Bison Oil Well Cementing
Single Cement Surface Pipe

Date: 9/15/2018
Invoice # 200332
API#
Foreman: KirkKallhoff

Customer: Anadarko Petroleum Corporation
Well Name: baja berg 35-9hz

County: Weld
State: Colorado
Sec: 23
Twp: 2N
Range: 66W

Consultant: dave
Rig Name & Number: Cartel 88
Distance To Location: 30
Units On Location: 4028/4033/4024
Time Requested: 130 am
Time Arrived On Location: 1030 pm
Time Left Location: 5:00ish

WELL DATA

Casing Size OD (in) :	9.625
Casing Weight (lb) :	36.00
Casing Depth (ft.) :	1,875
Total Depth (ft) :	1886
Open Hole Diameter (in.) :	13.50
Conductor Length (ft) :	80
Conductor ID :	15.25
Shoe Joint Length (ft) :	40
Landing Joint (ft) :	8
Max Rate:	8
Max Pressure:	2000

Cement Data

Cement Name: BFN III

Cement Density (lb/gal) :	14.2
Cement Yield (cuft) :	1.48
Gallons Per Sack:	7.40
% Excess:	10%
Displacement Fluid lb/gal:	8.3
BBL to Pit:	
Fluid Ahead (bbls):	30.0
H20 Wash Up (bbls):	10.0

Spacer Ahead Makeup
30 bbl with Die in 2nd 10

Casing ID 8.921 Casing Grade J-55 only used

Calculated Results

cuft of Shoe 17.36 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 965.00 cuft
(Open Hole Squared)-(Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)

Total Slurry Volume 1043.41 cuft
(cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)

bbls of Slurry 185.83 bbls
(Total Slurry Volume) X (.1781)

Sacks Needed 705 sk
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)

Mix Water 124.22 bbls
(Sacks Needed) X (Gallons Per Sack) ÷ 42

Displacement: 142.48 bbls
(Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)

Pressure of cement in annulus

Hydrostatic Pressure: 1383.19 PSI

Pressure of the fluids inside casing

Displacement: 791.22 psi
Shoe Joint: 29.51 PSI
Total 820.73 psi

Differential Pressure: 562.46 psi

Collapse PSI: 2020.00 psi
Burst PSI: 3520.00 psi

Total Water Needed: 306.69 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.

