



END OF WELL REPORT

Prepared For:

**Extraction Oil & Gas
Winder South 1
Patterson 346
Weld County, CO**

Prepared By:

***Seth Burstad
Rockies Region Well Planner
Scientific Drilling***

Scientific Drilling International
7237 W. Barton Rd., Casper, WY 82604
P.O. Box 1600, Mills, WY 82644
(307) 472-6621
seth.burstad@scientificdrilling.com



TABLE OF CONTENTS

- 1. Directional Plot and Surveys**
- 2. Daily Drilling Reports**
- 3. BHA Summary Reports and Slide Sheets**
- 4. Graphical Job History**
- 5. Support Staff**



Project: Weld County, CO NAD 83
Site: Winder South Pad
Well: Winder South 1
Wellbore: OH
Design: OH



WELL DETAILS: Winder South 1

GL 4854' & KB 25' @ 4879.00ft (Patterson 346)	4854.00
Northing	Longitude
1426546.99	3169418.27
Easting	Latitude
3169418.27	40° 30' 9.630 N
	104° 53' 26.776 W

Design: OH (Winder South 1/OH)

Created By: Seth Burstad Date: 8-23-2016

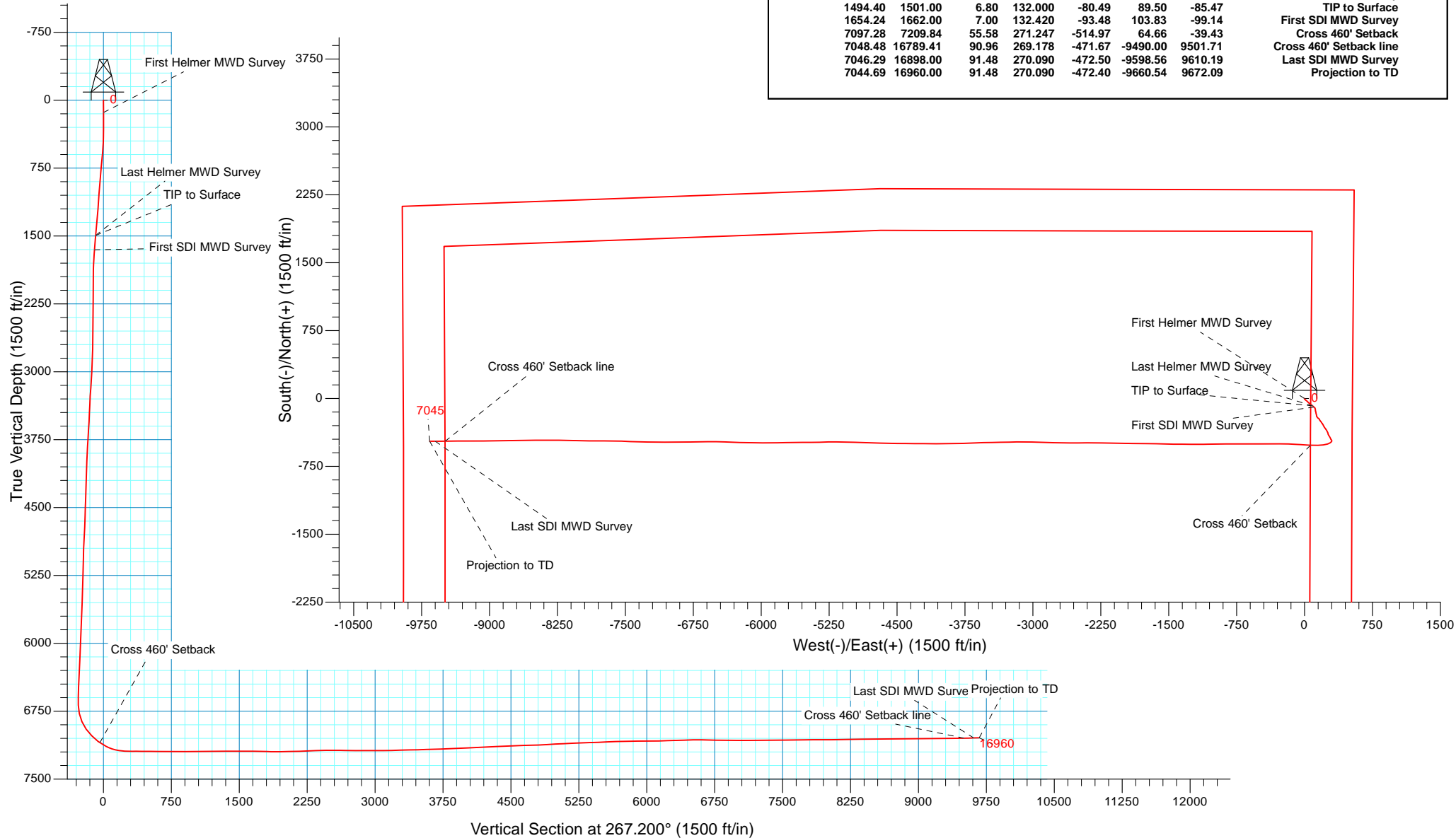
PROJECT DETAILS: Weld County, CO NAD 83

Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: Colorado Northern Zone

System Datum: Mean Sea Level
Local North: True

ANNOTATIONS

TVD	MD	Inc	Azi	+N/-S	+E/-W	VSect	Annotation
135.99	136.00	1.00	292.400	0.45	-1.10	1.07	First Helmer MWD Survey
1494.40	1501.00	6.80	132.000	-80.49	89.50	-85.47	Last Helmer MWD Survey
1494.40	1501.00	6.80	132.000	-80.49	89.50	-85.47	TIP to Surface
1654.24	1662.00	7.00	132.420	-93.48	103.83	-99.14	First SDI MWD Survey
7097.28	7209.84	55.58	271.247	-514.97	64.66	-39.43	Cross 460' Setback
7048.48	16789.41	90.96	269.178	-471.67	-9490.00	9501.71	Cross 460' Setback line
7046.29	16898.00	91.48	270.090	-472.50	-9598.56	9610.19	Last SDI MWD Survey
7044.69	16960.00	91.48	270.090	-472.40	-9660.54	9672.09	Projection to TD





Extraction Oil & Gas

Weld County, CO NAD 83

Winder South Pad

Winder South 1

OH

Design: OH

Standard Survey Report

24 August, 2016



Company:	Extraction Oil & Gas	Local Co-ordinate Reference:	Well Winder South 1
Project:	Weld County, CO NAD 83	TVD Reference:	GL 4854' & KB 25' @ 4879.00ft (Patterson 346)
Site:	Winder South Pad	MD Reference:	GL 4854' & KB 25' @ 4879.00ft (Patterson 346)
Well:	Winder South 1	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Casper District

Project	Weld County, CO NAD 83		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		

Site						Winder South Pad, Site Center: Winder South 2											
Site Position:			Northing:			1,426,547.14 usft			Latitude:			40° 30' 9.630 N					
From:			Lat/Long			Easting:			3,169,438.29 usft			Longitude:			104° 53' 26.516 W		
Position Uncertainty:			0.00 ft			Slot Radius:			13.200 in			Grid Convergence:			0.39 °		

Well	Winder South 1, 2306' FNL 528' FEL Sec 9 T6N R67W					
Well Position	+N-S	0.00 ft	Northing:	1,426,546.99 usft	Latitude:	40° 30' 9.630 N
	+E-W	0.00 ft	Easting:	3,169,418.27 usft	Longitude:	104° 53' 26.776 W
Position Uncertainty		0.00 ft	Wellhead Elevation:	0.00 ft	Ground Level:	4,854.00 ft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2015	8/22/2016	8.52	66.99	52,521

Design	OH				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)	
	0.00	0.00	0.00	267.200	

Survey Program	Date	8/24/2016			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
136.00	1,501.00	Survey #1 - Surface (OH)	MWD	MWD - Standard	
1,662.00	16,960.00	Survey #2 - Production (OH)	SDI MWD	SDI MWD - Standard ver 1.0.1	

Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
1,501.00	6.80	132.000	1,494.40	-80.49	89.50	-85.47	2.12	2.00	6.00	
Last Helmer MWD Survey - TIP to Surface										
1,662.00	7.00	132.420	1,654.24	-93.48	103.83	-99.14	0.13	0.12	0.26	
First SDI MWD Survey										
1,757.00	5.12	138.950	1,748.70	-100.59	110.89	-105.84	2.10	-1.98	6.87	
1,947.00	3.43	165.290	1,938.19	-112.48	117.90	-112.26	1.34	-0.89	13.86	
2,043.00	2.88	169.700	2,034.04	-117.63	119.06	-113.17	0.63	-0.57	4.59	
2,138.00	1.78	183.250	2,128.96	-121.45	119.40	-113.33	1.29	-1.16	14.26	
2,234.00	3.09	163.370	2,224.87	-125.42	120.06	-113.79	1.60	1.36	-20.71	

