



Terra Energy Partners

Well Name: STRAIT BOTTOM RANCH SG 413-22

API #: 05-045-24009

Job Type: Surface

Date Job Completed: 4/12/2020

Quote #: QUO-44561

Execution #: EXC-25693



Terra Energy Partners

Attention: Mr. Lynn Cass | (970) 263-2716 | LCass@terraep.com

Terra Energy Partners | 4828 Loop Central Dr., Suite 900 | Houston, TX 77081

Dear Mr. Cass,

Thank you for the opportunity to provide cementing services on this well. BJ Services strives to achieve complete customer satisfaction. If you have any questions regarding the services or data provided, please contact BJ Services at any time.

Sincerely,

Devon Hanson

Field Engineer | (701) 590-5946 | devon.hanson@bjservices.com

Field Office 28730 US-6, Rifle, CO 81650

Phone: (970) 632-2412

Sales Office 999 18th St. Suite 1200 Denver, CO 80202

Phone: (281) 408-2361

BJ Cementing Treatment Report

SERVICE SUPERVISOR	Douglas Diaz	FORMATION	
CLIENT FIELD REPRESENTATIVE	Steve Bumgarner	RIG	H&P 318
DISTRICT	Rifle, CO	COUNTY	GARFIELD
SERVICE	Cementing	STATE / PROVINCE	CO

WELL GEOMETRY

TYPE	ID (in)	OD (in)	WEIGHT (lb/ft)	MD (ft)	TVD (ft)	EXCESS (%)	GRADE	THREAD
Casing	9.00	9.63	32.30	1,041.00	969.00		H-40	ST&C
Open Hole	13.50	0.00	0.00	1,050.00	969.00	18.00		

HARDWARE

Bottom Plug Used?	No	Tool Type	Float Collar
Top Plug Used?	Yes	Tool Depth (ft)	996.00
Top Plug Provided By	Non BJ	Max Casing Pressure - Rated (psi)	3520.00
Top Plug Size	9.630	Max Casing Pressure - Operated (psi)	2816.00
Centralizers Used	No	Pipe Movement	None
Landing Collar Depth (ft)	996	Job Pumped Through	Manifold
Top Connection Size	9.63	Top Connection Thread	8 RND

CIRCULATION PRIOR TO JOB

Well Circulated By	Rig	Flare Prior to / during the Cement Job	No
Circulation Prior to Job	Yes	Gas Present	No
Circulation Time (min)	30.00	Solids Present at End of Circulation	No
Circulation Rate (bpm)	11.00	Lost Circulation Prior to Cement Job	No
Circulation Volume (bbls)	330.00		

TEMPERATURE

Ambient Temperature (°F)	47.00	Slurry Cement Temperature (°F)	63.00
Mix Water Temperature (°F)	56.00		

FLUID DETAILS

FLUID TYPE	FLUID NAME	DENSITY (ppg)	YIELD (Cu Ft/sk)	H ₂ O REQ (gals/sk)	PLN TOP FLD (ft)	LENGTH (ft)	VOL (sk)	VOL (Cu Ft)	VOL (bbls)
Spacer / Pre Flush / Flush	Water	8.30			0.00				20.00
Lead Slurry	BJCem S100	12.30	2.3380	13.43	0.00	500.00	124	289.00	51.40
Tail Slurry	BJCem S100	12.80	2.0761	11.47	500.00	500.00	149	308.00	54.80
Displacement Final	Displacement	8.30			0.00			0.00	75.20

FLUID TYPE	FLUID NAME	COMPONENT	CONCENTRATION	UOM
Lead Slurry	BJCem S100	CEMENT, ASTM TYPE III	100.0000	PCT
Lead Slurry	BJCem S100	FOAM PREVENTER, FP-25	0.3000	BWOB
Lead Slurry	BJCem S100	Cement Additive, Sodium Metasilicate A-2	2.0000	LBS/SK
Lead Slurry	BJCem S100	CEMENT EXTENDER, GYPSUM, A-10	5.0000	BWOB
Lead Slurry	BJCem S100	ACCELERATOR, SALT, CHLORIDE, CALCIUM, A-7P, PELLETS	2.0000	LBS/SK
Lead Slurry	BJCem S100	IntegraSeal POLI	0.1300	LBS/SK
Tail Slurry	BJCem S100	Cement Additive, Sodium Metasilicate A-2	2.0000	LBS/SK
Tail Slurry	BJCem S100	CEMENT, ASTM TYPE III	100.0000	PCT
Tail Slurry	BJCem S100	ACCELERATOR, SALT, CHLORIDE, CALCIUM, A-7P, PELLETS	2.0000	LBS/SK
Tail Slurry	BJCem S100	FOAM PREVENTER, FP-25	0.3000	BWOB
Tail Slurry	BJCem S100	CEMENT EXTENDER, GYPSUM, A-10	5.0000	BWOB
Tail Slurry	BJCem S100	IntegraSeal POLI	0.1300	LBS/SK

