

BONANZA CREEK ENERGY

WELD COUNTY

SEC 3-T4N-R62W

STATE SEVENTY HOLES P41-T44-4HN

OWB

Plan: PROPOSAL 1

Standard Planning Report

10 August, 2022

Project: WELD COUNTY
Site: SEC 3-T4N-R62W
Well: STATE SEVENTY HOLES P41-T44-4HN
Wellbore: OWB
Design: PROPOSAL 1

PROJECT DETAILS: WELD COUNTY
Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: Colorado Northern Zone
System Datum: Mean Sea Level



Azimuths to True North
Magnetic North: 7.50°
Magnetic Field
Strength: 51875.2snT
Dip Angle: 66.64°
Date: 5/27/2022
Model: IGRF2020

WELL DETAILS: STATE SEVENTY HOLES P41-T44-4HN

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	1371910.89	3331333.38	40.348200°N	104.311210°W	

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	
3	1935.37	36.71	276.40	1812.37	63.35	-564.55	2.00	276.40	280.58	
4	6574.46	36.71	276.40	5531.51	372.60	-3320.18	0.00	0.00	1650.14	
5	7532.61	90.00	176.65	6040.00	-218.30	-3659.82	10.00	-97.85	2327.82	LP-SSH P41-T44-4HN
6	11999.42	90.00	176.65	6040.00	-4677.46	-3398.42	0.00	0.00	5781.69	PBHL-SSH P41-T44-4HN

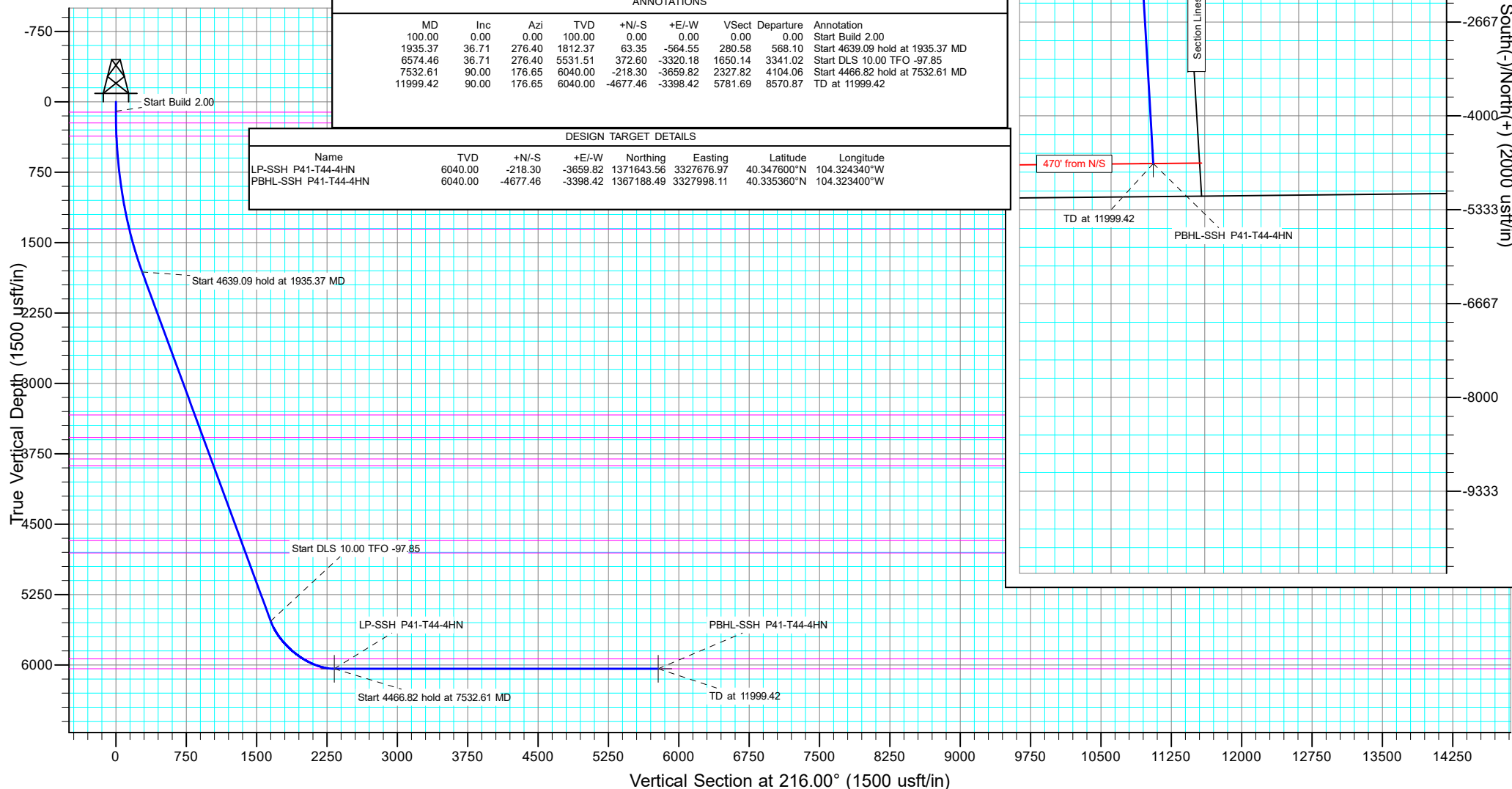
SHL:
286' FNL 2344' FEL
Sec 3-T4N-R62W
LP:
470' FNL 621' FEL
Sec 4-T4N-R62W
BHL:
470' FSL 658' FEL
Sec 4-T4N-R62W

