

US ROCKIES WATTENBERG PLANNING

WELD-NAD83-UTMFT13N

1N-67W-22 Wagner 7-22HZ Pad

WAGNER 27N-10HZ

Plan A

Plan: Permit Rev-2

Standard Survey Report

17 March, 2016

Project: WELD-NAD83-UTMFT13N
Site: 1N-67W-22 Wagner 7-22HZ Pad
Well: WAGNER 27N-10HZ
Wellbore: Plan A
Design: Permit Rev-2

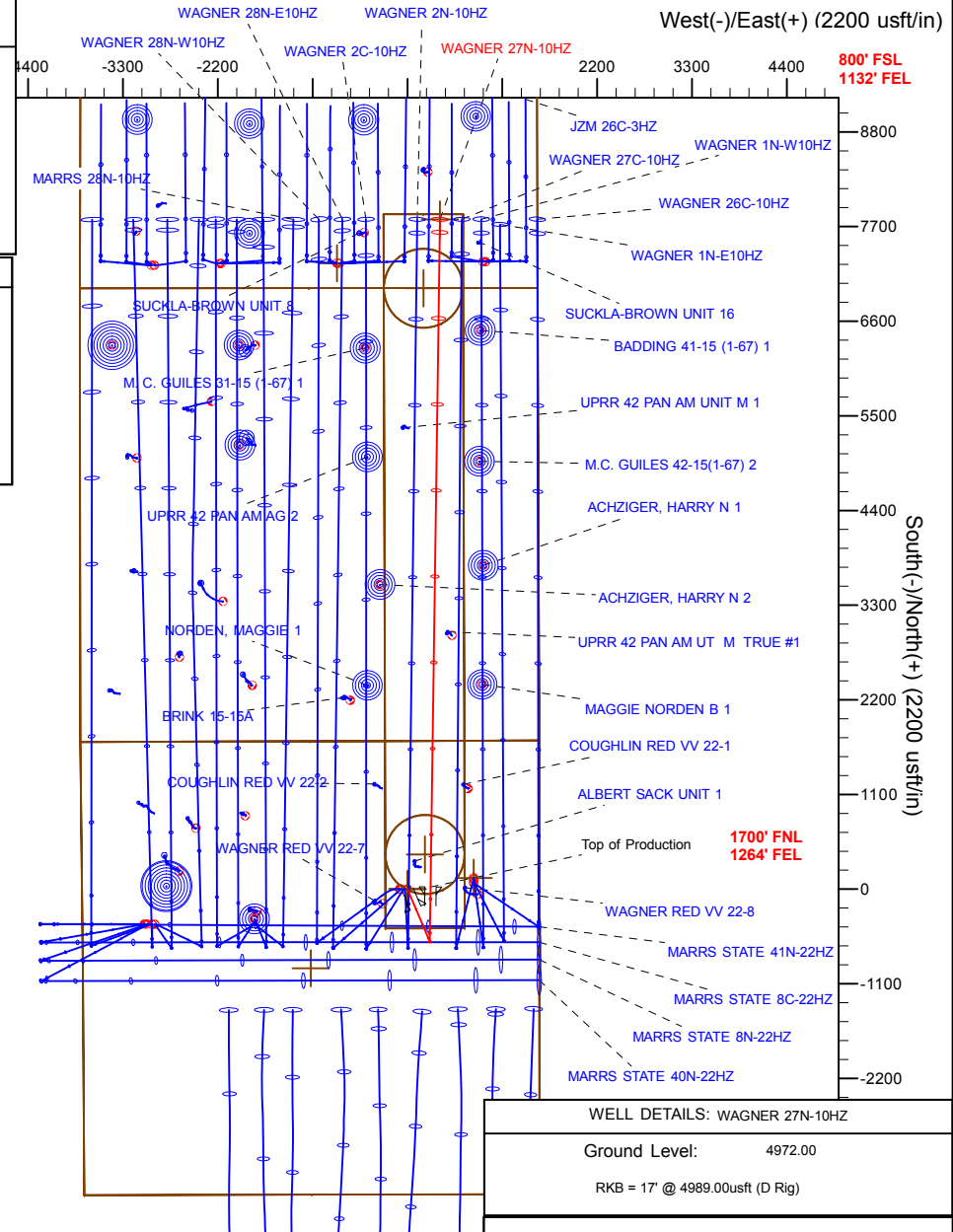
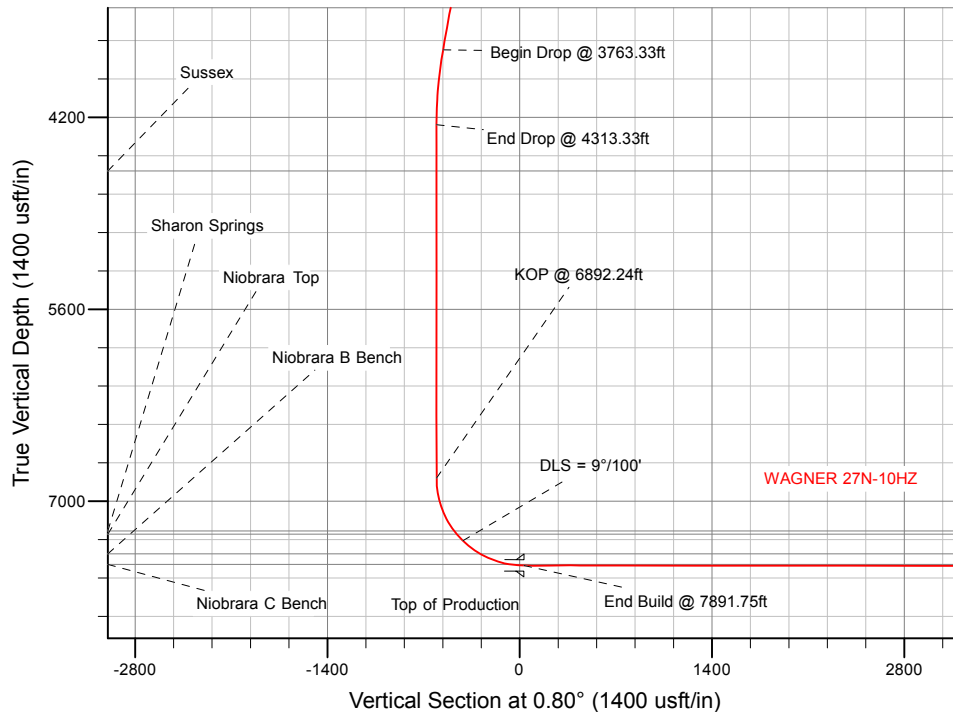
US ROCKIES WATTENBERG PLANNING

