

US ROCKIES WATTENBERG PLANNING

**WELD-NAD83-UTMFT13N
2N-65W-08 Sunflower Pad
SUNFLOWER 25G-17HZ**

Plan A

Plan: Permit Rev-3

Standard Planning Report

15 July, 2015

Project: WELD-NAD83-UTMFT13N
Site: 2N-65W-08 Sunflower Pad
Well: SUNFLOWER 25G-17HZ
Wellbore: Plan A
Design: Permit Rev-3

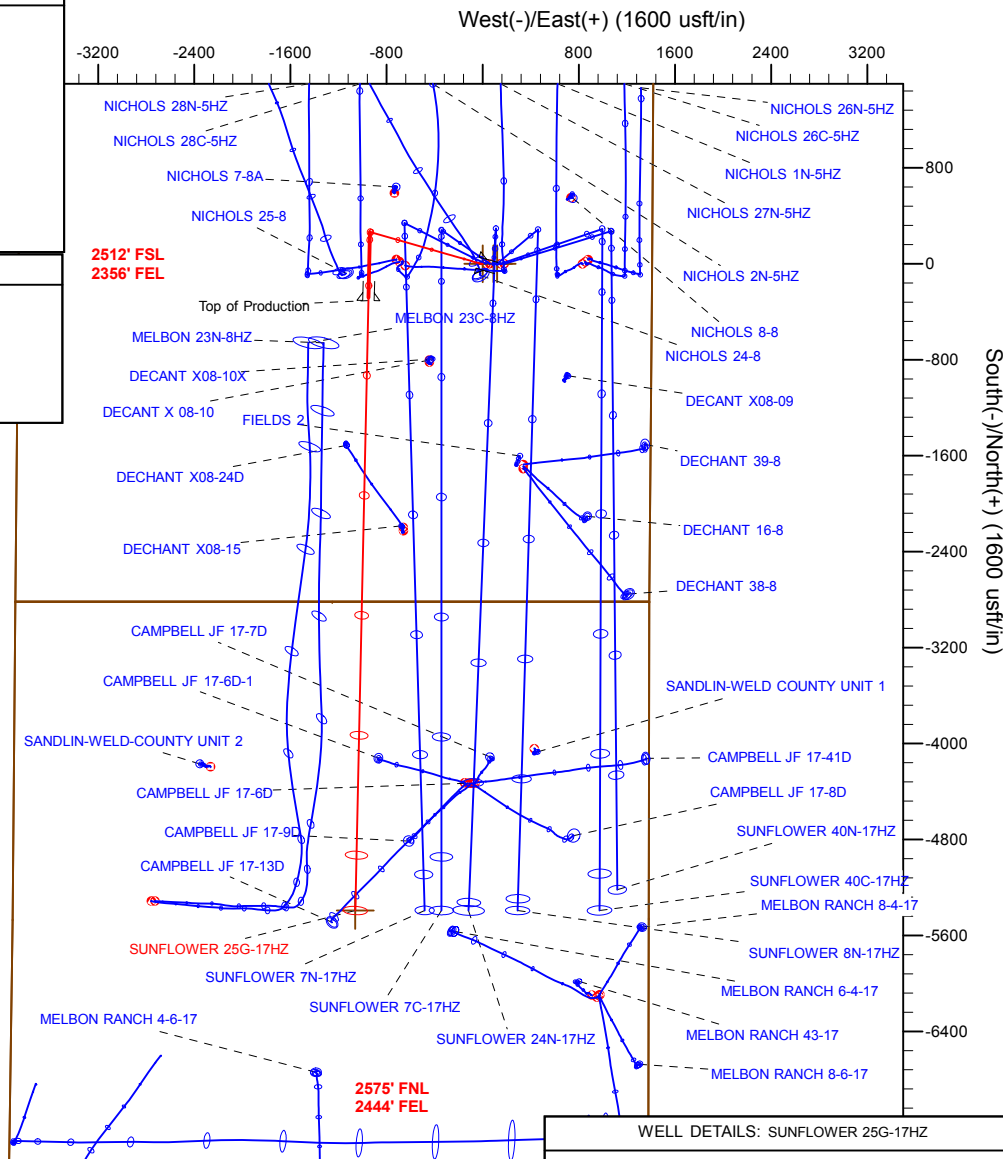
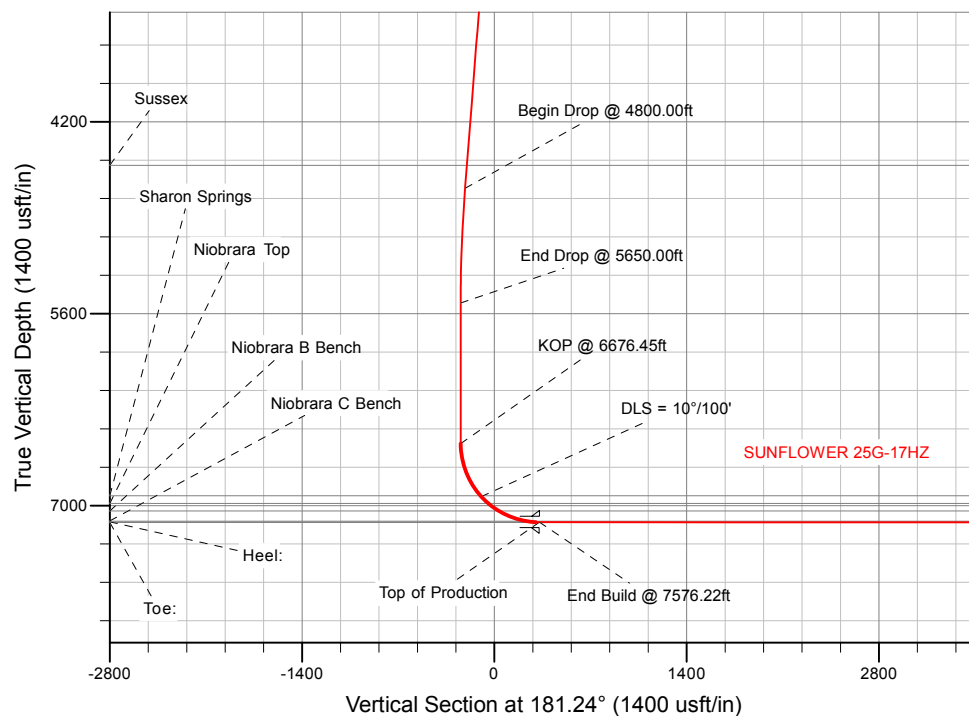
US ROCKIES WATTENBERG PLANNING

