



# **US ROCKIES WATTENBERG PLANNING**

**WELD-NAD83-UTMFT13N  
2N-66W-24 GRACIE 15-24HZ PAD  
GRACIE 24-11HZ**

**PLan A**

**Plan: Permit Rev-2**

## **Standard Planning Report**

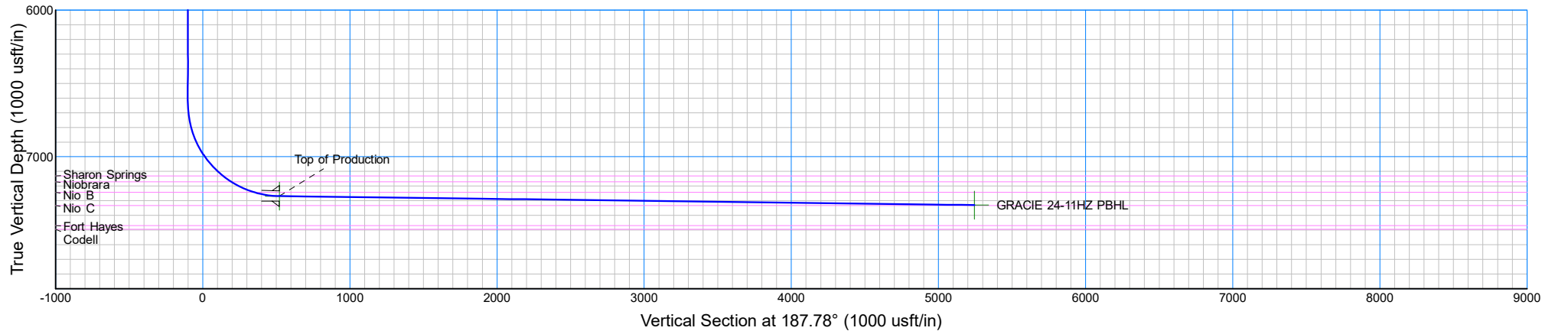
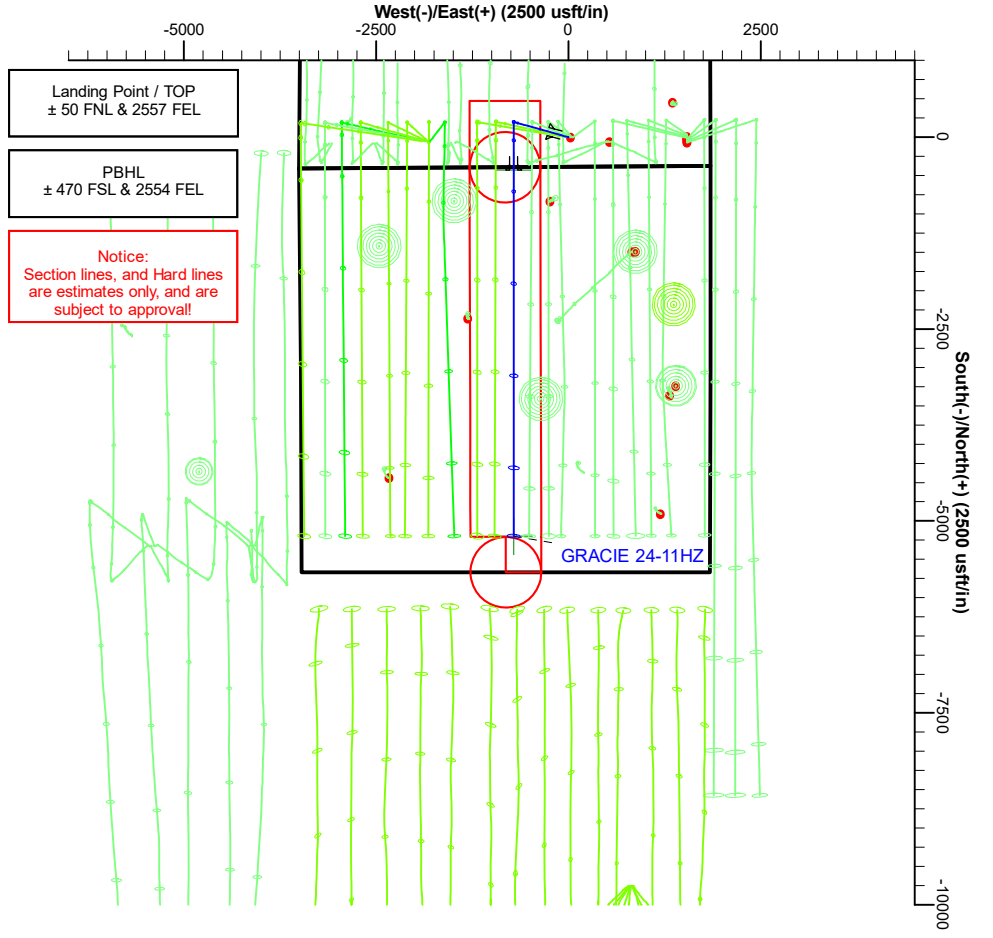
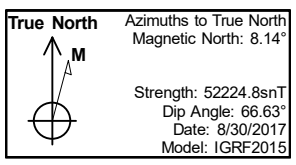
**12 September, 2017**