Company:	Extraction Oil & Gas	Local Co-ordinate Reference:	Well Winder South 1
Project:	Weld County, CO NAD 83	TVD Reference:	GL 4854' & KB 25' @ 4879.00ft (Patterson 346)
Site:	Winder South Pad	MD Reference:	GL 4854' & KB 25' @ 4879.00ft (Patterson 346)
Well:	Winder South 1	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Casper District

Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
2,329.00	2.73	174.550	2,319.75	-130.12	121.01	-114.51	0.71	-0.38	11.77	
2,424.00	2.89	180.750	2,414.64	-134.77	121.19	-114.46	0.36	0.17	6.53	
2,519.00	5.28	166.330	2,509.39	-141.41	122.19	-115.14	2.72	2.52	-15.18	
2,614.00	6.98	166.940	2,603.84	-151.29	124.53	-116.99	1.79	1.79	0.64	
2,710.00	6.83	167.250	2,699.15	-162.53	127.11	-119.02	0.16	-0.16	0.32	
2,805.00	7.58	168.830	2,793.40	-174.19	129.57	-120.91	0.82	0.79	1.66	
2,900.00	8.33	169.240	2,887.48	-187.10	132.07	-122.77	0.79	0.79	0.43	
2,995.00	7.74	153.730	2,981.56	-199.60	136.18	-126.27	2.36	-0.62	-16.33	
3,091.00	6.42	135.790	3,076.84	-209.24	142.79	-132.40	2.67	-1.38	-18.69	
3,186.00	5.64	131.450	3,171.31	-216.14	149.99	-139.25	0.95	-0.82	-4.57	
3,282.00	4.89	130.650	3,266.91	-221.93	156.63	-145.60	0.78	-0.78	-0.83	
3,377.00	4.79	143.410	3,361.57	-227.75	162.07	-150.75	1.14	-0.11	13.43	
3,472.00	5.35	152.210	3,456.20	-234.85	166.50	-154.83	1.01	0.59	9.26	
3,567.00	6.33	143.910	3,550.71	-243.01	171.65	-159.57	1.36	1.03	-8.74	
3,662.00	5.86	144.080	3,645.17	-251.16	177.58	-165.10	0.50	-0.49	0.18	
3,758.00	5.92	143.840	3,740.66	-259.13	183.37	-170.50	0.07	0.06	-0.25	
3,852.00	5.30	141.650	3,834.21	-266.45	188.93	-175.69	0.70	-0.66	-2.33	
3,948.00	5.13	143.910	3,929.82	-273.39	194.21	-180.62	0.28	-0.18	2.35	
4,043.00	4.17	148.010	4,024.50	-279.76	198.54	-184.64	1.07	-1.01	4.32	
4,138.00	3.84	153.530	4,119.27	-285.53	201.79	-187.60	0.53	-0.35	5.81	
4,233.00	3.46	150.820	4,214.08	-290.88	204.60	-190.15	0.44	-0.40	-2.85	
4,329.00	3.82	148.720	4,309.88	-296.15	207.67	-192.96	0.40	0.38	-2.19	
4,424.00	4.86	150.170	4,404.61	-302.34	211.32	-196.30	1.10	1.09	1.53	
4,519.00	4.21	152.250	4,499.31	-308.92	214.94	-199.60	0.71	-0.68	2.19	
4,615.00	4.78	147.060	4,595.02	-315.39	218.76	-203.09	0.73	0.59	-5.41	
4,710.00	3.40	150.340	4,689.77	-321.17	222.31	-206.35	1.47	-1.45	3.45	
4,805.00	5.05	140.700	4,784.51	-326.85	226.35	-210.12	1.88	1.74	-10.15	
4,900.00	4.38	142.170	4,879.19	-332.95	231.22	-214.68	0.72	-0.71	1.55	
4,996.00	3.78	141.330	4,974.95	-338.32	235.45	-218.64	0.63	-0.63	-0.88	
5,091.00	2.15	148.070	5,069.82	-342.27	238.35	-221.35	1.75	-1.72	7.09	
5,187.00	3.40	145.450	5,165.70	-346.15	240.91	-223.72	1.31	1.30	-2.73	
5,282.00	3.93	151.330	5,260.51	-351.32	244.07	-226.62	0.68	0.56	6.19	
5,377.00	4.37	154.910	5,355.26	-357.46	247.17	-229.42	0.54	0.46	3.77	
5,473.00	4.47	162.380	5,450.97	-364.34	249.85	-231.76	0.61	0.10	7.78	
5,569.00	5.90	145.460	5,546.58	-371.97	253.78	-235.31	2.17	1.49	-17.63	
5,664.00	7.06	165.190	5,640.99	-381.63	258.05	-239.10	2.62	1.22	20.77	
5,760.00	6.04	167.280	5,736.36	-392.26	260.67	-241.20	1.09	-1.06	2.18	
5,855.00	6.91	147.660	5,830.76	-401.97	264.82	-244.87	2.49	0.92	-20.65	
5,950.00	4.57	152.250	5,925.28	-410.15	269.64	-249.29	2.51	-2.46	4.83	
6,046.00	6.18	146.030	6,020.86	-417.82	274.31	-253.58	1.78	1.68	-6.48	
6,141.00	6.59	152.040	6,115.27	-426.87	279.73	-258.54	0.82	0.43	6.33	
6,236.00	5.67	151.260	6,209.73	-435.80	284.54	-262.91	0.97	-0.97	-0.82	
6,331.00	4.72	152.820	6,304.33	-443.40	288.58	-266.58	1.01	-1.00	1.64	

Company:	Extraction Oil & Gas	Local Co-ordinate Reference:	Well Winder South 1
Project:	Weld County, CO NAD 83	TVD Reference:	GL 4854' & KB 25' @ 4879.00ft (Patterson 346)
Site:	Winder South Pad	MD Reference:	GL 4854' & KB 25' @ 4879.00ft (Patterson 346)
Well:	Winder South 1	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Casper District

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
6,427.00	4.87	149.350	6,400.00	-450.42	292.46	-270.11	0.34	0.16	-3.61
6,522.00	4.61	143.730	6,494.67	-456.96	296.78	-274.10	0.56	-0.27	-5.92
6,617.00	4.84	159.120	6,589.35	-463.79	300.46	-277.45	1.35	0.24	16.20
6,711.00	6.13	195.150	6,682.95	-472.34	300.56	-277.14	3.83	1.37	38.33
6,806.00	14.05	231.160	6,776.48	-484.50	290.23	-266.22	10.28	8.34	37.91
6,902.00	25.90	249.240	6,866.63	-499.30	261.42	-236.72	13.78	12.34	18.83
6,997.00	34.53	262.620	6,948.74	-510.15	215.18	-190.01	11.47	9.08	14.08
7,093.00	44.60	268.430	7,022.67	-514.58	154.33	-129.01	11.17	10.49	6.05
7,188.00	53.84	270.400	7,084.66	-515.23	82.48	-57.22	9.85	9.73	2.07
7,209.84	55.58	271.247	7,097.28	-514.97	64.66	-39.43	8.58	7.97	3.88
Cross 460' Setback									
7,283.00	61.45	273.850	7,135.47	-512.15	2.37	22.65	8.58	8.02	3.56
7,378.00	73.88	273.500	7,171.50	-506.54	-85.16	109.79	13.09	13.08	-0.37
7,473.00	84.28	272.150	7,189.48	-501.97	-178.19	202.50	11.04	10.95	-1.42
7,569.00	90.40	270.350	7,193.93	-499.88	-274.02	298.10	6.64	6.38	-1.88
7,695.00	89.29	269.580	7,194.27	-499.96	-400.01	423.95	1.07	-0.88	-0.61
7,790.00	89.43	269.550	7,195.33	-500.68	-495.00	518.87	0.15	0.15	-0.03
7,885.00	89.33	269.600	7,196.36	-501.39	-590.00	613.78	0.12	-0.11	0.05
7,981.00	89.73	270.220	7,197.15	-501.54	-685.99	709.67	0.77	0.42	0.65
8,076.00	90.91	270.230	7,196.62	-501.16	-780.99	804.53	1.24	1.24	0.01
8,171.00	89.70	269.910	7,196.11	-501.05	-875.99	899.41	1.32	-1.27	-0.34
8,267.00	90.50	269.280	7,195.94	-501.73	-971.98	995.33	1.06	0.83	-0.66
8,362.00	90.10	268.770	7,195.45	-503.34	-1,066.97	1,090.28	0.68	-0.42	-0.54
8,458.00	90.40	270.120	7,195.03	-504.27	-1,162.96	1,186.20	1.44	0.31	1.41
8,553.00	90.57	270.170	7,194.22	-504.03	-1,257.95	1,281.07	0.19	0.18	0.05
8,648.00	90.87	269.970	7,193.03	-503.92	-1,352.95	1,375.94	0.38	0.32	-0.21
8,744.00	90.77	270.750	7,191.66	-503.31	-1,448.93	1,471.79	0.82	-0.10	0.81
8,839.00	89.19	271.960	7,191.69	-501.07	-1,543.90	1,566.53	2.09	-1.66	1.27
8,934.00	88.99	271.010	7,193.20	-498.61	-1,638.86	1,661.25	1.02	-0.21	-1.00
9,030.00	88.22	270.400	7,195.53	-497.42	-1,734.82	1,757.05	1.02	-0.80	-0.64
9,125.00	89.80	270.860	7,197.18	-496.38	-1,829.80	1,851.86	1.73	1.66	0.48
9,221.00	90.03	270.510	7,197.32	-495.23	-1,925.79	1,947.68	0.44	0.24	-0.36
9,316.00	90.54	270.820	7,196.85	-494.13	-2,020.78	2,042.50	0.63	0.54	0.33
9,411.00	92.42	271.270	7,194.39	-492.40	-2,115.73	2,137.26	2.03	1.98	0.47
9,507.00	92.96	271.040	7,189.89	-490.46	-2,211.60	2,232.92	0.61	0.56	-0.24
9,602.00	91.24	270.550	7,186.41	-489.15	-2,306.53	2,327.67	1.88	-1.81	-0.52
9,698.00	91.11	269.750	7,184.44	-488.90	-2,402.51	2,423.52	0.84	-0.14	-0.83
9,793.00	90.34	269.910	7,183.24	-489.18	-2,497.50	2,518.41	0.83	-0.81	0.17
9,889.00	89.50	270.010	7,183.37	-489.25	-2,593.50	2,614.30	0.88	-0.88	0.10
9,984.00	88.39	270.550	7,185.12	-488.78	-2,688.48	2,709.14	1.30	-1.17	0.57
10,080.00	90.13	271.760	7,186.36	-486.85	-2,784.45	2,804.90	2.21	1.81	1.26
10,175.00	90.40	271.990	7,185.92	-483.74	-2,879.39	2,899.58	0.37	0.28	0.24
10,271.00	89.77	271.540	7,185.78	-480.78	-2,975.35	2,995.28	0.81	-0.66	-0.47
10,366.00	90.24	270.050	7,185.77	-479.46	-3,070.33	3,090.09	1.64	0.49	-1.57

