COMPANY: Lamont Doherty

WELL: ODP Leg 195, Site 1201D (WP-1B)

FIELD: ION

Country: Japan Ocean: West Phillipine

Company: Lamont Doherty
Well: ODP Leg 195, Site 1201D (WP-1
Location: Rig- Joides Resolution
Field: ION
Country: Japan

**Schlumberger** APS/Density Porosity

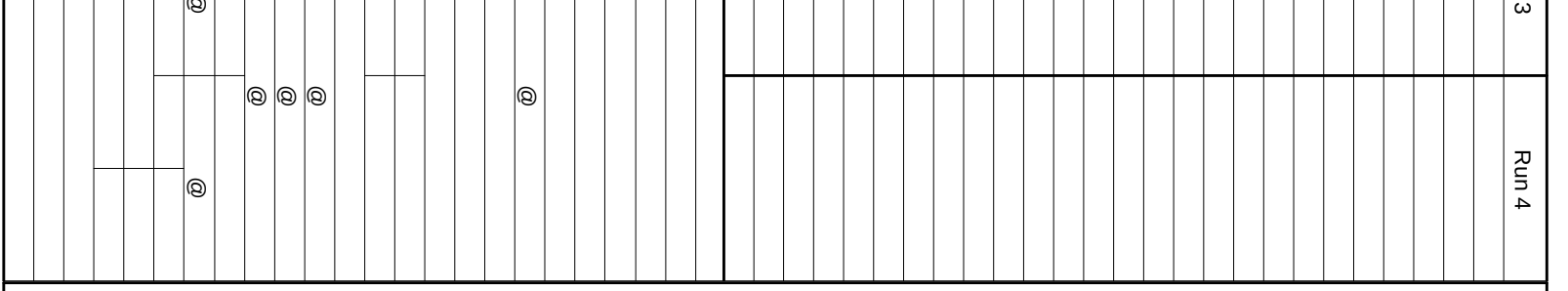
LOCATION

| | | | |
|---|---|---|---|
| Rig- Joides Resolution | | Elev.: K.B. | 11.2989 m |
| | | G.L. | -5720 m |
| | | D.F. | 11 m |
| Permanent Datum: | MSL | Elev.: | 0 m |
| Log Measured From: | DES | 11.3 m | above Perm. Datum |
| Drilling Measured From: | DES | | |

| API Serial No. | Max. Hole Devi. | Longitude | Latitude |
|---|---|---|---|
| | 0 deg | E 151.9836 | S 20.2425 |

| | Run 1 | Run 2 | Run |
|---|---|---|---|
| Logging Date | 12-Apr-2001 | | |
| Run Number | 1 | | |
| Depth Driller | 6320 m | | |
| Schlumberger Depth | 6314 m | | |
| Bottom Log Interval | 6295 m | | |
| Top Log Interval | 5723 m | | |
| Casing Driller Size @ Depth | 0.000 in @ 5800 m | @ | |
| Casing Schlumberger | 5799.5 m | | |
| Bit Size | 9.875 in | | |
| Type Fluid In Hole | Sepiolite/Salt water | | |
| MUD Density / Viscosity | 1.05 g/cm3 | | |
| MUD Fluid Loss / PH | | | |
| MUD Source Of Sample | Mud Tank | | |
| RM @ Measured Temperature | 0.224 ohm.m @ 82 degC | @ | |
| RMF @ Measured Temperature | @ | @ | |
| RMC @ Measured Temperature | @ | @ | |
| Source RMF / RMC | | | |
| RM @ MRT / RMF @ MRT | 0.612 @ 16 | @ 16 @ | @ |
| Maximum Recorded Temperatures | 16 degC | | |
| Circulation Stopped / Time | 12-Apr-2001 | 1:00 | |
| Logger On Bottom / Time | 12-Apr-2001 | See Log | |
| Unit Number / Location | 99 | Houston | |
| Recorded By | Kerry M. Swain | | |
| Witnessed By | Samantha Barr, Phillipe Gaillot | | |

| | Run 1 | Run 2 | Run |
|---|---|---|---|
| Logging Date | | | |
| Run Number | | | |
| Depth Driller | | | |
| Schlumberger Depth | | | |
| Bottom Log Interval | | | |
| Top Log Interval | | | |
| Casing Driller Size @ Depth | @ | | |
| Casing Schlumberger | | | |
| Bit Size | | | |
| Type Fluid In Hole | | | |
| MUD Density / Viscosity | | | |
| MUD Fluid Loss / PH | | | |
| MUD Source Of Sample | | | |
| RM @ Measured Temperature | @ | | |
| RMF @ Measured Temperature | @ | | |
| RMC @ Measured Temperature | @ | | |
| Source RMF / RMC | | | |
| RM @ MRT / RMF @ MRT | @ | @ | @ |
| Maximum Recorded Temperatures | | | |
| Circulation Stopped / Time | | | |
| Logger On Bottom / Time | | | |
| Unit Number / Location | | | |
| Recorded By | | | |
| Witnessed By | | | |




DISCLAIMER

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| OTHER SERVICES1 | OTHER SERVICES2 |
|---|---|
| OS1: MESTB/LSS | OS1: |
| OS2: DLT/HNGS | OS2: |
| OS3: | OS3: |
| OS4: | OS4: |
| OS5: | OS5: |

| REMARKS: RUN NUMBER 1 | REMARKS: RUN NUMBER 2 |
|---|---|
| Hole Cored With RCB. | |
| WHC used on all runs. | |
| Seas calm. | |
| Log Measured in Meters Below Rig Floor (MBRF). | |
| TD Driller- 6320 MBRF. | |
| Sea Floor Driller- 5720 MBRF. | |
| TD Logger- 6314 MBRF. | |
| Sea Floor Logger- 5723 MBRF. | |
| Drill Pipe Logger- 5799.5 MBRF. | |
| Drill Pipe Driller- 5800 MBRF. | |
| Splice at 6119.5 of original uplogs. | |
| Sepiolite mud used to displace hole after driling. | |
| The density/PEF curves are unreliable between 6147-6167mbrf, unstable voltage. | |
| Original log files recorded with real time speed correction. Displayed data are | |
| corrected back to measured depth. | |
| | |
| | |

RUN 1

SERVICE ORDER #:
PROGRAM VERSION: 9C2-303
FLUID LEVEL:

| LOGGED INTERVAL | START | STOP |
|---|---|---|
| | | |
| | | |
| | | |
| | | |
| | | |

RUN 2

SERVICE ORDER #:
PROGRAM VERSION:
FLUID LEVEL:

| LOGGED INTERVAL | START | STOP |
|---|---|---|
| | | |
| | | |
| | | |
| | | |
| | | |

# EQUIPMENT DESCRIPTION

RUN 1

## SURFACE EQUIPMENT

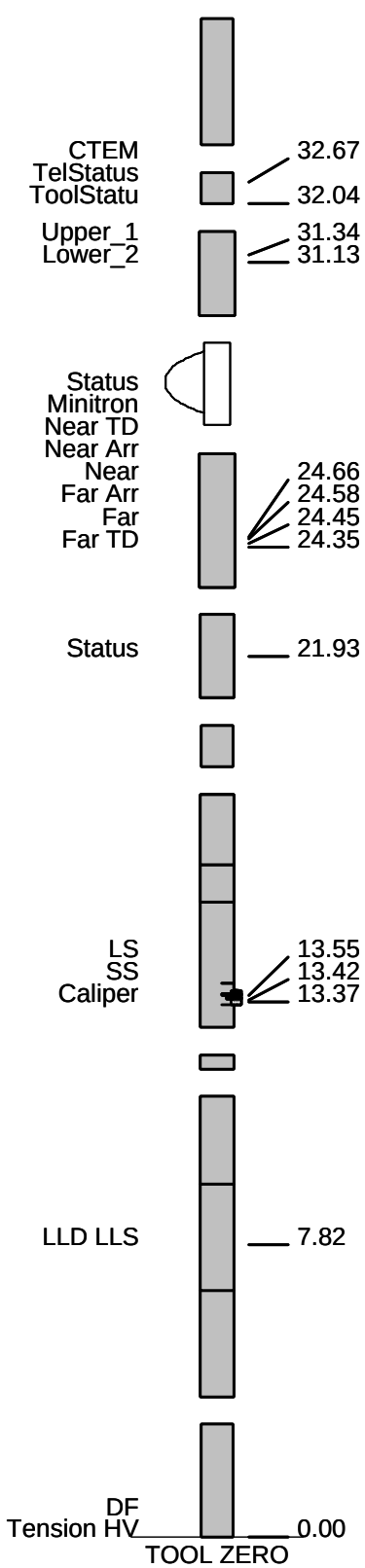
LCM-AA 728
SFT-281 24
SFT-178 4722
GSR-U 135
WITM (DTS)-A

## DOWNHOLE EQUIPMENT

LEH-QT 41.31

AH-Bridle-2 40.42
AH-Bridle-2 148

RUN 2




AH-Bridle-1 — 36.69
AH-Bridle-1 612

DTC-H — 32.95

HNGS-BA — 32.04
HNGS-BA 27
HNSH-BA 27

ILE-D — 29.54
ILE-D 25

APS-BA — 27.10
APS-BA 22
APH-AC 22
MNTR-F 4185

NPLC-B — 23.16
NPLC-B 79
NPH-B 82

DTA-A — 20.71
ECH-KE 8231

HLDT-A — 19.49
GSR-Z 1846
HLDC-AA 11
HLDV-A 10
HLDS-B 10
HLDP-B 10
HEH-G 11
HEH-H 12

AH-169 — 12.61

DLT-E — 12.20
DLH-CB 2893
DLC-D 930
DLS-F 929
DLE-E

AH-TAP — 3.34
AH-TAP

TOOL ZERO

MAXIMUM STRING DIAMETER 3.88 IN
MEASUREMENTS RELATIVE TO TOOL ZERO
ALL LENGTHS IN METERS

## Input DLIS Files

| | | | | | | |
|---|---|---|---|---|---|---|
| DEFAULT | SPLICE_DLL_LDL_APS_096 | FN:1 | PRODUCER | 14-Apr-2001 10:44 | 6317.7 M | 5703.9 M |

## Output DLIS Files

| | | | | | | |
|---|---|---|---|---|---|---|
| DEFAULT | DLL_LDL_APS_HNGS_097PUP | FN:81 | PRODUCER | 14-Apr-2001 10:46 | 6317.7 M | 5712.9 M |
| REDUCE | DLL_LDL_APS_HNGS_097PUP | FN:82 | PRODUCER | 14-Apr-2001 10:46 | 6317.7 M | 5712.9 M |

## OP System Version: 9C2-303

MCM

| | | | |
|---|---|---|---|
| DLT-E | 9C2-303 | HLDT-A | 9C2-303 |
| DTA-A | 9C2-303 | NPLC-B | 9C2-303 |
| APS-BA | 9C2-303 | HNGS-BA | 9C2-303 |
| DTC-H | 9C2-303 | | |

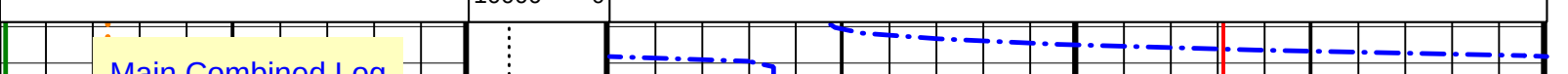
## Changed Parameter Summary

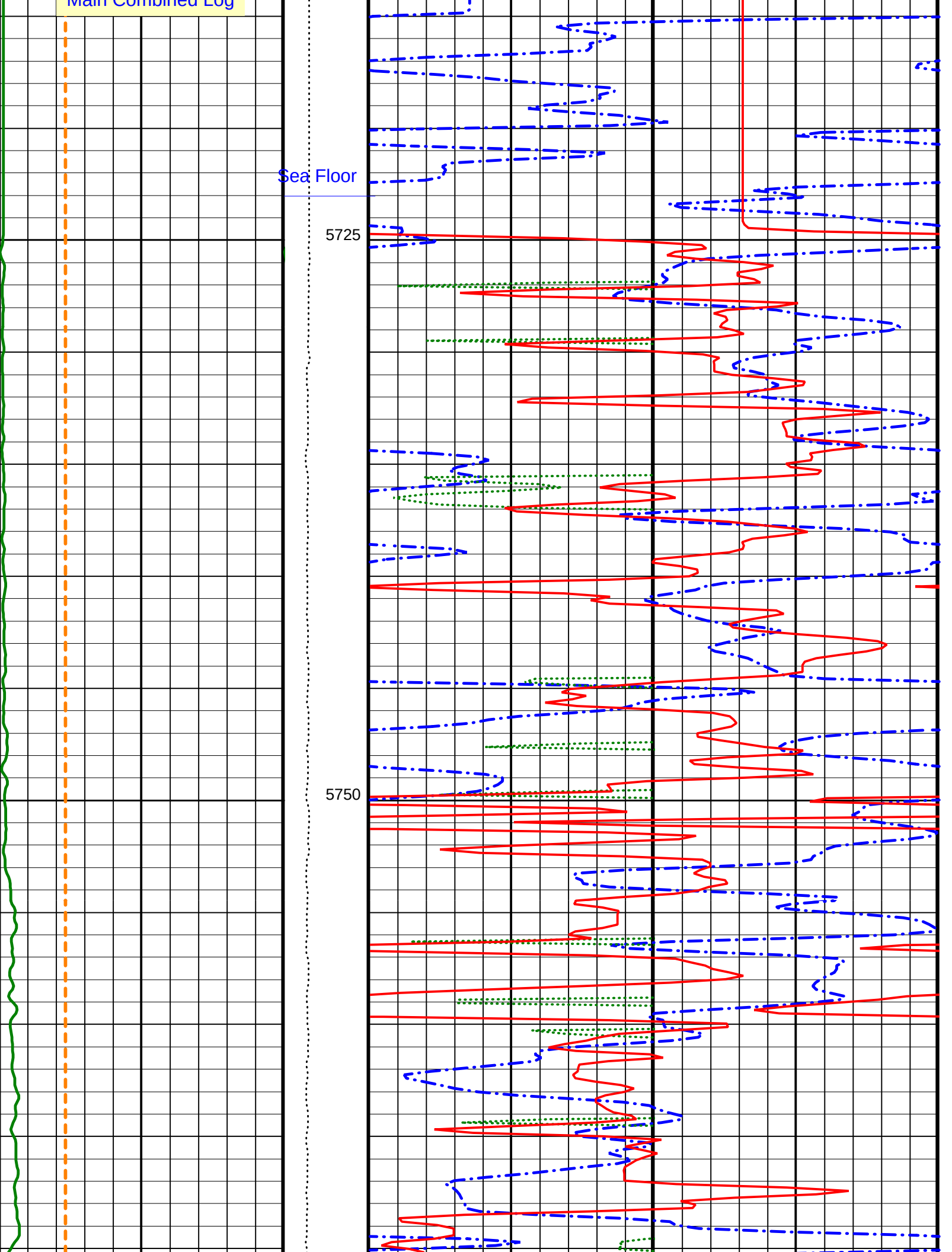
| DLIS Name | New Value | Previous Value | Depth & Time |
|---|---|---|---|
| BHS | CASED | OPEN | 5804.3 10:53:48 |
| GCSE | BS | CALI | 5804.3 10:53:44 |

