



Weatherford®

Weatherford
2000 Oil Drive
Casper, WY 82604

Survey Certification

Operating Company:	Anadarko Petroleum Corp.
Well Name:	NILES 3N-28HZ
State:	Colorado
County:	Weld
API Number:	05-123-35490
Datum:	NAD 83
Survey Calculation Method:	Minimum Curvature
North Reference:	True North

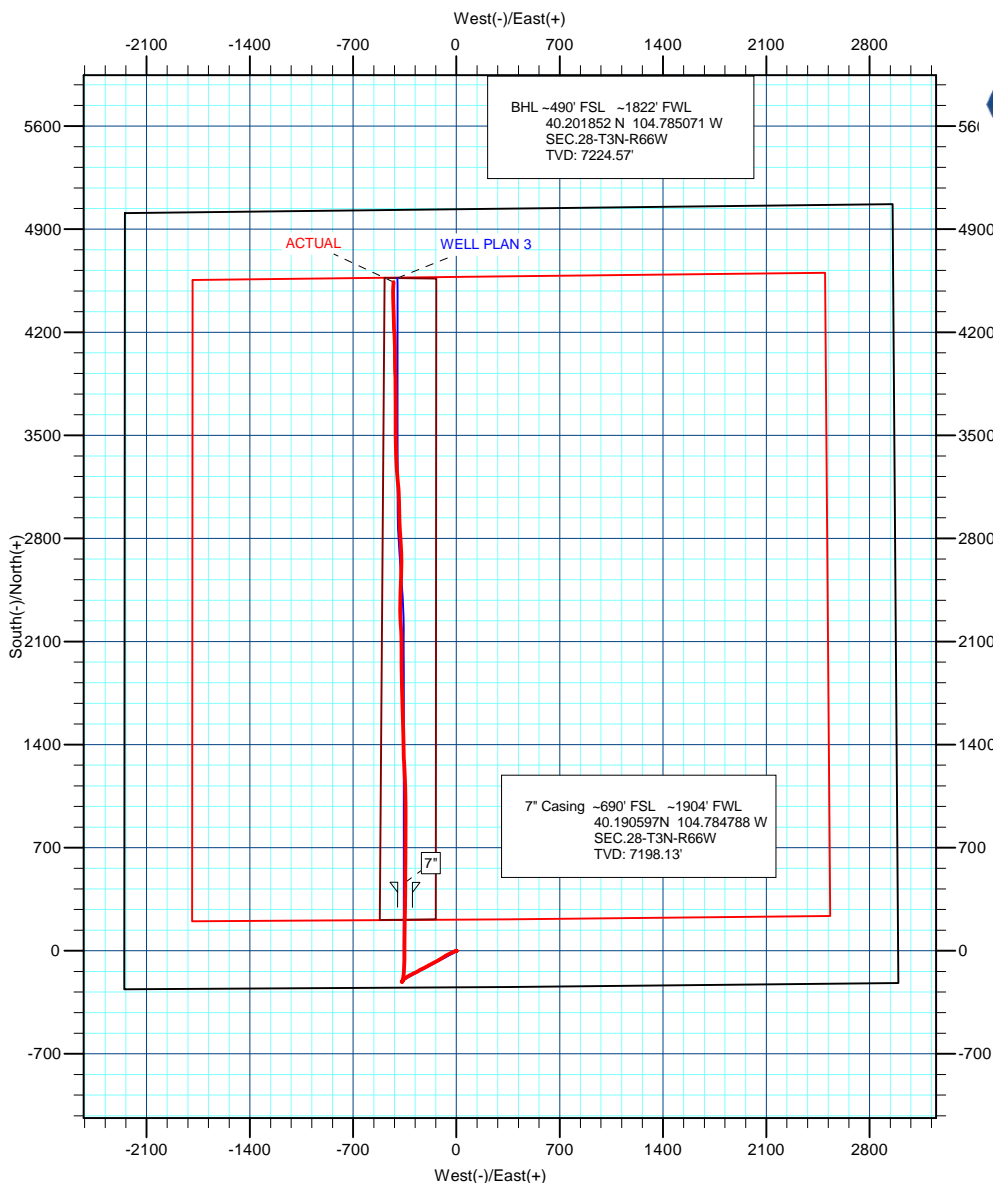
I, John R. Morgan, hereby certify the attached
directional survey run from the measure depth of 1,039.00 feet
to the measured depth of 11,719.00 feet as accurate and true
to the best of my knowledge.

Signature

21-Dec-12

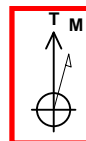
Date

John Morgan
Directional Planning
Weatherford - Rockies District



Weatherford

Project: COLORADO NORTHERN ZONE - 83
 Site: WELD NILES 14-28HZ PAD
 Well: Niles 3N-28HZ
 Wellbore: Wellbore #1
 Section: Sec. 28-T3N-R66W
 SHL: 2251' FWL 248' FSL
 Design: ACTUAL
 Latitude: 40.189390
 Longitude: -104.783544
 GL: 4959.00
 KB: GL + RKB @ 4984.00ft



Azimuths to True North
 Magnetic North: 8.75°
 Magnetic Field
 Strength: 52934.7snT
 Dip Angle: 66.85°
 Date: 3/28/2012
 Model: IGRF2010

WELL DETAILS: Niles 3N-28HZ

+N/-S	+E/-W	Northing	Ground Level: Easting	4959.00 Latitude	Longitude	Slot
0.00	0.00	1312646.02	3200158.13	40.189390	-104.783544	

ANNOTATIONS

TVD	MD	Inc	Azi	+N/-S	+E/-W	Vsect	Departure	Annotation
914.99	915.00	0.49	165.59	-0.86	-0.57	-0.80	3.98	TIE ON TO SURFACE GYRO
1038.99	1039.00	0.70	47.19	-0.85	0.12	-0.86	5.26	FIRST WFT MWD SURVEY
7198.13	7615.48	89.07	0.33	439.59	-347.53	468.23	1093.51	SET 7" CASING
7224.82	11662.00	90.43	1.19	4482.93	-428.66	4503.24	5139.20	LAST WFT MWD SURVEY
7224.57	11719.00	90.09	3.20	4539.89	-426.48	4559.78	5196.20	PROJECTION TO TD

WELLBORE TARGET DETAILS (MAP CO-ORDINATES AND LAT/LONG)

