



Libby Berry SWD 2

API # 30-025-45344

Revised: 05/15/2019

AS DRILLED

TVD	Geological Togs	Wellbore Sketch	Hole Size	Casing	Drilling Fluids	Cement	OH Logs/Evaluation
1,000'	1,561 Rustler		26"	Surface: 20" 94.0H J55 BTC 1,566'	FW Spud Mud 6.5 - 9.2 ppg 32 - 38 FV 4-6 PV 2-5 YP	Top of Lead: Surface 13.5 ppg 1.72 cuft/sk 1,923 sts Top of Tail: 1,100' 14.8 ppg 1.33 cuft/sk 1,195 sts (100% Excess)	
2,000'	1,922 Salado		17-1/2"	Intermediate 1: 13-3/8" 68H J55 BTC 5,706'	Saturated Brine 10.0 - 10.3 ppg 28 - 32 FV	Stage 1 - 100% Excess Top of Lead: 3,700' 11.9 ppg 2.56 cuft/sk 810 sts Top of Tail: 5,200' 14.8 ppg 1.33 cuft/sk 575 sts Stage 2 - 200% Excess Top of Cement: Surface 11.9 ppg 2.56 cuft/sk 3400 sts Top of Tail: 3,200'	
5,000'	3,425 Tansil		12-1/4"	Intermediate: 9-5/8" 40H HCL80 BTC 11,060'	Cut Brine/WBM 9.0 - 9.5 ppg 15 - 20 PV 8 - 12 YP	Top of Lead: Surface 11.5 ppg 2.93 cuft/sk 1021 sts Top of Tail: 8,000' 14.8 ppg 1.17 cuft/sk 1,231 sts (50% Excess in OH)	
4,000'	3,785 Captain Reef 3,979 Seven Rivers		8-3/4"	Liner: 7-5/8" SSW P110 TSH Wedge S15 10,804' - 14,650'	Saturated Brine 10.0 - 12.0 ppg 35 - 38 Viscosity 10 - 18 PV 8 - 12 YP 6 - 8 API Filtrate	Top of Tail: 10,804' 14.5 ppg 1.28 cuft/sk 335 sts (10% Excess)	
5,000'	5,645 Delaware		6-1/8"	OH Completion 5-1/2" Tubing Set @ 14,585'	Cut Brine/WBM 8.9 - 9.2 ppg 15 - 20 PV 8 - 12 YP		
7,000'	8,462 Bone Spring						
9,000'	9,598 1st Bone Spring SS 10,079 2nd Bone Spring SS						
11,000'	10,812 3rd Bone Spring SS 11,017 Wolfcamp						
13,000'	12,227 Strawn 12,800 Azoka 12,550 Morrow						
15,000'	13,832 Mississippian Lime 14,632 Devonian 15,733 Fusselman						
17,000'							

3Bear LLC

Libby Berry SWD #2

Lea County, NM

Treatment Summary Stage 1

HOBBS OCD

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5/13/2019

Basing Pump Down Services

3003 WCR 127

Midland, Texas. 79708

432-203-0614



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Treatment Report

Company Name: 3Bear LLC
Well Name: Libby Berry SWD #2
Stage No.: Stage 1

BPDS

Wellbore Information

Wellbore Data

Formation Info: Devonian
Mid-Depth: 15,204 ft
Frac Gradient: 0.66 psi/ft
Bottom Hole Temperature: 220 °F

Treatment Tubular's

Treatment Via Casing

Tubular Information

Type	Size(in)		Weight(lb)	Top	Bottom
	O.D.	I.D.			
Tubing	4 1/2	2.441	11.6#		14,625

Perforation

Perforated Intervals (ft)		SPF	Perf. Dia (in)	SHOTS
Top	Bottom			
14,675	15,733		0.42	0

NOTES:

Using the provided procedure and design, the stage was treated to completion. No fluid or mechanical issues was encountered.

