



# **Terra Energy Partners, LLC**

## **LONG STRING POST JOB REPORT**

Leverich SR 511-18 05-045-24573  
S:13 T:7S R:94W Garfield CO

Call Sheet #: 88351  
Proposal #: 71076



**LONG STRING Post Job Report**

**Attention:** Mr. Dustin Childers | (936) 524-8828 | dchilders@terraep.com  
Terra Energy Partners, LLC  
4828 Loop Central Dr., Suite 900 | Houston, TX 77081

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Dear Mr. Dustin Childers,

Thank you for the opportunity to provide cementing services on this well. American Cementing strives to achieve complete customer satisfaction. If you have any questions regarding the services or data provided, please contact American Cementing at any time.

Sincerely,

**Lyndon Chandarjit**

Field Engineer II | (281) 690-3840 | lyndon.chandarjit@americacementing.com

**Field Office**      28730 US-6, Rifle, CO 81650  
Phone: (970) 657-1187

## Job Details & Summary

### Geometry

| Type      | Function | OD (in) | ID (in) | Weight (lb/ft) | Thread | Top (ft) | Bottom (ft) | Excess (%) |
|-----------|----------|---------|---------|----------------|--------|----------|-------------|------------|
| Casing    | Outer    | 9.625   | 8.921   | 36             | n/a    | 0        | 1178        | 0          |
| Open Hole | Outer    | n/a     | 8.75    | n/a            | n/a    | 1178     | 7741        | 85         |
| Open Hole | Outer    | n/a     | 8.75    | n/a            | n/a    | 7741     | 10962       | 50         |
| Casing    | Inner    | 4.5     | 4       | 11.6           | n/a    | 0        | 10962       | 0          |

### Equipment / People

| Unit Type            | Unit    | Power Unit | Employee #1        |
|----------------------|---------|------------|--------------------|
| Field Storage Silo   | FSS-438 |            |                    |
| Field Storage Silo   | FSS-470 |            |                    |
| Cement Trailer Float | CTF-263 | TRC-201    | Lynn Wall          |
| Light Duty Vehicles  | LDV-088 |            | Leopoldo Serna     |
| Light Duty Vehicles  | LDV-092 |            | Collin Woronovitch |
| Cement Pump Float    | CPF-136 | TRH-964    | James Hansen       |

### Timing

| Event           | Date/Time        |
|-----------------|------------------|
| ERTS            | 09/01/2023 01:00 |
| Call Out        | 8/31/2023 13:00  |
| Depart Facility | 8/31/2023 17:00  |
| On Location     | 8/31/2023 19:00  |
| Rig Up Iron     | 9/1/2023 00:30   |
| Job Started     | 9/1/2023 02:35   |
| Job Completed   | 9/1/2023 05:11   |
| Rig Down Iron   | 9/1/2023 05:30   |
| Depart Location | 9/1/2023 07:30   |

### General Job Information

| Metrics                 | Value      |
|-------------------------|------------|
| Well Fluid Density      | 9.1 lb/gal |
| Well Fluid Type         | WBM        |
| Rig Circulation Vol     | 642 bbls   |
| Rig Circulation Time    | 1.5 hours  |
| Calculated Displacement | 169 bbls   |
| Actual Displacement     | 169 bbls   |
| Total Spacer to Surface | 0 bbls     |
| Total CMT to Surface    | 0 bbls     |
| Well Topped Out         | N/A        |
| Top Out Volume          | N/A bbls   |

### Job Details

| Metrics                        | Value      |
|--------------------------------|------------|
| Well Full Prior to Job         | Yes        |
| Well Fluid Density Into Well   | 9.1 lb/gal |
| Well Fluid Density Out of Well | 9.1 lb/gal |

### Job Details (cont.)

| Metrics | Value  |
|---------|--------|
| BHCT    | 173 °F |
| BHST    | 230 °F |