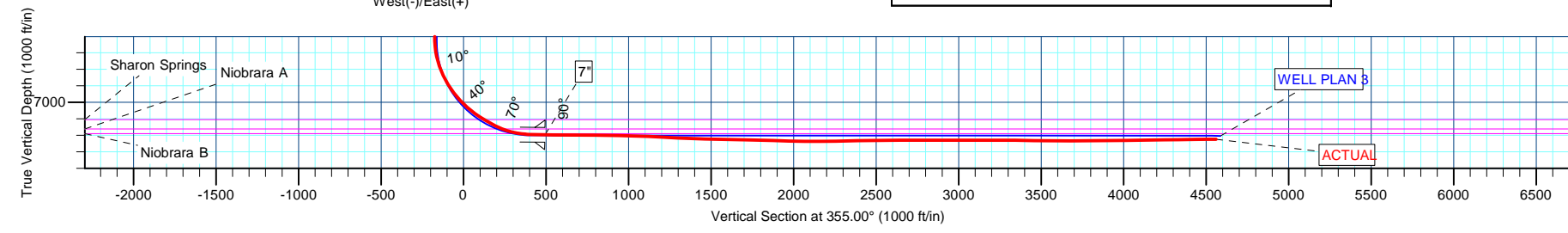
Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
Niles 3N-28HZ Rev. BHL	7204.00	4568.00	-400.00	40.201930	-104.784976	Point
Niles 3N-28HZ BHL	7204.00	4571.04	-358.09	40.201938	-104.784826	Point

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
3969.00	4003.05	Parkman
4393.00	4427.07	Sussex
7105.00	7251.19	Sharon Springs
7162.00	7374.57	Niobrara A
7190.00	7489.22	Niobrara B

CASING DETAILS

TVD	MD	Name	Size
7198.13	7615.48	7"	8-3/4"





Weatherford®

US ROCKIES REGION PLANNING

COLORADO NORTHERN ZONE - 83

WELD_NILES 14-28HZ PAD

Niles 3N-28HZ

Wellbore #1

Design: ACTUAL

Standard Survey Report

21 December, 2012

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well Niles 3N-28HZ
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	GL + RKB @ 4984.00ft
Site:	WELD_NILES 14-28HZ PAD	MD Reference:	GL + RKB @ 4984.00ft
Well:	Niles 3N-28HZ	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	ACTUAL	Database:	edmp

Project	COLORADO NORTHERN ZONE - 83		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		

Site		WELD_NILES 14-28HZ PAD, Sec. 28-T3N-R66W			
Site Position:		Northing:	1,312,646.02 usft	Latitude:	40.189390
From:	Lat/Long	Easting:	3,200,158.13 usft	Longitude:	-104.783544
Position Uncertainty:	0.00 ft	Slot Radius:	13-3/16 "	Grid Convergence:	0.46 °

Well	Niles 3N-28HZ					
Well Position	+N/-S	0.00 ft	Northing:	1,312,646.02 usft	Latitude:	40.189390
	+E/-W	0.00 ft	Easting:	3,200,158.13 usft	Longitude:	-104.783544
Position Uncertainty		0.00 ft	Wellhead Elevation:	ft	Ground Level:	4,959.00 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	3/28/2012	8.75	66.85	52,935

Design	ACTUAL				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	25.00
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)	
	25.00	0.00	0.00	213.78	

Survey Program	Date	12/21/2012			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
125.00	915.00	Survey #1 (Wellbore #1)	NS-GYRO-MS	NORTH SENSING GYROCOMPASSING M/S	
1,039.00	11,719.00	Survey #2 (Wellbore #1)	MWD	MWD - STANDARD	

Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
25.00	0.00	0.00	25.00	0.00	0.00	0.00	0.00	0.00	0.00	
125.00	0.25	164.87	125.00	-0.21	0.06	0.14	0.25	0.25	0.00	
225.00	0.21	103.23	225.00	-0.46	0.29	0.22	0.24	-0.04	-61.64	
325.00	0.34	199.79	325.00	-0.78	0.37	0.45	0.42	0.13	96.56	
425.00	0.33	248.73	425.00	-1.17	0.00	0.97	0.28	-0.01	48.94	
525.00	0.24	338.80	525.00	-1.08	-0.34	1.09	0.41	-0.09	90.07	
625.00	0.12	108.15	625.00	-0.91	-0.32	0.94	0.33	-0.12	129.35	
725.00	0.34	278.84	725.00	-0.90	-0.51	1.03	0.46	0.22	170.69	
825.00	0.24	20.26	824.99	-0.66	-0.73	0.96	0.45	-0.10	101.42	
915.00	0.49	165.59	914.99	-0.86	-0.57	1.03	0.78	0.28	161.48	

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well Niles 3N-28HZ
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	GL + RKB @ 4984.00ft
Site:	WELD_NILES 14-28HZ PAD	MD Reference:	GL + RKB @ 4984.00ft
Well:	Niles 3N-28HZ	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	ACTUAL	Database:	edmp

