

US ROCKIES WATTENBERG PLANNING

WELD-NAD83-UTMFT13N

3N-67W-08 BERRY FARMS 8-8HZ PAD

BERRY FARMS 8-5HZ

Plan A

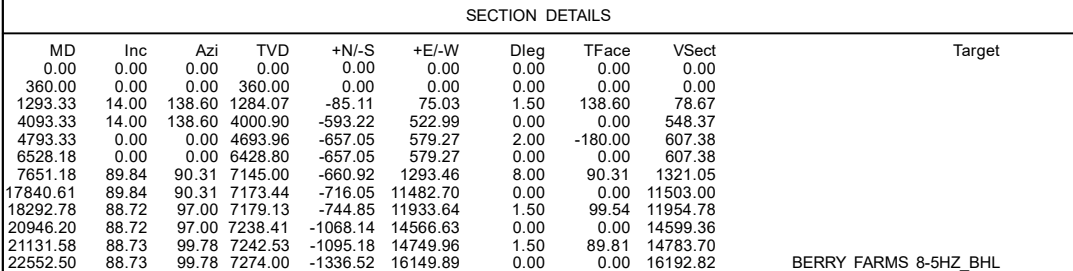
Plan: Permit Rev-2

Standard Planning Report

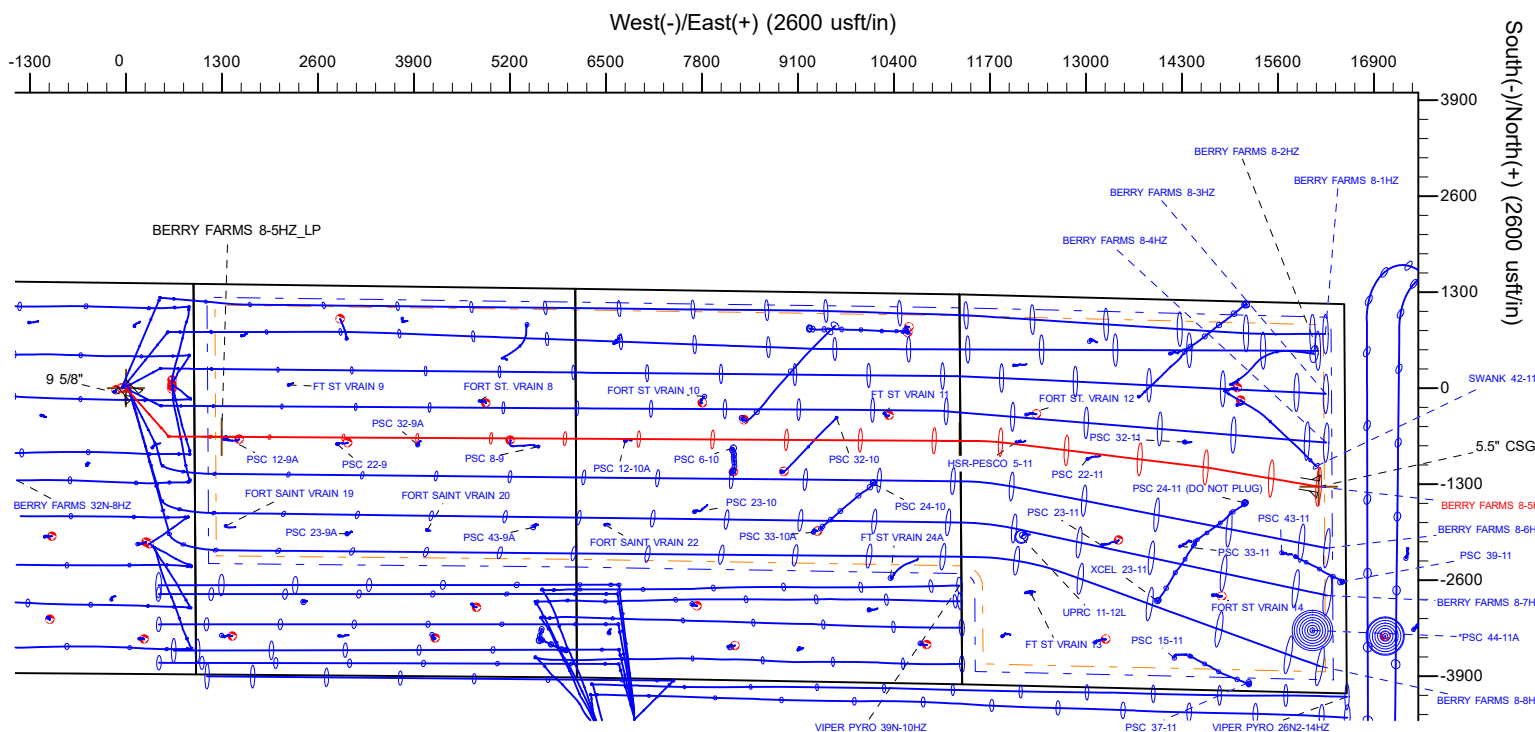
17 November, 2021

US ROCKIES WATTENBERG PLANNING

CASING DETAILS			
TVD	MD	Name	Size
1500.00	1515.87	9 5/8"	9-5/8
7274.00	22552.50	5.5" CSG	5-1/2

