



DRILL STEM TEST REPORT

Prepared For: **Downing-Nelson Oil Co., Inc.**

PO Box 1019
Hays, KS 67601

ATTN: Al Downing

Tammy Riedel #1-26

26-11S-23W Trego,KS

Start Date: 2019.07.21 @ 12:12:04

End Date: 2019.07.21 @ 18:50:25

Job Ticket #: 64484 DST #: 4

Trilobite Testing, Inc
1515 Commerce Parkway Hays, KS 67601
ph: 785-625-4778 fax: 785-625-5620

Printed: 2019.07.23 @ 11:12:00



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Dow ning-Nelson Oil Co., Inc.

26-11S-23W Trego,KS

PO Box 1019
Hays, KS 67601

Tammy Riedel #1-26

Job Ticket: 64484

DST#: 4

ATTN: Al Dow ning

Test Start: 2019.07.21 @ 12:12:04

GENERAL INFORMATION:

Formation: **LKC "E-G"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 13:40:40

Time Test Ended: 18:50:25

Test Type: Conventional Bottom Hole (Reset)

Tester: Brannan Lonsdale

Unit No: 73

Interval: 3705.00 ft (KB) To 3756.00 ft (KB) (TVD)

Reference Elevations: 2388.00 ft (KB)

Total Depth: 3756.00 ft (KB) (TVD)

2380.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 8.00 ft

Serial #: 8700

Outside

Press@RunDepth: 207.35 psig @ 3706.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2019.07.21

End Date:

2019.07.21

Last Calib.:

2019.07.21

Start Time:

12:12:05

End Time:

18:50:25

Time On Btm:

2019.07.21 @ 13:40:25

Time Off Btm:

2019.07.21 @ 16:42:25

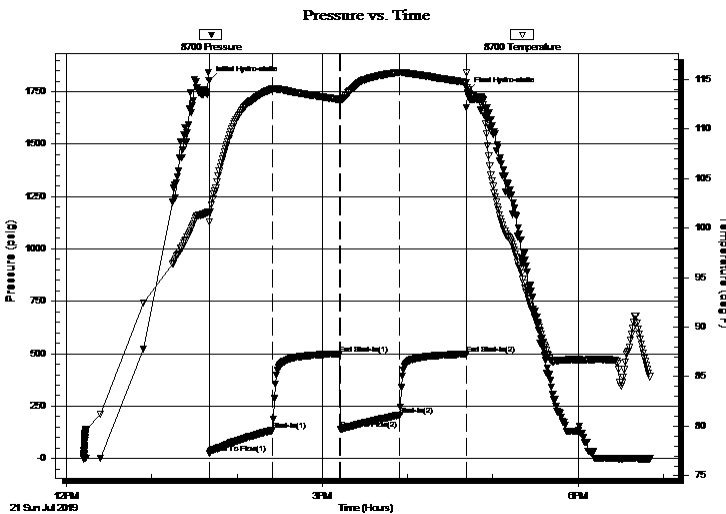
TEST COMMENT: 45- IF- BOB 11 mins. Built to 25.88"

45- IS- Slow ly built to 1.60"

45- FF- BOB 17 mins. Built to 25.89"

45- FS- Slow ly built to 1.42"

PRESSURE SUMMARY



| Time (Min.) | Pressure (psig) | Temp (deg F) | Annotation |
|-------------|-----------------|--------------|----------------------|
| 0 | 1802.07 | 101.62 | Initial Hydro-static |
| 1 | 24.00 | 100.62 | Open To Flow (1) |
| 45 | 134.50 | 114.07 | Shut-In(1) |
| 92 | 499.42 | 112.94 | End Shut-In(1) |
| 93 | 138.87 | 112.97 | Open To Flow (2) |
| 135 | 207.35 | 115.69 | Shut-In(2) |
| 181 | 497.60 | 114.67 | End Shut-In(2) |
| 182 | 1748.01 | 113.93 | Final Hydro-static |

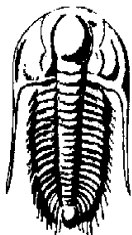
Recovery

| Length (ft) | Description | Volume (bbl) |
|-------------|----------------|--------------|
| 380.00 | MW, 25%M 75%W | 5.09 |
| 30.00 | CGO, 25%G 75%O | 0.43 |
| 0.00 | 220' GIP | 0.00 |
| | | |
| | | |

* Recovery from multiple tests

Gas Rates

| Choke (inches) | Pressure (psig) | Gas Rate (Mcf/d) |
|----------------|-----------------|------------------|
| | | |



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Dow ning-Nelson Oil Co., Inc.

26-11S-23W Trego,KS

PO Box 1019
Hays, KS 67601

Tammy Riedel #1-26

Job Ticket: 64484 **DST#: 4**

ATTN: Al Dow ning

Test Start: 2019.07.21 @ 12:12:04

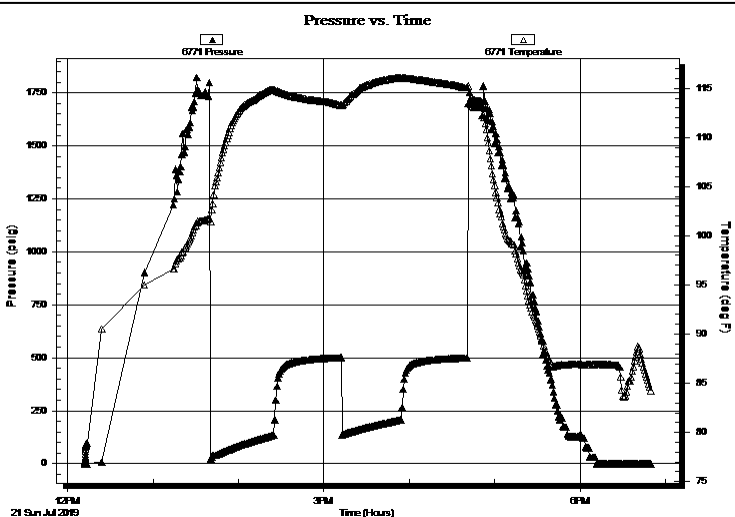
GENERAL INFORMATION:

| | | | | | |
|-------------------|---|--|----------------------|-----------------------|----------------------------------|
| Formation: | LKC "E-G" | | | Test Type: | Conventional Bottom Hole (Reset) |
| Deviated: | No Whipstock: | | ft (KB) | Tester: | Brannan Lonsdale |
| Time Tool Opened: | 13:40:40 | | | Unit No: | 73 |
| Time Test Ended: | 18:50:25 | | | Reference Elevations: | 2388.00 ft (KB) |
| Interval: | 3705.00 ft (KB) To 3756.00 ft (KB) (TVD) | | | | 2380.00 ft (CF) |
| Total Depth: | 3756.00 ft (KB) (TVD) | | | KB to GR/CF: | 8.00 ft |
| Hole Diameter: | 7.88 inches | | Hole Condition: Fair | | |

Serial #: 6771 Inside

| | | | | | |
|-----------------|------------|-----------|-----------------|---------------|--------------|
| Press@RunDepth: | | psig @ | 3706.00 ft (KB) | Capacity: | 8000.00 psig |
| Start Date: | 2019.07.21 | End Date: | 2019.07.21 | Last Calib.: | 2019.07.21 |
| Start Time: | 12:12:01 | End Time: | 18:50:06 | Time On Btm: | |
| | | | | Time Off Btm: | |

TEST COMMENT: 45- IF- BOB 11 mins. Built to 25.88"
45- ISl- Slow ly built to 1.60"
45- FF- BOB 17 mins. Built to 25.89"
45- FSl- Slow ly built to 1.42"



PRESSURE SUMMARY

| Time (Min.) | Pressure (psig) | Temp (deg F) | Annotation |
|-------------|-----------------|--------------|------------|
| | | | |

Recovery

| Length (ft) | Description | Volume (bbl) |
|-------------|----------------|--------------|
| 380.00 | MW, 25%M 75%W | 5.09 |
| 30.00 | CGO, 25%G 75%O | 0.43 |
| 0.00 | 220' GIP | 0.00 |
| | | |
| | | |

Gas Rates

| | Choke (inches) | Pressure (psig) | Gas Rate (Mcf/d) |
|--|----------------|-----------------|------------------|
| | | | |

* Recovery from multiple tests



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Dow ning-Nelson Oil Co., Inc.

26-11S-23W Trego,KS

PO Box 1019
Hays, KS 67601

Tammy Riedel #1-26

Job Ticket: 64484

DST#: 4

ATTN: Al Dow ning

Test Start: 2019.07.21 @ 12:12:04

Tool Information

| | | | | | |
|----------------------------|--------------------|-----------------------|----------------------------|------------------------|-------------|
| Drill Pipe: | Length: 3677.00 ft | Diameter: 3.82 inches | Volume: 52.12 bbl | Tool Weight: | 2000.00 lb |
| Heavy Wt. Pipe: | Length: ft | Diameter: inches | Volume: - bbl | Weight set on Packer: | 25000.00 lb |
| Drill Collar: | Length: 32.00 ft | Diameter: 2.25 inches | Volume: 0.16 bbl | Weight to Pull Loose: | 70000.00 lb |
| | | | <u>Total Volume:</u> - bbl | Tool Chased | 0.00 ft |
| Drill Pipe Above KB: | 24.00 ft | | | String Weight: Initial | 58000.00 lb |
| Depth to Top Packer: | 3705.00 ft | | | Final | 61000.00 lb |
| Depth to Bottom Packer: | ft | | | | |
| Interval betw een Packers: | 51.00 ft | | | | |
| Tool Length: | 71.00 ft | | | | |
| Number of Packers: | 2 | Diameter: 6.75 inches | | | |
| Tool Comments: | | | | | |

| Tool Description | Length (ft) | Serial No. | Position | Depth (ft) | Accum. Lengths |
|------------------|-------------|------------|----------|------------|----------------|
|------------------|-------------|------------|----------|------------|----------------|

| | | | | | |
|-----------------|-------|------|---------|---------|-------------------------------|
| Change Over Sub | 1.00 | | | 3686.00 | |
| Shut In Tool | 5.00 | | | 3691.00 | |
| Hydraulic tool | 5.00 | | | 3696.00 | |
| Packer | 5.00 | | | 3701.00 | 20.00 Bottom Of Top Packer |
| Packer | 4.00 | | | 3705.00 | |
| Stubb | 1.00 | | | 3706.00 | |
| Recorder | 0.00 | 6771 | Inside | 3706.00 | |
| Recorder | 0.00 | 8700 | Outside | 3706.00 | |
| Perforations | 13.00 | | | 3719.00 | |
| Change Over Sub | 1.00 | | | 3720.00 | |
| Drill Pipe | 32.00 | | | 3752.00 | |
| Change Over Sub | 1.00 | | | 3753.00 | |
| Bullnose | 3.00 | | | 3756.00 | 51.00 Bottom Packers & Anchor |

Total Tool Length: 71.00



**TRILOBITE
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DRILL STEM TEST REPORT

FLUID SUMMARY

Dow ning-Nelson Oil Co., Inc.

