



US ROCKIES WATTENBERG PLANNING

**WELD-NAD83-UTMFT13N
2N-66W-24 GRACIE 35-24HZ PAD
GRACIE 24-2HZ**

Plan A

Plan: Permit-Rev2

Standard Planning Report

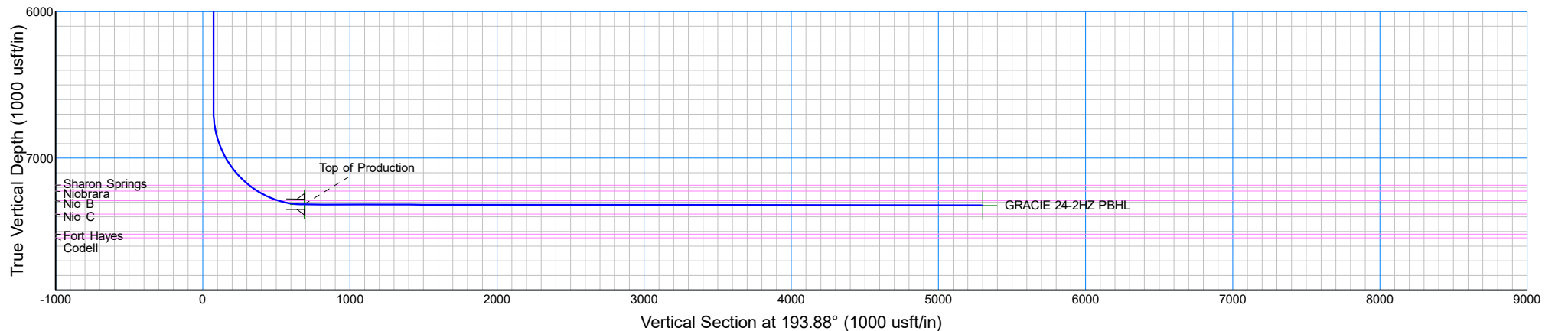
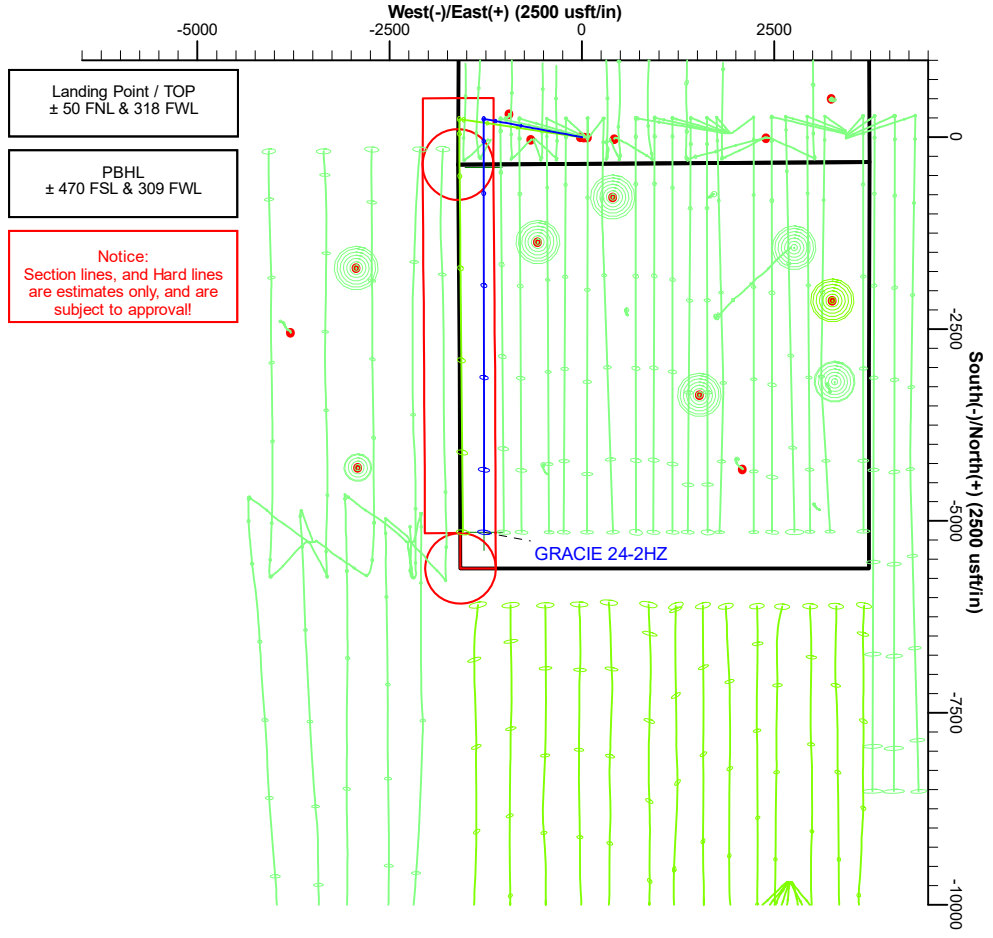
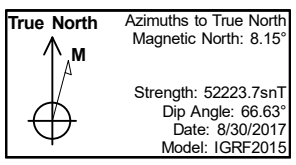
11 September, 2017

