RELIANCE
OILFIELD SERVICES

# Pulsed Neutron
# Gamma Ray
# Casing Collar Log

| | |
|---|---|
| Company | TEP Rocky Mountain LLC |
| Well | Ware SR 412-12 |
| Field | Rulison |
| County | Garfield |
| State | Colorado |

Company TEP Rocky Mountain LLC
Well Ware SR 412-12
Field Rulison
County Garfield State Colorado
Location: API # : 05-045-23449
1811' FSL & 2287' FWL NESW
SEC 12 TWP 7S RGE 94W

Other Services: RBL

| | | | |
|---|---|---|---|
| Permanent Datum | Ground Level | Elevation 7479' | Elevation |
| Log Measured From | Kelly Bushing | 24 FT | K.B. 7503' |
| Drilling Measured From | Kelly Bushing | | D.F. 7502' |
| | | | G.L. 7479' |

| | |
|---|---|
| Date | 14-DEC-2017 |
| Run Number | One |
| Depth Driller | 9997 FT |
| Depth Logger | 9945 FT |
| Bottom Logged Interval | 9939 FT |
| Top Log Interval | 5845 FT |
| Open Hole Size | 8.750" |
| Type Fluid | Fresh Water |
| Density / Viscosity | 8.34 lb/gal |
| Max. Recorded Temp. | -- |
| Estimated Cement Top | -- |
| Time Well Ready | -- |
| Time Logger on Bottom | -- |
| Equipment Number | -- |
| Location | Grand Junction, CO |
| Recorded By | A. Ellsworth |
| Witnessed By | -- |

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

| Casing Record | Size (in) | Wgt (lbs/Ft) | Grade | Top | Bottom |
|---|---|---|---|---|---|
| Surface Casing | 9 5/8 | 32.3 | H-40 | Surface | 1132 FT |
| Intermediate #1 | 4 1/2 | 11.6 | P-110 | Surface | 9953 FT |
| Intermediate #2 | | | | | |
| Liner | | | | | |

<<< 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.

## Comments

Log ran as per customer request
Depth referenced to Reliance Bond Log dated 08-DEC-2017
Log ran from 9939 FT to 5845 FT
Pulsed Neutron Data logged with the Hunter RAS Tool

Thank you for choosing Reliance Oilfield Services, LLC!!

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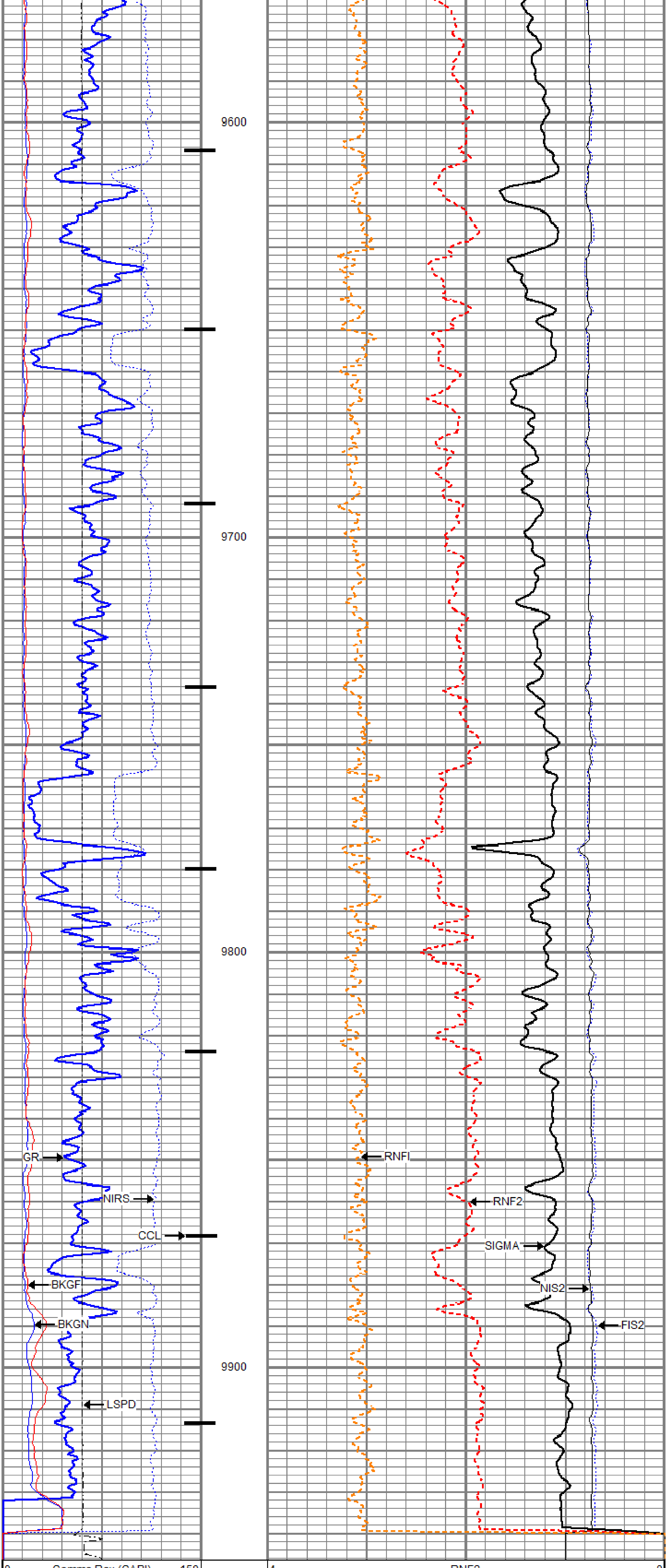
# Main Pass

