

US ROCKIES WATTENBERG PLANNING

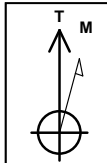
**WELD-NAD83-UTMFT13N
1N-67W-02 Speak 9-2HZ
SPEAK FED 32N2-5HZ**

Plan A

Plan: Permit Rev-1

Standard Planning Report

14 February, 2017



Azimuths to True North
Magnetic North: 8.12°

Magnetic Field
Strength: 52357.5snT
Dip Angle: 66.58°
Date: 2/8/2017
Model: IGRF2010

SITE: 1N-67W-02 Speak 9-2HZ

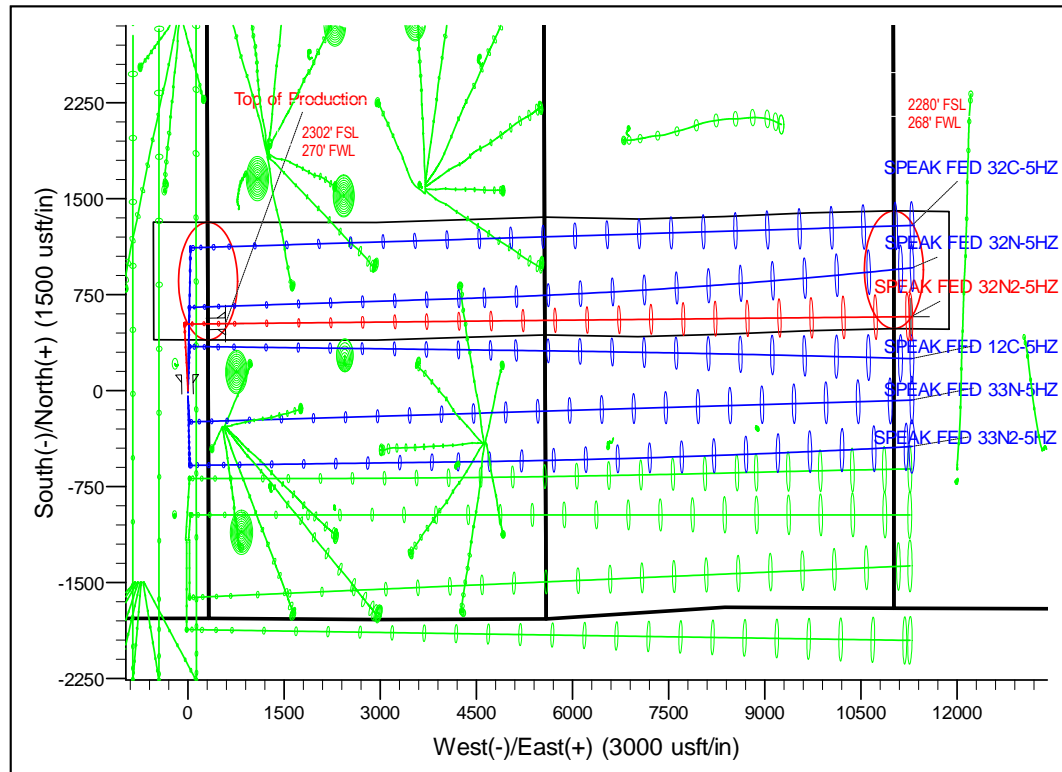
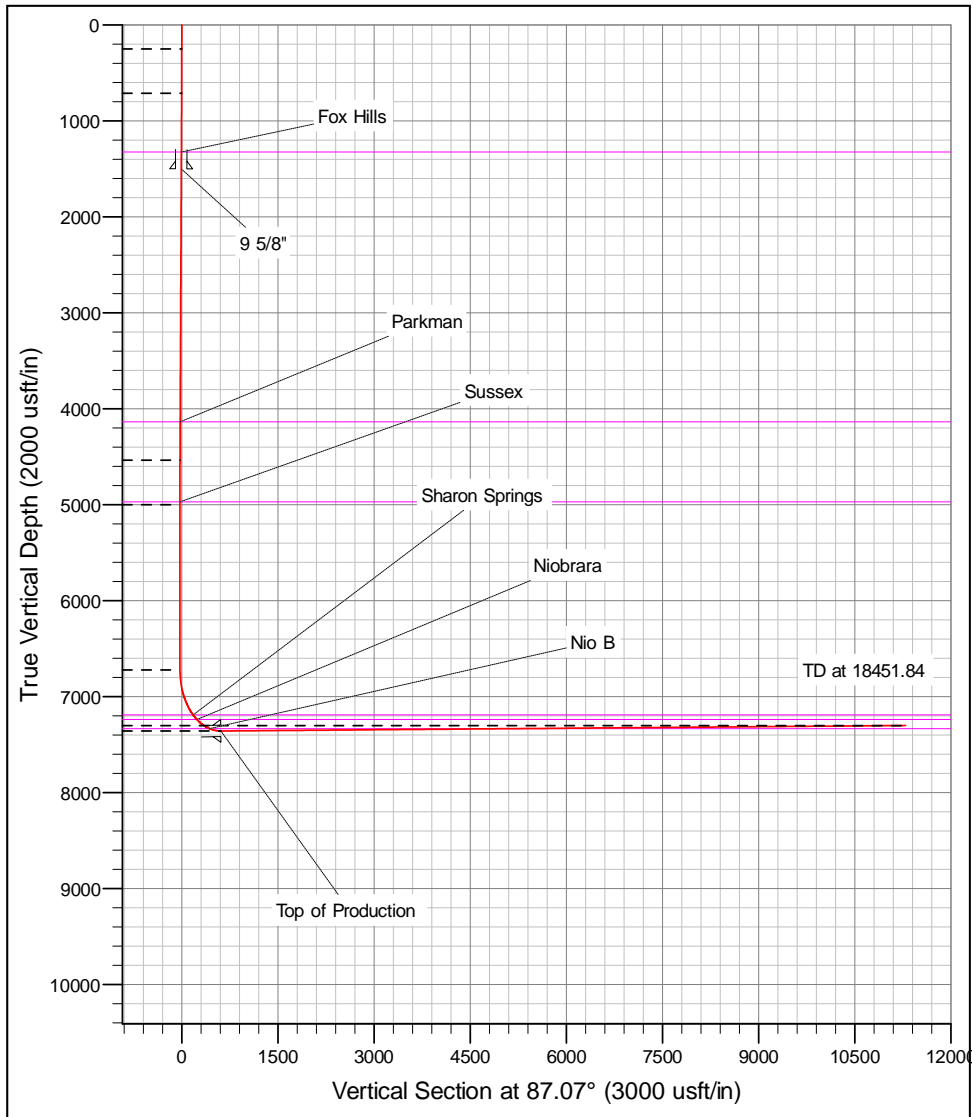
Well: SPEAK FED 32N2-5HZ
Wellbore: Plan A
Design: Permit Rev-1