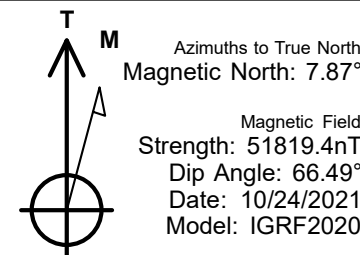


WELLBORE TARGET DETAILS (LAT/LONG)					
Name	TVD	Northing	Easting	Latitude	Longitude
BERRY FARMS 8-5HZ_SHL	0.00	14615497.10	1666053.61	40.243720	-104.908129
BERRY FARMS 8-5HZ_LP	7145.00	14614837.52	1667347.75	40.241905	-104.903494
BERRY FARMS 8-5HZ_BHL	7274.00	14614177.31	1682204.88	40.240036	-104.850258



WELL DETAILS: BERRY FARMS 8-5HZ
GL = 4817'
RKB = 17' @ 4834.00usft (RIG)
Plan: Permit Rev-2 (BERRY FARMS 8-5HZ/Plan A)
Date: 11/17/2021

FORMATION TOP DETAILS		
TVDPPath	MDPath	Formation
694.00	694.43	Fox Hills
2292.00	2332.12	Parkman
3538.00	3616.26	Sussex
6810.00	6930.15	Sharon Springs
6837.00	6962.51	Niobrara
6922.00	7072.20	Nio B
6982.00	7160.31	Nio C
7114.00	7441.69	Fort Hayes
7136.00	7539.52	Codell



Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well BERRY FARMS 8-5HZ
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 8-5HZ	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	Latitude:	40.243722
From:	Lat/Long	Easting:	1,665,993.52	usft	Longitude:	-104.908344
Position Uncertainty:		0.00	usft	Slot Radius:	13-3/16	"

Well		BERRY FARMS 8-5HZ				
Well Position	+N/-S	0.00 usft	Northing:	14,615,497.10 usft	Latitude:	40.243721
	+E/-W	0.00 usft	Easting:	1,666,053.61 usft	Longitude:	-104.908129
Position Uncertainty		3.28 usft	Wellhead Elevation:	usft	Ground Level:	4,817.00 usft
Grid Convergence:		0.06 °				

Wellbore	Plan A				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF202013	10/24/2021	7.87	66.49	51,819.35512413

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	92.50	

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	22,552.50	Permit Rev-2 (Plan A)	APC_ISCWSA REV 2 MWD+I Fixed:v2:Rockies, crustal dec +	

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 8-5HZ	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	
360.00	0.00	0.00	360.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,293.33	14.00	138.60	1,284.07	-85.11	75.03	1.50	1.50	0.00	138.60	
4,093.33	14.00	138.60	4,000.90	-593.22	522.99	0.00	0.00	0.00	0.00	
4,793.33	0.00	0.00	4,693.96	-657.05	579.27	2.00	-2.00	-19.80	-180.00	
6,528.18	0.00	0.00	6,428.80	-657.05	579.27	0.00	0.00	0.00	0.00	
7,651.18	89.84	90.31	7,145.00	-660.92	1,293.46	8.00	8.00	0.00	90.31	
17,840.61	89.84	90.31	7,173.44	-716.05	11,482.70	0.00	0.00	0.00	0.00	
18,292.78	88.72	97.00	7,179.13	-744.85	11,933.64	1.50	-0.25	1.48	99.54	
20,946.20	88.72	97.00	7,238.41	-1,068.14	14,566.63	0.00	0.00	0.00	0.00	
21,131.58	88.73	99.78	7,242.53	-1,095.18	14,749.96	1.50	0.01	1.50	89.81	
22,552.50	88.73	99.78	7,274.00	-1,336.52	16,149.89	0.00	0.00	0.00	0.00	BERRY FARMS 8-5H