| | |
|---|---|
| Database File | tep\sr 412-12\pn\tep_ware sr 412-12_pn_12-14-17.db |
| Dataset Pathname | ware_sr_412-12_main_2_shift_make_log |
| Presentation Format | ros_pdn_hunter |
| Dataset Creation | Fri Dec 22 09:08:42 2017 |
| Charted by | Depth in Feet scaled 1:240 |

| Min | Curve | Max |
|---|---|---|
| 0 | Gamma Ray (GAPI) | 150 |
| | Casing Collar Locator | |
| -100 | Line Speed (ft/min) | 100 |
| 0 | NIRS (cps) | 400000 |
| 0 | BKGN (cps) | 4000 |
| 0 | BKGF (cps) | 2000 |
| 4 | RNF2 | 0 |
| 60 | SIGMA (cu) | 0 |
| 4.5 | RNFI | 0 |
| 0 | FIS2 (cps) | 45000 |
| 0 | NIS2 (cps | 100000 |



| | | |
|---|---|---|
| 0 | Gamma Ray (GAPI) | 150 |
| | Casing Collar Locator | |
| -100 | Line Speed (ft/min) | 100 |
| 0 | NIRS (cps) | 400000 |
| 0 | BKGN (cps) | 4000 |
| 0 | BKGF (cps) | 2000 |

| | | |
|---|---|---|
| 4 | RNF2 | 0 |
| 60 | SIGMA (cu) | 0 |
| 4.5 | RNFI | 0 |
| | FIS2 | |
| 0 | (cps) | 45000 |
| | NIS2 | |
| 0 | (cps | 100000 |

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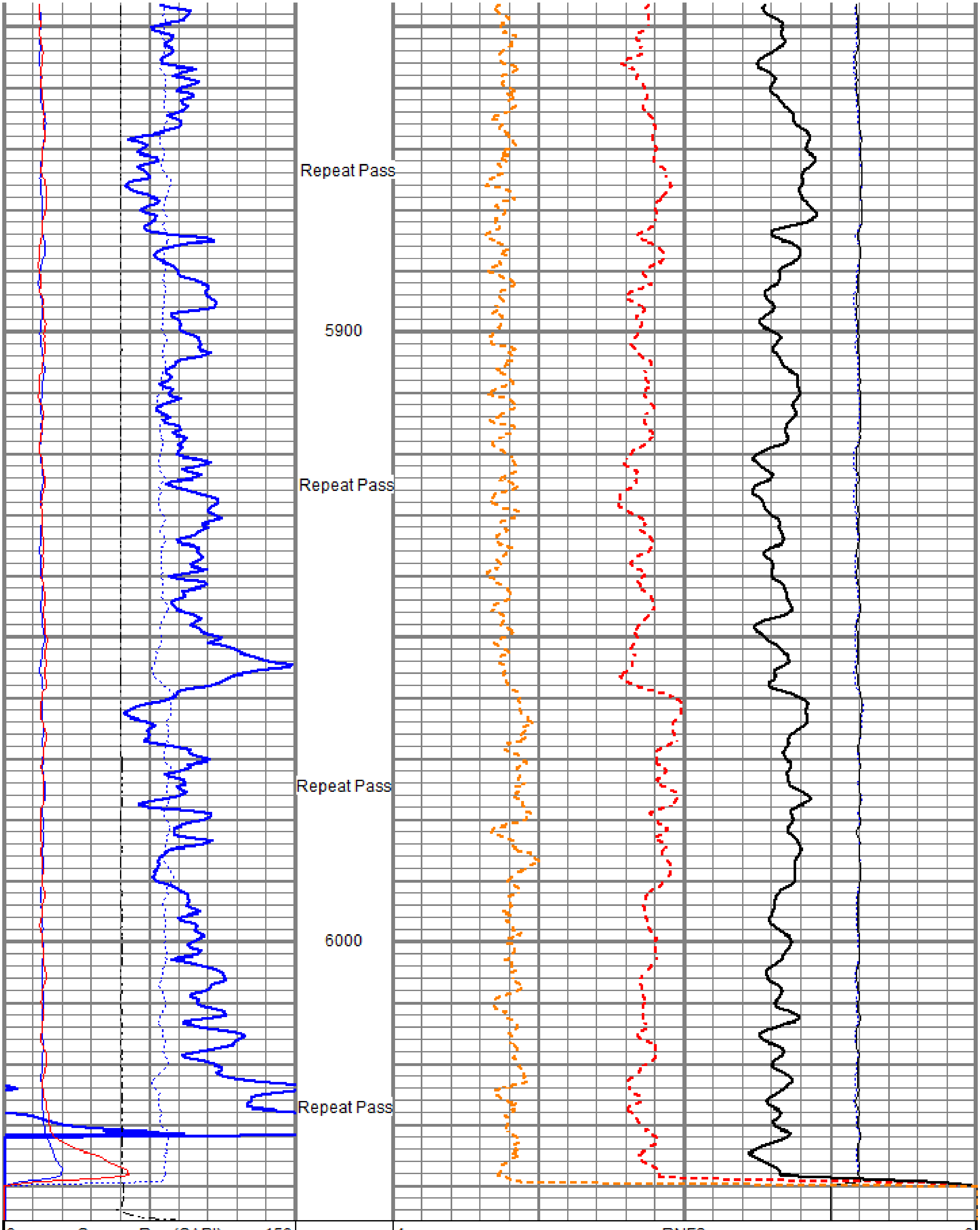
# Repeat Pass