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
TIE ON TO SURFACE GYRO									
1,039.00	0.70	47.19	1,038.99	-0.85	0.12	0.65	0.83	0.17	-95.48
FIRST WFT MWD SURVEY									
1,130.00	0.98	264.65	1,129.99	-0.55	-0.25	0.60	1.75	0.31	-156.64
1,224.00	3.03	247.74	1,223.92	-1.57	-3.35	3.16	2.25	2.18	-17.99
1,316.00	4.81	248.62	1,315.70	-3.89	-9.19	8.35	1.94	1.93	0.96
1,407.00	7.02	249.60	1,406.21	-7.22	-17.96	15.99	2.43	2.43	1.08
1,502.00	8.81	244.59	1,500.31	-12.37	-29.97	26.95	2.02	1.88	-5.27
1,597.00	10.85	245.27	1,593.91	-19.23	-44.67	40.82	2.15	2.15	0.72
1,693.00	10.90	242.17	1,688.18	-27.25	-60.90	56.51	0.61	0.05	-3.23
1,787.00	9.80	238.38	1,780.65	-35.59	-75.57	71.60	1.38	-1.17	-4.03
1,863.00	10.42	240.25	1,855.47	-42.39	-87.05	83.64	0.92	0.82	2.46
1,955.00	9.56	234.79	1,946.08	-50.93	-100.51	98.22	1.39	-0.93	-5.93
2,047.00	10.83	241.78	2,036.63	-59.42	-114.37	112.98	1.92	1.38	7.60
2,139.00	10.04	239.01	2,127.11	-67.64	-128.86	127.87	1.02	-0.86	-3.01
2,231.00	9.84	241.02	2,217.73	-75.57	-142.62	142.11	0.44	-0.22	2.18
2,323.00	10.16	241.34	2,308.33	-83.27	-156.61	156.30	0.35	0.35	0.35
2,414.00	10.37	243.40	2,397.87	-90.79	-170.98	170.53	0.46	0.23	2.26
2,509.00	10.56	242.35	2,491.29	-98.66	-186.34	185.61	0.28	0.20	-1.11
2,604.00	9.52	241.18	2,584.84	-106.49	-200.93	200.23	1.12	-1.09	-1.23
2,700.00	10.49	243.40	2,679.38	-114.23	-215.70	214.88	1.09	1.01	2.31
2,794.00	10.17	241.33	2,771.85	-122.04	-230.63	229.67	0.52	-0.34	-2.20
2,889.00	11.29	242.48	2,865.19	-130.36	-246.24	245.27	1.20	1.18	1.21
2,983.00	10.21	239.52	2,957.54	-138.84	-261.58	260.84	1.29	-1.15	-3.15
3,078.00	10.20	243.36	3,051.04	-146.88	-276.35	275.74	0.72	-0.01	4.04
3,174.00	9.23	243.79	3,145.66	-154.09	-290.86	289.80	1.01	-1.01	0.45
3,269.00	9.27	242.98	3,239.42	-160.93	-304.51	303.08	0.14	0.04	-0.85
3,364.00	9.50	239.33	3,333.15	-168.41	-318.07	316.83	0.67	0.24	-3.84
3,459.00	8.87	237.19	3,426.94	-176.38	-330.97	330.63	0.75	-0.66	-2.25
3,553.00	7.36	237.89	3,519.99	-183.50	-342.16	342.78	1.61	-1.61	0.74
3,649.00	5.47	237.38	3,615.39	-189.24	-351.22	352.58	1.97	-1.97	-0.53
3,744.00	3.55	241.54	3,710.09	-193.08	-357.62	359.33	2.05	-2.02	4.38
3,839.00	1.55	216.14	3,804.99	-195.52	-360.97	363.22	2.37	-2.11	-26.74
3,934.00	1.16	206.20	3,899.97	-197.42	-362.15	365.46	0.48	-0.41	-10.46
4,029.00	0.80	218.43	3,994.95	-198.80	-362.99	367.07	0.44	-0.38	12.87
4,123.00	0.95	223.64	4,088.94	-199.88	-363.93	368.49	0.18	0.16	5.54
4,218.00	0.21	197.51	4,183.93	-200.62	-364.53	369.44	0.81	-0.78	-27.51
4,313.00	0.64	172.18	4,278.93	-201.31	-364.51	370.00	0.48	0.45	-26.66
4,408.00	0.60	194.43	4,373.93	-202.32	-364.56	370.87	0.26	-0.04	23.42
4,502.00	0.66	198.61	4,467.92	-203.31	-364.86	371.85	0.08	0.06	4.45
4,598.00	0.63	199.00	4,563.92	-204.33	-365.21	372.90	0.03	-0.03	0.41
4,692.00	1.02	226.47	4,657.91	-205.40	-365.98	374.21	0.58	0.41	29.22
4,787.00	0.30	200.24	4,752.90	-206.21	-366.68	375.28	0.80	-0.76	-27.61

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well Niles 3N-28HZ
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	GL + RKB @ 4984.00ft
Site:	WELD_NILES 14-28HZ PAD	MD Reference:	GL + RKB @ 4984.00ft
Well:	Niles 3N-28HZ	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	ACTUAL	Database:	edmp

Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
4,883.00	0.75	231.91	4,848.89	-206.83	-367.26	376.12	0.54	0.47	32.99	
4,979.00	1.61	226.47	4,944.87	-208.15	-368.73	378.04	0.90	0.90	-5.67	
5,074.00	0.38	210.07	5,039.86	-209.34	-369.86	379.65	1.32	-1.29	-17.26	
5,169.00	0.21	227.51	5,134.86	-209.73	-370.14	380.14	0.20	-0.18	18.36	
5,265.00	0.25	191.20	5,230.86	-210.06	-370.31	380.50	0.15	0.04	-37.82	
5,360.00	0.35	133.03	5,325.85	-210.46	-370.14	380.74	0.32	0.11	-61.23	
5,455.00	0.31	110.67	5,420.85	-210.75	-369.69	380.73	0.14	-0.04	-23.54	
5,550.00	0.36	116.29	5,515.85	-210.97	-369.18	380.63	0.06	0.05	5.92	
5,645.00	0.31	80.73	5,610.85	-211.06	-368.66	380.41	0.22	-0.05	-37.43	
5,741.00	0.25	22.22	5,706.85	-210.83	-368.33	380.03	0.29	-0.06	-60.95	
5,837.00	0.35	12.26	5,802.85	-210.34	-368.18	379.55	0.12	0.10	-10.38	
5,933.00	0.29	22.29	5,898.85	-209.83	-368.03	379.04	0.09	-0.06	10.45	
6,028.00	0.60	51.54	5,993.84	-209.30	-367.55	378.33	0.39	0.33	30.79	
6,123.00	0.53	343.21	6,088.84	-208.57	-367.29	377.58	0.67	-0.07	-71.93	
6,219.00	0.41	322.92	6,184.84	-207.87	-367.62	377.19	0.21	-0.13	-21.14	
6,314.00	0.35	342.47	6,279.83	-207.32	-367.91	376.89	0.15	-0.06	20.58	
6,409.00	0.25	70.27	6,374.83	-206.98	-367.81	376.55	0.44	-0.11	92.42	
6,504.00	0.60	139.53	6,469.83	-207.29	-367.29	376.51	0.59	0.37	72.91	
6,600.00	0.40	148.41	6,565.83	-207.95	-366.79	376.79	0.22	-0.21	9.25	
6,631.00	0.41	163.25	6,596.83	-208.15	-366.70	376.91	0.34	0.03	47.87	
6,663.00	1.96	27.54	6,628.82	-207.78	-366.41	376.43	7.10	4.84	-424.09	
6,695.00	5.34	21.18	6,660.75	-205.90	-365.62	374.44	10.62	10.56	-19.88	
6,727.00	9.69	11.89	6,692.47	-201.88	-364.53	370.48	14.07	13.59	-29.03	
6,758.00	13.48	9.83	6,722.83	-195.76	-363.37	364.76	12.30	12.23	-6.65	
6,789.00	16.89	9.95	6,752.75	-187.76	-361.98	357.33	11.00	11.00	0.39	
6,821.00	19.52	10.25	6,783.14	-177.92	-360.22	348.18	8.22	8.22	0.94	
6,852.00	22.61	8.30	6,812.07	-166.93	-358.44	338.05	10.22	9.97	-6.29	
6,884.00	25.22	5.23	6,841.32	-154.05	-356.93	326.50	9.03	8.16	-9.59	
6,915.00	28.62	3.90	6,868.96	-140.06	-355.82	314.26	11.14	10.97	-4.29	
6,948.00	31.97	2.21	6,897.45	-123.44	-354.95	299.96	10.47	10.15	-5.12	
6,980.00	35.41	3.34	6,924.07	-105.71	-354.08	284.75	10.93	10.75	3.53	
7,012.00	38.94	2.44	6,949.56	-86.41	-353.11	268.16	11.16	11.03	-2.81	
7,044.00	42.73	1.79	6,973.77	-65.50	-352.35	250.36	11.92	11.84	-2.03	
7,075.00	44.18	359.84	6,996.27	-44.18	-352.05	232.47	6.37	4.68	-6.29	
7,107.00	45.41	359.41	7,018.98	-21.64	-352.20	213.82	3.96	3.84	-1.34	
7,139.00	49.22	359.51	7,040.67	1.88	-352.42	194.39	11.91	11.91	0.31	
7,170.00	52.16	359.81	7,060.31	25.86	-352.56	174.54	9.51	9.48	0.97	
7,202.00	55.81	0.35	7,079.12	51.74	-352.52	153.01	11.49	11.41	1.69	
7,233.00	59.16	1.30	7,095.78	77.88	-352.14	131.08	11.11	10.81	3.06	
7,265.00	60.54	1.95	7,111.85	105.53	-351.35	107.65	4.66	4.31	2.03	
7,296.00	60.22	1.06	7,127.17	132.47	-350.64	84.87	2.70	-1.03	-2.87	
7,327.00	62.60	1.16	7,142.01	159.69	-350.12	61.95	7.68	7.68	0.32	
7,360.00	65.96	0.57	7,156.33	189.41	-349.67	37.00	10.31	10.18	-1.79	
7,392.00	70.92	0.00	7,168.08	219.16	-349.52	12.19	15.59	15.50	-1.78	

