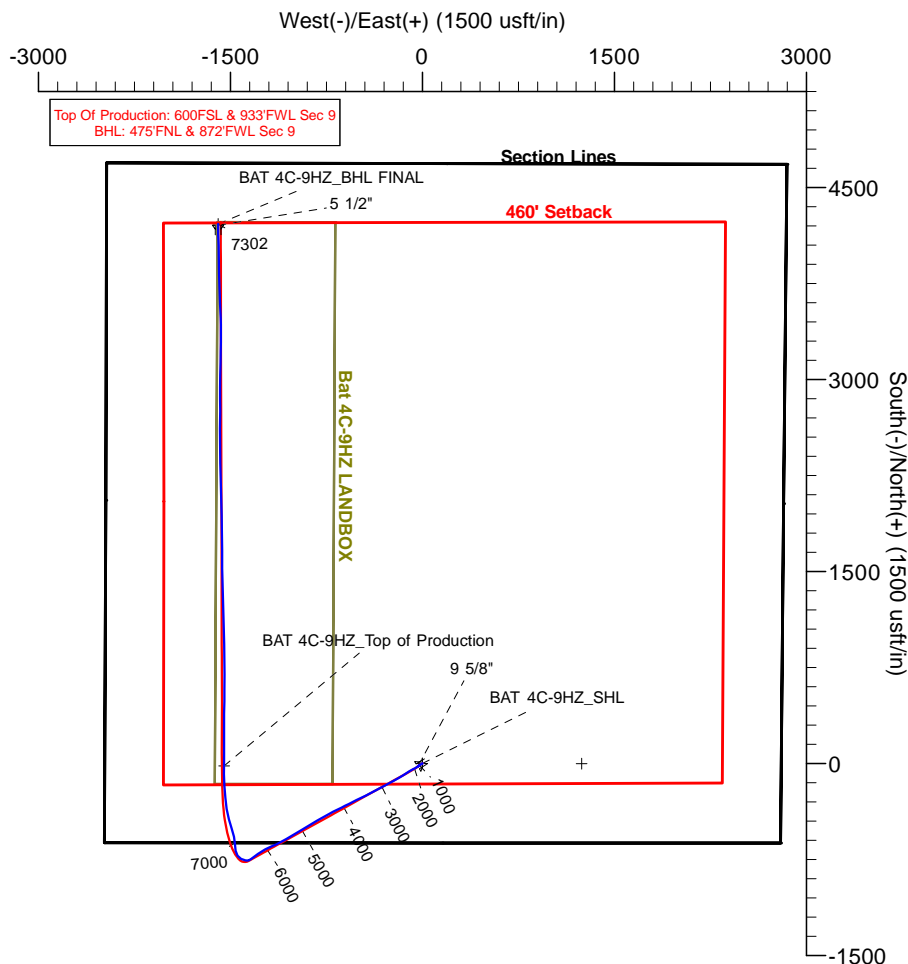


# US ROCKIES WATTENBERG PLANNING

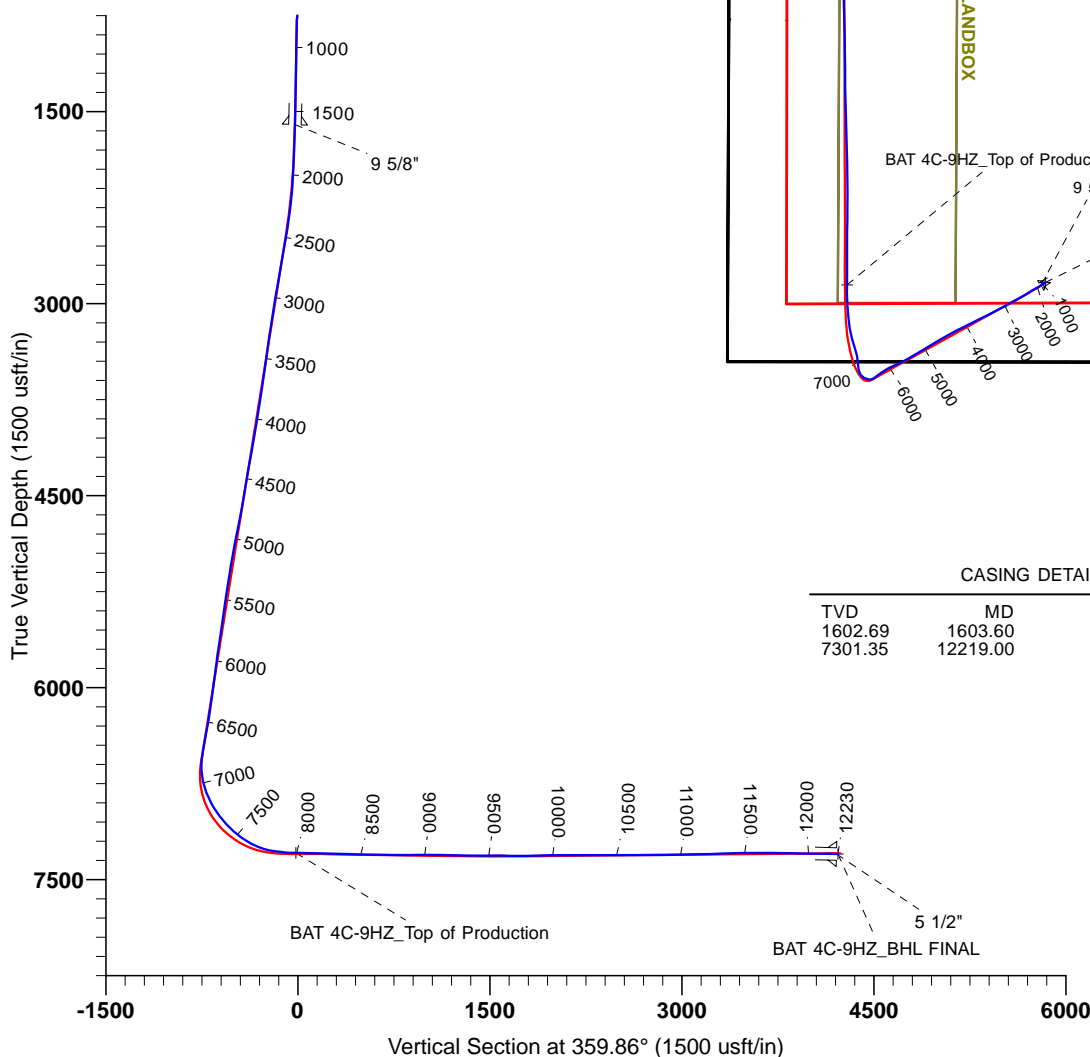


Project: WELD-NAD83-UTMFT13N  
 Site: 1N-65W-09 Bat Pad  
 Well: BAT 4C-9HZ  
 Wellbore: Plan D  
 Design: PDD Actual Surveys



## FORMATION TOP DETAILS

TVDPATH	MDPATH	FORMATION	DIPANGLE	DIPDIR
6905.30	7177.00	SSPG	0.00	359.47
6932.14	7208.00	NBRR	0.00	359.47
7052.08	7357.00	N470_B_CK	0.00	359.47
7120.72	7456.00	N700_C_CK	0.00	359.47
7271.25	7788.00	FRHS	0.00	359.47
7290.93	7939.00	CDLL	0.00	359.47



## CASING DETAILS

TVD	MD	Name	Size
1602.69	1603.60	9 5/8"	9-5/8
7301.35	12219.00	5 1/2"	5-1/2

## TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
1N-R65W-Sec. 9_Section lines	0.00	-0.33	1243.74	14548919.51	17341104.05	40.060443	-104.665168	Polygon
BAT 4C-9HZ_Landing Diagram	0.00	0.00	0.00	14548915.23	1732860.32	40.060444	-104.669613	Polygon
BAT 4C-9HZ_SHL	0.00	0.00	0.00	14548915.23	1732860.32	40.060444	-104.669613	Point
BAT 4C-9HZ_Top of Production	7292.02	-18.82	-1549.36	14548890.66	1731311.04	40.060392	-104.675150	Point
BAT 4C-9HZ_BHL FINAL	7301.64	4215.55	-1595.40	14553124.83	1731249.28	40.072020	-104.675316	Point



## Survey Report

<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>Local Co-ordinate Reference:</b>	Well BAT 4C-9HZ
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>TVD Reference:</b>	4931+25 @ 4956.00usft (hp311)
<b>Site:</b>	1N-65W-09 Bat Pad	<b>MD Reference:</b>	4931+25 @ 4956.00usft (hp311)
<b>Well:</b>	BAT 4C-9HZ	<b>North Reference:</b>	True
<b>Wellbore:</b>	Plan D	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	PDD Actual Surveys	<b>Database:</b>	EDM 5000 MultiUser DB

