gyrodata

# CEMENT BOND LOG

| | |
|---|---|
| Company | Extraction Oil & Gas |
| Well | Interchange B S22-30-15N |
| Field | Wattenberg |
| County | Broomfield |
| State | Colorado |

**Company** **Extraction Oil & Gas**

**Well** **Interchange B S22-30-15N**

**Field** **Wattenberg**

**County** **Broomfield** **State** **Colorado**

API # : 05-014-20780
Location: 2200' FSL & 1689' FWL
LAT: 39.978163
LONG: -104.991157

SEC: 10 TWP: 1S RGE: 68W

Other Services
N/A

Elevation
K.B. 5235'
D.F. -----
G.L. 5206'

Permanent Datum: Ground Level Elevation: 5206'
Log Measured From: Kelly Bushing , 29 ft. above Permanent Datum.
Drilling Measured From: Kelly Bushing

| | |
|---|---|
| Date | Oct. 1, 2019 |
| Run Number | ONE |
| Plug Back T.D. Driller | ----- |
| Plug Back T.D. Logger | ----- |
| Bottom Logged Interval | 9210' |
| Top Log Interval | Surface |
| Type Fluid | Fresh Water |
| Density / Viscosity | ----- |
| Max. Recorded Temp. | 234 °F |
| Time Logger on Bottom | 1230PM |
| Equipment Number | GD170 |
| Location | Casper, Wy. |
| Recorded By | B. Kennicker |
| Witnessed By | Manny |

| Casing Record | | | | Tubing Record | | | |
|---|---|---|---|---|---|---|---|
| Size | Weight | From | To | Size | Weight | From | To |
| 16" | 42# | Surface | 80' | | | | |
| 9 5/8" | 36# | Surface | 1500' | | | | |
| 5 1/2" | 20# | Surface | 24745' | | | | |

<<< Fold Here >>>

All interpretations are opinions based on inferences from electrical or other measurements and we cannot and do not guarantee the accuracy or correctness of any interpretation, and we shall not, except in the case of gross or willful negligence on our part, be liable or responsible for any loss, costs, damages, or expenses incurred or sustained by anyone resulting from any interpretation made by any of our officers, agents or employees. These interpretations are also subject to our general terms and conditions set out in our current Price Schedule.

Ticket # : RM1019PCBW
Your Crew Today: J. Baker, C. Barber
Log Correlated to: Surface

## Cement Data

| | |
|---|---|
| Date Cemented | ----- |
| Primary / Squeeze | Primary |
| Type / Weight | ----- |
| Main Pass Press. | 0 PSI |
| Repeat Pass Press. | 0 PSI |

## Bond Index

| Index % | Est Top Depth |
|---|---|
| 20 % Bond | 180' |
| 40 % Bond | 196' |
| 60 % Bond | 436' |
| 80 % Bond | 2954' |
| 100 % Bond | 3211' |

## Comments

**Estimated Top of Cement**
**( 20 % Bond Index) at 180 feet**

Thank you for using Gyrodata

Eric Regnier: Rocky Mountain Wireline Manager EricR@Gyrodata.com

# Log Variables

Databased:\warrior\data\2019_10_01_extraction_interchange_b_s22_30_15n\2019_10_01_extracti
Dataset field/well/run1/pass3/_vars_

**Top - Bottom**

| BHTEMP_Src | BOREID | BOTTEMP | CASEOD | CASETHCK | CASEWGHT | MAXAMPL | MaxAPIID |
|---|---|---|---|---|---|---|---|
|  | in | degF | in | in | lb/ft | mV | in |
| TEMP | 8.5 | 234 | 5.5 | 0.361 | 20 | 71.9 | 4.923 |

| MINAMPL | MinAPIID | MINATTN | PPT | TDEPTH |
|---|---|---|---|---|
| mV | in | db/ft | usec | ft |
| 2.1 | 4.751 | 0 | 237 | 9210 |

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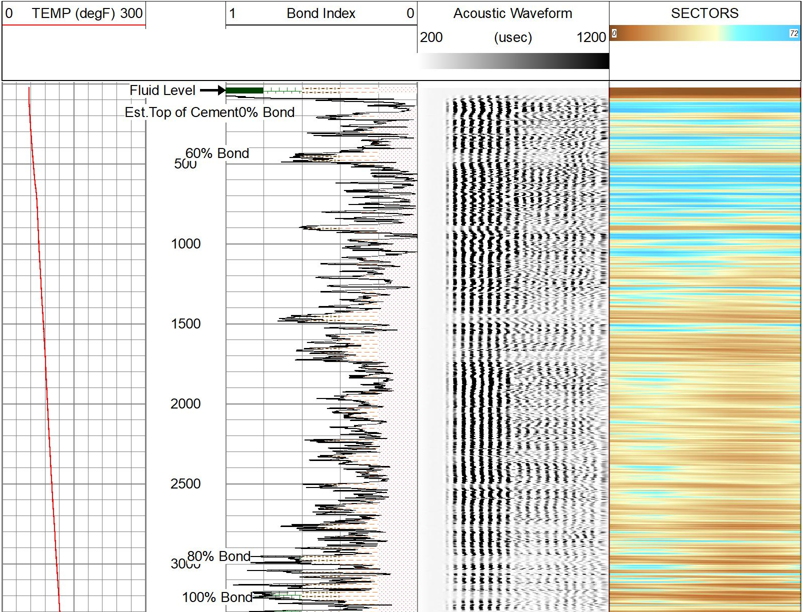
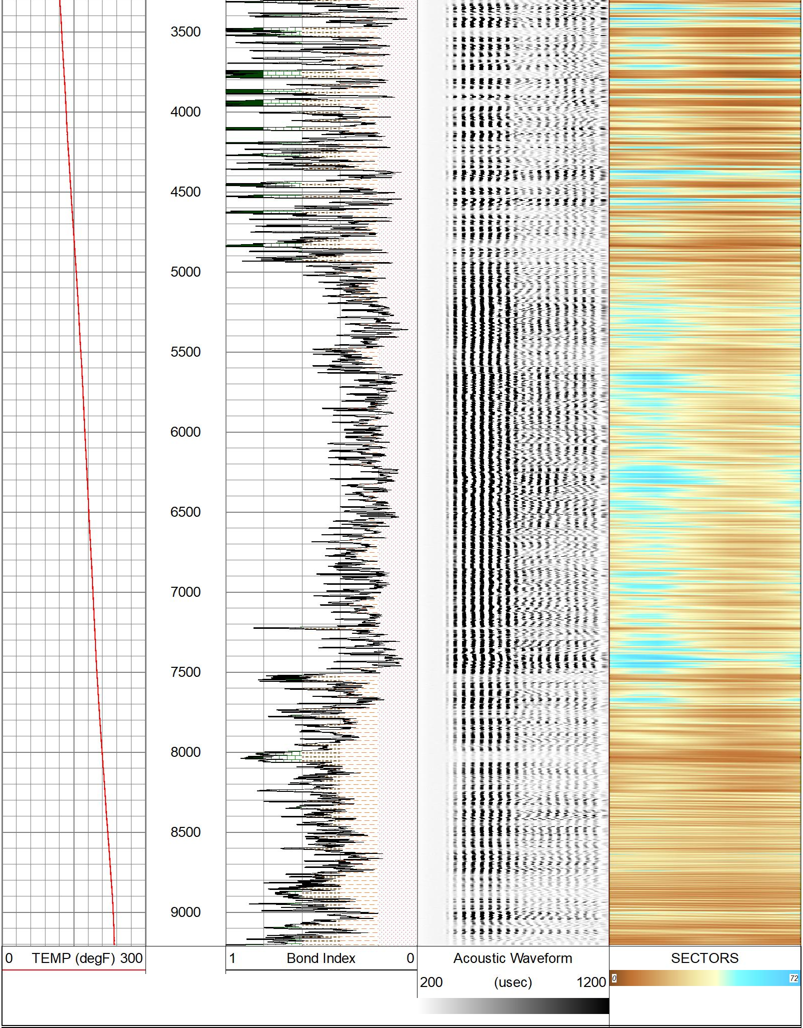
# BOND INDEX

| | |
|---|---|
| Database File | 2019_10_01_extraction_interchange_b_s22_30_15n\2019_10_01_extraction_interchange_b_s22_30_15n. |
| Dataset Pathname | bond |
| Presentation Format | bndindx_msg-sec |
| Dataset Creation | Tue Oct 01 13:56:13 2019 |
| Charted by | Depth in Feet scaled 1:7500 |





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# BOND INDEX

gyrodata

# MAIN PASS - Ran with 0 PSI

**5 in / 100 ft**

| | |
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| Dataset Pathname | pass3 |
| Presentation Format | rcbl_8s |
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| Charted by | Depth in Feet scaled 1:240 |

CCL
Gamma
0 (GAPI) 200
300(Line Tens (lb) 0
Predicted TT
TT
+[10 usec]-

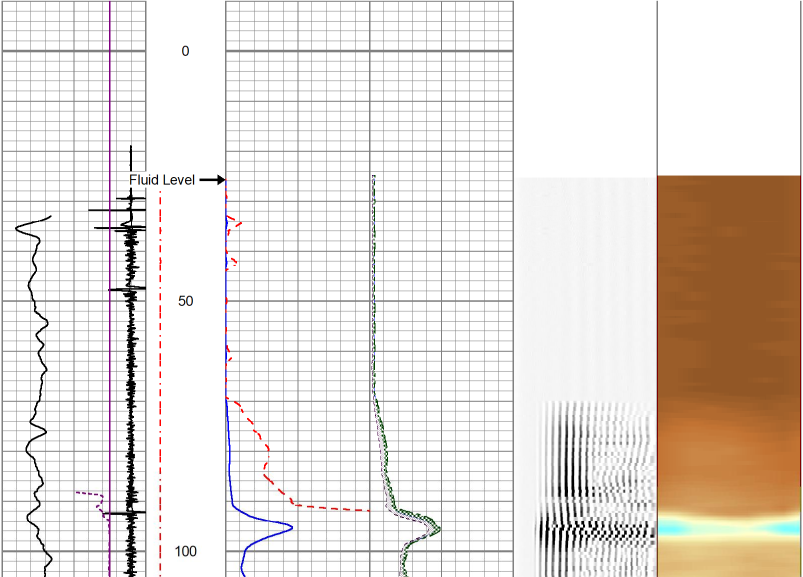
np - Analog C
(degF)
0 300

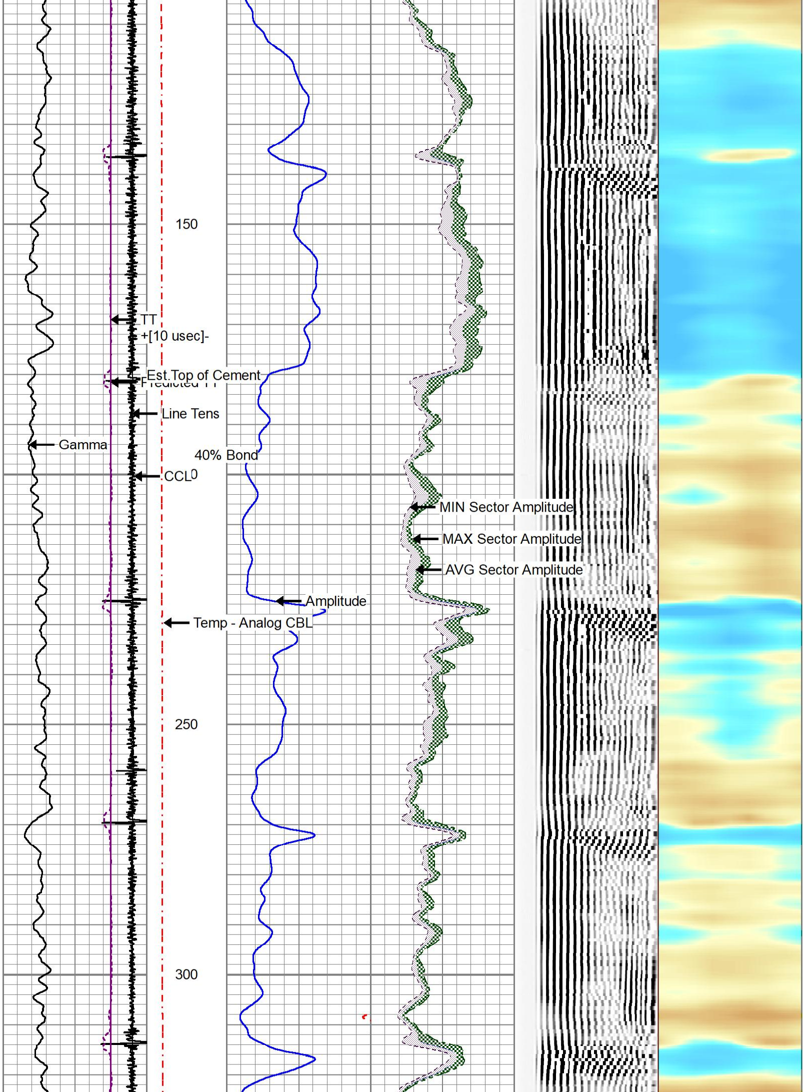
0 Amplitude (mV)100
Amplitude x10
0 (mV) 10

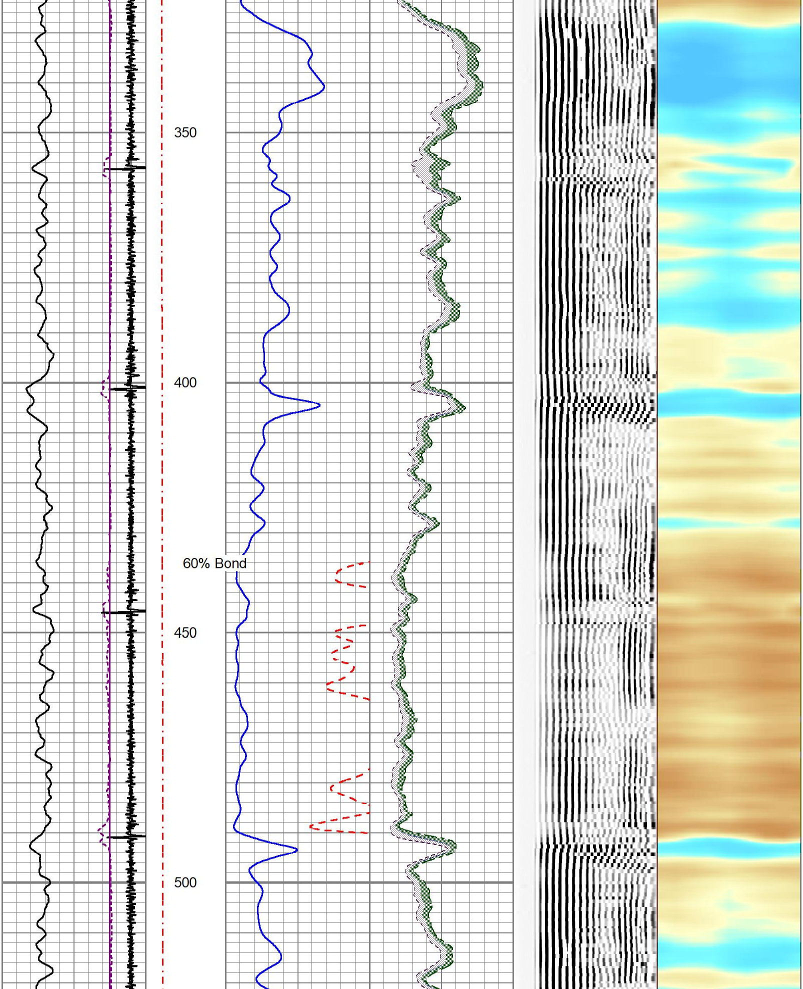
AVG Sector Amplitude
0 100
MAX Sector Amplitude
0 100
MIN Sector Amplitude
0 100

