

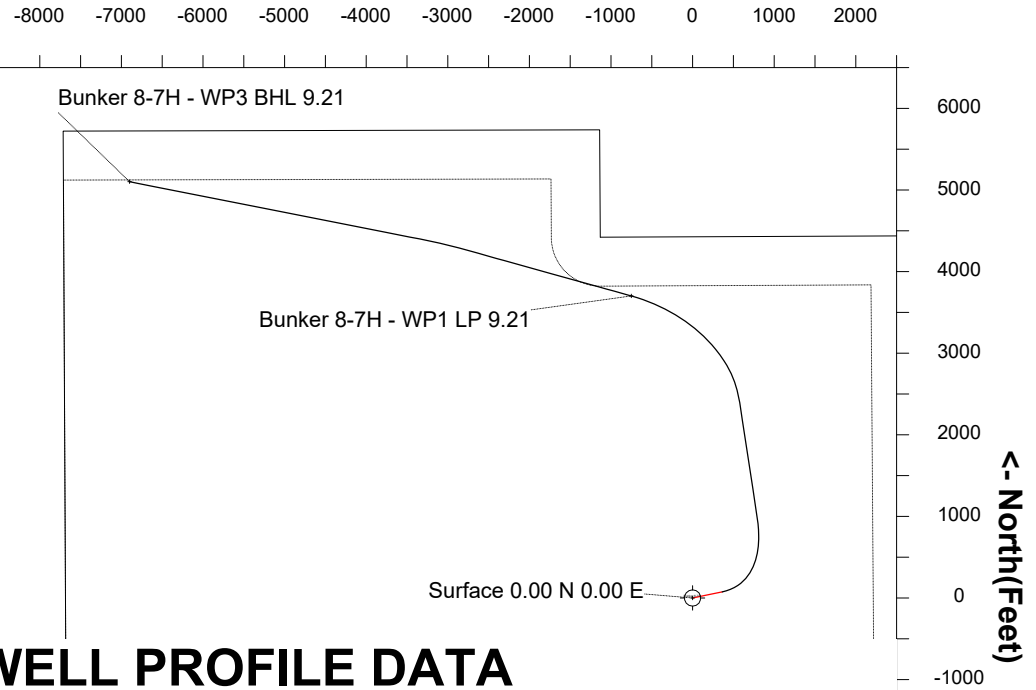
Magpie Operating

Location	DJ Basin	Slot	Bunker 8-7H
Field	Loveland Field	Well	Bunker 8-7H
Installation	Bunker 8 Pad	Wellbore	Bunker 8-7H- Permitted AWB Tieln Surface w/ Update BHL/FTP (PWB) 9.21.23_v3

Created by	johnny.musso
Date plotted	26-Sep-2023
Plot reference is	Bunker 8-7H- Permitted AWB Tieln Surface w/ Update BHL/FTP (PWB) 9.21.23_v3.
Ref wellpath is	Bunker 8-7H (PWP#1).
Coordinates are in	Feet reference Bunker 8-7H.
True Vertical Depths are	reference Rig Datum.
Measured Depths are	reference Rig Datum.
Rig Datum:	Planned Datum #1
Rig Datum to Mean Sea Level:	5014.00 ft.
Plot North is aligned to	GRID North.