Well: GRACIE 24-2HZ	Plan: Permit-Rev2	Field: WELD-NAD83-UTMFT13N	Site: 2N-66W-24 GRACIE 35-24HZ PAD	Rig: D Rig
Borehole: Plan A	Plan Date: 15:24, September 11 2017	Datum: UTM (US Survey Ft)	RKB: 5099ft	Latitude: 40.117476
Grid Conv: 0.17	VSec: 193.88deg	Zone: Zone 13N (108 W to 102 W)	GL: 5082.00ft	Longitude: -104.729216
				Model: IGRF2015 Date: 30-Aug-17 DEC: 8.15°
				DIP: 66.63° FS: 52223.74859250nT North Ref: True

Critical Points										
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Annotation
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	Build 1.5°/100 DLS
3	1600.00	18.00	280.63	1580.36	34.47	-183.74	1.50	280.63	10.61	Hold Inc
4	4595.03	18.00	280.63	4428.80	205.14	-1093.39	0.00	0.00	63.13	Drop 1.5°/100 DLS
5	5795.03	0.00	0.00	5609.16	239.62	-1277.13	1.50	180.00	73.74	Vertical Point
6	6865.25	0.00	0.00	6679.38	239.62	-1277.13	0.00	0.00	73.74	KOP, Build 10°/100 DLS
7	7864.45	89.93	179.94	7316.00	-396.20	-1276.51	9.00	179.94	690.84	Landing Target
8	12615.34	89.93	179.94	7322.00	-5147.09	-1271.82	0.00	0.00	5301.89	PBHL/TD

Target Details							
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
GRACIE 24-2HZ HEEL	7316.00	-396.21	-1276.51	14569226.84	1714844.62	40.116369	-104.733843
GRACIE 24-2HZ PBHL	7322.00	-5147.09	-1271.82	14564476.00	1714863.77	40.103341	-104.733764

FORMATION TOP DETAILS		
TVDPPath	MDPath	Formation
1512.00	1528.34	Fox Hills
4229.00	4384.95	Parkman
4717.00	4894.55	Sussex
7185.00	7449.50	Sharon Springs
7225.00	7520.67	Niobrara
7291.00	7686.25	Nio B



Database:	PLANNING	Local Co-ordinate Reference:	Well GRACIE 24-2HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	KB @ 5099.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	KB @ 5099.00usft (D Rig)
Site:	2N-66W-24 GRACIE 35-24HZ PAD	North Reference:	True
Well:	GRACIE 24-2HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit-Rev2		

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-66W-24 GRACIE 35-24HZ PAD				
Site Position:		Northing:	14,569,626.89 usft	Latitude:	40.117476
From:	Lat/Long	Easting:	1,716,104.82 usft	Longitude:	-104.729270
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.17 °

Well	GRACIE 24-2HZ					
Well Position	+N/-S	0.00 usft	Northing:	14,569,626.93 usft	Latitude:	40.117476
	+E/-W	15.10 usft	Easting:	1,716,119.92 usft	Longitude:	-104.729216
Position Uncertainty		3.28 usft	Wellhead Elevation:		Ground Level:	5,082.00 usft

Wellbore	Plan A				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	8/30/2017	8.15	66.63	52,223.74859250

