

US ROCKIES WATTENBERG PLANNING

**WELD-NAD83-UTMFT13N
3N-67W-08 BERRY FARMS 8-8HZ PAD
BERRY FARMS 8-4HZ**

Plan A

Plan: Permit Rev-2

Standard Planning Report

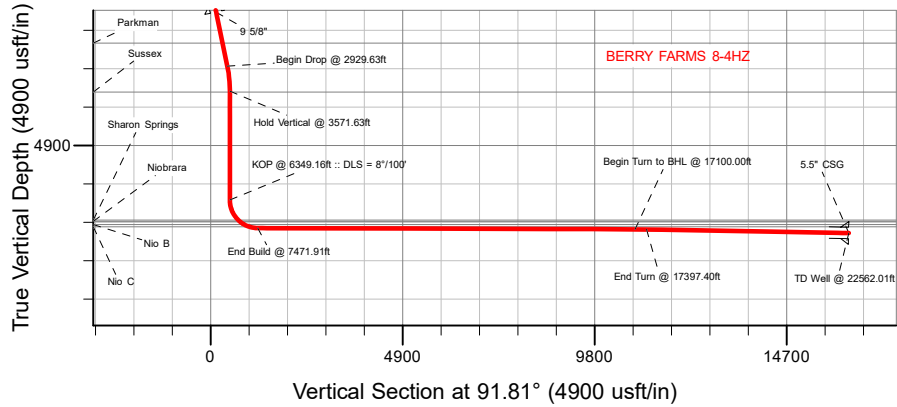
17 November, 2021

Project: WELD-NAD83-UTMFT13N
 Site: 3N-67W-08 BERRY FARMS 8-8HZ PAD
 Well: BERRY FARMS 8-4HZ
 Wellbore: Plan A
 Design: Permit Rev-2

US ROCKIES WATTENBERG PLANNING

CASING DETAILS

TVD	MD	Name	Size
1500.00	1513.59	9 5/8"	9-5/8
7137.00	22562.01	5.5" CSG	5-1/2



SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	
1256.00	12.84	116.50	1248.85	-42.62	85.48	1.50	116.50	86.78	
2929.63	12.84	116.50	2880.64	-208.57	418.33	0.00	0.00	424.71	
3571.63	0.00	0.00	3517.28	-240.54	482.44	2.00	180.00	489.80	
6349.16	0.00	0.00	6294.80	-240.54	482.44	0.00	0.00	489.80	
7471.91	89.82	90.34	7011.00	-244.77	1196.38	8.00	90.34	1203.51	
17100.00	89.82	90.34	7041.24	-301.91	10824.25	0.00	0.00	10828.38	
17397.40	88.97	94.72	7044.38	-315.03	11121.27	1.50	100.97	11125.67	
22562.01	88.97	94.72	7137.00	-739.94	16267.53	0.00	0.00	16282.78	BERRY FARMS 8-4HZ_BHL