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	200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	
3	933.33	11.00	157.00	928.84	-64.60	27.42	1.50	157.00	-64.21	
4	3763.33	11.00	157.00	3706.84	-561.66	238.41	0.00	0.00	-558.28	
5	4313.33	0.00	0.00	4253.47	-610.11	258.98	2.00	180.00	-606.44	
6	6892.24	0.00	0.00	6832.38	-610.11	258.98	0.00	0.00	-606.44	
7	7891.75	89.96	0.80	7469.00	25.95	267.81	9.00	0.80	29.69	
8	15651.95	89.96	0.80	7475.00	7785.40	375.54	0.00	0.00	7789.88	WAGNER 27N-10HZ_Toe

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
WAGNER 27N-10HZ_SHL	0.00	0.00	0.00	40.039095	-104.872738	Point
WAGNER 27N-10HZ_Toe	7475.00	7785.40	375.54	40.060475	-104.871396	Point



WELL DETAILS: WAGNER 27N-10HZ

Ground Level: 4972.00

RKB = 17" @ 4989.00usft (D Rig)

Plan: Permit Rev-2 (WAGNER 27N-10HZ/Plan A)

Created By: Clint Eshelman

Date: 3/18/2016

Reviewed: _____

Date: _____

Anadarko

Survey Report

Company:	US ROCKIES WATTENBERG PLANNING	Local Co-ordinate Reference:	Well WAGNER 27N-10HZ
Project:	WELD-NAD83-UTMFT13N	TVD Reference:	RKB = 17' @ 4989.00usft (D Rig)
Site:	1N-67W-22 Wagner 7-22HZ Pad	MD Reference:	RKB = 17' @ 4989.00usft (D Rig)
Well:	WAGNER 27N-10HZ	North Reference:	True
Wellbore:	Plan A	Survey Calculation Method:	Minimum Curvature
Design:	Permit Rev-2	Database:	PLANNING

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		1N-67W-22 Wagner 7-22HZ Pad						
Site Position:		Northing:	14,540,995.63	usft	Latitude:	40.039097		
From:	Lat/Long	Easting:	1,675,946.05	usft	Longitude:	-104.873060		
Position Uncertainty:	0.00	usft	Slot Radius:	13-3/16	"	Grid Convergence:	0.08	°

Well		WAGNER 27N-10HZ				
Well Position	+N/-S	0.00 usft	Northing:	14,540,995.04 usft	Latitude:	40.039095
	+E/-W	0.00 usft	Easting:	1,676,036.18 usft	Longitude:	-104.872738
Position Uncertainty		3.28 usft	Wellhead Elevation:	0.00 usft	Ground Level:	4,972.00 usft

Wellbore	Plan A				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	1/29/2016	8.27	66.58	52,442

Design	Permit Rev-2				
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	0.80	

Survey Tool Program	Date	3/17/2016			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
0.00	1,800.00	Permit Rev-2 (Plan A)	APC_ISCWSA REV 2 MWD	Fixed:v2:standard declination	
1,800.00	15,651.95	Permit Rev-2 (Plan A)	APC_ISCWSA REV 2 MWD+	Fixed:v2:Rockies, crustal dec + 3-axis correction	

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	
Begin Nudge @ 200.00ft										
300.00	1.50	157.00	299.99	-1.20	0.51	-1.20	1.50	1.50	0.00	
400.00	3.00	157.00	399.91	-4.82	2.05	-4.79	1.50	1.50	0.00	
500.00	4.50	157.00	499.69	-10.84	4.60	-10.77	1.50	1.50	0.00	
600.00	6.00	157.00	599.27	-19.26	8.18	-19.15	1.50	1.50	0.00	
700.00	7.50	157.00	698.57	-30.08	12.77	-29.90	1.50	1.50	0.00	
800.00	9.00	157.00	797.54	-43.29	18.37	-43.03	1.50	1.50	0.00	