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well Niles 3N-28HZ
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	GL + RKB @ 4984.00ft
Site:	WELD_NILES 14-28HZ PAD	MD Reference:	GL + RKB @ 4984.00ft
Well:	Niles 3N-28HZ	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	ACTUAL	Database:	edmp

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
7,423.00	75.38	0.56	7,177.07	248.82	-349.38	-12.54	14.49	14.39	1.81
7,455.00	79.10	1.44	7,184.13	280.02	-348.83	-38.78	11.93	11.63	2.75
7,487.00	81.02	0.90	7,189.66	311.53	-348.19	-65.33	6.23	6.00	-1.69
7,519.00	83.63	0.06	7,193.93	343.24	-347.92	-91.83	8.56	8.16	-2.63
7,565.00	88.53	0.27	7,197.07	389.12	-347.79	-130.03	10.66	10.65	0.46
7,615.48	89.07	0.33	7,198.13	439.59	-347.53	-172.13	1.08	1.07	0.11
SET 7" CASING									
7,702.00	90.00	0.42	7,198.83	526.10	-346.97	-244.35	1.08	1.07	0.11
7,797.00	89.94	0.45	7,198.88	621.10	-346.24	-323.71	0.07	-0.06	0.03
7,892.00	89.57	1.29	7,199.29	716.09	-344.80	-403.46	0.97	-0.39	0.88
7,986.00	89.20	359.45	7,200.30	810.08	-344.20	-481.91	2.00	-0.39	-1.96
8,082.00	88.71	359.70	7,202.05	906.06	-344.91	-561.29	0.57	-0.51	0.26
8,175.00	88.24	359.01	7,204.52	999.02	-345.95	-637.98	0.90	-0.51	-0.74
8,270.00	87.71	0.25	7,207.88	1,093.95	-346.57	-716.54	1.42	-0.56	1.31
8,364.00	87.10	356.55	7,212.14	1,187.80	-349.19	-793.09	3.99	-0.65	-3.94
8,458.00	86.61	356.86	7,217.29	1,281.51	-354.58	-867.97	0.62	-0.52	0.33
8,554.00	88.77	359.28	7,221.16	1,377.36	-357.81	-945.85	3.38	2.25	2.52
8,648.00	88.34	358.33	7,223.53	1,471.31	-359.77	-1,022.84	1.11	-0.46	-1.01
8,743.00	88.40	358.70	7,226.24	1,566.24	-362.23	-1,100.37	0.39	0.06	0.39
8,838.00	89.08	357.82	7,228.33	1,661.17	-365.12	-1,177.67	1.17	0.72	-0.93
8,933.00	89.14	358.87	7,229.80	1,756.12	-367.86	-1,255.06	1.11	0.06	1.11
9,028.00	87.78	358.12	7,232.35	1,851.05	-370.35	-1,332.58	1.63	-1.43	-0.79
9,123.00	88.77	0.70	7,235.21	1,945.99	-371.33	-1,410.95	2.91	1.04	2.72
9,218.00	88.83	359.19	7,237.20	2,040.97	-371.42	-1,489.84	1.59	0.06	-1.59
9,313.00	90.43	358.21	7,237.82	2,135.94	-373.58	-1,567.57	1.97	1.68	-1.03
9,408.00	91.48	356.36	7,236.23	2,230.81	-378.08	-1,643.93	2.24	1.11	-1.95
9,502.00	90.86	359.32	7,234.31	2,324.71	-381.62	-1,720.01	3.22	-0.66	3.15
9,597.00	91.05	3.13	7,232.73	2,419.66	-379.59	-1,800.05	4.01	0.20	4.01
9,692.00	90.25	1.68	7,231.65	2,514.57	-375.60	-1,881.15	1.74	-0.84	-1.53
9,787.00	91.17	0.88	7,230.48	2,609.54	-373.48	-1,961.26	1.28	0.97	-0.84
9,882.00	90.19	357.35	7,229.35	2,704.50	-374.95	-2,039.38	3.86	-1.03	-3.72
9,977.00	89.38	357.33	7,229.70	2,799.40	-379.35	-2,115.80	0.85	-0.85	-0.02
10,072.00	90.19	355.87	7,230.06	2,894.23	-384.99	-2,191.49	1.76	0.85	-1.54
10,167.00	89.82	0.31	7,230.05	2,989.15	-388.15	-2,268.62	4.69	-0.39	4.67
10,262.00	89.88	357.39	7,230.30	3,084.12	-390.06	-2,346.50	3.07	0.06	-3.07
10,356.00	90.00	355.22	7,230.40	3,177.92	-396.12	-2,421.09	2.31	0.13	-2.31
10,451.00	89.81	354.82	7,230.56	3,272.56	-404.36	-2,495.17	0.47	-0.20	-0.42
10,546.00	88.77	358.67	7,231.73	3,367.38	-409.76	-2,570.98	4.20	-1.09	4.05
10,641.00	89.64	0.46	7,233.05	3,462.36	-410.48	-2,649.52	2.09	0.92	1.88
10,735.00	89.08	358.93	7,234.10	3,556.35	-410.98	-2,727.37	1.73	-0.60	-1.63
10,830.00	90.68	358.71	7,234.30	3,651.33	-412.94	-2,805.22	1.70	1.68	-0.23
10,925.00	90.62	0.27	7,233.22	3,746.32	-413.78	-2,883.70	1.64	-0.06	1.64
11,019.00	89.45	0.30	7,233.17	3,840.31	-413.31	-2,962.08	1.25	-1.24	0.03