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	250.00	0.00	0.00	250.00	0.00	0.00	0.00	0.00	0.00	
3	350.00	1.50	270.00	349.99	0.00	-1.31	1.50	270.00	0.03	
4	850.00	1.50	270.00	849.82	0.00	-14.40	0.00	0.00	0.31	
5	877.83	1.50	286.00	877.64	0.10	-15.11	1.50	98.00	0.23	
6	1665.00	1.50	286.00	1664.54	5.78	-34.92	0.00	0.00	-5.02	
7	2440.00	17.00	286.00	2427.13	40.01	-154.30	2.00	0.00	-36.66	
8	4800.00	17.00	286.00	4684.01	230.20	-817.57	0.00	0.00	-212.46	
9	5650.00	0.00	0.00	5521.59	264.71	-937.90	2.00	180.00	-244.35	
10	6676.45	0.00	0.00	6548.04	264.71	-937.90	0.00	0.00	-244.35	
11	7576.22	89.98	181.24	7121.00	-307.89	-950.25	10.00	181.24	328.39	
12	12660.77	89.98	181.24	7123.00	-5391.26	-1059.86	0.00	0.00	5412.93	SUNFLOWER 25G-17HZ_BHL

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
SUNFLOWER 25G-17HZ_SHL	0.00	0.00	0.00	40.153696	-104.683356	Point
SUNFLOWER 25G-17HZ_BHL	7123.00	-5391.26	-1059.86	40.138891	-104.687148	Point



WELL DETAILS: SUNFLOWER 25G-17HZ

Ground Level: 4901.00

RKB = 17" @ 4918.00usft (D Rig)

Plan: Permit Rev-3 (SUNFLOWER 25G-17HZ/Plan A)

