

# **US ROCKIES WATTENBERG PLANNING**

**WELD-NAD83-UTMFT13N**

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

**WAGNER 28N-E10HZ**

**Plan A**

**Plan: Permit Rev-1**

## **Standard Survey Report**

**02 February, 2016**

Project: WELD-NAD83-UTMFT13N  
Site: 1N-67W-22 Wagner 7-22HZ Pad  
Well: WAGNER 28N-E10HZ  
Wellbore: Plan A  
Design: Permit Rev-1

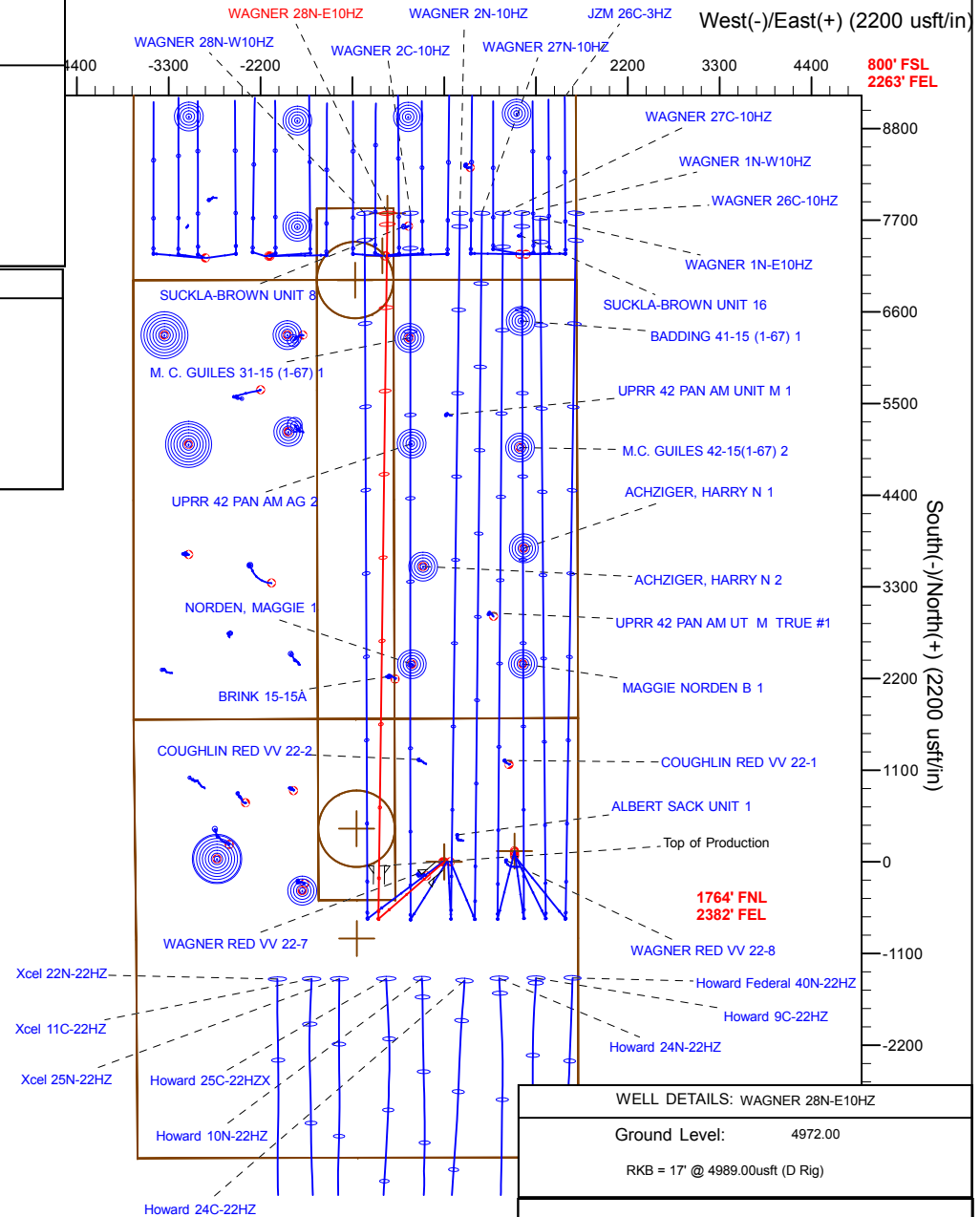
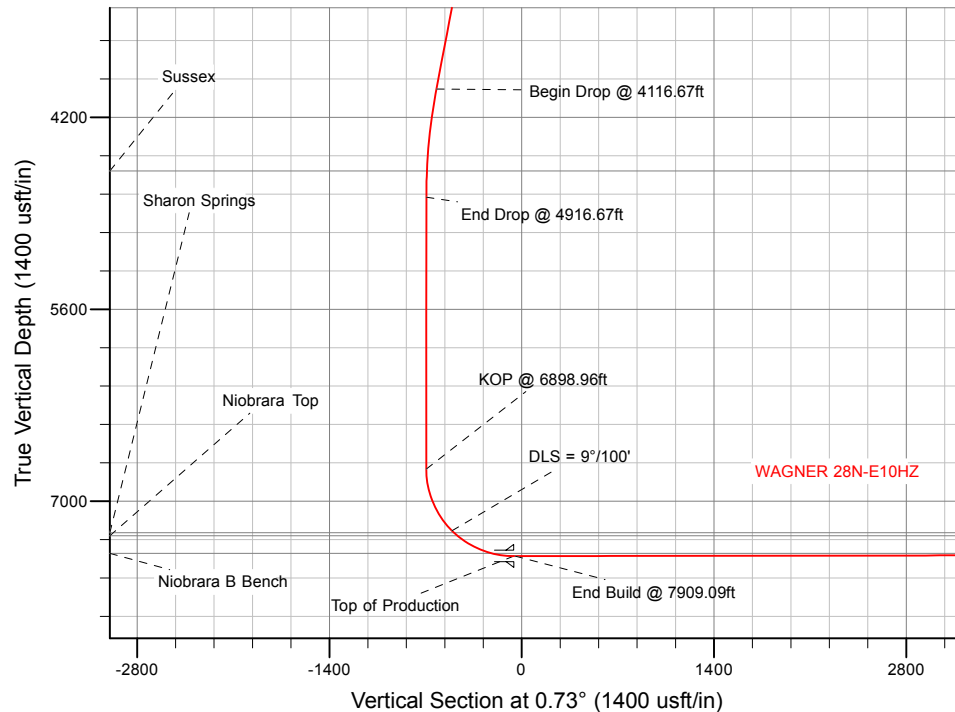
# US ROCKIES WATTENBERG PLANNING