ANNOTATIONS

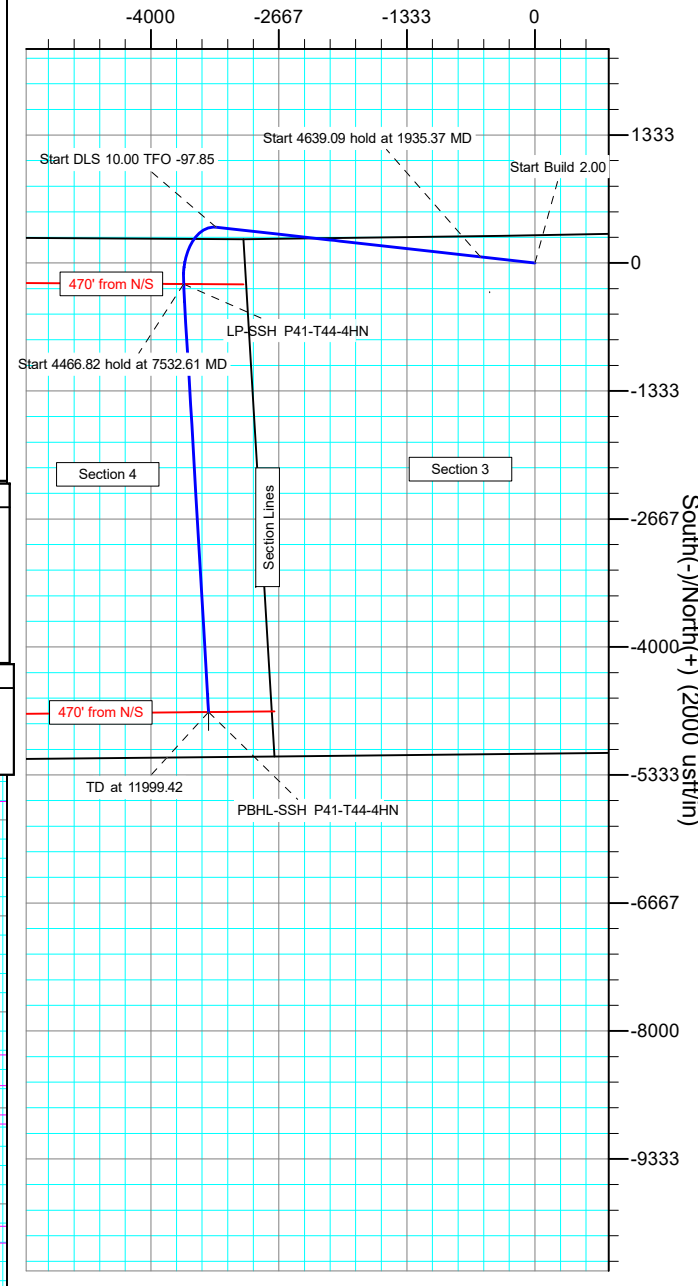
MD	Inc	Azi	TVD	+N/-S	+E/-W	VSect	Departure	Annotation
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	Start Build 2.00
1935.37	36.71	276.40	1812.37	63.35	-564.55	280.58	568.10	Start 4639.09 hold at 1935.37 MD
6574.46	36.71	276.40	5531.51	372.60	-3320.18	1650.14	3341.02	Start DLS 10.00 TFO -97.85
7532.61	90.00	176.65	6040.00	-218.30	-3659.82	2327.82	4104.06	Start 4466.82 hold at 7532.61 MD
11999.42	90.00	176.65	6040.00	-4677.46	-3398.42	5781.69	8570.87	TD at 11999.42

