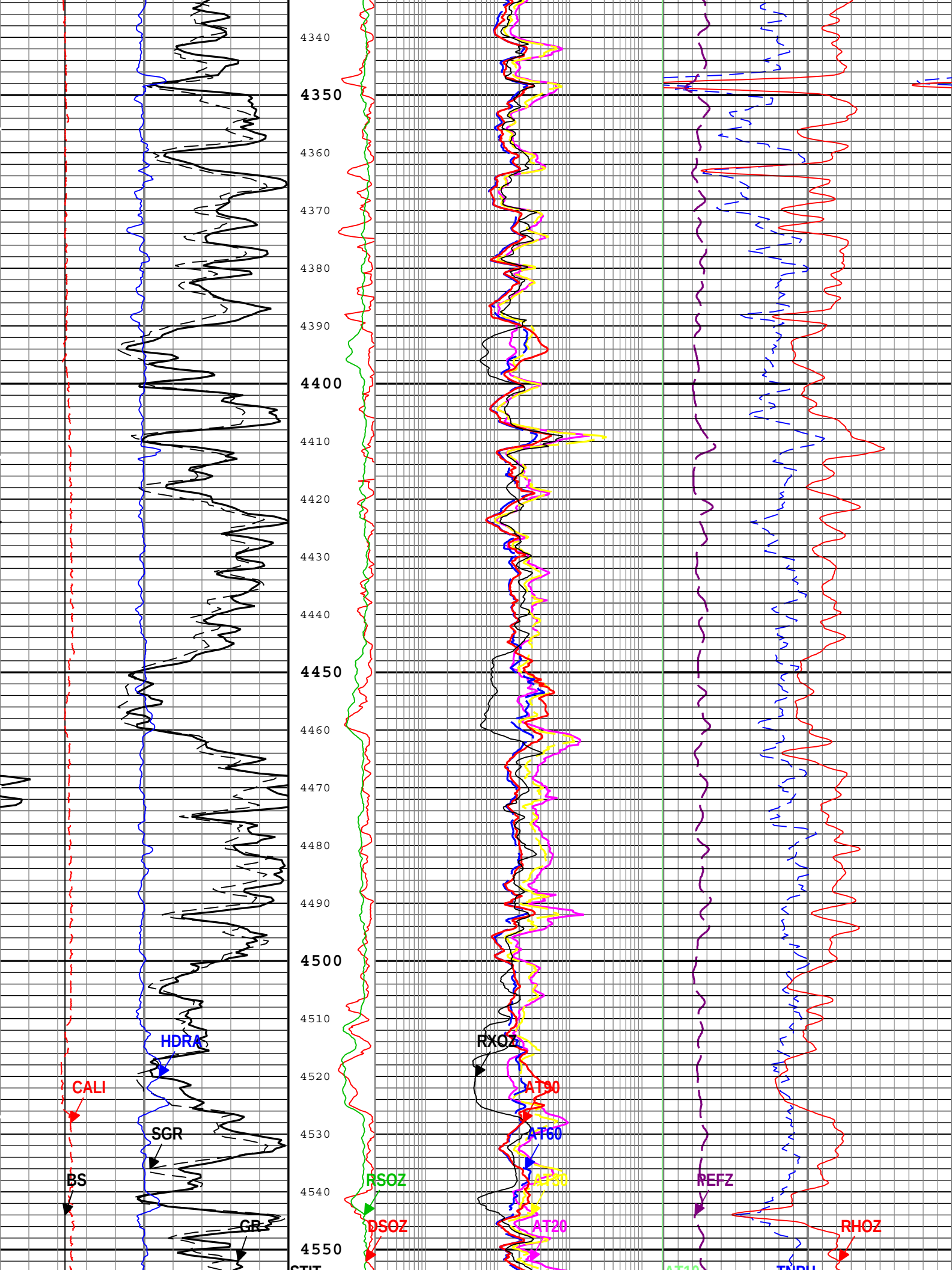


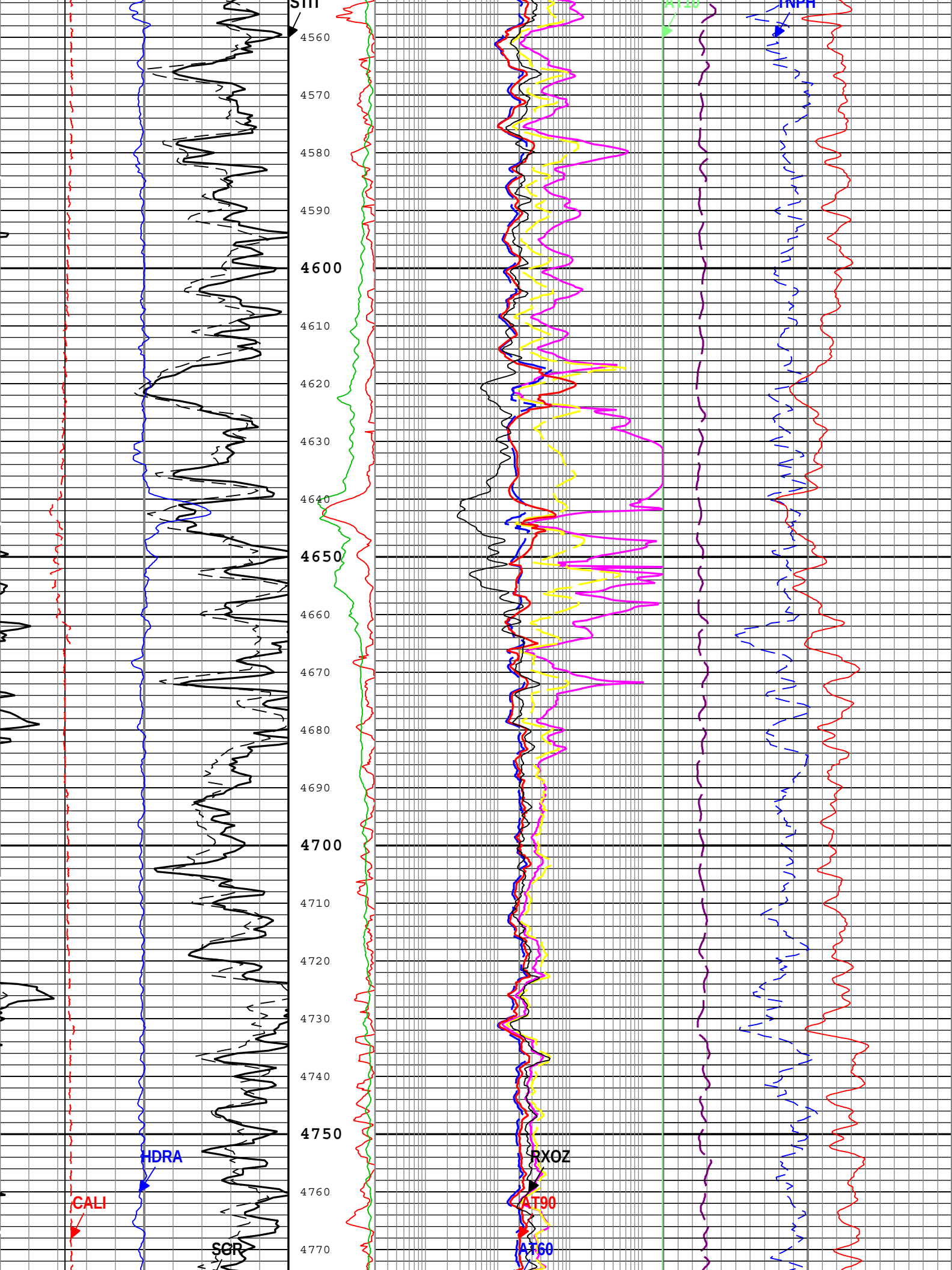


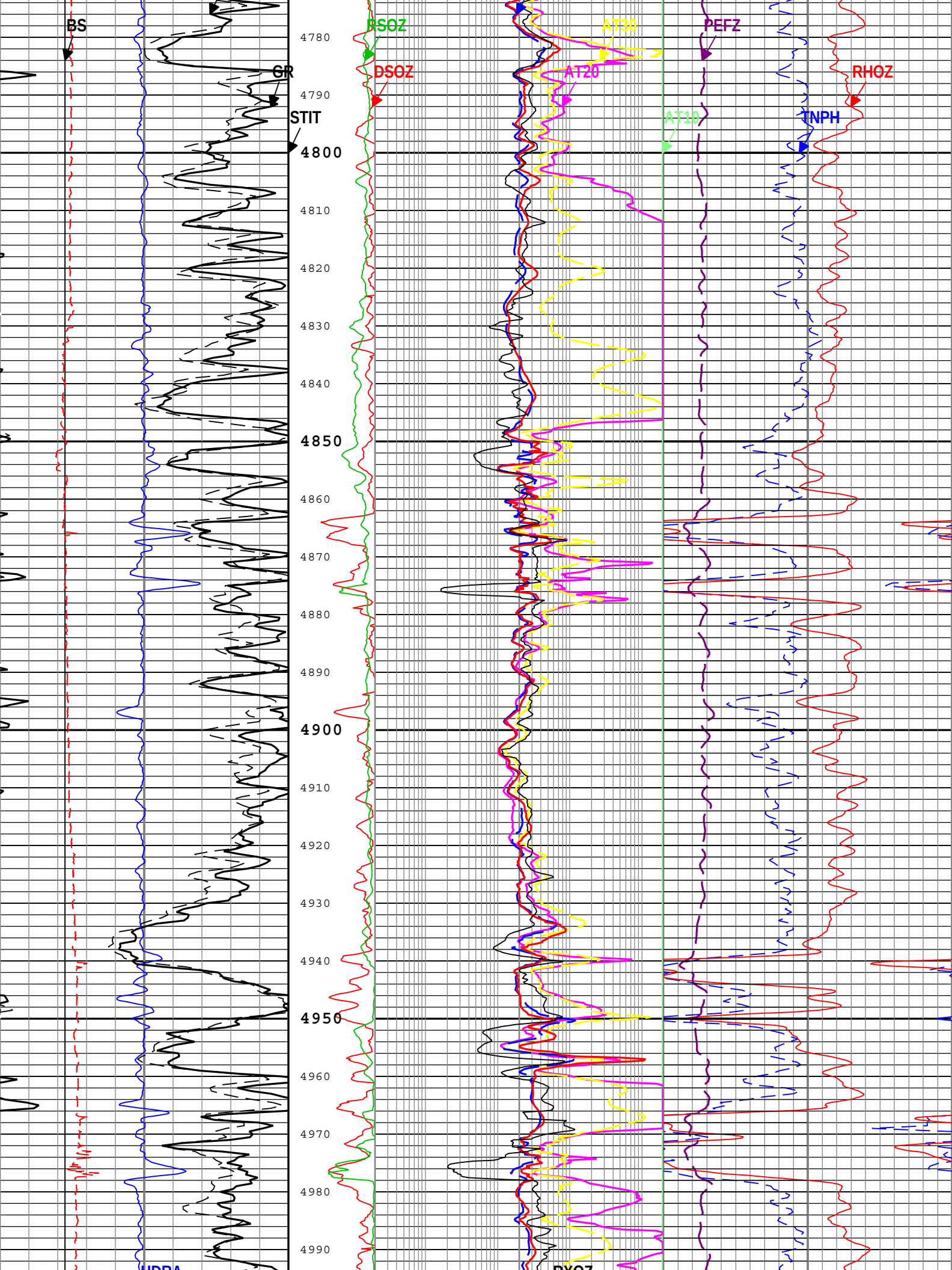


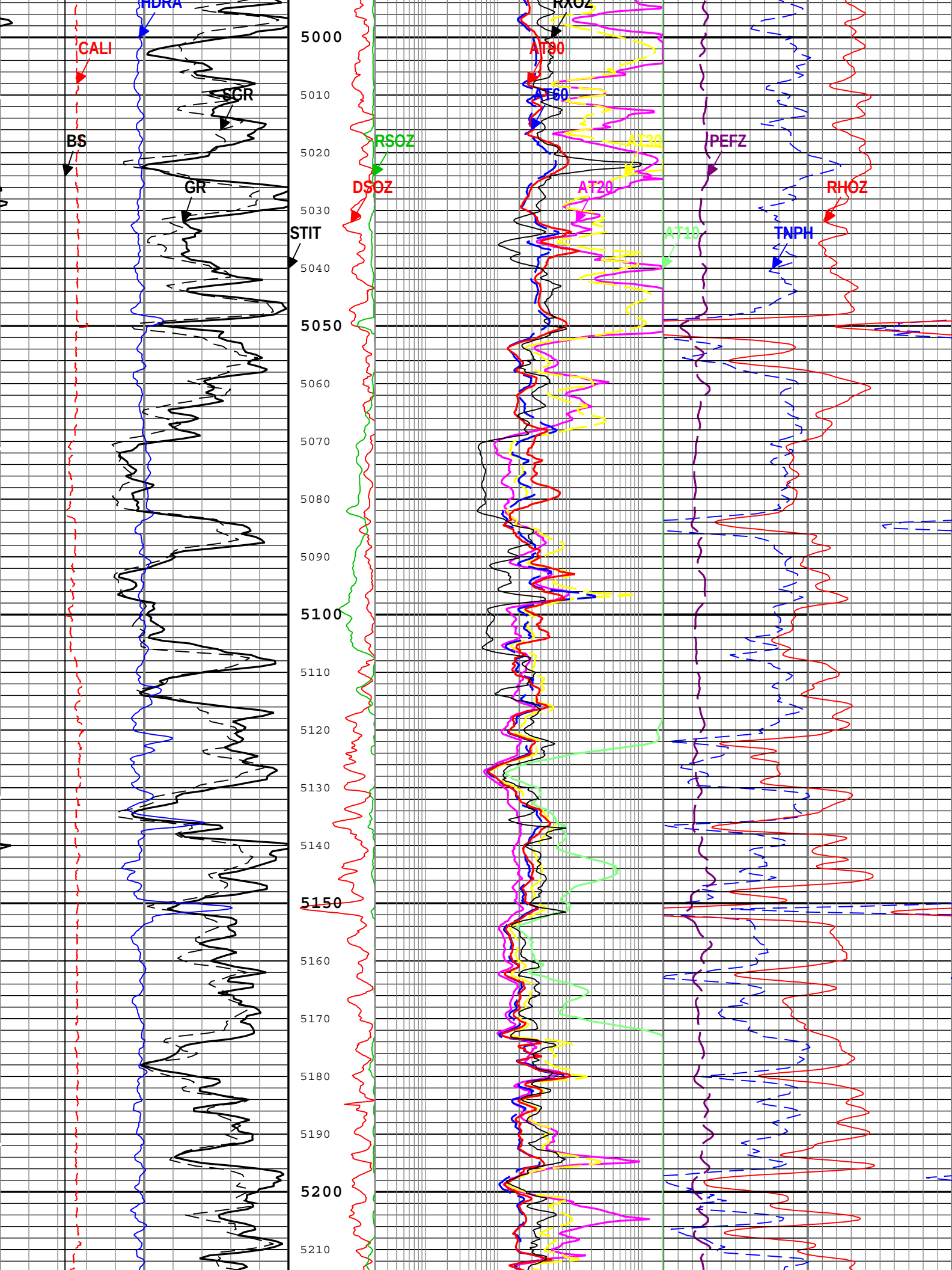


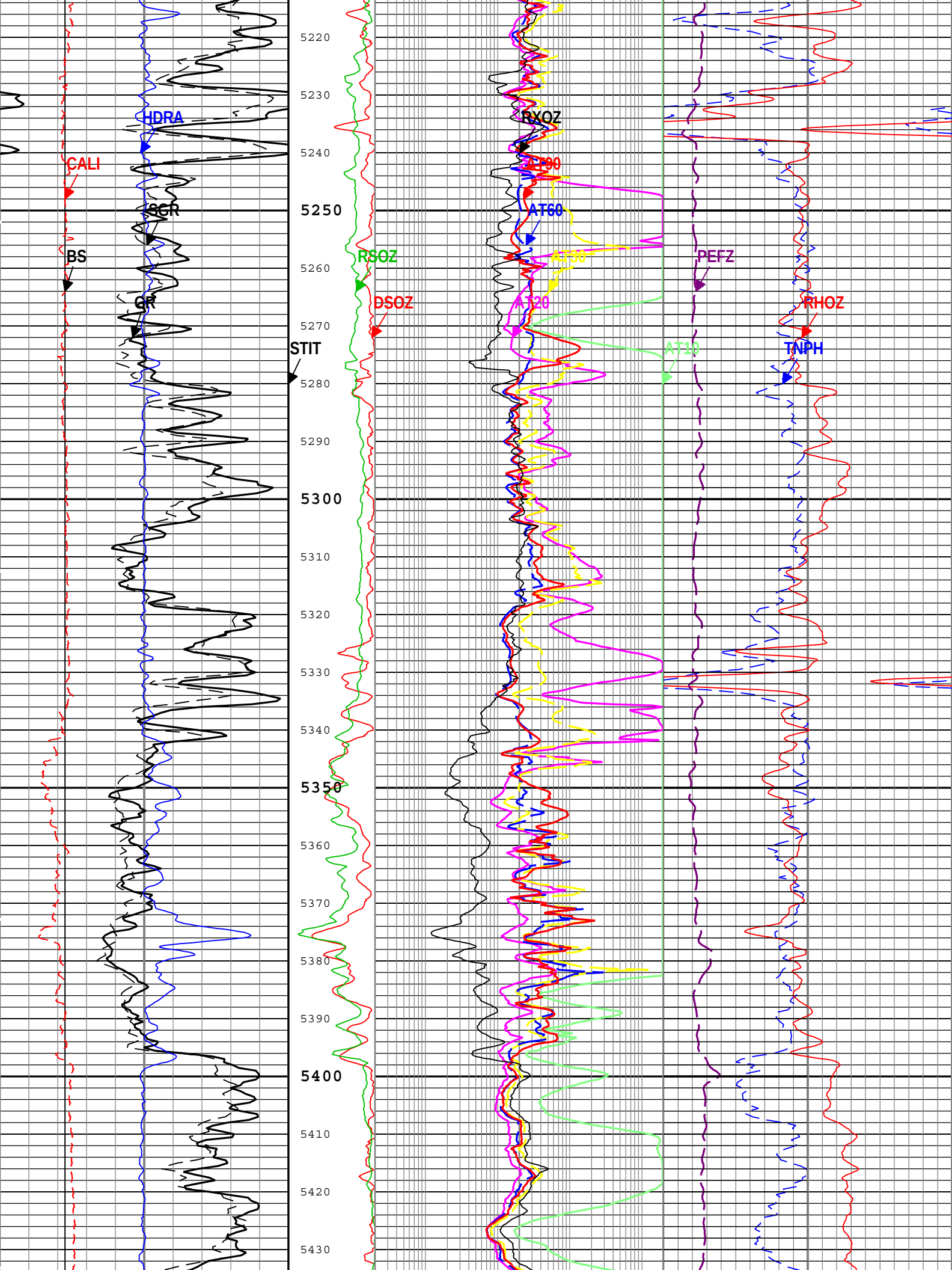


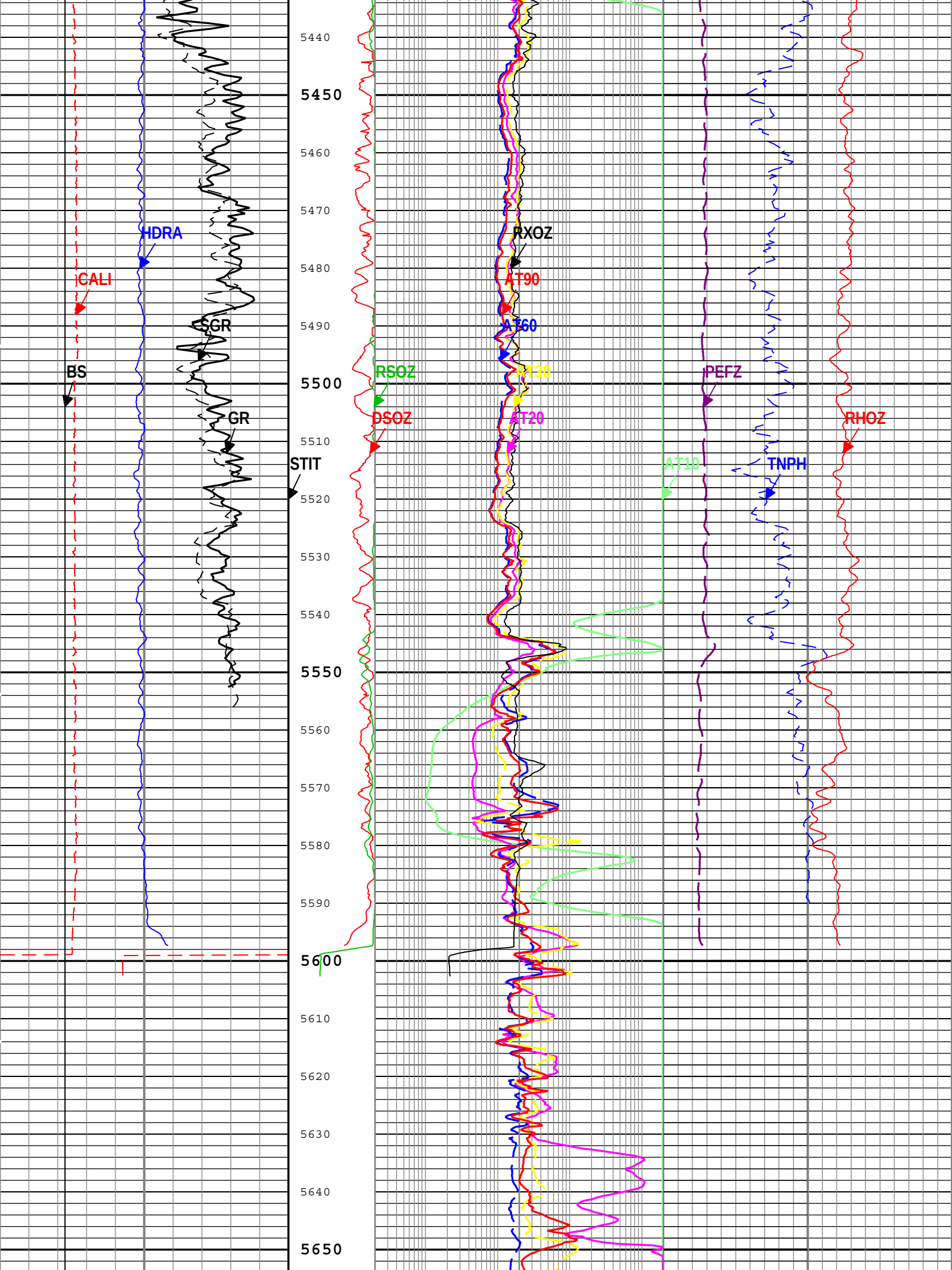


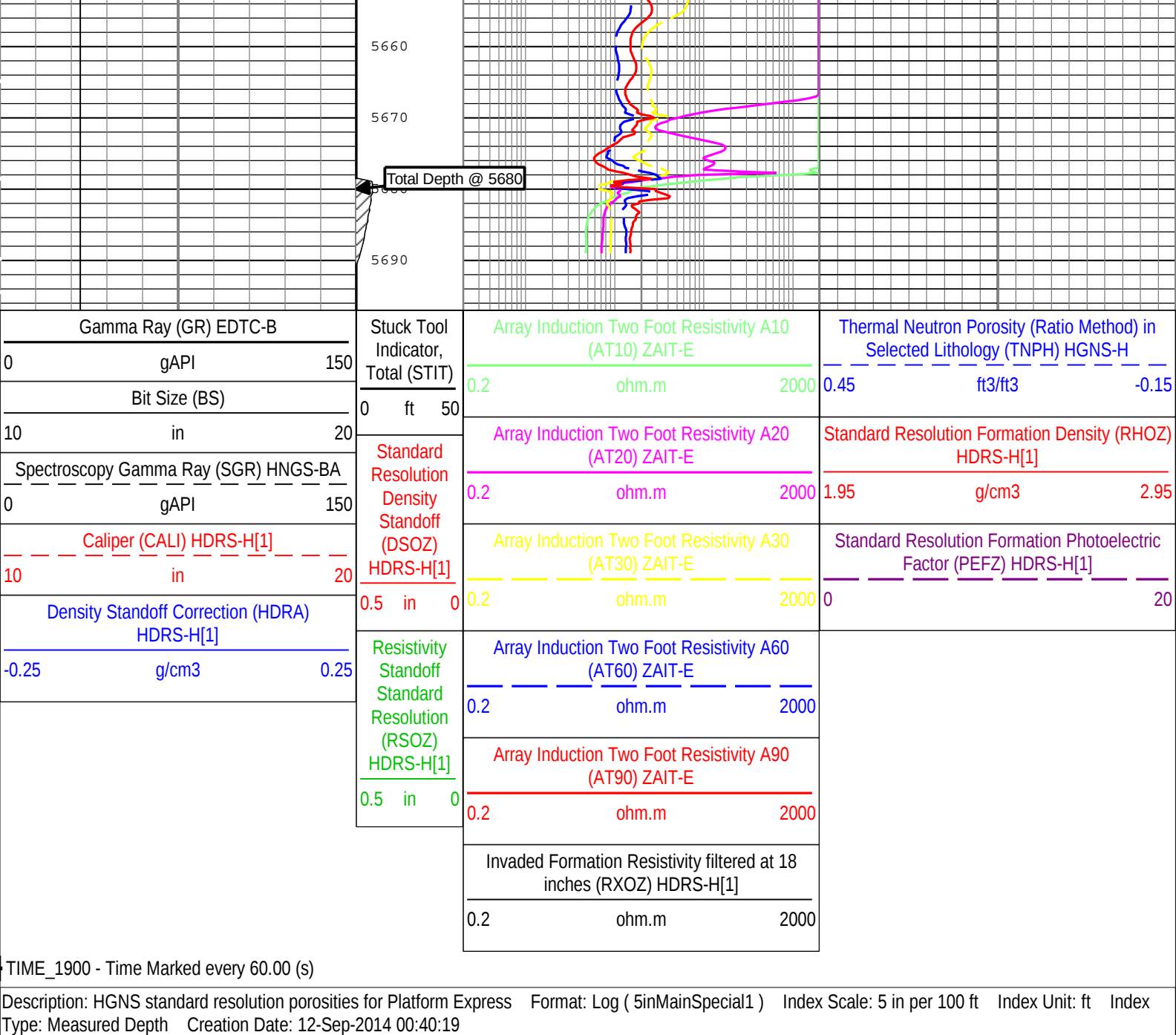












| Calibration Report                                                         |      |                      |             |           |          |            |  |
|----------------------------------------------------------------------------|------|----------------------|-------------|-----------|----------|------------|--|
| PPC-B[1] (Powered Positioning device and Caliper.) Calibration - Run One   |      |                      |             |           |          |            |  |
| Primary Equipment :                                                        |      |                      |             |           |          |            |  |
| PPC-B Element is used for usual logging at wellsite and check/diagnostics. |      |                      | PPC-B       |           | 8007     |            |  |
| Auxiliary Equipment :                                                      |      |                      |             |           |          |            |  |
| PPC-B Element is used for usual logging at wellsite and check/diagnostics. |      |                      | PPC-B       |           | 8007     |            |  |
| Calibration Parameter :                                                    |      |                      |             |           |          |            |  |
| ZERO_REF                                                                   |      |                      |             |           |          |            |  |
