

Cement Post Job Report

Client: PDC Energy

Well Name: George 16N

API #: 05-123-51784

Job Date: April 19, 2024

Job Type: New Well - 5.5" Production String

Cement Company & Contact: EXERO Well Integrity -
Cheve Meyer 720-239-3819

EXERO

TREATMENT REPORT

CLIENT	WELL	RIG	JOB TYPE	THREAD TYPE	WELLHEAD CONNECTION
PDC Energy	George 16N	True 41	Production	Buttress	5 1/2" HP Cement Head

WELL MD (FT)	WELL TVD (FT)	DEVIATION (DEG)	NUMBER OF STAGES	BHST (DEG)	BHCT (DEG)
17,414	6838	90	1	230	230

PACKER/RETAINER/CIBP/DV TOOL DEPTHS (FT)	TOOL TYPE	TOP OF PERFS (FT)	BOTTOM OF PERFS (FT)	NUMBER OF HOLES

CASING/TUBING/DP DETAILS								
STRING TYPE	GRADE	OD"	WT/FT	ID"	OH SIZE"	% EXCESS LEAD	% EXCESS TAIL	TOTAL DEPTH (FT)
Surface	K55	9.625	36	8.921	12.25			1989
Production	P110	5.5	20	4.778	8.5	0	0	17,401
MAXIMUM CASING/TUBING/DP PSI			MAXIMUM ANNULAR PSI					

Mud Type	OBM	Rotate Y,N	YES	Circulation Data				Water Requirements (bbls)		
Mud ppg		Rate (rpm)	60	Circulate Time (hrs)		1.5	Spacers		160	
Flow Temp		Torque Val.	9000	Circulation Rate (bpm)		10	PSI	1200	Stage 1 Lead	148
Vis. Sec/qt		Time (hr)	FULL	Full Circulation ? (Y,N,P)		Yes		Stage 1 Tail	225	
PV (cP)		Pipe Reciprocation		Gas Present (Y,N)		NO	Units	Stage 2 Lead		
Yield Pt		Recip Y,N		Centralizers/Plugs				Stage 2 Tail		
10 sec gel		Stroke (ft)		Quantity & Type		Customer Provided		Displacement	386	
10 min gel		Recip time		Top Plug/Type		Customer Provided		Wash up	20	
30 min gel		Stuck ?		Bottom Plug/Type		Customer Provided		Total + 10% Safety	1033	

Preflush & Spacers		Stage 1 Lead - Class G		Stage 1 Tail - Class G		Stage 2 Lead		Stage 2 Tail		Displacement	
Spacer 1	Spacer	Density	12.9	Density	13.7	Density		Density		Fluid Type	Water
Density	12	Sacks	1643	Sacks	1426	Sacks		Sacks		Dens. ppg	8.33
Volume	160	Vol/bbls	319.0	Vol/bbls	347.9	Vol/bbls	0.0	Vol/bbls	0.0	Vol. bbl	386
Rate	10	Rate	10	Rate	10	Rate		Rate		Rate bpm	10
Spacer 2		Yield	1.09	Yield	1.37	Yield		Yield		Clay Stay?	NO
Density		Gal/Sk	3.77	Gal/Sk	6.63	Gal/Sk		Gal/Sk		Biocide ?	YES
Volume		% Excess	0	% Excess	0	% Excess		% Excess		Slow @ bbl	366
Rate		TOL (ft)	1029	TOT (ft)	8688	TOL (ft)		TOT (ft)		Bump PSI	2750

Final Displacement (bbls)	386
Bump Plug?	YES
Final Bump Pressure (psi)	3300
Full Returns throughout job?	FULL
Vol. away/Time when returns lost	NA
Vol. away when returns were regained	NA
Spacer to Surface?	YES
Spacer volume returned (bbls)	111
Cement to surface?	NO
Cement volume to surface stage 1	NA
Cement volume to surface stage 2	NA

Surface Top Out Details-Pumped		Job Summary & Chems Used	
Cement Type		MFC 47 (gal)	112
Dens. ppg		MFC 67 (gal)	160
Sacks qty		Defoamer (gal)	35
Gal/sk		Biocide (gal)	20
Yield		Corr. Inhib (gal)	
Lbs. of chloride used		Fiber (lbs)	
Top out pipe used ?		Chloride (lbs)	
Feet of top out pipe		Retarder (lbs)	
Annulus holding?		Clay Stay (gal)	
Sodium Silicate Used		Other	