## 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	1266.67	16.00	229.00	1252.86	-97.08	-111.67	1.50	229.00	-98.49	
4	4116.67	16.00	229.00	3992.45	-612.45	-704.55	0.00	0.00	-621.38	
5	4916.67	0.00	0.00	4782.10	-685.26	-788.30	2.00	180.00	-695.25	
6	6898.96	0.00	0.00	6764.39	-685.26	-788.30	0.00	0.00	-695.25	
7	7900.09	90.10	0.73	7401.00	-47.56	-780.16	9.00	0.73	-57.49	
8	15732.98	90.10	0.73	7387.00	7784.68	-680.15	0.00	0.00	7775.38	WAGNER 28N-E10HZ_Toe

## WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
WAGNER 28N-E10HZ_SHL	0.00	0.00	0.00	40.039096	-104.873006	Point
WAGNER 28N-E10HZ_Toe	7387.00	7784.68	-680.15	40.060474	-104.875437	Point



## WELL DETAILS: WAGNER 28N-E10HZ

Ground Level: 4972.00

RKB = 17' @ 4989.00usft (D Rig)

Plan: Permit Rev-1 (WAGNER 28N-E10HZ/Plan A)

Created By: Clint Eshelman

Date: 2/3/2016

Reviewed: \_\_\_\_\_

Date: \_\_\_\_\_

# Anadarko

## Survey Report

<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>Local Co-ordinate Reference:</b>	Well WAGNER 28N-E10HZ
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>TVD Reference:</b>	RKB = 17' @ 4989.00usft (D Rig)
<b>Site:</b>	1N-67W-22 Wagner 7-22HZ Pad	<b>MD Reference:</b>	RKB = 17' @ 4989.00usft (D Rig)
<b>Well:</b>	WAGNER 28N-E10HZ	<b>North Reference:</b>	True
<b>Wellbore:</b>	Plan A	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Permit Rev-1	<b>Database:</b>	PLANNING

<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)		

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 28N-E10HZ				
Well Position	+N/-S	0.00 usft	Northing:	14,540,995.29 usft	Latitude:	40.039096
	+E/-W	0.00 usft	Easting:	1,675,961.17 usft	Longitude:	-104.873006
Position Uncertainty		3.28 usft	Wellhead Elevation:	0.00 usft	Ground Level:	4,972.00 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>
	IGRF2010	1/29/2016	8.27	66.58	52,442

<b>Design</b>	Permit Rev-1				
<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	0.73	

<b>Survey Tool Program</b>	<b>Date</b>	2/2/2016			
<b>From (usft)</b>	<b>To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
0.00	1,800.00	Permit Rev-1 (Plan A)	APC_ISCWSA REV 2 MWD	Fixed:v2:standard declination	
1,800.00	15,732.98	Permit Rev-1 (Plan A)	APC_ISCWSA REV 2 MWD+	Fixed:v2:Rockies, crustal dec + 3-axis correction	

<b>Planned Survey</b>										
<b>Measured Depth (usft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Vertical Section (usft)</b>	<b>Dogleg Rate (°/100usft)</b>	<b>Build Rate (°/100usft)</b>	<b>Turn Rate (°/100usft)</b>	
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	
<b>Begin Nudge @ 200.00ft</b>										
300.00	1.50	229.00	299.99	-0.86	-0.99	-0.87	1.50	1.50	0.00	
400.00	3.00	229.00	399.91	-3.43	-3.95	-3.48	1.50	1.50	0.00	
500.00	4.50	229.00	499.69	-7.73	-8.89	-7.84	1.50	1.50	0.00	
600.00	6.00	229.00	599.27	-13.73	-15.79	-13.93	1.50	1.50	0.00	
700.00	7.50	229.00	698.57	-21.44	-24.66	-21.75	1.50	1.50	0.00	
800.00	9.00	229.00	797.54	-30.85	-35.49	-31.30	1.50	1.50	0.00	