### Water Analysis

| Metrics          | Value            | Recommended |
|------------------|------------------|-------------|
| Water Source     | Upright Rig Tank |             |
| Temperature      | 65 °F            | 50-80 °F    |
| pH Level         | 7                | 5.5-8.5     |
| Chlorides        | 400 mg/L         | 0-3000 mg/L |
| Total Alkalinity | 200              | 0-1000      |
| Total Hardness   | 180 mg/L         | 0-500 mg/L  |
| Carbonates       | N/A mg/L         | 0-100 mg/L  |
| Sulfates         | 220 mg/L         | 0-1500 mg/L |
| Potassium        | 220 mg/L         | 0-3000 mg/L |
| Iron             | 0 mg/L           | 0-300 mg/L  |

### Circulation

| Lost Circulation Experienced | Losses into Spacer | Losses into Cement | Losses into Displacement |
|------------------------------|--------------------|--------------------|--------------------------|
| Yes                          | 0                  | 0                  | 0                        |

#### Circulation Details

NO RETURNS BEFORE JOB, NO RETURNS THROUGHOUT CEMENT, NO RETURNS AT START OF DISPLACEMENT. CAUGHT RETURNS @ 125 BBLS DISPLACED. RETURNS UNTIL END OF JOB

### Job Execution Information

| Fluid | Product      | Function          | Density (lb/gal) | Yield (ft <sup>3</sup> /sk) | Water Rq. (gal/sk) | Water Rq. (gal/bbl) | Volume (sks) | Volume (bbl) | Designed Top (ft) |
|-------|--------------|-------------------|------------------|-----------------------------|--------------------|---------------------|--------------|--------------|-------------------|
| 1     | Water        | Flush             | 8.34             |                             |                    | 42.00               |              | 10.00        | 6044              |
| 2     | Mud Flush    | Flush             | 8.45             |                             |                    | 40.86               |              | 20.00        | 6143              |
| 3     | Water        | Flush             | 8.34             |                             |                    | 42.00               |              | 10.00        | 6341              |
| 4     | Lead         | Lead              | 12.50            | 2.21                        | 12.30              |                     | 335.00       | 131.74       | 6440              |
| 5     | Tail         | Tail              | 13.00            | 2.05                        | 10.26              |                     | 786.00       | 286.69       | 7741              |
| 6     | Displacement | DisplacementFinal | 8.34             |                             |                    | 42.00               |              | 169.00       | 0                 |

### Job Fluid Details

| Fluid | Type  | Fluid     | Product            | Function        | Conc.  | Uom     |
|-------|-------|-----------|--------------------|-----------------|--------|---------|
| 2     | Flush | Mud Flush | SAPP               | Surfactant      | 10.00  | lb/bbl  |
| 2     | Flush | Mud Flush | SS-201             | Surfactant      | 0.50   | gal/bbl |
| 4     | Lead  | Lead      | ASTM TYPE IL       | Cement          | 100.00 | %       |
| 4     | Lead  | Lead      | A-2                | Accelerator     | 0.20   | %BWOB   |
| 4     | Lead  | Lead      | FL-66              | FluidLoss       | 0.30   | %BWOB   |
| 4     | Lead  | Lead      | FP-24              | Defoamer        | 0.30   | %BWOB   |
| 4     | Lead  | Lead      | GW-86              | Viscosifier     | 0.10   | %BWOB   |
| 4     | Lead  | Lead      | R-3                | Retarder        | 0.50   | %BWOB   |
| 4     | Lead  | Lead      | R-7C               | Retarder        | 0.10   | %BWOB   |
| 4     | Lead  | Lead      | STATIC FREE        | Other           | 0.01   | lb/sk   |
| 4     | Lead  | Lead      | XCem-1009          | Extender        | 10.00  | lb/sk   |
| 5     | Tail  | Tail      | CLASS G            | Cement          | 50.00  | %       |
| 5     | Tail  | Tail      | FLY ASH (POZZOLAN) | Extender        | 50.00  | %       |
| 5     | Tail  | Tail      | BENTONITE          | Viscosifier     | 6.00   | %BWOB   |
| 5     | Tail  | Tail      | FL-66              | FluidLoss       | 0.40   | %BWOB   |
| 5     | Tail  | Tail      | FP-24              | Defoamer        | 0.30   | %BWOB   |
| 5     | Tail  | Tail      | GW-86              | Viscosifier     | 0.10   | %BWOB   |
| 5     | Tail  | Tail      | IntegraSeal PHENO  | LostCirculation | 0.50   | lb/sk   |