Planning Report

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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 8-5HZ	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
360.00	0.00	0.00	360.00	0.00	0.00	0.00	0.00	0.00	0.00
Begin Nudge @ 360.00ft									
400.00	0.60	138.60	400.00	-0.16	0.14	0.15	1.50	1.50	0.00
500.00	2.10	138.60	499.97	-1.92	1.70	1.78	1.50	1.50	0.00
600.00	3.60	138.60	599.84	-5.65	4.98	5.23	1.50	1.50	0.00
694.43	5.02	138.60	694.00	-10.97	9.68	10.14	1.50	1.50	0.00
Fox Hills									
700.00	5.10	138.60	699.55	-11.34	10.00	10.49	1.50	1.50	0.00
800.00	6.60	138.60	799.03	-18.99	16.74	17.55	1.50	1.50	0.00
900.00	8.10	138.60	898.20	-28.58	25.20	26.42	1.50	1.50	0.00
1,000.00	9.60	138.60	997.01	-40.12	35.37	37.09	1.50	1.50	0.00
1,100.00	11.10	138.60	1,095.38	-53.60	47.26	49.55	1.50	1.50	0.00
1,200.00	12.60	138.60	1,193.25	-69.00	60.83	63.79	1.50	1.50	0.00
1,293.33	14.00	138.60	1,284.07	-85.11	75.03	78.67	1.50	1.50	0.00
Hold Tangent @ 1293.33ft									
1,300.00	14.00	138.60	1,290.54	-86.32	76.10	79.79	0.00	0.00	0.00
1,400.00	14.00	138.60	1,387.57	-104.47	92.10	96.57	0.00	0.00	0.00
1,500.00	14.00	138.60	1,484.60	-122.61	108.10	113.34	0.00	0.00	0.00
1,515.87	14.00	138.60	1,500.00	-125.49	110.64	116.01	0.00	0.00	0.00
9 5/8"									
1,600.00	14.00	138.60	1,581.63	-140.76	124.10	130.12	0.00	0.00	0.00
1,700.00	14.00	138.60	1,678.66	-158.91	140.09	146.89	0.00	0.00	0.00
1,800.00	14.00	138.60	1,775.69	-177.05	156.09	163.67	0.00	0.00	0.00
1,900.00	14.00	138.60	1,872.72	-195.20	172.09	180.44	0.00	0.00	0.00
2,000.00	14.00	138.60	1,969.75	-213.35	188.09	197.22	0.00	0.00	0.00
2,100.00	14.00	138.60	2,066.78	-231.49	204.09	213.99	0.00	0.00	0.00
2,200.00	14.00	138.60	2,163.81	-249.64	220.09	230.77	0.00	0.00	0.00
2,300.00	14.00	138.60	2,260.84	-267.79	236.09	247.54	0.00	0.00	0.00
2,332.12	14.00	138.60	2,292.00	-273.62	241.22	252.93	0.00	0.00	0.00
Parkman									
2,400.00	14.00	138.60	2,357.87	-285.93	252.08	264.32	0.00	0.00	0.00
2,500.00	14.00	138.60	2,454.90	-304.08	268.08	281.09	0.00	0.00	0.00
2,600.00	14.00	138.60	2,551.93	-322.23	284.08	297.87	0.00	0.00	0.00
2,700.00	14.00	138.60	2,648.96	-340.37	300.08	314.64	0.00	0.00	0.00
2,800.00	14.00	138.60	2,745.99	-358.52	316.08	331.42	0.00	0.00	0.00
2,900.00	14.00	138.60	2,843.02	-376.67	332.08	348.19	0.00	0.00	0.00
3,000.00	14.00	138.60	2,940.05	-394.81	348.08	364.97	0.00	0.00	0.00
3,100.00	14.00	138.60	3,037.07	-412.96	364.07	381.74	0.00	0.00	0.00
3,200.00	14.00	138.60	3,134.10	-431.11	380.07	398.52	0.00	0.00	0.00
3,300.00	14.00	138.60	3,231.13	-449.26	396.07	415.29	0.00	0.00	0.00
3,400.00	14.00	138.60	3,328.16	-467.40	412.07	432.07	0.00	0.00	0.00
3,500.00	14.00	138.60	3,425.19	-485.55	428.07	448.84	0.00	0.00	0.00
3,600.00	14.00	138.60	3,522.22	-503.70	444.07	465.62	0.00	0.00	0.00
3,616.26	14.00	138.60	3,538.00	-506.65	446.67	468.34	0.00	0.00	0.00
Sussex									
3,700.00	14.00	138.60	3,619.25	-521.84	460.07	482.39	0.00	0.00	0.00
3,800.00	14.00	138.60	3,716.28	-539.99	476.06	499.17	0.00	0.00	0.00
3,900.00	14.00	138.60	3,813.31	-558.14	492.06	515.94	0.00	0.00	0.00
4,000.00	14.00	138.60	3,910.34	-576.28	508.06	532.72	0.00	0.00	0.00