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well Niles 3N-28HZ
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	GL + RKB @ 4984.00ft
Site:	WELD_NILES 14-28HZ PAD	MD Reference:	GL + RKB @ 4984.00ft
Well:	Niles 3N-28HZ	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	ACTUAL	Database:	edmp

Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
11,115.00	91.17	357.10	7,232.65	3,936.27	-415.49	-3,040.63	3.78	1.79	-3.33	
11,210.00	90.80	1.55	7,231.01	4,031.23	-416.61	-3,118.93	4.70	-0.39	4.68	
11,305.00	90.68	356.58	7,229.79	4,126.18	-418.16	-3,196.99	5.23	-0.13	-5.23	
11,399.00	90.62	358.07	7,228.72	4,220.07	-422.55	-3,272.58	1.59	-0.06	1.59	
11,494.00	91.11	358.03	7,227.28	4,315.00	-425.78	-3,349.69	0.52	0.52	-0.04	
11,590.00	90.86	358.65	7,225.63	4,410.94	-428.56	-3,427.89	0.70	-0.26	0.65	
11,662.00	90.43	1.19	7,224.82	4,482.93	-428.66	-3,487.67	3.58	-0.60	3.53	
LAST WFT MWD SURVEY										
11,719.00	90.09	3.20	7,224.57	4,539.89	-426.48	-3,536.22	3.58	-0.60	3.53	
PROJECTION TO TD										

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")	
7,615.48	7,198.13	7"	8-3/4	8-3/4	

Design Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment	
		+N/-S (ft)	+E/-W (ft)		
915.00	914.99	-0.86	-0.57	TIE ON TO SURFACE GYRO	
1,039.00	1,038.99	-0.85	0.12	FIRST WFT MWD SURVEY	
7,615.48	7,198.13	439.59	-347.53	SET 7" CASING	
11,662.00	7,224.82	4,482.93	-428.66	LAST WFT MWD SURVEY	
11,719.00	7,224.57	4,539.89	-426.48	PROJECTION TO TD	

Checked By: _____ Approved By: _____ Date: _____



Weatherford®

US ROCKIES REGION PLANNING

COLORADO NORTHERN ZONE - 83

WELD_NILES 14-28HZ PAD

Niles 3N-28HZ

Wellbore #1

Design: ACTUAL

Survey Report - Geographic

21 December, 2012

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well Niles 3N-28HZ
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	GL + RKB @ 4984.00ft
Site:	WELD_NILES 14-28HZ PAD	MD Reference:	GL + RKB @ 4984.00ft
Well:	Niles 3N-28HZ	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	ACTUAL	Database:	edmp

Project	COLORADO NORTHERN ZONE - 83		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		

Site		WELD_NILES 14-28HZ PAD, Sec. 28-T3N-R66W			
Site Position:		Northing:	1,312,646.02 usft	Latitude:	40.189390
From:	Lat/Long	Easting:	3,200,158.13 usft	Longitude:	-104.783544
Position Uncertainty:	0.00 ft	Slot Radius:	13-3/16 "	Grid Convergence:	0.46 °

Well		Niles 3N-28HZ				
Well Position	+N/-S	0.00 ft	Northing:	1,312,646.02 usft	Latitude:	40.189390
	+E/-W	0.00 ft	Easting:	3,200,158.13 usft	Longitude:	-104.783544
Position Uncertainty		0.00 ft	Wellhead Elevation:	ft	Ground Level:	4,959.00 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	3/28/2012	8.75	66.85	52,935

Design	ACTUAL				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	25.00
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)	
	25.00	0.00	0.00	213.78	

Survey Program	Date	12/21/2012			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
125.00	915.00	Survey #1 (Wellbore #1)	NS-GYRO-MS	NORTH SENSING GYROCOMPASSING M/S	
1,039.00	11,719.00	Survey #2 (Wellbore #1)	MWD	MWD - STANDARD	

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
25.00	0.00	0.00	25.00	0.00	0.00	1,312,646.02	3,200,158.13	40.189390	-104.783544
125.00	0.25	164.87	125.00	-0.21	0.06	1,312,645.81	3,200,158.19	40.189390	-104.783544
225.00	0.21	103.23	225.00	-0.46	0.29	1,312,645.56	3,200,158.43	40.189389	-104.783543
325.00	0.34	199.79	325.00	-0.78	0.37	1,312,645.24	3,200,158.51	40.189388	-104.783543
425.00	0.33	248.73	425.00	-1.17	0.00	1,312,644.85	3,200,158.14	40.189387	-104.783544
525.00	0.24	338.80	525.00	-1.08	-0.34	1,312,644.94	3,200,157.80	40.189387	-104.783545
625.00	0.12	108.15	625.00	-0.91	-0.32	1,312,645.10	3,200,157.82	40.189388	-104.783545
725.00	0.34	278.84	725.00	-0.90	-0.51	1,312,645.11	3,200,157.62	40.189388	-104.783546
825.00	0.24	20.26	824.99	-0.66	-0.73	1,312,645.35	3,200,157.40	40.189388	-104.783547
915.00	0.49	165.59	914.99	-0.86	-0.57	1,312,645.16	3,200,157.56	40.189388	-104.783546
TIE ON TO SURFACE GYRO									



Weatherford®

Andarko Petroleum Corporation

Survey Report - Geographic



Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well Niles 3N-28HZ
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	GL + RKB @ 4984.00ft
Site:	WELD_NILES 14-28HZ PAD	MD Reference:	GL + RKB @ 4984.00ft
Well:	Niles 3N-28HZ	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	ACTUAL	Database:	edmp