Scale 1 cm = 500 ft

East (Feet) ->

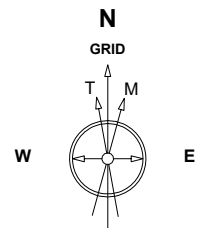
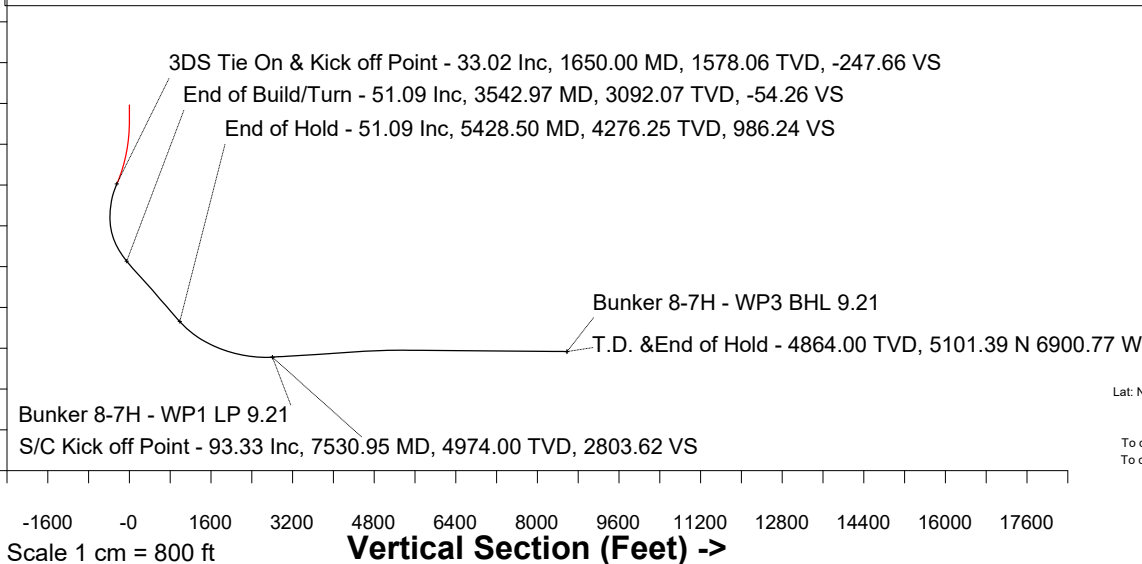


WELL PROFILE DATA

Point	MD	Inc	Azi	TVD	North	East	deg/100ft	V. Sect
KOP	1650.00	33.02	78.45	1578.06	N 74.14	E 362.79		-247.66
End of Build/Turn	3542.97	51.09	351.31	3092.07	N 980.99	E 792.67	3.00	-54.26
End of Hold	5428.50	51.09	351.31	4276.25	N 2431.44	E 570.97	0.00	986.24
Target Bunker...P 9.21	7530.95	93.33	285.56	4974.00	N 3701.14	W 750.45	3.50	2803.62
Target Bunker...2 6.23	9767.07	93.33	285.56	4844.00	N 4299.99	W 2900.96	0.00	4888.89
End of Drop/Turn	10055.38	89.59	281.18	4836.65	N 4366.59	W 3181.25	2.00	5153.88
T.D. & Target Bun....21	13846.88	89.59	281.18	4864.00	N 5101.39	W 6900.77	0.00	8581.65

<- True Vertical Depth (Feet)

Scale 1 cm = 500 ft



Jan-27-2021
 EMM-2017 Dip: 66.55 deg Field: 51905.5 nT
 Lat: N40 22 9.2280 Long: W105 1 55.2360 Elev: 4997.00 ft
 Magnetic North is 8.19 deg East of True North
 GRID North is 0.30 deg East of True North
 To correct azimuth from True to GRID subtract 0.30 deg
 To correct azimuth from Magnetic to GRID add 7.89 deg

Scale 1 cm = 800 ft

Vertical Section (Feet) ->

Azimuth 306.47 with reference 0.00 N, 0.00 E from Bunker 8-7H

SYSDRILL
Well Design Combined Report
Wellbore: Bunker 8-7H- Permitted AWB Tieln Surface w/ Update BHL/FTP (PWB)
9.21.23 v3

Wellhead Details							
Name	Latitude	Longitude	Northing	Easting	North	East	Slot Elevation Above Ground
Bunker 8-7H	40.36972999	-105.03200655	1377877.2559	3130398.6150	182.16N	0.00E	0.00

Declination		
Date	Source	Time
Nov-23-2021	EMM-2017	14:06
Nov-23-2021	EMM-2017	14:10
Aug-11-2023	IGRF-13	07:40
Aug-11-2023	IGRF-13	07:56
Aug-11-2023	IGRF-13	10:05
Aug-16-2023	IGRF-13	12:51
Aug-16-2023	IGRF-13	13:29
Aug-16-2023	IGRF-13	13:37
Aug-18-2023	IGRF-13 [1900.0-2025.0]	10:23
Aug-18-2023	IGRF-13 [1900.0-2025.0]	10:27
Aug-18-2023	IGRF-13 [1900.0-2025.0]	10:19
Aug-18-2023	IGRF-13 [1900.0-2025.0]	12:03
Jan-27-2021	EMM-2017	11:46

Installation Details						
Name	Installation Position (Latitude)	Installation Position (Longitude)	Northing	Easting	Coord System Name	North Alignment
Bunker 8 Pad	40.36923000	-105.03201000	1377695.1087	3130398.6150	NAD83 Colorado State Planes, North Zone, US Foot	Grid

