

US ROCKIES WATTENBERG PLANNING

WELD-NAD83-UTMFT13N

4N-67W-21 WALTERS 14-21HZ PAD

WALTERS 21-4HZ

Plan A

Plan: Permit Rev-1

SHL Lat/Long: 40.294019/-104.897551

Survey Program: MWD+IFR+MSA

Standard Planning Report

07 March, 2018

Project: WELD-NAD83-UTMFT13N
 Site: 4N-67W-21 WALTERS 14-21HZ PAD
 Well: WALTERS 21-4HZ
 Wellbore: Plan A
 Design: Permit Rev-1

US ROCKIES WATTENBERG PLANNING

CASING DETAILS

TVD	MD	Size
1500.00	1523.46	9-5/8
7309.00	7923.58	5-1/2

WELL DETAILS: WALTERS 21-4HZ
 GL = 4938'
 RKB = 17' @ 4955.00usft (Drilling Rig)

SECTION DETAILS

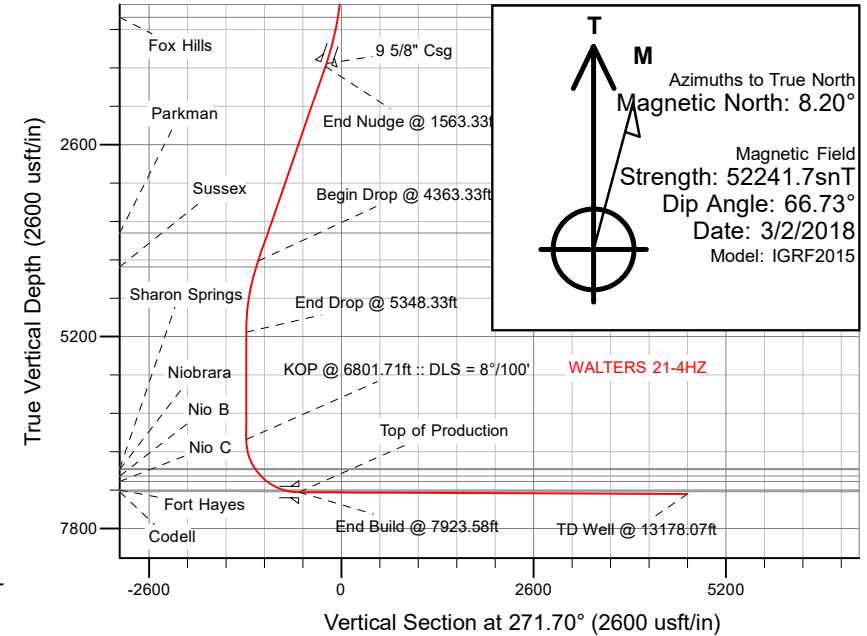
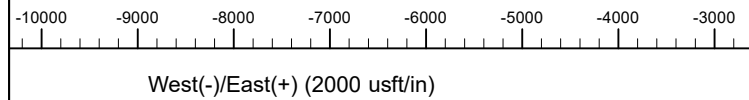
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	250.00	0.00	0.00	250.00	0.00	0.00	0.00	0.00	0.00	
3	1563.33	19.70	76.50	1537.61	52.19	217.39	1.50	76.50	-215.74	
4	4363.33	19.70	76.50	4173.73	272.53	1135.18	0.00	0.00	-1126.59	
5	5348.33	0.00	0.00	5139.43	311.67	1298.22	2.00	180.00	-1288.40	
6	6801.71	0.00	0.00	6592.81	311.67	1298.22	0.00	0.00	-1288.40	
7	7923.58	89.75	271.70	7309.00	332.80	585.47	8.00	271.70	-575.34	
8	13178.07	89.75	271.70	7332.00	488.48	-4666.67	0.00	0.00	4679.10	WALTERS 21-4HZ_BHL

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude
WALTERS 21-4HZ_SHL	0.00	0.00	0.00	40.294019	-104.897551
WALTERS 21-4HZ_BHL	7332.00	488.48	-4666.67	40.295359	-104.914287