Well: GRACIE 24-11HZ	Plan: Permit Rev-2	Field: WELD-NAD83-UTMFT13N	Site: 2N-66W-24 GRACIE 15-24HZ PAD
Borehole: PPlan A	Plan Date: 6:51, September 12 2017	Datum: UTM (US Survey Ft)	RKB: 5071ft
Grid Conv: 0.18	VSec: 187.78deg	Zone: Zone 13N (108 W to 102 W)	GL: 5054.00ft
Latitude: 40.117616		Longitude: -104.722461	
Northing / Y: 14569683.74		Easting / X: 1718008.26	
Model: IGRF2015		Date: 30-Aug-17	DEC: 8.14°
DIP: 66.63°		FS: 52224.75931919nT	North Ref: True

Critical Points										
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	Annotation
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	350.00	0.00	0.00	350.00	0.00	0.00	0.00	0.00	0.00	Build 1.5°/100 DLS
3	1550.00	18.00	285.63	1530.36	50.38	-180.03	1.50	285.63	-25.53	Hold Inc
4	2731.30	18.00	285.63	2653.84	148.76	-531.57	0.00	0.00	-75.39	Drop 1.5°/100 DLS
5	3931.30	0.00	0.00	3834.20	199.14	-711.60	1.50	180.00	-100.92	Vertical Point
6	6729.53	0.00	0.00	6632.43	199.14	-711.60	0.00	0.00	-100.92	KOP, Build 10°/100 DLS
7	7721.39	89.27	179.99	7269.00	-429.34	-711.48	0.00	179.99	521.75	Landing Target
8	12489.99	89.27	179.99	7330.00	-5197.55	-710.53	0.00	0.00	5245.89	PBHL/TD

Target Details									
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude		
GRACIE 24-11HZ HEEL	7269.00	-429.36	-711.48	14569252.16	1717298.12	40.116409	-104.724987		
GRACIE 24-11HZ PBHL	7330.00	-5197.55	-710.53	14564484.00	1717313.96	40.103343	-104.725002		

FORMATION TOP DETAILS		
TVDPPath	MDPath	Formation
1484.00	1501.36	Fox Hills
4201.00	4298.10	Parkman
4689.00	4786.10	Sussex
7131.00	7302.31	Sharon Springs
7171.00	7371.50	Niobrara
7243.00	7546.78	Nio B



<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well GRACIE 24-11HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	KB @ 5071.00usft (D Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	KB @ 5071.00usft (D Rig)
<b>Site:</b>	2N-66W-24 GRACIE 15-24HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	GRACIE 24-11HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	PLan A		
<b>Design:</b>	Permit Rev-2		

<b>Project</b>	WELD-NAD83-UTMFT13N		
<b>Map System:</b>	Universal Transverse Mercator (US Survey Feet)	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		
<b>Map Zone:</b>	Zone 13N (108 W to 102 W)		

<b>Site</b>	2N-66W-24 GRACIE 15-24HZ PAD				
<b>Site Position:</b>		<b>Northing:</b>	14,569,684.01 usft	<b>Latitude:</b>	40.117617
<b>From:</b>	Lat/Long	<b>Easting:</b>	1,717,978.34 usft	<b>Longitude:</b>	-104.722568
<b>Position Uncertainty:</b>	0.00 usft	<b>Slot Radius:</b>	13-3/16 "	<b>Grid Convergence:</b>	0.18 °