<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-65W-09 Bat Pad, centered on the 3N1				
Site Position:		Northing:	14,548,915.67 usft	Latitude:	40.060444
From:	Lat/Long	Easting:	1,732,980.35 usft	Longitude:	-104.669184
Position Uncertainty:	2.68 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.21 °

Well		BAT 4C-9HZ				
Well Position	+N/-S	0.00 usft	Northing:	14,548,915.23 usft	Latitude:	40.060444
	+E/-W	0.00 usft	Easting:	1,732,860.31 usft	Longitude:	-104.669613
Position Uncertainty		3.28 usft	Wellhead Elevation:	usft	Ground Level:	4,931.00 usft

<b>Wellbore</b>	Plan D				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	6/4/2015	8.25	66.65	52,544

<b>Design</b>	PDD Actual Surveys				
<b>Audit Notes:</b>					
<b>Version:</b>	1.0	<b>Phase:</b>	ACTUAL	<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	359.86	

<b>Survey Program</b>	<b>Date</b>	7/7/2015			
<b>From (usft)</b>	<b>To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
20.00	1,563.00	Cathedral MWD Surface (Plan D)	APC_ISCWSA REV 2 MWD	Fixed:v2:standard declination	
1,697.00	12,174.00	PDD MWD+IFR1 Curve/Lateral (Plan D)	APC_ISCWSA REV 2 MWD+	Fixed:v2:crustal field declination	
12,230.00	12,230.00	Projection to Bit (Plan D)	APC_BLIND	OWSG BLIND	

<b>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	
20.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	
102.00	0.70	341.40	102.00	0.47	-0.16	0.48	0.85	0.85	0.00	
166.00	0.90	343.70	165.99	1.33	-0.43	1.33	0.32	0.31	3.59	
225.00	0.50	1.50	224.99	2.03	-0.55	2.03	0.76	-0.68	30.17	
284.00	0.00	0.00	283.99	2.29	-0.54	2.29	0.85	-0.85	0.00	
342.00	0.50	226.10	341.99	2.11	-0.72	2.11	0.86	0.86	0.00	
408.00	1.80	225.30	407.97	1.18	-1.67	1.19	1.97	1.97	-1.21	
469.00	2.20	240.60	468.93	-0.07	-3.37	-0.06	1.09	0.66	25.08	

# Survey Report

<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>Local Co-ordinate Reference:</b>	Well BAT 4C-9HZ
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>TVD Reference:</b>	4931+25 @ 4956.00usft (hp311)
<b>Site:</b>	1N-65W-09 Bat Pad	<b>MD Reference:</b>	4931+25 @ 4956.00usft (hp311)
<b>Well:</b>	BAT 4C-9HZ	<b>North Reference:</b>	True
<b>Wellbore:</b>	Plan D	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	PDD Actual Surveys	<b>Database:</b>	EDM 5000 MultiUser DB