Design	Permit-Rev2			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	193.88

Plan Survey Tool Program	Date	9/11/2017		
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	12,615.35	Permit-Rev2 (Plan A)	APC_ISCWSA REV 2 MWD+I Fixed:v2:crustal field declinatio

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	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	18.00	280.63	1,580.36	34.47	-183.74	1.50	1.50	0.00	280.63	0.00
4,595.03	18.00	280.63	4,428.80	205.14	-1,093.39	0.00	0.00	0.00	0.00	0.00
5,795.03	0.00	0.00	5,609.16	239.62	-1,277.13	1.50	-1.50	0.00	180.00	0.00
6,865.25	0.00	0.00	6,679.38	239.62	-1,277.13	0.00	0.00	0.00	0.00	0.00
7,864.45	89.93	179.94	7,316.00	-396.20	-1,276.51	9.00	9.00	18.01	179.94	0.00
12,615.35	89.93	179.94	7,322.00	-5,147.09	-1,271.82	0.00	0.00	0.00	0.00	0.00

Database:	PLANNING	Local Co-ordinate Reference:	Well GRACIE 24-2HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	KB @ 5099.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	KB @ 5099.00usft (D Rig)
Site:	2N-66W-24 GRACIE 35-24HZ PAD	North Reference:	True
Well:	GRACIE 24-2HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit-Rev2		

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
Build 1.5°/100 DLS										
500.00	1.50	280.63	499.99	0.24	-1.29	0.07	1.50	1.50	0.00	0.00
600.00	3.00	280.63	599.91	0.97	-5.15	0.30	1.50	1.50	0.00	0.00
700.00	4.50	280.63	699.69	2.17	-11.57	0.67	1.50	1.50	0.00	0.00
800.00	6.00	280.63	799.27	3.86	-20.57	1.19	1.50	1.50	0.00	0.00
900.00	7.50	280.63	898.57	6.03	-32.12	1.85	1.50	1.50	0.00	0.00
1,000.00	9.00	280.63	997.54	8.67	-46.22	2.67	1.50	1.50	0.00	0.00
1,100.00	10.50	280.63	1,096.09	11.79	-62.86	3.63	1.50	1.50	0.00	0.00
1,200.00	12.00	280.63	1,194.16	15.39	-82.04	4.74	1.50	1.50	0.00	0.00
1,300.00	13.50	280.63	1,291.70	19.46	-103.73	5.99	1.50	1.50	0.00	0.00
1,400.00	15.00	280.63	1,388.62	24.00	-127.92	7.39	1.50	1.50	0.00	0.00
1,500.00	16.50	280.63	1,484.86	29.01	-154.60	8.93	1.50	1.50	0.00	0.00
1,528.34	16.93	280.63	1,512.00	30.51	-162.61	9.39	1.50	1.50	0.00	0.00
Fox Hills										
1,600.00	18.00	280.63	1,580.36	34.47	-183.74	10.61	1.50	1.50	0.00	0.00
Hold Inc										
