

US ROCKIES WATTENBERG PLANNING

WELD-NAD83-UTMFT13N

1N-67W-11 Leinweber 1-11HZ Pad

LEINWEBER FED 4C-8HZ

Plan A

Plan: Permit Rev-1

Standard Planning Report

17 June, 2016



Magnetic Field
Strength: 52428.5nT
Dip Angle: 66.60°
Date: 5/25/2016
Model: IGRF2010

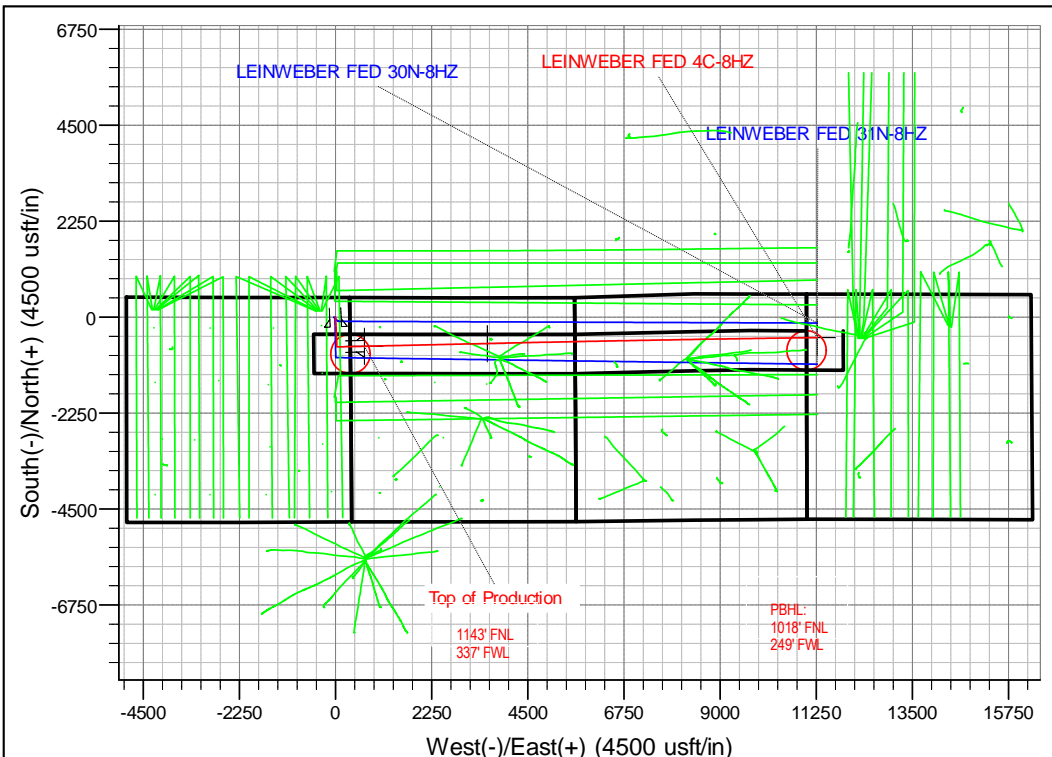
Well: LEINWEBER FED 4C-8HZ
Wellbore: Plan A
Design: Permit Rev-1

TVDPath	MDPPath	Formation
1324.00	1330.53	Fox Hills
3301.00	3401.36	Parkman
4539.00	4640.09	Sussex
7202.00	7310.83	Sharon Springs
7248.00	7362.16	Niobrara
7348.00	7483.07	Nio B
7415.00	7575.80	Nio C
7548.00	7842.69	Fort Hayes
7570.00	7933.46	Codell

		GL: 4958.00		RKB @ 4975.00ust (D Rig)		
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	14552805.45	1682412.64	40.071501	-104.849885	

MD	Inc	Azi	TVD	+N/S	+E/W	Dleg	Vsect
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
250.00	0.00	0.00	250.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00
2070.12	23.55	177.55	2026.28	-317.89	13.62	1.50	27.15
2230.96	23.55	177.55	2173.72	382.11	16.38	0.00	32.63
3801.00	0.00	0.00	3801.00	-70.00	35.00	0.00	37.78
704.05	0.00	0.00	6942.96	-600.00	30.00	0.00	59.8
8050.60	90.59	88.70	7579.55	-785.40	673.01	9.00	701.58
10930.70	90.59	88.70	7549.89	-620.00	3552.21	0.00	3575.39
18651.28	90.21	89.23	7496.00	-480.33	11271.30	0.01	281.53