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
LP-SSH P41-T44-4HN	6040.00	-218.30	-3659.82	1371643.56	3327676.97	40.347600°N	104.324340°W
PBHL-SSH P41-T44-4HN	6040.00	-4677.46	-3398.42	1367188.49	3327998.11	40.335360°N	104.323400°W



West(-)/East(+) (2000 usft/in)



Planning Report

Database:	EDT_32Bit_ODBC	Local Co-ordinate Reference:	Well STATE SEVENTY HOLES P41-T44-4HN
Company:	BONANZA CREEK ENERGY	TVD Reference:	KB 25' @ 4574.00usft
Project:	WELD COUNTY	MD Reference:	KB 25' @ 4574.00usft
Site:	SEC 3-T4N-R62W	North Reference:	True
Well:	STATE SEVENTY HOLES P41-T44-4HN	Survey Calculation Method:	Minimum Curvature
Wellbore:	OWB		
Design:	PROPOSAL 1		

Project	WELD COUNTY		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		Using geodetic scale factor

Site		SEC 3-T4N-R62W			
Site Position:		Northing:	1,372,270.09 usft	Latitude:	40.349100°N
From:	Lat/Long	Easting:	3,333,658.88 usft	Longitude:	104.302850°W
Position Uncertainty:	0.00 usft	Slot Radius:	13.200 in	Grid Convergence:	0.77 °

Well	STATE SEVENTY HOLES P41-T44-4HN					
Well Position	+N/-S	-327.78 usft	Northing:	1,371,910.89 usft	Latitude:	40.348200°N
	+E/-W	-2,330.22 usft	Easting:	3,331,333.39 usft	Longitude:	104.311210°W
Position Uncertainty		0.00 usft	Wellhead Elevation:		Ground Level:	4,549.00 usft

Wellbore	OWB				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2020	5/27/2022	7.50	66.64	51,875.23410429

Design	PROPOSAL 1			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	216.00

Plan Survey Tool Program	Date	8/10/2022		
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	11,999.42	PROPOSAL 1 (OWB)	MWD OWSG
				OWSG MWD - Standard

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,935.38	36.71	276.40	1,812.37	63.35	-564.55	2.00	2.00	0.00	276.40	
6,574.46	36.71	276.40	5,531.51	372.60	-3,320.18	0.00	0.00	0.00	0.00	
7,532.61	90.00	176.65	6,040.00	-218.30	-3,659.82	10.00	5.56	-10.41	-97.85	LP-SSH P41-T44-4HN
11,999.42	90.00	176.65	6,040.00	-4,677.46	-3,398.42	0.00	0.00	0.00	0.00	PBHL-SSH P41-T44-4HN