Summary Wellpath								
MD[ft]	Inc[deg]	Azi[deg]	TVD[ft]	Vertical Depth SS	North[ft]	East[ft]	Dogleg [deg/100ft]	Vertical Section[ft]
1650.00	33.02	78.45	1578.06	-3435.94	74.14N	362.79E		-247.66
3542.97	51.09	351.31	3092.07	-1921.93	980.99N	792.67E	3.00	-54.26
5428.50	51.09	351.31	4276.25	-737.75	2431.44N	570.97E	==>	986.24
7530.95	93.33	285.56	4974.00	-40.00	3701.14N	750.45W	3.50	2803.62
9767.07	93.33	285.56	4844.00	-170.00	4299.99N	2900.96W	==>	4888.89
10055.38	89.59	281.18	4836.65	-177.35	4366.59N	3181.25W	2.00	5153.88
13846.88	89.59	281.18	4864.00	-150.00	5101.39N	6900.77W	==>	8581.65

Interpolated Wellpath								
MD[ft]	Inc[deg]	Azi[deg]	TVD[ft]	North[ft]	East[ft]	Dogleg [deg/100ft]	Vertical Section[ft]	All Station Comments
0.00	0.00	0.00	0.00	0.00N	0.00E		0.00	
29.00	0.00	0.00	29.00	0.00N	0.00E	==>	0.00	Slot Datum
329.00	0.00	0.00	329.00	0.00N	0.00E	==>	0.00	
429.00	2.50	78.45	428.97	0.44N	2.14E	2.50	-1.46	
529.00	5.00	78.45	528.75	1.75N	8.54E	2.50	-5.83	
629.00	7.50	78.45	628.14	3.93N	19.21E	2.50	-13.11	
729.00	10.00	78.45	726.97	6.97N	34.11E	2.50	-23.29	
829.00	12.50	78.45	825.04	10.88N	53.23E	2.50	-36.33	
929.00	15.00	78.45	922.17	15.64N	76.51E	2.50	-52.23	
1029.00	17.50	78.45	1018.17	21.24N	103.92E	2.50	-70.94	
1129.00	20.00	78.45	1112.85	27.67N	135.42E	2.50	-92.44	
1229.00	22.50	78.45	1206.05	34.93N	170.92E	2.50	-116.68	
1329.00	25.00	78.45	1297.57	42.99N	210.38E	2.50	-143.61	
1429.00	27.50	78.45	1387.25	51.85N	253.71E	2.50	-173.19	
1529.00	30.00	78.45	1474.92	61.48N	300.83E	2.50	-205.36	
1629.00	32.50	78.45	1560.40	71.86N	351.65E	2.50	-240.05	
1650.00	33.02	78.45	1578.06	74.14N	362.79E	==>	-247.66	Sidetrack Tie
1750.00	32.02	73.19	1662.39	87.27N	414.88E	3.00	-281.74	
1850.00	31.25	67.66	1747.55	104.80N	464.26E	3.00	-311.03	
1950.00	30.72	61.92	1833.30	126.68N	510.80E	3.00	-335.44	
2050.00	30.45	56.05	1919.41	152.86N	554.36E	3.00	-354.91	
2150.00	30.45	50.13	2005.63	183.26N	594.84E	3.00	-369.38	
2250.00	30.71	44.25	2091.74	217.81N	632.11E	3.00	-378.82	
2350.00	31.23	38.51	2177.50	256.40N	666.08E	3.00	-383.20	
2450.00	32.00	32.98	2262.68	298.92N	696.65E	3.00	-382.50	

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Coordinates are from Slot MD's are from Rig and TVD's are from Rig (Planned Datum #1 5014.0ft above Mean Sea Level)
Vertical Section is from 0.00N 0.00E on azimuth 306.47 degrees
Bottom hole distance is 8581.65 Feet on azimuth 306.47 degrees from Wellhead
Calculation method uses Minimum Curvature method
Prepared by
Date Printed: 28-Sep-2023

SYSDRILL
Well Design Combined Report
Wellbore: Bunker 8-7H- Permitted AWB Tieln Surface w/ Update BHL/FTP (PWB)
9.21.23 v3