Name	TVD	+N-S	+E-W	Northing	Easting	Latitude	Longitude
LEINWEBER FED 4C-8HZ_PBHL	7496.00	-480.33	11271.30	14552344.14	1693684.74	40.070175	-104.809597
LEINWEBER FED 4C-8HZ_PHL	7579.55	-685.40	673.01	14552121.20	1683086.80	40.069619	-104.847479



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Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well LEINWEBER FED 4C-8HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB @ 4975.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB @ 4975.00usft (D Rig)
Site:	1N-67W-11 Leinweber 1-11HZ Pad	North Reference:	True
Well:	LEINWEBER FED 4C-8HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-1		

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						1N-67W-11 Leinweber 1-11HZ Pad											
Site Position:						Northing:			14,552,805.74 usft			Latitude:			40.071502		
From:			Lat/Long			Easting:			1,682,367.60 usft			Longitude:			-104.850046		
Position Uncertainty:			0.00 usft			Slot Radius:			13-3/16 "			Grid Convergence:			0.10 °		

Well	LEINWEBER FED 4C-8HZ					
Well Position	+N/-S	-0.36 usft	Northing:	14,552,805.45 usft	Latitude:	40.071501
	+E/-W	45.04 usft	Easting:	1,682,412.64 usft	Longitude:	-104.849885
Position Uncertainty		3.28 usft	Wellhead Elevation:	0.00 usft	Ground Level:	4,958.00 usft

Wellbore	Plan A				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	5/25/2016	8.22	66.60	52,429

Design	Permit Rev-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	92.44

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	
250.00	0.00	0.00	250.00	0.00	0.00	0.00	0.00	0.00	0.00	
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,070.12	23.55	177.55	2,026.28	-317.89	13.62	1.50	1.50	0.00	177.55	
2,230.96	23.55	177.55	2,173.72	-382.11	16.38	0.00	0.00	0.00	0.00	
3,801.09	0.00	0.00	3,700.00	-700.00	30.00	1.50	-1.50	0.00	180.00	
7,044.05	0.00	0.00	6,942.96	-700.00	30.00	0.00	0.00	0.00	0.00	
8,050.60	90.59	88.70	7,579.55	-685.40	673.01	9.00	9.00	0.00	88.70	
10,930.70	90.59	88.70	7,549.89	-620.00	3,552.21	0.00	0.00	0.00	0.00	LEINWEBER 4C-8H
18,651.28	90.21	89.23	7,496.00	-480.33	11,271.30	0.01	0.00	0.01	125.70	LEINWEBER FED 4

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Planning Report

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Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB @ 4975.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB @ 4975.00usft (D Rig)
Site:	1N-67W-11 Leinweber 1-11HZ Pad	North Reference:	True
Well:	LEINWEBER FED 4C-8HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-1		

