

US ROCKIES WATTENBERG PLANNING

**WELD-NAD83-UTMFT13N
2N-67W-04 Whiston Pad
WHISTON 40N-33HZ**

Plan A

Plan: Permit Rev-1

Standard Planning Report

27 July, 2016



Azimuths to True North
Magnetic North: 8.23°

Magnetic Field
Strength: 52459.7snT
Dip Angle: 66.67°
Date: 7/19/2016
Model: IGRF2010

SITE: 2N-67W-04 Whiston Pad

Well: WHISTON 40N-33HZ
Wellbore: Plan A
Design: Permit Rev-1

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
952.00	953.06	Fox Hills
3871.00	4054.38	Parkman
4287.00	4502.03	Sussex
7089.00	7435.34	Sharon Springs
7176.00	7594.72	Niobrara
7230.00	7768.08	Nio B

WELL DETAILS: WHISTON 40N-33HZ

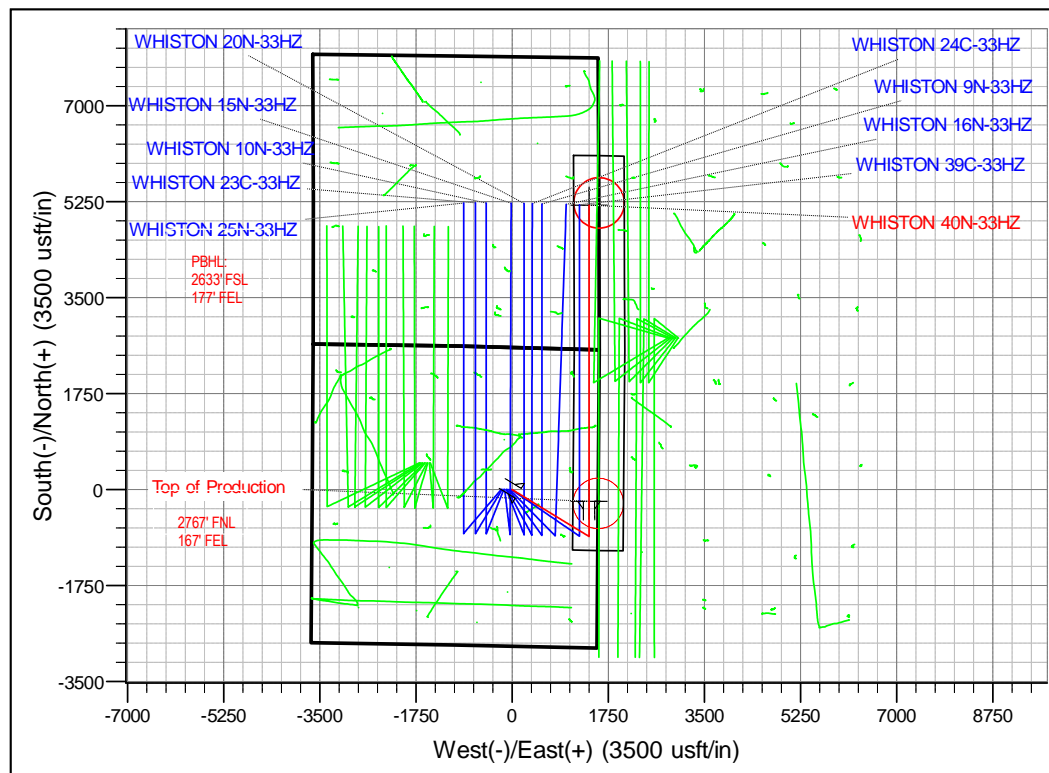
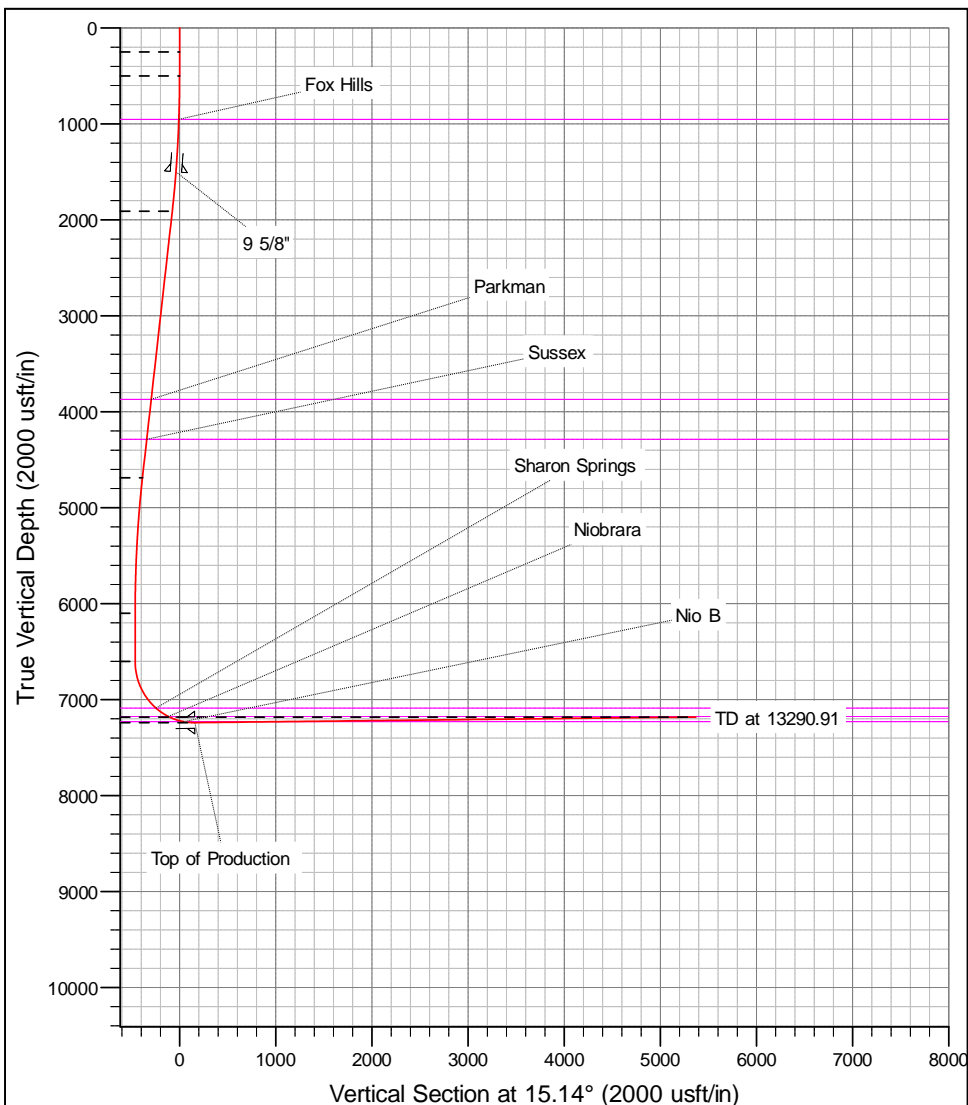
+N/-S	+E/-W	GL: 4887.00	RKB @ 4904.00usft (D Rig)	Longitude	Slot
0.00	0.00	Northing 14587872.79	Easting 1670756.44	Latitude 40.167847	

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
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00
1945.05	21.68	121.45	1910.83	-140.92	230.42	1.50	-75.86
4934.80	21.68	121.45	4689.17	-717.08	1172.48	0.00	-386.00
6379.86	0.00	0.00	6100.00	-858.00	1402.90	1.50	-461.85
6883.71	0.00	0.00	6603.85	-858.00	1402.90	0.00	-461.85
7890.60	90.62	360.00	7240.44	-214.49	1402.90	9.00	159.32
13290.91	90.62	360.00	7182.00	5185.50	1402.90	0.00	5371.92

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
Whiston 40N-33HZ_PBHL	7182.00	5185.50	1402.90	14593060.00	1672153.00	40.182087	-104.886374



