

US ROCKIES WATTENBERG PLANNING

**WELD-NAD83-UTMFT13N
2N-63W-17 ACACIA 13-17HZ PAD
ACACIA 17-9HZ**

Plan A

Plan: Permit Rev-1

Standard Planning Report

13 July, 2023

Project: WELD-NAD83-UTMFT13N
 Site: 2N-63W-17 ACACIA 13-17HZ PAD
 Well: ACACIA 17-9HZ
 Wellbore: Plan A
 Design: Permit Rev-1

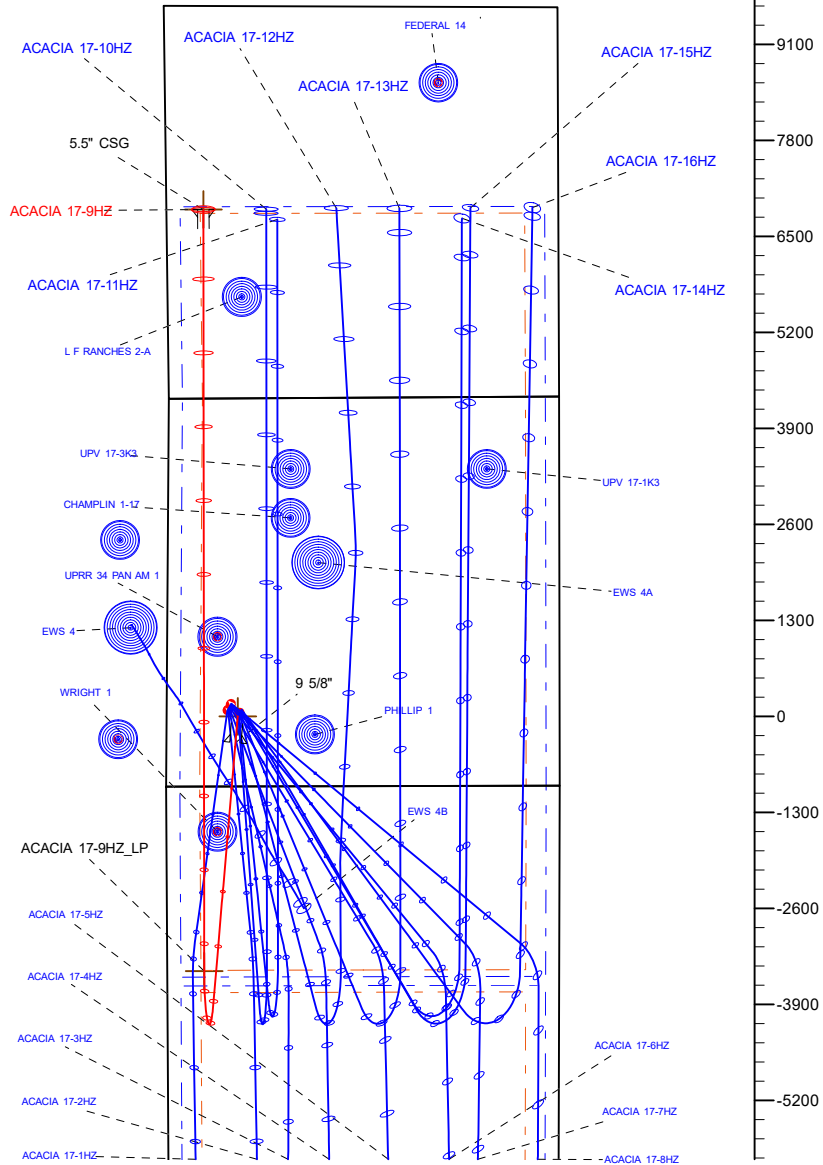
US ROCKIES WATTENBERG PLANNING

CASING DETAILS

TVD	MD	Name	Size
1817.00	1869.63	9 5/8"	9-5/8
6662.00	19041.92	5.5" CSG	5-1/2

West(-)/East(+) (2600 usft/in)

-2600 -1300 0 1300 2600 3900 5200 6500



South(-)/North(+) (2600 usft/in)

BHL
 2561' FSL
 500' FWL

LP
 2501' FNL
 501' FWL

SHL
 951' FSL
 962' FWL

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N-S	+E-W	Dleg	TFace	Vsect	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	200.30	0.00	0.00	200.30	0.00	0.00	0.00	0.00	0.00	
3	3412.30	48.18	184.85	3046.92	-1268.20	-107.61	1.50	184.85	-1268.09	
4	7000.84	48.18	184.85	5439.73	-3932.96	-333.72	0.00	0.00	-3932.61	
5	8726.54	90.11	359.94	6682.00	-3451.97	-453.51	8.00	172.64	-3451.50	
6	19041.92	90.11	359.94	6662.00	6863.39	-464.91	0.00	0.00	6863.87	ACACIA 17-9HZ_BHL