| | |
|---|---|
| Database File | tep\sr 412-12\pn\tep_ware sr 412-12_pn_12-14-17.db |
| Dataset Pathname | repeat/ware_sr_412-12_repeat_2_shift_make_log |
| Presentation Format | ros_pdn_hunter |
| Dataset Creation | Fri Dec 22 12:48:04 2017 |
| Charted by | Depth in Feet scaled 1:240 |

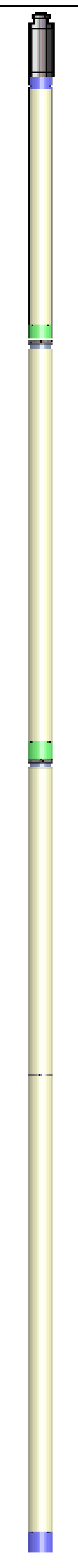
| | | |
|---|---|---|
| 0 | Gamma Ray (GAPI) | 150 |
| -100 | Line Speed (ft/min) | 100 |
| 0 | NIRS (cps) | 400000 |
| 0 | BKGN (cps) | 4000 |
| 0 | BKGF (cps) | 2000 |

| | | |
|---|---|---|
| 4 | RNF2 | 0 |
| 60 | SIGMA (cu) | 0 |
| 4.5 | RNFI | 0 |
| | FIS2 | |
| 0 | (cps) | 45000 |
| | NIS2 | |
| 0 | (cps | 100000 |



| | | |
|---|---|---|
| 0 | Gamma Ray (GAPI) | 150 |
| -100 | Line Speed (ft/min) | 100 |
| 0 | NIRS (cps) | 400000 |
| 0 | BKGN (cps) | 4000 |
| 0 | BKGF (cps) | 2000 |

| | | |
|---|---|---|
| 4 | RNF2 | 0 |
| 60 | SIGMA (cu) | 0 |
| 4.5 | RNFI | 0 |
| | FIS2 | |
| 0 | (cps) | 45000 |
| | NIS2 | |
| 0 | (cps | 100000 |

| Sensor | Offset (ft) | Schematic | Description | Length (ft) | O.D. (in) | Weight (lb |
|---|---|---|---|---|---|---|
| | |  | Titan_Electric_Cable_Heads-Titan_1-1<br>Electric Cable Head with 1" Fishing Neck | 11.03 | 1.69 | 5.40 |
| | | | Telemetry-Antares<br>Antares Telemetry / Gamma / CCL | 4.07 | 1.70 | 17.60 |
| | | | Generator-Antares<br>Antares Neutron Generator | 19.03 | 1.70 | 85.80 |

| | |
|---|---|
| Dataset: | pdn tool.db: field/well/run1/PDN_Tool_Diagram |
| Total length: | 24.13 ft |
| Total weight: | 108.80 lb |
| O.D.: | 1.70 in |

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