J-W WIRELINE COMPANY

# SECTOR BOND
# GAMMA RAY
# COLLAR LOG

Company NOBLE ENERGY INC.
Well HOLMAN B15-66HN
Field WATENBERG
County WELD
State COLORADO

| | | | |
|---|---|---|---|
| Company | NOBLE ENERGY INC. | | |
| Well | HOLMAN B15-66HN | | |
| Field | WATENBERG | | |
| County | WELD | State | COLORADO |

Location: API # : 05-123-37201
SHL: SE NW
SEC. 14 TWP. 5N RGE. 64W
BHL:2190' FNL & 1190' FWL
SEC TWP RGE

Other Services
NONE

| | | | |
|---|---|---|---|
| Permanent Datum | GROUND LEVEL | Elevation | 4584 |
| Log Measured From | KELLY BUSHING | | |
| Drilling Measured From | KELLY BUSHING | | |

Elevation
K.B. 4608
D.F.
G.L. 4584

| | | | |
|---|---|---|---|
| Date | 03-DECEMBER-2013 | | |
| Run Number | ONE | | |
| Depth Driller | 12684 | | |
| Depth Logger | 6720 | | |
| Bottom Logged Interval | 6721 | | |
| Top Log Interval | SURFACE | | |
| Open Hole Size | 8 3/4 | | |
| Type Fluid | WATER | | |
| Density / Viscosity | --- | | |
| Max. Recorded Temp. | 235 | | |
| Estimated Cement Top | 843 | | |
| Time Well Ready | --- | | |
| Time Logger on Bottom | --- | | |
| Equipment Number | 2405/TECKO | | |
| Location | BRIGHTON | | |
| Recorded By | HAYES | | |
| Witnessed By | MR. BILL MANSFIELD | | |

| Borehole Record | | | | Tubing Record | | | |
|---|---|---|---|---|---|---|---|
| Run Number | Bit | From | To | Size | Weight | From | To |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

| Casing Record | Size | Wgt/Ft | Top | Bottom |
|---|---|---|---|---|
| Surface String | 9 5/8 | 36# | SURFACE | 642 |
| Prot. String | | | | |
| Production String | 4.5 | 11.6# | 6822.5 | 12674 |
| Liner | 7.0 | 26# | SURFACE | 6974 |
| | | | | |

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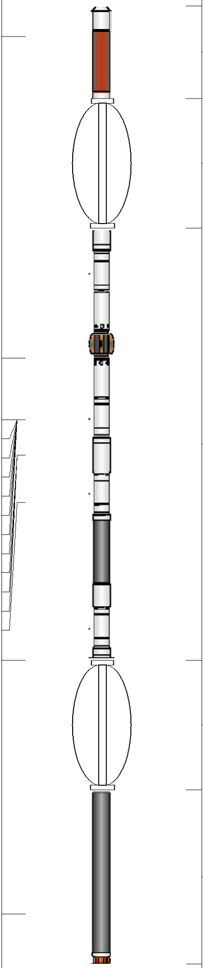
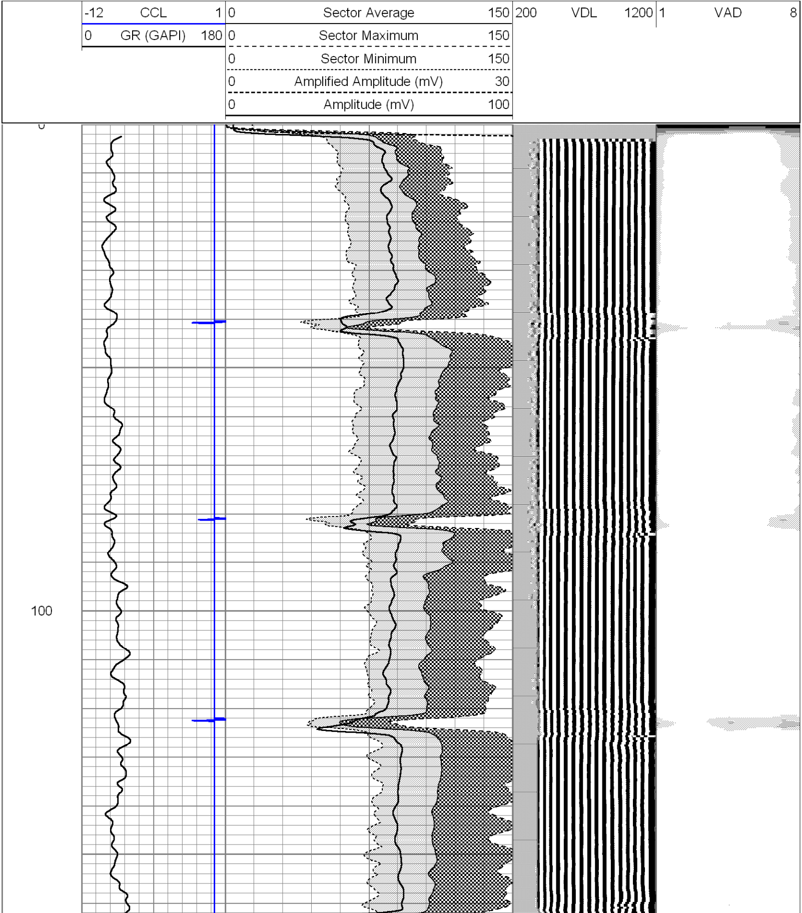
All interpretations are opinions based on inferences from electrical or other measurements and we cannot and do not guarantee the accuracy or correctness of any interpretation, and we shall not, except in the case of gross or willful negligence on our part, be liable or responsible for any loss, costs, 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.

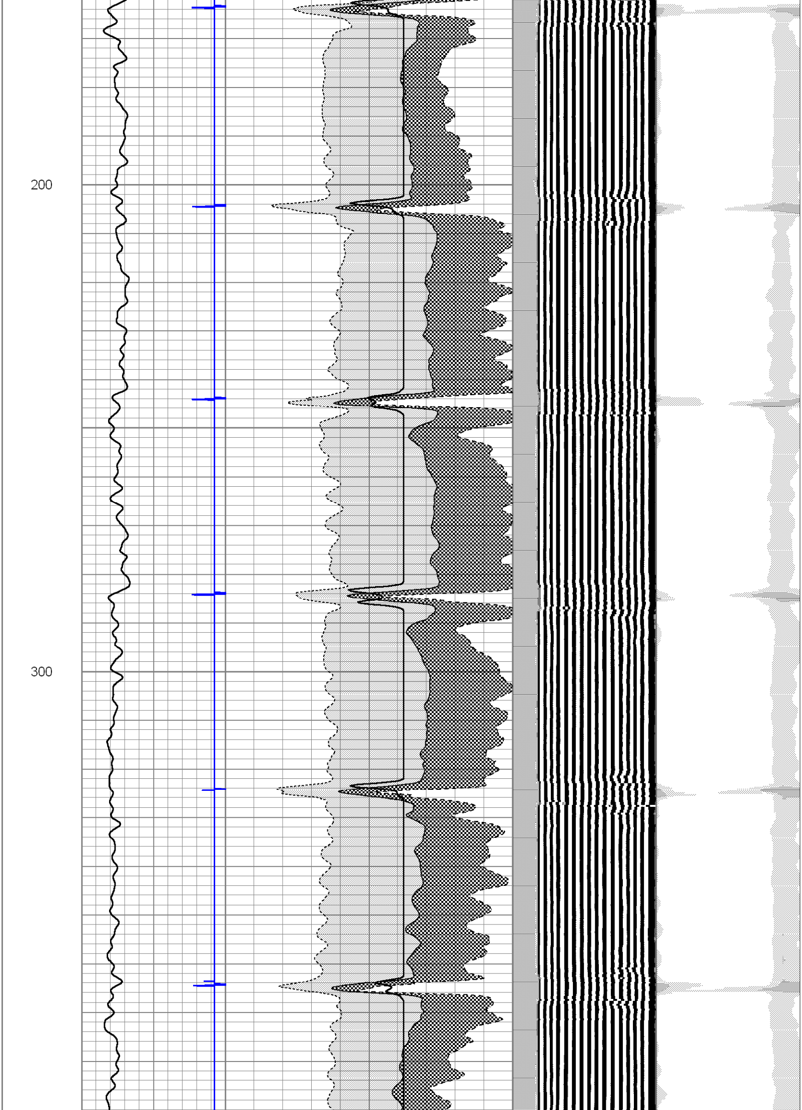
Comments

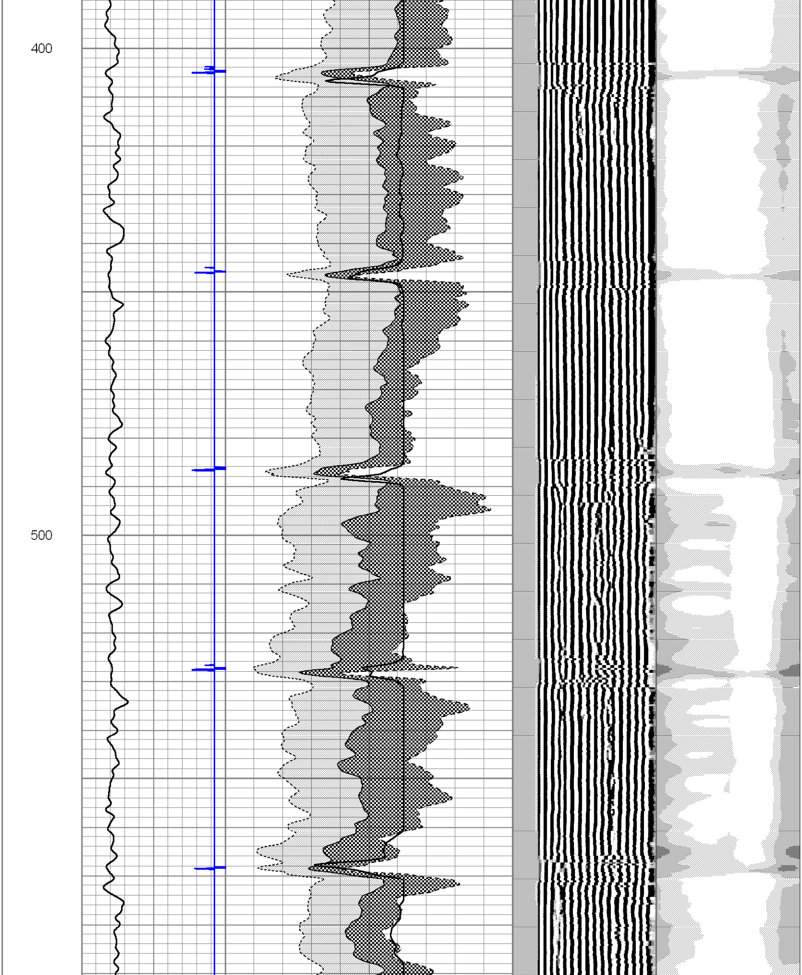
| Sensor | Offset (ft) | Schematic | Description | Len (ft) | OD (in) | Wt (lb) |
|---|---|---|---|---|---|---|
| CCL | 19.57 |  | | | | |
| | | | CCL-275tekco (2.75TEKCO)<br>2 3/4 TEK CCL Earth Mag | 1.96 | 2.75 | 20.00 |
| | | | CENT-TEKCO (101) | 2.73 | 2.75 | 10.00 |
| TEMP | 12.78 | | | | | |
| WVFS1 | 11.49 | | | | | |
| WVFS2 | 11.49 | | 275CTEKSECWTWSLCANS-275RIB (123<br>2 3/4" (R.I.B.) TOOL 3FT, 5FT and 8EA RIB SIGNALS 400 DEG "F" @20K PSI With Sliding Cans For Pressure Ballance | 9.13 | 2.75 | 102.00 |
| WVFS3 | 11.49 | | | | | |
| WVFS4 | 11.49 | | | | | |
| WVFS5 | 11.49 | | | | | |
| WVFS6 | 11.49 | | | | | |
| WVFS7 | 11.49 | | | | | |
| WVFS8 | 11.49 | | | | | |
| WVF3FT | 10.74 | | | | | |
| WVFCAL | 10.74 | | | | | |
| WVFSYNC | 10.74 | | | | | |
| WVF5FT | 9.74 | | | | | |
| WVFTEMP | 6.41 | | | | | |
| | | | CENT-TEKCO (101) | 2.73 | 2.75 | 10.00 |
| | | | GR-TEKCO (101sgr) | 3.68 | 2.75 | 30.00 |
| GR | 1.06 | | | | | |