Created By: Clint Eshelman

Date: 7/15/2015

Reviewed: _____

Date: _____

Anadarko

Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well SUNFLOWER 25G-17HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 4918.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 4918.00usft (D Rig)
Site:	2N-65W-08 Sunflower Pad	North Reference:	True
Well:	SUNFLOWER 25G-17HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-3		

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-65W-08 Sunflower Pad			
Site Position:		Northing:	14,582,858.79 usft	Latitude:	40.153696
From:	Lat/Long	Easting:	1,728,894.06 usft	Longitude:	-104.683356
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.20 °

Well		SUNFLOWER 25G-17HZ				
Well Position	+N/-S	0.00 usft	Northing:	14,582,858.79 usft	Latitude:	40.153696
	+E/-W	0.00 usft	Easting:	1,728,894.06 usft	Longitude:	-104.683356
Position Uncertainty		4.02 usft	Wellhead Elevation:	0.00 usft	Ground Level:	4,901.00 usft

Wellbore	Plan A				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	2/17/2015	8.30	66.74	52,623

Design	Permit Rev-3			
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	181.24

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	
350.00	1.50	270.00	349.99	0.00	-1.31	1.50	1.50	0.00	270.00	
850.00	1.50	270.00	849.82	0.00	-14.40	0.00	0.00	0.00	0.00	
877.83	1.50	286.00	877.64	0.10	-15.11	1.50	0.00	57.49	98.00	
1,665.00	1.50	286.00	1,664.54	5.78	-34.92	0.00	0.00	0.00	0.00	
2,440.00	17.00	286.00	2,427.13	40.01	-154.30	2.00	2.00	0.00	0.00	
4,800.00	17.00	286.00	4,684.01	230.20	-817.57	0.00	0.00	0.00	0.00	
5,650.00	0.00	0.00	5,521.59	264.71	-937.90	2.00	-2.00	8.71	180.00	
6,676.45	0.00	0.00	6,548.04	264.71	-937.90	0.00	0.00	0.00	0.00	
7,576.22	89.98	181.24	7,121.00	-307.89	-950.25	10.00	10.00	-19.87	181.24	
12,660.77	89.98	181.24	7,123.00	-5,391.26	-1,059.86	0.00	0.00	0.00	0.00	SUNFLOWER 25G-17

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Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well SUNFLOWER 25G-17HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 4918.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 4918.00usft (D Rig)
Site:	2N-65W-08 Sunflower Pad	North Reference:	True
Well:	SUNFLOWER 25G-17HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-3		

