

US ROCKIES WATTENBERG PLANNING

WELD-NAD83-UTMFT13N

1N-67W-02 Camenisch 13-2HZ Pad

CAMENISCH 3N-35HZ

Plan A

Plan: Permit Rev-1

Standard Survey Report

09 March, 2016

Project: WELD-NAD83-UTMFT13N
Site: 1N-67W-02 Camenisch 13-2HZ Pad
Well: CAMENISCH 3N-35HZ
Wellbore: Plan A
Design: Permit Rev-1

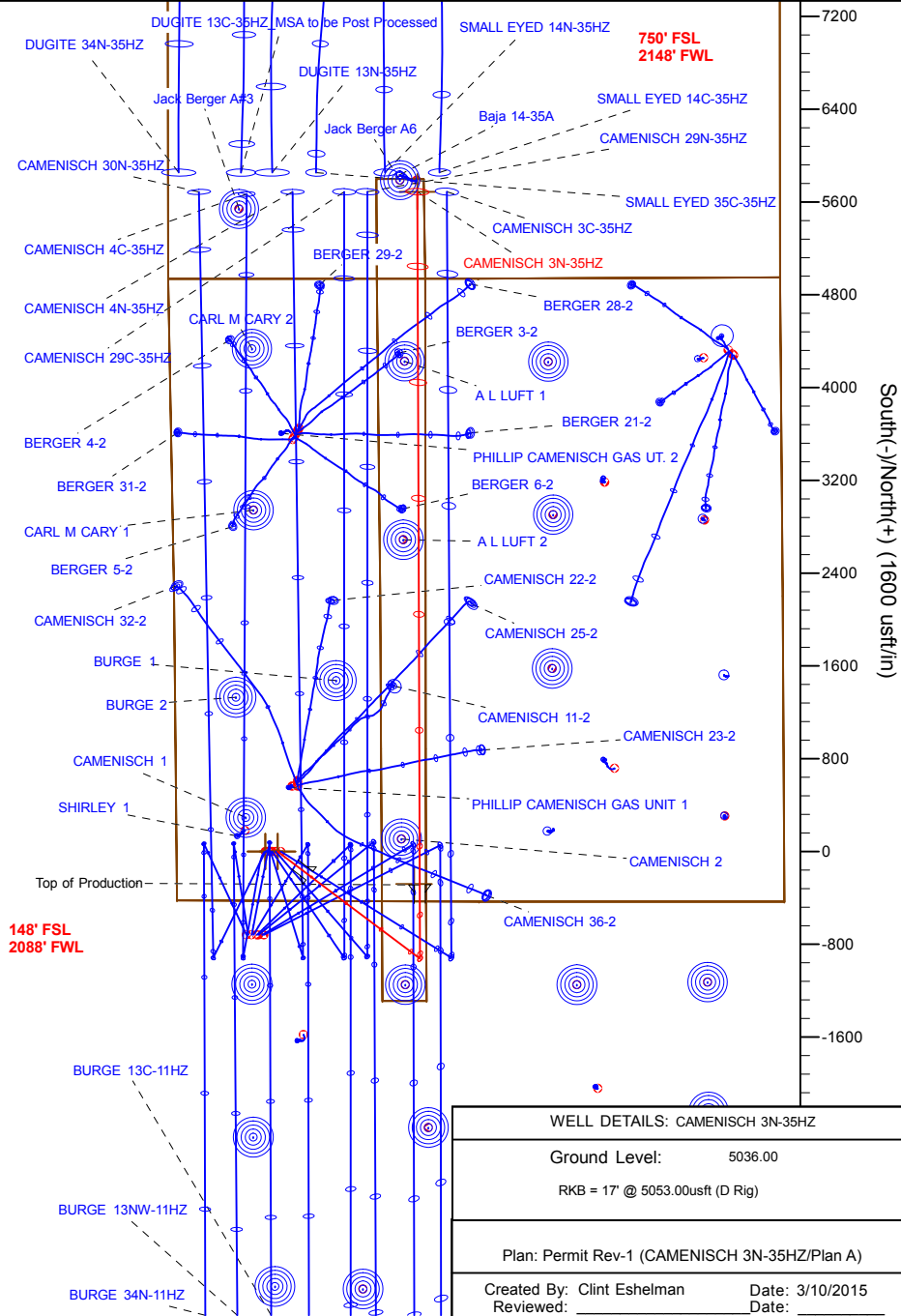
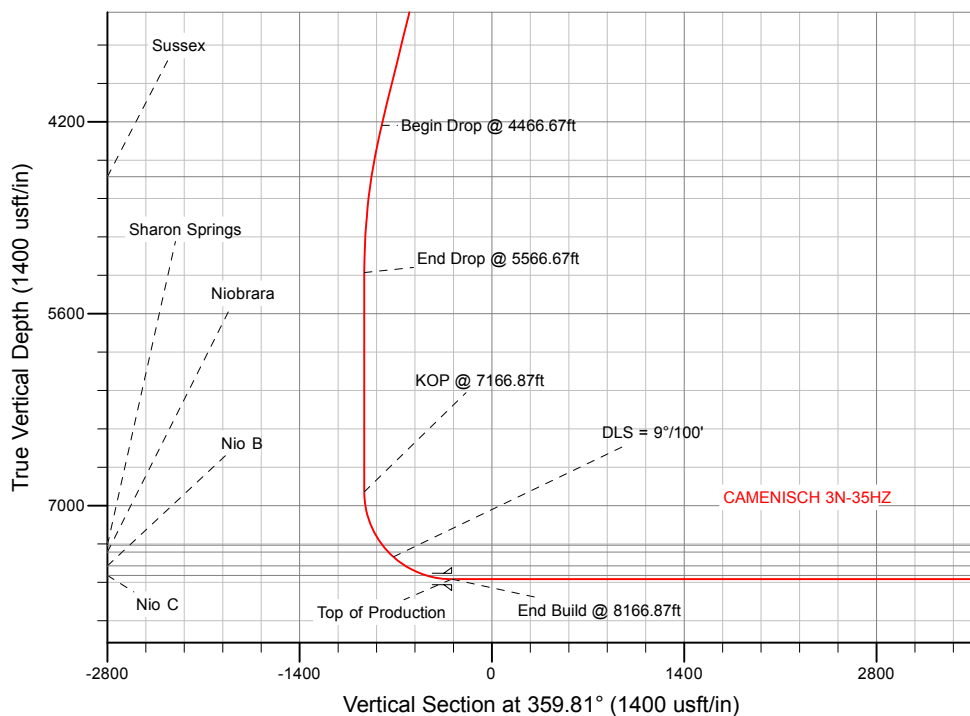
US ROCKIES WATTENBERG PLANNING