| PLUS_REF                                                                   |      |                      |             |           |          |            |  |
| Equipment Properties :                                                     |      |                      |             |           |          |            |  |
| Caliper Arm Equipment Type for PPC                                         |      |                      | PPC_CAL_STD |           |          |            |  |
| PPC Check - Downhole Electronics Test                                      |      |                      |             |           |          |            |  |
| Before (Measured):                                                         |      | 19:40:55 10-Sep-2014 |             |           |          |            |  |
| Measurement                                                                | Unit | Phase                | Nominal     | Low Limit | Actual   | High Limit |  |
| Positive Analog Voltage                                                    | V    | Before               |             | 7         | 8.70645  | 9          |  |
| Minus Analog Voltage                                                       | V    | Before               |             | -9        | -8.75156 | -7         |  |
| Digital Voltage                                                            | V    | Before               |             | 3.15      | 3.37769  | 3.45       |  |
| Digital Voltage                                                            | V    | Before               |             | 4.5       | 5.00000  | 5.5        |  |

|                                                |   |        |     |          |        |     |  |
|------------------------------------------------|---|--------|-----|----------|--------|-----|--|
| Digital Voltage for Analog Digital Converter   | V | Before | 4.5 | 5.5      | 5.0291 | 5.5 |  |
| Status Word of Analog Digital Converter Offset |   | Before | -8  | 0.666667 | 8      |     |  |

## PPC Check - Cartridge Temperature Test

| Before (Measured): 19:40:55 10-Sep-2014 |      |        |         |           |         |            |  |
|-----------------------------------------|------|--------|---------|-----------|---------|------------|--|
| Measurement                             | Unit | Phase  | Nominal | Low Limit | Actual  | High Limit |  |
| Cartridge Temperature                   | degF | Before |         | -58       | 69.8954 | 482        |  |

## PPC Check - Power Control LVDT Test

| Before (Measured): 19:40:55 10-Sep-2014 |      |        |         |           |          |            |  |
|-----------------------------------------|------|--------|---------|-----------|----------|------------|--|
| Measurement                             | Unit | Phase  | Nominal | Low Limit | Actual   | High Limit |  |
| LVDT5 Caliper Open Position             | in   | Before |         |           | -1.23169 |            |  |
| LVDT5 Full Power Position               | in   | Before |         |           | 1.50439  |            |  |

## PPC Diagnostics - Arm Close Position Test

| Master:                       |      |        |         |           |        |            |  |
|-------------------------------|------|--------|---------|-----------|--------|------------|--|