26-11S-23W Trego,KS

PO Box 1019
Hays, KS 67601

Tammy Riedel #1-26

Job Ticket: 64484

DST#: 4

ATTN: Al Dow ning

Test Start: 2019.07.21 @ 12:12:04

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

33 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

52000 ppm

Viscosity: 54.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.59 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 5000.00 ppm

Filter Cake: inches

Recovery Information

Recovery Table

| Length ft | Description | Volume bbbl |
|--------------|----------------|----------------|
| 380.00 | MW, 25%M 75%W | 5.090 |
| 30.00 | CGO, 25%G 75%O | 0.425 |
| 0.00 | 220' GIP | 0.000 |

Total Length: 410.00 ft Total Volume: 5.515 bbl

Num Fluid Samples: 0

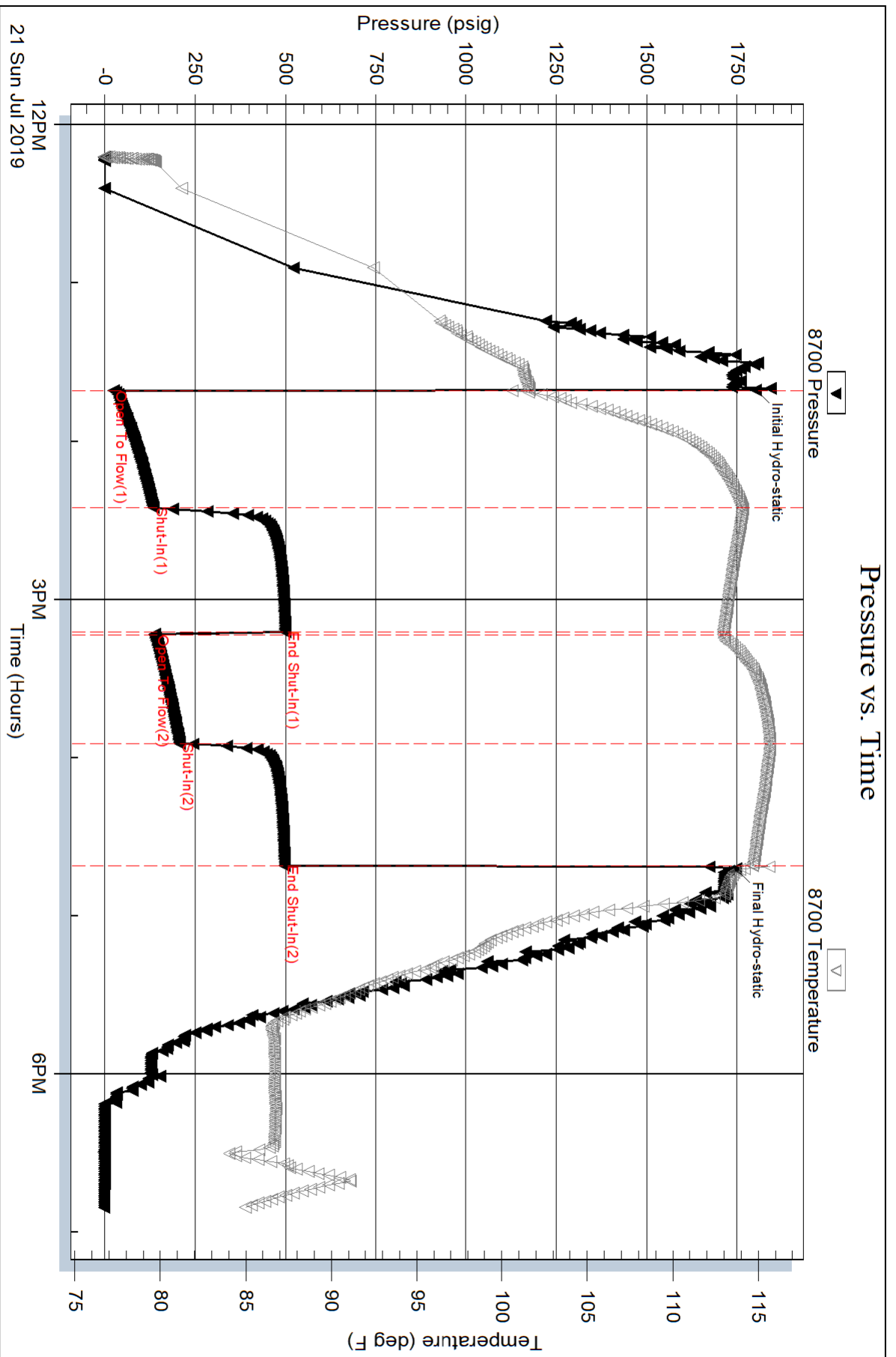
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: RW: .12@75deg



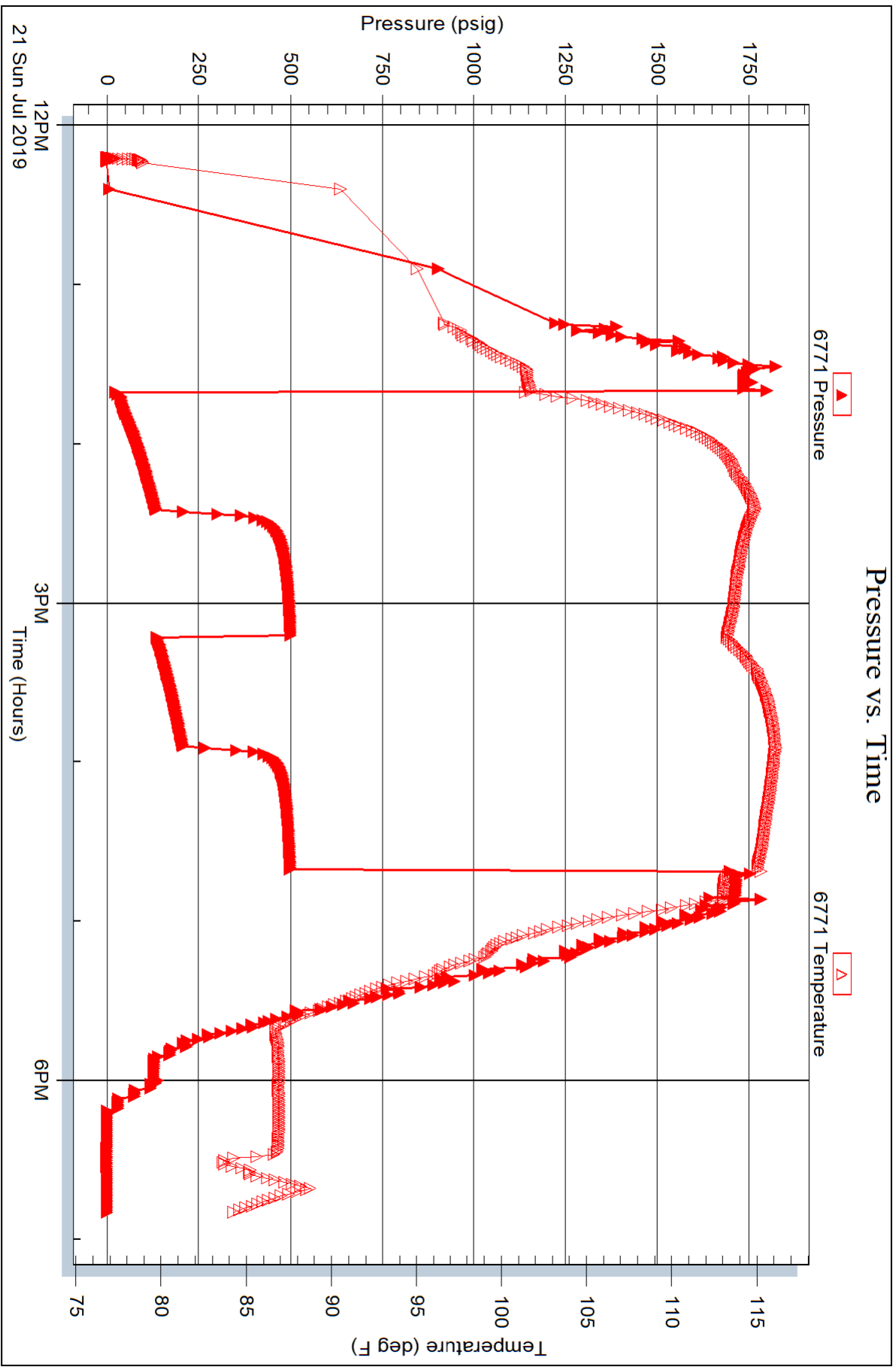
Serial #: 6771

Inside

Dow niny-Nelson Oil Co., Inc.

Tammy Riedel #1-26

DST Test Number: 4





DRILL STEM TEST REPORT

Prepared For: **Downing-Nelson Oil Co., Inc.**

PO Box 1019
Hays, KS 67601

ATTN: Al Downing

Tammy Riedel #1-26

26-11S-23W Trego,KS

Start Date: 2019.07.19 @ 16:11:23

End Date: 2019.07.19 @ 23:34:29

Job Ticket #: 64481 DST #: 1

Trilobite Testing, Inc
1515 Commerce Parkway Hays, KS 67601
ph: 785-625-4778 fax: 785-625-5620

Printed: 2019.07.23 @ 11:15:04



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Dow ning-Nelson Oil Co., Inc.