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Project:	WELD COUNTY	MD Reference:	KB 25' @ 4574.00usft
Site:	SEC 3-T4N-R62W	North Reference:	True
Well:	STATE SEVENTY HOLES P41-T44-4HN	Survey Calculation Method:	Minimum Curvature
Wellbore:	OWB		
Design:	PROPOSAL 1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
Start Build 2.00									
109.00	0.18	276.40	109.00	0.00	-0.01	0.01	2.00	2.00	0.00
Laramie-Fox Hills Formation									
200.00	2.00	276.40	199.98	0.19	-1.73	0.86	2.00	2.00	0.00
225.04	2.50	276.40	225.00	0.30	-2.71	1.35	2.00	2.00	0.00
Pierre Formation									
300.00	4.00	276.40	299.84	0.78	-6.93	3.45	2.00	2.00	0.00
365.38	5.31	276.40	365.00	1.37	-12.21	6.07	2.00	2.00	0.00
Upper Pierre aquifer									
400.00	6.00	276.40	399.45	1.75	-15.60	7.75	2.00	2.00	0.00
500.00	8.00	276.40	498.70	3.11	-27.71	13.77	2.00	2.00	0.00
600.00	10.00	276.40	597.47	4.85	-43.25	21.50	2.00	2.00	0.00
700.00	12.00	276.40	695.62	6.98	-62.21	30.92	2.00	2.00	0.00
800.00	14.00	276.40	793.06	9.49	-84.57	42.03	2.00	2.00	0.00
900.00	16.00	276.40	889.64	12.38	-110.29	54.81	2.00	2.00	0.00
1,000.00	18.00	276.40	985.27	15.64	-139.34	69.25	2.00	2.00	0.00
1,100.00	20.00	276.40	1,079.82	19.27	-171.69	85.33	2.00	2.00	0.00
1,200.00	22.00	276.40	1,173.17	23.26	-207.30	103.03	2.00	2.00	0.00
1,300.00	24.00	276.40	1,265.21	27.62	-246.13	122.33	2.00	2.00	0.00
1,399.06	25.98	276.40	1,355.00	32.29	-287.72	143.00	2.00	2.00	0.00
Base of Upper Pierre aquifer									
1,400.00	26.00	276.40	1,355.84	32.33	-288.13	143.20	2.00	2.00	0.00
1,500.00	28.00	276.40	1,444.94	37.40	-333.24	165.62	2.00	2.00	0.00
1,600.00	30.00	276.40	1,532.39	42.80	-381.42	189.56	2.00	2.00	0.00
1,700.00	32.00	276.40	1,618.11	48.55	-432.60	215.00	2.00	2.00	0.00
1,800.00	34.00	276.40	1,701.97	54.62	-486.72	241.90	2.00	2.00	0.00
1,900.00	36.00	276.40	1,783.88	61.02	-543.71	270.23	2.00	2.00	0.00
1,935.38	36.71	276.40	1,812.37	63.35	-564.55	280.58	2.00	2.00	0.00
Start 4639.09 hold at 1935.37 MD									
2,000.00	36.71	276.40	1,864.18	67.66	-602.94	299.66	0.00	0.00	0.00
2,100.00	36.71	276.40	1,944.35	74.33	-662.34	329.18	0.00	0.00	0.00
2,200.00	36.71	276.40	2,024.52	80.99	-721.74	358.71	0.00	0.00	0.00
2,300.00	36.71	276.40	2,104.69	87.66	-781.14	388.23	0.00	0.00	0.00
2,400.00	36.71	276.40	2,184.86	94.33	-840.54	417.75	0.00	0.00	0.00
2,500.00	36.71	276.40	2,265.03	100.99	-899.94	447.27	0.00	0.00	0.00
2,600.00	36.71	276.40	2,345.20	107.66	-959.34	476.79	0.00	0.00	0.00
2,700.00	36.71	276.40	2,425.37	114.32	-1,018.74	506.32	0.00	0.00	0.00
2,800.00	36.71	276.40	2,505.54	120.99	-1,078.14	535.84	0.00	0.00	0.00
2,900.00	36.71	276.40	2,585.71	127.66	-1,137.54	565.36	0.00	0.00	0.00
3,000.00	36.71	276.40	2,665.88	134.32	-1,196.94	594.88	0.00	0.00	0.00
3,100.00	36.71	276.40	2,746.05	140.99	-1,256.34	624.40	0.00	0.00	0.00
3,200.00	36.71	276.40	2,826.22	147.65	-1,315.74	653.93	0.00	0.00	0.00
3,300.00	36.71	276.40	2,906.39	154.32	-1,375.14	683.45	0.00	0.00	0.00
3,400.00	36.71	276.40	2,986.56	160.99	-1,434.54	712.97	0.00	0.00	0.00
3,500.00	36.71	276.40	3,066.72	167.65	-1,493.94	742.49	0.00	0.00	0.00
3,600.00	36.71	276.40	3,146.89	174.32	-1,553.34	772.01	0.00	0.00	0.00
3,700.00	36.71	276.40	3,227.06	180.98	-1,612.74	801.54	0.00	0.00	0.00
3,800.00	36.71	276.40	3,307.23	187.65	-1,672.14	831.06	0.00	0.00	0.00
3,834.63	36.71	276.40	3,335.00	189.96	-1,692.72	841.28	0.00	0.00	0.00
Larimer ("Parkman") sandstone									
3,900.00	36.71	276.40	3,387.40	194.32	-1,731.54	860.58	0.00	0.00	0.00