FORMATION TOP DETAILS		
TVDPath	MDPath	Formation
1324.00	1329.67	Fox Hills
4136.00	4162.53	Parkman
4971.00	5001.64	Sussex
7191.00	7279.72	Sharon Springs
7240.00	7357.48	Niobrara
7334.00	7574.17	Nio B

WELL DETAILS: SPEAK FED 32N2-5HZ						
+N/-S	+E/-W	GL: 4955.00	RKB @ 4972.00usft (D Rig)			Slot
0.00	0.00	Northing	Easting	Latitude	Longitude	
		14555043.86	1682413.90	40.077648	-104.849867	

SECTION DETAILS							
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	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
713.76	6.96	353.96	712.62	27.96	-2.96	1.50	-1.52
4566.88	6.96	353.96	4537.38	492.04	-52.04	0.00	-26.79
5030.64	0.00	0.00	5000.00	520.00	-55.00	1.50	-28.31
6752.96	0.00	0.00	6722.32	520.00	-55.00	0.00	-28.31
7756.35	90.31	89.71	7358.93	523.28	585.00	9.00	611.02
18451.84	90.31	89.71	7302.00	578.08	11280.19	0.00	1294.99

DESIGN TARGET DETAILS							
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
SPEAK FED 32N2-5HZ_PBHL	7302.00	578.08	11280.19	14555640.97	1683693.10	40.079228	-104.809541



Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well SPEAK FED 32N2-5HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB @ 4972.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB @ 4972.00usft (D Rig)
Site:	1N-67W-02 Speak 9-2HZ	North Reference:	True
Well:	SPEAK FED 32N2-5HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-1		

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-02 Speak 1-2HZ		
Site Position:		Northing:	14,555,089.01 usft
From:	Lat/Long	Easting:	1,682,413.54 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "
		Latitude:	40.077772
		Longitude:	-104.849868
		Grid Convergence:	0.10 °

Well	SPEAK FED 32N2-5HZ			
Well Position	+N-S	-45.15 usft	Northing:	14,555,043.86 usft
	+E-W	0.28 usft	Easting:	1,682,413.90 usft
Position Uncertainty		3.28 usft	Wellhead Elevation:	
			Latitude:	40.077648
			Longitude:	-104.849867
			Ground Level:	4,955.00 usft

