

US ROCKIES WATTENBERG PLANNING

**WELD-NAD83-UTMFT13N
1N-67W-07 BUDDY 17-7HZ PAD
BUDDY 7-13HZ**

Plan A

Plan: Permit Rev-1

SHL Lat/Long: 40.070708/-104.927554
Survey Program: MWD+IFR+MSA

Standard Planning Report

15 May, 2018

Project: WELD-NAD83-UTMFT13N
Site: 1N-67W-07 BUDDY 17-7HZ PAD
Well: BUDDY 7-13HZ
Wellbore: Plan A
Design: Permit Rev-1

US ROCKIES WATTENBERG PLANNING

CASING DETAILS

TVD	MD	Size
1500.00	1500.71	9-5/8
7639.00	8049.54	5-1/2

WELL DETAILS: BUDDY 7-13HZ
GL = 5072.00
RKB = 17' @ 5089.00usft (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	383.33	2.00	90.00	383.31	0.00	2.33	1.50	90.00	0.00	
4	1533.33	2.00	90.00	1532.61	0.00	42.46	0.00	0.00	0.01	
5	1633.33	0.00	0.00	1632.59	0.00	44.21	2.00	180.00	0.02	
6	6923.55	0.00	0.00	6922.80	0.00	44.21	0.00	0.00	0.02	
7	8049.54	90.08	359.82	7639.00	717.18	41.97	8.00	359.82	717.20	
8	13500.03	90.08	359.82	7631.48	6167.64	25.00	0.00	6167.65	BUDDY 7-13HZ_target	
9	13530.37	90.08	0.28	7631.44	6197.98	25.03	1.50	89.99	6197.99	
10	18193.89	90.08	0.28	7625.00	10861.44	47.54	0.00	0.00	10861.46	BUDDY 7-13HZ_BHL

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude
BUDDY 7-13HZ_SHL	0.00	0.00	0.00	40.070708	-104.927554
BUDDY 7-13HZ_BHL	7625.00	10861.44	47.54	40.100535	-104.927384