| Fluid | Type | Fluid | Product          | Function              | Conc. | Uom   |
|-------|------|-------|------------------|-----------------------|-------|-------|
| 5     | Tail | Tail  | IntegraSeal POLI | LostCirculation       | 0.25  | lb/sk |
| 5     | Tail | Tail  | S-8              | StrengthRetrogression | 20.00 | %BWOB |
| 5     | Tail | Tail  | XCem-1009        | Extender              | 6.00  | lb/sk |
| 5     | Tail | Tail  | XCem-916         | Retarder              | 0.40  | %BWOB |

## Job Logs

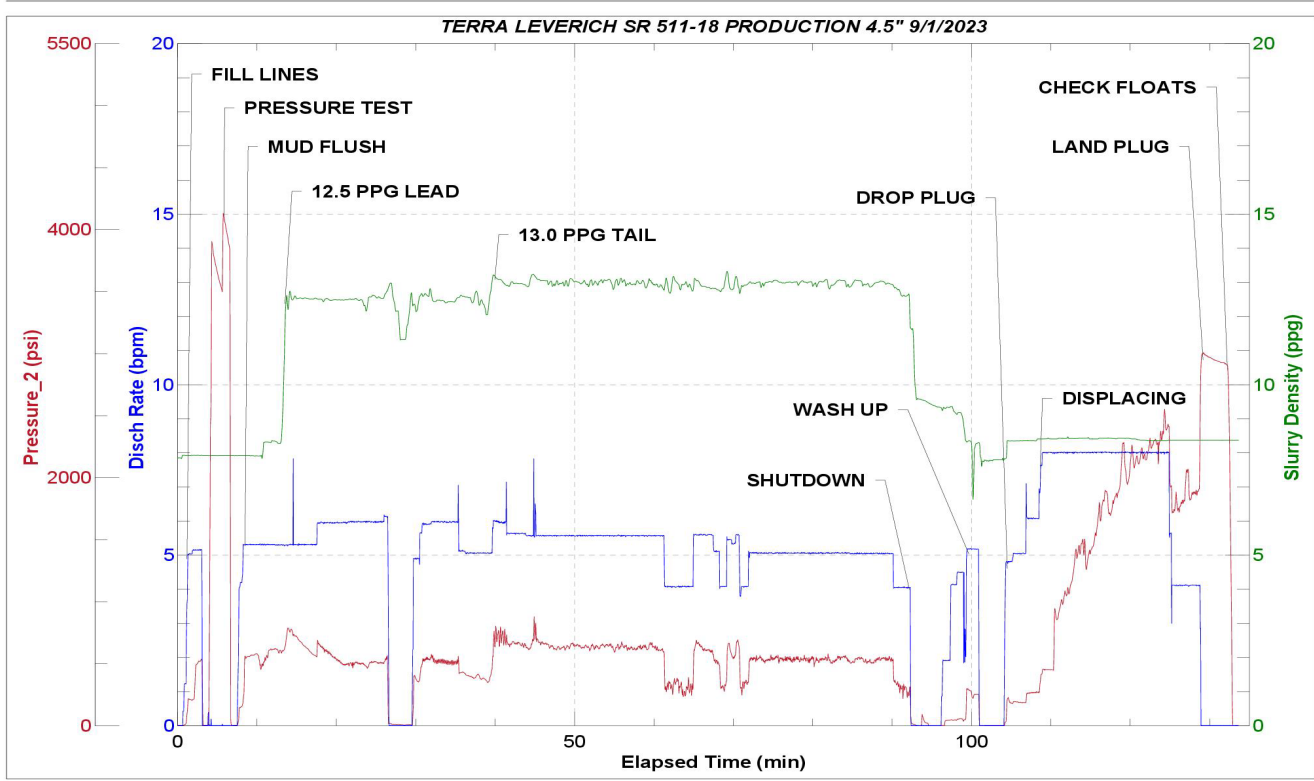
| Line | Event                 | Date (MM/DD/YY) | Time (HH:MM) | Density (lb/gal) | Pump Rate (bpm) | Pump Volume (bbls) | Pipe Pressure (psi) | Comment   |
|------|-----------------------|-----------------|--------------|------------------|-----------------|--------------------|---------------------|---|
| 1    | Callout               | 8/31/2023       | 13:00        |                  |                 |                    |                     | CREW CALLED OUT FOR ON LOCATION OF 1:00 ON 9/1/23                               |
| 2    | Depart Location       | 8/31/2023       | 17:00        |                  |                 |                    |                     | DEPART RCO YARD FOR LOCATION  |
| 3    | Arrive On Location    | 8/31/2023       | 19:00        |                  |                 |                    |                     | ARRIVE ON LOCATION. RIG ALMOST OUT OF HOLE WITH DRILL PIPE.                     |
| 4    | Safety Meeting        | 8/31/2023       | 19:15        |                  |                 |                    |                     | PRE RIG UP JSA. SPOT EQUIPMENT  |
| 5    | Rig Up Iron           | 9/1/2023        | 00:30        |                  |                 |                    |                     | RIG UP ALL IRON, HOSES, AND EQUIPMENT   |
| 6    | Other                 | 9/1/2023        | 01:30        |                  |                 |                    |                     | RIG LANDED CASING @ 12:30. RIG CIRCULATED FOR 1.5 HOURS. TOTAL VOLUME 642 BBLS. |
| 7    | Safety Meeting        | 9/1/2023        | 02:35        |                  |                 |                    |                     | PRE JOB SAFETY MEETING WITH RIG CREW AND COMPANY MAN.                           |
| 8    | Fill Lines            | 9/1/2023        | 02:59        | 8.34             | 5               | 10                 | 710                 | FILL LINES WITH 10 BBLS OF FRESHWATER. NO RETURNS                               |
| 9    | Pressure Test Lines   | 9/1/2023        | 03:01        | 8.34             | 1               | 1                  | 4500                | PRESSURE TEST PUMP AND IRON TO HEAD.  |
| 10   | Pump Spacer           | 9/1/2023        | 03:05        | 8.45             | 5               | 0                  | 693                 | BEGIN PUMPING MUD FLUSH + SURFACTANT.   |
| 11   | Pump Spacer           | 9/1/2023        | 03:09        | 8.45             | 5.3             | 20                 | 715                 | PUMP 20 BBLS MUD FLUSH + SURFACTANT PUMPED. NO RETURNS                          |
