EXERO

ROCK SOLID
WELL INTEGRITY
SOLUTIONS

Cement Post Job Report

Client: PDC Energy

Well Name: George 20N

API #: 05-123-51785

Job Date: May 1, 2024

Job Type: New Well - 5.5" Production String

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

JOB TREATMENT REPORT

Client	Well	Rig	Job Type
PDC Energy	George 20N	True 41	Production

Wellhead Connection	Thread Type	BHST (DEG)	BHCT (DEG)
5 1/2" HP Cement Head	Buttress	225	220

Well MD (FT)	Well TVD (FT)	Deviation (DEG)	Number of Stages
18220	6809	90	1

Tool Type	Tool Depth	Max Casing Burst (psi)	Max Ann. Collapse (psi)

TUBULAR DETAILS

String	Depth (ft)	OH Size"	OD"	ID"	Grade	Lb/ft	% Excess Lead	% Excess Tail
Surface	2001	12.25						
Production	18207	8.5	5.5	4.778		20	0	0

MUD PROPERTIES - CIRCULATION DETAILS - CENTRALIZER DATA

Mud Type	OBM	Rotate		Circulation Time (hrs)	2
Mud Weight (ppg)	10.2	Rate (rpm)	30	Circulation Rate (bpm)	10
Flow Line Temp (Deg)	140	Torque Val.	28000	Circulation Pressure (psi)	1400
Vis. Per Sec/Qt	59	Time	0:00	Full Circulation	Full
PV (cP)	19	Reciprocate		Gas Present (Y,N) & Units	No
Yield Point	13	Stroke (Ft)		Centralizer Detail	
10 Sec. Gel	6	Recip. Time (hr)		Quantity & Type	Customer Provided
10 Min. Gel	9	Stuck		Top Plug	Customer Provided
30 Min. Gel	13			Bottom Plug	Customer Provided

Pre-flush & Spacers	
Spacer 1	Spacer
Density (ppg)	12
Volume (bbls)	160
Rate (bpm)	10
Spacer 2	
Density (ppg)	
Volume (bbls)	
Rate (bpm	

Stage 1 Lead - Class G	
Density (ppg)	12.9
Sacks	1643
Volume (bbls)	319.0
Rate (bpm)	10
Yield cuft/sk	1.09
Gallon/sk	3.77
% Excess	0
TOL (ft)	957

Stage 1 Tail - Class G	
Density (ppg)	13.7
Sacks	1566
Volume (bbls)	382.1
Rate (bpm)	10
Yield cuft/sk	1.37
Gallon/sk	6.63
% Excess	0
TOT (ft)	8600

Stage 2 Lead	
Density (ppg)	
Sacks	
Volume (bbls)	0.0
Rate (bpm)	
Yield cuft/sk	
Gallon/sk	
% Excess	
TOL (ft)	

Stage 2 Tail	
Density (ppg)	
Sacks	
Volume (bbls)	0.0
Rate (bpm)	
Yield cuft/sk	
Gallon/sk	
% Excess	
TOT (ft)	

Displacement	
Fluid Type	Water
Density (ppg)	8.3
Volume (bbl)	404.0
Rate (bpm)	9
Slowed Rate at bbl#	384
Bumped to (psi)	3000-3500
Biocide added?	Yes
Clay Stay added?	No

Post Job Volumes and Pressures

Final Displacement (bbls)	404
Bumped plug?	Yes
Final Bump Pressure (psi)	3500
Full Returns Through Job?	Full
Vol. When Lost Returns (bbl)	
Vol. When Regained? (bbl)	
Spacer to Surface?	Yes
Spacer vol. to Surface (bbl)	114
Cement to Surface	No
Cement vol. Stg 1 to Surf?	
Cement vol. Stg 2 to Surf?	