# Anadarko

## Survey Report

<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>Local Co-ordinate Reference:</b>	Well WAGNER 28N-E10HZ
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>TVD Reference:</b>	RKB = 17' @ 4989.00usft (D Rig)
<b>Site:</b>	1N-67W-22 Wagner 7-22HZ Pad	<b>MD Reference:</b>	RKB = 17' @ 4989.00usft (D Rig)
<b>Well:</b>	WAGNER 28N-E10HZ	<b>North Reference:</b>	True
<b>Wellbore:</b>	Plan A	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Permit Rev-1	<b>Database:</b>	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	229.00	896.09	-41.96	-48.27	-42.57	1.50	1.50	0.00
1,000.00	12.00	229.00	994.16	-54.76	-63.00	-55.56	1.50	1.50	0.00
1,100.00	13.50	229.00	1,091.70	-69.24	-79.65	-70.25	1.50	1.50	0.00
1,200.00	15.00	229.00	1,188.62	-85.39	-98.23	-86.63	1.50	1.50	0.00
1,266.67	16.00	229.00	1,252.86	-97.08	-111.67	-98.49	1.50	1.50	0.00
<b>End Nudge @ 1266.67ft</b>									
1,300.00	16.00	229.00	1,284.90	-103.10	-118.61	-104.61	0.00	0.00	0.00
1,370.85	16.00	229.00	1,353.00	-115.92	-133.35	-117.61	0.00	0.00	0.00
<b>Fox Hills</b>									
1,400.00	16.00	229.00	1,381.03	-121.19	-139.41	-122.95	0.00	0.00	0.00
1,500.00	16.00	229.00	1,477.15	-139.27	-160.21	-141.30	0.00	0.00	0.00
1,600.00	16.00	229.00	1,573.28	-157.35	-181.02	-159.65	0.00	0.00	0.00
1,700.00	16.00	229.00	1,669.40	-175.44	-201.82	-178.00	0.00	0.00	0.00
1,800.00	16.00	229.00	1,765.53	-193.52	-222.62	-196.34	0.00	0.00	0.00
1,835.86	16.00	229.00	1,800.00	-200.01	-230.08	-202.92	0.00	0.00	0.00
<b>9 5/8"</b>									
1,900.00	16.00	229.00	1,861.66	-211.61	-243.42	-214.69	0.00	0.00	0.00
2,000.00	16.00	229.00	1,957.78	-229.69	-264.23	-233.04	0.00	0.00	0.00
2,100.00	16.00	229.00	2,053.91	-247.77	-285.03	-251.38	0.00	0.00	0.00
2,200.00	16.00	229.00	2,150.03	-265.86	-305.83	-269.73	0.00	0.00	0.00
2,300.00	16.00	229.00	2,246.16	-283.94	-326.63	-288.08	0.00	0.00	0.00
2,400.00	16.00	229.00	2,342.29	-302.02	-347.44	-306.42	0.00	0.00	0.00
2,500.00	16.00	229.00	2,438.41	-320.11	-368.24	-324.77	0.00	0.00	0.00
2,600.00	16.00	229.00	2,534.54	-338.19	-389.04	-343.12	0.00	0.00	0.00
2,700.00	16.00	229.00	2,630.67	-356.27	-409.84	-361.47	0.00	0.00	0.00
2,800.00	16.00	229.00	2,726.79	-374.36	-430.65	-379.81	0.00	0.00	0.00
2,900.00	16.00	229.00	2,822.92	-392.44	-451.45	-398.16	0.00	0.00	0.00
3,000.00	16.00	229.00	2,919.04	-410.52	-472.25	-416.51	0.00	0.00	0.00
3,100.00	16.00	229.00	3,015.17	-428.61	-493.06	-434.85	0.00	0.00	0.00
3,200.00	16.00	229.00	3,111.30	-446.69	-513.86	-453.20	0.00	0.00	0.00
3,300.00	16.00	229.00	3,207.42	-464.77	-534.66	-471.55	0.00	0.00	0.00
3,400.00	16.00	229.00	3,303.55	-482.86	-555.46	-489.89	0.00	0.00	0.00
3,500.00	16.00	229.00	3,399.68	-500.94	-576.27	-508.24	0.00	0.00	0.00
3,600.00	16.00	229.00	3,495.80	-519.02	-597.07	-526.59	0.00	0.00	0.00
3,700.00	16.00	229.00	3,591.93	-537.11	-617.87	-544.94	0.00	0.00	0.00
3,800.00	16.00	229.00	3,688.05	-555.19	-638.67	-563.28	0.00	0.00	0.00
3,900.00	16.00	229.00	3,784.18	-573.27	-659.48	-581.63	0.00	0.00	0.00
4,000.00	16.00	229.00	3,880.31	-591.36	-680.28	-599.98	0.00	0.00	0.00
4,100.00	16.00	229.00	3,976.43	-609.44	-701.08	-618.32	0.00	0.00	0.00
4,116.67	16.00	229.00	3,992.46	-612.46	-704.55	-621.38	0.00	0.00	0.00
<b>Begin Drop @ 4116.67ft</b>									
4,200.00	14.33	229.00	4,072.88	-626.76	-721.00	-635.89	2.00	-2.00	0.00
4,300.00	12.33	229.00	4,170.18	-641.89	-738.41	-651.24	2.00	-2.00	0.00
4,400.00	10.33	229.00	4,268.23	-654.78	-753.24	-664.32	2.00	-2.00	0.00

