

US ROCKIES WATTENBERG PLANNING

WELD-NAD83-UTMFT13N

3N-67W-05 Schlagel 10-5HZ Pad

SCHLAGEL 5-3HZ - Slot SCHLAGEL 5-3HZ

PLAN A

Plan: PERMIT REV 0

Standard Planning Report

22 May, 2020

Project: WELD-NAD83-UTMFT13N
 Site: 3N-67W-05 Schlagel 10-5HZ Pad
 Well: SCHLAGEL 5-3HZ
 Wellbore: PLAN A
 Design: PERMIT REV 0

US ROCKIES WATTENBERG PLANNING

SURFACE HOLE LOCATION: SCHLAGEL 5-3HZ

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	14619192.66	1664736.58	40.253872	-104.912835

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Latitude	Longitude
SCHLAGEL 5-3HZ KOP	6293.81	-231.06	1384.05	40.253238	-104.907875
Schlagel 5-3HZ Heel	7010.00	-213.97	670.29	40.253285	-104.910433
SCHLAGEL 5-3HZ Int Targ 1	7017.30	-140.00	-2280.60	40.253488	-104.921009
SCHLAGEL 5-3HZ Int Targ 2	7026.47	-50.00	-4925.05	40.253734	-104.930487
Schlagel 5-3HZ Toe	7035.72	-16.20	-7591.70	40.253825	-104.940045

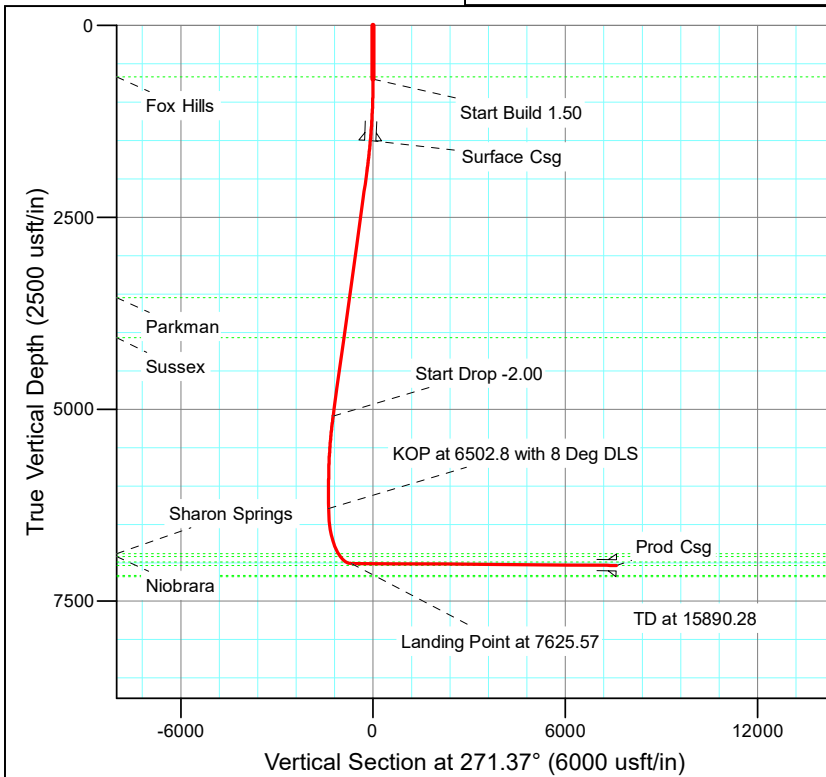
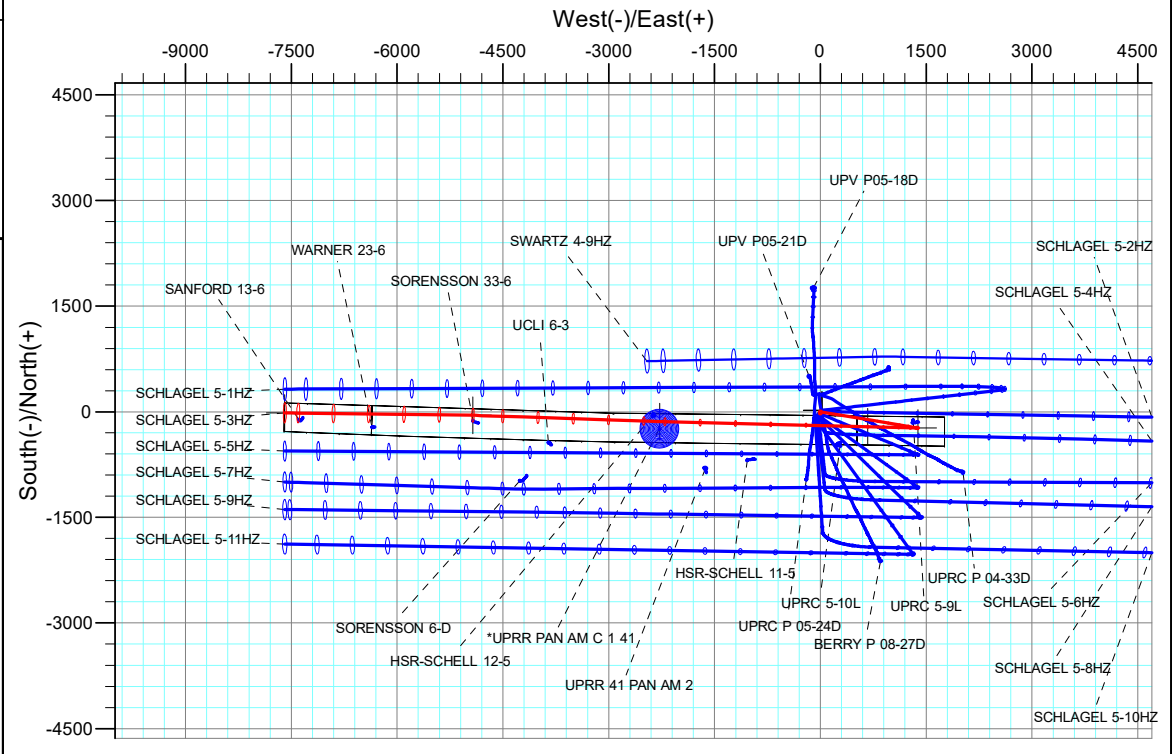
SECTION DETAILS