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)
532.00	2.20	235.40	531.89	-1.35	-5.42	-1.33	0.32	0.00	-8.25
596.00	2.90	237.50	595.82	-2.91	-7.80	-2.89	1.10	1.09	3.28
660.00	2.40	241.40	659.76	-4.42	-10.34	-4.40	0.83	-0.78	6.09
723.00	2.40	237.00	722.70	-5.77	-12.60	-5.74	0.29	0.00	-6.98
787.00	3.10	229.70	786.63	-7.62	-15.05	-7.59	1.22	1.09	-11.41
851.00	2.90	235.80	850.54	-9.65	-17.70	-9.61	0.59	-0.31	9.53
914.00	2.60	239.30	913.47	-11.28	-20.25	-11.23	0.55	-0.48	5.56
978.00	2.70	242.70	977.40	-12.71	-22.84	-12.66	0.29	0.16	5.31
1,041.00	1.60	259.60	1,040.35	-13.55	-25.02	-13.49	2.00	-1.75	26.83
1,105.00	1.50	253.80	1,104.33	-13.95	-26.71	-13.88	0.29	-0.16	-9.06
1,168.00	0.80	222.50	1,167.32	-14.50	-27.79	-14.43	1.45	-1.11	-49.68
1,231.00	1.20	197.30	1,230.31	-15.45	-28.29	-15.38	0.93	0.63	-40.00
1,295.00	1.40	191.30	1,294.29	-16.86	-28.64	-16.79	0.38	0.31	-9.38
1,359.00	1.10	184.70	1,358.28	-18.24	-28.84	-18.17	0.52	-0.47	-10.31
1,423.00	1.50	222.10	1,422.26	-19.47	-29.46	-19.40	1.43	0.63	58.44
1,487.00	1.90	233.90	1,486.23	-20.72	-30.87	-20.64	0.83	0.63	18.44
1,551.00	3.10	239.30	1,550.17	-22.23	-33.22	-22.15	1.91	1.88	8.44
1,563.00	3.10	234.10	1,562.15	-22.58	-33.76	-22.50	2.34	0.00	-43.33
1,697.00	3.70	244.00	1,695.92	-26.60	-40.58	-26.51	0.62	0.45	7.39
1,886.00	4.30	238.30	1,884.46	-33.00	-52.09	-32.87	0.38	0.32	-3.02
2,075.00	8.70	243.30	2,072.20	-43.15	-70.90	-42.98	2.35	2.33	2.65
2,263.00	12.70	237.80	2,256.90	-60.56	-101.10	-60.31	2.19	2.13	-2.93
2,453.00	17.00	237.30	2,440.51	-86.71	-142.17	-86.36	2.26	2.26	-0.26
2,642.00	21.00	241.80	2,619.18	-117.65	-195.29	-117.17	2.25	2.12	2.38
2,831.00	19.50	239.70	2,796.50	-149.57	-252.37	-148.95	0.88	-0.79	-1.11
3,020.00	19.30	243.10	2,974.77	-179.62	-307.47	-178.87	0.61	-0.11	1.80
3,209.00	19.20	242.30	3,153.21	-208.20	-362.84	-207.31	0.15	-0.05	-0.42
3,398.00	15.20	240.20	3,333.72	-234.97	-411.87	-233.96	2.14	-2.12	-1.11
3,587.00	18.60	246.00	3,514.54	-259.55	-460.93	-258.42	2.01	1.80	3.07
3,776.00	19.50	242.70	3,693.20	-286.28	-516.50	-285.02	0.74	0.48	-1.75
3,965.00	20.60	244.30	3,870.74	-315.17	-574.49	-313.76	0.65	0.58	0.85
4,153.00	19.60	242.80	4,047.29	-343.92	-632.34	-342.38	0.60	-0.53	-0.80
4,342.00	23.10	243.00	4,223.29	-375.26	-693.59	-373.56	1.85	1.85	0.11
4,531.00	19.30	242.60	4,399.47	-406.47	-754.38	-404.63	2.01	-2.01	-0.21
4,720.00	18.90	238.50	4,578.07	-436.84	-808.21	-434.87	0.74	-0.21	-2.17
4,908.00	21.80	238.50	4,754.32	-471.00	-863.94	-468.89	1.54	1.54	0.00
5,097.00	19.40	238.20	4,931.22	-505.88	-920.55	-503.63	1.27	-1.27	-0.16
5,286.00	17.50	241.20	5,110.50	-536.11	-972.14	-533.74	1.12	-1.01	1.59
5,475.00	17.60	240.20	5,290.71	-564.00	-1,021.84	-561.51	0.17	0.05	-0.53
5,664.00	16.40	241.50	5,471.44	-590.94	-1,070.08	-588.32	0.67	-0.63	0.69
5,853.00	16.10	238.30	5,652.90	-617.44	-1,115.83	-614.71	0.50	-0.16	-1.69
6,042.00	19.40	248.10	5,832.92	-642.93	-1,167.27	-640.08	2.35	1.75	5.19
6,231.00	16.90	243.60	6,012.51	-666.86	-1,221.01	-663.87	1.52	-1.32	-2.38

# Survey Report

<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>Local Co-ordinate Reference:</b>	Well BAT 4C-9HZ
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>TVD Reference:</b>	4931+25 @ 4956.00usft (hp311)
<b>Site:</b>	1N-65W-09 Bat Pad	<b>MD Reference:</b>	4931+25 @ 4956.00usft (hp311)
<b>Well:</b>	BAT 4C-9HZ	<b>North Reference:</b>	True
<b>Wellbore:</b>	Plan D	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	PDD Actual Surveys	<b>Database:</b>	EDM 5000 MultiUser DB