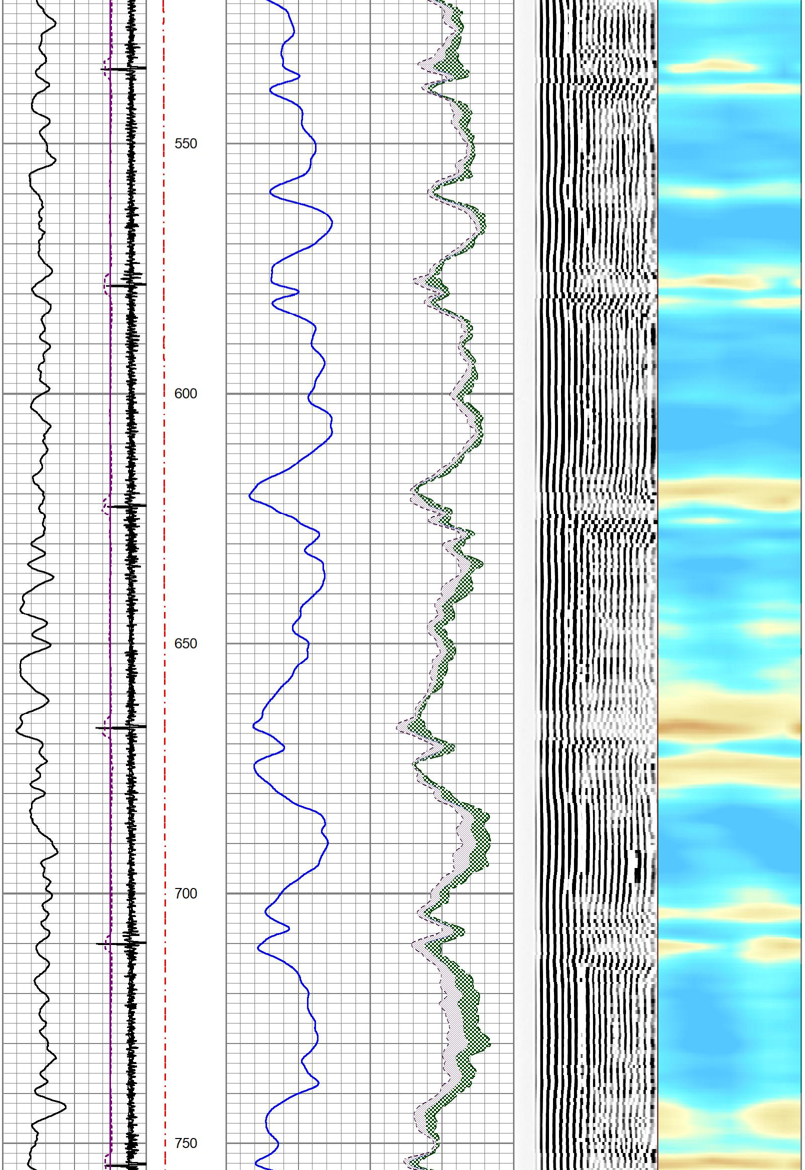
Acoustic Waveform
200 (usec) 1200

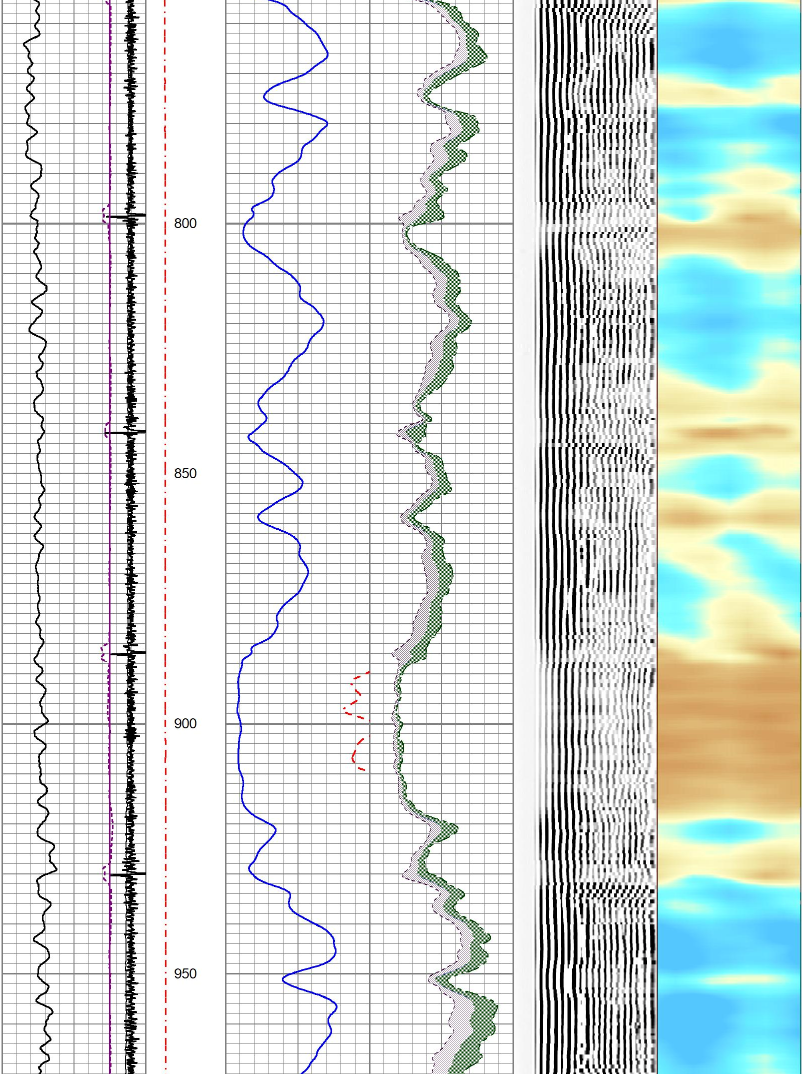
SECTORS
0 72

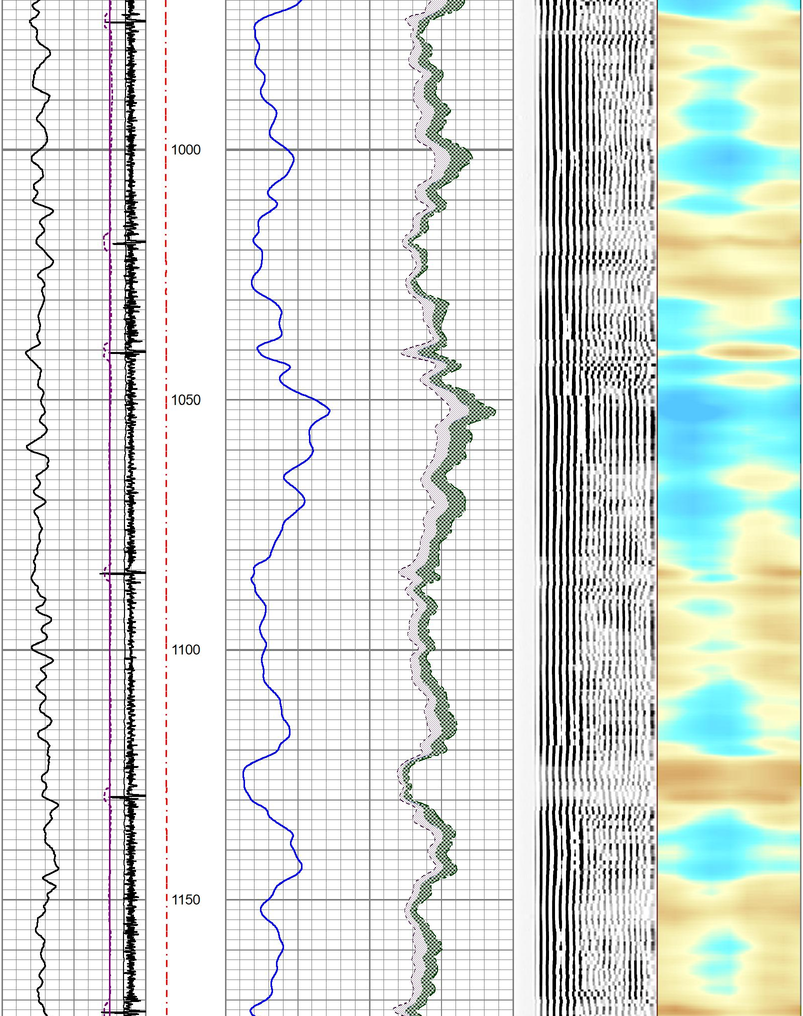


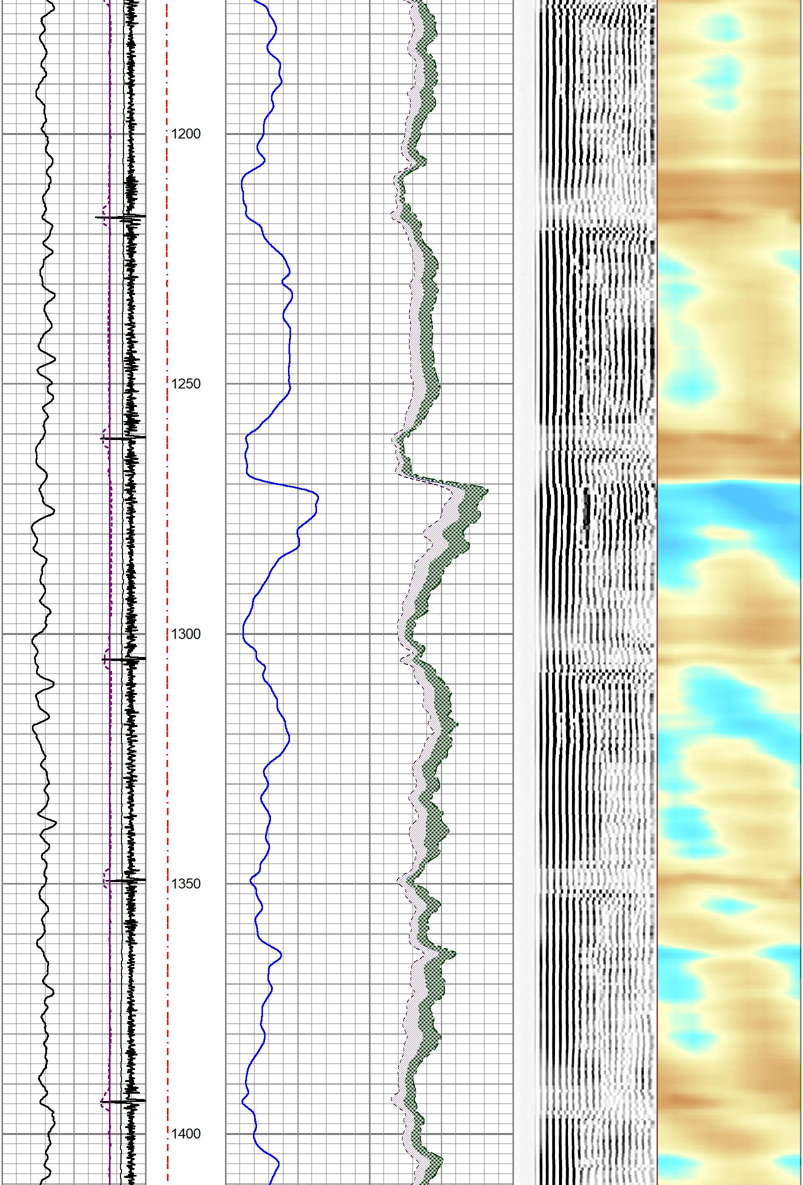


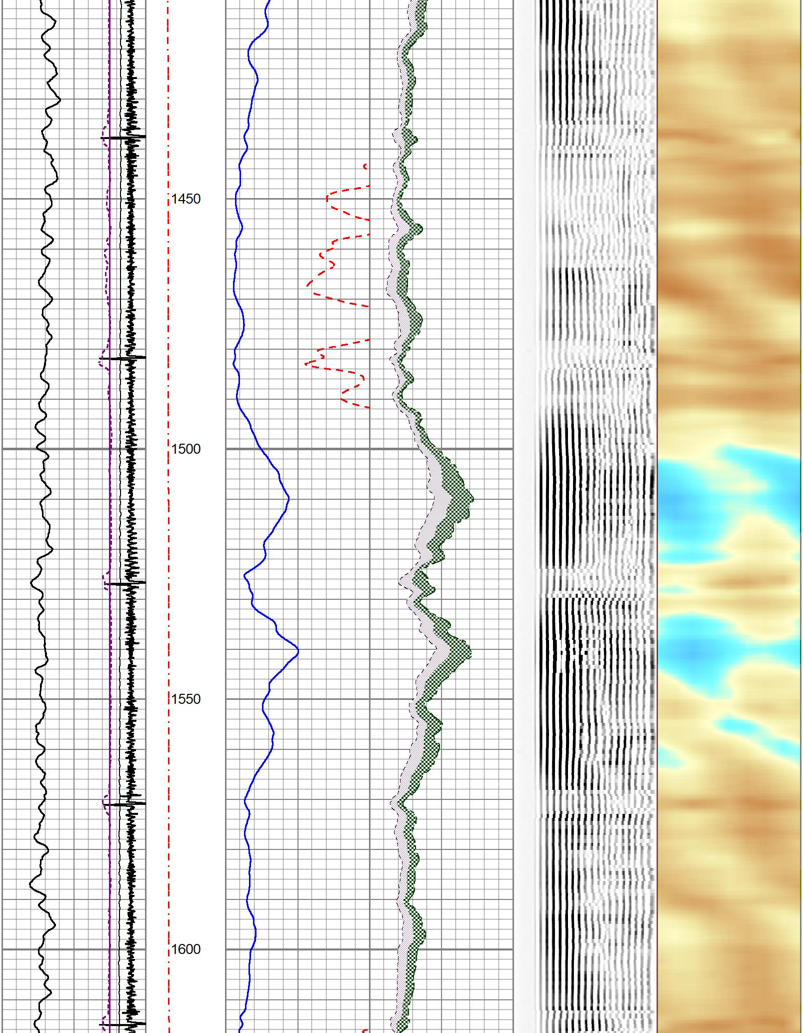


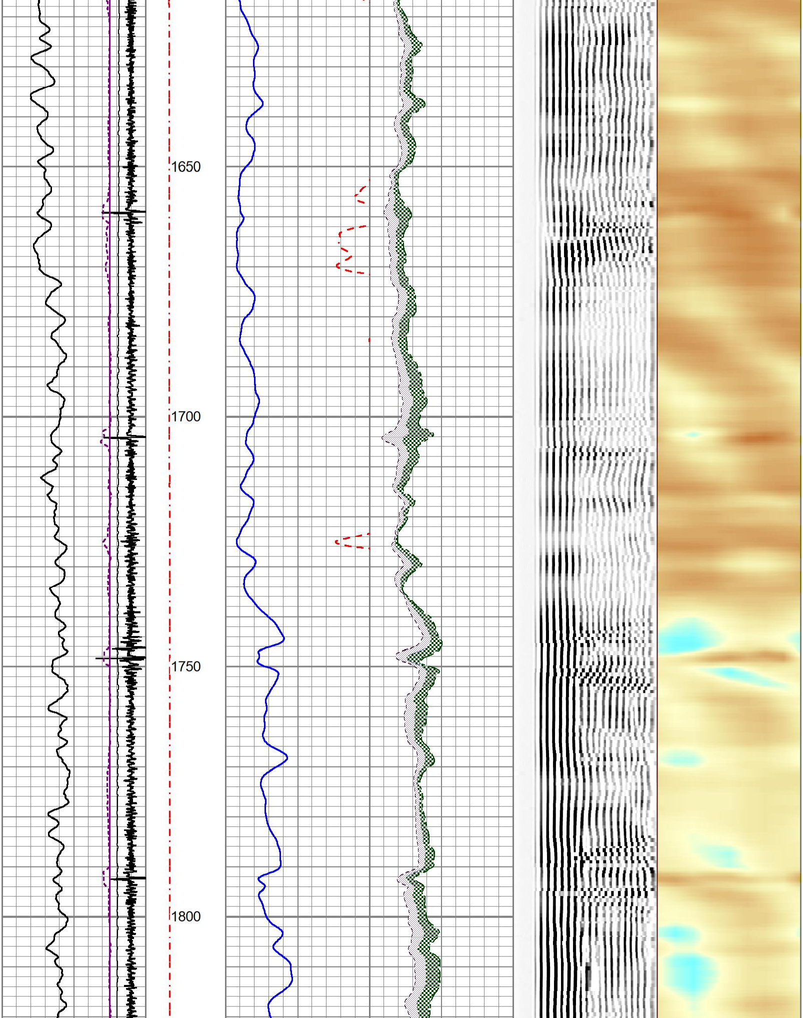


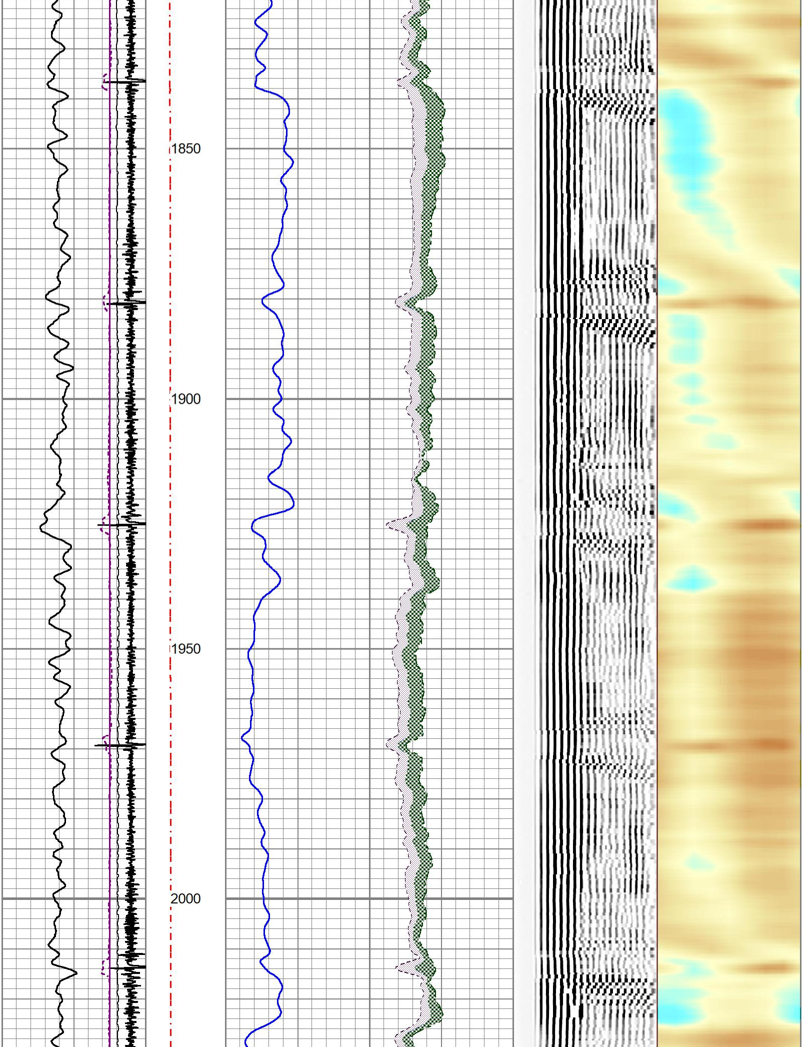


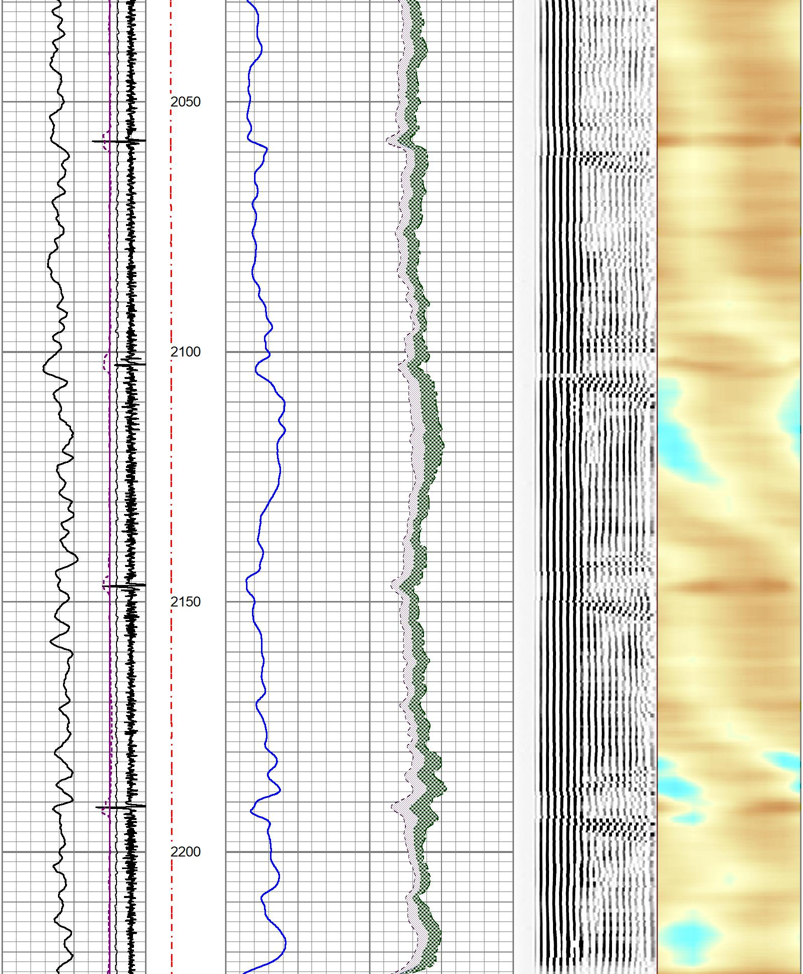


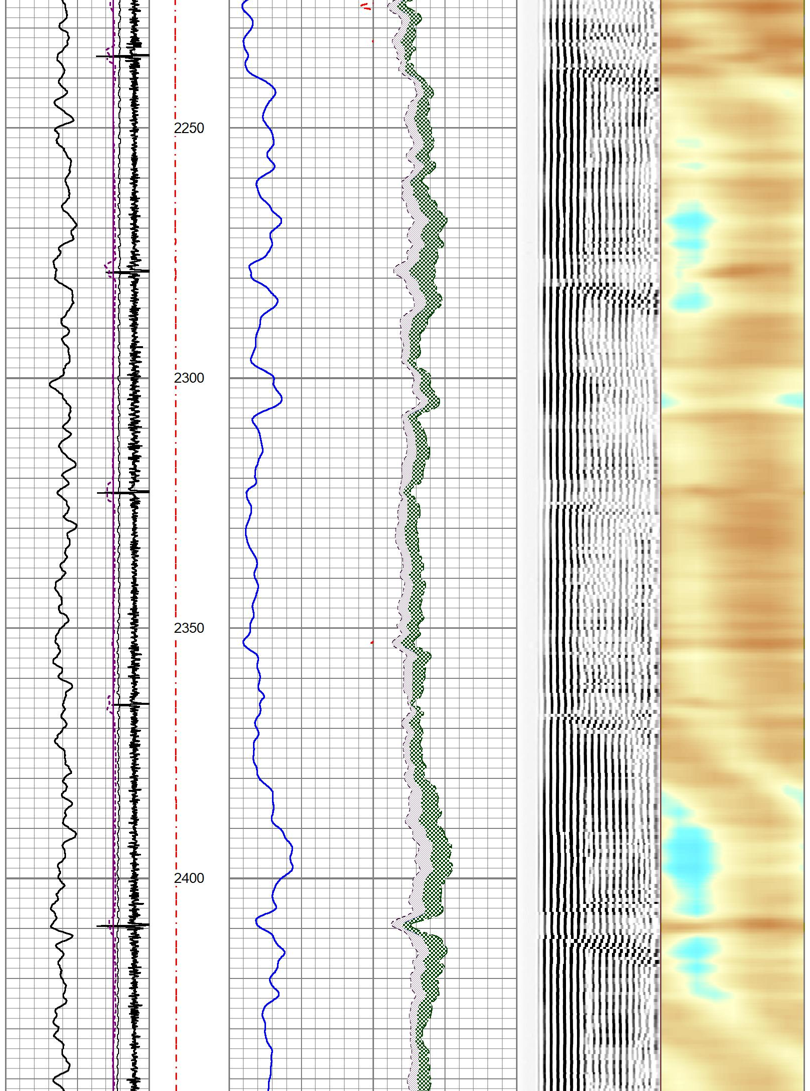


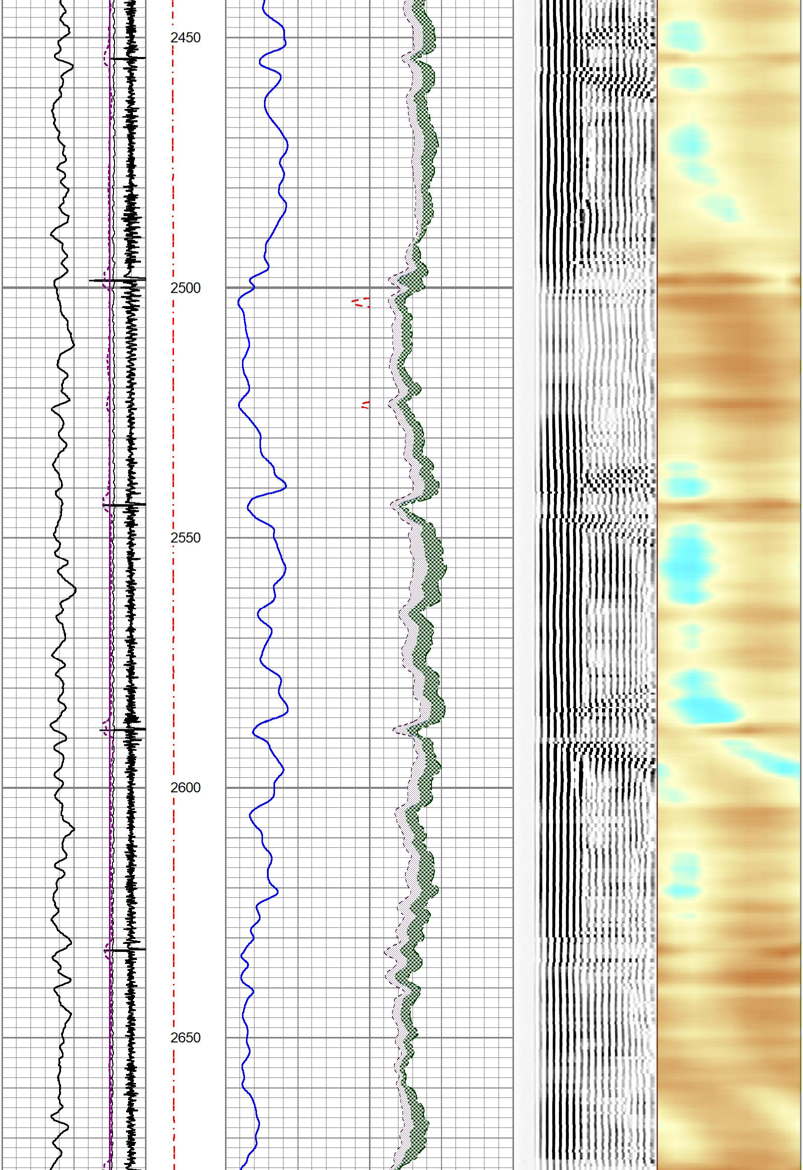


