Bison Oil Well Cementing
Single Cement Surface Pipe

INVOICE #	200575
LOCATION	Weld
FOREMAN	Kirk Kallhoff
Date	2/26/2020

Customer	Anadarko Petroleum Corporation
Well Name	damore 18-7hz

Treatment Report Page 2

DESCRIPTION OF JOB EVENTS

Amount Pumped			Event	Description	Rate	BBLs	Pressure
% Excess	10%	200 am	arived on location				
Mixed bbls	124.9	215 am	MIRU				
Total Sacks	709	515 am	JSA				
bbl Returns	15	539 am	Pressure Test		0.5		1000
Water Temp	60	540 am	Spacer Ahead	30 bbls h2o dye in 2nd 10	5	30	120
		545 am	M&P	709 sks cement 14.2 lbs 186.8 bbls slurry	4	186.8	250
Notes:		642 am	Shutdown				0
		644 am	Drop Plug				
		644 am	Start Displacement	143.3 bbls h2o	8		300
		710 am	Bump Plug	143.3 bbls h2o 650 psi lift	2	143.3	1190
		711 am	Test Floats				
		712 am	End Job				
		715 am	Rig Down				
		730 am	Leave Location				

X David Corbett
Work Preformed

X Co-man
Title

X 2-26-20
Date

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Date: 2/26/2020
Invoice # 200575
API#
Foreman: Kirk Kallhoff

Customer: Anadarko Petroleum Corporation
Well Name: damore 18-7hz

County: Weld
State: Colorado
Sec: 18
Twp: 5n
Range: 67w

Consultant: joe
Rig Name & Number: Cartel 88
Distance To Location: 15
Units On Location: 4047/4034/4039
Time Requested: 330 asm
Time Arrived On Location: 200 am
Time Left Location: 7:30 am

WELL DATA

Casing Size OD (in) :	9.625
Casing Weight (lb) :	36.00
Casing Depth (ft.) :	1,886
Total Depth (ft) :	1896
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 970.91 cuft
(Open Hole Squared)-(Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)

Total Slurry Volume 1049.32 cuft
(cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)

bbls of Slurry 186.88 bbls
(Total Slurry Volume) X (.1781)

Sacks Needed 709 sk
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)

Mix Water 124.92 bbls
(Sacks Needed) X (Gallons Per Sack) ÷ 42

Displacement: 143.33 bbls
(Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)

Pressure of cement in annulus

Hydrostatic Pressure: 1391.30 PSI

Pressure of the fluids inside casing

Displacement: 795.96 psi
Shoe Joint: 29.51 PSI
Total 825.47 psi

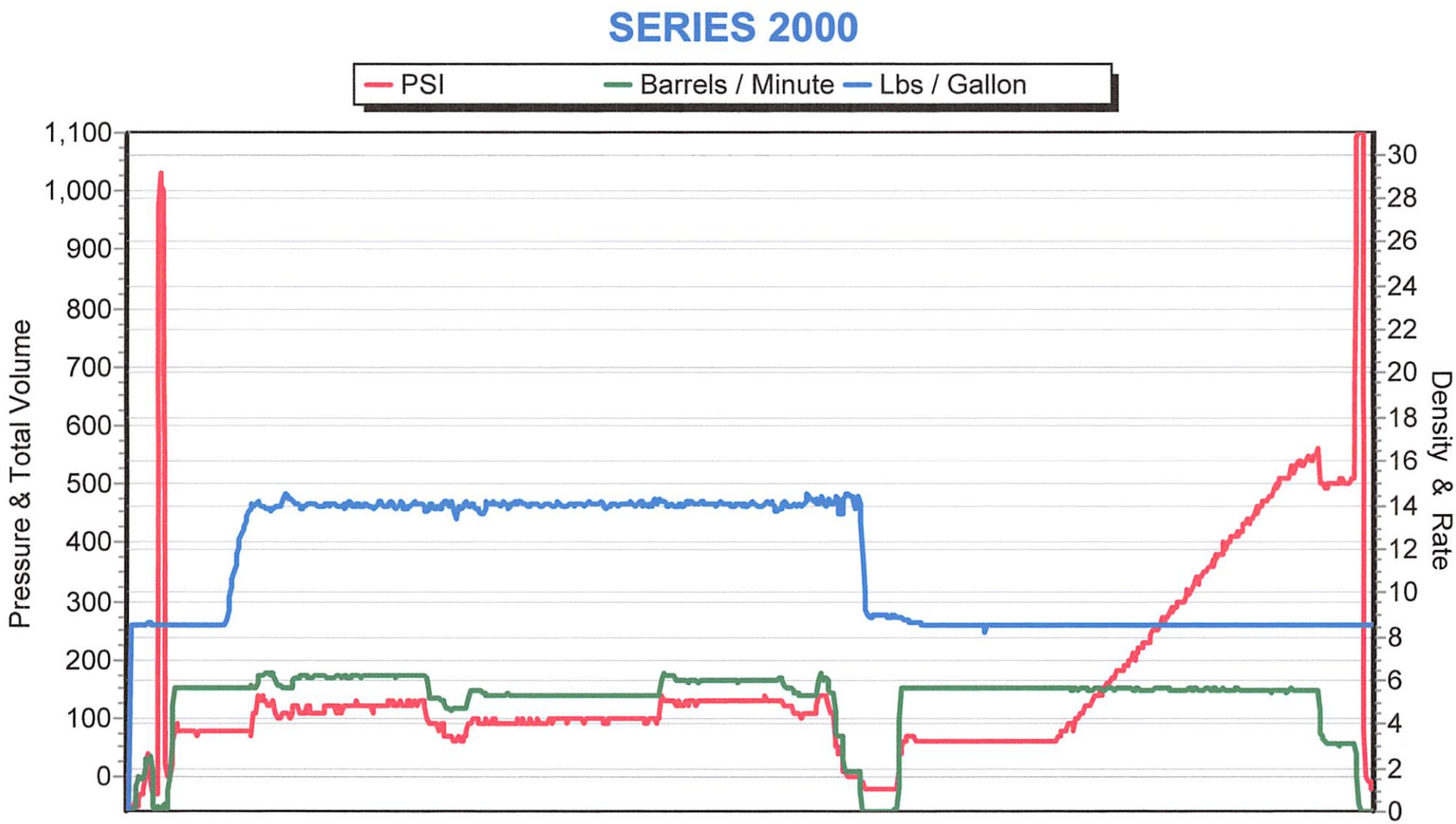
Differential Pressure: 565.83 psi

Collapse PSI: 2020.00 psi
Burst PSI: 3520.00 psi

Total Water Needed: 308.25 bbls

X for Waller
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.


SERIES 2000
PSI
Barrels / Minute
Lbs / Gallon
Pressure & Total Volume
Density & Rate
1,100
1,000
900
800
700
600
500
400
300
200
100
0
30
28
26
24
22
20
18
16
14
12
10
8
6
4
2
0