Company:	Extraction Oil & Gas	Local Co-ordinate Reference:	Well Winder South 1
Project:	Weld County, CO NAD 83	TVD Reference:	GL 4854' & KB 25' @ 4879.00ft (Patterson 346)
Site:	Winder South Pad	MD Reference:	GL 4854' & KB 25' @ 4879.00ft (Patterson 346)
Well:	Winder South 1	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Casper District

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
10,461.00	91.85	269.620	7,184.04	-479.74	-3,165.31	3,184.97	1.75	1.69	-0.45
10,557.00	91.78	269.430	7,181.00	-480.53	-3,261.26	3,280.84	0.21	-0.07	-0.20
10,652.00	91.48	268.530	7,178.29	-482.22	-3,356.21	3,375.76	1.00	-0.32	-0.95
10,747.00	91.11	268.360	7,176.15	-484.80	-3,451.15	3,470.71	0.43	-0.39	-0.18
10,842.00	91.61	268.500	7,173.89	-487.40	-3,546.09	3,565.66	0.55	0.53	0.15
10,937.00	91.95	268.700	7,170.94	-489.72	-3,641.01	3,660.59	0.42	0.36	0.21
11,033.00	92.35	268.240	7,167.34	-492.28	-3,736.91	3,756.49	0.63	0.42	-0.48
11,128.00	91.68	267.760	7,164.00	-495.60	-3,831.79	3,851.43	0.87	-0.71	-0.51
11,223.00	92.76	269.240	7,160.32	-498.08	-3,926.68	3,946.33	1.93	1.14	1.56
11,318.00	92.89	270.470	7,155.64	-498.32	-4,021.57	4,041.11	1.30	0.14	1.29
11,414.00	92.85	270.230	7,150.83	-497.74	-4,117.44	4,136.84	0.25	-0.04	-0.25
11,509.00	93.26	270.250	7,145.77	-497.34	-4,212.31	4,231.57	0.43	0.43	0.02
11,604.00	92.32	270.730	7,141.14	-496.53	-4,307.19	4,326.30	1.11	-0.99	0.51
11,700.00	93.17	270.740	7,136.54	-495.30	-4,403.07	4,422.01	0.89	0.89	0.01
11,795.00	91.24	270.040	7,132.89	-494.65	-4,497.99	4,516.79	2.16	-2.03	-0.74
11,891.00	90.67	269.960	7,131.29	-494.65	-4,593.98	4,612.66	0.60	-0.59	-0.08
11,986.00	92.46	272.190	7,128.69	-492.87	-4,688.92	4,707.40	3.01	1.88	2.35
12,082.00	93.09	272.150	7,124.05	-489.24	-4,784.74	4,802.92	0.66	0.66	-0.04
12,177.00	92.85	271.550	7,119.12	-486.18	-4,879.56	4,897.48	0.68	-0.25	-0.63
12,272.00	93.73	272.450	7,113.67	-482.87	-4,974.34	4,991.99	1.32	0.93	0.95
12,367.00	92.49	271.360	7,108.52	-479.72	-5,069.15	5,086.53	1.74	-1.31	-1.15
12,463.00	92.21	269.440	7,104.58	-479.05	-5,165.06	5,182.29	2.02	-0.29	-2.00
12,558.00	92.19	269.460	7,100.94	-479.96	-5,259.99	5,277.15	0.03	-0.02	0.02
12,653.00	91.84	268.540	7,097.59	-481.61	-5,354.91	5,372.04	1.04	-0.37	-0.97
12,748.00	92.58	269.260	7,093.93	-483.44	-5,449.82	5,466.93	1.09	0.78	0.76
12,844.00	93.05	269.490	7,089.22	-484.48	-5,545.70	5,562.74	0.54	0.49	0.24
12,939.00	91.04	268.890	7,085.83	-485.82	-5,640.62	5,657.62	2.21	-2.12	-0.63
13,034.00	91.01	269.680	7,084.13	-487.01	-5,735.60	5,752.54	0.83	-0.03	0.83
13,129.00	91.01	269.680	7,082.45	-487.54	-5,830.59	5,847.44	0.00	0.00	0.00
13,224.00	90.70	269.810	7,081.04	-487.96	-5,925.57	5,942.33	0.35	-0.33	0.14
13,320.00	90.50	269.920	7,080.03	-488.19	-6,021.57	6,038.23	0.24	-0.21	0.11
13,415.00	91.04	270.620	7,078.75	-487.74	-6,116.56	6,133.08	0.93	0.57	0.74
13,510.00	91.88	271.600	7,076.33	-485.90	-6,211.51	6,227.83	1.36	0.88	1.03
13,605.00	92.18	272.150	7,072.97	-482.80	-6,306.40	6,322.45	0.66	0.32	0.58
13,700.00	91.44	271.860	7,069.97	-479.47	-6,401.29	6,417.07	0.84	-0.78	-0.31
13,795.00	91.38	271.150	7,067.63	-476.98	-6,496.23	6,511.77	0.75	-0.06	-0.75
13,890.00	89.30	269.060	7,067.07	-476.81	-6,591.22	6,606.64	3.10	-2.19	-2.20
13,985.00	89.36	269.510	7,068.18	-477.99	-6,686.20	6,701.57	0.48	0.06	0.47
14,080.00	88.76	269.130	7,069.73	-479.12	-6,781.18	6,796.49	0.75	-0.63	-0.40
14,175.00	88.76	269.550	7,071.79	-480.21	-6,876.15	6,891.40	0.44	0.00	0.44
14,271.00	89.53	270.040	7,073.22	-480.56	-6,972.14	6,987.29	0.95	0.80	0.51
14,366.00	89.77	269.900	7,073.80	-480.61	-7,067.14	7,082.18	0.29	0.25	-0.15
14,461.00	89.83	270.550	7,074.14	-480.23	-7,162.14	7,177.04	0.69	0.06	0.68

Company:	Extraction Oil & Gas	Local Co-ordinate Reference:	Well Winder South 1
Project:	Weld County, CO NAD 83	TVD Reference:	GL 4854' & KB 25' @ 4879.00ft (Patterson 346)
Site:	Winder South Pad	MD Reference:	GL 4854' & KB 25' @ 4879.00ft (Patterson 346)
Well:	Winder South 1	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Casper District