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
Begin Nudge @ 250.00ft									
300.00	0.75	270.00	300.00	0.00	-0.33	0.01	1.50	1.50	0.00
350.00	1.50	270.00	349.99	0.00	-1.31	0.03	1.50	1.50	0.00
End Nudge @ 350.00ft									
400.00	1.50	270.00	399.97	0.00	-2.62	0.06	0.00	0.00	0.00
500.00	1.50	270.00	499.94	0.00	-5.24	0.11	0.00	0.00	0.00
600.00	1.50	270.00	599.90	0.00	-7.85	0.17	0.00	0.00	0.00
700.00	1.50	270.00	699.87	0.00	-10.47	0.23	0.00	0.00	0.00
800.00	1.50	270.00	799.83	0.00	-13.09	0.28	0.00	0.00	0.00
850.00	1.50	270.00	849.82	0.00	-14.40	0.31	0.00	0.00	0.00
Begin Nudge @ 850.00ft									
877.83	1.50	286.00	877.64	0.10	-15.11	0.23	1.50	0.00	57.49
End Nudge @ 877.83ft									
900.00	1.50	286.00	899.80	0.26	-15.67	0.08	0.00	0.00	0.00
1,000.00	1.50	286.00	999.77	0.98	-18.19	-0.59	0.00	0.00	0.00
1,100.00	1.50	286.00	1,099.73	1.70	-20.70	-1.26	0.00	0.00	0.00
1,200.00	1.50	286.00	1,199.70	2.42	-23.22	-1.92	0.00	0.00	0.00
1,300.00	1.50	286.00	1,299.66	3.15	-25.73	-2.59	0.00	0.00	0.00
1,400.00	1.50	286.00	1,399.63	3.87	-28.25	-3.26	0.00	0.00	0.00
1,500.00	1.50	286.00	1,499.59	4.59	-30.77	-3.92	0.00	0.00	0.00
1,600.00	1.50	286.00	1,599.56	5.31	-33.28	-4.59	0.00	0.00	0.00
1,665.00	1.50	286.00	1,664.54	5.78	-34.92	-5.02	0.00	0.00	0.00
Begin Nudge @ 1665.00ft									
1,700.00	2.20	286.00	1,699.52	6.09	-36.01	-5.31	2.00	2.00	0.00
1,800.00	4.20	286.00	1,799.36	7.63	-41.37	-6.73	2.00	2.00	0.00
1,800.64	4.21	286.00	1,800.00	7.64	-41.42	-6.75	2.00	2.00	0.00
9 5/8"									
1,900.00	6.20	286.00	1,898.94	10.13	-50.08	-9.04	2.00	2.00	0.00
2,000.00	8.20	286.00	1,998.15	13.58	-62.13	-12.23	2.00	2.00	0.00
2,100.00	10.20	286.00	2,096.86	17.99	-77.50	-16.31	2.00	2.00	0.00
2,200.00	12.20	286.00	2,194.95	23.34	-96.17	-21.26	2.00	2.00	0.00
2,300.00	14.20	286.00	2,292.30	29.64	-118.12	-27.07	2.00	2.00	0.00
2,400.00	16.20	286.00	2,388.80	36.86	-143.32	-33.75	2.00	2.00	0.00
2,440.00	17.00	286.00	2,427.13	40.01	-154.30	-36.66	2.00	2.00	0.00
End Nudge @ 2440.00ft									
2,500.00	17.00	286.00	2,484.51	44.85	-171.17	-41.13	0.00	0.00	0.00
2,600.00	17.00	286.00	2,580.14	52.91	-199.27	-48.58	0.00	0.00	0.00
2,700.00	17.00	286.00	2,675.77	60.97	-227.38	-56.03	0.00	0.00	0.00
2,800.00	17.00	286.00	2,771.40	69.03	-255.48	-63.48	0.00	0.00	0.00
2,900.00	17.00	286.00	2,867.03	77.08	-283.59	-70.93	0.00	0.00	0.00
3,000.00	17.00	286.00	2,962.66	85.14	-311.69	-78.38	0.00	0.00	0.00
3,100.00	17.00	286.00	3,058.29	93.20	-339.79	-85.83	0.00	0.00	0.00
3,200.00	17.00	286.00	3,153.92	101.26	-367.90	-93.28	0.00	0.00	0.00
3,300.00	17.00	286.00	3,249.55	109.32	-396.00	-100.72	0.00	0.00	0.00
3,400.00	17.00	286.00	3,345.18	117.38	-424.11	-108.17	0.00	0.00	0.00
3,500.00	17.00	286.00	3,440.81	125.44	-452.21	-115.62	0.00	0.00	0.00
3,600.00	17.00	286.00	3,536.44	133.50	-480.32	-123.07	0.00	0.00	0.00
3,700.00	17.00	286.00	3,632.07	141.55	-508.42	-130.52	0.00	0.00	0.00
3,800.00	17.00	286.00	3,727.70	149.61	-536.53	-137.97	0.00	0.00	0.00

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Planning Report

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Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 4918.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 4918.00usft (D Rig)
Site:	2N-65W-08 Sunflower Pad	North Reference:	True
Well:	SUNFLOWER 25G-17HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-3		