FORMATION TOP DETAILS

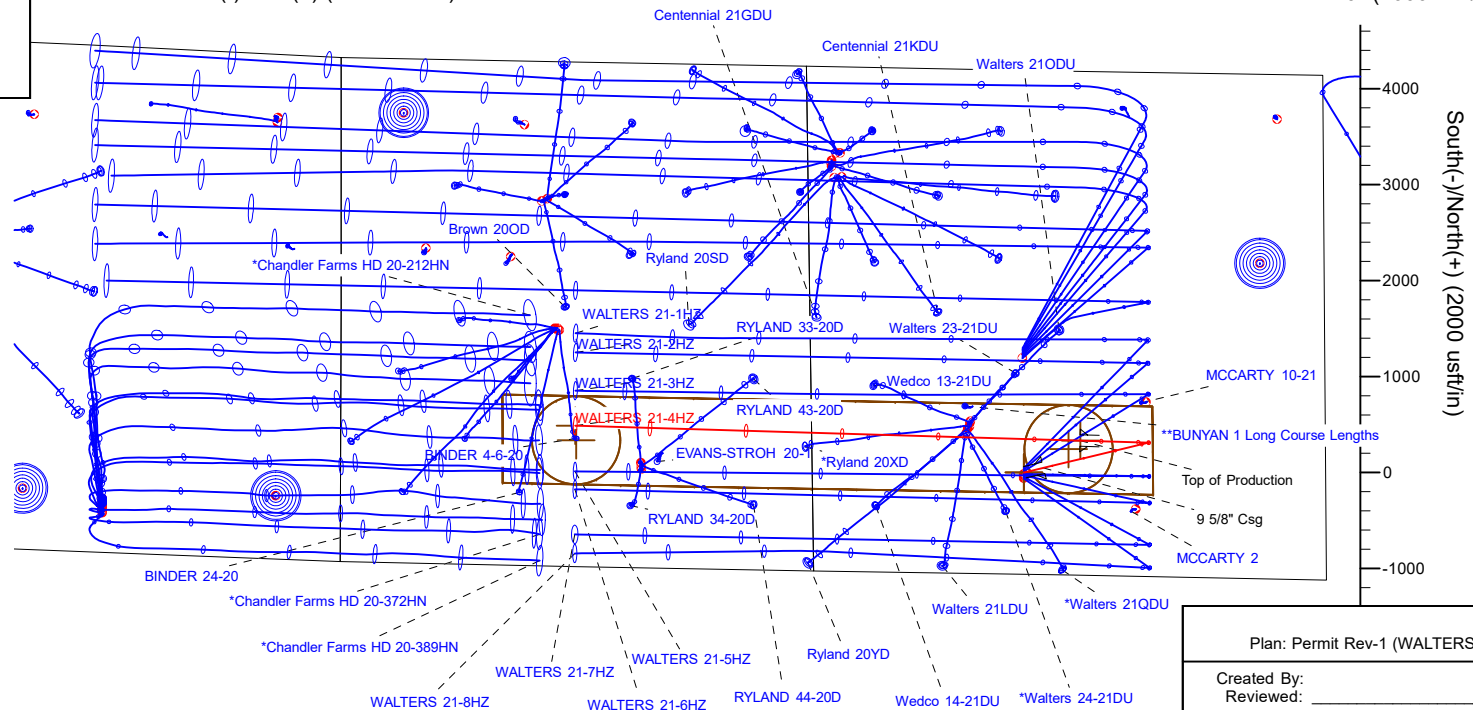
TVDPath	MDPath	Formation
874.00	876.81	Fox Hills
3795.00	3961.06	Parkman
4255.00	4449.21	Sussex
6987.00	7219.13	Sharon Springs
7002.00	7237.25	Niobrara
7089.00	7349.87	Nio B
7163.00	7461.24	Nio C
7279.00	7718.66	Fort Hayes
7300.00	7813.00	Codell



SHL
 1061' FSL
 2202' FWL

HEEL
 1402' FSL
 2550' FEL

TOE
 1469' FSL
 2440' FWL



Plan: Permit Rev-1 (WALTERS 21-4HZ/Plan A)

Created By: _____ Date: 3/7/2018
 Reviewed: _____ Date: _____

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well WALTERS 21-4HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 4955.00usft (Drilling Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 4955.00usft (Drilling Rig)
Site:	4N-67W-21 WALTERS 14-21HZ PAD	North Reference:	True
Well:	WALTERS 21-4HZ	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	4N-67W-21 WALTERS 14-21HZ PAD			
Site Position:		Northing:	14,633,862.07 usft	Latitude: 40.294143
From:	Lat/Long	Easting:	1,668,984.40 usft	Longitude: -104.897550
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence: 0.07 °

