**CEMENTING TREATMENT REPORT**

PIONEER NATURAL RESOURCES

| | |
|---|---|
| **TREATMENT NUMBER** | GH2013005 |
| **DATE** | 3/27/2013 |
| **STAGE** | 1 |
| **JOB TYPE** | Surface |

| | | | |
|---|---|---|---|
| **WELL NAME AND NO.** | Davis 42-12 | **LOCATION (LEGAL)** | |
| **FIELD** | Black Fox | **FORMATION** | |
| **COUNTY** | Kiowa | **STATE** | CO |
| **API NO.** | | | |

**RIG NAME:** Patterson UTI 190

**CEMENT PUMPER:** 23005

RIG FORMAN: Dave Martinez

CEMENT SUPER: Gary Hessling

SPECIAL INSTRUCTIONS

| **WELL DATA** | | | **BOTTOM** | **FT** | **TOP** | | **FT** |
|---|---|---|---|---|---|---|---|
| **BIT SIZE** | | **CSG/Liner Size** | 8 5/8 | | | | |
| **TOTAL DEPTH** | 2730 | **WEIGHT** | 24 | | | | |
| **MUD TYPE** | | **FOOTAGE** | 2716 | | | | |
| ☐ BHST | | **GRADE** | | | | | |
| ☐ BHCT | | **THREAD** | | | | | |
| **MUD DENSITY** | | LESS FOOTAGE SHOE JOINT(S) | 40.55 | | | | TOTAL: |
| **MUD VISC** | | **Disp. Capacity** | 170 | | | | 170 |

Include Footage From Ground Level To Head In Disp. Capacity

| | | | | | | |
|---|---|---|---|---|---|---|
| FLOAT | TYPE | | Stage Tool | TYPE | | |
| | DEPTH | | | DEPTH | | |
| SHOE | TYPE | | | TYPE | | |
| | DEPTH | | | DEPTH | | |

| | | | | | |
|---|---|---|---|---|---|
| Head & Plugs | | ☐ TBG | ☑ D.P. | SQUEEZE JOB | |
| | | SIZE | | TOOL | TYPE |
| ☐ Double Box 6 | **WEIGHT** | | | | DEPTH |
| ☐ Single | **GRADE** | | | **TAIL PIPE:** | SIZE DEPTH |
| ☐ Swage | **THREADS** | | | **TUBING VOLUME** | BBLs |
| ☐ Knockout | ☐ New | ☐ Used | | **CSG VOL BELOW TOOL** | BBLs |
| | **DEPTH** | | | **TOTAL** | BBLs |
| **CEMENT TEMPERATURE:** | | | | **ANNULAR VOLUME** | BBLs |
| **WATER QUALITY:** | | | **pH** | **SG** | **TEMP** |

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| **LIFT PRESSURE** | 728 | psi | |
| **PRESSURE LIMIT** | | psi | **BUMP PLUG TO** 1300 |
| | | | **NO. of Centralizers** 14 |

| **JOB SCHEDULED FOR** | | **ARRIVE ON LOCATION** | | **RIG UP** | | **LEFT LOCATION** | |
|---|---|---|---|---|---|---|---|
| **TIME:** 15:00 | **DATE:** 3/27/2013 | **TIME:** 14:30 | **DATE:** 3/27/2013 | **TIME:** 22:00 | **DATE:** 3/27/2013 | **TIME:** 6:00 | **DATE:** 3/28/2013 |

| TIME 0001 to 2400 | PRESSURE TBG | PRESSURE CSG | VOLUME PUMPED INCR | VOLUME PUMPED CUM | RATE | FLUID TYPE | DENSITY | |
|---|---|---|---|---|---|---|---|---|
| 14:30 | | | | | | | | Arrive on location |
| 22:00 | | | | | | | | Rig up pumps and bulk equipment |
| 23:00 | | | | | | | | Held safety meeting |
| 23:40 | | 3000 | | | | | | Test pumps and lines to 3000 psi. Test good. |
| 23:42 | | 150 | 173 | | 4 | H2o | 8.34 | pumped 173 H2o ahead. Cirrculation at 1 bbls away |
| 0:31 | | 300 | 300 | 473 | 3 | Cmt | 13.5 | Mix and pump 300 bbls ( 980 sks) 13.5 surface set |
| 2:04 | | 50 | 170 | 643 | 4 | Cmt | 8.34 | Start displacement |
| | | | | | | | | Call out for displacement 56bbls 230 psi, 4 bpm 112 bbls 550psi, 2bpm 165 bbls 700 psi 2 bpm |
| 3:40 | | 1380 | | | | | | Land plug at 1380 psi. Held for 10 min. Checked float. Held |
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| 5:50 | | | | | | | | Rig down and left location |

| System Used | No.of Sacks | Yield $ft^3/sk$ | COMPOSITION OF SYSTEM | SLURRY MIXED BBLS | SLURRY MIXED DENSITY |
|---|---|---|---|---|---|
| surface set | 913 | 1.69 | Class G, Pozzolan,P020,S001,P042,P154,P029,P046 | 300 | 13.5 |
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| **CIRCULATION** | ☑ Yes ☐ No | **WASHED CASING DOWN** | ☐ Yes ☑ No | **BREAKDOWN** | **PSI** | **FINAL** 1380 | **PSI** |
| **DISPLACEMENT VOL.** | 170 **BBLS** | **RETURNED TO SURFACE** | yes 80 bbls | BEFORE PLUG BUMP **PRESSURE** | **780 PSI** | **RATE** | 1 **BPM** |