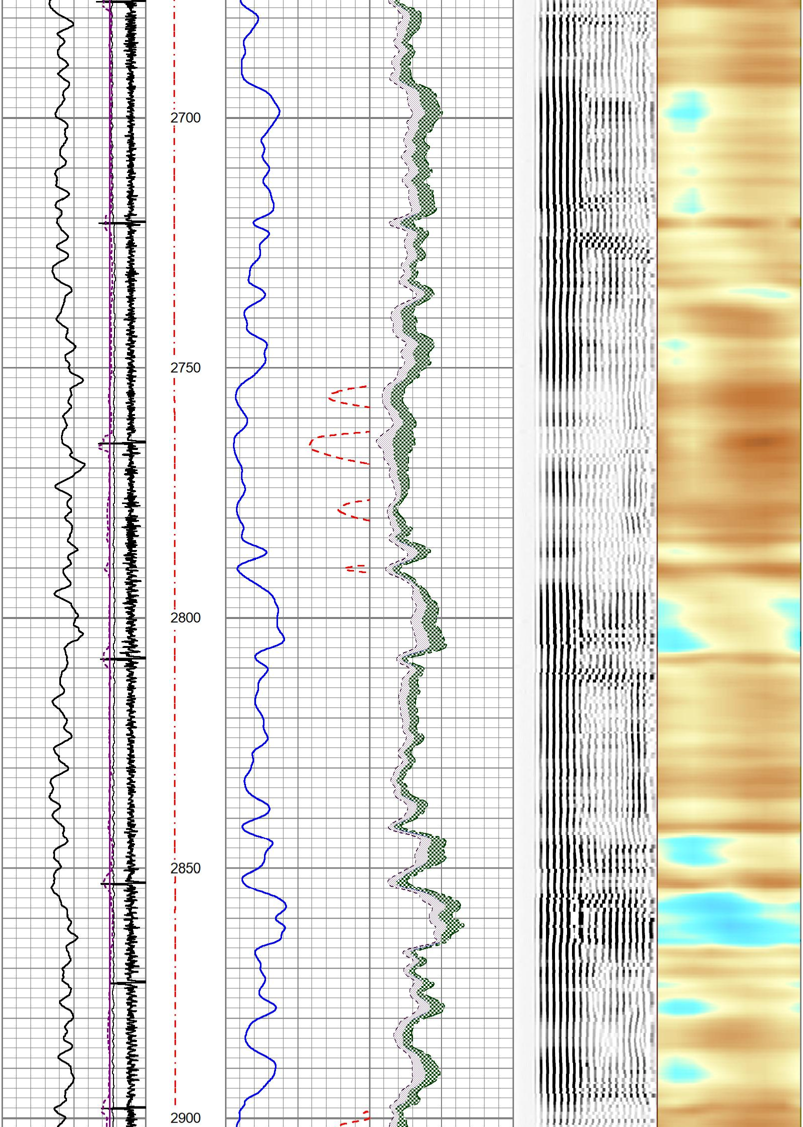


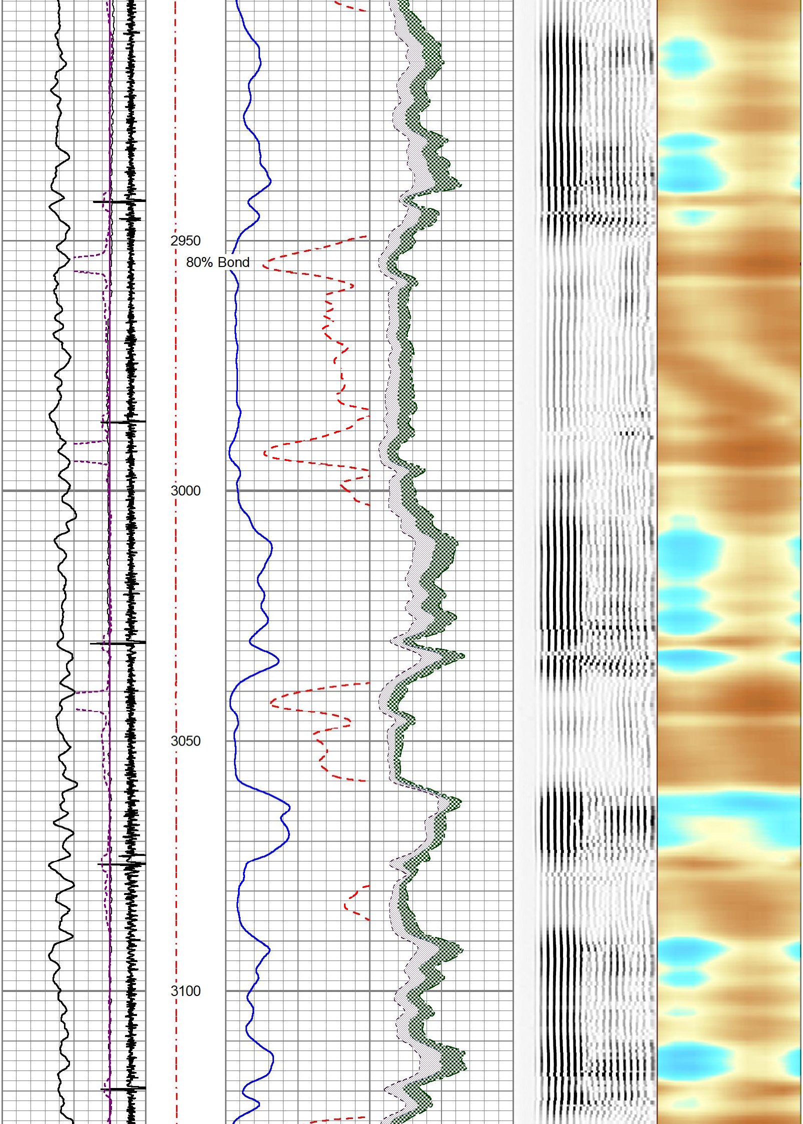


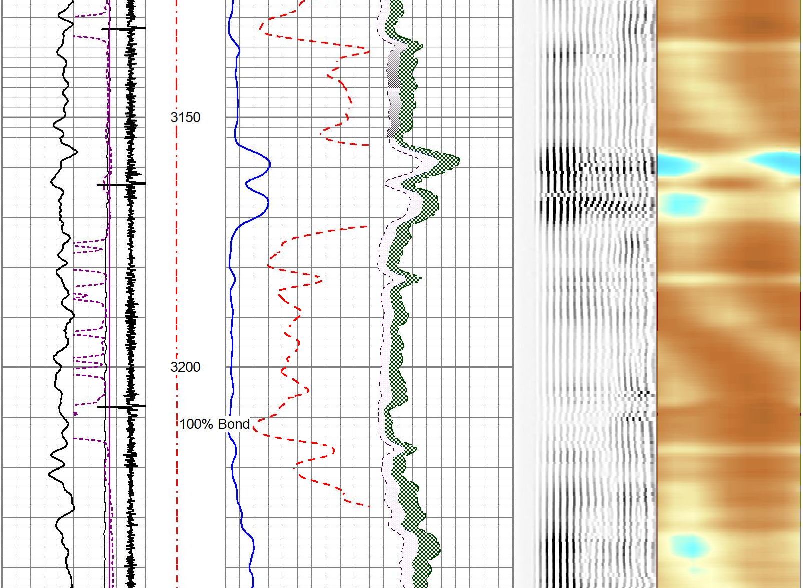


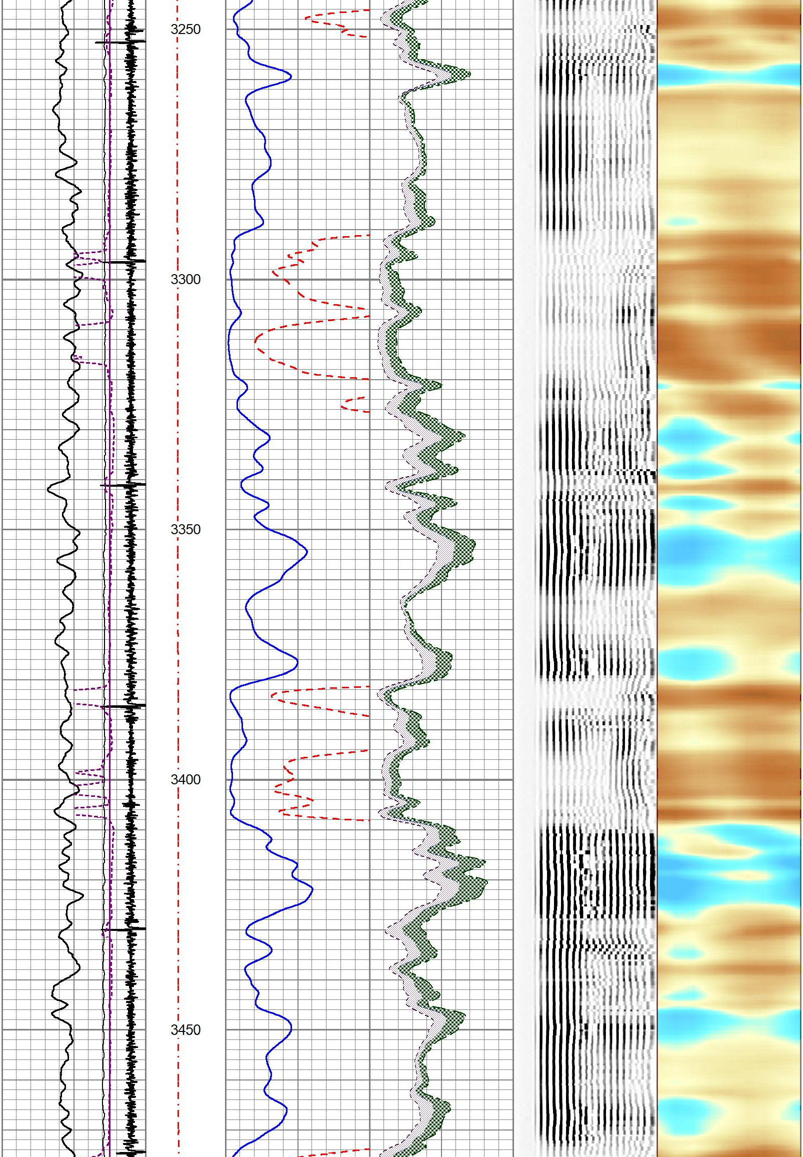








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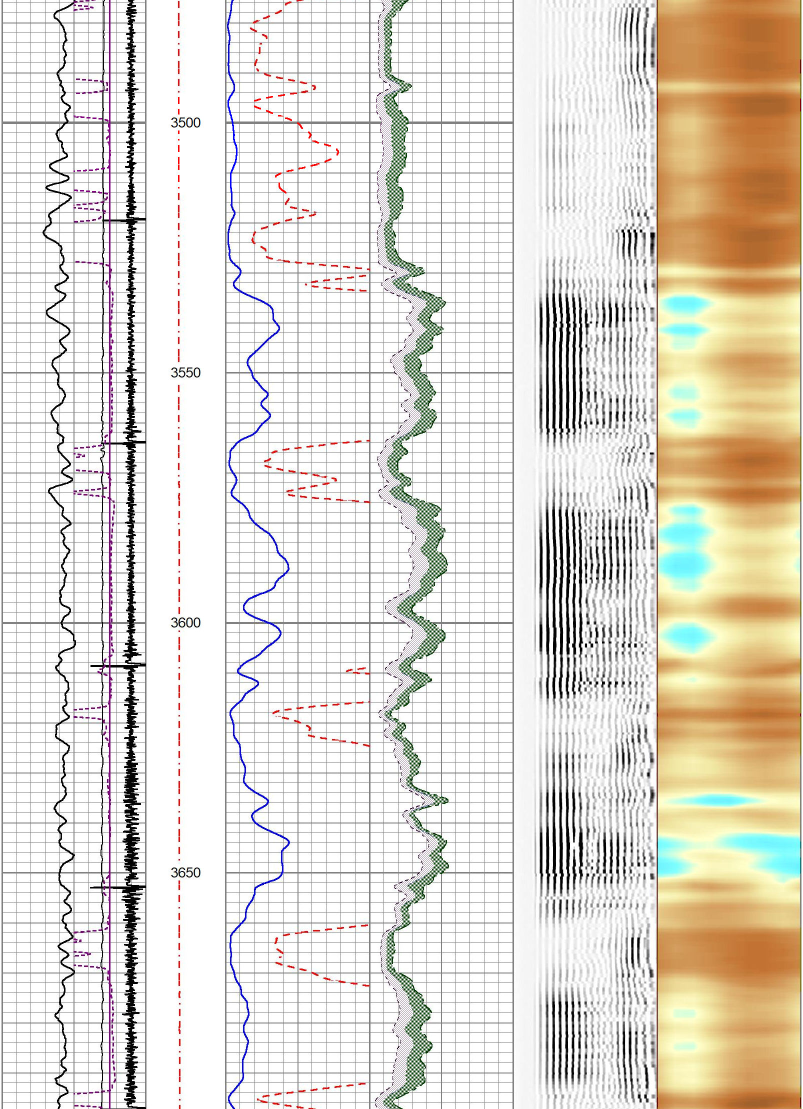
3400
3450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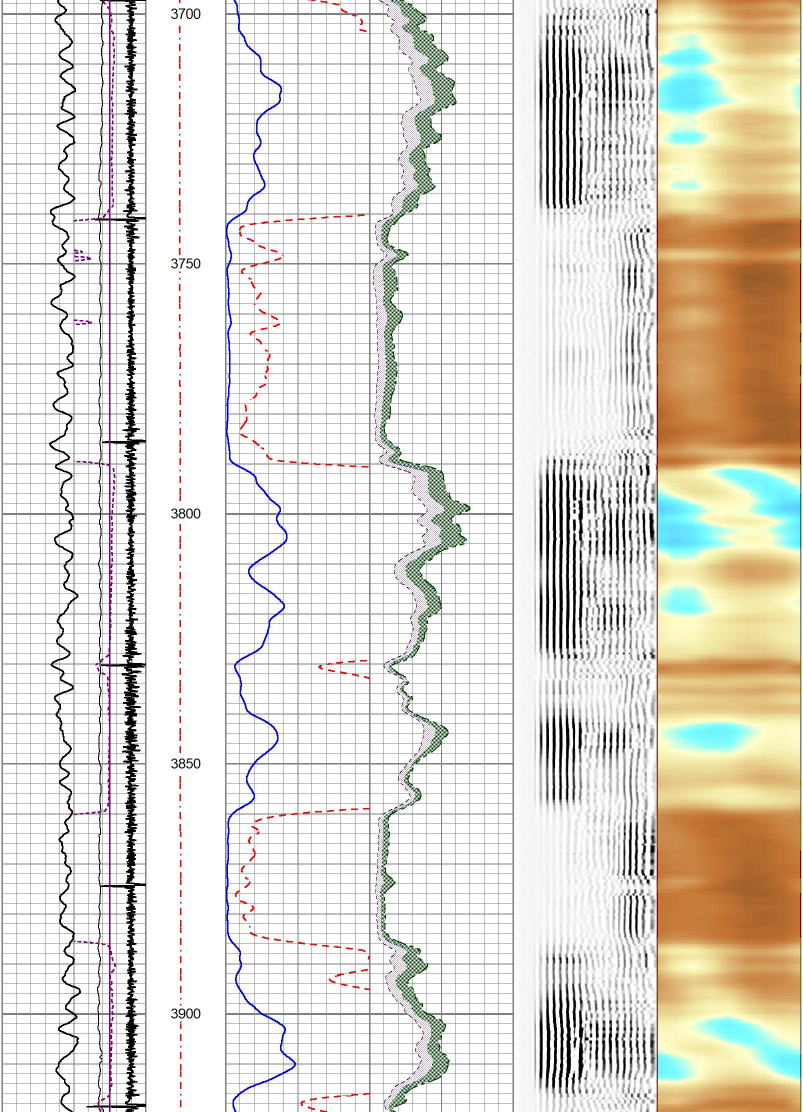
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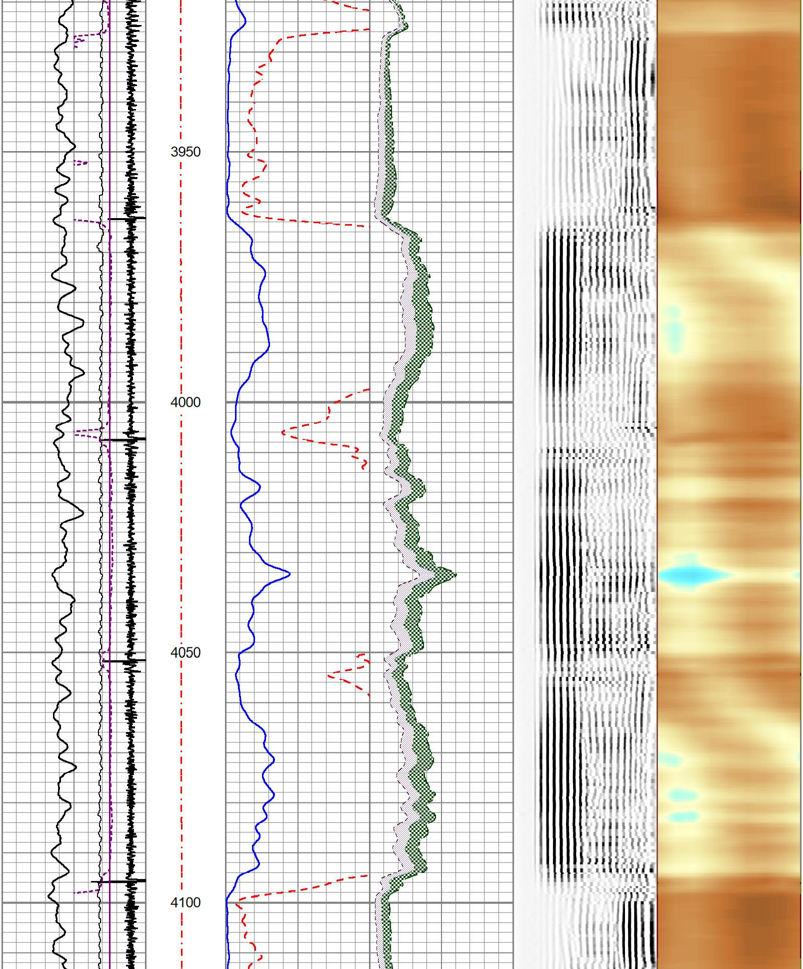