<b>Well</b>	GRACIE 24-11HZ					
<b>Well Position</b>	<b>+N/-S</b>	-0.36 usft	<b>Northing:</b>	14,569,683.74 usft	<b>Latitude:</b>	40.117616
	<b>+E/-W</b>	29.91 usft	<b>Easting:</b>	1,718,008.26 usft	<b>Longitude:</b>	-104.722461
<b>Position Uncertainty</b>		3.28 usft	<b>Wellhead Elevation:</b>		<b>Ground Level:</b>	5,054.00 usft

<b>Wellbore</b>	PLan A				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2015	8/30/2017	8.14	66.63	52,224.75931920

<b>Design</b>	Permit Rev-2			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PROTOTYPE	<b>Tie On Depth:</b>	0.00
<b>Vertical Section:</b>	<b>Depth From (TVD) (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Direction (°)</b>
	0.00	0.00	0.00	187.78

<b>Plan Survey Tool Program</b>	<b>Date</b>	9/11/2017			
<b>Depth From (usft)</b>	<b>Depth To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Remarks</b>	
1	0.00	12,489.99	Permit Rev-2 (PLan A)	APC_ISCWSA REV 2 MWD+I Fixed:v2:crustal field declinatio	

<b>Plan Sections</b>										
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	
350.00	0.00	0.00	350.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,550.00	18.00	285.63	1,530.36	50.38	-180.03	1.50	1.50	0.00	285.63	
2,731.30	18.00	285.63	2,653.84	148.76	-531.57	0.00	0.00	0.00	0.00	
3,931.30	0.00	0.00	3,834.20	199.14	-711.60	1.50	-1.50	0.00	180.00	
6,729.53	0.00	0.00	6,632.43	199.14	-711.60	0.00	0.00	0.00	0.00	
7,721.39	89.27	179.99	7,269.00	-429.34	-711.48	9.00	9.00	18.15	179.99	
12,489.99	89.27	179.99	7,330.00	-5,197.55	-710.53	0.00	0.00	0.00	0.00	GRACIE 24-11HZ PB