# Anadarko

## Survey Report

<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>Local Co-ordinate Reference:</b>	Well WAGNER 28N-E10HZ
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>TVD Reference:</b>	RKB = 17' @ 4989.00usft (D Rig)
<b>Site:</b>	1N-67W-22 Wagner 7-22HZ Pad	<b>MD Reference:</b>	RKB = 17' @ 4989.00usft (D Rig)
<b>Well:</b>	WAGNER 28N-E10HZ	<b>North Reference:</b>	True
<b>Wellbore:</b>	Plan A	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Permit Rev-1	<b>Database:</b>	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)
4,500.00	8.33	229.00	4,366.90	-665.42	-765.48	-675.12	2.00	-2.00	0.00
4,600.00	6.33	229.00	4,466.07	-673.79	-775.11	-683.61	2.00	-2.00	0.00
4,700.00	4.33	229.00	4,565.64	-679.89	-782.12	-689.80	2.00	-2.00	0.00
4,724.43	3.84	229.00	4,590.00	-681.03	-783.44	-690.96	2.00	-2.00	0.00
<b>Sussex</b>									
4,800.00	2.33	229.00	4,665.46	-683.70	-786.51	-693.67	2.00	-2.00	0.00
4,900.00	0.33	229.00	4,765.43	-685.23	-788.27	-695.22	2.00	-2.00	0.00
4,916.67	0.00	0.00	4,782.10	-685.26	-788.30	-695.25	2.00	-2.00	0.00
<b>End Drop @ 4916.67ft</b>									
5,000.00	0.00	0.00	4,865.43	-685.26	-788.30	-695.25	0.00	0.00	0.00
5,100.00	0.00	0.00	4,965.43	-685.26	-788.30	-695.25	0.00	0.00	0.00
5,200.00	0.00	0.00	5,065.43	-685.26	-788.30	-695.25	0.00	0.00	0.00
5,300.00	0.00	0.00	5,165.43	-685.26	-788.30	-695.25	0.00	0.00	0.00
5,400.00	0.00	0.00	5,265.43	-685.26	-788.30	-695.25	0.00	0.00	0.00
5,500.00	0.00	0.00	5,365.43	-685.26	-788.30	-695.25	0.00	0.00	0.00
5,600.00	0.00	0.00	5,465.43	-685.26	-788.30	-695.25	0.00	0.00	0.00
5,700.00	0.00	0.00	5,565.43	-685.26	-788.30	-695.25	0.00	0.00	0.00
5,800.00	0.00	0.00	5,665.43	-685.26	-788.30	-695.25	0.00	0.00	0.00
5,900.00	0.00	0.00	5,765.43	-685.26	-788.30	-695.25	0.00	0.00	0.00
6,000.00	0.00	0.00	5,865.43	-685.26	-788.30	-695.25	0.00	0.00	0.00
6,100.00	0.00	0.00	5,965.43	-685.26	-788.30	-695.25	0.00	0.00	0.00
6,200.00	0.00	0.00	6,065.43	-685.26	-788.30	-695.25	0.00	0.00	0.00
6,300.00	0.00	0.00	6,165.43	-685.26	-788.30	-695.25	0.00	0.00	0.00
6,400.00	0.00	0.00	6,265.43	-685.26	-788.30	-695.25	0.00	0.00	0.00
6,500.00	0.00	0.00	6,365.43	-685.26	-788.30	-695.25	0.00	0.00	0.00
6,600.00	0.00	0.00	6,465.43	-685.26	-788.30	-695.25	0.00	0.00	0.00
6,700.00	0.00	0.00	6,565.43	-685.26	-788.30	-695.25	0.00	0.00	0.00
6,800.00	0.00	0.00	6,665.43	-685.26	-788.30	-695.25	0.00	0.00	0.00
6,898.96	0.00	0.00	6,764.39	-685.26	-788.30	-695.25	0.00	0.00	0.00
<b>KOP @ 6898.96ft</b>									
6,900.00	0.09	0.73	6,765.43	-685.26	-788.30	-695.25	9.03	9.03	0.00
7,000.00	9.09	0.73	6,865.01	-677.26	-788.20	-687.25	9.00	9.00	0.00
7,100.00	18.09	0.73	6,962.10	-653.78	-787.90	-663.77	9.00	9.00	0.00
7,200.00	27.09	0.73	7,054.33	-615.41	-787.41	-625.39	9.00	9.00	0.00
7,300.00	36.09	0.73	7,139.43	-563.07	-786.74	-573.05	9.00	9.00	0.00
7,400.00	45.09	0.73	7,215.28	-498.08	-785.91	-508.05	9.00	9.00	0.00
<b>DLS = 9°/100'</b>									
7,420.77	46.96	0.73	7,229.70	-483.13	-785.72	-493.10	9.00	9.00	0.00
<b>Sharon Springs</b>									
7,455.50	50.09	0.73	7,252.70	-457.11	-785.39	-467.08	9.00	9.00	0.00
<b>Niobrara Top</b>									
7,500.00	54.09	0.73	7,280.03	-422.01	-784.94	-431.98	9.00	9.00	0.00
7,600.00	63.09	0.73	7,332.09	-336.76	-783.85	-346.72	9.00	9.00	0.00
7,700.00	72.09	0.73	7,370.17	-244.41	-782.67	-254.36	9.00	9.00	0.00

