

HALLIBURTON

iCem[®] Service

TERRA ENERGY PARTNERS

United States of America, COLORADO

For: Terra

Date: Wednesday, August 07, 2019

RWF 43-7 Production PJR

API# 05-045-24029-00

Sincerely,

Grand Junction Cement Engineering

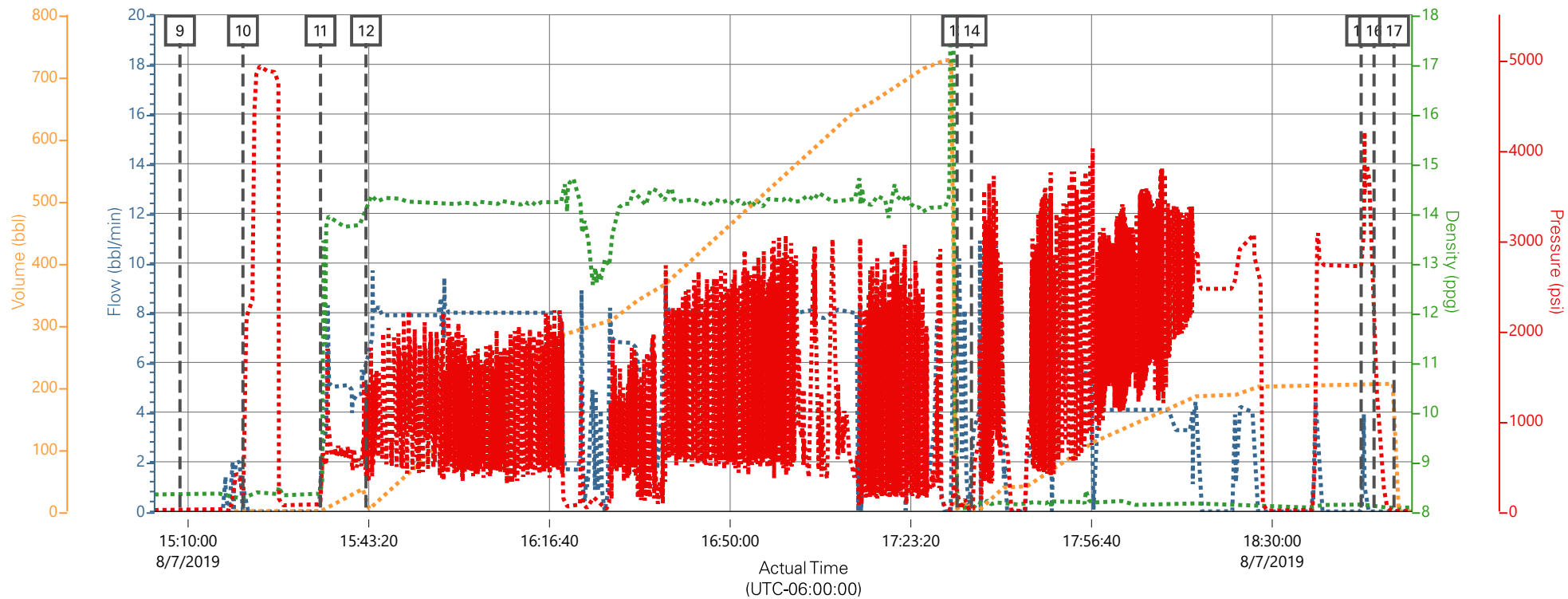
2.0 Real-Time Job Summary

2.1 Job Event Log

| Type | Seq. No. | Graph Label | Date | Time | Source | Comb Pump Rate (bbl/min) | DH Density (ppg) | Pump Stg Tot (bbl) | DS Pump Press (psi) | Comments |
|-------|----------|---------------------------------------|----------|----------|--------|-----------------------------|---------------------|-----------------------|------------------------|--|
| Event | 1 | Call Out | 8/7/2019 | 02:00:00 | USER | | | | | REQUESTED ON LOCATION 8/7/19 @ 08:00 |
| Event | 2 | Depart Yard Safety Meeting | 8/7/2019 | 04:55:00 | USER | | | | | JSA COMPLETED |
| Event | 3 | Crew Leave Shop | 8/7/2019 | 05:00:00 | USER | | | | | |
| Event | 4 | Arrive At Loc | 8/7/2019 | 06:30:00 | USER | | | | | RIG RUNNING CASING |
| Event | 5 | Assessment Of Location Safety Meeting | 8/7/2019 | 06:45:00 | USER | | | | | JSA COMPLETED |
| Event | 6 | Pre-Rig Up Safety Meeting | 8/7/2019 | 09:55:00 | USER | | | | | JSA COMPLETED |
| Event | 7 | Rig-Up Equipment | 8/7/2019 | 10:00:00 | USER | | | | | |
| Event | 8 | Pre-Job Safety Meeting | 8/7/2019 | 14:30:00 | USER | | | | | JSA COMPLETED, PRESSURIZED MUD SCALES CALIBRATED TO FRESH WATER |
| Event | 9 | Start Job | 8/7/2019 | 15:08:30 | COM4 | | | | | 4 1/2"-11.6# CASING IN 8 3/4" OH, TD 9736', TP 9731', ST 30', MUD 13.1 PPG, WATER TEMP 55, PH 7, CHLORIDES 0 |