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	
3	1666.67	22.00	127.00	1630.89	-167.39	222.13	1.50	127.00	-168.12	
4	4466.67	22.00	127.00	4227.01	-798.63	1059.82	0.00	0.00	-802.14	
5	5566.67	0.00	0.00	5300.18	-924.17	1226.42	2.00	180.00	-928.23	
6	7166.87	0.00	0.00	6900.38	-924.17	1226.42	0.00	0.00	-928.23	
7	8166.87	90.00	359.81	7537.00	-287.55	1224.25	9.00	359.81	-291.61	
8	14143.90	90.00	359.81	7537.00	5689.44	1203.92	0.00	0.00	5685.42	CAMENISCH 3N-35HZ_BHL

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
CAMENISCH 3N-35HZ_SHL	0.00	0.00	0.00	40.073945	-104.864302	Point
CAMENISCH 3N-35HZ_BHL	7537.00	5689.44	1203.92	40.089569	-104.859997	Point



WELL DETAILS: CAMENISCH 3N-35HZ

Ground Level: 5036.00

RKB = 17' @ 5053.00usft (D Rig)

Plan: Permit Rev-1 (CAMENISCH 3N-35HZ/Plan A)

Created By: Clint Eshelman

Date: 3/10/2015

Reviewed:

Date:

Anadarko

Survey Report

Company:	US ROCKIES WATTENBERG PLANNING	Local Co-ordinate Reference:	Well CAMENISCH 3N-35HZ
Project:	WELD-NAD83-UTMFT13N	TVD Reference:	RKB = 17' @ 5053.00usft (D Rig)
Site:	1N-67W-02 Camenisch 13-2HZ Pad	MD Reference:	RKB = 17' @ 5053.00usft (D Rig)
Well:	CAMENISCH 3N-35HZ	North Reference:	True
Wellbore:	Plan A	Survey Calculation Method:	Minimum Curvature
Design:	Permit Rev-1	Database:	PLANNING

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 Camenisch 13-2HZ Pad						
Site Position:		Northing:	14,553,689.51	usft	Latitude:	40.073947		
From:	Lat/Long	Easting:	1,678,273.09	usft	Longitude:	-104.864677		
Position Uncertainty:	0.00	usft	Slot Radius:	13-3/16	"	Grid Convergence:	0.09	°

Well		CAMENISCH 3N-35HZ				
Well Position	+N/-S	0.00 usft	Northing:	14,553,688.94 usft	Latitude:	40.073945
	+E/-W	0.00 usft	Easting:	1,678,378.00 usft	Longitude:	-104.864302
Position Uncertainty		3.28 usft	Wellhead Elevation:	0.00 usft	Ground Level:	5,036.00 usft