# Anadarko

## Survey Report

<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>Local Co-ordinate Reference:</b>	Well WAGNER 28N-E10HZ
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>TVD Reference:</b>	RKB = 17' @ 4989.00usft (D Rig)
<b>Site:</b>	1N-67W-22 Wagner 7-22HZ Pad	<b>MD Reference:</b>	RKB = 17' @ 4989.00usft (D Rig)
<b>Well:</b>	WAGNER 28N-E10HZ	<b>North Reference:</b>	True
<b>Wellbore:</b>	Plan A	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Permit Rev-1	<b>Database:</b>	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)
7,737.73	75.49	0.73	7,380.70	-208.19	-782.21	-218.13	9.00	9.00	0.00
<b>Niobrara B Bench</b>									
7,800.00	81.09	0.73	7,393.33	-147.24	-781.43	-157.19	9.00	9.00	0.00
7,900.00	90.09	0.73	7,401.00	-47.65	-780.16	-57.59	9.00	9.00	0.00
7,900.09	90.10	0.73	7,401.00	-47.56	-780.16	-57.50	9.00	9.00	0.00
<b>Top of Production</b>									
7,909.09	90.10	0.73	7,400.99	-38.56	-780.05	-48.50	0.00	0.00	0.00
<b>End Build @ 7909.09ft</b>									
8,000.00	90.10	0.73	7,400.83	52.34	-778.89	42.41	0.00	0.00	0.00
8,100.00	90.10	0.73	7,400.65	152.33	-777.61	142.41	0.00	0.00	0.00
8,200.00	90.10	0.73	7,400.47	252.32	-776.33	242.41	0.00	0.00	0.00
8,300.00	90.10	0.73	7,400.29	352.32	-775.05	342.41	0.00	0.00	0.00
8,400.00	90.10	0.73	7,400.11	452.31	-773.78	442.41	0.00	0.00	0.00
8,500.00	90.10	0.73	7,399.93	552.30	-772.50	542.41	0.00	0.00	0.00
8,600.00	90.10	0.73	7,399.75	652.29	-771.22	642.41	0.00	0.00	0.00
8,700.00	90.10	0.73	7,399.57	752.28	-769.95	742.41	0.00	0.00	0.00
8,800.00	90.10	0.73	7,399.40	852.27	-768.67	842.41	0.00	0.00	0.00
8,900.00	90.10	0.73	7,399.22	952.27	-767.39	942.41	0.00	0.00	0.00
9,000.00	90.10	0.73	7,399.04	1,052.26	-766.12	1,042.41	0.00	0.00	0.00
9,100.00	90.10	0.73	7,398.86	1,152.25	-764.84	1,142.41	0.00	0.00	0.00
9,200.00	90.10	0.73	7,398.68	1,252.24	-763.56	1,242.41	0.00	0.00	0.00
9,300.00	90.10	0.73	7,398.50	1,352.23	-762.29	1,342.41	0.00	0.00	0.00
9,400.00	90.10	0.73	7,398.32	1,452.22	-761.01	1,442.41	0.00	0.00	0.00
9,500.00	90.10	0.73	7,398.14	1,552.22	-759.73	1,542.41	0.00	0.00	0.00
9,600.00	90.10	0.73	7,397.97	1,652.21	-758.46	1,642.41	0.00	0.00	0.00
9,700.00	90.10	0.73	7,397.79	1,752.20	-757.18	1,742.41	0.00	0.00	0.00
9,800.00	90.10	0.73	7,397.61	1,852.19	-755.90	1,842.41	0.00	0.00	0.00
9,900.00	90.10	0.73	7,397.43	1,952.18	-754.63	1,942.41	0.00	0.00	0.00
10,000.00	90.10	0.73	7,397.25	2,052.17	-753.35	2,042.41	0.00	0.00	0.00
10,100.00	90.10	0.73	7,397.07	2,152.17	-752.07	2,142.41	0.00	0.00	0.00
10,200.00	90.10	0.73	7,396.89	2,252.16	-750.80	2,242.41	0.00	0.00	0.00
10,300.00	90.10	0.73	7,396.71	2,352.15	-749.52	2,342.41	0.00	0.00	0.00
10,400.00	90.10	0.73	7,396.54	2,452.14	-748.24	2,442.41	0.00	0.00	0.00
10,500.00	90.10	0.73	7,396.36	2,552.13	-746.97	2,542.41	0.00	0.00	0.00
10,600.00	90.10	0.73	7,396.18	2,652.12	-745.69	2,642.41	0.00	0.00	0.00
10,700.00	90.10	0.73	7,396.00	2,752.12	-744.41	2,742.41	0.00	0.00	0.00
10,800.00	90.10	0.73	7,395.82	2,852.11	-743.13	2,842.41	0.00	0.00	0.00
10,900.00	90.10	0.73	7,395.64	2,952.10	-741.86	2,942.41	0.00	0.00	0.00
11,000.00	90.10	0.73	7,395.46	3,052.09	-740.58	3,042.41	0.00	0.00	0.00
11,100.00	90.10	0.73	7,395.28	3,152.08	-739.30	3,142.41	0.00	0.00	0.00
11,200.00	90.10	0.73	7,395.10	3,252.07	-738.03	3,242.41	0.00	0.00	0.00
11,300.00	90.10	0.73	7,394.93	3,352.07	-736.75	3,342.41	0.00	0.00	0.00
11,400.00	90.10	0.73	7,394.75	3,452.06	-735.47	3,442.41	0.00	0.00	0.00
11,500.00	90.10	0.73	7,394.57	3,552.05	-734.20	3,542.41	0.00	0.00	0.00