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
14,556.00	90.67	270.530	7,073.72	-479.34	-7,257.13	7,271.88	0.88	0.88	-0.02
14,651.00	91.11	271.450	7,072.24	-477.70	-7,352.10	7,366.66	1.07	0.46	0.97
14,746.00	91.04	273.000	7,070.46	-474.01	-7,447.01	7,461.28	1.63	-0.07	1.63
14,841.00	90.84	271.570	7,068.90	-470.22	-7,541.92	7,555.89	1.52	-0.21	-1.51
14,936.00	90.67	270.740	7,067.65	-468.31	-7,636.89	7,650.65	0.89	-0.18	-0.87
15,031.00	90.57	270.480	7,066.62	-467.30	-7,731.88	7,745.48	0.29	-0.11	-0.27
15,126.00	90.07	269.720	7,066.09	-467.13	-7,826.88	7,840.35	0.96	-0.53	-0.80
15,221.00	90.47	270.920	7,065.65	-466.60	-7,921.87	7,935.21	1.33	0.42	1.26
15,317.00	90.20	271.520	7,065.08	-464.56	-8,017.85	8,030.97	0.69	-0.28	0.63
15,411.00	90.84	270.920	7,064.23	-462.55	-8,111.82	8,124.74	0.93	0.68	-0.64
15,506.00	90.54	270.260	7,063.09	-461.58	-8,206.81	8,219.56	0.76	-0.32	-0.69
15,602.00	91.21	271.090	7,061.62	-460.45	-8,302.79	8,315.37	1.11	0.70	0.86
15,697.00	91.31	270.370	7,059.53	-459.24	-8,397.76	8,410.17	0.76	0.11	-0.76
15,793.00	90.47	268.830	7,058.04	-459.91	-8,493.74	8,506.07	1.83	-0.88	-1.60
15,888.00	90.40	268.890	7,057.32	-461.80	-8,588.72	8,601.03	0.10	-0.07	0.06
15,983.00	90.84	269.320	7,056.29	-463.28	-8,683.70	8,695.97	0.65	0.46	0.45
16,078.00	90.40	269.120	7,055.26	-464.57	-8,778.69	8,790.90	0.51	-0.46	-0.21
16,174.00	90.50	269.480	7,054.51	-465.75	-8,874.68	8,886.84	0.39	0.10	0.38
16,270.00	90.10	269.610	7,054.01	-466.51	-8,970.68	8,982.75	0.44	-0.42	0.14
16,365.00	90.07	269.420	7,053.87	-467.31	-9,065.67	9,077.68	0.20	-0.03	-0.20
16,460.00	89.77	269.310	7,054.00	-468.36	-9,160.67	9,172.61	0.34	-0.32	-0.12
16,555.00	91.31	270.000	7,053.10	-468.94	-9,255.66	9,267.51	1.78	1.62	0.73
16,650.00	91.27	269.330	7,050.96	-469.49	-9,350.63	9,362.40	0.71	-0.04	-0.71
16,745.00	90.87	268.930	7,049.19	-470.93	-9,445.60	9,457.33	0.60	-0.42	-0.42
16,789.41	90.96	269.178	7,048.48	-471.67	-9,490.00	9,501.71	0.60	0.21	0.56
Cross 460' Setback line									
16,840.00	91.07	269.460	7,047.58	-472.27	-9,540.58	9,552.26	0.60	0.21	0.56
16,898.00	91.48	270.090	7,046.29	-472.50	-9,598.56	9,610.19	1.30	0.71	1.09
Last SDI MWD Survey									
16,960.00	91.48	270.090	7,044.69	-472.40	-9,660.54	9,672.09	0.00	0.00	0.00
Projection to TD									

Company:	Extraction Oil & Gas	Local Co-ordinate Reference:	Well Winder South 1
Project:	Weld County, CO NAD 83	TVD Reference:	GL 4854' & KB 25' @ 4879.00ft (Patterson 346)
Site:	Winder South Pad	MD Reference:	GL 4854' & KB 25' @ 4879.00ft (Patterson 346)
Well:	Winder South 1	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Casper District

Design Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
136.00	135.99	0.45	-1.10	First Helmer MWD Survey
1,501.00	1,494.40	-80.49	89.50	Last Helmer MWD Survey
1,501.00	1,494.40	-80.49	89.50	TIP to Surface
1,662.00	1,654.24	-93.48	103.83	First SDI MWD Survey
7,209.84	7,097.28	-514.97	64.66	Cross 460' Setback
16,789.41	7,048.48	-471.67	-9,490.00	Cross 460' Setback line
16,898.00	7,046.29	-472.50	-9,598.56	Last SDI MWD Survey
16,960.00	7,044.69	-472.40	-9,660.54	Projection to TD

Checked By: _____ Approved By: _____ Date: _____



Extraction Oil & Gas

Weld County, CO NAD 83

Winder South Pad

Winder South 1

OH

Design: OH

Survey Report - Geographic

24 August, 2016



Company:	Extraction Oil & Gas	Local Co-ordinate Reference:	Well Winder South 1
Project:	Weld County, CO NAD 83	TVD Reference:	GL 4854' & KB 25' @ 4879.00ft (Patterson 346)
Site:	Winder South Pad	MD Reference:	GL 4854' & KB 25' @ 4879.00ft (Patterson 346)
Well:	Winder South 1	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Casper District

Project	Weld County, CO NAD 83		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		

Site						Winder South Pad, Site Center: Winder South 2					
Site Position:				Northing:		1,426,547.14 usft		Latitude:		40° 30' 9.630 N	
From:		Lat/Long		Easting:		3,169,438.29 usft		Longitude:		104° 53' 26.516 W	
Position Uncertainty:		0.00 ft		Slot Radius:		13.200 in		Grid Convergence:		0.39 °	

Well	Winder South 1, 2306' FNL 528' FEL Sec 9 T6N R67W					
Well Position	+N-S	0.00 ft	Northing:	1,426,546.99 usft	Latitude:	40° 30' 9.630 N
	+E-W	0.00 ft	Easting:	3,169,418.27 usft	Longitude:	104° 53' 26.776 W
Position Uncertainty		0.00 ft	Wellhead Elevation:	0.00 ft	Ground Level:	4,854.00 ft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2015	8/22/2016	8.52	66.99	52,521

Design	OH				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)	
	0.00	0.00	0.00	267.200	

Survey Program	Date	8/24/2016			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
136.00	1,501.00	Survey #1 - Surface (OH)	MWD	MWD - Standard	
1,662.00	16,960.00	Survey #2 - Production (OH)	SDI MWD	SDI MWD - Standard ver 1.0.1	

Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
0.00	0.00	0.000	0.00	0.00	0.00	1,426,546.99	3,169,418.27	40° 30' 9.630 N	104° 53' 26.776 W	
136.00	1.00	292.400	135.99	0.45	-1.10	1,426,547.44	3,169,417.17	40° 30' 9.634 N	104° 53' 26.790 W	
First Helmer MWD Survey										
226.00	0.90	181.300	225.99	0.04	-1.84	1,426,547.03	3,169,416.43	40° 30' 9.630 N	104° 53' 26.799 W	
316.00	0.90	153.000	315.98	-1.29	-1.53	1,426,545.69	3,169,416.75	40° 30' 9.617 N	104° 53' 26.795 W	
406.00	2.90	143.000	405.92	-3.74	0.16	1,426,543.26	3,169,418.45	40° 30' 9.593 N	104° 53' 26.774 W	
496.00	4.80	137.400	495.71	-8.33	4.08	1,426,538.69	3,169,422.40	40° 30' 9.548 N	104° 53' 26.723 W	
586.00	6.50	134.900	585.27	-14.70	10.23	1,426,532.37	3,169,428.60	40° 30' 9.485 N	104° 53' 26.643 W	
676.00	7.90	129.200	674.56	-22.20	18.64	1,426,524.92	3,169,437.06	40° 30' 9.410 N	104° 53' 26.534 W	
766.00	7.20	132.900	763.78	-29.95	27.56	1,426,517.23	3,169,446.04	40° 30' 9.334 N	104° 53' 26.419 W	
856.00	6.60	132.900	853.13	-37.31	35.48	1,426,509.93	3,169,454.01	40° 30' 9.261 N	104° 53' 26.316 W	

Company:	Extraction Oil & Gas	Local Co-ordinate Reference:	Well Winder South 1
Project:	Weld County, CO NAD 83	TVD Reference:	GL 4854' & KB 25' @ 4879.00ft (Patterson 346)
Site:	Winder South Pad	MD Reference:	GL 4854' & KB 25' @ 4879.00ft (Patterson 346)
Well:	Winder South 1	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Casper District