Wellbore	Plan A				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	3/7/2016	8.25	66.61	52,450

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	359.81	

Survey Tool Program	Date	3/9/2016			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
0.00	1,800.00	Permit Rev-1 (Plan A)	APC_ISCWSA REV 2 MWD	Fixed:v2:standard declination	
1,800.00	14,143.90	Permit Rev-1 (Plan A)	APC_ISCWSA REV 2 MWD+	Fixed:v2:crustal field declination	

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	
Begin Nudge @ 200.00ft										
300.00	1.50	127.00	299.99	-0.79	1.05	-0.79	1.50	1.50	0.00	
400.00	3.00	127.00	399.91	-3.15	4.18	-3.16	1.50	1.50	0.00	
500.00	4.50	127.00	499.69	-7.09	9.40	-7.12	1.50	1.50	0.00	
600.00	6.00	127.00	599.27	-12.59	16.71	-12.65	1.50	1.50	0.00	
700.00	7.50	127.00	698.57	-19.67	26.10	-19.75	1.50	1.50	0.00	
800.00	9.00	127.00	797.54	-28.30	37.56	-28.43	1.50	1.50	0.00	

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Survey Report

Company:	US ROCKIES WATTENBERG PLANNING	Local Co-ordinate Reference:	Well CAMENISCH 3N-35HZ
Project:	WELD-NAD83-UTMFT13N	TVD Reference:	RKB = 17' @ 5053.00usft (D Rig)
Site:	1N-67W-02 Camenisch 13-2HZ Pad	MD Reference:	RKB = 17' @ 5053.00usft (D Rig)
Well:	CAMENISCH 3N-35HZ	North Reference:	True
Wellbore:	Plan A	Survey Calculation Method:	Minimum Curvature
Design:	Permit Rev-1	Database:	PLANNING

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)
900.00	10.50	127.00	896.09	-38.49	51.08	-38.66	1.50	1.50	0.00
1,000.00	12.00	127.00	994.16	-50.23	66.66	-50.45	1.50	1.50	0.00
1,100.00	13.50	127.00	1,091.70	-63.52	84.29	-63.79	1.50	1.50	0.00
1,200.00	15.00	127.00	1,188.62	-78.33	103.95	-78.67	1.50	1.50	0.00
1,300.00	16.50	127.00	1,284.86	-94.66	125.62	-95.08	1.50	1.50	0.00
1,393.32	17.90	127.00	1,374.00	-111.27	147.66	-111.76	1.50	1.50	0.00
Fox Hills									
1,400.00	18.00	127.00	1,380.36	-112.51	149.31	-113.00	1.50	1.50	0.00
1,500.00	19.50	127.00	1,475.05	-131.85	174.98	-132.43	1.50	1.50	0.00
1,600.00	21.00	127.00	1,568.86	-152.68	202.62	-153.35	1.50	1.50	0.00
1,666.67	22.00	127.00	1,630.89	-167.39	222.13	-168.12	1.50	1.50	0.00
End Nudge @ 1666.67ft									
1,700.00	22.00	127.00	1,661.80	-174.90	232.10	-175.67	0.00	0.00	0.00
1,800.00	22.00	127.00	1,754.52	-197.45	262.02	-198.31	0.00	0.00	0.00
1,849.06	22.00	127.00	1,800.00	-208.51	276.70	-209.42	0.00	0.00	0.00
9 5/8"									
1,900.00	22.00	127.00	1,847.23	-219.99	291.94	-220.96	0.00	0.00	0.00
2,000.00	22.00	127.00	1,939.95	-242.54	321.85	-243.60	0.00	0.00	0.00
2,100.00	22.00	127.00	2,032.67	-265.08	351.77	-266.24	0.00	0.00	0.00
2,200.00	22.00	127.00	2,125.39	-287.62	381.69	-288.89	0.00	0.00	0.00
2,300.00	22.00	127.00	2,218.11	-310.17	411.61	-311.53	0.00	0.00	0.00
2,400.00	22.00	127.00	2,310.83	-332.71	441.52	-334.17	0.00	0.00	0.00
2,500.00	22.00	127.00	2,403.55	-355.26	471.44	-356.82	0.00	0.00	0.00
2,600.00	22.00	127.00	2,496.26	-377.80	501.36	-379.46	0.00	0.00	0.00
2,700.00	22.00	127.00	2,588.98	-400.35	531.28	-402.11	0.00	0.00	0.00
2,800.00	22.00	127.00	2,681.70	-422.89	561.19	-424.75	0.00	0.00	0.00
2,900.00	22.00	127.00	2,774.42	-445.43	591.11	-447.39	0.00	0.00	0.00
3,000.00	22.00	127.00	2,867.14	-467.98	621.03	-470.04	0.00	0.00	0.00
3,100.00	22.00	127.00	2,959.86	-490.52	650.95	-492.68	0.00	0.00	0.00
3,200.00	22.00	127.00	3,052.57	-513.07	680.86	-515.32	0.00	0.00	0.00
3,300.00	22.00	127.00	3,145.29	-535.61	710.78	-537.97	0.00	0.00	0.00
3,400.00	22.00	127.00	3,238.01	-558.16	740.70	-560.61	0.00	0.00	0.00
3,500.00	22.00	127.00	3,330.73	-580.70	770.62	-583.25	0.00	0.00	0.00
3,600.00	22.00	127.00	3,423.45	-603.25	800.53	-605.90	0.00	0.00	0.00
3,700.00	22.00	127.00	3,516.17	-625.79	830.45	-628.54	0.00	0.00	0.00
3,800.00	22.00	127.00	3,608.88	-648.33	860.37	-651.18	0.00	0.00	0.00
3,900.00	22.00	127.00	3,701.60	-670.88	890.29	-673.83	0.00	0.00	0.00
4,000.00	22.00	127.00	3,794.32	-693.42	920.20	-696.47	0.00	0.00	0.00
4,100.00	22.00	127.00	3,887.04	-715.97	950.12	-719.11	0.00	0.00	0.00
4,200.00	22.00	127.00	3,979.76	-738.51	980.04	-741.76	0.00	0.00	0.00
4,300.00	22.00	127.00	4,072.48	-761.06	1,009.96	-764.40	0.00	0.00	0.00
4,400.00	22.00	127.00	4,165.19	-783.60	1,039.87	-787.04	0.00	0.00	0.00
4,466.67	22.00	127.00	4,227.01	-798.63	1,059.82	-802.14	0.00	0.00	0.00
Begin Drop @ 4466.67ft									