| Measurement                   | Unit | Phase  | Nominal | Low Limit | Actual | High Limit |  |
| Caliper-arm 1, radius raw - 0 | in   | Master | ----    | ----      | ----   | ----       |  |
| Caliper-arm 2, radius raw - 0 | in   | Master | ----    | ----      | ----   | ----       |  |
| Caliper-arm 3, radius raw - 0 | in   | Master | ----    | ----      | ----   | ----       |  |
| Caliper-arm 4, radius raw - 0 | in   | Master | ----    | ----      | ----   | ----       |  |
| Power Control LVDT - 0        | in   | Master | ----    | ----      | ----   | ----       |  |
| LVDT excitation - 0           | V    | Master | ----    | ----      | ----   | ----       |  |

## PPC Diagnostics - Downhole Electronics Test

| Master:                                            |      |        |         |           |        |            |  |
|----------------------------------------------------|------|--------|---------|-----------|--------|------------|--|
| Measurement                                        | Unit | Phase  | Nominal | Low Limit | Actual | High Limit |  |
| Positive Analog Voltage - 0                        | V    | Master | ----    | ----      | ----   | ----       |  |
| Minus Analog Voltage - 0                           | V    | Master | ----    | ----      | ----   | ----       |  |
| Digital Voltage - 0                                | V    | Master | ----    | ----      | ----   | ----       |  |
| Digital Voltage for Analog Digital Converter - 0   | V    | Master | ----    | ----      | ----   | ----       |  |
| Status Word of Analog Digital Converter Offset - 0 |      | Master | ----    | ----      | ----   | ----       |  |