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
946.00	5.90	129.100	942.60	-43.75	42.86	1,426,503.54	3,169,461.43	40° 30' 9.198 N	104° 53' 26.221 W
1,036.00	6.20	127.800	1,032.09	-49.65	50.29	1,426,497.69	3,169,468.90	40° 30' 9.139 N	104° 53' 26.125 W
1,126.00	5.70	127.100	1,121.61	-55.32	57.69	1,426,492.07	3,169,476.34	40° 30' 9.083 N	104° 53' 26.029 W
1,216.00	6.10	131.700	1,211.13	-61.20	64.83	1,426,486.24	3,169,483.52	40° 30' 9.025 N	104° 53' 25.936 W
1,306.00	6.50	128.100	1,300.59	-67.52	72.41	1,426,479.97	3,169,491.14	40° 30' 8.963 N	104° 53' 25.838 W
1,396.00	6.10	123.800	1,390.05	-73.33	80.39	1,426,474.22	3,169,499.16	40° 30' 8.905 N	104° 53' 25.735 W
1,486.00	6.50	131.100	1,479.50	-79.34	88.20	1,426,468.27	3,169,507.02	40° 30' 8.846 N	104° 53' 25.634 W
1,501.00	6.80	132.000	1,494.40	-80.49	89.50	1,426,467.12	3,169,508.32	40° 30' 8.835 N	104° 53' 25.617 W
Last Helmer MWD Survey - TIP to Surface									
1,662.00	7.00	132.420	1,654.24	-93.48	103.83	1,426,454.23	3,169,522.74	40° 30' 8.706 N	104° 53' 25.431 W
First SDI MWD Survey									
1,757.00	5.12	138.950	1,748.70	-100.59	110.89	1,426,447.17	3,169,529.85	40° 30' 8.636 N	104° 53' 25.340 W
1,947.00	3.43	165.290	1,938.19	-112.48	117.90	1,426,435.33	3,169,536.94	40° 30' 8.518 N	104° 53' 25.249 W
2,043.00	2.88	169.700	2,034.04	-117.63	119.06	1,426,430.19	3,169,538.14	40° 30' 8.467 N	104° 53' 25.234 W
2,138.00	1.78	183.250	2,128.96	-121.45	119.40	1,426,426.37	3,169,538.50	40° 30' 8.430 N	104° 53' 25.230 W
2,234.00	3.09	163.370	2,224.87	-125.42	120.06	1,426,422.40	3,169,539.19	40° 30' 8.391 N	104° 53' 25.221 W
2,329.00	2.73	174.550	2,319.75	-130.12	121.01	1,426,417.70	3,169,540.17	40° 30' 8.344 N	104° 53' 25.209 W
2,424.00	2.89	180.750	2,414.64	-134.77	121.19	1,426,413.06	3,169,540.38	40° 30' 8.298 N	104° 53' 25.207 W
2,519.00	5.28	166.330	2,509.39	-141.41	122.19	1,426,406.42	3,169,541.43	40° 30' 8.232 N	104° 53' 25.194 W
2,614.00	6.98	166.940	2,603.84	-151.29	124.53	1,426,396.57	3,169,543.84	40° 30' 8.135 N	104° 53' 25.164 W
2,710.00	6.83	167.250	2,699.15	-162.53	127.11	1,426,385.34	3,169,546.49	40° 30' 8.024 N	104° 53' 25.130 W
2,805.00	7.58	168.830	2,793.40	-174.19	129.57	1,426,373.70	3,169,549.03	40° 30' 7.909 N	104° 53' 25.098 W
2,900.00	8.33	169.240	2,887.48	-187.10	132.07	1,426,360.81	3,169,551.62	40° 30' 7.781 N	104° 53' 25.066 W
2,995.00	7.74	153.730	2,981.56	-199.60	136.18	1,426,348.34	3,169,555.82	40° 30' 7.657 N	104° 53' 25.013 W
3,091.00	6.42	135.790	3,076.84	-209.24	142.79	1,426,338.74	3,169,562.49	40° 30' 7.562 N	104° 53' 24.927 W
3,186.00	5.64	131.450	3,171.31	-216.14	149.99	1,426,331.89	3,169,569.74	40° 30' 7.494 N	104° 53' 24.834 W
3,282.00	4.89	130.650	3,266.91	-221.93	156.63	1,426,326.15	3,169,576.42	40° 30' 7.437 N	104° 53' 24.748 W
3,377.00	4.79	143.410	3,361.57	-227.75	162.07	1,426,320.36	3,169,581.90	40° 30' 7.379 N	104° 53' 24.678 W
3,472.00	5.35	152.210	3,456.20	-234.85	166.50	1,426,313.29	3,169,586.38	40° 30' 7.309 N	104° 53' 24.620 W
3,567.00	6.33	143.910	3,550.71	-243.01	171.65	1,426,305.17	3,169,591.58	40° 30' 7.229 N	104° 53' 24.554 W
3,662.00	5.86	144.080	3,645.17	-251.16	177.58	1,426,297.06	3,169,597.57	40° 30' 7.148 N	104° 53' 24.477 W
3,758.00	5.92	143.840	3,740.66	-259.13	183.37	1,426,289.13	3,169,603.42	40° 30' 7.069 N	104° 53' 24.402 W
3,852.00	5.30	141.650	3,834.21	-266.45	188.93	1,426,281.85	3,169,609.02	40° 30' 6.997 N	104° 53' 24.330 W
3,948.00	5.13	143.910	3,929.82	-273.39	194.21	1,426,274.94	3,169,614.35	40° 30' 6.928 N	104° 53' 24.262 W
4,043.00	4.17	148.010	4,024.50	-279.76	198.54	1,426,268.61	3,169,618.73	40° 30' 6.865 N	104° 53' 24.205 W
4,138.00	3.84	153.530	4,119.27	-285.53	201.79	1,426,262.85	3,169,622.01	40° 30' 6.808 N	104° 53' 24.163 W
4,233.00	3.46	150.820	4,214.08	-290.88	204.60	1,426,257.52	3,169,624.86	40° 30' 6.755 N	104° 53' 24.127 W
4,329.00	3.82	148.720	4,309.88	-296.15	207.67	1,426,252.28	3,169,627.97	40° 30' 6.703 N	104° 53' 24.087 W
4,424.00	4.86	150.170	4,404.61	-302.34	211.32	1,426,246.11	3,169,631.66	40° 30' 6.642 N	104° 53' 24.040 W
4,519.00	4.21	152.250	4,499.31	-308.92	214.94	1,426,239.56	3,169,635.33	40° 30' 6.577 N	104° 53' 23.993 W
4,615.00	4.78	147.060	4,595.02	-315.39	218.76	1,426,233.11	3,169,639.19	40° 30' 6.513 N	104° 53' 23.944 W
4,710.00	3.40	150.340	4,689.77	-321.17	222.31	1,426,227.36	3,169,642.78	40° 30' 6.456 N	104° 53' 23.898 W
4,805.00	5.05	140.700	4,784.51	-326.85	226.35	1,426,221.71	3,169,646.86	40° 30' 6.400 N	104° 53' 23.845 W
4,900.00	4.38	142.170	4,879.19	-332.95	231.22	1,426,215.64	3,169,651.77	40° 30' 6.340 N	104° 53' 23.782 W
4,996.00	3.78	141.330	4,974.95	-338.32	235.45	1,426,210.30	3,169,656.04	40° 30' 6.287 N	104° 53' 23.728 W
5,091.00	2.15	148.070	5,069.82	-342.27	238.35	1,426,206.37	3,169,658.96	40° 30' 6.248 N	104° 53' 23.690 W
5,187.00	3.40	145.450	5,165.70	-346.15	240.91	1,426,202.51	3,169,661.56	40° 30' 6.209 N	104° 53' 23.657 W
5,282.00	3.93	151.330	5,260.51	-351.32	244.07	1,426,197.36	3,169,664.75	40° 30' 6.158 N	104° 53' 23.616 W
5,377.00	4.37	154.910	5,355.26	-357.46	247.17	1,426,191.24	3,169,667.89	40° 30' 6.098 N	104° 53' 23.576 W
5,473.00	4.47	162.380	5,450.97	-364.34	249.85	1,426,184.38	3,169,670.62	40° 30' 6.030 N	104° 53' 23.541 W
5,569.00	5.90	145.460	5,546.58	-371.97	253.78	1,426,176.78	3,169,674.60	40° 30' 5.954 N	104° 53' 23.490 W
5,664.00	7.06	165.190	5,640.99	-381.63	258.05	1,426,167.14	3,169,678.93	40° 30' 5.859 N	104° 53' 23.435 W
5,760.00	6.04	167.280	5,736.36	-392.26	260.67	1,426,156.53	3,169,681.62	40° 30' 5.754 N	104° 53' 23.401 W
5,855.00	6.91	147.660	5,830.76	-401.97	264.82	1,426,146.85	3,169,685.85	40° 30' 5.658 N	104° 53' 23.347 W
5,950.00	4.57	152.250	5,925.28	-410.15	269.64	1,426,138.71	3,169,690.73	40° 30' 5.577 N	104° 53' 23.285 W

Company:	Extraction Oil & Gas	Local Co-ordinate Reference:	Well Winder South 1
Project:	Weld County, CO NAD 83	TVD Reference:	GL 4854' & KB 25' @ 4879.00ft (Patterson 346)
Site:	Winder South Pad	MD Reference:	GL 4854' & KB 25' @ 4879.00ft (Patterson 346)
Well:	Winder South 1	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Casper District