Interpolated Wellpath								
MD[ft]	Inc[deg]	Azi[deg]	TVD[ft]	North[ft]	East[ft]	Dogleg [deg/100ft]	Vertical Section[ft]	All Station Comments
2550.00	33.00	27.71	2347.03	345.28N	723.75E	3.00	-376.74	
2650.00	34.21	22.75	2430.33	395.32N	747.29E	3.00	-365.91	
2750.00	35.60	18.10	2512.35	448.93N	767.20E	3.00	-350.07	
2850.00	37.16	13.78	2592.87	505.95N	783.45E	3.00	-329.23	
2950.00	38.87	9.77	2671.66	566.22N	795.97E	3.00	-303.48	
3050.00	40.70	6.06	2748.51	629.58N	804.75E	3.00	-272.86	
3150.00	42.65	2.62	2823.20	695.86N	809.74E	3.00	-237.48	
3250.00	44.69	359.44	2895.55	764.88N	810.95E	3.00	-197.42	
3350.00	46.81	356.47	2965.33	836.44N	808.36E	3.00	-152.80	
3450.00	49.00	353.71	3032.37	910.35N	801.98E	3.00	-103.74	
3550.00	51.09	351.31	3096.49	986.40N	791.85E	==>	-50.38	
3650.00	51.09	351.31	3159.29	1063.32N	780.09E	==>	4.80	
3750.00	51.09	351.31	3222.10	1140.25N	768.33E	==>	59.99	
3850.00	51.09	351.31	3284.90	1217.17N	756.57E	==>	115.17	
3950.00	51.09	351.31	3347.70	1294.10N	744.81E	==>	170.35	
4050.00	51.09	351.31	3410.51	1371.02N	733.06E	==>	225.54	
4150.00	51.09	351.31	3473.31	1447.95N	721.30E	==>	280.72	
4250.00	51.09	351.31	3536.11	1524.87N	709.54E	==>	335.90	
4350.00	51.09	351.31	3598.92	1601.80N	697.78E	==>	391.09	
4450.00	51.09	351.31	3661.72	1678.72N	686.02E	==>	446.27	
4550.00	51.09	351.31	3724.52	1755.65N	674.27E	==>	501.46	
4650.00	51.09	351.31	3787.33	1832.57N	662.51E	==>	556.64	
4750.00	51.09	351.31	3850.13	1909.50N	650.75E	==>	611.82	
4850.00	51.09	351.31	3912.93	1986.42N	638.99E	==>	667.01	
4950.00	51.09	351.31	3975.74	2063.35N	627.23E	==>	722.19	
5050.00	51.09	351.31	4038.54	2140.28N	615.47E	==>	777.37	
5150.00	51.09	351.31	4101.34	2217.20N	603.72E	==>	832.56	
5250.00	51.09	351.31	4164.15	2294.13N	591.96E	==>	887.74	
5350.00	51.09	351.31	4226.95	2371.05N	580.20E	==>	942.92	
5450.00	51.34	350.40	4289.72	2447.98N	568.31E	3.50	998.22	
5550.00	52.55	346.22	4351.38	2525.05N	552.33E	3.50	1056.88	
5650.00	53.90	342.19	4411.26	2602.09N	530.52E	3.50	1120.21	
5750.00	55.39	338.31	4469.14	2678.82N	502.95E	3.50	1187.99	
5850.00	56.99	334.56	4524.80	2754.94N	469.72E	3.50	1259.97	
5950.00	58.70	330.96	4578.03	2830.18N	430.96E	3.50	1335.86	
6050.00	60.51	327.48	4628.64	2904.25N	386.81E	3.50	1415.40	
6150.00	62.40	324.13	4676.43	2976.88N	337.43E	3.50	1498.28	
6250.00	64.38	320.90	4721.23	3047.80N	283.02E	3.50	1584.19	
6350.00	66.42	317.77	4762.87	3116.73N	223.76E	3.50	1672.82	
6450.00	68.52	314.74	4801.19	3183.44N	159.90E	3.50	1763.83	
6550.00	70.68	311.80	4836.05	3247.65N	91.65E	3.50	1856.88	
6650.00	72.88	308.93	4867.33	3309.15N	19.28E	3.50	1951.63	
6750.00	75.12	306.13	4894.90	3367.69N	56.94W	3.50	2047.72	
6850.00	77.39	303.40	4918.67	3423.06N	136.73W	3.50	2144.79	
6950.00	79.69	300.70	4938.54	3475.05N	219.79W	3.50	2242.49	
7050.00	82.02	298.05	4954.43	3523.47N	305.81W	3.50	2340.45	
7150.00	84.35	295.43	4966.30	3568.13N	394.47W	3.50	2438.29	
7250.00	86.71	292.83	4974.10	3608.88N	485.44W	3.50	2535.67	
7350.00	89.06	290.24	4977.79	3645.56N	578.38W	3.50	2632.21	
7450.00	91.42	287.66	4977.36	3678.02N	672.95W	3.50	2727.55	
7530.95	93.33	285.56	4974.00	3701.14N	750.45W	3.50	2803.62	Bunker 8-7H - WP1 LP 9.21
7550.00	93.33	285.56	4972.89	3706.24N	768.77W	==>	2821.38	
7650.00	93.33	285.56	4967.08	3733.02N	864.94W	==>	2914.63	
7750.00	93.33	285.56	4961.27	3759.81N	961.11W	==>	3007.89	
7850.00	93.33	285.56	4955.45	3786.59N	1057.28W	==>	3101.14	
7950.00	93.33	285.56	4949.64	3813.37N	1153.45W	==>	3194.40	
8050.00	93.33	285.56	4943.82	3840.15N	1249.63W	==>	3287.65	
8150.00	93.33	285.56	4938.01	3866.93N	1345.80W	==>	3380.90	
8250.00	93.33	285.56	4932.20	3893.71N	1441.97W	==>	3474.16	
8350.00	93.33	285.56	4926.38	3920.49N	1538.14W	==>	3567.41	