Well	WALTERS 21-4HZ			
Well Position	+N/-S	-45.16 usft	Northing:	14,633,816.91 usft
	+E/-W	-0.28 usft	Easting:	1,668,984.17 usft
Position Uncertainty	3.28 usft	Wellhead Elevation:		Ground Level: 4,938.00 usft

Wellbore	Plan A				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	3/2/2018	8.20	66.73	52,241.73484965

Design	Permit Rev-1			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	271.70

Plan Survey Tool Program	Date	3/6/2018		
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	1,500.00	Permit Rev-1 (Plan A)	APC_ISCWSA REV 2 MWD+I Fixed:v2:crustal field declinatio
2	1,500.00	13,178.07	Permit Rev-1 (Plan A)	APC_ISCWSA REV 2 MWD+I Fixed:v2:Rockies, crustal dec +

Corporate
Planning Report

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Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 4955.00usft (Drilling Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 4955.00usft (Drilling Rig)
Site:	4N-67W-21 WALTERS 14-21HZ PAD	North Reference:	True
Well:	WALTERS 21-4HZ	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	
1,563.33	19.70	76.50	1,537.61	52.19	217.39	1.50	1.50	0.00	76.50	
4,363.33	19.70	76.50	4,173.73	272.53	1,135.18	0.00	0.00	0.00	0.00	
5,348.33	0.00	0.00	5,139.43	311.67	1,298.22	2.00	-2.00	0.00	180.00	
6,801.71	0.00	0.00	6,592.81	311.67	1,298.22	0.00	0.00	0.00	0.00	
7,923.58	89.75	271.70	7,309.00	332.80	585.47	8.00	8.00	-7.87	271.70	
13,178.07	89.75	271.70	7,332.00	488.48	-4,666.67	0.00	0.00	0.00	0.00	WALTERS 21-4HZ_B