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	700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	
3	1929.20	18.44	99.48	1908.09	-32.29	193.40	1.50	99.48	-194.12	
4	5280.90	18.44	99.48	5087.74	-206.84	1239.00	0.00	0.00	-1243.59	
5	6202.80	0.00	0.00	5993.81	-231.06	1384.05	2.00	180.00	-1389.18	
6	6502.80	0.00	0.00	6293.81	-231.06	1384.05	0.00	0.00	-1389.18	SCHLAGEL 5-3HZ KOP
7	7625.57	89.82	271.37	7010.00	-213.97	670.29	8.00	271.37	-675.21	Schlagel 5-3HZ Heel
8	7630.52	89.86	271.44	7010.01	-213.85	665.34	1.50	60.74	-670.27	
9	10577.40	89.86	271.44	7017.30	-140.00	-2280.60	0.00	0.00	2276.60	SCHLAGEL 5-3HZ Int Targ 1
10	10612.05	89.80	271.95	7017.41	-138.98	-2315.24	1.50	96.32	2311.25	
11	13223.39	89.80	271.95	7026.47	-50.00	-4925.05	0.00	0.00	4922.44	SCHLAGEL 5-3HZ Int Targ 2
12	13306.44	89.80	270.71	7026.76	-48.07	-5008.08	1.50	-89.99	5005.50	
13	15890.28	89.80	270.71	7035.72	-16.20	-7591.70	0.00	0.00	7589.14	Schlagel 5-3HZ Toe

FORMATION TOP DETAILS

TVDPATH	MDPATH	Formation
672.00	672.00	Fox Hills
3548.00	3657.84	Parkman
4070.00	4208.09	Sussex
6883.00	7194.71	Sharon Springs
6920.00	7264.87	Niobrara
6988.00	7449.80	Nio B
7035.00	15682.61	Nio C

SHL **Heel** **Toe**
2259' FSL **2053' FSL** **2046' FSL**
2220' FEL **1551' FEL** **470' FWL**



Azimuths to True North
Magnetic North: 7.97°

Magnetic Field
Strength: 51969.5snT
Dip Angle: 66.64°
Date: 5/13/2020
Model: IGRF2015

CASING DETAILS

TVD	MD	Name	Size
1500.00	1505.97	Surface Csg	9-5/8
7035.72	15890.28	Prod Csg	5-1/2

ELEVATION

GROUND ELEVATION: 4870.00
RKB = 17' @ 4887ft

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well SCHLAGEL 5-3HZ - Slot SCHLAGEL 5-3HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB @ 4887.00usft
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB @ 4887.00usft
Site:	3N-67W-05 Schlagel 10-5HZ Pad	North Reference:	True
Well:	SCHLAGEL 5-3HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	PLAN A		
Design:	PERMIT REV 0		

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		
Site Position:	Northing:	14,619,213.65 usft	Latitude: 40.253930
From: Lat/Long	Easting:	1,664,758.13 usft	Longitude: -104.912758
Position Uncertainty: 0.00 usft	Slot Radius: 13-3/16 "		Grid Convergence: 0.06 °