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well GRACIE 24-11HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	KB @ 5071.00usft (D Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	KB @ 5071.00usft (D Rig)
<b>Site:</b>	2N-66W-24 GRACIE 15-24HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	GRACIE 24-11HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	PLan A		
<b>Design:</b>	Permit Rev-2		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N-S (usft)	+E-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
350.00	0.00	0.00	350.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Build 1.5°/100 DLS</b>									
400.00	0.75	285.63	400.00	0.09	-0.32	-0.04	1.50	1.50	0.00
500.00	2.25	285.63	499.96	0.79	-2.84	-0.40	1.50	1.50	0.00
600.00	3.75	285.63	599.82	2.20	-7.88	-1.12	1.50	1.50	0.00
700.00	5.25	285.63	699.51	4.32	-15.43	-2.19	1.50	1.50	0.00
800.00	6.75	285.63	798.96	7.14	-25.50	-3.62	1.50	1.50	0.00
900.00	8.25	285.63	898.10	10.65	-38.07	-5.40	1.50	1.50	0.00
1,000.00	9.75	285.63	996.87	14.87	-53.13	-7.54	1.50	1.50	0.00
1,100.00	11.25	285.63	1,095.19	19.78	-70.68	-10.02	1.50	1.50	0.00
1,200.00	12.75	285.63	1,193.00	25.38	-90.70	-12.86	1.50	1.50	0.00
1,300.00	14.25	285.63	1,290.24	31.67	-113.18	-16.05	1.50	1.50	0.00
1,400.00	15.75	285.63	1,386.83	38.65	-138.10	-19.59	1.50	1.50	0.00
1,500.00	17.25	285.63	1,482.71	46.30	-165.45	-23.47	1.50	1.50	0.00
1,501.36	17.27	285.63	1,484.00	46.41	-165.84	-23.52	1.50	1.50	0.00
<b>Fox Hills</b>									
1,550.00	18.00	285.63	1,530.36	50.38	-180.03	-25.53	1.50	1.50	0.00
<b>Hold Inc</b>									
1,600.00	18.00	285.63	1,577.91	54.55	-194.91	-27.64	0.00	0.00	0.00
1,700.00	18.00	285.63	1,673.02	62.87	-224.67	-31.86	0.00	0.00	0.00
1,800.00	18.00	285.63	1,768.12	71.20	-254.43	-36.08	0.00	0.00	0.00
1,833.52	18.00	285.63	1,800.00	73.99	-264.40	-37.50	0.00	0.00	0.00
<b>Surface Csg</b>									
1,900.00	18.00	285.63	1,863.23	79.53	-284.19	-40.30	0.00	0.00	0.00
2,000.00	18.00	285.63	1,958.33	87.86	-313.95	-44.52	0.00	0.00	0.00
2,100.00	18.00	285.63	2,053.44	96.18	-343.70	-48.75	0.00	0.00	0.00
2,200.00	18.00	285.63	2,148.54	104.51	-373.46	-52.97	0.00	0.00	0.00
2,300.00	18.00	285.63	2,243.65	112.84	-403.22	-57.19	0.00	0.00	0.00
2,400.00	18.00	285.63	2,338.76	121.17	-432.98	-61.41	0.00	0.00	0.00
2,500.00	18.00	285.63	2,433.86	129.50	-462.74	-65.63	0.00	0.00	0.00
2,600.00	18.00	285.63	2,528.97	137.82	-492.50	-69.85	0.00	0.00	0.00
2,700.00	18.00	285.63	2,624.07	146.15	-522.26	-74.07	0.00	0.00	0.00
2,731.30	18.00	285.63	2,653.84	148.76	-531.57	-75.39	0.00	0.00	0.00
<b>Drop 1.5°/100 DLS</b>									
2,800.00	16.97	285.63	2,719.37	154.32	-551.45	-78.21	1.50	-1.50	0.00
2,900.00	15.47	285.63	2,815.38	161.85	-578.34	-82.02	1.50	-1.50	0.00
3,000.00	13.97	285.63	2,912.10	168.69	-602.81	-85.49	1.50	-1.50	0.00
3,100.00	12.47	285.63	3,009.45	174.86	-624.83	-88.62	1.50	-1.50	0.00
3,200.00	10.97	285.63	3,107.36	180.33	-644.39	-91.39	1.50	-1.50	0.00
3,300.00	9.47	285.63	3,205.77	185.11	-661.48	-93.81	1.50	-1.50	0.00
3,400.00	7.97	285.63	3,304.61	189.20	-676.08	-95.88	1.50	-1.50	0.00
3,500.00	6.47	285.63	3,403.81	192.58	-688.18	-97.60	1.50	-1.50	0.00
3,600.00	4.97	285.63	3,503.31	195.27	-697.78	-98.96	1.50	-1.50	0.00
3,700.00	3.47	285.63	3,603.04	197.25	-704.86	-99.97	1.50	-1.50	0.00
3,800.00	1.97	285.63	3,702.92	198.53	-709.43	-100.61	1.50	-1.50	0.00
3,900.00	0.47	285.63	3,802.90	199.11	-711.48	-100.90	1.50	-1.50	0.00
3,931.30	0.00	0.00	3,834.20	199.14	-711.60	-100.92	1.50	-1.50	237.59
<b>Vertical Point</b>									
4,000.00	0.00	0.00	3,902.90	199.14	-711.60	-100.92	0.00	0.00	0.00