Planning Report

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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 8-5HZ	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)
4,093.33	14.00	138.60	4,000.90	-593.22	522.99	548.37	0.00	0.00	0.00
Begin Drop @ 4093.33ft									
4,100.00	13.87	138.60	4,007.37	-594.42	524.06	549.49	2.00	-2.00	0.00
4,200.00	11.87	138.60	4,104.86	-611.13	538.78	564.93	2.00	-2.00	0.00
4,300.00	9.87	138.60	4,203.06	-625.27	551.25	578.00	2.00	-2.00	0.00
4,400.00	7.87	138.60	4,301.86	-636.83	561.44	588.68	2.00	-2.00	0.00
4,500.00	5.87	138.60	4,401.14	-645.80	569.35	596.97	2.00	-2.00	0.00
4,600.00	3.87	138.60	4,500.77	-652.16	574.96	602.86	2.00	-2.00	0.00
4,700.00	1.87	138.60	4,600.64	-655.91	578.26	606.32	2.00	-2.00	0.00
4,793.33	0.00	0.00	4,693.96	-657.05	579.27	607.38	2.00	-2.00	-148.50
Hold Vertical @ 4793.33ft									
4,800.00	0.00	0.00	4,700.62	-657.05	579.27	607.38	0.00	0.00	0.00
4,900.00	0.00	0.00	4,800.62	-657.05	579.27	607.38	0.00	0.00	0.00
5,000.00	0.00	0.00	4,900.62	-657.05	579.27	607.38	0.00	0.00	0.00
5,100.00	0.00	0.00	5,000.62	-657.05	579.27	607.38	0.00	0.00	0.00
5,200.00	0.00	0.00	5,100.62	-657.05	579.27	607.38	0.00	0.00	0.00
5,300.00	0.00	0.00	5,200.62	-657.05	579.27	607.38	0.00	0.00	0.00
5,400.00	0.00	0.00	5,300.62	-657.05	579.27	607.38	0.00	0.00	0.00
5,500.00	0.00	0.00	5,400.62	-657.05	579.27	607.38	0.00	0.00	0.00
5,600.00	0.00	0.00	5,500.62	-657.05	579.27	607.38	0.00	0.00	0.00
5,700.00	0.00	0.00	5,600.62	-657.05	579.27	607.38	0.00	0.00	0.00
5,800.00	0.00	0.00	5,700.62	-657.05	579.27	607.38	0.00	0.00	0.00
5,900.00	0.00	0.00	5,800.62	-657.05	579.27	607.38	0.00	0.00	0.00
6,000.00	0.00	0.00	5,900.62	-657.05	579.27	607.38	0.00	0.00	0.00
6,100.00	0.00	0.00	6,000.62	-657.05	579.27	607.38	0.00	0.00	0.00
6,200.00	0.00	0.00	6,100.62	-657.05	579.27	607.38	0.00	0.00	0.00
6,300.00	0.00	0.00	6,200.62	-657.05	579.27	607.38	0.00	0.00	0.00
6,400.00	0.00	0.00	6,300.62	-657.05	579.27	607.38	0.00	0.00	0.00
6,500.00	0.00	0.00	6,400.62	-657.05	579.27	607.38	0.00	0.00	0.00
6,528.18	0.00	0.00	6,428.80	-657.05	579.27	607.38	0.00	0.00	0.00
KOP @ 6528.18ft :: DLS = 8°/100'									
6,550.00	1.75	90.31	6,450.62	-657.05	579.60	607.71	8.00	8.00	413.89
6,600.00	5.75	90.31	6,500.50	-657.07	582.87	610.97	8.00	8.00	0.00
6,650.00	9.75	90.31	6,550.04	-657.11	589.60	617.71	8.00	8.00	0.00
6,700.00	13.75	90.31	6,598.98	-657.16	599.78	627.87	8.00	8.00	0.00
6,750.00	17.75	90.31	6,647.09	-657.24	613.35	641.43	8.00	8.00	0.00
6,800.00	21.75	90.31	6,694.14	-657.33	630.23	658.31	8.00	8.00	0.00
6,850.00	25.75	90.31	6,739.90	-657.44	650.36	678.42	8.00	8.00	0.00
6,900.00	29.75	90.31	6,784.14	-657.56	673.64	701.68	8.00	8.00	0.00
6,930.15	32.16	90.31	6,810.00	-657.65	689.14	717.17	8.00	8.00	0.00
Sharon Springs									
6,950.00	33.75	90.31	6,826.66	-657.70	699.94	727.96	8.00	8.00	0.00
6,962.51	34.75	90.31	6,837.00	-657.74	706.98	735.00	8.00	8.00	0.00
Niobrara									
7,000.00	37.75	90.31	6,867.23	-657.86	729.14	757.14	8.00	8.00	0.00
7,050.00	41.75	90.31	6,905.67	-658.04	761.10	789.08	8.00	8.00	0.00
7,072.20	43.52	90.31	6,922.00	-658.12	776.14	804.11	8.00	8.00	0.00
Nio B									
7,100.00	45.75	90.31	6,941.78	-658.22	795.67	823.62	8.00	8.00	0.00
7,150.00	49.75	90.31	6,975.39	-658.42	832.67	860.60	8.00	8.00	0.00
7,160.31	50.57	90.31	6,982.00	-658.47	840.59	868.51	8.00	8.00	0.00
Nio C									
7,200.00	53.75	90.31	7,006.34	-658.64	871.92	899.82	8.00	8.00	0.00

