

US ROCKIES WATTENBERG PLANNING

WELD-NAD83-UTMFT13N

3N-67W-05 SCHLAGEL 10-5HZ PAD WEST

SCHLAGEL 5-5HZ

Plan A

Plan: Permit Rev-1

Standard Planning Report

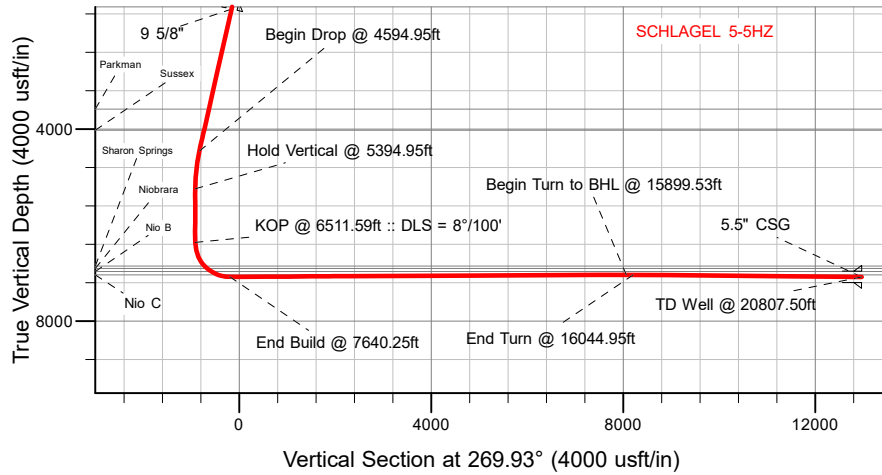
07 August, 2021

Project: WELD-NAD83-UTMFT13N
 Site: 3N-67W-05 SCHLAGEL 10-5HZ PAD WEST
 Well: SCHLAGEL 5-5HZ
 Wellbore: Plan A
 Design: Permit Rev-1

US ROCKIES WATTENBERG PLANNING

CASING DETAILS

TVD	MD	Name	Size
1500.00	1521.35	9 5/8"	9-5/8
7080.00	20807.50	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	
260.00	0.00	0.00	260.00	0.00	0.00	0.00	0.00	0.00	
1326.67	16.00	127.99	1312.86	-91.08	116.62	1.50	127.99	-116.51	
4594.95	16.00	127.99	4454.53	-645.58	826.60	0.00	0.00	-825.81	
5394.95	0.00	0.00	5244.18	-713.89	914.07	2.00	180.00	-913.19	
6511.59	0.00	0.00	6360.82	-713.89	914.07	0.00	0.00	-913.19	
7640.25	90.29	270.63	7077.00	-706.01	194.26	8.00	270.63	-193.39	
15899.53	90.29	270.63	7034.85	-615.61	-8064.43	0.00	0.00	8065.17	SCHLAGEL 5-5HZ_Deflection
16044.95	89.46	268.61	7035.16	-616.58	-8209.83	1.50	-112.42	8210.58	
20807.50	89.46	268.61	7080.00	-732.04	-12970.78	0.00	0.00	12971.66	SCHLAGEL 5-5HZ_BHL

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	Northing	Easting	Latitude	Longitude
SCHLAGEL 5-5HZ SHL	0.00	14619171.78	1664715.05	40.253815	-104.912913
SCHLAGEL 5-5HZ LP	7077.00	14618465.96	1664910.00	40.251876	-104.912216
SCHLAGEL 5-5HZ BHL	7080.00	14618427.00	1651745.00	40.251796	-104.959400