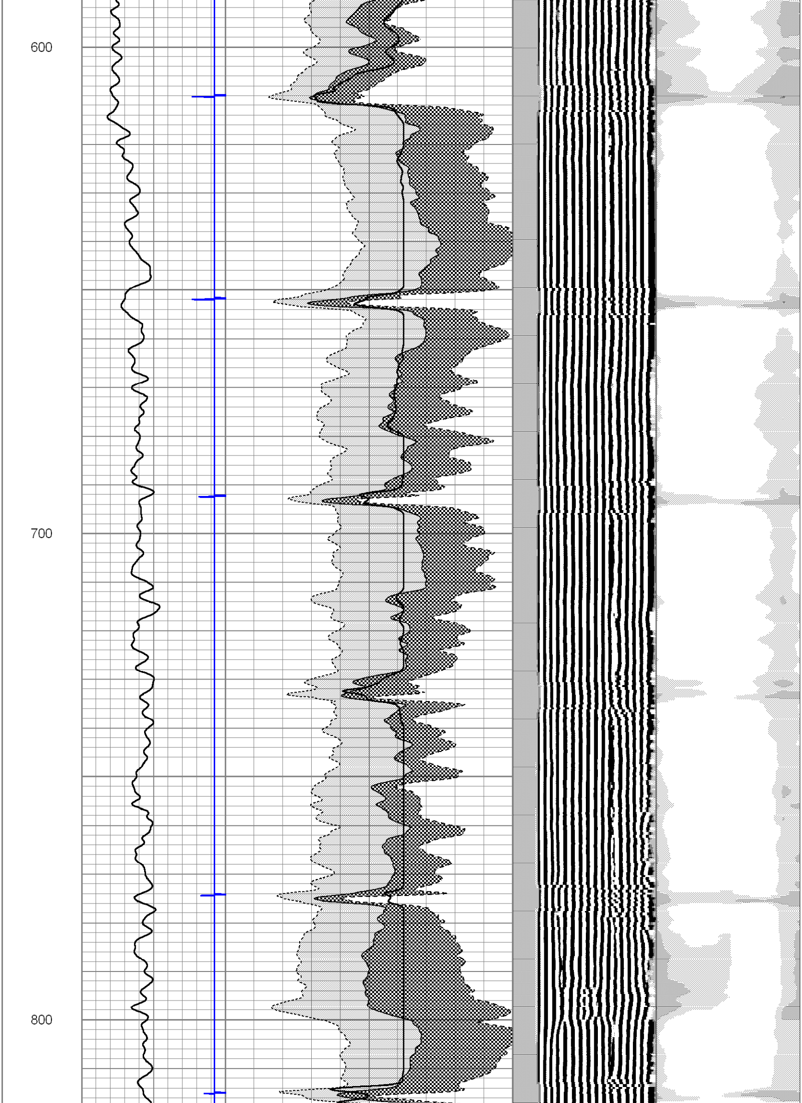
| | |
|---|---|
| Dataset: | holman b15-66hn.db: field/well/run1/pass3 |
| Total Length: | 20.22 ft |
| Total Weight: | 172.00 lb |
| O.D. | 2.75 in |

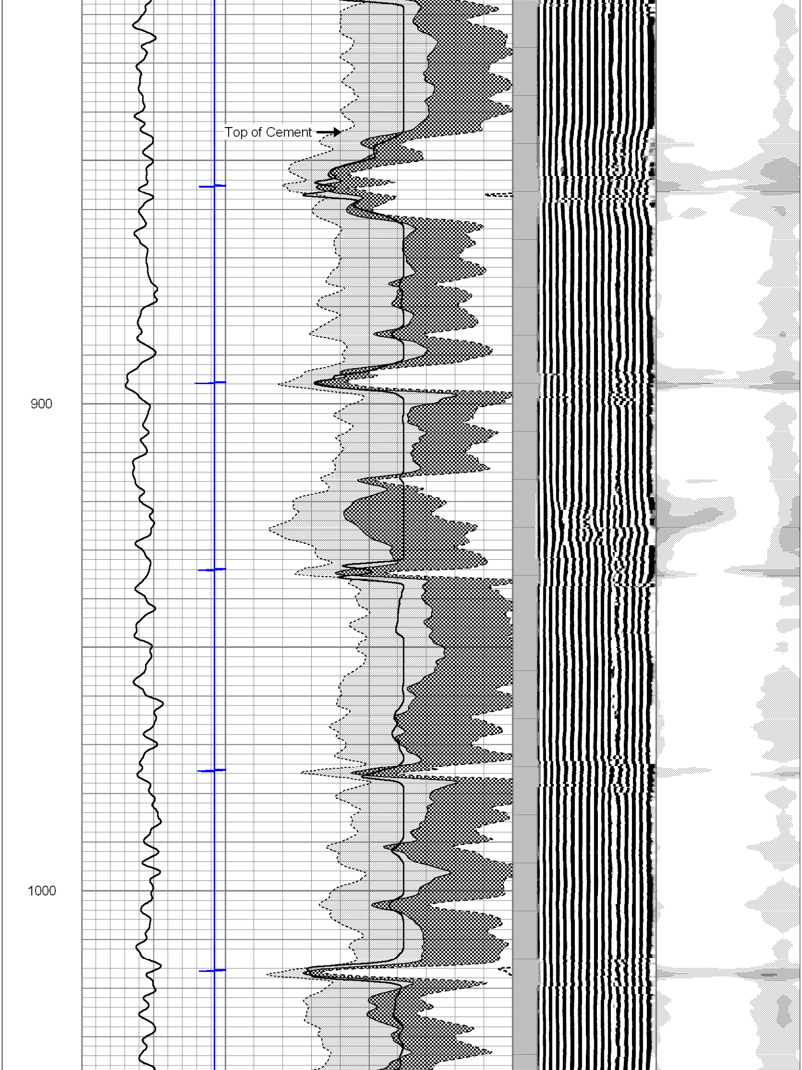
Database File: holman b15-66hn.db
Dataset Pathname: pass3
Presentation Format: scbl01
Dataset Creation: Wed Dec 04 01:30:28 2013 by Log SCH 111116
Charted by: Depth in Feet scaled 1:240