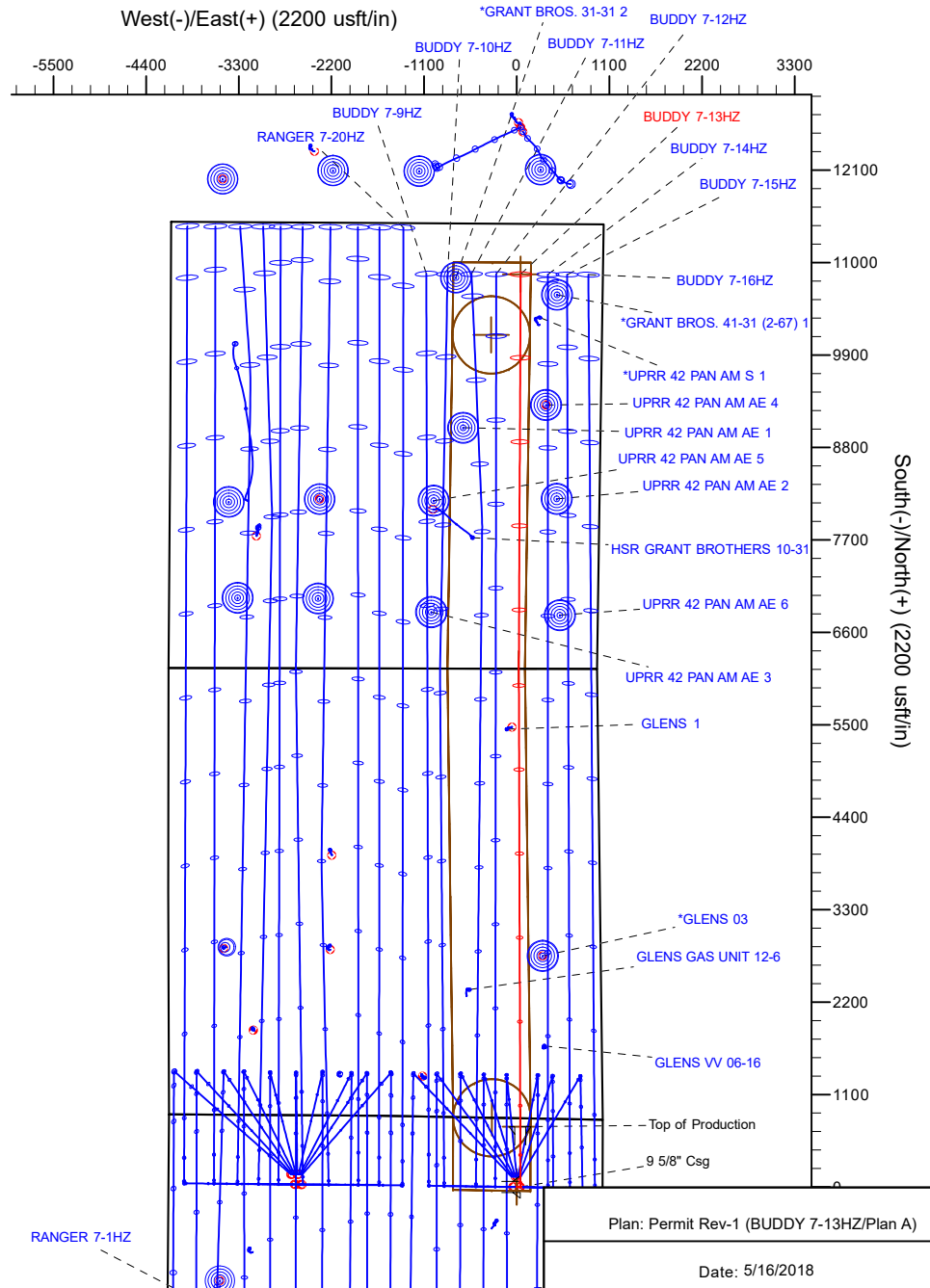
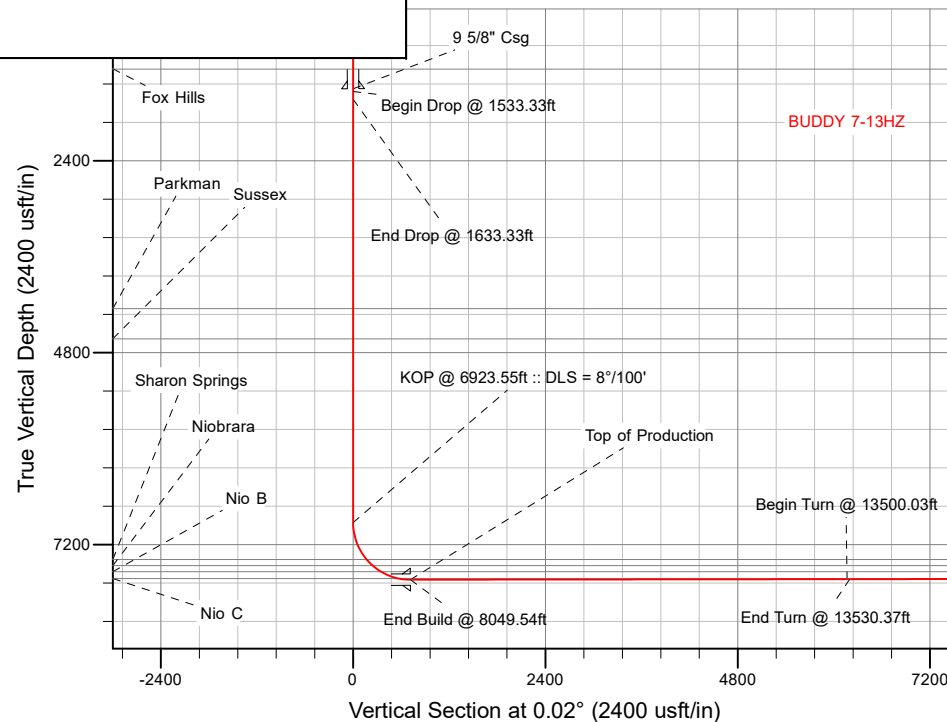
FORMATION TOP DETAILS

TVDPath	MDPath	Formation
1252.00	1252.56	Fox Hills
4248.00	4248.75	Parkman
4627.00	4627.75	Sussex
7387.00	7428.57	Sharon Springs
7462.00	7534.04	Niobrara
7538.00	7663.58	Nio B
7624.00	7901.72	Nio C

SHL
818' FNL
1020' FEL

HEEL
100' FNL
977' FEL

TOE
600' FNL
976' FEL



Plan: Permit Rev-1 (BUDDY 7-13HZ/Plan A)

Date: 5/16/2018

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well BUDDY 7-13HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 5089.00usft (Drilling Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 5089.00usft (Drilling Rig)
Site:	1N-67W-07 BUDDY 17-7HZ PAD	North Reference:	True
Well:	BUDDY 7-13HZ	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-07 BUDDY 17-7HZ PAD			
Site Position:		Northing:	14,552,609.64 usft	Latitude:	40.071038
From:	Lat/Long	Easting:	1,660,624.89 usft	Longitude:	-104.927766
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.05 °