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Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well WHISTON 40N-33HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB @ 4904.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB @ 4904.00usft (D Rig)
Site:	2N-67W-04 Whiston Pad	North Reference:	True
Well:	WHISTON 40N-33HZ	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		2N-67W-04 Whiston Pad			
Site Position:		Northing:	14,587,875.82 usft	Latitude:	40.167856
From:	Lat/Long	Easting:	1,670,561.72 usft	Longitude:	-104.892094
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.07

Well	WHISTON 40N-33HZ					
Well Position	+N-S	-3.28 usft	Northing:	14,587,872.78 usft	Latitude:	40.167847
	+E-W	194.72 usft	Easting:	1,670,756.44 usft	Longitude:	-104.891397
Position Uncertainty		3.28 usft	Wellhead Elevation:	0.00 usft	Ground Level:	4,887.00 usft

Wellbore	Plan A				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	7/19/2016	8.23	66.67	52,460

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	15.14

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	
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,945.05	21.68	121.45	1,910.83	-140.92	230.42	1.50	1.50	0.00	121.45	
4,934.80	21.68	121.45	4,689.17	-717.08	1,172.48	0.00	0.00	0.00	0.00	
6,379.86	0.00	0.00	6,100.00	-858.00	1,402.90	1.50	-1.50	0.00	180.00	
6,883.71	0.00	0.00	6,603.85	-858.00	1,402.90	0.00	0.00	0.00	0.00	
7,890.60	90.62	360.00	7,240.44	-214.49	1,402.90	9.00	9.00	0.00	360.00	
13,290.91	90.62	360.00	7,182.00	5,185.50	1,402.90	0.00	0.00	0.00	0.00	Whiston 40N-33HZ_

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Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well WHISTON 40N-33HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB @ 4904.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB @ 4904.00usft (D Rig)
Site:	2N-67W-04 Whiston Pad	North Reference:	True
Well:	WHISTON 40N-33HZ	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
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	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	1.50	121.45	599.99	-0.68	1.12	-0.37	1.50	1.50	0.00
700.00	3.00	121.45	699.91	-2.73	4.47	-1.47	1.50	1.50	0.00
800.00	4.50	121.45	799.69	-6.14	10.05	-3.31	1.50	1.50	0.00
900.00	6.00	121.45	899.27	-10.92	17.85	-5.88	1.50	1.50	0.00
953.06	6.80	121.45	952.00	-14.00	22.90	-7.54	1.50	1.50	0.00
Fox Hills									
1,000.00	7.50	121.45	998.57	-17.05	27.88	-9.18	1.50	1.50	0.00
1,100.00	9.00	121.45	1,097.54	-24.54	40.12	-13.21	1.50	1.50	0.00