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well GRACIE 24-11HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	KB @ 5071.00usft (D Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	KB @ 5071.00usft (D Rig)
<b>Site:</b>	2N-66W-24 GRACIE 15-24HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	GRACIE 24-11HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	PLan A		
<b>Design:</b>	Permit Rev-2		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
4,100.00	0.00	0.00	4,002.90	199.14	-711.60	-100.92	0.00	0.00	0.00
4,200.00	0.00	0.00	4,102.90	199.14	-711.60	-100.92	0.00	0.00	0.00
4,298.10	0.00	0.00	4,201.00	199.14	-711.60	-100.92	0.00	0.00	0.00
<b>Parkman</b>									
4,300.00	0.00	0.00	4,202.90	199.14	-711.60	-100.92	0.00	0.00	0.00
4,400.00	0.00	0.00	4,302.90	199.14	-711.60	-100.92	0.00	0.00	0.00
4,500.00	0.00	0.00	4,402.90	199.14	-711.60	-100.92	0.00	0.00	0.00
4,600.00	0.00	0.00	4,502.90	199.14	-711.60	-100.92	0.00	0.00	0.00
4,700.00	0.00	0.00	4,602.90	199.14	-711.60	-100.92	0.00	0.00	0.00
4,786.10	0.00	0.00	4,689.00	199.14	-711.60	-100.92	0.00	0.00	0.00
<b>Sussex</b>									
4,800.00	0.00	0.00	4,702.90	199.14	-711.60	-100.92	0.00	0.00	0.00
4,900.00	0.00	0.00	4,802.90	199.14	-711.60	-100.92	0.00	0.00	0.00
5,000.00	0.00	0.00	4,902.90	199.14	-711.60	-100.92	0.00	0.00	0.00
5,100.00	0.00	0.00	5,002.90	199.14	-711.60	-100.92	0.00	0.00	0.00
5,200.00	0.00	0.00	5,102.90	199.14	-711.60	-100.92	0.00	0.00	0.00
5,300.00	0.00	0.00	5,202.90	199.14	-711.60	-100.92	0.00	0.00	0.00
5,400.00	0.00	0.00	5,302.90	199.14	-711.60	-100.92	0.00	0.00	0.00
5,500.00	0.00	0.00	5,402.90	199.14	-711.60	-100.92	0.00	0.00	0.00
5,600.00	0.00	0.00	5,502.90	199.14	-711.60	-100.92	0.00	0.00	0.00
5,700.00	0.00	0.00	5,602.90	199.14	-711.60	-100.92	0.00	0.00	0.00
5,800.00	0.00	0.00	5,702.90	199.14	-711.60	-100.92	0.00	0.00	0.00
5,900.00	0.00	0.00	5,802.90	199.14	-711.60	-100.92	0.00	0.00	0.00
6,000.00	0.00	0.00	5,902.90	199.14	-711.60	-100.92	0.00	0.00	0.00
6,100.00	0.00	0.00	6,002.90	199.14	-711.60	-100.92	0.00	0.00	0.00
6,200.00	0.00	0.00	6,102.90	199.14	-711.60	-100.92	0.00	0.00	0.00
6,300.00	0.00	0.00	6,202.90	199.14	-711.60	-100.92	0.00	0.00	0.00
6,400.00	0.00	0.00	6,302.90	199.14	-711.60	-100.92	0.00	0.00	0.00
6,500.00	0.00	0.00	6,402.90	199.14	-711.60	-100.92	0.00	0.00	0.00
6,600.00	0.00	0.00	6,502.90	199.14	-711.60	-100.92	0.00	0.00	0.00
6,700.00	0.00	0.00	6,602.90	199.14	-711.60	-100.92	0.00	0.00	0.00
6,729.53	0.00	0.00	6,632.43	199.14	-711.60	-100.92	0.00	0.00	0.00
<b>KOP, Build 10°/100 DLS</b>									
6,800.00	6.34	179.99	6,702.76	195.24	-711.60	-97.06	9.00	9.00	0.00
6,900.00	15.34	179.99	6,800.87	176.45	-711.60	-78.44	9.00	9.00	0.00
7,000.00	24.34	179.99	6,894.84	142.54	-711.59	-44.85	9.00	9.00	0.00
7,100.00	33.34	179.99	6,982.34	94.35	-711.58	2.90	9.00	9.00	0.00
7,200.00	42.34	179.99	7,061.23	33.07	-711.57	63.62	9.00	9.00	0.00
7,300.00	51.34	179.99	7,129.56	-39.80	-711.56	135.81	9.00	9.00	0.00
7,302.31	51.55	179.99	7,131.00	-41.61	-711.56	137.60	9.00	9.00	0.00
<b>Sharon Springs</b>									
7,371.50	57.78	179.99	7,171.00	-98.03	-711.55	193.50	9.00	9.00	0.00
<b>Niobrara</b>									
7,400.00	60.34	179.99	7,185.65	-122.47	-711.54	217.71	9.00	9.00	0.00
7,500.00	69.34	179.99	7,228.12	-212.89	-711.52	307.30	9.00	9.00	0.00
7,546.78	73.55	179.99	7,243.00	-257.23	-711.51	351.23	9.00	9.00	0.00
<b>Nio B</b>									
7,600.00	78.34	179.99	7,255.92	-308.84	-711.50	402.36	9.00	9.00	0.00
7,700.00	87.34	179.99	7,268.37	-407.96	-711.48	500.57	9.00	9.00	0.00
7,721.39	89.27	179.99	7,269.00	-429.34	-711.48	521.75	9.00	9.00	0.00
<b>Landing Target</b>									
7,721.41	89.27	179.99	7,269.00	-429.36	-711.48	521.77	0.00	0.00	0.00
<b>Top of Production</b>									