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Survey Report

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Well:	CAMENISCH 3N-35HZ	North Reference:	True
Wellbore:	Plan A	Survey Calculation Method:	Minimum Curvature
Design:	Permit Rev-1	Database:	PLANNING

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	21.33	127.00	4,257.98	-806.04	1,069.65	-809.58	2.00	-2.00	0.00
4,600.00	19.33	127.00	4,351.75	-826.95	1,097.40	-830.58	2.00	-2.00	0.00
4,700.00	17.33	127.00	4,446.67	-845.88	1,122.52	-849.59	2.00	-2.00	0.00
4,800.00	15.33	127.00	4,542.63	-862.80	1,144.97	-866.59	2.00	-2.00	0.00
4,860.36	14.13	127.00	4,601.00	-872.04	1,157.23	-875.87	2.00	-2.00	0.00
Sussex									
4,900.00	13.33	127.00	4,639.51	-877.70	1,164.74	-881.56	2.00	-2.00	0.00
5,000.00	11.33	127.00	4,737.20	-890.55	1,181.80	-894.47	2.00	-2.00	0.00
5,100.00	9.33	127.00	4,835.57	-901.35	1,196.13	-905.31	2.00	-2.00	0.00
5,200.00	7.33	127.00	4,934.51	-910.07	1,207.70	-914.07	2.00	-2.00	0.00
5,300.00	5.33	127.00	5,033.89	-916.71	1,216.51	-920.74	2.00	-2.00	0.00
5,400.00	3.33	127.00	5,133.60	-921.25	1,222.54	-925.30	2.00	-2.00	0.00
5,500.00	1.33	127.00	5,233.51	-923.70	1,225.80	-927.76	2.00	-2.00	0.00
5,566.67	0.00	0.00	5,300.18	-924.17	1,226.42	-928.23	2.00	-2.00	0.00
End Drop @ 5566.67ft									
5,600.00	0.00	0.00	5,333.51	-924.17	1,226.42	-928.23	0.00	0.00	0.00
5,700.00	0.00	0.00	5,433.51	-924.17	1,226.42	-928.23	0.00	0.00	0.00
5,800.00	0.00	0.00	5,533.51	-924.17	1,226.42	-928.23	0.00	0.00	0.00
5,900.00	0.00	0.00	5,633.51	-924.17	1,226.42	-928.23	0.00	0.00	0.00
6,000.00	0.00	0.00	5,733.51	-924.17	1,226.42	-928.23	0.00	0.00	0.00
6,100.00	0.00	0.00	5,833.51	-924.17	1,226.42	-928.23	0.00	0.00	0.00
6,200.00	0.00	0.00	5,933.51	-924.17	1,226.42	-928.23	0.00	0.00	0.00
6,300.00	0.00	0.00	6,033.51	-924.17	1,226.42	-928.23	0.00	0.00	0.00
6,400.00	0.00	0.00	6,133.51	-924.17	1,226.42	-928.23	0.00	0.00	0.00
6,500.00	0.00	0.00	6,233.51	-924.17	1,226.42	-928.23	0.00	0.00	0.00
6,600.00	0.00	0.00	6,333.51	-924.17	1,226.42	-928.23	0.00	0.00	0.00
6,700.00	0.00	0.00	6,433.51	-924.17	1,226.42	-928.23	0.00	0.00	0.00
6,800.00	0.00	0.00	6,533.51	-924.17	1,226.42	-928.23	0.00	0.00	0.00
6,900.00	0.00	0.00	6,633.51	-924.17	1,226.42	-928.23	0.00	0.00	0.00
7,000.00	0.00	0.00	6,733.51	-924.17	1,226.42	-928.23	0.00	0.00	0.00
7,100.00	0.00	0.00	6,833.51	-924.17	1,226.42	-928.23	0.00	0.00	0.00
7,166.87	0.00	0.00	6,900.38	-924.17	1,226.42	-928.23	0.00	0.00	0.00
KOP @ 7166.87ft									
7,200.00	2.98	359.81	6,933.49	-923.31	1,226.41	-927.37	9.00	9.00	0.00
7,300.00	11.98	359.81	7,032.54	-910.30	1,226.37	-914.36	9.00	9.00	0.00
7,400.00	20.98	359.81	7,128.33	-881.96	1,226.27	-886.02	9.00	9.00	0.00
7,500.00	29.98	359.81	7,218.51	-838.98	1,226.13	-843.04	9.00	9.00	0.00
7,584.89	37.62	359.81	7,289.00	-791.79	1,225.97	-795.85	9.00	9.00	0.00
Sharon Springs									
7,600.00	38.98	359.81	7,300.86	-782.42	1,225.93	-786.48	9.00	9.00	0.00
7,650.76	43.55	359.81	7,339.00	-748.96	1,225.82	-753.02	9.00	9.00	0.00
Niobrara									
7,700.00	47.98	359.81	7,373.34	-713.68	1,225.70	-717.74	9.00	9.00	0.00
DLS = 9°/100'									