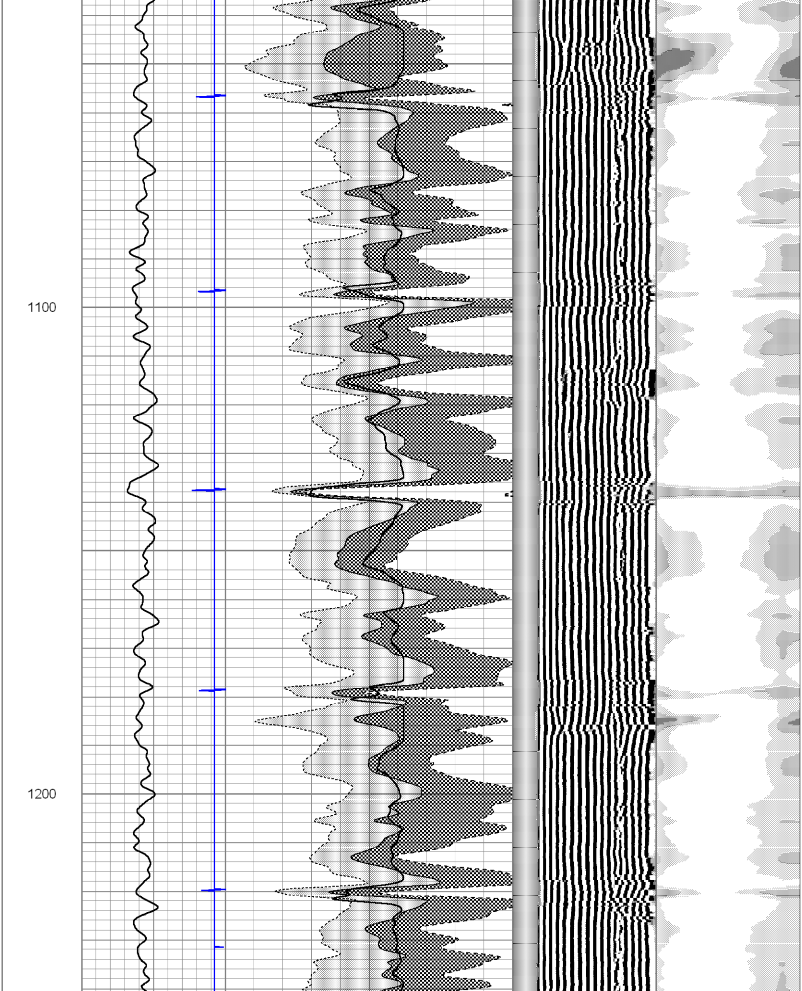


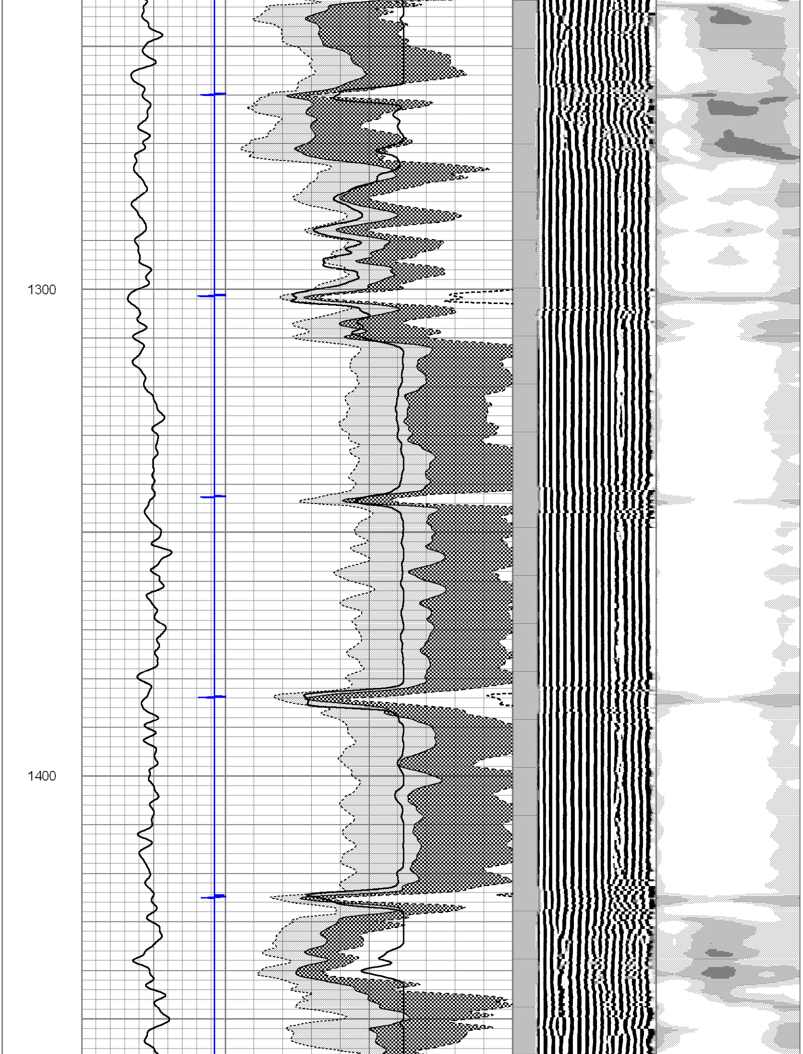


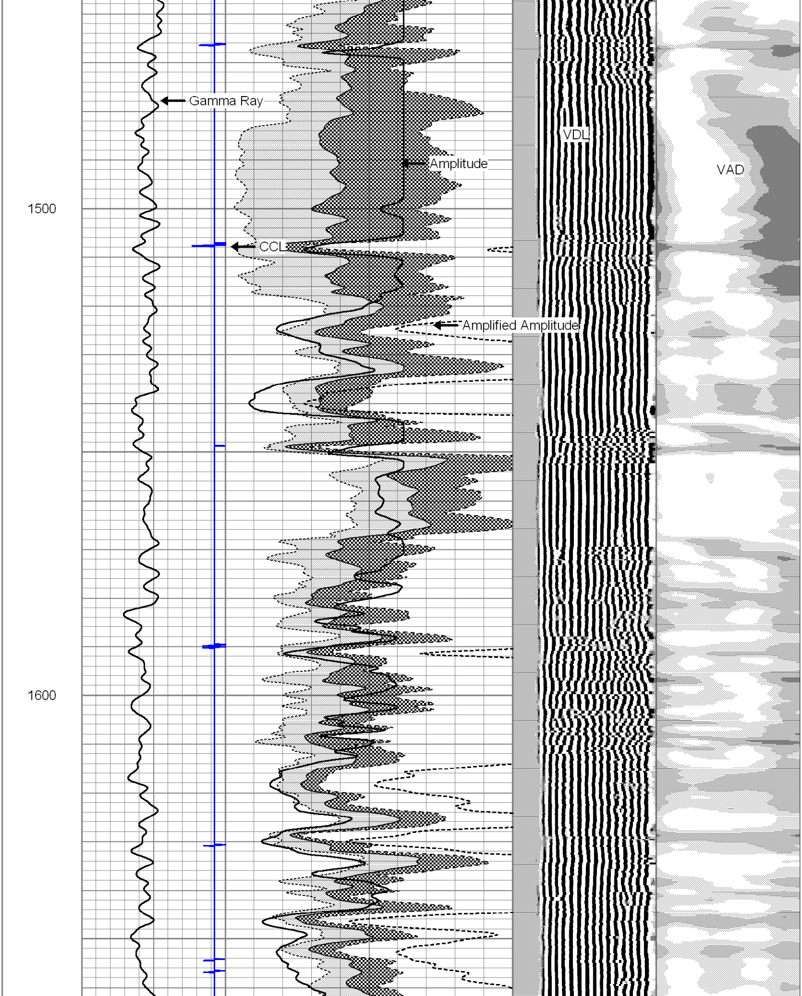


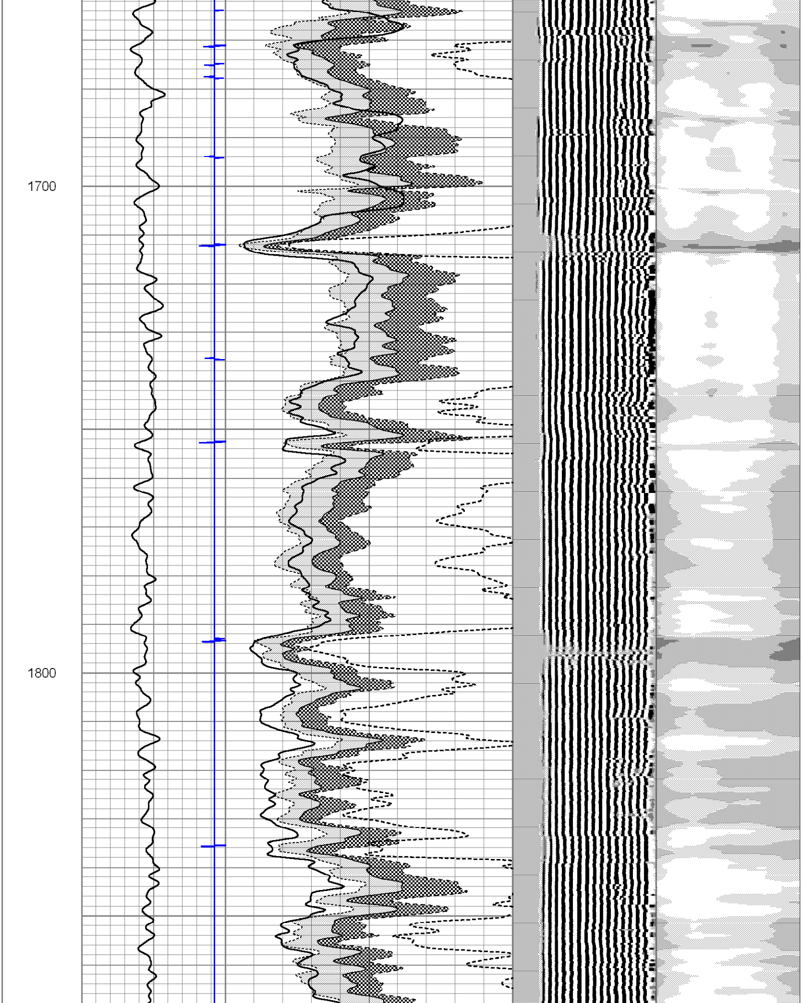


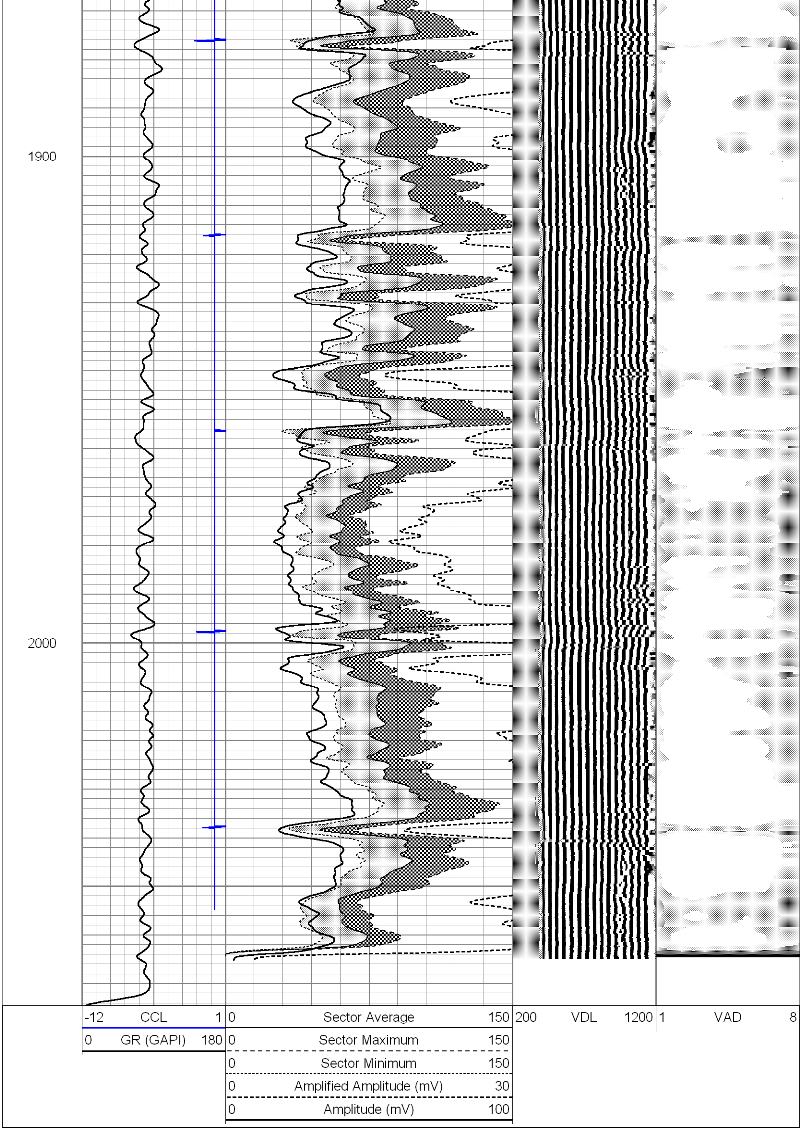




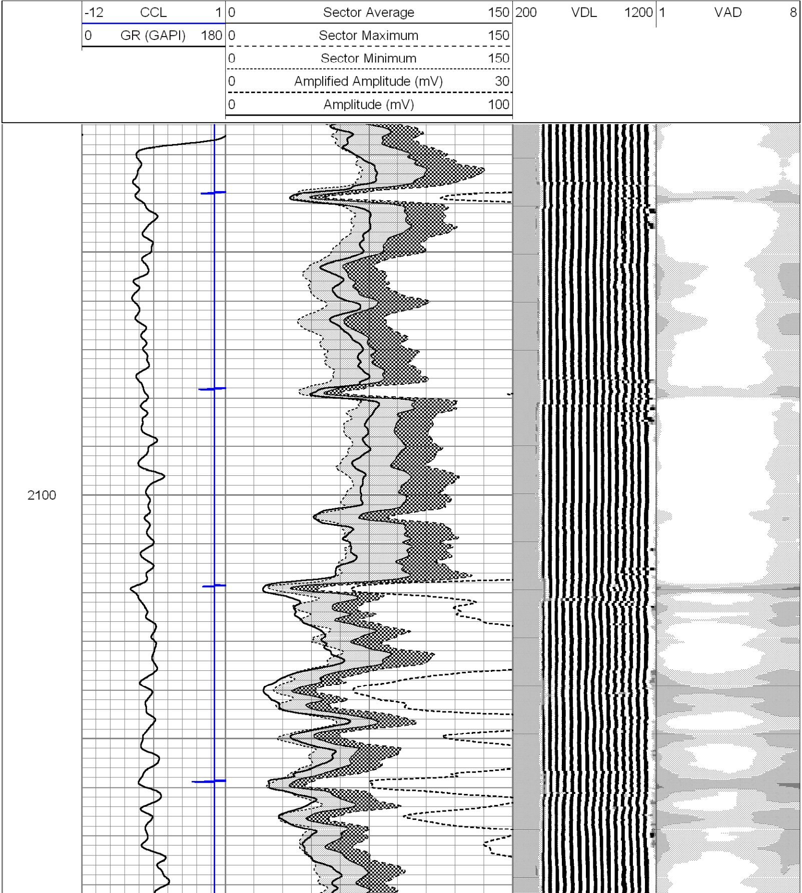


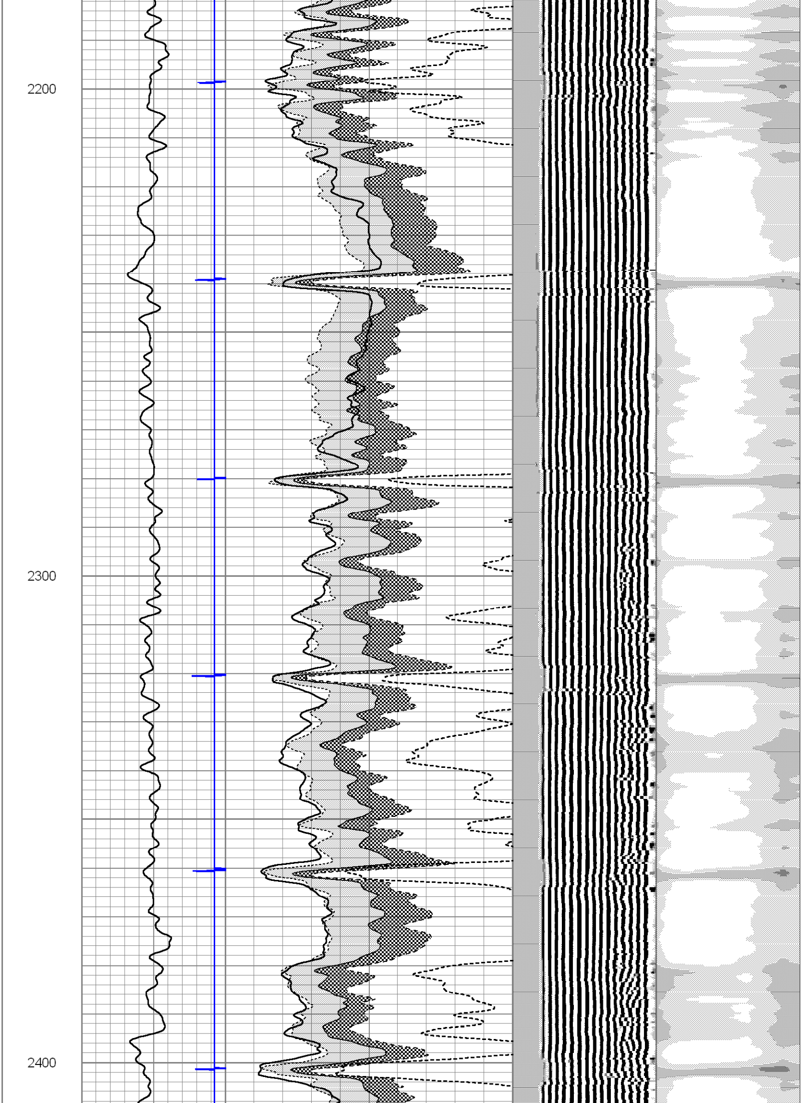


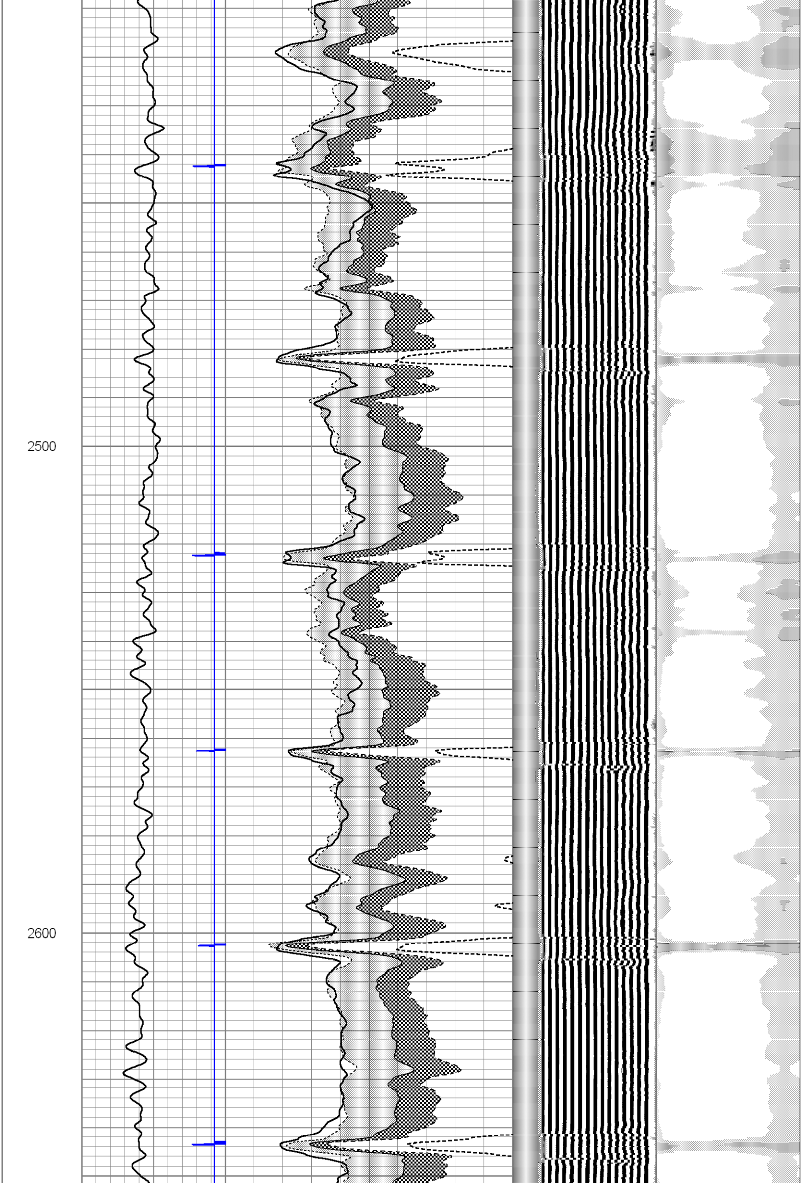