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Survey Report

Company:	US ROCKIES WATTENBERG PLANNING	Local Co-ordinate Reference:	Well WAGNER 27N-10HZ
Project:	WELD-NAD83-UTMFT13N	TVD Reference:	RKB = 17' @ 4989.00usft (D Rig)
Site:	1N-67W-22 Wagner 7-22HZ Pad	MD Reference:	RKB = 17' @ 4989.00usft (D Rig)
Well:	WAGNER 27N-10HZ	North Reference:	True
Wellbore:	Plan A	Survey Calculation Method:	Minimum Curvature
Design:	Permit Rev-2	Database:	PLANNING

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)
900.00	10.50	157.00	896.09	-58.88	24.99	-58.52	1.50	1.50	0.00
933.33	11.00	157.00	928.83	-64.60	27.42	-64.21	1.50	1.50	0.00
End Nudge @ 933.33ft									
1,000.00	11.00	157.00	994.28	-76.31	32.39	-75.85	0.00	0.00	0.00
1,100.00	11.00	157.00	1,092.44	-93.87	39.85	-93.31	0.00	0.00	0.00
1,200.00	11.00	157.00	1,190.60	-111.44	47.30	-110.77	0.00	0.00	0.00
1,300.00	11.00	157.00	1,288.77	-129.00	54.76	-128.22	0.00	0.00	0.00
1,365.44	11.00	157.00	1,353.00	-140.49	59.64	-139.65	0.00	0.00	0.00
Fox Hills									
1,400.00	11.00	157.00	1,386.93	-146.57	62.21	-145.68	0.00	0.00	0.00
1,500.00	11.00	157.00	1,485.09	-164.13	69.67	-163.14	0.00	0.00	0.00
1,600.00	11.00	157.00	1,583.25	-181.69	77.12	-180.60	0.00	0.00	0.00
1,700.00	11.00	157.00	1,681.42	-199.26	84.58	-198.06	0.00	0.00	0.00
1,800.00	11.00	157.00	1,779.58	-216.82	92.04	-215.52	0.00	0.00	0.00
1,820.80	11.00	157.00	1,800.00	-220.48	93.59	-219.15	0.00	0.00	0.00
9 5/8"									
1,900.00	11.00	157.00	1,877.74	-234.39	99.49	-232.97	0.00	0.00	0.00
2,000.00	11.00	157.00	1,975.91	-251.95	106.95	-250.43	0.00	0.00	0.00
2,100.00	11.00	157.00	2,074.07	-269.51	114.40	-267.89	0.00	0.00	0.00
2,200.00	11.00	157.00	2,172.23	-287.08	121.86	-285.35	0.00	0.00	0.00
2,300.00	11.00	157.00	2,270.39	-304.64	129.31	-302.81	0.00	0.00	0.00
2,400.00	11.00	157.00	2,368.56	-322.21	136.77	-320.27	0.00	0.00	0.00
2,500.00	11.00	157.00	2,466.72	-339.77	144.22	-337.72	0.00	0.00	0.00
2,600.00	11.00	157.00	2,564.88	-357.33	151.68	-355.18	0.00	0.00	0.00
2,700.00	11.00	157.00	2,663.04	-374.90	159.13	-372.64	0.00	0.00	0.00
2,800.00	11.00	157.00	2,761.21	-392.46	166.59	-390.10	0.00	0.00	0.00
2,900.00	11.00	157.00	2,859.37	-410.03	174.05	-407.56	0.00	0.00	0.00
3,000.00	11.00	157.00	2,957.53	-427.59	181.50	-425.01	0.00	0.00	0.00
3,100.00	11.00	157.00	3,055.70	-445.15	188.96	-442.47	0.00	0.00	0.00
3,200.00	11.00	157.00	3,153.86	-462.72	196.41	-459.93	0.00	0.00	0.00
3,300.00	11.00	157.00	3,252.02	-480.28	203.87	-477.39	0.00	0.00	0.00
3,400.00	11.00	157.00	3,350.18	-497.85	211.32	-494.85	0.00	0.00	0.00
3,500.00	11.00	157.00	3,448.35	-515.41	218.78	-512.31	0.00	0.00	0.00
3,600.00	11.00	157.00	3,546.51	-532.98	226.23	-529.76	0.00	0.00	0.00
3,700.00	11.00	157.00	3,644.67	-550.54	233.69	-547.22	0.00	0.00	0.00
3,763.33	11.00	157.00	3,706.84	-561.66	238.41	-558.28	0.00	0.00	0.00
Begin Drop @ 3763.33ft									
3,800.00	10.27	157.00	3,742.88	-567.89	241.06	-564.47	2.00	-2.00	0.00
3,900.00	8.27	157.00	3,841.57	-582.71	247.35	-579.20	2.00	-2.00	0.00
4,000.00	6.27	157.00	3,940.76	-594.36	252.29	-590.78	2.00	-2.00	0.00
4,100.00	4.27	157.00	4,040.33	-602.80	255.88	-599.17	2.00	-2.00	0.00
4,200.00	2.27	157.00	4,140.17	-608.05	258.10	-604.39	2.00	-2.00	0.00
4,300.00	0.27	157.00	4,240.14	-610.08	258.97	-606.41	2.00	-2.00	0.00
4,313.33	0.00	157.00	4,253.47	-610.11	258.98	-606.44	2.00	-2.00	0.00

