

# **US ROCKIES WATTENBERG PLANNING**

**WELD-NAD83-UTMFT13N  
1N-66-13 VERDE 3-13HZ PAD  
VERDE 13-13HZ**

**Plan A**

**Plan: Permit Rev-1**

## **Standard Planning Report**

**02 June, 2017**



Azimuths to True North  
Magnetic North: 8.01°

Magnetic Field  
Strength: 52325.5snT  
Dip Angle: 66.57°  
Date: 6/1/2017  
Model: IGRF2010

SITE: 1N-66-13 VERDE 3-13HZ PAD

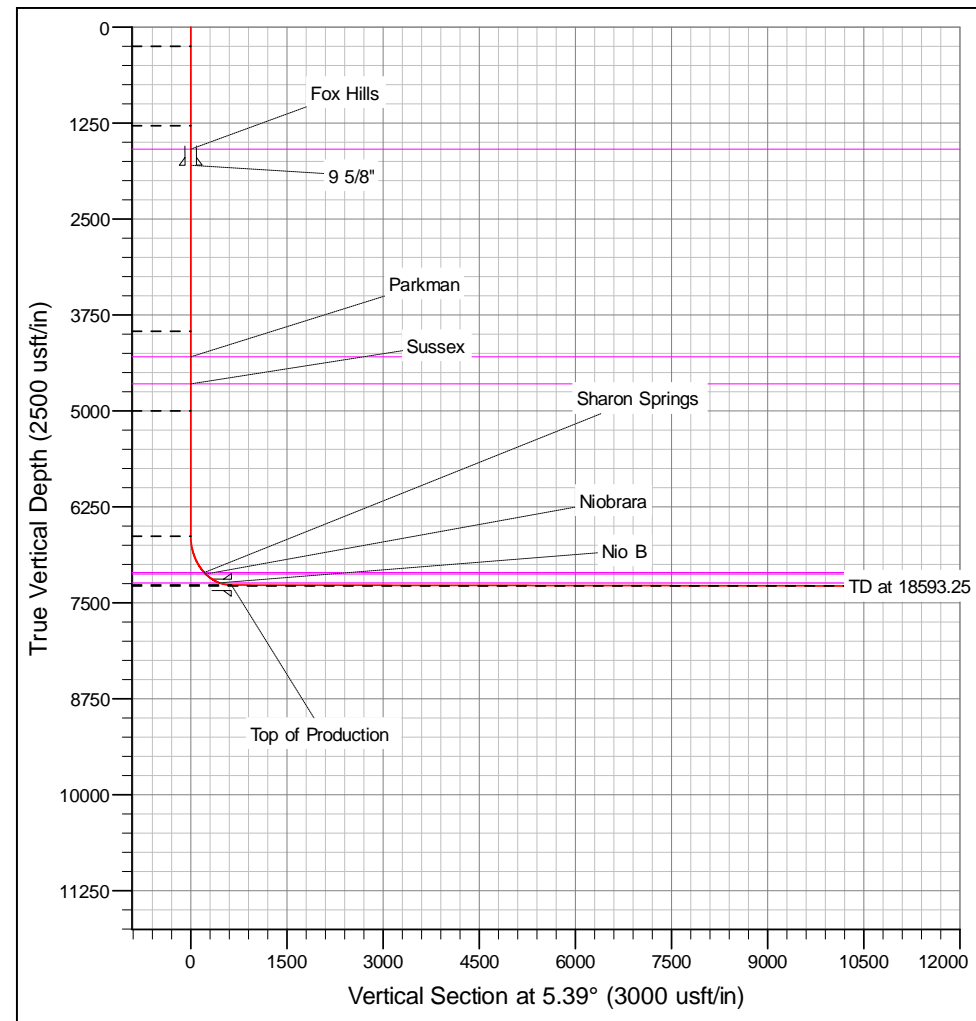
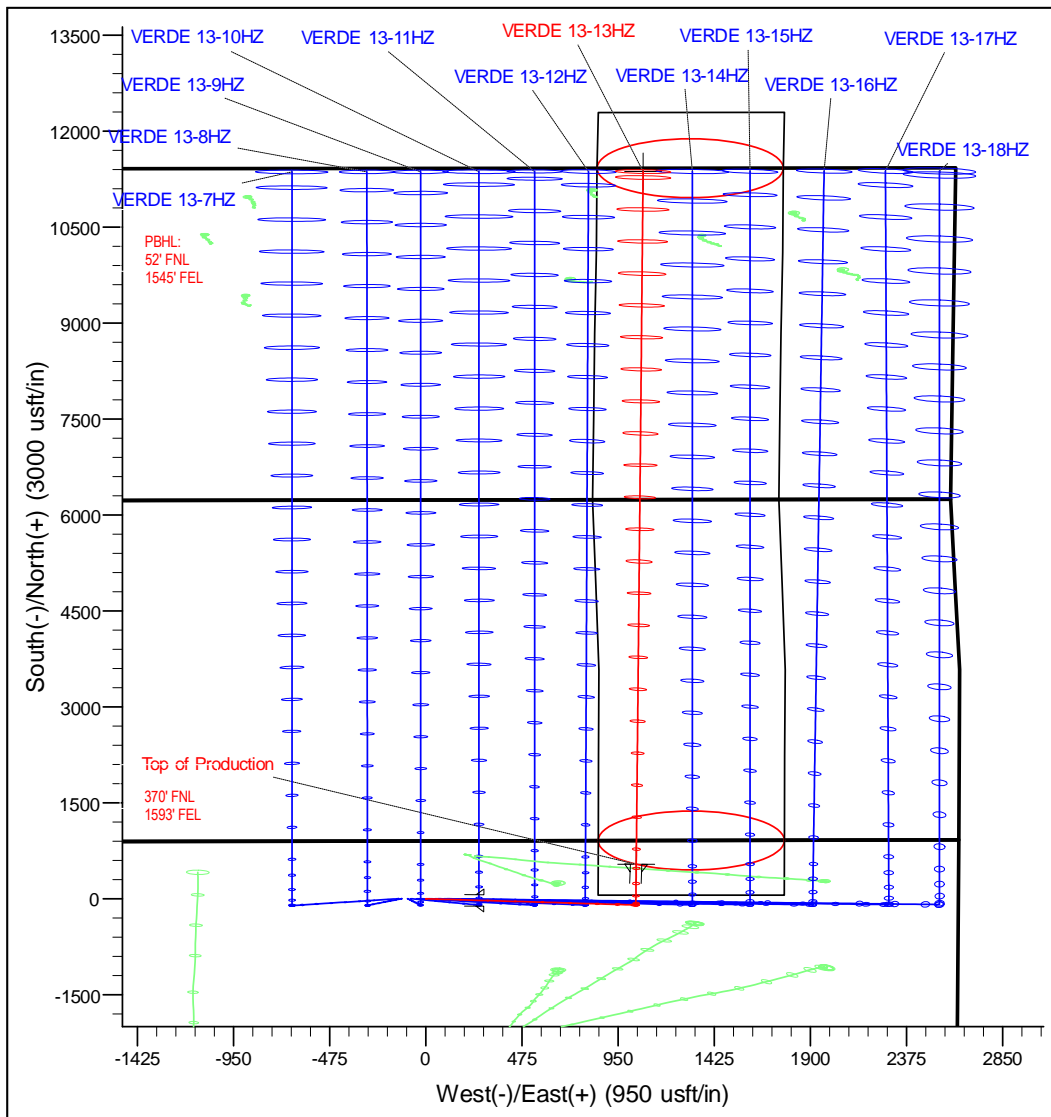
Well: VERDE 13-13HZ  
Wellbore: Plan A  
Design: Permit Rev-1

