Bison Oil Well Cementing
Single Cement Surface Pipe

Date: 6/10/2015
Invoice # 80050
API# 05-123-41504-00
Foreman: Calvin Reimers

Customer: Anadarko Petroleum Corporation

Well Name: English Farms 37N-8HZ

County: Weld
State: Colorado

Sec: 8
Twp: 1N
Range: 65W

Consultant: Don / Tobin
Rig Name & Number: Extreme 24
Distance To Location: 22 Miles
Units On Location: 4023-3104/4030-3203
Time Requested: 130am
Time Arrived On Location: 1210am
Time Left Location: 7:15 AM

WELL DATA

Casing Size OD (in) :	9.625
Casing Weight (lb) :	36.00
Casing Depth (ft.) :	1,830
Total Depth (ft) :	1856
Open Hole Diameter (in.) :	13.50
Conductor Length (ft) :	60
Conductor ID :	16
Shoe Joint Length (ft) :	43
Landing Joint (ft) :	19
Max Rate:	6
Max Pressure:	1750

Cement Data

Cement Name:	BFN III
Cement Density (lb/gal) :	14.2
Cement Yield (cuft) :	1.49
Gallons Per Sack:	7.48
% Excess:	25%
Displacement Fluid lb/gal:	8.3
BBL to Pit:	20
Fluid Ahead (bbls):	30.0
H20 Wash Up (bbls):	10.0

Spacer Ahead Makeup

30 bbls With Dye in 2nd 10 bbls

Casing ID 8.921 Casing Grade J-55 only used

Calculated Results

cuft of Shoe 18.60 cuft
(Casing ID Squared) X (.005454) X (Shoe Joint ft)

cuft of Conductor 53.46 cuft
(Conductor Width Squared) -(Casing Size OD Squared) X (.005454) X (Conductor Length ft)

cuft of Casing 1081.60 cuft
(Open Hole Squared)-(Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)

Total Slurry Volume 1153.65 cuft
(cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)

bbls of Slurry 205.47 bbls
(Total Slurry Volume) X (.1781)

Sacks Needed 774 sk
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)

Mix Water 137.89 bbls
(Sacks Needed) X (Gallons Per Sack) ÷ 42

Displacement: 139.67 bbls
(Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)

Pressure of cement in annulus

Hydrostatic Pressure: 1350.33 PSI

Pressure of the fluids inside casing

Displacement: 770.78 psi
Shoe Joint: 31.61 psi
Total 802.39 psi

Differential Pressure: 547.94 psi

Collapse PSI: 2020.00 psi
Burst PSI: 3520.00 psi

Total Water Needed: 317.56 bbls

x _____
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.