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
6,046.00	6.18	146.030	6,020.86	-417.82	274.31	1,426,131.07	3,169,695.45	40° 30' 5.501 N	104° 53' 23.225 W
6,141.00	6.59	152.040	6,115.27	-426.87	279.73	1,426,122.05	3,169,700.92	40° 30' 5.412 N	104° 53' 23.154 W
6,236.00	5.67	151.260	6,209.73	-435.80	284.54	1,426,113.15	3,169,705.80	40° 30' 5.323 N	104° 53' 23.092 W
6,331.00	4.72	152.820	6,304.33	-443.40	288.58	1,426,105.59	3,169,709.89	40° 30' 5.248 N	104° 53' 23.040 W
6,427.00	4.87	149.350	6,400.00	-450.42	292.46	1,426,098.60	3,169,713.82	40° 30' 5.179 N	104° 53' 22.990 W
6,522.00	4.61	143.730	6,494.67	-456.96	296.78	1,426,092.08	3,169,718.18	40° 30' 5.114 N	104° 53' 22.934 W
6,617.00	4.84	159.120	6,589.35	-463.79	300.46	1,426,085.28	3,169,721.91	40° 30' 5.047 N	104° 53' 22.886 W
6,711.00	6.13	195.150	6,682.95	-472.34	300.56	1,426,076.73	3,169,722.07	40° 30' 4.962 N	104° 53' 22.885 W
6,806.00	14.05	231.160	6,776.48	-484.50	290.23	1,426,064.50	3,169,711.82	40° 30' 4.842 N	104° 53' 23.018 W
6,902.00	25.90	249.240	6,866.63	-499.30	261.42	1,426,049.50	3,169,683.12	40° 30' 4.696 N	104° 53' 23.391 W
6,997.00	34.53	262.620	6,948.74	-510.15	215.18	1,426,038.34	3,169,636.95	40° 30' 4.589 N	104° 53' 23.990 W
7,093.00	44.60	268.430	7,022.67	-514.58	154.33	1,426,033.49	3,169,576.13	40° 30' 4.545 N	104° 53' 24.778 W
7,188.00	53.84	270.400	7,084.66	-515.23	82.48	1,426,032.35	3,169,504.29	40° 30' 4.539 N	104° 53' 25.708 W
7,209.84	55.58	271.247	7,097.28	-514.97	64.66	1,426,032.48	3,169,486.46	40° 30' 4.541 N	104° 53' 25.939 W
Cross 460' Setback									
7,283.00	61.45	273.850	7,135.47	-512.15	2.37	1,426,034.87	3,169,424.15	40° 30' 4.569 N	104° 53' 26.745 W
7,378.00	73.88	273.500	7,171.50	-506.54	-85.16	1,426,039.88	3,169,336.60	40° 30' 4.624 N	104° 53' 27.878 W
7,473.00	84.28	272.150	7,189.48	-501.97	-178.19	1,426,043.81	3,169,243.53	40° 30' 4.670 N	104° 53' 29.082 W
7,569.00	90.40	270.350	7,193.93	-499.88	-274.02	1,426,045.24	3,169,147.70	40° 30' 4.690 N	104° 53' 30.323 W
7,695.00	89.29	269.580	7,194.27	-499.96	-400.01	1,426,044.30	3,169,021.70	40° 30' 4.689 N	104° 53' 31.954 W
7,790.00	89.43	269.550	7,195.33	-500.68	-495.00	1,426,042.92	3,168,926.72	40° 30' 4.682 N	104° 53' 33.184 W
7,885.00	89.33	269.600	7,196.36	-501.39	-590.00	1,426,041.57	3,168,831.73	40° 30' 4.675 N	104° 53' 34.413 W
7,981.00	89.73	270.220	7,197.15	-501.54	-685.99	1,426,040.76	3,168,735.74	40° 30' 4.674 N	104° 53' 35.656 W
8,076.00	90.91	270.230	7,196.62	-501.16	-780.99	1,426,040.48	3,168,640.75	40° 30' 4.677 N	104° 53' 36.886 W
8,171.00	89.70	269.910	7,196.11	-501.05	-875.99	1,426,039.94	3,168,545.75	40° 30' 4.678 N	104° 53' 38.115 W
8,267.00	90.50	269.280	7,195.94	-501.73	-971.98	1,426,038.60	3,168,449.76	40° 30' 4.672 N	104° 53' 39.358 W
8,362.00	90.10	268.770	7,195.45	-503.34	-1,066.97	1,426,036.33	3,168,354.79	40° 30' 4.656 N	104° 53' 40.588 W
8,458.00	90.40	270.120	7,195.03	-504.27	-1,162.96	1,426,034.74	3,168,258.81	40° 30' 4.646 N	104° 53' 41.830 W
8,553.00	90.57	270.170	7,194.22	-504.03	-1,257.95	1,426,034.33	3,168,163.81	40° 30' 4.649 N	104° 53' 43.060 W
8,648.00	90.87	269.970	7,193.03	-503.92	-1,352.95	1,426,033.80	3,168,068.82	40° 30' 4.650 N	104° 53' 44.290 W
8,744.00	90.77	270.750	7,191.66	-503.31	-1,448.93	1,426,033.74	3,167,972.83	40° 30' 4.656 N	104° 53' 45.532 W
8,839.00	89.19	271.960	7,191.69	-501.07	-1,543.90	1,426,035.33	3,167,877.85	40° 30' 4.678 N	104° 53' 46.762 W
8,934.00	88.99	271.010	7,193.20	-498.61	-1,638.86	1,426,037.14	3,167,782.88	40° 30' 4.702 N	104° 53' 47.991 W
9,030.00	88.22	270.400	7,195.53	-497.42	-1,734.82	1,426,037.66	3,167,686.91	40° 30' 4.714 N	104° 53' 49.233 W
9,125.00	89.80	270.860	7,197.18	-496.38	-1,829.80	1,426,038.06	3,167,591.93	40° 30' 4.724 N	104° 53' 50.463 W
9,221.00	90.03	270.510	7,197.32	-495.23	-1,925.79	1,426,038.54	3,167,495.93	40° 30' 4.735 N	104° 53' 51.705 W
9,316.00	90.54	270.820	7,196.85	-494.13	-2,020.78	1,426,038.99	3,167,400.93	40° 30' 4.746 N	104° 53' 52.935 W
9,411.00	92.42	271.270	7,194.39	-492.40	-2,115.73	1,426,040.07	3,167,305.98	40° 30' 4.763 N	104° 53' 54.164 W
9,507.00	92.96	271.040	7,189.89	-490.46	-2,211.60	1,426,041.35	3,167,210.09	40° 30' 4.782 N	104° 53' 55.405 W
9,602.00	91.24	270.550	7,186.41	-489.15	-2,306.53	1,426,042.01	3,167,115.16	40° 30' 4.795 N	104° 53' 56.634 W
9,698.00	91.11	269.750	7,184.44	-488.90	-2,402.51	1,426,041.60	3,167,019.18	40° 30' 4.798 N	104° 53' 57.877 W
9,793.00	90.34	269.910	7,183.24	-489.18	-2,497.50	1,426,040.67	3,166,924.20	40° 30' 4.795 N	104° 53' 59.106 W
9,889.00	89.50	270.010	7,183.37	-489.25	-2,593.50	1,426,039.94	3,166,828.20	40° 30' 4.794 N	104° 54' 0.349 W
9,984.00	88.39	270.550	7,185.12	-488.78	-2,688.48	1,426,039.75	3,166,733.22	40° 30' 4.798 N	104° 54' 1.579 W
10,080.00	90.13	271.760	7,186.36	-486.85	-2,784.45	1,426,041.03	3,166,637.24	40° 30' 4.817 N	104° 54' 2.821 W
10,175.00	90.40	271.990	7,185.92	-483.74	-2,879.39	1,426,043.49	3,166,542.27	40° 30' 4.848 N	104° 54' 4.050 W
10,271.00	89.77	271.540	7,185.78	-480.78	-2,975.35	1,426,045.78	3,166,446.30	40° 30' 4.877 N	104° 54' 5.292 W
10,366.00	90.24	270.050	7,185.77	-479.46	-3,070.33	1,426,046.45	3,166,351.31	40° 30' 4.890 N	104° 54' 6.522 W
10,461.00	91.85	269.620	7,184.04	-479.74	-3,165.31	1,426,045.52	3,166,256.33	40° 30' 4.887 N	104° 54' 7.751 W
10,557.00	91.78	269.430	7,181.00	-480.53	-3,261.26	1,426,044.07	3,166,160.39	40° 30' 4.879 N	104° 54' 8.993 W
10,652.00	91.48	268.530	7,178.29	-482.22	-3,356.21	1,426,041.73	3,166,065.46	40° 30' 4.862 N	104° 54' 10.223 W
10,747.00	91.11	268.360	7,176.15	-484.80	-3,451.15	1,426,038.50	3,165,970.54	40° 30' 4.837 N	104° 54' 11.452 W
10,842.00	91.61	268.500	7,173.89	-487.40	-3,546.09	1,426,035.24	3,165,875.62	40° 30' 4.811 N	104° 54' 12.681 W
10,937.00	91.95	268.700	7,170.94	-489.72	-3,641.01	1,426,032.27	3,165,780.72	40° 30' 4.788 N	104° 54' 13.909 W
11,033.00	92.35	268.240	7,167.34	-492.28	-3,736.91	1,426,029.05	3,165,684.84	40° 30' 4.762 N	104° 54' 15.151 W