Well	SCHLAGEL 5-3HZ - Slot SCHLAGEL 5-3HZ		
Well Position	+N/-S -20.98 usft	Northing: 14,619,192.66 usft	Latitude: 40.253873
	+E/-W -21.57 usft	Easting: 1,664,736.58 usft	Longitude: -104.912836
Position Uncertainty	3.28 usft	Wellhead Elevation:	Ground Level: 4,870.00 usft

Wellbore	PLAN A				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	5/13/2020	7.97	66.64	51,969.48131782

Design	PERMIT REV 0			
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	271.37

Plan Survey Tool Program	Date 5/22/2020			
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	300.00 PERMIT REV 0 (PLAN A)	APC_ISCWSA REV 2 MWD	Fixed:v2:standard declination
2	2,000.00	15,890.28 PERMIT REV 0 (PLAN A)	APC_ISCWSA REV 2 MWD+I	Fixed:v2:Rockies, crustal dec +

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Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB @ 4887.00usft
Site:	3N-67W-05 Schlagel 10-5HZ Pad	North Reference:	True
Well:	SCHLAGEL 5-3HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	PLAN A		
Design:	PERMIT REV 0		

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	
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,929.20	18.44	99.48	1,908.09	-32.29	193.40	1.50	1.50	0.00	99.48	
5,280.90	18.44	99.48	5,087.74	-206.84	1,239.00	0.00	0.00	0.00	0.00	
6,202.80	0.00	0.00	5,993.81	-231.06	1,384.05	2.00	-2.00	0.00	180.00	
6,502.80	0.00	0.00	6,293.81	-231.06	1,384.05	0.00	0.00	0.00	0.00	SCHLAGEL 5-3HZ K
7,625.57	89.82	271.37	7,010.00	-213.97	670.29	8.00	8.00	-7.89	271.37	Schlagel 5-3HZ Heel
7,630.52	89.86	271.44	7,010.01	-213.85	665.34	1.50	0.73	1.31	60.74	
10,577.40	89.86	271.44	7,017.30	-140.00	-2,280.60	0.00	0.00	0.00	0.00	SCHLAGEL 5-3HZ Int
10,612.05	89.80	271.95	7,017.41	-138.98	-2,315.24	1.50	-0.17	1.49	96.32	
13,223.39	89.80	271.95	7,026.47	-50.00	-4,925.05	0.00	0.00	0.00	0.00	SCHLAGEL 5-3HZ Int
13,306.44	89.80	270.71	7,026.76	-48.07	-5,008.08	1.50	0.00	-1.50	-89.99	
15,890.28	89.80	270.71	7,035.72	-16.20	-7,591.70	0.00	0.00	0.00	0.00	Schlagel 5-3HZ Toe

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Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB @ 4887.00usft
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB @ 4887.00usft
Site:	3N-67W-05 Schlagel 10-5HZ Pad	North Reference:	True
Well:	SCHLAGEL 5-3HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	PLAN A		
Design:	PERMIT REV 0		