Wellbore	Plan A				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	2/8/2017	8.12	66.58	52,357.50941785

Design	Permit Rev-1			
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	87.07

Plan Survey Tool Program	Date	2/14/2017		
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	1,506.98	Permit Rev-1 (Plan A)	APC_ISCWSA REV 2 MWI Fixed:v2:standard declinator
2	1,506.98	18,451.84	Permit Rev-1 (Plan A)	APC_ISCWSA REV 2 MWI Fixed:v2:Rockies, crustal dex

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well SPEAK FED 32N2-5HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB @ 4972.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB @ 4972.00usft (D Rig)
Site:	1N-67W-02 Speak 9-2HZ	North Reference:	True
Well:	SPEAK FED 32N2-5HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	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	
713.76	6.96	353.96	712.62	27.96	-2.96	1.50	1.50	0.00	353.96	
4,566.88	6.96	353.96	4,537.38	492.04	-52.04	0.00	0.00	0.00	0.00	
5,030.64	0.00	0.00	5,000.00	520.00	-55.00	1.50	-1.50	0.00	180.00	
6,752.96	0.00	0.00	6,722.32	520.00	-55.00	0.00	0.00	0.00	0.00	
7,756.35	90.31	89.71	7,358.93	523.28	585.00	9.00	9.00	0.00	89.71	
18,451.84	90.31	89.71	7,302.00	578.08	11,280.19	0.00	0.00	0.00	0.00	SPEAK FED 32N2-4

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well SPEAK FED 32N2-5HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB @ 4972.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB @ 4972.00usft (D Rig)
Site:	1N-67W-02 Speak 9-2HZ	North Reference:	True
Well:	SPEAK FED 32N2-5HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	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	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
250.00	0.00	0.00	250.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.75	353.96	300.00	0.33	-0.03	-0.02	1.50	1.50	0.00	0.00
400.00	2.25	353.96	399.96	2.93	-0.31	-0.16	1.50	1.50	0.00	0.00
500.00	3.75	353.96	499.82	8.13	-0.86	-0.44	1.50	1.50	0.00	0.00
600.00	5.25	353.96	599.51	15.94	-1.69	-0.87	1.50	1.50	0.00	0.00
700.00	6.75	353.96	698.96	26.33	-2.78	-1.43	1.50	1.50	0.00	0.00
713.76	6.96	353.96	712.62	27.96	-2.96	-1.52	1.50	1.50	0.00	0.00
800.00	6.96	353.96	798.23	38.35	-4.06	-2.09	0.00	0.00	0.00	0.00
900.00	6.96	353.96	897.49	50.39	-5.33	-2.74	0.00	0.00	0.00	0.00
1,000.00	6.96	353.96	996.75	62.44	-6.60	-3.40	0.00	0.00	0.00	0.00
1,100.00	6.96	353.96	1,096.02	74.48	-7.88	-4.06	0.00	0.00	0.00	0.00
1,200.00	6.96	353.96	1,195.28	86.53	-9.15	-4.71	0.00	0.00	0.00	0.00