Company:	Extraction Oil & Gas	Local Co-ordinate Reference:	Well Winder South 1
Project:	Weld County, CO NAD 83	TVD Reference:	GL 4854' & KB 25' @ 4879.00ft (Patterson 346)
Site:	Winder South Pad	MD Reference:	GL 4854' & KB 25' @ 4879.00ft (Patterson 346)
Well:	Winder South 1	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Casper District

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
11,128.00	91.68	267.760	7,164.00	-495.60	-3,831.79	1,426,025.08	3,165,589.98	40° 30' 4.730 N	104° 54' 16.379 W
11,223.00	92.76	269.240	7,160.32	-498.08	-3,926.68	1,426,021.95	3,165,495.11	40° 30' 4.705 N	104° 54' 17.607 W
11,318.00	92.89	270.470	7,155.64	-498.32	-4,021.57	1,426,021.06	3,165,400.23	40° 30' 4.702 N	104° 54' 18.836 W
11,414.00	92.85	270.230	7,150.83	-497.74	-4,117.44	1,426,020.98	3,165,304.35	40° 30' 4.708 N	104° 54' 20.077 W
11,509.00	93.26	270.250	7,145.77	-497.34	-4,212.31	1,426,020.73	3,165,209.49	40° 30' 4.712 N	104° 54' 21.305 W
11,604.00	92.32	270.730	7,141.14	-496.53	-4,307.19	1,426,020.89	3,165,114.60	40° 30' 4.720 N	104° 54' 22.533 W
11,700.00	93.17	270.740	7,136.54	-495.30	-4,403.07	1,426,021.46	3,165,018.71	40° 30' 4.732 N	104° 54' 23.774 W
11,795.00	91.24	270.040	7,132.89	-494.65	-4,497.99	1,426,021.45	3,164,923.79	40° 30' 4.738 N	104° 54' 25.003 W
11,891.00	90.67	269.960	7,131.29	-494.65	-4,593.98	1,426,020.79	3,164,827.81	40° 30' 4.738 N	104° 54' 26.246 W
11,986.00	92.46	272.190	7,128.69	-492.87	-4,688.92	1,426,021.92	3,164,732.86	40° 30' 4.755 N	104° 54' 27.475 W
12,082.00	93.09	272.150	7,124.05	-489.24	-4,784.74	1,426,024.89	3,164,637.02	40° 30' 4.791 N	104° 54' 28.715 W
12,177.00	92.85	271.550	7,119.12	-486.18	-4,879.56	1,426,027.30	3,164,542.18	40° 30' 4.821 N	104° 54' 29.943 W
12,272.00	93.73	272.450	7,113.67	-482.87	-4,974.34	1,426,029.96	3,164,447.37	40° 30' 4.853 N	104° 54' 31.170 W
12,367.00	92.49	271.360	7,108.52	-479.72	-5,069.15	1,426,032.46	3,164,352.55	40° 30' 4.884 N	104° 54' 32.397 W
12,463.00	92.21	269.440	7,104.58	-479.05	-5,165.06	1,426,032.47	3,164,256.63	40° 30' 4.891 N	104° 54' 33.639 W
12,558.00	92.19	269.460	7,100.94	-479.96	-5,259.99	1,426,030.91	3,164,161.72	40° 30' 4.881 N	104° 54' 34.867 W
12,653.00	91.84	268.540	7,097.59	-481.61	-5,354.91	1,426,028.60	3,164,066.81	40° 30' 4.865 N	104° 54' 36.096 W
12,748.00	92.58	269.260	7,093.93	-483.44	-5,449.82	1,426,026.13	3,163,971.91	40° 30' 4.847 N	104° 54' 37.325 W
12,844.00	93.05	269.490	7,089.22	-484.48	-5,545.70	1,426,024.42	3,163,876.04	40° 30' 4.836 N	104° 54' 38.566 W
12,939.00	91.04	268.890	7,085.83	-485.82	-5,640.62	1,426,022.43	3,163,781.13	40° 30' 4.823 N	104° 54' 39.795 W
13,034.00	91.01	269.680	7,084.13	-487.01	-5,735.60	1,426,020.59	3,163,686.16	40° 30' 4.811 N	104° 54' 41.024 W
13,129.00	91.01	269.680	7,082.45	-487.54	-5,830.59	1,426,019.41	3,163,591.18	40° 30' 4.805 N	104° 54' 42.254 W
13,224.00	90.70	269.810	7,081.04	-487.96	-5,925.57	1,426,018.33	3,163,496.20	40° 30' 4.801 N	104° 54' 43.484 W
13,320.00	90.50	269.920	7,080.03	-488.19	-6,021.57	1,426,017.45	3,163,400.21	40° 30' 4.798 N	104° 54' 44.726 W
13,415.00	91.04	270.620	7,078.75	-487.74	-6,116.56	1,426,017.24	3,163,305.22	40° 30' 4.803 N	104° 54' 45.956 W
13,510.00	91.88	271.600	7,076.33	-485.90	-6,211.51	1,426,018.43	3,163,210.26	40° 30' 4.821 N	104° 54' 47.185 W
13,605.00	92.18	272.150	7,072.97	-482.80	-6,306.40	1,426,020.88	3,163,115.35	40° 30' 4.851 N	104° 54' 48.413 W
13,700.00	91.44	271.860	7,069.97	-479.47	-6,401.29	1,426,023.55	3,163,020.44	40° 30' 4.884 N	104° 54' 49.642 W
13,795.00	91.38	271.150	7,067.63	-476.98	-6,496.23	1,426,025.40	3,162,925.49	40° 30' 4.908 N	104° 54' 50.871 W
13,890.00	89.30	269.060	7,067.07	-476.81	-6,591.22	1,426,024.92	3,162,830.50	40° 30' 4.909 N	104° 54' 52.100 W
13,985.00	89.36	269.510	7,068.18	-477.99	-6,686.20	1,426,023.08	3,162,735.52	40° 30' 4.898 N	104° 54' 53.330 W
14,080.00	88.76	269.130	7,069.73	-479.12	-6,781.18	1,426,021.30	3,162,640.56	40° 30' 4.886 N	104° 54' 54.560 W
14,175.00	88.76	269.550	7,071.79	-480.21	-6,876.15	1,426,019.55	3,162,545.59	40° 30' 4.875 N	104° 54' 55.789 W
14,271.00	89.53	270.040	7,073.22	-480.56	-6,972.14	1,426,018.55	3,162,449.61	40° 30' 4.871 N	104° 54' 57.032 W
14,366.00	89.77	269.900	7,073.80	-480.61	-7,067.14	1,426,017.85	3,162,354.62	40° 30' 4.871 N	104° 54' 58.261 W
14,461.00	89.83	270.550	7,074.14	-480.23	-7,162.14	1,426,017.57	3,162,259.62	40° 30' 4.874 N	104° 54' 59.491 W
14,556.00	90.67	270.530	7,073.72	-479.34	-7,257.13	1,426,017.81	3,162,164.62	40° 30' 4.883 N	104° 55' 0.721 W
14,651.00	91.11	271.450	7,072.24	-477.70	-7,352.10	1,426,018.80	3,162,069.64	40° 30' 4.899 N	104° 55' 1.950 W
14,746.00	91.04	273.000	7,070.46	-474.01	-7,447.01	1,426,021.83	3,161,974.71	40° 30' 4.935 N	104° 55' 3.179 W
14,841.00	90.84	271.570	7,068.90	-470.22	-7,541.92	1,426,024.97	3,161,879.77	40° 30' 4.972 N	104° 55' 4.408 W
14,936.00	90.67	270.740	7,067.65	-468.31	-7,636.89	1,426,026.23	3,161,784.79	40° 30' 4.990 N	104° 55' 5.637 W
15,031.00	90.57	270.480	7,066.62	-467.30	-7,731.88	1,426,026.59	3,161,689.80	40° 30' 5.000 N	104° 55' 6.867 W
15,126.00	90.07	269.720	7,066.09	-467.13	-7,826.88	1,426,026.10	3,161,594.80	40° 30' 5.002 N	104° 55' 8.096 W
15,221.00	90.47	270.920	7,065.65	-466.60	-7,921.87	1,426,025.98	3,161,499.80	40° 30' 5.006 N	104° 55' 9.326 W
15,317.00	90.20	271.520	7,065.08	-464.56	-8,017.85	1,426,027.37	3,161,403.82	40° 30' 5.026 N	104° 55' 10.569 W
15,411.00	90.84	270.920	7,064.23	-462.55	-8,111.82	1,426,028.72	3,161,309.83	40° 30' 5.046 N	104° 55' 11.785 W
15,506.00	90.54	270.260	7,063.09	-461.58	-8,206.81	1,426,029.05	3,161,214.84	40° 30' 5.055 N	104° 55' 13.015 W
15,602.00	91.21	271.090	7,061.62	-460.45	-8,302.79	1,426,029.52	3,161,118.85	40° 30' 5.066 N	104° 55' 14.257 W
15,697.00	91.31	270.370	7,059.53	-459.24	-8,397.76	1,426,030.08	3,161,023.88	40° 30' 5.078 N	104° 55' 15.487 W
15,793.00	90.47	268.830	7,058.04	-459.91	-8,493.74	1,426,028.75	3,160,927.90	40° 30' 5.071 N	104° 55' 16.729 W
15,888.00	90.40	268.890	7,057.32	-461.80	-8,588.72	1,426,026.20	3,160,832.94	40° 30' 5.052 N	104° 55' 17.959 W
15,983.00	90.84	269.320	7,056.29	-463.28	-8,683.70	1,426,024.07	3,160,737.97	40° 30' 5.037 N	104° 55' 19.188 W
16,078.00	90.40	269.120	7,055.26	-464.57	-8,778.69	1,426,022.12	3,160,643.00	40° 30' 5.024 N	104° 55' 20.418 W
16,174.00	90.50	269.480	7,054.51	-465.75	-8,874.68	1,426,020.29	3,160,547.02	40° 30' 5.012 N	104° 55' 21.661 W
16,270.00	90.10	269.610	7,054.01	-466.51	-8,970.68	1,426,018.87	3,160,451.03	40° 30' 5.004 N	104° 55' 22.903 W