## PPC Diagnostics - RBS Test

| Master:                      |      |        |         |           |        |            |  |
|------------------------------|------|--------|---------|-----------|--------|------------|--|
| Measurement                  | Unit | Phase  | Nominal | Low Limit | Actual | High Limit |  |
| Relative Bearing - 0         | deg  | Master | ----    | ----      | ----   | ----       |  |
| Potentiometer Excitation - 0 | V    | Master | ----    | ----      | ----   | ----       |  |

## PPC Diagnostics - Cartridge Temperature Test

| Master:                   |      |        |         |           |        |            |  |
|---------------------------|------|--------|---------|-----------|--------|------------|--|
| Measurement               | Unit | Phase  | Nominal | Low Limit | Actual | High Limit |  |
| Cartridge Temperature - 0 | degF | Master | ----    | ----      | ----   | ----       |  |

## PPC Diagnostics - Power Control LVDT Test

| Master:                         |      |        |         |           |        |            |  |
|---------------------------------|------|--------|---------|-----------|--------|------------|--|
| Measurement                     | Unit | Phase  | Nominal | Low Limit | Actual | High Limit |  |
| LVDT5 Caliper Open Position - 0 | in   | Master | ----    | ----      | ----   | ----       |  |
| LVDT5 Full Power Position - 0   | in   | Master | ----    | ----      | ----   | ----       |  |

## PPC LVDT5 Master Calibration - PPC CaliCoefficients

| Master (EEPROM): 18:55:00 05-Aug-2014 |      |        |         |           |          |            |  |
|---------------------------------------|------|--------|---------|-----------|----------|------------|--|
| Measurement                           | Unit | Phase  | Nominal | Low Limit | Actual   | High Limit |  |
| CCS                                   | in   | Master | -1.51   |           | -1.39331 |            |  |
| COP                                   | in   | Master | -1.31   |           | -1.23169 |            |  |
| CPW                                   | in   | Master | 1.41    |           | 1.50439  |            |  |

## PPC Caliper Calibration - PPC CaliCoefficients

| Before (Manual Entry): 22:28:57 11-Sep-2014 |      |        |         |           |         |            |  |
|---------------------------------------------|------|--------|---------|-----------|---------|------------|--|
| Measurement                                 | Unit | Phase  | Nominal | Low Limit | Actual  | High Limit |  |
| RD1_GAIN                                    |      | Before | 1       | 0.85      | 1.09801 | 1.15       |  |
| RD2_GAIN                                    |      | Before | 1       | 0.85      | 1.06466 | 1.15       |  |
| RD3_GAIN                                    |      | Before | 1       | 0.85      | 1.11091 | 1.15       |  |
| RD4_GAIN                                    |      | Before | 1       | 0.85      | 1.02237 | 1.15       |  |
| RD1_OFFSET                                  | in   | Before | 0       | -2.2      | -2.2    | 2.6        |  |
| RD2_OFFSET                                  | in   | Before | 0       | -2.2      | -0.7623 | 2.6        |  |
| RD3_OFFSET                                  | in   | Before | 0       | -2.2      | -2.2    | 2.6        |  |
| RD4_OFFSET                                  | in   | Before | 0       | -2.2      | 0.0468  | 2.6        |  |

## PPC Caliper Calibration - PPC Accumulations

## PPC Caliper Calibration - PPC Accumulations

| Before (Manual Entry):    |      | 22:28:57 11-Sep-2014 |         |           |        |            |  |
|---------------------------|------|----------------------|---------|-----------|--------|------------|--|
| Measurement               | Unit | Phase                | Nominal | Low Limit | Actual | High Limit |  |
| Caliper 1 Zero Radius - 0 | in   | Before               | -----   | -----     | -----  | -----      |  |
| Caliper 2 Zero Radius - 0 | in   | Before               | -----   | -----     | -----  | -----      |  |
| Caliper 3 Zero Radius - 0 | in   | Before               | -----   | -----     | -----  | -----      |  |
| Caliper 4 Zero Radius - 0 | in   | Before               | -----   | -----     | -----  | -----      |  |
| Caliper 1 Plus Radius - 0 | in   | Before               | -----   | -----     | -----  | -----      |  |
| Caliper 2 Plus Radius - 0 | in   | Before               | -----   | -----     | -----  | -----      |  |
| Caliper 3 Plus Radius - 0 | in   | Before               | -----   | -----     | -----  | -----      |  |
| Caliper 4 Plus Radius - 0 | in   | Before               | -----   | -----     | -----  | -----      |  |

## HDRS-H[1] (HILT Density and Rxo Sonde, 150 degC) Calibration - Run One

|                         |                                                     |  |               |  |       |  |  |
|-------------------------|-----------------------------------------------------|--|---------------|--|-------|--|--|
| Primary Equipment :     |                                                     |  |               |  |       |  |  |
|                         | HILT High-Resolution Control Cartridge, 150 degC    |  | HRCC-H        |  |       |  |  |
|                         | HILT Resistivity Gamma-Ray Density Device, 150 degC |  | HRGD-H        |  | 4718  |  |  |
| Auxiliary Equipment :   |                                                     |  |               |  |       |  |  |
|                         | HRDD Backscatter Detector                           |  | Backscatter   |  |       |  |  |
|                         | HRDD Long Spacing Detector                          |  | Long Spacing  |  | 28735 |  |  |
|                         | HRDD Short Spacing Detector                         |  | Short Spacing |  | 27869 |  |  |
|                         | Cesium 137 Gamma-Ray Logging Source                 |  | GSR-J         |  | 5347  |  |  |
|                         | HILT High-Resolution Control Cartridge, 150 degC    |  | HRCC-H        |  |       |  |  |
|                         | HILT High-Resolution Mechanical Sonde, 150 degC     |  | HRMS-H        |  | 3964  |  |  |
| Calibration Parameter : |                                                     |  |               |  |       |  |  |
|                         | Small Ring Size (Caliper Calibration Small Ring)    |  | 8.00          |  |       |  |  |
|                         | Large Ring Size (Caliper Calibration Large Ring)    |  | 12.00         |  |       |  |  |

## HDRS Caliper Calibration - Caliper Accumulations

| Before (Measured): |      | 19:49:19 10-Sep-2014 |         |           |        |            |  |
|--------------------|------|----------------------|---------|-----------|--------|------------|--|
| Measurement        | Unit | Phase                | Nominal | Low Limit | Actual | High Limit |  |
| Small Ring         | in   | Before               | 8.00    | 6.00      | 8.10   | 10.00      |  |
| Large Ring         | in   | Before               | 12.00   | 9.00      | 12.47  | 15.00      |  |

## HDRS Density Calibration - Inversion Results

| Master (EEPROM): |       | 04:43:48 05-Sep-2014 |         |           |        |            |  |
|------------------|-------|----------------------|---------|-----------|--------|------------|--|
| Measurement      | Unit  | Phase                | Nominal | Low Limit | Actual | High Limit |  |
| Rho Aluminum     | g/cm3 | Master               | 2.596   | 2.586     | 2.595  | 2.606      |  |
| Rho Magnesium    | g/cm3 | Master               | 1.686   | 1.676     | 1.689  | 1.696      |  |
| Pe Aluminum      |       | Master               | 2.570   | 2.470     | 2.561  | 2.670      |  |
| Pe Magnesium     |       | Master               | 2.650   | 2.550     | 2.616  | 2.750      |  |