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
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
672.00	0.00	0.00	672.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fox Hills										
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Start Build 1.50										
800.00	1.50	99.48	799.99	-0.22	1.29	-1.30	1.50	1.50	0.00	0.00
900.00	3.00	99.48	899.91	-0.86	5.16	-5.18	1.50	1.50	0.00	0.00
1,000.00	4.50	99.48	999.69	-1.94	11.61	-11.66	1.50	1.50	0.00	0.00
1,100.00	6.00	99.48	1,099.27	-3.45	20.64	-20.72	1.50	1.50	0.00	0.00
1,200.00	7.50	99.48	1,198.57	-5.38	32.23	-32.35	1.50	1.50	0.00	0.00
1,300.00	9.00	99.48	1,297.54	-7.74	46.39	-46.56	1.50	1.50	0.00	0.00
1,400.00	10.50	99.48	1,396.09	-10.53	63.09	-63.32	1.50	1.50	0.00	0.00
1,500.00	12.00	99.48	1,494.16	-13.74	82.33	-82.64	1.50	1.50	0.00	0.00
1,505.97	12.09	99.48	1,500.00	-13.95	83.56	-83.87	1.50	1.50	0.00	0.00
Surface Csg										
1,600.00	13.50	99.48	1,591.70	-17.38	104.10	-104.48	1.50	1.50	0.00	0.00
1,700.00	15.00	99.48	1,688.62	-21.43	128.38	-128.85	1.50	1.50	0.00	0.00
1,800.00	16.50	99.48	1,784.86	-25.90	155.15	-155.72	1.50	1.50	0.00	0.00
1,900.00	18.00	99.48	1,880.36	-30.78	184.40	-185.08	1.50	1.50	0.00	0.00
1,929.20	18.44	99.48	1,908.09	-32.29	193.40	-194.12	1.50	1.50	0.00	0.00
2,000.00	18.44	99.48	1,975.26	-35.97	215.49	-216.29	0.00	0.00	0.00	0.00
2,100.00	18.44	99.48	2,070.13	-41.18	246.69	-247.60	0.00	0.00	0.00	0.00
2,200.00	18.44	99.48	2,164.99	-46.39	277.88	-278.91	0.00	0.00	0.00	0.00
2,300.00	18.44	99.48	2,259.86	-51.60	309.08	-310.22	0.00	0.00	0.00	0.00
2,400.00	18.44	99.48	2,354.73	-56.81	340.27	-341.54	0.00	0.00	0.00	0.00
2,500.00	18.44	99.48	2,449.59	-62.01	371.47	-372.85	0.00	0.00	0.00	0.00
2,600.00	18.44	99.48	2,544.46	-67.22	402.67	-404.16	0.00	0.00	0.00	0.00
2,700.00	18.44	99.48	2,639.33	-72.43	433.86	-435.47	0.00	0.00	0.00	0.00
2,800.00	18.44	99.48	2,734.19	-77.64	465.06	-466.78	0.00	0.00	0.00	0.00
2,900.00	18.44	99.48	2,829.06	-82.85	496.25	-498.09	0.00	0.00	0.00	0.00
3,000.00	18.44	99.48	2,923.93	-88.05	527.45	-529.41	0.00	0.00	0.00	0.00
3,100.00	18.44	99.48	3,018.79	-93.26	558.65	-560.72	0.00	0.00	0.00	0.00
3,200.00	18.44	99.48	3,113.66	-98.47	589.84	-592.03	0.00	0.00	0.00	0.00
3,300.00	18.44	99.48	3,208.53	-103.68	621.04	-623.34	0.00	0.00	0.00	0.00
3,400.00	18.44	99.48	3,303.39	-108.88	652.23	-654.65	0.00	0.00	0.00	0.00
3,500.00	18.44	99.48	3,398.26	-114.09	683.43	-685.96	0.00	0.00	0.00	0.00
3,600.00	18.44	99.48	3,493.13	-119.30	714.63	-717.28	0.00	0.00	0.00	0.00
3,657.84	18.44	99.48	3,548.00	-122.31	732.67	-735.39	0.00	0.00	0.00	0.00
Parkman										
3,700.00	18.44	99.48	3,587.99	-124.51	745.82	-748.59	0.00	0.00	0.00	0.00
3,800.00	18.44	99.48	3,682.86	-129.72	777.02	-779.90	0.00	0.00	0.00	0.00
3,900.00	18.44	99.48	3,777.73	-134.92	808.22	-811.21	0.00	0.00	0.00	0.00
4,000.00	18.44	99.48	3,872.59	-140.13	839.41	-842.52	0.00	0.00	0.00	0.00
4,100.00	18.44	99.48	3,967.46	-145.34	870.61	-873.83	0.00	0.00	0.00	0.00
4,200.00	18.44	99.48	4,062.33	-150.55	901.80	-905.15	0.00	0.00	0.00	0.00
4,208.09	18.44	99.48	4,070.00	-150.97	904.33	-907.68	0.00	0.00	0.00	0.00

**Corporate
Planning Report**

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Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB @ 4887.00usft
Site:	3N-67W-05 Schlagel 10-5HZ Pad	North Reference:	True
Well:	SCHLAGEL 5-3HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	PLAN A		
Design:	PERMIT REV 0		