SHL
1423' FNL
939' FEL

LP
1652' FNL
255' FWL

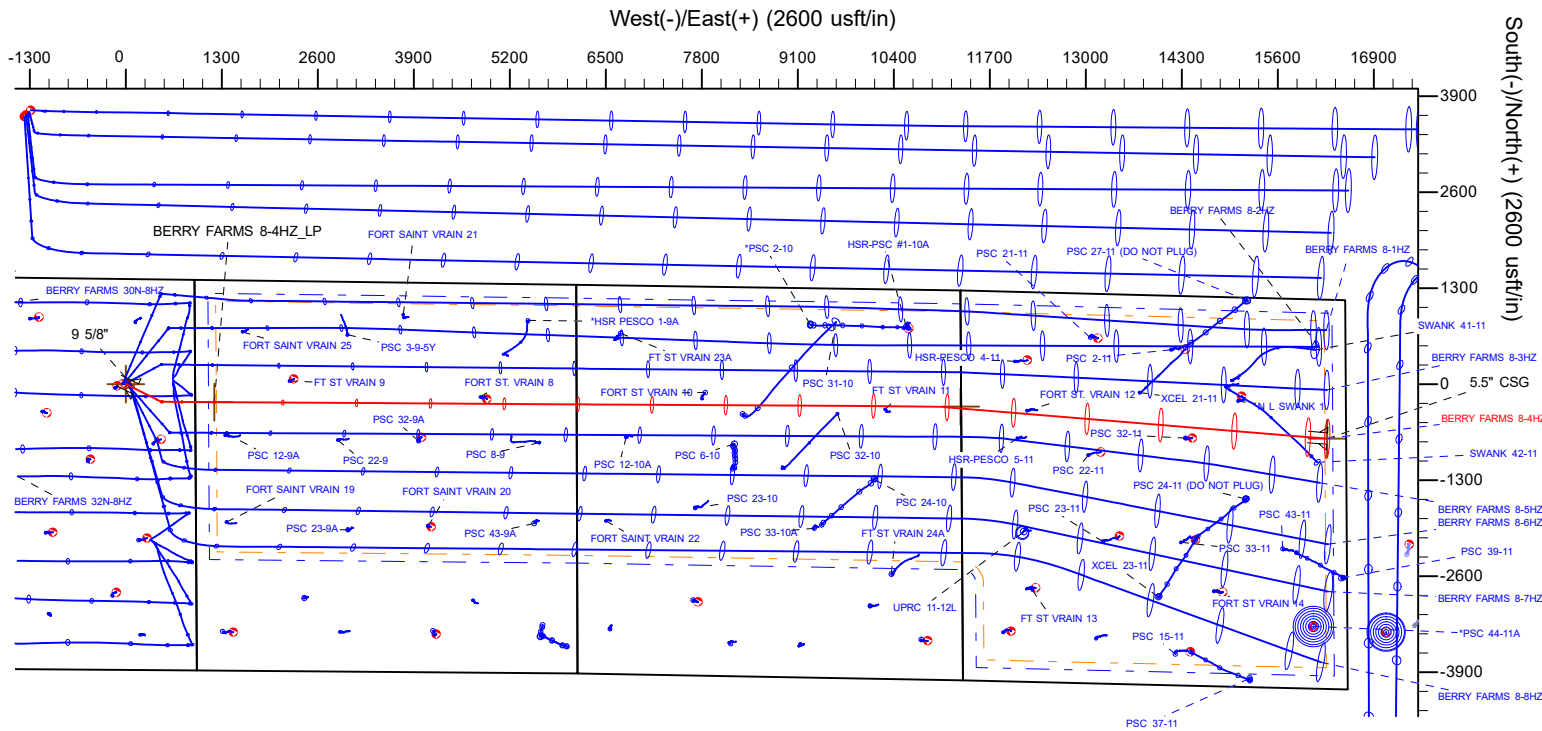
BHL
1880' FNL
255' FEL

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	Northing	Easting	Latitude	Longitude
BERRY FARMS 8-4HZ_SHL	0.00	14615497.19	1666038.61	40.243721	-104.908182
BERRY FARMS 8-4HZ_LP	7011.00	14615253.66	1667235.24	40.243049	-104.903895
BERRY FARMS 8-4HZ_BHL	7137.00	14614774.09	1682306.90	40.241674	-104.849889

WELL DETAILS: BERRY FARMS 8-4HZ

GL = 4817'
RKB = 17' @ 4834.00usft (RIG)
Plan: Permit Rev-2 (BERRY FARMS 8-4HZ/Plan A)
Date: 11/17/2021



FORMATION TOP DETAILS

TVDPath	MDPath	Formation
694.00	694.29	Fox Hills
2292.00	2325.90	Parkman
3538.00	3592.36	Sussex
6810.00	6924.17	Sharon Springs
6837.00	6964.22	Niobrara
6922.00	7113.31	Niob B
6982.00	7269.65	Niob C

Azimuths to True North
 Magnetic North: 7.87°

Magnetic Field
 Strength: 51819.3nT
 Dip Angle: 66.49°
 Date: 10/24/2021
 Model: IGRF2020

Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well BERRY FARMS 8-4HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 4834.00usft (RIG)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 4834.00usft (RIG)
Site:	3N-67W-08 BERRY FARMS 8-8HZ PAD	North Reference:	True
Well:	BERRY FARMS 8-4HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-2		

Project WELD-NAD83-UTMFT13N			
Map System:	Universal Transverse Mercator (US Survey Feet)	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Zone 13N (108 W to 102 W)		

Site 3N-67W-08 BERRY FARMS 8-8HZ PAD			
Site Position:		Northing:	14,615,497.59 usft
From:	Lat/Long	Easting:	1,665,993.52 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "
		Latitude:	40.243722
		Longitude:	-104.908344

Well BERRY FARMS 8-4HZ			
Well Position	+N/-S	0.00 usft	Northing: 14,615,497.19 usft
	+E/-W	0.00 usft	Easting: 1,666,038.61 usft
Position Uncertainty		3.28 usft	Wellhead Elevation: usft
Grid Convergence:		0.06 °	Ground Level: 4,817.00 usft
			Latitude: 40.243721
			Longitude: -104.908183

Wellbore Plan A					
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF202013	10/24/2021	7.87	66.49	51,819.34963150

Design Permit Rev-2				
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	91.81

Plan Survey Tool Program		Date	11/16/2021		
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks	
1	0.00	2,000.00	Permit Rev-2 (Plan A)	APC_ISCWSA REV 2 MWD Fixed:v2:standard declination	
2	2,000.00	22,562.01	Permit Rev-2 (Plan A)	APC_ISCWSA REV 2 MWD+I Fixed:v2:Rockies, crustal dec +	

Planning Report

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Site:	3N-67W-08 BERRY FARMS 8-8HZ PAD	North Reference:	True
Well:	BERRY FARMS 8-4HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-2		

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,256.00	12.84	116.50	1,248.85	-42.62	85.48	1.50	1.50	0.00	116.50	
2,929.63	12.84	116.50	2,880.64	-208.57	418.33	0.00	0.00	0.00	0.00	
3,571.63	0.00	0.00	3,517.28	-240.54	482.44	2.00	-2.00	0.00	180.00	
6,349.16	0.00	0.00	6,294.80	-240.54	482.44	0.00	0.00	0.00	0.00	
7,471.91	89.82	90.34	7,011.00	-244.77	1,196.38	8.00	8.00	0.00	90.34	
17,100.00	89.82	90.34	7,041.24	-301.91	10,824.25	0.00	0.00	0.00	0.00	
17,397.40	88.97	94.72	7,044.38	-315.03	11,121.27	1.50	-0.28	1.47	100.97	
22,562.01	88.97	94.72	7,137.00	-739.94	16,267.53	0.00	0.00	0.00	0.00	BERRY FARMS 8-4H

