95-21420

# Tucker WIRELINE SERVICES

## DUAL INDUCTION RESISTIVITY LOG

RECEIVED
JAN 30 2012
Mo Oil & Gas Council

11/30/13

| | |
|---|---|
| File No | : TUL-55941 |
| Company | : COLT ENERGY INC. |
| Well | : SOUTH RHODEN #51-IJ |
| Field | : SOUTH RHODEN |
| County | : JACKSON |
| State | : MISSOURI |
| Country | : USA |
| API No | : 095-21420 |

| | |
|---|---|
| Company | COLT ENERGY INC. |
| Well | SOUTH RHODEN #51-IJ |
| Field | SOUTH RHODEN |
| County | JACKSON |
| State | MISSOURI |
| Country | USA |
| API No. | 095-21420 |

Location : 2050' FNL & 1585' FEL

LSD : Sect : 33 Twp : 47N Rge : 33W

| | | Elevations: | | Services: |
|---|---|---|---|---|
| Permanent Datum: | GL | KB | 0.00 Ft | CNT |
| Drilling Measured From: | GL | DF | 0.00 Ft | LDT |
| Log Measured From: | GL | GL | 1040.00 Ft | PIT |
| Above Permanent Datum: | 0.00 Ft | | | |

| | | |
|---|---|---|
| Date | Nov 17 2011 | |
| Run Number | 1 | |
| Depth--Driller | 691.0 | Ft |
| Depth--Logger | 666.0 | Ft |
| First Reading | 665.0 | Ft |
| Last Reading | 20.0 | Ft |
| Casing--Driller | 20.0 | Ft |
| Casing--Logger | 20.0 | Ft |
| Bit Size | 6.750 | In |
| Casing Size | 8.625 | In |
| Hole Fluid Type | FRESH / NATIVE | |
| Density | 0.0 | LBS/GAL |
| Fluid Loss | 0.0 | CC |
| PH/Viscosity | 0.0 | 0.0 SEC |
| Sample Source | MEASURED | |
| RM@Measured Temp. | 10.000 @ 60 | F |
| RMF@Measured Temp | 8.000 @ 60 | F |
| RMC@Measured Temp. | 12.000 @ 60 | F |
| Source RMF/RMC | CALCULATED | CALCULATED |
| RM@BHT | 8.600 @ 70 | F |
| Time Circulation Stopped | | |
| Max Recorded Temp. | 70 | F |
| Equipment/Base | TRK123 | TULSA |
| Recorded By | S. DAVIS / R. FRANKLIN | |
| Witnessed By | R. ASLOCK | |

The customer is hereby warned that by providing the log data herein, T. W. S. does not agree to provide any interpretation of log data, conversion of log data to physical rock parameters or recommendations. T. W. S. does not guarantee or warrant either expressly or impliedly, the accuracy of any interpretation of log data, conversion of log data to physical rock parameters or recommendations which may be given by T. W. S. personnel. Any interpretation, conversion or recommendation is not part of the consideration for the agreement between the parties and is not part of any part of the charge by T. W. S. for its services. Any user of the log data is warned that said user is not entitled to rely on intepretations, conversions or recommendations as aforesaid.

| Bitsize Intervals | | Casing Strings | | |
|---|---|---|---|---|
| Size (In) | Bottom (Ft) | Size (In) | Weight (Lbs) | Bottom (Ft) |
| 6.750 | 666.00 | 8.625 | 13.00 | 20.00 |

| | |
|---|---|
| Run Number | 1 |
| Date | Nov 17 2011 |
| Date/Time On Bottom | Nov 17 2011 14:45 |
| Depth to Fluid | 70.0 Ft |
| Salinity | 0.000 PPM |
| RMF@BHT | 6.880 @ 70 F |
| RMC@BHT | 10.320 @ 70 F |