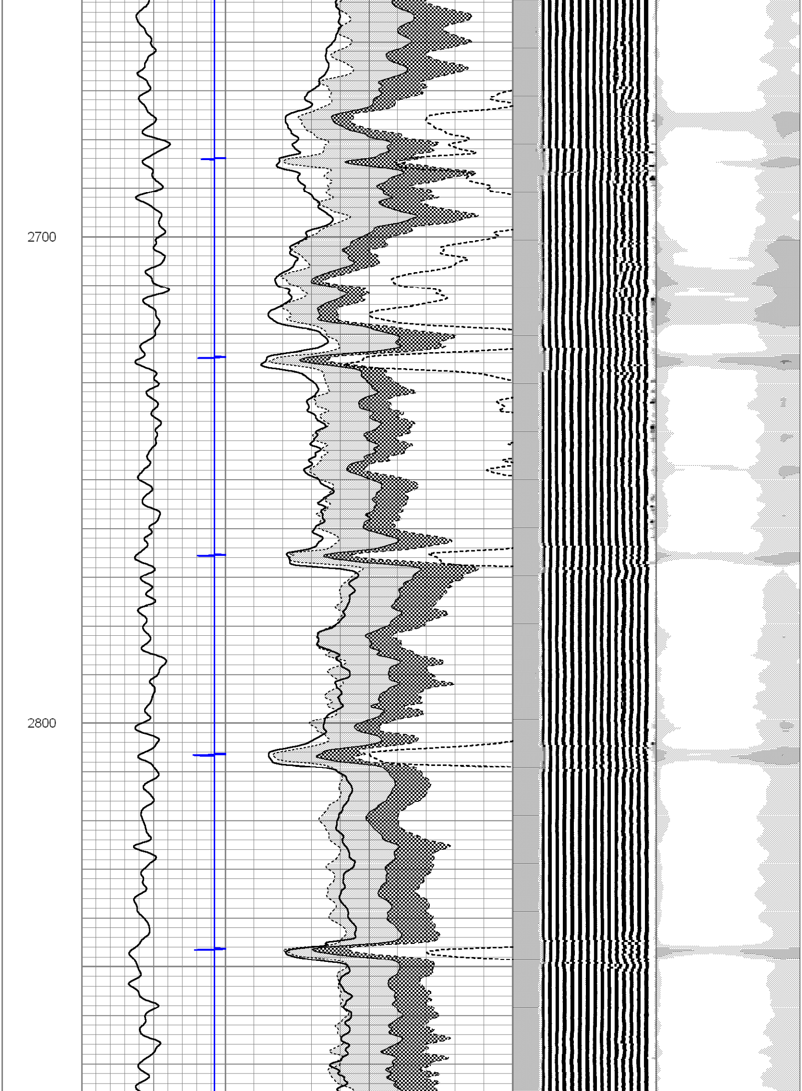


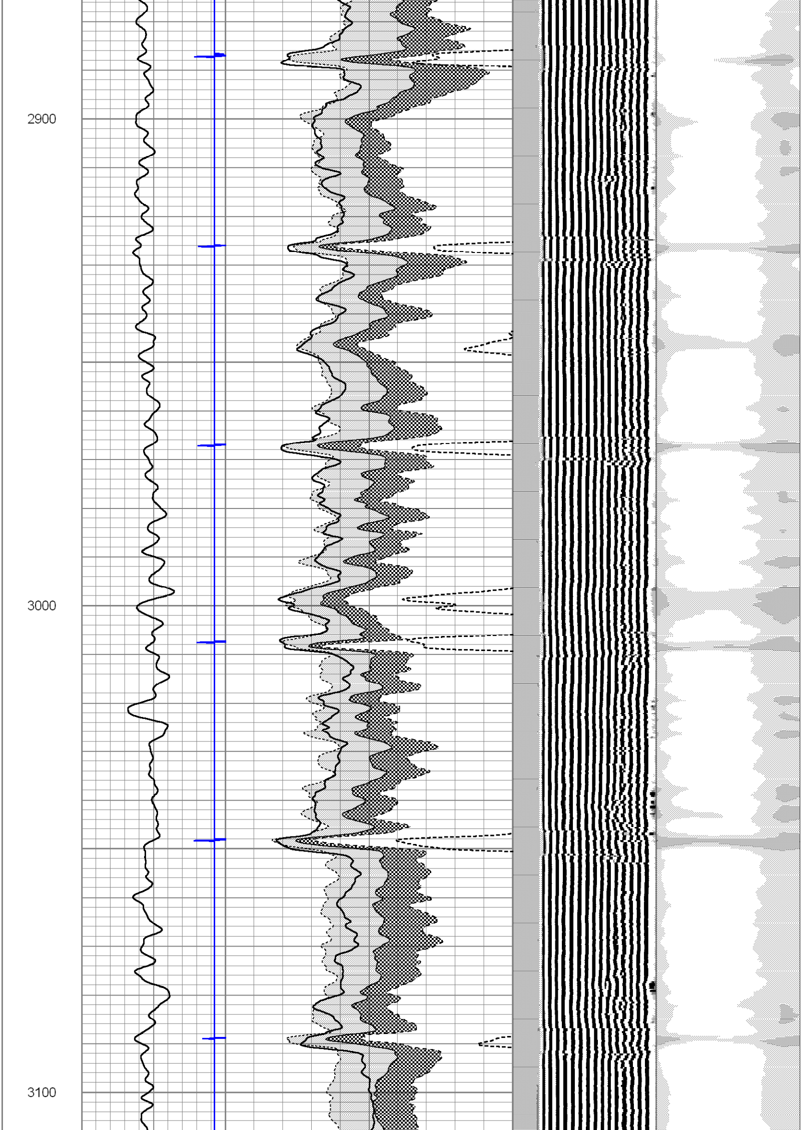
| | |
|---|---|
| Database File: | holman b15-66hn.db |
| Dataset Pathname: | pass1 |
| Presentation Format: | scbl01 |
| Dataset Creation: | Wed Dec 04 00:23:42 2013 by Log SCH 111116 |
| Charted by: | Depth in Feet scaled 1:240 |