Planning Report

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Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 4834.00usft (RIG)
Site:	3N-67W-08 BERRY FARMS 8-8HZ PAD	North Reference:	True
Well:	BERRY FARMS 8-4HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-2		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
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
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
Begin Nudge @ 400.00ft									
500.00	1.50	116.50	499.99	-0.58	1.17	1.19	1.50	1.50	0.00
600.00	3.00	116.50	599.91	-2.34	4.68	4.76	1.50	1.50	0.00
694.29	4.41	116.50	694.00	-5.06	10.14	10.30	1.50	1.50	0.00
Fox Hills									
700.00	4.50	116.50	699.69	-5.25	10.54	10.70	1.50	1.50	0.00
800.00	6.00	116.50	799.27	-9.34	18.73	19.01	1.50	1.50	0.00
900.00	7.50	116.50	898.57	-14.58	29.24	29.69	1.50	1.50	0.00
1,000.00	9.00	116.50	997.54	-20.98	42.09	42.73	1.50	1.50	0.00
1,100.00	10.50	116.50	1,096.09	-28.54	57.24	58.11	1.50	1.50	0.00
1,200.00	12.00	116.50	1,194.16	-37.24	74.70	75.84	1.50	1.50	0.00
1,256.00	12.84	116.50	1,248.85	-42.62	85.48	86.78	1.50	1.50	0.00
Hold Tangent @ 1256.00ft									
1,300.00	12.84	116.50	1,291.75	-46.98	94.23	95.67	0.00	0.00	0.00
1,400.00	12.84	116.50	1,389.25	-56.90	114.12	115.86	0.00	0.00	0.00
1,500.00	12.84	116.50	1,486.75	-66.81	134.01	136.05	0.00	0.00	0.00
1,513.59	12.84	116.50	1,500.00	-68.16	136.71	138.79	0.00	0.00	0.00
9 5/8"									
1,600.00	12.84	116.50	1,584.25	-76.73	153.89	156.24	0.00	0.00	0.00
1,700.00	12.84	116.50	1,681.75	-86.64	173.78	176.43	0.00	0.00	0.00
1,800.00	12.84	116.50	1,779.25	-96.56	193.67	196.62	0.00	0.00	0.00
1,900.00	12.84	116.50	1,876.75	-106.48	213.56	216.81	0.00	0.00	0.00
2,000.00	12.84	116.50	1,974.25	-116.39	233.45	237.01	0.00	0.00	0.00
2,100.00	12.84	116.50	2,071.75	-126.31	253.33	257.20	0.00	0.00	0.00
2,200.00	12.84	116.50	2,169.25	-136.22	273.22	277.39	0.00	0.00	0.00
2,300.00	12.84	116.50	2,266.75	-146.14	293.11	297.58	0.00	0.00	0.00
2,325.90	12.84	116.50	2,292.00	-148.71	298.26	302.81	0.00	0.00	0.00
Parkman									
2,400.00	12.84	116.50	2,364.25	-156.06	313.00	317.77	0.00	0.00	0.00
2,500.00	12.84	116.50	2,461.75	-165.97	332.89	337.96	0.00	0.00	0.00
2,600.00	12.84	116.50	2,559.25	-175.89	352.77	358.15	0.00	0.00	0.00
2,700.00	12.84	116.50	2,656.75	-185.80	372.66	378.35	0.00	0.00	0.00
2,800.00	12.84	116.50	2,754.24	-195.72	392.55	398.54	0.00	0.00	0.00
2,900.00	12.84	116.50	2,851.74	-205.63	412.44	418.73	0.00	0.00	0.00
2,929.63	12.84	116.50	2,880.64	-208.57	418.33	424.71	0.00	0.00	0.00
Begin Drop @ 2929.63ft									
3,000.00	11.43	116.50	2,949.43	-215.17	431.57	438.15	2.00	-2.00	0.00
3,100.00	9.43	116.50	3,047.77	-223.25	447.78	454.60	2.00	-2.00	0.00
3,200.00	7.43	116.50	3,146.68	-229.80	460.90	467.93	2.00	-2.00	0.00
3,300.00	5.43	116.50	3,246.05	-234.79	470.93	478.11	2.00	-2.00	0.00
3,400.00	3.43	116.50	3,345.75	-238.24	477.84	485.13	2.00	-2.00	0.00
3,500.00	1.43	116.50	3,445.65	-240.14	481.64	488.98	2.00	-2.00	0.00
3,571.63	0.00	0.00	3,517.28	-240.54	482.44	489.80	2.00	-2.00	0.00
Hold Vertical @ 3571.63ft									
3,592.36	0.00	0.00	3,538.00	-240.54	482.44	489.80	0.00	0.00	0.00
Sussex									
3,600.00	0.00	0.00	3,545.64	-240.54	482.44	489.80	0.00	0.00	0.00
3,700.00	0.00	0.00	3,645.64	-240.54	482.44	489.80	0.00	0.00	0.00

Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well BERRY FARMS 8-4HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 4834.00usft (RIG)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 4834.00usft (RIG)
Site:	3N-67W-08 BERRY FARMS 8-8HZ PAD	North Reference:	True
Well:	BERRY FARMS 8-4HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-2		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
3,800.00	0.00	0.00	3,745.64	-240.54	482.44	489.80	0.00	0.00	0.00
3,900.00	0.00	0.00	3,845.64	-240.54	482.44	489.80	0.00	0.00	0.00
4,000.00	0.00	0.00	3,945.64	-240.54	482.44	489.80	0.00	0.00	0.00
4,100.00	0.00	0.00	4,045.64	-240.54	482.44	489.80	0.00	0.00	0.00
4,200.00	0.00	0.00	4,145.64	-240.54	482.44	489.80	0.00	0.00	0.00
4,300.00	0.00	0.00	4,245.64	-240.54	482.44	489.80	0.00	0.00	0.00
4,400.00	0.00	0.00	4,345.64	-240.54	482.44	489.80	0.00	0.00	0.00
4,500.00	0.00	0.00	4,445.64	-240.54	482.44	489.80	0.00	0.00	0.00
4,600.00	0.00	0.00	4,545.64	-240.54	482.44	489.80	0.00	0.00	0.00
4,700.00	0.00	0.00	4,645.64	-240.54	482.44	489.80	0.00	0.00	0.00
4,800.00	0.00	0.00	4,745.64	-240.54	482.44	489.80	0.00	0.00	0.00
4,900.00	0.00	0.00	4,845.64	-240.54	482.44	489.80	0.00	0.00	0.00
5,000.00	0.00	0.00	4,945.64	-240.54	482.44	489.80	0.00	0.00	0.00
5,100.00	0.00	0.00	5,045.64	-240.54	482.44	489.80	0.00	0.00	0.00
5,200.00	0.00	0.00	5,145.64	-240.54	482.44	489.80	0.00	0.00	0.00
5,300.00	0.00	0.00	5,245.64	-240.54	482.44	489.80	0.00	0.00	0.00
5,400.00	0.00	0.00	5,345.64	-240.54	482.44	489.80	0.00	0.00	0.00
5,500.00	0.00	0.00	5,445.64	-240.54	482.44	489.80	0.00	0.00	0.00
5,600.00	0.00	0.00	5,545.64	-240.54	482.44	489.80	0.00	0.00	0.00
5,700.00	0.00	0.00	5,645.64	-240.54	482.44	489.80	0.00	0.00	0.00
5,800.00	0.00	0.00	5,745.64	-240.54	482.44	489.80	0.00	0.00	0.00
5,900.00	0.00	0.00	5,845.64	-240.54	482.44	489.80	0.00	0.00	0.00
6,000.00	0.00	0.00	5,945.64	-240.54	482.44	489.80	0.00	0.00	0.00
6,100.00	0.00	0.00	6,045.64	-240.54	482.44	489.80	0.00	0.00	0.00
6,200.00	0.00	0.00	6,145.64	-240.54	482.44	489.80	0.00	0.00	0.00
6,300.00	0.00	0.00	6,245.64	-240.54	482.44	489.80	0.00	0.00	0.00
6,349.16	0.00	0.00	6,294.80	-240.54	482.44	489.80	0.00	0.00	0.00
KOP @ 6349.16ft :: DLS = 8°/100'									
6,400.00	4.07	90.34	6,345.60	-240.55	484.24	491.60	8.00	8.00	0.00
6,450.00	8.07	90.34	6,395.31	-240.58	489.53	496.88	8.00	8.00	0.00
6,500.00	12.07	90.34	6,444.53	-240.63	498.27	505.62	8.00	8.00	0.00
6,550.00	16.07	90.34	6,493.02	-240.70	510.42	517.77	8.00	8.00	0.00
6,600.00	20.07	90.34	6,540.55	-240.79	525.92	533.26	8.00	8.00	0.00
6,650.00	24.07	90.34	6,586.87	-240.91	544.70	552.04	8.00	8.00	0.00
6,700.00	28.07	90.34	6,631.78	-241.04	566.67	574.00	8.00	8.00	0.00
6,750.00	32.07	90.34	6,675.04	-241.18	591.71	599.04	8.00	8.00	0.00
6,800.00	36.07	90.34	6,716.45	-241.35	619.71	627.03	8.00	8.00	0.00
6,850.00	40.07	90.34	6,755.81	-241.53	650.54	657.84	8.00	8.00	0.00
6,900.00	44.07	90.34	6,792.92	-241.73	684.03	691.32	8.00	8.00	0.00
6,924.17	46.00	90.34	6,810.00	-241.83	701.13	708.42	8.00	8.00	0.00
Sharon Springs									
6,950.00	48.07	90.34	6,827.60	-241.95	720.03	727.31	8.00	8.00	0.00
6,964.22	49.20	90.34	6,837.00	-242.01	730.70	737.98	8.00	8.00	0.00
Niobrara									
7,000.00	52.07	90.34	6,859.69	-242.17	758.36	765.63	8.00	8.00	0.00
7,050.00	56.07	90.34	6,889.03	-242.41	798.84	806.10	8.00	8.00	0.00
7,100.00	60.07	90.34	6,915.47	-242.67	841.26	848.51	8.00	8.00	0.00
7,113.31	61.13	90.34	6,922.00	-242.73	852.85	860.10	8.00	8.00	0.00
Nio B									
7,150.00	64.07	90.34	6,938.88	-242.93	885.43	892.66	8.00	8.00	0.00
7,200.00	68.07	90.34	6,959.16	-243.20	931.12	938.33	8.00	8.00	0.00
7,250.00	72.07	90.34	6,976.21	-243.48	978.11	985.31	8.00	8.00	0.00
7,269.65	73.64	90.34	6,982.00	-243.59	996.89	1,004.09	8.00	8.00	0.00
Nio C									