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
250.00	0.00	0.00	250.00	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
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	1.50	177.55	599.99	-1.31	0.06	0.11	1.50	1.50	0.00
700.00	3.00	177.55	699.91	-5.23	0.22	0.45	1.50	1.50	0.00
800.00	4.50	177.55	799.69	-11.76	0.50	1.00	1.50	1.50	0.00
900.00	6.00	177.55	899.27	-20.91	0.90	1.79	1.50	1.50	0.00
1,000.00	7.50	177.55	998.57	-32.65	1.40	2.79	1.50	1.50	0.00
1,100.00	9.00	177.55	1,097.54	-46.98	2.01	4.01	1.50	1.50	0.00
1,200.00	10.50	177.55	1,196.09	-63.90	2.74	5.46	1.50	1.50	0.00
1,300.00	12.00	177.55	1,294.16	-83.39	3.57	7.12	1.50	1.50	0.00
1,330.53	12.46	177.55	1,324.00	-89.85	3.85	7.67	1.50	1.50	0.00
Fox Hills									
1,400.00	13.50	177.55	1,391.70	-105.44	4.52	9.00	1.50	1.50	0.00
1,500.00	15.00	177.55	1,488.62	-130.03	5.57	11.10	1.50	1.50	0.00
1,600.00	16.50	177.55	1,584.86	-157.15	6.74	13.42	1.50	1.50	0.00
1,700.00	18.00	177.55	1,680.36	-186.78	8.00	15.95	1.50	1.50	0.00
1,800.00	19.50	177.55	1,775.05	-218.89	9.38	18.69	1.50	1.50	0.00
1,826.50	19.90	177.55	1,800.00	-227.82	9.76	19.45	1.50	1.50	0.00
9 5/8"									
1,900.00	21.00	177.55	1,868.86	-253.47	10.86	21.65	1.50	1.50	0.00
2,000.00	22.50	177.55	1,961.74	-290.49	12.45	24.81	1.50	1.50	0.00
2,070.12	23.55	177.55	2,026.28	-317.89	13.62	27.15	1.50	1.50	0.00
2,100.00	23.55	177.55	2,053.67	-329.82	14.14	28.17	0.00	0.00	0.00
2,200.00	23.55	177.55	2,145.34	-369.74	15.85	31.57	0.00	0.00	0.00
2,230.96	23.55	177.55	2,173.72	-382.11	16.38	32.63	0.00	0.00	0.00
2,300.00	22.52	177.55	2,237.25	-409.09	17.53	34.93	1.50	-1.50	0.00
2,400.00	21.02	177.55	2,330.12	-446.14	19.12	38.10	1.50	-1.50	0.00
2,500.00	19.52	177.55	2,423.93	-480.74	20.60	41.05	1.50	-1.50	0.00
2,600.00	18.02	177.55	2,518.61	-512.89	21.98	43.80	1.50	-1.50	0.00
2,700.00	16.52	177.55	2,614.10	-542.54	23.25	46.33	1.50	-1.50	0.00
2,800.00	15.02	177.55	2,710.33	-569.68	24.42	48.65	1.50	-1.50	0.00
2,900.00	13.52	177.55	2,807.25	-594.30	25.47	50.75	1.50	-1.50	0.00
3,000.00	12.02	177.55	2,904.77	-616.38	26.42	52.64	1.50	-1.50	0.00
3,100.00	10.52	177.55	3,002.84	-635.90	27.25	54.30	1.50	-1.50	0.00
3,200.00	9.02	177.55	3,101.39	-652.85	27.98	55.75	1.50	-1.50	0.00
3,300.00	7.52	177.55	3,200.35	-667.21	28.59	56.98	1.50	-1.50	0.00
3,400.00	6.02	177.55	3,299.65	-678.98	29.10	57.98	1.50	-1.50	0.00
3,401.36	6.00	177.55	3,301.00	-679.12	29.11	57.99	1.50	-1.50	0.00
Parkman									
3,500.00	4.52	177.55	3,399.22	-688.15	29.49	58.76	1.50	-1.50	0.00
3,600.00	3.02	177.55	3,499.01	-694.71	29.77	59.32	1.50	-1.50	0.00
3,700.00	1.52	177.55	3,598.92	-698.66	29.94	59.66	1.50	-1.50	0.00
3,800.00	0.02	177.55	3,698.91	-700.00	30.00	59.78	1.50	-1.50	0.00
3,801.09	0.00	0.00	3,700.00	-700.00	30.00	59.78	1.50	-1.50	0.00
3,900.00	0.00	0.00	3,798.91	-700.00	30.00	59.78	0.00	0.00	0.00
4,000.00	0.00	0.00	3,898.91	-700.00	30.00	59.78	0.00	0.00	0.00
4,100.00	0.00	0.00	3,998.91	-700.00	30.00	59.78	0.00	0.00	0.00
4,200.00	0.00	0.00	4,098.91	-700.00	30.00	59.78	0.00	0.00	0.00

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Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well LEINWEBER FED 4C-8HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB @ 4975.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB @ 4975.00usft (D Rig)
Site:	1N-67W-11 Leinweber 1-11HZ Pad	North Reference:	True
Well:	LEINWEBER FED 4C-8HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-1		