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)
3,900.00	17.00	286.00	3,823.33	157.67	-564.63	-145.42	0.00	0.00	0.00
4,000.00	17.00	286.00	3,918.97	165.73	-592.74	-152.87	0.00	0.00	0.00
4,100.00	17.00	286.00	4,014.60	173.79	-620.84	-160.31	0.00	0.00	0.00
4,200.00	17.00	286.00	4,110.23	181.85	-648.94	-167.76	0.00	0.00	0.00
4,300.00	17.00	286.00	4,205.86	189.91	-677.05	-175.21	0.00	0.00	0.00
4,400.00	17.00	286.00	4,301.49	197.97	-705.15	-182.66	0.00	0.00	0.00
4,500.00	17.00	286.00	4,397.12	206.03	-733.26	-190.11	0.00	0.00	0.00
4,600.00	17.00	286.00	4,492.75	214.08	-761.36	-197.56	0.00	0.00	0.00
4,626.41	17.00	286.00	4,518.00	216.21	-768.78	-199.53	0.00	0.00	0.00
Sussex									
4,700.00	17.00	286.00	4,588.38	222.14	-789.47	-205.01	0.00	0.00	0.00
4,800.00	17.00	286.00	4,684.01	230.20	-817.57	-212.46	0.00	0.00	0.00
Begin Drop @ 4800.00ft									
4,900.00	15.00	286.00	4,780.13	237.80	-844.07	-219.48	2.00	-2.00	0.00
5,000.00	13.00	286.00	4,877.16	244.47	-867.32	-225.64	2.00	-2.00	0.00
5,100.00	11.00	286.00	4,974.96	250.20	-887.31	-230.94	2.00	-2.00	0.00
5,200.00	9.00	286.00	5,073.44	254.98	-904.00	-235.36	2.00	-2.00	0.00
5,300.00	7.00	286.00	5,172.46	258.82	-917.37	-238.91	2.00	-2.00	0.00
5,400.00	5.00	286.00	5,271.91	261.70	-927.42	-241.57	2.00	-2.00	0.00
5,500.00	3.00	286.00	5,371.66	263.62	-934.13	-243.35	2.00	-2.00	0.00
5,600.00	1.00	286.00	5,471.60	264.59	-937.48	-244.24	2.00	-2.00	0.00
5,650.00	0.00	0.00	5,521.59	264.71	-937.90	-244.35	2.00	-2.00	148.00
End Drop @ 5650.00ft									
5,700.00	0.00	0.00	5,571.59	264.71	-937.90	-244.35	0.00	0.00	0.00
5,800.00	0.00	0.00	5,671.59	264.71	-937.90	-244.35	0.00	0.00	0.00
5,900.00	0.00	0.00	5,771.59	264.71	-937.90	-244.35	0.00	0.00	0.00
6,000.00	0.00	0.00	5,871.59	264.71	-937.90	-244.35	0.00	0.00	0.00
6,100.00	0.00	0.00	5,971.59	264.71	-937.90	-244.35	0.00	0.00	0.00
6,200.00	0.00	0.00	6,071.59	264.71	-937.90	-244.35	0.00	0.00	0.00
6,300.00	0.00	0.00	6,171.59	264.71	-937.90	-244.35	0.00	0.00	0.00
6,400.00	0.00	0.00	6,271.59	264.71	-937.90	-244.35	0.00	0.00	0.00
6,500.00	0.00	0.00	6,371.59	264.71	-937.90	-244.35	0.00	0.00	0.00
6,600.00	0.00	0.00	6,471.59	264.71	-937.90	-244.35	0.00	0.00	0.00
6,676.45	0.00	0.00	6,548.04	264.71	-937.90	-244.35	0.00	0.00	0.00
KOP @ 6676.45ft									
6,700.00	2.36	181.24	6,571.59	264.22	-937.91	-243.86	10.00	10.00	-759.09
6,800.00	12.36	181.24	6,670.64	251.44	-938.19	-231.08	10.00	10.00	0.00
6,900.00	22.36	181.24	6,765.96	221.66	-938.83	-201.29	10.00	10.00	0.00
7,000.00	32.36	181.24	6,854.67	175.77	-939.82	-155.39	10.00	10.00	0.00
7,093.62	41.72	181.24	6,929.32	119.46	-941.03	-99.07	10.00	10.00	0.00
Sharon Springs									
7,100.00	42.36	181.24	6,934.06	115.19	-941.12	-94.80	10.00	10.00	0.00
DLS = 10°/100'									
7,172.37	49.59	181.24	6,984.32	63.20	-942.25	-42.80	10.00	10.00	0.00
Niobrara Top									
7,200.00	52.36	181.24	7,001.72	41.74	-942.71	-21.33	10.00	10.00	0.00
7,267.61	59.12	181.24	7,039.76	-14.09	-943.91	34.51	10.00	10.00	0.00
Niobrara B Bench									
7,300.00	62.36	181.24	7,055.59	-42.33	-944.52	62.76	10.00	10.00	0.00
7,400.00	72.36	181.24	7,094.04	-134.49	-946.51	154.94	10.00	10.00	0.00
7,480.95	80.45	181.24	7,113.06	-213.08	-948.20	233.55	10.00	10.00	0.00
Niobrara C Bench									
7,500.00	82.36	181.24	7,115.91	-231.91	-948.61	252.39	10.00	10.00	0.00