1,300.00	6.96	353.96	1,294.55	98.57	-10.43	-5.37	0.00	0.00	0.00	0.00
1,329.67	6.96	353.96	1,324.00	102.14	-10.80	-5.56	0.00	0.00	0.00	0.00
Fox Hills										
1,400.00	6.96	353.96	1,393.81	110.61	-11.70	-6.02	0.00	0.00	0.00	0.00
1,500.00	6.96	353.96	1,493.07	122.66	-12.97	-6.68	0.00	0.00	0.00	0.00
1,506.98	6.96	353.96	1,500.00	123.50	-13.06	-6.72	0.00	0.00	0.00	0.00
9 5/8"										
1,600.00	6.96	353.96	1,592.34	134.70	-14.25	-7.33	0.00	0.00	0.00	0.00
1,700.00	6.96	353.96	1,691.60	146.75	-15.52	-7.99	0.00	0.00	0.00	0.00
1,800.00	6.96	353.96	1,790.87	158.79	-16.80	-8.65	0.00	0.00	0.00	0.00
1,900.00	6.96	353.96	1,890.13	170.83	-18.07	-9.30	0.00	0.00	0.00	0.00
2,000.00	6.96	353.96	1,989.39	182.88	-19.34	-9.96	0.00	0.00	0.00	0.00
2,100.00	6.96	353.96	2,088.66	194.92	-20.62	-10.61	0.00	0.00	0.00	0.00
2,200.00	6.96	353.96	2,187.92	206.97	-21.89	-11.27	0.00	0.00	0.00	0.00
2,300.00	6.96	353.96	2,287.18	219.01	-23.16	-11.93	0.00	0.00	0.00	0.00
2,400.00	6.96	353.96	2,386.45	231.06	-24.44	-12.58	0.00	0.00	0.00	0.00
2,500.00	6.96	353.96	2,485.71	243.10	-25.71	-13.24	0.00	0.00	0.00	0.00
2,600.00	6.96	353.96	2,584.98	255.14	-26.99	-13.89	0.00	0.00	0.00	0.00
2,700.00	6.96	353.96	2,684.24	267.19	-28.26	-14.55	0.00	0.00	0.00	0.00
2,800.00	6.96	353.96	2,783.50	279.23	-29.53	-15.20	0.00	0.00	0.00	0.00
2,900.00	6.96	353.96	2,882.77	291.28	-30.81	-15.86	0.00	0.00	0.00	0.00
3,000.00	6.96	353.96	2,982.03	303.32	-32.08	-16.52	0.00	0.00	0.00	0.00
3,100.00	6.96	353.96	3,081.30	315.36	-33.36	-17.17	0.00	0.00	0.00	0.00
3,200.00	6.96	353.96	3,180.56	327.41	-34.63	-17.83	0.00	0.00	0.00	0.00
3,300.00	6.96	353.96	3,279.82	339.45	-35.90	-18.48	0.00	0.00	0.00	0.00
3,400.00	6.96	353.96	3,379.09	351.50	-37.18	-19.14	0.00	0.00	0.00	0.00
3,500.00	6.96	353.96	3,478.35	363.54	-38.45	-19.79	0.00	0.00	0.00	0.00
3,600.00	6.96	353.96	3,577.62	375.59	-39.73	-20.45	0.00	0.00	0.00	0.00
3,700.00	6.96	353.96	3,676.88	387.63	-41.00	-21.11	0.00	0.00	0.00	0.00
3,800.00	6.96	353.96	3,776.14	399.67	-42.27	-21.76	0.00	0.00	0.00	0.00
3,900.00	6.96	353.96	3,875.41	411.72	-43.55	-22.42	0.00	0.00	0.00	0.00
4,000.00	6.96	353.96	3,974.67	423.76	-44.82	-23.07	0.00	0.00	0.00	0.00
4,100.00	6.96	353.96	4,073.93	435.81	-46.09	-23.73	0.00	0.00	0.00	0.00
4,162.53	6.96	353.96	4,136.00	443.34	-46.89	-24.14	0.00	0.00	0.00	0.00
Parkman										
4,200.00	6.96	353.96	4,173.20	447.85	-47.37	-24.39	0.00	0.00	0.00	0.00
4,300.00	6.96	353.96	4,272.46	459.89	-48.64	-25.04	0.00	0.00	0.00	0.00
4,400.00	6.96	353.96	4,371.73	471.94	-49.92	-25.70	0.00	0.00	0.00	0.00