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)
4,300.00	0.00	0.00	4,198.91	-700.00	30.00	59.78	0.00	0.00	0.00
4,400.00	0.00	0.00	4,298.91	-700.00	30.00	59.78	0.00	0.00	0.00
4,500.00	0.00	0.00	4,398.91	-700.00	30.00	59.78	0.00	0.00	0.00
4,600.00	0.00	0.00	4,498.91	-700.00	30.00	59.78	0.00	0.00	0.00
4,640.09	0.00	0.00	4,539.00	-700.00	30.00	59.78	0.00	0.00	0.00
Sussex									
4,700.00	0.00	0.00	4,598.91	-700.00	30.00	59.78	0.00	0.00	0.00
4,800.00	0.00	0.00	4,698.91	-700.00	30.00	59.78	0.00	0.00	0.00
4,900.00	0.00	0.00	4,798.91	-700.00	30.00	59.78	0.00	0.00	0.00
5,000.00	0.00	0.00	4,898.91	-700.00	30.00	59.78	0.00	0.00	0.00
5,100.00	0.00	0.00	4,998.91	-700.00	30.00	59.78	0.00	0.00	0.00
5,200.00	0.00	0.00	5,098.91	-700.00	30.00	59.78	0.00	0.00	0.00
5,300.00	0.00	0.00	5,198.91	-700.00	30.00	59.78	0.00	0.00	0.00
5,400.00	0.00	0.00	5,298.91	-700.00	30.00	59.78	0.00	0.00	0.00
5,500.00	0.00	0.00	5,398.91	-700.00	30.00	59.78	0.00	0.00	0.00
5,600.00	0.00	0.00	5,498.91	-700.00	30.00	59.78	0.00	0.00	0.00
5,700.00	0.00	0.00	5,598.91	-700.00	30.00	59.78	0.00	0.00	0.00
5,800.00	0.00	0.00	5,698.91	-700.00	30.00	59.78	0.00	0.00	0.00
5,900.00	0.00	0.00	5,798.91	-700.00	30.00	59.78	0.00	0.00	0.00
6,000.00	0.00	0.00	5,898.91	-700.00	30.00	59.78	0.00	0.00	0.00
6,100.00	0.00	0.00	5,998.91	-700.00	30.00	59.78	0.00	0.00	0.00
6,200.00	0.00	0.00	6,098.91	-700.00	30.00	59.78	0.00	0.00	0.00
6,300.00	0.00	0.00	6,198.91	-700.00	30.00	59.78	0.00	0.00	0.00
6,400.00	0.00	0.00	6,298.91	-700.00	30.00	59.78	0.00	0.00	0.00
6,500.00	0.00	0.00	6,398.91	-700.00	30.00	59.78	0.00	0.00	0.00
6,600.00	0.00	0.00	6,498.91	-700.00	30.00	59.78	0.00	0.00	0.00
6,700.00	0.00	0.00	6,598.91	-700.00	30.00	59.78	0.00	0.00	0.00
6,800.00	0.00	0.00	6,698.91	-700.00	30.00	59.78	0.00	0.00	0.00
6,900.00	0.00	0.00	6,798.91	-700.00	30.00	59.78	0.00	0.00	0.00
7,000.00	0.00	0.00	6,898.91	-700.00	30.00	59.78	0.00	0.00	0.00
7,044.05	0.00	0.00	6,942.96	-700.00	30.00	59.78	0.00	0.00	0.00
7,100.00	5.04	88.70	6,998.84	-699.94	32.46	62.23	9.00	9.00	0.00
7,200.00	14.04	88.70	7,097.36	-699.57	49.00	78.74	9.00	9.00	0.00
7,300.00	23.04	88.70	7,192.07	-698.85	80.75	110.43	9.00	9.00	0.00
7,310.83	24.01	88.70	7,202.00	-698.75	85.07	114.74	9.00	9.00	0.00
Sharon Springs									
7,362.16	28.63	88.70	7,248.00	-698.23	107.82	137.45	9.00	9.00	0.00
Niobrara									
7,400.00	32.04	88.70	7,280.65	-697.80	126.92	156.52	9.00	9.00	0.00
7,483.07	39.51	88.70	7,348.00	-696.70	175.43	204.94	9.00	9.00	0.00
Nio B									
7,500.00	41.04	88.70	7,360.92	-696.45	186.38	215.86	9.00	9.00	0.00
7,575.80	47.86	88.70	7,415.00	-695.24	239.41	268.79	9.00	9.00	0.00
Nio C									
7,600.00	50.04	88.70	7,430.89	-694.83	257.65	287.00	9.00	9.00	0.00
7,700.00	59.04	88.70	7,488.85	-692.98	339.00	368.19	9.00	9.00	0.00
7,800.00	68.04	88.70	7,533.37	-690.95	428.40	457.43	9.00	9.00	0.00
7,842.69	71.88	88.70	7,548.00	-690.04	468.48	497.44	9.00	9.00	0.00
Fort Hayes									
7,900.00	77.04	88.70	7,563.35	-688.79	523.67	552.52	9.00	9.00	0.00
7,933.46	80.05	88.70	7,570.00	-688.04	556.45	585.24	9.00	9.00	0.00
Codell									
8,000.00	86.04	88.70	7,578.06	-686.54	622.45	651.12	9.00	9.00	0.00