## HDRS Density Calibration - Deviation Summary

| Master (EEPROM):     |      | 04:43:48 05-Sep-2014 |         |           |        |            |  |
|----------------------|------|----------------------|---------|-----------|--------|------------|--|
| Measurement          | Unit | Phase                | Nominal | Low Limit | Actual | High Limit |  |
| BS Average Deviation | %    | Master               | 0       | -0.6000   | 0.3045 | 0.6000     |  |
| BS Max Deviation     | %    | Master               | 0       | -1.6000   | 0.5044 | 1.6000     |  |
| SS Average Deviation | %    | Master               | 0       | -1.0000   | 0.3743 | 1.0000     |  |
| SS Max Deviation     | %    | Master               | 0       | -2.5000   | 1.3053 | 2.5000     |  |
| LS Average Deviation | %    | Master               | 0       | -1.5000   | 0.6654 | 1.5000     |  |
| LS Max Deviation     | %    | Master               | 0       | -3.5000   | 1.7777 | 3.5000     |  |

## HDRS Density Calibration - Background Summary

| Master (EEPROM): |      | 04:43:48 05-Sep-2014 |         | Before (Measured): |         | 19:44:06 10-Sep-2014 |  |
|------------------|------|----------------------|---------|--------------------|---------|----------------------|--|
| Measurement      | Unit | Phase                | Nominal | Low Limit          | Actual  | High Limit           |  |
| BS Window Ratio  |      | Master               | 1.0000  |                    | 0.7427  |                      |  |
|                  |      | Before               | 0.7427  | 0.7056             | 0.7411  | 0.7798               |  |
|                  |      | Before-Master        | -----   | -----              | -0.0016 | -----                |  |
| BS Window Sum    | 1/s  | Master               | 1       |                    | 23216   |                      |  |
|                  |      | Before               | 23216   | 22055              | 23027   | 24376                |  |
|                  |      | Before-Master        | -----   | -----              | -189    | -----                |  |
| SS Window Ratio  |      | Master               | 1.0000  |                    | 0.4861  |                      |  |
|                  |      | Before               | 0.4861  | 0.4618             | 0.4860  | 0.5104               |  |

|                 |     |               |        |        |         |        |  |
|-----------------|-----|---------------|--------|--------|---------|--------|--|
|                 |     | Before-Master | -----  | -----  | -0.0001 | -----  |  |
| SS Window Sum   | 1/s | Master        | 1      |        | 10779   |        |  |
|                 |     | Before        | 10779  | 10240  | 10768   | 11318  |  |
|                 |     | Before-Master | -----  | -----  | -11     | -----  |  |
| LS Window Ratio |     | Master        | 1.0000 |        | 0.3077  |        |  |
|                 |     | Before        | 0.3077 | 0.2923 | 0.3031  | 0.3230 |  |
|                 |     | Before-Master | -----  | -----  | -0.0046 | -----  |  |
| LS Window Sum   | 1/s | Master        | 1      |        | 1251    |        |  |
|                 |     | Before        | 1251   | 1189   | 1250    | 1314   |  |
|                 |     | Before-Master | -----  | -----  | -1      | -----  |  |

## HDRS Density Calibration - Photo-multiplier High Voltages

| Master (EEPROM):   |      | 04:43:48 05-Sep-2014 |         | Before (Measured): |        | 19:44:06 10-Sep-2014 |  |
|--------------------|------|----------------------|---------|--------------------|--------|----------------------|--|
| Measurement        | Unit | Phase                | Nominal | Low Limit          | Actual | High Limit           |  |
| BS PM High Voltage | V    | Master               |         | 1000               | 1383   | 2400                 |  |
|                    |      | Before               |         | 1000               | 1376   | 2400                 |  |
|                    |      | Before-Master        | -----   | -100               | -7     | 100                  |  |
| SS PM High Voltage | V    | Master               |         | 1000               | 1636   | 2400                 |  |
|                    |      | Before               |         | 1000               | 1648   | 2400                 |  |
|                    |      | Before-Master        | -----   | -100               | 12     | 100                  |  |
| LS PM High Voltage | V    | Master               |         | 1000               | 1584   | 2400                 |  |
|                    |      | Before               |         | 1000               | 1584   | 2400                 |  |
|                    |      | Before-Master        | -----   | -100               | 0      | 100                  |  |

## HDRS Density Calibration - Crystal Quality Resolutions

| Master (EEPROM):      |      | 04:43:48 05-Sep-2014 |         | Before (Measured): |        | 19:44:06 10-Sep-2014 |  |
|-----------------------|------|----------------------|---------|--------------------|--------|----------------------|--|
| Measurement           | Unit | Phase                | Nominal | Low Limit          | Actual | High Limit           |  |
| BS Crystal Resolution | %    | Master               |         | 5.00               | 10.63  | 25.00                |  |
|                       |      | Before               |         | 5.00               | 10.57  | 25.00                |  |
|                       |      | Before-Master        | -----   | -1.00              | -0.06  | 1.00                 |  |
| SS Crystal Resolution | %    | Master               |         | 5.00               | 9.68   | 20.00                |  |
|                       |      | Before               |         | 5.00               | 9.70   | 20.00                |  |
|                       |      | Before-Master        | -----   | -1.00              | 0.02   | 1.00                 |  |
| LS Crystal Resolution | %    | Master               |         | 5.00               | 8.53   | 20.00                |  |
|                       |      | Before               |         | 5.00               | 8.34   | 20.00                |  |
|                       |      | Before-Master        | -----   | -1.00              | -0.19  | 1.00                 |  |

## HDRS MCFL Calibration - MCFL Accumulations

| Before (Measured):  |       | 19:45:58 10-Sep-2014 |         |           |        |            |  |
|---------------------|-------|----------------------|---------|-----------|--------|------------|--|
| Measurement         | Unit  | Phase                | Nominal | Low Limit | Actual | High Limit |  |
| Main Resistivity    | ohm.m | Before               | 3875    | 3565      | 3890   | 4185       |  |
| Deep Resistivity    | ohm.m | Before               | 3830    | 3524      | 3840   | 4136       |  |
| Shallow Resistivity | ohm.m | Before               | 3830    | 3524      | 3853   | 4136       |  |

## HGNS-H (HILT Gamma-Ray and Neutron Sonde, 150 degC) Calibration - Run One

|                                            |  |         |      |
|--------------------------------------------|--|---------|------|
| Primary Equipment :                        |  |         |      |
| HILT Gamma-Ray and Neutron Sonde, 150 degC |  | HGNS-H  | 3819 |
| Auxiliary Equipment :                      |  |         |      |
| HGNS Accelerometer, 150 degC               |  | HACCZ-H | 2102 |
| AmBe Neutron Logging Source                |  | NSR-F   | 5226 |
| Calibration Parameter :                    |  |         |      |
| Water Temperature                          |  |         |      |
| Housing Size                               |  |         |      |
| JIG-BKG (Jig minus background reference)   |  | 165     |      |

## HGNS Accelerometer Calibration - Accelerometer Accumulations

| Before (Measured):      |       | 17:12:31 11-Sep-2014 |         |           |        |            |  |
|-------------------------|-------|----------------------|---------|-----------|--------|------------|--|
| Measurement             | Unit  | Phase                | Nominal | Low Limit | Actual | High Limit |  |
| AZ Vertical Measurement | ft/s2 | Before               | 32.2    | 31.5      | 32.2   | 32.8       |  |

## HGNS Accelerometer EEPROM - Accelerometer EEPROM Read

| Master (EEPROM):                    |      | 00:00:00 15-Feb-2003 |         |           |         |            |  |
|-------------------------------------|------|----------------------|---------|-----------|---------|------------|--|
| Measurement                         | Unit | Phase                | Nominal | Low Limit | Actual  | High Limit |  |
| Accelerometer Manufacturer          |      | Master               |         |           | QAT_160 |            |  |
| Accelerometer Reference Temperature | degF | Master               |         | 30.2      | 77.0    | 122.0      |  |

|                                |  |        |       |       |           |       |  |  |
|--------------------------------|--|--------|-------|-------|-----------|-------|--|--|
| Accelerometer Coefficients - 0 |  | Master | ----- | ----- | -2847.000 | ----- |  |  |
| Accelerometer Coefficients - 1 |  | Master | ----- | ----- | 13.547    | ----- |  |  |
| Accelerometer Coefficients - 2 |  | Master | ----- | ----- | -0.002    | ----- |  |  |
| Accelerometer Coefficients - 3 |  | Master | ----- | ----- | 0.000     | ----- |  |  |
| Accelerometer Coefficients - 4 |  | Master | ----- | ----- | 2.752     | ----- |  |  |
| Accelerometer Coefficients - 5 |  | Master | ----- | ----- | 0.000     | ----- |  |  |
| Accelerometer Coefficients - 6 |  | Master | ----- | ----- | 0.000     | ----- |  |  |
| Accelerometer Coefficients - 7 |  | Master | ----- | ----- | 0.000     | ----- |  |  |
| Accelerometer Coefficients - 8 |  | Master | ----- | ----- | 299.200   | ----- |  |  |
| Accelerometer Coefficients - 9 |  | Master | ----- | ----- | 1.004     | ----- |  |  |

