EXERO

ROCK SOLID
WELL INTEGRITY
SOLUTIONS

Cement Post Job Report

Client: PDC Energy

Well Name: George 9N

API #: 05-123-51779

Job Date: March 31, 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 09N	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)
17953'	6833'	90	1	230	230

PACKER/RETAINER/CIBP/DV TOOL DEPTHS (FT)	TOOL TYPE	TOP OF PERFS (FT)	BOTTOM OF PERFS (FT)	NUMBER OF HOLES
Wet Shoe/ Landing Collar @ 17920'				

CASING/TUBING/DP DETAILS								
STRING TYPE	GRADE	OD"	WT/FT	ID"	OH SIZE"	% EXCESS LEAD	% EXCESS TAIL	TOTAL DEPTH (FT)
Surface		9.625	36	8.921	12.25			1970
Production	P110	5.5	20	4.778	8.5	0	0	17,940
MAXIMUM CASING/TUBING/DP PSI						MAXIMUM ANNULAR PSI		

Mud Type	OBM
Mud ppg	10.3
Flow Temp	150
Vis. Sec/qt	55
PV (cP)	15
Yield Pt	15
10 sec gel	6
10 min gel	11
30 min gel	14

Rotate Y,N	Yes
Rate (rpm)	30
Torque Val.	27000
Time (hr)	Job
Pipe Reciprocation	
Recip Y,N	NO
Stroke (ft)	
Recip time	
Stuck ?	

Circulation Data			
Circulate Time (hrs)	2		
Circulation Rate (bpm)	10	PSI	1550
Full Circulation ? (Y,N,P)	Yes		
Gas Present (Y,N)	Yes	Units	1200
Centralizers/Plugs			
Quantity & Type	Customer Provided		
Top Plug/Type	Customer Provided		
Bottom Plug/Type	Customer Provided		

Water Requirements (bbls)	
Spacers	160
Stage 1 Lead	148
Stage 1 Tail	244
Stage 2 Lead	
Stage 2 Tail	
Displacement	402
Wash up	20
Total + 10% Safety	1071

Preflush & Spacers	
Spacer 1	Spacer
Density	12
Volume	160
Rate	10
Spacer 2	
Density	
Volume	
Rate	

Stage 1 Lead - Class G	
Density	12.9
Sacks	1643
Vol/bbls	319.0
Rate	10
Yield	1.09
Gal/Sk	3.77
% Excess	0
TOL (ft)	989

Stage 1 Tail - Class G	
Density	13.7
Sacks	1516
Vol/bbls	369.9
Rate	10
Yield	1.37
Gal/Sk	6.63
% Excess	0
TOT (ft)	8631

Stage 2 Lead	
Density	
Sacks	
Vol/bbls	0.0
Rate	
Yield	
Gal/Sk	
% Excess	
TOL (ft)	

Stage 2 Tail	
Density	
Sacks	
Vol/bbls	0.0
Rate	
Yield	
Gal/Sk	
% Excess	
TOT (ft)	

Displacement	
Fluid Type	Water
Dens. ppg	8.33
Vol. bbl	398
Rate bpm	9
Clay Stay?	No
Biocide ?	Yes
Slow @ bbl	378
Bump PSI	2900

Final Displacement (bbls)	398
Bump Plug?	Yes
Final Bump Pressure (psi)	3400
Full Returns throughout job?	Full
Vol. away/Time when returns lost	
Vol. away when returns were regained	
Spacer to Surface?	Yes
Spacer volume returned (bbls)	113
Cement to surface?	No
Cement volume to surface stage 1	
Cement volume to surface stage 2	

Surface Top Out Details-Pumped	
Cement Type	
Dens. ppg	
Sacks qty	
Gal/sk	
Yield	
Lbs. of chloride used	
Top out pipe used ?	
Feet of top out pipe	
Annulus holding?	
Sodium Silicate Used	

Job Summary & Chems Used	
MFC 47 (gal)	112
MFC 67 (gal)	160
Defoamer (gal)	35
Biocide (gal)	20
Corr. Inhib (gal)	
Fiber (lbs)	145
Chloride (lbs)	
Retarder (lbs)	
Clay Stay (gal)	
Other	

JOB LOG

CLIENT	WELL	RIG	JOB TYPE	START DATE	Ambient Conditions
PDC Energy	George 09N	True 41	Production	3/31/2024	Temp / Hum / Air Press 56 Deg F / 47% / 24.59 in