Surface Job Top Out	
Cement Type	
Density (ppg)	
Sacks	
Gallon/sk	
Yield cuft/sk	
Cal. Chlor (lbs)	
Top Out Pipe Used	
Top Out Pipe (ft)	
Annulus Holding	
Sodium Silicate Used	

Job Summary (Chems Used)	
MFC-47 (gal)	80
MFC-67 (gal)	168
Defoamer (gal)	
Biocide (gal)	20
Corrosion Inhib (gal)	
Clay Stabilizer (gal)	
Fiber (lbs)	
Cal. Chloride (lbs)	
Retarder (lbs)	
Other	

Job Log

Client	Well Name & Number	Rig Name	Job Type	Start Date	Ambient Conditions
PDC Energy	George 20N	True 41	Production	5/1/2024	Temp / Hum / Air Press 58 Deg F / 44% / 24.79 in

Date	Time	Density	Rate	Vol.	Total Vol.	Pressure	Job Treatment Comments
5/1/2024	8:30:00 AM						Arrived on location/ Wait for rig to finish running casing
5/1/2024	11:50:00 AM						Spot equipment
5/1/2024	12:15:00 PM						Rig up/ Wait for rig to finish circulation
5/1/2024	1:35:00 PM						Safety meeting
5/1/2024	1:57:00 PM						Rig up floor
5/1/2024	1:57:00 PM						Load 1st BOTTOM plug
5/1/2024	1:59:00 PM	8.33	6.2	3	3		Fill surface lines, 3bbl Freshwater
5/1/2024	2:00:00 PM	8.33				8100	Pressure test
5/1/2024	2:03:00 PM	12	10	160	160	1900	Pump 160 bbl SPACER @ 12# with surfactant
5/1/2024	2:19:00 PM						Shutdown/ Drop 2nd BOTTTOM plug
5/1/2024	2:22:00 PM	12.9	9	319	319	1750	Pump 319 bbl (1643sks) LEAD cement @ 12.9#, 1.09Y, 3.77gal/sk, TOL- 957'
5/1/2024	2:56:00 PM	13.7	10	382	382	1650	Pump 382 bbl (1566sks) TAIL cement @ 13.7#, 1.37Y, 6.63gal/sk, TOT- 8600'
5/1/2024	3:35:00 PM	8.33	10	10	10	1000	Pump 10 bbl Fresh Washup Water
5/1/2024	3:37:00 PM						Shutdown/ Drop TOP plug/ Finish washing pump
5/1/2024	3:43:00 PM	8.33					Pump 404 bbl Freshwater Displacement
5/1/2024	3:44:00 PM	8.33	10	10	10	700	Pump Freshwater Displacement
5/1/2024	3:48:00 PM	8.33	10	50	50	2200	Pump Freshwater Displacement
5/1/2024	3:53:00 PM	8.33	10	100	100	2800	Pump Freshwater Displacement
5/1/2024	3:59:00 PM	8.33	10	150	150	3400	Pump Freshwater Displacement
5/1/2024	4:04:00 PM	8.33	10	200	200	3800	Pump Freshwater Displacement
5/1/2024	4:10:00 PM	8.33	10	250	250	3900	Pump Freshwater Displacement, Spacer to surface at 290 away, circulate 114 bbl Spacer to surface.
5/1/2024	4:15:00 PM	8.33	10	300	300	4100	Pump Freshwater Displacement
5/1/2024	4:20:00 PM	8.33	S/D	340	340		Shutdown to allow rig hands to get valve closed at shakers
5/1/2024	4:21:00 PM	8.33	10	350	350	4200	Pump Freshwater Displacement
5/1/2024	4:25:00 PM	8.33	4	384	384	3000	Pump Freshwater Displacement, Slow rate to 4 bbl/ min to bump plug
5/1/2024	4:29:00 PM	8.33	BUMP	404	404	3000-3500	Bump plug/ Shutdown FCP- 3000psi, bumped to 3500psi
5/1/2024	4:32:00 PM	8.33					Sheer Wet Shoe per company man, Opened at 4800psi
5/1/2024	4:33:00 PM	8.33	3	5	5	2825	Pump 5 bbl Wet Shoe
5/1/2024	4:35:00 PM						Shutdown
5/1/2024	4:36:00 PM						Check float, float held, 5 bbl back to truck
5/1/2024	4:40:00 PM	8.33	10	30	30	450	Rig up and flush stack clean
5/1/2024	5:20:00 AM						Rig down
							Depart location

George 20N Production Pump Chart – Pressure / Rate / Density