Treatment Report

Company Name: 3Bear LLC
Well Name: Libby Berry SWD #2
Stage No.: Stage 1

BPDS

Fluid And Proppant Description

FLUID VOLUMES

FLUID DESCRIPTION	Design Clean Volumes	Actual Clean Volumes	Unit
Pad	3,500	3,780	gal
20% HCL	20,750	20,118	gal
Spacer	6,000	12,915	gal
Flush	13,650	13,776	gal
FLUID TO RECOVER		50,589	gal
		1,205	bbf

Stage Max/Min

Rate / Pressure	Rate	Pressure
Maximum	48	4,340
Minimum	2	2,480

Stage Average's

Rate / Pressure	Rate	Pressure
During Pad	2	2,480
During Acid	30	2,735
During Flush	42	2,680
Average	36	3,717

Stage FG & ISIP'S

Description	Pressure	Unit
Breakdown	70	psi
ISIP	3,410	psi
Frac Gradient	0.66	psi/ft

Treatment Report

Company Name: 3Bear LLC

Well Name: Libby Berry SWD #2

BPDS

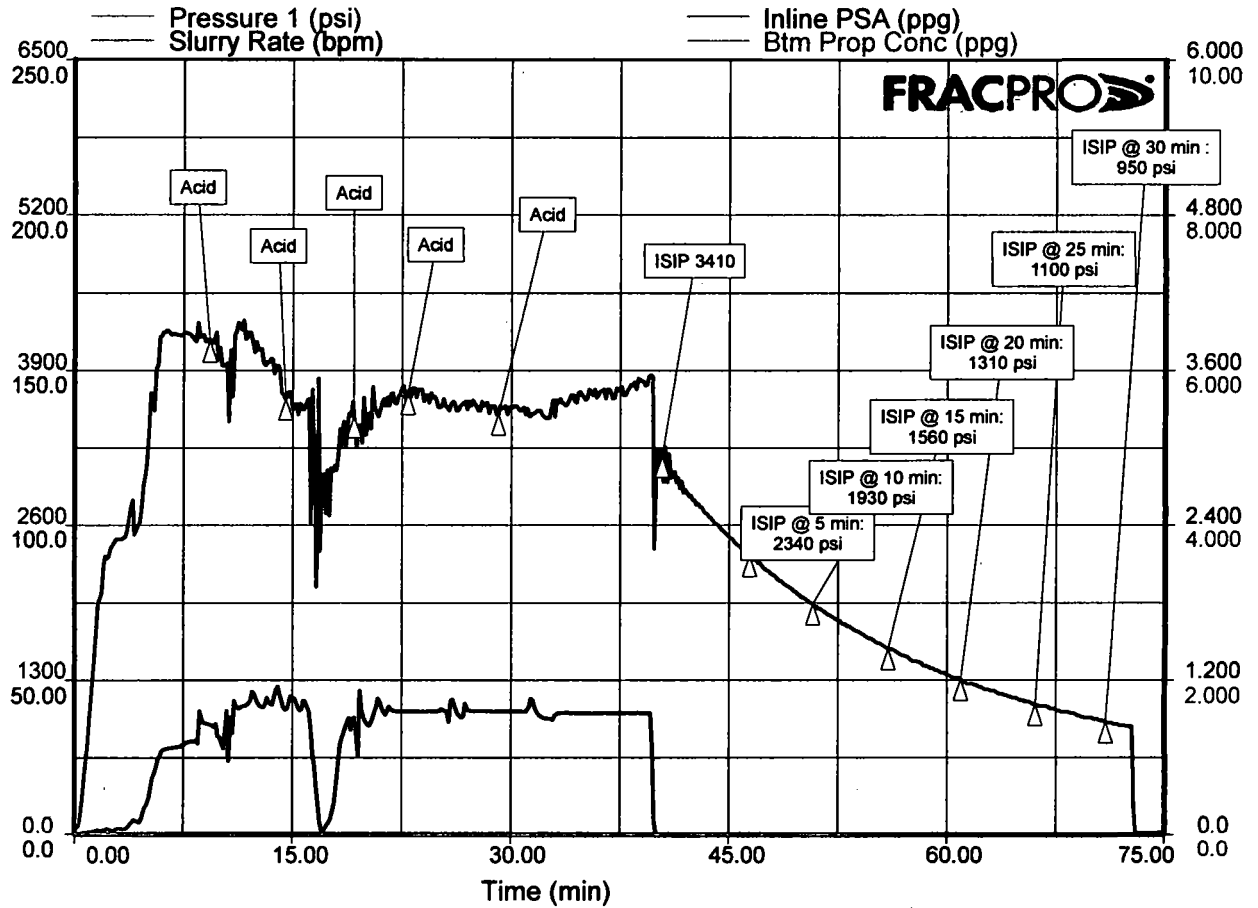
Stage No.: Stage 1

Stage Treatment Summary

Time	Press.	Slurry Rate	Slurry Volume Stage	Slurry Volume Total	Clean Volume Stage	Clean Volume Total	Prop Conc	Actual Prop	Prop Total	Stage Description
9:44	70									Well Open
9:46	2,480	2	90	90	90	90				Breakdown
9:52	4,160	30	119	209	119	209				20% NEFE
9:55	4,260	42	56	265	56	265		0	0	Spacer
9:57	4,000	41	24	289	24	289		0	0	20% NEFE
9:59	3,080	42	162	451	162	451		0	0	Flush
10:02	3,440	35	95	546	95	546		0	0	20% NEFE
10:03	3,441	38	42	588	42	588		0	0	Spacer
10:05	3,660	41	119	707	119	707		0	0	20% NEFE
10:09	3,590	40	47	755	47	755		0	0	Spacer
10:10	3,570	40	122	877	122	877		0	0	20% NEFE
10:15	3,570	40	328	1,205	328	1205		0	0	FW Flush
10:24	3,410	40		1,205	0	1205		0	0	ISIP
				1,205	0	1205		0	0	
10:30	2,340			1,205	0	1205		0	0	ISIP @ 5 min
10:35	1,930			1,205	0	1205		0	0	ISIP @ 10 min
10:40	1,560			1,205	0	1205		0	0	ISIP @ 15 min
10:45	1,310			1,205	0	1205		0	0	ISIP @ 20 min
10:50				1,205	0	1205		0	0	ISIP @ 25 min