Planning Report

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Company:	BONANZA CREEK ENERGY	TVD Reference:	KB 25' @ 4574.00usft
Project:	WELD COUNTY	MD Reference:	KB 25' @ 4574.00usft
Site:	SEC 3-T4N-R62W	North Reference:	True
Well:	STATE SEVENTY HOLES P41-T44-4HN	Survey Calculation Method:	Minimum Curvature
Wellbore:	OWB		
Design:	PROPOSAL 1		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
4,000.00	36.71	276.40	3,467.57	200.98	-1,790.94	890.10	0.00	0.00	0.00	
4,100.00	36.71	276.40	3,547.74	207.65	-1,850.35	919.62	0.00	0.00	0.00	
4,134.00	36.71	276.40	3,575.00	209.91	-1,870.54	929.66	0.00	0.00	0.00	
Pierre Formation										
4,200.00	36.71	276.40	3,627.91	214.31	-1,909.75	949.15	0.00	0.00	0.00	
4,300.00	36.71	276.40	3,708.08	220.98	-1,969.15	978.67	0.00	0.00	0.00	
4,400.00	36.71	276.40	3,788.25	227.65	-2,028.55	1,008.19	0.00	0.00	0.00	
4,420.89	36.71	276.40	3,805.00	229.04	-2,040.96	1,014.36	0.00	0.00	0.00	
Terry ("Sussex") sandstone										
4,500.00	36.71	276.40	3,868.42	234.31	-2,087.95	1,037.71	0.00	0.00	0.00	
4,508.21	36.71	276.40	3,875.00	234.86	-2,092.82	1,040.13	0.00	0.00	0.00	
Pierre Formation										
4,600.00	36.71	276.40	3,948.59	240.98	-2,147.35	1,067.23	0.00	0.00	0.00	
4,700.00	36.71	276.40	4,028.76	247.64	-2,206.75	1,096.76	0.00	0.00	0.00	
4,800.00	36.71	276.40	4,108.93	254.31	-2,266.15	1,126.28	0.00	0.00	0.00	
4,900.00	36.71	276.40	4,189.10	260.98	-2,325.55	1,155.80	0.00	0.00	0.00	
5,000.00	36.71	276.40	4,269.27	267.64	-2,384.95	1,185.32	0.00	0.00	0.00	
5,100.00	36.71	276.40	4,349.44	274.31	-2,444.35	1,214.84	0.00	0.00	0.00	
5,200.00	36.71	276.40	4,429.61	280.97	-2,503.75	1,244.37	0.00	0.00	0.00	
5,300.00	36.71	276.40	4,509.78	287.64	-2,563.15	1,273.89	0.00	0.00	0.00	
5,400.00	36.71	276.40	4,589.95	294.31	-2,622.55	1,303.41	0.00	0.00	0.00	
5,500.00	36.71	276.40	4,670.12	300.97	-2,681.95	1,332.93	0.00	0.00	0.00	
5,506.09	36.71	276.40	4,675.00	301.38	-2,685.57	1,334.73	0.00	0.00	0.00	
Hygiene ("Shannon") sandstone										
5,600.00	36.71	276.40	4,750.29	307.64	-2,741.35	1,362.45	0.00	0.00	0.00	
5,668.25	36.71	276.40	4,805.00	312.19	-2,781.89	1,382.60	0.00	0.00	0.00	
Pierre Formation										
5,700.00	36.71	276.40	4,830.46	314.30	-2,800.75	1,391.98	0.00	0.00	0.00	
5,800.00	36.71	276.40	4,910.63	320.97	-2,860.15	1,421.50	0.00	0.00	0.00	
5,900.00	36.71	276.40	4,990.80	327.64	-2,919.55	1,451.02	0.00	0.00	0.00	
6,000.00	36.71	276.40	5,070.97	334.30	-2,978.95	1,480.54	0.00	0.00	0.00	
6,100.00	36.71	276.40	5,151.14	340.97	-3,038.35	1,510.06	0.00	0.00	0.00	
6,200.00	36.71	276.40	5,231.31	347.63	-3,097.75	1,539.59	0.00	0.00	0.00	
6,300.00	36.71	276.40	5,311.48	354.30	-3,157.15	1,569.11	0.00	0.00	0.00	
6,400.00	36.71	276.40	5,391.65	360.97	-3,216.55	1,598.63	0.00	0.00	0.00	
6,500.00	36.71	276.40	5,471.81	367.63	-3,275.95	1,628.15	0.00	0.00	0.00	
6,574.46	36.71	276.40	5,531.51	372.60	-3,320.18	1,650.14	0.00	0.00	0.00	
Start DLS 10.00 TFO -97.85										
6,600.00	36.43	272.14	5,552.02	373.73	-3,335.35	1,658.13	10.00	-1.07	-16.69	
6,650.00	36.34	263.71	5,592.30	372.66	-3,364.93	1,676.38	10.00	-0.18	-16.86	
6,700.00	36.84	255.36	5,632.47	367.25	-3,394.18	1,697.96	10.00	1.00	-16.70	
6,750.00	37.91	247.31	5,672.23	357.52	-3,422.87	1,722.69	10.00	2.13	-16.10	
6,800.00	39.49	239.72	5,711.27	343.57	-3,450.79	1,750.39	10.00	3.17	-15.18	
6,850.00	41.54	232.69	5,749.30	325.49	-3,477.72	1,780.84	10.00	4.09	-14.06	
6,900.00	43.97	226.25	5,786.03	303.43	-3,503.46	1,813.82	10.00	4.87	-12.87	
6,950.00	46.74	220.39	5,821.17	277.54	-3,527.82	1,849.08	10.00	5.53	-11.72	
7,000.00	49.78	215.07	5,854.47	248.04	-3,550.60	1,886.34	10.00	6.08	-10.65	
7,050.00	53.04	210.22	5,885.67	215.13	-3,571.63	1,925.33	10.00	6.52	-9.71	
7,100.00	56.48	205.77	5,914.53	179.08	-3,590.76	1,965.74	10.00	6.88	-8.89	
7,138.47	59.23	202.59	5,935.00	149.37	-3,604.09	1,997.61	10.00	7.15	-8.26	
Sharon Springs Member										
7,150.00	60.07	201.68	5,940.82	140.15	-3,607.83	2,007.26	10.00	7.27	-7.95	
7,200.00	63.77	197.87	5,964.36	98.65	-3,622.73	2,049.59	10.00	7.41	-7.61	