| Event | 10 | Test Lines | 8/7/2019 | 15:20:07 | COM4 | | | | 5000.00 | TEST LINES TO 5000 PSI |
| Event | 11 | Pump Spacer 1 | 8/7/2019 | 15:34:26 | COM4 | 5.00 | 13.80 | 40.00 | 630.00 | 40 BBLS TUNED SPACER @ 13.8 PPG |
| Event | 12 | Pump Lead Cement | 8/7/2019 | 15:42:49 | COM4 | 8.00 | 14.20 | 539.20 | 700.00 | 539.2 BBLS PRIMARY CEMENT, 1750 SKS @ 14.2 PPG / 1.73 YLD / 7.77 GAL/SK |
| Event | 13 | Drop Top Plug | 8/7/2019 | 17:31:52 | COM4 | | | | | PLUG AWAY |

| | | | | | | | | | | |
|-------|----|-----------------------------|----------|----------|------|------|------|--------|---------|--|
| Event | 14 | Pump Displacement | 8/7/2019 | 17:34:31 | COM4 | 8.00 | 8.40 | 150.60 | 2800.00 | 150.4 BBLS KCL WATER DISPLACEMENT WITH 3# BE-6 AND 1 GALLONS MMCR |
| Event | 15 | Bump Plug | 8/7/2019 | 18:46:24 | COM4 | 4.00 | 8.40 | 150.60 | 2800.00 | PLUG BUMPED AT CALCULATED DISPLACEMENT ACCORDING TO GALLONS COUNTER. FINAL LIFT PRESSURE 2800 PSI @ 4 BBL/MIN, BROUGHT TO 3800 PSI |
| Event | 16 | Check Floats | 8/7/2019 | 18:48:47 | USER | | | | | FLOATS HELD, 1 BBL BACK TO PUMP |
| Event | 17 | End Job | 8/7/2019 | 18:52:28 | COM4 | | | | | PIPE WAS RECIPRICATED, PARTIAL RETURNS THROUGHOUT, NO SPACER TO SURFACE, 3 ADD HOURS CHARGED |
| Event | 18 | Pre-Rig Down Safety Meeting | 8/7/2019 | 18:55:00 | USER | | | | | JSA COMPLETED |
| Event | 19 | Rig-Down Equipment | 8/7/2019 | 19:00:00 | USER | | | | | |
| Event | 20 | Pre-Convoy Safety Meeting | 8/7/2019 | 19:55:00 | USER | | | | | JSA COMPLETED |
| Event | 21 | Crew Leave Location | 8/7/2019 | 20:00:00 | USER | | | | | THANK YOU FOR CHOOSING HALLIBURTON CEMENTING OF GRAND JUNCTION, CO - RYAN MARTIN AND CREW |