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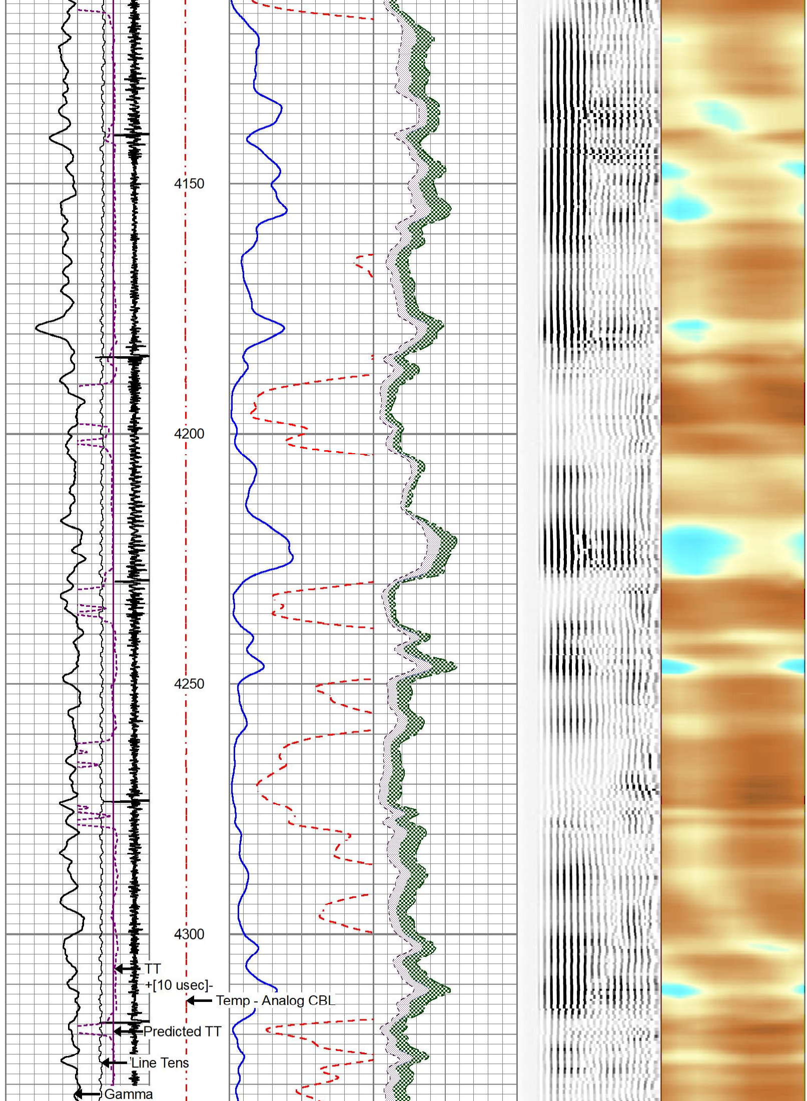
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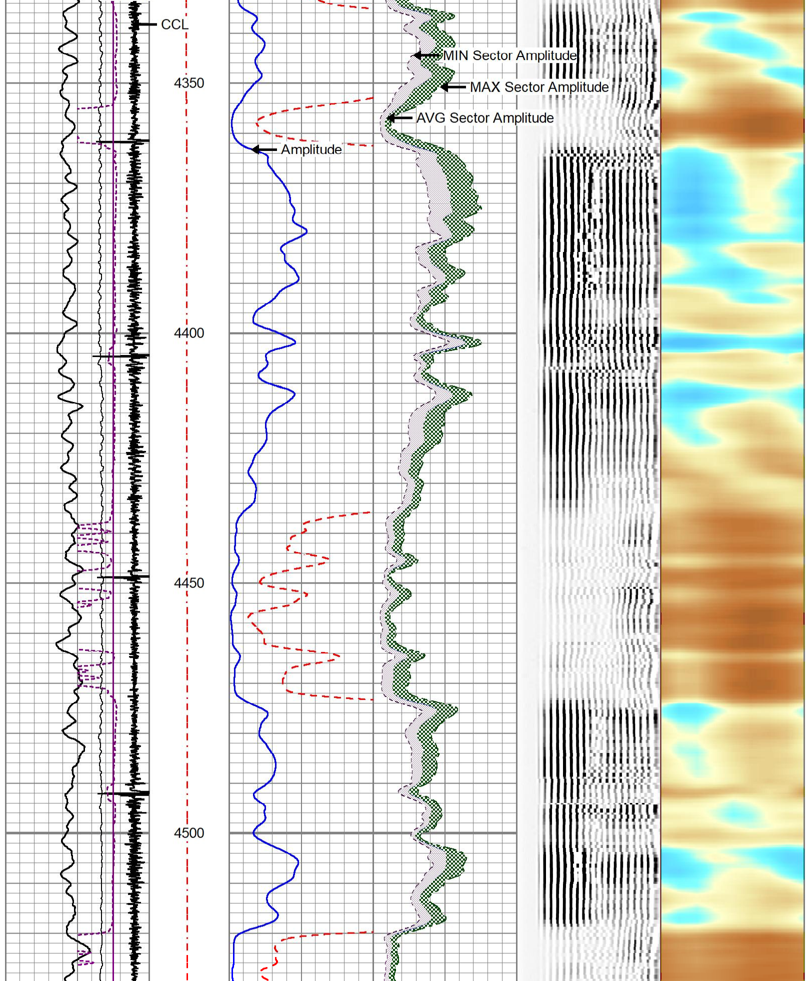
TT
+[10 usec]-
Temp - Analog CBL
Predicted TT
Line Tens
Gamma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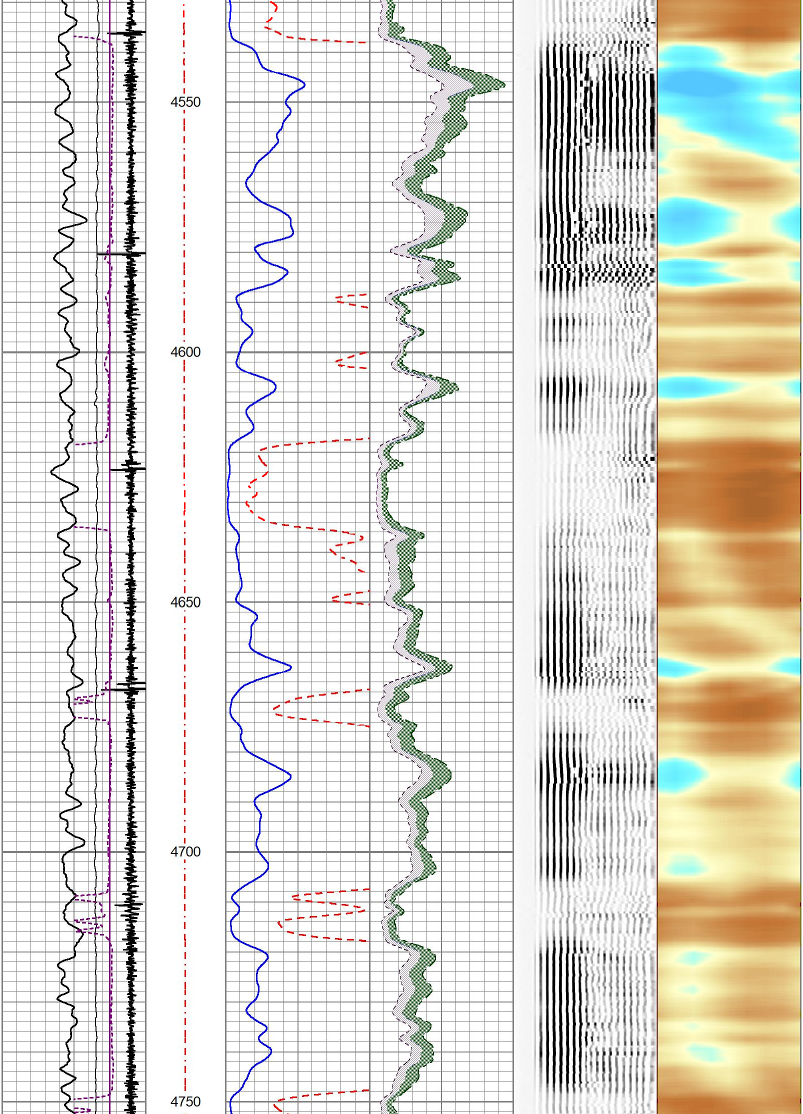
MAX Sector Amplitude
AVG Sector Amplitude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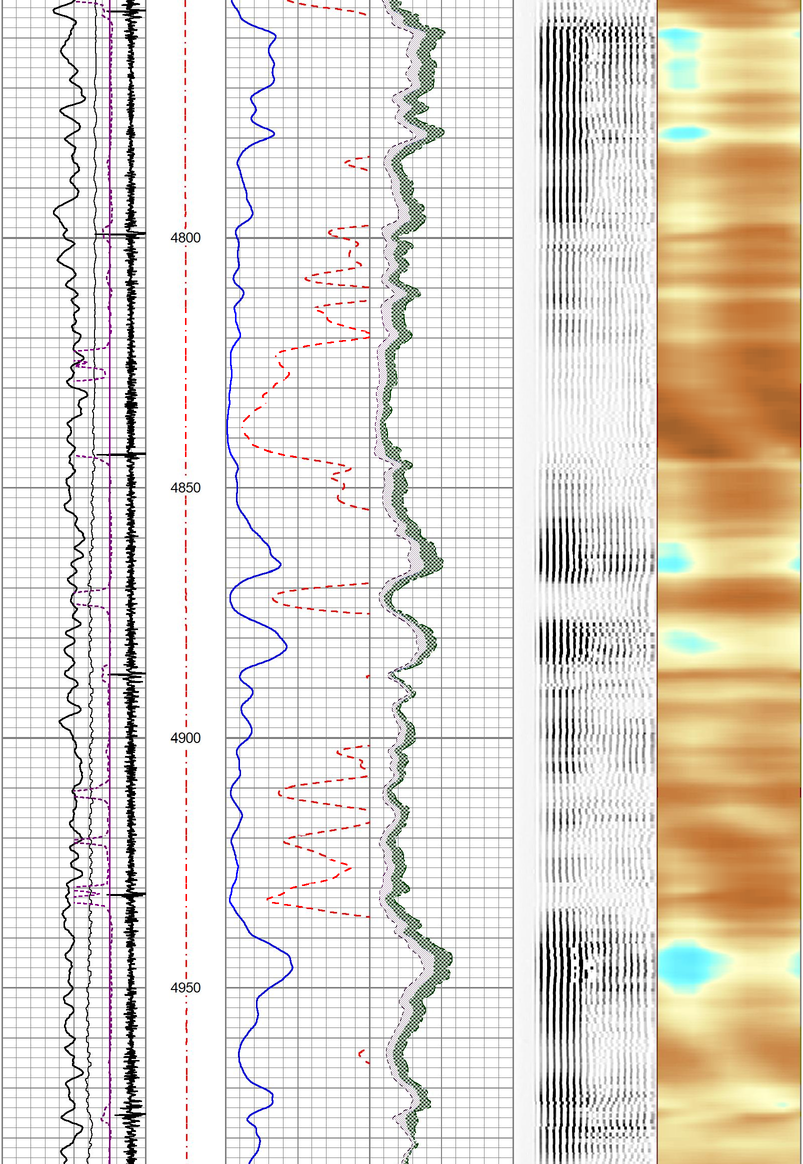