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Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well LEINWEBER FED 4C-8HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB @ 4975.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB @ 4975.00usft (D Rig)
Site:	1N-67W-11 Leinweber 1-11HZ Pad	North Reference:	True
Well:	LEINWEBER FED 4C-8HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-1		

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)
8,050.60	90.59	88.70	7,579.55	-685.40	673.01	701.58	9.00	9.00	0.00
Top of Production - LEINWEBER FED 4C-8HZ_PHL									
8,100.00	90.59	88.70	7,579.04	-684.27	722.39	750.87	0.00	0.00	0.00
8,200.00	90.59	88.70	7,578.01	-682.00	822.36	850.65	0.00	0.00	0.00
8,300.00	90.59	88.70	7,576.98	-679.73	922.33	950.43	0.00	0.00	0.00
8,400.00	90.59	88.70	7,575.95	-677.46	1,022.30	1,050.21	0.00	0.00	0.00
8,500.00	90.59	88.70	7,574.92	-675.19	1,122.27	1,150.00	0.00	0.00	0.00
8,600.00	90.59	88.70	7,573.89	-672.92	1,222.23	1,249.78	0.00	0.00	0.00
8,700.00	90.59	88.70	7,572.86	-670.65	1,322.20	1,349.56	0.00	0.00	0.00
8,800.00	90.59	88.70	7,571.83	-668.38	1,422.17	1,449.34	0.00	0.00	0.00
8,900.00	90.59	88.70	7,570.80	-666.11	1,522.14	1,549.12	0.00	0.00	0.00
9,000.00	90.59	88.70	7,569.77	-663.84	1,622.11	1,648.90	0.00	0.00	0.00
9,100.00	90.59	88.70	7,568.74	-661.57	1,722.08	1,748.68	0.00	0.00	0.00
9,200.00	90.59	88.70	7,567.71	-659.30	1,822.05	1,848.47	0.00	0.00	0.00
9,300.00	90.59	88.70	7,566.68	-657.03	1,922.02	1,948.25	0.00	0.00	0.00
9,400.00	90.59	88.70	7,565.65	-654.76	2,021.99	2,048.03	0.00	0.00	0.00
9,500.00	90.59	88.70	7,564.62	-652.49	2,121.95	2,147.81	0.00	0.00	0.00
9,600.00	90.59	88.70	7,563.59	-650.21	2,221.92	2,247.59	0.00	0.00	0.00
9,700.00	90.59	88.70	7,562.56	-647.94	2,321.89	2,347.37	0.00	0.00	0.00
9,800.00	90.59	88.70	7,561.53	-645.67	2,421.86	2,447.16	0.00	0.00	0.00
9,900.00	90.59	88.70	7,560.50	-643.40	2,521.83	2,546.94	0.00	0.00	0.00
10,000.00	90.59	88.70	7,559.47	-641.13	2,621.80	2,646.72	0.00	0.00	0.00
10,100.00	90.59	88.70	7,558.44	-638.86	2,721.77	2,746.50	0.00	0.00	0.00
10,200.00	90.59	88.70	7,557.41	-636.59	2,821.74	2,846.28	0.00	0.00	0.00
10,300.00	90.59	88.70	7,556.38	-634.32	2,921.71	2,946.06	0.00	0.00	0.00
10,400.00	90.59	88.70	7,555.35	-632.05	3,021.67	3,045.85	0.00	0.00	0.00