FORMATION TOP DETAILS		
TVDPath	MDPath	Formation
1591.00	1616.04	Fox Hills
4295.00	4421.70	Parkman
4648.00	4778.26	Sussex
7106.00	7296.90	Sharon Springs
7127.00	7329.19	Niobrara
7242.00	7575.32	Nio B

WELL DETAILS: VERDE 13-13HZ					
+N/-S	+E/-W	GL: 5071.00 Northing	RKB @ 5088.00usft (D Rig) Easting	Latitude 40.056069	Longitude -104.725403
0.00	0.00	14547269.06	1717254.93		

DESIGN TARGET DETAILS							
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
VERDE 13-13HZ_PBHL	7282.00	11368.80	1073.14	14558641.11	1718293.00	40.087289	-104.721566

SECTION DETAILS									
MD	Inc	Azi	TVD	+N/-S	+E/-W	Diag	Vsect		
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
250.00	0.00	0.00	250.00	0.00	0.00	0.00	0.00		
1300.07	15.75	95.35	1296.89	-13.38	142.80	1.50	0.10		
4080.70	15.75	95.35	3963.11	-83.77	894.34	0.00	0.84		
5130.76	0.00	0.00	5000.00	-97.15	1037.14	1.50	0.75		
6763.86	0.00	0.00	6633.09	-97.15	1037.14	0.00	0.75		
7763.14	89.94	0.18	7269.71	538.74	1039.14	9.00	634.01		
18593.25	89.94	0.18	7282.00	11368.80	1073.14	0.00	1419.34		



# Corporate Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well VERDE 13-13HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB @ 5088.00usft (D Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB @ 5088.00usft (D Rig)
<b>Site:</b>	1N-66-13 VERDE 3-13HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	VERDE 13-13HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan A		
<b>Design:</b>	Permit Rev-1		