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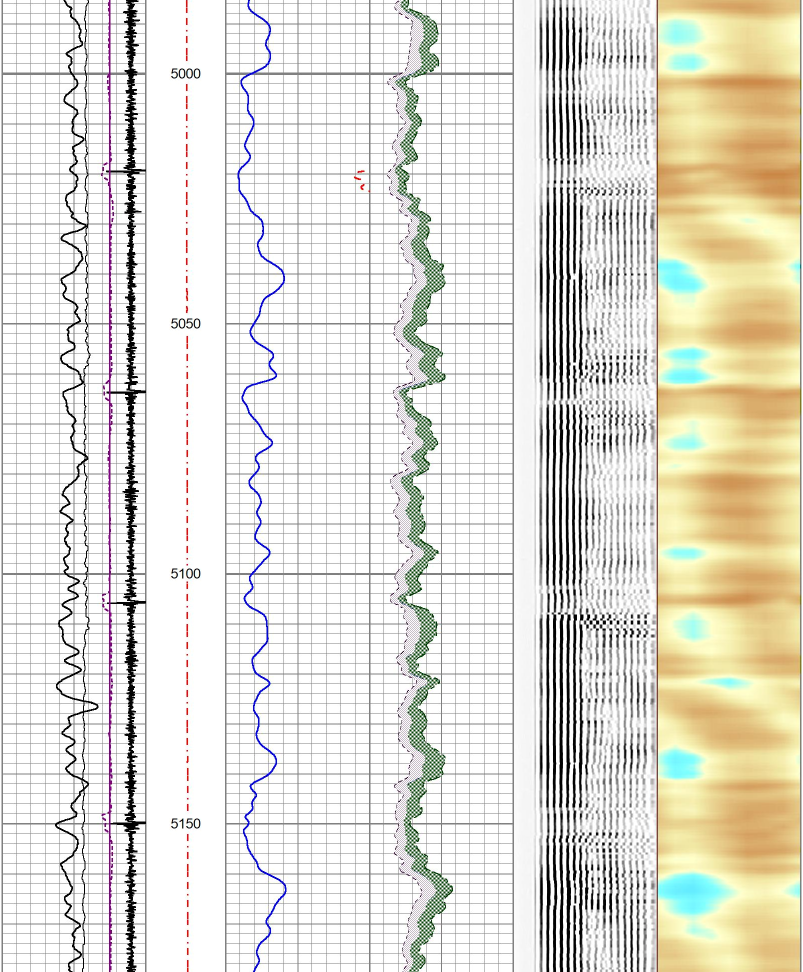
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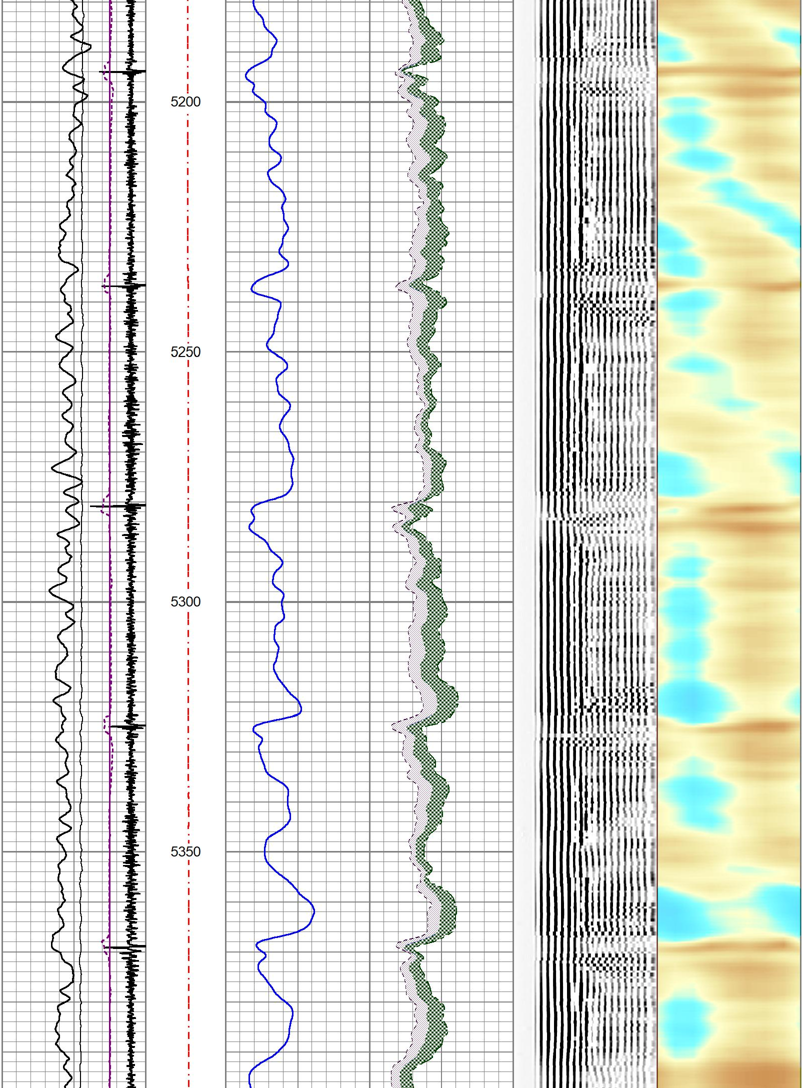
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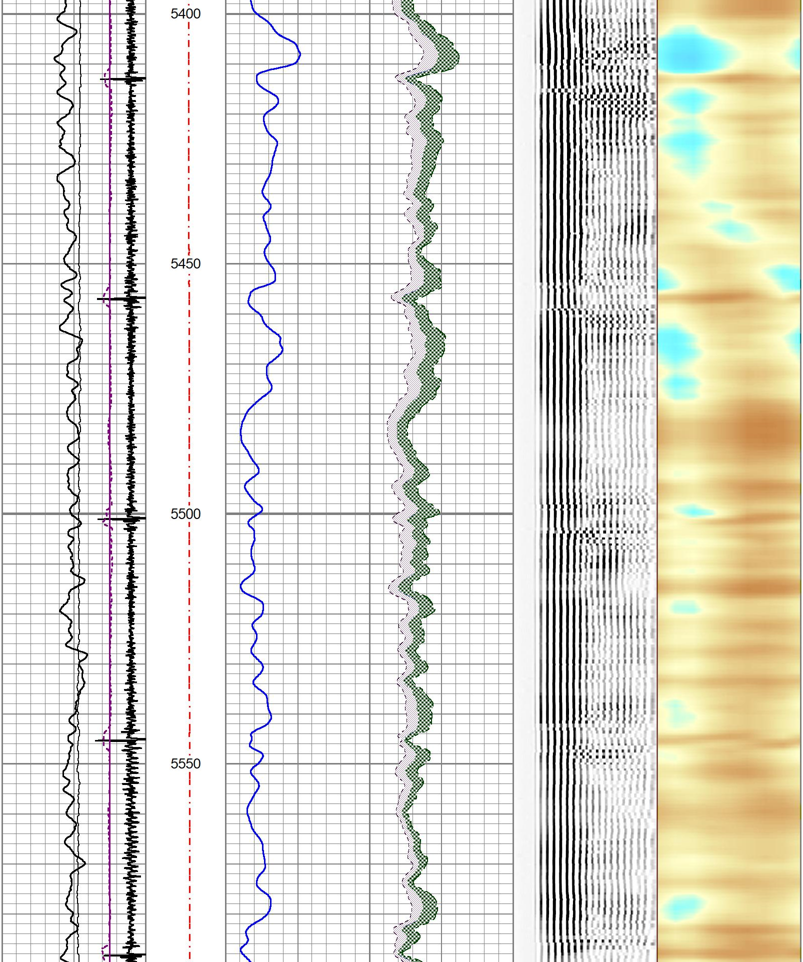
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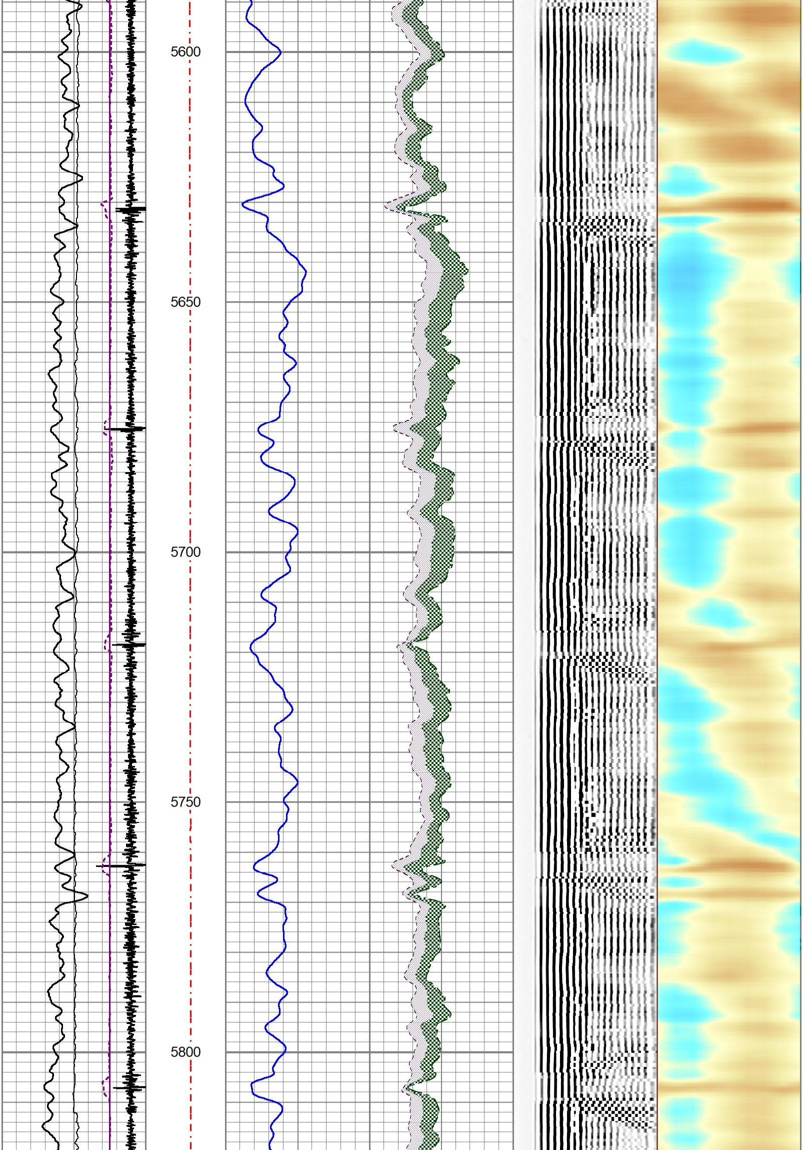