Well		BUDDY 7-13HZ				
Well Position	+N/-S	-120.17 usft	Northing:	14,552,489.52 usft	Latitude:	40.070708
	+E/-W	59.31 usft	Easting:	1,660,684.29 usft	Longitude:	-104.927554
Position Uncertainty		3.28 usft	Wellhead Elevation:		Ground Level:	5,072.00 usft

Wellbore	Plan A				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	5/2/2018	8.18	66.54	52,102.03248462

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	0.02

Plan Survey Tool Program	Date	5/15/2018		
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+II Fixed:v2:crustal field declinatio
2	1,500.00	18,193.89	Permit Rev-1 (Plan A)	APC_ISCWSA REV 2 MWD+II Fixed:v2:Rockies, crustal dec +

Corporate
Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well BUDDY 7-13HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 5089.00usft (Drilling Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 5089.00usft (Drilling Rig)
Site:	1N-67W-07 BUDDY 17-7HZ PAD	North Reference:	True
Well:	BUDDY 7-13HZ	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	
383.33	2.00	90.00	383.31	0.00	2.33	1.50	1.50	0.00	90.00	
1,533.33	2.00	90.00	1,532.61	0.00	42.46	0.00	0.00	0.00	0.00	
1,633.33	0.00	0.00	1,632.59	0.00	44.21	2.00	-2.00	0.00	180.00	
6,923.55	0.00	0.00	6,922.80	0.00	44.21	0.00	0.00	0.00	0.00	
8,049.54	90.08	359.82	7,639.00	717.18	41.97	8.00	8.00	-0.02	359.82	
13,500.03	90.08	359.82	7,631.48	6,167.64	25.00	0.00	0.00	0.00	0.00	BUDDY 7-13HZ_target
13,530.37	90.08	0.28	7,631.44	6,197.98	25.03	1.50	0.00	1.50	89.99	
18,193.89	90.08	0.28	7,625.00	10,861.44	47.54	0.00	0.00	0.00	0.00	BUDDY 7-13HZ_BHL