Run Number 1

Comments

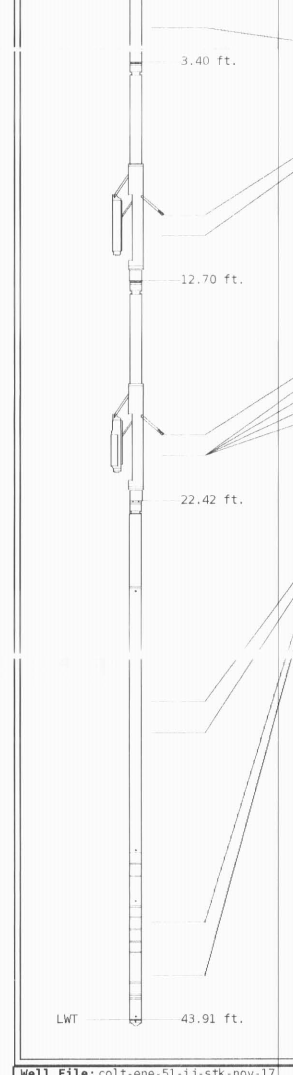
ALL PRESENTATIONS AS PER CUSTOMER REQUEST.
GRT, CNT, LDT, AND PIT RUN IN COMBINATION.
CALIPERS ORIENTED ON X-Y AXIS.
2.71 G/CC USED TO CALCULATED POROSITY.
ANNULAR HOLE VOLUME CALCULATED UISING 2.875" PRODUCTION CASING.
NO REPEAT DUE TO HOLE CONDITIONS
FLUID LEVEL @ 70'

GRT: GRP.
CNT: PHIN, CLCNIN.
LDT: PORL, LCORN, PECLN, LDENN, PORLLS, CLLDIN.
PIT: ILD, ILM, SPU, SFLAEC.

OPERATORS:
T. HOBBS
S. DAVIS
A. WARREN

## Tool String Schematic

Total Tool Length - 43.91 ft.
Maximum Outside diameter - 4.80 in.
Net Weight in Air - 743.00 lbs.




Tool: GRT-B Length: 3.40 ft. O.D. 3.60 in.
Gamma Ray Controller
Sonde ID :GRT-BC-41

| Measure Point | Tool Offset | Stack Offset | Bottom Offset |
|---|---|---|---|
| GRP | 2.00 | 2.00 | 41.91 |

Tool: CNT-AA Length: 9.30 ft. O.D. 4.36 in.
Compensated Neutron A Pad on NDT-A
Sonde ID :NDT-AC-027
Source ID :N-1046
Pad ID :CNP-AA-024

| Measure Point | Tool Offset | Stack Offset | Bottom Offset |
|---|---|---|---|
| CLCN | 6.00 | 9.40 | 34.51 |
| PHIN | 6.80 | 10.20 | 33.71 |

Tool: LDT-DF Length: 9.72 ft. O.D. 4.80 in.
Litho Density D Pad on NDT-F
Sonde ID :PDT-GA-466
Source ID :2991GW
Pad ID :LDP-DA-067

| Measure Point | Tool Offset | Stack Offset | Bottom Offset |
|---|---|---|---|
| CLLD | 6.42 | 19.12 | 24.79 |
| PEL | 7.42 | 20.12 | 23.79 |
| PES | 7.82 | 20.52 | 23.39 |
| LDEN | 7.62 | 20.32 | 23.59 |
| LCOR | 7.62 | 20.32 | 23.59 |