SHL
2238' FSL
2242' FEL

LP
1533' FSL
2050' FEL

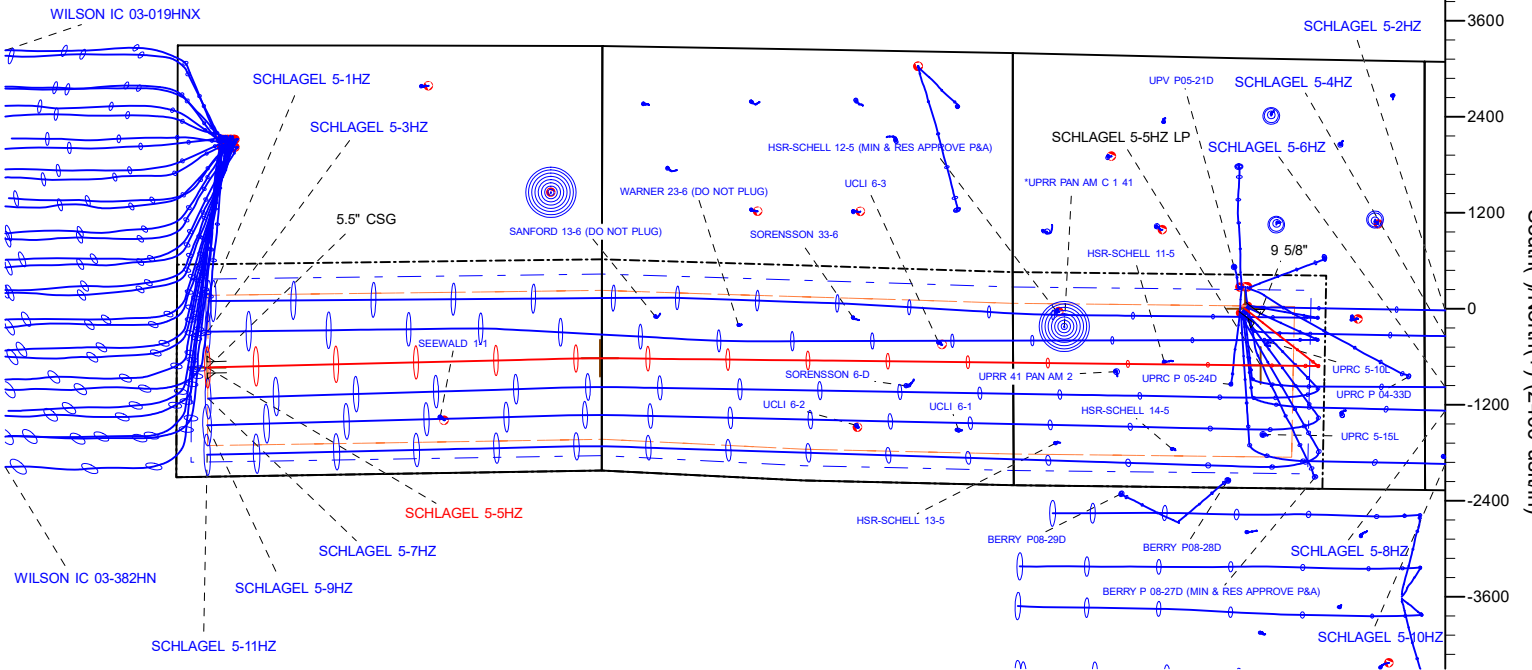
BHL
1365' FSL
385' FWL

West(-)/East(+) (2400 usft/in)



WELL DETAILS: SCHLAGEL 5-5HZ

GL = 4870'
RKB = 17' @ 4887.00usft (RIG)
Plan: Permit Rev-1 (SCHLAGEL 5-5HZ/Plan A)
Date: 8/7/2021



FORMATION TOP DETAILS

TVDPATH	MDPATH	FORMATION
740.00	741.27	Fox Hills
3582.00	3687.25	Parkman
4022.00	4144.99	Sussex
6851.00	7051.47	Sharon Springs
6902.00	7125.10	Niobrara
6969.00	7238.13	Nio B
7034.00	7387.11	Nio C

T
M
 Azimuths to True North
 Magnetic North: 7.90°
 Magnetic Field
 Strength: 51846.8nT
 Dip Angle: 66.51°
 Date: 8/5/2021
 Model: IGRF2020

Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well SCHLAGEL 5-5HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 4887.00usft (RIG)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 4887.00usft (RIG)
Site:	3N-67W-05 SCHLAGEL 10-5HZ PAD WEST	North Reference:	True
Well:	SCHLAGEL 5-5HZ	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 3N-67W-05 SCHLAGEL 10-5HZ PAD WEST			
Site Position:		Northing:	14,619,213.53 usft
From:	Map	Easting:	1,664,758.12 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "
		Latitude:	40.253930
		Longitude:	-104.912758

Well SCHLAGEL 5-5HZ			
Well Position	+N/-S	0.00 usft	Northing: 14,619,171.78 usft
	+E/-W	0.00 usft	Easting: 1,664,715.05 usft
Position Uncertainty		3.28 usft	Wellhead Elevation: usft
Grid Convergence:		0.06 °	Ground Level: 4,870.00 usft

Wellbore Plan A					
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF202013	8/5/2021	7.90	66.51	51,846.83562455

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	269.93

Plan Survey Tool Program		Date	8/6/2021		
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks	
1	0.00	1,500.00	Permit Rev-1 (Plan A)	APC_ISCWSA REV 2 MWD+I	Fixed:v2:crustal field declinatio
2	1,500.00	20,807.50	Permit Rev-1 (Plan A)	APC_ISCWSA REV 2 MWD+I	Fixed:v2:Rockies, crustal dec +

Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well SCHLAGEL 5-5HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 4887.00usft (RIG)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 4887.00usft (RIG)
Site:	3N-67W-05 SCHLAGEL 10-5HZ PAD WEST	North Reference:	True
Well:	SCHLAGEL 5-5HZ	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	
260.00	0.00	0.00	260.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,326.67	16.00	127.99	1,312.86	-91.08	116.62	1.50	1.50	0.00	127.99	
4,594.95	16.00	127.99	4,454.53	-645.58	826.60	0.00	0.00	0.00	0.00	
5,394.95	0.00	0.00	5,244.18	-713.89	914.07	2.00	-2.00	0.00	180.00	
6,511.59	0.00	0.00	6,360.82	-713.89	914.07	0.00	0.00	0.00	0.00	
7,640.25	90.29	270.63	7,077.00	-706.01	194.26	8.00	8.00	-7.92	270.63	
15,899.53	90.29	270.63	7,034.85	-615.61	-8,064.43	0.00	0.00	0.00	0.00	SCHLAGEL 5-5HZ_D
16,044.95	89.46	268.61	7,035.16	-616.58	-8,209.83	1.50	-0.57	-1.39	-112.42	
20,807.50	89.46	268.61	7,080.00	-732.04	-12,970.78	0.00	0.00	0.00	0.00	SCHLAGEL 5-5HZ_B

Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well SCHLAGEL 5-5HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 4887.00usft (RIG)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 4887.00usft (RIG)
Site:	3N-67W-05 SCHLAGEL 10-5HZ PAD WEST	North Reference:	True
Well:	SCHLAGEL 5-5HZ	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	0.00
100.00	0.00	0.00	100.00	0.00	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	0.00
260.00	0.00	0.00	260.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Begin Nudge @ 260.00ft										
300.00	0.60	127.99	300.00	-0.13	0.17	-0.16	1.50	1.50	0.00	
400.00	2.10	127.99	399.97	-1.58	2.02	-2.02	1.50	1.50	0.00	
500.00	3.60	127.99	499.84	-4.64	5.94	-5.93	1.50	1.50	0.00	
600.00	5.10	127.99	599.55	-9.31	11.92	-11.91	1.50	1.50	0.00	
700.00	6.60	127.99	699.03	-15.58	19.95	-19.93	1.50	1.50	0.00	
741.27	7.22	127.99	740.00	-18.64	23.86	-23.84	1.50	1.50	0.00	
Fox Hills										
800.00	8.10	127.99	798.20	-23.46	30.03	-30.00	1.50	1.50	0.00	
900.00	9.60	127.99	897.01	-32.93	42.16	-42.12	1.50	1.50	0.00	
1,000.00	11.10	127.99	995.38	-43.98	56.32	-56.26	1.50	1.50	0.00	
1,100.00	12.60	127.99	1,093.25	-56.62	72.50	-72.43	1.50	1.50	0.00	
1,200.00	14.10	127.99	1,190.54	-70.83	90.70	-90.61	1.50	1.50	0.00	
1,300.00	15.60	127.99	1,287.20	-86.61	110.90	-110.79	1.50	1.50	0.00	
1,326.67	16.00	127.99	1,312.86	-91.08	116.62	-116.51	1.50	1.50	0.00	
Hold Tangent @ 1326.67ft										
1,400.00	16.00	127.99	1,383.35	-103.52	132.55	-132.42	0.00	0.00	0.00	
1,500.00	16.00	127.99	1,479.48	-120.49	154.27	-154.12	0.00	0.00	0.00	
1,521.35	16.00	127.99	1,500.00	-124.11	158.91	-158.76	0.00	0.00	0.00	
9 5/8"										
1,600.00	16.00	127.99	1,575.60	-137.45	175.99	-175.83	0.00	0.00	0.00	
1,700.00	16.00	127.99	1,671.73	-154.42	197.72	-197.53	0.00	0.00	0.00	
1,800.00	16.00	127.99	1,767.85	-171.39	219.44	-219.23	0.00	0.00	0.00	
1,900.00	16.00	127.99	1,863.98	-188.35	241.17	-240.94	0.00	0.00	0.00	
2,000.00	16.00	127.99	1,960.11	-205.32	262.89	-262.64	0.00	0.00	0.00	
2,100.00	16.00	127.99	2,056.23	-222.28	284.61	-284.34	0.00	0.00	0.00	
2,200.00	16.00	127.99	2,152.36	-239.25	306.34	-306.04	0.00	0.00	0.00	
2,300.00	16.00	127.99	2,248.49	-256.22	328.06	-327.75	0.00	0.00	0.00	
2,400.00	16.00	127.99	2,344.61	-273.18	349.78	-349.45	0.00	0.00	0.00	
2,500.00	16.00	127.99	2,440.74	-290.15	371.51	-371.15	0.00	0.00	0.00	
2,600.00	16.00	127.99	2,536.86	-307.11	393.23	-392.85	0.00	0.00	0.00	
2,700.00	16.00	127.99	2,632.99	-324.08	414.95	-414.56	0.00	0.00	0.00	
2,800.00	16.00	127.99	2,729.12	-341.05	436.68	-436.26	0.00	0.00	0.00	
2,900.00	16.00	127.99	2,825.24	-358.01	458.40	-457.96	0.00	0.00	0.00	
3,000.00	16.00	127.99	2,921.37	-374.98	480.12	-479.67	0.00	0.00	0.00	
3,100.00	16.00	127.99	3,017.49	-391.94	501.85	-501.37	0.00	0.00	0.00	
3,200.00	16.00	127.99	3,113.62	-408.91	523.57	-523.07	0.00	0.00	0.00	
3,300.00	16.00	127.99	3,209.75	-425.88	545.29	-544.77	0.00	0.00	0.00	
3,400.00	16.00	127.99	3,305.87	-442.84	567.02	-566.48	0.00	0.00	0.00	
3,500.00	16.00	127.99	3,402.00	-459.81	588.74	-588.18	0.00	0.00	0.00	
3,600.00	16.00	127.99	3,498.13	-476.78	610.46	-609.88	0.00	0.00	0.00	
3,687.25	16.00	127.99	3,582.00	-491.58	629.42	-628.82	0.00	0.00	0.00	
Parkman										
3,700.00	16.00	127.99	3,594.25	-493.74	632.19	-631.58	0.00	0.00	0.00	
3,800.00	16.00	127.99	3,690.38	-510.71	653.91	-653.29	0.00	0.00	0.00	
3,900.00	16.00	127.99	3,786.50	-527.67	675.64	-674.99	0.00	0.00	0.00	
4,000.00	16.00	127.99	3,882.63	-544.64	697.36	-696.69	0.00	0.00	0.00	
4,100.00	16.00	127.99	3,978.76	-561.61	719.08	-718.40	0.00	0.00	0.00	
4,144.99	16.00	127.99	4,022.00	-569.24	728.85	-728.16	0.00	0.00	0.00	

Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well SCHLAGEL 5-5HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 4887.00usft (RIG)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 4887.00usft (RIG)
Site:	3N-67W-05 SCHLAGEL 10-5HZ PAD WEST	North Reference:	True
Well:	SCHLAGEL 5-5HZ	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)
Sussex									
4,200.00	16.00	127.99	4,074.88	-578.57	740.81	-740.10	0.00	0.00	0.00
4,300.00	16.00	127.99	4,171.01	-595.54	762.53	-761.80	0.00	0.00	0.00
4,400.00	16.00	127.99	4,267.13	-612.50	784.25	-783.50	0.00	0.00	0.00
4,500.00	16.00	127.99	4,363.26	-629.47	805.98	-805.21	0.00	0.00	0.00
4,594.95	16.00	127.99	4,454.53	-645.58	826.60	-825.81	0.00	0.00	0.00
Begin Drop @ 4594.95ft									
4,600.00	15.90	127.99	4,459.39	-646.43	827.70	-826.91	2.00	-2.00	0.00
4,700.00	13.90	127.99	4,556.02	-662.26	847.96	-847.15	2.00	-2.00	0.00
4,800.00	11.90	127.99	4,653.49	-676.00	865.55	-864.72	2.00	-2.00	0.00
4,900.00	9.90	127.99	4,751.68	-687.64	880.45	-879.61	2.00	-2.00	0.00
5,000.00	7.90	127.99	4,850.48	-697.16	892.64	-891.79	2.00	-2.00	0.00
5,100.00	5.90	127.99	4,949.75	-704.55	902.11	-901.25	2.00	-2.00	0.00
5,200.00	3.90	127.99	5,049.38	-709.81	908.84	-907.97	2.00	-2.00	0.00
5,300.00	1.90	127.99	5,149.24	-712.92	912.83	-911.95	2.00	-2.00	0.00
5,394.95	0.00	0.00	5,244.18	-713.89	914.07	-913.19	2.00	-2.00	0.00
Hold Vertical @ 5394.95ft									
5,400.00	0.00	0.00	5,249.23	-713.89	914.07	-913.19	0.00	0.00	0.00
5,500.00	0.00	0.00	5,349.23	-713.89	914.07	-913.19	0.00	0.00	0.00
5,600.00	0.00	0.00	5,449.23	-713.89	914.07	-913.19	0.00	0.00	0.00
5,700.00	0.00	0.00	5,549.23	-713.89	914.07	-913.19	0.00	0.00	0.00
5,800.00	0.00	0.00	5,649.23	-713.89	914.07	-913.19	0.00	0.00	0.00
5,900.00	0.00	0.00	5,749.23	-713.89	914.07	-913.19	0.00	0.00	0.00
6,000.00	0.00	0.00	5,849.23	-713.89	914.07	-913.19	0.00	0.00	0.00
6,100.00	0.00	0.00	5,949.23	-713.89	914.07	-913.19	0.00	0.00	0.00
6,200.00	0.00	0.00	6,049.23	-713.89	914.07	-913.19	0.00	0.00	0.00
6,300.00	0.00	0.00	6,149.23	-713.89	914.07	-913.19	0.00	0.00	0.00
6,400.00	0.00	0.00	6,249.23	-713.89	914.07	-913.19	0.00	0.00	0.00
6,500.00	0.00	0.00	6,349.23	-713.89	914.07	-913.19	0.00	0.00	0.00
6,511.59	0.00	0.00	6,360.82	-713.89	914.07	-913.19	0.00	0.00	0.00
KOP @ 6511.59ft :: DLS = 8°/100'									
6,550.00	3.07	270.63	6,399.21	-713.88	913.04	-912.16	8.00	8.00	0.00
6,600.00	7.07	270.63	6,449.00	-713.83	908.62	-907.74	8.00	8.00	0.00
6,650.00	11.07	270.63	6,498.37	-713.74	900.73	-899.86	8.00	8.00	0.00
6,700.00	15.07	270.63	6,547.06	-713.62	889.43	-888.55	8.00	8.00	0.00
6,750.00	19.07	270.63	6,594.85	-713.46	874.75	-873.88	8.00	8.00	0.00
6,800.00	23.07	270.63	6,641.49	-713.26	856.78	-855.91	8.00	8.00	0.00
6,850.00	27.07	270.63	6,686.77	-713.03	835.60	-834.72	8.00	8.00	0.00
6,900.00	31.07	270.63	6,730.46	-712.76	811.31	-810.43	8.00	8.00	0.00
6,950.00	35.07	270.63	6,772.35	-712.47	784.03	-783.16	8.00	8.00	0.00
7,000.00	39.07	270.63	6,812.24	-712.14	753.89	-753.02	8.00	8.00	0.00
7,050.00	43.07	270.63	6,849.93	-711.78	721.05	-720.18	8.00	8.00	0.00
7,051.47	43.19	270.63	6,851.00	-711.77	720.05	-719.18	8.00	8.00	0.00
Sharon Springs									
7,100.00	47.07	270.63	6,885.23	-711.39	685.66	-684.79	8.00	8.00	0.00
7,125.10	49.08	270.63	6,902.00	-711.18	666.99	-666.12	8.00	8.00	0.00
Niobrara									
7,150.00	51.07	270.63	6,917.98	-710.98	647.89	-647.02	8.00	8.00	0.00
7,200.00	55.07	270.63	6,948.01	-710.54	607.93	-607.07	8.00	8.00	0.00
7,238.13	58.12	270.63	6,969.00	-710.19	576.11	-575.24	8.00	8.00	0.00
Nio B									
7,250.00	59.07	270.63	6,975.18	-710.08	565.98	-565.11	8.00	8.00	0.00
7,300.00	63.07	270.63	6,999.36	-709.60	522.23	-521.36	8.00	8.00	0.00

Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well SCHLAGEL 5-5HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 4887.00usft (RIG)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 4887.00usft (RIG)
Site:	3N-67W-05 SCHLAGEL 10-5HZ PAD WEST	North Reference:	True
Well:	SCHLAGEL 5-5HZ	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)
7,350.00	67.07	270.63	7,020.43	-709.10	476.90	-476.03	8.00	8.00	0.00
7,387.11	70.04	270.63	7,034.00	-708.73	442.36	-441.49	8.00	8.00	0.00
Nio C									
7,400.00	71.07	270.63	7,038.29	-708.59	430.21	-429.34	8.00	8.00	0.00
7,450.00	75.07	270.63	7,052.84	-708.07	382.39	-381.52	8.00	8.00	0.00
7,500.00	79.07	270.63	7,064.03	-707.54	333.67	-332.80	8.00	8.00	0.00
7,550.00	83.07	270.63	7,071.78	-707.00	284.29	-283.42	8.00	8.00	0.00
7,600.00	87.07	270.63	7,076.08	-706.45	234.48	-233.62	8.00	8.00	0.00
7,640.25	90.29	270.63	7,077.00	-706.01	194.26	-193.39	8.00	8.00	0.00
End Build @ 7640.25ft									
7,700.00	90.29	270.63	7,076.70	-705.36	134.51	-133.64	0.00	0.00	0.00
7,800.00	90.29	270.63	7,076.19	-704.26	34.51	-33.65	0.00	0.00	0.00
7,900.00	90.29	270.63	7,075.68	-703.17	-65.48	66.34	0.00	0.00	0.00
8,000.00	90.29	270.63	7,075.17	-702.07	-165.47	166.33	0.00	0.00	0.00
8,100.00	90.29	270.63	7,074.66	-700.98	-265.47	266.32	0.00	0.00	0.00
8,200.00	90.29	270.63	7,074.15	-699.88	-365.46	366.31	0.00	0.00	0.00
8,300.00	90.29	270.63	7,073.64	-698.79	-465.45	466.30	0.00	0.00	0.00
8,400.00	90.29	270.63	7,073.13	-697.69	-565.44	566.30	0.00	0.00	0.00
8,500.00	90.29	270.63	7,072.62	-696.60	-665.44	666.29	0.00	0.00	0.00
8,600.00	90.29	270.63	7,072.11	-695.51	-765.43	766.28	0.00	0.00	0.00
8,700.00	90.29	270.63	7,071.59	-694.41	-865.42	866.27	0.00	0.00	0.00
8,800.00	90.29	270.63	7,071.08	-693.32	-965.41	966.26	0.00	0.00	0.00
8,900.00	90.29	270.63	7,070.57	-692.22	-1,065.41	1,066.25	0.00	0.00	0.00
9,000.00	90.29	270.63	7,070.06	-691.13	-1,165.40	1,166.24	0.00	0.00	0.00
9,100.00	90.29	270.63	7,069.55	-690.03	-1,265.39	1,266.23	0.00	0.00	0.00
9,200.00	90.29	270.63	7,069.04	-688.94	-1,365.39	1,366.23	0.00	0.00	0.00
9,300.00	90.29	270.63	7,068.53	-687.84	-1,465.38	1,466.22	0.00	0.00	0.00
9,400.00	90.29	270.63	7,068.02	-686.75	-1,565.37	1,566.21	0.00	0.00	0.00
9,500.00	90.29	270.63	7,067.51	-685.65	-1,665.36	1,666.20	0.00	0.00	0.00
9,600.00	90.29	270.63	7,067.00	-684.56	-1,765.36	1,766.19	0.00	0.00	0.00
9,700.00	90.29	270.63	7,066.49	-683.47	-1,865.35	1,866.18	0.00	0.00	0.00
9,800.00	90.29	270.63	7,065.98	-682.37	-1,965.34	1,966.17	0.00	0.00	0.00
9,900.00	90.29	270.63	7,065.47	-681.28	-2,065.33	2,066.16	0.00	0.00	0.00
10,000.00	90.29	270.63	7,064.96	-680.18	-2,165.33	2,166.16	0.00	0.00	0.00
10,100.00	90.29	270.63	7,064.45	-679.09	-2,265.32	2,266.15	0.00	0.00	0.00
10,200.00	90.29	270.63	7,063.94	-677.99	-2,365.31	2,366.14	0.00	0.00	0.00
10,300.00	90.29	270.63	7,063.43	-676.90	-2,465.30	2,466.13	0.00	0.00	0.00
10,400.00	90.29	270.63	7,062.92	-675.80	-2,565.30	2,566.12	0.00	0.00	0.00
10,500.00	90.29	270.63	7,062.41	-674.71	-2,665.29	2,666.11	0.00	0.00	0.00
10,600.00	90.29	270.63	7,061.90	-673.61	-2,765.28	2,766.10	0.00	0.00	0.00
10,700.00	90.29	270.63	7,061.39	-672.52	-2,865.28	2,866.10	0.00	0.00	0.00
10,800.00	90.29	270.63	7,060.88	-671.43	-2,965.27	2,966.09	0.00	0.00	0.00
10,900.00	90.29	270.63	7,060.37	-670.33	-3,065.26	3,066.08	0.00	0.00	0.00
11,000.00	90.29	270.63	7,059.86	-669.24	-3,165.25	3,166.07	0.00	0.00	0.00
11,100.00	90.29	270.63	7,059.35	-668.14	-3,265.25	3,266.06	0.00	0.00	0.00
11,200.00	90.29	270.63	7,058.84	-667.05	-3,365.24	3,366.05	0.00	0.00	0.00
11,300.00	90.29	270.63	7,058.33	-665.95	-3,465.23	3,466.04	0.00	0.00	0.00
11,400.00	90.29	270.63	7,057.81	-664.86	-3,565.22	3,566.03	0.00	0.00	0.00
11,500.00	90.29	270.63	7,057.30	-663.76	-3,665.22	3,666.03	0.00	0.00	0.00
11,600.00	90.29	270.63	7,056.79	-662.67	-3,765.21	3,766.02	0.00	0.00	0.00
11,700.00	90.29	270.63	7,056.28	-661.57	-3,865.20	3,866.01	0.00	0.00	0.00
11,800.00	90.29	270.63	7,055.77	-660.48	-3,965.20	3,966.00	0.00	0.00	0.00
11,900.00	90.29	270.63	7,055.26	-659.39	-4,065.19	4,065.99	0.00	0.00	0.00

Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well SCHLAGEL 5-5HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 4887.00usft (RIG)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 4887.00usft (RIG)
Site:	3N-67W-05 SCHLAGEL 10-5HZ PAD WEST	North Reference:	True
Well:	SCHLAGEL 5-5HZ	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)
12,000.00	90.29	270.63	7,054.75	-658.29	-4,165.18	4,165.98	0.00	0.00	0.00
12,100.00	90.29	270.63	7,054.24	-657.20	-4,265.17	4,265.97	0.00	0.00	0.00
12,200.00	90.29	270.63	7,053.73	-656.10	-4,365.17	4,365.96	0.00	0.00	0.00
12,300.00	90.29	270.63	7,053.22	-655.01	-4,465.16	4,465.96	0.00	0.00	0.00
12,400.00	90.29	270.63	7,052.71	-653.91	-4,565.15	4,565.95	0.00	0.00	0.00
12,500.00	90.29	270.63	7,052.20	-652.82	-4,665.14	4,665.94	0.00	0.00	0.00
12,600.00	90.29	270.63	7,051.69	-651.72	-4,765.14	4,765.93	0.00	0.00	0.00
12,700.00	90.29	270.63	7,051.18	-650.63	-4,865.13	4,865.92	0.00	0.00	0.00
12,800.00	90.29	270.63	7,050.67	-649.53	-4,965.12	4,965.91	0.00	0.00	0.00
12,900.00	90.29	270.63	7,050.16	-648.44	-5,065.12	5,065.90	0.00	0.00	0.00
13,000.00	90.29	270.63	7,049.65	-647.35	-5,165.11	5,165.89	0.00	0.00	0.00
13,100.00	90.29	270.63	7,049.14	-646.25	-5,265.10	5,265.89	0.00	0.00	0.00
13,200.00	90.29	270.63	7,048.63	-645.16	-5,365.09	5,365.88	0.00	0.00	0.00
13,300.00	90.29	270.63	7,048.12	-644.06	-5,465.09	5,465.87	0.00	0.00	0.00
13,400.00	90.29	270.63	7,047.61	-642.97	-5,565.08	5,565.86	0.00	0.00	0.00
13,500.00	90.29	270.63	7,047.10	-641.87	-5,665.07	5,665.85	0.00	0.00	0.00
13,600.00	90.29	270.63	7,046.59	-640.78	-5,765.06	5,765.84	0.00	0.00	0.00
13,700.00	90.29	270.63	7,046.08	-639.68	-5,865.06	5,865.83	0.00	0.00	0.00
13,800.00	90.29	270.63	7,045.57	-638.59	-5,965.05	5,965.83	0.00	0.00	0.00
13,900.00	90.29	270.63	7,045.06	-637.49	-6,065.04	6,065.82	0.00	0.00	0.00
14,000.00	90.29	270.63	7,044.54	-636.40	-6,165.04	6,165.81	0.00	0.00	0.00
14,100.00	90.29	270.63	7,044.03	-635.31	-6,265.03	6,265.80	0.00	0.00	0.00
14,200.00	90.29	270.63	7,043.52	-634.21	-6,365.02	6,365.79	0.00	0.00	0.00
14,300.00	90.29	270.63	7,043.01	-633.12	-6,465.01	6,465.78	0.00	0.00	0.00
14,400.00	90.29	270.63	7,042.50	-632.02	-6,565.01	6,565.77	0.00	0.00	0.00
14,500.00	90.29	270.63	7,041.99	-630.93	-6,665.00	6,665.76	0.00	0.00	0.00
14,600.00	90.29	270.63	7,041.48	-629.83	-6,764.99	6,765.76	0.00	0.00	0.00
14,700.00	90.29	270.63	7,040.97	-628.74	-6,864.98	6,865.75	0.00	0.00	0.00
14,800.00	90.29	270.63	7,040.46	-627.64	-6,964.98	6,965.74	0.00	0.00	0.00
14,900.00	90.29	270.63	7,039.95	-626.55	-7,064.97	7,065.73	0.00	0.00	0.00
15,000.00	90.29	270.63	7,039.44	-625.45	-7,164.96	7,165.72	0.00	0.00	0.00
15,100.00	90.29	270.63	7,038.93	-624.36	-7,264.95	7,265.71	0.00	0.00	0.00
15,200.00	90.29	270.63	7,038.42	-623.27	-7,364.95	7,365.70	0.00	0.00	0.00
15,300.00	90.29	270.63	7,037.91	-622.17	-7,464.94	7,465.69	0.00	0.00	0.00
15,400.00	90.29	270.63	7,037.40	-621.08	-7,564.93	7,565.69	0.00	0.00	0.00
15,500.00	90.29	270.63	7,036.89	-619.98	-7,664.93	7,665.68	0.00	0.00	0.00
15,600.00	90.29	270.63	7,036.38	-618.89	-7,764.92	7,765.67	0.00	0.00	0.00
15,700.00	90.29	270.63	7,035.87	-617.79	-7,864.91	7,865.66	0.00	0.00	0.00
15,800.00	90.29	270.63	7,035.36	-616.70	-7,964.90	7,965.65	0.00	0.00	0.00
15,899.53	90.29	270.63	7,034.85	-615.61	-8,064.43	8,065.17	0.00	0.00	0.00
Begin Turn to BHL @ 15899.53ft									
16,000.00	89.72	269.23	7,034.84	-615.73	-8,164.89	8,165.64	1.50	-0.57	-1.39
16,044.95	89.46	268.61	7,035.16	-616.58	-8,209.83	8,210.58	1.50	-0.57	-1.39
End Turn @ 16044.95ft									
16,100.00	89.46	268.61	7,035.68	-617.91	-8,264.87	8,265.61	0.00	0.00	0.00
16,200.00	89.46	268.61	7,036.62	-620.34	-8,364.83	8,365.58	0.00	0.00	0.00
16,300.00	89.46	268.61	7,037.56	-622.76	-8,464.80	8,465.55	0.00	0.00	0.00
16,400.00	89.46	268.61	7,038.51	-625.18	-8,564.76	8,565.52	0.00	0.00	0.00
16,500.00	89.46	268.61	7,039.45	-627.61	-8,664.73	8,665.49	0.00	0.00	0.00
16,600.00	89.46	268.61	7,040.39	-630.03	-8,764.70	8,765.46	0.00	0.00	0.00
16,700.00	89.46	268.61	7,041.33	-632.46	-8,864.66	8,865.43	0.00	0.00	0.00
16,800.00	89.46	268.61	7,042.27	-634.88	-8,964.63	8,965.40	0.00	0.00	0.00
16,900.00	89.46	268.61	7,043.21	-637.31	-9,064.60	9,065.37	0.00	0.00	0.00
17,000.00	89.46	268.61	7,044.15	-639.73	-9,164.56	9,165.34	0.00	0.00	0.00

Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well SCHLAGEL 5-5HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 4887.00usft (RIG)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 4887.00usft (RIG)
Site:	3N-67W-05 SCHLAGEL 10-5HZ PAD WEST	North Reference:	True
Well:	SCHLAGEL 5-5HZ	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)	
17,100.00	89.46	268.61	7,045.10	-642.16	-9,264.53	9,265.31	0.00	0.00	0.00	
17,200.00	89.46	268.61	7,046.04	-644.58	-9,364.49	9,365.27	0.00	0.00	0.00	
17,300.00	89.46	268.61	7,046.98	-647.00	-9,464.46	9,465.24	0.00	0.00	0.00	
17,400.00	89.46	268.61	7,047.92	-649.43	-9,564.43	9,565.21	0.00	0.00	0.00	
17,500.00	89.46	268.61	7,048.86	-651.85	-9,664.39	9,665.18	0.00	0.00	0.00	
17,600.00	89.46	268.61	7,049.80	-654.28	-9,764.36	9,765.15	0.00	0.00	0.00	
17,700.00	89.46	268.61	7,050.74	-656.70	-9,864.32	9,865.12	0.00	0.00	0.00	
17,800.00	89.46	268.61	7,051.69	-659.13	-9,964.29	9,965.09	0.00	0.00	0.00	
17,900.00	89.46	268.61	7,052.63	-661.55	-10,064.26	10,065.06	0.00	0.00	0.00	
18,000.00	89.46	268.61	7,053.57	-663.97	-10,164.22	10,165.03	0.00	0.00	0.00	
18,100.00	89.46	268.61	7,054.51	-666.40	-10,264.19	10,265.00	0.00	0.00	0.00	
18,200.00	89.46	268.61	7,055.45	-668.82	-10,364.16	10,364.96	0.00	0.00	0.00	
18,300.00	89.46	268.61	7,056.39	-671.25	-10,464.12	10,464.93	0.00	0.00	0.00	
18,400.00	89.46	268.61	7,057.33	-673.67	-10,564.09	10,564.90	0.00	0.00	0.00	
18,500.00	89.46	268.61	7,058.28	-676.10	-10,664.05	10,664.87	0.00	0.00	0.00	
18,600.00	89.46	268.61	7,059.22	-678.52	-10,764.02	10,764.84	0.00	0.00	0.00	
18,700.00	89.46	268.61	7,060.16	-680.95	-10,863.99	10,864.81	0.00	0.00	0.00	
18,800.00	89.46	268.61	7,061.10	-683.37	-10,963.95	10,964.78	0.00	0.00	0.00	
18,900.00	89.46	268.61	7,062.04	-685.79	-11,063.92	11,064.75	0.00	0.00	0.00	
19,000.00	89.46	268.61	7,062.98	-688.22	-11,163.88	11,164.72	0.00	0.00	0.00	
19,100.00	89.46	268.61	7,063.93	-690.64	-11,263.85	11,264.69	0.00	0.00	0.00	
19,200.00	89.46	268.61	7,064.87	-693.07	-11,363.82	11,364.66	0.00	0.00	0.00	
19,300.00	89.46	268.61	7,065.81	-695.49	-11,463.78	11,464.62	0.00	0.00	0.00	
19,400.00	89.46	268.61	7,066.75	-697.92	-11,563.75	11,564.59	0.00	0.00	0.00	
19,500.00	89.46	268.61	7,067.69	-700.34	-11,663.72	11,664.56	0.00	0.00	0.00	
19,600.00	89.46	268.61	7,068.63	-702.77	-11,763.68	11,764.53	0.00	0.00	0.00	
19,700.00	89.46	268.61	7,069.57	-705.19	-11,863.65	11,864.50	0.00	0.00	0.00	
19,800.00	89.46	268.61	7,070.52	-707.61	-11,963.61	11,964.47	0.00	0.00	0.00	
19,900.00	89.46	268.61	7,071.46	-710.04	-12,063.58	12,064.44	0.00	0.00	0.00	
20,000.00	89.46	268.61	7,072.40	-712.46	-12,163.55	12,164.41	0.00	0.00	0.00	
20,100.00	89.46	268.61	7,073.34	-714.89	-12,263.51	12,264.38	0.00	0.00	0.00	
20,200.00	89.46	268.61	7,074.28	-717.31	-12,363.48	12,364.35	0.00	0.00	0.00	
20,300.00	89.46	268.61	7,075.22	-719.74	-12,463.45	12,464.32	0.00	0.00	0.00	
20,400.00	89.46	268.61	7,076.16	-722.16	-12,563.41	12,564.28	0.00	0.00	0.00	
20,500.00	89.46	268.61	7,077.11	-724.59	-12,663.38	12,664.25	0.00	0.00	0.00	
20,600.00	89.46	268.61	7,078.05	-727.01	-12,763.34	12,764.22	0.00	0.00	0.00	
20,700.00	89.46	268.61	7,078.99	-729.43	-12,863.31	12,864.19	0.00	0.00	0.00	
20,807.50	89.46	268.61	7,080.00	-732.04	-12,970.77	12,971.66	0.00	0.00	0.00	
TD Well @ 20807.50ft - 5.5" CSG										