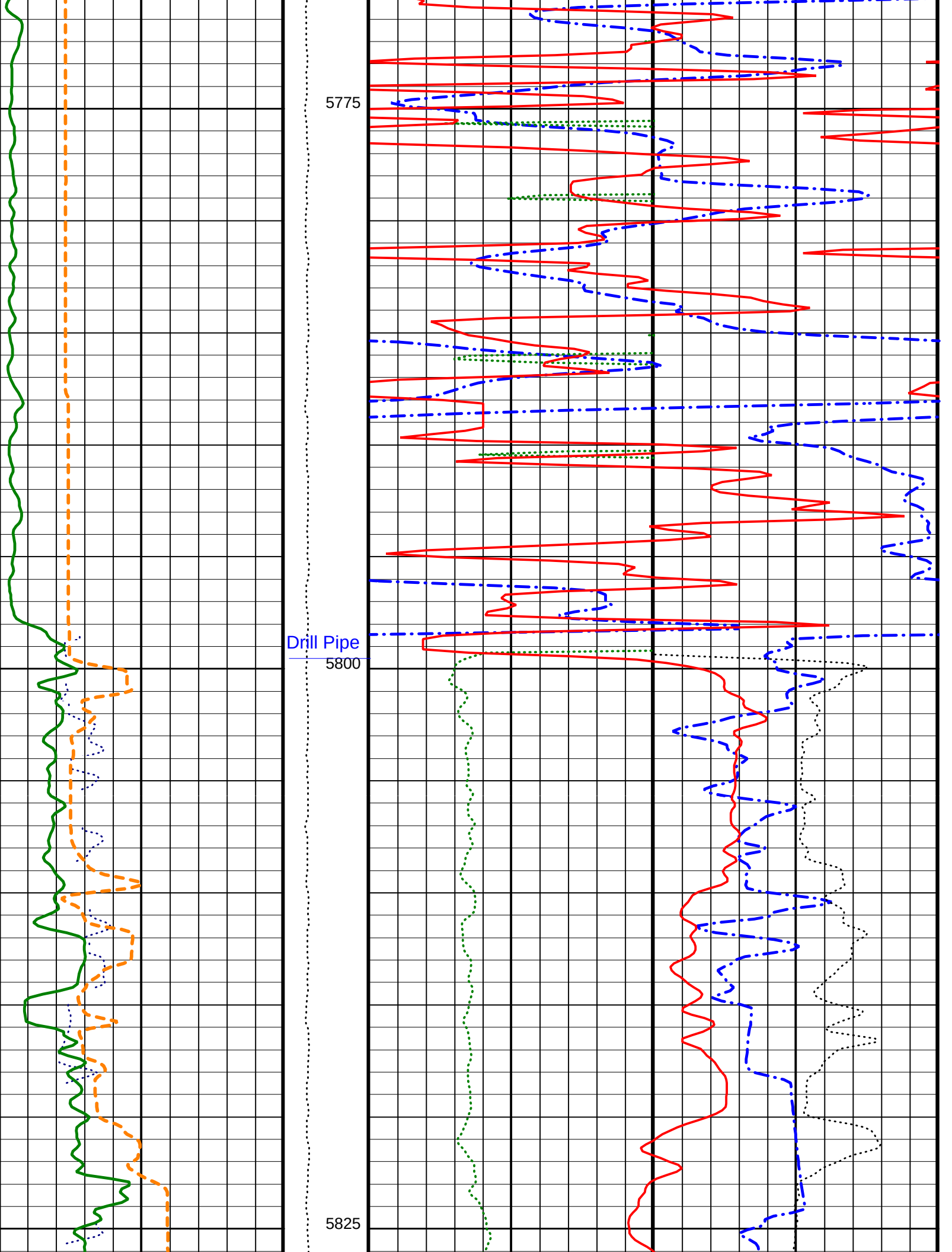
PIP SUMMARY

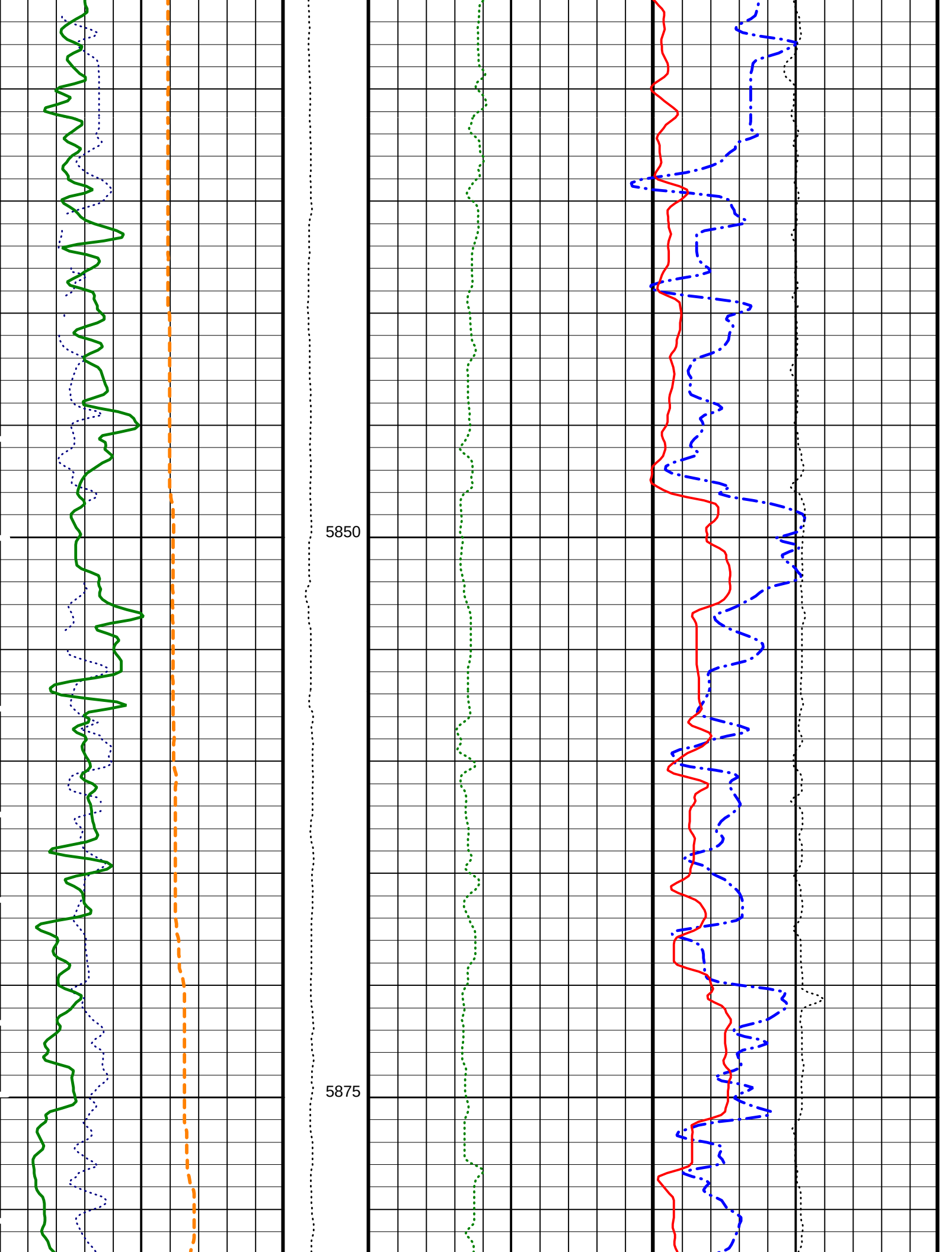
Time Mark Every 60 S

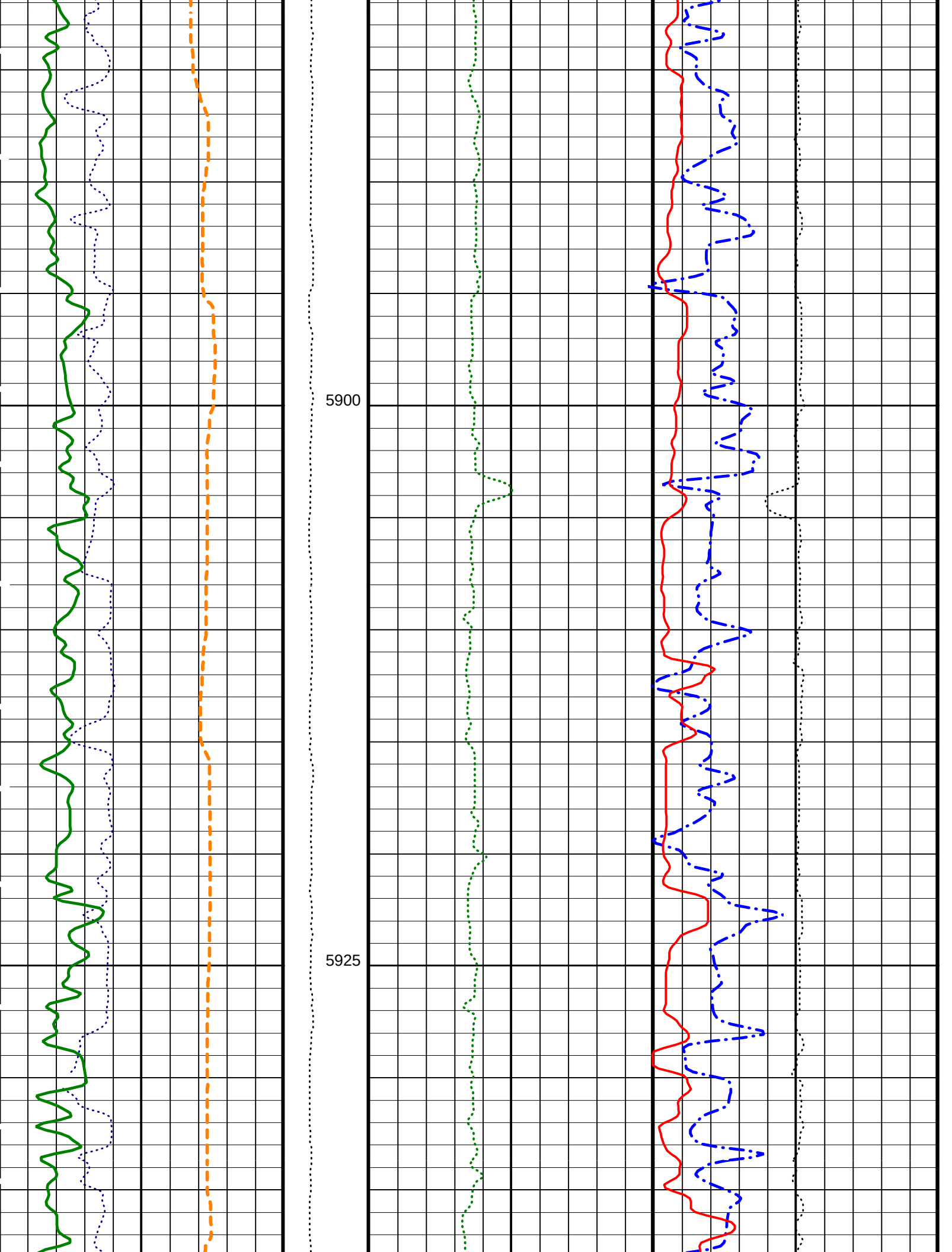
| | | |
|---|---|---|
| HNGS Spectroscopy Gamma Ray (HSGR)<br>0 (GAPI) 100 | | Bulk Density (RHOB)<br>3 (G/C3) 1 |
| APS Effective Standoff in Limestone (STOF)<br>-1 (IN) 4 | | PhotoElectric Factor (PEF)<br>0 (----) 10 |
| | | Bulk Density Correction (DRHO)<br>-0.25 (G/C3) 0.25 |
| Caliper (CALI)<br>0 (IN) 20 | Tension (TENS) (LBF)<br>10000 0 | APS Near/Array Corrected Limestone Porosity (APLC)<br>0 (PU) 100 |