26-11S-23W Trego,KS

PO Box 1019
Hays, KS 67601

Tammy Riedel #1-26

Job Ticket: 64481

DST#: 1

ATTN: Al Dow ning

Test Start: 2019.07.19 @ 16:11:23

GENERAL INFORMATION:

Formation: **Toronto - LKC "A"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 19:06:44

Time Test Ended: 23:34:29

Test Type: Conventional Bottom Hole (Initial)

Tester: Brannan Lonsdale

Unit No: 73

Interval: **3602.00 ft (KB) To 3660.00 ft (KB) (TVD)**

Reference Elevations: 2388.00 ft (KB)

Total Depth: 3660.00 ft (KB) (TVD)

2380.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Poor

KB to GR/CF: 8.00 ft

Serial #: 8700 Outside

Press@RunDepth: 38.31 psig @ 3603.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2019.07.19 End Date: 2019.07.19

Last Calib.: 2019.07.19

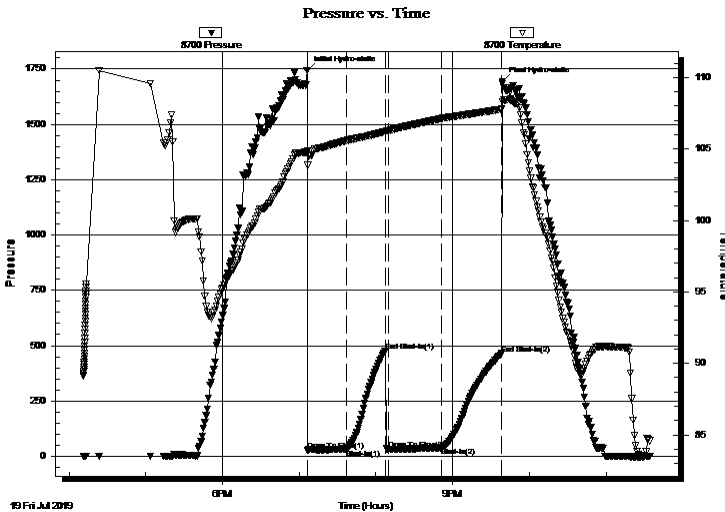
Start Time: 16:11:24 End Time: 23:34:29

Time On Btm: 2019.07.19 @ 19:06:29

Time Off Btm: 2019.07.19 @ 21:38:59

TEST COMMENT: 30- IF- Slow ly built to 2.46"
30- IS- No blow
45- FF- Slow ly built to 5.45"
45- FS- No blow

PRESSURE SUMMARY



| Time (Min.) | Pressure (psig) | Temp (deg F) | Annotation |
|-------------|-----------------|--------------|----------------------|
| 0 | 1743.89 | 104.86 | Initial Hydro-static |
| 1 | 27.86 | 103.86 | Open To Flow (1) |
| 31 | 32.57 | 105.58 | Shut-In(1) |
| 61 | 475.46 | 106.21 | End Shut-In(1) |
| 64 | 32.05 | 106.29 | Open To Flow (2) |
| 105 | 38.31 | 107.13 | Shut-In(2) |
| 152 | 463.21 | 107.78 | End Shut-In(2) |
| 153 | 1692.28 | 108.31 | Final Hydro-static |

Recovery

| Length (ft) | Description | Volume (bbl) |
|-------------|-----------------|--------------|
| 63.00 | HOCM, 45%O 55%M | 0.60 |
| | | |
| | | |
| | | |
| | | |

Gas Rates

| Choke (inches) | Pressure (psig) | Gas Rate (Mcf/d) |
|----------------|-----------------|------------------|
| | | |



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DRILL STEM TEST REPORT

Dow ning-Nelson Oil Co., Inc.

26-11S-23W Trego,KS

PO Box 1019
Hays, KS 67601

Tammy Riedel #1-26

Job Ticket: 64481 **DST#: 1**

ATTN: Al Dow ning

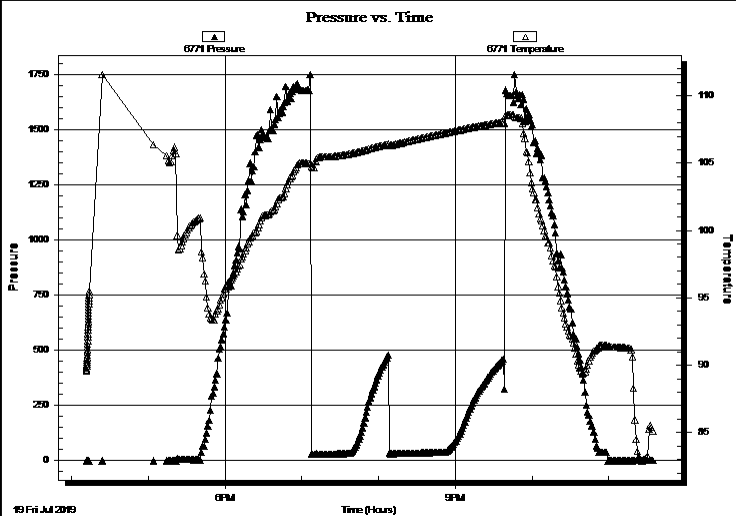
Test Start: 2019.07.19 @ 16:11:23

GENERAL INFORMATION:

| | | | |
|---|----------------------|---|--|
| Formation: Toronto - LKC "A" | | | |
| Deviated: No Whipstock: | ft (KB) | Test Type: Conventional Bottom Hole (Initial) | |
| Time Tool Opened: 19:06:44 | | Tester: Brannan Lonsdale | |
| Time Test Ended: 23:34:29 | | Unit No: 73 | |
| Interval: 3602.00 ft (KB) To 3660.00 ft (KB) (TVD) | | Reference Elevations: 2388.00 ft (KB) | |
| Total Depth: 3660.00 ft (KB) (TVD) | | 2380.00 ft (CF) | |
| Hole Diameter: 7.88 inches | Hole Condition: Poor | KB to GR/CF: 8.00 ft | |

| | | | | | |
|---|---|---------------|--------------|--|--|
| Serial #: 6771 | Inside | | | | |
| Press@RunDepth: psig @ | 3603.00 ft (KB) | Capacity: | 8000.00 psig | | |
| Start Date: 2019.07.19 | End Date: 2019.07.19 | Last Calib.: | 2019.07.19 | | |
| Start Time: 16:11:32 | End Time: 23:34:37 | Time On Btm: | | | |
| | | Time Off Btm: | | | |

TEST COMMENT: 30- IF- Slow ly built to 2.46"
30- IS- No blow
45- FF- Slow ly built to 5.45"
45- FS- No blow



PRESSURE SUMMARY

| Time (Min.) | Pressure (psig) | Temp (deg F) | Annotation |
|-------------|-----------------|--------------|------------|
| | | | |
| | | | |
| | | | |

Recovery

| Length (ft) | Description | Volume (bbl) |
|-------------|-----------------|--------------|
| 63.00 | HOCM, 45%O 55%M | 0.60 |
| | | |
| | | |
| | | |

Gas Rates

| Choke (inches) | Pressure (psig) | Gas Rate (Mcf/d) |
|----------------|-----------------|------------------|
| | | |



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Dow ning-Nelson Oil Co., Inc.

26-11S-23W Trego,KS

PO Box 1019
Hays, KS 67601

Tammy Riedel #1-26

Job Ticket: 64481

DST#: 1

ATTN: Al Dow ning

Test Start: 2019.07.19 @ 16:11:23

Tool Information

| | | | | |
|----------------------------|--------------------|-----------------------|----------------------------|------------------------------------|
| Drill Pipe: | Length: 3582.00 ft | Diameter: 3.82 inches | Volume: 50.78 bbl | Tool Weight: 2000.00 lb |
| Heavy Wt. Pipe: | Length: ft | Diameter: inches | Volume: - bbl | Weight set on Packer: 25000.00 lb |
| Drill Collar: | Length: 32.00 ft | Diameter: 2.25 inches | Volume: 0.16 bbl | Weight to Pull Loose: 75000.00 lb |
| | | | <u>Total Volume: - bbl</u> | Tool Chased 3.00 ft |
| Drill Pipe Above KB: | 32.00 ft | | | String Weight: Initial 57000.00 lb |
| Depth to Top Packer: | 3602.00 ft | | | Final 58000.00 lb |
| Depth to Bottom Packer: | ft | | | |
| Interval betw een Packers: | 58.00 ft | | | |
| Tool Length: | 78.00 ft | | | |
| Number of Packers: | 2 | Diameter: 6.75 inches | | |

Tool Comments:

Tool Description

| Tool Description | Length (ft) | Serial No. | Position | Depth (ft) | Accum. Lengths |
|------------------|-------------|------------|----------|------------|-------------------------------|
| Change Over Sub | 1.00 | | | 3583.00 | |
| Shut In Tool | 5.00 | | | 3588.00 | |
| Hydraulic tool | 5.00 | | | 3593.00 | |
| Packer | 5.00 | | | 3598.00 | 20.00 Bottom Of Top Packer |
| Packer | 4.00 | | | 3602.00 | |
| Stubb | 1.00 | | | 3603.00 | |
| Recorder | 0.00 | 6771 | Inside | 3603.00 | |
| Recorder | 0.00 | 8700 | Outside | 3603.00 | |
| Perforations | 20.00 | | | 3623.00 | |
| Change Over Sub | 1.00 | | | 3624.00 | |
| Drill Pipe | 32.00 | | | 3656.00 | |
| Change Over Sub | 1.00 | | | 3657.00 | |
| Bullnose | 3.00 | | | 3660.00 | 58.00 Bottom Packers & Anchor |

Total Tool Length: 78.00



**TRILOBITE
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DRILL STEM TEST REPORT

FLUID SUMMARY

Dow ning-Nelson Oil Co., Inc.