10,500.00	90.59	88.70	7,554.33	-629.78	3,121.64	3,145.63	0.00	0.00	0.00
10,600.00	90.59	88.70	7,553.30	-627.51	3,221.61	3,245.41	0.00	0.00	0.00
10,700.00	90.59	88.70	7,552.27	-625.24	3,321.58	3,345.19	0.00	0.00	0.00
10,800.00	90.59	88.70	7,551.24	-622.97	3,421.55	3,444.97	0.00	0.00	0.00
10,900.00	90.59	88.70	7,550.21	-620.70	3,521.52	3,544.75	0.00	0.00	0.00
10,930.70	90.59	88.70	7,549.89	-620.00	3,552.21	3,575.39	0.00	0.00	0.00
LEINWEBER 4C-8HZ_PITL1									
11,000.00	90.59	88.70	7,549.18	-618.43	3,621.49	3,644.54	0.01	0.00	0.01
11,100.00	90.58	88.71	7,548.16	-616.17	3,721.46	3,744.32	0.01	0.00	0.01
11,200.00	90.58	88.72	7,547.15	-613.93	3,821.43	3,844.10	0.01	0.00	0.01
11,300.00	90.57	88.72	7,546.15	-611.70	3,921.40	3,943.89	0.01	0.00	0.01
11,400.00	90.57	88.73	7,545.15	-609.48	4,021.37	4,043.67	0.01	0.00	0.01
11,500.00	90.56	88.74	7,544.17	-607.27	4,121.34	4,143.46	0.01	0.00	0.01
11,600.00	90.56	88.74	7,543.19	-605.07	4,221.31	4,243.24	0.01	0.00	0.01
11,700.00	90.55	88.75	7,542.22	-602.89	4,321.28	4,343.03	0.01	0.00	0.01
11,800.00	90.55	88.76	7,541.26	-600.71	4,421.25	4,442.82	0.01	0.00	0.01
11,900.00	90.54	88.77	7,540.31	-598.55	4,521.23	4,542.61	0.01	0.00	0.01
12,000.00	90.54	88.77	7,539.37	-596.40	4,621.20	4,642.40	0.01	0.00	0.01
12,100.00	90.53	88.78	7,538.44	-594.27	4,721.17	4,742.19	0.01	0.00	0.01
12,200.00	90.53	88.79	7,537.51	-592.14	4,821.14	4,841.98	0.01	0.00	0.01
12,300.00	90.52	88.79	7,536.60	-590.03	4,921.12	4,941.78	0.01	0.00	0.01
12,400.00	90.52	88.80	7,535.69	-587.93	5,021.09	5,041.57	0.01	0.00	0.01
12,500.00	90.51	88.81	7,534.79	-585.84	5,121.07	5,141.36	0.01	0.00	0.01
12,600.00	90.51	88.81	7,533.90	-583.76	5,221.04	5,241.16	0.01	0.00	0.01
12,700.00	90.50	88.82	7,533.02	-581.70	5,321.01	5,340.96	0.01	0.00	0.01
12,800.00	90.50	88.83	7,532.14	-579.64	5,420.99	5,440.75	0.01	0.00	0.01
12,900.00	90.49	88.83	7,531.28	-577.60	5,520.96	5,540.55	0.01	0.00	0.01
13,000.00	90.49	88.84	7,530.42	-575.57	5,620.94	5,640.35	0.01	0.00	0.01

Anadarko

Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well LEINWEBER FED 4C-8HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB @ 4975.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB @ 4975.00usft (D Rig)
Site:	1N-67W-11 Leinweber 1-11HZ Pad	North Reference:	True
Well:	LEINWEBER FED 4C-8HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-1		