JOB LOG

CLIENT	WELL	RIG	JOB TYPE	START DATE	Ambient Conditions		
PDC Energy	George 16N	True 41	Production	4/19/2024	Temp / Hum / Air Press 34 Deg F / 92% / 25.18 in		
DATE (dd/mm)	TIME (hh:mm)	DENSITY (ppg)	RATE (bpm)	VOL. (bbl)	TOTAL VOL.	PRESSURE	TREATMENT COMMENTS
4/19/2024	8:30:00 AM						CREW CALLED OUT FOR AN ON LOCATION TIME OF 3:30 PM
	2:30:00 PM						CREW ARRIVES ON LOCATION/CHECK IN WITH CO REP/CALCULATE JOB
	3:30:00 PM						CASING LANDED/SPOT IN AND RIG UP EQUIPMENT/CIRCULATE WELL
	5:20:00 PM						SAFETY MEETING
	5:30:00 PM						RIG UP FLOOR/DROP 1ST BOTTOM PLUG
	5:39:00 PM	8.3	3.0	3	3	950	FILL LINES
	5:43:00 PM	8.3	1.0	1	1	6870	PRESSURE TEST
	5:45:00 PM	12	10.0	160	160	2000	PUMP 160 BBLS OF SPACER AT 12 PPG (111 RETURNED TO SURFACE)
	6:03:00 PM						SHUT DOWN/DROP 2ND BOTTOM PLUG
	6:05:00 PM	12.9	10.0	319	319	2400	PUMP 319 BBLS OF LEAD AT 12.9 PPG (TOL-1029') (1643 SKS, 1.09 YLD, 3.77 GPS, 148 MXH20)
	6:43:00 PM	13.7	10.0	348	348	2000	PUMP 348 BBLS OF TAIL AT 13.7 PPG (TOT-8688') (1426 SKS, 1.37 YLD, 6.63 GPS, 225 MXH20)
	7:19:00 PM	8.3	10.0	8	8	1300	PUMP 8 BBLS OF SUGAR WATER
	7:21:00 PM						SHUT DOWN/WASHUP PUMPS AND LINES/DROP TOP PLUG
	7:26:00 PM	8.3	10.0			1050	BEGIN DISPLACEMENT USING FRESHWATER WITH BIOCIDES IN ALL
	7:31:00 PM	8.3	10.0	50	50	2250	FRESHWATER DISPLACEMENT
	7:36:00 PM	8.3	10.0	50	100	2850	FRESHWATER DISPLACEMENT
	7:41:00 PM	8.3	10.0	50	150	3550	FRESHWATER DISPLACEMENT
	7:46:00 PM	8.3	10.0	50	200	3750	FRESHWATER DISPLACEMENT
	7:51:00 PM	8.3	10.0	50	250	3900	FRESHWATER DISPLACEMENT
	7:55:00 PM	8.3	10.0	20	270	3900	FRESHWATER DISPLACEMENT/NEO-SPACER INTERFACE AT SHAKERS/SWAPPED TO OPEN TOPS
	7:58:00 PM	8.3	8.0	30	300	3750	FRESHWATER DISPLACEMENT
	8:03:00 PM	8.3	8.0	50	350	3700	FRESHWATER DISPLACEMENT
	8:05:00 PM	8.3	4.0	16	366	2750	FRESHWATER DISPLACEMENT/SLOWED RATE TO LAND PLUG
	8:12:00 PM	8.3	4.0	20	386	3300	LAND PLUG GOING 500 OVER FCP
	8:16:00 PM	8.3	2.7			3300	PRESSURE UP TO BURST DISK
	8:18:00 PM	8.3	2.7	1	1	4900	BURST DISK
	8:19:00 PM	8.3	2.7	5	5	2700	PUMP 5 BBLS WET SHOE
	8:22:00 PM	8.3					CHECK FLOATS/FLOATS HELD/RECEIVED 4.5 BBLS BACK
	8:23:00 PM	8.3	5.0	40	40	150	RIG IN TO FLUSH STACK/PUMP 40 BBLS THRU BOP
	8:45:00 PM						RIG DOWN FLOOR AND EQUIPMENT/FINISH PAPER WORK
	10:00:00 PM						DEPART LOCATION

George 16N Production Pump Chart – Pressure / Rate / Density

— discharge pressure ds psi — backup density lbm/galUS — combined rate bbl/min