<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-66-13 VERDE 3-13HZ PAD							
Site Position:						Northing:		14,547,269.73 usft		Latitude:		40.056072	
From:		Lat/Long				Easting:		1,717,120.05 usft		Longitude:		-104.725885	
Position Uncertainty:			3.28 usft			Slot Radius:		13-3/16 "		Grid Convergence:		0.18	

Well	VERDE 13-13HZ					
Well Position	+N/-S	-1.09 usft	Northing:	14,547,269.05 usft	Latitude:	40.056069
	+E/-W	134.88 usft	Easting:	1,717,254.93 usft	Longitude:	-104.725403
Position Uncertainty		3.28 usft	Wellhead Elevation:		Ground Level:	5,071.00 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	6/1/2017	8.01	66.57	52,325.48016566

<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	5.39	

<b>Plan Survey Tool Program</b>	<b>Date</b>	6/2/2017			
<b>Depth From (usft)</b>	<b>Depth To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Remarks</b>	
1	0.00	1,833.20	Permit Rev-1 (Plan A)	APC_ISCWSA REV 2 MWI Fixed:v2:crustal field declinat	
2	1,521.49	18,593.25	Permit Rev-1 (Plan A)	APC_ISCWSA REV 2 MWI Fixed:v2:Rockies, crustal dex	

# Corporate Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well VERDE 13-13HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB @ 5088.00usft (D Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB @ 5088.00usft (D Rig)
<b>Site:</b>	1N-66-13 VERDE 3-13HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	VERDE 13-13HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan A		
<b>Design:</b>	Permit Rev-1		

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	
250.00	0.00	0.00	250.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,300.07	15.75	95.35	1,286.89	-13.38	142.80	1.50	1.50	0.00	95.35	
4,080.70	15.75	95.35	3,963.11	-83.77	894.34	0.00	0.00	0.00	0.00	
5,130.76	0.00	0.00	5,000.00	-97.15	1,037.14	1.50	-1.50	0.00	180.00	
6,763.86	0.00	0.00	6,633.09	-97.15	1,037.14	0.00	0.00	0.00	0.00	
7,763.14	89.94	0.18	7,269.71	538.74	1,039.14	9.00	9.00	0.00	0.18	
18,593.25	89.94	0.18	7,282.00	11,368.80	1,073.14	0.00	0.00	0.00	0.00	VERDE 13-13HZ_P

# Corporate Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well VERDE 13-13HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB @ 5088.00usft (D Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB @ 5088.00usft (D Rig)
<b>Site:</b>	1N-66-13 VERDE 3-13HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	VERDE 13-13HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan A		
<b>Design:</b>	Permit Rev-1		