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
1,039.00	0.70	47.19	1,038.99	-0.85	0.12	1,312,645.16	3,200,158.25	40.189388	-104.783544
FIRST WFT MWD SURVEY									
1,130.00	0.98	264.65	1,129.99	-0.55	-0.25	1,312,645.47	3,200,157.88	40.189389	-104.783545
1,224.00	3.03	247.74	1,223.92	-1.57	-3.35	1,312,644.42	3,200,154.79	40.189386	-104.783556
1,316.00	4.81	248.62	1,315.70	-3.89	-9.19	1,312,642.05	3,200,148.97	40.189379	-104.783577
1,407.00	7.02	249.60	1,406.21	-7.22	-17.96	1,312,638.65	3,200,140.23	40.189370	-104.783609
1,502.00	8.81	244.59	1,500.31	-12.37	-29.97	1,312,633.41	3,200,128.26	40.189356	-104.783652
1,597.00	10.85	245.27	1,593.91	-19.23	-44.67	1,312,626.43	3,200,113.62	40.189337	-104.783704
1,693.00	10.90	242.17	1,688.18	-27.25	-60.90	1,312,618.28	3,200,097.45	40.189315	-104.783762
1,787.00	9.80	238.38	1,780.65	-35.59	-75.57	1,312,609.82	3,200,082.85	40.189292	-104.783815
1,863.00	10.42	240.25	1,855.47	-42.39	-87.05	1,312,602.92	3,200,071.43	40.189274	-104.783856
1,955.00	9.56	234.79	1,946.08	-50.93	-100.51	1,312,594.28	3,200,058.03	40.189250	-104.783904
2,047.00	10.83	241.78	2,036.63	-59.42	-114.37	1,312,585.68	3,200,044.24	40.189227	-104.783954
2,139.00	10.04	239.01	2,127.11	-67.64	-128.86	1,312,577.34	3,200,029.82	40.189204	-104.784006
2,231.00	9.84	241.02	2,217.73	-75.57	-142.62	1,312,569.29	3,200,016.13	40.189183	-104.784055
2,323.00	10.16	241.34	2,308.33	-83.27	-156.61	1,312,561.48	3,200,002.20	40.189161	-104.784105
2,414.00	10.37	243.40	2,397.87	-90.79	-170.98	1,312,553.85	3,199,987.89	40.189141	-104.784156
2,509.00	10.56	242.35	2,491.29	-98.66	-186.34	1,312,545.86	3,199,972.60	40.189119	-104.784211
2,604.00	9.52	241.18	2,584.84	-106.49	-200.93	1,312,537.91	3,199,958.07	40.189098	-104.784263
2,700.00	10.49	243.40	2,679.38	-114.23	-215.70	1,312,530.05	3,199,943.36	40.189077	-104.784316
2,794.00	10.17	241.33	2,771.85	-122.04	-230.63	1,312,522.12	3,199,928.49	40.189055	-104.784370
2,889.00	11.29	242.48	2,865.19	-130.36	-246.24	1,312,513.67	3,199,912.95	40.189032	-104.784426
2,983.00	10.21	239.52	2,957.54	-138.84	-261.58	1,312,505.07	3,199,897.68	40.189009	-104.784481
3,078.00	10.20	243.36	3,051.04	-146.88	-276.35	1,312,496.91	3,199,882.97	40.188987	-104.784533
3,174.00	9.23	243.79	3,145.66	-154.09	-290.86	1,312,489.58	3,199,868.53	40.188967	-104.784585
3,269.00	9.27	242.98	3,239.42	-160.93	-304.51	1,312,482.63	3,199,854.93	40.188948	-104.784634
3,364.00	9.50	239.33	3,333.15	-168.41	-318.07	1,312,475.04	3,199,841.43	40.188928	-104.784683
3,459.00	8.87	237.19	3,426.94	-176.38	-330.97	1,312,466.97	3,199,828.60	40.188906	-104.784729
3,553.00	7.36	237.89	3,519.99	-183.50	-342.16	1,312,459.75	3,199,817.46	40.188886	-104.784769
3,649.00	5.47	237.38	3,615.39	-189.24	-351.22	1,312,453.95	3,199,808.45	40.188871	-104.784801
3,744.00	3.55	241.54	3,710.09	-193.08	-357.62	1,312,450.05	3,199,802.08	40.188860	-104.784824
3,839.00	1.55	216.14	3,804.99	-195.52	-360.97	1,312,447.58	3,199,798.75	40.188853	-104.784836
3,934.00	1.16	206.20	3,899.97	-197.42	-362.15	1,312,445.68	3,199,797.59	40.188848	-104.784841
4,029.00	0.80	218.43	3,994.95	-198.80	-362.99	1,312,444.29	3,199,796.76	40.188844	-104.784844
4,123.00	0.95	223.64	4,088.94	-199.88	-363.93	1,312,443.20	3,199,795.82	40.188841	-104.784847
4,218.00	0.21	197.51	4,183.93	-200.62	-364.53	1,312,442.46	3,199,795.23	40.188839	-104.784849
4,313.00	0.64	172.18	4,278.93	-201.31	-364.51	1,312,441.77	3,199,795.26	40.188837	-104.784849
4,408.00	0.60	194.43	4,373.93	-202.32	-364.56	1,312,440.76	3,199,795.22	40.188835	-104.784849
4,502.00	0.66	198.61	4,467.92	-203.31	-364.86	1,312,439.77	3,199,794.93	40.188832	-104.784850
4,598.00	0.63	199.00	4,563.92	-204.33	-365.21	1,312,438.74	3,199,794.59	40.188829	-104.784851
4,692.00	1.02	226.47	4,657.91	-205.40	-365.98	1,312,437.67	3,199,793.82	40.188826	-104.784854
4,787.00	0.30	200.24	4,752.90	-206.21	-366.68	1,312,436.85	3,199,793.13	40.188824	-104.784857
4,883.00	0.75	231.91	4,848.89	-206.83	-367.26	1,312,436.22	3,199,792.55	40.188822	-104.784859
4,979.00	1.61	226.47	4,944.87	-208.15	-368.73	1,312,434.89	3,199,791.09	40.188819	-104.784864
5,074.00	0.38	210.07	5,039.86	-209.34	-369.86	1,312,433.69	3,199,789.98	40.188815	-104.784868
5,169.00	0.21	227.51	5,134.86	-209.73	-370.14	1,312,433.30	3,199,789.69	40.188814	-104.784869
5,265.00	0.25	191.20	5,230.86	-210.06	-370.31	1,312,432.97	3,199,789.53	40.188813	-104.784870
5,360.00	0.35	133.03	5,325.85	-210.46	-370.14	1,312,432.57	3,199,789.70	40.188812	-104.784869
5,455.00	0.31	110.67	5,420.85	-210.75	-369.69	1,312,432.29	3,199,790.15	40.188812	-104.784868
5,550.00	0.36	116.29	5,515.85	-210.97	-369.18	1,312,432.07	3,199,790.66	40.188811	-104.784866
5,645.00	0.31	80.73	5,610.85	-211.06	-368.66	1,312,431.98	3,199,791.19	40.188811	-104.784864
5,741.00	0.25	22.22	5,706.85	-210.83	-368.33	1,312,432.22	3,199,791.52	40.188811	-104.784863
5,837.00	0.35	12.26	5,802.85	-210.34	-368.18	1,312,432.70	3,199,791.66	40.188813	-104.784862
5,933.00	0.29	22.29	5,898.85	-209.83	-368.03	1,312,433.22	3,199,791.81	40.188814	-104.784862
6,028.00	0.60	51.54	5,993.84	-209.30	-367.55	1,312,433.75	3,199,792.28	40.188816	-104.784860