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well GRACIE 24-11HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	KB @ 5071.00usft (D Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	KB @ 5071.00usft (D Rig)
<b>Site:</b>	2N-66W-24 GRACIE 15-24HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	GRACIE 24-11HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	PLan A		
<b>Design:</b>	Permit Rev-2		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
7,800.00	89.27	179.99	7,270.00	-507.94	-711.46	599.63	0.00	0.00	0.00
7,900.00	89.27	179.99	7,271.28	-607.93	-711.44	698.69	0.00	0.00	0.00
8,000.00	89.27	179.99	7,272.56	-707.93	-711.42	797.76	0.00	0.00	0.00
8,100.00	89.27	179.99	7,273.84	-807.92	-711.40	896.83	0.00	0.00	0.00
8,200.00	89.27	179.99	7,275.12	-907.91	-711.38	995.90	0.00	0.00	0.00
8,300.00	89.27	179.99	7,276.40	-1,007.90	-711.36	1,094.96	0.00	0.00	0.00
8,400.00	89.27	179.99	7,277.68	-1,107.89	-711.34	1,194.03	0.00	0.00	0.00
8,500.00	89.27	179.99	7,278.96	-1,207.89	-711.32	1,293.10	0.00	0.00	0.00
8,600.00	89.27	179.99	7,280.24	-1,307.88	-711.30	1,392.17	0.00	0.00	0.00
8,700.00	89.27	179.99	7,281.52	-1,407.87	-711.28	1,491.23	0.00	0.00	0.00
8,800.00	89.27	179.99	7,282.80	-1,507.86	-711.26	1,590.30	0.00	0.00	0.00
8,900.00	89.27	179.99	7,284.08	-1,607.85	-711.24	1,689.37	0.00	0.00	0.00
9,000.00	89.27	179.99	7,285.35	-1,707.84	-711.22	1,788.44	0.00	0.00	0.00
9,100.00	89.27	179.99	7,286.63	-1,807.84	-711.20	1,887.51	0.00	0.00	0.00
9,200.00	89.27	179.99	7,287.91	-1,907.83	-711.18	1,986.57	0.00	0.00	0.00
9,300.00	89.27	179.99	7,289.19	-2,007.82	-711.16	2,085.64	0.00	0.00	0.00
9,400.00	89.27	179.99	7,290.47	-2,107.81	-711.14	2,184.71	0.00	0.00	0.00
9,500.00	89.27	179.99	7,291.75	-2,207.80	-711.12	2,283.78	0.00	0.00	0.00
9,600.00	89.27	179.99	7,293.03	-2,307.80	-711.10	2,382.84	0.00	0.00	0.00
9,700.00	89.27	179.99	7,294.31	-2,407.79	-711.08	2,481.91	0.00	0.00	0.00
9,800.00	89.27	179.99	7,295.59	-2,507.78	-711.06	2,580.98	0.00	0.00	0.00
9,900.00	89.27	179.99	7,296.87	-2,607.77	-711.04	2,680.05	0.00	0.00	0.00
10,000.00	89.27	179.99	7,298.15	-2,707.76	-711.03	2,779.11	0.00	0.00	0.00
10,100.00	89.27	179.99	7,299.43	-2,807.75	-711.01	2,878.18	0.00	0.00	0.00
10,200.00	89.27	179.99	7,300.71	-2,907.75	-710.99	2,977.25	0.00	0.00	0.00
10,300.00	89.27	179.99	7,301.98	-3,007.74	-710.97	3,076.32	0.00	0.00	0.00
10,400.00	89.27	179.99	7,303.26	-3,107.73	-710.95	3,175.39	0.00	0.00	0.00
10,500.00	89.27	179.99	7,304.54	-3,207.72	-710.93	3,274.45	0.00	0.00	0.00
10,600.00	89.27	179.99	7,305.82	-3,307.71	-710.91	3,373.52	0.00	0.00	0.00
10,700.00	89.27	179.99	7,307.10	-3,407.71	-710.89	3,472.59	0.00	0.00	0.00
10,800.00	89.27	179.99	7,308.38	-3,507.70	-710.87	3,571.66	0.00	0.00	0.00
10,900.00	89.27	179.99	7,309.66	-3,607.69	-710.85	3,670.72	0.00	0.00	0.00
11,000.00	89.27	179.99	7,310.94	-3,707.68	-710.83	3,769.79	0.00	0.00	0.00
11,100.00	89.27	179.99	7,312.22	-3,807.67	-710.81	3,868.86	0.00	0.00	0.00
11,200.00	89.27	179.99	7,313.50	-3,907.66	-710.79	3,967.93	0.00	0.00	0.00
11,300.00	89.27	179.99	7,314.78	-4,007.66	-710.77	4,066.99	0.00	0.00	0.00
11,400.00	89.27	179.99	7,316.06	-4,107.65	-710.75	4,166.06	0.00	0.00	0.00
11,500.00	89.27	179.99	7,317.34	-4,207.64	-710.73	4,265.13	0.00	0.00	0.00
11,600.00	89.27	179.99	7,318.61	-4,307.63	-710.71	4,364.20	0.00	0.00	0.00
11,700.00	89.27	179.99	7,319.89	-4,407.62	-710.69	4,463.27	0.00	0.00	0.00
11,800.00	89.27	179.99	7,321.17	-4,507.62	-710.67	4,562.33	0.00	0.00	0.00
11,900.00	89.27	179.99	7,322.45	-4,607.61	-710.65	4,661.40	0.00	0.00	0.00
12,000.00	89.27	179.99	7,323.73	-4,707.60	-710.63	4,760.47	0.00	0.00	0.00
12,100.00	89.27	179.99	7,325.01	-4,807.59	-710.61	4,859.54	0.00	0.00	0.00
12,200.00	89.27	179.99	7,326.29	-4,907.58	-710.59	4,958.60	0.00	0.00	0.00
12,300.00	89.27	179.99	7,327.57	-5,007.57	-710.57	5,057.67	0.00	0.00	0.00
12,400.00	89.27	179.99	7,328.85	-5,107.57	-710.55	5,156.74	0.00	0.00	0.00
12,489.99	89.27	179.99	7,330.00	-5,197.55	-710.53	5,245.89	0.00	0.00	0.00
<b>PBHL/TD</b>									