1,200.00	10.50	121.45	1,196.09	-33.37	54.57	-17.96	1.50	1.50	0.00
1,300.00	12.00	121.45	1,294.16	-43.55	71.21	-23.44	1.50	1.50	0.00
1,400.00	13.50	121.45	1,391.70	-55.06	90.04	-29.64	1.50	1.50	0.00
1,500.00	15.00	121.45	1,488.62	-67.91	111.03	-36.55	1.50	1.50	0.00
1,511.79	15.18	121.45	1,500.00	-69.51	113.65	-37.42	1.50	1.50	0.00
9 5/8"									
1,600.00	16.50	121.45	1,584.86	-82.07	134.19	-44.18	1.50	1.50	0.00
1,700.00	18.00	121.45	1,680.36	-97.54	159.49	-52.51	1.50	1.50	0.00
1,800.00	19.50	121.45	1,775.05	-114.31	186.91	-61.53	1.50	1.50	0.00
1,900.00	21.00	121.45	1,868.86	-132.37	216.43	-71.25	1.50	1.50	0.00
1,945.05	21.68	121.45	1,910.83	-140.92	230.42	-75.86	1.50	1.50	0.00
2,000.00	21.68	121.45	1,961.89	-151.51	247.73	-81.56	0.00	0.00	0.00
2,100.00	21.68	121.45	2,054.82	-170.78	279.24	-91.93	0.00	0.00	0.00
2,200.00	21.68	121.45	2,147.75	-190.05	310.75	-102.30	0.00	0.00	0.00
2,300.00	21.68	121.45	2,240.68	-209.32	342.26	-112.68	0.00	0.00	0.00
2,400.00	21.68	121.45	2,333.61	-228.60	373.77	-123.05	0.00	0.00	0.00
2,500.00	21.68	121.45	2,426.54	-247.87	405.28	-133.42	0.00	0.00	0.00
2,600.00	21.68	121.45	2,519.46	-267.14	436.79	-143.80	0.00	0.00	0.00
2,700.00	21.68	121.45	2,612.39	-286.41	468.30	-154.17	0.00	0.00	0.00
2,800.00	21.68	121.45	2,705.32	-305.68	499.81	-164.54	0.00	0.00	0.00
2,900.00	21.68	121.45	2,798.25	-324.95	531.32	-174.92	0.00	0.00	0.00
3,000.00	21.68	121.45	2,891.18	-344.22	562.83	-185.29	0.00	0.00	0.00
3,100.00	21.68	121.45	2,984.11	-363.49	594.34	-195.66	0.00	0.00	0.00
3,200.00	21.68	121.45	3,077.04	-382.76	625.85	-206.04	0.00	0.00	0.00
3,300.00	21.68	121.45	3,169.97	-402.03	657.36	-216.41	0.00	0.00	0.00
3,400.00	21.68	121.45	3,262.89	-421.31	688.87	-226.78	0.00	0.00	0.00
3,500.00	21.68	121.45	3,355.82	-440.58	720.38	-237.16	0.00	0.00	0.00
3,600.00	21.68	121.45	3,448.75	-459.85	751.89	-247.53	0.00	0.00	0.00
3,700.00	21.68	121.45	3,541.68	-479.12	783.40	-257.90	0.00	0.00	0.00
3,800.00	21.68	121.45	3,634.61	-498.39	814.91	-268.28	0.00	0.00	0.00
3,900.00	21.68	121.45	3,727.54	-517.66	846.42	-278.65	0.00	0.00	0.00
4,000.00	21.68	121.45	3,820.47	-536.93	877.93	-289.02	0.00	0.00	0.00
4,054.38	21.68	121.45	3,871.00	-547.41	895.06	-294.67	0.00	0.00	0.00
Parkman									
4,100.00	21.68	121.45	3,913.40	-556.20	909.44	-299.40	0.00	0.00	0.00
4,200.00	21.68	121.45	4,006.33	-575.47	940.95	-309.77	0.00	0.00	0.00
4,300.00	21.68	121.45	4,099.25	-594.74	972.46	-320.14	0.00	0.00	0.00
4,400.00	21.68	121.45	4,192.18	-614.02	1,003.97	-330.52	0.00	0.00	0.00