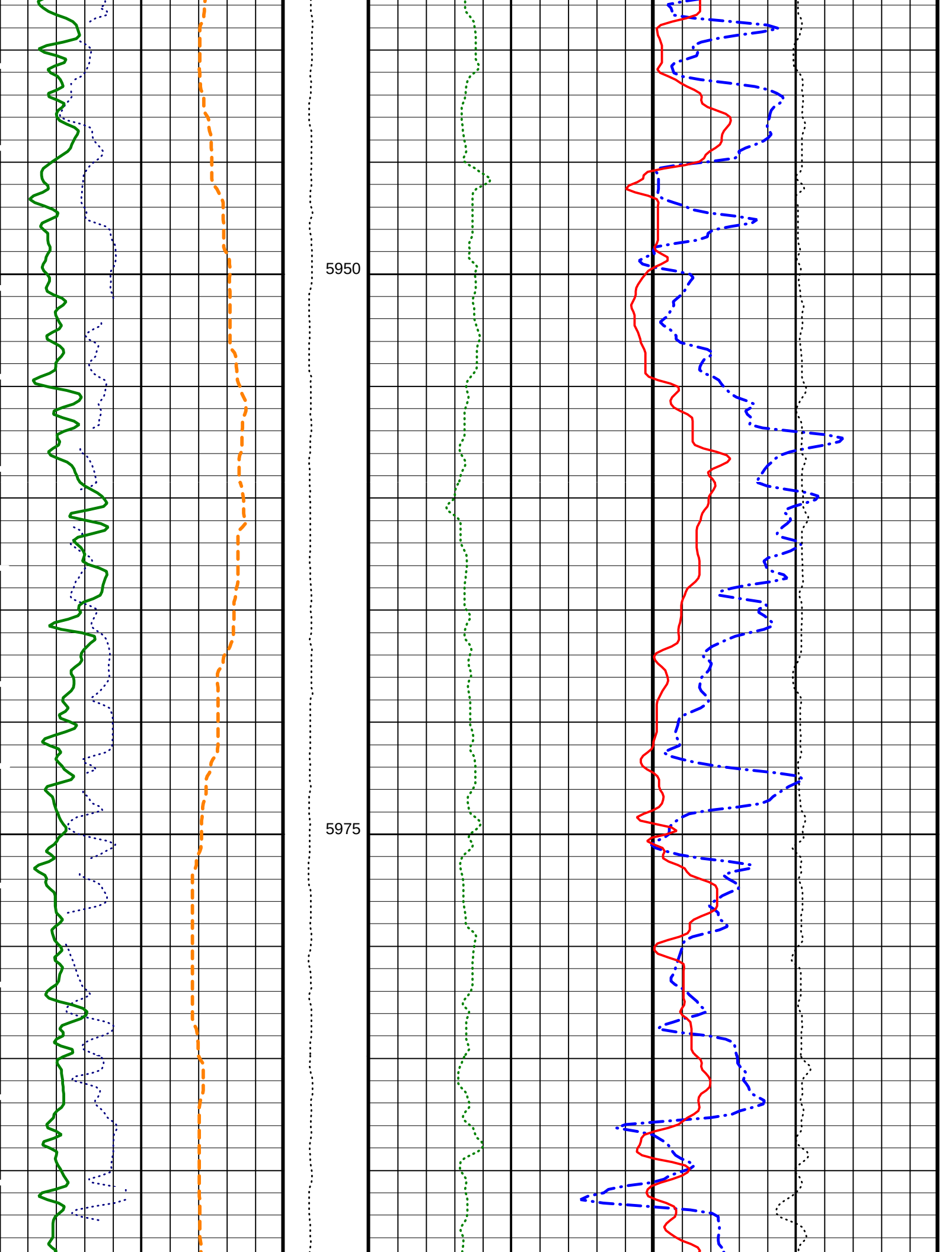


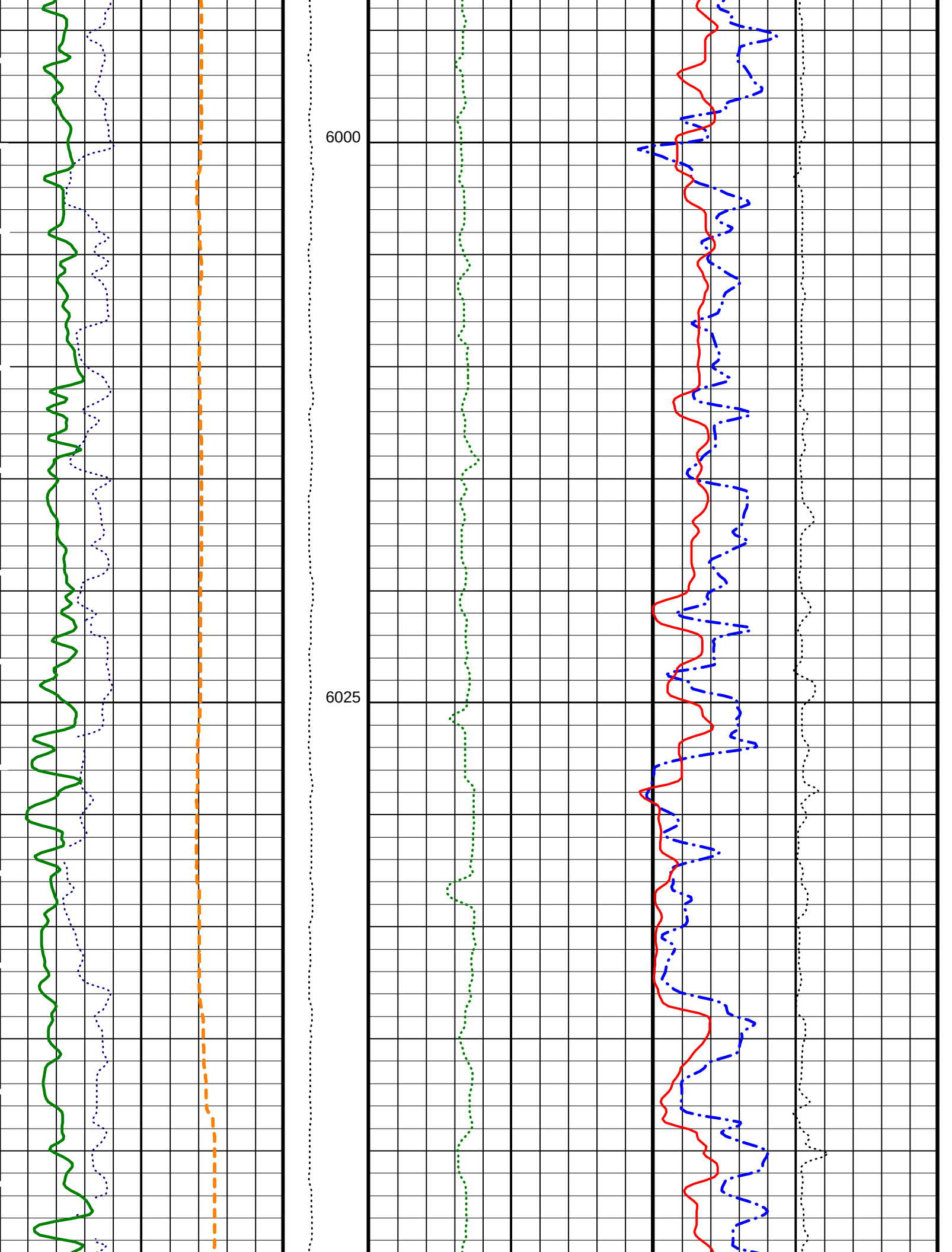

Main Combined Log
Sea Floor
5725
5750

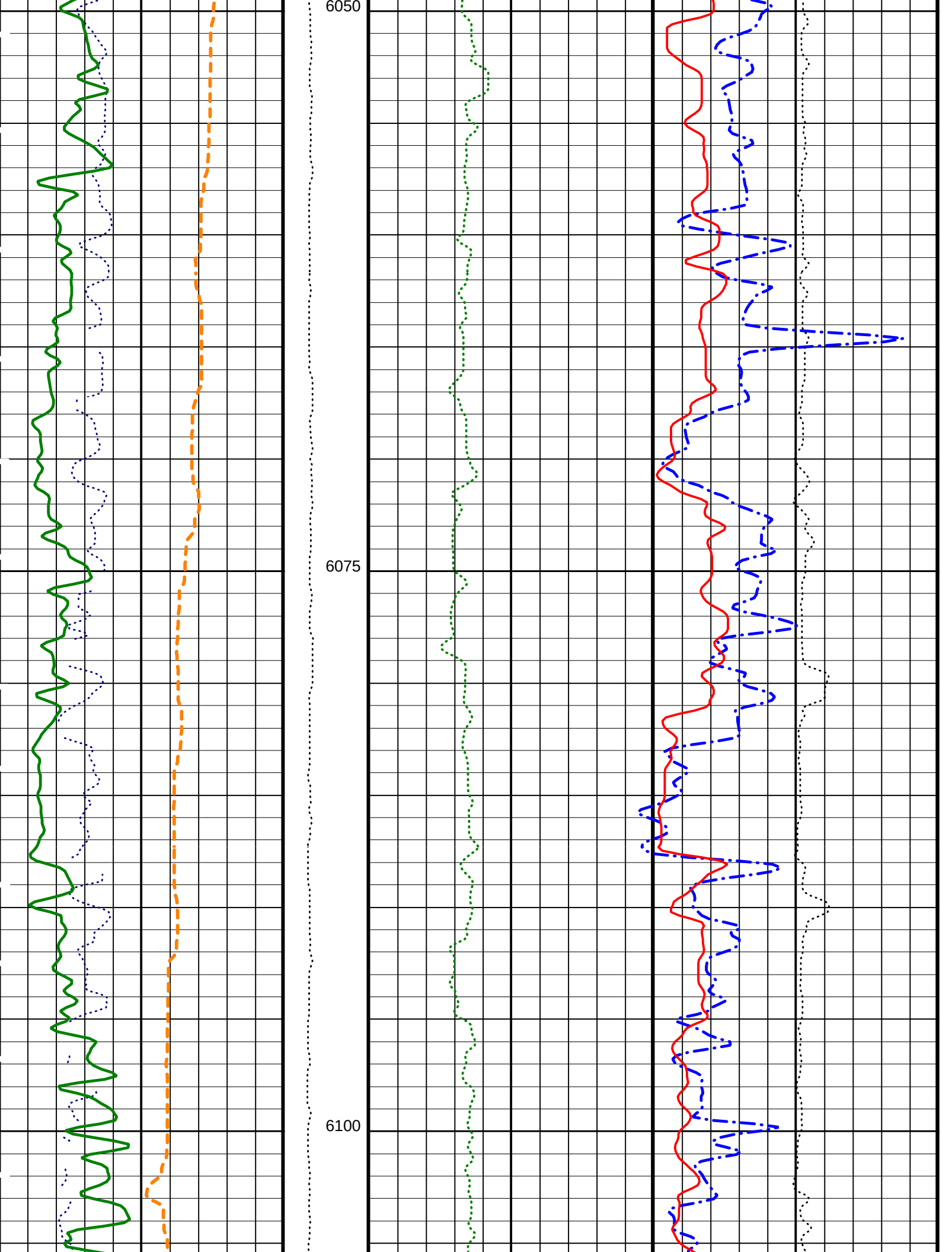

5775
Drill Pipe
5800
5825

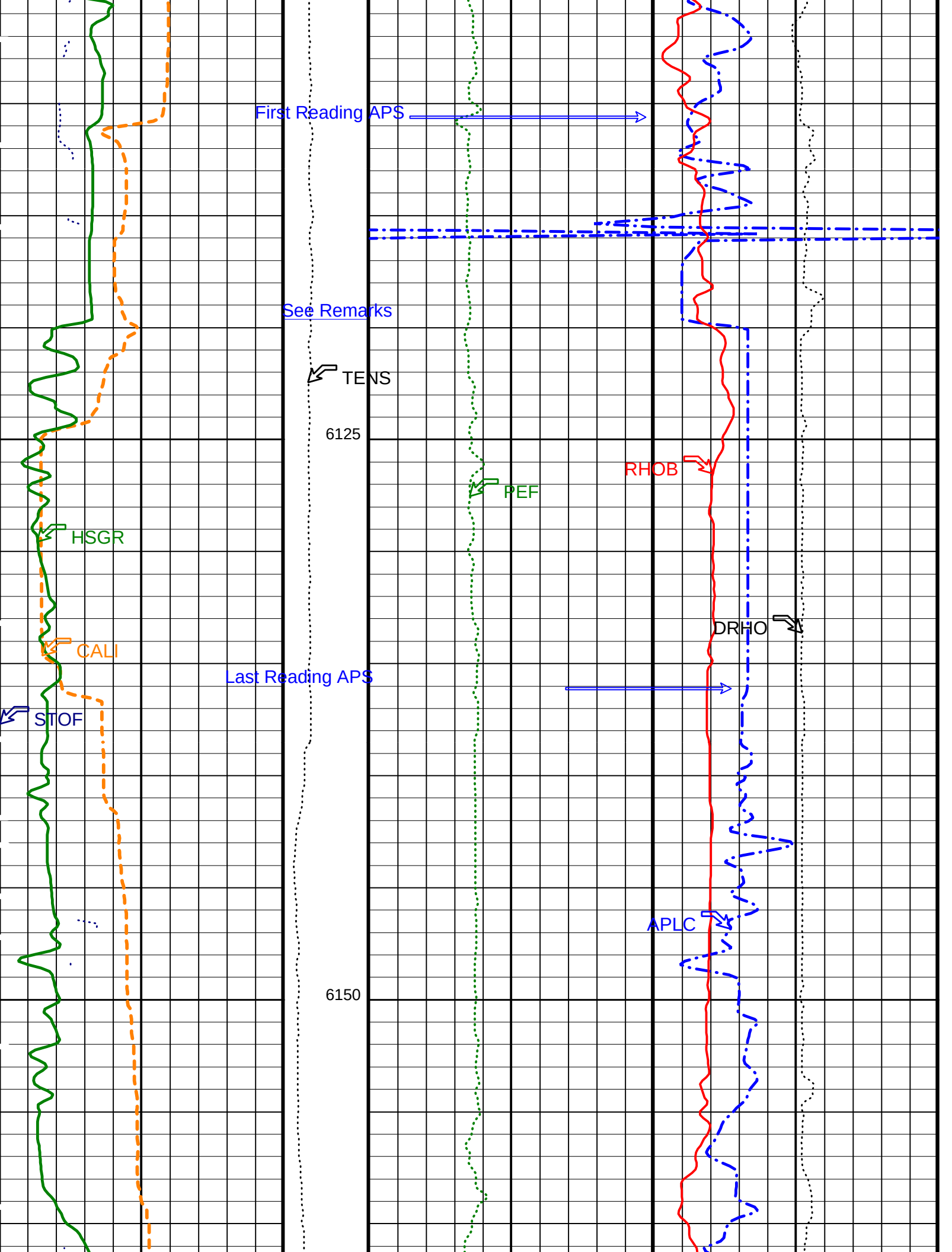

5850
5875

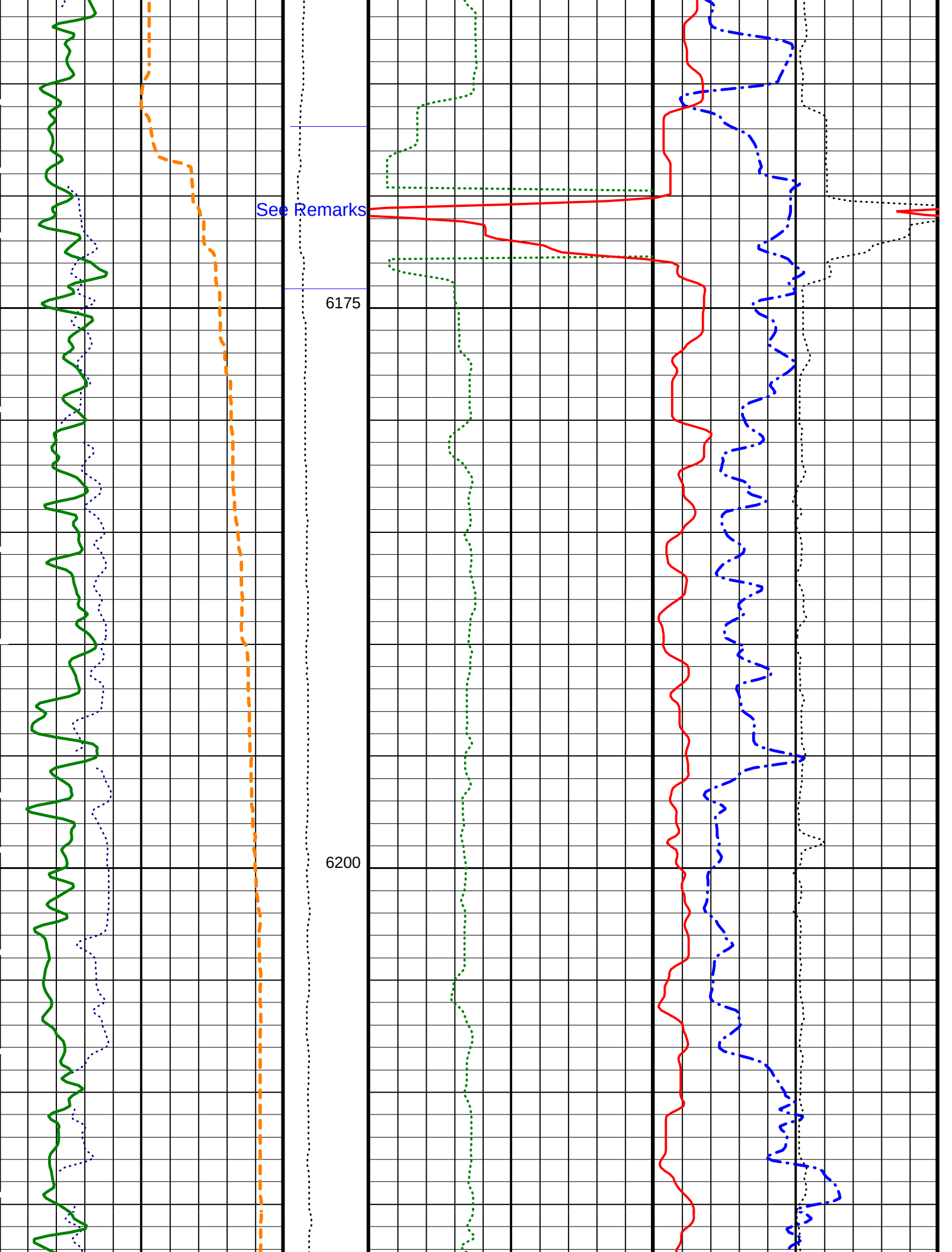

5900
5925

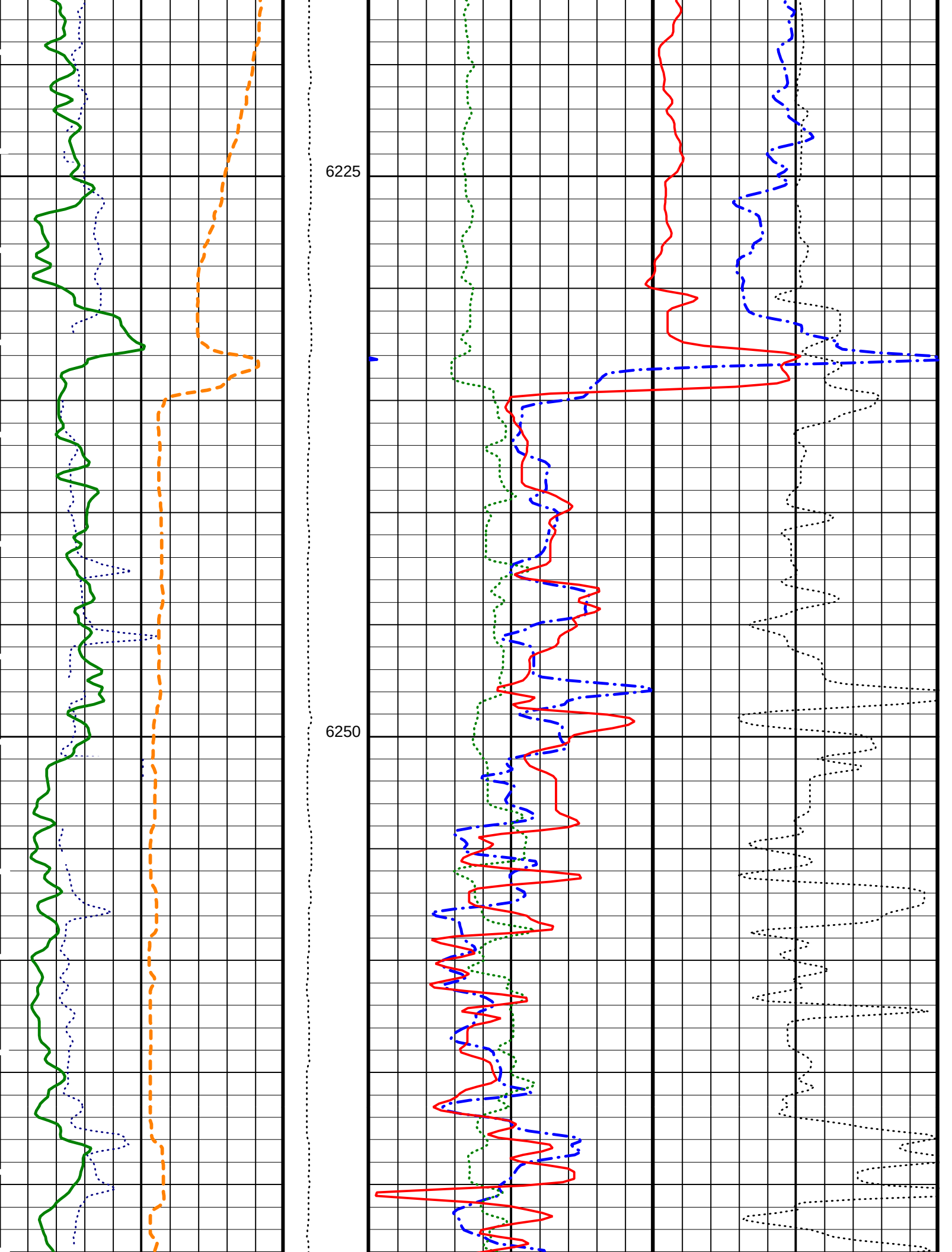

5950
5975

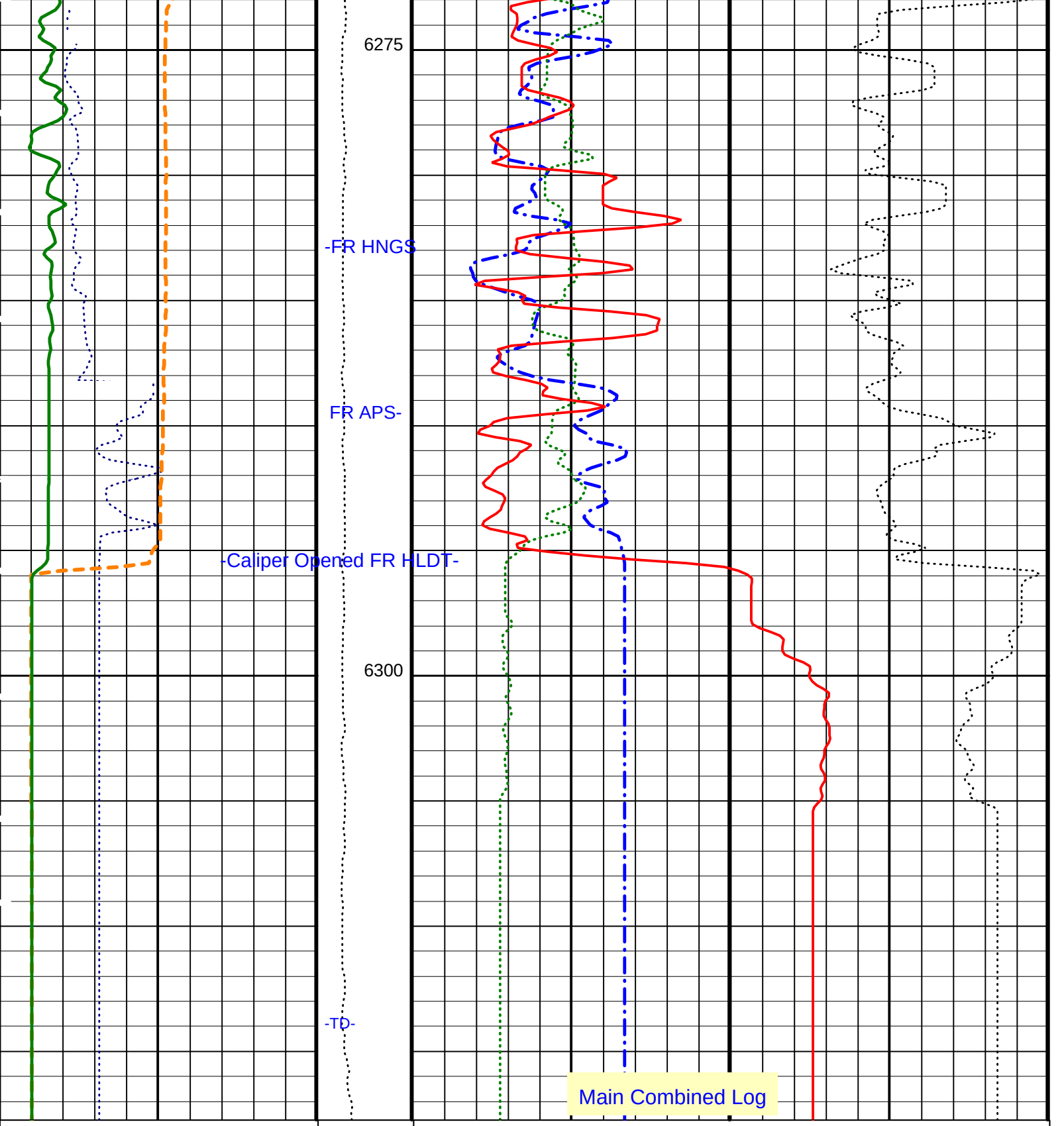

6000
6025


6050
6075
6100


First Reading APS
See Remarks
TENS
6125
RHOB
PEF
HSGR
DRHO
CALI
Last Reading APS
STOF
APLC
6150


See Remarks
6175
6200


6225
6250




Caliper (CALI)
0 (IN) 20

Tension (TENS) (LBF)
10000 0

APS Near/Array Corrected Limestone Porosity (APLC)
0 (PU) 100

APS Effective Standoff in Limestone (STOF)
-1 (IN) 4

PhotoElectric Factor (PEF)
0 (----) 10

Bulk Density Correction (DRHO)
-0.25 (G/C3) 0.25

HNGS Spectroscopy Gamma Ray (HSGR)
0 (GAPI) 100

Bulk Density (RHOB)
3 (G/C3) 1

PIP SUMMARY

Time Mark Every 60 S

# Parameters

| DLIS Name | Description | Value | |
|---|---|---|---|
| | APS Cement Thickness Source | COMPUTED | |
| | Apparent Thickness of Cement | 0 | IN |
| | APS Software Version | 5 | |
| AASD | APS Thermal and Array Detectors High Voltage Setting | 1968.98 | V |
| ABOS | APS Neutron Burst-Off Background Subtraction Switch | ON | |
| ADSO | APS Array Detectors Data Source Switch | Both | |
| AFSD | APS Far Detector High Voltage Setting | 2052.03 | V |
| AHCS | APS Holesize Correction Source | BS | |
| AHSS | APS Holesize Correction Switch | ON | |
| ALTDPCHAN | Name of alternate depth channel | MeasuredDepth | |
| AMTY | APS Environmental Corrections Mud Type | WaterBaseBarite | |
| ANSD | APS Near Detector High Voltage Setting | 1748.3 | V |
| AOTS | APS Old Temperature Sensor Switch | NO | |
| ASOS | APS Standoff Correction Switch | ON | |
| ATSS | APS Temperature-Pressure-Salinity Correction Switch | ON | |
| BAR1 | HNGS Detector 1 Barite Constant | 1 | |
| BAR2 | HNGS Detector 2 Barite Constant | 1 | |
| BFM | Borehole Fluid Medium | LIQUID | |
| BHK | HNGS Borehole Potassium Correction Concentration | 0 | |
| BHS | Borehole Status | OPEN | |
| BHT | Bottom Hole Temperature (used in calculations) | 40 | DEGF |
| BKSF | HNGS Borehole Fluid Excluder Sleeve Algorithm Factor | 1 | |
| BKSH | HNGS Borehole Fluid Excluder Sleeve Algorithm High Channel | 245 | |
| BKSL | HNGS Borehole Fluid Excluder Sleeve Algorithm Low Channel | 17 | |
| BS | Bit Size | 9.875 | IN |
| BSAL | Borehole Salinity | 35000.00 | PPM |
| CSD1 | Inner Casing Outer Diameter | 0 | IN |
| CSD2 | Outer Casing Outer Diameter | 0 | IN |
| CSIZ | Current Casing Size | 0.000 | IN |