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well BUDDY 7-13HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 5089.00usft (Drilling Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 5089.00usft (Drilling Rig)
Site:	1N-67W-07 BUDDY 17-7HZ PAD	North Reference:	True
Well:	BUDDY 7-13HZ	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	90.00	300.00	0.00	0.33	0.00	1.50	1.50	0.00
383.33	2.00	90.00	383.31	0.00	2.33	0.00	1.50	1.50	0.00
End Nudge @ 383.33ft									
400.00	2.00	90.00	399.96	0.00	2.91	0.00	0.00	0.00	0.00
500.00	2.00	90.00	499.90	0.00	6.40	0.00	0.00	0.00	0.00
600.00	2.00	90.00	599.84	0.00	9.89	0.00	0.00	0.00	0.00
700.00	2.00	90.00	699.78	0.00	13.38	0.00	0.00	0.00	0.00
800.00	2.00	90.00	799.72	0.00	16.87	0.01	0.00	0.00	0.00
900.00	2.00	90.00	899.66	0.00	20.36	0.01	0.00	0.00	0.00
1,000.00	2.00	90.00	999.60	0.00	23.85	0.01	0.00	0.00	0.00
1,100.00	2.00	90.00	1,099.54	0.00	27.34	0.01	0.00	0.00	0.00
1,200.00	2.00	90.00	1,199.48	0.00	30.83	0.01	0.00	0.00	0.00
1,252.56	2.00	90.00	1,252.00	0.00	32.66	0.01	0.00	0.00	0.00
Fox Hills									
1,300.00	2.00	90.00	1,299.41	0.00	34.32	0.01	0.00	0.00	0.00
1,400.00	2.00	90.00	1,399.35	0.00	37.81	0.01	0.00	0.00	0.00
1,500.00	2.00	90.00	1,499.29	0.00	41.30	0.01	0.00	0.00	0.00
1,500.71	2.00	90.00	1,500.00	0.00	41.32	0.01	0.00	0.00	0.00
9 5/8" Csg									
1,533.33	2.00	90.00	1,532.61	0.00	42.46	0.01	0.00	0.00	0.00
Begin Drop @ 1533.33ft									
1,600.00	0.67	90.00	1,599.25	0.00	44.01	0.02	2.00	-2.00	0.00
1,633.33	0.00	0.00	1,632.59	0.00	44.21	0.02	2.00	-2.00	0.00
End Drop @ 1633.33ft									
1,700.00	0.00	0.00	1,699.25	0.00	44.21	0.02	0.00	0.00	0.00
1,800.00	0.00	0.00	1,799.25	0.00	44.21	0.02	0.00	0.00	0.00
1,900.00	0.00	0.00	1,899.25	0.00	44.21	0.02	0.00	0.00	0.00
2,000.00	0.00	0.00	1,999.25	0.00	44.21	0.02	0.00	0.00	0.00
2,100.00	0.00	0.00	2,099.25	0.00	44.21	0.02	0.00	0.00	0.00
2,200.00	0.00	0.00	2,199.25	0.00	44.21	0.02	0.00	0.00	0.00
2,300.00	0.00	0.00	2,299.25	0.00	44.21	0.02	0.00	0.00	0.00
2,400.00	0.00	0.00	2,399.25	0.00	44.21	0.02	0.00	0.00	0.00
2,500.00	0.00	0.00	2,499.25	0.00	44.21	0.02	0.00	0.00	0.00
2,600.00	0.00	0.00	2,599.25	0.00	44.21	0.02	0.00	0.00	0.00
2,700.00	0.00	0.00	2,699.25	0.00	44.21	0.02	0.00	0.00	0.00
2,800.00	0.00	0.00	2,799.25	0.00	44.21	0.02	0.00	0.00	0.00
2,900.00	0.00	0.00	2,899.25	0.00	44.21	0.02	0.00	0.00	0.00
3,000.00	0.00	0.00	2,999.25	0.00	44.21	0.02	0.00	0.00	0.00
3,100.00	0.00	0.00	3,099.25	0.00	44.21	0.02	0.00	0.00	0.00
3,200.00	0.00	0.00	3,199.25	0.00	44.21	0.02	0.00	0.00	0.00
3,300.00	0.00	0.00	3,299.25	0.00	44.21	0.02	0.00	0.00	0.00
3,400.00	0.00	0.00	3,399.25	0.00	44.21	0.02	0.00	0.00	0.00
3,500.00	0.00	0.00	3,499.25	0.00	44.21	0.02	0.00	0.00	0.00
3,600.00	0.00	0.00	3,599.25	0.00	44.21	0.02	0.00	0.00	0.00
3,700.00	0.00	0.00	3,699.25	0.00	44.21	0.02	0.00	0.00	0.00
3,800.00	0.00	0.00	3,799.25	0.00	44.21	0.02	0.00	0.00	0.00
3,900.00	0.00	0.00	3,899.25	0.00	44.21	0.02	0.00	0.00	0.00
4,000.00	0.00	0.00	3,999.25	0.00	44.21	0.02	0.00	0.00	0.00

Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well BUDDY 7-13HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 5089.00usft (Drilling Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 5089.00usft (Drilling Rig)
Site:	1N-67W-07 BUDDY 17-7HZ PAD	North Reference:	True
Well:	BUDDY 7-13HZ	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)
4,100.00	0.00	0.00	4,099.25	0.00	44.21	0.02	0.00	0.00	0.00
4,200.00	0.00	0.00	4,199.25	0.00	44.21	0.02	0.00	0.00	0.00
4,248.75	0.00	0.00	4,248.00	0.00	44.21	0.02	0.00	0.00	0.00
Parkman									
4,300.00	0.00	0.00	4,299.25	0.00	44.21	0.02	0.00	0.00	0.00
4,400.00	0.00	0.00	4,399.25	0.00	44.21	0.02	0.00	0.00	0.00
4,500.00	0.00	0.00	4,499.25	0.00	44.21	0.02	0.00	0.00	0.00
4,600.00	0.00	0.00	4,599.25	0.00	44.21	0.02	0.00	0.00	0.00
4,627.75	0.00	0.00	4,627.00	0.00	44.21	0.02	0.00	0.00	0.00
Sussex									
4,700.00	0.00	0.00	4,699.25	0.00	44.21	0.02	0.00	0.00	0.00
4,800.00	0.00	0.00	4,799.25	0.00	44.21	0.02	0.00	0.00	0.00
4,900.00	0.00	0.00	4,899.25	0.00	44.21	0.02	0.00	0.00	0.00
5,000.00	0.00	0.00	4,999.25	0.00	44.21	0.02	0.00	0.00	0.00
5,100.00	0.00	0.00	5,099.25	0.00	44.21	0.02	0.00	0.00	0.00
5,200.00	0.00	0.00	5,199.25	0.00	44.21	0.02	0.00	0.00	0.00
5,300.00	0.00	0.00	5,299.25	0.00	44.21	0.02	0.00	0.00	0.00
5,400.00	0.00	0.00	5,399.25	0.00	44.21	0.02	0.00	0.00	0.00
5,500.00	0.00	0.00	5,499.25	0.00	44.21	0.02	0.00	0.00	0.00
5,600.00	0.00	0.00	5,599.25	0.00	44.21	0.02	0.00	0.00	0.00
5,700.00	0.00	0.00	5,699.25	0.00	44.21	0.02	0.00	0.00	0.00
5,800.00	0.00	0.00	5,799.25	0.00	44.21	0.02	0.00	0.00	0.00
5,900.00	0.00	0.00	5,899.25	0.00	44.21	0.02	0.00	0.00	0.00
6,000.00	0.00	0.00	5,999.25	0.00	44.21	0.02	0.00	0.00	0.00
6,100.00	0.00	0.00	6,099.25	0.00	44.21	0.02	0.00	0.00	0.00
6,200.00	0.00	0.00	6,199.25	0.00	44.21	0.02	0.00	0.00	0.00
6,300.00	0.00	0.00	6,299.25	0.00	44.21	0.02	0.00	0.00	0.00
6,400.00	0.00	0.00	6,399.25	0.00	44.21	0.02	0.00	0.00	0.00
6,500.00	0.00	0.00	6,499.25	0.00	44.21	0.02	0.00	0.00	0.00
6,600.00	0.00	0.00	6,599.25	0.00	44.21	0.02	0.00	0.00	0.00
6,700.00	0.00	0.00	6,699.25	0.00	44.21	0.02	0.00	0.00	0.00
6,800.00	0.00	0.00	6,799.25	0.00	44.21	0.02	0.00	0.00	0.00
6,900.00	0.00	0.00	6,899.25	0.00	44.21	0.02	0.00	0.00	0.00
6,923.55	0.00	0.00	6,922.80	0.00	44.21	0.02	0.00	0.00	0.00
KOP @ 6923.55ft :: DLS = 8°/100'									
7,000.00	6.12	359.82	6,999.11	4.08	44.19	4.09	8.00	8.00	0.00
7,100.00	14.12	359.82	7,097.47	21.63	44.14	21.64	8.00	8.00	0.00
7,200.00	22.12	359.82	7,192.44	52.70	44.04	52.71	8.00	8.00	0.00
7,300.00	30.12	359.82	7,282.16	96.68	43.91	96.69	8.00	8.00	0.00
7,400.00	38.12	359.82	7,364.88	152.72	43.73	152.73	8.00	8.00	0.00
7,428.57	40.40	359.82	7,387.00	170.80	43.67	170.81	8.00	8.00	0.00
Sharon Springs									
7,500.00	46.12	359.82	7,439.00	219.73	43.52	219.74	8.00	8.00	0.00
7,534.04	48.84	359.82	7,462.00	244.81	43.44	244.83	8.00	8.00	0.00
Niobrara									
7,600.00	54.12	359.82	7,503.07	296.40	43.28	296.41	8.00	8.00	0.00
7,663.58	59.20	359.82	7,538.00	349.49	43.12	349.51	8.00	8.00	0.00
Nio B									
7,700.00	62.12	359.82	7,555.85	381.24	43.02	381.26	8.00	8.00	0.00
7,800.00	70.12	359.82	7,596.30	472.60	42.73	472.62	8.00	8.00	0.00
7,900.00	78.12	359.82	7,623.65	568.71	42.44	568.72	8.00	8.00	0.00
7,901.72	78.25	359.82	7,624.00	570.39	42.43	570.40	8.00	8.00	0.00
Nio C									