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
250.00	0.00	0.00	250.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.75	95.35	300.00	-0.03	0.33	0.00	1.50	1.50	0.00
400.00	2.25	95.35	399.96	-0.27	2.93	0.00	1.50	1.50	0.00
500.00	3.75	95.35	499.82	-0.76	8.14	0.01	1.50	1.50	0.00
600.00	5.25	95.35	599.51	-1.49	15.95	0.01	1.50	1.50	0.00
700.00	6.75	95.35	698.96	-2.47	26.36	0.02	1.50	1.50	0.00
800.00	8.25	95.35	798.10	-3.69	39.36	0.03	1.50	1.50	0.00
900.00	9.75	95.35	896.87	-5.15	54.93	0.04	1.50	1.50	0.00
1,000.00	11.25	95.35	995.19	-6.85	73.07	0.05	1.50	1.50	0.00
1,100.00	12.75	95.35	1,093.00	-8.78	93.77	0.07	1.50	1.50	0.00
1,200.00	14.25	95.35	1,190.24	-10.96	117.02	0.08	1.50	1.50	0.00
1,300.00	15.75	95.35	1,286.83	-13.37	142.79	0.10	1.50	1.50	0.00
1,300.07	15.75	95.35	1,286.89	-13.38	142.80	0.10	1.50	1.50	0.00
1,400.00	15.75	95.35	1,383.07	-15.91	169.81	0.12	0.00	0.00	0.00
1,500.00	15.75	95.35	1,479.32	-18.44	196.84	0.14	0.00	0.00	0.00
1,600.00	15.75	95.35	1,575.56	-20.97	223.87	0.16	0.00	0.00	0.00
1,616.04	15.75	95.35	1,591.00	-21.38	228.20	0.16	0.00	0.00	0.00
Fox Hills									
1,700.00	15.75	95.35	1,671.81	-23.50	250.90	0.18	0.00	0.00	0.00
1,800.00	15.75	95.35	1,768.05	-26.03	277.92	0.20	0.00	0.00	0.00
1,833.20	15.75	95.35	1,800.00	-26.87	286.89	0.21	0.00	0.00	0.00
9 5/8"									
1,900.00	15.75	95.35	1,864.30	-28.56	304.95	0.22	0.00	0.00	0.00
2,000.00	15.75	95.35	1,960.54	-31.10	331.98	0.24	0.00	0.00	0.00
2,100.00	15.75	95.35	2,056.79	-33.63	359.00	0.26	0.00	0.00	0.00
2,200.00	15.75	95.35	2,153.03	-36.16	386.03	0.28	0.00	0.00	0.00
2,300.00	15.75	95.35	2,249.28	-38.69	413.06	0.30	0.00	0.00	0.00
2,400.00	15.75	95.35	2,345.52	-41.22	440.09	0.32	0.00	0.00	0.00
2,500.00	15.75	95.35	2,441.77	-43.76	467.11	0.34	0.00	0.00	0.00
2,600.00	15.75	95.35	2,538.01	-46.29	494.14	0.36	0.00	0.00	0.00
2,700.00	15.75	95.35	2,634.26	-48.82	521.17	0.37	0.00	0.00	0.00
2,800.00	15.75	95.35	2,730.50	-51.35	548.20	0.39	0.00	0.00	0.00
2,900.00	15.75	95.35	2,826.75	-53.88	575.22	0.41	0.00	0.00	0.00
3,000.00	15.75	95.35	2,922.99	-56.41	602.25	0.43	0.00	0.00	0.00
3,100.00	15.75	95.35	3,019.24	-58.95	629.28	0.45	0.00	0.00	0.00
3,200.00	15.75	95.35	3,115.48	-61.48	656.31	0.47	0.00	0.00	0.00
3,300.00	15.75	95.35	3,211.73	-64.01	683.33	0.49	0.00	0.00	0.00
3,400.00	15.75	95.35	3,307.97	-66.54	710.36	0.51	0.00	0.00	0.00
3,500.00	15.75	95.35	3,404.22	-69.07	737.39	0.53	0.00	0.00	0.00
3,600.00	15.75	95.35	3,500.46	-71.60	764.42	0.55	0.00	0.00	0.00
3,700.00	15.75	95.35	3,596.71	-74.14	791.44	0.57	0.00	0.00	0.00
3,800.00	15.75	95.35	3,692.95	-76.67	818.47	0.59	0.00	0.00	0.00
3,900.00	15.75	95.35	3,789.20	-79.20	845.50	0.61	0.00	0.00	0.00
4,000.00	15.75	95.35	3,885.44	-81.73	872.53	0.63	0.00	0.00	0.00
4,080.70	15.75	95.35	3,963.11	-83.77	894.34	0.64	0.00	0.00	0.00
4,100.00	15.46	95.35	3,981.70	-84.26	899.51	0.65	1.50	-1.50	0.00
4,200.00	13.96	95.35	4,078.42	-86.63	924.79	0.67	1.50	-1.50	0.00
4,300.00	12.46	95.35	4,175.77	-88.76	947.54	0.68	1.50	-1.50	0.00
4,400.00	10.96	95.35	4,273.69	-90.65	967.75	0.70	1.50	-1.50	0.00
4,421.70	10.64	95.35	4,295.00	-91.03	971.80	0.70	1.50	-1.50	0.00

# Corporate Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well VERDE 13-13HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB @ 5088.00usft (D Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB @ 5088.00usft (D Rig)
<b>Site:</b>	1N-66-13 VERDE 3-13HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	VERDE 13-13HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan A		
<b>Design:</b>	Permit Rev-1		