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Vertical Section is from 0.00N 0.00E on azimuth 306.47 degrees
Bottom hole distance is 8581.65 Feet on azimuth 306.47 degrees from Wellhead
Calculation method uses Minimum Curvature method
Prepared by
Date Printed: 28-Sep-2023

SYSDRILL
Well Design Combined Report
Wellbore: Bunker 8-7H- Permitted AWB Tieln Surface w/ Update BHL/FTP (PWB)
9.21.23 v3

Interpolated Wellpath								
MD[ft]	Inc[deg]	Azi[deg]	TVD[ft]	North[ft]	East[ft]	Dogleg [deg/100ft]	Vertical Section[ft]	All Station Comments
8450.00	93.33	285.56	4920.57	3947.27N	1634.31W	==>	3660.67	
8550.00	93.33	285.56	4914.76	3974.05N	1730.48W	==>	3753.92	
8650.00	93.33	285.56	4908.94	4000.83N	1826.66W	==>	3847.18	
8750.00	93.33	285.56	4903.13	4027.61N	1922.83W	==>	3940.43	
8850.00	93.33	285.56	4897.32	4054.39N	2019.00W	==>	4033.69	
8950.00	93.33	285.56	4891.50	4081.18N	2115.17W	==>	4126.94	
9050.00	93.33	285.56	4885.69	4107.96N	2211.34W	==>	4220.19	
9150.00	93.33	285.56	4879.87	4134.74N	2307.51W	==>	4313.45	
9250.00	93.33	285.56	4874.06	4161.52N	2403.69W	==>	4406.70	
9350.00	93.33	285.56	4868.25	4188.30N	2499.86W	==>	4499.96	
9450.00	93.33	285.56	4862.43	4215.08N	2596.03W	==>	4593.21	
9550.00	93.33	285.56	4856.62	4241.86N	2692.20W	==>	4686.47	
9650.00	93.33	285.56	4850.81	4268.64N	2788.37W	==>	4779.72	
9750.00	93.33	285.56	4844.99	4295.42N	2884.54W	==>	4872.98	
9767.07	93.33	285.56	4844.00	4299.99N	2900.96W	==>	4888.89	Bunker 8-7H - WP2 6.23
9850.00	92.26	284.30	4839.96	4321.33N	2980.99W	2.00	4965.94	
9950.00	90.96	282.78	4837.15	4344.73N	3078.17W	2.00	5057.99	
10050.00	89.66	281.26	4836.62	4365.55N	3175.97W	2.00	5149.01	
10150.00	89.59	281.18	4837.34	4384.93N	3274.07W	==>	5239.42	
10250.00	89.59	281.18	4838.06	4404.31N	3372.18W	==>	5329.83	
10350.00	89.59	281.18	4838.78	4423.69N	3470.28W	==>	5420.23	
10450.00	89.59	281.18	4839.50	4443.07N	3568.38W	==>	5510.64	
10550.00	89.59	281.18	4840.22	4462.45N	3666.48W	==>	5601.05	
10650.00	89.59	281.18	4840.94	4481.83N	3764.58W	==>	5691.45	
10750.00	89.59	281.18	4841.66	4501.21N	3862.68W	==>	5781.86	
10850.00	89.59	281.18	4842.38	4520.59N	3960.78W	==>	5872.27	
10950.00	89.59	281.18	4843.11	4539.97N	4058.89W	==>	5962.67	
11050.00	89.59	281.18	4843.83	4559.35N	4156.99W	==>	6053.08	
11150.00	89.59	281.18	4844.55	4578.73N	4255.09W	==>	6143.49	
11250.00	89.59	281.18	4845.27	4598.11N	4353.19W	==>	6233.89	
11350.00	89.59	281.18	4845.99	4617.49N	4451.29W	==>	6324.30	
11450.00	89.59	281.18	4846.71	4636.87N	4549.39W	==>	6414.71	