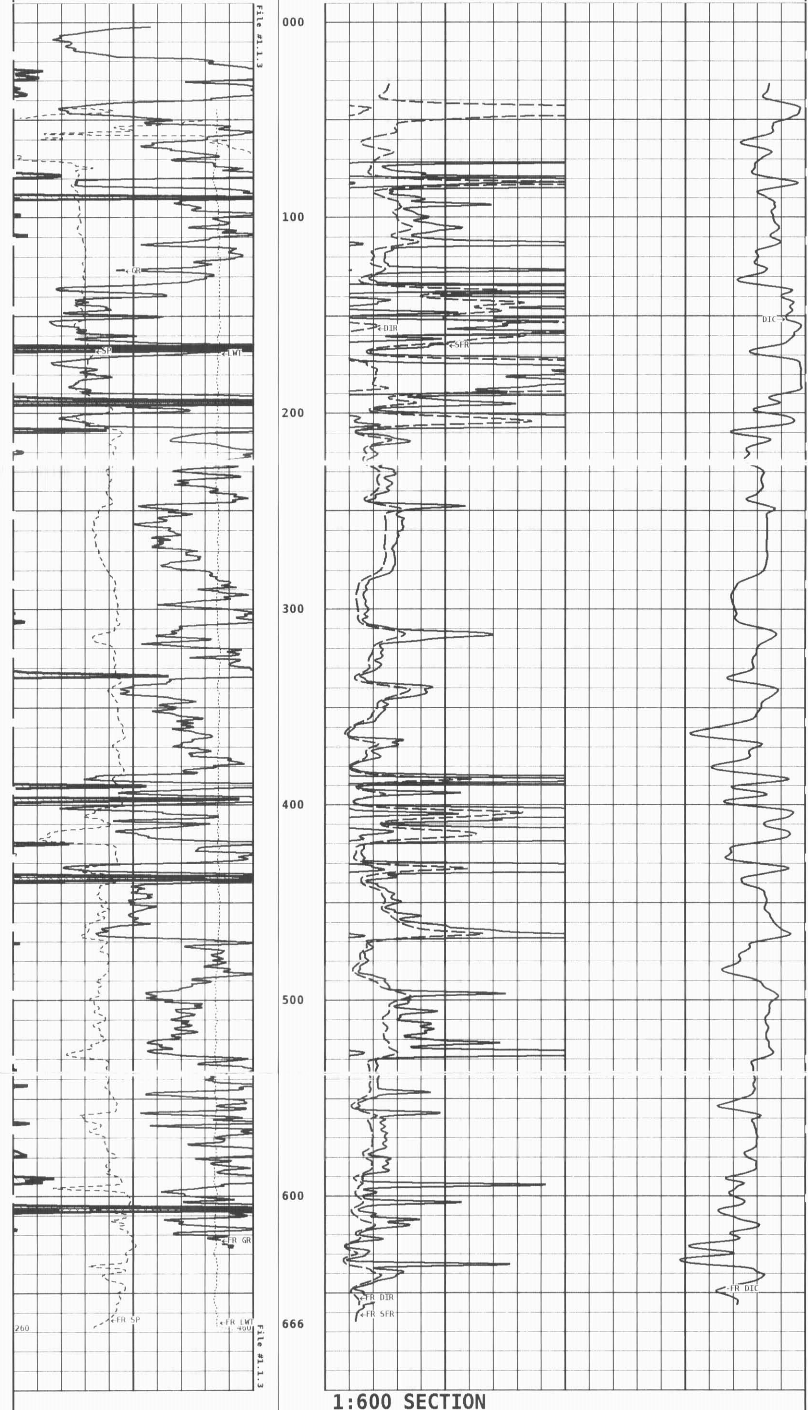
Tool: PIT-CA Length: 21.49 ft. O.D. 3.62 in.
Phased Dual Induction w/ RM & D
Sonde ID :PIT-CA-069

| Measure Point | Tool Offset | Stack Offset | Bottom Offset |
|---|---|---|---|
| ILD | 8.92 | 31.34 | 12.56 |
| ILM | 10.10 | 32.52 | 11.39 |
| SFLU | 17.49 | 39.91 | 4.00 |
| SP | 20.60 | 43.02 | 0.88 |

Well File: colt-ene-51-ij-stk-nov-17
Segment: V1.D1.S3 Reprocess of segment_002
Reference: 0
Scale: 1:600
Acquired: 2011-11/17 14:47 3.2.0-9963
Processed: 2011-11/17 15:20 3.2.0-9963

TENSION LBS 10000 0
SPONTANEOUS POTENTIAL mV →| |←20
GAMMA RAY API UNITS 150 300 / 0 150
SHALLOW FOCUSED RESISTIVITY OHMM 0.0 500.0 / 0.0 50.0
DEEP INDUCTION OHMM 0.0 500.0 / 0.0 50.0
DEEP CONDUCTIVITY MMHO 2000 1000 / 1000 0