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Survey Report

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Wellbore:	Plan A	Survey Calculation Method:	Minimum Curvature
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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)
End Drop @ 4313.33ft									
4,400.00	0.00	0.00	4,340.14	-610.11	258.98	-606.44	0.00	0.00	0.00
4,500.00	0.00	0.00	4,440.14	-610.11	258.98	-606.44	0.00	0.00	0.00
4,600.00	0.00	0.00	4,540.14	-610.11	258.98	-606.44	0.00	0.00	0.00
4,649.86	0.00	0.00	4,590.00	-610.11	258.98	-606.44	0.00	0.00	0.00
Sussex									
4,700.00	0.00	0.00	4,640.14	-610.11	258.98	-606.44	0.00	0.00	0.00
4,800.00	0.00	0.00	4,740.14	-610.11	258.98	-606.44	0.00	0.00	0.00
4,900.00	0.00	0.00	4,840.14	-610.11	258.98	-606.44	0.00	0.00	0.00
5,000.00	0.00	0.00	4,940.14	-610.11	258.98	-606.44	0.00	0.00	0.00
5,100.00	0.00	0.00	5,040.14	-610.11	258.98	-606.44	0.00	0.00	0.00
5,200.00	0.00	0.00	5,140.14	-610.11	258.98	-606.44	0.00	0.00	0.00
5,300.00	0.00	0.00	5,240.14	-610.11	258.98	-606.44	0.00	0.00	0.00
5,400.00	0.00	0.00	5,340.14	-610.11	258.98	-606.44	0.00	0.00	0.00
5,500.00	0.00	0.00	5,440.14	-610.11	258.98	-606.44	0.00	0.00	0.00
5,600.00	0.00	0.00	5,540.14	-610.11	258.98	-606.44	0.00	0.00	0.00
5,700.00	0.00	0.00	5,640.14	-610.11	258.98	-606.44	0.00	0.00	0.00
5,800.00	0.00	0.00	5,740.14	-610.11	258.98	-606.44	0.00	0.00	0.00
5,900.00	0.00	0.00	5,840.14	-610.11	258.98	-606.44	0.00	0.00	0.00
6,000.00	0.00	0.00	5,940.14	-610.11	258.98	-606.44	0.00	0.00	0.00
6,100.00	0.00	0.00	6,040.14	-610.11	258.98	-606.44	0.00	0.00	0.00
6,200.00	0.00	0.00	6,140.14	-610.11	258.98	-606.44	0.00	0.00	0.00
6,300.00	0.00	0.00	6,240.14	-610.11	258.98	-606.44	0.00	0.00	0.00
6,400.00	0.00	0.00	6,340.14	-610.11	258.98	-606.44	0.00	0.00	0.00
6,500.00	0.00	0.00	6,440.14	-610.11	258.98	-606.44	0.00	0.00	0.00
6,600.00	0.00	0.00	6,540.14	-610.11	258.98	-606.44	0.00	0.00	0.00
6,700.00	0.00	0.00	6,640.14	-610.11	258.98	-606.44	0.00	0.00	0.00
6,800.00	0.00	0.00	6,740.14	-610.11	258.98	-606.44	0.00	0.00	0.00
6,892.24	0.00	0.00	6,832.38	-610.11	258.98	-606.44	0.00	0.00	0.00
KOP @ 6892.24ft									
6,900.00	0.70	0.80	6,840.14	-610.07	258.98	-606.39	9.00	9.00	0.00
7,000.00	9.70	0.80	6,939.62	-601.02	259.10	-597.34	9.00	9.00	0.00
7,100.00	18.70	0.80	7,036.47	-576.52	259.44	-572.84	9.00	9.00	0.00
7,200.00	27.70	0.80	7,128.29	-537.17	259.99	-533.49	9.00	9.00	0.00
7,300.00	36.70	0.80	7,212.82	-483.94	260.73	-480.26	9.00	9.00	0.00
7,305.98	37.24	0.80	7,217.60	-480.35	260.78	-476.66	9.00	9.00	0.00
Sharon Springs									
7,335.40	39.88	0.80	7,240.60	-462.02	261.03	-458.33	9.00	9.00	0.00
Niobrara Top									
7,400.00	45.70	0.80	7,287.99	-418.15	261.64	-414.46	9.00	9.00	0.00
DLS = 9°/100'									
7,500.00	54.70	0.80	7,351.94	-341.41	262.71	-337.71	9.00	9.00	0.00
7,557.50	59.87	0.80	7,383.00	-293.06	263.38	-289.35	9.00	9.00	0.00
Niobrara B Bench									

