Bison Oil Well Cementing
Single Cement Surface Pipe

Date: 7/3/2019
Invoice # 900362
API# 05-123-50071
Foreman: Corey Barras

Customer: Anadarko Petroleum Corporation
Well Name: Sarchet 21-3 HZ

County: Weld
State: Colorado
Sec: 28
Twp: 3n
Range: 66w

Consultant: Tyler
Rig Name & Number: CARTEL 88
Distance To Location: 21
Units On Location: 4028/3103-4024/3201-4023/4016
Time Requested: 1400
Time Arrived On Location: 1300
Time Left Location:

WELL DATA

Casing Size OD (in) :	_9.625
Casing Weight (lb) :	36.00
Casing Depth (ft.) :	1,839
Total Depth (ft) :	1849
Open Hole Diameter (in.) :	13.50
Conductor Length (ft) :	80
Conductor ID :	15.25
Shoe Joint Length (ft) :	44
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:	7.48
% Excess:	10%
Displacement Fluid lb/gal:	8.3
BBL to Pit:	
Fluid Ahead (bbls):	30.0
H20 Wash Up (bbls):	20.0

Spacer Ahead Makeup
30 BBL WATER, DYE IN 2ND 10

Casing ID 8.921 Casing Grade J-55 only used

Calculated Results

cuft of Shoe 19.10 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 945.64 cuft
(Open Hole Squared)-(Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)

Total Slurry Volume 1025.79 cuft
(cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)

bbls of Slurry 182.69 bbls
(Total Slurry Volume) X (.1781)

Sacks Needed 693 sk
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)

Mix Water 123.44 bbls
(Sacks Needed) X (Gallons Per Sack) ÷ 42

Displacement: 139.39 bbls
(Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)

Pressure of cement in annulus

Hydrostatic Pressure: 1356.63 PSI

Pressure of the fluids inside casing

Displacement: 773.97 psi
Shoe Joint: 32.46 psi
Total 806.43 psi

Differential Pressure: 550.20 psi

Collapse PSI: 2020.00 psi
Burst PSI: 3520.00 psi

Total Water Needed: 312.82 bbls

X Tyler Humphrey HG
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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Well Name	Sarchet 21-3 HZ

INVOICE #	900362
LOCATION	Weld
FOREMAN	Corey Barras
Date	7/3/2019

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Amount Pumped		Time/Date	Event	Description	Rate	BBLs	Pressure
% Excess	10%	1300	ARRIVE ON LOCATION	ACCESS LOCATION			
Mixed bbls	123.4	1400	MIRU	SPOT EQUIPMENT			
Total Sacks	693	1500	JSA				
bbl Returns	13	1536	PRESSURE TEST LINES	PRESSURE TEST TO 1500 PSI			1500
Water Temp	60	1538	Spacer Ahead	30 BBLS H2O DYE IN 2ND 10	7	30	130
		1542	CEMENT	CEMENT 14.2 PPG	6	182.6	110
Notes:		1620	SHUT DOWN				
		1621	DROP PLUG				
		1622	START DISPLACEMENT	DISPLACE H2O	8	70	390
		1650	BUMP PLUG	(620 PSI LIFT PSI)	3	139	1180
		1652	CHECK FLOATS	FLOATS HELD, .5 BBL BACK			
		1655	RIG DOWN				
			LEAVE LOCATION				

X _____
Authorized signature

X _____
Title

X 7-3-19
Date

Sarchet 21-3 HZ