Bison Oil Well Cementing
Single Cement Surface Pipe

INVOICE #	200332
LOCATION	Weld
FOREMAN	KirkKallhoff
Date	9/16/2018

Customer	Anadarko Petroleum Corporation
Well Name	baja berg 35-9hz

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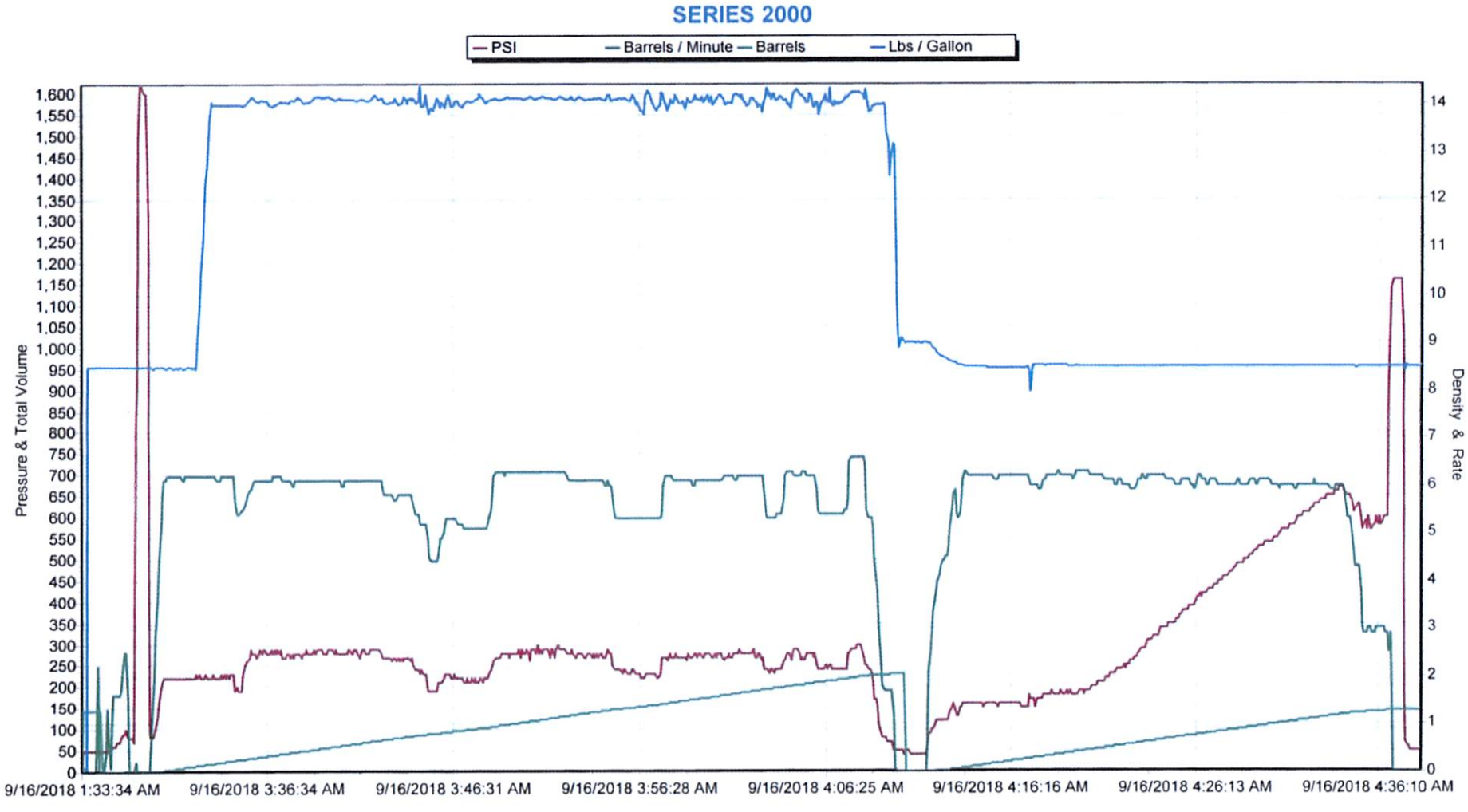
DESCRIPTION OF JOB EVENTS

Amount Pumped			Event	Description	Rate	BBLs	Pressure
% Excess	10%	1030 pm	arived on location				
Mixed bbls	124	1045 pm	MIRU				
Total Sacks	705	300 am	JSA				
bbl Returns	15	328 am	Pressure Test		0.5		1100
Water Temp	65	330 am	Spacer Ahead	30 bbls h2o dye in 2nd 10	6	30	200
		334 am	M&P	705 sks cement 14.2 lbs 185.8 bbls slurry	6	185.8	300
Notes:		409 am	Shutdown				0
		411 am	Drop Plug				
		411 am	Start Displacement	142.4 bbls h2o	6		250
		436 am	Bump Plug	142.4 bbls h2o 600 psi lift	2	142.4	1150
		437 am	Test Floats				
		438 am	End Job				
		440 am	Rig Down				
		500 am	Leave Location				

x Dan Kallhoff
Work Preformed

x Co-man
Title

x 9-16-18
Date


SERIES 2000
PSI
Barrels / Minute
Barrels
Lbs / Gallon
Pressure & Total Volume
Density & Rate
1,600
1,550
1,500
1,450
1,400
1,350
1,300
1,250
1,200
1,150
1,100
1,050
1,000
950
900
850
800
750
700
650
600
550
500
450
400
350
300
250
200
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14
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2
1
0
9/16/2018 1:33:34 AM
9/16/2018 3:36:34 AM
9/16/2018 3:46:31 AM
9/16/2018 3:56:28 AM
9/16/2018 4:06:25 AM
9/16/2018 4:16:16 AM
9/16/2018 4:26:13 AM
9/16/2018 4:36:10 AM