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)
<b>Parkman</b>									
4,500.00	9.46	95.35	4,372.10	-92.30	985.40	0.71	1.50	-1.50	0.00
4,600.00	7.96	95.35	4,470.94	-93.72	1,000.48	0.72	1.50	-1.50	0.00
4,700.00	6.46	95.35	4,570.15	-94.89	1,012.98	0.73	1.50	-1.50	0.00
4,778.26	5.29	95.35	4,648.00	-95.63	1,020.96	0.73	1.50	-1.50	0.00
<b>Sussex</b>									
4,800.00	4.96	95.35	4,669.65	-95.82	1,022.89	0.74	1.50	-1.50	0.00
4,900.00	3.46	95.35	4,769.38	-96.50	1,030.20	0.74	1.50	-1.50	0.00
5,000.00	1.96	95.35	4,869.26	-96.94	1,034.91	0.74	1.50	-1.50	0.00
5,100.00	0.46	95.35	4,969.24	-97.14	1,037.02	0.75	1.50	-1.50	0.00
5,130.76	0.00	0.00	5,000.00	-97.15	1,037.14	0.75	1.50	-1.50	0.00
5,200.00	0.00	0.00	5,069.24	-97.15	1,037.14	0.75	0.00	0.00	0.00
5,300.00	0.00	0.00	5,169.24	-97.15	1,037.14	0.75	0.00	0.00	0.00
5,400.00	0.00	0.00	5,269.24	-97.15	1,037.14	0.75	0.00	0.00	0.00
5,500.00	0.00	0.00	5,369.24	-97.15	1,037.14	0.75	0.00	0.00	0.00
5,600.00	0.00	0.00	5,469.24	-97.15	1,037.14	0.75	0.00	0.00	0.00
5,700.00	0.00	0.00	5,569.24	-97.15	1,037.14	0.75	0.00	0.00	0.00
5,800.00	0.00	0.00	5,669.24	-97.15	1,037.14	0.75	0.00	0.00	0.00
5,900.00	0.00	0.00	5,769.24	-97.15	1,037.14	0.75	0.00	0.00	0.00
6,000.00	0.00	0.00	5,869.24	-97.15	1,037.14	0.75	0.00	0.00	0.00
6,100.00	0.00	0.00	5,969.24	-97.15	1,037.14	0.75	0.00	0.00	0.00
6,200.00	0.00	0.00	6,069.24	-97.15	1,037.14	0.75	0.00	0.00	0.00
6,300.00	0.00	0.00	6,169.24	-97.15	1,037.14	0.75	0.00	0.00	0.00
6,400.00	0.00	0.00	6,269.24	-97.15	1,037.14	0.75	0.00	0.00	0.00
6,500.00	0.00	0.00	6,369.24	-97.15	1,037.14	0.75	0.00	0.00	0.00
6,600.00	0.00	0.00	6,469.24	-97.15	1,037.14	0.75	0.00	0.00	0.00
6,700.00	0.00	0.00	6,569.24	-97.15	1,037.14	0.75	0.00	0.00	0.00
6,763.86	0.00	0.00	6,633.09	-97.15	1,037.14	0.75	0.00	0.00	0.00
6,800.00	3.25	0.18	6,669.22	-96.12	1,037.14	1.77	9.00	9.00	0.00
6,900.00	12.25	0.18	6,768.20	-82.65	1,037.19	15.19	9.00	9.00	0.00
7,000.00	21.25	0.18	6,863.86	-53.85	1,037.28	43.86	9.00	9.00	0.00
7,100.00	30.25	0.18	6,953.83	-10.45	1,037.41	87.09	9.00	9.00	0.00
7,200.00	39.25	0.18	7,035.91	46.49	1,037.59	143.80	9.00	9.00	0.00
7,296.90	47.97	0.18	7,106.00	113.27	1,037.80	210.30	9.00	9.00	0.00
<b>Sharon Springs</b>									
7,300.00	48.25	0.18	7,108.07	115.58	1,037.81	212.60	9.00	9.00	0.00
7,329.19	50.88	0.18	7,127.00	137.79	1,037.88	234.72	9.00	9.00	0.00
<b>Niobrara</b>									
7,400.00	57.25	0.18	7,168.53	195.10	1,038.06	291.79	9.00	9.00	0.00
7,500.00	66.25	0.18	7,215.81	283.10	1,038.33	379.42	9.00	9.00	0.00
7,575.32	73.03	0.18	7,242.00	353.68	1,038.56	449.71	9.00	9.00	0.00
<b>Nio B</b>									
7,600.00	75.25	0.18	7,248.74	377.41	1,038.63	473.35	9.00	9.00	0.00
7,700.00	84.25	0.18	7,266.51	475.72	1,038.94	571.25	9.00	9.00	0.00
7,763.14	89.94	0.18	7,269.71	538.75	1,039.14	634.02	9.00	9.00	0.00
<b>Top of Production - VERDE 13-13HZ_PHL</b>									
7,800.00	89.94	0.18	7,269.76	575.61	1,039.25	670.73	0.00	0.00	0.00
7,900.00	89.94	0.18	7,269.87	675.61	1,039.57	770.31	0.00	0.00	0.00
8,000.00	89.94	0.18	7,269.98	775.61	1,039.88	869.90	0.00	0.00	0.00
8,100.00	89.94	0.18	7,270.10	875.61	1,040.19	969.48	0.00	0.00	0.00
8,200.00	89.94	0.18	7,270.21	975.61	1,040.51	1,069.07	0.00	0.00	0.00
8,300.00	89.94	0.18	7,270.32	1,075.61	1,040.82	1,168.66	0.00	0.00	0.00
8,400.00	89.94	0.18	7,270.44	1,175.60	1,041.14	1,268.24	0.00	0.00	0.00

# Corporate Planning Report

**Database:** PLANNING  
**Company:** US ROCKIES WATTENBERG PLANNING  
**Project:** WELD-NAD83-UTMFT13N  
**Site:** 1N-66-13 VERDE 3-13HZ PAD  
**Well:** VERDE 13-13HZ  
**Wellbore:** Plan A  
**Design:** Permit Rev-1

**Local Co-ordinate Reference:**  
**TVD Reference:**  
**MD Reference:**  
**North Reference:**  
**Survey Calculation Method:**

Well VERDE 13-13HZ  
 RKB @ 5088.00usft (D Rig)  
 RKB @ 5088.00usft (D Rig)  
 True  
 Minimum Curvature