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well SPEAK FED 32N2-5HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB @ 4972.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB @ 4972.00usft (D Rig)
Site:	1N-67W-02 Speak 9-2HZ	North Reference:	True
Well:	SPEAK FED 32N2-5HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	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)
4,500.00	6.96	353.96	4,470.99	483.98	-51.19	-26.35	0.00	0.00	0.00
4,566.88	6.96	353.96	4,537.38	492.04	-52.04	-26.79	0.00	0.00	0.00
4,600.00	6.46	353.96	4,570.27	495.88	-52.45	-27.00	1.50	-1.50	0.00
4,700.00	4.96	353.96	4,669.77	505.78	-53.50	-27.54	1.50	-1.50	0.00
4,800.00	3.46	353.96	4,769.50	513.08	-54.27	-27.94	1.50	-1.50	0.00
4,900.00	1.96	353.96	4,869.38	517.78	-54.77	-28.19	1.50	-1.50	0.00
5,000.00	0.46	353.96	4,969.36	519.88	-54.99	-28.31	1.50	-1.50	0.00
5,001.64	0.44	353.96	4,971.00	519.89	-54.99	-28.31	1.50	-1.50	0.00
Sussex									
5,030.64	0.00	0.00	5,000.00	520.00	-55.00	-28.31	1.50	-1.50	0.00
5,100.00	0.00	0.00	5,069.36	520.00	-55.00	-28.31	0.00	0.00	0.00
5,200.00	0.00	0.00	5,169.36	520.00	-55.00	-28.31	0.00	0.00	0.00
5,300.00	0.00	0.00	5,269.36	520.00	-55.00	-28.31	0.00	0.00	0.00
5,400.00	0.00	0.00	5,369.36	520.00	-55.00	-28.31	0.00	0.00	0.00
5,500.00	0.00	0.00	5,469.36	520.00	-55.00	-28.31	0.00	0.00	0.00
5,600.00	0.00	0.00	5,569.36	520.00	-55.00	-28.31	0.00	0.00	0.00
5,700.00	0.00	0.00	5,669.36	520.00	-55.00	-28.31	0.00	0.00	0.00
5,800.00	0.00	0.00	5,769.36	520.00	-55.00	-28.31	0.00	0.00	0.00
5,900.00	0.00	0.00	5,869.36	520.00	-55.00	-28.31	0.00	0.00	0.00
6,000.00	0.00	0.00	5,969.36	520.00	-55.00	-28.31	0.00	0.00	0.00
6,100.00	0.00	0.00	6,069.36	520.00	-55.00	-28.31	0.00	0.00	0.00
6,200.00	0.00	0.00	6,169.36	520.00	-55.00	-28.31	0.00	0.00	0.00
6,300.00	0.00	0.00	6,269.36	520.00	-55.00	-28.31	0.00	0.00	0.00
6,400.00	0.00	0.00	6,369.36	520.00	-55.00	-28.31	0.00	0.00	0.00
6,500.00	0.00	0.00	6,469.36	520.00	-55.00	-28.31	0.00	0.00	0.00
6,600.00	0.00	0.00	6,569.36	520.00	-55.00	-28.31	0.00	0.00	0.00
6,700.00	0.00	0.00	6,669.36	520.00	-55.00	-28.31	0.00	0.00	0.00
6,752.96	0.00	0.00	6,722.32	520.00	-55.00	-28.31	0.00	0.00	0.00
6,800.00	4.23	89.71	6,769.32	520.01	-53.26	-26.58	9.00	9.00	0.00
6,900.00	13.23	89.71	6,868.06	520.09	-38.10	-11.43	9.00	9.00	0.00
7,000.00	22.23	89.71	6,963.21	520.24	-7.67	18.97	9.00	9.00	0.00
7,100.00	31.23	89.71	7,052.43	520.47	37.27	63.86	9.00	9.00	0.00
7,200.00	40.23	89.71	7,133.52	520.77	95.61	122.14	9.00	9.00	0.00
7,279.72	47.41	89.71	7,191.00	521.05	150.77	177.24	9.00	9.00	0.00
Sharon Springs									
7,300.00	49.23	89.71	7,204.48	521.13	165.92	192.37	9.00	9.00	0.00
7,357.48	54.41	89.71	7,240.00	521.36	211.08	237.49	9.00	9.00	0.00
Niobrara									
7,400.00	58.23	89.71	7,263.58	521.54	246.46	272.83	9.00	9.00	0.00
7,500.00	67.23	89.71	7,309.34	522.00	335.25	361.53	9.00	9.00	0.00
7,574.17	73.91	89.71	7,334.00	522.36	405.16	431.36	9.00	9.00	0.00
Nio B									
7,600.00	76.23	89.71	7,340.66	522.49	430.12	456.29	9.00	9.00	0.00
7,700.00	85.23	89.71	7,356.74	522.99	528.71	554.78	9.00	9.00	0.00
7,756.35	90.30	89.71	7,358.93	523.28	585.00	611.01	9.00	9.00	0.00
Top of Production - SPEAK FED 32N2-5HZ_PHL									
7,800.00	90.31	89.71	7,358.70	523.50	628.65	654.61	0.00	0.00	0.00
7,900.00	90.31	89.71	7,358.17	524.02	728.64	754.51	0.00	0.00	0.00
8,000.00	90.31	89.71	7,357.64	524.53	828.64	854.40	0.00	0.00	0.00
8,100.00	90.31	89.71	7,357.11	525.04	928.64	954.29	0.00	0.00	0.00
8,200.00	90.31	89.71	7,356.57	525.55	1,028.63	1,054.18	0.00	0.00	0.00
8,300.00	90.31	89.71	7,356.04	526.06	1,128.63	1,154.08	0.00	0.00	0.00
8,400.00	90.31	89.71	7,355.51	526.58	1,228.63	1,253.97	0.00	0.00	0.00
8,500.00	90.31	89.71	7,354.98	527.09	1,328.63	1,353.86	0.00	0.00	0.00

