Bison Oil Well Cementing
Single Cement Surface Pipe

Date:	6/30/2015
Invoice #	90010
API#	05-123-41508
Foreman:	Nick

Customer: Noble Energy Inc.
Well Name: Wells Ranch State A36-675

County:	Weld	Consultant:	Chris
State:	Colorado	Rig Name & Number:	H&P 326
		Distance To Location:	60
Sec:	31	Units On Location:	4027/3107/4022/3213
Twp:	6N	Time Requested:	22:00
Range:	63W	Time Arrived On Location:	20:25
		Time Left Location:	11:30

WELL DATA

Casing Size OD (in) :	9.625
Casing Weight (lb) :	36.00
Casing Depth (ft.) :	783
Total Depth (ft) :	823
Open Hole Diameter (in.) :	13.50
Conductor Length (ft) :	80
Conductor ID :	15.25
Shoe Joint Length (ft) :	43
Landing Joint (ft) :	34
Max Rate:	6
Max Pressure:	1500

Cement Data

Cement Name:	BFN III
Cement Density (lb/gal) :	14.2
Cement Yield (cuft) :	1.49
Gallons Per Sack:	7.48
% Excess:	20%
Displacement Fluid lb/gal:	8.3
BBL to Pit:	19.0
Fluid Ahead (bbls):	50.0
H20 Wash Up (bbls):	20.0

Spacer Ahead Makeup
DYE IN SECOND 10 BBL

Casing ID	8.921	Casing Grade	J-55 only used

Calculated Results

cuft of Shoe   18.66   cuft
(Casing ID Squared) X (.005454) X (Shoe Joint ft)

cuft of Conductor   61.05   cuft
(Conductor Width Squared) -(Casing Size OD Squared) X (.005454) X (Conductor Length ft)

cuft of Casing   286.35   cuft
(Open Hole Squared)-(Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)

Total Slurry Volume   512.00   cuft
(cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)

bbls of Slurry   91.20   bbls
(Total Slurry Volume) X (.1781)

Sacks Needed   344   sk
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)

Mix Water   61.26   bbls
(Sacks Needed) X (Gallons Per Sack) ÷ 42

Displacement: 59.00   bbls
(Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)

Pressure of cement in annulus

Hydrostatic Pressure:	577.53 PSI

Pressure of the fluids inside casing

Displacement:	319.02 psi
Shoe Joint:	31.72 psi
Total	350.74 psi
Differential Pressure:	226.79 psi
Collapse PSI:	2020.00 psi
Burst PSI:	3520.00 psi
Total Water Needed:	190.26 bbls

X _[signature]_
Authorization To Proceed

Bison Oil Well Cementing
Single Cement Surface Pipe

INVOICE #	90010
LOCATION	Weld
FOREMAN	Nick
Date	6/30/2015

Customer	Noble Energy Inc.
Well Name	Wells Ranch State A36-675

Treatment Report Page 2

DESCRIPTION OF JOB EVENTS

Amount Pumped		Time/Date	Event	Description	Rate	BBLs	Pressure
% Excess	20%	8:25 PM	Arrive on location	Well site assesment, Hazard hunt			
Mixed bbls	91	10:00 PM	Rig up equipment	Spot in and rig up while rig was running casing.			
Total Sacks	344	10:40 PM	Pre job JSA	Held safety meeting with all personnel involved.			
bbl Returns	19	11:00 PM	Pressure Test	Pressure tested lines to 1500 psi.			
Water Temp	75	11:05 PM	Spacer Ahead	Dye in second 10	5.5	50	110
		11:15 PM	Lead Cement	14.2 ppg Cement (344 sks)	5.5	91	140
Notes:		11:38 PM	Shutdown				
		11:39 PM	Drop Plug	Plug was pre loaded.			
		11:40 PM	Start Displacement	Displaced with fresh water	7	30	230
		11:53 PM	Bump Plug	Bumped 300 psi over final lift pressure	3	43.5	260-660
		11:54 PM	Casing Test	Tested casing to 1000 psi for 15 min.			1000
		12:11 AM	Check Floats	Floats held (.5 bbl back to truck)			
		12:15 AM	End Job	Rig down equipment			
		12:20 AM	Rig down equipment				
		1:30 AM	Crew left location				

X ~~(signature)~~
Work Preformed

X WSS
Title

X Jun 30, 2015
Date