1,700.00	18.00	280.63	1,675.46	40.17	-214.12	12.36	0.00	0.00	0.00	0.00
1,800.00	18.00	280.63	1,770.57	45.87	-244.49	14.12	0.00	0.00	0.00	0.00
1,830.95	18.00	280.63	1,800.00	47.63	-253.89	14.66	0.00	0.00	0.00	0.00
Surface Csg										
1,900.00	18.00	280.63	1,865.67	51.57	-274.86	15.87	0.00	0.00	0.00	0.00
2,000.00	18.00	280.63	1,960.78	57.27	-305.23	17.62	0.00	0.00	0.00	0.00
2,100.00	18.00	280.63	2,055.89	62.97	-335.60	19.38	0.00	0.00	0.00	0.00
2,200.00	18.00	280.63	2,150.99	68.66	-365.97	21.13	0.00	0.00	0.00	0.00
2,300.00	18.00	280.63	2,246.10	74.36	-396.35	22.88	0.00	0.00	0.00	0.00
2,400.00	18.00	280.63	2,341.20	80.06	-426.72	24.64	0.00	0.00	0.00	0.00
2,500.00	18.00	280.63	2,436.31	85.76	-457.09	26.39	0.00	0.00	0.00	0.00
2,600.00	18.00	280.63	2,531.41	91.46	-487.46	28.15	0.00	0.00	0.00	0.00
2,700.00	18.00	280.63	2,626.52	97.16	-517.83	29.90	0.00	0.00	0.00	0.00
2,800.00	18.00	280.63	2,721.63	102.85	-548.21	31.65	0.00	0.00	0.00	0.00
2,900.00	18.00	280.63	2,816.73	108.55	-578.58	33.41	0.00	0.00	0.00	0.00
3,000.00	18.00	280.63	2,911.84	114.25	-608.95	35.16	0.00	0.00	0.00	0.00
3,100.00	18.00	280.63	3,006.94	119.95	-639.32	36.91	0.00	0.00	0.00	0.00
3,200.00	18.00	280.63	3,102.05	125.65	-669.69	38.67	0.00	0.00	0.00	0.00
3,300.00	18.00	280.63	3,197.15	131.35	-700.06	40.42	0.00	0.00	0.00	0.00
3,400.00	18.00	280.63	3,292.26	137.04	-730.44	42.17	0.00	0.00	0.00	0.00
3,500.00	18.00	280.63	3,387.37	142.74	-760.81	43.93	0.00	0.00	0.00	0.00
3,600.00	18.00	280.63	3,482.47	148.44	-791.18	45.68	0.00	0.00	0.00	0.00
3,700.00	18.00	280.63	3,577.58	154.14	-821.55	47.44	0.00	0.00	0.00	0.00
3,800.00	18.00	280.63	3,672.68	159.84	-851.92	49.19	0.00	0.00	0.00	0.00
3,900.00	18.00	280.63	3,767.79	165.54	-882.29	50.94	0.00	0.00	0.00	0.00
4,000.00	18.00	280.63	3,862.89	171.24	-912.67	52.70	0.00	0.00	0.00	0.00
4,100.00	18.00	280.63	3,958.00	176.93	-943.04	54.45	0.00	0.00	0.00	0.00
4,200.00	18.00	280.63	4,053.11	182.63	-973.41	56.20	0.00	0.00	0.00	0.00
4,300.00	18.00	280.63	4,148.21	188.33	-1,003.78	57.96	0.00	0.00	0.00	0.00
4,384.95	18.00	280.63	4,229.00	193.17	-1,029.58	59.45	0.00	0.00	0.00	0.00
Parkman										
4,400.00	18.00	280.63	4,243.32	194.03	-1,034.15	59.71	0.00	0.00	0.00	0.00