Anadarko

Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well SUNFLOWER 25G-17HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 4918.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 4918.00usft (D Rig)
Site:	2N-65W-08 Sunflower Pad	North Reference:	True
Well:	SUNFLOWER 25G-17HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-3		

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)	
7,576.22	89.98	181.24	7,121.00	-307.89	-950.25	328.38	10.00	10.00	0.00	
End Build @ 7576.22ft - Heel: - Top of Production										
7,600.00	89.98	181.24	7,121.01	-331.66	-950.76	352.16	0.00	0.00	0.00	
7,700.00	89.98	181.24	7,121.05	-431.64	-952.92	452.16	0.00	0.00	0.00	
7,800.00	89.98	181.24	7,121.09	-531.62	-955.07	552.16	0.00	0.00	0.00	
7,900.00	89.98	181.24	7,121.13	-631.59	-957.23	652.16	0.00	0.00	0.00	
8,000.00	89.98	181.24	7,121.17	-731.57	-959.38	752.16	0.00	0.00	0.00	
8,100.00	89.98	181.24	7,121.21	-831.55	-961.54	852.16	0.00	0.00	0.00	
8,200.00	89.98	181.24	7,121.25	-931.52	-963.69	952.16	0.00	0.00	0.00	
8,300.00	89.98	181.24	7,121.28	-1,031.50	-965.85	1,052.16	0.00	0.00	0.00	
8,400.00	89.98	181.24	7,121.32	-1,131.48	-968.01	1,152.16	0.00	0.00	0.00	
8,500.00	89.98	181.24	7,121.36	-1,231.45	-970.16	1,252.16	0.00	0.00	0.00	
8,600.00	89.98	181.24	7,121.40	-1,331.43	-972.32	1,352.16	0.00	0.00	0.00	
8,700.00	89.98	181.24	7,121.44	-1,431.41	-974.47	1,452.16	0.00	0.00	0.00	
8,800.00	89.98	181.24	7,121.48	-1,531.38	-976.63	1,552.16	0.00	0.00	0.00	
8,900.00	89.98	181.24	7,121.52	-1,631.36	-978.79	1,652.16	0.00	0.00	0.00	
9,000.00	89.98	181.24	7,121.56	-1,731.34	-980.94	1,752.16	0.00	0.00	0.00	
9,100.00	89.98	181.24	7,121.60	-1,831.31	-983.10	1,852.16	0.00	0.00	0.00	
9,200.00	89.98	181.24	7,121.64	-1,931.29	-985.25	1,952.16	0.00	0.00	0.00	
9,300.00	89.98	181.24	7,121.68	-2,031.27	-987.41	2,052.16	0.00	0.00	0.00	
9,400.00	89.98	181.24	7,121.72	-2,131.24	-989.56	2,152.16	0.00	0.00	0.00	
9,500.00	89.98	181.24	7,121.76	-2,231.22	-991.72	2,252.16	0.00	0.00	0.00	
9,600.00	89.98	181.24	7,121.80	-2,331.20	-993.88	2,352.16	0.00	0.00	0.00	
9,700.00	89.98	181.24	7,121.84	-2,431.18	-996.03	2,452.16	0.00	0.00	0.00	
9,800.00	89.98	181.24	7,121.87	-2,531.15	-998.19	2,552.16	0.00	0.00	0.00	
9,900.00	89.98	181.24	7,121.91	-2,631.13	-1,000.34	2,652.16	0.00	0.00	0.00	
10,000.00	89.98	181.24	7,121.95	-2,731.11	-1,002.50	2,752.16	0.00	0.00	0.00	