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	Northing	Easting	Latitude	Longitude
ACACIA 17-9HZ_SHL	0.00	14575883.52	1789267.02	40.133749	-104.467449
ACACIA 17-9HZ_LP	6682.00	14572428.89	1788834.20	40.124270	-104.469071
ACACIA 17-9HZ_BHL	6662.00	14582744.00	1788761.00	40.152597	-104.469113

WELL DETAILS: ACACIA 17-9HZ

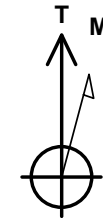
GL = 4860'
 RKB = 17° @ 4877.00usft (RIG)

Plan: Permit Rev-1 (ACACIA 17-9HZ/Plan A)

Date: 7/13/2023

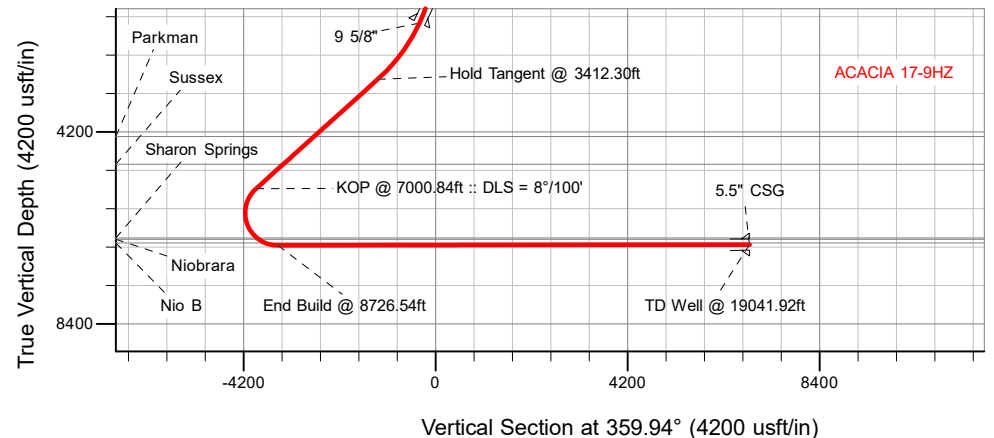
FORMATION TOP DETAILS

TVDPath	MDPath	Formation
435.00	435.15	Fox Hills
4298.00	5288.57	Parkman
4902.00	6194.39	Sussex
6515.00	8224.82	Sharon Springs
6547.00	8277.13	Niobrara
6625.00	8436.81	Nio B



Azimuths to True North
 Magnetic North: 7.45°

Magnetic Field
 Strength: 51625.9nT
 Dip Angle: 66.40°
 Date: 7/12/2023
 Model: IGRF2020



Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well ACACIA 17-9HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 4877.00usft (RIG)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 4877.00usft (RIG)
Site:	2N-63W-17 ACACIA 13-17HZ PAD	North Reference:	True
Well:	ACACIA 17-9HZ	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 2N-63W-17 ACACIA 13-17HZ PAD			
Site Position:		Northing:	14,575,962.17 usft
From:	Map	Easting:	1,789,127.74 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "
		Latitude:	40.133968
		Longitude:	-104.467946

Well ACACIA 17-9HZ			
Well Position	+N/-S	0.00 usft	Northing: 14,575,883.52 usft
	+E/-W	0.00 usft	Easting: 1,789,267.02 usft
Position Uncertainty		3.28 usft	Wellhead Elevation: usft
Grid Convergence:		0.34 °	Ground Level: 4,860.00 usft
			Latitude: 40.133750
			Longitude: -104.467449

Wellbore Plan A					
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF202013	7/12/2023	7.45	66.40	51,625.86754233

Design Permit Rev-1					
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	359.94	

Plan Survey Tool Program		Date 7/12/2023		
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	1,817.00 Permit Rev-1 (Plan A)	APC_ISCWSA REV 2 MWD+I	Fixed:v2:crustal field declinatio
2	1,817.00	19,041.93 Permit Rev-1 (Plan A)	APC_ISCWSA REV 2 MWD+I	Fixed:v2:crustal field declinatio

Planning Report

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Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 4877.00usft (RIG)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 4877.00usft (RIG)
Site:	2N-63W-17 ACACIA 13-17HZ PAD	North Reference:	True
Well:	ACACIA 17-9HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-1		

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	
200.30	0.00	0.00	200.30	0.00	0.00	0.00	0.00	0.00	0.00	
3,412.30	48.18	184.85	3,046.92	-1,268.20	-107.61	1.50	1.50	0.00	184.85	
7,000.84	48.18	184.85	5,439.73	-3,932.96	-333.72	0.00	0.00	0.00	0.00	
8,726.54	90.11	359.94	6,682.00	-3,451.97	-453.51	8.00	2.43	10.15	172.64	
19,041.93	90.11	359.94	6,662.00	6,863.39	-464.91	0.00	0.00	0.00	0.00	ACACIA 17-9HZ_BHL

Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well ACACIA 17-9HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 4877.00usft (RIG)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 4877.00usft (RIG)
Site:	2N-63W-17 ACACIA 13-17HZ PAD	North Reference:	True
Well:	ACACIA 17-9HZ	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
200.30	0.00	0.00	200.30	0.00	0.00	0.00	0.00	0.00	0.00
Begin Nudge @ 200.30ft									
300.00	1.50	184.85	299.99	-1.30	-0.11	-1.30	1.50	1.50	0.00
400.00	3.00	184.85	399.91	-5.20	-0.44	-5.20	1.50	1.50	0.00
435.15	3.52	184.85	435.00	-7.19	-0.61	-7.19	1.50	1.50	0.00
Fox Hills									
500.00	4.50	184.85	499.69	-11.71	-0.99	-11.71	1.50	1.50	0.00
600.00	6.00	184.85	599.27	-20.82	-1.77	-20.82	1.50	1.50	0.00
700.00	7.50	184.85	698.58	-32.52	-2.76	-32.52	1.50	1.50	0.00
800.00	9.00	184.85	797.54	-46.81	-3.97	-46.81	1.50	1.50	0.00
900.00	10.50	184.85	896.09	-63.68	-5.40	-63.67	1.50	1.50	0.00
1,000.00	12.00	184.85	994.17	-83.11	-7.05	-83.10	1.50	1.50	0.00
1,100.00	13.50	184.85	1,091.70	-105.09	-8.92	-105.08	1.50	1.50	0.00
1,200.00	15.00	184.85	1,188.63	-129.61	-11.00	-129.60	1.50	1.50	0.00
1,300.00	16.50	184.85	1,284.87	-156.65	-13.29	-156.63	1.50	1.50	0.00
1,400.00	18.00	184.85	1,380.37	-186.19	-15.80	-186.17	1.50	1.50	0.00
1,500.00	19.50	184.85	1,475.07	-218.21	-18.52	-218.19	1.50	1.50	0.00
1,600.00	21.00	184.85	1,568.88	-252.69	-21.44	-252.67	1.50	1.50	0.00
1,700.00	22.50	184.85	1,661.77	-289.60	-24.57	-289.58	1.50	1.50	0.00
1,800.00	24.00	184.85	1,753.65	-328.93	-27.91	-328.90	1.50	1.50	0.00
1,869.63	25.04	184.85	1,817.00	-357.72	-30.35	-357.69	1.50	1.50	0.00
9 5/8"									
1,900.00	25.50	184.85	1,844.46	-370.64	-31.45	-370.60	1.50	1.50	0.00
2,000.00	27.00	184.85	1,934.15	-414.70	-35.19	-414.66	1.50	1.50	0.00
2,100.00	28.50	184.85	2,022.65	-461.08	-39.12	-461.04	1.50	1.50	0.00
2,200.00	30.00	184.85	2,109.90	-509.76	-43.25	-509.72	1.50	1.50	0.00
2,300.00	31.50	184.85	2,195.84	-560.70	-47.58	-560.65	1.50	1.50	0.00
2,400.00	33.00	184.85	2,280.42	-613.86	-52.09	-613.81	1.50	1.50	0.00
2,500.00	34.50	184.85	2,363.57	-669.21	-56.78	-669.15	1.50	1.50	0.00
2,600.00	36.00	184.85	2,445.23	-726.71	-61.66	-726.65	1.50	1.50	0.00
2,700.00	37.50	184.85	2,525.36	-786.32	-66.72	-786.25	1.50	1.50	0.00
2,800.00	39.00	184.85	2,603.89	-848.00	-71.95	-847.93	1.50	1.50	0.00
2,900.00	40.50	184.85	2,680.78	-911.71	-77.36	-911.63	1.50	1.50	0.00
3,000.00	42.00	184.85	2,755.97	-977.40	-82.93	-977.31	1.50	1.50	0.00
3,100.00	43.50	184.85	2,829.40	-1,045.03	-88.67	-1,044.94	1.50	1.50	0.00
3,200.00	45.00	184.85	2,901.04	-1,114.55	-94.57	-1,114.45	1.50	1.50	0.00
3,300.00	46.50	184.85	2,970.82	-1,185.92	-100.63	-1,185.81	1.50	1.50	0.00
3,400.00	48.00	184.85	3,038.70	-1,259.08	-106.83	-1,258.97	1.50	1.50	0.00
3,412.30	48.18	184.85	3,046.92	-1,268.20	-107.61	-1,268.09	1.50	1.50	0.00
Hold Tangent @ 3412.30ft									
3,500.00	48.18	184.85	3,105.40	-1,333.33	-113.13	-1,333.21	0.00	0.00	0.00
3,600.00	48.18	184.85	3,172.08	-1,407.58	-119.44	-1,407.46	0.00	0.00	0.00
3,700.00	48.18	184.85	3,238.76	-1,481.84	-125.74	-1,481.71	0.00	0.00	0.00
3,800.00	48.18	184.85	3,305.44	-1,556.10	-132.04	-1,555.96	0.00	0.00	0.00
3,900.00	48.18	184.85	3,372.11	-1,630.35	-138.34	-1,630.21	0.00	0.00	0.00
4,000.00	48.18	184.85	3,438.79	-1,704.61	-144.64	-1,704.46	0.00	0.00	0.00
4,100.00	48.18	184.85	3,505.47	-1,778.87	-150.94	-1,778.71	0.00	0.00	0.00
4,200.00	48.18	184.85	3,572.15	-1,853.13	-157.24	-1,852.96	0.00	0.00	0.00
4,300.00	48.18	184.85	3,638.83	-1,927.38	-163.54	-1,927.21	0.00	0.00	0.00
4,400.00	48.18	184.85	3,705.51	-2,001.64	-169.84	-2,001.46	0.00	0.00	0.00
4,500.00	48.18	184.85	3,772.19	-2,075.90	-176.14	-2,075.71	0.00	0.00	0.00
4,600.00	48.18	184.85	3,838.87	-2,150.16	-182.44	-2,149.97	0.00	0.00	0.00