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")	
1,521.35	1,500.00	9 5/8"	9-5/8	13-1/2	
20,807.50	7,080.00	5.5" CSG	5-1/2	7-7/8	

Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well SCHLAGEL 5-5HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 4887.00usft (RIG)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 4887.00usft (RIG)
Site:	3N-67W-05 SCHLAGEL 10-5HZ PAD WEST	North Reference:	True
Well:	SCHLAGEL 5-5HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-1		

Formations						
	Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
	741.27	740.00	Fox Hills			
	3,687.25	3,582.00	Parkman			
	4,144.99	4,022.00	Sussex			
	7,051.47	6,851.00	Sharon Springs			
	7,125.10	6,902.00	Niobrara			
	7,238.13	6,969.00	Nio B			
	7,387.11	7,034.00	Nio C			

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			Comment
		+N/-S (usft)	+E/-W (usft)		
260.00	260.00	0.00	0.00		Begin Nudge @ 260.00ft
1,326.67	1,312.86	-91.08	116.62		Hold Tangent @ 1326.67ft
4,594.95	4,454.53	-645.58	826.60		Begin Drop @ 4594.95ft
5,394.95	5,244.18	-713.89	914.07		Hold Vertical @ 5394.95ft
6,511.59	6,360.82	-713.89	914.07		KOP @ 6511.59ft :: DLS = 8°/100'
7,640.25	7,077.00	-706.01	194.26		End Build @ 7640.25ft
15,899.53	7,034.85	-615.61	-8,064.43		Begin Turn to BHL @ 15899.53ft
16,044.95	7,035.16	-616.58	-8,209.83		End Turn @ 16044.95ft
20,807.50	7,080.00	-732.04	-12,970.77		TD Well @ 20807.50ft