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Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	KB @ 5099.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	KB @ 5099.00usft (D Rig)
Site:	2N-66W-24 GRACIE 35-24HZ PAD	North Reference:	True
Well:	GRACIE 24-2HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit-Rev2		

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)	
4,500.00	18.00	280.63	4,338.42	199.73	-1,064.53	61.46	0.00	0.00	0.00	
4,595.03	18.00	280.63	4,428.80	205.14	-1,093.39	63.13	0.00	0.00	0.00	
Drop 1.5°/100 DLS										
4,600.00	17.93	280.63	4,433.53	205.42	-1,094.89	63.22	1.50	-1.50	0.00	
4,700.00	16.43	280.63	4,529.07	210.87	-1,123.92	64.89	1.50	-1.50	0.00	
4,800.00	14.93	280.63	4,625.34	215.85	-1,150.47	66.43	1.50	-1.50	0.00	
4,894.55	13.51	280.63	4,717.00	220.13	-1,173.29	67.74	1.50	-1.50	0.00	
Sussex										
4,900.00	13.43	280.63	4,722.30	220.37	-1,174.54	67.82	1.50	-1.50	0.00	
5,000.00	11.93	280.63	4,819.86	224.41	-1,196.11	69.06	1.50	-1.50	0.00	
5,100.00	10.43	280.63	4,917.96	227.99	-1,215.15	70.16	1.50	-1.50	0.00	
5,200.00	8.93	280.63	5,016.53	231.09	-1,231.67	71.11	1.50	-1.50	0.00	
5,300.00	7.43	280.63	5,115.51	233.71	-1,245.65	71.92	1.50	-1.50	0.00	
5,400.00	5.93	280.63	5,214.83	235.85	-1,257.07	72.58	1.50	-1.50	0.00	
5,500.00	4.43	280.63	5,314.42	237.52	-1,265.94	73.09	1.50	-1.50	0.00	
5,600.00	2.93	280.63	5,414.21	238.70	-1,272.24	73.46	1.50	-1.50	0.00	
5,700.00	1.43	280.63	5,514.14	239.40	-1,275.97	73.67	1.50	-1.50	0.00	
5,795.03	0.00	0.00	5,609.16	239.62	-1,277.13	73.74	1.50	-1.50	83.52	
Vertical Point										
5,800.00	0.00	0.00	5,614.13	239.62	-1,277.13	73.74	0.00	0.00	0.00	
5,900.00	0.00	0.00	5,714.13	239.62	-1,277.13	73.74	0.00	0.00	0.00	
6,000.00	0.00	0.00	5,814.13	239.62	-1,277.13	73.74	0.00	0.00	0.00	
6,100.00	0.00	0.00	5,914.13	239.62	-1,277.13	73.74	0.00	0.00	0.00	
6,200.00	0.00	0.00	6,014.13	239.62	-1,277.13	73.74	0.00	0.00	0.00	
6,300.00	0.00	0.00	6,114.13	239.62	-1,277.13	73.74	0.00	0.00	0.00	
6,400.00	0.00	0.00	6,214.13	239.62	-1,277.13	73.74	0.00	0.00	0.00	
6,500.00	0.00	0.00	6,314.13	239.62	-1,277.13	73.74	0.00	0.00	0.00	
6,600.00	0.00	0.00	6,414.13	239.62	-1,277.13	73.74	0.00	0.00	0.00	
6,700.00	0.00	0.00	6,514.13	239.62	-1,277.13	73.74	0.00	0.00	0.00	
6,800.00	0.00	0.00	6,614.13	239.62	-1,277.13	73.74	0.00	0.00	0.00	
6,865.25	0.00	0.00	6,679.38	239.62	-1,277.13	73.74	0.00	0.00	0.00	
KOP, Build 10°/100 DLS										
6,900.00	3.13	179.94	6,714.11	238.67	-1,277.13	74.66	9.00	9.00	0.00	
7,000.00	12.13	179.94	6,813.12	225.41	-1,277.12	87.53	9.00	9.00	0.00	
7,100.00	21.13	179.94	6,908.84	196.82	-1,277.09	115.27	9.00	9.00	0.00	
7,200.00	30.13	179.94	6,998.91	153.62	-1,277.05	157.21	9.00	9.00	0.00	
7,300.00	39.13	179.94	7,081.12	96.85	-1,276.99	212.30	9.00	9.00	0.00	
7,400.00	48.13	179.94	7,153.43	27.93	-1,276.92	279.20	9.00	9.00	0.00	
7,449.50	52.58	179.94	7,185.00	-10.18	-1,276.89	316.18	9.00	9.00	0.00	
Sharon Springs										
7,500.00	57.13	179.94	7,214.06	-51.46	-1,276.85	356.25	9.00	9.00	0.00	
7,520.67	58.99	179.94	7,225.00	-69.00	-1,276.83	373.28	9.00	9.00	0.00	
Niobrara										
7,600.00	66.13	179.94	7,261.54	-139.36	-1,276.76	441.56	9.00	9.00	0.00	
7,686.25	73.89	179.94	7,291.00	-220.35	-1,276.68	520.17	9.00	9.00	0.00	
Nio B										
7,700.00	75.13	179.94	7,294.67	-233.60	-1,276.67	533.03	9.00	9.00	0.00	
7,800.00	84.13	179.94	7,312.66	-331.87	-1,276.57	628.40	9.00	9.00	0.00	
7,864.45	89.93	179.94	7,316.00	-396.20	-1,276.51	690.84	9.00	9.00	0.00	
Top of Production										
7,864.45	89.93	179.94	7,316.00	-396.21	-1,276.51	690.85	0.02	0.00	0.00	
Landing Target										
7,900.00	89.93	179.94	7,316.04	-431.75	-1,276.47	725.35	0.00	0.00	0.00	