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well BUDDY 7-13HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 5089.00usft (Drilling Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 5089.00usft (Drilling Rig)
Site:	1N-67W-07 BUDDY 17-7HZ PAD	North Reference:	True
Well:	BUDDY 7-13HZ	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)
8,000.00	86.12	359.82	7,637.35	667.68	42.13	667.70	8.00	8.00	0.00
8,049.54	90.08	359.82	7,639.00	717.18	41.97	717.20	8.00	8.00	0.00
End Build @ 8049.54ft - Top of Production									
8,100.00	90.08	359.82	7,638.93	767.64	41.82	767.66	0.00	0.00	0.00
8,200.00	90.08	359.82	7,638.79	867.64	41.50	867.66	0.00	0.00	0.00
8,300.00	90.08	359.82	7,638.65	967.64	41.19	967.66	0.00	0.00	0.00
8,400.00	90.08	359.82	7,638.52	1,067.64	40.88	1,067.66	0.00	0.00	0.00
8,500.00	90.08	359.82	7,638.38	1,167.64	40.57	1,167.66	0.00	0.00	0.00
8,600.00	90.08	359.82	7,638.24	1,267.64	40.26	1,267.65	0.00	0.00	0.00
8,700.00	90.08	359.82	7,638.10	1,367.64	39.95	1,367.65	0.00	0.00	0.00
8,800.00	90.08	359.82	7,637.96	1,467.64	39.64	1,467.65	0.00	0.00	0.00
8,900.00	90.08	359.82	7,637.83	1,567.64	39.32	1,567.65	0.00	0.00	0.00
9,000.00	90.08	359.82	7,637.69	1,667.64	39.01	1,667.65	0.00	0.00	0.00
9,100.00	90.08	359.82	7,637.55	1,767.64	38.70	1,767.65	0.00	0.00	0.00
9,200.00	90.08	359.82	7,637.41	1,867.64	38.39	1,867.65	0.00	0.00	0.00
9,300.00	90.08	359.82	7,637.27	1,967.64	38.08	1,967.65	0.00	0.00	0.00
9,400.00	90.08	359.82	7,637.14	2,067.64	37.77	2,067.65	0.00	0.00	0.00
9,500.00	90.08	359.82	7,637.00	2,167.64	37.46	2,167.65	0.00	0.00	0.00
9,600.00	90.08	359.82	7,636.86	2,267.63	37.14	2,267.65	0.00	0.00	0.00
9,700.00	90.08	359.82	7,636.72	2,367.63	36.83	2,367.65	0.00	0.00	0.00
9,800.00	90.08	359.82	7,636.58	2,467.63	36.52	2,467.65	0.00	0.00	0.00
9,900.00	90.08	359.82	7,636.45	2,567.63	36.21	2,567.65	0.00	0.00	0.00
10,000.00	90.08	359.82	7,636.31	2,667.63	35.90	2,667.64	0.00	0.00	0.00
10,100.00	90.08	359.82	7,636.17	2,767.63	35.59	2,767.64	0.00	0.00	0.00
10,200.00	90.08	359.82	7,636.03	2,867.63	35.28	2,867.64	0.00	0.00	0.00
10,300.00	90.08	359.82	7,635.89	2,967.63	34.97	2,967.64	0.00	0.00	0.00
10,400.00	90.08	359.82	7,635.76	3,067.63	34.65	3,067.64	0.00	0.00	0.00
10,500.00	90.08	359.82	7,635.62	3,167.63	34.34	3,167.64	0.00	0.00	0.00
10,600.00	90.08	359.82	7,635.48	3,267.63	34.03	3,267.64	0.00	0.00	0.00
10,700.00	90.08	359.82	7,635.34	3,367.63	33.72	3,367.64	0.00	0.00	0.00
10,800.00	90.08	359.82	7,635.20	3,467.63	33.41	3,467.64	0.00	0.00	0.00
10,900.00	90.08	359.82	7,635.07	3,567.63	33.10	3,567.64	0.00	0.00	0.00
11,000.00	90.08	359.82	7,634.93	3,667.63	32.79	3,667.64	0.00	0.00	0.00
11,100.00	90.08	359.82	7,634.79	3,767.63	32.47	3,767.64	0.00	0.00	0.00
11,200.00	90.08	359.82	7,634.65	3,867.63	32.16	3,867.64	0.00	0.00	0.00
11,300.00	90.08	359.82	7,634.51	3,967.63	31.85	3,967.64	0.00	0.00	0.00
11,400.00	90.08	359.82	7,634.38	4,067.62	31.54	4,067.64	0.00	0.00	0.00
11,500.00	90.08	359.82	7,634.24	4,167.62	31.23	4,167.63	0.00	0.00	0.00
11,600.00	90.08	359.82	7,634.10	4,267.62	30.92	4,267.63	0.00	0.00	0.00
11,700.00	90.08	359.82	7,633.96	4,367.62	30.61	4,367.63	0.00	0.00	0.00
11,800.00	90.08	359.82	7,633.83	4,467.62	30.29	4,467.63	0.00	0.00	0.00
11,900.00	90.08	359.82	7,633.69	4,567.62	29.98	4,567.63	0.00	0.00	0.00
12,000.00	90.08	359.82	7,633.55	4,667.62	29.67	4,667.63	0.00	0.00	0.00
12,100.00	90.08	359.82	7,633.41	4,767.62	29.36	4,767.63	0.00	0.00	0.00
12,200.00	90.08	359.82	7,633.27	4,867.62	29.05	4,867.63	0.00	0.00	0.00
12,300.00	90.08	359.82	7,633.14	4,967.62	28.74	4,967.63	0.00	0.00	0.00
12,400.00	90.08	359.82	7,633.00	5,067.62	28.43	5,067.63	0.00	0.00	0.00
12,500.00	90.08	359.82	7,632.86	5,167.62	28.11	5,167.63	0.00	0.00	0.00
12,600.00	90.08	359.82	7,632.72	5,267.62	27.80	5,267.63	0.00	0.00	0.00
12,700.00	90.08	359.82	7,632.58	5,367.62	27.49	5,367.63	0.00	0.00	0.00
12,800.00	90.08	359.82	7,632.45	5,467.62	27.18	5,467.63	0.00	0.00	0.00
12,900.00	90.08	359.82	7,632.31	5,567.62	26.87	5,567.62	0.00	0.00	0.00
13,000.00	90.08	359.82	7,632.17	5,667.62	26.56	5,667.62	0.00	0.00	0.00

