



Terra Energy Partners

Well Name: STRAIT BOTTOM RANCH SG 22-22

API #: 05-045-24007

Job Type: Surface

Date Job Completed: 3/20/2020

Quote #: QUO-43818

Execution #: EXC-25370



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	Garrett Wade	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	1,002.00	949.00		H-40	ST&C
Open Hole	13.50	0.00	0.00	1,013.00	949.00	18.00		

HARDWARE

Bottom Plug Used?	No	Tool Type	Float Collar
Top Plug Used?	Yes	Tool Depth (ft)	962.00
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)	962	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)	60.00	Solids Present at End of Circulation	No
Circulation Rate (bpm)	11.00	Lost Circulation Prior to Cement Job	No
Circulation Volume (bbls)	660.00		

TEMPERATURE

Ambient Temperature (°F)	45.00	Slurry Cement Temperature (°F)	76.00
Mix Water Temperature (°F)	63.00		

FLUID DETAILS

Client: Terra Energy Partners

Well: STRAIT BOTTOM RANCH SG 22-22

Well API: 05-045-24007

Start Date: 3/20/2020

End Date: 3/20/2020

Field Ticket #: FT-25370-F9P2R70202-16550



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

TREATMENT SUMMARY

TIME	FLUID	RATE (bpm)	FLUID VOL (bbls)	PIPE PRESS (psi)
3/20/2020 5:48:00 PM	Water	6.00	20.00	455.00
3/20/2020 5:51:00 PM	BJCem S100	6.00	51.00	492.00
3/20/2020 6:00:00 PM	BJCem S100	5.00	54.00	689.00
3/20/2020 6:13:00 PM	Displacement	8.50	74.00	1105.00

MIN / MAX / AVG PRESSURE AND RATES

	MIN	MAX	AVG
Pressure (psi)	455.00	1105.00	685.25
Rate (bpm)	5.00	8.50	6.38



DISPLACEMENT AND END OF JOB SUMMARY

Displaced By	BJ	Amt of Cement Returned / Reversed	38.00
Calculated Displacement Vol (bbls)	74.00	Method Used to Verify Returns	Visual
Actual Displacement Vol (bbls)	74.00	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)	1072.00	Total Volume Pumped (bbls)	199.00
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	03/20/2020 09:30	Callout					Yard call 0930 on location 1400
2	03/20/2020 11:32	Depart for Location					Leave Rifle shop for location
3	03/20/2020 12:43	Arrive on Location					Arrive on location, rig rigging up casing crew
4	03/20/2020 12:43	Spot Units					Spot in all equipment
5	03/20/2020 13:20	Rig Up					Rig in all lines and equipment
6	03/20/2020 14:30	Rig					Waiting on rig to run casing and circulate
7	03/20/2020 17:20	STEACS Briefing					Pre job safety meeting with rig crew and company man
8	03/20/2020 17:28	Rig					Rig ended circulation, circulated 60 mins @ 11 BBLs/min total of 660 BBLs
9	03/20/2020 17:28	Rig					Waiting on rig to blow down
10	03/20/2020 17:38	Rig Up					Rig up cement head and lines on the floor
11	03/20/2020 17:44	Prime Up	8.3400	2.50	5.00	145.00	Prime up pump and lines
12	03/20/2020 17:46	Pressure Test				3000.00	Pressure test, pressure held
13	03/20/2020 17:48	Pump Spacer	8.3400	6.00	15.00	455.00	Pumping fresh water spacer
14	03/20/2020 17:51	Pump Lead Cement	12.3000	6.00	0.00	492.00	Pumping lead cement
15	03/20/2020 17:51	Pump Lead Cement	12.3000	5.00	51.00	418.00	Pumping lead cement
16	03/20/2020 18:00	Pump Tail Cement	12.3000	5.00	0.00	418.00	Pumping tail cement
17	03/20/2020 18:00	Pump Tail Cement	12.3000	6.00	54.00	689.00	Pumping tail cement
18	03/20/2020 18:12	Drop Top Plug					Dropped top plug verified by company man
19	03/20/2020 18:13	Pump Displacement	8.3400	7.00	0.00	675.00	Pumping fresh water displacement

Client: Terra Energy Partners

Well Name / API: STRAIT BOTTOM RANCH SG 22-22 / 05-045-24007

Well MD: 1000



Quote #: QUO-43818-J3D5J0

Plan #: ORD-25370-F9P2R7

Execution #: EXC-25370-F9P2R702

SEQ	START DATE / TIME	EVENT	DENSITY (ppg)	PUMP RATE (bpm)	PUMP VOL (bbls)	PIPE PRESSURE (psi)	COMMENTS
20	03/20/2020 18:13	Pump Displacement	8.3400	8.50	50.00	1044.00	Pumping fresh water displacement, cement to surface @36 BBLs away, 38 BBLs cement to surface
21	03/20/2020 18:20	Pump Displacement	8.3400	3.00	74.00	426.00	Pumping fresh water displacement
22	03/20/2020 18:25	Land Plug				1072.00	Bump plug, FCP 426 PSI bumped to 1072 PSI
23	03/20/2020 18:25	Check Floats					Bled pressure floats held, .5 BBI bled back
24	03/20/2020 18:30	Rig Down					Pre rig down safety meeting, rigged down cement head and lines on the floor
25	03/20/2020 18:40	Wash Pumps and Lines					Washed and winterized pump and lines to pit
26	03/20/2020 18:53	Rig Down					Rig down all lines and equipment
27	03/20/2020 19:20	Leave Location					Leave location for Rifle shop





Terra SG 22-22 Surf (JC CPF-011 3/20/20)