10:55	950			1,205	0	1205		0	0	ISIP @ 30 min

Treatment Report

3Bear LLC Libby Berry SWD #2 - Stage 1



Primary Plot

3Bear LLC

Devonian

Libby Berry SWD #2

Lea County, NM

Treatment Summary

Stage 2

5/13/2019

Basing Pump Down Services

3003 WCR 127

Midland, Texas. 79708

432-203-0614



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Treatment Report

Company Name: 3Bear LLC
Well Name: Libby Berry SWD #2
Stage No.: Stage 2

BPDS

Wellbore Information

Wellbore Data

Formation Info: Devonian
Mid-Depth: 15,204 ft
Frac Gradient: 0.64 psi/ft
Bottom Hole Temperature: 220 °F

Treatment Tubular's

Treatment Via Casing

Tubular Information

Type	Size(in)		Weight(lb)	Top	Bottom
	O.D.	I.D.			
Tubing	4 1/2	4.892	11.6#		14,625

Perforation

Perforated Intervals (ft)		SPF	Perf. Dia (in)	SHOTS
Top	Bottom			
14,675	15,733		0.42	0

NOTES:

Using the provided procedure and design, the stage was treated to completion. No fluid or mechanical issues was encountered.

Treatment Report

Company Name: 3Bear LLC
 Well Name: LIDDY BERRY SWD #2
 Stage No.: Stage 2

BPDS

Fluid And Proppant Description

FLUID VOLUMES

FLUID DESCRIPTION	Design Clean Volumes	Actual Clean Volumes	Unit
Pad	3,500	4,830	gal
20% HCL	20,750	20,748	gal
Space	6,000	26,716	gal
Flush	13,650	0	gal
FLUID TO RECOVER		52,294	gal
		1,245	bbl

Proppant Types

PROPPANT DESCRIPTION	PROPOSED	ACTUAL	Unit
RockSalt	0	0	lbs
Total Proppant	0	0	lbs

Stage Max/Min

Rate / Pressure	Rate	Pressure
Maximum	49	3,330
Minimum	40	2,150

Stage Average's

Rate / Pressure	Rate	Pressure
During Pad	38	1,920
During Sand	42	2,873
During Flush	40	3,230
Average	40	2,908

Stage FG & ISIP'S

Description	Pressure	Unit
Breakdown	1,920	psi
ISIP	3,050	psi
Frac Gradient	0.64	psi/ft
15 Minute SIP	340	psi