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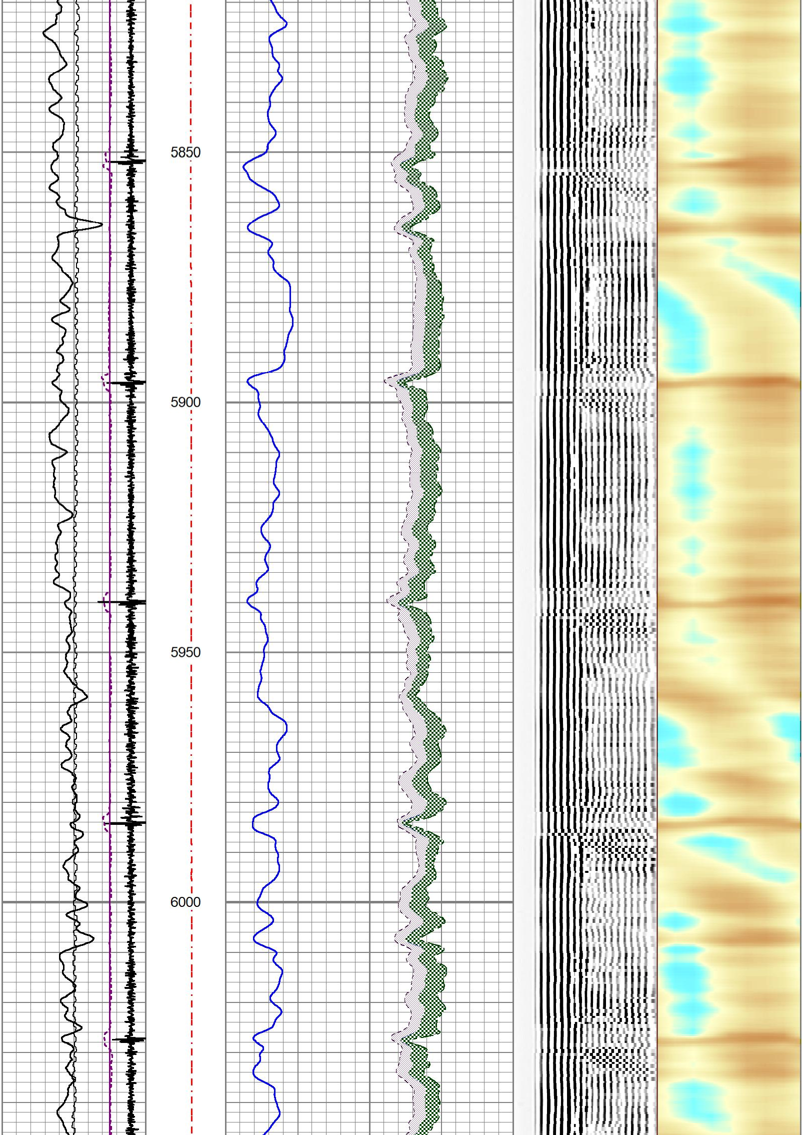
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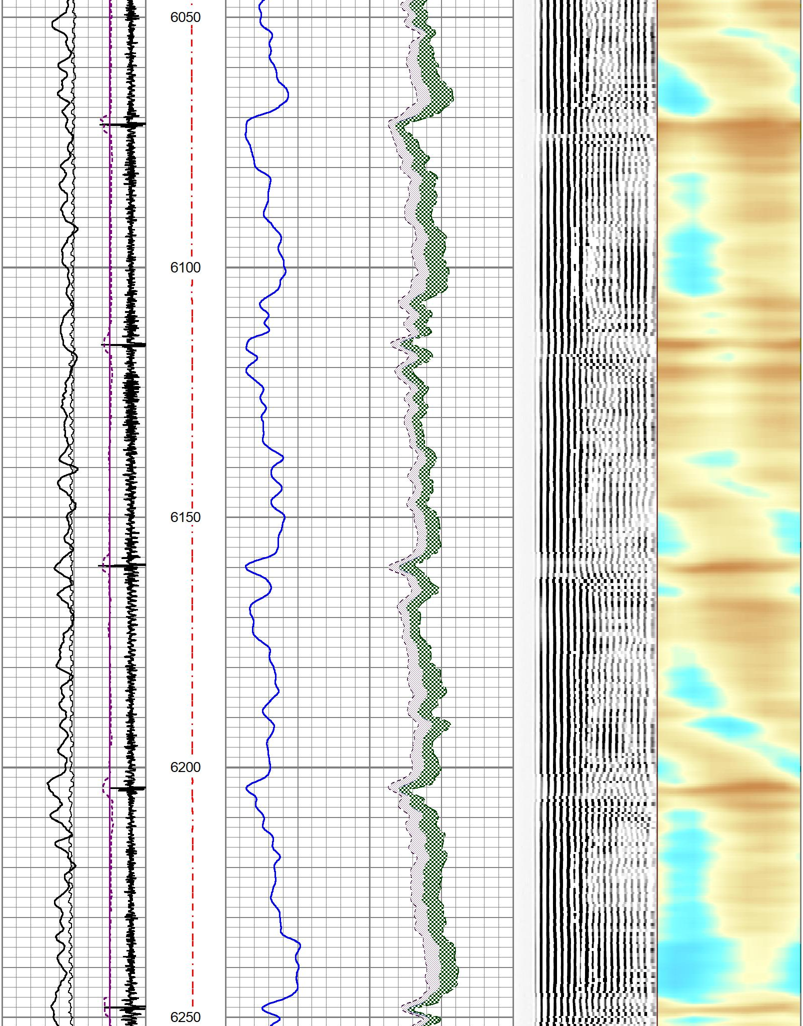
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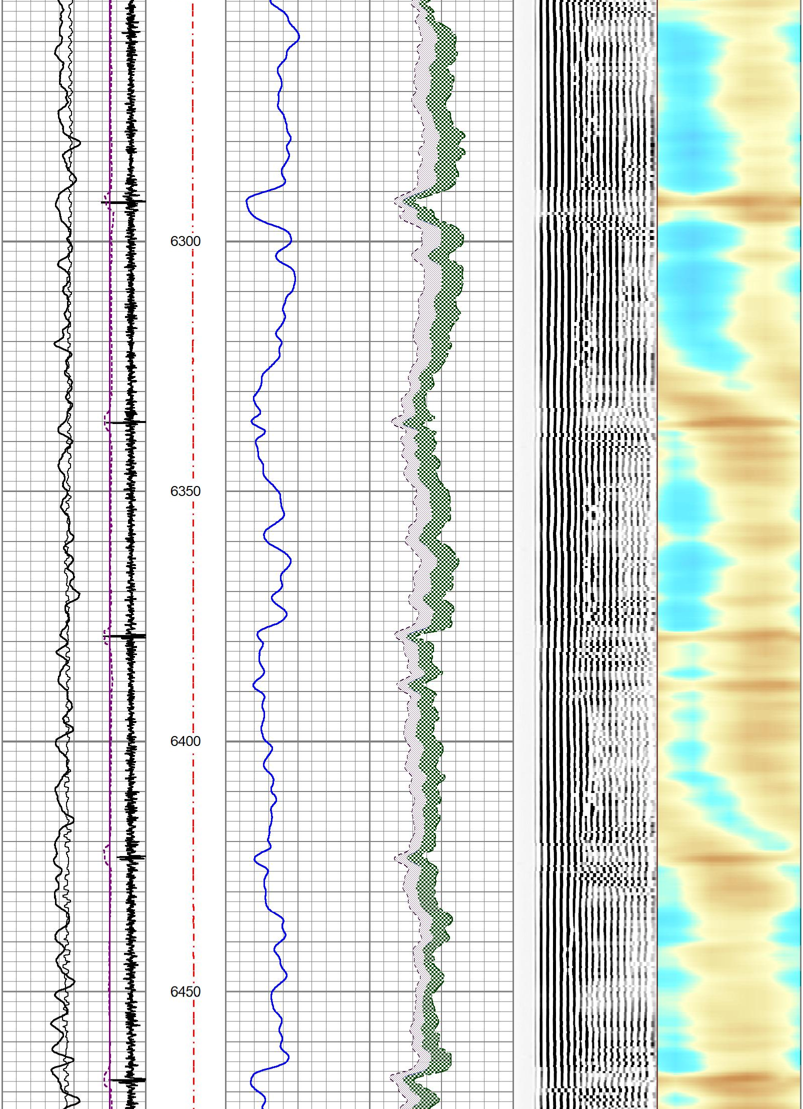
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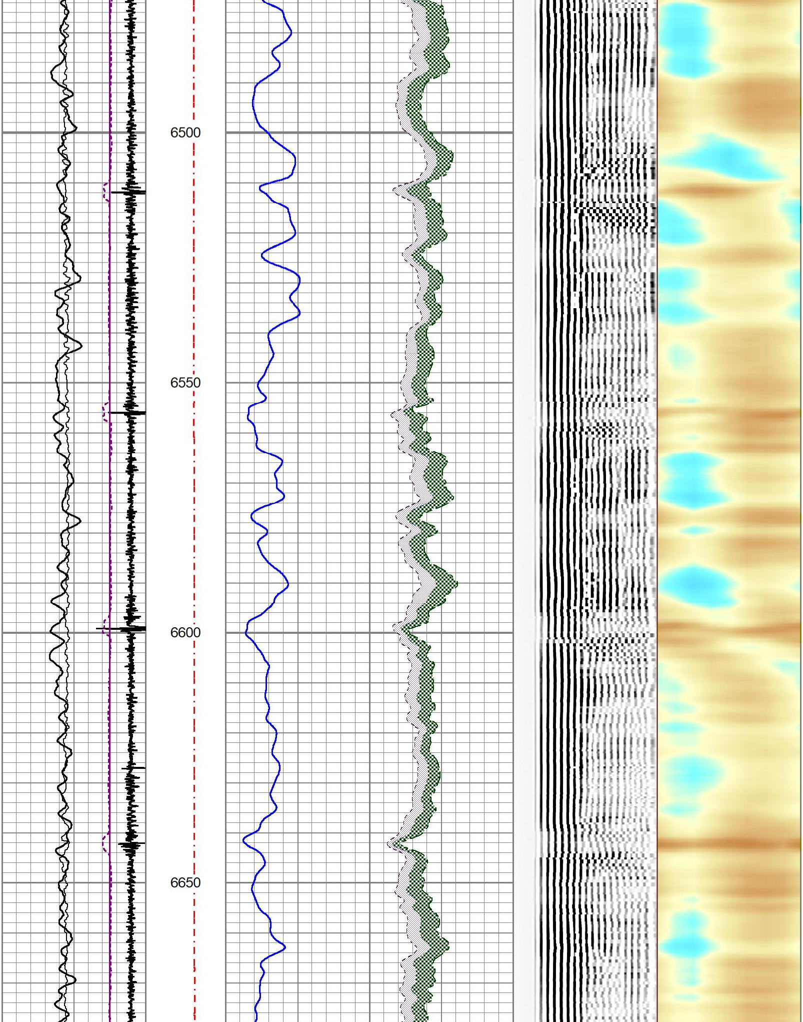
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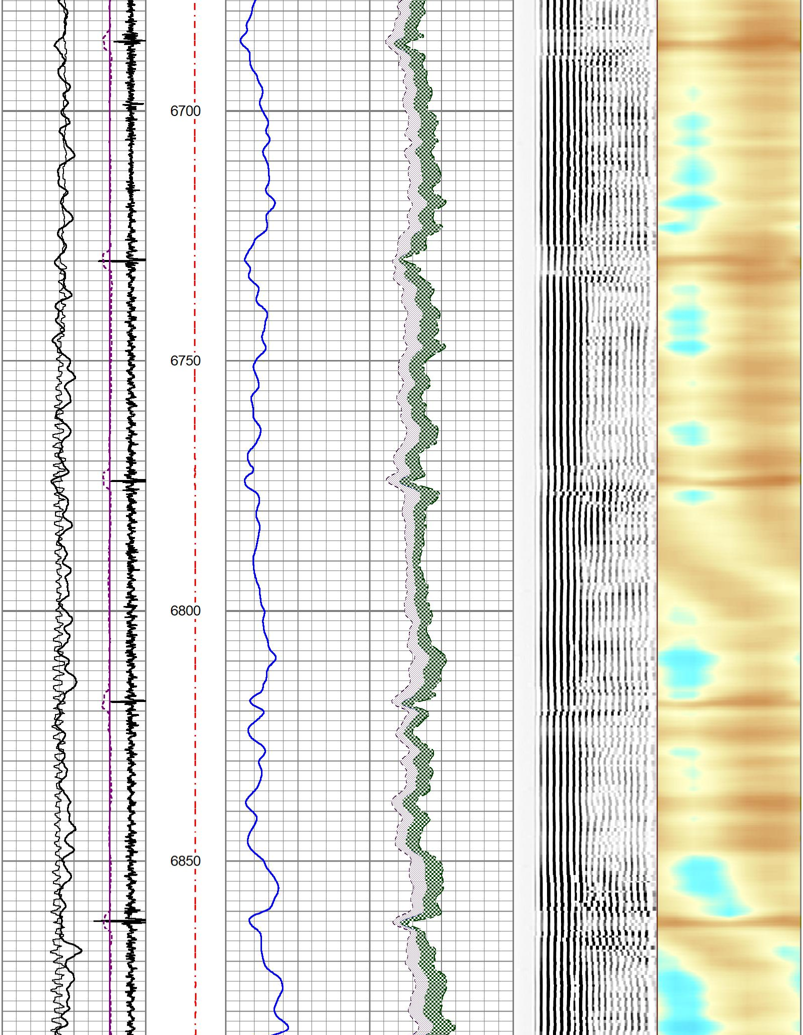