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									
4,300.00	18.44	99.48	4,157.19	-155.76	933.00	-936.46	0.00	0.00	0.00
4,400.00	18.44	99.48	4,252.06	-160.96	964.20	-967.77	0.00	0.00	0.00
4,500.00	18.44	99.48	4,346.93	-166.17	995.39	-999.08	0.00	0.00	0.00
4,600.00	18.44	99.48	4,441.79	-171.38	1,026.59	-1,030.39	0.00	0.00	0.00
4,700.00	18.44	99.48	4,536.66	-176.59	1,057.78	-1,061.70	0.00	0.00	0.00
4,800.00	18.44	99.48	4,631.53	-181.80	1,088.98	-1,093.01	0.00	0.00	0.00
4,900.00	18.44	99.48	4,726.39	-187.00	1,120.18	-1,124.33	0.00	0.00	0.00
5,000.00	18.44	99.48	4,821.26	-192.21	1,151.37	-1,155.64	0.00	0.00	0.00
5,100.00	18.44	99.48	4,916.13	-197.42	1,182.57	-1,186.95	0.00	0.00	0.00
5,200.00	18.44	99.48	5,010.99	-202.63	1,213.76	-1,218.26	0.00	0.00	0.00
5,280.90	18.44	99.48	5,087.74	-206.84	1,239.00	-1,243.59	0.00	0.00	0.00
Start Drop -2.00									
5,300.00	18.06	99.48	5,105.88	-207.83	1,244.90	-1,249.51	2.00	-2.00	0.00
5,400.00	16.06	99.48	5,201.48	-212.65	1,273.83	-1,278.55	2.00	-2.00	0.00
5,500.00	14.06	99.48	5,298.04	-216.93	1,299.45	-1,304.26	2.00	-2.00	0.00
5,600.00	12.06	99.48	5,395.45	-220.65	1,321.73	-1,326.63	2.00	-2.00	0.00
5,700.00	10.06	99.48	5,493.59	-223.81	1,340.64	-1,345.61	2.00	-2.00	0.00
5,800.00	8.06	99.48	5,592.34	-226.40	1,356.17	-1,361.19	2.00	-2.00	0.00
5,900.00	6.06	99.48	5,691.57	-228.42	1,368.28	-1,373.35	2.00	-2.00	0.00
6,000.00	4.06	99.48	5,791.18	-229.87	1,376.98	-1,382.08	2.00	-2.00	0.00
6,100.00	2.06	99.48	5,891.03	-230.75	1,382.23	-1,387.36	2.00	-2.00	0.00
6,202.80	0.00	0.00	5,993.81	-231.06	1,384.05	-1,389.18	2.00	-2.00	0.00
6,300.00	0.00	0.00	6,091.01	-231.06	1,384.05	-1,389.18	0.00	0.00	0.00
6,400.00	0.00	0.00	6,191.01	-231.06	1,384.05	-1,389.18	0.00	0.00	0.00
6,502.80	0.00	0.00	6,293.81	-231.06	1,384.05	-1,389.18	0.00	0.00	0.00
KOP at 6484.37 with 8 Deg DLS									
6,550.00	3.78	271.37	6,340.98	-231.02	1,382.50	-1,387.63	8.00	8.00	0.00
6,600.00	7.78	271.37	6,390.71	-230.90	1,377.47	-1,382.60	8.00	8.00	0.00
6,650.00	11.78	271.37	6,439.98	-230.69	1,368.98	-1,374.11	8.00	8.00	0.00
6,700.00	15.78	271.37	6,488.53	-230.41	1,357.08	-1,362.20	8.00	8.00	0.00
6,750.00	19.78	271.37	6,536.13	-230.04	1,341.83	-1,346.94	8.00	8.00	0.00
6,800.00	23.78	271.37	6,582.55	-229.60	1,323.29	-1,328.40	8.00	8.00	0.00
6,850.00	27.78	271.37	6,627.57	-229.08	1,301.55	-1,306.66	8.00	8.00	0.00
6,900.00	31.78	271.37	6,670.96	-228.49	1,276.74	-1,281.83	8.00	8.00	0.00
6,950.00	35.78	271.37	6,712.51	-227.82	1,248.95	-1,254.04	8.00	8.00	0.00
7,000.00	39.78	271.37	6,752.02	-227.09	1,218.34	-1,223.42	8.00	8.00	0.00
7,050.00	43.78	271.37	6,789.30	-226.29	1,185.04	-1,190.11	8.00	8.00	0.00
7,100.00	47.78	271.37	6,824.17	-225.43	1,149.23	-1,154.29	8.00	8.00	0.00
7,150.00	51.78	271.37	6,856.45	-224.52	1,111.07	-1,116.12	8.00	8.00	0.00
7,194.71	55.35	271.37	6,883.00	-223.66	1,075.12	-1,080.16	8.00	8.00	0.00
Sharon Springs									
7,200.00	55.78	271.37	6,885.99	-223.56	1,070.76	-1,075.79	8.00	8.00	0.00
7,250.00	59.78	271.37	6,912.65	-222.54	1,028.48	-1,033.50	8.00	8.00	0.00
7,264.87	60.97	271.37	6,920.00	-222.23	1,015.56	-1,020.58	8.00	8.00	0.00
Niobrara									
7,300.00	63.78	271.37	6,936.29	-221.49	984.44	-989.46	8.00	8.00	0.00
7,350.00	67.78	271.37	6,956.80	-220.40	938.87	-943.87	8.00	8.00	0.00
7,400.00	71.78	271.37	6,974.08	-219.28	891.97	-896.96	8.00	8.00	0.00
7,449.80	75.76	271.37	6,988.00	-218.13	844.18	-849.15	8.00	8.00	0.00
Nio B									
7,450.00	75.78	271.37	6,988.05	-218.13	843.99	-848.96	8.00	8.00	0.00

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well SCHLAGEL 5-3HZ - Slot SCHLAGEL 5-3HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB @ 4887.00usft
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB @ 4887.00usft
Site:	3N-67W-05 Schlagel 10-5HZ Pad	North Reference:	True
Well:	SCHLAGEL 5-3HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	PLAN A		
Design:	PERMIT REV 0		