Treatment Report

Company Name: 3Bear LLC

Well Name: Libby Berry SWD #2

BPDS

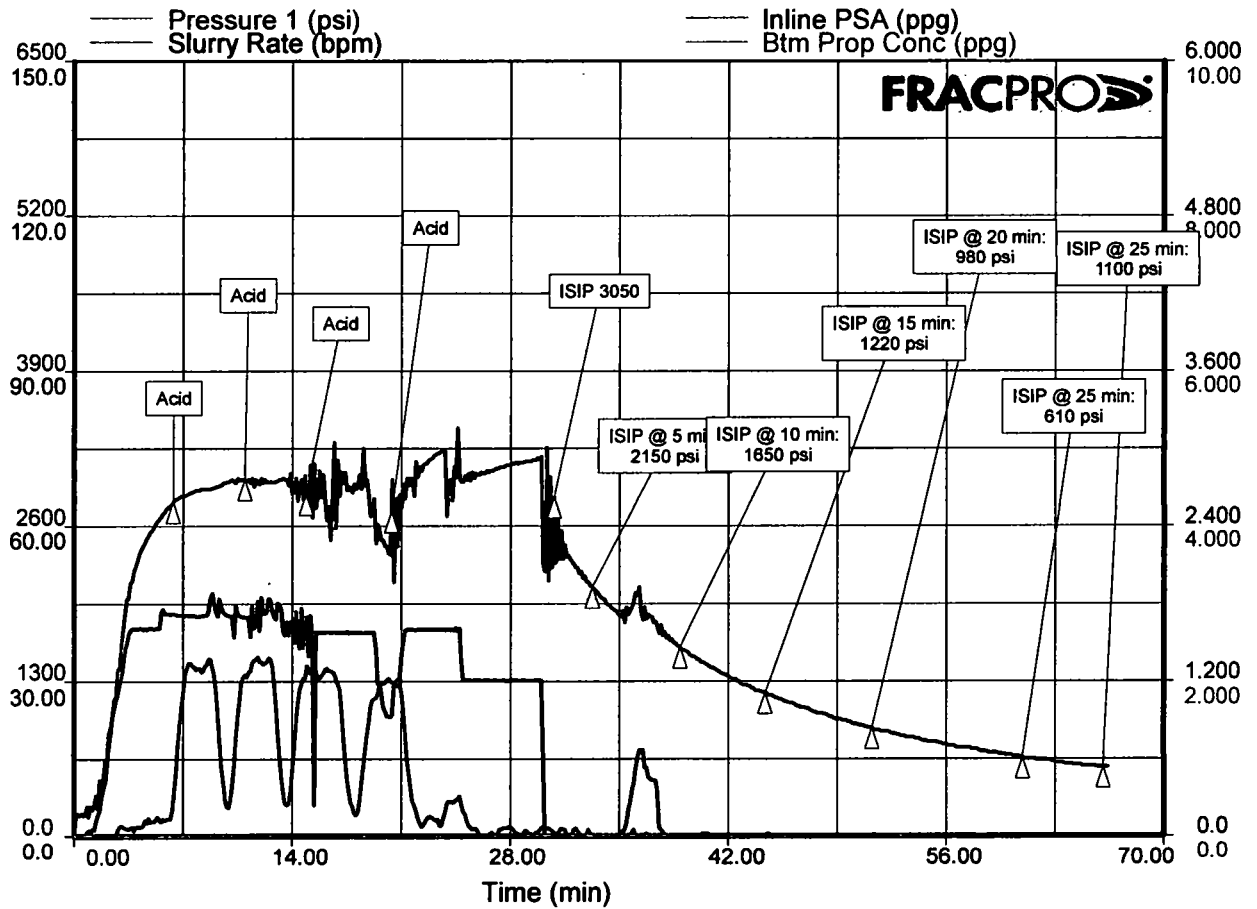
Stage No.: Stage 2

Stage Treatment Summary

Time	Press.	Slurry Rate	Slurry Stage	Slurry Volume Total	Clean Volume Stage	Clean Volume Total	Prop Conc	Actual Prop	Prop Total	Stage Description
12:56	160									Well Open
12:59	1,920	38	115	115	115	115				Breakdown
13:01	2,620	40	119	234	119	234				20% NEFE
13:04	2,900	43	45	279	45	279	0.00	0	0	Spacer
13:05	2,920	45	121	400	121	400	0.00	0	0	20% NEFE
13:08	2,960	45	37	437	37	437	0.00	0	0	Spacer
13:09	2,970	43	121	558	121	558	0.00	0	0	20% NEFE
13:12	2,900	40	54	612	54	612	0.00	0	0	Spacer
13:13	3,030	40	133	745	133	745	0.00	0	0	20% NEFE
13:20	3,230	40	500	1,245	500	1245	0.00	0	0	Flush
13:27	3,050			1,245	0	1245	0.00	0	0	ISIP
				1,245	0	1245	0.00	0	0	
13:33	2,150			1,245	0	1245		0	0	ISIP @ 5 min
13:38	1,650			1,245	0	1245		0	0	ISIP @ 10 min
13:43	1,220			1,245	0	1245		0	0	ISIP @ 15 min
13:48	980			1,245	0	1245		0	0	ISIP @ 20 min
13:54	750			1,245	0	1245		0	0	ISIP @ 25 min
14:00	610			1,245	0	1245		0	0	ISIP @ 30 min
				1,245	0	1245		0	0	
				1,245	0	1245		0	0	
				1,245	0	1245		0	0	