## HGNS Neutron Calibration - HGNS Neutron Accumulations

|                                 |      |                      |         |                    |        |                      |                        |
|---------------------------------|------|----------------------|---------|--------------------|--------|----------------------|------------------------|
| Master (EEPROM):                |      | 05:20:48 05-Sep-2014 |         | Before (Measured): |        | 19:42:35 10-Sep-2014 |                        |
| Measurement                     | Unit | Phase                | Nominal | Low Limit          | Actual | High Limit           | <div><div></div></div> |
| Near Zero Measurement           | 1/s  | Master               | 0       | 5.0                | 26.7   | 40.0                 | <div><div></div></div> |
|                                 |      | Before               | 0       | 5.0                | 27.1   | 40.0                 | <div><div></div></div> |
|                                 |      | Before-Master        | ----    | -4.0               | 0.4    | 4.0                  | <div><div></div></div> |
| Far Zero Measurement            | 1/s  | Master               | 0       | 5.0                | 27.9   | 40.0                 | <div><div></div></div> |
|                                 |      | Before               | 0       | 5.0                | 27.8   | 40.0                 | <div><div></div></div> |
|                                 |      | Before-Master        | ----    | -4.2               | -0.1   | 4.2                  | <div><div></div></div> |
| Near Plus Measurement           | 1/s  | Master               | 6031.0  | 4700.0             | 5086.0 | 6900.0               | <div><div></div></div> |
|                                 |      | Before               | ----    | ----               | ----   | ----                 | <div><div></div></div> |
|                                 |      | Before-Master        | ----    | ----               | ----   | ----                 | <div><div></div></div> |
| Far Plus Measurement            | 1/s  | Master               | 2793.0  | 1900.0             | 2109.0 | 2900.0               | <div><div></div></div> |
|                                 |      | Before               | ----    | ----               | ----   | ----                 | <div><div></div></div> |
|                                 |      | Before-Master        | ----    | ----               | ----   | ----                 | <div><div></div></div> |
| Near Corrected Plus Measurement | 1/s  | Master               |         | 4700.0             | 5010.0 | 6900.0               | <div><div></div></div> |
|                                 |      | Before               | ----    | ----               | ----   | ----                 | <div><div></div></div> |
|                                 |      | Before-Master        | ----    | ----               | ----   | ----                 | <div><div></div></div> |
| Far Corrected Plus Measurement  | 1/s  | Master               |         | 1900.0             | 2050.0 | 2900.0               | <div><div></div></div> |
|                                 |      | Before               | ----    | ----               | ----   | ----                 | <div><div></div></div> |
|                                 |      | Before-Master        | ----    | ----               | ----   | ----                 | <div><div></div></div> |

## HGNS Gamma-Ray Calibration - Gamma-Ray Accumulations

|                      |      |                      |         |           |        |            |                                              |
|----------------------|------|----------------------|---------|-----------|--------|------------|----------------------------------------------|
| Before (Measured):   |      | 19:48:35 10-Sep-2014 |         |           |        |            |                                              |
| Measurement          | Unit | Phase                | Nominal | Low Limit | Actual | High Limit | <div><div></div><div></div><div></div></div> |
| RGR Zero Measurement | gAPI | Before               | 30.0    | 0         | 84.1   | 120.0      | <div><div></div><div></div><div></div></div> |
| RGR Plus Measurement | gAPI | Before               | 185.4   | 157.1     | 177.1  | 206.3      | <div><div></div><div></div><div></div></div> |
| GR Calibration Gain  |      | Before               | 0.89    | 0.80      | 0.93   | 1.05       | <div><div></div><div></div><div></div></div> |

| HDRS-H[2] (HILT Density and Rxo Sonde, 150 degC) Calibration - Run One |               |  |       |
|------------------------------------------------------------------------|---------------|--|-------|
| Primary Equipment :                                                    |               |  |       |
| HILT High-Resolution Control Cartridge, 150 degC                       | HRCC-H        |  |       |
| HILT Resistivity Gamma-Ray Density Device, 150 degC                    | HRGD-H        |  | 3714  |
| Auxiliary Equipment :                                                  |               |  |       |
| HRDD Backscatter Detector                                              | Backscatter   |  |       |
| HRDD Long Spacing Detector                                             | Long Spacing  |  |       |
| HRDD Short Spacing Detector                                            | Short Spacing |  | 27860 |
| Cesium 137 Gamma-Ray Logging Source                                    | GSR-J         |  | 5416  |
| HILT High-Resolution Control Cartridge, 150 degC                       | HRCC-H        |  |       |
| HILT High-Resolution Mechanical Sonde, 150 degC                        | HRMS-H        |  | 3898  |
| Calibration Parameter :                                                |               |  |       |
| Small Ring Size (Caliper Calibration Small Ring)                       | 8.00          |  |       |
| Large Ring Size (Caliper Calibration Large Ring)                       | 12.00         |  |       |

## HDRS Caliper Calibration - Caliper Accumulations

|                    |      |                      |         |           |        |            |  |  |
|--------------------|------|----------------------|---------|-----------|--------|------------|--|--|
| Before (Measured): |      | 19:49:19 10-Sep-2014 |         |           |        |            |  |  |
| Measurement        | Unit | Phase                | Nominal | Low Limit | Actual | High Limit |  |  |
| Small Ring         | in   | Before               | 8.00    | 6.00      | 8.10   | 10.00      |  |  |
| Large Ring         | in   | Before               | 12.00   | 9.00      | 12.47  | 15.00      |  |  |

## HDRS Density Calibration - Inversion Results

|                  |  |                      |  |  |  |  |  |
|------------------|--|----------------------|--|--|--|--|--|
| Master (EEPROM): |  | 15:32:00 15-Aug-2014 |  |  |  |  |  |
|------------------|--|----------------------|--|--|--|--|--|

| Measurement   | Unit  | Phase  | Nominal | Low Limit | Actual | High Limit |  |
|---------------|-------|--------|---------|-----------|--------|------------|--|
| Rho Aluminum  | g/cm3 | Master | 2.596   | 2.586     | 2.602  | 2.606      |  |
| Rho Magnesium | g/cm3 | Master | 1.686   | 1.676     | 1.686  | 1.696      |  |
| Pe Aluminum   |       | Master | 2.570   | 2.470     | 2.524  | 2.670      |  |
| Pe Magnesium  |       | Master | 2.650   | 2.550     | 2.625  | 2.750      |  |

## HDRS Density Calibration - Deviation Summary

Master (EEPROM): 15:32:00 15-Aug-2014

| Measurement          | Unit | Phase  | Nominal | Low Limit | Actual | High Limit |  |
|----------------------|------|--------|---------|-----------|--------|------------|--|
| BS Average Deviation | %    | Master | 0       | -0.6000   | 0.3230 | 0.6000     |  |
| BS Max Deviation     | %    | Master | 0       | -1.6000   | 0.7055 | 1.6000     |  |
| SS Average Deviation | %    | Master | 0       | -1.0000   | 0.3967 | 1.0000     |  |
| SS Max Deviation     | %    | Master | 0       | -2.5000   | 1.4761 | 2.5000     |  |
| LS Average Deviation | %    | Master | 0       | -1.5000   | 0.6964 | 1.5000     |  |
| LS Max Deviation     | %    | Master | 0       | -3.5000   | 1.6889 | 3.5000     |  |