TERRA - FEDERAL RWF 43-7 - 4 1/2 PRODUCTION CASING



..... Comb Pump Rate (bbl/min) 10.1
 DH Density (ppg) 8.12
 DS Pump Press (psi) -1
 Pump Stg Tot (bbl) 10

| Description | Actual Time (UTC-06:00:00) | Comb Pump Rate (bbl/min) | DH Density (ppg) | DS Pump Press (psi) | Pump Stg Tot (bbl) |
|----------------------|----------------------------|--------------------------|------------------|---------------------|--------------------|
| 9 Start Job | 15:08:30 | 0.00 | 8.35 | 17.00 | 0.00 |
| 10 Test Lines | 15:20:07 | 0.00 | 8.25 | 183.00 | 3.20 |
| 11 Pump Spacer 1 | 15:34:26 | 0.00 | 8.35 | 73.00 | 0.00 |
| 12 Pump Lead Cement | 15:42:49 | 5.80 | 14.18 | 522.00 | 0.00 |
| 13 Drop Top Plug | 17:31:52 | 7.10 | 8.37 | 211.00 | 4.20 |
| 14 Pump Displacement | 17:34:31 | 0.00 | -0.26 | 4.00 | 0.00 |
| 15 Bump Plug | 18:46:24 | 0.00 | 8.13 | 2708.00 | 204.00 |
| 16 Check Floats | 18:48:47 | 0.00 | 8.13 | 2084.00 | 205.60 |
| 17 End Job | 18:52:28 | 0.00 | 8.08 | 4.00 | 205.60 |

▼ **HALLIBURTON** | iCem® Service

Created: 2019-08-07 11:25:06, (UTC-06:00), Version: 4.5.139

Edit

Customer: TERRA ENERGY PARTNERS
Representative: DARRELL LEATHERMAN

Job Date: 8/7/2019
Sales Order #: 905886999

Well: FEDERAL RWF 43-7
ELITE #8: WES GOWEN / RYAN MARTIN

TERRA - FEDERAL RWF 43-7 - 4 1/2 PRODUCTION CASING



Job Information

| | | | | | |
|-----------------------|-----------------------|-----------------|-------------------|-------------------|----------------|
| Request/Slurry | 2574507/3 | Rig Name | H&P 318 | Date | 02/AUG/2019 |
| Submitted By | Patrick Ealey | Job Type | Production Casing | Bulk Plant | Grand Junction |
| Customer | Terra Energy Partners | Location | Garfield | Well | RWF 43-7 |

Well Information

| | | | | | |
|--------------------------|----------|------------------|---------|-------------|---------------|
| Casing/Liner Size | 4.5 in | Depth MD | 9765 ft | BHST | 112°C / 234°F |
| Hole Size | 8.75 in | Depth TVD | 9083 ft | BHCT | 73°C / 164°F |
| Pressure | 5658 psi | | | | |

Drilling Fluid Information

| | | |
|--------------------------|-----------------------|----------------|
| Mud Supplier Name | Mud Trade Name | Density |
|--------------------------|-----------------------|----------------|

Cement Information - Primary Design

| <u>Conc</u> | <u>UOM</u> | <u>Cement/Additive</u> | <u>MP</u> | <u>Sample Type</u> | <u>Sample Date</u> | <u>Lot No.</u> | Cement Properties | | |
|-------------|------------|------------------------|-----------|--------------------|--------------------|----------------|--------------------------|-------------|----------|
| | | | | | | | Slurry Density | 14.2 | lbm/gal |
| | | | | | | | Slurry Yield | 1.73 | ft3/sack |
| | | | | | | | Water Requirement | 7.77 | gal/sack |
| | | | | | | | Total Mix Fluid | 7.77 | gal/sack |
| | | | | | | | Water Source | Fresh Water | |
| | | | | | | | Water Chloride | | |

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Operation Test Results Request ID 2574507/3