TREATMENT SUMMARY

TIME	FLUID	RATE (bpm)	FLUID VOL (bbls)	PIPE PRESS (psi)
4/12/2020 3:57:00 AM	Water	7.00	20.00	542.00
4/12/2020 3:58:00 AM	BJCem S100	7.00	51.00	814.00
4/12/2020 4:06:00 AM	BJCem S100	7.00	55.00	814.00
4/12/2020 4:16:00 AM	Displacement	10.00	77.00	1130.00

MIN / MAX / AVG PRESSURE AND RATES

	MIN	MAX	AVG
Pressure (psi)	542.00	1130.00	825.00
Rate (bpm)	7.00	10.00	7.75

DISPLACEMENT AND END OF JOB SUMMARY

Displaced By	BJ	Amt of Cement Returned / Reversed	32.00
Calculated Displacement Vol (bbls)	77.00	Method Used to Verify Returns	Visual
Actual Displacement Vol (bbls)	77.00	Amt of Spacer to Surface	20.00
Did Float Hold?	Yes	Pressure Left on Casing (psi)	0.00
Bump Plug	Yes	Amt Bled Back After Job	0.50
Bump Plug Pressure (psi)	1050.00	Total Volume Pumped (bbls)	203.00
Were Returns Planned at Surface	Yes	Top Out Cement Spotted	No
Cement Returns During Job	Full	Lost Circulation During Cement Job	No

BJ Cementing Event Log

Surface - Rifle, CO - Douglas Diaz

SEQ	START DATE / TIME	EVENT	DENSITY (ppg)	PUMP RATE (bpm)	PUMP VOL (bbls)	PIPE PRESSURE (psi)	COMMENTS
1	04/11/2020 22:30	Callout					Yard call 2230 on location 0130
2	04/11/2020 23:20	Depart for Location					Leave Rifle yard for location
3	04/12/2020 00:00	Arrive on Location					Arrive on location rig pulling drill pipe
4	04/12/2020 00:00	Spot Units					Spot in all equipment
5	04/12/2020 00:14	Rig Up					Pre job safety meeting, rig in equipment and lines to the stand pipe
6	04/12/2020 00:45	Rig					Waiting on rig to run casing and circulate
7	04/12/2020 03:33	Rig					Rig ended circulation, circulated 30 mins @ 11BBLs/min total of 330 BBLs
8	04/12/2020 03:33	Rig					Waiting on rig to lay down CRT
9	04/12/2020 03:40	Rig Up					Rig up cement head and lines on the floor
10	04/12/2020 03:45	STEACS Briefing					Pre job safety meeting with rig crew and company man
11	04/12/2020 03:50	Prime Up	8.3400	5.00	5.00	270.00	Prime up pump and lines
12	04/12/2020 03:52	Pressure Test				3000.00	Pressure test
13	04/12/2020 03:57	Pump Spacer	8.3400	7.00	15.00	542.00	Pumping fresh water spacer, Returns
14	04/12/2020 03:58	Pump Lead Cement	12.3000	7.00	0.00	642.00	Pumping lead cement
15	04/12/2020 03:58	Pump Lead Cement	12.3000	7.00	51.00	814.00	Pumping lead cement
16	04/12/2020 04:06	Pump Tail Cement	12.8000	7.00	0.00	814.00	Pumping tail cement
17	04/12/2020 04:06	Pump Tail Cement	12.8000	5.00	55.00	414.00	Pumping tail cement
18	04/12/2020 04:14	Drop Top Plug					Dropped top plug verified by company man
19	04/12/2020 04:16	Pump Displacement	8.3400	7.00	0.00	532.00	Pumping fresh water displacement

Client: Terra Energy Partners, LLC

Well Name / API: STRAIT BOTTOM RANCH SG 413-22 / 05-045-24009

Well MD: 1000

Quote #: QUO-44561-T5J5V3

Plan #: ORD-25693-Z1J9P5

Execution #: EXC-25693-Z1J9P502



SEQ	START DATE / TIME	EVENT	DENSITY (ppg)	PUMP RATE (bpm)	PUMP VOL (bbls)	PIPE PRESSURE (psi)	COMMENTS
20	04/12/2020 04:16	Pump Displacement	8.3400	10.00	50.00	1080.00	Pumping fresh water displacement, cement to surface @ 45 BBLs pumped, 32 BBLs cement to surface total
21	04/12/2020 04:23	Pump Displacement	8.3400	2.00	77.00	365.00	Pumping fresh water displacement
22	04/12/2020 04:28	Land Plug				1050.00	Land plug, FCP 365 PSI, Bumped to 1050 PSI
23	04/12/2020 04:28	Check Floats					Bled pressure, floats held .5 BBL bled back
24	04/12/2020 04:32	Rig Down					Pre rig down safety meeting, rigged down cement head and lines on the floor
25	04/12/2020 04:40	Wash Pumps and Lines					Washed and winterized pump and lines to pit
26	04/12/2020 05:10	Rig Down					Rig down all lines and equipment
27	04/12/2020 05:35	Leave Location					Leave location for Rifle shop



Terra SG 413-22 Surf (AA CPF011 4/12/20)