Planning Report

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Well:	BERRY FARMS 8-4HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-2		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
7,300.00	76.07	90.34	6,989.93	-243.76	1,026.18	1,033.37	8.00	8.00	0.00
7,350.00	80.07	90.34	7,000.26	-244.05	1,075.09	1,082.26	8.00	8.00	0.00
7,400.00	84.07	90.34	7,007.16	-244.35	1,124.60	1,131.76	8.00	8.00	0.00
7,450.00	88.07	90.34	7,010.59	-244.64	1,174.47	1,181.61	8.00	8.00	0.00
7,471.91	89.82	90.34	7,011.00	-244.77	1,196.38	1,203.51	8.00	8.00	0.00
End Build @ 7471.91ft									
7,500.00	89.82	90.34	7,011.08	-244.94	1,224.47	1,231.59	0.00	0.00	0.00
7,600.00	89.82	90.34	7,011.40	-245.53	1,324.46	1,331.56	0.00	0.00	0.00
7,700.00	89.82	90.34	7,011.71	-246.13	1,424.46	1,431.52	0.00	0.00	0.00
7,800.00	89.82	90.34	7,012.03	-246.72	1,524.46	1,531.49	0.00	0.00	0.00
7,900.00	89.82	90.34	7,012.34	-247.31	1,624.46	1,631.46	0.00	0.00	0.00
8,000.00	89.82	90.34	7,012.66	-247.91	1,724.45	1,731.42	0.00	0.00	0.00
8,100.00	89.82	90.34	7,012.97	-248.50	1,824.45	1,831.39	0.00	0.00	0.00
8,200.00	89.82	90.34	7,013.28	-249.09	1,924.45	1,931.36	0.00	0.00	0.00
8,300.00	89.82	90.34	7,013.60	-249.69	2,024.45	2,031.32	0.00	0.00	0.00
8,400.00	89.82	90.34	7,013.91	-250.28	2,124.45	2,131.29	0.00	0.00	0.00
8,500.00	89.82	90.34	7,014.23	-250.87	2,224.44	2,231.26	0.00	0.00	0.00
8,600.00	89.82	90.34	7,014.54	-251.47	2,324.44	2,331.22	0.00	0.00	0.00
8,700.00	89.82	90.34	7,014.85	-252.06	2,424.44	2,431.19	0.00	0.00	0.00
8,800.00	89.82	90.34	7,015.17	-252.65	2,524.44	2,531.16	0.00	0.00	0.00
8,900.00	89.82	90.34	7,015.48	-253.25	2,624.43	2,631.12	0.00	0.00	0.00
9,000.00	89.82	90.34	7,015.80	-253.84	2,724.43	2,731.09	0.00	0.00	0.00
9,100.00	89.82	90.34	7,016.11	-254.43	2,824.43	2,831.06	0.00	0.00	0.00
9,200.00	89.82	90.34	7,016.43	-255.03	2,924.43	2,931.02	0.00	0.00	0.00
9,300.00	89.82	90.34	7,016.74	-255.62	3,024.42	3,030.99	0.00	0.00	0.00
9,400.00	89.82	90.34	7,017.05	-256.21	3,124.42	3,130.96	0.00	0.00	0.00
9,500.00	89.82	90.34	7,017.37	-256.81	3,224.42	3,230.92	0.00	0.00	0.00
9,600.00	89.82	90.34	7,017.68	-257.40	3,324.42	3,330.89	0.00	0.00	0.00
9,700.00	89.82	90.34	7,018.00	-257.99	3,424.42	3,430.86	0.00	0.00	0.00
9,800.00	89.82	90.34	7,018.31	-258.59	3,524.41	3,530.82	0.00	0.00	0.00
9,900.00	89.82	90.34	7,018.62	-259.18	3,624.41	3,630.79	0.00	0.00	0.00
10,000.00	89.82	90.34	7,018.94	-259.77	3,724.41	3,730.76	0.00	0.00	0.00
10,100.00	89.82	90.34	7,019.25	-260.37	3,824.41	3,830.72	0.00	0.00	0.00
10,200.00	89.82	90.34	7,019.57	-260.96	3,924.40	3,930.69	0.00	0.00	0.00
10,300.00	89.82	90.34	7,019.88	-261.56	4,024.40	4,030.66	0.00	0.00	0.00
10,400.00	89.82	90.34	7,020.20	-262.15	4,124.40	4,130.62	0.00	0.00	0.00
10,500.00	89.82	90.34	7,020.51	-262.74	4,224.40	4,230.59	0.00	0.00	0.00
10,600.00	89.82	90.34	7,020.82	-263.34	4,324.40	4,330.56	0.00	0.00	0.00
10,700.00	89.82	90.34	7,021.14	-263.93	4,424.39	4,430.52	0.00	0.00	0.00
10,800.00	89.82	90.34	7,021.45	-264.52	4,524.39	4,530.49	0.00	0.00	0.00
10,900.00	89.82	90.34	7,021.77	-265.12	4,624.39	4,630.46	0.00	0.00	0.00
11,000.00	89.82	90.34	7,022.08	-265.71	4,724.39	4,730.42	0.00	0.00	0.00
11,100.00	89.82	90.34	7,022.39	-266.30	4,824.38	4,830.39	0.00	0.00	0.00
11,200.00	89.82	90.34	7,022.71	-266.90	4,924.38	4,930.36	0.00	0.00	0.00
11,300.00	89.82	90.34	7,023.02	-267.49	5,024.38	5,030.32	0.00	0.00	0.00
11,400.00	89.82	90.34	7,023.34	-268.08	5,124.38	5,130.29	0.00	0.00	0.00
11,500.00	89.82	90.34	7,023.65	-268.68	5,224.38	5,230.25	0.00	0.00	0.00
11,600.00	89.82	90.34	7,023.97	-269.27	5,324.37	5,330.22	0.00	0.00	0.00
11,700.00	89.82	90.34	7,024.28	-269.86	5,424.37	5,430.19	0.00	0.00	0.00
11,800.00	89.82	90.34	7,024.59	-270.46	5,524.37	5,530.15	0.00	0.00	0.00
11,900.00	89.82	90.34	7,024.91	-271.05	5,624.37	5,630.12	0.00	0.00	0.00
12,000.00	89.82	90.34	7,025.22	-271.64	5,724.36	5,730.09	0.00	0.00	0.00
12,100.00	89.82	90.34	7,025.54	-272.24	5,824.36	5,830.05	0.00	0.00	0.00

Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well BERRY FARMS 8-4HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 4834.00usft (RIG)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 4834.00usft (RIG)
Site:	3N-67W-08 BERRY FARMS 8-8HZ PAD	North Reference:	True
Well:	BERRY FARMS 8-4HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-2		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
12,200.00	89.82	90.34	7,025.85	-272.83	5,924.36	5,930.02	0.00	0.00	0.00	
12,300.00	89.82	90.34	7,026.16	-273.42	6,024.36	6,029.99	0.00	0.00	0.00	
12,400.00	89.82	90.34	7,026.48	-274.02	6,124.35	6,129.95	0.00	0.00	0.00	
12,500.00	89.82	90.34	7,026.79	-274.61	6,224.35	6,229.92	0.00	0.00	0.00	
12,600.00	89.82	90.34	7,027.11	-275.20	6,324.35	6,329.89	0.00	0.00	0.00	
12,700.00	89.82	90.34	7,027.42	-275.80	6,424.35	6,429.85	0.00	0.00	0.00	
12,800.00	89.82	90.34	7,027.74	-276.39	6,524.35	6,529.82	0.00	0.00	0.00	
12,900.00	89.82	90.34	7,028.05	-276.98	6,624.34	6,629.79	0.00	0.00	0.00	
13,000.00	89.82	90.34	7,028.36	-277.58	6,724.34	6,729.75	0.00	0.00	0.00	
13,100.00	89.82	90.34	7,028.68	-278.17	6,824.34	6,829.72	0.00	0.00	0.00	
13,200.00	89.82	90.34	7,028.99	-278.76	6,924.34	6,929.69	0.00	0.00	0.00	
13,300.00	89.82	90.34	7,029.31	-279.36	7,024.33	7,029.65	0.00	0.00	0.00	
13,400.00	89.82	90.34	7,029.62	-279.95	7,124.33	7,129.62	0.00	0.00	0.00	
13,500.00	89.82	90.34	7,029.93	-280.54	7,224.33	7,229.59	0.00	0.00	0.00	
13,600.00	89.82	90.34	7,030.25	-281.14	7,324.33	7,329.55	0.00	0.00	0.00	
13,700.00	89.82	90.34	7,030.56	-281.73	7,424.33	7,429.52	0.00	0.00	0.00	
13,800.00	89.82	90.34	7,030.88	-282.32	7,524.32	7,529.49	0.00	0.00	0.00	
13,900.00	89.82	90.34	7,031.19	-282.92	7,624.32	7,629.45	0.00	0.00	0.00	
14,000.00	89.82	90.34	7,031.51	-283.51	7,724.32	7,729.42	0.00	0.00	0.00	
14,100.00	89.82	90.34	7,031.82	-284.10	7,824.32	7,829.39	0.00	0.00	0.00	
14,200.00	89.82	90.34	7,032.13	-284.70	7,924.31	7,929.35	0.00	0.00	0.00	
14,300.00	89.82	90.34	7,032.45	-285.29	8,024.31	8,029.32	0.00	0.00	0.00	
14,400.00	89.82	90.34	7,032.76	-285.88	8,124.31	8,129.29	0.00	0.00	0.00	
14,500.00	89.82	90.34	7,033.08	-286.48	8,224.31	8,229.25	0.00	0.00	0.00	
14,600.00	89.82	90.34	7,033.39	-287.07	8,324.31	8,329.22	0.00	0.00	0.00	
14,700.00	89.82	90.34	7,033.70	-287.66	8,424.30	8,429.19	0.00	0.00	0.00	
14,800.00	89.82	90.34	7,034.02	-288.26	8,524.30	8,529.15	0.00	0.00	0.00	
14,900.00	89.82	90.34	7,034.33	-288.85	8,624.30	8,629.12	0.00	0.00	0.00	
15,000.00	89.82	90.34	7,034.65	-289.45	8,724.30	8,729.09	0.00	0.00	0.00	
15,100.00	89.82	90.34	7,034.96	-290.04	8,824.29	8,829.05	0.00	0.00	0.00	
15,200.00	89.82	90.34	7,035.28	-290.63	8,924.29	8,929.02	0.00	0.00	0.00	
15,300.00	89.82	90.34	7,035.59	-291.23	9,024.29	9,028.99	0.00	0.00	0.00	
15,400.00	89.82	90.34	7,035.90	-291.82	9,124.29	9,128.95	0.00	0.00	0.00	
15,500.00	89.82	90.34	7,036.22	-292.41	9,224.29	9,228.92	0.00	0.00	0.00	
15,600.00	89.82	90.34	7,036.53	-293.01	9,324.28	9,328.89	0.00	0.00	0.00	
15,700.00	89.82	90.34	7,036.85	-293.60	9,424.28	9,428.85	0.00	0.00	0.00	
15,800.00	89.82	90.34	7,037.16	-294.19	9,524.28	9,528.82	0.00	0.00	0.00	
15,900.00	89.82	90.34	7,037.47	-294.79	9,624.28	9,628.79	0.00	0.00	0.00	
16,000.00	89.82	90.34	7,037.79	-295.38	9,724.27	9,728.75	0.00	0.00	0.00	
16,100.00	89.82	90.34	7,038.10	-295.97	9,824.27	9,828.72	0.00	0.00	0.00	
16,200.00	89.82	90.34	7,038.42	-296.57	9,924.27	9,928.68	0.00	0.00	0.00	
16,300.00	89.82	90.34	7,038.73	-297.16	10,024.27	10,028.65	0.00	0.00	0.00	
16,400.00	89.82	90.34	7,039.05	-297.75	10,124.26	10,128.62	0.00	0.00	0.00	
16,500.00	89.82	90.34	7,039.36	-298.35	10,224.26	10,228.58	0.00	0.00	0.00	
16,600.00	89.82	90.34	7,039.67	-298.94	10,324.26	10,328.55	0.00	0.00	0.00	
16,700.00	89.82	90.34	7,039.99	-299.53	10,424.26	10,428.52	0.00	0.00	0.00	
16,800.00	89.82	90.34	7,040.30	-300.13	10,524.26	10,528.48	0.00	0.00	0.00	
16,900.00	89.82	90.34	7,040.62	-300.72	10,624.25	10,628.45	0.00	0.00	0.00	
17,000.00	89.82	90.34	7,040.93	-301.31	10,724.25	10,728.42	0.00	0.00	0.00	
17,100.00	89.82	90.34	7,041.24	-301.91	10,824.25	10,828.38	0.00	0.00	0.00	
Begin Turn to BHL @ 17100.00ft										
17,200.00	89.53	91.81	7,041.81	-303.78	10,924.23	10,928.37	1.50	-0.29	1.47	
17,300.00	89.25	93.29	7,042.87	-308.23	11,024.12	11,028.35	1.50	-0.29	1.47	
17,397.40	88.97	94.72	7,044.38	-315.03	11,121.27	11,125.67	1.50	-0.28	1.47	

Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well BERRY FARMS 8-4HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 4834.00usft (RIG)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 4834.00usft (RIG)
Site:	3N-67W-08 BERRY FARMS 8-8HZ PAD	North Reference:	True
Well:	BERRY FARMS 8-4HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-2		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
End Turn @ 17397.40ft									
17,400.00	88.97	94.72	7,044.43	-315.24	11,123.86	11,128.27	0.00	0.00	0.00
17,500.00	88.97	94.72	7,046.22	-323.47	11,223.50	11,228.12	0.00	0.00	0.00
17,600.00	88.97	94.72	7,048.01	-331.70	11,323.15	11,327.98	0.00	0.00	0.00
17,700.00	88.97	94.72	7,049.81	-339.93	11,422.79	11,427.83	0.00	0.00	0.00
17,800.00	88.97	94.72	7,051.60	-348.15	11,522.44	11,527.69	0.00	0.00	0.00
17,900.00	88.97	94.72	7,053.39	-356.38	11,622.08	11,627.54	0.00	0.00	0.00
18,000.00	88.97	94.72	7,055.19	-364.61	11,721.73	11,727.40	0.00	0.00	0.00
18,100.00	88.97	94.72	7,056.98	-372.84	11,821.37	11,827.25	0.00	0.00	0.00
18,200.00	88.97	94.72	7,058.77	-381.06	11,921.02	11,927.11	0.00	0.00	0.00
18,300.00	88.97	94.72	7,060.57	-389.29	12,020.66	12,026.96	0.00	0.00	0.00
18,400.00	88.97	94.72	7,062.36	-397.52	12,120.31	12,126.82	0.00	0.00	0.00
18,500.00	88.97	94.72	7,064.15	-405.74	12,219.95	12,226.67	0.00	0.00	0.00
18,600.00	88.97	94.72	7,065.95	-413.97	12,319.60	12,326.53	0.00	0.00	0.00
18,700.00	88.97	94.72	7,067.74	-422.20	12,419.24	12,426.38	0.00	0.00	0.00
18,800.00	88.97	94.72	7,069.53	-430.43	12,518.89	12,526.24	0.00	0.00	0.00
18,900.00	88.97	94.72	7,071.33	-438.65	12,618.53	12,626.09	0.00	0.00	0.00
19,000.00	88.97	94.72	7,073.12	-446.88	12,718.18	12,725.95	0.00	0.00	0.00
19,100.00	88.97	94.72	7,074.91	-455.11	12,817.82	12,825.80	0.00	0.00	0.00
19,200.00	88.97	94.72	7,076.71	-463.34	12,917.47	12,925.66	0.00	0.00	0.00
19,300.00	88.97	94.72	7,078.50	-471.56	13,017.11	13,025.51	0.00	0.00	0.00
19,400.00	88.97	94.72	7,080.29	-479.79	13,116.76	13,125.37	0.00	0.00	0.00
19,500.00	88.97	94.72	7,082.09	-488.02	13,216.40	13,225.22	0.00	0.00	0.00
19,600.00	88.97	94.72	7,083.88	-496.25	13,316.05	13,325.08	0.00	0.00	0.00
19,700.00	88.97	94.72	7,085.67	-504.47	13,415.69	13,424.93	0.00	0.00	0.00
19,800.00	88.97	94.72	7,087.47	-512.70	13,515.33	13,524.79	0.00	0.00	0.00
19,900.00	88.97	94.72	7,089.26	-520.93	13,614.98	13,624.64	0.00	0.00	0.00
20,000.00	88.97	94.72	7,091.05	-529.15	13,714.62	13,724.50	0.00	0.00	0.00
20,100.00	88.97	94.72	7,092.85	-537.38	13,814.27	13,824.35	0.00	0.00	0.00
20,200.00	88.97	94.72	7,094.64	-545.61	13,913.91	13,924.21	0.00	0.00	0.00
20,300.00	88.97	94.72	7,096.43	-553.84	14,013.56	14,024.06	0.00	0.00	0.00
20,400.00	88.97	94.72	7,098.23	-562.06	14,113.20	14,123.92	0.00	0.00	0.00
20,500.00	88.97	94.72	7,100.02	-570.29	14,212.85	14,223.77	0.00	0.00	0.00
20,600.00	88.97	94.72	7,101.81	-578.52	14,312.49	14,323.63	0.00	0.00	0.00
20,700.00	88.97	94.72	7,103.61	-586.75	14,412.14	14,423.48	0.00	0.00	0.00
20,800.00	88.97	94.72	7,105.40	-594.97	14,511.78	14,523.34	0.00	0.00	0.00
20,900.00	88.97	94.72	7,107.19	-603.20	14,611.43	14,623.19	0.00	0.00	0.00
21,000.00	88.97	94.72	7,108.99	-611.43	14,711.07	14,723.05	0.00	0.00	0.00
21,100.00	88.97	94.72	7,110.78	-619.66	14,810.72	14,822.90	0.00	0.00	0.00
21,200.00	88.97	94.72	7,112.57	-627.88	14,910.36	14,922.76	0.00	0.00	0.00
21,300.00	88.97	94.72	7,114.37	-636.11	15,010.01	15,022.61	0.00	0.00	0.00
21,400.00	88.97	94.72	7,116.16	-644.34	15,109.65	15,122.47	0.00	0.00	0.00
21,500.00	88.97	94.72	7,117.95	-652.57	15,209.30	15,222.32	0.00	0.00	0.00
21,600.00	88.97	94.72	7,119.75	-660.79	15,308.94	15,322.18	0.00	0.00	0.00
21,700.00	88.97	94.72	7,121.54	-669.02	15,408.59	15,422.03	0.00	0.00	0.00
21,800.00	88.97	94.72	7,123.33	-677.25	15,508.23	15,521.88	0.00	0.00	0.00
21,900.00	88.97	94.72	7,125.13	-685.47	15,607.88	15,621.74	0.00	0.00	0.00
22,000.00	88.97	94.72	7,126.92	-693.70	15,707.52	15,721.59	0.00	0.00	0.00
22,100.00	88.97	94.72	7,128.71	-701.93	15,807.17	15,821.45	0.00	0.00	0.00
22,200.00	88.97	94.72	7,130.51	-710.16	15,906.81	15,921.30	0.00	0.00	0.00
22,300.00	88.97	94.72	7,132.30	-718.38	16,006.46	16,021.16	0.00	0.00	0.00
22,400.00	88.97	94.72	7,134.09	-726.61	16,106.10	16,121.01	0.00	0.00	0.00
22,500.00	88.97	94.72	7,135.89	-734.84	16,205.75	16,220.87	0.00	0.00	0.00

Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well BERRY FARMS 8-4HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 4834.00usft (RIG)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 4834.00usft (RIG)
Site:	3N-67W-08 BERRY FARMS 8-8HZ PAD	North Reference:	True
Well:	BERRY FARMS 8-4HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-2		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
22,562.01	88.97	94.72	7,137.00	-739.94	16,267.53	16,282.79	0.00	0.00	0.00
TD Well @ 22562.01ft									

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")	
1,513.59	1,500.00	9 5/8"	9-5/8	13-1/2	
22,562.01	7,137.00	5.5" CSG	5-1/2	7-7/8	

Formations					
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
694.29	694.00	Fox Hills			
2,325.90	2,292.00	Parkman			
3,592.36	3,538.00	Sussex			
6,924.17	6,810.00	Sharon Springs			
6,964.22	6,837.00	Niobrara			
7,113.31	6,922.00	Nio B			
7,269.65	6,982.00	Nio C			

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
400.00	400.00	0.00	0.00	Begin Nudge @ 400.00ft
1,256.00	1,248.85	-42.62	85.48	Hold Tangent @ 1256.00ft
2,929.63	2,880.64	-208.57	418.33	Begin Drop @ 2929.63ft
3,571.63	3,517.28	-240.54	482.44	Hold Vertical @ 3571.63ft
6,349.16	6,294.80	-240.54	482.44	KOP @ 6349.16ft :: DLS = 8°/100'
7,471.91	7,011.00	-244.77	1,196.38	End Build @ 7471.91ft
17,100.00	7,041.24	-301.91	10,824.25	Begin Turn to BHL @ 17100.00ft
17,397.40	7,044.38	-315.03	11,121.27	End Turn @ 17397.40ft
22,562.01	7,137.00	-739.94	16,267.53	TD Well @ 22562.01ft