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Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well WHISTON 40N-33HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB @ 4904.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB @ 4904.00usft (D Rig)
Site:	2N-67W-04 Whiston Pad	North Reference:	True
Well:	WHISTON 40N-33HZ	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	21.68	121.45	4,285.11	-633.29	1,035.47	-340.89	0.00	0.00	0.00
4,502.03	21.68	121.45	4,287.00	-633.68	1,036.11	-341.10	0.00	0.00	0.00
Sussex									
4,600.00	21.68	121.45	4,378.04	-652.56	1,066.98	-351.26	0.00	0.00	0.00
4,700.00	21.68	121.45	4,470.97	-671.83	1,098.49	-361.64	0.00	0.00	0.00
4,800.00	21.68	121.45	4,563.90	-691.10	1,130.00	-372.01	0.00	0.00	0.00
4,900.00	21.68	121.45	4,656.83	-710.37	1,161.51	-382.38	0.00	0.00	0.00
4,934.80	21.68	121.45	4,689.17	-717.08	1,172.48	-386.00	0.00	0.00	0.00
5,000.00	20.70	121.45	4,749.96	-729.37	1,192.58	-392.61	1.50	-1.50	0.00
5,100.00	19.20	121.45	4,843.96	-747.17	1,221.68	-402.19	1.50	-1.50	0.00
5,200.00	17.70	121.45	4,938.82	-763.68	1,248.68	-411.08	1.50	-1.50	0.00
5,300.00	16.20	121.45	5,034.47	-778.89	1,273.55	-419.27	1.50	-1.50	0.00
5,400.00	14.70	121.45	5,130.85	-792.79	1,296.27	-426.75	1.50	-1.50	0.00
5,500.00	13.20	121.45	5,227.90	-805.36	1,316.83	-433.52	1.50	-1.50	0.00
5,600.00	11.70	121.45	5,325.55	-816.61	1,335.22	-439.57	1.50	-1.50	0.00
5,700.00	10.20	121.45	5,423.73	-826.52	1,351.42	-444.91	1.50	-1.50	0.00
5,800.00	8.70	121.45	5,522.37	-835.08	1,365.42	-449.52	1.50	-1.50	0.00
5,900.00	7.20	121.45	5,621.40	-842.29	1,377.22	-453.40	1.50	-1.50	0.00
6,000.00	5.70	121.45	5,720.77	-848.15	1,386.80	-456.55	1.50	-1.50	0.00
6,100.00	4.20	121.45	5,820.39	-852.65	1,394.16	-458.97	1.50	-1.50	0.00
6,200.00	2.70	121.45	5,920.21	-855.79	1,399.29	-460.66	1.50	-1.50	0.00
6,300.00	1.20	121.45	6,020.15	-857.56	1,402.19	-461.62	1.50	-1.50	0.00
6,379.86	0.00	0.00	6,100.00	-858.00	1,402.90	-461.85	1.50	-1.50	0.00
6,400.00	0.00	0.00	6,120.14	-858.00	1,402.90	-461.85	0.00	0.00	0.00
6,500.00	0.00	0.00	6,220.14	-858.00	1,402.90	-461.85	0.00	0.00	0.00
6,600.00	0.00	0.00	6,320.14	-858.00	1,402.90	-461.85	0.00	0.00	0.00
6,700.00	0.00	0.00	6,420.14	-858.00	1,402.90	-461.85	0.00	0.00	0.00
6,800.00	0.00	0.00	6,520.14	-858.00	1,402.90	-461.85	0.00	0.00	0.00
6,883.71	0.00	0.00	6,603.85	-858.00	1,402.90	-461.85	0.00	0.00	0.00
6,900.00	1.47	360.00	6,620.14	-857.79	1,402.90	-461.65	9.00	9.00	0.00
7,000.00	10.47	360.00	6,719.50	-847.41	1,402.90	-451.63	9.00	9.00	0.00
7,100.00	19.47	360.00	6,816.01	-821.61	1,402.90	-426.73	9.00	9.00	0.00
7,200.00	28.47	360.00	6,907.29	-781.03	1,402.90	-387.56	9.00	9.00	0.00
7,300.00	37.47	360.00	6,991.10	-726.67	1,402.90	-335.08	9.00	9.00	0.00
7,400.00	46.47	360.00	7,065.38	-659.87	1,402.90	-270.60	9.00	9.00	0.00
7,435.34	49.65	360.00	7,089.00	-633.59	1,402.90	-245.23	9.00	9.00	0.00
Sharon Springs									
7,500.00	55.47	360.00	7,128.29	-582.28	1,402.90	-195.70	9.00	9.00	0.00
7,594.72	63.99	360.00	7,176.00	-500.54	1,402.90	-116.80	9.00	9.00	0.00
Niobrara									
7,600.00	64.47	360.00	7,178.29	-495.79	1,402.90	-112.21	9.00	9.00	0.00
7,700.00	73.47	360.00	7,214.15	-402.55	1,402.90	-22.21	9.00	9.00	0.00
7,768.08	79.59	360.00	7,230.00	-336.38	1,402.90	41.67	9.00	9.00	0.00
Nio B									
7,800.00	82.47	360.00	7,234.98	-304.85	1,402.90	72.10	9.00	9.00	0.00
7,890.60	90.62	360.00	7,240.44	-214.49	1,402.90	159.32	9.00	9.00	0.00
Top of Production - WHISTON 40N-33HZ_PHL									
7,900.00	90.62	360.00	7,240.33	-205.09	1,402.90	168.40	0.00	0.00	0.00
8,000.00	90.62	360.00	7,239.25	-105.10	1,402.90	264.92	0.00	0.00	0.00
8,100.00	90.62	360.00	7,238.17	-5.10	1,402.90	361.45	0.00	0.00	0.00
8,200.00	90.62	360.00	7,237.09	94.89	1,402.90	457.97	0.00	0.00	0.00
8,300.00	90.62	360.00	7,236.01	194.88	1,402.90	554.49	0.00	0.00	0.00
8,400.00	90.62	360.00	7,234.92	294.88	1,402.90	651.02	0.00	0.00	0.00
8,500.00	90.62	360.00	7,233.84	394.87	1,402.90	747.54	0.00	0.00	0.00