# Anadarko

## Survey Report

<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>Local Co-ordinate Reference:</b>	Well WAGNER 28N-E10HZ
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>TVD Reference:</b>	RKB = 17' @ 4989.00usft (D Rig)
<b>Site:</b>	1N-67W-22 Wagner 7-22HZ Pad	<b>MD Reference:</b>	RKB = 17' @ 4989.00usft (D Rig)
<b>Well:</b>	WAGNER 28N-E10HZ	<b>North Reference:</b>	True
<b>Wellbore:</b>	Plan A	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Permit Rev-1	<b>Database:</b>	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	90.10	0.73	7,394.39	3,652.04	-732.92	3,642.41	0.00	0.00	0.00
11,700.00	90.10	0.73	7,394.21	3,752.03	-731.64	3,742.41	0.00	0.00	0.00
11,800.00	90.10	0.73	7,394.03	3,852.02	-730.37	3,842.41	0.00	0.00	0.00
11,900.00	90.10	0.73	7,393.85	3,952.02	-729.09	3,942.41	0.00	0.00	0.00
12,000.00	90.10	0.73	7,393.67	4,052.01	-727.81	4,042.41	0.00	0.00	0.00
12,100.00	90.10	0.73	7,393.50	4,152.00	-726.54	4,142.41	0.00	0.00	0.00
12,200.00	90.10	0.73	7,393.32	4,251.99	-725.26	4,242.41	0.00	0.00	0.00
12,300.00	90.10	0.73	7,393.14	4,351.98	-723.98	4,342.41	0.00	0.00	0.00
12,400.00	90.10	0.73	7,392.96	4,451.98	-722.71	4,442.41	0.00	0.00	0.00
12,500.00	90.10	0.73	7,392.78	4,551.97	-721.43	4,542.41	0.00	0.00	0.00
12,600.00	90.10	0.73	7,392.60	4,651.96	-720.15	4,642.41	0.00	0.00	0.00
12,700.00	90.10	0.73	7,392.42	4,751.95	-718.88	4,742.41	0.00	0.00	0.00
12,800.00	90.10	0.73	7,392.24	4,851.94	-717.60	4,842.41	0.00	0.00	0.00
12,900.00	90.10	0.73	7,392.07	4,951.93	-716.32	4,942.41	0.00	0.00	0.00
13,000.00	90.10	0.73	7,391.89	5,051.93	-715.04	5,042.41	0.00	0.00	0.00
13,100.00	90.10	0.73	7,391.71	5,151.92	-713.77	5,142.40	0.00	0.00	0.00
13,200.00	90.10	0.73	7,391.53	5,251.91	-712.49	5,242.40	0.00	0.00	0.00
13,300.00	90.10	0.73	7,391.35	5,351.90	-711.21	5,342.40	0.00	0.00	0.00
13,400.00	90.10	0.73	7,391.17	5,451.89	-709.94	5,442.40	0.00	0.00	0.00
13,500.00	90.10	0.73	7,390.99	5,551.88	-708.66	5,542.40	0.00	0.00	0.00
13,600.00	90.10	0.73	7,390.81	5,651.88	-707.38	5,642.40	0.00	0.00	0.00
13,700.00	90.10	0.73	7,390.63	5,751.87	-706.11	5,742.40	0.00	0.00	0.00
13,800.00	90.10	0.73	7,390.46	5,851.86	-704.83	5,842.40	0.00	0.00	0.00
13,900.00	90.10	0.73	7,390.28	5,951.85	-703.55	5,942.40	0.00	0.00	0.00
14,000.00	90.10	0.73	7,390.10	6,051.84	-702.28	6,042.40	0.00	0.00	0.00
14,100.00	90.10	0.73	7,389.92	6,151.83	-701.00	6,142.40	0.00	0.00	0.00
14,200.00	90.10	0.73	7,389.74	6,251.83	-699.72	6,242.40	0.00	0.00	0.00
14,300.00	90.10	0.73	7,389.56	6,351.82	-698.45	6,342.40	0.00	0.00	0.00
14,400.00	90.10	0.73	7,389.38	6,451.81	-697.17	6,442.40	0.00	0.00	0.00
14,500.00	90.10	0.73	7,389.20	6,551.80	-695.89	6,542.40	0.00	0.00	0.00
14,600.00	90.10	0.73	7,389.03	6,651.79	-694.62	6,642.40	0.00	0.00	0.00
14,700.00	90.10	0.73	7,388.85	6,751.78	-693.34	6,742.40	0.00	0.00	0.00
14,800.00	90.10	0.73	7,388.67	6,851.78	-692.06	6,842.40	0.00	0.00	0.00
14,900.00	90.10	0.73	7,388.49	6,951.77	-690.79	6,942.40	0.00	0.00	0.00
15,000.00	90.10	0.73	7,388.31	7,051.76	-689.51	7,042.40	0.00	0.00	0.00
15,100.00	90.10	0.73	7,388.13	7,151.75	-688.23	7,142.40	0.00	0.00	0.00
15,200.00	90.10	0.73	7,387.95	7,251.74	-686.96	7,242.40	0.00	0.00	0.00
15,300.00	90.10	0.73	7,387.77	7,351.73	-685.68	7,342.40	0.00	0.00	0.00
15,400.00	90.10	0.73	7,387.60	7,451.73	-684.40	7,442.40	0.00	0.00	0.00
15,500.00	90.10	0.73	7,387.42	7,551.72	-683.12	7,542.40	0.00	0.00	0.00
15,600.00	90.10	0.73	7,387.24	7,651.71	-681.85	7,642.40	0.00	0.00	0.00
15,700.00	90.10	0.73	7,387.06	7,751.70	-680.57	7,742.40	0.00	0.00	0.00
15,732.98	90.10	0.73	7,387.00	7,784.68	-680.15	7,775.38	0.00	0.00	0.00