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well Niles 3N-28HZ
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	GL + RKB @ 4984.00ft
Site:	WELD_NILES 14-28HZ PAD	MD Reference:	GL + RKB @ 4984.00ft
Well:	Niles 3N-28HZ	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	ACTUAL	Database:	edmp

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
6,123.00	0.53	343.21	6,088.84	-208.57	-367.29	1,312,434.48	3,199,792.54	40.188818	-104.784859
6,219.00	0.41	322.92	6,184.84	-207.87	-367.62	1,312,435.18	3,199,792.20	40.188819	-104.784860
6,314.00	0.35	342.47	6,279.83	-207.32	-367.91	1,312,435.73	3,199,791.90	40.188821	-104.784861
6,409.00	0.25	70.27	6,374.83	-206.98	-367.81	1,312,436.07	3,199,792.01	40.188822	-104.784861
6,504.00	0.60	139.53	6,469.83	-207.29	-367.29	1,312,435.77	3,199,792.53	40.188821	-104.784859
6,600.00	0.40	148.41	6,565.83	-207.95	-366.79	1,312,435.11	3,199,793.04	40.188819	-104.784857
6,631.00	0.41	163.25	6,596.83	-208.15	-366.70	1,312,434.91	3,199,793.13	40.188819	-104.784857
6,663.00	1.96	27.54	6,628.82	-207.78	-366.41	1,312,435.29	3,199,793.41	40.188820	-104.784856
6,695.00	5.34	21.18	6,660.75	-205.90	-365.62	1,312,437.17	3,199,794.19	40.188825	-104.784853
6,727.00	9.69	11.89	6,692.47	-201.88	-364.53	1,312,441.20	3,199,795.25	40.188836	-104.784849
6,758.00	13.48	9.83	6,722.83	-195.76	-363.37	1,312,447.33	3,199,796.35	40.188853	-104.784845
6,789.00	16.89	9.95	6,752.75	-187.76	-361.98	1,312,455.33	3,199,797.68	40.188875	-104.784840
6,821.00	19.52	10.25	6,783.14	-177.92	-360.22	1,312,465.19	3,199,799.36	40.188902	-104.784834
6,852.00	22.61	8.30	6,812.07	-166.93	-358.44	1,312,476.20	3,199,801.05	40.188932	-104.784827
6,884.00	25.22	5.23	6,841.32	-154.05	-356.93	1,312,489.09	3,199,802.46	40.188967	-104.784822
6,915.00	28.62	3.90	6,868.96	-140.06	-355.82	1,312,503.09	3,199,803.45	40.189006	-104.784818
6,948.00	31.97	2.21	6,897.45	-123.44	-354.95	1,312,519.71	3,199,804.19	40.189051	-104.784815
6,980.00	35.41	3.34	6,924.07	-105.71	-354.08	1,312,537.45	3,199,804.91	40.189100	-104.784812
7,012.00	38.94	2.44	6,949.56	-86.41	-353.11	1,312,556.76	3,199,805.73	40.189153	-104.784808
7,044.00	42.73	1.79	6,973.77	-65.50	-352.35	1,312,577.67	3,199,806.33	40.189210	-104.784805
7,075.00	44.18	359.84	6,996.27	-44.18	-352.05	1,312,598.99	3,199,806.45	40.189269	-104.784804
7,107.00	45.41	359.41	7,018.98	-21.64	-352.20	1,312,621.53	3,199,806.12	40.189331	-104.784805
7,139.00	49.22	359.51	7,040.67	1.88	-352.42	1,312,645.05	3,199,805.71	40.189395	-104.784806
7,170.00	52.16	359.81	7,060.31	25.86	-352.56	1,312,669.03	3,199,805.38	40.189461	-104.784806
7,202.00	55.81	0.35	7,079.12	51.74	-352.52	1,312,694.91	3,199,805.21	40.189532	-104.784806
7,233.00	59.16	1.30	7,095.78	77.88	-352.14	1,312,721.04	3,199,805.37	40.189604	-104.784805
7,265.00	60.54	1.95	7,111.85	105.53	-351.35	1,312,748.71	3,199,805.94	40.189680	-104.784802
7,296.00	60.22	1.06	7,127.17	132.47	-350.64	1,312,775.65	3,199,806.43	40.189754	-104.784799
7,327.00	62.60	1.16	7,142.01	159.69	-350.12	1,312,802.87	3,199,806.74	40.189828	-104.784797
7,360.00	65.96	0.57	7,156.33	189.41	-349.67	1,312,832.59	3,199,806.94	40.189910	-104.784796
7,392.00	70.92	0.00	7,168.08	219.16	-349.52	1,312,862.35	3,199,806.85	40.189992	-104.784795
7,423.00	75.38	0.56	7,177.07	248.82	-349.38	1,312,892.01	3,199,806.75	40.190073	-104.784795
7,455.00	79.10	1.44	7,184.13	280.02	-348.83	1,312,923.21	3,199,807.05	40.190159	-104.784793
7,487.00	81.02	0.90	7,189.66	311.53	-348.19	1,312,954.73	3,199,807.44	40.190245	-104.784791
7,519.00	83.63	0.06	7,193.93	343.24	-347.92	1,312,986.44	3,199,807.45	40.190332	-104.784790
7,565.00	88.53	0.27	7,197.07	389.12	-347.79	1,313,032.31	3,199,807.21	40.190458	-104.784789
7,615.48	89.07	0.33	7,198.13	439.59	-347.53	1,313,082.78	3,199,807.06	40.190597	-104.784788
SET 7" CASING									
7,702.00	90.00	0.42	7,198.83	526.10	-346.97	1,313,169.30	3,199,806.93	40.190834	-104.784786
7,797.00	89.94	0.45	7,198.88	621.10	-346.24	1,313,264.30	3,199,806.88	40.191095	-104.784784
7,892.00	89.57	1.29	7,199.29	716.09	-344.80	1,313,359.29	3,199,807.55	40.191356	-104.784778
7,986.00	89.20	359.45	7,200.30	810.08	-344.20	1,313,453.28	3,199,807.40	40.191614	-104.784776
8,082.00	88.71	359.70	7,202.05	906.06	-344.91	1,313,549.25	3,199,805.91	40.191877	-104.784779
8,175.00	88.24	359.01	7,204.52	999.02	-345.95	1,313,642.20	3,199,804.12	40.192132	-104.784783
8,270.00	87.71	0.25	7,207.88	1,093.95	-346.57	1,313,737.13	3,199,802.74	40.192393	-104.784785
8,364.00	87.10	356.55	7,212.14	1,187.80	-349.19	1,313,830.96	3,199,799.36	40.192651	-104.784794
8,458.00	86.61	356.86	7,217.29	1,281.51	-354.58	1,313,924.61	3,199,793.21	40.192908	-104.784814
8,554.00	88.77	359.28	7,221.16	1,377.36	-357.81	1,314,020.44	3,199,789.20	40.193171	-104.784825
8,648.00	88.34	358.33	7,223.53	1,471.31	-359.77	1,314,114.37	3,199,786.48	40.193429	-104.784832
8,743.00	88.40	358.70	7,226.24	1,566.24	-362.23	1,314,209.27	3,199,783.26	40.193690	-104.784841
8,838.00	89.08	357.82	7,228.33	1,661.17	-365.12	1,314,304.18	3,199,779.61	40.193950	-104.784851
8,933.00	89.14	358.87	7,229.80	1,756.12	-367.86	1,314,399.10	3,199,776.10	40.194211	-104.784861
9,028.00	87.78	358.12	7,232.35	1,851.05	-370.35	1,314,494.01	3,199,772.83	40.194471	-104.784870
9,123.00	88.77	0.70	7,235.21	1,945.99	-371.33	1,314,588.94	3,199,771.09	40.194732	-104.784874
9,218.00	88.83	359.19	7,237.20	2,040.97	-371.42	1,314,683.91	3,199,770.23	40.194993	-104.784874

