



Bison Oil Well Cementing Single Cement Surface Pipe

Date: 4/13/2014
Invoice #: 12140
API#: 05-123-38068
Foreman: LEE SHARP

Customer: ENCANA
Well Name: 03-EDITH ANN- DUCKWORTH 4E-21H

County: WELD
State: Colorado
Sec: 21
Twp: 2N
Range: 68W

Consultant:
Rig Name & Number: PATTERSON 272
Distance To Location: 25
Units On Location: 3106-
Time Requested: 3:30 AM
Time Arrived On Location: 3:00
Time Left Location:

WELL DATA

Casing Size OD (in) : 9.625
Casing Weight (lb) : 40.00
Casing Depth (ft.) : 943
Total Depth (ft) : 953
Open Hole Diameter (in.) : 12.25
Conductor Length (ft) : 100
Conductor ID : 15.5
Shoe Joint Length (ft) : 43
Landing Joint (ft) : 40

Max Rate:
Max Pressure:

Cement Data

Cement Name: BFN III
Cement Density (lb/gal) : 15.2
Cement Yield (cuft) : 1.27
Gallons Per Sack: 5.89
% Excess: 32%
Displacement Fluid lb/gal: 8.3
BBL to Pit: 0.0
Fluid Ahead (bbls): 30.0
H2O Wash Up (bbls): 20.0

Spacer Ahead Makeup
KCL 30 =10+10DYE+10

Casing ID

8.835

Casing Grade

J-55 only used

Calculated Results

cuft of Shoe 18.48 cuft
(Casing ID Squared) X (.005454) X (Shoe Joint ft)

cuft of Conductor 80.51 cuft
(Conductor Width Squared) -(Casing Size OD Squared) X (.005454) X (Conductor Length ft)

cuft of Casing 264.01 cuft
(Open Hole Squared)-(Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)

Total Slurry Volume 362.99 cuft
(cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)

bbls of Slurry 85.14 bbls
(Total Slurry Volume) X (.1781) X (% Excess Cement)

Sacks Needed 376 sk
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)

Mix Water 52.79 bbls
(Sacks Needed) X (Gallons Per Sack) ÷ 42

Displacement: 71.24 bbls

(Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)

Pressure of cement in annulus

Hydrostatic Pressure: 744.59 PSI

Pressure of the fluids inside casing

Displacement: 387.89 psi

Shoe Joint: 34.27 psi

Total 422.16 psi

Differential Pressure: 322.43 psi

Collapse PSI: #N/A psi

Burst PSI: #N/A psi

Total Water Needed: 174.03 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**

Customer
Well Name

ENCANA
03-EDITH ANN- DUCKWORTH 4E-21H

INVOICE #
LOCATION
FOREMAN
Date

12140
WELD
LEE SHARP
4/13/2014

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DESCRIPTION OF JOB EVENTS

Safety Meeting		4:20	Displace 1			Displace 2			Displace 3			Displace 4			Displace 5		
MIRU		4:00	BBLS	Time	PSI	BBLS	Time	PSI	BBLS	Time	PSI	BBLS	Time	PSI	BBLS	Time	PSI
CIRCULATE		4:48	0	5:14		0			0			0			0		
Drop Plug			10	5:17	150	10			10			10			10		
5:14			20	5:19	200	20			20			20			20		
			30	5:21	280	30			30			30			30		
			40	5:23	350	40			40			40			40		
M & P			50	5:25	450	50			50			50			50		
Time	Sacks		60	5:27	470	60			60			60			60		
4:51	376		70	5:30	1000	70			70			70			70		
			80			80			80			80			80		
			90			90			90			90			90		
			100			100			100			100			100		
			110			110			110			110			110		
% Excess	32%		120			120			120			120			120		
Mixed bbls	52.8		130			130			130			130			130		
Total Sacks	377		140			140			140			140			140		
bbl Returns	18		150			150			150			150			150		
Water Temp	60																

Notes:

JOB WENT SMOOTHLY NO ISSUES LANDED PLUG 500 PSI OVER LIFT LAND AT CALCULATED

X

Work Performed

X

Title

X

Date