Database:	PLANNING	Local Co-ordinate Reference:	Well GRACIE 24-2HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	KB @ 5099.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	KB @ 5099.00usft (D Rig)
Site:	2N-66W-24 GRACIE 35-24HZ PAD	North Reference:	True
Well:	GRACIE 24-2HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit-Rev2		

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)	
8,000.00	89.93	179.94	7,316.17	-531.75	-1,276.37	822.40	0.00	0.00	0.00	
8,100.00	89.93	179.94	7,316.30	-631.75	-1,276.27	919.46	0.00	0.00	0.00	
8,200.00	89.93	179.94	7,316.42	-731.75	-1,276.18	1,016.52	0.00	0.00	0.00	
8,300.00	89.93	179.94	7,316.55	-831.75	-1,276.08	1,113.57	0.00	0.00	0.00	
8,400.00	89.93	179.94	7,316.68	-931.75	-1,275.98	1,210.63	0.00	0.00	0.00	
8,500.00	89.93	179.94	7,316.80	-1,031.75	-1,275.88	1,307.69	0.00	0.00	0.00	
8,600.00	89.93	179.94	7,316.93	-1,131.75	-1,275.78	1,404.74	0.00	0.00	0.00	
8,700.00	89.93	179.94	7,317.05	-1,231.75	-1,275.68	1,501.80	0.00	0.00	0.00	
8,800.00	89.93	179.94	7,317.18	-1,331.75	-1,275.58	1,598.85	0.00	0.00	0.00	
8,900.00	89.93	179.94	7,317.31	-1,431.75	-1,275.49	1,695.91	0.00	0.00	0.00	
9,000.00	89.93	179.94	7,317.43	-1,531.75	-1,275.39	1,792.97	0.00	0.00	0.00	
9,100.00	89.93	179.94	7,317.56	-1,631.75	-1,275.29	1,890.02	0.00	0.00	0.00	
9,200.00	89.93	179.94	7,317.69	-1,731.75	-1,275.19	1,987.08	0.00	0.00	0.00	
9,300.00	89.93	179.94	7,317.81	-1,831.75	-1,275.09	2,084.14	0.00	0.00	0.00	
9,400.00	89.93	179.94	7,317.94	-1,931.75	-1,274.99	2,181.19	0.00	0.00	0.00	
9,500.00	89.93	179.94	7,318.07	-2,031.75	-1,274.89	2,278.25	0.00	0.00	0.00	
9,600.00	89.93	179.94	7,318.19	-2,131.75	-1,274.80	2,375.31	0.00	0.00	0.00	
9,700.00	89.93	179.94	7,318.32	-2,231.75	-1,274.70	2,472.36	0.00	0.00	0.00	
9,800.00	89.93	179.94	7,318.44	-2,331.75	-1,274.60	2,569.42	0.00	0.00	0.00	
9,900.00	89.93	179.94	7,318.57	-2,431.75	-1,274.50	2,666.48	0.00	0.00	0.00	
10,000.00	89.93	179.94	7,318.70	-2,531.75	-1,274.40	2,763.53	0.00	0.00	0.00	
10,100.00	89.93	179.94	7,318.82	-2,631.75	-1,274.30	2,860.59	0.00	0.00	0.00	
10,200.00	89.93	179.94	7,318.95	-2,731.75	-1,274.20	2,957.65	0.00	0.00	0.00	
10,300.00	89.93	179.94	7,319.08	-2,831.75	-1,274.11	3,054.70	0.00	0.00	0.00	
10,400.00	89.93	179.94	7,319.20	-2,931.75	-1,274.01	3,151.76	0.00	0.00	0.00	
10,500.00	89.93	179.94	7,319.33	-3,031.75	-1,273.91	3,248.81	0.00	0.00	0.00	
10,600.00	89.93	179.94	7,319.45	-3,131.75	-1,273.81	3,345.87	0.00	0.00	0.00	
10,700.00	89.93	179.94	7,319.58	-3,231.75	-1,273.71	3,442.93	0.00	0.00	0.00	
10,800.00	89.93	179.94	7,319.71	-3,331.75	-1,273.61	3,539.98	0.00	0.00	0.00	
10,900.00	89.93	179.94	7,319.83	-3,431.75	-1,273.51	3,637.04	0.00	0.00	0.00	
11,000.00	89.93	179.94	7,319.96	-3,531.75	-1,273.42	3,734.10	0.00	0.00	0.00	
11,100.00	89.93	179.94	7,320.09	-3,631.75	-1,273.32	3,831.15	0.00	0.00	0.00	
11,200.00	89.93	179.94	7,320.21	-3,731.75	-1,273.22	3,928.21	0.00	0.00	0.00	
11,300.00	89.93	179.94	7,320.34	-3,831.75	-1,273.12	4,025.27	0.00	0.00	0.00	
11,400.00	89.93	179.94	7,320.47	-3,931.75	-1,273.02	4,122.32	0.00	0.00	0.00	
11,500.00	89.93	179.94	7,320.59	-4,031.75	-1,272.92	4,219.38	0.00	0.00	0.00	
11,600.00	89.93	179.94	7,320.72	-4,131.75	-1,272.83	4,316.44	0.00	0.00	0.00	
11,700.00	89.93	179.94	7,320.84	-4,231.75	-1,272.73	4,413.49	0.00	0.00	0.00	
11,800.00	89.93	179.94	7,320.97	-4,331.75	-1,272.63	4,510.55	0.00	0.00	0.00	
11,900.00	89.93	179.94	7,321.10	-4,431.75	-1,272.53	4,607.61	0.00	0.00	0.00	
12,000.00	89.93	179.94	7,321.22	-4,531.75	-1,272.43	4,704.66	0.00	0.00	0.00	
12,100.00	89.93	179.94	7,321.35	-4,631.75	-1,272.33	4,801.72	0.00	0.00	0.00	
12,200.00	89.93	179.94	7,321.48	-4,731.75	-1,272.23	4,898.77	0.00	0.00	0.00	
12,300.00	89.93	179.94	7,321.60	-4,831.75	-1,272.14	4,995.83	0.00	0.00	0.00	
12,400.00	89.93	179.94	7,321.73	-4,931.75	-1,272.04	5,092.89	0.00	0.00	0.00	
12,500.00	89.93	179.94	7,321.85	-5,031.75	-1,271.94	5,189.94	0.00	0.00	0.00	
12,600.00	89.93	179.94	7,321.98	-5,131.75	-1,271.84	5,287.00	0.00	0.00	0.00	
12,615.34	89.93	179.94	7,322.00	-5,147.09	-1,271.82	5,301.89	0.00	0.00	0.00	
PBHL/TD										