| CSW1 | Inner Casing Weight | 0 | LB/F |
| CSW2 | Outer Casing Weight | 0 | LB/F |
| CWEI | Casing Weight | 0.00 | LB/F |
| D1PR | HNGS Detector 1 Calibration Thorium Peak Resolution | 8.0343 | % |
| D1TC | HNGS Detector 1 Calibration Temperature | 87.4251 | DEGF |
| D1TL | HNGS Detector 1 Calibration Thorium Peak Location | 210.477 | |
| D2PR | HNGS Detector 2 Calibration Thorium Peak Resolution | 7.33894 | % |
| D2TC | HNGS Detector 2 Calibration Temperature | 85.5201 | DEGF |
| D2TL | HNGS Detector 2 Calibration Thorium Peak Location | 208.56 | |
| DBCC | HNGS Barite Constant Correction Flag | NONE | |
| DFD | Drilling Fluid Density | 1.05 | G/C3 |
| DHC | Density Hole Correction | BS | |
| DO | Depth Offset for Playback | 0.0 | M |
| DPPM | Density Porosity Processing Mode | HIRS | |
| DPRF | DEEP REFERENCE POWER | 550 | NW |
| FD | Fluid Density | 1 | G/C3 |
| FSAL | Formation Salinity | 35500 | PPM |
| GCF1_START | HNGS Detector 1 GCF Constant | 1 | |
| GCF2_START | HNGS Detector 2 GCF Constant | 1 | |
| GCSE | Generalized Caliper Selection | CALI | |
| GDEV | Average Angular Deviation of Borehole from Normal | 0 | DEG |
| GGRD | Geothermal Gradient | 0.01 | DF/F |
| GRSE | Generalized Mud Resistivity Selection | CHART_GEN_9 | |
| GTSE | Generalized Temperature Selection | LINEAR_ESTIMATE | |
| H1P | HNGS Detector 1 Allow/Disallow In Processing | ALLOW | |
| H2P | HNGS Detector 2 Allow/Disallow In Processing | ALLOW | |
| HABK | HNGS Borehole Potassium Running Average | -0.00377598 | |
| HALF | HNGS Alpha Filter Length | 60 | IN |
| HATIM | HNGS Marquardt Accumulation Time | 600 | S |
| HCRB | HNGS Apply Borehole Potassium Correction | NONE | |
| HMWM | Mud Weighting Material | NATU | |
| HNPE | HNGS Processing Enable | YES | |
| HSLV | HNGS Borehole Fluid Excluder Sleeve Status | NO | |
| HSVN | HNGS Spectral Standards Version Number | 3.92875e-032 | |
| KFAC | K FACTOR | SOND | |
| LLOO | LATEROLOG LOOP | OFF | |
| LSHC | LS Hardware Loop Control | DISALLOW | |
| MARQ_START | HNGS Marquardt Start-up Mode | INTERNAL | |
| MATR | Rock Matrix for Neutron Porosity Corrections | LIMESTONE | |
| MDEN | Matrix Density | 2.71 | G/C3 |
| MST | Mud Sample Temperature | 82.00 | DEGC |
| NARC | APS Near/Array Calibration Ratio | 1.06443 | |
| NFRC | APS Near/Far Calibration Ratio | 0.900767 | |
| NOTS | NPLC Old Temperature Sensor | NO | |
| PBVSADP | Use alternate depth channel for playback | NO | |
| PLRM | POWER LOOP REFERENCE MODE | DEEP | |
| PP | Playback Processing | NORMAL | |
| QPPS | Quicklook Processing Pe Select | PEFL | |
| RDF1_START | HNGS Detector 1 RDF Constant | 0 | |