10,100.00	89.98	181.24	7,121.99	-2,831.08	-1,004.65	2,852.16	0.00	0.00	0.00	
10,200.00	89.98	181.24	7,122.03	-2,931.06	-1,006.81	2,952.16	0.00	0.00	0.00	
10,300.00	89.98	181.24	7,122.07	-3,031.04	-1,008.97	3,052.16	0.00	0.00	0.00	
10,400.00	89.98	181.24	7,122.11	-3,131.01	-1,011.12	3,152.16	0.00	0.00	0.00	
10,500.00	89.98	181.24	7,122.15	-3,230.99	-1,013.28	3,252.16	0.00	0.00	0.00	
10,600.00	89.98	181.24	7,122.19	-3,330.97	-1,015.43	3,352.16	0.00	0.00	0.00	
10,700.00	89.98	181.24	7,122.23	-3,430.94	-1,017.59	3,452.16	0.00	0.00	0.00	
10,800.00	89.98	181.24	7,122.27	-3,530.92	-1,019.75	3,552.16	0.00	0.00	0.00	
10,900.00	89.98	181.24	7,122.31	-3,630.90	-1,021.90	3,652.16	0.00	0.00	0.00	
11,000.00	89.98	181.24	7,122.35	-3,730.87	-1,024.06	3,752.16	0.00	0.00	0.00	
11,100.00	89.98	181.24	7,122.39	-3,830.85	-1,026.21	3,852.16	0.00	0.00	0.00	
11,200.00	89.98	181.24	7,122.43	-3,930.83	-1,028.37	3,952.16	0.00	0.00	0.00	
11,300.00	89.98	181.24	7,122.46	-4,030.80	-1,030.52	4,052.16	0.00	0.00	0.00	
11,400.00	89.98	181.24	7,122.50	-4,130.78	-1,032.68	4,152.16	0.00	0.00	0.00	
11,500.00	89.98	181.24	7,122.54	-4,230.76	-1,034.84	4,252.16	0.00	0.00	0.00	
11,600.00	89.98	181.24	7,122.58	-4,330.73	-1,036.99	4,352.16	0.00	0.00	0.00	
11,700.00	89.98	181.24	7,122.62	-4,430.71	-1,039.15	4,452.16	0.00	0.00	0.00	
11,800.00	89.98	181.24	7,122.66	-4,530.69	-1,041.30	4,552.16	0.00	0.00	0.00	
11,900.00	89.98	181.24	7,122.70	-4,630.66	-1,043.46	4,652.16	0.00	0.00	0.00	
12,000.00	89.98	181.24	7,122.74	-4,730.64	-1,045.62	4,752.16	0.00	0.00	0.00	
12,100.00	89.98	181.24	7,122.78	-4,830.62	-1,047.77	4,852.16	0.00	0.00	0.00	
12,200.00	89.98	181.24	7,122.82	-4,930.59	-1,049.93	4,952.16	0.00	0.00	0.00	
12,300.00	89.98	181.24	7,122.86	-5,030.57	-1,052.08	5,052.16	0.00	0.00	0.00	
12,400.00	89.98	181.24	7,122.90	-5,130.55	-1,054.24	5,152.16	0.00	0.00	0.00	
12,500.00	89.98	181.24	7,122.94	-5,230.52	-1,056.39	5,252.16	0.00	0.00	0.00	
12,600.00	89.98	181.24	7,122.98	-5,330.50	-1,058.55	5,352.16	0.00	0.00	0.00	
12,660.77	89.98	181.24	7,123.00	-5,391.26	-1,059.86	5,412.93	0.00	0.00	0.00	

Anadarko

Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well SUNFLOWER 25G-17HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 4918.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 4918.00usft (D Rig)
Site:	2N-65W-08 Sunflower Pad	North Reference:	True
Well:	SUNFLOWER 25G-17HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-3		