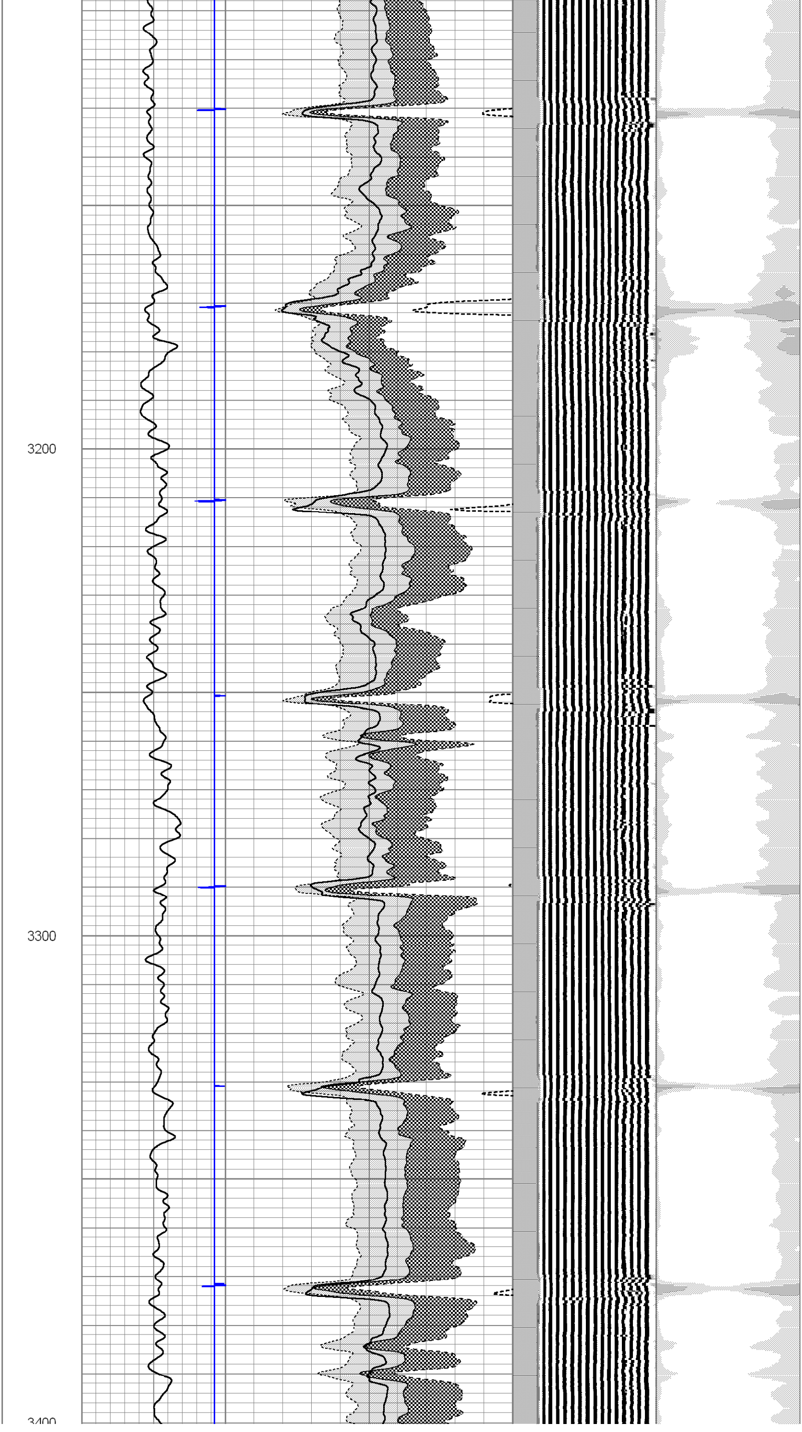


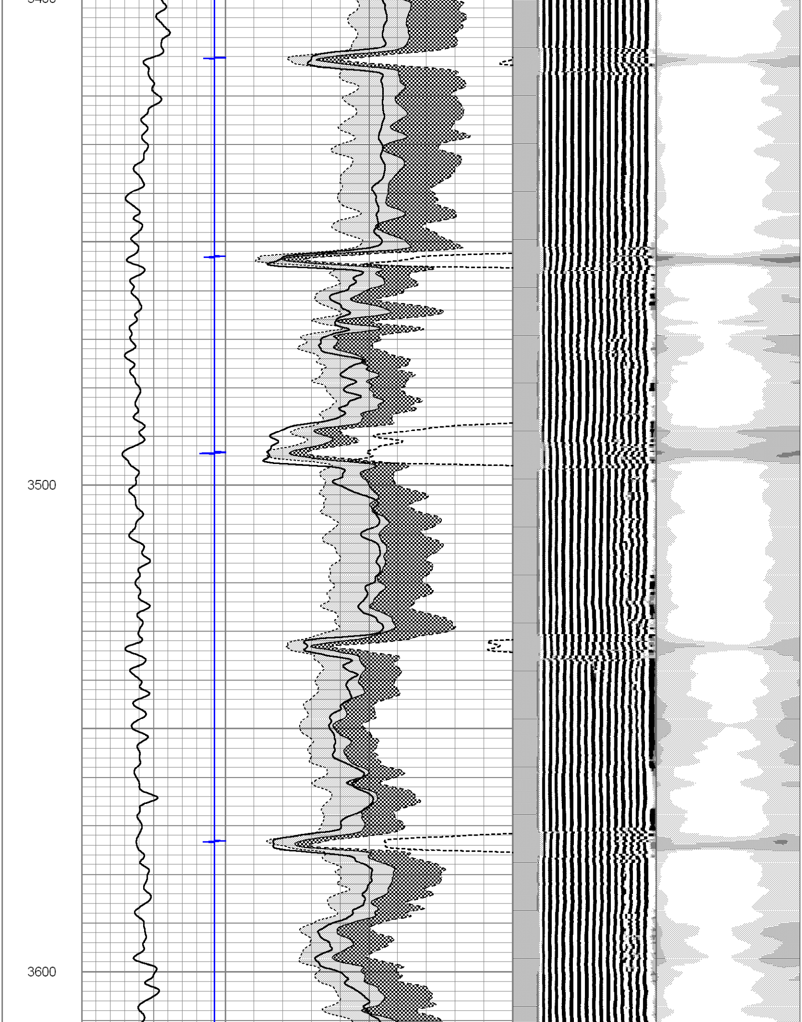


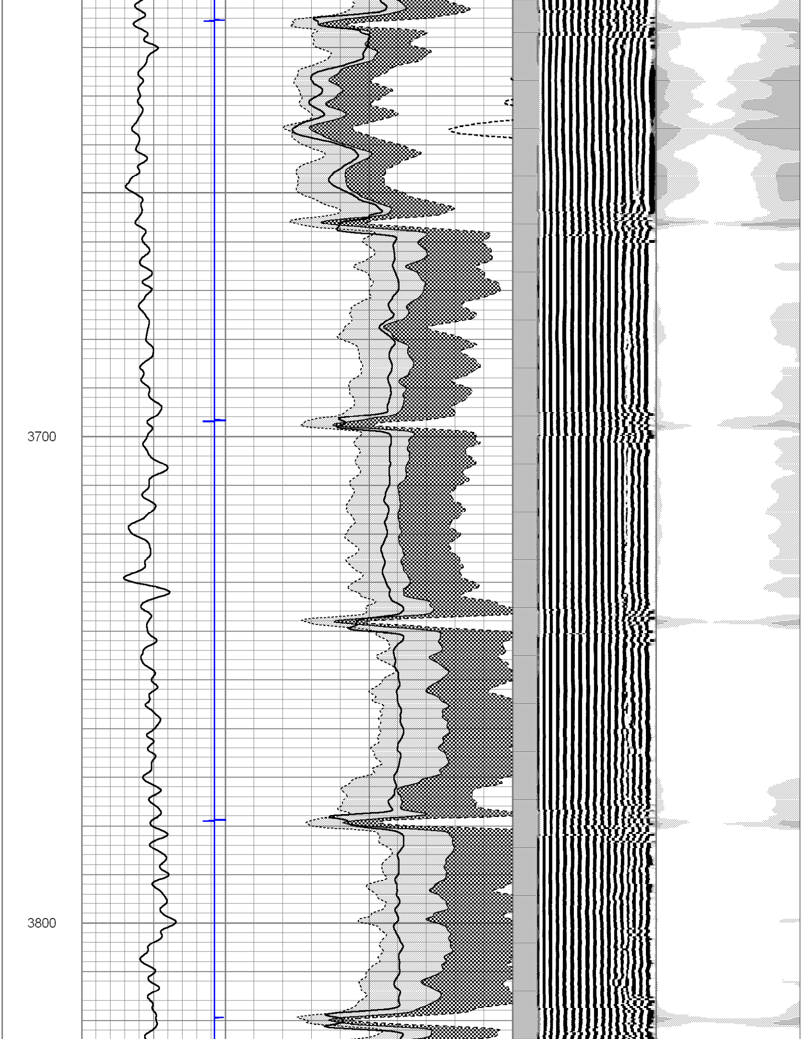


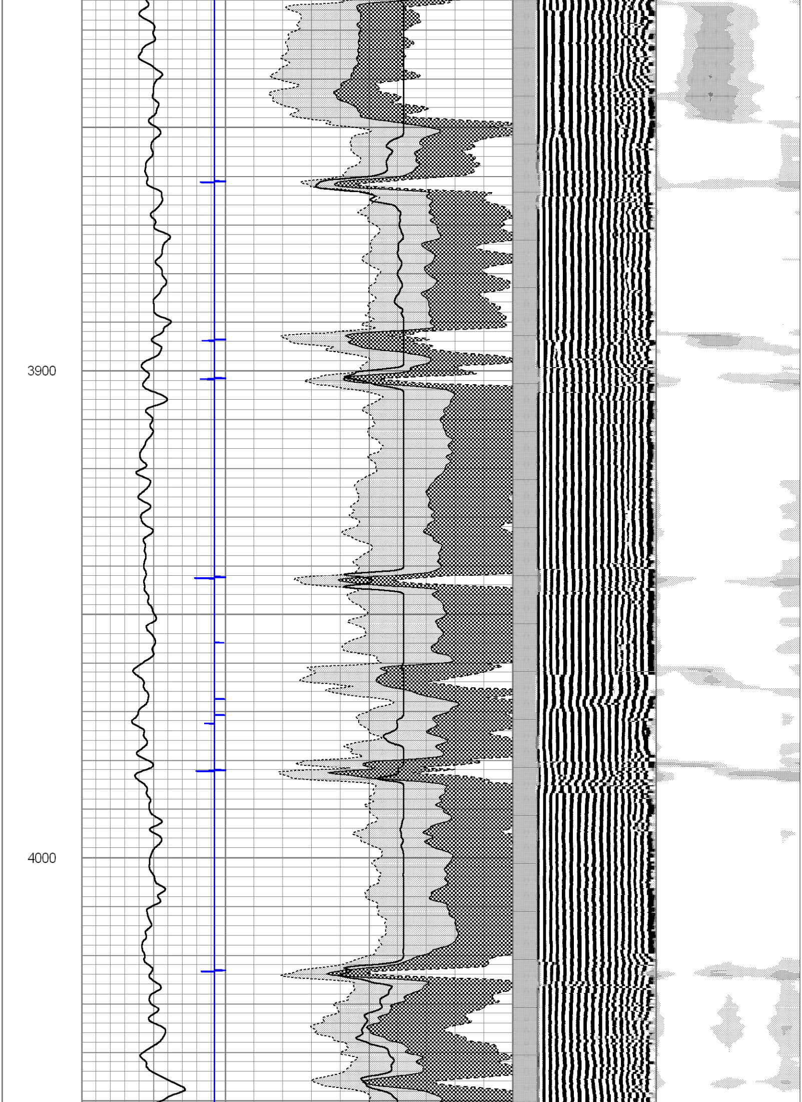


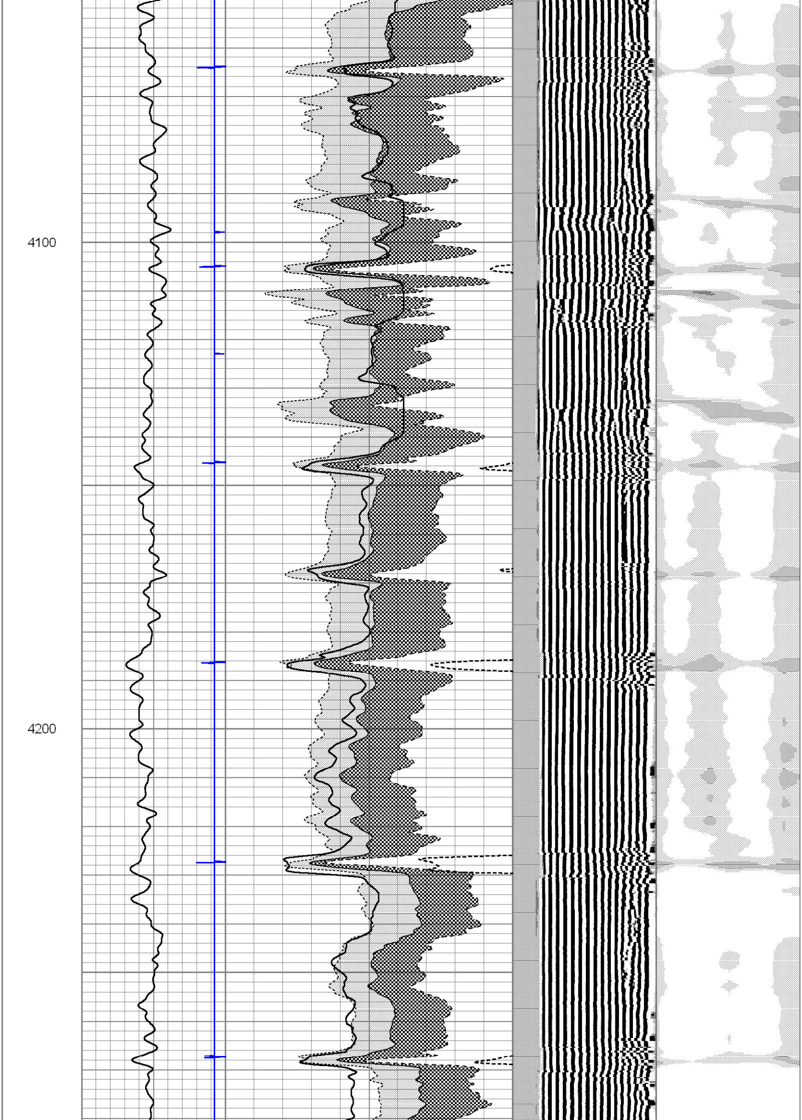


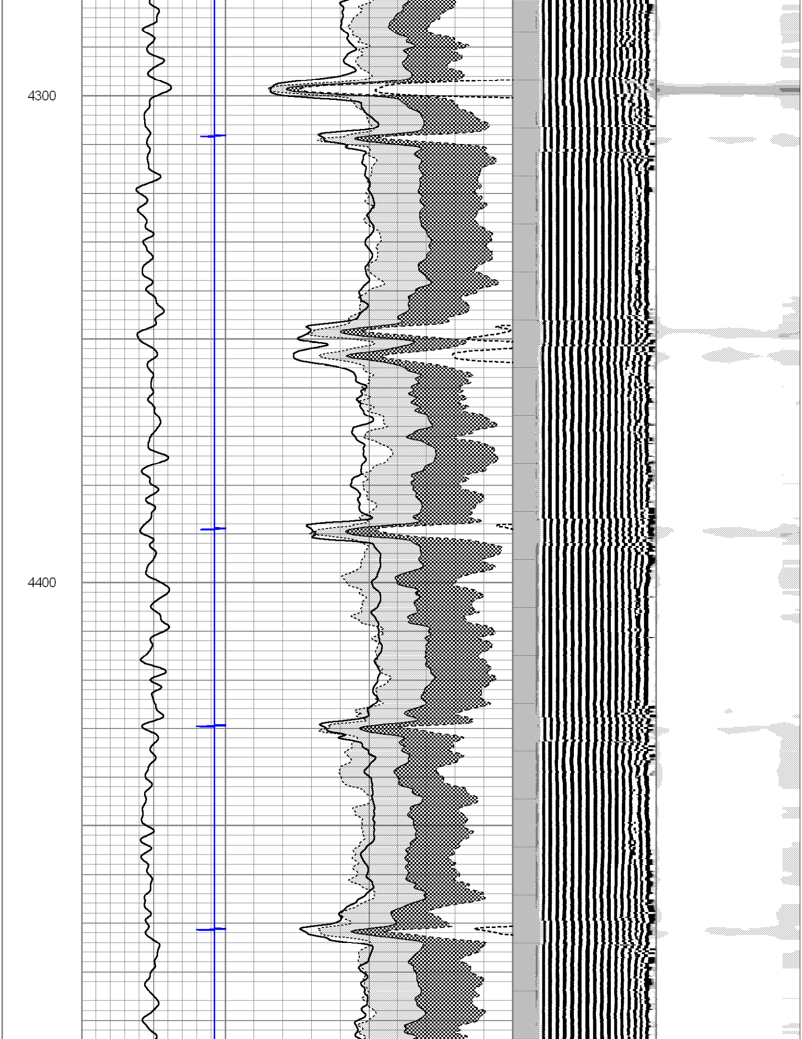


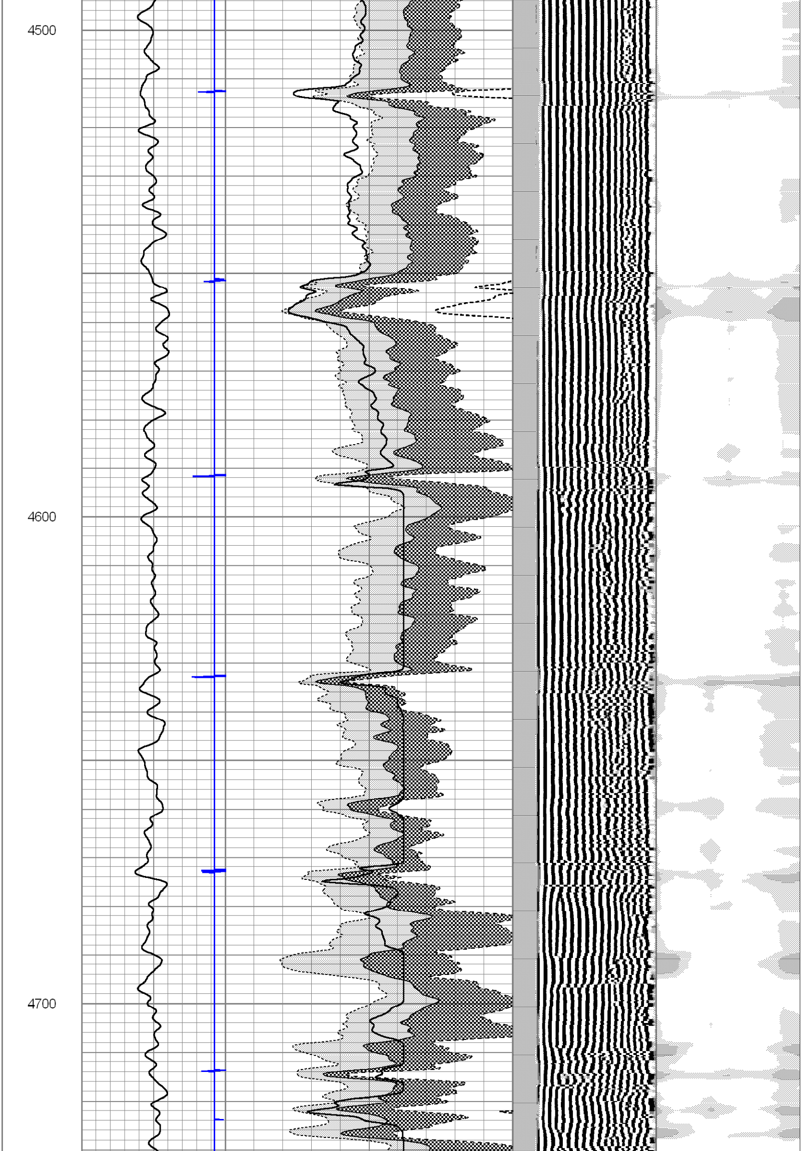


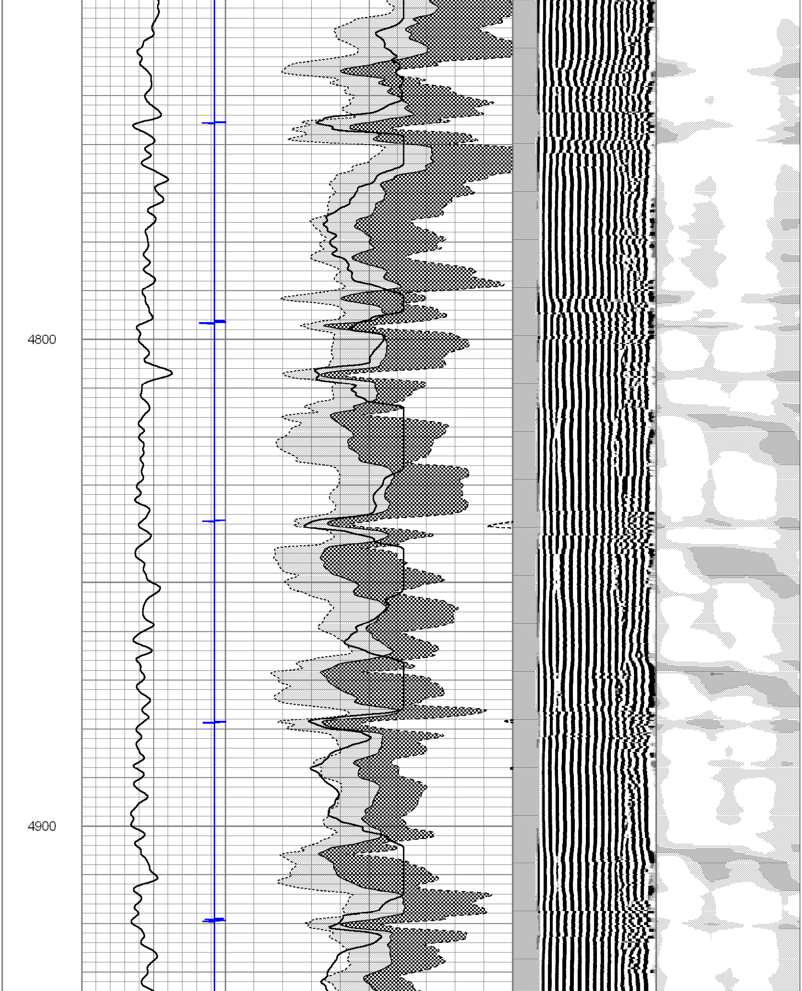


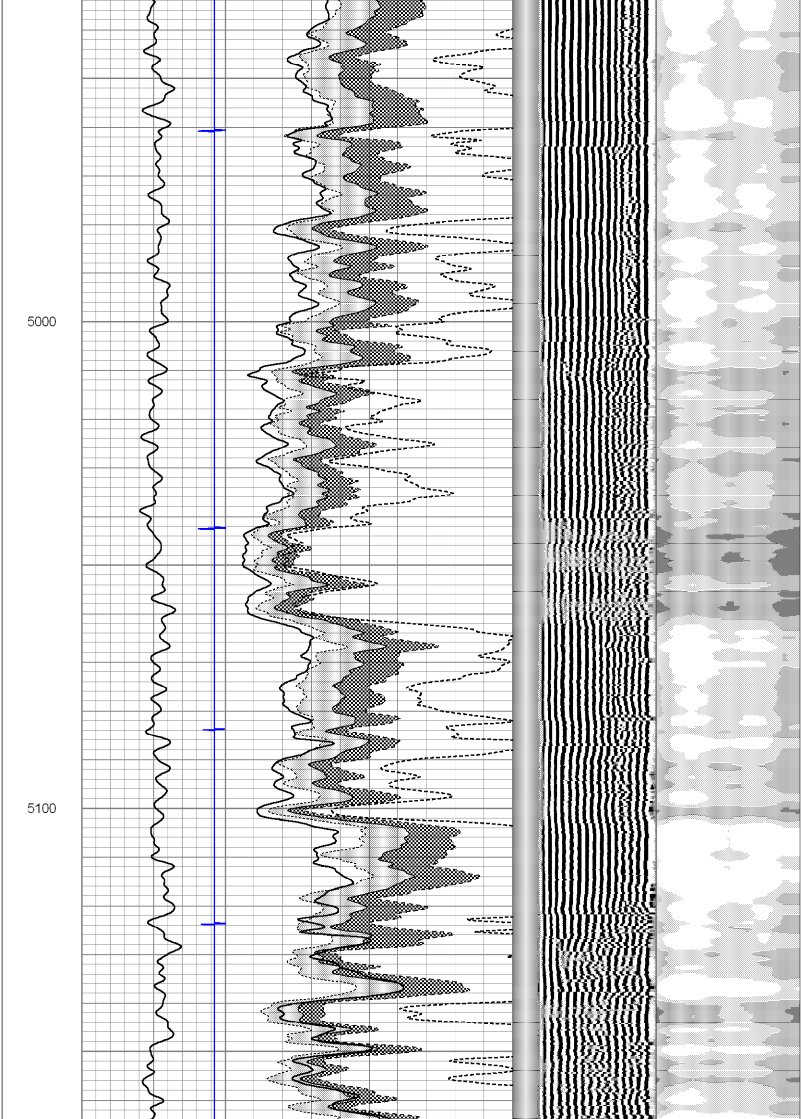


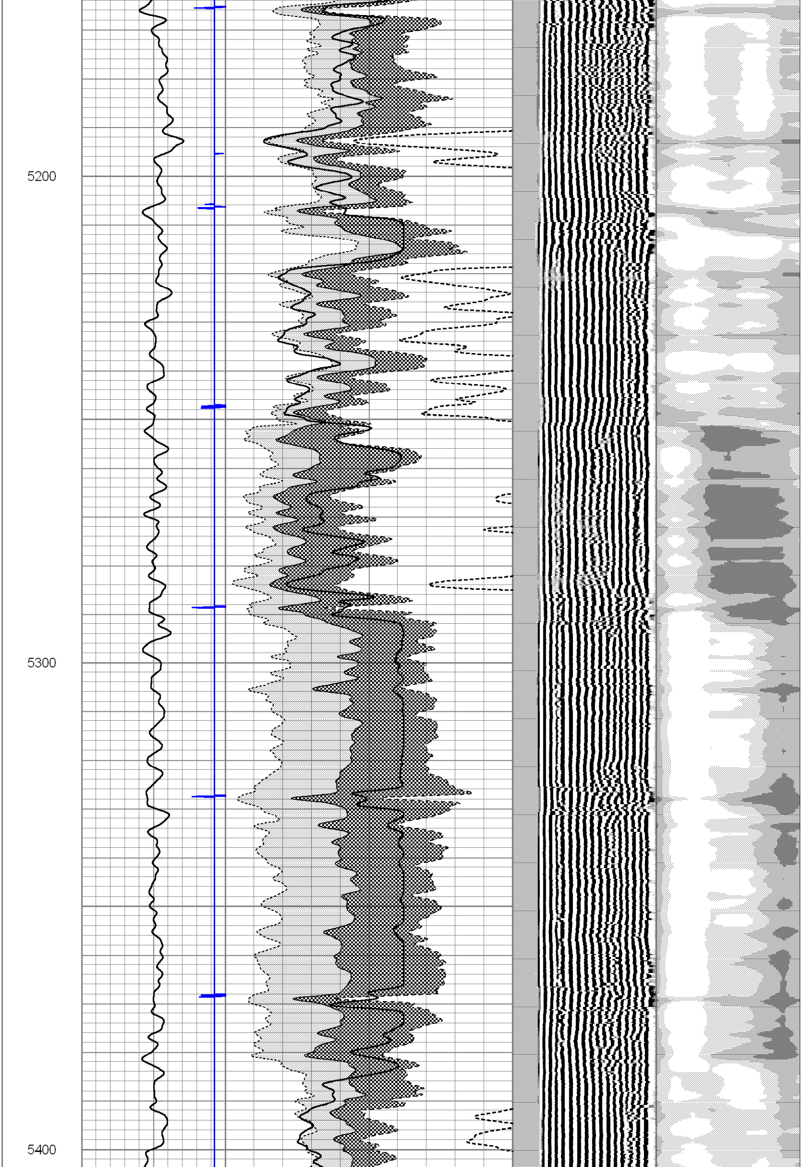


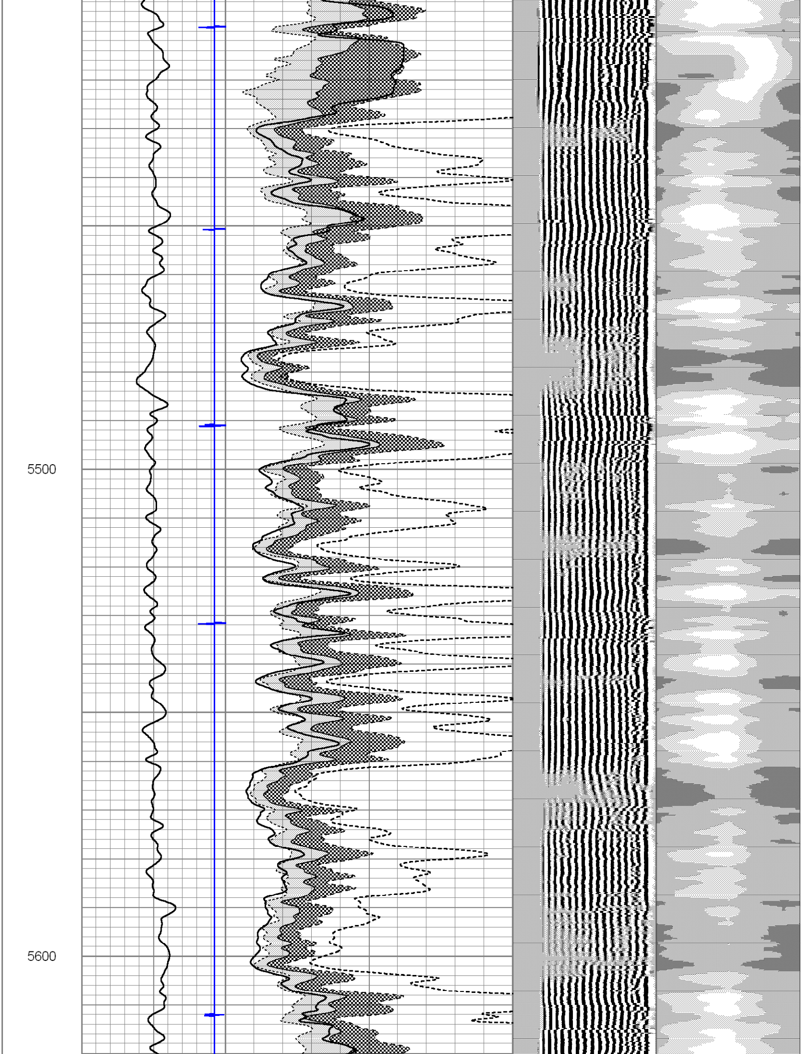


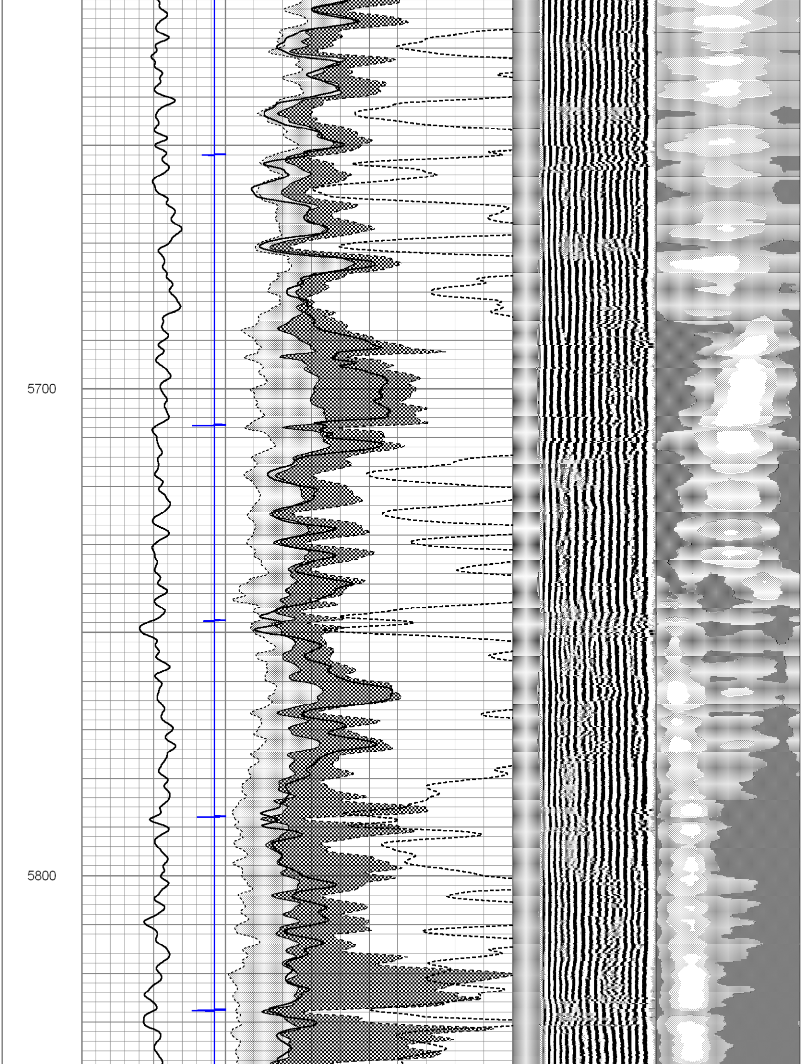


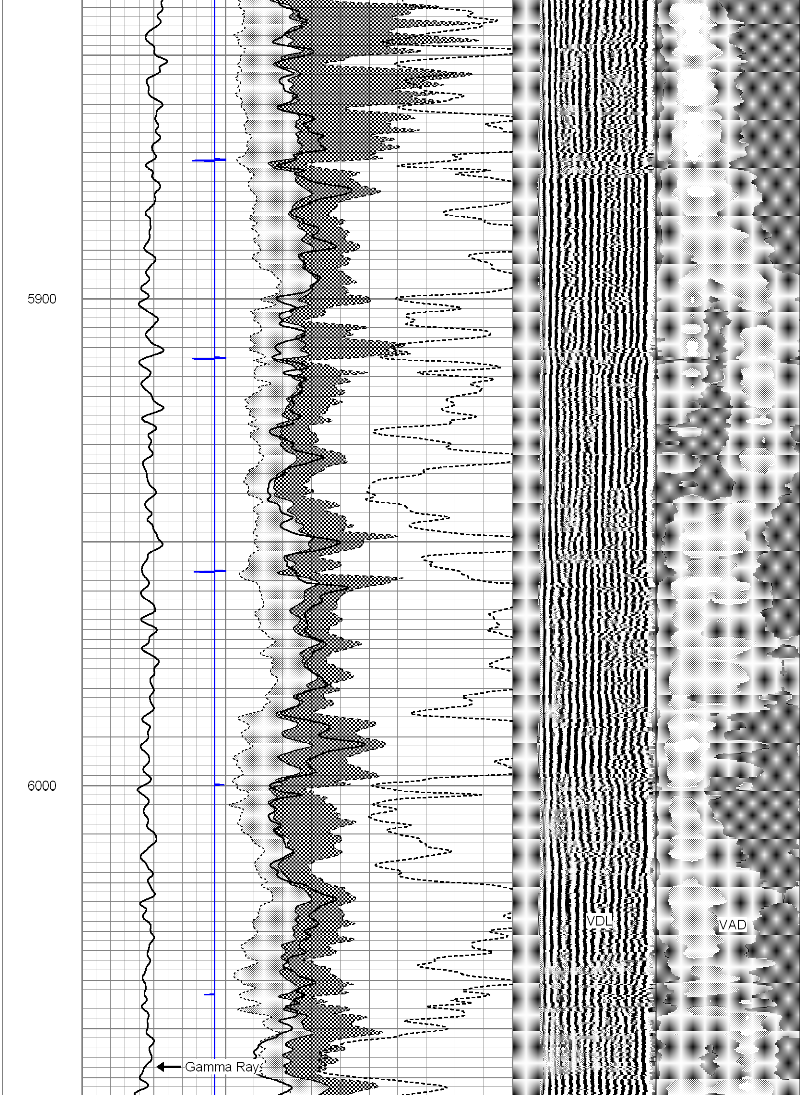


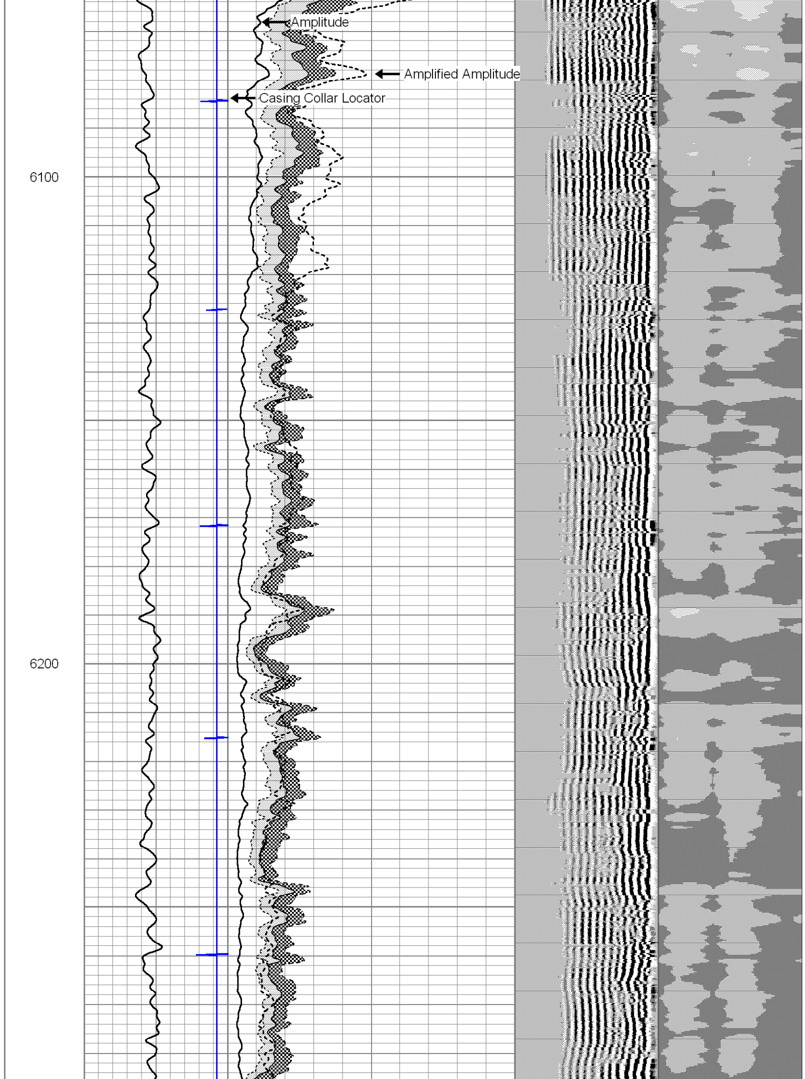


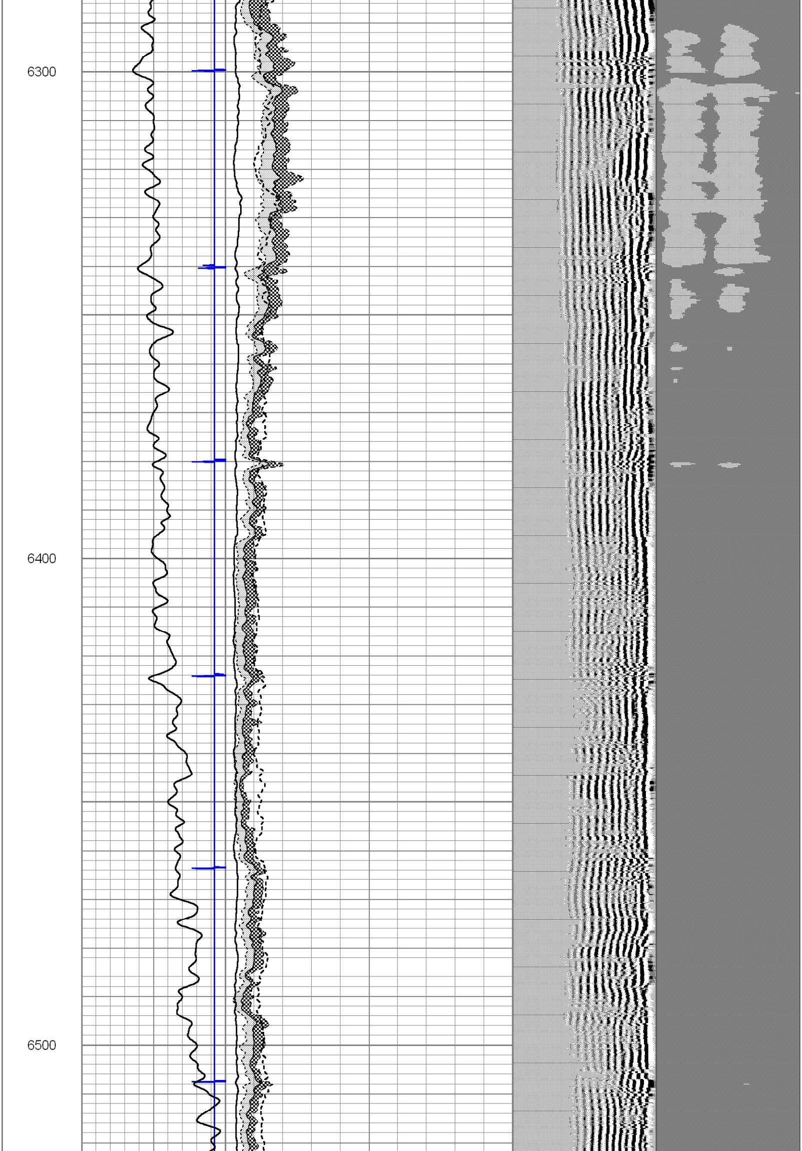