Thickening Time - ON-OFF-ON, Request Test ID:36726594

05/AUG/2019

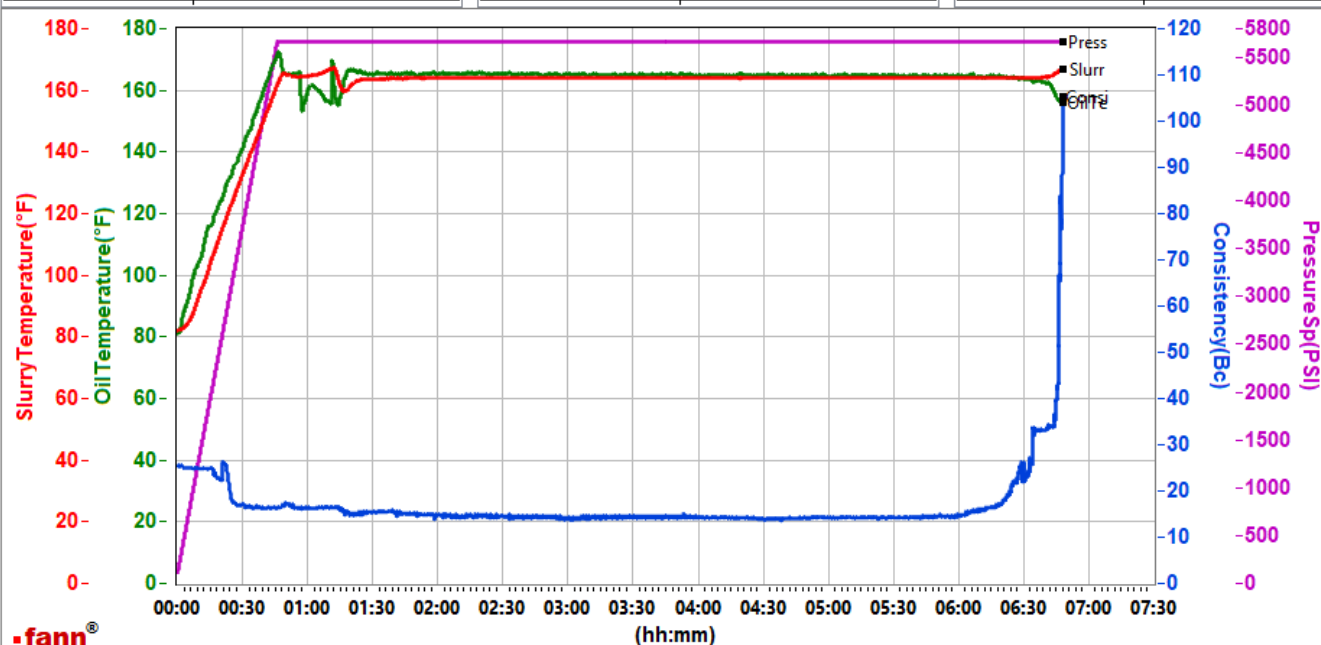
| Test Temp (degF) | Pressure (psi) | Reached in (min) | 30 Bc (hh:mm) | 50 Bc (hh:mm) | 70 Bc (hh:mm) | 100 Bc (hh:mm) | Start Bc | Stirring before stop (mins) | Static Period (min) | Peak reading (BC) |
|------------------|----------------|------------------|---------------|---------------|---------------|----------------|----------|-----------------------------|---------------------|-------------------|
| 164 | 5658 | 46 | 6:33 | 6:46 | 6:46 | 6:48 | 24 | 56 | 15 | 16 |

GRAND JUNCTION

| Fields | Values |
|--------------|-------------------------|
| Project Name | GJ2574507-3 Terra Prodi |
| SW Version | 1.0 |
| Test ID | 36726594-TT |
| Request ID | 2574507-3 |
| Tested by | DEBA |
| Customer | TERRA ENERGY PARTN |
| Well No | RWF 43-7 |

| Fields | Values |
|-------------------|-----------------------|
| Rig | H&P 318 |
| Casing/Liner Size | 4.5 INCH |
| Job Type | PRODUCTION CASING |
| Cement Weight | MOUNTAIN G |
| Comments | Standard |
| Date Time | 8/4/2019 04:47:27.225 |
| Temp. Units | degF |

| Events | Results |
|--------|---------|
| 30 Bc | 6:33 |
| 50 Bc | 6:46 |
| 70 Bc | 6:46 |
| 100 Bc | 6:48 |
| | |
| | |
| | |



Data File C:\Users\HX25273\Desktop\HPHT Graphs\GJ2574507-3 TERRA PRODUCTION PRIMARY BULK.tdms

Comments Standard

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Thickening Time - ON-OFF-ON, Request Test ID:36725208