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 @ 12660.77ft									

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
2N-R65W-Sec. 17_Secti	0.00	0.00	0.00	-0.36	120.15	14,582,858.86	1,729,014.21	40.153695	-104.682926
- plan misses target center by 120.15usft at 0.00usft MD (0.00 TVD, 0.00 N, 0.00 E)									
- Polygon									
Point 1			0.00	-2,816.61	-4,008.29	14,580,027.98	1,725,015.99		
Point 2			0.00	-2,816.66	-1,370.73	14,580,037.33	1,727,653.53		
Point 3			0.00	-2,816.83	1,266.75	14,580,046.56	1,730,290.99		
Point 4			0.00	-5,458.07	1,263.14	14,577,405.32	1,730,296.80		
Point 5			0.00	-8,097.27	1,258.67	14,574,766.13	1,730,301.73		
Point 6			0.00	-8,105.44	-1,395.81	14,574,748.49	1,727,647.30		
Point 7			0.00	-8,138.96	-4,068.45	14,574,705.45	1,724,974.80		
Point 8			0.00	-5,466.70	-4,031.25	14,577,377.83	1,725,002.47		
SUNFLOWER 25G-17H.	0.00	0.00	0.00	0.00	0.00	14,582,858.79	1,728,894.06	40.153696	-104.683356
- plan hits target center									
- Point									
2N-R65W-Sec. 8_Sectio	0.00	0.00	0.00	-0.36	89.97	14,582,858.75	1,728,984.04	40.153695	-104.683034
- plan misses target center by 89.98usft at 0.00usft MD (0.00 TVD, 0.00 N, 0.00 E)									
- Polygon									
Point 1			0.00	2,477.58	-3,927.69	14,585,322.32	1,725,047.54		
Point 2			0.00	2,484.51	-1,296.13	14,585,338.63	1,727,679.06		
Point 3			0.00	2,491.49	1,335.39	14,585,354.98	1,730,310.54		
Point 4			0.00	-183.55	1,318.51	14,582,679.90	1,730,303.19		
Point 5			0.00	-2,816.83	1,296.93	14,580,046.56	1,730,291.00		
Point 6			0.00	-2,816.66	-1,340.55	14,580,037.33	1,727,653.53		
Point 7			0.00	-2,816.61	-3,978.11	14,580,027.98	1,725,015.99		
Point 8			0.00	-169.24	-3,952.93	14,582,675.42	1,725,031.73		
SUNFLOWER 25G-17H.	0.00	0.00	7,123.00	-5,391.26	-1,059.86	14,577,463.79	1,727,853.42	40.138891	-104.687148
- plan hits target center									
- Point									

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")	
1,800.64	1,800.00	9 5/8"	9-5/8	13-1/2	
7,576.22	7,121.00	Top of Production	5-1/2	7-7/8	

Anadarko

Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well SUNFLOWER 25G-17HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 4918.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 4918.00usft (D Rig)
Site:	2N-65W-08 Sunflower Pad	North Reference:	True
Well:	SUNFLOWER 25G-17HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-3		

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
4,626.41	4,518.00	Sussex		0.00		
7,093.62	6,929.32	Sharon Springs		0.00		
7,172.37	6,984.32	Niobrara Top		0.00		
7,267.61	7,039.76	Niobrara B Bench		0.00		
7,480.95	7,113.06	Niobrara C Bench		0.00		
7,576.22	7,121.00	Heel:		0.00		
12,660.77	7,123.00	Toe:		0.00		

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
250.00	250.00	0.00	0.00	Begin Nudge @ 250.00ft	
350.00	349.99	0.00	-1.31	End Nudge @ 350.00ft	
850.00	849.82	0.00	-14.40	Begin Nudge @ 850.00ft	
877.83	877.64	0.10	-15.11	End Nudge @ 877.83ft	
1,665.00	1,664.54	5.78	-34.92	Begin Nudge @ 1665.00ft	
2,440.00	2,427.13	40.01	-154.30	End Nudge @ 2440.00ft	
4,800.00	4,684.01	230.20	-817.57	Begin Drop @ 4800.00ft	
5,650.00	5,521.59	264.71	-937.90	End Drop @ 5650.00ft	
6,676.45	6,548.04	264.71	-937.90	KOP @ 6676.45ft	
7,100.00	6,934.06	115.19	-941.12	DLS = 10"/100'	
7,576.22	7,121.00	-307.89	-950.25	End Build @ 7576.22ft	
12,660.77	7,123.00	-5,391.26	-1,059.86	TD Well @ 12660.77ft	