26-11S-23W Trego,KS

PO Box 1019
Hays, KS 67601

Tammy Riedel #1-26

Job Ticket: 64481

DST#: 1

ATTN: Al Dow ning

Test Start: 2019.07.19 @ 16:11:23

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

28 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 53.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.98 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 4000.00 ppm

Filter Cake: inches

Recovery Information

Recovery Table

| Length ft | Description | Volume bbbl |
|--------------|-----------------|----------------|
| 63.00 | HOCM, 45%O 55%M | 0.597 |

Total Length: 63.00 ft Total Volume: 0.597 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

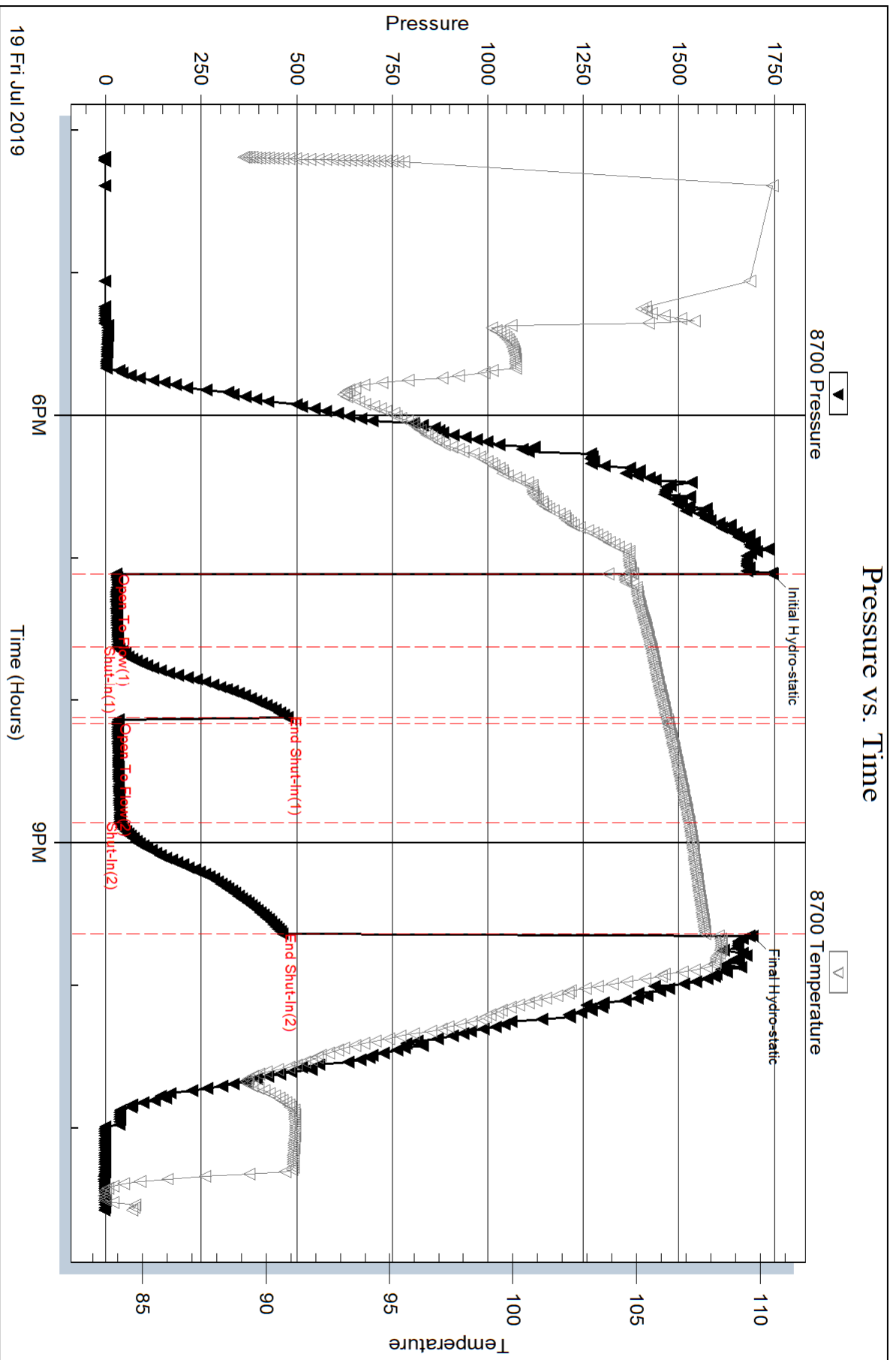
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

Pressure vs. Time



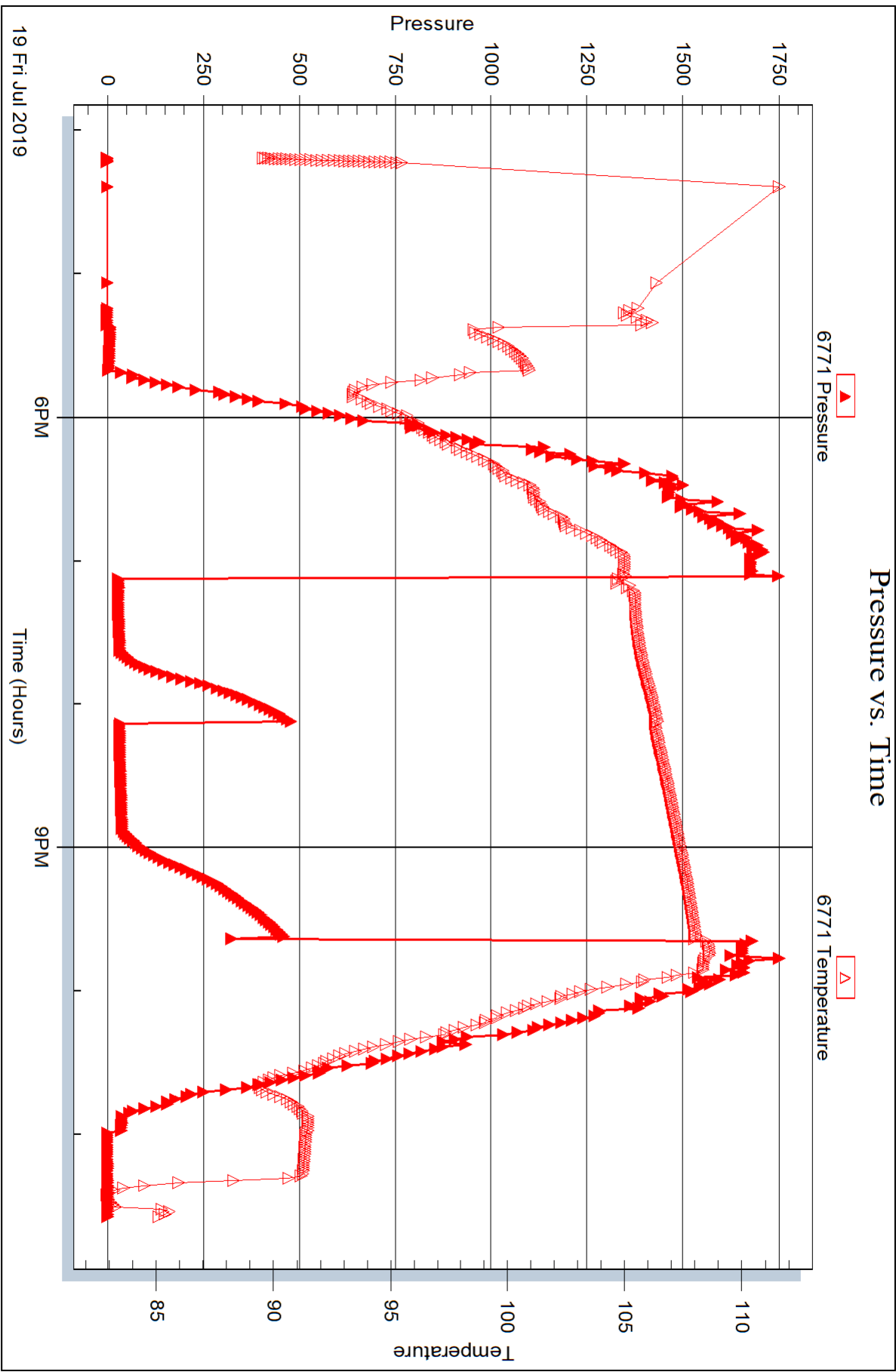
Serial #: 6771

Inside

Dow nting-Nelson Oil Co., Inc.

Tammy Riedel #1-26

DST Test Number: 1





DRILL STEM TEST REPORT

Prepared For: **Downing-Nelson Oil Co., Inc.**

PO Box 1019
Hays, KS 67601

ATTN: Al Downing

Tammy Riedel #1-26

26-11S-23W Trego,KS

Start Date: 2019.07.20 @ 06:57:24

End Date: 2019.07.20 @ 13:16:15

Job Ticket #: 64482 DST #: 2

Trilobite Testing, Inc
1515 Commerce Parkway Hays, KS 67601
ph: 785-625-4778 fax: 785-625-5620

Printed: 2019.07.23 @ 11:12:53



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Dow ning-Nelson Oil Co., Inc.