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well SPEAK FED 32N2-5HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB @ 4972.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB @ 4972.00usft (D Rig)
Site:	1N-67W-02 Speak 9-2HZ	North Reference:	True
Well:	SPEAK FED 32N2-5HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	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)
8,600.00	90.31	89.71	7,354.44	527.60	1,428.62	1,453.75	0.00	0.00	0.00
8,700.00	90.31	89.71	7,353.91	528.11	1,528.62	1,553.65	0.00	0.00	0.00
8,800.00	90.31	89.71	7,353.38	528.63	1,628.62	1,653.54	0.00	0.00	0.00
8,900.00	90.31	89.71	7,352.85	529.14	1,728.62	1,753.43	0.00	0.00	0.00
9,000.00	90.31	89.71	7,352.31	529.65	1,828.61	1,853.32	0.00	0.00	0.00
9,100.00	90.31	89.71	7,351.78	530.16	1,928.61	1,953.22	0.00	0.00	0.00
9,200.00	90.31	89.71	7,351.25	530.68	2,028.61	2,053.11	0.00	0.00	0.00
9,300.00	90.31	89.71	7,350.72	531.19	2,128.60	2,153.00	0.00	0.00	0.00
9,400.00	90.31	89.71	7,350.19	531.70	2,228.60	2,252.89	0.00	0.00	0.00
9,500.00	90.31	89.71	7,349.65	532.21	2,328.60	2,352.79	0.00	0.00	0.00
9,600.00	90.31	89.71	7,349.12	532.73	2,428.60	2,452.68	0.00	0.00	0.00
9,700.00	90.31	89.71	7,348.59	533.24	2,528.59	2,552.57	0.00	0.00	0.00
9,800.00	90.31	89.71	7,348.06	533.75	2,628.59	2,652.46	0.00	0.00	0.00
9,900.00	90.31	89.71	7,347.52	534.26	2,728.59	2,752.36	0.00	0.00	0.00
10,000.00	90.31	89.71	7,346.99	534.78	2,828.59	2,852.25	0.00	0.00	0.00
10,100.00	90.31	89.71	7,346.46	535.29	2,928.58	2,952.14	0.00	0.00	0.00
10,200.00	90.31	89.71	7,345.93	535.80	3,028.58	3,052.03	0.00	0.00	0.00
10,300.00	90.31	89.71	7,345.39	536.31	3,128.58	3,151.93	0.00	0.00	0.00
10,400.00	90.31	89.71	7,344.86	536.82	3,228.57	3,251.82	0.00	0.00	0.00
10,500.00	90.31	89.71	7,344.33	537.34	3,328.57	3,351.71	0.00	0.00	0.00
10,600.00	90.31	89.71	7,343.80	537.85	3,428.57	3,451.60	0.00	0.00	0.00
10,700.00	90.31	89.71	7,343.26	538.36	3,528.57	3,551.50	0.00	0.00	0.00
10,800.00	90.31	89.71	7,342.73	538.87	3,628.56	3,651.39	0.00	0.00	0.00
10,900.00	90.31	89.71	7,342.20	539.39	3,728.56	3,751.28	0.00	0.00	0.00
11,000.00	90.31	89.71	7,341.67	539.90	3,828.56	3,851.17	0.00	0.00	0.00
11,100.00	90.31	89.71	7,341.14	540.41	3,928.56	3,951.07	0.00	0.00	0.00
11,200.00	90.31	89.71	7,340.60	540.92	4,028.55	4,050.96	0.00	0.00	0.00
11,300.00	90.31	89.71	7,340.07	541.44	4,128.55	4,150.85	0.00	0.00	0.00
11,400.00	90.31	89.71	7,339.54	541.95	4,228.55	4,250.74	0.00	0.00	0.00
11,500.00	90.31	89.71	7,339.01	542.46	4,328.54	4,350.63	0.00	0.00	0.00
11,600.00	90.31	89.71	7,338.47	542.97	4,428.54	4,450.53	0.00	0.00	0.00
11,700.00	90.31	89.71	7,337.94	543.49	4,528.54	4,550.42	0.00	0.00	0.00
11,800.00	90.31	89.71	7,337.41	544.00	4,628.54	4,650.31	0.00	0.00	0.00
11,900.00	90.31	89.71	7,336.88	544.51	4,728.53	4,750.20	0.00	0.00	0.00
12,000.00	90.31	89.71	7,336.34	545.02	4,828.53	4,850.10	0.00	0.00	0.00
12,100.00	90.31	89.71	7,335.81	545.53	4,928.53	4,949.99	0.00	0.00	0.00
12,200.00	90.31	89.71	7,335.28	546.05	5,028.53	5,049.88	0.00	0.00	0.00
12,300.00	90.31	89.71	7,334.75	546.56	5,128.52	5,149.77	0.00	0.00	0.00
12,400.00	90.31	89.71	7,334.22	547.07	5,228.52	5,249.67	0.00	0.00	0.00
12,500.00	90.31	89.71	7,333.68	547.58	5,328.52	5,349.56	0.00	0.00	0.00
12,600.00	90.31	89.71	7,333.15	548.10	5,428.51	5,449.45	0.00	0.00	0.00
12,700.00	90.31	89.71	7,332.62	548.61	5,528.51	5,549.34	0.00	0.00	0.00
12,800.00	90.31	89.71	7,332.09	549.12	5,628.51	5,649.24	0.00	0.00	0.00
12,900.00	90.31	89.71	7,331.55	549.63	5,728.51	5,749.13	0.00	0.00	0.00
13,000.00	90.31	89.71	7,331.02	550.15	5,828.50	5,849.02	0.00	0.00	0.00
13,100.00	90.31	89.71	7,330.49	550.66	5,928.50	5,948.91	0.00	0.00	0.00
13,200.00	90.31	89.71	7,329.96	551.17	6,028.50	6,048.81	0.00	0.00	0.00
13,300.00	90.31	89.71	7,329.42	551.68	6,128.50	6,148.70	0.00	0.00	0.00
13,400.00	90.31	89.71	7,328.89	552.20	6,228.49	6,248.59	0.00	0.00	0.00
13,500.00	90.31	89.71	7,328.36	552.71	6,328.49	6,348.48	0.00	0.00	0.00
13,600.00	90.31	89.71	7,327.83	553.22	6,428.49	6,448.38	0.00	0.00	0.00
13,700.00	90.31	89.71	7,327.30	553.73	6,528.48	6,548.27	0.00	0.00	0.00
13,800.00	90.31	89.71	7,326.76	554.25	6,628.48	6,648.16	0.00	0.00	0.00
13,900.00	90.31	89.71	7,326.23	554.76	6,728.48	6,748.05	0.00	0.00	0.00