| | | | |
|---|---|---|---|
| RDF2_START | HNGS Detector 2 RDF Constant | 0 | |
| RMFS | Resistivity of Mud Filtrate Sample | -50000.0000 | OHMM |
| RW | Resistivity of Connate Water | 1.0000 | OHMM |
| S1BI | HNGS Detector 1 Calibration Bismuth Count Rate | 1.3 | CPS |
| S1NA | HNGS Detector 1 Calibration Sodium Count Rate | 21.323 | CPS |
| S1NG | HNGS Detector 1 Calibration End-On / Side-On Gain Ratio | 0.986452 | |
| S2BI | HNGS Detector 2 Calibration Bismuth Count Rate | 1.3 | CPS |
| S2NA | HNGS Detector 2 Calibration Sodium Count Rate | 21.8134 | CPS |
| S2NG | HNGS Detector 2 Calibration End-On / Side-On Gain Ratio | 0.977534 | |
| SABK | HNGS Statistical Uncertainty in Borehole Potassium Running Average | 9.20898e-005 | |
| SGRC | HNGS Standard Gamma-Ray Correction Flag | YES | |
| SHT | Surface Hole Temperature | 68 | DEGF |
| SPRF | SHALLOW REFERENCE POWER | 550 | NW |
| SSHC | SS Hardware Loop Control | DISALLOW | |
| TD | Total Depth | 20734 | FT |
| TDD | Total Depth - Driller | 6320.00 | M |
| TDL | Total Depth - Logger | 6320.00 | M |
| TPOS | Tool Position | ECCE | |
| TWS | Temperature of Connate Water Sample | 37.78 | DEGC |
| VBA1 | HNGS Detector 1 Variable Barite Factor Running Average | 1.07226 | |
| VBA2 | HNGS Detector 2 Variable Barite Factor Running Average | 1.02923 | |
| WMUD | Mud Weight | 0.994556 | G/C3 |

Format: APSLiquidPorosity_1 Vertical Scale: 1:200 Graphics File Created: 14-Apr-2001 10:46

## OP System Version: 9C2-303

MCM

| | | | |
|---|---|---|---|
| DLT-E | 9C2-303 | HLDT-A | 9C2-303 |
| DTA-A | 9C2-303 | NPLC-B | 9C2-303 |
| APS-BA | 9C2-303 | HNGS-BA | 9C2-303 |
| DTC-H | 9C2-303 | | |

## Input DLIS Files

| | | | | | | |
|---|---|---|---|---|---|---|
| DEFAULT | SPLICE_DLL_LDL_APS_096 | FN:1 | PRODUCER | 14-Apr-2001 10:44 | 6317.7 M | 5703.9 M |

## Output DLIS Files

| | | | | | | |
|---|---|---|---|---|---|---|
| DEFAULT | DLL_LDL_APS_HNGS_097PUP | FN:81 | PRODUCER | 14-Apr-2001 10:46 | | |
| REDUCE | DLL_LDL_APS_HNGS_097PUP | FN:82 | PRODUCER | 14-Apr-2001 10:46 | | |

## Input DLIS Files

| | | | | | | |
|---|---|---|---|---|---|---|
| DEFAULT | DLL_LDL_APS_HNGS_030LUP | FN:20 | PRODUCER | 12-Apr-2001 21:59 | 5904.7 M | 5810.1 M |

## Output DLIS Files

| | | | | | | |
|---|---|---|---|---|---|---|
| DEFAULT | DLL_LDL_APS_HNGS_038PUP | FN:36 | PRODUCER | 13-Apr-2001 00:53 | 5904.7 M | 5815.7 M |
| REDUCE | DLL_LDL_APS_HNGS_038PUP | FN:37 | PRODUCER | 13-Apr-2001 00:53 | 5904.7 M | 5815.7 M |

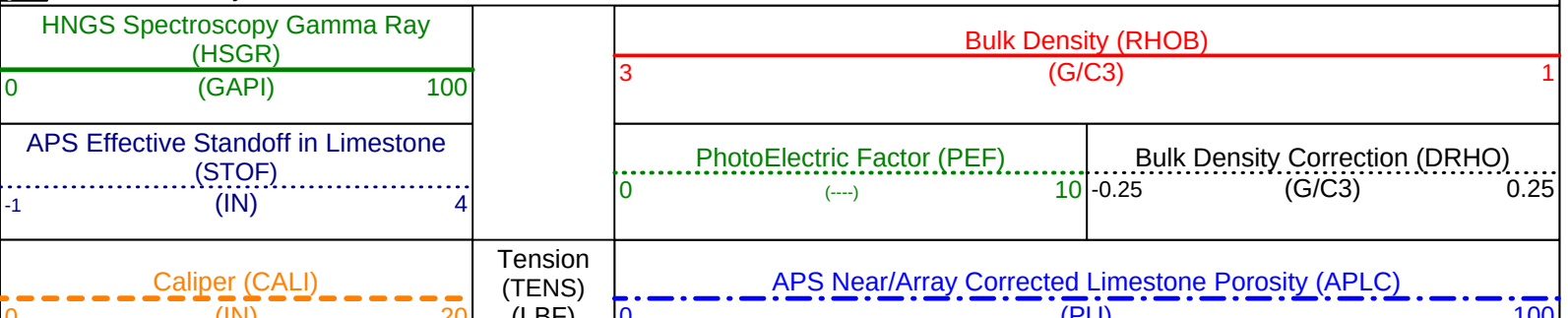
## OP System Version: 9C2-303

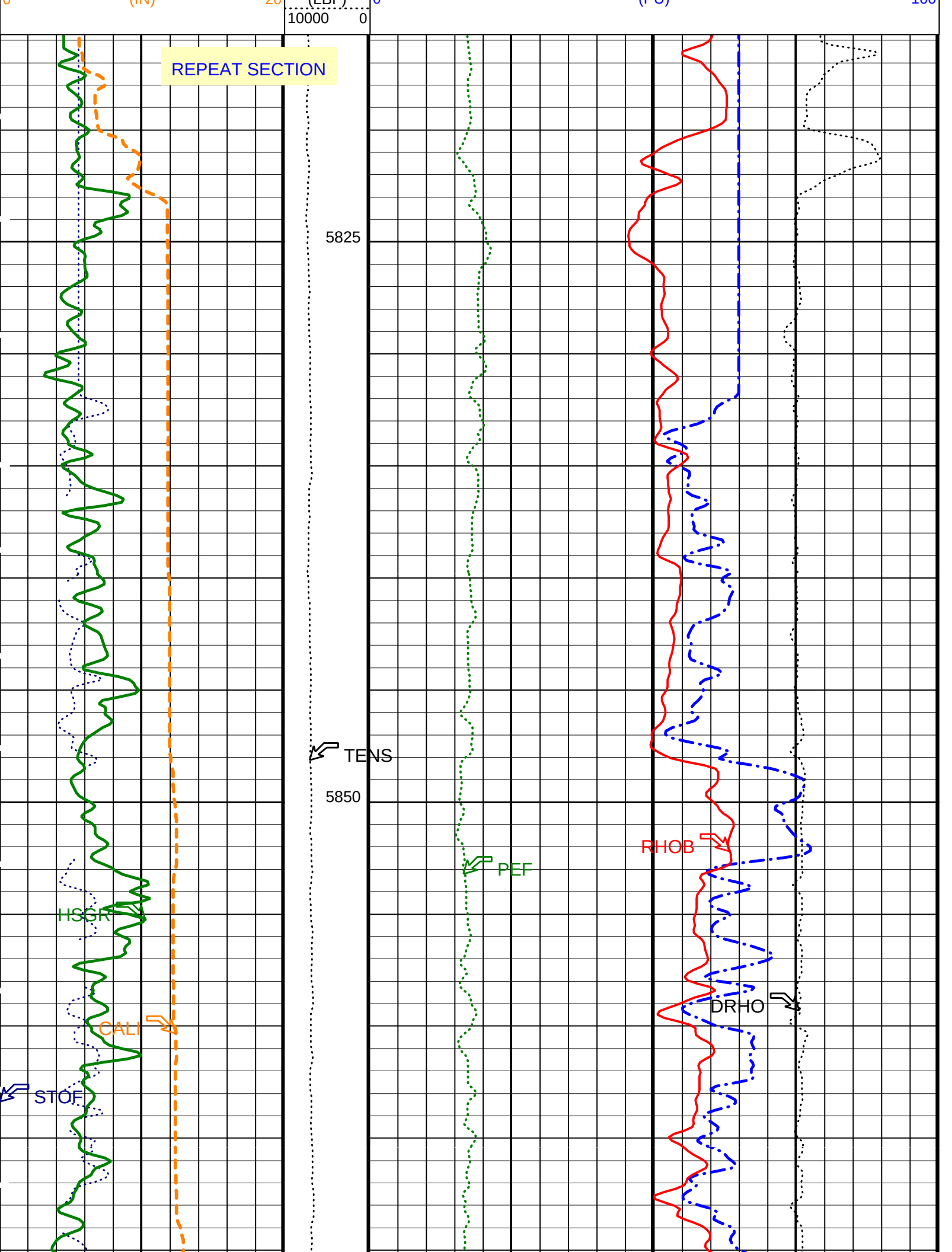
MCM

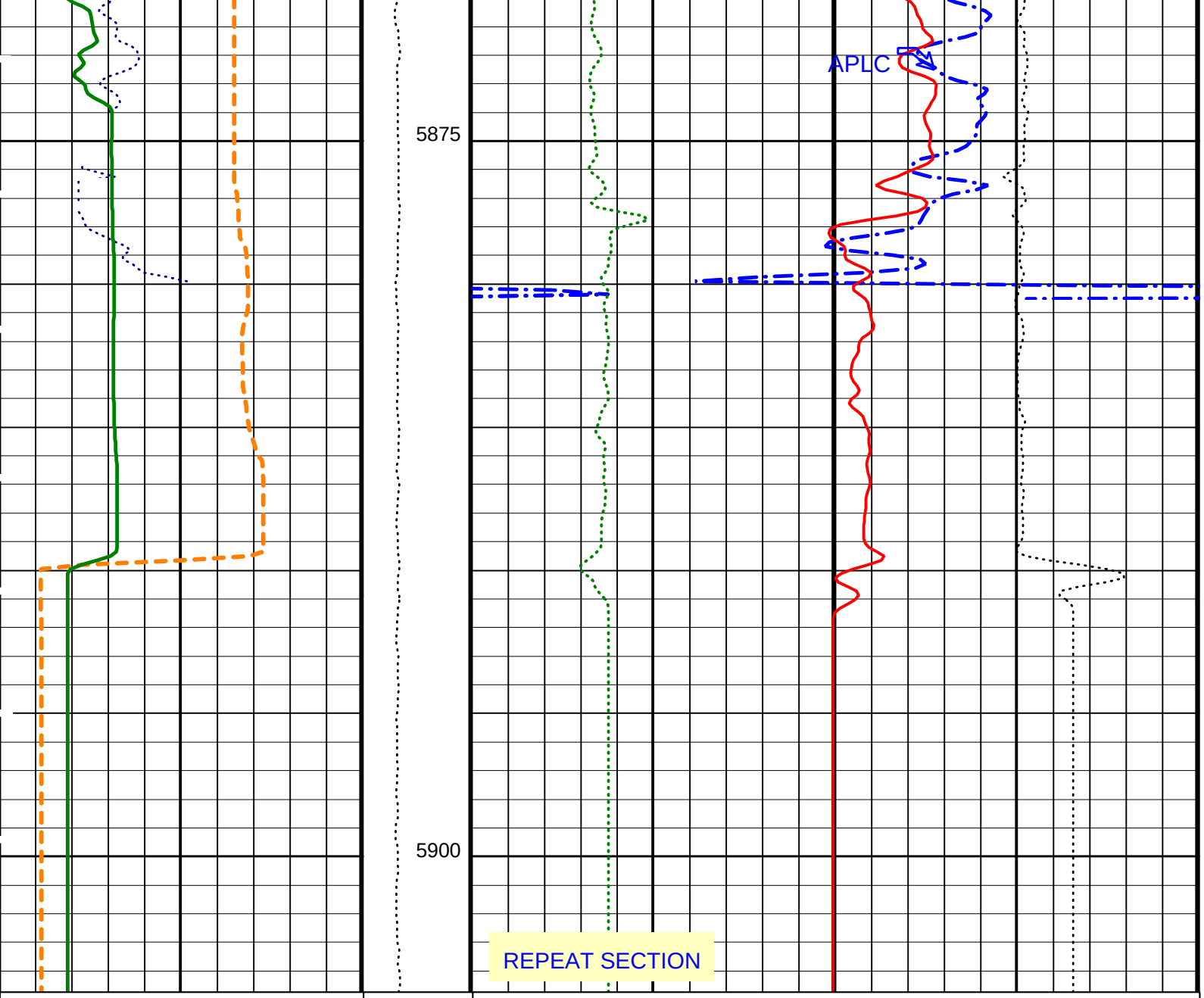
| | | | |
|---|---|---|---|
| DLT-E | 9C2-303 | HLDT-A | 9C2-303 |
| DTA-A | 9C2-303 | NPLC-B | 9C2-303 |
| APS-BA | 9C2-303 | HNGS-BA | 9C2-303 |
| DTC-H | 9C2-303 | | |

