



# Terra Energy Partners

Well Name: STRAIT BOTTOM RANCH SG 13-22

API #: 05-045-24014

Job Type: Surface

Date Job Completed: 4/6/2020

Quote #: QUO-44358

Execution #: EXC-25591



## Terra Energy Partners

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

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

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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](mailto: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

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# BJ Cementing Treatment Report

SERVICE SUPERVISOR	Jeff Hernandez	FORMATION	
CLIENT FIELD REPRESENTATIVE	Craig Borgstede	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	1,042.00	969.00		H-40	ST&C
Open Hole	13.50	0.00	0.00	1,052.00	969.00	18.00		

## HARDWARE

Bottom Plug Used?	No	Tool Type	Float Collar
Top Plug Used?	Yes	Tool Depth (ft)	1,042.00
Top Plug Provided By	Non BJ	Max Casing Pressure - Rated (psi)	3520.00
Top Plug Size	9.625	Max Casing Pressure - Operated (psi)	2816.00
Centralizers Used	Yes	Pipe Movement	Reciprocation
Centralizers Quantity	14.00	Job Pumped Through	Manifold
Centralizers Type	Bow	Top Connection Thread	8rd
Landing Collar Depth (ft)	956	Top Connection Size	9.625

## CIRCULATION PRIOR TO JOB

Well Circulated By	Rig	YP Mud In	18
Circulation Prior to Job	No	Solids Present at End of Circulation	No
Circulation Time (min)	60.00	10 sec SGS	4
Circulation Rate (bpm)	10.00	10 min SGS	10
Circulation Volume (bbls)	600.00	30 min SGS	14
Lost Circulation Prior to Cement Job	No	Flare Prior to / during the Cement Job	No
PV Mud In	20	Gas Present	No

## TEMPERATURE

Ambient Temperature (°F)	65.00	Slurry Cement Temperature (°F)	73.00
Mix Water Temperature (°F)	68.00		

## FLUID DETAILS

FLUID TYPE	FLUID NAME	DENSITY (ppg)	YIELD (Cu Ft/sk)	H <sub>2</sub> 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	ACCELERATOR, SALT, CHLORIDE, CALCIUM, A-7P, PELLETS	2.0000	LBS/SK
Lead Slurry	BJCem S100	IntegraSeal POLI	0.1300	LBS/SK
Lead Slurry	BJCem S100	CEMENT, ASTM TYPE III	100.0000	PCT
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	FOAM PREVENTER, FP-25	0.3000	BWOB
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 EXTENDER, GYPSUM, A-10	5.0000	BWOB
Tail Slurry	BJCem S100	Cement Additive, Sodium Metasilicate A-2	2.0000	LBS/SK
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

## TREATMENT SUMMARY

TIME	FLUID	RATE (bpm)	FLUID VOL (bbls)	PIPE PRESS (psi)	ANNULUS PRESS (psi)	COMMENTS
4/6/2020 5:35:00 PM	Water	8.00	20.00	285.00		
4/6/2020 5:44:00 PM	BJCem S100	8.00	51.40	933.00		
4/6/2020 5:50:00 PM	BJCem S100	8.00	54.80	924.00		
4/6/2020 5:59:00 PM	Displacement	8.00	75.20	1024.00		

### MIN / MAX / AVG PRESSURE AND RATES

	MIN	MAX	AVG
Pressure (psi)	285.00	1024.00	791.50
Rate (bpm)	8.00	8.00	8.00

### DISPLACEMENT AND END OF JOB SUMMARY

Displaced By	BJ	Amt of Cement Returned / Reversed	35.00
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	1.00
Bump Plug Pressure (psi)	750.00	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 - Jeff Hernandez

SEQ	START DATE / TIME	EVENT	DENSITY (ppg)	PUMP RATE (bpm)	PUMP VOL (bbls)	PIPE PRESSURE (psi)	COMMENTS
1	04/06/2020 12:00	Callout					Call out for Terra on location @ 1500 on 4-6-20
2	04/06/2020 13:00	Depart for Location					Leave Rifle for location
3	04/06/2020 13:30	Arrive on Location					Arrive on location rig is rigging up casing
4	04/06/2020 14:30	Spot Units					Spot all equipment for the job
5	04/06/2020 14:40	Rig Up					Held a rig up meeting rig up iron to run the job
6	04/06/2020 16:00	Rig					Waiting on rig to run casing
7	04/06/2020 17:25	Rig Up					Rig up floor to run job
8	04/06/2020 17:30	STEACS Briefing					Held a safety meeting with rig crew
9	04/06/2020 17:34	Pump Spacer	8.3400	5.00	5.00	285.00	Pump 5 bbl of water
10	04/06/2020 17:36	Pressure Test				3000.00	Test lines to 3000 psi
11	04/06/2020 17:39	Pump Lead Cement	12.3000	8.00	51.00	933.00	Pump Lead Cement
12	04/06/2020 17:44	Pump Tail Cement	12.5000	8.00	55.00	925.00	Pump Tail Cement
13	04/06/2020 17:50	Drop Top Plug					Drop top plug
14	04/06/2020 17:57	Pump Displacement	8.3400	8.00	0.00	946.00	Pump Displacement
15	04/06/2020 17:59	Pump Displacement	8.3400	2.00	70.00	400.00	Slow down last 7 bbl
16	04/06/2020 18:09	Land Plug	8.3400	2.00	77.00	1079.00	Bump plug from 400 to 1079 psi got back 35 bbl of cement to surface
17	04/06/2020 18:10	Check Floats					Check float bled back .5 bbl
18	04/06/2020 18:15	Rig Down					Had a rig down meeting then rig down iron

Client: Terra Energy Partners, LLC

Well Name / API: STRAIT BOTTOM RANCH SG 13-22 / 05-045-24014

Well MD: 1000

Quote #: QUO-44358-V9G8H7

Plan #: ORD-25591-X9S0D1

Execution #: EXC-25591-X9S0D102



SEQ	START DATE / TIME	EVENT	DENSITY (ppg)	PUMP RATE (bpm)	PUMP VOL (bbls)	PIPE PRESSURE (psi)	COMMENTS
19	04/06/2020 19:30	Leave Location					Leave location and head back to the yard

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