



Bison Oil Well Cementing Single Cement Surface Pipe

Date: 4/17/2017
 Invoice # 900082
 API# 05-123-43809
 Foreman: Corey B.

Customer: Anadarko Petroleum Corporation
Well Name: Babcock 33C-33HZ

County: Weld Consultant: Matt
 State: Colorado Rig Name & Number: 252
 Distance To Location: 36
 Sec: 4 Units On Location: 1027-3103/4020-3212/4019-321
 Twp: 2N Time Requested: 2100
 Range: 67W Time Arrived On Location: 1930
 Time Left Location: _____

WELL DATA	Cement Data
Casing Size OD (in) : <u>9.625</u>	Cement Name: <u>BFN III</u>
Casing Weight (lb) : <u>36.00</u>	Cement Density (lb/gal) : <u>14.2</u>
Casing Depth (ft.) : <u>1,832</u>	Cement Yield (cuft) : <u>1.48</u>
Total Depth (ft) : <u>1842</u>	Gallons Per Sack: <u>7.49</u>
Open Hole Diameter (in.) : <u>13.50</u>	% Excess: <u>15%</u>
Conductor Length (ft) : <u>80</u>	Displacement Fluid lb/gal: <u>8.3</u>
Conductor ID : <u>15.25</u>	BBL to Pit: <u>21</u>
Shoe Joint Length (ft) : <u>44</u>	Fluid Ahead (bbls): <u>30.0</u>
Landing Joint (ft) : <u>15</u>	H2O Wash Up (bbls): <u>20.0</u>
Max Rate: <u>8bm</u>	Spacer Ahead Makeup
Max Pressure: <u>2000</u>	<u>30 bbl /2nd 10 BBL with Die</u>

Calculated Results	Pressure of cement in annulus
Casing ID <u>8.921</u> Casing Grade _____ J-55 only used	Displacement: <u>139.39 bbls</u> (Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)
cuft of Shoe <u>19.10 cuft</u> (Casing ID Squared) X (.005454) X (Shoe Joint ft)	Pressure of cement in annulus
cuft of Conductor <u>61.05 cuft</u> (Conductor Width Squared) -(Casing Size OD Squared) X (.005454) X (Conductor Length ft)	Hydrostatic Pressure: <u>1351.47 PSI</u>
cuft of Casing <u>984.69 cuft</u> (Open Hole Squared)-(Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)	Pressure of the fluids inside casing
Total Slurry Volume <u>1064.84 cuft</u> (cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)	Displacement: <u>770.95 psi</u>
bbls of Slurry <u>189.65 bbls</u> (Total Slurry Volume) X (.1781)	Shoe Joint: <u>32.46 psi</u>
Sacks Needed <u>719 sk</u> (Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)	Total <u>803.41 psi</u>
Mix Water <u>128.31 bbls</u> (Sacks Needed) X (Gallons Per Sack) ÷ 42	Differential Pressure: <u>548.06 psi</u>
	Collapse PSI: <u>2020.00 psi</u>
	Burst PSI: <u>3520.00 psi</u>
	Total Water Needed: <u>317.70 bbls</u>

X Byron Brown
 Authorization To Proceed

Customers hereby acknowledges and specifically agrees to the terms and condition on this work order, including, without limitation, the provisions on this work order.



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

Customer
Well Name

Anadarko Petroleum Corporation
Babcock 33C-33HZ

INVOICE #
LOCATION
FOREMAN
Date

900082
Weld
Corey B.
4/18/2017

Treatment Report Page 2

DESCRIPTION OF JOB EVENTS

Amount Pumped	Time/Date	Event	Description	Rate	BBLs	Pressure
% Excess 15%						
Mixed bbls 128.31						
Total Sacks 719	1930	What rig is doing upon Bison Arrival	Rig was broke down/ran wiper trip/ran casing			
bbl Returns 21	1935	JSA	Bison Crew			
Water Temp 65	1945	Rig up				
	845 4/18/17	Safety Meeting	Bison and Rig crew			
Notes:	920	Start Job				
Rig had hydraulic issues once they were up and running decided to run a wiper trip down hole before cement job	925	Pressure Test				
	927	Spacer Ahead	2nd 10 with die	4.5	30	100
	933	Lead Cement	14.2 ppg	7	189	190
	1005	Shutdown				
	1007	Drop Plug	Preloaded in plug container			
	1010	Start Displacement		7	90	430
	1032	Bump Plug	500 psi over final lift (10900psi)	2	139	520
	1035	Floats Held	Held for 3 min with 1/2 BBL Back			
	1037	End Job				
	1042	Rig Down				
	1115	Leave Location				

X Bryan Brown
Work Performed

X Co Man.
Title

X 4-18-17
Date

Butterball133C-33HZ