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)	
6,420.00	14.70	235.60	6,194.38	-692.63	-1,265.42	-689.53	1.64	-1.16	-4.23	
6,609.00	17.30	232.00	6,376.04	-723.48	-1,307.36	-720.29	1.47	1.38	-1.90	
6,703.00	16.60	235.20	6,465.96	-739.75	-1,329.40	-736.50	1.24	-0.74	3.40	
6,798.00	15.40	242.30	6,557.29	-753.36	-1,351.71	-750.06	2.41	-1.26	7.47	
6,892.00	22.50	275.40	6,646.38	-757.49	-1,380.79	-754.11	13.43	7.55	35.21	
6,987.00	26.00	299.60	6,733.20	-745.46	-1,417.09	-741.99	11.01	3.68	25.47	
7,081.00	23.20	330.20	6,819.01	-719.10	-1,444.32	-715.57	13.72	-2.98	32.55	
7,176.00	29.00	348.80	6,904.43	-680.18	-1,458.13	-676.61	10.49	6.11	19.58	
7,270.00	35.00	356.80	6,984.14	-630.84	-1,464.07	-627.26	7.80	6.38	8.51	
7,365.00	43.00	348.00	7,057.97	-571.81	-1,472.34	-568.21	10.22	8.42	-9.26	
7,459.00	50.00	342.90	7,122.66	-505.94	-1,489.62	-502.30	8.42	7.45	-5.43	
7,554.00	54.50	342.80	7,180.80	-434.18	-1,511.77	-430.49	4.74	4.74	-0.11	
7,648.00	64.90	351.70	7,228.23	-355.18	-1,529.30	-351.44	13.74	11.06	9.47	
7,743.00	75.20	355.00	7,260.61	-266.61	-1,539.54	-262.84	11.32	10.84	3.47	
7,837.00	79.90	355.80	7,280.87	-175.14	-1,546.90	-171.36	5.07	5.00	0.85	
7,932.00	88.20	0.60	7,290.72	-80.81	-1,549.83	-77.02	10.08	8.74	5.05	
8,026.00	90.00	0.10	7,292.19	13.18	-1,549.26	16.96	1.99	1.91	-0.53	
8,121.00	88.60	0.40	7,293.35	108.17	-1,548.84	111.95	1.51	-1.47	0.32	
8,215.00	87.80	359.80	7,296.31	202.12	-1,548.68	205.90	1.06	-0.85	-0.64	
8,310.00	89.10	0.00	7,298.88	297.08	-1,548.84	300.86	1.38	1.37	0.21	
8,404.00	88.00	0.50	7,301.25	391.05	-1,548.43	394.83	1.29	-1.17	0.53	
8,499.00	88.80	0.40	7,303.91	486.01	-1,547.69	489.79	0.85	0.84	-0.11	
8,593.00	89.30	0.80	7,305.47	579.99	-1,546.70	583.77	0.68	0.53	0.43	
8,688.00	88.50	359.70	7,307.29	674.97	-1,546.29	678.74	1.43	-0.84	-1.16	
8,783.00	89.20	0.10	7,309.20	769.95	-1,546.46	773.72	0.85	0.74	0.42	
8,877.00	90.60	358.60	7,309.36	863.94	-1,547.52	867.72	2.18	1.49	-1.60	
8,972.00	91.30	358.70	7,307.78	958.90	-1,549.76	962.68	0.74	0.74	0.11	
9,066.00	89.30	358.90	7,307.29	1,052.87	-1,551.73	1,056.66	2.14	-2.13	0.21	
9,161.00	88.50	359.00	7,309.12	1,147.84	-1,553.47	1,151.63	0.85	-0.84	0.11	
9,255.00	88.80	358.30	7,311.33	1,241.78	-1,555.68	1,245.58	0.81	0.32	-0.74	
9,349.00	89.50	358.10	7,312.73	1,335.73	-1,558.63	1,339.53	0.77	0.74	-0.21	
9,444.00	90.90	358.10	7,312.39	1,430.67	-1,561.78	1,434.48	1.47	1.47	0.00	
9,538.00	90.20	359.80	7,311.49	1,524.65	-1,563.51	1,528.46	1.96	-0.74	1.81	
9,632.00	87.90	0.00	7,313.05	1,618.63	-1,563.67	1,622.44	2.46	-2.45	0.21	
9,727.00	88.80	359.20	7,315.79	1,713.58	-1,564.33	1,717.40	1.27	0.95	-0.84	
9,821.00	92.30	359.00	7,314.88	1,807.55	-1,565.81	1,811.37	3.73	3.72	-0.21	
9,916.00	91.60	358.40	7,311.65	1,902.47	-1,567.96	1,906.30	0.97	-0.74	-0.63	
10,010.00	90.60	358.90	7,309.85	1,996.43	-1,570.18	2,000.26	1.19	-1.06	0.53	
10,104.00	89.10	358.50	7,310.09	2,090.40	-1,572.31	2,094.24	1.65	-1.60	-0.43	
10,199.00	90.20	358.20	7,310.67	2,185.36	-1,575.05	2,189.20	1.20	1.16	-0.32	
10,294.00	89.90	358.30	7,310.59	2,280.31	-1,577.95	2,284.16	0.33	-0.32	0.11	
10,388.00	91.40	358.70	7,309.52	2,374.27	-1,580.41	2,378.13	1.65	1.60	0.43	
10,483.00	89.20	0.60	7,309.03	2,469.26	-1,580.99	2,473.11	3.06	-2.32	2.00	

