



Bison Oil Well Cementing
1547 Gaylord Street
Denver, CO 80206

FIELD INVOICE #
90059

FIELD INVOICE

WELL NO. AND FARM Alvin 2C-29HZ		COUNTY Weld	STATE Colorado	DATE 11/13/2015	Contractor Noble 2
CHARGE TO Anadarko Petroleum Corporation		WELL LOCATION			
PO Box 4995		Section 29	TWP 2N	RANGE 65W	
The Woodlands, TX 77387		DELIVERED TO cr. 41 & cr.16		LOCATION 1 Greeley	CODE
		SHIPPED VIA 4024/3210/4007/3106/3105/3204		LOCATION 2 Cr.41 & cr.16	CODE
		TYPE AND PURPOSE OF JOB SURFACE		LOCATION 3 Greeley	CODE
				WELL TYPE Oil	CODE

ITEM	DESCRIPTION	UNITS		UNIT PRICE	AMOUNT
		QTY.	MEAS.		
PUMP CHARGE					
SURFACE		1			
MILLEAGE CHARGE					
Pickup		50	mile		
Truck/Equipment		50	mile		
Truck/Equipment		50	mile		
CEMENT CHARGE:					
BFN III		773	sack		
ADDITIVES CHARGE:					
Red Dye		16	oz		
FLOAT EQUIPMENT:					
RUBBER PLUG - 9 5/8"					
OTHER CHARGES:					
DATA ACQUISITION FEE		1			
Containment		1			
Wait Time		2	hour		

If this account is not paid within 30 days of invoice date a FINANCE CHARGE will be made. Computed at a single monthly rate of 1 1/2% which is equal to an ANNUAL PERCENTAGE RATE OF 18%.

TAX

ALVIN 2C-29HZ NOBLE 2
FRANK KINNEY USER ID: CU0741
CONSULTANT: *Hayden Stone*
AFE# 2109773 DATE: *11-13-15*
GL CODE: 800/12090

SUBJECT TO CORRECTION

Hayden Stone
Customer or Agent

[Signature]
Bison Oil Well Cementing, Inc. Representative

Customers hereby acknowledges and specifically agrees to the terms and conditions on this work order, including, without limitation, the provisions on the reverse hereof which include the release and indemnity.



Bison Oil Well Cementing Single Cement Surface Pipe

Date: 11/13/2015
 Invoice #: 90059
 API#: 05-123-42205
 Supervisor: Nick

Customer: Anadarko Petroleum Corporation
Well Name: Alvin 2C-29HZ

County: Weld
 State: Colorado
 Sec: 29
 Twp: 2N
 Range: 65W

Consultant: Hayden/Bryan
 Rig Name & Number: Noble 2
 Distance To Location: 25
 Units On Location: 024/3210/4007/3106/3105/320
 Time Requested: 12:30
 Time Arrived On Location: 11:00
 Time Left Location: 18:35

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.) : 1,912	Cement Yield (cuft) : 1.49
Total Depth (ft) : 1921	Gallons Per Sack: 7.48
Open Hole Diameter (in.) : 13.50	% Excess: 20%
Conductor Length (ft) : 60	Displacement Fluid lb/gal: 8.3
Conductor ID : 15.25	BBL to Pit: 0.0
Shoe Joint Length (ft) : 46	Fluid Ahead (bbls): 30.0
Landing Joint (ft) : 10	H2O Wash Up (bbls): 20.0
Max Rate: 7	Spacer Ahead Makeup
Max Pressure: 1250	30 bbl dye in second 10

Calculated Results	Pressure of cement in annulus
cuft of Shoe 19.97 cuft (Casing ID Squared) X (.005454) X (Shoe Joint ft)	Displacement: 145.03 bbls (Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)
cuft of Conductor 45.79 cuft (Conductor Width Squared) - (Casing Size OD Squared) X (.005454) X (Conductor Length ft)	Hydrostatic Pressure: 1410.48 PSI
cuft of Casing 1086.15 cuft (Open Hole Squared) - (Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)	Pressure of the fluids inside casing
Total Slurry Volume 1151.91 cuft (cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)	Displacement: 804.58 psi
bbls of Slurry 205.15 bbls (Total Slurry Volume) X (.1781)	Shoe Joint: 33.93 psi
Sacks Needed 773 sk (Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)	Total 838.52 psi
Mix Water 137.68 bbls (Sacks Needed) X (Gallons Per Sack) ÷ 42	Differential Pressure: 571.96 psi
	Collapse PSI: 2020.00 psi
	Burst PSI: 3520.00 psi
	Total Water Needed: 332.71 bbls

X Authorization To Proceed

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