Occidental Petroleum Corporation

SBJ 13-9HZ

Surface Casing

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1. Project Background

On October 07, 2021, Magnum utilized PCMP-Q technology on the surface casing cementing job with a total of 344 bbl mixed and pumped, and maximum combined displacement rate of 6 bbl/min. The total time of operations was 2 hours.

2. *Cement Blend Data*

This is the blend data of the Cement ordered for the job.

Blend Description	Cement Properties
Base Cement Blend : MAG S 14.1	
Mix Water (gal/sk)	5.89
Yield (ft^3/sk)	1.28
Lab Results	
Density (ppg)	14.1
Working Time (hr:min)	2:13
Thickening Time (hr:min)	3:05
Compressive Strength (psi/12h)	698
Compressive Strength (psi/24h)	1070
Mix water Temperature (°F)	65
Slurry Temperature (°F)	65

3. Pump Schedule

PUMP SCHEDULE

RATE (BPM)	EVENT	VOLUME (BBL)	DENSITY (LB/GAL)	# OF SACKS	SACK WEIGHT (LB/SK)	YIELD (FT3/SK)	MIX WATER (GAL/SK)
	Start Job			Max PSI 1200			
	Drop Plug						
2.5	Fill Fresh Water	5.0					
	Test Lines 2500						
2.5	Fresh water	5.0					
2.5	MAG Mark	10.0					
2.5	Fresh water	10.0					
6	Mag S 14.1#	179.3	14.1	786.9	87.00	1.28	5.89
3	Slow at 100 away						
	Drop top plug						
6	Displacement	139.7					
	Land Plug						
	TOL						
	TOT			Bump Plug 500psi Over			
	Spacer to Surface	30.0					
	Cement to Surface	8.4					

TOTAL	TOTAL PIPE	SHOE JOINT	FLOAT COLLAR	BBL/FT	H2O REQ.
	1,884.00	41.00	1843.00	40.0000	301

SHOE JOINT CAP.	3.10	USE MUD SCALES TO VERIFY WEIGHT			
PRESSURE TO LAND (PSI)		552	TOTAL FLUID PUMPED (BBL)		349
Collapse (psi)	2,474	Burst (psi)	4600	JOB#	109329
Client	Occidental	Well Name	SBJ 13-9HZ	Job Type	Surface
Water Temp (°F)	65	Water pH	7	Water Chlorie (mg/L)	1000
Total Hardness (mg/L):	300				

4. Job Sequence / Procedure 1 of 2

US Treatment Report

Magnum Cementing Services

Customer:	OCCIDENTAL PETROLEUM CORP.			**Job #:**	JOB00109329
Rep:	David Cornett	**Rig:**	Ikon 12	**Job Date**	Oct 06 @ 00:00
Supervisor:	TRAVIS TOLMAN	**Well:**	SBJ 13-9HZ	**Time Requested:**	Oct 07 @ 07:30
Job Type:	US Primary Casing-Surface	**UWI:**	SBJ 13-9HZ	**Time Arrived:**	Oct 07 @ 07:30
		Surface:	T4N R68W S13	**Time Released:**	Oct 07 @ 11:30

786.9 sk MAG S 14.1 + 1.00% MCA-1 + 0.10% MCDF-P

Yield: 1.28 ft3/sk = 179.39bbls Mix Water: 5.89 gal/sk = 4634.84gal

BHCT (F)	81	BHST (F)	81	Surface Casing Casing Size (in)	9.625
Surface Casing Grade	L-80	Surface Casing Weight (lb/ft)	40	Collapse Csg Pressure (psi)	2472
Float Depth (ft)	1843	Hole Size (in)	13.5	Max Csg Pressure (psi)	4600
Max Pressure (psi)	1200	Mud Density (lb/gal)	8.6	Mud Type	WBM
Plug Size (in)	9.625	Plug Type	Rig Supplied	TMD (ft)	1884
TVD (ft)	1884	Unkown UDF	Surface Casing		