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Survey Report

Company:	US ROCKIES WATTENBERG PLANNING	Local Co-ordinate Reference:	Well WAGNER 27N-10HZ
Project:	WELD-NAD83-UTMFT13N	TVD Reference:	RKB = 17' @ 4989.00usft (D Rig)
Site:	1N-67W-22 Wagner 7-22HZ Pad	MD Reference:	RKB = 17' @ 4989.00usft (D Rig)
Well:	WAGNER 27N-10HZ	North Reference:	True
Wellbore:	Plan A	Survey Calculation Method:	Minimum Curvature
Design:	Permit Rev-2	Database:	PLANNING

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)
7,600.00	63.70	0.80	7,403.09	-255.61	263.90	-251.90	9.00	9.00	0.00
7,700.00	72.70	0.80	7,440.19	-162.87	265.19	-159.15	9.00	9.00	0.00
7,789.96	80.79	0.80	7,460.80	-75.39	266.40	-71.66	9.00	9.00	0.00
Niobrara C Bench									
7,800.00	81.70	0.80	7,462.33	-65.47	266.54	-61.74	9.00	9.00	0.00
7,891.75	89.96	0.80	7,469.00	25.95	267.81	29.69	9.00	9.00	0.00
End Build @ 7891.75ft - Top of Production									
7,900.00	89.96	0.80	7,469.01	34.20	267.92	37.94	0.00	0.00	0.00
8,000.00	89.96	0.80	7,469.08	134.19	269.31	137.94	0.00	0.00	0.00
8,100.00	89.96	0.80	7,469.16	234.18	270.70	237.94	0.00	0.00	0.00
8,200.00	89.96	0.80	7,469.24	334.17	272.09	337.94	0.00	0.00	0.00
8,300.00	89.96	0.80	7,469.31	434.16	273.48	437.94	0.00	0.00	0.00
8,400.00	89.96	0.80	7,469.39	534.15	274.86	537.94	0.00	0.00	0.00
8,500.00	89.96	0.80	7,469.47	634.14	276.25	637.94	0.00	0.00	0.00
8,600.00	89.96	0.80	7,469.55	734.13	277.64	737.94	0.00	0.00	0.00
8,700.00	89.96	0.80	7,469.62	834.12	279.03	837.94	0.00	0.00	0.00
8,800.00	89.96	0.80	7,469.70	934.11	280.42	937.94	0.00	0.00	0.00
8,900.00	89.96	0.80	7,469.78	1,034.10	281.81	1,037.94	0.00	0.00	0.00
9,000.00	89.96	0.80	7,469.86	1,134.09	283.19	1,137.94	0.00	0.00	0.00
9,100.00	89.96	0.80	7,469.93	1,234.09	284.58	1,237.94	0.00	0.00	0.00
9,200.00	89.96	0.80	7,470.01	1,334.08	285.97	1,337.94	0.00	0.00	0.00
9,300.00	89.96	0.80	7,470.09	1,434.07	287.36	1,437.94	0.00	0.00	0.00
9,400.00	89.96	0.80	7,470.17	1,534.06	288.75	1,537.94	0.00	0.00	0.00
9,500.00	89.96	0.80	7,470.24	1,634.05	290.14	1,637.94	0.00	0.00	0.00
9,600.00	89.96	0.80	7,470.32	1,734.04	291.52	1,737.94	0.00	0.00	0.00
9,700.00	89.96	0.80	7,470.40	1,834.03	292.91	1,837.94	0.00	0.00	0.00
9,800.00	89.96	0.80	7,470.47	1,934.02	294.30	1,937.94	0.00	0.00	0.00
9,900.00	89.96	0.80	7,470.55	2,034.01	295.69	2,037.94	0.00	0.00	0.00
10,000.00	89.96	0.80	7,470.63	2,134.00	297.08	2,137.94	0.00	0.00	0.00
10,100.00	89.96	0.80	7,470.71	2,233.99	298.46	2,237.94	0.00	0.00	0.00
10,200.00	89.96	0.80	7,470.78	2,333.98	299.85	2,337.94	0.00	0.00	0.00
10,300.00	89.96	0.80	7,470.86	2,433.97	301.24	2,437.94	0.00	0.00	0.00
10,400.00	89.96	0.80	7,470.94	2,533.96	302.63	2,537.94	0.00	0.00	0.00
10,500.00	89.96	0.80	7,471.02	2,633.95	304.02	2,637.94	0.00	0.00	0.00
10,600.00	89.96	0.80	7,471.09	2,733.94	305.41	2,737.94	0.00	0.00	0.00
10,700.00	89.96	0.80	7,471.17	2,833.93	306.79	2,837.94	0.00	0.00	0.00
10,800.00	89.96	0.80	7,471.25	2,933.92	308.18	2,937.94	0.00	0.00	0.00
10,900.00	89.96	0.80	7,471.33	3,033.91	309.57	3,037.94	0.00	0.00	0.00
11,000.00	89.96	0.80	7,471.40	3,133.90	310.96	3,137.94	0.00	0.00	0.00
11,100.00	89.96	0.80	7,471.48	3,233.89	312.35	3,237.94	0.00	0.00	0.00
11,200.00	89.96	0.80	7,471.56	3,333.88	313.74	3,337.94	0.00	0.00	0.00
11,300.00	89.96	0.80	7,471.63	3,433.87	315.12	3,437.94	0.00	0.00	0.00
11,400.00	89.96	0.80	7,471.71	3,533.86	316.51	3,537.94	0.00	0.00	0.00
11,500.00	89.96	0.80	7,471.79	3,633.85	317.90	3,637.94	0.00	0.00	0.00