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well Niles 3N-28HZ
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	GL + RKB @ 4984.00ft
Site:	WELD_NILES 14-28HZ PAD	MD Reference:	GL + RKB @ 4984.00ft
Well:	Niles 3N-28HZ	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	ACTUAL	Database:	edmp

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
9,313.00	90.43	358.21	7,237.82	2,135.94	-373.58	1,314,778.86	3,199,767.31	40.195253	-104.784882
9,408.00	91.48	356.36	7,236.23	2,230.81	-378.08	1,314,873.70	3,199,762.04	40.195514	-104.784898
9,502.00	90.86	359.32	7,234.31	2,324.71	-381.62	1,314,967.57	3,199,757.74	40.195772	-104.784910
9,597.00	91.05	313	7,232.73	2,419.66	-379.59	1,315,062.53	3,199,759.01	40.196032	-104.784903
9,692.00	90.25	1.68	7,231.65	2,514.57	-375.60	1,315,157.46	3,199,762.23	40.196293	-104.784889
9,787.00	91.17	0.88	7,230.48	2,609.54	-373.48	1,315,252.44	3,199,763.58	40.196554	-104.784881
9,882.00	90.19	357.35	7,229.35	2,704.50	-374.95	1,315,347.39	3,199,761.35	40.196814	-104.784886
9,977.00	89.38	357.33	7,229.70	2,799.40	-379.35	1,315,442.25	3,199,756.17	40.197075	-104.784902
10,072.00	90.19	355.87	7,230.06	2,894.23	-384.99	1,315,537.03	3,199,749.77	40.197335	-104.784922
10,167.00	89.82	0.31	7,230.05	2,989.15	-388.15	1,315,631.93	3,199,745.84	40.197596	-104.784934
10,262.00	89.88	357.39	7,230.30	3,084.12	-390.06	1,315,726.88	3,199,743.16	40.197856	-104.784941
10,356.00	90.00	355.22	7,230.40	3,177.92	-396.12	1,315,820.62	3,199,736.35	40.198114	-104.784962
10,451.00	89.81	354.82	7,230.56	3,272.56	-404.36	1,315,915.20	3,199,727.34	40.198374	-104.784992
10,546.00	88.77	358.67	7,231.73	3,367.38	-409.76	1,316,009.97	3,199,721.18	40.198634	-104.785011
10,641.00	89.64	0.46	7,233.05	3,462.36	-410.48	1,316,104.94	3,199,719.69	40.198895	-104.785014
10,735.00	89.08	358.93	7,234.10	3,556.35	-410.98	1,316,198.93	3,199,718.43	40.199153	-104.785016
10,830.00	90.68	358.71	7,234.30	3,651.33	-412.94	1,316,293.88	3,199,715.71	40.199413	-104.785023
10,925.00	90.62	0.27	7,233.22	3,746.32	-413.78	1,316,388.86	3,199,714.10	40.199674	-104.785026
11,019.00	89.45	0.30	7,233.17	3,840.31	-413.31	1,316,482.86	3,199,713.80	40.199932	-104.785024
11,115.00	91.17	357.10	7,232.65	3,936.27	-415.49	1,316,578.80	3,199,710.85	40.200196	-104.785032
11,210.00	90.80	1.55	7,231.01	4,031.23	-416.61	1,316,673.74	3,199,708.96	40.200456	-104.785036
11,305.00	90.68	356.58	7,229.79	4,126.18	-418.16	1,316,768.67	3,199,706.65	40.200717	-104.785041
11,399.00	90.62	358.07	7,228.72	4,220.07	-422.55	1,316,862.52	3,199,701.50	40.200975	-104.785057
11,494.00	91.11	358.03	7,227.28	4,315.00	-425.78	1,316,957.43	3,199,697.50	40.201235	-104.785069
11,590.00	90.86	358.65	7,225.63	4,410.94	-428.56	1,317,053.35	3,199,693.95	40.201499	-104.785079
11,662.00	90.43	1.19	7,224.82	4,482.93	-428.66	1,317,125.33	3,199,693.27	40.201696	-104.785079
LAST WFT MWD SURVEY									
11,719.00	90.09	3.20	7,224.57	4,539.89	-426.48	1,317,182.30	3,199,694.99	40.201853	-104.785071
PROJECTION TO TD									

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")	
7,615.48	7,198.13	7"	8-3/4	8-3/4	

Design Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment	
		+N/-S (ft)	+E/-W (ft)		
915.00	914.99	-0.86	-0.57	TIE ON TO SURFACE GYRO	
1,039.00	1,038.99	-0.85	0.12	FIRST WFT MWD SURVEY	
7,615.48	7,198.13	439.59	-347.53	SET 7" CASING	
11,662.00	7,224.82	4,482.93	-428.66	LAST WFT MWD SURVEY	
11,719.00	7,224.57	4,539.89	-426.48	PROJECTION TO TD	

Checked By: _____ Approved By: _____ Date: _____