04/AUG/2019

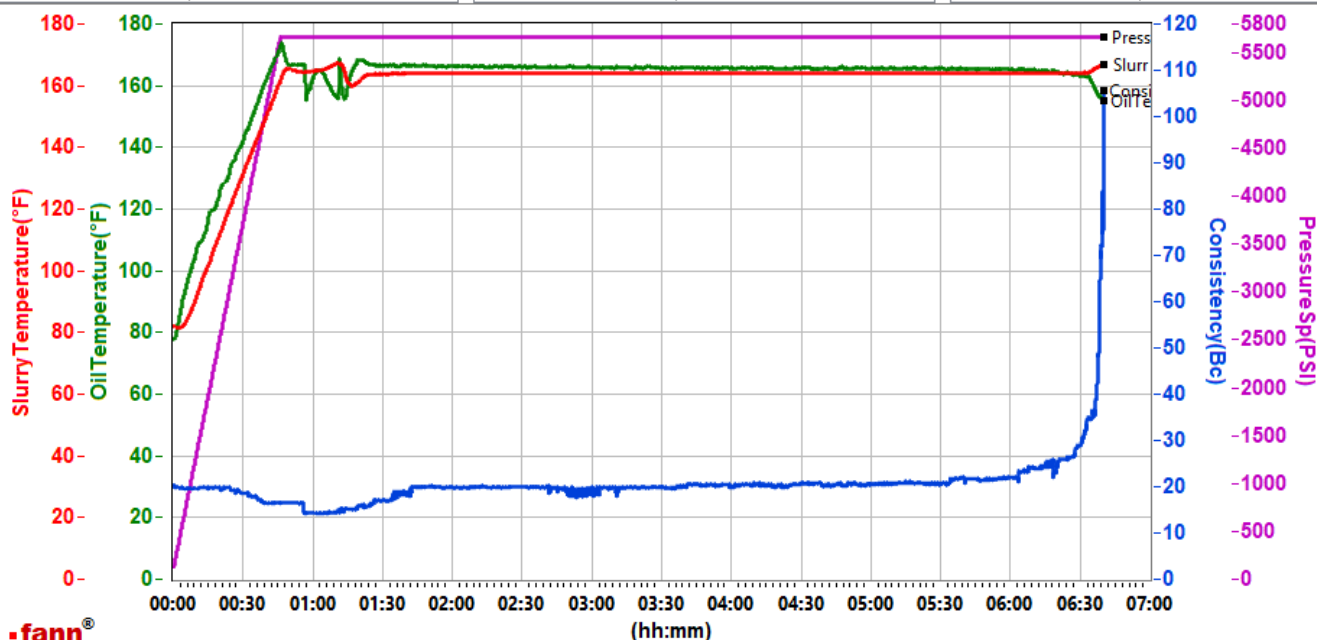
| Test Temp (degF) | Pressure (psi) | Reached in (min) | 30 Bc (hh:mm) | 50 Bc (hh:mm) | 70 Bc (hh:mm) | 100 Bc (hh:mm) | Start Bc | Stirring before stop (mins) | Static Period (min) | Peak reading (BC) |
|------------------|----------------|------------------|---------------|---------------|---------------|----------------|----------|-----------------------------|---------------------|-------------------|
| 164 | 5658 | 66 | 6:31 | 6:38 | 6:40 | 6:40 | 21 | 56 | 15 | 15 |

GRAND JUNCTION

| Fields | Values |
|--------------|-------------------------|
| Project Name | GJ2574507-2 Terra Produ |
| SW Version | 1.0 |
| Test ID | 36725208-TT |
| Request ID | 2574507-2 |
| Tested by | JASON |
| Customer | TERRA ENERGY PARTN |
| Well No | RWF 43-7 |

| Fields | Values |
|-------------------|-----------------------|
| Rig | H&P 318 |
| Casing/Liner Size | 4.5 INCH |
| Job Type | PRODUCTION CASING |
| Cement Weight | MOUNTAIN G |
| Comments | Standard |
| Date Time | 8/3/2019 10:44:31.730 |
| Temp. Units | degF |

| Events | Results |
|--------|---------|
| 30 Bc | 6:31 |
| 50 Bc | 6:38 |
| 70 Bc | 6:40 |
| 100 Bc | 6:40 |
| | |
| | |
| | |



Data File C:\Users\HX25273\Desktop\HPHT Graphs\GJ2574507-2 TERRA PRODUCTION PRIMARY BULK.tdms

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Operation Test Results Request ID 2574507/1

