



Terra Energy Partners

Well Name: STRAIT BOTTOM RANCH SG 312-22

API #: 05-045-24013

Job Type: Surface

Date Job Completed: 3/17/2020

Quote #: QUO-43525

Execution #: EXC-25324



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	Paul Linn III	FORMATION	
CLIENT FIELD REPRESENTATIVE		RIG	H&P 318
DISTRICT	Rifle, CO	COUNTY	GARFIELD
SERVICE	Cementing	STATE / PROVINCE	CO

WELL GEOMETRY

TYPE	ID (in)	OD (in)	WEIGHT (lbs/ft)	MD (ft)	TVD (ft)	EXCESS (%)	GRADE	THREAD
Open Hole	13.50	0.00	0.00	1,014.00	951.00	18.00		
Casing	9.00	9.63	32.30	1,003.42	951.00		H-40	ST&C

HARDWARE

Bottom Plug Used?	No	Tool Type	Float Collar
Top Plug Used?	Yes	Tool Depth (ft)	958.19
Top Plug Provided By	Non BJ	Pipe Movement	None
Top Plug Size	9.625	Job Pumped Through	Squeeze Manifold
Centralizers Used	No	Top Connection Thread	8 RND
Landing Collar Depth (ft)	1,003	Top Connection Size	9.625

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)	10.25	Mud Density In (ppg)	9.40
Circulation Volume (bbls)	615.00	Mud Density Out (ppg)	9.40
Lost Circulation Prior to Cement Job	No		

TEMPERATURE

Ambient Temperature (°F)	51.00	Slurry Cement Temperature (°F)	86.40
Mix Water Temperature (°F)	78.30		

Client: Terra Energy Partners

Well: STRAIT BOTTOM RANCH
SG 312-22

Well API: 05-045-24013

Start Date: 3/17/2020

End Date: 3/17/2020

Field Ticket #: FT-25324-Q8J3L50201-1525790410



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 EXTENDER, GYPSUM, A-10	5.0000	BWOB
Lead Slurry	BJCem S100	IntegraSeal POLI	0.1300	LBS/SK
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	ACCELERATOR, SALT, CHLORIDE, CALCIUM, A-7P, PELLETS	2.0000	LBS/SK
Lead Slurry	BJCem S100	FOAM PREVENTER, FP-25	0.3000	BWOB
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	Cement Additive, Sodium Metasilicate A-2	2.0000	LBS/SK
Tail Slurry	BJCem S100	CEMENT EXTENDER, GYPSUM, A-10	5.0000	BWOB
Tail Slurry	BJCem S100	FOAM PREVENTER, FP-25	0.3000	BWOB
Tail Slurry	BJCem S100	IntegraSeal POLI	0.1300	LBS/SK

TREATMENT SUMMARY

TIME	FLUID	RATE (bpm)	FLUID VOL. (bbls)	PIPE PRESSURE (psi)
3/17/2020 3:16 PM	Water	5.00	20.00	317.00
3/17/2020 3:21 PM	BJCem S100	7.70	51.40	1,053.00
3/17/2020 3:30 PM	BJCem S100	8.00	54.80	1,107.00
3/17/2020 3:39 PM	Displacement	9.50	75.20	1,015.00

MIN / MAX / AVG PRESSURE AND RATES

	MIN	MAX	AVG
Pressure (psi)	67.00	1,306.00	938.00
Rate (bpm)	9.50	8.00	2.00

DISPLACEMENT AND END OF JOB SUMMARY

Displaced By	BJ	Amt of Cement Returned / Reversed	30.00
Calculated Displacement Vol (bbls)	74.07	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)	383.00	Total Volume Pumped (bbls)	110.00
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 - Paul Linn III