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)
13,100.00	90.48	88.85	7,529.57	-573.56	5,720.92	5,740.15	0.01	0.00	0.01
13,200.00	90.48	88.85	7,528.74	-571.55	5,820.89	5,839.95	0.01	0.00	0.01
13,300.00	90.47	88.86	7,527.90	-569.56	5,920.87	5,939.75	0.01	0.00	0.01
13,400.00	90.47	88.87	7,527.08	-567.58	6,020.85	6,039.55	0.01	0.00	0.01
13,500.00	90.46	88.87	7,526.27	-565.61	6,120.82	6,139.36	0.01	0.00	0.01
13,600.00	90.46	88.88	7,525.46	-563.65	6,220.80	6,239.16	0.01	0.00	0.01
13,700.00	90.45	88.89	7,524.67	-561.70	6,320.78	6,338.96	0.01	0.00	0.01
13,800.00	90.45	88.90	7,523.88	-559.77	6,420.76	6,438.77	0.01	0.00	0.01
13,900.00	90.44	88.90	7,523.10	-557.85	6,520.74	6,538.57	0.01	0.00	0.01
14,000.00	90.44	88.91	7,522.33	-555.94	6,620.71	6,638.38	0.01	0.00	0.01
14,100.00	90.43	88.92	7,521.57	-554.04	6,720.69	6,738.19	0.01	0.00	0.01
14,200.00	90.43	88.92	7,520.82	-552.16	6,820.67	6,838.00	0.01	0.00	0.01
14,300.00	90.42	88.93	7,520.07	-550.28	6,920.65	6,937.81	0.01	0.00	0.01
14,400.00	90.42	88.94	7,519.34	-548.42	7,020.63	7,037.62	0.01	0.00	0.01
14,500.00	90.41	88.94	7,518.61	-546.57	7,120.61	7,137.43	0.01	0.00	0.01
14,600.00	90.41	88.95	7,517.89	-544.73	7,220.59	7,237.24	0.01	0.00	0.01
14,700.00	90.40	88.96	7,517.18	-542.91	7,320.57	7,337.05	0.01	0.00	0.01
14,800.00	90.40	88.96	7,516.48	-541.09	7,420.56	7,436.86	0.01	0.00	0.01
14,900.00	90.39	88.97	7,515.79	-539.29	7,520.54	7,536.68	0.01	0.00	0.01
15,000.00	90.39	88.98	7,515.10	-537.50	7,620.52	7,636.49	0.01	0.00	0.01
15,100.00	90.38	88.98	7,514.43	-535.72	7,720.50	7,736.31	0.01	0.00	0.01
15,200.00	90.38	88.99	7,513.76	-533.96	7,820.48	7,836.13	0.01	0.00	0.01
15,300.00	90.37	89.00	7,513.10	-532.20	7,920.47	7,935.94	0.01	0.00	0.01
15,400.00	90.37	89.01	7,512.45	-530.46	8,020.45	8,035.76	0.01	0.00	0.01
15,500.00	90.37	89.01	7,511.81	-528.73	8,120.43	8,135.58	0.01	0.00	0.01
15,600.00	90.36	89.02	7,511.18	-527.01	8,220.41	8,235.40	0.01	0.00	0.01
15,700.00	90.36	89.03	7,510.55	-525.31	8,320.40	8,335.22	0.01	0.00	0.01
15,800.00	90.35	89.03	7,509.94	-523.61	8,420.38	8,435.04	0.01	0.00	0.01
15,900.00	90.35	89.04	7,509.33	-521.93	8,520.37	8,534.86	0.01	0.00	0.01
16,000.00	90.34	89.05	7,508.73	-520.26	8,620.35	8,634.68	0.01	0.00	0.01
16,100.00	90.34	89.05	7,508.14	-518.60	8,720.33	8,734.51	0.01	0.00	0.01
16,200.00	90.33	89.06	7,507.56	-516.95	8,820.32	8,834.33	0.01	0.00	0.01
16,300.00	90.33	89.07	7,506.99	-515.32	8,920.30	8,934.16	0.01	0.00	0.01
16,400.00	90.32	89.07	7,506.42	-513.70	9,020.29	9,033.98	0.01	0.00	0.01
16,500.00	90.32	89.08	7,505.87	-512.09	9,120.27	9,133.81	0.01	0.00	0.01
16,600.00	90.31	89.09	7,505.32	-510.49	9,220.26	9,233.63	0.01	0.00	0.01
16,700.00	90.31	89.09	7,504.78	-508.90	9,320.25	9,333.46	0.01	0.00	0.01
16,800.00	90.30	89.10	7,504.25	-507.32	9,420.23	9,433.29	0.01	0.00	0.01
16,900.00	90.30	89.11	7,503.73	-505.76	9,520.22	9,533.12	0.01	0.00	0.01
17,000.00	90.29	89.11	7,503.22	-504.21	9,620.21	9,632.95	0.01	0.00	0.01
17,100.00	90.29	89.12	7,502.72	-502.67	9,720.19	9,732.78	0.01	0.00	0.01
17,200.00	90.28	89.13	7,502.22	-501.15	9,820.18	9,832.61	0.01	0.00	0.01
17,300.00	90.28	89.14	7,501.73	-499.63	9,920.17	9,932.44	0.01	0.00	0.01
17,400.00	90.27	89.14	7,501.26	-498.13	10,020.15	10,032.28	0.01	0.00	0.01
17,500.00	90.27	89.15	7,500.79	-496.64	10,120.14	10,132.11	0.01	0.00	0.01
17,600.00	90.26	89.16	7,500.33	-495.16	10,220.13	10,231.94	0.01	0.00	0.01
17,700.00	90.26	89.16	7,499.87	-493.69	10,320.12	10,331.78	0.01	0.00	0.01
17,800.00	90.25	89.17	7,499.43	-492.23	10,420.11	10,431.62	0.01	0.00	0.01
17,900.00	90.25	89.18	7,498.99	-490.79	10,520.10	10,531.45	0.01	0.00	0.01
18,000.00	90.24	89.18	7,498.57	-489.36	10,620.08	10,631.29	0.01	0.00	0.01
18,100.00	90.24	89.19	7,498.15	-487.94	10,720.07	10,731.13	0.01	0.00	0.01
18,200.00	90.23	89.20	7,497.74	-486.53	10,820.06	10,830.97	0.01	0.00	0.01
18,300.00	90.23	89.20	7,497.34	-485.14	10,920.05	10,930.81	0.01	0.00	0.01
18,400.00	90.22	89.21	7,496.95	-483.75	11,020.04	11,030.65	0.01	0.00	0.01