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Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well WHISTON 40N-33HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB @ 4904.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB @ 4904.00usft (D Rig)
Site:	2N-67W-04 Whiston Pad	North Reference:	True
Well:	WHISTON 40N-33HZ	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	90.62	360.00	7,232.76	494.87	1,402.90	844.07	0.00	0.00	0.00
8,700.00	90.62	360.00	7,231.68	594.86	1,402.90	940.59	0.00	0.00	0.00
8,800.00	90.62	360.00	7,230.60	694.86	1,402.90	1,037.11	0.00	0.00	0.00
8,900.00	90.62	360.00	7,229.51	794.85	1,402.90	1,133.64	0.00	0.00	0.00
9,000.00	90.62	360.00	7,228.43	894.84	1,402.90	1,230.16	0.00	0.00	0.00
9,100.00	90.62	360.00	7,227.35	994.84	1,402.90	1,326.69	0.00	0.00	0.00
9,200.00	90.62	360.00	7,226.27	1,094.83	1,402.90	1,423.21	0.00	0.00	0.00
9,300.00	90.62	360.00	7,225.19	1,194.83	1,402.90	1,519.73	0.00	0.00	0.00
9,400.00	90.62	360.00	7,224.10	1,294.82	1,402.90	1,616.26	0.00	0.00	0.00
9,500.00	90.62	360.00	7,223.02	1,394.81	1,402.90	1,712.78	0.00	0.00	0.00
9,600.00	90.62	360.00	7,221.94	1,494.81	1,402.90	1,809.31	0.00	0.00	0.00
9,700.00	90.62	360.00	7,220.86	1,594.80	1,402.90	1,905.83	0.00	0.00	0.00
9,800.00	90.62	360.00	7,219.77	1,694.80	1,402.90	2,002.36	0.00	0.00	0.00
9,900.00	90.62	360.00	7,218.69	1,794.79	1,402.90	2,098.88	0.00	0.00	0.00
10,000.00	90.62	360.00	7,217.61	1,894.79	1,402.90	2,195.40	0.00	0.00	0.00
10,100.00	90.62	360.00	7,216.53	1,994.78	1,402.90	2,291.93	0.00	0.00	0.00
10,200.00	90.62	360.00	7,215.45	2,094.77	1,402.90	2,388.45	0.00	0.00	0.00
10,300.00	90.62	360.00	7,214.36	2,194.77	1,402.90	2,484.98	0.00	0.00	0.00
10,400.00	90.62	360.00	7,213.28	2,294.76	1,402.90	2,581.50	0.00	0.00	0.00
10,500.00	90.62	360.00	7,212.20	2,394.76	1,402.90	2,678.02	0.00	0.00	0.00
10,600.00	90.62	360.00	7,211.12	2,494.75	1,402.90	2,774.55	0.00	0.00	0.00
10,700.00	90.62	360.00	7,210.04	2,594.74	1,402.90	2,871.07	0.00	0.00	0.00
10,800.00	90.62	360.00	7,208.95	2,694.74	1,402.90	2,967.60	0.00	0.00	0.00
10,900.00	90.62	360.00	7,207.87	2,794.73	1,402.90	3,064.12	0.00	0.00	0.00
11,000.00	90.62	360.00	7,206.79	2,894.73	1,402.90	3,160.64	0.00	0.00	0.00
11,100.00	90.62	360.00	7,205.71	2,994.72	1,402.90	3,257.17	0.00	0.00	0.00
11,200.00	90.62	360.00	7,204.63	3,094.72	1,402.90	3,353.69	0.00	0.00	0.00
11,300.00	90.62	360.00	7,203.54	3,194.71	1,402.90	3,450.22	0.00	0.00	0.00
11,400.00	90.62	360.00	7,202.46	3,294.70	1,402.90	3,546.74	0.00	0.00	0.00
11,500.00	90.62	360.00	7,201.38	3,394.70	1,402.90	3,643.26	0.00	0.00	0.00
11,600.00	90.62	360.00	7,200.30	3,494.69	1,402.90	3,739.79	0.00	0.00	0.00
11,700.00	90.62	360.00	7,199.22	3,594.69	1,402.90	3,836.31	0.00	0.00	0.00
11,800.00	90.62	360.00	7,198.13	3,694.68	1,402.90	3,932.84	0.00	0.00	0.00
11,900.00	90.62	360.00	7,197.05	3,794.67	1,402.90	4,029.36	0.00	0.00	0.00
12,000.00	90.62	360.00	7,195.97	3,894.67	1,402.90	4,125.88	0.00	0.00	0.00
12,100.00	90.62	360.00	7,194.89	3,994.66	1,402.90	4,222.41	0.00	0.00	0.00
12,200.00	90.62	360.00	7,193.80	4,094.66	1,402.90	4,318.93	0.00	0.00	0.00
12,300.00	90.62	360.00	7,192.72	4,194.65	1,402.90	4,415.46	0.00	0.00	0.00
12,400.00	90.62	360.00	7,191.64	4,294.64	1,402.90	4,511.98	0.00	0.00	0.00
12,500.00	90.62	360.00	7,190.56	4,394.64	1,402.90	4,608.50	0.00	0.00	0.00
12,600.00	90.62	360.00	7,189.48	4,494.63	1,402.90	4,705.03	0.00	0.00	0.00
12,700.00	90.62	360.00	7,188.39	4,594.63	1,402.90	4,801.55	0.00	0.00	0.00
12,800.00	90.62	360.00	7,187.31	4,694.62	1,402.90	4,898.08	0.00	0.00	0.00
12,900.00	90.62	360.00	7,186.23	4,794.62	1,402.90	4,994.60	0.00	0.00	0.00
13,000.00	90.62	360.00	7,185.15	4,894.61	1,402.90	5,091.13	0.00	0.00	0.00
13,100.00	90.62	360.00	7,184.07	4,994.60	1,402.90	5,187.65	0.00	0.00	0.00
13,200.00	90.62	360.00	7,182.98	5,094.60	1,402.90	5,284.17	0.00	0.00	0.00
13,290.91	90.62	360.00	7,182.00	5,185.50	1,402.90	5,371.92	0.00	0.00	0.00
Whiston 40N-33HZ_PBHL									