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)
8,500.00	89.94	0.18	7,270.55	1,275.60	1,041.45	1,367.83	0.00	0.00	0.00
8,600.00	89.94	0.18	7,270.66	1,375.60	1,041.76	1,467.42	0.00	0.00	0.00
8,700.00	89.94	0.18	7,270.78	1,475.60	1,042.08	1,567.00	0.00	0.00	0.00
8,800.00	89.94	0.18	7,270.89	1,575.60	1,042.39	1,666.59	0.00	0.00	0.00
8,900.00	89.94	0.18	7,271.00	1,675.60	1,042.71	1,766.18	0.00	0.00	0.00
9,000.00	89.94	0.18	7,271.12	1,775.60	1,043.02	1,865.76	0.00	0.00	0.00
9,100.00	89.94	0.18	7,271.23	1,875.60	1,043.33	1,965.35	0.00	0.00	0.00
9,200.00	89.94	0.18	7,271.34	1,975.60	1,043.65	2,064.93	0.00	0.00	0.00
9,300.00	89.94	0.18	7,271.46	2,075.60	1,043.96	2,164.52	0.00	0.00	0.00
9,400.00	89.94	0.18	7,271.57	2,175.60	1,044.28	2,264.11	0.00	0.00	0.00
9,500.00	89.94	0.18	7,271.68	2,275.60	1,044.59	2,363.69	0.00	0.00	0.00
9,600.00	89.94	0.18	7,271.80	2,375.60	1,044.90	2,463.28	0.00	0.00	0.00
9,700.00	89.94	0.18	7,271.91	2,475.60	1,045.22	2,562.87	0.00	0.00	0.00
9,800.00	89.94	0.18	7,272.02	2,575.60	1,045.53	2,662.45	0.00	0.00	0.00
9,900.00	89.94	0.18	7,272.14	2,675.60	1,045.85	2,762.04	0.00	0.00	0.00
10,000.00	89.94	0.18	7,272.25	2,775.60	1,046.16	2,861.63	0.00	0.00	0.00
10,100.00	89.94	0.18	7,272.36	2,875.60	1,046.47	2,961.21	0.00	0.00	0.00
10,200.00	89.94	0.18	7,272.48	2,975.59	1,046.79	3,060.80	0.00	0.00	0.00
10,300.00	89.94	0.18	7,272.59	3,075.59	1,047.10	3,160.39	0.00	0.00	0.00
10,400.00	89.94	0.18	7,272.71	3,175.59	1,047.42	3,259.97	0.00	0.00	0.00
10,500.00	89.94	0.18	7,272.82	3,275.59	1,047.73	3,359.56	0.00	0.00	0.00
10,600.00	89.94	0.18	7,272.93	3,375.59	1,048.04	3,459.14	0.00	0.00	0.00
10,700.00	89.94	0.18	7,273.05	3,475.59	1,048.36	3,558.73	0.00	0.00	0.00
10,800.00	89.94	0.18	7,273.16	3,575.59	1,048.67	3,658.32	0.00	0.00	0.00
10,900.00	89.94	0.18	7,273.27	3,675.59	1,048.99	3,757.90	0.00	0.00	0.00
11,000.00	89.94	0.18	7,273.39	3,775.59	1,049.30	3,857.49	0.00	0.00	0.00
11,100.00	89.94	0.18	7,273.50	3,875.59	1,049.61	3,957.08	0.00	0.00	0.00
11,200.00	89.94	0.18	7,273.61	3,975.59	1,049.93	4,056.66	0.00	0.00	0.00
11,300.00	89.94	0.18	7,273.73	4,075.59	1,050.24	4,156.25	0.00	0.00	0.00
11,400.00	89.94	0.18	7,273.84	4,175.59	1,050.56	4,255.84	0.00	0.00	0.00
11,500.00	89.94	0.18	7,273.95	4,275.59	1,050.87	4,355.42	0.00	0.00	0.00
11,600.00	89.94	0.18	7,274.07	4,375.59	1,051.18	4,455.01	0.00	0.00	0.00
11,700.00	89.94	0.18	7,274.18	4,475.59	1,051.50	4,554.59	0.00	0.00	0.00
11,800.00	89.94	0.18	7,274.29	4,575.59	1,051.81	4,654.18	0.00	0.00	0.00
11,900.00	89.94	0.18	7,274.41	4,675.59	1,052.13	4,753.77	0.00	0.00	0.00
12,000.00	89.94	0.18	7,274.52	4,775.58	1,052.44	4,853.35	0.00	0.00	0.00
12,100.00	89.94	0.18	7,274.63	4,875.58	1,052.75	4,952.94	0.00	0.00	0.00
12,200.00	89.94	0.18	7,274.75	4,975.58	1,053.07	5,052.53	0.00	0.00	0.00
12,300.00	89.94	0.18	7,274.86	5,075.58	1,053.38	5,152.11	0.00	0.00	0.00
12,400.00	89.94	0.18	7,274.97	5,175.58	1,053.69	5,251.70	0.00	0.00	0.00
12,500.00	89.94	0.18	7,275.09	5,275.58	1,054.01	5,351.29	0.00	0.00	0.00
12,600.00	89.94	0.18	7,275.20	5,375.58	1,054.32	5,450.87	0.00	0.00	0.00
12,700.00	89.94	0.18	7,275.31	5,475.58	1,054.64	5,550.46	0.00	0.00	0.00
12,800.00	89.94	0.18	7,275.43	5,575.58	1,054.95	5,650.05	0.00	0.00	0.00
12,900.00	89.94	0.18	7,275.54	5,675.58	1,055.26	5,749.63	0.00	0.00	0.00
13,000.00	89.94	0.18	7,275.65	5,775.58	1,055.58	5,849.22	0.00	0.00	0.00
13,100.00	89.94	0.18	7,275.77	5,875.58	1,055.89	5,948.80	0.00	0.00	0.00
13,200.00	89.94	0.18	7,275.88	5,975.58	1,056.21	6,048.39	0.00	0.00	0.00
13,300.00	89.94	0.18	7,276.00	6,075.58	1,056.52	6,147.98	0.00	0.00	0.00
13,400.00	89.94	0.18	7,276.11	6,175.58	1,056.83	6,247.56	0.00	0.00	0.00
13,500.00	89.94	0.18	7,276.22	6,275.58	1,057.15	6,347.15	0.00	0.00	0.00
13,600.00	89.94	0.18	7,276.34	6,375.58	1,057.46	6,446.74	0.00	0.00	0.00
13,700.00	89.94	0.18	7,276.45	6,475.58	1,057.78	6,546.32	0.00	0.00	0.00
13,800.00	89.94	0.18	7,276.56	6,575.57	1,058.09	6,645.91	0.00	0.00	0.00