DATE (dd/mm)	TIME (hh:mm)	DENSITY (ppg)	RATE (bpm)	VOL. (bbl)	TOTAL VOL.	PRESSURE	TREATMENT COMMENTS
3/31/2024	9:00:00 AM						Arrived on location/ Wait for rig to finish running casing
3/31/2024	12:45:00 PM						Spot equipment
3/31/2024	12:55:00 PM						Rig up/ Wait for rig to finish circulation
3/31/2024	2:15:00 PM						Safety meeting
3/31/2024	2:28:00 PM						Rig up floor
3/31/2024	2:36:00 PM						Load 1st BOTTOM plug
3/31/2024	2:39:00 PM	8.33		3	3		Fill surface line
3/31/2024	2:41:00 PM	8.33				5300	Pressure test, SD to fix leak on standpipe with manlift
3/31/2024	2:53:00 PM						Fill surface line
3/31/2024	2:55:00 PM						Pressure test, replace seal inside iron on standpipe with manlift
3/31/2024	3:02:00 PM						Fill surface line
3/31/2024	3:04:00 PM						Pressure test
3/31/2024	3:06:00 PM	12	10.0	160	160	2200	Pump 160 bbl SPACER @ 12# with surfactant and fiber
3/31/2024	3:22:00 PM						Shutdown/ Drop 2nd BOTTOM plug
3/31/2024	3:25:00 PM	12.9	10.0	319	319	2300	Pump 319 bbl LEAD cement @ 12.9#, 1.09Y, 3.77gal/sk TOL- 989'
3/31/2024	3:58:00 PM	13.7	10.0	370	370	2100	Pump 370 bbl TAIL cement @ 13.7#, 1.37Y, 6.63gal/sk TOT- 8631'
3/31/2024	4:35:00 PM	8.33	10.0	10	10	2000	Pump 10 bbl Freshwater to wash lines
3/31/2024	4:36:00 PM	8.33					Shutdown/ Drop TOP plug
3/31/2024	4:40:00 PM	8.33					Pump 398 bbl Freshwater Displacement, First 10 bbl SUGAR water
3/31/2024	4:42:00 PM	8.33	10.0	10	10	2000	Pump Freshwater Displacement
3/31/2024	4:46:00 PM	8.33	10.0	50	50	2300	Pump Freshwater Displacement
3/31/2024	4:51:00 PM	8.33	10.0	100	100	2900	Pump Freshwater Displacement
3/31/2024	4:57:00 PM	8.33	8.6	150	150	3300	Pump Freshwater Displacement
3/31/2024	5:03:00 PM	8.33	8.0	200	200	3700	Pump Freshwater Displacement
3/31/2024	5:09:00 PM	8.33	8.0	250	250	3900	Pump Freshwater Displacement, Spacer to surface at 285, circulate 113 bbl Spacer to surface
3/31/2024	5:16:00 PM	8.33	8.0	300	300	4100	Pump Freshwater Displacement
3/31/2024	5:23:00 PM	8.33	7.9	350	350	4000	Pump Freshwater Displacement
3/31/2024	5:28:00 PM	8.33	3.0	378	378	2900	Pump Freshwater Displacement, Slow rate to 3 bbl/ min to bump plug
3/31/2024	5:31:00 PM	8.33	BUMP	398	398	2900-3400	Bump plug/ Shutdown FCP-2900psi, Bumped to 3400psi
3/31/2024	5:35:00 PM	8.33				5000	Burst wet shoe per company man, Opened @ 5000psi
3/31/2024	5:36:00 PM	8.33	2.0	5	5	2750	Pump 5 bbl Wet shoe FCP- 2750psi
3/31/2024	5:38:00 PM	8.33					Shutdown
3/31/2024	5:39:00 PM	8.33					Check float/ float held/ 5 bbl back to truck
3/31/2024	5:45:00 PM	8.33	10.0	40	40	500	Rig up and flush stack clean
3/31/2024	5:45:00 PM						Begin 30 min inflow test
3/31/2024	5:55:00 PM						Rig down
3/31/2024	6:15:00 PM						End 30 min inflow test, 20 gal Freshwater to surface
3/31/2024	6:45:00 PM						Depart location

George 9N Production Pump Chart – Pressure / Rate / Density