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)	
7,500.00	79.78	271.37	6,998.63	-216.96	795.15	-800.11	8.00	8.00	0.00	
7,550.00	83.78	271.37	7,005.78	-215.77	745.68	-750.63	8.00	8.00	0.00	
7,600.00	87.78	271.37	7,009.46	-214.58	695.84	-700.78	8.00	8.00	0.00	
7,625.57	89.82	271.37	7,010.00	-213.97	670.29	-675.21	8.00	8.00	0.00	
Landing Point at 7607.14										
7,630.52	89.86	271.44	7,010.01	-213.85	665.34	-670.27	1.50	0.73	1.31	
7,700.00	89.86	271.44	7,010.19	-212.11	595.88	-600.78	0.00	0.00	0.00	
7,800.00	89.86	271.44	7,010.43	-209.60	495.91	-500.78	0.00	0.00	0.00	
7,900.00	89.86	271.44	7,010.68	-207.10	395.95	-400.78	0.00	0.00	0.00	
8,000.00	89.86	271.44	7,010.93	-204.59	295.98	-300.78	0.00	0.00	0.00	
8,100.00	89.86	271.44	7,011.18	-202.08	196.01	-200.78	0.00	0.00	0.00	
8,200.00	89.86	271.44	7,011.42	-199.58	96.04	-100.78	0.00	0.00	0.00	
8,300.00	89.86	271.44	7,011.67	-197.07	-3.93	-0.79	0.00	0.00	0.00	
8,400.00	89.86	271.44	7,011.92	-194.57	-103.90	99.21	0.00	0.00	0.00	
8,500.00	89.86	271.44	7,012.16	-192.06	-203.86	199.21	0.00	0.00	0.00	
8,600.00	89.86	271.44	7,012.41	-189.55	-303.83	299.21	0.00	0.00	0.00	
8,700.00	89.86	271.44	7,012.66	-187.05	-403.80	399.21	0.00	0.00	0.00	
8,800.00	89.86	271.44	7,012.91	-184.54	-503.77	499.21	0.00	0.00	0.00	
8,900.00	89.86	271.44	7,013.15	-182.04	-603.74	599.21	0.00	0.00	0.00	
9,000.00	89.86	271.44	7,013.40	-179.53	-703.71	699.21	0.00	0.00	0.00	
9,100.00	89.86	271.44	7,013.65	-177.02	-803.67	799.21	0.00	0.00	0.00	
9,200.00	89.86	271.44	7,013.90	-174.52	-903.64	899.21	0.00	0.00	0.00	
9,300.00	89.86	271.44	7,014.14	-172.01	-1,003.61	999.21	0.00	0.00	0.00	
9,400.00	89.86	271.44	7,014.39	-169.51	-1,103.58	1,099.21	0.00	0.00	0.00	
9,500.00	89.86	271.44	7,014.64	-167.00	-1,203.55	1,199.21	0.00	0.00	0.00	
9,600.00	89.86	271.44	7,014.89	-164.49	-1,303.52	1,299.21	0.00	0.00	0.00	
9,700.00	89.86	271.44	7,015.13	-161.99	-1,403.48	1,399.21	0.00	0.00	0.00	
9,800.00	89.86	271.44	7,015.38	-159.48	-1,503.45	1,499.21	0.00	0.00	0.00	
9,900.00	89.86	271.44	7,015.63	-156.98	-1,603.42	1,599.21	0.00	0.00	0.00	
10,000.00	89.86	271.44	7,015.88	-154.47	-1,703.39	1,699.21	0.00	0.00	0.00	
10,100.00	89.86	271.44	7,016.12	-151.96	-1,803.36	1,799.21	0.00	0.00	0.00	
10,200.00	89.86	271.44	7,016.37	-149.46	-1,903.33	1,899.21	0.00	0.00	0.00	
10,300.00	89.86	271.44	7,016.62	-146.95	-2,003.29	1,999.21	0.00	0.00	0.00	
10,400.00	89.86	271.44	7,016.86	-144.45	-2,103.26	2,099.21	0.00	0.00	0.00	
10,500.00	89.86	271.44	7,017.11	-141.94	-2,203.23	2,199.21	0.00	0.00	0.00	
10,577.40	89.86	271.44	7,017.30	-140.00	-2,280.60	2,276.60	0.00	0.00	0.00	
10,600.00	89.82	271.77	7,017.37	-139.37	-2,303.20	2,299.21	1.50	-0.17	1.49	
10,612.05	89.80	271.95	7,017.41	-138.98	-2,315.24	2,311.25	1.50	-0.17	1.49	
10,700.00	89.80	271.95	7,017.71	-135.98	-2,403.14	2,399.20	0.00	0.00	0.00	
10,800.00	89.80	271.95	7,018.06	-132.57	-2,503.08	2,499.19	0.00	0.00	0.00	
10,900.00	89.80	271.95	7,018.41	-129.16	-2,603.02	2,599.19	0.00	0.00	0.00	
11,000.00	89.80	271.95	7,018.75	-125.76	-2,702.96	2,699.18	0.00	0.00	0.00	
11,100.00	89.80	271.95	7,019.10	-122.35	-2,802.90	2,799.18	0.00	0.00	0.00	
11,200.00	89.80	271.95	7,019.45	-118.94	-2,902.85	2,899.17	0.00	0.00	0.00	
11,300.00	89.80	271.95	7,019.80	-115.54	-3,002.79	2,999.17	0.00	0.00	0.00	
11,400.00	89.80	271.95	7,020.14	-112.13	-3,102.73	3,099.16	0.00	0.00	0.00	
11,500.00	89.80	271.95	7,020.49	-108.72	-3,202.67	3,199.15	0.00	0.00	0.00	
11,600.00	89.80	271.95	7,020.84	-105.31	-3,302.61	3,299.15	0.00	0.00	0.00	
11,700.00	89.80	271.95	7,021.18	-101.91	-3,402.55	3,399.14	0.00	0.00	0.00	
11,800.00	89.80	271.95	7,021.53	-98.50	-3,502.49	3,499.14	0.00	0.00	0.00	
11,900.00	89.80	271.95	7,021.88	-95.09	-3,602.43	3,599.13	0.00	0.00	0.00	
12,000.00	89.80	271.95	7,022.23	-91.68	-3,702.38	3,699.13	0.00	0.00	0.00	