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well WALTERS 21-4HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 4955.00usft (Drilling Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 4955.00usft (Drilling Rig)
Site:	4N-67W-21 WALTERS 14-21HZ PAD	North Reference:	True
Well:	WALTERS 21-4HZ	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
Begin Nudge @ 250.00ft									
300.00	0.75	76.50	300.00	0.08	0.32	-0.32	1.50	1.50	0.00
400.00	2.25	76.50	399.96	0.69	2.86	-2.84	1.50	1.50	0.00
500.00	3.75	76.50	499.82	1.91	7.95	-7.89	1.50	1.50	0.00
600.00	5.25	76.50	599.51	3.74	15.58	-15.46	1.50	1.50	0.00
700.00	6.75	76.50	698.96	6.18	25.74	-25.55	1.50	1.50	0.00
800.00	8.25	76.50	798.10	9.23	38.44	-38.15	1.50	1.50	0.00
876.81	9.40	76.50	874.00	11.98	49.90	-49.52	1.50	1.50	0.00
Fox Hills									
900.00	9.75	76.50	896.87	12.88	53.65	-53.24	1.50	1.50	0.00
1,000.00	11.25	76.50	995.19	17.13	71.37	-70.83	1.50	1.50	0.00
1,100.00	12.75	76.50	1,093.00	21.99	91.58	-90.89	1.50	1.50	0.00
1,200.00	14.25	76.50	1,190.24	27.44	114.28	-113.42	1.50	1.50	0.00
1,300.00	15.75	76.50	1,286.83	33.48	139.45	-138.39	1.50	1.50	0.00
1,400.00	17.25	76.50	1,382.71	40.11	167.06	-165.80	1.50	1.50	0.00
1,500.00	18.75	76.50	1,477.81	47.32	197.11	-195.62	1.50	1.50	0.00
1,523.46	19.10	76.50	1,500.00	49.10	204.51	-202.96	1.50	1.50	0.00
9 5/8" Csg									
1,563.33	19.70	76.50	1,537.61	52.19	217.39	-215.74	1.50	1.50	0.00
End Nudge @ 1563.33ft									
1,600.00	19.70	76.50	1,572.13	55.08	229.41	-227.67	0.00	0.00	0.00
1,700.00	19.70	76.50	1,666.28	62.95	262.19	-260.20	0.00	0.00	0.00
1,800.00	19.70	76.50	1,760.42	70.81	294.96	-292.73	0.00	0.00	0.00
1,900.00	19.70	76.50	1,854.57	78.68	327.74	-325.26	0.00	0.00	0.00
2,000.00	19.70	76.50	1,948.72	86.55	360.52	-357.79	0.00	0.00	0.00
2,100.00	19.70	76.50	2,042.86	94.42	393.30	-390.32	0.00	0.00	0.00
2,200.00	19.70	76.50	2,137.01	102.29	426.08	-422.85	0.00	0.00	0.00
2,300.00	19.70	76.50	2,231.16	110.16	458.85	-455.38	0.00	0.00	0.00
2,400.00	19.70	76.50	2,325.31	118.03	491.63	-487.91	0.00	0.00	0.00
2,500.00	19.70	76.50	2,419.45	125.90	524.41	-520.44	0.00	0.00	0.00
2,600.00	19.70	76.50	2,513.60	133.77	557.19	-552.98	0.00	0.00	0.00
2,700.00	19.70	76.50	2,607.75	141.64	589.97	-585.51	0.00	0.00	0.00
2,800.00	19.70	76.50	2,701.89	149.51	622.75	-618.04	0.00	0.00	0.00
2,900.00	19.70	76.50	2,796.04	157.38	655.52	-650.57	0.00	0.00	0.00
3,000.00	19.70	76.50	2,890.19	165.25	688.30	-683.10	0.00	0.00	0.00
3,100.00	19.70	76.50	2,984.34	173.12	721.08	-715.63	0.00	0.00	0.00
3,200.00	19.70	76.50	3,078.48	180.99	753.86	-748.16	0.00	0.00	0.00
3,300.00	19.70	76.50	3,172.63	188.85	786.64	-780.69	0.00	0.00	0.00
3,400.00	19.70	76.50	3,266.78	196.72	819.41	-813.22	0.00	0.00	0.00
3,500.00	19.70	76.50	3,360.92	204.59	852.19	-845.75	0.00	0.00	0.00
3,600.00	19.70	76.50	3,455.07	212.46	884.97	-878.28	0.00	0.00	0.00
3,700.00	19.70	76.50	3,549.22	220.33	917.75	-910.81	0.00	0.00	0.00
3,800.00	19.70	76.50	3,643.36	228.20	950.53	-943.34	0.00	0.00	0.00
3,900.00	19.70	76.50	3,737.51	236.07	983.30	-975.87	0.00	0.00	0.00
3,961.06	19.70	76.50	3,795.00	240.88	1,003.32	-995.73	0.00	0.00	0.00
Parkman									
4,000.00	19.70	76.50	3,831.66	243.94	1,016.08	-1,008.40	0.00	0.00	0.00
4,100.00	19.70	76.50	3,925.81	251.81	1,048.86	-1,040.93	0.00	0.00	0.00
4,200.00	19.70	76.50	4,019.95	259.68	1,081.64	-1,073.46	0.00	0.00	0.00
4,300.00	19.70	76.50	4,114.10	267.55	1,114.42	-1,105.99	0.00	0.00	0.00