Anadarko

Survey Report

Company:	US ROCKIES WATTENBERG PLANNING	Local Co-ordinate Reference:	Well CAMENISCH 3N-35HZ
Project:	WELD-NAD83-UTMFT13N	TVD Reference:	RKB = 17' @ 5053.00usft (D Rig)
Site:	1N-67W-02 Camenisch 13-2HZ Pad	MD Reference:	RKB = 17' @ 5053.00usft (D Rig)
Well:	CAMENISCH 3N-35HZ	North Reference:	True
Wellbore:	Plan A	Survey Calculation Method:	Minimum Curvature
Design:	Permit Rev-1	Database:	PLANNING

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)
7,800.00	56.98	359.81	7,434.18	-634.45	1,225.43	-638.51	9.00	9.00	0.00
7,810.82	57.96	359.81	7,440.00	-625.32	1,225.40	-629.38	9.00	9.00	0.00
Nio B									
7,900.00	65.98	359.81	7,481.88	-546.67	1,225.13	-550.73	9.00	9.00	0.00
7,977.37	72.95	359.81	7,509.00	-474.26	1,224.89	-478.32	9.00	9.00	0.00
Nio C									
8,000.00	74.98	359.81	7,515.25	-452.52	1,224.81	-456.57	9.00	9.00	0.00
8,100.00	83.98	359.81	7,533.49	-354.30	1,224.48	-358.36	9.00	9.00	0.00
8,166.87	90.00	359.81	7,537.00	-287.55	1,224.25	-291.61	9.00	9.00	0.00
End Build @ 8166.87ft - Top of Production									
8,200.00	90.00	359.81	7,537.00	-254.42	1,224.14	-258.48	0.00	0.00	0.00
8,300.00	90.00	359.81	7,537.00	-154.42	1,223.80	-158.48	0.00	0.00	0.00
8,400.00	90.00	359.81	7,537.00	-54.42	1,223.46	-58.48	0.00	0.00	0.00
8,500.00	90.00	359.81	7,537.00	45.58	1,223.12	41.52	0.00	0.00	0.00
8,600.00	90.00	359.81	7,537.00	145.58	1,222.78	141.52	0.00	0.00	0.00
8,700.00	90.00	359.81	7,537.00	245.58	1,222.44	241.52	0.00	0.00	0.00
8,800.00	90.00	359.81	7,537.00	345.58	1,222.10	341.52	0.00	0.00	0.00
8,900.00	90.00	359.81	7,537.00	445.57	1,221.76	441.52	0.00	0.00	0.00
9,000.00	90.00	359.81	7,537.00	545.57	1,221.42	541.52	0.00	0.00	0.00
9,100.00	90.00	359.81	7,537.00	645.57	1,221.08	641.52	0.00	0.00	0.00
9,200.00	90.00	359.81	7,537.00	745.57	1,220.74	741.52	0.00	0.00	0.00
9,300.00	90.00	359.81	7,537.00	845.57	1,220.40	841.52	0.00	0.00	0.00
9,400.00	90.00	359.81	7,537.00	945.57	1,220.06	941.52	0.00	0.00	0.00
9,500.00	90.00	359.81	7,537.00	1,045.57	1,219.72	1,041.52	0.00	0.00	0.00
9,600.00	90.00	359.81	7,537.00	1,145.57	1,219.38	1,141.52	0.00	0.00	0.00
9,700.00	90.00	359.81	7,537.00	1,245.57	1,219.04	1,241.52	0.00	0.00	0.00
9,800.00	90.00	359.81	7,537.00	1,345.57	1,218.70	1,341.52	0.00	0.00	0.00
9,900.00	90.00	359.81	7,537.00	1,445.57	1,218.36	1,441.52	0.00	0.00	0.00
10,000.00	90.00	359.81	7,537.00	1,545.57	1,218.01	1,541.52	0.00	0.00	0.00
10,100.00	90.00	359.81	7,537.00	1,645.57	1,217.67	1,641.52	0.00	0.00	0.00
10,200.00	90.00	359.81	7,537.00	1,745.57	1,217.33	1,741.52	0.00	0.00	0.00
10,300.00	90.00	359.81	7,537.00	1,845.57	1,216.99	1,841.52	0.00	0.00	0.00
10,400.00	90.00	359.81	7,537.00	1,945.57	1,216.65	1,941.52	0.00	0.00	0.00
10,500.00	90.00	359.81	7,537.00	2,045.57	1,216.31	2,041.52	0.00	0.00	0.00
10,600.00	90.00	359.81	7,537.00	2,145.57	1,215.97	2,141.52	0.00	0.00	0.00
10,700.00	90.00	359.81	7,537.00	2,245.56	1,215.63	2,241.52	0.00	0.00	0.00
10,800.00	90.00	359.81	7,537.00	2,345.56	1,215.29	2,341.52	0.00	0.00	0.00
10,900.00	90.00	359.81	7,537.00	2,445.56	1,214.95	2,441.52	0.00	0.00	0.00
11,000.00	90.00	359.81	7,537.00	2,545.56	1,214.61	2,541.52	0.00	0.00	0.00
11,100.00	90.00	359.81	7,537.00	2,645.56	1,214.27	2,641.52	0.00	0.00	0.00
11,200.00	90.00	359.81	7,537.00	2,745.56	1,213.93	2,741.52	0.00	0.00	0.00
11,300.00	90.00	359.81	7,537.00	2,845.56	1,213.59	2,841.52	0.00	0.00	0.00
11,400.00	90.00	359.81	7,537.00	2,945.56	1,213.25	2,941.52	0.00	0.00	0.00
11,500.00	90.00	359.81	7,537.00	3,045.56	1,212.91	3,041.52	0.00	0.00	0.00

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Survey Report

Company:	US ROCKIES WATTENBERG PLANNING	Local Co-ordinate Reference:	Well CAMENISCH 3N-35HZ
Project:	WELD-NAD83-UTMFT13N	TVD Reference:	RKB = 17' @ 5053.00usft (D Rig)
Site:	1N-67W-02 Camenisch 13-2HZ Pad	MD Reference:	RKB = 17' @ 5053.00usft (D Rig)
Well:	CAMENISCH 3N-35HZ	North Reference:	True
Wellbore:	Plan A	Survey Calculation Method:	Minimum Curvature
Design:	Permit Rev-1	Database:	PLANNING

