



Bison Oil Well Cementing Single Cement Surface Pipe

Date: 11/28/2017
 Invoice #: 900216
 API#: 05-123-45135
 Foreman: Corey Barras

Customer: Anadarko Petroleum Corporation
 Well Name: Putter 27-4HZ

County: Weld
 State: Colorado
 Consultant: Matt
 Rig Name & Number: Cartel 88
 Distance To Location: 42
 Sec: 27
 Twp: 3N
 Range: 68W
 Units On Location: 1027-3103/4020-3214/4040-320
 Time Requested: 2300
 Time Arrived On Location: 2200
 Time Left Location:

| WELL DATA | Cement Data |
|----------------------------------|--------------------------------|
| Casing Size OD (in) : 9.625 | Cement Name: BFN III |
| Casing Weight (lb) : 36.00 | Cement Density (lb/gal) : 14.2 |
| Casing Depth (ft.) : 1,869 | Cement Yield (cuft) : 1.48 |
| Total Depth (ft) : 1879 | Gallons Per Sack: 7.40 |
| Open Hole Diameter (in.) : 13.50 | % Excess: 5% |
| Conductor Length (ft) : 80 | Displacement Fluid lb/gal: 8.3 |
| Conductor ID : 15.25 | BBL to Pit: |
| Shoe Joint Length (ft) : 44 | Fluid Ahead (bbls): 30.0 |
| Landing Joint (ft) : 15 | H2O Wash Up (bbls): 20.0 |
| Max Rate: 8 | Spacer Ahead Makeup |
| Max Pressure: 2000 | 30 bbl with Die in 2nd 10 |

| Calculated Results | Displacement: 142.25 bbls |
|--|---|
| cuft of Shoe 19.10 cuft (Casing ID Squared) X (.005454) X (Shoe Joint ft) | (Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint) |
| cuft of Conductor 61.05 cuft (Conductor Width Squared) - (Casing Size OD Squared) X (.005454) X (Conductor Length ft) | Pressure of cement in annulus Hydrostatic Pressure: 1378.76 PSI |
| cuft of Casing 918.05 cuft (Open Hole Squared) - (Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length) | Pressure of the fluids inside casing Displacement: 786.91 psi Shoe Joint: 32.46 psi Total: 819.36 psi |
| Total Slurry Volume 998.20 cuft (cuft of Shoe) + (cuft of Conductor) + (cuft of Casing) | Differential Pressure: 559.40 psi |
| bbls of Slurry 177.78 bbls (Total Slurry Volume) X (.1781) | Collapse PSI: 2020.00 psi Burst PSI: 3520.00 psi |
| Sacks Needed 674 sk (Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement) | Total Water Needed: 311.08 bbls |
| Mix Water 118.83 bbls (Sacks Needed) X (Gallons Per Sack) ÷ 42 | |

X Authorization To Proceed



**Bison Oil Well Cementing
Single Cement Surface Pipe**

Customer
Well Name

Anadarko Petroleum Corporation
Putter 27-4HZ

INVOICE #
LOCATION
FOREMAN
Date

900216
Weld
Corey Barras
11/29/2017

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DESCRIPTION OF JOB EVENTS

| Amount Pumped | | Event | Description | Rate | BBLs | Pressure |
|---------------|--------|-------|--------------------------------------|------|------|----------|
| % Excess | 5% | 2200 | What rig is doing upon Bison Arrival | | | |
| Mixed bbls | 118.83 | 2210 | JSA | | | |
| Total Sacks | 674 | 2220 | Rig up | | | |
| bbl Returns | 12 | 240 | Safety Meeting | | | |
| Water Temp | 58 | 305 | Start Job | | | |
| | | 307 | Pressure Test | | | |
| Notes: | | | | | | |
| | | 309 | Spacer Ahead | | | |
| | | 315 | Lead Cement | 8 | 30 | 90 |
| | | | | 8 | 177 | 80 |
| | | 348 | Shutdown | | | |
| | | 348 | Drop Plug | | | |
| | | | Preloaded in plug container | | | |
| | | 351 | Start Displacement | | | |
| | | 413 | Bump Plug | 7 | 90 | 310 |
| | | | 500 over final lift (1050 PSI) | 2 | 142 | 510 |
| | | 415 | Floats Held | | | |
| | | 418 | End Job | | | |
| | | | Held for 2 MIN with .5 bll back | | | |
| | | 425 | Rig Down | | | |
| | | 500 | Leave Location | | | |

X 
Work Performed

X Corey Barras
Title

X 11/29/17
Date

Putter 27-4HZ