Treatment Info: Sacks Used: 0 Sacks Not Used: 0

Preflush: 10bbls Fresh Water & 10bbls MAG Mark & 10bbls Fresh Water

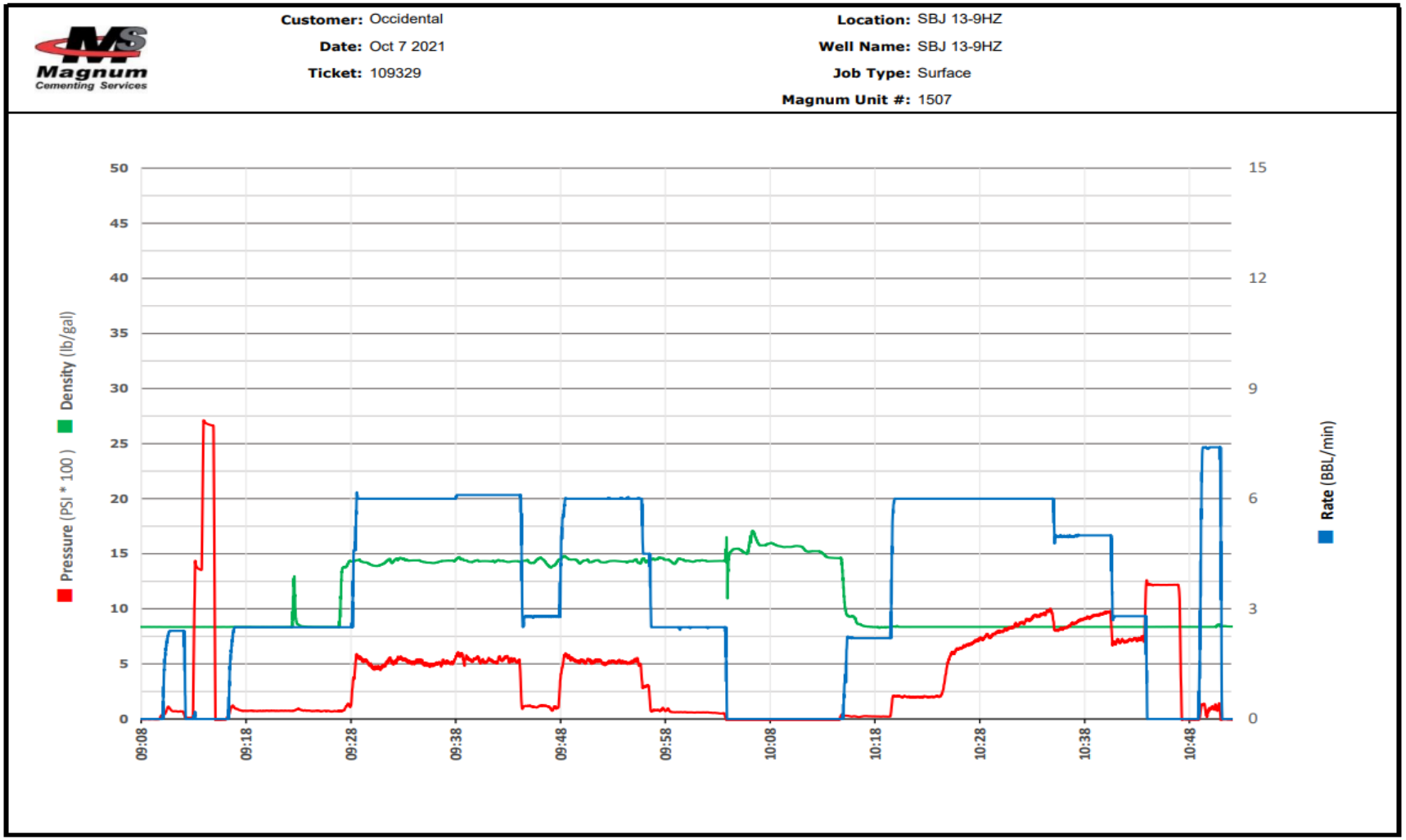
Displace: 139.7bbls Fresh Water

				Circulation Time:	1
		Slurry Temp:		Bulk Sample:	Yes
		Water Temp:	65	Water Sample:	Yes
		Bulk Temp:		Slurry Sample:	Yes
		Air Temp:	51	Air Pressure	29.99
Slurry Returns:	10	Plug Bumped:	Yes	Pump Out Lines:	No
				Float Held:	Yes
Cement Class:		Type III	Humidity:	61	Precipitation: 0

Job Sequence / Procedure 2 of 2

Time	Pressure psi	Annular Pressure psi	Volume Per Stage bbls	Total Stage Volume bbls	Rate bbls/min	Treatment Detail
07:00	0.00					Arrive on Location - Arrive on location, talk with company man to get number and discuss safety. On location time 7;30
08:45	0.00					Safety Meeting - Held safety meeting with company man, rig hands and crew
09:00	0.00					Drop Plug - Drop bottom plug
09:11	130.00		5		2.5	Fill Lines - Load pump and lines with fresh water
09:14	2,700.00					Start Pressure Test - Pressure test pump and lines with fresh water
09:17	120.00		25		2.5	Pump Preflush - Pump 5bbls fresh water, 10bbls MAG Mark, 10bbls fresh water
09:28	708.00		179.3		6	Pump Slurry - Pump 786.9sks/179.3bbls of MAG S at 14.1#-1.28Y-5.89gps
10:05	0.00					Stop Pumping
10:10	0.00					Drop Plug - Drop plug, witnessed by company man
10:16	1,058.00		100		6	Displace - Displace with fresh water, calculated displacement 139.7bbls
10:36	1,025.00		30		5	Decrease Rate - Slowed rate pressure was high
10:42	702.00		10		3	Decrease Rate - Slow rate to land plug
10:45	1,246.00					Bump Plug - Actual displacement 140bbls, got 10bbls cement to surface
10:48	1,220.00					Check Floats - Float held, got back .5bbl
10:50	0.00					Wash Up Truck
11:10	0.00					Rig Out
11:30	0.00					Leave Location

5. Job Graph


Customer: Occidental
Date: Oct 7 2021
Ticket: 109329
Location: SBJ 13-9HZ
Well Name: SBJ 13-9HZ
Job Type: Surface
Magnum Unit #: 1507
Pressure (PSI * 100)
Density (lb/gal)
Rate (BBL/min)
50
45
40
35
30
25
20
15
10
5
0
15
12
9
6
3
0
09:08
09:18
09:28
09:38
09:48
09:58
10:08
10:18
10:28
10:38
10:48