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well WALTERS 21-4HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 4955.00usft (Drilling Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 4955.00usft (Drilling Rig)
Site:	4N-67W-21 WALTERS 14-21HZ PAD	North Reference:	True
Well:	WALTERS 21-4HZ	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)
4,363.33	19.70	76.50	4,173.73	272.53	1,135.18	-1,126.59	0.00	0.00	0.00
Begin Drop @ 4363.33ft									
4,400.00	18.97	76.50	4,208.33	275.37	1,146.98	-1,138.31	2.00	-2.00	0.00
4,449.21	17.98	76.50	4,255.00	279.01	1,162.14	-1,153.35	2.00	-2.00	0.00
Sussex									
4,500.00	16.97	76.50	4,303.44	282.57	1,176.97	-1,168.07	2.00	-2.00	0.00
4,600.00	14.97	76.50	4,399.58	288.99	1,203.72	-1,194.62	2.00	-2.00	0.00
4,700.00	12.97	76.50	4,496.62	294.62	1,227.19	-1,217.91	2.00	-2.00	0.00
4,800.00	10.97	76.50	4,594.44	299.46	1,247.35	-1,237.91	2.00	-2.00	0.00
4,900.00	8.97	76.50	4,692.93	303.50	1,264.18	-1,254.62	2.00	-2.00	0.00
5,000.00	6.97	76.50	4,791.96	306.74	1,277.65	-1,267.99	2.00	-2.00	0.00
5,100.00	4.97	76.50	4,891.41	309.16	1,287.76	-1,278.02	2.00	-2.00	0.00
5,200.00	2.97	76.50	4,991.17	310.78	1,294.48	-1,284.70	2.00	-2.00	0.00
5,300.00	0.97	76.50	5,091.10	311.58	1,297.82	-1,288.01	2.00	-2.00	0.00
5,348.33	0.00	0.00	5,139.43	311.67	1,298.22	-1,288.40	2.00	-2.00	0.00
End Drop @ 5348.33ft									
5,400.00	0.00	0.00	5,191.10	311.67	1,298.22	-1,288.40	0.00	0.00	0.00
5,500.00	0.00	0.00	5,291.10	311.67	1,298.22	-1,288.40	0.00	0.00	0.00
5,600.00	0.00	0.00	5,391.10	311.67	1,298.22	-1,288.40	0.00	0.00	0.00
5,700.00	0.00	0.00	5,491.10	311.67	1,298.22	-1,288.40	0.00	0.00	0.00
5,800.00	0.00	0.00	5,591.10	311.67	1,298.22	-1,288.40	0.00	0.00	0.00
5,900.00	0.00	0.00	5,691.10	311.67	1,298.22	-1,288.40	0.00	0.00	0.00
6,000.00	0.00	0.00	5,791.10	311.67	1,298.22	-1,288.40	0.00	0.00	0.00
6,100.00	0.00	0.00	5,891.10	311.67	1,298.22	-1,288.40	0.00	0.00	0.00
6,200.00	0.00	0.00	5,991.10	311.67	1,298.22	-1,288.40	0.00	0.00	0.00
6,300.00	0.00	0.00	6,091.10	311.67	1,298.22	-1,288.40	0.00	0.00	0.00
6,400.00	0.00	0.00	6,191.10	311.67	1,298.22	-1,288.40	0.00	0.00	0.00
6,500.00	0.00	0.00	6,291.10	311.67	1,298.22	-1,288.40	0.00	0.00	0.00
6,600.00	0.00	0.00	6,391.10	311.67	1,298.22	-1,288.40	0.00	0.00	0.00
6,700.00	0.00	0.00	6,491.10	311.67	1,298.22	-1,288.40	0.00	0.00	0.00
6,800.00	0.00	0.00	6,591.10	311.67	1,298.22	-1,288.40	0.00	0.00	0.00
6,801.71	0.00	0.00	6,592.81	311.67	1,298.22	-1,288.40	0.00	0.00	0.00
KOP @ 6801.71ft :: DLS = 8°/100'									
6,900.00	7.86	271.70	6,690.79	311.87	1,291.49	-1,281.67	8.00	8.00	0.00
7,000.00	15.86	271.70	6,788.58	312.48	1,270.96	-1,261.13	8.00	8.00	0.00
7,100.00	23.86	271.70	6,882.55	313.49	1,237.02	-1,227.18	8.00	8.00	0.00
7,200.00	31.86	271.70	6,970.89	314.87	1,190.34	-1,180.48	8.00	8.00	0.00
7,219.13	33.39	271.70	6,987.00	315.18	1,180.03	-1,170.16	8.00	8.00	0.00
Sharon Springs									
7,237.25	34.84	271.70	7,002.00	315.48	1,169.87	-1,160.00	8.00	8.00	0.00
Niobrara									
7,300.00	39.86	271.70	7,051.86	316.61	1,131.83	-1,121.94	8.00	8.00	0.00
7,349.87	43.85	271.70	7,089.00	317.59	1,098.57	-1,088.67	8.00	8.00	0.00
Nio B									
7,400.00	47.86	271.70	7,123.90	318.66	1,062.62	-1,052.70	8.00	8.00	0.00
7,461.24	52.76	271.70	7,163.00	320.05	1,015.53	-1,005.59	8.00	8.00	0.00
Nio C									
7,500.00	55.86	271.70	7,185.61	320.99	984.07	-974.11	8.00	8.00	0.00
7,600.00	63.86	271.70	7,235.77	323.55	897.69	-887.70	8.00	8.00	0.00
7,700.00	71.86	271.70	7,273.42	326.29	805.18	-795.15	8.00	8.00	0.00
7,718.66	73.36	271.70	7,279.00	326.82	787.38	-777.34	8.00	8.00	0.00
Fort Hayes									
7,800.00	79.86	271.70	7,297.83	329.16	708.33	-698.25	8.00	8.00	0.00