# Survey Report

<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>Local Co-ordinate Reference:</b>	Well BAT 4C-9HZ
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>TVD Reference:</b>	4931+25 @ 4956.00usft (hp311)
<b>Site:</b>	1N-65W-09 Bat Pad	<b>MD Reference:</b>	4931+25 @ 4956.00usft (hp311)
<b>Well:</b>	BAT 4C-9HZ	<b>North Reference:</b>	True
<b>Wellbore:</b>	Plan D	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	PDD Actual Surveys	<b>Database:</b>	EDM 5000 MultiUser DB

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)	
10,577.00	90.10	0.80	7,309.60	2,563.25	-1,579.84	2,567.10	0.98	0.96	0.21	
10,672.00	90.00	0.10	7,309.52	2,658.24	-1,579.09	2,662.10	0.74	-0.11	-0.74	
10,767.00	90.30	359.70	7,309.27	2,753.24	-1,579.26	2,757.09	0.53	0.32	-0.42	
10,861.00	90.90	0.00	7,308.28	2,847.24	-1,579.51	2,851.09	0.71	0.64	0.32	
10,956.00	91.70	359.80	7,306.13	2,942.21	-1,579.67	2,946.06	0.87	0.84	-0.21	
11,050.00	90.50	1.10	7,304.32	3,036.19	-1,578.93	3,040.04	1.88	-1.28	1.38	
11,145.00	90.90	1.00	7,303.16	3,131.17	-1,577.19	3,135.01	0.43	0.42	-0.11	
11,239.00	91.90	1.40	7,300.87	3,225.12	-1,575.22	3,228.95	1.15	1.06	0.43	
11,304.00	92.50	1.10	7,298.37	3,290.05	-1,573.81	3,293.89	1.03	0.92	-0.46	
11,399.00	91.60	359.10	7,294.97	3,384.98	-1,573.64	3,388.82	2.31	-0.95	-2.11	
11,493.00	91.20	357.50	7,292.68	3,478.91	-1,576.43	3,482.75	1.75	-0.43	-1.70	
11,587.00	89.50	358.20	7,292.10	3,572.84	-1,579.96	3,576.69	1.96	-1.81	0.74	
11,682.00	89.60	358.00	7,292.85	3,667.78	-1,583.11	3,671.64	0.24	0.11	-0.21	
11,776.00	89.50	358.20	7,293.59	3,761.73	-1,586.22	3,765.59	0.24	-0.11	0.21	
11,871.00	89.20	358.50	7,294.66	3,856.68	-1,588.96	3,860.56	0.45	-0.32	0.32	
11,965.00	89.10	358.90	7,296.06	3,950.65	-1,591.09	3,954.53	0.44	-0.11	0.43	
12,060.00	88.90	358.90	7,297.72	4,045.62	-1,592.91	4,049.50	0.21	-0.21	0.00	
12,154.00	88.70	359.10	7,299.69	4,139.58	-1,594.55	4,143.47	0.30	-0.21	0.21	
12,174.00	88.50	359.40	7,300.17	4,159.58	-1,594.81	4,163.46	1.80	-1.00	1.50	
12,230.00	88.50	359.40	7,301.64	4,215.55	-1,595.40	4,219.44	0.00	0.00	0.00	