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well GRACIE 24-11HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	KB @ 5071.00usft (D Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	KB @ 5071.00usft (D Rig)
<b>Site:</b>	2N-66W-24 GRACIE 15-24HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	GRACIE 24-11HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	PLan A		
<b>Design:</b>	Permit Rev-2		

Design Targets									
Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- hit/miss target	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)		
- Shape									
GRACIE 24-11HZ HEEL - plan hits target center - Point	0.00	0.00	7,269.00	-429.36	-711.48	14,569,252.16	1,717,298.12	40.116437	-104.725006
GRACIE 24-11HZ PBHL - plan hits target center - Point	0.00	0.00	7,330.00	-5,197.55	-710.53	14,564,483.99	1,717,313.96	40.103343	-104.725002

Casing Points					
Measured Depth	Vertical Depth	Name	Casing Diameter	Hole Diameter	
(usft)	(usft)		(")	(")	
1,833.52	1,800.00	Surface Csg	9-5/8	13-1/2	
7,721.41	7,269.00	Top of Production	5-1/2	7-7/8	

Formations						
Measured Depth	Vertical Depth	Name	Lithology	Dip	Dip Direction	
(usft)	(usft)			(°)	(°)	
1,501.36	1,484.00	Fox Hills				
4,298.10	4,201.00	Parkman				
4,786.10	4,689.00	Sussex				
7,302.31	7,131.00	Sharon Springs				
7,371.50	7,171.00	Niobrara				
7,546.78	7,243.00	Nio B				

Plan Annotations					
Measured Depth	Vertical Depth	Local Coordinates		Comment	
(usft)	(usft)	+N/-S	+E/-W		
		(usft)	(usft)		
350.00	350.00	0.00	0.00	Build 1.5°/100 DLS	
1,550.00	1,530.36	50.38	-180.03	Hold Inc	
2,731.30	2,653.84	148.76	-531.57	Drop 1.5°/100 DLS	
3,931.30	3,834.20	199.14	-711.60	Vertical Point	
6,729.53	6,632.43	199.14	-711.60	KOP, Build 10°/100 DLS	
7,721.39	7,269.00	-429.34	-711.48	Landing Target	
12,489.99	7,330.00	-5,197.55	-710.53	PBHL/TD	