26-11S-23W Trego,KS

PO Box 1019
Hays, KS 67601

Tammy Riedel #1-26

ATTN: Al Dow ning

Job Ticket: 64482

DST#: 2

Test Start: 2019.07.20 @ 06:57:24

GENERAL INFORMATION:

Formation: **LKC "C"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 08:49:45

Time Test Ended: 13:16:15

Test Type: Conventional Bottom Hole (Reset)

Tester: Brannan Lonsdale

Unit No: 73

Interval: 3664.00 ft (KB) To 3686.00 ft (KB) (TVD)

Reference Elevations: 2388.00 ft (KB)

Total Depth: 3686.00 ft (KB) (TVD)

2380.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 8.00 ft

Serial #: 8700 Outside

Press@RunDepth: 152.31 psig @ 3665.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2019.07.20 End Date: 2019.07.20

Last Calib.: 2019.07.20

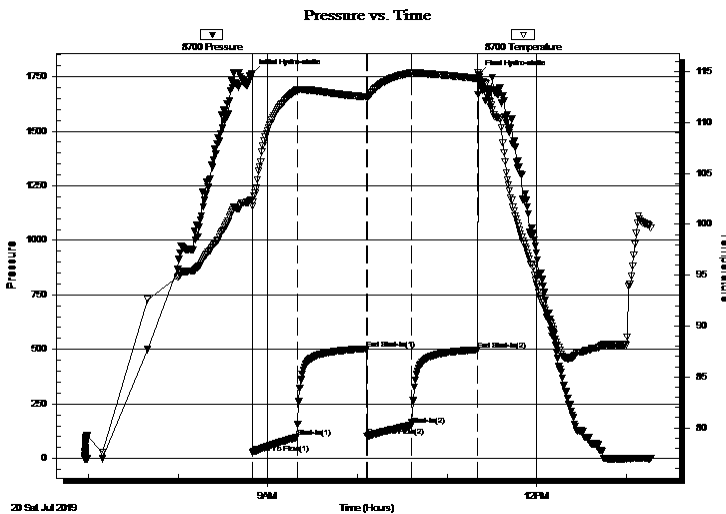
Start Time: 06:57:25 End Time: 13:16:15

Time On Btm: 2019.07.20 @ 08:49:30

Time Off Btm: 2019.07.20 @ 11:21:15

TEST COMMENT: 30- IF- BOB 7 mins. Built to 30.10"
45- IS- Slow ly built to 1.76"
30- FF- BOB 9 mins. Built to 27.29"
45- FS- Slow ly built to 3.01"

PRESSURE SUMMARY



| Time (Min.) | Pressure (psig) | Temp (deg F) | Annotation |
|-------------|-----------------|--------------|----------------------|
| 0 | 1765.02 | 102.46 | Initial Hydro-static |
| 1 | 25.29 | 101.74 | Open To Flow (1) |
| 30 | 96.26 | 113.19 | Shut-In(1) |
| 77 | 502.86 | 112.52 | End Shut-In(1) |
| 77 | 102.20 | 112.47 | Open To Flow (2) |
| 107 | 152.31 | 114.88 | Shut-In(2) |
| 151 | 498.26 | 114.33 | End Shut-In(2) |
| 152 | 1758.41 | 114.11 | Final Hydro-static |

Recovery

| Length (ft) | Description | Volume (bbl) |
|-------------|----------------|--------------|
| 250.00 | MW, 10%M 90%W | 3.25 |
| 30.00 | CGO, 15%G 85%O | 0.43 |
| 0.00 | 410' GIP | 0.00 |
| | | |
| | | |

Gas Rates

| | Choke (inches) | Pressure (psig) | Gas Rate (Mcf/d) |
|--|----------------|-----------------|------------------|
| | | | |

* Recovery from multiple tests



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Dow ning-Nelson Oil Co., Inc.

26-11S-23W Trego,KS

PO Box 1019
Hays, KS 67601

Tammy Riedel #1-26

Job Ticket: 64482

DST#: 2

ATTN: Al Dow ning

Test Start: 2019.07.20 @ 06:57:24

Tool Information

| | | | | | |
|----------------------------|--------------------|-----------------------|----------------------|------------------------|-------------|
| Drill Pipe: | Length: 3614.00 ft | Diameter: 3.82 inches | Volume: 51.23 bbl | Tool Weight: | 2000.00 lb |
| Heavy Wt. Pipe: | Length: ft | Diameter: inches | Volume: - bbl | Weight set on Packer: | 25000.00 lb |
| Drill Collar: | Length: 32.00 ft | Diameter: 2.25 inches | Volume: 0.16 bbl | Weight to Pull Loose: | 65000.00 lb |
| | | | <u>Total Volume:</u> | Tool Chased | 0.00 ft |
| Drill Pipe Above KB: | 2.00 ft | | | String Weight: Initial | 58000.00 lb |
| Depth to Top Packer: | 3664.00 ft | | | Final | 59000.00 lb |
| Depth to Bottom Packer: | ft | | | | |
| Interval betw een Packers: | 22.00 ft | | | | |
| Tool Length: | 42.00 ft | | | | |
| Number of Packers: | 2 | Diameter: 6.75 inches | | | |

Tool Comments:

Tool Description

| Tool Description | Length (ft) | Serial No. | Position | Depth (ft) | Accum. Lengths |
|---------------------------|--------------|------------|----------|------------|-------------------------------|
| Change Over Sub | 1.00 | | | 3645.00 | |
| Shut In Tool | 5.00 | | | 3650.00 | |
| Hydraulic tool | 5.00 | | | 3655.00 | |
| Packer | 5.00 | | | 3660.00 | 20.00 Bottom Of Top Packer |
| Packer | 4.00 | | | 3664.00 | |
| Stubb | 1.00 | | | 3665.00 | |
| Recorder | 0.00 | 6771 | Inside | 3665.00 | |
| Recorder | 0.00 | 8700 | Outside | 3665.00 | |
| Perforations | 18.00 | | | 3683.00 | |
| Bullnose | 3.00 | | | 3686.00 | 22.00 Bottom Packers & Anchor |
| Total Tool Length: | 42.00 | | | | |



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Dow ning-Nelson Oil Co., Inc.

26-11S-23W Trego,KS

PO Box 1019
Hays, KS 67601

Tammy Riedel #1-26

Job Ticket: 64482

DST#: 2

ATTN: Al Dow ning

Test Start: 2019.07.20 @ 06:57:24

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

33 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

65000 ppm

Viscosity: 52.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.96 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 4000.00 ppm

Filter Cake: inches

Recovery Information

Recovery Table

| Length ft | Description | Volume bbbl |
|--------------|----------------|----------------|
| 250.00 | MW, 10%M 90%W | 3.248 |
| 30.00 | CGO, 15%G 85%O | 0.425 |
| 0.00 | 410' GIP | 0.000 |

Total Length: 280.00 ft Total Volume: 3.673 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

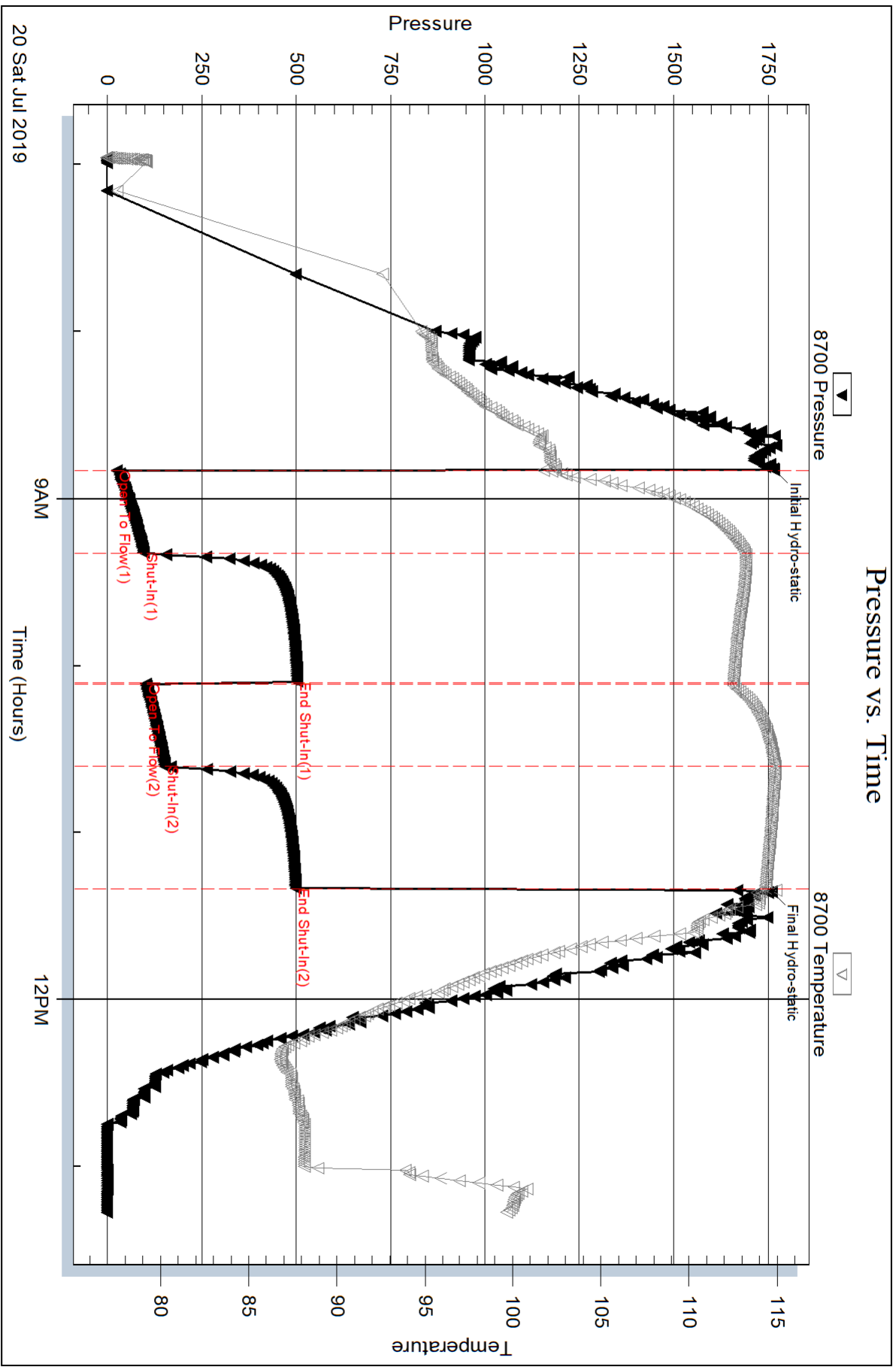
Recovery Comments: RW: .07@98deg

Serial #: 8700

Outside Dow nting-Nelson Oil Co., Inc.