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Survey Report

Company:	US ROCKIES WATTENBERG PLANNING	Local Co-ordinate Reference:	Well WAGNER 27N-10HZ
Project:	WELD-NAD83-UTMFT13N	TVD Reference:	RKB = 17' @ 4989.00usft (D Rig)
Site:	1N-67W-22 Wagner 7-22HZ Pad	MD Reference:	RKB = 17' @ 4989.00usft (D Rig)
Well:	WAGNER 27N-10HZ	North Reference:	True
Wellbore:	Plan A	Survey Calculation Method:	Minimum Curvature
Design:	Permit Rev-2	Database:	PLANNING

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)
11,600.00	89.96	0.80	7,471.87	3,733.84	319.29	3,737.94	0.00	0.00	0.00
11,700.00	89.96	0.80	7,471.94	3,833.83	320.68	3,837.94	0.00	0.00	0.00
11,800.00	89.96	0.80	7,472.02	3,933.82	322.07	3,937.94	0.00	0.00	0.00
11,900.00	89.96	0.80	7,472.10	4,033.81	323.45	4,037.94	0.00	0.00	0.00
12,000.00	89.96	0.80	7,472.18	4,133.80	324.84	4,137.94	0.00	0.00	0.00
12,100.00	89.96	0.80	7,472.25	4,233.80	326.23	4,237.94	0.00	0.00	0.00
12,200.00	89.96	0.80	7,472.33	4,333.79	327.62	4,337.94	0.00	0.00	0.00
12,300.00	89.96	0.80	7,472.41	4,433.78	329.01	4,437.94	0.00	0.00	0.00
12,400.00	89.96	0.80	7,472.49	4,533.77	330.39	4,537.94	0.00	0.00	0.00
12,500.00	89.96	0.80	7,472.56	4,633.76	331.78	4,637.94	0.00	0.00	0.00
12,600.00	89.96	0.80	7,472.64	4,733.75	333.17	4,737.94	0.00	0.00	0.00
12,700.00	89.96	0.80	7,472.72	4,833.74	334.56	4,837.94	0.00	0.00	0.00
12,800.00	89.96	0.80	7,472.79	4,933.73	335.95	4,937.94	0.00	0.00	0.00
12,900.00	89.96	0.80	7,472.87	5,033.72	337.34	5,037.94	0.00	0.00	0.00
13,000.00	89.96	0.80	7,472.95	5,133.71	338.72	5,137.94	0.00	0.00	0.00
13,100.00	89.96	0.80	7,473.03	5,233.70	340.11	5,237.94	0.00	0.00	0.00
13,200.00	89.96	0.80	7,473.10	5,333.69	341.50	5,337.94	0.00	0.00	0.00
13,300.00	89.96	0.80	7,473.18	5,433.68	342.89	5,437.94	0.00	0.00	0.00
13,400.00	89.96	0.80	7,473.26	5,533.67	344.28	5,537.94	0.00	0.00	0.00
13,500.00	89.96	0.80	7,473.34	5,633.66	345.67	5,637.94	0.00	0.00	0.00
13,600.00	89.96	0.80	7,473.41	5,733.65	347.05	5,737.94	0.00	0.00	0.00
13,700.00	89.96	0.80	7,473.49	5,833.64	348.44	5,837.94	0.00	0.00	0.00
13,800.00	89.96	0.80	7,473.57	5,933.63	349.83	5,937.94	0.00	0.00	0.00
13,900.00	89.96	0.80	7,473.65	6,033.62	351.22	6,037.94	0.00	0.00	0.00
14,000.00	89.96	0.80	7,473.72	6,133.61	352.61	6,137.94	0.00	0.00	0.00
14,100.00	89.96	0.80	7,473.80	6,233.60	354.00	6,237.94	0.00	0.00	0.00
14,200.00	89.96	0.80	7,473.88	6,333.59	355.38	6,337.94	0.00	0.00	0.00
14,300.00	89.96	0.80	7,473.95	6,433.58	356.77	6,437.94	0.00	0.00	0.00
14,400.00	89.96	0.80	7,474.03	6,533.57	358.16	6,537.94	0.00	0.00	0.00
14,500.00	89.96	0.80	7,474.11	6,633.56	359.55	6,637.94	0.00	0.00	0.00
14,600.00	89.96	0.80	7,474.19	6,733.55	360.94	6,737.94	0.00	0.00	0.00
14,700.00	89.96	0.80	7,474.26	6,833.54	362.32	6,837.94	0.00	0.00	0.00
14,800.00	89.96	0.80	7,474.34	6,933.53	363.71	6,937.94	0.00	0.00	0.00
14,900.00	89.96	0.80	7,474.42	7,033.52	365.10	7,037.94	0.00	0.00	0.00
15,000.00	89.96	0.80	7,474.50	7,133.52	366.49	7,137.94	0.00	0.00	0.00
15,100.00	89.96	0.80	7,474.57	7,233.51	367.88	7,237.94	0.00	0.00	0.00
15,200.00	89.96	0.80	7,474.65	7,333.50	369.27	7,337.94	0.00	0.00	0.00
15,300.00	89.96	0.80	7,474.73	7,433.49	370.65	7,437.94	0.00	0.00	0.00
15,400.00	89.96	0.80	7,474.81	7,533.48	372.04	7,537.94	0.00	0.00	0.00
15,500.00	89.96	0.80	7,474.88	7,633.47	373.43	7,637.94	0.00	0.00	0.00
15,600.00	89.96	0.80	7,474.96	7,733.46	374.82	7,737.94	0.00	0.00	0.00
15,651.95	89.96	0.80	7,475.00	7,785.40	375.54	7,789.88	0.00	0.00	0.00
TD Well @ 15651.95ft									