| 12   | Pump Spacer           | 9/1/2023        | 03:09        | 8.34             | 5.3             | 0                  | 792                 | PUMP 10 BBLS FRESHWATER FLUSH   |
| 13   | Pump Spacer           | 9/1/2023        | 03:11        | 8.34             | 5.3             | 10                 | 800                 | 10 BBLS FRESHWATER AWAY SWAP TO LEAD  |
| 14   | Pump Lead Cement      | 9/1/2023        | 03:11        | 12.5             | 5.3             | 0                  | 813                 | BEGIN PUMPING 12.5 PPG LEAD CEMENT, WEIGHT VERIFIED BY MUD SCALE                |
| 15   | Pump Lead Cement      | 9/1/2023        | 03:20        | 12.5             | 6               | 50                 | 670                 | 50 BBLS LEAD CEMENT PUMPED  |
| 16   | Pump Lead Cement      | 9/1/2023        | 03:32        | 12.5             | 6               | 50                 | 668                 | 100 BBLS LEAD CEMENT PUMPED. NO RETURNS. HAD TO GO TO BATCH FOR DELIVERY ISSUE. |
| 17   | Pump Lead Cement      | 9/1/2023        | 03:37        | 12.5             | 5               | 38                 | 692                 | 132 BBLS (335 SKS) TOTAL LEAD CEMENT PUMPED.                                    |
| 18   | Pump Tail Cement      | 9/1/2023        | 03:37        | 13               | 5               | 0                  | 950                 | BEGIN PUMPING 13.0 PPG TAIL CEMENT. WEIGHT VERIFIED BY MUD SCALE.               |
| 19   | Pump Tail Cement      | 9/1/2023        | 03:46        | 13               | 5.6             | 50                 | 820                 | 50 BBLS TAIL CEMENT PUMPED  |
| 20   | Pump Tail Cement      | 9/1/2023        | 03:55        | 13               | 5.6             | 50                 | 807                 | 100 BBLS TAIL CEMENT PUMPED   |
| 21   | Pump Tail Cement      | 9/1/2023        | 04:05        | 13               | 5.6             | 50                 | 802                 | 150 BBLS TAIL CEMENT PUMPED. NO RETURNS   |
| 22   | Pump Tail Cement      | 9/1/2023        | 04:15        | 13               | 5               | 50                 | 708                 | 200 BBLS TAIL CEMENT PUMPED   |
| 23   | Pump Tail Cement      | 9/1/2023        | 04:25        | 13               | 5               | 50                 | 680                 | 250 BBLS TAIL CEMENT PUMPED   |
| 24   | Pump Tail Cement      | 9/1/2023        | 04:33        | 13               | 4               | 32                 | 495                 | 287 BBLS (786 SKS) TOTAL TAIL CEMENT PUMPED.                                    |
| 25   | Clean Pumps and Lines | 9/1/2023        | 04:34        |                  |                 |                    |                     | BLOW RIG AIR TO CLEAR LINES, VALVE MANIFOLD TO WASH UP PUMP AND LINES TO PIT.   |
| 26   | Drop Top Plug         | 9/1/2023        | 04:43        | 8.34             | 4               | 0                  | 245                 | DROP PLUG, WITNESSED BY DRILLER AND COMPANY MAN BEGIN KCL DISPLACEMENT.         |
| 27   | Pump Displacement     | 9/1/2023        | 04:50        | 8.34             | 8               | 50                 | 1250                | 50 BBLS DISPLACEMENT PUMPED. CAUGHT PRESSURE @ 38 BBLS DISPLACED. NO RETURNS.   |