Tammy Riedel #1-26

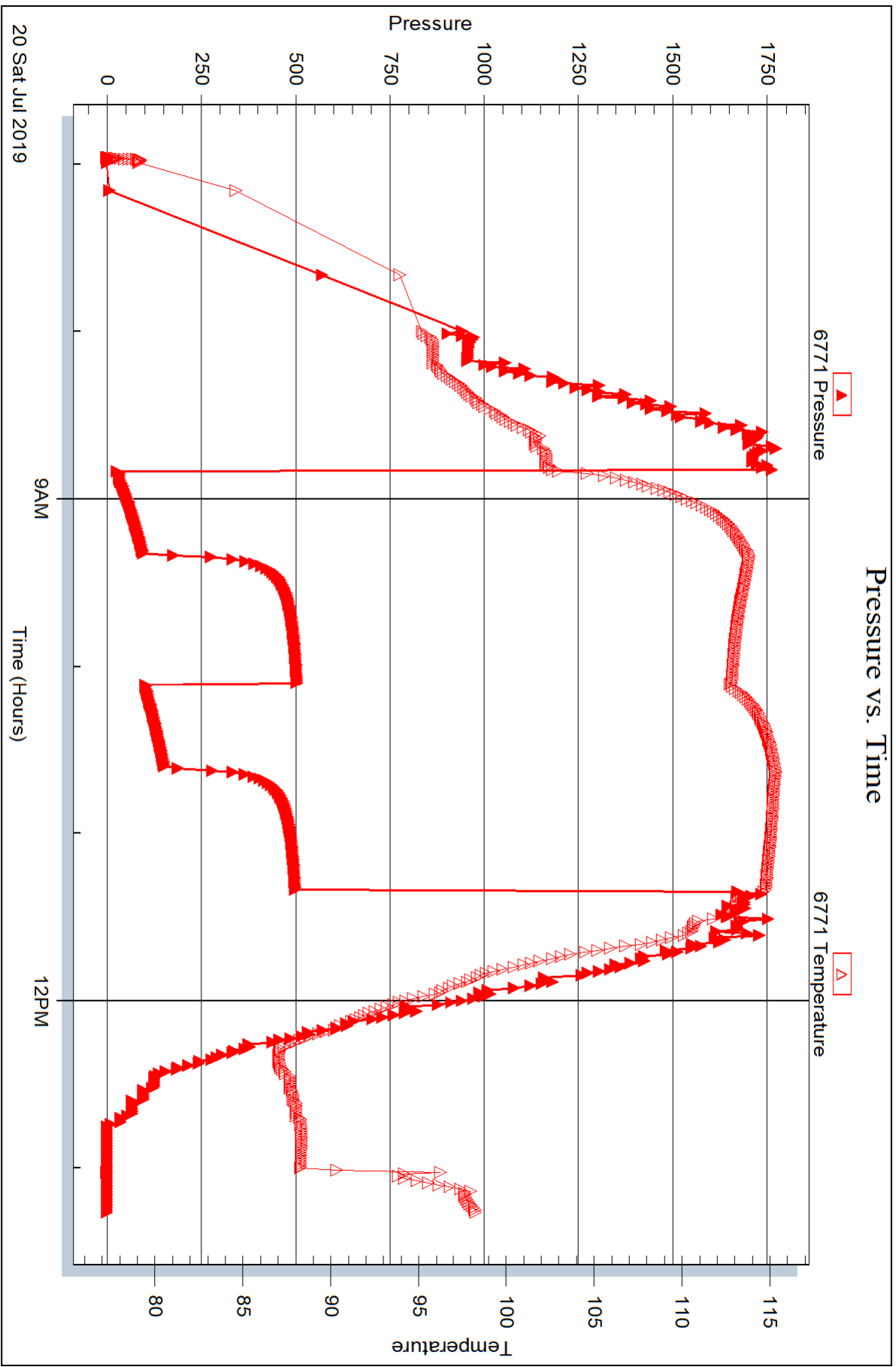
DST Test Number: 2



Trilobite Testing, Inc

Ref. No: 64482

Printed: 2019.07.23 @ 11:12:55





DRILL STEM TEST REPORT

Prepared For: **Downing-Nelson Oil Co., Inc.**

PO Box 1019
Hays, KS 67601

ATTN: Al Downing

Tammy Riedel #1-26

26-11S-23W Trego,KS

Start Date: 2019.07.20 @ 19:50:07

End Date: 2019.07.21 @ 03:19:58

Job Ticket #: 64483 DST #: 3

Trilobite Testing, Inc
1515 Commerce Parkway Hays, KS 67601
ph: 785-625-4778 fax: 785-625-5620

Printed: 2019.07.23 @ 11:12:32



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Dow ning-Nelson Oil Co., Inc.

26-11S-23W Trego,KS

PO Box 1019
Hays, KS 67601

Tammy Riedel #1-26

ATTN: Al Dow ning

Job Ticket: 64483

DST#: 3

Test Start: 2019.07.20 @ 19:50:07

GENERAL INFORMATION:

Formation: **LKC "D"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 22:42:43

Time Test Ended: 03:19:58

Test Type: Conventional Bottom Hole (Reset)

Tester: Brannan Lonsdale

Unit No: 73

Interval: 3685.00 ft (KB) To 3704.00 ft (KB) (TVD)

Reference Elevations: 2388.00 ft (KB)

Total Depth: 3704.00 ft (KB) (TVD)

2380.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 8.00 ft

Serial #: 8700 Outside

Press@RunDepth: 35.64 psig @ 3686.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2019.07.20 End Date: 2019.07.21

Last Calib.: 2019.07.21

Start Time: 19:50:08 End Time: 03:19:58

Time On Btm: 2019.07.20 @ 22:42:28

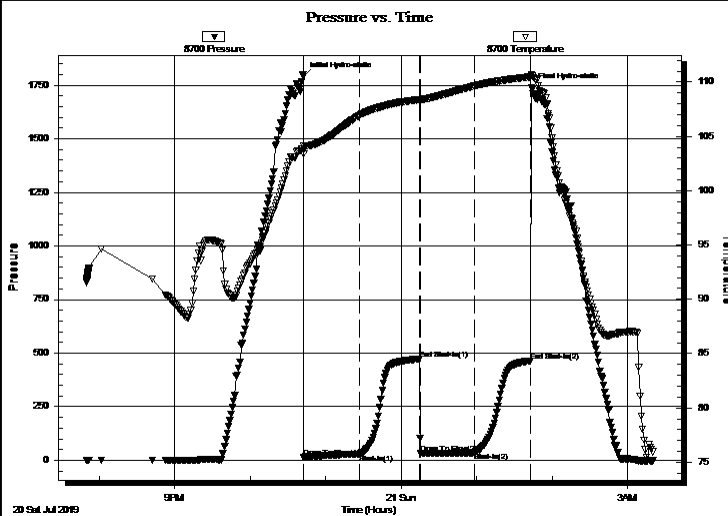
Time Off Btm: 2019.07.21 @ 01:43:43

TEST COMMENT: 45- IF- Slow ly built to 2.82"

45- IS- No blow

45- FF- Surface blow

45- FSI- No blow



PRESSURE SUMMARY

| Time (Min.) | Pressure (psig) | Temp (deg F) | Annotation |
|-------------|-----------------|--------------|----------------------|
| 0 | 1789.66 | 104.12 | Initial Hydro-static |
| 1 | 13.94 | 103.40 | Open To Flow (1) |
| 45 | 28.59 | 106.95 | Shut-In(1) |
| 93 | 472.30 | 108.38 | End Shut-In(1) |
| 94 | 31.49 | 108.41 | Open To Flow (2) |
| 136 | 35.64 | 109.64 | Shut-In(2) |
| 181 | 463.39 | 110.47 | End Shut-In(2) |
| 182 | 1739.51 | 110.71 | Final Hydro-static |

Recovery

| Length (ft) | Description | Volume (bbl) |
|-------------|---------------|--------------|
| 50.00 | MW, 25%M 75%W | 0.41 |
| | | |
| | | |
| | | |
| | | |

Gas Rates

| Choke (inches) | Pressure (psig) | Gas Rate (Mcf/d) |
|----------------|-----------------|------------------|
| | | |

* Recovery from multiple tests



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Dow ning-Nelson Oil Co., Inc.

26-11S-23W Trego,KS

PO Box 1019
Hays, KS 67601

Tammy Riedel #1-26

Job Ticket: 64483

DST#: 3

ATTN: Al Dow ning

Test Start: 2019.07.20 @ 19:50:07

Tool Information

| | | | | |
|----------------------------|--------------------|-----------------------|----------------------------|------------------------------------|
| Drill Pipe: | Length: 3645.00 ft | Diameter: 3.82 inches | Volume: 51.67 bbl | Tool Weight: 2000.00 lb |
| Heavy Wt. Pipe: | Length: ft | Diameter: inches | Volume: - bbl | Weight set on Packer: 25000.00 lb |
| Drill Collar: | Length: 32.00 ft | Diameter: 2.25 inches | Volume: 0.16 bbl | Weight to Pull Loose: 60000.00 lb |
| | | | <u>Total Volume: - bbl</u> | Tool Chased 0.00 ft |
| Drill Pipe Above KB: | 12.00 ft | | | String Weight: Initial 55000.00 lb |
| Depth to Top Packer: | 3685.00 ft | | | Final 57000.00 lb |
| Depth to Bottom Packer: | ft | | | |
| Interval betw een Packers: | 19.00 ft | | | |
| Tool Length: | 39.00 ft | | | |
| Number of Packers: | 2 | Diameter: 6.75 inches | | |

Tool Comments:

Tool Description

| Tool Description | Length (ft) | Serial No. | Position | Depth (ft) | Accum. Lengths |
|---------------------------|--------------|------------|----------|------------|-------------------------------|
| Change Over Sub | 1.00 | | | 3666.00 | |
| Shut In Tool | 5.00 | | | 3671.00 | |
| Hydraulic tool | 5.00 | | | 3676.00 | |
| Packer | 5.00 | | | 3681.00 | 20.00 Bottom Of Top Packer |
| Packer | 4.00 | | | 3685.00 | |
| Stubb | 1.00 | | | 3686.00 | |
| Recorder | 0.00 | 6771 | Inside | 3686.00 | |
| Recorder | 0.00 | 8700 | Outside | 3686.00 | |
| Perforations | 15.00 | | | 3701.00 | |
| Bullnose | 3.00 | | | 3704.00 | 19.00 Bottom Packers & Anchor |
| Total Tool Length: | 39.00 | | | | |



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Dow ning-Nelson Oil Co., Inc.