11550.00	89.59	281.18	4847.43	4656.25N	4647.49W	==>	6505.12	
11650.00	89.59	281.18	4848.15	4675.63N	4745.60W	==>	6595.52	
11750.00	89.59	281.18	4848.88	4695.01N	4843.70W	==>	6685.93	
11850.00	89.59	281.18	4849.60	4714.39N	4941.80W	==>	6776.34	
11950.00	89.59	281.18	4850.32	4733.77N	5039.90W	==>	6866.74	
12050.00	89.59	281.18	4851.04	4753.15N	5138.00W	==>	6957.15	
12150.00	89.59	281.18	4851.76	4772.53N	5236.10W	==>	7047.56	
12250.00	89.59	281.18	4852.48	4791.91N	5334.20W	==>	7137.96	
12350.00	89.59	281.18	4853.20	4811.29N	5432.31W	==>	7228.37	
12450.00	89.59	281.18	4853.92	4830.67N	5530.41W	==>	7318.78	
12550.00	89.59	281.18	4854.65	4850.05N	5628.51W	==>	7409.18	
12650.00	89.59	281.18	4855.37	4869.43N	5726.61W	==>	7499.59	
12750.00	89.59	281.18	4856.09	4888.81N	5824.71W	==>	7590.00	
12850.00	89.59	281.18	4856.81	4908.20N	5922.81W	==>	7680.41	
12950.00	89.59	281.18	4857.53	4927.58N	6020.91W	==>	7770.81	
13050.00	89.59	281.18	4858.25	4946.96N	6119.02W	==>	7861.22	
13150.00	89.59	281.18	4858.97	4966.34N	6217.12W	==>	7951.63	
13250.00	89.59	281.18	4859.69	4985.72N	6315.22W	==>	8042.03	
13350.00	89.59	281.18	4860.42	5005.10N	6413.32W	==>	8132.44	
13450.00	89.59	281.18	4861.14	5024.48N	6511.42W	==>	8222.85	
13550.00	89.59	281.18	4861.86	5043.86N	6609.52W	==>	8313.25	
13650.00	89.59	281.18	4862.58	5063.24N	6707.62W	==>	8403.66	
13750.00	89.59	281.18	4863.30	5082.62N	6805.73W	==>	8494.07	
13846.88	89.59	281.18	4864.00	5101.39N	6900.77W	==>	8581.65	Bunker 8-7H - WP3 BHL 9.21

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Vertical Section is from 0.00N 0.00E on azimuth 306.47 degrees
Bottom hole distance is 8581.65 Feet on azimuth 306.47 degrees from Wellhead
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SYSDRILL
Well Design Combined Report
Wellbore: Bunker 8-7H- Permitted AWB Tieln Surface w/ Update BHL/FTP (PWB)
9.21.23_v3

Targets							
Name	North[ft]	East[ft]	TVD[ft]	Latitude	Longitude	Northing	Easting
Bunker 8-7H - WP2 6.23	4299.99N	2900.96W	4844.00	40.38157449	-105.04233765	1382177.06	3127497.78
Bunker 8-7H - WP1 LP 9.21	3701.14N	750.45W	4974.00	40.37990000	-105.03463000	1381578.24	3129648.20
Bunker 8-7H - WP3 BHL 9.21	5101.39N	6900.77W	4864.00	40.38383000	-105.05668000	1382978.43	3123498.15

Survey Tool Program					
Reference	Survey Name	MD[ft]	TVD[ft]	Survey Tool	Error Model
1157785	Bunker 8-7H_AprovedPermitted_Ensign	1650.00	1578.06	ISCWSA MWD	Rev 4 + AX + SAG + FLT
1170775	Planned	13846.88	4864.00	ISCWSA MWD	Rev 4

Notes