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well SPEAK FED 32N2-5HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB @ 4972.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB @ 4972.00usft (D Rig)
Site:	1N-67W-02 Speak 9-2HZ	North Reference:	True
Well:	SPEAK FED 32N2-5HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	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)
14,000.00	90.31	89.71	7,325.70	555.27	6,828.48	6,847.95	0.00	0.00	0.00
14,100.00	90.31	89.71	7,325.17	555.78	6,928.47	6,947.84	0.00	0.00	0.00
14,200.00	90.31	89.71	7,324.63	556.29	7,028.47	7,047.73	0.00	0.00	0.00
14,300.00	90.31	89.71	7,324.10	556.81	7,128.47	7,147.62	0.00	0.00	0.00
14,400.00	90.31	89.71	7,323.57	557.32	7,228.47	7,247.52	0.00	0.00	0.00
14,500.00	90.31	89.71	7,323.04	557.83	7,328.46	7,347.41	0.00	0.00	0.00
14,600.00	90.31	89.71	7,322.50	558.34	7,428.46	7,447.30	0.00	0.00	0.00
14,700.00	90.31	89.71	7,321.97	558.86	7,528.46	7,547.19	0.00	0.00	0.00
14,800.00	90.31	89.71	7,321.44	559.37	7,628.45	7,647.09	0.00	0.00	0.00
14,900.00	90.31	89.71	7,320.91	559.88	7,728.45	7,746.98	0.00	0.00	0.00
15,000.00	90.31	89.71	7,320.38	560.39	7,828.45	7,846.87	0.00	0.00	0.00
15,100.00	90.31	89.71	7,319.84	560.91	7,928.45	7,946.76	0.00	0.00	0.00
15,200.00	90.31	89.71	7,319.31	561.42	8,028.44	8,046.66	0.00	0.00	0.00
15,300.00	90.31	89.71	7,318.78	561.93	8,128.44	8,146.55	0.00	0.00	0.00
15,400.00	90.31	89.71	7,318.25	562.44	8,228.44	8,246.44	0.00	0.00	0.00
15,500.00	90.31	89.71	7,317.71	562.96	8,328.44	8,346.33	0.00	0.00	0.00
15,600.00	90.31	89.71	7,317.18	563.47	8,428.43	8,446.23	0.00	0.00	0.00
15,700.00	90.31	89.71	7,316.65	563.98	8,528.43	8,546.12	0.00	0.00	0.00
15,800.00	90.31	89.71	7,316.12	564.49	8,628.43	8,646.01	0.00	0.00	0.00
15,900.00	90.31	89.71	7,315.58	565.01	8,728.42	8,745.90	0.00	0.00	0.00
16,000.00	90.31	89.71	7,315.05	565.52	8,828.42	8,845.79	0.00	0.00	0.00
16,100.00	90.31	89.71	7,314.52	566.03	8,928.42	8,945.69	0.00	0.00	0.00
16,200.00	90.31	89.71	7,313.99	566.54	9,028.42	9,045.58	0.00	0.00	0.00
16,300.00	90.31	89.71	7,313.45	567.05	9,128.41	9,145.47	0.00	0.00	0.00
16,400.00	90.31	89.71	7,312.92	567.57	9,228.41	9,245.36	0.00	0.00	0.00
16,500.00	90.31	89.71	7,312.39	568.08	9,328.41	9,345.26	0.00	0.00	0.00
16,600.00	90.31	89.71	7,311.86	568.59	9,428.41	9,445.15	0.00	0.00	0.00
16,700.00	90.31	89.71	7,311.33	569.10	9,528.40	9,545.04	0.00	0.00	0.00
16,800.00	90.31	89.71	7,310.79	569.62	9,628.40	9,644.93	0.00	0.00	0.00
16,900.00	90.31	89.71	7,310.26	570.13	9,728.40	9,744.83	0.00	0.00	0.00
17,000.00	90.31	89.71	7,309.73	570.64	9,828.39	9,844.72	0.00	0.00	0.00
17,100.00	90.31	89.71	7,309.20	571.15	9,928.39	9,944.61	0.00	0.00	0.00
17,200.00	90.31	89.71	7,308.66	571.67	10,028.39	10,044.50	0.00	0.00	0.00
17,300.00	90.31	89.71	7,308.13	572.18	10,128.39	10,144.40	0.00	0.00	0.00
17,400.00	90.31	89.71	7,307.60	572.69	10,228.38	10,244.29	0.00	0.00	0.00
17,500.00	90.31	89.71	7,307.07	573.20	10,328.38	10,344.18	0.00	0.00	0.00
17,600.00	90.31	89.71	7,306.53	573.72	10,428.38	10,444.07	0.00	0.00	0.00
17,700.00	90.31	89.71	7,306.00	574.23	10,528.38	10,543.97	0.00	0.00	0.00
17,800.00	90.31	89.71	7,305.47	574.74	10,628.37	10,643.86	0.00	0.00	0.00
17,900.00	90.31	89.71	7,304.94	575.25	10,728.37	10,743.75	0.00	0.00	0.00
18,000.00	90.31	89.71	7,304.41	575.76	10,828.37	10,843.64	0.00	0.00	0.00
18,100.00	90.31	89.71	7,303.87	576.28	10,928.36	10,943.54	0.00	0.00	0.00
18,200.00	90.31	89.71	7,303.34	576.79	11,028.36	11,043.43	0.00	0.00	0.00
18,300.00	90.31	89.71	7,302.81	577.30	11,128.36	11,143.32	0.00	0.00	0.00
18,400.00	90.31	89.71	7,302.28	577.81	11,228.36	11,243.21	0.00	0.00	0.00
18,451.84	90.31	89.71	7,302.00	578.08	11,280.19	11,294.99	0.00	0.00	0.00
SPEAK FED 32N2-5HZ_PBHL									