26-11S-23W Trego,KS

PO Box 1019
Hays, KS 67601

Tammy Riedel #1-26

Job Ticket: 64483

DST#: 3

ATTN: Al Dow ning

Test Start: 2019.07.20 @ 19:50:07

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

55000 ppm

Viscosity: 52.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.98 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 4000.00 ppm

Filter Cake: inches

Recovery Information

Recovery Table

| Length ft | Description | Volume bbbl |
|--------------|---------------|----------------|
| 50.00 | MW, 25%M 75%W | 0.413 |

Total Length: 50.00 ft Total Volume: 0.413 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: RW: .12@70deg

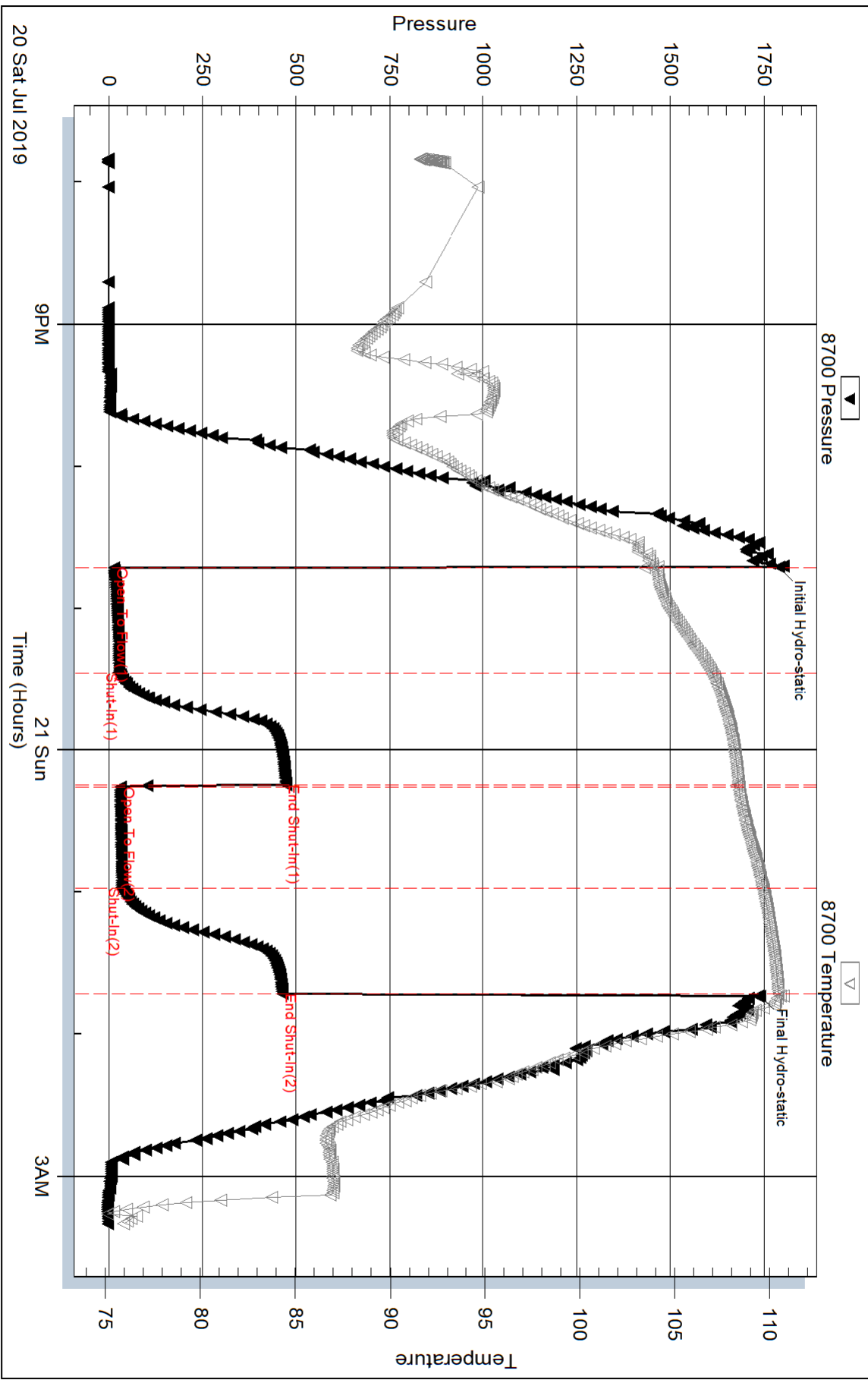
Serial #: 8700

Outside Dow nng-Nelson Oil Co., Inc.

Tammy Riedel #1-26

DST Test Number: 3

Pressure vs. Time



Trilobite Testing, Inc

Ref. No: 64483

Printed: 2019.07.23 @ 11:12:33

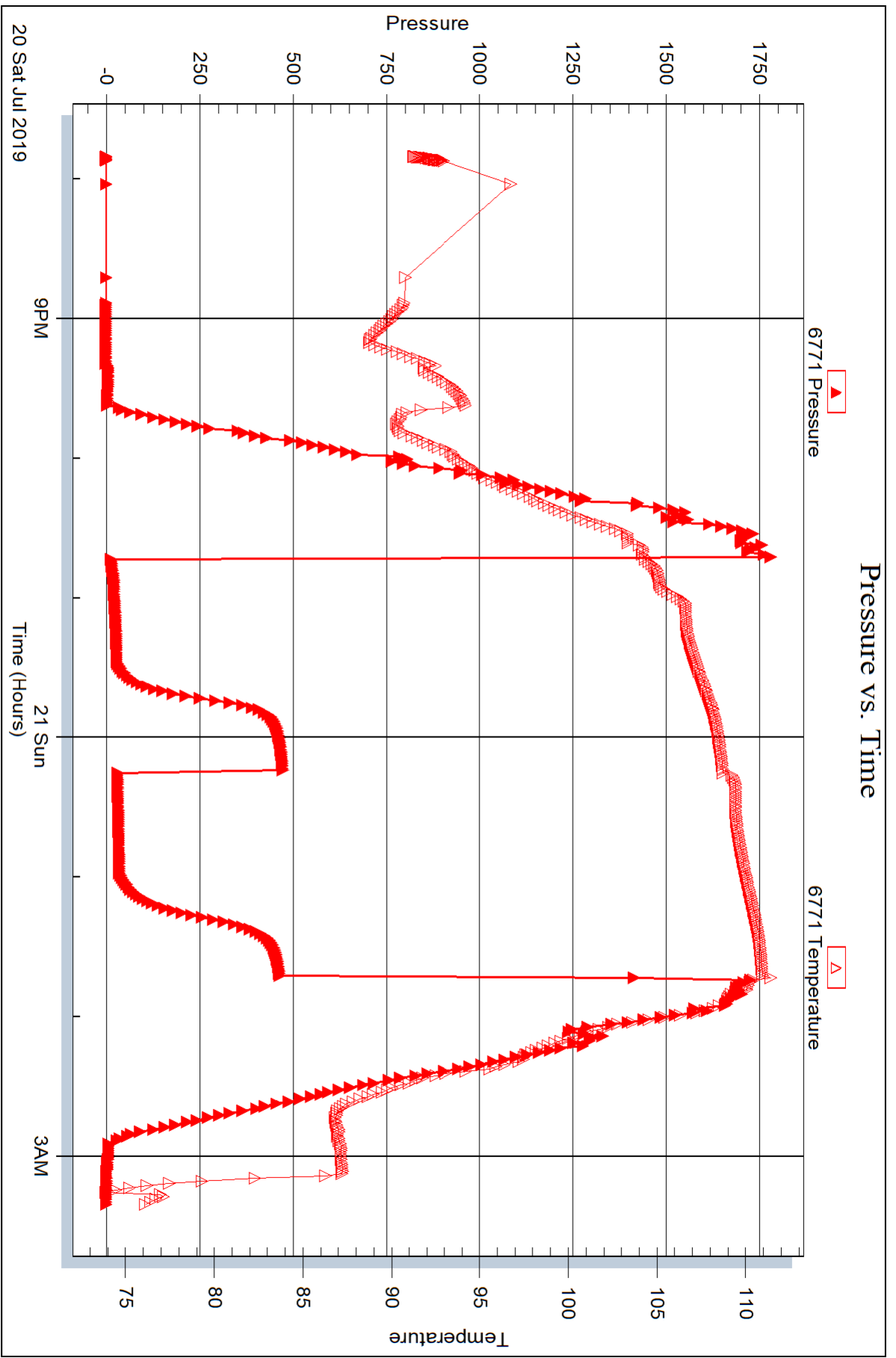
Serial #: 6771

Inside

Dow n/mg-Nelson Oil Co., Inc.

Tammy Riedel #1-26

DST Test Number: 3



Trilobite Testing, Inc

Ref. No: 64483

Printed: 2019.07.23 @ 11:12:34



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 64481

Well Name & No. Jammy Riedel #1-26 Test No. 1 Date 7/19/19
 Company Downing-Nelson Oil Co., Inc Elevation 2380 KB 2388 GL
 Address PO Box 1019 Hays KS 67601
 Co. Rep / Geo. Al Downing Rig Discovery 4
 Location: Sec. 26 Twp 11 S Rge. 23 W Co. Trego State KS

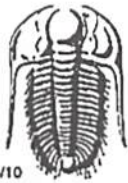
Interval Tested 3602-3660 Zone Tested Toronto + LKC "A"
 Anchor Length 58' Drill Pipe Run 3582 Mud Wt. 8.7
 Top Packer Depth 3597 Drill Collars Run 32 Vis 53
 Bottom Packer Depth 3602 Wt. Pipe Run _____ WL 8.0
 Total Depth 3660 Chlorides 4,000 ppm System LCM 2 1/2"
 Blow Description IF - slowly built to 2.46"
FSI - No blow
FF - slowly built to 5.45"
FSI - No blow

| Rec | Feet of | %gas | %oil | %water | %mud |
|-----------|--------------|------|-----------|--------|-----------|
| <u>63</u> | <u>HOCXA</u> | | <u>45</u> | | <u>55</u> |
| Rec | Feet of | %gas | %oil | %water | %mud |
| Rec | Feet of | %gas | %oil | %water | %mud |
| Rec | Feet of | %gas | %oil | %water | %mud |