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Survey Report

Company:	US ROCKIES WATTENBERG PLANNING	Local Co-ordinate Reference:	Well WAGNER 27N-10HZ
Project:	WELD-NAD83-UTMFT13N	TVD Reference:	RKB = 17' @ 4989.00usft (D Rig)
Site:	1N-67W-22 Wagner 7-22HZ Pad	MD Reference:	RKB = 17' @ 4989.00usft (D Rig)
Well:	WAGNER 27N-10HZ	North Reference:	True
Wellbore:	Plan A	Survey Calculation Method:	Minimum Curvature
Design:	Permit Rev-2	Database:	PLANNING

Anadarko

Survey Report

Company:	US ROCKIES WATTENBERG PLANNING	Local Co-ordinate Reference:	Well WAGNER 27N-10HZ
Project:	WELD-NAD83-UTMFT13N	TVD Reference:	RKB = 17' @ 4989.00usft (D Rig)
Site:	1N-67W-22 Wagner 7-22HZ Pad	MD Reference:	RKB = 17' @ 4989.00usft (D Rig)
Well:	WAGNER 27N-10HZ	North Reference:	True
Wellbore:	Plan A	Survey Calculation Method:	Minimum Curvature
Design:	Permit Rev-2	Database:	PLANNING

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
WAGNER 27N-10HZ_4€ - plan misses target center by 450.85usft at 0.00usft MD (0.00 TVD, 0.00 N, 0.00 E) - Circle (radius 460.00)	0.00	0.00	0.00	402.57	202.99	14,541,397.90	1,676,238.60	40.040201	-104.872013
WAGNER 27N-10HZ_Hi - plan hits target center - Polygon	0.00	0.00	0.00	0.00	0.00	14,540,995.04	1,676,036.18	40.039095	-104.872738
Point 1		0.00	7,844.35	643.13	14,548,840.30	1,676,668.10			
Point 2		0.00	6,983.55	644.60	14,547,979.50	1,676,670.80			
Point 3		0.00	5,673.74	648.03	14,546,669.70	1,676,676.10			
Point 4		0.00	4,364.13	651.15	14,545,360.10	1,676,681.10			
Point 5		0.00	3,038.73	654.36	14,544,034.70	1,676,686.20			
Point 6		0.00	1,721.72	659.48	14,542,717.70	1,676,693.20			
Point 7		0.00	404.81	662.30	14,541,400.80	1,676,697.90			
Point 8		0.00	-452.09	664.07	14,540,543.90	1,676,700.90			
Point 9		0.00	-453.73	204.07	14,540,541.60	1,676,240.90			
Point 10		0.00	-455.48	-255.93	14,540,539.20	1,675,780.90			
Point 11		0.00	401.63	-257.71	14,541,396.30	1,675,777.90			
Point 12		0.00	1,718.63	-260.53	14,542,713.30	1,675,773.20			
Point 13		0.00	3,035.44	-265.64	14,544,030.10	1,675,766.20			
Point 14		0.00	4,356.35	-268.86	14,545,351.00	1,675,761.10			
Point 15		0.00	5,669.65	-271.98	14,546,664.30	1,675,756.10			
Point 16		0.00	6,983.06	-275.40	14,547,977.70	1,675,750.80			
Point 17		0.00	7,843.76	-276.87	14,548,838.40	1,675,748.10			
Point 18		0.00	7,844.11	183.13	14,548,839.40	1,676,208.10			
Point 19		0.00	7,844.35	643.13	14,548,840.30	1,676,668.10			
WAGNER 27N-10HZ_4€ - plan misses target center by 6985.74usft at 0.00usft MD (0.00 TVD, 0.00 N, 0.00 E) - Circle (radius 460.00)	0.00	0.00	0.00	6,983.30	184.60	14,547,978.60	1,676,210.80	40.058272	-104.872079
WAGNER 27N-10HZ_SI - plan hits target center - Point	0.00	0.00	0.00	0.00	0.00	14,540,995.04	1,676,036.18	40.039095	-104.872738
1N-R67W-Sec. 22_Secti - plan misses target center by 1449.88usft at 4.00usft MD (4.00 TVD, 0.00 N, 0.00 E) - Polygon	0.00	0.00	4.00	-918.66	-1,121.71	14,540,074.78	1,674,915.79	40.036572	-104.876746
Point 1		4.00	2,627.78	-2,674.22	14,542,698.74	1,672,237.82			
Point 2		4.00	2,636.63	-12.49	14,542,711.39	1,674,899.53			
Point 3		4.00	2,645.60	2,649.28	14,542,724.16	1,677,561.29			
Point 4		4.00	9.73	2,650.67	14,540,088.30	1,677,566.44			
Point 5		4.00	-2,626.39	2,652.38	14,537,452.18	1,677,571.92			
Point 6		4.00	-2,631.96	12.48	14,537,442.84	1,674,932.03			
Point 7		4.00	-2,637.68	-2,626.99	14,537,433.35	1,672,292.57			
Point 8		4.00	-9.70	-2,642.90	14,540,061.30	1,672,272.91			
1N-R67W-Sec. 15_Secti - plan misses target center by 779.13usft at 4.00usft MD (4.00 TVD, 0.00 N, 0.00 E) - Polygon	0.00	0.00	4.00	131.10	768.02	14,541,127.24	1,676,804.01	40.039455	-104.869994
Point 1		4.00	6,851.58	-4,568.26	14,547,972.29	1,672,225.97			
Point 2		4.00	6,853.93	-1,913.35	14,547,978.43	1,674,880.87			
Point 3		4.00	6,855.16	741.27	14,547,983.45	1,677,535.49			
Point 4		4.00	4,225.46	750.46	14,545,353.77	1,677,548.43			
Point 5		4.00	1,595.89	759.53	14,542,724.21	1,677,561.26			
Point 6		4.00	1,586.93	-1,902.25	14,542,711.45	1,674,899.50			
Point 7		4.00	1,578.07	-4,563.97	14,542,698.79	1,672,237.79			
Point 8		4.00	4,213.91	-4,566.57	14,545,334.62	1,672,231.43			
1N-R67W-Sec. 10_Secti - plan misses target center by 7319.83usft at 0.00usft MD (0.00 TVD, 0.00 N, 0.00 E)	0.00	0.00	-91.00	7,273.43	-817.89	14,548,267.29	1,675,207.90	40.059069	-104.875661