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well WALTERS 21-4HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 4955.00usft (Drilling Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 4955.00usft (Drilling Rig)
Site:	4N-67W-21 WALTERS 14-21HZ PAD	North Reference:	True
Well:	WALTERS 21-4HZ	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)
7,813.00	80.90	271.70	7,300.00	329.54	695.51	-685.43	8.00	8.00	0.00
Codell									
7,900.00	87.86	271.70	7,308.51	332.10	609.03	-598.91	8.00	8.00	0.00
7,923.58	89.75	271.70	7,309.00	332.80	585.46	-575.33	8.00	8.00	0.00
End Build @ 7923.58ft - Top of Production									
8,000.00	89.75	271.70	7,309.34	335.07	509.08	-498.91	0.00	0.00	0.00
8,100.00	89.75	271.70	7,309.77	338.03	409.12	-398.92	0.00	0.00	0.00
8,200.00	89.75	271.70	7,310.21	340.99	309.17	-298.92	0.00	0.00	0.00
8,300.00	89.75	271.70	7,310.65	343.95	209.21	-198.92	0.00	0.00	0.00
8,400.00	89.75	271.70	7,311.09	346.92	109.26	-98.92	0.00	0.00	0.00
8,500.00	89.75	271.70	7,311.52	349.88	9.30	1.08	0.00	0.00	0.00
8,600.00	89.75	271.70	7,311.96	352.84	-90.65	101.08	0.00	0.00	0.00
8,700.00	89.75	271.70	7,312.40	355.80	-190.61	201.08	0.00	0.00	0.00
8,800.00	89.75	271.70	7,312.84	358.77	-290.56	301.08	0.00	0.00	0.00
8,900.00	89.75	271.70	7,313.27	361.73	-390.52	401.08	0.00	0.00	0.00
9,000.00	89.75	271.70	7,313.71	364.69	-490.47	501.08	0.00	0.00	0.00
9,100.00	89.75	271.70	7,314.15	367.66	-590.43	601.08	0.00	0.00	0.00
9,200.00	89.75	271.70	7,314.59	370.62	-690.38	701.07	0.00	0.00	0.00
9,300.00	89.75	271.70	7,315.03	373.58	-790.34	801.07	0.00	0.00	0.00
9,400.00	89.75	271.70	7,315.46	376.54	-890.29	901.07	0.00	0.00	0.00
9,500.00	89.75	271.70	7,315.90	379.51	-990.25	1,001.07	0.00	0.00	0.00
9,600.00	89.75	271.70	7,316.34	382.47	-1,090.20	1,101.07	0.00	0.00	0.00
9,700.00	89.75	271.70	7,316.78	385.43	-1,190.16	1,201.07	0.00	0.00	0.00
9,800.00	89.75	271.70	7,317.21	388.40	-1,290.11	1,301.07	0.00	0.00	0.00
9,900.00	89.75	271.70	7,317.65	391.36	-1,390.07	1,401.07	0.00	0.00	0.00
10,000.00	89.75	271.70	7,318.09	394.32	-1,490.02	1,501.07	0.00	0.00	0.00
10,100.00	89.75	271.70	7,318.53	397.28	-1,589.98	1,601.07	0.00	0.00	0.00
10,200.00	89.75	271.70	7,318.96	400.25	-1,689.93	1,701.06	0.00	0.00	0.00
10,300.00	89.75	271.70	7,319.40	403.21	-1,789.89	1,801.06	0.00	0.00	0.00
10,400.00	89.75	271.70	7,319.84	406.17	-1,889.85	1,901.06	0.00	0.00	0.00
10,500.00	89.75	271.70	7,320.28	409.13	-1,989.80	2,001.06	0.00	0.00	0.00
10,600.00	89.75	271.70	7,320.72	412.10	-2,089.76	2,101.06	0.00	0.00	0.00
10,700.00	89.75	271.70	7,321.15	415.06	-2,189.71	2,201.06	0.00	0.00	0.00
10,800.00	89.75	271.70	7,321.59	418.02	-2,289.67	2,301.06	0.00	0.00	0.00
10,900.00	89.75	271.70	7,322.03	420.99	-2,389.62	2,401.06	0.00	0.00	0.00
11,000.00	89.75	271.70	7,322.47	423.95	-2,489.58	2,501.06	0.00	0.00	0.00
11,100.00	89.75	271.70	7,322.90	426.91	-2,589.53	2,601.06	0.00	0.00	0.00
11,200.00	89.75	271.70	7,323.34	429.87	-2,689.49	2,701.06	0.00	0.00	0.00
11,300.00	89.75	271.70	7,323.78	432.84	-2,789.44	2,801.05	0.00	0.00	0.00
11,400.00	89.75	271.70	7,324.22	435.80	-2,889.40	2,901.05	0.00	0.00	0.00
11,500.00	89.75	271.70	7,324.66	438.76	-2,989.35	3,001.05	0.00	0.00	0.00
11,600.00	89.75	271.70	7,325.09	441.73	-3,089.31	3,101.05	0.00	0.00	0.00
11,700.00	89.75	271.70	7,325.53	444.69	-3,189.26	3,201.05	0.00	0.00	0.00
11,800.00	89.75	271.70	7,325.97	447.65	-3,289.22	3,301.05	0.00	0.00	0.00
11,900.00	89.75	271.70	7,326.41	450.61	-3,389.17	3,401.05	0.00	0.00	0.00
12,000.00	89.75	271.70	7,326.84	453.58	-3,489.13	3,501.05	0.00	0.00	0.00
12,100.00	89.75	271.70	7,327.28	456.54	-3,589.08	3,601.05	0.00	0.00	0.00
12,200.00	89.75	271.70	7,327.72	459.50	-3,689.04	3,701.05	0.00	0.00	0.00
12,300.00	89.75	271.70	7,328.16	462.46	-3,788.99	3,801.04	0.00	0.00	0.00
12,400.00	89.75	271.70	7,328.59	465.43	-3,888.95	3,901.04	0.00	0.00	0.00
12,500.00	89.75	271.70	7,329.03	468.39	-3,988.90	4,001.04	0.00	0.00	0.00
12,600.00	89.75	271.70	7,329.47	471.35	-4,088.86	4,101.04	0.00	0.00	0.00
12,700.00	89.75	271.70	7,329.91	474.32	-4,188.81	4,201.04	0.00	0.00	0.00
12,800.00	89.75	271.70	7,330.35	477.28	-4,288.77	4,301.04	0.00	0.00	0.00