SEQ	START DATE / TIME	EVENT	DENSITY (ppg)	PUMP RATE (bpm)	PUMP VOL (bbls)	PIPE PRESSURE (psi)	COMMENTS
1	03/17/2020 06:30	Callout					Call out, on location of 13:00 3/17/2020
2	03/17/2020 09:36	STEACS Briefing					Pre-Convoy STEACS Briefing
3	03/17/2020 10:11	Depart for Location					Depart from Rifle yard for H&P 318
4	03/17/2020 11:24	Arrive on Location					Arrive on location, rig was pulling drill pipe
5	03/17/2020 11:36	Spot Units					Did a site assessment, spotted in all equipment
6	03/17/2020 11:44	STEACS Briefing					Pre-Rig Up STEACS Briefing with all BJ Services cement crew
7	03/17/2020 11:53	Rig Up					Rig up all ground equipment
8	03/17/2020 12:46	Client					Wait on rig to finish running casing and circulate
9	03/17/2020 14:26	STEACS Briefing					Pre-Job STEACS Briefing with rig crew, company man, and all BJ Services cement crew
10	03/17/2020 14:49	Rig Up					Load plug in plug container verified by company man, stab plug container, and hook up lines
11	03/17/2020 15:08	Prime Up	8.4000	2.00	5.00	67.00	Fill lines with 5 bbls of fresh water
12	03/17/2020 15:12	Pressure Test				3108.00	Pressure test to 3108 psi
13	03/17/2020 15:16	Pump Spacer	8.4000	5.00	20.00	317.00	Pump Fresh water spacer
14	03/17/2020 15:20	Pump Lead Cement	12.3000	7.70	5.00	1053.00	Pump Lead Cement @ 12.3 ppg 124 sks 2.34 cuft/sk 13.43 gals/sk. For a total of 51.68 bbls of Lead cement requiring 39.65 bbls of mix water, weight verified by mud scale
15	03/17/2020 15:25	Pump Lead Cement	12.3000	6.50	40.00	771.00	Pump Lead Cement
16	03/17/2020 15:27	Pump Lead Cement	12.3000	6.50	50.00	821.00	Finished pumping Lead Cement with 50 bbls away

Client: Terra Energy Partners

Well Name / API: STRAIT BOTTOM RANCH SG 312-22 / 05-045-24013

Well MD: 1014

Quote #: QUO-43525-Z4F0B8

Plan #: ORD-25324-Q8J3L5

Execution #: EXC-25324-Q8J3L502



SEQ	START DATE / TIME	EVENT	DENSITY (ppg)	PUMP RATE (bpm)	PUMP VOL (bbls)	PIPE PRESSURE (psi)	COMMENTS
02 54 17	03/17/2020 15:29	Pump Tail Cement	12.8000	8.00	10.00	606.00	Pump Tail Cement @ 12.8 ppg 149 sks 2.08 cuft/sk 11.47 gals/sk. For a total 55.2 bbls of Tail cement requiring 40.69 bbls of mix water, weight verified with mud scale
18	03/17/2020 15:34	Pump Tail Cement	12.8000	6.50	50.00	853.00	Pump Tail Cement
19	03/17/2020 15:35	Pump Tail Cement	12.8000	6.50	58.00	938.00	Finished pumping Tail Cement with 58 bbls away
20	03/17/2020 15:36	Drop Top Plug					Drop plug, verified by company man
21	03/17/2020 15:39	Pump Displacement	8.4000	9.50	10.00	1015.00	Pump Displacement
22	03/17/2020 15:45	Pump Displacement	8.4000	9.50	65.00	1306.00	Pump Displacement
23	03/17/2020 15:49	Pump Displacement	8.4000	2.50	75.00	383.00	Pump Displacement
24	03/17/2020 15:50	Land Plug				1278.00	Land plug @ 383 psi took 1278 psi
25	03/17/2020 15:52	Check Floats					Check floats, floats held 1/2 bbl back
26	03/17/2020 16:02	STEACS Briefing					Pre-Rig Down STEACS Briefing with rig crew
27	03/17/2020 16:12	Rig Down					Rig Down rig floor
28	03/17/2020 16:27	Wash Pumps and Lines					Wash pumps and line to cellar
29	03/17/2020 16:34	STEACS Briefing					Pre-Rig Down STEACS Briefing with all BJ Services cement crew
30	03/17/2020 16:43	Rig Down					Rig Down all equipment
31	03/17/2020 17:34	STEACS Briefing					Pre-Convoy STEACS Briefing with all BJ Services cement crew
32	03/17/2020 18:00	Leave Location					Depart from location for Rifle yard, Thank you for using BJ Services, Andrew Linn, and crew