# Corporate Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well VERDE 13-13HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB @ 5088.00usft (D Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB @ 5088.00usft (D Rig)
<b>Site:</b>	1N-66-13 VERDE 3-13HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	VERDE 13-13HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan A		
<b>Design:</b>	Permit Rev-1		

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)
13,900.00	89.94	0.18	7,276.68	6,675.57	1,058.40	6,745.50	0.00	0.00	0.00
14,000.00	89.94	0.18	7,276.79	6,775.57	1,058.72	6,845.08	0.00	0.00	0.00
14,100.00	89.94	0.18	7,276.90	6,875.57	1,059.03	6,944.67	0.00	0.00	0.00
14,200.00	89.94	0.18	7,277.02	6,975.57	1,059.35	7,044.25	0.00	0.00	0.00
14,300.00	89.94	0.18	7,277.13	7,075.57	1,059.66	7,143.84	0.00	0.00	0.00
14,400.00	89.94	0.18	7,277.24	7,175.57	1,059.97	7,243.43	0.00	0.00	0.00
14,500.00	89.94	0.18	7,277.36	7,275.57	1,060.29	7,343.01	0.00	0.00	0.00
14,600.00	89.94	0.18	7,277.47	7,375.57	1,060.60	7,442.60	0.00	0.00	0.00
14,700.00	89.94	0.18	7,277.58	7,475.57	1,060.92	7,542.19	0.00	0.00	0.00
14,800.00	89.94	0.18	7,277.70	7,575.57	1,061.23	7,641.77	0.00	0.00	0.00
14,900.00	89.94	0.18	7,277.81	7,675.57	1,061.54	7,741.36	0.00	0.00	0.00
15,000.00	89.94	0.18	7,277.92	7,775.57	1,061.86	7,840.95	0.00	0.00	0.00
15,100.00	89.94	0.18	7,278.04	7,875.57	1,062.17	7,940.53	0.00	0.00	0.00
15,200.00	89.94	0.18	7,278.15	7,975.57	1,062.49	8,040.12	0.00	0.00	0.00
15,300.00	89.94	0.18	7,278.26	8,075.57	1,062.80	8,139.71	0.00	0.00	0.00
15,400.00	89.94	0.18	7,278.38	8,175.57	1,063.11	8,239.29	0.00	0.00	0.00
15,500.00	89.94	0.18	7,278.49	8,275.57	1,063.43	8,338.88	0.00	0.00	0.00
15,600.00	89.94	0.18	7,278.60	8,375.56	1,063.74	8,438.46	0.00	0.00	0.00
15,700.00	89.94	0.18	7,278.72	8,475.56	1,064.06	8,538.05	0.00	0.00	0.00
15,800.00	89.94	0.18	7,278.83	8,575.56	1,064.37	8,637.64	0.00	0.00	0.00
15,900.00	89.94	0.18	7,278.94	8,675.56	1,064.68	8,737.22	0.00	0.00	0.00
16,000.00	89.94	0.18	7,279.06	8,775.56	1,065.00	8,836.81	0.00	0.00	0.00
16,100.00	89.94	0.18	7,279.17	8,875.56	1,065.31	8,936.40	0.00	0.00	0.00
16,200.00	89.94	0.18	7,279.29	8,975.56	1,065.63	9,035.98	0.00	0.00	0.00
16,300.00	89.94	0.18	7,279.40	9,075.56	1,065.94	9,135.57	0.00	0.00	0.00
16,400.00	89.94	0.18	7,279.51	9,175.56	1,066.25	9,235.16	0.00	0.00	0.00
16,500.00	89.94	0.18	7,279.63	9,275.56	1,066.57	9,334.74	0.00	0.00	0.00
16,600.00	89.94	0.18	7,279.74	9,375.56	1,066.88	9,434.33	0.00	0.00	0.00
16,700.00	89.94	0.18	7,279.85	9,475.56	1,067.20	9,533.91	0.00	0.00	0.00
16,800.00	89.94	0.18	7,279.97	9,575.56	1,067.51	9,633.50	0.00	0.00	0.00
16,900.00	89.94	0.18	7,280.08	9,675.56	1,067.82	9,733.09	0.00	0.00	0.00