Planning Report

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Project:	WELD COUNTY	MD Reference:	KB 25' @ 4574.00usft
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Well:	STATE SEVENTY HOLES P41-T44-4HN	Survey Calculation Method:	Minimum Curvature
Wellbore:	OWB		
Design:	PROPOSAL 1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
7,250.00	67.57	194.30	5,984.96	54.89	-3,635.33	2,092.40	10.00	7.60	-7.14
7,300.00	71.44	190.93	6,002.47	9.19	-3,645.53	2,135.37	10.00	7.75	-6.75
7,350.00	75.37	187.70	6,016.75	-38.08	-3,653.27	2,178.16	10.00	7.86	-6.45
7,400.00	79.35	184.59	6,027.69	-86.57	-3,658.48	2,220.46	10.00	7.95	-6.22
7,450.00	83.35	181.56	6,035.21	-135.92	-3,661.12	2,261.93	10.00	8.01	-6.06
7,500.00	87.37	178.58	6,039.25	-185.74	-3,661.18	2,302.27	10.00	8.04	-5.96
7,532.61	90.00	176.65	6,040.00	-218.30	-3,659.82	2,327.82	10.00	8.06	-5.93
Start 4466.82 hold at 7532.61 MD - Niobrara Formation									
7,600.00	90.00	176.65	6,040.00	-285.58	-3,655.88	2,379.93	0.00	0.00	0.00
7,700.00	90.00	176.65	6,040.00	-385.41	-3,650.02	2,457.25	0.00	0.00	0.00
7,800.00	90.00	176.65	6,040.00	-485.24	-3,644.17	2,534.57	0.00	0.00	0.00
7,900.00	90.00	176.65	6,040.00	-585.07	-3,638.32	2,611.89	0.00	0.00	0.00
8,000.00	90.00	176.65	6,040.00	-684.89	-3,632.47	2,689.22	0.00	0.00	0.00
8,100.00	90.00	176.65	6,040.00	-784.72	-3,626.62	2,766.54	0.00	0.00	0.00
8,200.00	90.00	176.65	6,040.00	-884.55	-3,620.76	2,843.86	0.00	0.00	0.00
8,300.00	90.00	176.65	6,040.00	-984.38	-3,614.91	2,921.19	0.00	0.00	0.00
8,400.00	90.00	176.65	6,040.00	-1,084.21	-3,609.06	2,998.51	0.00	0.00	0.00
8,500.00	90.00	176.65	6,040.00	-1,184.04	-3,603.21	3,075.83	0.00	0.00	0.00
8,600.00	90.00	176.65	6,040.00	-1,283.87	-3,597.36	3,153.15	0.00	0.00	0.00
8,700.00	90.00	176.65	6,040.00	-1,383.69	-3,591.50	3,230.48	0.00	0.00	0.00
8,800.00	90.00	176.65	6,040.00	-1,483.52	-3,585.65	3,307.80	0.00	0.00	0.00
8,900.00	90.00	176.65	6,040.00	-1,583.35	-3,579.80	3,385.12	0.00	0.00	0.00
9,000.00	90.00	176.65	6,040.00	-1,683.18	-3,573.95	3,462.45	0.00	0.00	0.00
9,100.00	90.00	176.65	6,040.00	-1,783.01	-3,568.10	3,539.77	0.00	0.00	0.00
9,200.00	90.00	176.65	6,040.00	-1,882.84	-3,562.24	3,617.09	0.00	0.00	0.00