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)	
11,600.00	90.00	359.81	7,537.00	3,145.56	1,212.57	3,141.52	0.00	0.00	0.00	
11,700.00	90.00	359.81	7,537.00	3,245.56	1,212.23	3,241.52	0.00	0.00	0.00	
11,800.00	90.00	359.81	7,537.00	3,345.56	1,211.89	3,341.52	0.00	0.00	0.00	
11,900.00	90.00	359.81	7,537.00	3,445.56	1,211.55	3,441.52	0.00	0.00	0.00	
12,000.00	90.00	359.81	7,537.00	3,545.56	1,211.21	3,541.52	0.00	0.00	0.00	
12,100.00	90.00	359.81	7,537.00	3,645.56	1,210.87	3,641.52	0.00	0.00	0.00	
12,200.00	90.00	359.81	7,537.00	3,745.56	1,210.53	3,741.52	0.00	0.00	0.00	
12,300.00	90.00	359.81	7,537.00	3,845.56	1,210.19	3,841.52	0.00	0.00	0.00	
12,400.00	90.00	359.81	7,537.00	3,945.55	1,209.85	3,941.52	0.00	0.00	0.00	
12,500.00	90.00	359.81	7,537.00	4,045.55	1,209.51	4,041.52	0.00	0.00	0.00	
12,600.00	90.00	359.81	7,537.00	4,145.55	1,209.17	4,141.52	0.00	0.00	0.00	
12,700.00	90.00	359.81	7,537.00	4,245.55	1,208.83	4,241.52	0.00	0.00	0.00	
12,800.00	90.00	359.81	7,537.00	4,345.55	1,208.49	4,341.52	0.00	0.00	0.00	
12,900.00	90.00	359.81	7,537.00	4,445.55	1,208.15	4,441.52	0.00	0.00	0.00	
13,000.00	90.00	359.81	7,537.00	4,545.55	1,207.81	4,541.52	0.00	0.00	0.00	
13,100.00	90.00	359.81	7,537.00	4,645.55	1,207.47	4,641.52	0.00	0.00	0.00	
13,200.00	90.00	359.81	7,537.00	4,745.55	1,207.13	4,741.52	0.00	0.00	0.00	
13,300.00	90.00	359.81	7,537.00	4,845.55	1,206.79	4,841.52	0.00	0.00	0.00	
13,400.00	90.00	359.81	7,537.00	4,945.55	1,206.45	4,941.52	0.00	0.00	0.00	
13,500.00	90.00	359.81	7,537.00	5,045.55	1,206.11	5,041.52	0.00	0.00	0.00	
13,600.00	90.00	359.81	7,537.00	5,145.55	1,205.77	5,141.52	0.00	0.00	0.00	
13,700.00	90.00	359.81	7,537.00	5,245.55	1,205.43	5,241.52	0.00	0.00	0.00	
13,800.00	90.00	359.81	7,537.00	5,345.55	1,205.09	5,341.52	0.00	0.00	0.00	
13,900.00	90.00	359.81	7,537.00	5,445.55	1,204.75	5,441.52	0.00	0.00	0.00	
14,000.00	90.00	359.81	7,537.00	5,545.55	1,204.41	5,541.52	0.00	0.00	0.00	
14,100.00	90.00	359.81	7,537.00	5,645.54	1,204.07	5,641.52	0.00	0.00	0.00	
14,143.90	90.00	359.81	7,537.00	5,689.44	1,203.92	5,685.42	0.00	0.00	0.00	
TD Well @ 14143.90ft										

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Survey Report

Company:	US ROCKIES WATTENBERG PLANNING	Local Co-ordinate Reference:	Well CAMENISCH 3N-35HZ
Project:	WELD-NAD83-UTMFT13N	TVD Reference:	RKB = 17' @ 5053.00usft (D Rig)
Site:	1N-67W-02 Camenisch 13-2HZ Pad	MD Reference:	RKB = 17' @ 5053.00usft (D Rig)
Well:	CAMENISCH 3N-35HZ	North Reference:	True
Wellbore:	Plan A	Survey Calculation Method:	Minimum Curvature
Design:	Permit Rev-1	Database:	PLANNING