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well BUDDY 7-13HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 5089.00usft (Drilling Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 5089.00usft (Drilling Rig)
Site:	1N-67W-07 BUDDY 17-7HZ PAD	North Reference:	True
Well:	BUDDY 7-13HZ	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)
13,100.00	90.08	359.82	7,632.03	5,767.61	26.25	5,767.62	0.00	0.00	0.00
13,200.00	90.08	359.82	7,631.89	5,867.61	25.93	5,867.62	0.00	0.00	0.00
13,300.00	90.08	359.82	7,631.76	5,967.61	25.62	5,967.62	0.00	0.00	0.00
13,400.00	90.08	359.82	7,631.62	6,067.61	25.31	6,067.62	0.00	0.00	0.00
13,500.00	90.08	359.82	7,631.48	6,167.61	25.00	6,167.62	0.00	0.00	0.00
13,500.03	90.08	359.82	7,631.48	6,167.64	25.00	6,167.65	0.00	0.00	0.00
Begin Turn @ 13500.03ft									
13,530.37	90.08	0.28	7,631.44	6,197.98	25.03	6,197.99	1.50	0.00	1.50
End Turn @ 13530.37ft									
13,600.00	90.08	0.28	7,631.34	6,267.61	25.36	6,267.62	0.00	0.00	0.00
13,700.00	90.08	0.28	7,631.20	6,367.61	25.85	6,367.62	0.00	0.00	0.00
13,800.00	90.08	0.28	7,631.07	6,467.61	26.33	6,467.62	0.00	0.00	0.00
13,900.00	90.08	0.28	7,630.93	6,567.61	26.81	6,567.62	0.00	0.00	0.00
14,000.00	90.08	0.28	7,630.79	6,667.61	27.29	6,667.62	0.00	0.00	0.00
14,100.00	90.08	0.28	7,630.65	6,767.61	27.78	6,767.61	0.00	0.00	0.00
14,200.00	90.08	0.28	7,630.51	6,867.60	28.26	6,867.61	0.00	0.00	0.00
14,300.00	90.08	0.28	7,630.38	6,967.60	28.74	6,967.61	0.00	0.00	0.00
14,400.00	90.08	0.28	7,630.24	7,067.60	29.23	7,067.61	0.00	0.00	0.00
14,500.00	90.08	0.28	7,630.10	7,167.60	29.71	7,167.61	0.00	0.00	0.00
14,600.00	90.08	0.28	7,629.96	7,267.60	30.19	7,267.61	0.00	0.00	0.00
14,700.00	90.08	0.28	7,629.82	7,367.60	30.67	7,367.61	0.00	0.00	0.00
14,800.00	90.08	0.28	7,629.69	7,467.60	31.16	7,467.61	0.00	0.00	0.00
14,900.00	90.08	0.28	7,629.55	7,567.59	31.64	7,567.61	0.00	0.00	0.00
15,000.00	90.08	0.28	7,629.41	7,667.59	32.12	7,667.60	0.00	0.00	0.00
15,100.00	90.08	0.28	7,629.27	7,767.59	32.61	7,767.60	0.00	0.00	0.00
15,200.00	90.08	0.28	7,629.13	7,867.59	33.09	7,867.60	0.00	0.00	0.00
15,300.00	90.08	0.28	7,629.00	7,967.59	33.57	7,967.60	0.00	0.00	0.00
15,400.00	90.08	0.28	7,628.86	8,067.59	34.05	8,067.60	0.00	0.00	0.00
15,500.00	90.08	0.28	7,628.72	8,167.59	34.54	8,167.60	0.00	0.00	0.00
15,600.00	90.08	0.28	7,628.58	8,267.59	35.02	8,267.60	0.00	0.00	0.00
15,700.00	90.08	0.28	7,628.44	8,367.58	35.50	8,367.60	0.00	0.00	0.00
15,800.00	90.08	0.28	7,628.31	8,467.58	35.99	8,467.60	0.00	0.00	0.00
15,900.00	90.08	0.28	7,628.17	8,567.58	36.47	8,567.59	0.00	0.00	0.00
16,000.00	90.08	0.28	7,628.03	8,667.58	36.95	8,667.59	0.00	0.00	0.00
16,100.00	90.08	0.28	7,627.89	8,767.58	37.43	8,767.59	0.00	0.00	0.00
16,200.00	90.08	0.28	7,627.75	8,867.58	37.92	8,867.59	0.00	0.00	0.00
16,300.00	90.08	0.28	7,627.61	8,967.58	38.40	8,967.59	0.00	0.00	0.00
16,400.00	90.08	0.28	7,627.48	9,067.58	38.88	9,067.59	0.00	0.00	0.00
16,500.00	90.08	0.28	7,627.34	9,167.57	39.37	9,167.59	0.00	0.00	0.00
16,600.00	90.08	0.28	7,627.20	9,267.57	39.85	9,267.59	0.00	0.00	0.00
16,700.00	90.08	0.28	7,627.06	9,367.57	40.33	9,367.59	0.00	0.00	0.00
16,800.00	90.08	0.28	7,626.92	9,467.57	40.81	9,467.58	0.00	0.00	0.00
16,900.00	90.08	0.28	7,626.79	9,567.57	41.30	9,567.58	0.00	0.00	0.00
17,000.00	90.08	0.28	7,626.65	9,667.57	41.78	9,667.58	0.00	0.00	0.00
17,100.00	90.08	0.28	7,626.51	9,767.57	42.26	9,767.58	0.00	0.00	0.00
17,200.00	90.08	0.28	7,626.37	9,867.57	42.75	9,867.58	0.00	0.00	0.00
17,300.00	90.08	0.28	7,626.23	9,967.56	43.23	9,967.58	0.00	0.00	0.00
17,400.00	90.08	0.28	7,626.10	10,067.56	43.71	10,067.58	0.00	0.00	0.00
17,500.00	90.08	0.28	7,625.96	10,167.56	44.19	10,167.58	0.00	0.00	0.00
17,600.00	90.08	0.28	7,625.82	10,267.56	44.68	10,267.58	0.00	0.00	0.00
17,700.00	90.08	0.28	7,625.68	10,367.56	45.16	10,367.57	0.00	0.00	0.00
17,800.00	90.08	0.28	7,625.54	10,467.56	45.64	10,467.57	0.00	0.00	0.00
17,900.00	90.08	0.28	7,625.41	10,567.56	46.13	10,567.57	0.00	0.00	0.00
18,000.00	90.08	0.28	7,625.27	10,667.56	46.61	10,667.57	0.00	0.00	0.00

