C&J ENERGY SERVICES — O-TEX CEMENTING

Job Summary

Ticket Number	Ticket Date
TN# BCO-1812-0086	12/22/2018

COUNTY	COMPANY	API Number
Weld	PDC ENERGY	05-123-45756
WELL NAME	**RIG**	**JOB TYPE**
Harold 6X-232	Ensign 161	Production Casing
SURFACE WELL LOCATION	**CJES Field Supervisor**	**CUSTOMER REP**
40.33574 -104.58549	Francisco Corral-Flores	Brady Sharp

EMPLOYEES

Larry Laslie	*Vernon Fox*	
AJ Staples		
Austin Holdway		

WELL PROFILE

Max Treating Pressure (psi):	3500	Bottom Hole Static Temperature (°F):	
Bottom Hole Circulating Temperature (°F):		Well Type:	Oil

Open Hole

	Size (in)	TMD From (ft)	TMD to (ft)	TVD From (Ft)	TVD to (Ft)
1	8.5	17,598'	1,631'		
2					

Casing/Tubing/Drill Pipe

Type	Size (in)	Weight (lb/ft)	Grade	TMD From (ft)	TMD to (ft)	TVD From (Ft)	TVD to (Ft)
Surface	9.625	36		1631	0		
Production	5.5	20		17598	1631		

CEMENT DATA

Stage 1: From Depth (ft): To Depth (ft):
Type: **Weighted Spacer**
Volume (sacks): Volume (bbls): 150

Cement & Additives:	Density (ppg)	Yield (ft^3/sk)	Water Req.
	12.5	3.14	18.98

Stage 2: From Depth (ft): To Depth (ft):
Type: **Non-Latex Lead**
Volume (sacks): 25 Volume (bbls): 6

Cement & Additives:	Density (ppg)	Yield (ft^3/sk)	Water Req.
	14	1.37	5.98

Stage 3: From Depth (ft): To Depth (ft):
Type: **Latex Lead**
Volume (sacks): 755 Volume (bbls): 184.2

Cement & Additives:	Density (ppg)	Yield (ft^3/sk)	Water Req.
	14	1.37	4.71

Stage 4: From Depth (ft): To Depth (ft):
Type: **Tail Cement**
Volume (sacks): 2000 Volume (bbls): 434.5

Cement & Additives:	Density (ppg)	Yield (ft^3/sk)	Water Req.
	14.5	1.22	5.41

SUMMARY

				Stage 1	Stage 2
Preflushes:	3	bbls of	Fresh Water	Calculated Displacement (bbl):	389.6	
	150	bbls of	Weighted Spacer	Actual Displacement (bbl):	391	
		bbls of				
TotalPreflush/Spacer Volume (bbl):	153			Plug Bump (Y/N):	Yes	Bump Pressure (psi): 2008
Total Slurry Volume (bbl):	624.7			Lost Returns (Y/N):	No	(if Y, when)
Total Fluid Pumped	1167.3					
Returns to Surface:	Spacer	44	bbls			

Job Notes (fluids pumped / procedures / tools / etc.):

Mix & pump 150bbls of weighted spacer@12.5ppg 3.14Y. Followed by 25sx@14ppg 1.37Y of non-latex lead. Mix & pump 755sx@14ppg 1.37Y Latex lead. Mix & pump 2000sx@14.5ppg 1.22Y of tail cement. Shut down, wash up SCM and drop bottom plug. Displace 389.6 bbls of treated fresh water to bump plug. Burst wet shoe sub and check floats. Pumped job per customers request. Job went well. Thank you!

Customer Representative Signature:

Thank You For Using
CJES O-TEX Cementing

Cement Job Log

C&J ENERGY SERVICES

Customer: PDC ENERGY	Date: 12/22/2018	Serv. Supervisor: Francisco Corral-Flores
Cust. Rep.: Brady Sharp	Ticket #: BCO-1812-0086	Serv. Center: Brighton - 3021
Lease: Harold 6X-232	API Well #: 05-123-45756	County: Weld State: CO
Well Type: Oil	Rig: Ensign 161	Type of Job: Production Casing