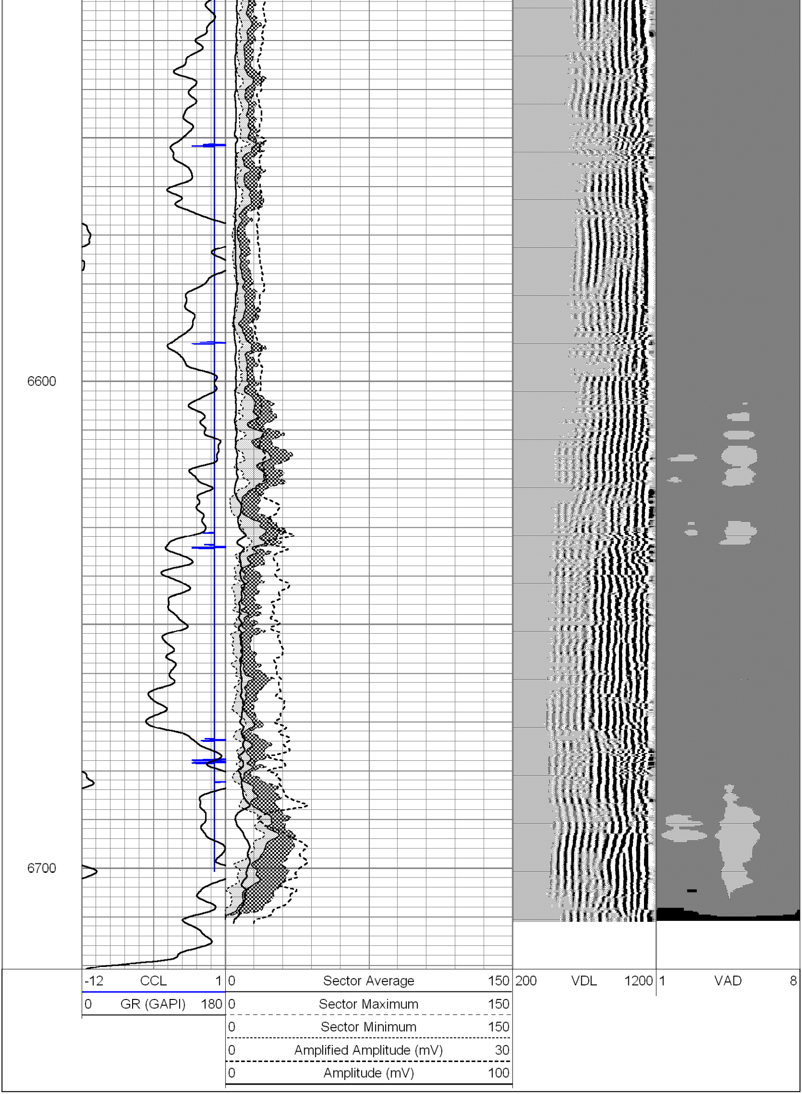












# Calibration Report

Database File: holman b15-66hn.db
Dataset Pathname: pass3
Dataset Creation: Wed Dec 04 01:30:28 2013 by Log SCH 111116

## Gamma Ray Calibration Report

Serial Number: 101sgr
Tool Model: TEKCO
Performed: Sun Jun 13 14:33:21 1993

Calibrator Value: 1.0 GAPI

Background Reading: 0.0 cps
Calibrator Reading: 1.0 cps

Sensitivity: 1.0000 GAPI/cps

## Segmented Cement Bond Log Calibration Report

Serial Number: 1234
Tool Model: 275RIB

Calibration Casing Diameter: 7.000 in
Calibration Depth: 106.800 ft

Master Calibration, performed Wed Dec 04 00:01:13 2013:

| | Raw (v) | | Calibrated (mv) | | Results | |