1:600 SECTION



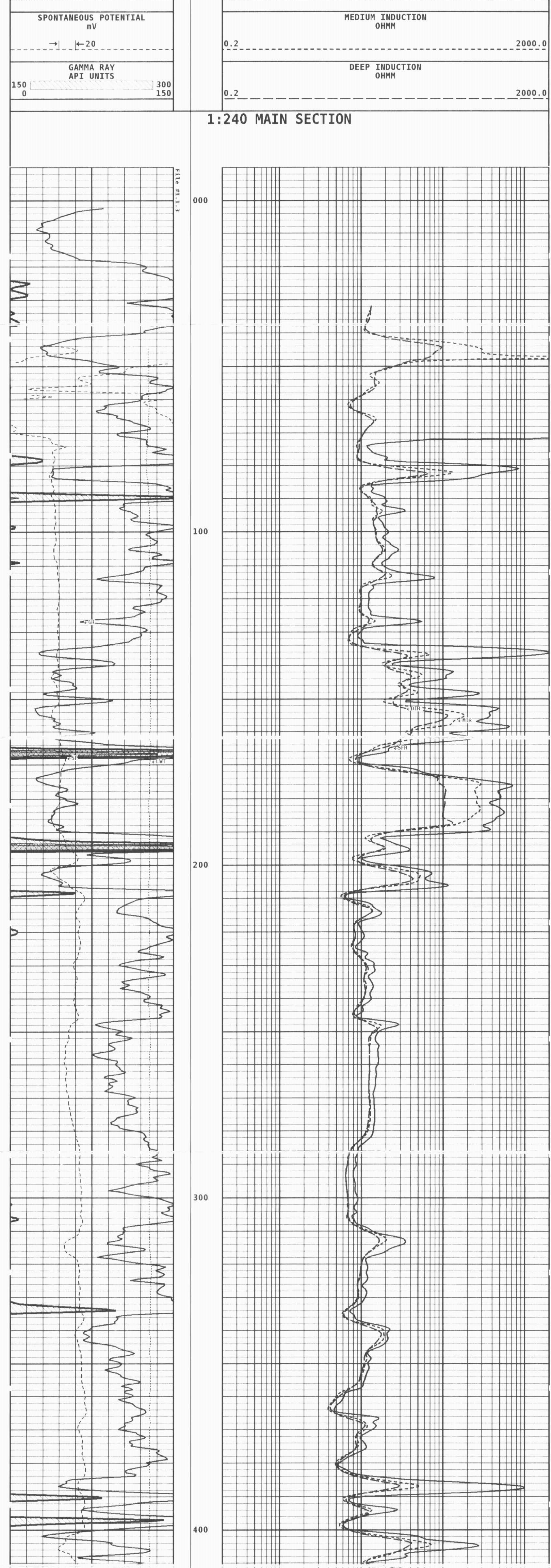
1:600 SECTION

GAMMA RAY API UNITS 150 300 / 0 150
SPONTANEOUS POTENTIAL mV →| |←20
TENSION LBS 10000 0
DEEP CONDUCTIVITY MMHO 2000 1000 / 1000 0
DEEP INDUCTION OHMM 0.0 500.0 / 0.0 50.0
SHALLOW FOCUSED RESISTIVITY OHMM 0.0 500.0 / 0.0 50.0

Well File: colt-ene-51-ij-stk-nov-17
Segment: V1.D1.S3 Reprocess of segment_002
Reference: 0
Scale: 1:240
Acquired: 2011-11/17 14:47 3.2.0-9963
Processed: 2011-11/17 15:20 3.2.0-9963

TENSION LBS 10000 0
SPONTANEOUS POTENTIAL mV →| |←20
GAMMA RAY API UNITS 150 300 / 0 150
SHALLOW FOCUSED RESISTIVITY OHMM 0.2 2000.0
MEDIUM INDUCTION OHMM 0.2 2000.0
DEEP INDUCTION OHMM 0.2 2000.0

1:240 MAIN SECTION



1:240 MAIN SECTION

GAMMA RAY API UNITS 150 300 / 0 150
SPONTANEOUS POTENTIAL mV →| |←20
TENSION LBS 10000 0
DEEP INDUCTION OHMM 0.2 2000.0
MEDIUM INDUCTION OHMM 0.2 2000.0
SHALLOW FOCUSED RESISTIVITY OHMM 0.2 2000.0

* Borehole Zone Factors *

Zone 1 99999.0 to 0.0 Feet

| | | |
|---|---|---|
| Drill Bit Size | 6.750 | in |
| BHT Depth | 691.000 | ft |
| Borehole Temperature | 70.0 | degF |
| Temperature Gradient | 1.00 | DFHF |
| Resistivity Of Mud | 10.000 | ohm/m |
| Resistivity Of Mud Temperature | 60.00 | degF |

* Calibration Summary *

**Shop Calibration GRT-B**

Performed : 04-APR-2011 Time : 19:28
Sensor Suite : GR-GR5 ID : GRT-BC-41

| | Measured Background | Measured Jig | Units | Calibrated Jig | Units |
|---|---|---|---|---|---|
| GR | 46 | 346 | CPS | 175 | GRAPI |

**Shop Calibration PIT-CA**

Performed : 28-APR-2011 Time : 06:57
Sensor Suite : P-IND-T ID : PIT-CA-069

Medium

| | Measured R | Measured X | Calibrated R | Calibrated X | Units |
|---|---|---|---|---|---|
| Air | 130173 | 131162 | -0.0 | -0.0 | MMHOS |
| Zero | 131069 | 131068 | 42.3 | -8.2 | MMHOS |
| Reference | 249132 | 248386 | 5042.3 | 4991.8 | MMHOS |
| Loop | 128928 | 218725 | 3679.1 | 3784.6 | MMHOS |
| Sonde Error | | | 0.1 | -8.5 | MMHOS |
| Cond | | | 5042.3 | 4991.8 | MMHOS |