Treatment Report

3Bear LLC Libby Berry SWD #2 - Stage 2



Primary Plot

3Bear LLC

Devonian

Libby Berry SWD #2

Lea County, NM

Treatment Summary

Stage 3

5/14/2019

Basing Pump Down Services

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Midland, Texas. 79708

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Treatment Report

Company Name: 3Bear LLC
Well Name: Libby Berry SWD #2
Stage No.: Stage 3

BPDS

Wellbore Information

Wellbore Data

Formation Info: Devonian
Mid-Depth: 15,204 ft
Frac Gradient: 0.58 psi/ft
Bottom Hole Temperature: 220 °F

Treatment Tubular's

Treatment Via Casing

Tubular Information

Type	Size(in)		Weight(lb)	Top	Bottom
	O.D.	I.D.			
Tubing	4 1/2	4.892	11.6#		14,625

Perforation

Perforated Intervals (ft)		SPF	Perf. Dia (in)	SHOTS
Top	Bottom			
14,675	15,733		0.42	0

NOTES:

Using the provided procedure and design, the stage was treated to completion. No fluid or mechanical issues was encountered.

Treatment Report

Company Name: 3Bear LLC
 well name: LIBBY BERRY SWD #2
 Stage No.: Stage 3

BPDS

Fluid And Proppant Description

FLUID VOLUMES

FLUID DESCRIPTION	Design Clean Volumes	Actual Clean Volumes	Unit
Pad	3,500	0	gal
15% HCL	18,000	0	gal
10# Brine	6,000	0	gal
Flush	12,483	314,370	gal
FLUID TO RECOVER		314,370	gal
		7,485	bbl

Proppant Types

PROPPANT DESCRIPTION	PROPOSED	ACTUAL	Unit
RockSalt	10,000	0	lbs
Total Proppant	10,000	0	lbs

Stage Max/Min

Rate / Pressure	Rate	Pressure
Maximum		
Minimum	15	890

Stage Average's

Rate / Pressure	Rate	Pressure
During Pad	10	550
During Sand	23	2,200
During Flush	#DIV/0!	1,130
Average		

Stage FG & ISIP'S

Description	Pressure	Unit
Breakdown	550	psi
ISIP	2,180	psi
Frac Gradient	0.58	psi/ft
15 MINUTE ISIP	-	psi

Treatment Report

Company Name: 3Bear LLC

well name: Liddy Berry SWD #2

BPDS

Stage No.: Stage 3

Stage Treatment Summary

Time	Press.	Slurry Rate	Slurry Volume Stage	Volume Total	Clean Volume Stage	Volume Total	Prop Conc	Actual Prop	Prop Total	Stage Description
12:42	130									Well Open
12:43	550	10	300	300	300	300				Step Rate Test
13:14	1,530	15	450	750	450	750				
13:41	2,100	20	600	1,350	600	1350	0.00	0	0	Step Rate Test
14:11	2,900	25	750	2,100	750	2100	0.00	0	0	
14:41	3,960	30	792	2,892	792	2892	0.00	0	0	Step Rate Test
15:07	3,790	25	4,593	7,485	4,593	7485	0.00	0	0	
18:21	2,180			7,485	0	7485	0.00	0	0	ISIP
				7,485	0	7485	0.00	0	0	
18:26	1,650			7,485	0	7485	0.00	0	0	ISIP @ 5 min
18:31	1,460			7,485	0	7485	0.00	0	0	ISIP @ 10 min
18:36	1,240			7,485	0	7485	0.00	0	0	ISIP @ 15 min
18:41	1,190			7,485	0	7485	0.00	0	0	ISIP @ 20 min
18:46	1,130			7,485	0	7485		0	0	ISIP @ 25 min
18:51	1,070			7,485	0	7485	0.00	0	0	ISIP @ 30 min
18:56	990			7,485	0	7485		0	0	ISIP @ 35 min
19:01	940			7,485	0	7485		0	0	ISIP @ 40 min
19:06	890			7,485	0	7485		0	0	ISIP @ 45 min

Treatment Report