9,300.00	90.00	176.65	6,040.00	-1,982.67	-3,556.39	3,694.42	0.00	0.00	0.00
9,400.00	90.00	176.65	6,040.00	-2,082.49	-3,550.54	3,771.74	0.00	0.00	0.00
9,500.00	90.00	176.65	6,040.00	-2,182.32	-3,544.69	3,849.06	0.00	0.00	0.00
9,600.00	90.00	176.65	6,040.00	-2,282.15	-3,538.84	3,926.38	0.00	0.00	0.00
9,700.00	90.00	176.65	6,040.00	-2,381.98	-3,532.98	4,003.71	0.00	0.00	0.00
9,800.00	90.00	176.65	6,040.00	-2,481.81	-3,527.13	4,081.03	0.00	0.00	0.00
9,900.00	90.00	176.65	6,040.00	-2,581.64	-3,521.28	4,158.35	0.00	0.00	0.00
10,000.00	90.00	176.65	6,040.00	-2,681.47	-3,515.43	4,235.68	0.00	0.00	0.00
10,100.00	90.00	176.65	6,040.00	-2,781.29	-3,509.58	4,313.00	0.00	0.00	0.00
10,200.00	90.00	176.65	6,040.00	-2,881.12	-3,503.72	4,390.32	0.00	0.00	0.00
10,300.00	90.00	176.65	6,040.00	-2,980.95	-3,497.87	4,467.64	0.00	0.00	0.00
10,400.00	90.00	176.65	6,040.00	-3,080.78	-3,492.02	4,544.97	0.00	0.00	0.00
10,500.00	90.00	176.65	6,040.00	-3,180.61	-3,486.17	4,622.29	0.00	0.00	0.00
10,600.00	90.00	176.65	6,040.00	-3,280.44	-3,480.32	4,699.61	0.00	0.00	0.00
10,700.00	90.00	176.65	6,040.00	-3,380.27	-3,474.46	4,776.94	0.00	0.00	0.00
10,800.00	90.00	176.65	6,040.00	-3,480.10	-3,468.61	4,854.26	0.00	0.00	0.00
10,900.00	90.00	176.65	6,040.00	-3,579.92	-3,462.76	4,931.58	0.00	0.00	0.00
11,000.00	90.00	176.65	6,040.00	-3,679.75	-3,456.91	5,008.91	0.00	0.00	0.00
11,100.00	90.00	176.65	6,040.00	-3,779.58	-3,451.05	5,086.23	0.00	0.00	0.00
11,200.00	90.00	176.65	6,040.00	-3,879.41	-3,445.20	5,163.55	0.00	0.00	0.00
11,300.00	90.00	176.65	6,040.00	-3,979.24	-3,439.35	5,240.87	0.00	0.00	0.00
11,400.00	90.00	176.65	6,040.00	-4,079.07	-3,433.50	5,318.20	0.00	0.00	0.00
11,500.00	90.00	176.65	6,040.00	-4,178.90	-3,427.65	5,395.52	0.00	0.00	0.00
11,600.00	90.00	176.65	6,040.00	-4,278.72	-3,421.79	5,472.84	0.00	0.00	0.00
11,700.00	90.00	176.65	6,040.00	-4,378.55	-3,415.94	5,550.17	0.00	0.00	0.00
11,800.00	90.00	176.65	6,040.00	-4,478.38	-3,410.09	5,627.49	0.00	0.00	0.00
11,900.00	90.00	176.65	6,040.00	-4,578.21	-3,404.24	5,704.81	0.00	0.00	0.00
11,999.42	90.00	176.65	6,040.00	-4,677.46	-3,398.42	5,781.69	0.00	0.00	0.00
TD at 11999.42									