Anadarko

Survey Report

Company:	US ROCKIES WATTENBERG PLANNING	Local Co-ordinate Reference:	Well WAGNER 27N-10HZ
Project:	WELD-NAD83-UTMFT13N	TVD Reference:	RKB = 17' @ 4989.00usft (D Rig)
Site:	1N-67W-22 Wagner 7-22HZ Pad	MD Reference:	RKB = 17' @ 4989.00usft (D Rig)
Well:	WAGNER 27N-10HZ	North Reference:	True
Wellbore:	Plan A	Survey Calculation Method:	Minimum Curvature
Design:	Permit Rev-2	Database:	PLANNING

- Polygon									
Point 1	-91.00	4,992.86	-2,976.12	14,553,255.89	1,672,224.65				
Point 2	-91.00	4,994.59	-331.69	14,553,261.40	1,674,869.08				
Point 3	-91.00	4,996.25	2,313.07	14,553,266.84	1,677,513.83				
Point 4	-91.00	2,354.63	2,320.05	14,550,625.23	1,677,524.59				
Point 5	-91.00	-287.06	2,326.97	14,547,983.56	1,677,535.28				
Point 6	-91.00	-288.46	-327.65	14,547,978.36	1,674,880.67				
Point 7	-91.00	-290.97	-2,982.55	14,547,972.06	1,672,225.77				
WAGNER 27N-10HZ_Tc	0.00	0.00	7,475.00	7,785.40	375.54	14,548,780.96	1,676,400.59	40.060475	-104.871396
- plan hits target center									
- Point									

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")	
1,820.80	1,800.00	9 5/8"	9-5/8	13-1/2	
7,891.75	7,469.00	Top of Production	5-1/2	7-7/8	

Formations					
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,365.44	1,353.00	Fox Hills			
4,649.86	4,590.00	Sussex			
7,305.98	7,217.60	Sharon Springs			
7,335.40	7,240.60	Niobrara Top			
7,557.50	7,383.00	Niobrara B Bench			
7,789.96	7,460.80	Niobrara C Bench			

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
200	200	0	0	Begin Nudge @ 200.00ft	
933	929	-65	27	End Nudge @ 933.33ft	
3763	3707	-562	238	Begin Drop @ 3763.33ft	
4313	4253	-610	259	End Drop @ 4313.33ft	
6892	6832	-610	259	KOP @ 6892.24ft	
7400	7288	-418	262	DLS = 9°/100'	
7892	7469	26	268	End Build @ 7891.75ft	
15,652	7475	7785	376	TD Well @ 15651.95ft	

Checked By: _____	Approved By: _____	Date: _____
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