Planning Report

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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 8-5HZ	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)
7,250.00	57.75	90.31	7,034.48	-658.86	913.24	941.11	8.00	8.00	0.00
7,300.00	61.75	90.31	7,059.67	-659.09	956.42	984.26	8.00	8.00	0.00
7,350.00	65.75	90.31	7,081.78	-659.34	1,001.25	1,029.06	8.00	8.00	0.00
7,400.00	69.75	90.31	7,100.71	-659.59	1,047.52	1,075.29	8.00	8.00	0.00
7,441.69	73.08	90.31	7,114.00	-659.80	1,087.03	1,114.77	8.00	8.00	0.00
Fort Hayes									
7,450.00	73.75	90.31	7,116.37	-659.84	1,094.99	1,122.73	8.00	8.00	0.00
7,500.00	77.75	90.31	7,128.68	-660.10	1,143.44	1,171.15	8.00	8.00	0.00
7,539.52	80.91	90.31	7,136.00	-660.31	1,182.27	1,209.95	8.00	8.00	0.00
Codell									
7,550.00	81.75	90.31	7,137.58	-660.37	1,192.63	1,220.30	8.00	8.00	0.00
7,600.00	85.75	90.31	7,143.03	-660.64	1,242.33	1,269.96	8.00	8.00	0.00
7,651.18	89.84	90.31	7,145.00	-660.92	1,293.46	1,321.05	8.00	8.00	0.00
End Build @ 7651.18ft									
7,700.00	89.84	90.31	7,145.13	-661.18	1,342.28	1,369.84	0.00	0.00	0.00
7,800.00	89.84	90.31	7,145.41	-661.72	1,442.27	1,469.76	0.00	0.00	0.00
7,900.00	89.84	90.31	7,145.69	-662.26	1,542.27	1,569.69	0.00	0.00	0.00
8,000.00	89.84	90.31	7,145.97	-662.80	1,642.27	1,669.62	0.00	0.00	0.00
8,100.00	89.84	90.31	7,146.25	-663.34	1,742.27	1,769.54	0.00	0.00	0.00
8,200.00	89.84	90.31	7,146.53	-663.89	1,842.27	1,869.47	0.00	0.00	0.00
8,300.00	89.84	90.31	7,146.81	-664.43	1,942.26	1,969.40	0.00	0.00	0.00
8,400.00	89.84	90.31	7,147.09	-664.97	2,042.26	2,069.32	0.00	0.00	0.00
8,500.00	89.84	90.31	7,147.37	-665.51	2,142.26	2,169.25	0.00	0.00	0.00
8,600.00	89.84	90.31	7,147.65	-666.05	2,242.26	2,269.18	0.00	0.00	0.00
8,700.00	89.84	90.31	7,147.93	-666.59	2,342.26	2,369.10	0.00	0.00	0.00
8,800.00	89.84	90.31	7,148.21	-667.13	2,442.25	2,469.03	0.00	0.00	0.00
8,900.00	89.84	90.31	7,148.48	-667.67	2,542.25	2,568.96	0.00	0.00	0.00
9,000.00	89.84	90.31	7,148.76	-668.21	2,642.25	2,668.88	0.00	0.00	0.00
9,100.00	89.84	90.31	7,149.04	-668.76	2,742.25	2,768.81	0.00	0.00	0.00
9,200.00	89.84	90.31	7,149.32	-669.30	2,842.25	2,868.74	0.00	0.00	0.00
9,300.00	89.84	90.31	7,149.60	-669.84	2,942.25	2,968.66	0.00	0.00	0.00
9,400.00	89.84	90.31	7,149.88	-670.38	3,042.24	3,068.59	0.00	0.00	0.00
9,500.00	89.84	90.31	7,150.16	-670.92	3,142.24	3,168.52	0.00	0.00	0.00
9,600.00	89.84	90.31	7,150.44	-671.46	3,242.24	3,268.44	0.00	0.00	0.00
9,700.00	89.84	90.31	7,150.72	-672.00	3,342.24	3,368.37	0.00	0.00	0.00
9,800.00	89.84	90.31	7,151.00	-672.54	3,442.24	3,468.30	0.00	0.00	0.00
9,900.00	89.84	90.31	7,151.28	-673.08	3,542.23	3,568.22	0.00	0.00	0.00
10,000.00	89.84	90.31	7,151.56	-673.62	3,642.23	3,668.15	0.00	0.00	0.00
10,100.00	89.84	90.31	7,151.83	-674.17	3,742.23	3,768.08	0.00	0.00	0.00
10,200.00	89.84	90.31	7,152.11	-674.71	3,842.23	3,868.00	0.00	0.00	0.00
10,300.00	89.84	90.31	7,152.39	-675.25	3,942.23	3,967.93	0.00	0.00	0.00
10,400.00	89.84	90.31	7,152.67	-675.79	4,042.23	4,067.86	0.00	0.00	0.00
10,500.00	89.84	90.31	7,152.95	-676.33	4,142.22	4,167.78	0.00	0.00	0.00
10,600.00	89.84	90.31	7,153.23	-676.87	4,242.22	4,267.71	0.00	0.00	0.00
10,700.00	89.84	90.31	7,153.51	-677.41	4,342.22	4,367.64	0.00	0.00	0.00
10,800.00	89.84	90.31	7,153.79	-677.95	4,442.22	4,467.56	0.00	0.00	0.00
10,900.00	89.84	90.31	7,154.07	-678.49	4,542.22	4,567.49	0.00	0.00	0.00
11,000.00	89.84	90.31	7,154.35	-679.03	4,642.21	4,667.41	0.00	0.00	0.00
11,100.00	89.84	90.31	7,154.63	-679.58	4,742.21	4,767.34	0.00	0.00	0.00
11,200.00	89.84	90.31	7,154.91	-680.12	4,842.21	4,867.27	0.00	0.00	0.00
11,300.00	89.84	90.31	7,155.18	-680.66	4,942.21	4,967.19	0.00	0.00	0.00
11,400.00	89.84	90.31	7,155.46	-681.20	5,042.21	5,067.12	0.00	0.00	0.00
11,500.00	89.84	90.31	7,155.74	-681.74	5,142.20	5,167.05	0.00	0.00	0.00

Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well BERRY FARMS 8-5HZ
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 8-5HZ	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)
11,600.00	89.84	90.31	7,156.02	-682.28	5,242.20	5,266.97	0.00	0.00	0.00
11,700.00	89.84	90.31	7,156.30	-682.82	5,342.20	5,366.90	0.00	0.00	0.00
11,800.00	89.84	90.31	7,156.58	-683.36	5,442.20	5,466.83	0.00	0.00	0.00
11,900.00	89.84	90.31	7,156.86	-683.90	5,542.20	5,566.75	0.00	0.00	0.00
12,000.00	89.84	90.31	7,157.14	-684.45	5,642.20	5,666.68	0.00	0.00	0.00
12,100.00	89.84	90.31	7,157.42	-684.99	5,742.19	5,766.61	0.00	0.00	0.00
12,200.00	89.84	90.31	7,157.70	-685.53	5,842.19	5,866.53	0.00	0.00	0.00
12,300.00	89.84	90.31	7,157.98	-686.07	5,942.19	5,966.46	0.00	0.00	0.00
12,400.00	89.84	90.31	7,158.26	-686.61	6,042.19	6,066.39	0.00	0.00	0.00
12,500.00	89.84	90.31	7,158.54	-687.15	6,142.19	6,166.31	0.00	0.00	0.00
12,600.00	89.84	90.31	7,158.81	-687.69	6,242.18	6,266.24	0.00	0.00	0.00
12,700.00	89.84	90.31	7,159.09	-688.23	6,342.18	6,366.17	0.00	0.00	0.00
12,800.00	89.84	90.31	7,159.37	-688.77	6,442.18	6,466.09	0.00	0.00	0.00
12,900.00	89.84	90.31	7,159.65	-689.31	6,542.18	6,566.02	0.00	0.00	0.00
13,000.00	89.84	90.31	7,159.93	-689.86	6,642.18	6,665.95	0.00	0.00	0.00
13,100.00	89.84	90.31	7,160.21	-690.40	6,742.18	6,765.87	0.00	0.00	0.00
13,200.00	89.84	90.31	7,160.49	-690.94	6,842.17	6,865.80	0.00	0.00	0.00
13,300.00	89.84	90.31	7,160.77	-691.48	6,942.17	6,965.73	0.00	0.00	0.00
13,400.00	89.84	90.31	7,161.05	-692.02	7,042.17	7,065.65	0.00	0.00	0.00
13,500.00	89.84	90.31	7,161.33	-692.56	7,142.17	7,165.58	0.00	0.00	0.00
13,600.00	89.84	90.31	7,161.61	-693.10	7,242.17	7,265.51	0.00	0.00	0.00
13,700.00	89.84	90.31	7,161.89	-693.64	7,342.16	7,365.43	0.00	0.00	0.00
13,800.00	89.84	90.31	7,162.16	-694.18	7,442.16	7,465.36	0.00	0.00	0.00
13,900.00	89.84	90.31	7,162.44	-694.73	7,542.16	7,565.29	0.00	0.00	0.00
14,000.00	89.84	90.31	7,162.72	-695.27	7,642.16	7,665.21	0.00	0.00	0.00
14,100.00	89.84	90.31	7,163.00	-695.81	7,742.16	7,765.14	0.00	0.00	0.00
14,200.00	89.84	90.31	7,163.28	-696.35	7,842.15	7,865.07	0.00	0.00	0.00
14,300.00	89.84	90.31	7,163.56	-696.89	7,942.15	7,964.99	0.00	0.00	0.00
14,400.00	89.84	90.31	7,163.84	-697.43	8,042.15	8,064.92	0.00	0.00	0.00
14,500.00	89.84	90.31	7,164.12	-697.97	8,142.15	8,164.84	0.00	0.00	0.00
14,600.00	89.84	90.31	7,164.40	-698.51	8,242.15	8,264.77	0.00	0.00	0.00
14,700.00	89.84	90.31	7,164.68	-699.05	8,342.15	8,364.70	0.00	0.00	0.00
14,800.00	89.84	90.31	7,164.96	-699.59	8,442.14	8,464.62	0.00	0.00	0.00
14,900.00	89.84	90.31	7,165.24	-700.14	8,542.14	8,564.55	0.00	0.00	0.00
15,000.00	89.84	90.31	7,165.51	-700.68	8,642.14	8,664.48	0.00	0.00	0.00
15,100.00	89.84	90.31	7,165.79	-701.22	8,742.14	8,764.40	0.00	0.00	0.00
15,200.00	89.84	90.31	7,166.07	-701.76	8,842.14	8,864.33	0.00	0.00	0.00
15,300.00	89.84	90.31	7,166.35	-702.30	8,942.13	8,964.26	0.00	0.00	0.00
15,400.00	89.84	90.31	7,166.63	-702.84	9,042.13	9,064.18	0.00	0.00	0.00
15,500.00	89.84	90.31	7,166.91	-703.38	9,142.13	9,164.11	0.00	0.00	0.00
15,600.00	89.84	90.31	7,167.19	-703.92	9,242.13	9,264.04	0.00	0.00	0.00
15,700.00	89.84	90.31	7,167.47	-704.46	9,342.13	9,363.96	0.00	0.00	0.00
15,800.00	89.84	90.31	7,167.75	-705.01	9,442.13	9,463.89	0.00	0.00	0.00
15,900.00	89.84	90.31	7,168.03	-705.55	9,542.12	9,563.82	0.00	0.00	0.00
16,000.00	89.84	90.31	7,168.31	-706.09	9,642.12	9,663.74	0.00	0.00	0.00
16,100.00	89.84	90.31	7,168.59	-706.63	9,742.12	9,763.67	0.00	0.00	0.00
16,200.00	89.84	90.31	7,168.86	-707.17	9,842.12	9,863.60	0.00	0.00	0.00
16,300.00	89.84	90.31	7,169.14	-707.71	9,942.12	9,963.52	0.00	0.00	0.00
16,400.00	89.84	90.31	7,169.42	-708.25	10,042.11	10,063.45	0.00	0.00	0.00
16,500.00	89.84	90.31	7,169.70	-708.79	10,142.11	10,163.38	0.00	0.00	0.00
16,600.00	89.84	90.31	7,169.98	-709.33	10,242.11	10,263.30	0.00	0.00	0.00
16,700.00	89.84	90.31	7,170.26	-709.87	10,342.11	10,363.23	0.00	0.00	0.00
16,800.00	89.84	90.31	7,170.54	-710.42	10,442.11	10,463.16	0.00	0.00	0.00
16,900.00	89.84	90.31	7,170.82	-710.96	10,542.10	10,563.08	0.00	0.00	0.00

Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well BERRY FARMS 8-5HZ
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 8-5HZ	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)
17,000.00	89.84	90.31	7,171.10	-711.50	10,642.10	10,663.01	0.00	0.00	0.00
17,100.00	89.84	90.31	7,171.38	-712.04	10,742.10	10,762.94	0.00	0.00	0.00
17,200.00	89.84	90.31	7,171.66	-712.58	10,842.10	10,862.86	0.00	0.00	0.00
17,300.00	89.84	90.31	7,171.94	-713.12	10,942.10	10,962.79	0.00	0.00	0.00
17,400.00	89.84	90.31	7,172.21	-713.66	11,042.10	11,062.72	0.00	0.00	0.00
17,500.00	89.84	90.31	7,172.49	-714.20	11,142.09	11,162.64	0.00	0.00	0.00
17,600.00	89.84	90.31	7,172.77	-714.74	11,242.09	11,262.57	0.00	0.00	0.00
17,700.00	89.84	90.31	7,173.05	-715.29	11,342.09	11,362.50	0.00	0.00	0.00
17,800.00	89.84	90.31	7,173.33	-715.83	11,442.09	11,462.42	0.00	0.00	0.00
17,840.61	89.84	90.31	7,173.44	-716.05	11,482.70	11,503.00	0.00	0.00	0.00
Begin Turn @ 17840.61ft									
17,900.00	89.69	91.19	7,173.69	-716.82	11,542.08	11,562.36	1.50	-0.25	1.48
18,000.00	89.44	92.67	7,174.44	-720.19	11,642.02	11,662.35	1.50	-0.25	1.48
18,100.00	89.20	94.15	7,175.63	-726.13	11,741.83	11,762.33	1.50	-0.25	1.48
18,200.00	88.95	95.63	7,177.25	-734.65	11,841.45	11,862.23	1.50	-0.25	1.48
18,292.78	88.72	97.00	7,179.13	-744.85	11,933.64	11,954.78	1.50	-0.25	1.48
End Turn @ 18292.78ft									
18,300.00	88.72	97.00	7,179.29	-745.73	11,940.81	11,961.98	0.00	0.00	0.00
18,400.00	88.72	97.00	7,181.53	-757.91	12,040.04	12,061.64	0.00	0.00	0.00
18,500.00	88.72	97.00	7,183.76	-770.10	12,139.27	12,161.31	0.00	0.00	0.00
18,600.00	88.72	97.00	7,186.00	-782.28	12,238.50	12,260.98	0.00	0.00	0.00
18,700.00	88.72	97.00	7,188.23	-794.46	12,337.73	12,360.64	0.00	0.00	0.00
18,800.00	88.72	97.00	7,190.46	-806.65	12,436.96	12,460.31	0.00	0.00	0.00
18,900.00	88.72	97.00	7,192.70	-818.83	12,536.19	12,559.98	0.00	0.00	0.00
19,000.00	88.72	97.00	7,194.93	-831.02	12,635.42	12,659.64	0.00	0.00	0.00
19,100.00	88.72	97.00	7,197.17	-843.20	12,734.65	12,759.31	0.00	0.00	0.00
19,200.00	88.72	97.00	7,199.40	-855.38	12,833.88	12,858.98	0.00	0.00	0.00
19,300.00	88.72	97.00	7,201.63	-867.57	12,933.11	12,958.65	0.00	0.00	0.00
19,400.00	88.72	97.00	7,203.87	-879.75	13,032.34	13,058.31	0.00	0.00	0.00
19,500.00	88.72	97.00	7,206.10	-891.94	13,131.57	13,157.98	0.00	0.00	0.00
19,600.00	88.72	97.00	7,208.33	-904.12	13,230.80	13,257.65	0.00	0.00	0.00
19,700.00	88.72	97.00	7,210.57	-916.30	13,330.03	13,357.31	0.00	0.00	0.00
19,800.00	88.72	97.00	7,212.80	-928.49	13,429.26	13,456.98	0.00	0.00	0.00
19,900.00	88.72	97.00	7,215.04	-940.67	13,528.49	13,556.65	0.00	0.00	0.00
20,000.00	88.72	97.00	7,217.27	-952.85	13,627.72	13,656.31	0.00	0.00	0.00
20,100.00	88.72	97.00	7,219.50	-965.04	13,726.95	13,755.98	0.00	0.00	0.00
20,200.00	88.72	97.00	7,221.74	-977.22	13,826.18	13,855.65	0.00	0.00	0.00
20,300.00	88.72	97.00	7,223.97	-989.41	13,925.41	13,955.31	0.00	0.00	0.00
20,400.00	88.72	97.00	7,226.21	-1,001.59	14,024.64	14,054.98	0.00	0.00	0.00
20,500.00	88.72	97.00	7,228.44	-1,013.77	14,123.87	14,154.65	0.00	0.00	0.00
20,600.00	88.72	97.00	7,230.67	-1,025.96	14,223.10	14,254.31	0.00	0.00	0.00
20,700.00	88.72	97.00	7,232.91	-1,038.14	14,322.33	14,353.98	0.00	0.00	0.00
20,800.00	88.72	97.00	7,235.14	-1,050.33	14,421.56	14,453.65	0.00	0.00	0.00
20,900.00	88.72	97.00	7,237.37	-1,062.51	14,520.79	14,553.31	0.00	0.00	0.00
20,946.20	88.72	97.00	7,238.41	-1,068.14	14,566.63	14,599.36	0.00	0.00	0.00
Begin Turn to BHL @ 20946.20ft									
21,000.00	88.72	97.81	7,239.61	-1,075.07	14,619.97	14,652.95	1.50	0.01	1.50
21,100.00	88.73	99.31	7,241.83	-1,089.95	14,718.83	14,752.36	1.50	0.01	1.50
21,131.58	88.73	99.78	7,242.53	-1,095.18	14,749.96	14,783.70	1.50	0.01	1.50
End Turn @ 21131.58ft									
21,200.00	88.73	99.78	7,244.05	-1,106.80	14,817.37	14,851.55	0.00	0.00	0.00
21,300.00	88.73	99.78	7,246.26	-1,123.79	14,915.90	14,950.72	0.00	0.00	0.00
21,400.00	88.73	99.78	7,248.48	-1,140.77	15,014.42	15,049.89	0.00	0.00	0.00

Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well BERRY FARMS 8-5HZ
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 8-5HZ	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)	
21,500.00	88.73	99.78	7,250.69	-1,157.76	15,112.94	15,149.06	0.00	0.00	0.00	
21,600.00	88.73	99.78	7,252.90	-1,174.74	15,211.46	15,248.23	0.00	0.00	0.00	
21,700.00	88.73	99.78	7,255.12	-1,191.72	15,309.99	15,347.40	0.00	0.00	0.00	
21,800.00	88.73	99.78	7,257.33	-1,208.71	15,408.51	15,446.57	0.00	0.00	0.00	
21,900.00	88.73	99.78	7,259.55	-1,225.69	15,507.03	15,545.73	0.00	0.00	0.00	
22,000.00	88.73	99.78	7,261.76	-1,242.68	15,605.55	15,644.90	0.00	0.00	0.00	
22,100.00	88.73	99.78	7,263.98	-1,259.66	15,704.07	15,744.07	0.00	0.00	0.00	
22,200.00	88.73	99.78	7,266.19	-1,276.65	15,802.60	15,843.24	0.00	0.00	0.00	
22,300.00	88.73	99.78	7,268.41	-1,293.63	15,901.12	15,942.41	0.00	0.00	0.00	
22,400.00	88.73	99.78	7,270.62	-1,310.62	15,999.64	16,041.58	0.00	0.00	0.00	
22,500.00	88.73	99.78	7,272.84	-1,327.60	16,098.16	16,140.75	0.00	0.00	0.00	
22,552.50	88.73	99.78	7,274.00	-1,336.52	16,149.89	16,192.81	0.00	0.00	0.00	
TD Well @ 22552.50ft - 5.5" CSG										

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")	
1,515.87	1,500.00	9 5/8"	9-5/8	13-1/2	
22,552.50	7,274.00	5.5" CSG	5-1/2	7-7/8	

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
694.43	694.00	Fox Hills				
2,332.12	2,292.00	Parkman				
3,616.26	3,538.00	Sussex				
6,930.15	6,810.00	Sharon Springs				
6,962.51	6,837.00	Niobrara				
7,072.20	6,922.00	Nio B				
7,160.31	6,982.00	Nio C				
7,441.69	7,114.00	Fort Hayes				
7,539.52	7,136.00	Codell				

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Wellbore:	Plan A		
Design:	Permit Rev-2		

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
360.00	360.00	0.00	0.00	Begin Nudge @ 360.00ft
1,293.33	1,284.07	-85.11	75.03	Hold Tangent @ 1293.33ft
4,093.33	4,000.90	-593.22	522.99	Begin Drop @ 4093.33ft
4,793.33	4,693.96	-657.05	579.27	Hold Vertical @ 4793.33ft
6,528.18	6,428.80	-657.05	579.27	KOP @ 6528.18ft :: DLS = 8"/100'
7,651.18	7,145.00	-660.92	1,293.46	End Build @ 7651.18ft
17,840.61	7,173.44	-716.05	11,482.70	Begin Turn @ 17840.61ft
18,292.78	7,179.13	-744.85	11,933.64	End Turn @ 18292.78ft
20,946.20	7,238.41	-1,068.14	14,566.63	Begin Turn to BHL @ 20946.20ft
21,131.58	7,242.53	-1,095.18	14,749.96	End Turn @ 21131.58ft
22,552.50	7,274.00	-1,336.52	16,149.89	TD Well @ 22552.50ft