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well SCHLAGEL 5-3HZ - Slot SCHLAGEL 5-3HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB @ 4887.00usft
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB @ 4887.00usft
Site:	3N-67W-05 Schlagel 10-5HZ Pad	North Reference:	True
Well:	SCHLAGEL 5-3HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	PLAN A		
Design:	PERMIT REV 0		

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)	
12,100.00	89.80	271.95	7,022.57	-88.28	-3,802.32	3,799.12	0.00	0.00	0.00	
12,200.00	89.80	271.95	7,022.92	-84.87	-3,902.26	3,899.11	0.00	0.00	0.00	
12,300.00	89.80	271.95	7,023.27	-81.46	-4,002.20	3,999.11	0.00	0.00	0.00	
12,400.00	89.80	271.95	7,023.61	-78.06	-4,102.14	4,099.10	0.00	0.00	0.00	
12,500.00	89.80	271.95	7,023.96	-74.65	-4,202.08	4,199.10	0.00	0.00	0.00	
12,600.00	89.80	271.95	7,024.31	-71.24	-4,302.02	4,299.09	0.00	0.00	0.00	
12,700.00	89.80	271.95	7,024.66	-67.83	-4,401.97	4,399.09	0.00	0.00	0.00	
12,800.00	89.80	271.95	7,025.00	-64.43	-4,501.91	4,499.08	0.00	0.00	0.00	
12,900.00	89.80	271.95	7,025.35	-61.02	-4,601.85	4,599.07	0.00	0.00	0.00	
13,000.00	89.80	271.95	7,025.70	-57.61	-4,701.79	4,699.07	0.00	0.00	0.00	
13,100.00	89.80	271.95	7,026.05	-54.20	-4,801.73	4,799.06	0.00	0.00	0.00	
13,200.00	89.80	271.95	7,026.39	-50.80	-4,901.67	4,899.06	0.00	0.00	0.00	
13,223.39	89.80	271.95	7,026.47	-50.00	-4,925.05	4,922.44	0.00	0.00	0.00	
13,306.44	89.80	270.71	7,026.76	-48.07	-5,008.08	5,005.50	1.50	0.00	-1.50	
13,400.00	89.80	270.71	7,027.09	-46.92	-5,101.63	5,099.05	0.00	0.00	0.00	
13,500.00	89.80	270.71	7,027.43	-45.69	-5,201.62	5,199.04	0.00	0.00	0.00	
13,600.00	89.80	270.71	7,027.78	-44.45	-5,301.61	5,299.03	0.00	0.00	0.00	
13,700.00	89.80	270.71	7,028.13	-43.22	-5,401.60	5,399.02	0.00	0.00	0.00	
13,800.00	89.80	270.71	7,028.47	-41.98	-5,501.59	5,499.02	0.00	0.00	0.00	
13,900.00	89.80	270.71	7,028.82	-40.75	-5,601.59	5,599.01	0.00	0.00	0.00	
14,000.00	89.80	270.71	7,029.17	-39.52	-5,701.58	5,699.00	0.00	0.00	0.00	
14,100.00	89.80	270.71	7,029.51	-38.28	-5,801.57	5,798.99	0.00	0.00	0.00	
14,200.00	89.80	270.71	7,029.86	-37.05	-5,901.56	5,898.99	0.00	0.00	0.00	
14,300.00	89.80	270.71	7,030.21	-35.82	-6,001.55	5,998.98	0.00	0.00	0.00	
14,400.00	89.80	270.71	7,030.55	-34.58	-6,101.54	6,098.97	0.00	0.00	0.00	
14,500.00	89.80	270.71	7,030.90	-33.35	-6,201.54	6,198.97	0.00	0.00	0.00	
14,600.00	89.80	270.71	7,031.25	-32.12	-6,301.53	6,298.96	0.00	0.00	0.00	
14,700.00	89.80	270.71	7,031.59	-30.88	-6,401.52	6,398.95	0.00	0.00	0.00	
14,800.00	89.80	270.71	7,031.94	-29.65	-6,501.51	6,498.94	0.00	0.00	0.00	
14,900.00	89.80	270.71	7,032.29	-28.42	-6,601.50	6,598.94	0.00	0.00	0.00	
15,000.00	89.80	270.71	7,032.63	-27.18	-6,701.49	6,698.93	0.00	0.00	0.00	
15,100.00	89.80	270.71	7,032.98	-25.95	-6,801.49	6,798.92	0.00	0.00	0.00	
15,200.00	89.80	270.71	7,033.33	-24.71	-6,901.48	6,898.91	0.00	0.00	0.00	
15,300.00	89.80	270.71	7,033.67	-23.48	-7,001.47	6,998.91	0.00	0.00	0.00	
15,400.00	89.80	270.71	7,034.02	-22.25	-7,101.46	7,098.90	0.00	0.00	0.00	
15,500.00	89.80	270.71	7,034.37	-21.01	-7,201.45	7,198.89	0.00	0.00	0.00	
15,600.00	89.80	270.71	7,034.71	-19.78	-7,301.45	7,298.89	0.00	0.00	0.00	
15,682.61	89.80	270.71	7,035.00	-18.76	-7,384.05	7,381.49	0.00	0.00	0.00	
Nio C										
15,700.00	89.80	270.71	7,035.06	-18.55	-7,401.44	7,398.88	0.00	0.00	0.00	
15,800.00	89.80	270.71	7,035.41	-17.31	-7,501.43	7,498.87	0.00	0.00	0.00	
15,890.28	89.80	270.71	7,035.72	-16.20	-7,591.70	7,589.14	0.00	0.00	0.00	
TD at 15871.85										