| Line | Event             | Date (MM/DD/YY) | Time (HH:MM) | Density (lb/gal) | Pump Rate (bpm) | Pump Volume (bbls) | Pipe Pressure (psi) | Comment  |
|------|-------------------|-----------------|--------------|------------------|-----------------|--------------------|---------------------|--|
| 28   | Pump Displacement | 9/1/2023        | 04:56        | 8.34             | 8               | 50                 | 1985                | 100 BBLS DISPLACEMENT PUMPED. CAUGHT RETURNS @ 125 BBLS DISPLACED.                             |
| 29   | Pump Displacement | 9/1/2023        | 05:03        | 8.34             | 8               | 50                 | 2382                | 150 BBLS DISPLACEMENT PUMPED. MAX LIFT- 2430 PSI @ 8 BPM BEFORE SLOW DOWN @ 155 BBLS DISPLACED |
| 30   | Pump Displacement | 9/1/2023        | 05:07        | 8.34             | 4               | 19                 | 1900                | 169 BBLS (CALCULATED) DISPLACEMENT PUMPED  |
| 31   | Land Plug         | 9/1/2023        | 05:07        |                  |                 |                    |                     | PLUG LANDED FCP-1900 PSI BUMPED TO 2990 PSI  |
| 32   | Check Floats      | 9/1/2023        | 05:11        |                  |                 |                    |                     | BLEED PRESSURE OFF AND CHECK FLOATS, FLOATS HELD 3 BBLS BACK                                   |
| 33   | Rig Down Iron     | 9/1/2023        | 05:30        |                  |                 |                    |                     | PRE RIG DOWN SAFETY MEETING. RIG DOWN EQUIPMENT, IRON AND HOSES                                |
| 34   | Depart Location   | 9/1/2023        | 07:30        |                  |                 |                    |                     | CREW DEPARTS LOCATION  |

# Pump Diagrams

JobMaster Program Version 5.01C1  
Job Number: 88351  
Customer: TERRA  
Well Name: LEVERICH SR 511-18



Job Start: Friday, September 01, 2023