Materials Furnished by C&J ENERGY SERVICES

Plugs	Casing Hardware	Sacks of Cement	Fluid Dens (lb/gal)	Excess	Yield (cuft/sk)	Mix Water (gal/sk)	Fluid Volume (bbls)	Mix Water (bbls)
0								
0								
150 bbls ppg Weighted Spacer - 150 bbls of 12	+10.0 PPB CJ890+222.16 PPB CJ300+1.0 PPB CJ209+0.5 PPB CJ776+8.1 PPB CJ801		12.5				150.00	
C&J Non Latex Lead 1-1	50 % CJ914+50 % CJ010-74 +2.0 % CJ020+0.4 % CJ548+0.3 % CJ240+10.0 % CJ041+0.3 % CJX157011	25	14		1.37	5.98	6.08	4
C&J Latex Lead 1-1	50 % CJ914+50 % CJ010-74 +2.0 % CJ020+0.4 % CJ548+0.3 % CJ240+10.0 % CJ041+0.3 % CJX157011+1.0 GPS CJ550L+0.2 GPS CJ891	755	14		1.37	4.71	183.66	85
C&J Tail 1-1	65 % CJ914+35 % CJ010-74 +0.3 % CJ704+0.15 % CJ210K+0.5 % CJ511	2000	14.5		1.22	5.41	433.04	258
Displacement							389.16	
50 % CJ914+50 % CJ010-74+2.0 % CJ020+0.4								
Displacement Chemicals:								

OPEN HOLE DATA	TUBULAR DATA	SIZE WEIGHT	THREAD	DEPTH (ft)	GRADE	ID (in)	BURST (psi)	COLLAPSE (psi)
8.5 in. O.H. (1,651 to 17,590 ft)	5.5 in. 20#, (0 to 17,590 ft)						2400	

PREVIOUS CASING DATA	PERFORATED INTERVAL DATA				CASING EQUIPMENT DEPTHS			
	TOP	BTM	SPF	SIZE	SHOE	FLOAT	STAGE	ACP
9.625 in. 36# (0 to 1,651 ft)					17590	17550		

WELL FLUID TYPE	WELL FLUID DENSITY	DISPLACEMENT FLUID VOLUME	DISPLACEMENT FLUID TYPE	DISPLACEMENT FLUID DENSITY	DIFF PRESS (psi)	CSG LIFT (psi)	MAX PRESS (psi)	WATER ON LOC (bbl)
							3500	1200

Time	Rate (bbl/min)	Csg. Press. (psi)	Tbg. Press (psi)	Ann. Press. (psi)	Stg. Vol. (bbl)	Cum. Vol. (bbl)	Stage Details
8:30 PM						0	Tailgate meeting
9:00 PM						0	Mix latex
1:00 AM						0	Spot equipment
1:15 AM						0	Rig in iron
6:00 AM						0	Safety meeting
7:06 AM	3	365			3	3	Fill lines
7:08 AM		5260				3	Pressure test iron
7:15 AM	5.2	451			150	153	Mix & pump 150 bbls weighted spacer@12.5ppg
7:50 AM	5.4	243			6	159	Mix & pump 25sx@14ppg 1.37Y non-latex lead
7:54 AM	5.4	197			184.2	343.2	Mix & pump 755sx@14ppg 1.37Y latex lead
8:30 AM	6.9	295			434.5	777.7	Mix & pump 2000sx@14.5ppg 1.22Y tail cement
9:50 AM						777.7	Wash up SCM & drop top plug
10:02 AM	8	1590			391	1168.7	Displacement
10:56 AM		2008				1168.7	Bump plug
11:04 AM		2400				1168.7	Burst WSS
11:06 AM						1168.7	Check floats
11:15 AM						1168.7	Rig out iron
						1168.7	
						1168.7	
						1168.7	
						1168.7	
						1168.7	
						1168.7	
						1168.7	

Left Yard	12/22/18 7:30 PM	Left Loc.	12/23/18 12:00 PM	Start Pump	12/23/18 7:06 AM		
Arrived Loc.	12/22/18 8:30 PM	Returned Yd.	12/23/18 1:00 PM	End Pump	12/23/18 11:06 AM		

Bumped Plug (psi)	Final Differential (psi)	Floats Held (Y/N)	PSI Left on Casing	Cement to Surface (bbl)	Top of Cement (ft)	Full Circ. During Job (Y/N)	Max Pump Pressure (psi)	Casing Rotation	Standby Charged(hrs)	Casing Reciprocation		
Yes	2008	Yes		0	2298'	Yes	3500	No	6			

Francisco Flores — Service Supervisor

12/ 22/ 2018 — Date