Deep

| | Measured R | Measured X | Calibrated R | Calibrated X | Units |
|---|---|---|---|---|---|
| Air | 128071 | 132145 | 0.0 | 0.0 | MMHOS |
| Zero | 131066 | 131068 | 56.5 | -22.2 | MMHOS |
| Reference | 234699 | 233671 | 2056.5 | 1977.8 | MMHOS |
| Loop | 127048 | 223014 | 1751.5 | 1791.0 | MMHOS |
| Sonde Error | | | -2.6 | 0.1 | MMHOS |
| Cond | | | 2056.5 | 1977.8 | MMHOS |

Temperature

| Measured Low | Measured High | Calibrated Low | Calibrated High | Units |
|---|---|---|---|---|
| 16980.0 | 56920.0 | 70.0 | 350.0 | DEGF |

Performed : 28-Apr-2011 Time : 12:54
Sensor Suite : SFL ID : PIT-CA-069

Internal

| | Measured Zero | Measured Reference | Calibrated Zero | Calibrated Reference | Units |
|---|---|---|---|---|---|
| Im | 32786.2 | 49071.6 | 0.0 | 7028.0 | uA |
| Ib | 32768.9 | 49102.0 | 0.0 | 1750.0 | mA |
| MOM1 | 32796.9 | 56691.2 | 0.0 | 175.0 | mV |
| Equivalent SFL | | | | 43.97 | OHMM |

Performed : 28-Apr-2011 Time : 12:57
Sensor Suite : P-SP ID : PIT-CA-069

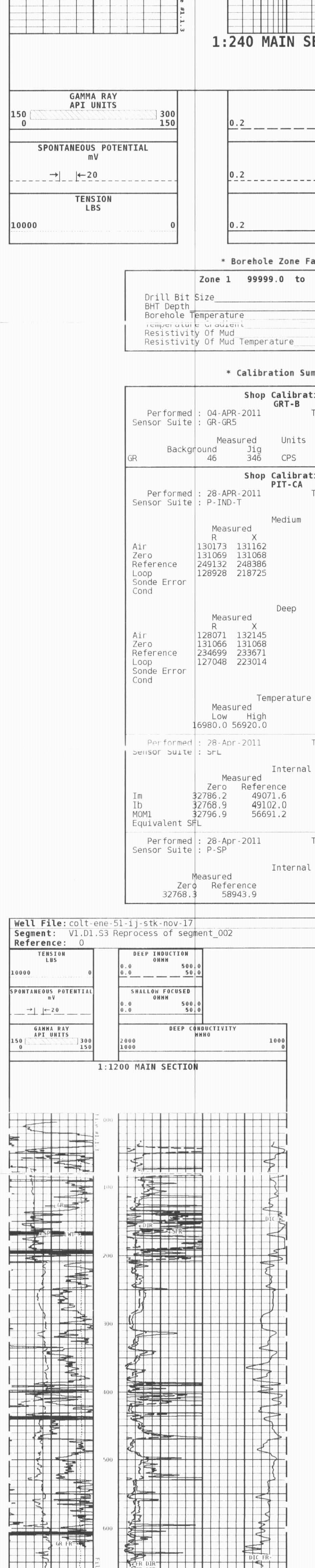
Internal

| Measured Zero | Measured Reference | Calibrated Zero | Calibrated Reference | Units |
|---|---|---|---|---|
| 32768.3 | 58943.9 | 0.0 | 1000.0 | mV |

Well File: colt-ene-51-ij-stk-nov-17
Segment: V1.D1.S3 Reprocess of segment_002
Reference: 0
Scale: 1:1200
Acquired: 2011-11/17 14:47 3.2.0-9963
Processed: 2011-11/17 15:20 3.2.0-9963

TENSION LBS 10000 0
SPONTANEOUS POTENTIAL mV →| |←20
GAMMA RAY API UNITS 150 300 / 0 150
DEEP INDUCTION OHMM 0.0 500.0 / 0.0 50.0
SHALLOW FOCUSED OHMM 0.0 500.0 / 0.0 50.0
DEEP CONDUCTIVITY MMHO 2000 1000 / 1000 0

1:1200 MAIN SECTION



1:1200 MAIN SECTION

GAMMA RAY API UNITS 150 300 / 0 150
SPONTANEOUS POTENTIAL mV →| |←20
TENSION LBS 10000 0
DEEP CONDUCTIVITY MMHO 2000 1000 / 1000 0
SHALLOW FOCUSED OHMM 0.0 500.0 / 0.0 50.0
DEEP INDUCTION OHMM 0.0 500.0 / 0.0 50.0