# Anadarko

## Survey Report

<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>Local Co-ordinate Reference:</b>	Well WAGNER 28N-E10HZ
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>TVD Reference:</b>	RKB = 17' @ 4989.00usft (D Rig)
<b>Site:</b>	1N-67W-22 Wagner 7-22HZ Pad	<b>MD Reference:</b>	RKB = 17' @ 4989.00usft (D Rig)
<b>Well:</b>	WAGNER 28N-E10HZ	<b>North Reference:</b>	True
<b>Wellbore:</b>	Plan A	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Permit Rev-1	<b>Database:</b>	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)
TD Well @ 15732.98ft									



# Anadarko

## Survey Report

<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>Local Co-ordinate Reference:</b>	Well WAGNER 28N-E10HZ
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>TVD Reference:</b>	RKB = 17' @ 4989.00usft (D Rig)
<b>Site:</b>	1N-67W-22 Wagner 7-22HZ Pad	<b>MD Reference:</b>	RKB = 17' @ 4989.00usft (D Rig)
<b>Well:</b>	WAGNER 28N-E10HZ	<b>North Reference:</b>	True
<b>Wellbore:</b>	Plan A	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Permit Rev-1	<b>Database:</b>	PLANNING

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									
WAGNER 28N-E10HZ_4	0.00	0.00	0.00	6,982.33	-1,067.72	14,547,976.10	1,674,883.50	40.058271	-104.876822
- plan misses target center by 7063.50usft at 0.00usft MD (0.00 TVD, 0.00 N, 0.00 E)									
- Circle (radius 460.00)									
WAGNER 28N-E10HZ_I	0.00	0.00	0.00	-47.33	-638.71	14,540,947.05	1,675,322.52	40.038966	-104.875288
- plan misses target center by 640.47usft at 0.00usft MD (0.00 TVD, 0.00 N, 0.00 E)									
- Point									
WAGNER 28N-E10HZ_4	0.00	0.00	0.00	-919.01	-1,043.78	14,540,074.80	1,674,918.70	40.036572	-104.876735
- plan misses target center by 1390.70usft at 0.00usft MD (0.00 TVD, 0.00 N, 0.00 E)									
- Circle (radius 460.00)									
WAGNER 28N-E10HZ_5	0.00	0.00	0.00	0.00	0.00	14,540,995.29	1,675,961.17	40.039096	-104.873006
- plan hits target center									
- Point									
WAGNER 28N-E10HZ_I	0.00	0.00	0.00	0.00	0.00	14,540,995.29	1,675,961.17	40.039096	-104.873006
- plan hits target center									
- Polygon									
Point 1		0.00	7,843.18	-608.39		14,548,837.60	1,675,341.60		
Point 2		0.00	6,982.58	-607.71		14,547,977.00	1,675,343.50		
Point 3		0.00	5,667.47	-604.69		14,546,661.90	1,675,348.40		
Point 4		0.00	4,352.57	-602.16		14,545,347.00	1,675,352.80		
Point 5		0.00	3,033.66	-599.25		14,544,028.10	1,675,357.60		
Point 6		0.00	1,717.45	-596.32		14,542,711.90	1,675,362.40		
Point 7		0.00	399.74	-590.10		14,541,394.20	1,675,370.50		
Point 8		0.00	-917.37	-583.78		14,540,077.10	1,675,378.70		
Point 9		0.00	-1,774.87	-579.70		14,539,219.60	1,675,384.00		
Point 10		0.00	-1,776.22	-1,039.70		14,539,217.60	1,674,924.00		
Point 11		0.00	-1,777.76	-1,499.71		14,539,215.40	1,674,464.00		
Point 12		0.00	-921.15	-1,503.79		14,540,072.00	1,674,458.70		
Point 13		0.00	396.36	-1,510.11		14,541,389.50	1,674,450.50		
Point 14		0.00	1,714.27	-1,516.33		14,542,707.40	1,674,442.40		
Point 15		0.00	3,030.77	-1,519.25		14,544,023.90	1,674,437.60		
Point 16		0.00	4,347.58	-1,522.17		14,545,340.70	1,674,432.80		
Point 17		0.00	5,664.68	-1,524.69		14,546,657.80	1,674,428.40		
Point 18		0.00	6,981.89	-1,527.72		14,547,975.00	1,674,423.50		
Point 19		0.00	7,842.59	-1,528.39		14,548,835.70	1,674,421.60		
Point 20		0.00	7,842.93	-1,068.39		14,548,836.70	1,674,881.60		
Point 21		0.00	7,843.18	-608.39		14,548,837.60	1,675,341.60		
1N-R67W-Sec. 22_Secti	0.00	0.00	4.00	-919.03	-1,046.69	14,540,074.78	1,674,915.79	40.036572	-104.876746
- plan misses target center by 1392.90usft at 4.00usft MD (4.00 TVD, 0.00 N, 0.00 E)									
- Polygon									
Point 1		4.00	2,627.78	-2,674.22		14,542,698.74	1,672,237.83		
Point 2		4.00	2,636.63	-12.49		14,542,711.39	1,674,899.54		
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		14,540,088.29	1,677,566.44		
Point 5		4.00	-2,626.39	2,652.38		14,537,452.17	1,677,571.91		
Point 6		4.00	-2,631.96	12.48		14,537,442.84	1,674,932.02		
Point 7		4.00	-2,637.68	-2,626.99		14,537,433.36	1,672,292.56		
Point 8		4.00	-9.70	-2,642.90		14,540,061.31	1,672,272.91		
1N-R67W-Sec. 15_Secti	0.00	0.00	4.00	130.74	843.03	14,541,127.24	1,676,804.01	40.039455	-104.869994
- plan misses target center by 853.11usft at 4.00usft MD (4.00 TVD, 0.00 N, 0.00 E)									
- Polygon									
Point 1		4.00	6,851.58	-4,568.26		14,547,972.30	1,672,225.99		
Point 2		4.00	6,853.93	-1,913.35		14,547,978.44	1,674,880.89		
Point 3		4.00	6,855.16	741.27		14,547,983.45	1,677,535.51		
Point 4		4.00	4,225.46	750.46		14,545,353.77	1,677,548.45		
Point 5		4.00	1,595.89	759.53		14,542,724.21	1,677,561.27		