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well BUDDY 7-13HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 5089.00usft (Drilling Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 5089.00usft (Drilling Rig)
Site:	1N-67W-07 BUDDY 17-7HZ PAD	North Reference:	True
Well:	BUDDY 7-13HZ	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)
18,100.00	90.08	0.28	7,625.13	10,767.55	47.09	10,767.57	0.00	0.00	0.00
18,193.89	90.08	0.28	7,625.00	10,861.44	47.54	10,861.46	0.00	0.00	0.00
TD Well @ 18193.89ft									

Casing Points				
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
1,500.71	1,500.00	9 5/8" Csg	9-5/8	13-1/2
8,049.54	7,639.00	Top of Production	5-1/2	7-7/8

Formations					
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,252.56	1,252.00	Fox Hills			
4,248.75	4,248.00	Parkman			
4,627.75	4,627.00	Sussex			
7,428.57	7,387.00	Sharon Springs			
7,534.04	7,462.00	Niobrara			
7,663.58	7,538.00	Nio B			
7,901.72	7,624.00	Nio C			

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
383.33	383.31	0.00	2.33	End Nudge @ 383.33ft
1,533.33	1,532.61	0.00	42.46	Begin Drop @ 1533.33ft
1,633.33	1,632.59	0.00	44.21	End Drop @ 1633.33ft
6,923.55	6,922.80	0.00	44.21	KOP @ 6923.55ft :: DLS = 8°/100'
8,049.54	7,639.00	717.18	41.97	End Build @ 8049.54ft
13,500.03	7,631.48	6,167.64	25.00	Begin Turn @ 13500.03ft
13,530.37	7,631.44	6,197.98	25.03	End Turn @ 13530.37ft
18,193.89	7,625.00	10,861.44	47.54	TD Well @ 18193.89ft