Planning Report

Database:	EDT_32Bit_ODBC	Local Co-ordinate Reference:	Well STATE SEVENTY HOLES P41-T44-4HN
Company:	BONANZA CREEK ENERGY	TVD Reference:	KB 25' @ 4574.00usft
Project:	WELD COUNTY	MD Reference:	KB 25' @ 4574.00usft
Site:	SEC 3-T4N-R62W	North Reference:	True
Well:	STATE SEVENTY HOLES P41-T44-4HN	Survey Calculation Method:	Minimum Curvature
Wellbore:	OWB		
Design:	PROPOSAL 1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)

Design Targets									
Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
LP-SSH P41-T44-4HN - plan hits target center - Point	0.00	0.00	6,040.00	-218.30	-3,659.82	1,371,643.56	3,327,676.97	40.347600°N	104.324340°W
PBHL-SSH P41-T44-4H - plan hits target center - Point	0.00	0.00	6,040.00	-4,677.46	-3,398.42	1,367,188.49	3,327,998.12	40.335360°N	104.323400°W

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
109.00	109.00	Laramie-Fox Hills Formation				
225.04	225.00	Pierre Formation				
365.38	365.00	Upper Pierre aquifer				
1,399.06	1,355.00	Base of Upper Pierre aquifer				
3,834.63	3,335.00	Larimer ("Parkman") sandstone				
4,134.00	3,575.00	Pierre Formation				
4,420.89	3,805.00	Terry ("Sussex") sandstone				
4,508.21	3,875.00	Pierre Formation				
5,506.09	4,675.00	Hygiene ("Shannon") sandstone				
5,668.25	4,805.00	Pierre Formation				
7,138.47	5,935.00	Sharon Springs Member				
7,532.61	6,040.00	Niobrara Formation				

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
100.00	100.00	0.00	0.00	Start Build 2.00
1,935.38	1,812.37	63.35	-564.55	Start 4639.09 hold at 1935.37 MD
6,574.46	5,531.51	372.60	-3,320.18	Start DLS 10.00 TFO -97.85
7,532.61	6,040.00	-218.30	-3,659.82	Start 4466.82 hold at 7532.61 MD
11,999.42	6,040.00	-4,677.46	-3,398.42	TD at 11999.42