Anadarko

Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well LEINWEBER FED 4C-8HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB @ 4975.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB @ 4975.00usft (D Rig)
Site:	1N-67W-11 Leinweber 1-11HZ Pad	North Reference:	True
Well:	LEINWEBER FED 4C-8HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-1		

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)
18,500.00	90.22	89.22	7,496.56	-482.38	11,120.03	11,130.49	0.01	0.00	0.01
18,600.00	90.21	89.22	7,496.19	-481.02	11,220.02	11,230.33	0.01	0.00	0.01
18,651.28	90.21	89.23	7,496.00	-480.33	11,271.30	11,281.53	0.01	0.00	0.01
LEINWEBER FED 4C-8HZ_PBHL									

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
LEINWEBER FED 4C	0.00	0.00	7,496.00	-480.33	11,271.30	14,552,344.13	1,693,684.73	40.070175	-104.809597
- plan hits target center									
- Point									
LEINWEBER 4C-8HZ	0.00	0.00	7,549.89	-620.00	3,552.21	14,552,191.44	1,685,965.89	40.069798	-104.837188
- plan hits target center									
- Point									
LEINWEBER FED 4C	0.00	0.00	7,579.55	-685.40	673.01	14,552,121.19	1,683,086.80	40.069619	-104.847480
- plan hits target center									
- Point									

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")	
1,826.50	1,800.00	9 5/8"	9-5/8	13-1/2	
8,050.60	7,579.55	Top of Production	5-1/2	8-1/2	

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
1,330.53	1,324.00	Fox Hills				
3,401.36	3,301.00	Parkman				
4,640.09	4,539.00	Sussex				
7,310.83	7,202.00	Sharon Springs				
7,362.16	7,248.00	Niobrara				
7,483.07	7,348.00	Nio B				
7,575.80	7,415.00	Nio C				
7,842.69	7,548.00	Fort Hayes				
7,933.46	7,570.00	Codell				