PIP SUMMARY

Time Mark Every 60 S




(IN)
20
(LBF)
10000
0
(PU)
100
REPEAT SECTION
5825
TENS
5850
PEF
RHOB
HSGR
DRHO
CALI
STOF




Caliper (CALI)
0 (IN) 20

Tension (TENS) (LBF)
10000 0

APS Near/Array Corrected Limestone Porosity (APLC)
0 (PU) 100

APS Effective Standoff in Limestone (STOF)
-1 (IN) 4

PhotoElectric Factor (PEF)
0 (----) 10

Bulk Density Correction (DRHO)
-0.25 (G/C3) 0.25

HNGS Spectroscopy Gamma Ray (HSGR)
0 (GAPI) 100

Bulk Density (RHOB)
3 (G/C3) 1

PIP SUMMARY

Time Mark Every 60 S

## Parameters

| DLIS Name | Description | Value | |
|---|---|---|---|
| | APS Cement Thickness Source | COMPUTED | |
| | Apparent Thickness of Cement | 0 | IN |
| | APS Software Version | 5 | |
| AASD | APS Thermal and Array Detectors High Voltage Setting | 1968.98 | V |
| ABOS | APS Neutron Burst-Off Background Subtraction Switch | ON | |
| ADSO | APS Array Detectors Data Source Switch | Both | |
| AFSD | APS Far Detector High Voltage Setting | 2052.03 | V |
| AHCS | APS Holesize Correction Source | BS | |

| | | | |
|---|---|---|---|
| AHSS | APS Holesize Correction Switch | ON | |
| ALTDPCHAN | Name of alternate depth channel | MeasuredDepth | |
| AMTY | APS Environmental Corrections Mud Type | WaterBaseBarite | |
| ANSD | APS Near Detector High Voltage Setting | 1748.3 | V |
| AOTS | APS Old Temperature Sensor Switch | NO | |
| ASOS | APS Standoff Correction Switch | ON | |
| ATSS | APS Temperature-Pressure-Salinity Correction Switch | ON | |
| BAR1 | HNGS Detector 1 Barite Constant | 1 | |
| BAR2 | HNGS Detector 2 Barite Constant | 1 | |
| BFM | Borehole Fluid Medium | LIQUID | |
| BHK | HNGS Borehole Potassium Correction Concentration | 0 | |
| BHS | Borehole Status | OPEN | |
| BHT | Bottom Hole Temperature (used in calculations) | 40 | DEGF |
| BKSF | HNGS Borehole Fluid Excluder Sleeve Algorithm Factor | 1 | |
| BKSH | HNGS Borehole Fluid Excluder Sleeve Algorithm High Channel | 245 | |
| BKSL | HNGS Borehole Fluid Excluder Sleeve Algorithm Low Channel | 17 | |
| BS | Bit Size | 9.875 | IN |
| BSAL | Borehole Salinity | 35000.00 | PPM |
| CSD1 | Inner Casing Outer Diameter | 0 | IN |
| CSD2 | Outer Casing Outer Diameter | 0 | IN |
| CSIZ | Current Casing Size | 0.000 | IN |
| CSW1 | Inner Casing Weight | 0 | LB/F |
| CSW2 | Outer Casing Weight | 0 | LB/F |
| CWEI | Casing Weight | 0.00 | LB/F |
| D1PR | HNGS Detector 1 Calibration Thorium Peak Resolution | 8.0343 | % |
| D1TC | HNGS Detector 1 Calibration Temperature | 87.4251 | DEGF |
| D1TL | HNGS Detector 1 Calibration Thorium Peak Location | 210.477 | |
| D2PR | HNGS Detector 2 Calibration Thorium Peak Resolution | 7.33894 | % |
| D2TC | HNGS Detector 2 Calibration Temperature | 85.5201 | DEGF |
| D2TL | HNGS Detector 2 Calibration Thorium Peak Location | 208.56 | |
| DBCC | HNGS Barite Constant Correction Flag | NONE | |
| DFD | Drilling Fluid Density | 1.05 | G/C3 |
| DHC | Density Hole Correction | BS | |
| DO | Depth Offset for Playback | 0.0 | M |
| DPPM | Density Porosity Processing Mode | HIRS | |
| DPRF | DEEP REFERENCE POWER | 550 | NW |
| FD | Fluid Density | 1 | G/C3 |
| FSAL | Formation Salinity | 35500 | PPM |
| GCF1_START | HNGS Detector 1 GCF Constant | 1 | |
| GCF2_START | HNGS Detector 2 GCF Constant | 1 | |
| GCSE | Generalized Caliper Selection | CALI | |
| GDEV | Average Angular Deviation of Borehole from Normal | 0 | DEG |
| GGRD | Geothermal Gradient | 0.01 | DF/F |
| GRSE | Generalized Mud Resistivity Selection | CHART_GEN_9 | |
| GTSE | Generalized Temperature Selection | LINEAR_ESTIMATE | |
| H1P | HNGS Detector 1 Allow/Disallow In Processing | ALLOW | |
| H2P | HNGS Detector 2 Allow/Disallow In Processing | ALLOW | |
| HABK | HNGS Borehole Potassium Running Average | -0.0040082 | |
| HALF | HNGS Alpha Filter Length | 60 | IN |
| HATIM | HNGS Marquardt Accumulation Time | 600 | S |
| HCRB | HNGS Apply Borehole Potassium Correction | NONE | |
| HMWM | Mud Weighting Material | NATU | |
| HNPE | HNGS Processing Enable | YES | |
| HSLV | HNGS Borehole Fluid Excluder Sleeve Status | NO | |
| HSVN | HNGS Spectral Standards Version Number | 2.30388e-036 | |
| KFAC | K FACTOR | SOND | |
| LLOO | LATEROLOG LOOP | OFF | |
| LSHC | LS Hardware Loop Control | DISALLOW | |
| MARQ_START | HNGS Marquardt Start-up Mode | INTERNAL | |
| MATR | Rock Matrix for Neutron Porosity Corrections | LIMESTONE | |
| MDEN | Matrix Density | 2.71 | G/C3 |
| MST | Mud Sample Temperature | 82.00 | DEGC |
| NARC | APS Near/Array Calibration Ratio | 1.06443 | |
| NFRC | APS Near/Far Calibration Ratio | 0.900767 | |
| NOTS | NPLC Old Temperature Sensor | NO | |
| PBVSADP | Use alternate depth channel for playback | YES | |
| PLRM | POWER LOOP REFERENCE MODE | DEEP | |
| PP | Playback Processing | RECOMPUTE | |
| QPPS | Quicklook Processing Pe Select | PEFL | |
| RDF1_START | HNGS Detector 1 RDF Constant | 0 | |
| RDF2_START | HNGS Detector 2 RDF Constant | 0 | |
| RMFS | Resistivity of Mud Filtrate Sample | -50000.0000 | OHMM |
| RW | Resistivity of Connate Water | 1.0000 | OHMM |
| S1BI | HNGS Detector 1 Calibration Bismuth Count Rate | 1.3 | CPS |
| S1NA | HNGS Detector 1 Calibration Sodium Count Rate | 21.323 | CPS |
| S1NG | HNGS Detector 1 Calibration End-On / Side-On Gain Ratio | 0.986452 | |
| S2BI | HNGS Detector 2 Calibration Bismuth Count Rate | 1.3 | CPS |
| S2NA | HNGS Detector 2 Calibration Sodium Count Rate | 21.8134 | CPS |
| S2NG | HNGS Detector 2 Calibration End-On / Side-On Gain Ratio | 0.977534 | |
| SABK | HNGS Statistical Uncertainty in Borehole Potassium Running Average | 8.45832e-005 | |
| SGRC | HNGS Standard Gamma-Ray Correction Flag | YES | |
| SHT | Surface Hole Temperature | 68 | DEGF |
| SPRF | SHALLOW REFERENCE POWER | 550 | NW |
| SSHC | SS Hardware Loop Control | DISALLOW | |

| | | | |
|---|---|---|---|
| TD | Total Depth | 20734 | FT |
| TDD | Total Depth - Driller | 6320.00 | M |
| TDL | Total Depth - Logger | 6320.00 | M |
| TPOS | Tool Position | ECCE | |
| TWS | Temperature of Connate Water Sample | 37.78 | DEGC |
| VBA1 | HNGS Detector 1 Variable Barite Factor Running Average | 1.06885 | |
| VBA2 | HNGS Detector 2 Variable Barite Factor Running Average | 1.04232 | |
| WMUD | Mud Weight | 0.994556 | G/C3 |

Format: APSLiquidPorosity_1 Vertical Scale: 1:200 Graphics File Created: 13-Apr-2001 00:53

## OP System Version: 9C2-303

MCM

| | | | |
|---|---|---|---|
| DLT-E | 9C2-303 | HLDT-A | 9C2-303 |
| DTA-A | 9C2-303 | NPLC-B | 9C2-303 |
| APS-BA | 9C2-303 | HNGS-BA | 9C2-303 |
| DTC-H | 9C2-303 | | |

## Input DLIS Files

| | | | | | | |
|---|---|---|---|---|---|---|
| DEFAULT | DLL_LDL_APS_HNGS_030LUP | FN:20 | PRODUCER | 12-Apr-2001 21:59 | 5904.7 M | 5810.1 M |

## Output DLIS Files

| | | | | |
|---|---|---|---|---|
| DEFAULT | DLL_LDL_APS_HNGS_038PUP | FN:36 | PRODUCER | 13-Apr-2001 00:53 |
| REDUCE | DLL_LDL_APS_HNGS_038PUP | FN:37 | PRODUCER | 13-Apr-2001 00:53 |

Calibration and Check Summary

| Measurement | Nominal | Master | Before | After | Change | Limit | Units |
|---|---|---|---|---|---|---|---|
| DUAL LATEROLOG - E Wellsite Calibration - DLT ELECTRONICS CALIBRATION Laterolog Measurement | | | | | | | |
| Before: 12-Apr-2001 19:31 After: 13-Apr-2001 0:05 | | | | | | | |
| MEASURED LLD | 31.62 | N/A | 31.96 | 31.95 | -0.009939 | 0.9000 | OHMM |
| MEASURED LLS | 31.62 | N/A | 31.13 | 31.15 | 0.01953 | 0.9000 | OHMM |
| Hostile Environment Litho Density - A Wellsite Calibration - Background Measurement | | | | | | | |
| Master: 25-Feb-2001 4:31 Before: 17-Mar-2001 2:28 After: 13-Apr-2001 2:11 | | | | | | | |
| LSW1 Background | 100.0 | 89.57 | 90.13 | 89.70 | -0.4220 | 3.000 | CPS |
| LSW2 Background | 105.0 | 93.01 | 94.83 | 94.01 | -0.8213 | 3.150 | CPS |
| LSW3 Background | 210.0 | 182.4 | 180.0 | 181.4 | 1.325 | 6.300 | CPS |
| LSW4 Background | 290.0 | 244.1 | 244.0 | 243.0 | -1.012 | 8.700 | CPS |
| LSW5 Background | 610.0 | 539.3 | 535.2 | 533.1 | -2.070 | 18.30 | CPS |
| SSW1 Background | 100.0 | 86.90 | 87.09 | 86.97 | -0.1207 | 3.000 | CPS |
| SSW2 Background | 200.0 | 172.0 | 171.7 | 170.1 | -1.511 | 6.000 | CPS |
| SSW3 Background | 530.0 | 455.8 | 454.0 | 451.8 | -2.122 | 15.90 | CPS |
| SSW4 Background | 280.0 | 240.8 | 240.9 | 239.7 | -1.131 | 8.400 | CPS |
| SSW5 Background | 205.0 | 178.8 | 179.0 | 179.2 | 0.2390 | 6.150 | CPS |
| Hostile Environment Litho Density - A Wellsite Calibration - Tool Quality Control Information High Voltage | | | | | | | |
| Master: 25-Feb-2001 4:31 Before: 17-Mar-2001 2:28 After: 13-Apr-2001 2:11 | | | | | | | |
| LS Bkg. High Voltage | 1127 | 1127 | 1132 | 1134 | 2.103 | N/A | V |
| SS Bkg. High Voltage | 1178 | 1178 | 1178 | 1180 | 2.536 | N/A | V |
| Hostile Environment Litho Density - A Wellsite Calibration - Detectors Resolution From BKG Measurments | | | | | | | |
| Master: 25-Feb-2001 4:31 Before: 17-Mar-2001 2:28 After: 13-Apr-2001 2:11 | | | | | | | |
| LS Background Resolution | 1.000 | 1.027 | 1.041 | 1.045 | 0.003996 | N/A | |
| SS Background Resolution | 1.000 | 0.9461 | 0.9462 | 0.9470 | 0.0008126 | N/A | |
| Hostile Environment Litho Density - A Wellsite Calibration - Caliper Calibration | | | | | | | |
| Before: 17-Mar-2001 2:07 | | | | | | | |
| Caliper Small Ring | 12.00 | N/A | 16.23 | N/A | N/A | N/A | IN |
| Caliper Large Ring | 18.25 | N/A | 23.88 | N/A | N/A | N/A | IN |
| Hostile Environment Litho Density - A Master Calibration - Aluminum Measurement | | | | | | | |
| Master: 25-Feb-2001 4:52 | | | | | | | |
| LSW1 Aluminum | 648.4 | 598.2 | -- | -- | -- | -- | CPS |
| LSW2 Aluminum | 1018 | 955.0 | -- | -- | -- | -- | CPS |
| LSW3 Aluminum | 1105 | 1008 | -- | -- | -- | -- | CPS |
| LSW4 Aluminum | 609.5 | 556.2 | -- | -- | -- | -- | CPS |
| LSW5 Aluminum | 533.8 | 492.0 | -- | -- | -- | -- | CPS |
| SSW1 Aluminum | 2664 | 2543 | -- | -- | -- | -- | CPS |
| SSW2 Aluminum | 7731 | 7423 | -- | -- | -- | -- | CPS |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| SSW3 Aluminum | 10380 | 9983 | -- | -- | -- | -- | CPS |
| SSW4 Aluminum | 4574 | 4364 | -- | -- | -- | -- | CPS |
| SSW5 Aluminum | 745.2 | 725.1 | -- | -- | -- | -- | CPS |

Hostile Environment Litho Density - A Master Calibration - Tool Quality Control Information: High Voltage
Master: 25-Feb-2001 4:52

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| LS Alum. High Voltage | 1127 | 1130 | -- | -- | -- | -- | V |
| SS Alum. High Voltage | 1178 | 1167 | -- | -- | -- | -- | V |

Hostile Environment Litho Density - A Master Calibration - Detectors Resolution From Aluminum Measurment
Master: 25-Feb-2001 4:52

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| LS Aluminum Resolution | 1.000 | 1.041 | -- | -- | -- | -- | |
| SS Aluminum Resolution | 1.000 | 1.028 | -- | -- | -- | -- | |

Hostile Environment Litho Density - A Master Calibration - Aluminum Measurement (Window Ratios)
Master: 25-Feb-2001 4:52

