



Bison Oil Well Cementing Single Cement Surface Pipe

Date: 1/15/2021
 Invoice #: 200662
 API#
 Foreman: kirk

Customer: Occidental Petroleum
 Well Name: nelson 35-16hz

County: Weld
 State: Colorado
 Consultant: jeremy
 Rig Name & Number: icon
 Distance To Location: 35
 Units On Location: 4028 4032 4033
 Time Requested: 1000 pm
 Time Arrived On Location: 800 pm
 Time Left Location:

Sec: 35
 Twp: 2n
 Range: 68w

WELL DATA	Cement Data
Casing Size OD (in) : 9.625	Cement Name: BFN III
Casing Weight (lb) : 36.00	Cement Density (lb/gal) : 14.2
Casing Depth (ft.) : 1,872	Cement Yield (cuft) : 1.48
Total Depth (ft) : 1882	Gallons Per Sack: 7.40
Open Hole Diameter (in.) : 13.50	% Excess: 15%
Conductor Length (ft) : 80	Displacement Fluid lb/gal: 8.3
Conductor ID : 15.25	BBL to Pit:
Shoe Joint Length (ft) : 41	Fluid Ahead (bbls): 30.0
Landing Joint (ft) : 8	H2O Wash Up (bbls): 5.0
Max Rate: 8	Spacer Ahead Makeup
Max Pressure: 2000	10 fresh 10 dye 10 fresh

Casing ID 8.921 Casing Grade J-55 only used

Calculated Results	Pressure of cement in annulus
Displacement: 142.17 bbls	(Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)
cuft of Shoe 17.80 cuft (Casing ID Squared) X (.005454) X (Shoe Joint ft)	Pressure of cement in annulus
cuft of Conductor 61.05 cuft (Conductor Width Squared) -(Casing Size OD Squared) X (.005454) X (Conductor Length ft)	Hydrostatic Pressure: 1380.97 PSI
cuft of Casing 1007.17 cuft (Open Hole Squared)-(Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)	Pressure of the fluids inside casing
Total Slurry Volume 1086.02 cuft (cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)	Displacement: 789.49 psi
bbls of Slurry 193.42 bbls (Total Slurry Volume) X (.1781)	Shoe Joint: 30.25 psi
Sacks Needed 734 sk (Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)	Total 819.74 psi
Mix Water 129.29 bbls (Sacks Needed) X (Gallons Per Sack) ÷ 42	Differential Pressure: 561.24 psi
	Collapse PSI: 2020.00 psi
	Burst PSI: 3520.00 psi
	Total Water Needed: 306.46 bbls

X *Jeremy White*
 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.