# Anadarko

## Survey Report

<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>Local Co-ordinate Reference:</b>	Well WAGNER 28N-E10HZ
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>TVD Reference:</b>	RKB = 17' @ 4989.00usft (D Rig)
<b>Site:</b>	1N-67W-22 Wagner 7-22HZ Pad	<b>MD Reference:</b>	RKB = 17' @ 4989.00usft (D Rig)
<b>Well:</b>	WAGNER 28N-E10HZ	<b>North Reference:</b>	True
<b>Wellbore:</b>	Plan A	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Permit Rev-1	<b>Database:</b>	PLANNING

Point 6	4.00	1,586.93	-1,902.25	14,542,711.46	1,674,899.50		
Point 7	4.00	1,578.07	-4,563.97	14,542,698.80	1,672,237.80		
Point 8	4.00	4,213.91	-4,566.57	14,545,334.64	1,672,231.44		
1N-R67W-Sec. 10_Secti	0.00	0.00	-91.00	7,273.06	-742.90	14,548,267.29	1,675,207.90
- plan misses target center by 7311.47usft at 0.00usft MD (0.00 TVD, 0.00 N, 0.00 E)							
- Polygon							
Point 1	-91.00	4,992.86	-2,976.12	14,553,255.90	1,672,224.67		
Point 2	-91.00	4,994.59	-331.69	14,553,261.40	1,674,869.09		
Point 3	-91.00	4,996.25	2,313.07	14,553,266.83	1,677,513.85		
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	14,547,983.55	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	14,547,972.07	1,672,225.77		
WAGNER 28N-E10HZ_	0.00	0.00	7,387.00	7,784.68	-680.15	14,548,778.99	1,675,269.92
- plan hits target center							
- Point							

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")	
1,835.86	1,800.00	9 5/8"	9-5/8	13-1/2	
7,900.09	7,401.00	Top of Production	5-1/2	7-7/8	

Formations					
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,370.85	1,353.00	Fox Hills			
4,724.43	4,590.00	Sussex			
7,420.77	7,229.70	Sharon Springs			
7,455.50	7,252.70	Niobrara Top			
7,737.73	7,380.70	Niobrara B 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	
1267	1253	-97	-112	End Nudge @ 1266.67ft	
4117	3992	-612	-705	Begin Drop @ 4116.67ft	
4917	4782	-685	-788	End Drop @ 4916.67ft	
6899	6764	-685	-788	KOP @ 6898.96ft	
7400	7215	-498	-786	DLS = 9°/100'	
7909	7401	-39	-780	End Build @ 7909.09ft	
15,733	7387	7785	-680	TD Well @ 15732.98ft	

Checked By: \_\_\_\_\_ Approved By: \_\_\_\_\_ Date: \_\_\_\_\_