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| LSW1/(LSW4 + LSW5) Calc. | 0.5400 | 0.5707 | -- | -- | -- | -- | |
| LSW3/(LSW4 + LSW5) Calc. | 0.9600 | 0.9613 | -- | -- | -- | -- | |
| SSW1/(SSW4 + SSW5) Calc. | 0.4600 | 0.4997 | -- | -- | -- | -- | |
| SSW3/(SSW4 + SSW5) Calc. | 1.900 | 1.962 | -- | -- | -- | -- | |

Hostile Environment Litho Density - A Master Calibration - Litholog Measurement
Master: 25-Feb-2001 4:47

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| LSW1 Iron | 410.0 | 429.9 | -- | -- | -- | -- | CPS |
| LSW2 Iron | 870.0 | 810.2 | -- | -- | -- | -- | CPS |
| LSW3 Iron | 1030 | 934.8 | -- | -- | -- | -- | CPS |
| LSW4 Iron | 590.0 | 523.3 | -- | -- | -- | -- | CPS |
| LSW5 Iron | 530.0 | 468.6 | -- | -- | -- | -- | CPS |
| SSW1 Iron | 1850 | 1887 | -- | -- | -- | -- | CPS |
| SSW2 Iron | 6500 | 6358 | -- | -- | -- | -- | CPS |
| SSW3 Iron | 10000 | 9323 | -- | -- | -- | -- | CPS |
| SSW4 Iron | 4500 | 4091 | -- | -- | -- | -- | CPS |
| SSW5 Iron | 750.0 | 658.2 | -- | -- | -- | -- | CPS |

Hostile Environment Litho Density - A Master Calibration - Tool Quality Control Information: High Voltage
Master: 25-Feb-2001 4:47

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| LS Lith High Voltage | 1127 | 1129 | -- | -- | -- | -- | V |
| SS Lith High Voltage | 1178 | 1169 | -- | -- | -- | -- | V |

Hostile Environment Litho Density - A Master Calibration - Detectors Resolution From Litholog Measurment
Master: 25-Feb-2001 4:47

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| LS Lith Resolution | 1.000 | 1.033 | -- | -- | -- | -- | |
| SS Lith Resolution | 1.000 | 1.032 | -- | -- | -- | -- | |

Accelerator-Porosity Tool Wellsite Calibration - Detector Background
Master: 24-Feb-2001 4:02 Before: 12-Apr-2001 16:55 After: 12-Apr-2001 23:55

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Near Det Bkg Cntrate | 30.00 | 32.57 | 32.70 | 55.83 | 23.12 | N/A | CPS |
| Far Det Bkg Cntrate | 30.00 | 32.66 | 32.64 | 34.38 | 1.745 | N/A | CPS |
| Array-1 Det Bkg Cntrate | 30.00 | 29.51 | 29.03 | 38.58 | 9.554 | N/A | CPS |
| Array-2 Det Bkg Cntrate | 30.00 | 30.14 | 31.34 | 37.91 | 6.580 | N/A | CPS |
| Array Therm Det Bkg Cntrate | 30.00 | 33.69 | 31.99 | 38.16 | 6.171 | N/A | CPS |

Accelerator-Porosity Tool Wellsite Calibration - Calibration Ratios
Master: 24-Feb-2001 4:02

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Near/Far Calibration Ratio | 0.9250 | 0.9008 | N/A | N/A | N/A | N/A | |
| Near/Array Calibration Ratio | 1.030 | 1.064 | N/A | N/A | N/A | N/A | |

Accelerator-Porosity Tool Master Calibration - Tank Check
Master: 24-Feb-2001 4:02

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Array-1 Standoff Porosity | 10.25 | 11.67 | -- | -- | -- | -- | PU |
| Array-2 Standoff Porosity | 10.25 | 11.37 | -- | -- | -- | -- | PU |
| Sigma Formation | 27.50 | 28.08 | -- | -- | -- | -- | CU |

Hostile Natural Gamma Ray Sonde Wellsite Calibration - Detector 1 Check
Master: 24-Feb-2001 5:08 Before: 11-Mar-2001 3:09 After: 13-Apr-2001 2:16

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Na 511 Peak Loc | 40.00 | 40.59 | 40.57 | 40.79 | 0.2230 | 1.000 | |
| Na 511 Peak Res | 15.50 | 16.64 | 16.82 | 15.62 | -1.199 | 2.000 | % |
| High Voltage | 1150 | 1101 | 1108 | 1108 | -0.2228 | 30.00 | V |
| Na 1785 Peak Loc | 142.6 | 145.5 | 146.4 | 146.3 | -0.03072 | 7.000 | |
| Na 1785 Peak Res | 8.500 | 9.019 | 9.237 | 9.499 | 0.2612 | 2.000 | % |
| Temperature | 15.50 | 30.80 | 32.93 | 30.94 | -1.994 | N/A | DEGC |
| Na Count Rate | 45.00 | 21.32 | 21.01 | 20.42 | -0.5898 | 8.000 | CPS |

Hostile Natural Gamma Ray Sonde Wellsite Calibration - Detector 2 Check
Master: 24-Feb-2001 5:08 Before: 11-Mar-2001 3:09 After: 13-Apr-2001 2:16

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Na 511 Peak Loc | 40.00 | 40.60 | 40.59 | 40.49 | -0.09770 | 1.000 | |
| Na 511 Peak Res | 15.50 | 16.11 | 16.15 | 15.31 | -0.8404 | 2.000 | % |
| High Voltage | 1150 | 1189 | 1197 | 1196 | -0.6383 | 30.00 | V |
| Na 1785 Peak Loc | 142.6 | 144.7 | 145.0 | 144.8 | -0.2100 | 7.000 | |
| Na 1785 Peak Res | 8.500 | 9.551 | 7.951 | 8.858 | 0.9066 | 2.000 | % |
| Temperature | 15.50 | 29.75 | 31.98 | 30.79 | -1.189 | N/A | DEGC |
| Na Count Rate | 45.00 | 21.81 | 21.19 | 20.76 | -0.4358 | 8.000 | CPS |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Na Count Rate | 43.00 | 21.81 | 21.19 | 20.70 | 0.4888 | 3.000 | CPS |

Hostile Natural Gamma Ray Sonde Wellsite Calibration - Ratio Of Detector 1 To Detector 2
Master: 24-Feb-2001 5:08 Before: 11-Mar-2001 3:09 After: 13-Apr-2001 2:16

| | | | | | | |
|---|---|---|---|---|---|---|
| Coincidence Count Rate Ratio | 1.000 | 0.9809 | 0.9916 | 0.9853 | -0.006294 | 0.05000 | |

Hostile Natural Gamma Ray Sonde Master Calibration - Detector 1 Calibration
Master: 24-Feb-2001 4:53

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Na 511 Peak Set Point | 40.00 | 41.00 | -- | -- | -- | -- | |
| Th Peak Loc | 209.6 | 210.5 | -- | -- | -- | -- | |
| Th Peak Res | 7.000 | 8.034 | -- | -- | -- | -- | % |
| Background Count Rate | 142.5 | 16.57 | -- | -- | -- | -- | CPS |
| Gain Ratio | 1.000 | 0.9865 | -- | -- | -- | -- | |

Hostile Natural Gamma Ray Sonde Master Calibration - Detector 2 Calibration
Master: 24-Feb-2001 4:53

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Na 511 Peak Set Point | 40.00 | 41.00 | -- | -- | -- | -- | |
| Th Peak Loc | 209.6 | 208.6 | -- | -- | -- | -- | |
| Th Peak Res | 7.000 | 7.339 | -- | -- | -- | -- | % |
| Background Count Rate | 142.5 | 18.32 | -- | -- | -- | -- | CPS |
| Gain Ratio | 1.000 | 0.9775 | -- | -- | -- | -- | |

Accelerator-Porosity Tool - Detector Plateau Settings :

Near Detector Plateau Setting 1748 V
Far Detector Plateau Setting 2052 V
Array Detector Plateau Setting 1969 V

DUAL LATEROLOG - E / Equipment Identification

Primary Equipment:

Auxiliary Equipment:

| | | |
|---|---|---|
| Dual Laterolog Electrode | DLE - E | |
| Dual Laterolog Sonde | DLS - F | 929 |
| Dual Laterolog Housing | DLH - CB | 2893 |
| Dual Laterolog Cartridge | DLC - D | 930 |
| Laterolog Control Module | LCM - AA | 728 |

Hostile Environment Litho Density - A / Equipment Identification

Primary Equipment:

| | | |
|---|---|---|
| HOSTILE ENVIRONMENT LITHO DENSITY HIGH V | HLDV - A | 10 |
| HOSTILE ENVIRONMENT LITHO DENSITY CARTRI | HLDC - AA | 11 |
| Gamma Source Radioactive | GSR - Z | 1846 |

Auxiliary Equipment:

| | | |
|---|---|---|
| HOSTILE ENVIRONMENT LITHO DENSITY SONDE | HLDS - B | 10 |
| HOSTILE ENVIRONMENT ELECTRONICS CARTRIDG | HEH - H | 12 |
| HOSTILE ENVIRONMENT ELECTRONICS CARTRIDG | HEH - G | 11 |
| HOSTILE ENVIRONMENT LITHO DENSITY PAD | HLDP - B | 10 |

Hostile Environment Litho Density - A Wellsite Calibration

Background Measurement

| Phase | LSW1 Background CPS | Value |
|---|---|---|
| Master | | 89.57 |
| Before | | 90.13 |
| After | | 89.70 |
| | 65.00 (Minimum) 100.0 (Nominal) 125.0 (Maximum) | |

| Phase | LSW2 Background CPS | Value |
|---|---|---|
| Master | | 93.01 |
| Before | | 94.83 |
| After | | 94.01 |
| | 70.00 (Minimum) 105.0 (Nominal) 130.0 (Maximum) | |

| Phase | LSW3 Background CPS | Value |
|---|---|---|
| Master | | 182.4 |
| Before | | 180.0 |
| After | | 181.4 |
| | 150.0 (Minimum) 210.0 (Nominal) 250.0 (Maximum) | |

| Phase | LSW4 Background CPS | Value |
|---|---|---|
| Master | | 244.1 |
| Before | | 244.0 |
| After | | 243.0 |
| | 220.0 (Minimum) 290.0 (Nominal) 330.0 (Maximum) | |

| Phase | LSW5 Background CPS | Value |
|---|---|---|
| Master | | 539.3 |
| Before | | 535.2 |
| After | | 533.1 |
| | 430.0 (Minimum) 610.0 (Nominal) 730.0 (Maximum) | |

| Phase | SSW1 Background CPS | Value |
|---|---|---|
| Master | | 86.90 |
| Before | | 87.09 |
| After | | 86.97 |
| | 70.00 (Minimum) 100.0 (Nominal) 120.0 (Maximum) | |

| Phase | SSW2 Background CPS | Value |
|---|---|---|
| Master | | 172.0 |
| Before | | 171.7 |
| After | | 170.1 |
| 140.0 (Minimum) | 200.0 (Nominal) | 240.0 (Maximum) |

| Phase | SSW3 Background CPS | Value |
|---|---|---|
| Master | | 455.8 |
| Before | | 454.0 |
| After | | 451.8 |
| 380.0 (Minimum) | 530.0 (Nominal) | 630.0 (Maximum) |

| Phase | SSW4 Background CPS | Value |
|---|---|---|
| Master | | 240.8 |
| Before | | 240.9 |
| After | | 239.7 |
| 190.0 (Minimum) | 280.0 (Nominal) | 340.0 (Maximum) |

| Phase | SSW5 Background CPS | Value |
|---|---|---|
| Master | | 178.8 |
| Before | | 179.0 |
| After | | 179.2 |
| 140.0 (Minimum) | 205.0 (Nominal) | 250.0 (Maximum) |

Master: 25-Feb-2001 4:31 Before: 17-Mar-2001 2:28 After: 13-Apr-2001 2:11

Hostile Environment Litho Density - A Wellsite Calibration

Detectors Resolution From BKG Measurments

| Phase | LS Background Resolution | Value |
|---|---|---|
| Master | | 1.027 |
| Before | | 1.041 |
| After | | 1.045 |
| 0.7000 (Minimum) | 1.000 (Nominal) | 1.111 (Maximum) |

| Phase | SS Background Resolution | Value |
|---|---|---|
| Master | | 0.9461 |
| Before | | 0.9462 |
| After | | 0.9470 |
| 0.7000 (Minimum) | 1.000 (Nominal) | 1.111 (Maximum) |

Master: 25-Feb-2001 4:31 Before: 17-Mar-2001 2:28 After: 13-Apr-2001 2:11

Hostile Environment Litho Density - A Master Calibration

Aluminum Measurement

| Phase | LSW1 Aluminum CPS | Value |
|---|---|---|
| Master | | 598.2 |
| 440.0 (Minimum) | 648.4 (Nominal) | 840.0 (Maximum) |

| Phase | LSW2 Aluminum CPS | Value |
|---|---|---|
| Master | | 955.0 |
| 840.0 (Minimum) | 1018 (Nominal) | 1200 (Maximum) |

| Phase | LSW3 Aluminum CPS | Value |
|---|---|---|
| Master | | 1008 |
| 920.0 (Minimum) | 1105 (Nominal) | 1280 (Maximum) |

| Phase | LSW4 Aluminum CPS | Value |
|---|---|---|
| Master | | 556.2 |
| 520.0 (Minimum) | 609.5 (Nominal) | 720.0 (Maximum) |

| Phase | LSW5 Aluminum CPS | Value |
|---|---|---|
| Master | | 492.0 |
| 450.0 (Minimum) | 533.8 (Nominal) | 670.0 (Maximum) |

| Phase | SSW1 Aluminum CPS | Value |
|---|---|---|
| Master | | 2543 |
| 1850 (Minimum) | 2664 (Nominal) | 2900 (Maximum) |

| Phase | SSW2 Aluminum CPS | Value |
|---|---|---|
| Master | | 7423 |
| 6200 (Minimum) | 7731 (Nominal) | 8500 (Maximum) |

| Phase | SSW3 Aluminum CPS | Value |
|---|---|---|
| Master | | 9983 |
| 8750 (Minimum) | 10380 (Nominal) | 11750 (Maximum) |

| Phase | SSW4 Aluminum CPS | Value |
|---|---|---|
| Master | | 4364 |
| 4000 (Minimum) | 4574 (Nominal) | 5400 (Maximum) |

| Phase | SSW5 Aluminum CPS | Value |
|---|---|---|
| Master | | 725.1 |
| 570.0 (Minimum) | 745.2 (Nominal) | 1110 (Maximum) |

Master: 25-Feb-2001 4:52

Hostile Environment Litho Density - A Master Calibration

Detectors Resolution From Aluminum Measurment

| Phase | LS Aluminum Resolution | Value |
|---|---|---|
| Master | | 1.041 |
| 0.7000 (Minimum) | 1.000 (Nominal) | 1.111 (Maximum) |

| Phase | SS Aluminum Resolution | Value |
|---|---|---|
| Master | | 1.028 |
| 0.7000 (Minimum) | 1.000 (Nominal) | 1.111 (Maximum) |