Corporate
Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well SCHLAGEL 5-3HZ - Slot SCHLAGEL 5-3HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB @ 4887.00usft
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB @ 4887.00usft
Site:	3N-67W-05 Schlagel 10-5HZ Pad	North Reference:	True
Well:	SCHLAGEL 5-3HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	PLAN A		
Design:	PERMIT REV 0		

Design Targets									
Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
SCHLAGEL 5-3HZ KOP - plan hits target center - Point	0.00	0.00	6,293.81	-231.06	1,384.05	14,618,962.96	1,666,120.86	40.253238	-104.907875
Schlagel 5-3HZ Heel - plan hits target center - Point	0.00	0.00	7,010.00	-213.97	670.29	14,618,979.35	1,665,407.08	40.253285	-104.910433
SCHLAGEL 5-3HZ Int T ₂ - plan hits target center - Point	0.00	0.00	7,017.30	-140.00	-2,280.60	14,619,050.41	1,662,456.11	40.253488	-104.921009
SCHLAGEL 5-3HZ Int T ₂ - plan hits target center - Point	0.00	0.00	7,026.47	-50.00	-4,925.05	14,619,137.82	1,659,811.58	40.253734	-104.930487
Schlagel 5-3HZ Toe - plan hits target center - Point	0.00	0.00	7,035.72	-16.20	-7,591.70	14,619,168.99	1,657,144.90	40.253825	-104.940045

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")	
1,505.97	1,500.00	Surface Csg	9-5/8	13-1/2	
15,890.28	7,035.72	Prod Csg	5-1/2	7-7/8	

Formations					
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
672.00	672.00	Fox Hills			
3,657.84	3,548.00	Parkman			
4,208.09	4,070.00	Sussex			
7,194.71	6,883.00	Sharon Springs			
7,264.87	6,920.00	Niobrara			
7,449.80	6,988.00	Nio B			
15,682.61	7,035.00	Nio C			

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment	
		+N/-S (usft)	+E/-W (usft)		
700.00	700.00	0.00	0.00	Start Build 1.50	
5,280.90	5,087.74	-206.84	1,239.00	Start Drop -2.00	
6,502.80	6,293.81	-231.06	1,384.05	KOP at 6484.37 with 8 Deg DLS	
7,625.57	7,010.00	-213.97	670.29	Landing Point at 7607.14	
15,890.28	7,035.72	-16.20	-7,591.70	TD at 15871.85	