Rec Total 63' BHT 108° Gravity 28 API RW _____ @ _____ ° F Chlorides _____ ppm

| | | |
|-------------------------------------|--|--|
| (A) Initial Hydrostatic <u>1744</u> | <input checked="" type="checkbox"/> Test <u>1200</u> | T-On Location <u>1545</u> |
| (B) First Initial Flow <u>28</u> | <input type="checkbox"/> Jars _____ | T-Started <u>1611</u> |
| (C) First Final Flow <u>33</u> | <input type="checkbox"/> Safety Joint _____ | T-Open <u>1907</u> |
| (D) Initial Shut-In <u>475</u> | <input type="checkbox"/> Circ Sub _____ | T-Pulled <u>2137</u> |
| (E) Second Initial Flow <u>32</u> | <input type="checkbox"/> Hourly Standby _____ | T-Out <u>2336</u> |
| (F) Second Final Flow <u>38</u> | <input checked="" type="checkbox"/> Mileage <u>84RT</u> 84 | Comments _____ |
| (G) Final Shut-In <u>463</u> | <input type="checkbox"/> Sampler _____ | _____ |
| (H) Final Hydrostatic <u>1692</u> | <input type="checkbox"/> Straddle _____ | <input type="checkbox"/> Ruined Shale Packer _____ |
| Initial Open <u>30</u> | <input type="checkbox"/> Shale Packer _____ | <input type="checkbox"/> Ruined Packer _____ |
| Initial Shut-In <u>30</u> | <input type="checkbox"/> Extra Packer _____ | <input type="checkbox"/> Extra Copies _____ |
| Final Flow <u>45</u> | <input type="checkbox"/> Extra Recorder _____ | Sub Total <u>0</u> |
| Final Shut-In <u>45</u> | <input type="checkbox"/> Day Standby _____ | Total <u>1284</u> |
| | <input type="checkbox"/> Accessibility _____ | MP/DST Disc't _____ |
| | Sub Total <u>1284</u> | |

Approved By _____ Our Representative Brannan Longdale
 Trilobite Testing Inc. shall not be liable for damaged of any kind of the property or personnel of the one for whom a test is made, or for any loss suffered or sustained, directly or indirectly, through the use of its equipment, or its statements or opinion concerning the results of any test, tools lost or damaged in the hole shall be paid for at cost by the party for whom the test is made.



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. **64482**

Well Name & No. Tammy Riedel #1-26 Test No. 2 Date 7/20/19
 Company Downing-Nelson Oil Co, Inc. Elevation 2380 KB 2388 GL
 Address PO Box 1019 Hays, KS 67601
 Co. Rep / Geo. Al Downing Rig Discovery 4
 Location: Sec. 26 Twp 11 S Rge. 23 W Co. Trego State KS

Interval Tested 3664-3686 Zone Tested LKC "C"
 Anchor Length 22' Drill Pipe Run 3614 Mud Wt. 8.8
 Top Packer Depth 3659 Drill Collars Run 32 Vis 53
 Bottom Packer Depth 3664 Wt. Pipe Run _____ WL 8.0
 Total Depth 3686 Chlorides 4000 ppm System LCM 2 1/2"

Blow Description IF - BOB 7mins. Built to 30.10"
ISI - Slowly built to 1.76"
FF - BOB 9mins. Built to 27.29"
FSTI - Slowly built to 3.01"

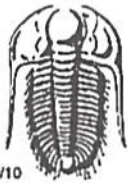
| Rec | Feet of | %gas | %oil | %water | %mud |
|------------|-----------------|-----------|-----------|-----------|------|
| <u>250</u> | <u>MW</u> | | <u>90</u> | <u>10</u> | |
| <u>30</u> | <u>CCO</u> | <u>15</u> | <u>85</u> | | |
| | <u>410' WIP</u> | | | | |
| | | | | | |
| | | | | | |

Rec Total 280' BHT 114° Gravity 33 API RW 07 @ 98 °F Chlorides 65,000 ppm
 (A) Initial Hydrostatic 1765 Test 1200 T-On Location 0642
 (B) First Initial Flow 25 Jars _____ T-Started 0657
 (C) First Final Flow 96 Safety Joint _____ T-Open 0850
 (D) Initial Shut-In 503 Circ Sub _____ T-Pulled 1120
 (E) Second Initial Flow 102 Hourly Standby _____ T-Out 1318
 (F) Second Final Flow 152 Mileage 84 RT 84 Comments _____
 (G) Final Shut-In 498 Sampler _____
 (H) Final Hydrostatic 1758 Straddle _____ Ruined Shale Packer _____
 Shale Packer _____ Ruined Packer _____
 Extra Packer _____ Extra Copies _____
 Extra Recorder _____ Sub Total 0
 Day Standby _____ Total 1284
 Accessibility _____ MP/DST Disc't _____
 Sub Total 1284

Initial Open 30
 Initial Shut-In 45
 Final Flow 30
 Final Shut-In 45

Approved By _____ Our Representative Braman Lonsdale

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 64483

Well Name & No. Tommy Riedel #1-26 Test No. 3 Date 7/20/19
 Company Downing-Nelson Oil Co, Inc Elevation 2388 KB 2380 GL
 Address PO Box 1019 Hays, KS 67601
 Co. Rep / Geo. Al Downing Rig Discovery 4
 Location: Sec. 26 Twp 11 S Rge. 23 W Co. Trego State KS

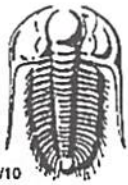
Interval Tested 3685-3704 Zone Tested LKC "D"
 Anchor Length 19' Drill Pipe Run 3645 Mud Wt. 8.8
 Top Packer Depth 3680 Drill Collars Run 37 Vis 52
 Bottom Packer Depth 3685 Wt. Pipe Run --- WL 8.0
 Total Depth 3704 Chlorides 4000 ppm System LCM 2 1/2 #
 Blow Description IF - slowly built to 2.82"
ISF - No blow
FF - Surface blow
FSF - No blow

| Rec | Feet of | %gas | %oil | %water | %mud |
|-----------|-----------|------|------|-----------|-----------|
| <u>50</u> | <u>MW</u> | | | <u>75</u> | <u>25</u> |
| Rec | Feet of | %gas | %oil | %water | %mud |
| Rec | Feet of | %gas | %oil | %water | %mud |
| Rec | Feet of | %gas | %oil | %water | %mud |
| Rec | Feet of | %gas | %oil | %water | %mud |

Rec Total 50' BHT 111° Gravity --- API RW 12 @ 70° F Chlorides 55000 ppm
 (A) Initial Hydrostatic 1790 Test 1200 T-On Location 1935
 (B) First Initial Flow 14 Jars --- T-Started 1950
 (C) First Final Flow 29 Safety Joint --- T-Open 2243
 (D) Initial Shut-In 472 Circ Sub --- T-Pulled 7/21 0143
 (E) Second Initial Flow 31 Hourly Standby --- T-Out 0322
 (F) Second Final Flow 36 Mileage 84RT 84 Comments ---
 (G) Final Shut-In 463 Sampler ---
 (H) Final Hydrostatic 1740 Straddle ---
 Ruined Shale Packer ---
 Ruined Packer ---
 Extra Copies ---
 Initial Open 45 Shale Packer ---
 Initial Shut-In 45 Extra Packer ---
 Final Flow 45 Extra Recorder ---
 Final Shut-In 45 Day Standby ---
 Accessibility ---
 Sub Total 1284 Sub Total 0
 Total 1284 MP/DST Disc't ---

Approved By _____ Our Representative Brannan Lonsdale

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 64484

Well Name & No. Tammy Riedel #1-26 Test No. 4 Date 7/21/19
 Company Downing Nelson Oil Co, Inc. Elevation 2388 KB 2380 GL
 Address 90 Box 1019 Hays, KS 67601
 Co. Rep / Geo. Al Downing Rig Discovery 4
 Location: Sec. 26 Twp 11 S Rge. 23 W Co. Trego State KS

Interval Tested 3705-3756 Zone Tested LKC "E-G"
 Anchor Length 51' Drill Pipe Run 3627 Mud Wt. 8.9
 Top Packer Depth 3700 Drill Collars Run 32 Vis 54
 Bottom Packer Depth 3705 Wt. Pipe Run _____ WL 7.6
 Total Depth 3756 Chlorides 5000 ppm System LCM 2 1/2"

Blow Description IF - BOB 11 mins. Built to 25.88"
IST - slowly built to 1.60"
FF - BOB 17 mins. Built to 25.89"
FST - slowly built to 1.42"

| Rec | Feet of | %gas | %oil | %water | %mud |
|------------|-----------------|-----------|-----------|-----------|-----------|
| <u>380</u> | <u>MMV</u> | | | <u>75</u> | <u>25</u> |
| <u>30</u> | <u>CGO</u> | <u>25</u> | <u>75</u> | | |
| | <u>220' GIP</u> | | | | |
| | | | | | |
| | | | | | |

Rec Total 410' BHT 115° Gravity 33 API RW 12 @ 75° F Chlorides 52,000 ppm

(A) Initial Hydrostatic 1802 Test 1200 T-On Location 1155
 (B) First Initial Flow 24 Jars _____ T-Started 1212
 (C) First Final Flow 135 Safety Joint _____ T-Open 1340
 (D) Initial Shut-In 499 Circ Sub _____ T-Pulled 1640
 (E) Second Initial Flow 139 Hourly Standby _____ T-Out 1850
 (F) Second Final Flow 207 Mileage 84 RT x 2 84+84 Comments Tools loaded
 (G) Final Shut-In 498 Sampler _____ 7/22 @ 2200
 (H) Final Hydrostatic 1748 Straddle _____
 Shale Packer _____
 Extra Packer _____
 Extra Recorder _____
 Day Standby _____
 Accessibility _____

Initial Open 45
 Initial Shut-In 45
 Final Flow 45
 Final Shut-In 45
 Sub Total 1368
 Total 1368
 MP/DST Disc't _____

Approved By _____ Our Representative Brannan Lonsdale

Trilobite Testing Inc. shall not be liable for damaged of any kind of the property or personnel of the one for whom a test is made, or for any loss suffered or sustained, directly or indirectly, through the use of its equipment, or its statements or opinion concerning the results of any test, tools lost or damaged in the hole shall be paid for at cost by the party for whom the test is made.