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well SPEAK FED 32N2-5HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB @ 4972.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB @ 4972.00usft (D Rig)
Site:	1N-67W-02 Speak 9-2HZ	North Reference:	True
Well:	SPEAK FED 32N2-5HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-1		

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										
SPEAK FED 32N2-5H - plan hits target center - Point	0.00	0.00	7,302.00	578.08	11,280.19	14,555,640.97	1,693,693.10	40.079229	-104.809542	
SPEAK FED 32N2-5H - plan hits target center - Point	0.00	0.00	7,358.93	523.28	585.00	14,555,568.13	1,682,998.01	40.079085	-104.847776	

Casing Points						
Measured Depth	Vertical Depth	Name	Casing Diameter	Hole Diameter		
(usft)	(usft)		(")	(")		
1,506.98	1,500.00	9 5/8"	9-5/8	13-1/2		
7,756.35	7,358.93	Top of Production	5-1/2	8-1/2		

Formations						
Measured Depth	Vertical Depth	Name	Lithology	Dip	Dip Direction	
(usft)	(usft)			(°)	(°)	
1,329.67	1,324.00	Fox Hills				
4,162.53	4,136.00	Parkman				
5,001.64	4,971.00	Sussex				
7,279.72	7,191.00	Sharon Springs				
7,357.48	7,240.00	Niobrara				
7,574.17	7,334.00	Nio B				