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
2N-R67W-Sec. 35_Secti - plan misses target center by 104.91usft at 0.00usft MD (0.00 TVD, 0.00 N, 0.00 E) - Polygon	0.00	0.00	0.00	0.73	-104.91	14,553,689.51	1,678,273.09	40.073947	-104.864677
Point 1		0.00	10,230.77	-843.44		14,563,918.99	1,677,414.06		
Point 2		0.00	10,218.65	1,790.52		14,563,910.89	1,680,048.03		
Point 3		0.00	10,206.53	4,424.50		14,563,902.78	1,682,682.03		
Point 4		0.00	7,578.31	4,426.97		14,561,274.57	1,682,688.51		
Point 5		0.00	4,950.33	4,430.33		14,558,646.60	1,682,695.87		
Point 6		0.00	4,939.63	1,832.58		14,558,631.94	1,680,098.14		
Point 7		0.00	4,937.01	-837.44		14,558,625.25	1,677,428.13		
Point 8		0.00	7,583.97	-840.57		14,561,272.20	1,677,420.96		
CAMENISCH 3N-35HZ_ - plan hits target center - Point	0.00	0.00	0.00	0.00	0.00	14,553,688.94	1,678,378.00	40.073945	-104.864302
CAMENISCH 3N-35HZ_ - plan misses target center by 1208.05usft at 0.00usft MD (0.00 TVD, 0.00 N, 0.00 E) - Point	0.00	0.00	0.00	-279.64	1,175.24	14,553,411.10	1,679,553.66	40.073177	-104.860101
CAMENISCH 3N-35HZ_ - plan hits target center - Polygon	0.00	0.00	0.00	0.00	0.00	14,553,688.94	1,678,378.00	40.073945	-104.864302
Point 1		0.00	5,799.06	850.24		14,559,489.30	1,679,219.40		
Point 2		0.00	5,798.94	1,257.84		14,559,489.80	1,679,627.00		
Point 3		0.00	4,937.62	1,270.53		14,558,628.50	1,679,641.00		
Point 4		0.00	3,574.31	1,272.55		14,557,265.20	1,679,645.10		
Point 5		0.00	2,210.91	1,274.57		14,555,901.80	1,679,649.20		
Point 6		0.00	889.31	1,276.35		14,554,580.20	1,679,653.00		
Point 7		0.00	-437.60	1,278.23		14,553,253.30	1,679,656.90		
Point 8		0.00	-1,289.51	1,284.53		14,552,401.40	1,679,664.50		
Point 9		0.00	-1,288.53	902.43		14,552,401.80	1,679,282.40		
Point 10		0.00	-426.42	898.15		14,553,263.90	1,679,276.80		
Point 11		0.00	890.59	890.86		14,554,580.90	1,679,267.50		
Point 12		0.00	2,211.81	883.47		14,555,902.10	1,679,258.10		
Point 13		0.00	3,574.53	869.55		14,557,264.80	1,679,242.10		
Point 14		0.00	4,937.15	855.53		14,558,627.40	1,679,226.00		
Point 15		0.00	5,799.06	850.24		14,559,489.30	1,679,219.40		
1N-R67W-Sec. 2_Sectio - plan misses target center by 104.91usft at 0.00usft MD (0.00 TVD, 0.00 N, 0.00 E) - Polygon	0.00	0.00	0.00	0.73	-104.91	14,553,689.51	1,678,273.09	40.073947	-104.864677
Point 1		0.00	4,937.01	-837.44		14,558,625.25	1,677,428.13		
Point 2		0.00	4,939.63	1,832.58		14,558,631.94	1,680,098.14		
Point 3		0.00	4,950.33	4,430.33		14,558,646.60	1,682,695.87		
Point 4		0.00	2,206.22	4,453.01		14,555,902.53	1,682,722.74		
Point 5		0.00	-432.33	4,467.41		14,553,264.00	1,682,741.16		
Point 6		0.00	-432.55	1,840.25		14,553,259.77	1,680,114.00		
Point 7		0.00	-421.59	-759.75		14,553,266.77	1,677,513.99		
Point 8		0.00	2,217.11	-785.55		14,555,905.43	1,677,484.17		
CAMENISCH 3N-35HZ_ - plan hits target center - Point	0.00	0.00	7,537.00	5,689.44	1,203.92	14,559,380.22	1,679,573.24	40.089569	-104.859998

Anadarko

Survey Report

Company:	US ROCKIES WATTENBERG PLANNING	Local Co-ordinate Reference:	Well CAMENISCH 3N-35HZ
Project:	WELD-NAD83-UTMFT13N	TVD Reference:	RKB = 17' @ 5053.00usft (D Rig)
Site:	1N-67W-02 Camenisch 13-2HZ Pad	MD Reference:	RKB = 17' @ 5053.00usft (D Rig)
Well:	CAMENISCH 3N-35HZ	North Reference:	True
Wellbore:	Plan A	Survey Calculation Method:	Minimum Curvature
Design:	Permit Rev-1	Database:	PLANNING

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")	
1,849.06	1,800.00	9 5/8"	9-5/8	13-1/2	
8,166.87	7,537.00	Top of Production	5-1/2	7-7/8	

Formations					
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,393.32	1,374.00	Fox Hills			
4,860.36	4,601.00	Sussex			
7,584.89	7,289.00	Sharon Springs			
7,650.76	7,339.00	Niobrara			
7,810.82	7,440.00	Nio B			
7,977.37	7,509.00	Nio C			

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
200	200	0	0	Begin Nudge @ 200.00ft	
1667	1631	-167	222	End Nudge @ 1666.67ft	
4467	4227	-799	1060	Begin Drop @ 4466.67ft	
5567	5300	-924	1226	End Drop @ 5566.67ft	
7167	6900	-924	1226	KOP @ 7166.87ft	
7700	7373	-714	1226	DLS = 9°/100'	
8167	7537	-288	1224	End Build @ 8166.87ft	
14,144	7537	5689	1204	TD Well @ 14143.90ft	

Checked By: _____ Approved By: _____ Date: _____