## HDRS Density Calibration - Background Summary

Master (EEPROM): 15:32:00 15-Aug-2014 Before (Measured): 19:44:21 10-Sep-2014

| Measurement     | Unit | Phase         | Nominal | Low Limit | Actual  | High Limit |  |
|-----------------|------|---------------|---------|-----------|---------|------------|--|
| BS Window Ratio |      | Master        | 1.0000  |           | 0.7323  |            |  |
|                 |      | Before        | 0.7323  | 0.6957    | 0.7296  | 0.7689     |  |
|                 |      | Before-Master | -----   | -----     | -0.0027 | -----      |  |
| BS Window Sum   | 1/s  | Master        | 1       |           | 25192   |            |  |
|                 |      | Before        | 25192   | 23933     | 25128   | 26452      |  |
|                 |      | Before-Master | -----   | -----     | -64     | -----      |  |
| SS Window Ratio |      | Master        | 1.0000  |           | 0.4841  |            |  |
|                 |      | Before        | 0.4841  | 0.4599    | 0.4808  | 0.5083     |  |
|                 |      | Before-Master | -----   | -----     | -0.0033 | -----      |  |
| SS Window Sum   | 1/s  | Master        | 1       |           | 13464   |            |  |
|                 |      | Before        | 13464   | 12790     | 13431   | 14137      |  |
|                 |      | Before-Master | -----   | -----     | -33     | -----      |  |
| LS Window Ratio |      | Master        | 1.0000  |           | 0.2989  |            |  |
|                 |      | Before        | 0.2989  | 0.2839    | 0.2999  | 0.3138     |  |
|                 |      | Before-Master | -----   | -----     | 0.0010  | -----      |  |
| LS Window Sum   | 1/s  | Master        | 1       |           | 1523    |            |  |
|                 |      | Before        | 1523    | 1447      | 1513    | 1599       |  |
|                 |      | Before-Master | -----   | -----     | -10     | -----      |  |

## HDRS Density Calibration - Photo-multiplier High Voltages

Master (EEPROM): 15:32:00 15-Aug-2014 Before (Measured): 19:44:21 10-Sep-2014

| Measurement        | Unit | Phase         | Nominal | Low Limit | Actual | High Limit |  |
|--------------------|------|---------------|---------|-----------|--------|------------|--|
| BS PM High Voltage | V    | Master        |         | 1000      | 1542   | 2400       |  |
|                    |      | Before        |         | 1000      | 1518   | 2400       |  |
|                    |      | Before-Master | -----   | -100      | -24    | 100        |  |
| SS PM High Voltage | V    | Master        |         | 1000      | 1535   | 2400       |  |
|                    |      | Before        |         | 1000      | 1537   | 2400       |  |
|                    |      | Before-Master | -----   | -100      | 2      | 100        |  |
| LS PM High Voltage | V    | Master        |         | 1000      | 1406   | 2400       |  |
|                    |      | Before        |         | 1000      | 1404   | 2400       |  |
|                    |      | Before-Master | -----   | -100      | -2     | 100        |  |

## HDRS Density Calibration - Crystal Quality Resolutions

Master (EEPROM): 15:32:00 15-Aug-2014 Before (Measured): 19:44:21 10-Sep-2014

| Measurement           | Unit | Phase         | Nominal | Low Limit | Actual | High Limit |  |
|-----------------------|------|---------------|---------|-----------|--------|------------|--|
| BS Crystal Resolution | %    | Master        |         | 5.00      | 10.63  | 25.00      |  |
|                       |      | Before        |         | 5.00      | 10.70  | 25.00      |  |
|                       |      | Before-Master | -----   | -1.00     | 0.07   | 1.00       |  |
| SS Crystal Resolution | %    | Master        |         | 5.00      | 9.67   | 20.00      |  |
|                       |      | Before        |         | 5.00      | 9.72   | 20.00      |  |
|                       |      | Before-Master | -----   | -1.00     | 0.05   | 1.00       |  |
| LS Crystal Resolution | %    | Master        |         | 5.00      | 8.84   | 20.00      |  |
|                       |      | Before        |         | 5.00      | 8.59   | 20.00      |  |
|                       |      | Before-Master | -----   | -1.00     | -0.25  | 1.00       |  |

## HDRS MCFL Calibration - MCFL Accumulations

Before (Measured): 19:46:01 10-Sep-2014

| Measurement      | Unit  | Phase  | Nominal | Low Limit | Actual | High Limit |  |
|------------------|-------|--------|---------|-----------|--------|------------|--|
| Main Resistivity | ohm.m | Before | 3875    | 3565      | 3856   | 4185       |  |

|                     |       |        |      |      |      |      |  |
|---------------------|-------|--------|------|------|------|------|--|
| Deep Resistivity    | ohm.m | Before | 3830 | 3524 | 3803 | 4136 |  |
| Shallow Resistivity | ohm.m | Before | 3830 | 3524 | 3826 | 4136 |  |

|                                                                                 |        |
|---------------------------------------------------------------------------------|--------|
| EDTC-B (Enhanced Digital Telemetry Cartridge - Version B) Calibration - Run One |        |
| Primary Equipment :                                                             |        |
| EDTC-B                                                                          | EDTC-B |
| Calibration Parameter :                                                         |        |
| Plus Reference (Jig minus background reference)                                 | 165    |

|                                                                            |       |        |         |           |        |            |  |
|----------------------------------------------------------------------------|-------|--------|---------|-----------|--------|------------|--|
| <b>EDTC-B Accelerometer Calibration - EDTC-B Accelerometer Calibration</b> |       |        |         |           |        |            |  |
| Before (Measured): 10:17:47 24-Aug-2014 Expired by 17 days                 |       |        |         |           |        |            |  |
| Measurement                                                                | Unit  | Phase  | Nominal | Low Limit | Actual | High Limit |  |
| AZ Vertical Measurement                                                    | ft/s2 | Before | 32.19   | 31.53     | 31.96  | 32.84      |  |

|                                                              |      |        |         |           |        |            |  |
|--------------------------------------------------------------|------|--------|---------|-----------|--------|------------|--|
| <b>EDTC-B Gamma-Ray Calibration - Gamma Ray Coefficients</b> |      |        |         |           |        |            |  |
| Before (Measured): 19:48:39 10-Sep-2014                      |      |        |         |           |        |            |  |
| Measurement                                                  | Unit | Phase  | Nominal | Low Limit | Actual | High Limit |  |
| Gamma Ray Gain                                               |      | Before | 1.000   | 0.900     | 1.044  | 1.100      |  |

|                                                               |      |        |         |           |         |            |  |
|---------------------------------------------------------------|------|--------|---------|-----------|---------|------------|--|
| <b>EDTC-B Gamma-Ray Calibration - Gamma Ray Accumulations</b> |      |        |         |           |         |            |  |
| Before (Measured): 19:48:39 10-Sep-2014                       |      |        |         |           |         |            |  |
| Measurement                                                   | Unit | Phase  | Nominal | Low Limit | Actual  | High Limit |  |
| RGR Zero Measurement                                          | gAPI | Before |         | 0         | 82.496  | 120.000    |  |
| RGR Plus Measurement                                          | gAPI | Before | 165.000 | 150.000   | 158.068 | 180.000    |  |

|                  |                                        |                     |
|------------------|----------------------------------------|---------------------|
| Company:         | Southwestern Energy Production Company | <b>Schlumberger</b> |
| Well:            | Diamond T Sheep 7-92 1-26              |                     |
| Field:           | Sand Wash Basin/Niobrara               |                     |
| County:          | Moffat                                 |                     |
| State:           | Colorado                               |                     |
| Platform Express |                                        |                     |
| Triple Combo     |                                        |                     |
| Density 1        |                                        |                     |