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well WALTERS 21-4HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 4955.00usft (Drilling Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 4955.00usft (Drilling Rig)
Site:	4N-67W-21 WALTERS 14-21HZ PAD	North Reference:	True
Well:	WALTERS 21-4HZ	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)
12,900.00	89.75	271.70	7,330.78	480.24	-4,388.72	4,401.04	0.00	0.00	0.00
13,000.00	89.75	271.70	7,331.22	483.20	-4,488.68	4,501.04	0.00	0.00	0.00
13,100.00	89.75	271.70	7,331.66	486.17	-4,588.63	4,601.04	0.00	0.00	0.00
13,178.07	89.75	271.70	7,332.00	488.48	-4,666.67	4,679.10	0.00	0.00	0.00
TD Well @ 13178.07ft									

Casing Points				
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
1,523.46	1,500.00	9 5/8" Csg	9-5/8	13-1/2
7,923.58	7,309.00	Top of Production	5-1/2	7-7/8

Formations					
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
876.81	874.00	Fox Hills			
3,961.06	3,795.00	Parkman			
4,449.21	4,255.00	Sussex			
7,219.13	6,987.00	Sharon Springs			
7,237.25	7,002.00	Niobrara			
7,349.87	7,089.00	Nio B			
7,461.24	7,163.00	Nio C			
7,718.66	7,279.00	Fort Hayes			
7,813.00	7,300.00	Codell			

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
250.00	250.00	0.00	0.00	Begin Nudge @ 250.00ft
1,563.33	1,537.61	52.19	217.39	End Nudge @ 1563.33ft
4,363.33	4,173.73	272.53	1,135.18	Begin Drop @ 4363.33ft
5,348.33	5,139.43	311.67	1,298.22	End Drop @ 5348.33ft
6,801.71	6,592.81	311.67	1,298.22	KOP @ 6801.71ft :: DLS = 8°/100'
7,923.58	7,309.00	332.80	585.47	End Build @ 7923.58ft
13,178.07	7,332.00	488.48	-4,666.67	TD Well @ 13178.07ft