Database:	PLANNING	Local Co-ordinate Reference:	Well GRACIE 24-2HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	KB @ 5099.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	KB @ 5099.00usft (D Rig)
Site:	2N-66W-24 GRACIE 35-24HZ PAD	North Reference:	True
Well:	GRACIE 24-2HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit-Rev2		

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
GRACIE 24-2HZ HEEL - plan hits target center - Point	0.00	0.00	7,316.00	-396.21	-1,276.51	14,569,226.84	1,714,844.62	40.116388	-104.733782
GRACIE 24-2HZ PBHL - plan hits target center - Point	0.00	0.00	7,322.00	-5,147.09	-1,271.82	14,564,475.99	1,714,863.77	40.103341	-104.733764

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")	
1,830.95	1,800.00	Surface Csg	9-5/8	13-1/2	
7,864.45	7,316.00	Top of Production	5-1/2	7-7/8	

Formations					
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,528.34	1,512.00	Fox Hills			
4,384.95	4,229.00	Parkman			
4,894.55	4,717.00	Sussex			
7,449.50	7,185.00	Sharon Springs			
7,520.67	7,225.00	Niobrara			
7,686.25	7,291.00	Nio B			

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment	
		+N/-S (usft)	+E/-W (usft)		
400.00	400.00	0.00	0.00	Build 1.5°/100 DLS	
1,600.00	1,580.36	34.47	-183.74	Hold Inc	
4,595.03	4,428.80	205.14	-1,093.39	Drop 1.5°/100 DLS	
5,795.03	5,609.16	239.62	-1,277.13	Vertical Point	
6,865.25	6,679.38	239.62	-1,277.13	KOP, Build 10°/100 DLS	
7,864.45	7,316.00	-396.21	-1,276.51	Landing Target	
12,615.34	7,322.00	-5,147.09	-1,271.82	PBHL/TD	