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Single Cement Surface Pipe

Customer	Anadarko Petroleum Corporation
Well Name	English Farms 37N-8HZ

INVOICE #	80050
LOCATION	Weld
FOREMAN	Calvin Reimers
Date	6/10/2015

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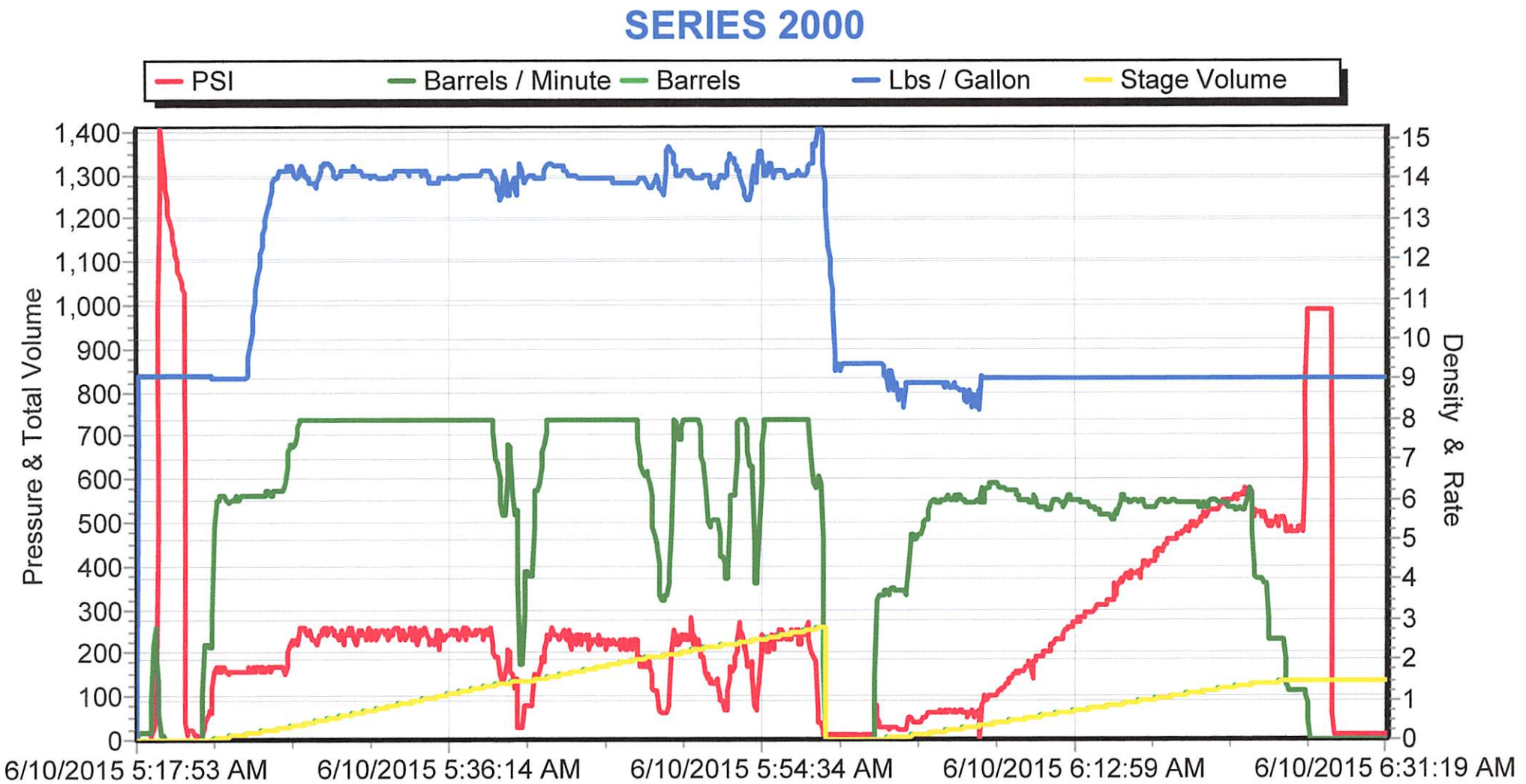
DESCRIPTION OF JOB EVENTS

Amount Pumped		Time/Date	Event	Description	Rate	BBLs	Pressure
% Excess	25%	1215am	MIRU	Rigged Up Equipment			
Mixed bbls	137.89	410am	JSA	Safety Meeting			
Total Sacks	774	520am	Pressure Test	Pressure Test Lines to Cement Head	0.5	1	1300
bbl Returns	20	522am	Spacer Ahead	Pump Spacer (dye in 2nd 10 bbls)	6	30	180
Water Temp	64.1	527am	Lead Cement	14.2ppg 774 sks	6	205.47	250
		558am	Shutdown	Stop Cementing			
Notes:		600am	Drop Plug	Release Plug			
		601am	Start Displacement	Displaced With Fresh Water	6	139.67	570
		626am	Bump Plug	Land Plug at 500PSI Over Lift PSI	1		480
		628am	Floats Held	Checked Floats			990
		635am	End Job	Rigged Down Equipment			
		715am	Leave Location	Leave Location			
		1210am	What rig is doing upon Bison Arrival	Running Casing			

X _____ X _____ X _____

Work Preformed | Title | Date


SERIES 2000
PSI
Barrels / Minute
Barrels
Lbs / Gallon
Stage Volume
Pressure & Total Volume
Density & Rate
1,400
1,300
1,200
1,100
1,000
900
800
700
600
500
400
300
200
100
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