17,000.00	89.94	0.18	7,280.19	9,775.56	1,068.14	9,832.67	0.00	0.00	0.00
17,100.00	89.94	0.18	7,280.31	9,875.56	1,068.45	9,932.26	0.00	0.00	0.00
17,200.00	89.94	0.18	7,280.42	9,975.56	1,068.77	10,031.85	0.00	0.00	0.00
17,300.00	89.94	0.18	7,280.53	10,075.56	1,069.08	10,131.43	0.00	0.00	0.00
17,400.00	89.94	0.18	7,280.65	10,175.55	1,069.39	10,231.02	0.00	0.00	0.00
17,500.00	89.94	0.18	7,280.76	10,275.55	1,069.71	10,330.61	0.00	0.00	0.00
17,600.00	89.94	0.18	7,280.87	10,375.55	1,070.02	10,430.19	0.00	0.00	0.00
17,700.00	89.94	0.18	7,280.99	10,475.55	1,070.34	10,529.78	0.00	0.00	0.00
17,800.00	89.94	0.18	7,281.10	10,575.55	1,070.65	10,629.37	0.00	0.00	0.00
17,900.00	89.94	0.18	7,281.21	10,675.55	1,070.96	10,728.95	0.00	0.00	0.00
18,000.00	89.94	0.18	7,281.33	10,775.55	1,071.28	10,828.54	0.00	0.00	0.00
18,100.00	89.94	0.18	7,281.44	10,875.55	1,071.59	10,928.12	0.00	0.00	0.00
18,200.00	89.94	0.18	7,281.55	10,975.55	1,071.91	11,027.71	0.00	0.00	0.00
18,300.00	89.94	0.18	7,281.67	11,075.55	1,072.22	11,127.30	0.00	0.00	0.00
18,400.00	89.94	0.18	7,281.78	11,175.55	1,072.53	11,226.88	0.00	0.00	0.00
18,500.00	89.94	0.18	7,281.89	11,275.55	1,072.85	11,326.47	0.00	0.00	0.00
18,593.25	89.94	0.18	7,282.00	11,368.80	1,073.14	11,419.34	0.00	0.00	0.00
VERDE 13-13HZ_PBHL									



# Corporate Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well VERDE 13-13HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB @ 5088.00usft (D Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB @ 5088.00usft (D Rig)
<b>Site:</b>	1N-66-13 VERDE 3-13HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	VERDE 13-13HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan A		
<b>Design:</b>	Permit Rev-1		

Design Targets									
Target Name									
- hit/miss target	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- Shape	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)		
VERDE 13-13HZ_PHI	0.00	0.00	7,269.71	538.75	1,039.14	14,547,811.00	1,718,292.40	40.057549	-104.721690
- plan hits target center									
- Point									
VERDE 13-13HZ_PBI	0.00	0.00	7,282.00	11,368.80	1,073.14	14,558,641.11	1,718,293.00	40.087289	-104.721566
- plan hits target center									
- Point									

Casing Points					
	Measured Depth	Vertical Depth		Casing Diameter	Hole Diameter
	(usft)	(usft)	Name	(")	(")
	1,833.20	1,800.00	9 5/8"	9-5/8	13-1/2
	7,763.14	7,269.71	Top of Production	5-1/2	7-7/8

Formations						
	Measured Depth	Vertical Depth			Dip	Dip Direction
	(usft)	(usft)	Name	Lithology	(°)	(°)
	1,616.04	1,591.00	Fox Hills			
	4,421.70	4,295.00	Parkman			
	4,778.26	4,648.00	Sussex			
	7,296.90	7,106.00	Sharon Springs			
	7,329.19	7,127.00	Niobrara			
	7,575.32	7,242.00	Nio B			