Anadarko

Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well WHISTON 40N-33HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB @ 4904.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB @ 4904.00usft (D Rig)
Site:	2N-67W-04 Whiston Pad	North Reference:	True
Well:	WHISTON 40N-33HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	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)		
Whiston 40N-33HZ_P	0.00	0.00	7,182.00	5,185.50	1,402.90	14,593,060.00	1,672,153.00	40.182087	-104.886374
- plan hits target center									
- Point									
WHISTON 40N-33HZ	0.00	0.00	7,240.44	-214.49	1,402.90	14,587,660.01	1,672,159.60	40.167258	-104.886376
- plan hits target center									
- Point									

Casing Points					
	Measured Depth	Vertical Depth		Casing Diameter	Hole Diameter
	(usft)	(usft)	Name	(")	(")
	1,511.79	1,500.00	9 5/8"	9-5/8	13-1/2
	7,890.60	7,240.44	Top of Production	5-1/2	8-1/2

Formations						
	Measured Depth	Vertical Depth			Dip	Dip Direction
	(usft)	(usft)	Name	Lithology	(°)	(°)
	953.06	952.00	Fox Hills			
	4,054.38	3,871.00	Parkman			
	4,502.03	4,287.00	Sussex			
	7,435.34	7,089.00	Sharon Springs			
	7,594.72	7,176.00	Niobrara			
	7,768.08	7,230.00	Nio B			