Thickening Time - ON-OFF-ON, Request Test ID:36722099

03/AUG/2019

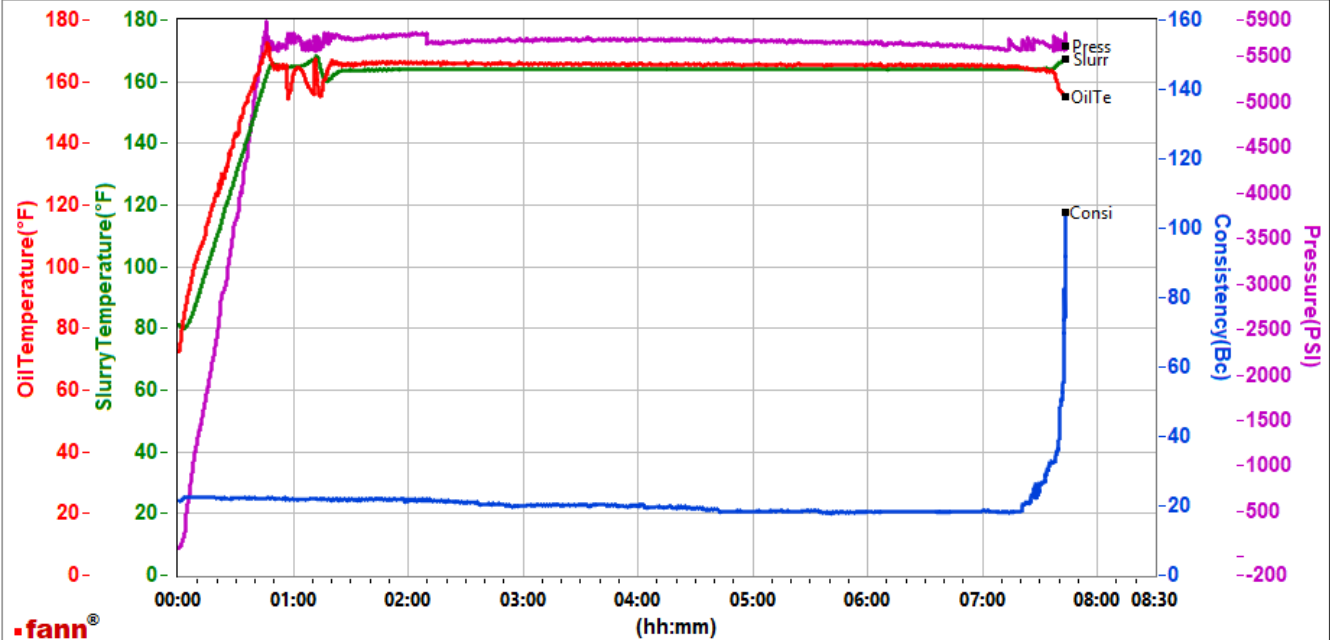
| Test Temp (degF) | Pressure (psi) | Reached in (min) | 30 Bc (hh:mm) | 50 Bc (hh:mm) | 70 Bc (hh:mm) | 100 Bc (hh:mm) | Start Bc | Stirring before stop (mins) | Static Period (min) | Peak reading (BC) |
|------------------|----------------|------------------|---------------|---------------|---------------|----------------|----------|-----------------------------|---------------------|-------------------|
| 164 | 5658 | 46 | 7:33 | 7:40 | 7:42 | 7:43 | 22 | 56 | 15 | 22 |

Grand Junction

| Fields | Values |
|--------------|----------------------|
| Project Name | GJ2574507-1 TERRA PR |
| SW Version | 1.0 |
| Test ID | 36722099-TT |
| Request ID | 2574507-1 |
| Tested by | JASON |
| Customer | TERRA ENERGY PARTN |
| Well No | RWF 43-7 |

| Fields | Values |
|-------------------|-----------------------|
| Rig | H&P 318 |
| Casing/Liner Size | 4.5 INCH |
| Job Type | PRODUCTION CASING |
| Cement Weight | MOUNTAIN G |
| Comments | Standard |
| Date Time | 8/2/2019 12:28:00.740 |
| Temp. Units | degF |

| Events | Results |
|-----------|---------|
| 30.00 Bc | 07h:33m |
| 40.00 Bc | 07h:40m |
| 50.00 Bc | 07h:40m |
| 70.00 Bc | 07h:42m |
| 100.00 Bc | 07h:43m |
| | |
| | |



Data File N:\01 Test Graphs\GJ2574507-1 TERRA PRODUCTION LEAD BULK.tdms

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