Master: 25-Feb-2001 4:52

Hostile Environment Litho Density - A Master Calibration

Aluminum Measurement (Window Ratios)

| Phase | LSW1/(LSW4 + LSW5) Calc. | Value |
|---|---|---|
| Master | | 0.5707 |
| 0.3400 (Minimum) | 0.5400 (Nominal) | 0.7400 (Maximum) |

| Phase | LSW3/(LSW4 + LSW5) Calc. | Value |
|---|---|---|
| Master | | 0.9613 |
| 0.7600 (Minimum) | 0.9600 (Nominal) | 1.160 (Maximum) |

| Phase | SSW1/(SSW4 + SSW5) Calc. | Value |
|---|---|---|
| Master | | 0.4997 |
| 0.3600 | 0.4600 | 0.5600 |

| Phase | SSW3/(SSW4 + SSW5) Calc. | Value |
|---|---|---|
| Master | | 1.962 |
| 1.700 | 1.900 | 2.100 |

(Minimum) (Nominal) (Maximum) (Minimum) (Nominal) (Maximum)

Master: 25-Feb-2001 4:52

## Hostile Environment Litho Density - A Master Calibration

### Litholog Measurement

| Phase | LSW1 Iron CPS | Value | LSW2 Iron CPS | Value | LSW3 Iron CPS | Value |
|---|---|---|---|---|---|---|
| Master | | 429.9 | | 810.2 | | 934.8 |
| | 310.0 (Minimum) 410.0 (Nominal) 510.0 (Maximum) | | 660.0 (Minimum) 870.0 (Nominal) 980.0 (Maximum) | | 810.0 (Minimum) 1030 (Nominal) 1170 (Maximum) | |

| Phase | LSW4 Iron CPS | Value | LSW5 Iron CPS | Value | SSW1 Iron CPS | Value |
|---|---|---|---|---|---|---|
| Master | | 523.3 | | 468.6 | | 1887 |
| | 470.0 (Minimum) 590.0 (Nominal) 670.0 (Maximum) | | 400.0 (Minimum) 530.0 (Nominal) 620.0 (Maximum) | | 1400 (Minimum) 1850 (Nominal) 2120 (Maximum) | |

| Phase | SSW2 Iron CPS | Value | SSW3 Iron CPS | Value | SSW4 Iron CPS | Value |
|---|---|---|---|---|---|---|
| Master | | 6358 | | 9323 | | 4091 |
| | 5170 (Minimum) 6500 (Nominal) 7270 (Maximum) | | 8100 (Minimum) 10000 (Nominal) 11000 (Maximum) | | 3620 (Minimum) 4500 (Nominal) 5020 (Maximum) | |

| Phase | SSW5 Iron CPS | Value |
|---|---|---|
| Master | | 658.2 |
| | 470.0 (Minimum) 750.0 (Nominal) 10100 (Maximum) | |

Master: 25-Feb-2001 4:47

## Hostile Environment Litho Density - A Master Calibration

### Detectors Resolution From Litholog Measurment

| Phase | LS Lith Resolution | Value | Phase | SS Lith Resolution | Value |
|---|---|---|---|---|---|
| Master | | 1.033 | Master | | 1.032 |
| | 0.7000 (Minimum) 1.000 (Nominal) 1.111 (Maximum) | | | 0.7000 (Minimum) 1.000 (Nominal) 1.111 (Maximum) | |

Master: 25-Feb-2001 4:47

## Nuclear Porosity Lithology Cartridge - B / Equipment Identification

| | | |
|---|---|---|
| Primary Equipment: | | |
| NPLC Cartridge | NPLC - B | 79 |
| Auxiliary Equipment: | | |
| NPLC Housing | NPH - B | 82 |

## Accelerator-Porosity Tool / Equipment Identification

| | | |
|---|---|---|
| Primary Equipment: | | |
| Accelerator-Porosity Sonde | APS - BA | 22 |
| APS Minitron | MNTR - F | 4185 |
| Auxiliary Equipment: | | |
| Accelerator-Porosity Housing | APH - AC | 22 |
| APS Calibration Water Tank | SFT - 178 | 4722 |
| APS Aluminium Calibrator Sleeve | SFT - 281 | 24 |

Near Bkg high because measurement taken shortly after logging.

## Accelerator-Porosity Tool Wellsite Calibration

### Detector Background

| Phase | Near Det Bkg Cntrate CPS | Value | Far Det Bkg Cntrate CPS | Value | Array-1 Det Bkg Cntrate CPS | Value |
|---|---|---|---|---|---|---|
| Master | | 32.57 | | 32.66 | | 29.51 |
| Before | | 32.70 | | 32.64 | | 29.03 |
| After | EXCEEDS LIMIT | 55.83 | | 34.38 | | 38.58 |
| | 0 (Minimum) 30.00 (Nominal) 50.00 (Maximum) | | 0 (Minimum) 30.00 (Nominal) 50.00 (Maximum) | | 0 (Minimum) 30.00 (Nominal) 50.00 (Maximum) | |

| Phase | Array-2 Det Bkg Cntrate CPS | Value | Phase | Array Therm Det Bkg Cntrate CPS | Value |
|---|---|---|---|---|---|
| Master | | 30.14 | Master | | 33.69 |
| Before | | 31.34 | Before | | 31.99 |
| After | | 37.91 | After | | 38.16 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 0 (Minimum) | 30.00 (Nominal) | 50.00 (Maximum) | | 0 (Minimum) | 30.00 (Nominal) | 50.00 (Maximum) | |

Master: 24-Feb-2001 4:02 Before: 12-Apr-2001 16:55 After: 12-Apr-2001 23:55

## Accelerator-Porosity Tool Wellsite Calibration

### Calibration Ratios

| Phase | Near/Far Calibration Ratio | Value | Phase | Near/Array Calibration Ratio | Value |
|---|---|---|---|---|---|
| Master | | 0.9008 | Master | | 1.064 |
| | 0.8000 (Minimum) 0.9250 (Nominal) 1.050 (Maximum) | | | 0.9000 (Minimum) 1.030 (Nominal) 1.150 (Maximum) | |

Master: 24-Feb-2001 4:02

## Accelerator-Porosity Tool Master Calibration

### Detector Calibration

| Phase | Near/Far Calibration Ratio | Value | Phase | Near/Array Calibration Ratio | Value |
|---|---|---|---|---|---|
| Master | | 0.9008 | Master | | 1.064 |
| | 0.8000 (Minimum) 0.9250 (Nominal) 1.050 (Maximum) | | | 0.9000 (Minimum) 1.030 (Nominal) 1.150 (Maximum) | |

Master: 24-Feb-2001 4:02

## Accelerator-Porosity Tool Master Calibration

### Tank Check

| Phase | Array-1 Standoff Porosity PU | Value | Phase | Array-2 Standoff Porosity PU | Value | Phase | Sigma Formation CU | Value |
|---|---|---|---|---|---|---|---|---|
| Master | | 11.67 | Master | | 11.37 | Master | | 28.08 |
| | 5.500 (Minimum) 10.25 (Nominal) 15.00 (Maximum) | | | 5.500 (Minimum) 10.25 (Nominal) 15.00 (Maximum) | | | 20.00 (Minimum) 27.50 (Nominal) 35.00 (Maximum) | |

Master: 24-Feb-2001 4:02

## Hostile Natural Gamma Ray Sonde / Equipment Identification

| | | |
|---|---|---|
| Primary Equipment: | | |
| HNGS Sonde | HNGS - BA | 27 |
| Auxiliary Equipment: | | |
| HNGS Sonde Housing | HNSH - BA | 27 |
| Gamma Source Radioactive | GSR - U | 135 |

## Hostile Natural Gamma Ray Sonde Wellsite Calibration

### Detector 1 Check

| Phase | Na 511 Peak Loc | Value | Phase | Na 511 Peak Res % | Value | Phase | High Voltage V | Value |
|---|---|---|---|---|---|---|---|---|
| Master | | 40.59 | Master | | 16.64 | Master | | 1101 |
| Before | | 40.57 | Before | | 16.82 | Before | | 1108 |
| After | | 40.79 | After | | 15.62 | After | | 1108 |
| | 37.50 (Minimum) 40.00 (Nominal) 42.50 (Maximum) | | | 12.00 (Minimum) 15.50 (Nominal) 19.00 (Maximum) | | | 900.0 (Minimum) 1150 (Nominal) 1600 (Maximum) | |

| Phase | Na 1785 Peak Loc | Value | Phase | Na 1785 Peak Res % | Value | Phase | Temperature DEGC | Value |
|---|---|---|---|---|---|---|---|---|
| Master | | 145.5 | Master | | 9.019 | Master | | 30.80 |
| Before | | 146.4 | Before | | 9.237 | Before | | 32.93 |
| After | | 146.3 | After | | 9.499 | After | | 30.94 |
| | 135.0 (Minimum) 142.6 (Nominal) 150.3 (Maximum) | | | 7.000 (Minimum) 8.500 (Nominal) 11.00 (Maximum) | | | -28.89 (Minimum) 15.50 (Nominal) 60.00 (Maximum) | |

| Phase | Na Count Rate CPS | Value |
|---|---|---|
| Master | | 21.32 |
| Before | | 21.01 |
| After | | 20.42 |
| | 15.00 (Minimum) 45.00 (Nominal) 100.0 (Maximum) | |

Master: 24-Feb-2001 5:08 Before: 11-Mar-2001 3:09 After: 13-Apr-2001 2:16

## Hostile Natural Gamma Ray Sonde Wellsite Calibration

### Detector 2 Check

| Phase | Na 511 Peak Loc | Value | Phase | Na 511 Peak Res % | Value | Phase | High Voltage V | Value |
|---|---|---|---|---|---|---|---|---|

| Phase | | Value |
|---|---|---|
| Master | | 40.60 |
| Before | | 40.59 |
| After | | 40.49 |

37.50 (Minimum) 40.00 (Nominal) 42.50 (Maximum)

| Phase | | Value |
|---|---|---|
| Master | | 16.11 |
| Before | | 16.15 |
| After | | 15.31 |

12.00 (Minimum) 15.50 (Nominal) 19.00 (Maximum)

| Phase | | Value |
|---|---|---|
| Master | | 1189 |
| Before | | 1197 |
| After | | 1196 |

900.0 (Minimum) 1150 (Nominal) 1600 (Maximum)

| Phase | Na 1785 Peak Loc | Value |
|---|---|---|
| Master | | 144.7 |
| Before | | 145.0 |
| After | | 144.8 |

135.0 (Minimum) 142.6 (Nominal) 150.3 (Maximum)

| Phase | Na 1785 Peak Res % | Value |
|---|---|---|
| Master | | 9.551 |
| Before | | 7.951 |
| After | | 8.858 |

7.000 (Minimum) 8.500 (Nominal) 11.00 (Maximum)

| Phase | Temperature DEGC | Value |
|---|---|---|
| Master | | 29.75 |
| Before | | 31.98 |
| After | | 30.79 |

-28.89 (Minimum) 15.50 (Nominal) 60.00 (Maximum)

| Phase | Na Count Rate CPS | Value |
|---|---|---|
| Master | | 21.81 |
| Before | | 21.19 |
| After | | 20.76 |

15.00 (Minimum) 45.00 (Nominal) 100.0 (Maximum)

Master: 24-Feb-2001 5:08 Before: 11-Mar-2001 3:09 After: 13-Apr-2001 2:16

Hostile Natural Gamma Ray Sonde Wellsite Calibration

Ratio Of Detector 1 To Detector 2

| Phase | Coincidence Count Rate Ratio | Value |
|---|---|---|
| Master | | 0.9809 |
| Before | | 0.9916 |
| After | | 0.9853 |

0.9500 (Minimum) 1.000 (Nominal) 1.050 (Maximum)

Master: 24-Feb-2001 5:08
Before: 11-Mar-2001 3:09
After: 13-Apr-2001 2:16

Hostile Natural Gamma Ray Sonde Master Calibration

Detector 1 Calibration

| Phase | Na 511 Peak Set Point | Value |
|---|---|---|
| Master | | 41.00 |

38.00 (Minimum) 40.00 (Nominal) 42.00 (Maximum)

| Phase | Th Peak Loc | Value |
|---|---|---|
| Master | | 210.5 |

201.0 (Minimum) 209.6 (Nominal) 218.3 (Maximum)

| Phase | Th Peak Res % | Value |
|---|---|---|
| Master | | 8.034 |

5.000 (Minimum) 7.000 (Nominal) 9.000 (Maximum)

| Phase | Background Count Rate CPS | Value |
|---|---|---|
| Master | EXCEEDS LIMIT | 16.57 |

20.00 (Minimum) 142.5 (Nominal) 265.0 (Maximum)

| Phase | Gain Ratio | Value |
|---|---|---|
| Master | | 0.9865 |

0.9400 (Minimum) 1.000 (Nominal) 1.060 (Maximum)

Master: 24-Feb-2001 4:53

Hostile Natural Gamma Ray Sonde Master Calibration

Detector 2 Calibration

| Phase | Na 511 Peak Set Point | Value |
|---|---|---|
| Master | | 41.00 |

38.00 (Minimum) 40.00 (Nominal) 42.00 (Maximum)

| Phase | Th Peak Loc | Value |
|---|---|---|
| Master | | 208.6 |

201.0 (Minimum) 209.6 (Nominal) 218.3 (Maximum)

| Phase | Th Peak Res % | Value |
|---|---|---|
| Master | | 7.339 |

5.000 (Minimum) 7.000 (Nominal) 9.000 (Maximum)

| Phase | Background Count Rate CPS | Value |
|---|---|---|
| Master | EXCEEDS LIMIT | 18.32 |

20.00 (Minimum) 142.5 (Nominal) 265.0 (Maximum)

| Phase | Gain Ratio | Value |
|---|---|---|
| Master | | 0.9775 |

0.9400 (Minimum) 1.000 (Nominal) 1.060 (Maximum)

Master: 24-Feb-2001 4:53

Background source low, does not affect log measurement.

| | |
|---|---|
| COMPANY: | Lamont Doherty |
| WELL: | ODP Leg 195, Site 1201D (WP-1B) |
| FIELD: | ION |
| Country: | Japan |
| Ocean: | West Phillipine Sea |

| | |
|---|---|
| BOTTOM LOG INTERVAL | 6295 m |
| SCHLUMBERGER DEPTH | 6314 m |
| DEPTH DRILLER | 6320 m |
| KELLY BUSHING | 11.2989 m |
| DRILL FLOOR | 11 m |
| GROUND LEVEL | -5720 m |

Schlumberger

# APS/Density Porosity