Planning Report

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Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 4877.00usft (RIG)
Site:	2N-63W-17 ACACIA 13-17HZ PAD	North Reference:	True
Well:	ACACIA 17-9HZ	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)
4,700.00	48.18	184.85	3,905.55	-2,224.41	-188.74	-2,224.22	0.00	0.00	0.00
4,800.00	48.18	184.85	3,972.23	-2,298.67	-195.05	-2,298.47	0.00	0.00	0.00
4,900.00	48.18	184.85	4,038.91	-2,372.93	-201.35	-2,372.72	0.00	0.00	0.00
5,000.00	48.18	184.85	4,105.59	-2,447.19	-207.65	-2,446.97	0.00	0.00	0.00
5,100.00	48.18	184.85	4,172.27	-2,521.44	-213.95	-2,521.22	0.00	0.00	0.00
5,200.00	48.18	184.85	4,238.94	-2,595.70	-220.25	-2,595.47	0.00	0.00	0.00
5,288.57	48.18	184.85	4,298.00	-2,661.47	-225.83	-2,661.23	0.00	0.00	0.00
Parkman									
5,300.00	48.18	184.85	4,305.62	-2,669.96	-226.55	-2,669.72	0.00	0.00	0.00
5,400.00	48.18	184.85	4,372.30	-2,744.22	-232.85	-2,743.97	0.00	0.00	0.00
5,500.00	48.18	184.85	4,438.98	-2,818.47	-239.15	-2,818.22	0.00	0.00	0.00
5,600.00	48.18	184.85	4,505.66	-2,892.73	-245.45	-2,892.47	0.00	0.00	0.00
5,700.00	48.18	184.85	4,572.34	-2,966.99	-251.75	-2,966.72	0.00	0.00	0.00
5,800.00	48.18	184.85	4,639.02	-3,041.25	-258.05	-3,040.98	0.00	0.00	0.00
5,900.00	48.18	184.85	4,705.70	-3,115.50	-264.35	-3,115.23	0.00	0.00	0.00
6,000.00	48.18	184.85	4,772.38	-3,189.76	-270.66	-3,189.48	0.00	0.00	0.00
6,100.00	48.18	184.85	4,839.06	-3,264.02	-276.96	-3,263.73	0.00	0.00	0.00
6,194.39	48.18	184.85	4,902.00	-3,334.12	-282.90	-3,333.82	0.00	0.00	0.00
Sussex									
6,200.00	48.18	184.85	4,905.74	-3,338.28	-283.26	-3,337.98	0.00	0.00	0.00
6,300.00	48.18	184.85	4,972.42	-3,412.53	-289.56	-3,412.23	0.00	0.00	0.00
6,400.00	48.18	184.85	5,039.10	-3,486.79	-295.86	-3,486.48	0.00	0.00	0.00
6,500.00	48.18	184.85	5,105.78	-3,561.05	-302.16	-3,560.73	0.00	0.00	0.00
6,600.00	48.18	184.85	5,172.45	-3,635.31	-308.46	-3,634.98	0.00	0.00	0.00
6,700.00	48.18	184.85	5,239.13	-3,709.56	-314.76	-3,709.23	0.00	0.00	0.00
6,800.00	48.18	184.85	5,305.81	-3,783.82	-321.06	-3,783.48	0.00	0.00	0.00
6,900.00	48.18	184.85	5,372.49	-3,858.08	-327.36	-3,857.73	0.00	0.00	0.00
7,000.84	48.18	184.85	5,439.73	-3,932.96	-333.72	-3,932.61	0.00	0.00	0.00
KOP @ 7000.84ft :: DLS = 8°/100'									
7,050.00	44.28	185.57	5,473.73	-3,968.31	-336.93	-3,967.95	8.00	-7.93	1.47
7,100.00	40.32	186.42	5,510.71	-4,001.77	-340.44	-4,001.41	8.00	-7.92	1.69
7,150.00	36.37	187.41	5,549.91	-4,032.56	-344.16	-4,032.20	8.00	-7.90	1.99
7,200.00	32.43	188.61	5,591.16	-4,060.53	-348.08	-4,060.16	8.00	-7.88	2.40
7,250.00	28.50	190.10	5,634.25	-4,085.54	-352.18	-4,085.16	8.00	-7.86	2.98
7,300.00	24.59	192.03	5,678.97	-4,107.46	-356.44	-4,107.09	8.00	-7.81	3.84
7,350.00	20.72	194.62	5,725.11	-4,126.21	-360.84	-4,125.83	8.00	-7.75	5.19
7,400.00	16.90	198.33	5,772.43	-4,141.67	-365.36	-4,141.28	8.00	-7.64	7.43
7,450.00	13.19	204.10	5,820.71	-4,153.78	-369.98	-4,153.39	8.00	-7.43	11.53
7,500.00	9.70	214.08	5,869.71	-4,162.47	-374.67	-4,162.08	8.00	-6.98	19.97
7,550.00	6.79	233.63	5,919.20	-4,167.72	-379.41	-4,167.32	8.00	-5.82	39.10
7,600.00	5.48	269.81	5,968.93	-4,169.48	-384.18	-4,169.07	8.00	-2.62	72.35
7,650.00	6.77	306.06	6,018.66	-4,167.75	-388.95	-4,167.34	8.00	2.59	72.51
7,700.00	9.68	325.69	6,068.15	-4,162.54	-393.71	-4,162.12	8.00	5.81	39.26
7,750.00	13.16	335.71	6,117.16	-4,153.87	-398.42	-4,153.45	8.00	6.98	20.04
7,800.00	16.88	341.49	6,165.45	-4,141.80	-403.07	-4,141.37	8.00	7.43	11.56
7,850.00	20.70	345.22	6,212.77	-4,126.36	-407.63	-4,125.93	8.00	7.64	7.44
7,900.00	24.57	347.81	6,258.92	-4,107.65	-412.08	-4,107.22	8.00	7.75	5.20
7,950.00	28.48	349.74	6,303.65	-4,085.75	-416.40	-4,085.31	8.00	7.81	3.85
8,000.00	32.41	351.23	6,346.75	-4,060.77	-420.56	-4,060.33	8.00	7.86	2.99
8,050.00	36.35	352.44	6,388.00	-4,032.83	-424.56	-4,032.38	8.00	7.88	2.40
8,100.00	40.30	353.43	6,427.22	-4,002.07	-428.36	-4,001.62	8.00	7.90	1.99
8,150.00	44.26	354.28	6,464.21	-3,968.63	-431.95	-3,968.17	8.00	7.92	1.69
8,200.00	48.22	355.01	6,498.78	-3,932.68	-435.31	-3,932.22	8.00	7.93	1.47

Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well ACACIA 17-9HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 4877.00usft (RIG)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 4877.00usft (RIG)
Site:	2N-63W-17 ACACIA 13-17HZ PAD	North Reference:	True
Well:	ACACIA 17-9HZ	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)
8,224.82	50.19	355.34	6,515.00	-3,913.95	-436.89	-3,913.49	8.00	7.94	1.33
Sharon Springs									
8,250.00	52.19	355.66	6,530.78	-3,894.40	-438.43	-3,893.93	8.00	7.94	1.26
8,277.13	54.35	355.98	6,547.00	-3,872.71	-440.02	-3,872.25	8.00	7.94	1.19
Niobrara									
8,300.00	56.17	356.24	6,560.03	-3,853.96	-441.29	-3,853.50	8.00	7.95	1.13
8,350.00	60.14	356.77	6,586.41	-3,811.58	-443.88	-3,811.11	8.00	7.95	1.06
8,400.00	64.12	357.26	6,609.78	-3,767.45	-446.18	-3,766.98	8.00	7.95	0.98
8,436.81	67.05	357.60	6,625.00	-3,733.96	-447.68	-3,733.49	8.00	7.96	0.92
Nio B									
8,450.00	68.09	357.72	6,630.03	-3,721.79	-448.18	-3,721.31	8.00	7.96	0.89
8,500.00	72.07	358.15	6,647.06	-3,674.82	-449.87	-3,674.34	8.00	7.96	0.86
8,550.00	76.05	358.56	6,660.79	-3,626.77	-451.25	-3,626.29	8.00	7.96	0.83
8,600.00	80.03	358.96	6,671.14	-3,577.87	-452.31	-3,577.40	8.00	7.96	0.80
8,650.00	84.02	359.35	6,678.08	-3,528.37	-453.04	-3,527.90	8.00	7.96	0.78
8,700.00	88.00	359.73	6,681.56	-3,478.51	-453.43	-3,478.03	8.00	7.96	0.77
8,726.54	90.11	359.94	6,682.00	-3,451.97	-453.51	-3,451.50	8.00	7.96	0.76
End Build @ 8726.54ft									
8,800.00	90.11	359.94	6,681.85	-3,378.51	-453.59	-3,378.03	0.00	0.00	0.00
8,900.00	90.11	359.94	6,681.66	-3,278.51	-453.70	-3,278.03	0.00	0.00	0.00
9,000.00	90.11	359.94	6,681.47	-3,178.51	-453.81	-3,178.03	0.00	0.00	0.00
9,100.00	90.11	359.94	6,681.27	-3,078.51	-453.92	-3,078.03	0.00	0.00	0.00
9,200.00	90.11	359.94	6,681.08	-2,978.51	-454.03	-2,978.03	0.00	0.00	0.00
9,300.00	90.11	359.94	6,680.88	-2,878.51	-454.14	-2,878.03	0.00	0.00	0.00
9,400.00	90.11	359.94	6,680.69	-2,778.51	-454.25	-2,778.03	0.00	0.00	0.00
9,500.00	90.11	359.94	6,680.50	-2,678.51	-454.36	-2,678.04	0.00	0.00	0.00
9,600.00	90.11	359.94	6,680.30	-2,578.51	-454.48	-2,578.04	0.00	0.00	0.00
9,700.00	90.11	359.94	6,680.11	-2,478.51	-454.59	-2,478.04	0.00	0.00	0.00
9,800.00	90.11	359.94	6,679.92	-2,378.51	-454.70	-2,378.04	0.00	0.00	0.00
9,900.00	90.11	359.94	6,679.72	-2,278.51	-454.81	-2,278.04	0.00	0.00	0.00
10,000.00	90.11	359.94	6,679.53	-2,178.51	-454.92	-2,178.04	0.00	0.00	0.00
10,100.00	90.11	359.94	6,679.33	-2,078.51	-455.03	-2,078.04	0.00	0.00	0.00
10,200.00	90.11	359.94	6,679.14	-1,978.51	-455.14	-1,978.04	0.00	0.00	0.00
10,300.00	90.11	359.94	6,678.95	-1,878.51	-455.25	-1,878.04	0.00	0.00	0.00
10,400.00	90.11	359.94	6,678.75	-1,778.51	-455.36	-1,778.04	0.00	0.00	0.00
10,500.00	90.11	359.94	6,678.56	-1,678.51	-455.47	-1,678.04	0.00	0.00	0.00
10,600.00	90.11	359.94	6,678.36	-1,578.52	-455.58	-1,578.04	0.00	0.00	0.00
10,700.00	90.11	359.94	6,678.17	-1,478.52	-455.69	-1,478.04	0.00	0.00	0.00
10,800.00	90.11	359.94	6,677.98	-1,378.52	-455.80	-1,378.04	0.00	0.00	0.00
10,900.00	90.11	359.94	6,677.78	-1,278.52	-455.91	-1,278.04	0.00	0.00	0.00
11,000.00	90.11	359.94	6,677.59	-1,178.52	-456.02	-1,178.04	0.00	0.00	0.00
11,100.00	90.11	359.94	6,677.40	-1,078.52	-456.13	-1,078.04	0.00	0.00	0.00
11,200.00	90.11	359.94	6,677.20	-978.52	-456.24	-978.04	0.00	0.00	0.00
11,300.00	90.11	359.94	6,677.01	-878.52	-456.35	-878.04	0.00	0.00	0.00
11,400.00	90.11	359.94	6,676.81	-778.52	-456.46	-778.04	0.00	0.00	0.00
11,500.00	90.11	359.94	6,676.62	-678.52	-456.57	-678.04	0.00	0.00	0.00
11,600.00	90.11	359.94	6,676.43	-578.52	-456.68	-578.04	0.00	0.00	0.00
11,700.00	90.11	359.94	6,676.23	-478.52	-456.80	-478.04	0.00	0.00	0.00
11,800.00	90.11	359.94	6,676.04	-378.52	-456.91	-378.04	0.00	0.00	0.00
11,900.00	90.11	359.94	6,675.84	-278.52	-457.02	-278.04	0.00	0.00	0.00
12,000.00	90.11	359.94	6,675.65	-178.52	-457.13	-178.04	0.00	0.00	0.00
12,100.00	90.11	359.94	6,675.46	-78.52	-457.24	-78.04	0.00	0.00	0.00
12,200.00	90.11	359.94	6,675.26	21.48	-457.35	21.96	0.00	0.00	0.00
12,300.00	90.11	359.94	6,675.07	121.48	-457.46	121.96	0.00	0.00	0.00

Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well ACACIA 17-9HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 4877.00usft (RIG)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 4877.00usft (RIG)
Site:	2N-63W-17 ACACIA 13-17HZ PAD	North Reference:	True
Well:	ACACIA 17-9HZ	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)
12,400.00	90.11	359.94	6,674.88	221.48	-457.57	221.96	0.00	0.00	0.00
12,500.00	90.11	359.94	6,674.68	321.48	-457.68	321.96	0.00	0.00	0.00
12,600.00	90.11	359.94	6,674.49	421.48	-457.79	421.96	0.00	0.00	0.00
12,700.00	90.11	359.94	6,674.29	521.48	-457.90	521.96	0.00	0.00	0.00
12,800.00	90.11	359.94	6,674.10	621.48	-458.01	621.96	0.00	0.00	0.00
12,900.00	90.11	359.94	6,673.91	721.48	-458.12	721.96	0.00	0.00	0.00
13,000.00	90.11	359.94	6,673.71	821.48	-458.23	821.96	0.00	0.00	0.00
13,100.00	90.11	359.94	6,673.52	921.48	-458.34	921.96	0.00	0.00	0.00
13,200.00	90.11	359.94	6,673.32	1,021.48	-458.45	1,021.96	0.00	0.00	0.00
13,300.00	90.11	359.94	6,673.13	1,121.48	-458.56	1,121.96	0.00	0.00	0.00
13,400.00	90.11	359.94	6,672.94	1,221.48	-458.67	1,221.96	0.00	0.00	0.00
13,500.00	90.11	359.94	6,672.74	1,321.48	-458.78	1,321.96	0.00	0.00	0.00
13,600.00	90.11	359.94	6,672.55	1,421.48	-458.89	1,421.96	0.00	0.00	0.00
13,700.00	90.11	359.94	6,672.36	1,521.48	-459.00	1,521.96	0.00	0.00	0.00
13,800.00	90.11	359.94	6,672.16	1,621.48	-459.12	1,621.96	0.00	0.00	0.00
13,900.00	90.11	359.94	6,671.97	1,721.48	-459.23	1,721.96	0.00	0.00	0.00
14,000.00	90.11	359.94	6,671.77	1,821.48	-459.34	1,821.96	0.00	0.00	0.00
14,100.00	90.11	359.94	6,671.58	1,921.48	-459.45	1,921.96	0.00	0.00	0.00
14,200.00	90.11	359.94	6,671.39	2,021.48	-459.56	2,021.96	0.00	0.00	0.00
14,300.00	90.11	359.94	6,671.19	2,121.48	-459.67	2,121.96	0.00	0.00	0.00
14,400.00	90.11	359.94	6,671.00	2,221.48	-459.78	2,221.96	0.00	0.00	0.00
14,500.00	90.11	359.94	6,670.80	2,321.48	-459.89	2,321.96	0.00	0.00	0.00
14,600.00	90.11	359.94	6,670.61	2,421.48	-460.00	2,421.96	0.00	0.00	0.00
14,700.00	90.11	359.94	6,670.42	2,521.47	-460.11	2,521.96	0.00	0.00	0.00
14,800.00	90.11	359.94	6,670.22	2,621.47	-460.22	2,621.96	0.00	0.00	0.00