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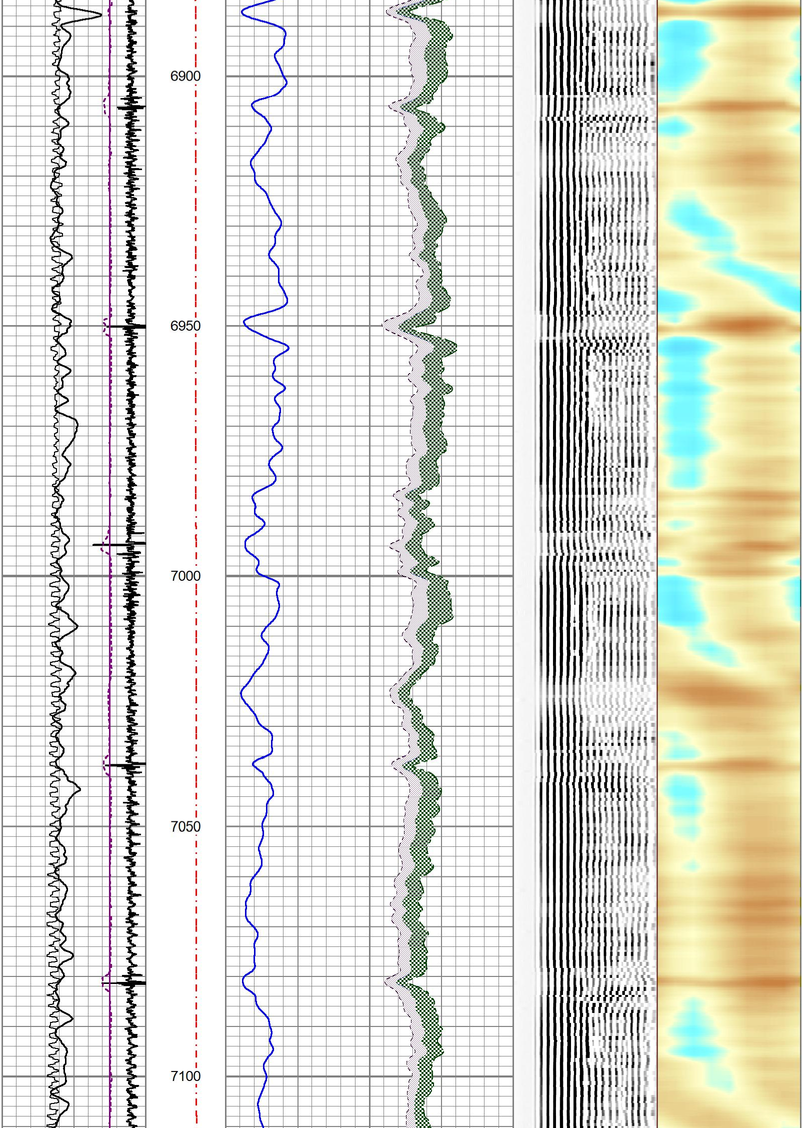
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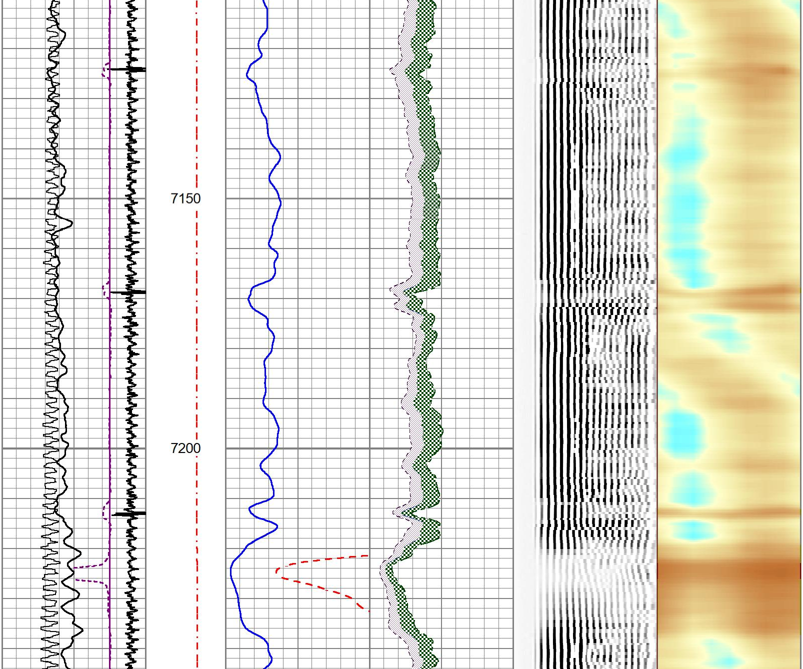
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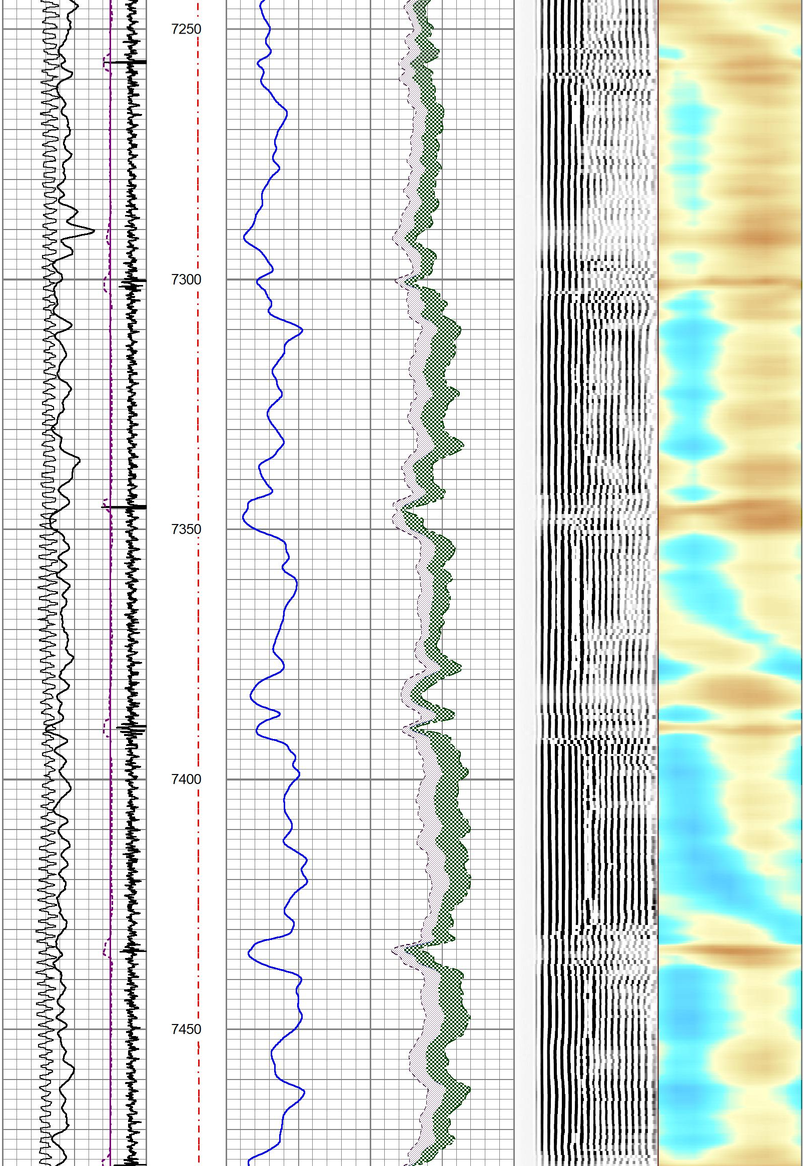
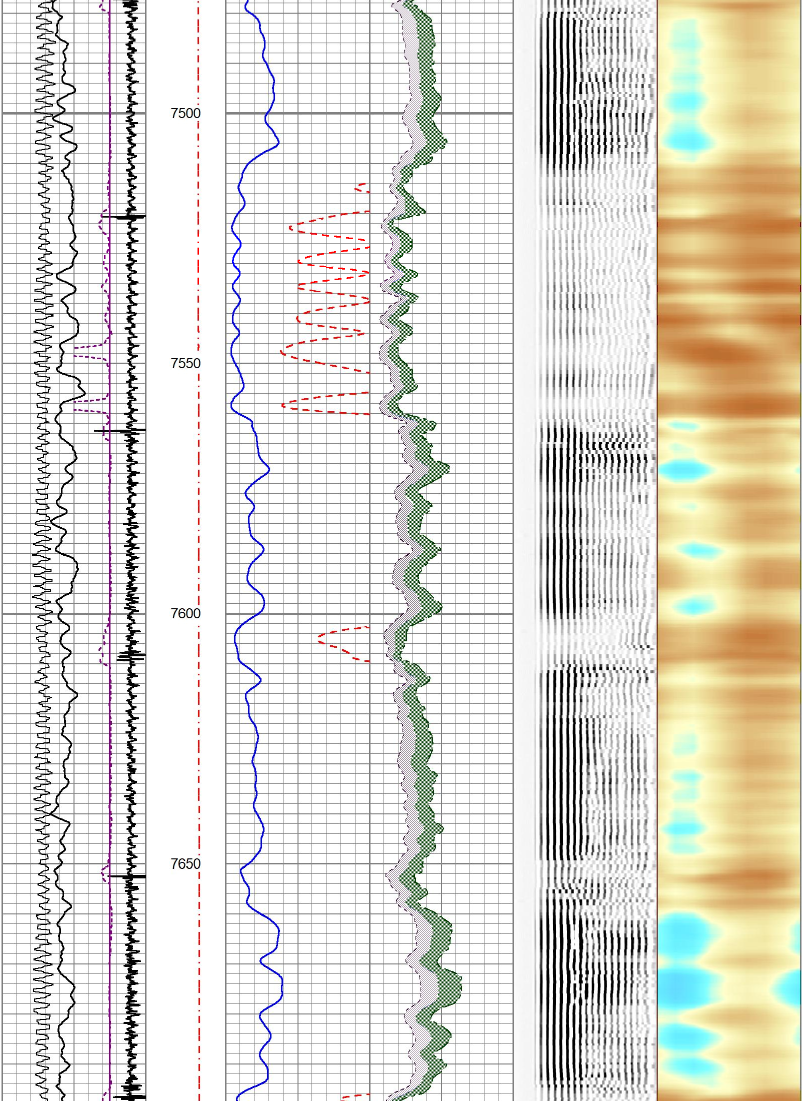
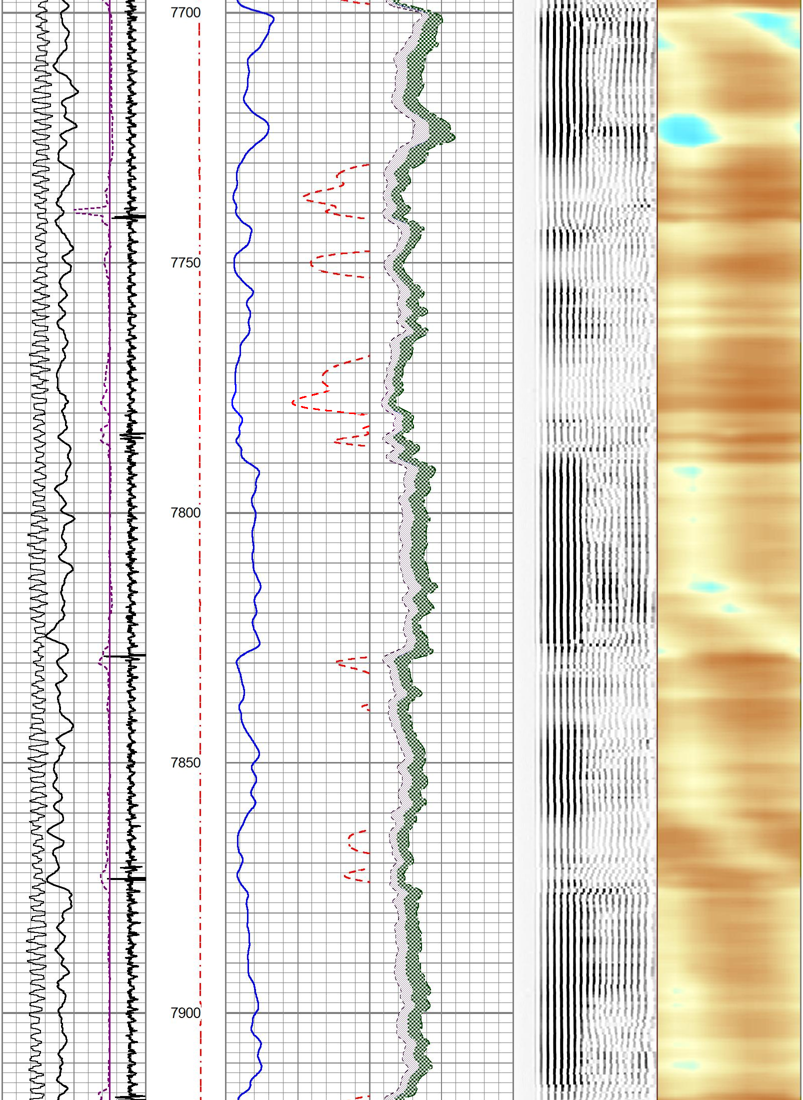
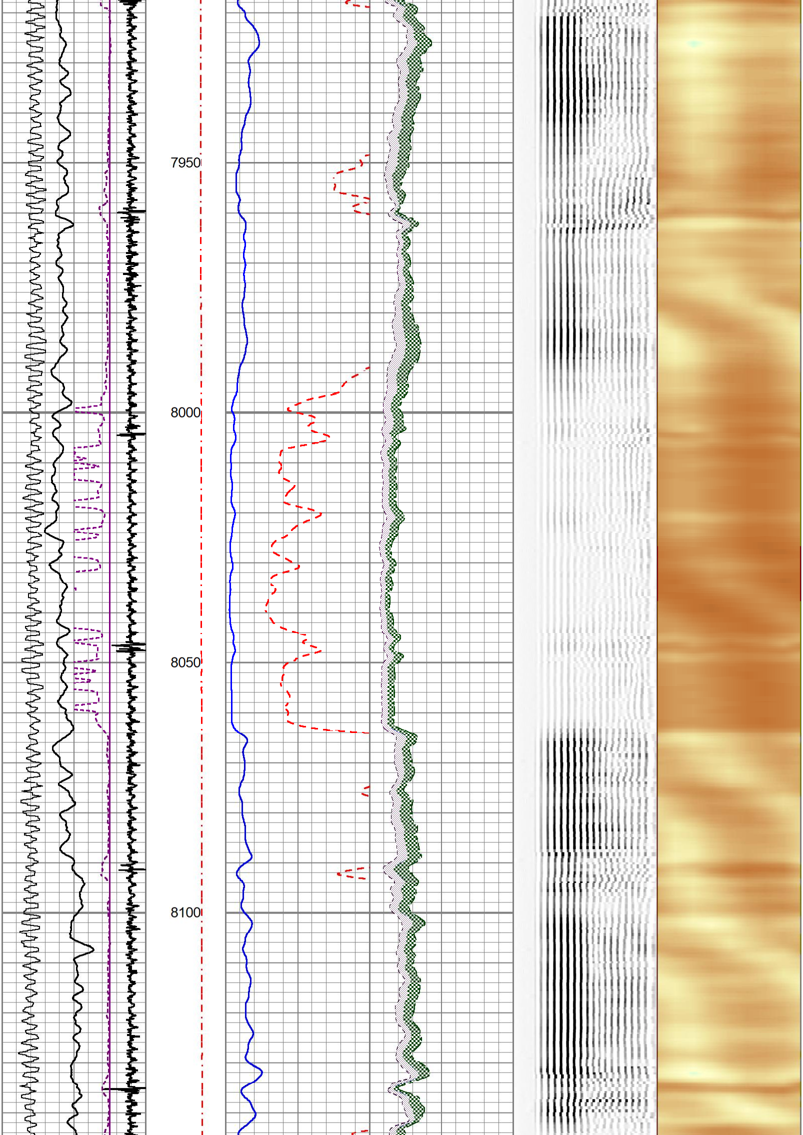
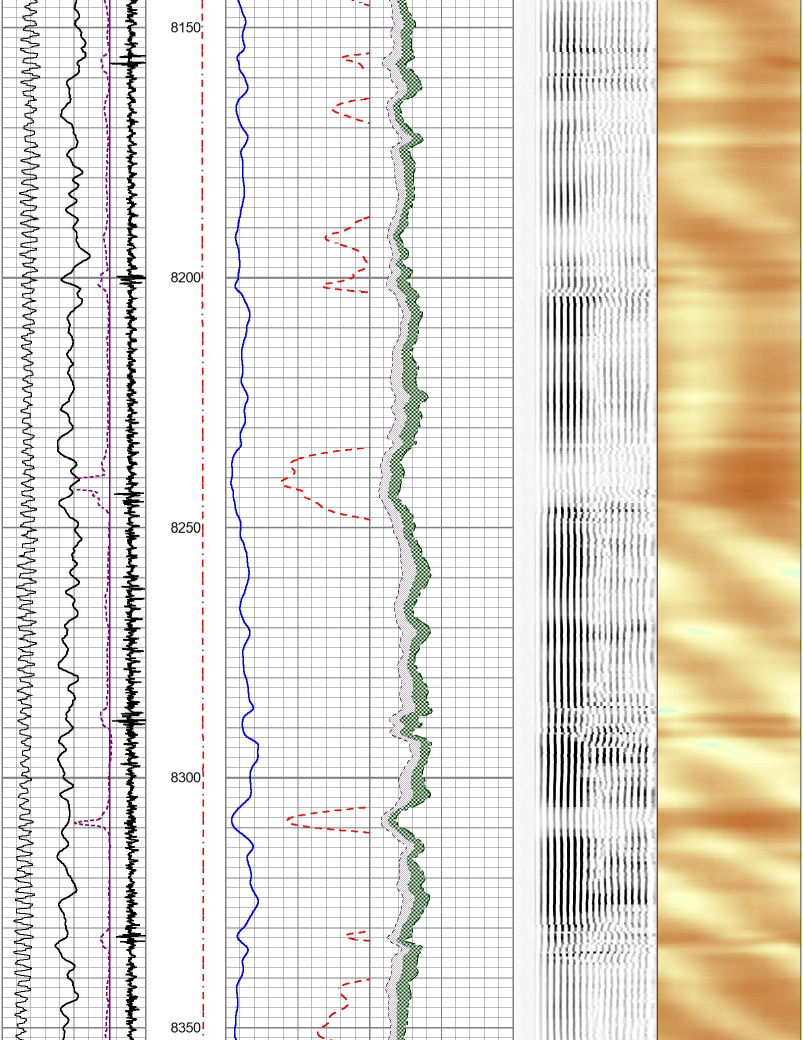
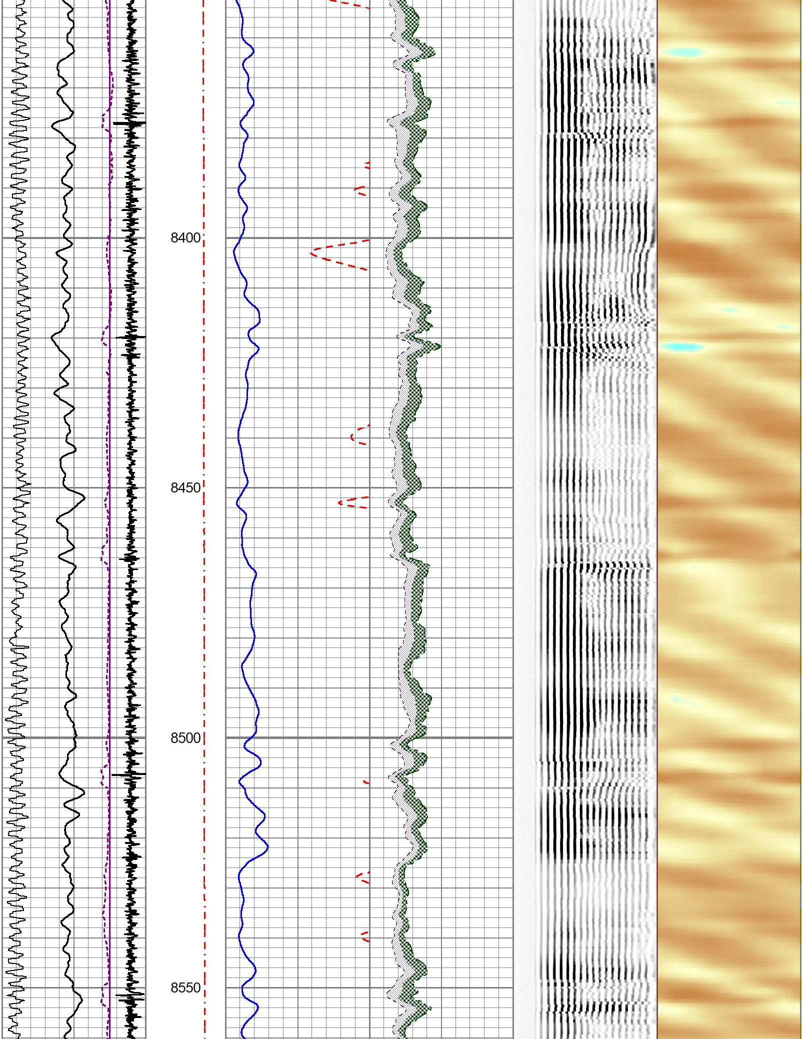