|---|---|---|---|---|---|---|
| | Zero | Cal | Zero | Cal | Gain | Offset |
| 3' | 0.000 | 2.500 | 3.000 | 62.165 | 23.666 | 3.000 |
| CAL | 0.000 | 0.140 | | | | |
| 5' | 0.000 | 2.500 | 3.000 | 62.165 | 23.666 | 3.000 |
| SUM | | | | | | |
| S1 | 0.000 | 1.719 | 0.000 | 100.000 | 58.172 | 0.000 |
| S2 | 0.000 | 1.111 | 0.000 | 100.000 | 90.020 | 0.000 |
| S3 | 0.000 | 0.988 | 0.000 | 100.000 | 101.212 | 0.000 |
| S4 | 0.000 | 0.974 | 0.000 | 100.000 | 102.721 | 0.000 |
| S5 | 0.000 | 0.895 | 0.000 | 100.000 | 111.758 | 0.000 |
| S6 | 0.000 | 0.849 | 0.000 | 100.000 | 117.764 | 0.000 |
| S7 | 0.000 | 1.062 | 0.000 | 100.000 | 94.175 | 0.000 |
| S8 | 0.000 | 1.498 | 0.000 | 100.000 | 66.769 | 0.000 |

Internal Reference Calibration, performed Wed Dec 31 18:00:00 1969:

| | Raw (v) | | Calibrated (v) | | Results | |
|---|---|---|---|---|---|---|
| | Zero | Cal | Zero | Cal | Gain | Offset |
| CAL | 0.000 | 0.000 | 0.000 | 0.140 | 1.000 | 0.000 |

Air Zero Calibration, performed Thu Oct 24 21:04:44 2013:

| | 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: 1234
Tool Model: 275RIB
Performed: Fri Apr 19 20:17:41 2013

| | Reference | Reading |
|---|---|---|
| Low Reference: | 300.00 degF | 50.00 usec |
| High Reference: | 400.00 degF | 300.00 usec |

Gain: 0.40
Offset: 2.50
Delta Spacing 1