14,900.00	90.11	359.94	6,670.03	2,721.47	-460.33	2,721.95	0.00	0.00	0.00
15,000.00	90.11	359.94	6,669.84	2,821.47	-460.44	2,821.95	0.00	0.00	0.00
15,100.00	90.11	359.94	6,669.64	2,921.47	-460.55	2,921.95	0.00	0.00	0.00
15,200.00	90.11	359.94	6,669.45	3,021.47	-460.66	3,021.95	0.00	0.00	0.00
15,300.00	90.11	359.94	6,669.25	3,121.47	-460.77	3,121.95	0.00	0.00	0.00
15,400.00	90.11	359.94	6,669.06	3,221.47	-460.88	3,221.95	0.00	0.00	0.00
15,500.00	90.11	359.94	6,668.87	3,321.47	-460.99	3,321.95	0.00	0.00	0.00
15,600.00	90.11	359.94	6,668.67	3,421.47	-461.10	3,421.95	0.00	0.00	0.00
15,700.00	90.11	359.94	6,668.48	3,521.47	-461.21	3,521.95	0.00	0.00	0.00
15,800.00	90.11	359.94	6,668.28	3,621.47	-461.32	3,621.95	0.00	0.00	0.00
15,900.00	90.11	359.94	6,668.09	3,721.47	-461.43	3,721.95	0.00	0.00	0.00
16,000.00	90.11	359.94	6,667.90	3,821.47	-461.55	3,821.95	0.00	0.00	0.00
16,100.00	90.11	359.94	6,667.70	3,921.47	-461.66	3,921.95	0.00	0.00	0.00
16,200.00	90.11	359.94	6,667.51	4,021.47	-461.77	4,021.95	0.00	0.00	0.00
16,300.00	90.11	359.94	6,667.32	4,121.47	-461.88	4,121.95	0.00	0.00	0.00
16,400.00	90.11	359.94	6,667.12	4,221.47	-461.99	4,221.95	0.00	0.00	0.00
16,500.00	90.11	359.94	6,666.93	4,321.47	-462.10	4,321.95	0.00	0.00	0.00
16,600.00	90.11	359.94	6,666.73	4,421.47	-462.21	4,421.95	0.00	0.00	0.00
16,700.00	90.11	359.94	6,666.54	4,521.47	-462.32	4,521.95	0.00	0.00	0.00
16,800.00	90.11	359.94	6,666.35	4,621.47	-462.43	4,621.95	0.00	0.00	0.00
16,900.00	90.11	359.94	6,666.15	4,721.47	-462.54	4,721.95	0.00	0.00	0.00
17,000.00	90.11	359.94	6,665.96	4,821.47	-462.65	4,821.95	0.00	0.00	0.00
17,100.00	90.11	359.94	6,665.76	4,921.47	-462.76	4,921.95	0.00	0.00	0.00
17,200.00	90.11	359.94	6,665.57	5,021.47	-462.87	5,021.95	0.00	0.00	0.00
17,300.00	90.11	359.94	6,665.38	5,121.47	-462.98	5,121.95	0.00	0.00	0.00
17,400.00	90.11	359.94	6,665.18	5,221.47	-463.09	5,221.95	0.00	0.00	0.00
17,500.00	90.11	359.94	6,664.99	5,321.47	-463.20	5,321.95	0.00	0.00	0.00
17,600.00	90.11	359.94	6,664.80	5,421.47	-463.31	5,421.95	0.00	0.00	0.00
17,700.00	90.11	359.94	6,664.60	5,521.47	-463.42	5,521.95	0.00	0.00	0.00

Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well ACACIA 17-9HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 4877.00usft (RIG)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 4877.00usft (RIG)
Site:	2N-63W-17 ACACIA 13-17HZ PAD	North Reference:	True
Well:	ACACIA 17-9HZ	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)
17,800.00	90.11	359.94	6,664.41	5,621.47	-463.53	5,621.95	0.00	0.00	0.00
17,900.00	90.11	359.94	6,664.21	5,721.47	-463.64	5,721.95	0.00	0.00	0.00
18,000.00	90.11	359.94	6,664.02	5,821.47	-463.75	5,821.95	0.00	0.00	0.00
18,100.00	90.11	359.94	6,663.83	5,921.47	-463.87	5,921.95	0.00	0.00	0.00
18,200.00	90.11	359.94	6,663.63	6,021.47	-463.98	6,021.95	0.00	0.00	0.00
18,300.00	90.11	359.94	6,663.44	6,121.47	-464.09	6,121.95	0.00	0.00	0.00
18,400.00	90.11	359.94	6,663.24	6,221.47	-464.20	6,221.95	0.00	0.00	0.00
18,500.00	90.11	359.94	6,663.05	6,321.47	-464.31	6,321.95	0.00	0.00	0.00
18,600.00	90.11	359.94	6,662.86	6,421.47	-464.42	6,421.95	0.00	0.00	0.00
18,700.00	90.11	359.94	6,662.66	6,521.46	-464.53	6,521.95	0.00	0.00	0.00
18,800.00	90.11	359.94	6,662.47	6,621.46	-464.64	6,621.95	0.00	0.00	0.00
18,900.00	90.11	359.94	6,662.28	6,721.46	-464.75	6,721.95	0.00	0.00	0.00
19,000.00	90.11	359.94	6,662.08	6,821.46	-464.86	6,821.95	0.00	0.00	0.00
19,041.92	90.11	359.94	6,662.00	6,863.38	-464.91	6,863.87	0.00	0.00	0.00
TD Well @ 19041.92ft - 5.5" CSG									

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")	
1,869.63	1,817.00	9 5/8"	9-5/8	13-1/2	
19,041.92	6,662.00	5.5" CSG	5-1/2	7-7/8	

Formations					
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
435.15	435.00	Fox Hills			
5,288.57	4,298.00	Parkman			
6,194.39	4,902.00	Sussex			
8,224.82	6,515.00	Sharon Springs			
8,277.13	6,547.00	Niobrara			
8,436.81	6,625.00	Nio B			

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment	
		+N/-S (usft)	+E/-W (usft)		
200.30	200.30	0.00	0.00	Begin Nudge @ 200.30ft	
3,412.30	3,046.92	-1,268.20	-107.61	Hold Tangent @ 3412.30ft	
7,000.84	5,439.73	-3,932.96	-333.72	KOP @ 7000.84ft :: DLS = 8°/100'	
8,726.54	6,682.00	-3,451.97	-453.51	End Build @ 8726.54ft	
19,041.92	6,662.00	6,863.39	-464.91	TD Well @ 19041.92ft	