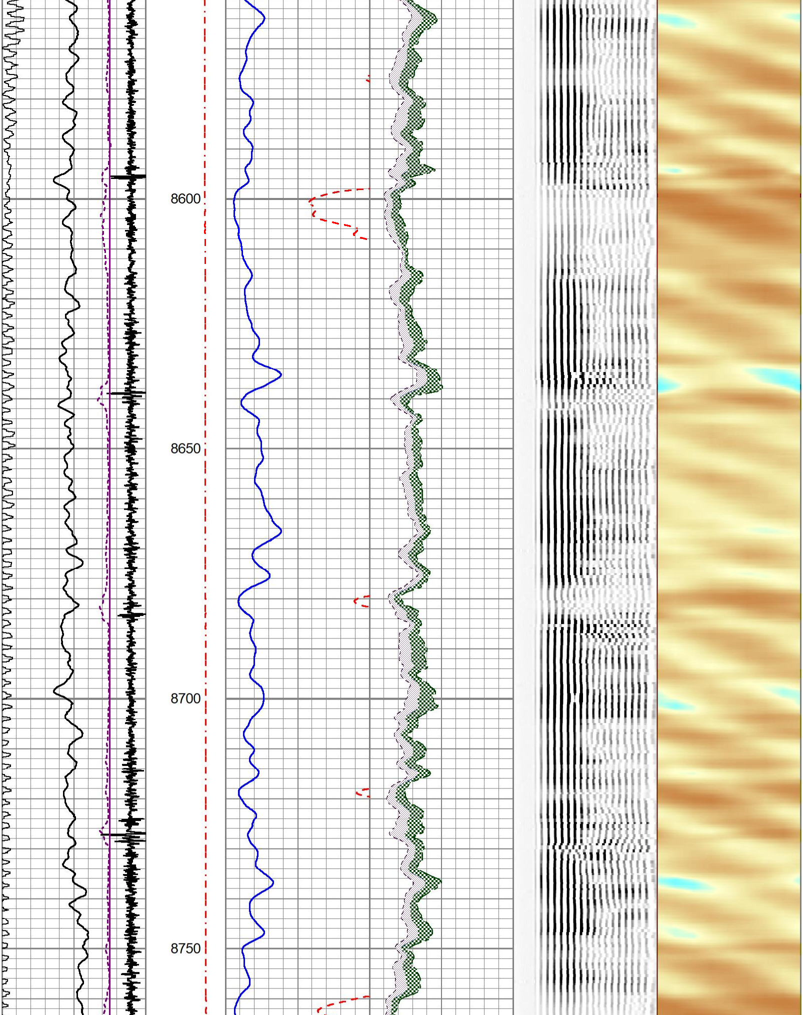


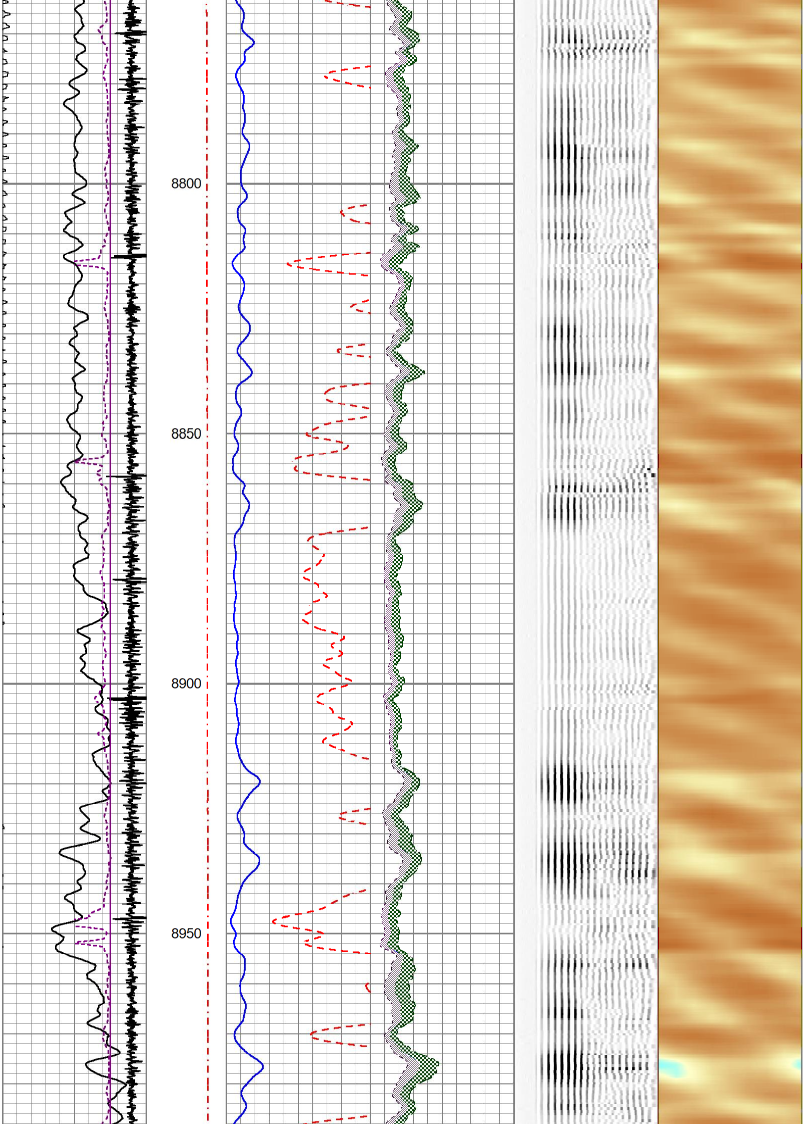


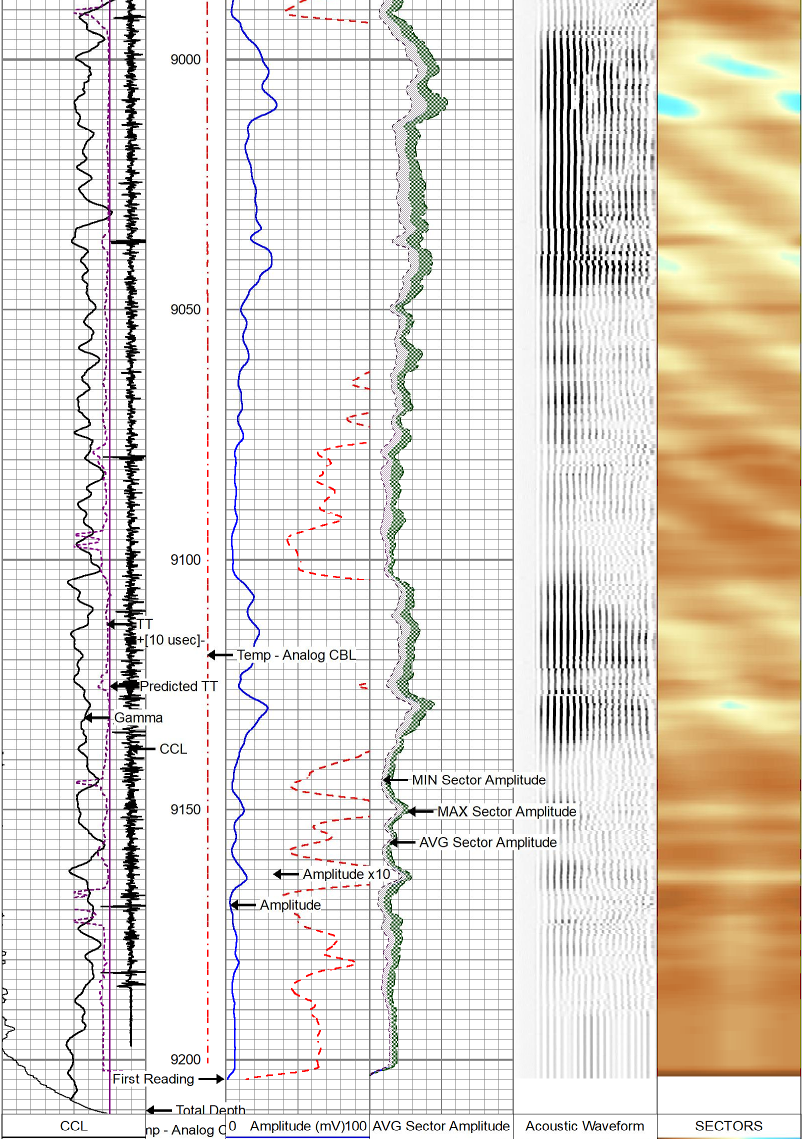












Gamma
0 (GAPI) 200
300( Line Tens (lb) 0
Predicted TT
TT
+[10 usec]-

(degF)
0 300

Amplitude x10
0 (mV) 10

0 100
MAX Sector Amplitude
0 100
MIN Sector Amplitude
0 100

200 (usec) 1200

0 72

**gyrodata**

## MAIN PASS - Ran with 0 PSI

5 in / 100 ft

**gyrodata**

## REPEAT PASS - Ran with 0 PSI

5 in / 100 ft

| | |
|---|---|
| Database File | 2019_10_01_extraction_interchange_b_s22_30_15n\2019_10_01_extraction_interchange_b_s22_30_15n. |
| Dataset Pathname | pass2 |
| Presentation Format | rcbl_8s |
| Dataset Creation | Tue Oct 01 12:31:18 2019 |
| Charted by | Depth in Feet scaled 1:240 |

CCL
Gamma
0 (GAPI) 200
300( Line Tens (lb) 0
Predicted TT
TT
+[10 usec]-

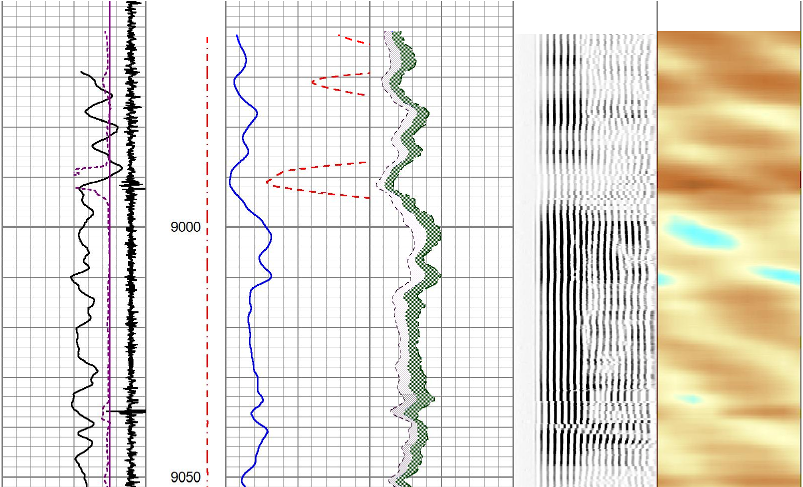
np - Analog C
(degF)
0 300

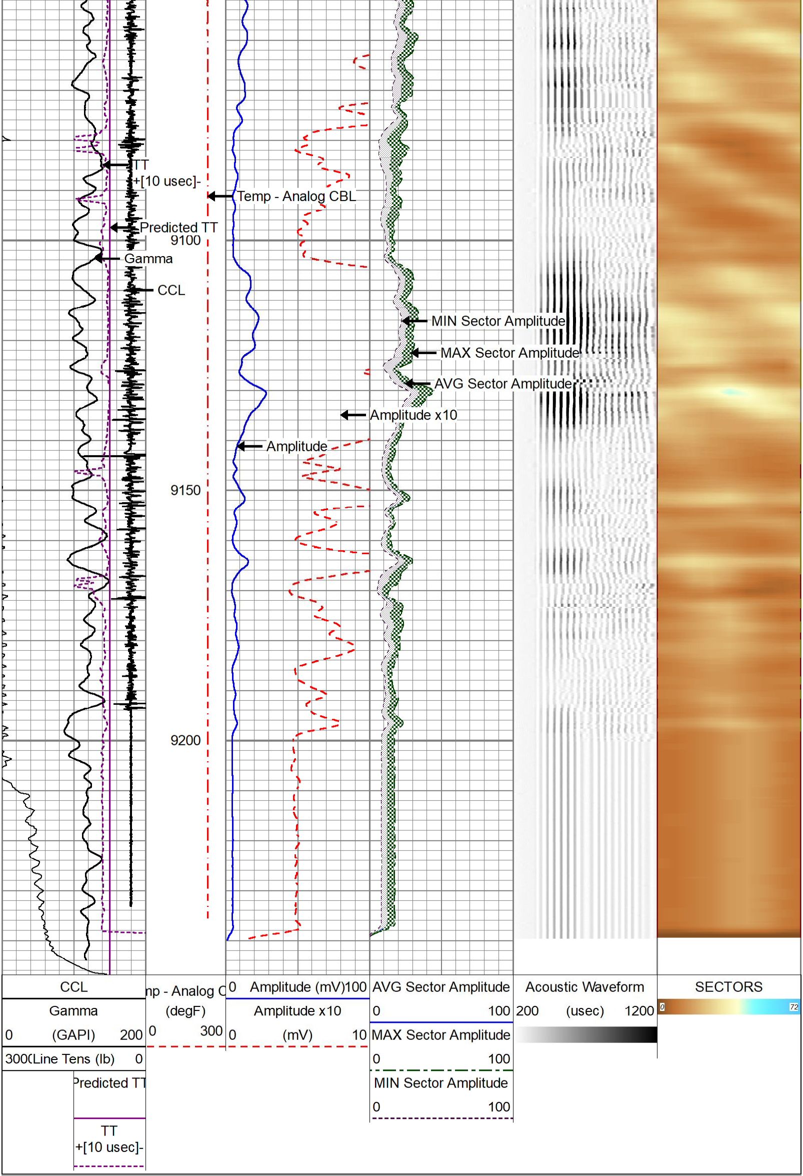
0 Amplitude (mV) 100
Amplitude x10
0 (mV) 10

AVG Sector Amplitude
0 100
MAX Sector Amplitude
0 100
MIN Sector Amplitude
0 100

Acoustic Waveform
200 (usec) 1200

SECTORS
0 72





# REPEAT PASS - Ran with 0 PSI

**5 in / 100 ft**

## Calibration Report

| | |
|---|---|
| Database File | d:\warrior\data\2019_10_01_extraction_interchange_b_s22_30_15n\2019_10_01_extraction_interchange_b_ |
| Dataset Pathname | bond |
| Dataset Creation | Tue Oct 01 13:56:13 2019 |

## Gamma Ray Calibration Report

| | | |
|---|---|---|
| Serial Number: | ISHV2-03 | |
| Tool Model: | 2 3/4" TekCo | |
| Performed: | Thu Apr 25 10:34:21 2019 | |
| Calibrator Value: | 194.0 | GAPI |
| Background Reading: | 61.7 | cps |
| Calibrator Reading: | 373.2 | cps |
| Sensitivity: | 0.6226 | GAPI/cps |

## Segmented Cement Bond Log Calibration Report

| | | |
|---|---|---|
| Serial Number: | IRB34-03 | |
| Tool Model: | 2 3/4" RIB Analog | |
| Calibration Casing Diameter: | 5.500 | in |
| Calibration Depth: | 122.740 | ft |

Master Calibration, performed (Derived):

| | Raw (v) | | Calibrated (mv) | | Results | |
|---|---|---|---|---|---|---|
| | Zero | Cal | Zero | Cal | Gain | Offset |
| 3' | -0.015 | 0.865 | 0.000 | 71.921 | 81.723 | 1.239 |
| CAL | -0.004 | 0.746 | | | | |
| 5' | -0.001 | 0.990 | 0.000 | 71.921 | 72.534 | 0.091 |
| SUM | | | | | | |
| S1 | 0.004 | 0.944 | 0.000 | 72.000 | 76.634 | -0.307 |
| S2 | 0.005 | 0.974 | 0.000 | 72.000 | 74.298 | -0.335 |
| S3 | 0.005 | 0.993 | 0.000 | 72.000 | 72.850 | -0.375 |
| S4 | 0.007 | 1.076 | 0.000 | 72.000 | 67.344 | -0.454 |
| S5 | 0.009 | 1.130 | 0.000 | 72.000 | 64.212 | -0.547 |
| S6 | 0.008 | 1.154 | 0.000 | 72.000 | 62.799 | -0.475 |
| S7 | 0.006 | 1.126 | 0.000 | 72.000 | 64.286 | -0.410 |
| S8 | 0.005 | 1.042 | 0.000 | 72.000 | 69.421 | -0.346 |

Internal Reference Calibration, performed (Not Performed):

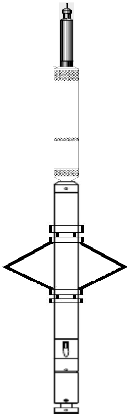
| | Raw (v) | | Calibrated (v) | | Results | |
|---|---|---|---|---|---|---|
| | Zero | Cal | Zero | Cal | Gain | Offset |
| CAL | 0.000 | 0.000 | -0.004 | 0.746 | 1.000 | 0.000 |

Air Zero Calibration, performed (Not Performed):

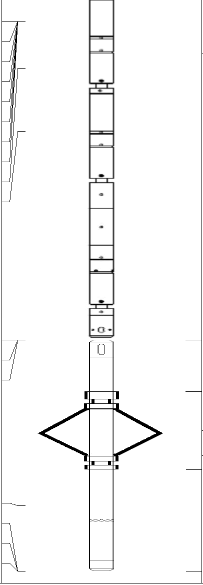
| | Raw (v) | Calibrated (v) | Results |
|---|---|---|---|
| | Zero | Zero | Offset |
| 3' | 0.000 | 0.000 | 0.000 |
| 5' | 0.000 | 0.000 | 0.000 |
| SUM | | | |
| S1 | 0.000 | 0.000 | 0.000 |
| S2 | 0.000 | 0.000 | 0.000 |
| S3 | 0.000 | 0.000 | 0.000 |
| S4 | 0.000 | 0.000 | 0.000 |
| S5 | 0.000 | 0.000 | 0.000 |
| S6 | 0.000 | 0.000 | 0.000 |
| S7 | 0.000 | 0.000 | 0.000 |
| S8 | 0.000 | 0.000 | 0.000 |

## Temperature Calibration Report

| | | |
|---|---|---|
| Serial Number: | IRB34-03 | |
| Tool Model: | 2 3/4" RIB Analog | |
| Performed: | Wed Jan 30 14:38:18 2019 | |
| | Reference | Reading |
| Low Reference: | 0.00 degF | 0.00 usec |
| High Reference: | 1.00 degF | 1.00 usec |
| Gain: | 0.33 | |
| Offset: | 0.00 | |
| Delta Spacing | 1 | |

| Sensor | Offset (ft) | Schematic | Description | Length (ft) | O.D. (in) | Weight (lb |
|---|---|---|---|---|---|---|
| | |  | CableHead-TitanConeType2 | 1.03 | 1.44 | 3.60 |
| CCL | 13.50 | | CCL_Log-2 3/4" TekCo (IPSN7-03) | 1.83 | 2.75 | 33.00 |
| | | | Antelope-Overbody | 1.25 | 2.75 | |
| TEMP | 10.05 | | | | | |

| | |
|---|---|
| WVFS8 | 8.76 |
| WVFS7 | 8.76 |
| WVFS6 | 8.76 |
| WVFS5 | 8.76 |
| WVFS4 | 8.76 |
| WVFS3 | 8.76 |
| WVFS2 | 8.76 |
| WVFS1 | 8.76 |
| WVF3FT | 8.01 |
| WVF5FT | 7.01 |
| WVFSYNC | 3.68 |
| WVFTEMP | 3.68 |
| WVFCAL | 3.68 |
| GR | 1.04 |
| LOCTIM | 0.00 |
| UTCTIM | 0.00 |
| PMON | 0.00 |



| | | | |
|---|---|---|---|
| RBTA-2 3/4" RIB Analog (IRB34-03) | 9.13 | 2.75 | 102.00 |
| Antelope-Overbody | 1.25 | 2.75 | |
| GR_Log-2 3/4" TekCo (ISHV2-03) | 3.68 | 2.75 | 47.00 |

Dataset: 2019_10_01_extraction_interchange_b_s22_30_15n.db: field/well/run1/pass3
Total length: 15.67 ft
Total weight: 185.60 lb
O.D.: 2.75 in

gyrodata

**Company** Extraction Oil & Gas
**Well** Interchange B S22-30-15N
**Field** Wattenberg
**County** Broomfield
**State** Colorado **Country** U.S.A.