Company:	Extraction Oil & Gas	Local Co-ordinate Reference:	Well Winder South 1
Project:	Weld County, CO NAD 83	TVD Reference:	GL 4854' & KB 25' @ 4879.00ft (Patterson 346)
Site:	Winder South Pad	MD Reference:	GL 4854' & KB 25' @ 4879.00ft (Patterson 346)
Well:	Winder South 1	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Casper District

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
16,365.00	90.07	269.420	7,053.87	-467.31	-9,065.67	1,426,017.41	3,160,356.04	40° 30' 4.996 N	104° 55' 24.133 W
16,460.00	89.77	269.310	7,054.00	-468.36	-9,160.67	1,426,015.70	3,160,261.06	40° 30' 4.985 N	104° 55' 25.363 W
16,555.00	91.31	270.000	7,053.10	-468.94	-9,255.66	1,426,014.48	3,160,166.07	40° 30' 4.979 N	104° 55' 26.592 W
16,650.00	91.27	269.330	7,050.96	-469.49	-9,350.63	1,426,013.27	3,160,071.11	40° 30' 4.973 N	104° 55' 27.822 W
16,745.00	90.87	268.930	7,049.19	-470.93	-9,445.60	1,426,011.18	3,159,976.15	40° 30' 4.958 N	104° 55' 29.051 W
16,789.41	90.96	269.178	7,048.48	-471.67	-9,490.00	1,426,010.14	3,159,931.75	40° 30' 4.951 N	104° 55' 29.626 W
Cross 460' Setback line									
16,840.00	91.07	269.460	7,047.58	-472.27	-9,540.58	1,426,009.19	3,159,881.18	40° 30' 4.945 N	104° 55' 30.281 W
16,898.00	91.48	270.090	7,046.29	-472.50	-9,598.56	1,426,008.56	3,159,823.20	40° 30' 4.942 N	104° 55' 31.031 W
Last SDI MWD Survey									
16,960.00	91.48	270.090	7,044.69	-472.40	-9,660.54	1,426,008.24	3,159,761.22	40° 30' 4.943 N	104° 55' 31.834 W
Projection to TD									

Design Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
136.00	135.99	0.45	-1.10	First Helmer MWD Survey
1,501.00	1,494.40	-80.49	89.50	Last Helmer MWD Survey
1,501.00	1,494.40	-80.49	89.50	TIP to Surface
1,662.00	1,654.24	-93.48	103.83	First SDI MWD Survey
7,209.84	7,097.28	-514.97	64.66	Cross 460' Setback
16,789.41	7,048.48	-471.67	-9,490.00	Cross 460' Setback line
16,898.00	7,046.29	-472.50	-9,598.56	Last SDI MWD Survey
16,960.00	7,044.69	-472.40	-9,660.54	Projection to TD

Checked By: _____ Approved By: _____ Date: _____



JOB NO.: 376608
Company: Extraction Oil & Gas
LOCATION: Winder South
RIG NAME: Patterson 346
STATE: Colorado
COUNTY: Weld
WELL NAME: Winder South 1
Lead Directional : Scott Sanford

Report Time: 2400 **1 of 7**
API JOB # 05-123-43402
WORK ORDER#
FIELD: Wattenburg
Township: 6N
Range/Section 67W 9
Company Man Hugh McGraw
2nd Dir Hand : Colby Hansen

From Sunday, August 14, 2016 at 0000 to Sunday, August 14, 2016 at 2400

DAILY TOTALS		ASSEMBLY TOTALS									
Start Depth	0.00	BHA #	Motor SN / R.S. SN	Slide Ftg	Slide Hrs	Rotate Ftg	Rotate Hrs	Circ Hrs	D & C Hrs	BHA Ftg	Avg ROP
End Depth	0.00										
Below Rot Hrs.	0.00										
Total Drilled:	0.00	Drilling Parameters		Mud Record		Bit Record		Current BHA # 0			
Avg. Total ROP:	NA										
Slide Footage:	0.00	WOB:	0	Weight:	0	Bit No:					
Slide Hours	0.00	Rot Wt:	0	Visc:	0	Model					
Avg. Slide ROP:	NA	Pick UP:	0	Chlorides:	0	SN.:					
Rotate Footage:	0.00	Slack Off:	0	YP:	0	MFG.					
Rotary Hours	0.00	SPP:	0	PV:	0	Type					
Avg. Rot ROP:	NA	Flow:	0 - 0	PH:	0	IADC					
Circ Hours	0.00	SPM:	0	GAS:	0	JETS					
Ream Hours	0.00	Rot. RPM	-	SAND:	0	TFA:					
Rotary Hrs%:	NA	Mot RPM:	-	WL:	0	Hole ID: N/A					
Slide Hrs%:	NA	Incl. In:	0	SOLID:	0	Bit Hrs:					
Rotary Ftg%:	NA	Azm. In:	0	BHT°:	0	Bit Ftg:					
Slide Ftg%:	NA	Incl. Out:	0	Flow T°:	0	PUMPS					
CASING		Azm. Out:	0	Oil %:	0	Liner	0	0			
Size	Lb/Ft	MD	COST BREAKDOWN			Effic.	95.00%	95.00%			
					Gal/Stk	0.00	0.00				
					BBL/Stk	0.000	0.000				

GENERAL COMMENT

Start Time	End Time	Hours	Start Depth	End Depth	Delta Depth	ROP	Activity Code	COMMENT
00:00	24:00	24.00	0	0	0	.00	Standby	Standby to P/U Dir. Tools



JOB NO.: 376608
Company: Extraction Oil & Gas
LOCATION: Winder South
RIG NAME: Patterson 346
STATE: Colorado
COUNTY: Weld
WELL NAME: Winder South 1
Lead Directional : Scott Sanford

Report Time: 2400 **2 of 7**
API JOB # 05-123-43402
WORK ORDER#
FIELD: Wattenburg
Township: 6N
Range/Section 67W 9
Company Man Hugh McGraw
2nd Dir Hand : Colby Hansen

From Monday, August 15, 2016 at 0000 to Monday, August 15, 2016 at 2400

DAILY TOTALS		ASSEMBLY TOTALS													
Start Depth	1585.00	BHA #	Motor SN / R.S. SN	Slide Ftg	Slide Hrs	Rotate Ftg	Rotate Hrs	Circ Hrs	D & C Hrs	BHA Ftg	Avg ROP				
End Depth	1730.00	1	650-0070	535.00	5.55	4,617.00	8.72	6.52	20.78	5,152.00	256.53				
Below Rot Hrs.	6.25														
Total Drilled:	145.00														
Avg. Total ROP:	310.71														
Slide Footage:	0.00	Drilling Parameters		Mud Record		Bit Record		Current BHA # 1							
Slide Hours	0.00														
Avg. Slide ROP:	NA	WOB:	20	Weight:	0	Model	PDC	PDC 2.0 FBH Non Mag DC Pony Non Mag DC HANG OFF SUB Pony Non Mag DC Non Mag DC Filter Sub 3 Stands H.W.D.P.							
Rotate Footage:	145.00	Rot Wt:	0	Visc:	0	SN.:	A230298								
Rotary Hours	0.47	Pick UP:	0	Chlorides:	0	MFG.	REED								
Avg. Rot ROP:	310.71	Slack Off:	0	YP:	0	Type	PDC								
Circ Hours	0.70	SPP:	2850	PV:	0	IADC									
Ream Hours	0.70	Flow:	0 - 700	PH:	0	JETS	7-12								
Rotary Hrs%:	100.00	SPM:	240	GAS:	0	TFA:	0.773								
Slide Hrs%:	.00	Rot. RPM	40 - 40	SAND:	0	Hole ID:	7 7/8								
Rotary Ftg%:	100.00	Mot RPM:	-	WL:	0	Bit Hrs:	14.27								
Slide Ftg%:	.00	Incl. In:	0	SOLID:	0	Bit Ftg:	5152.00								
CASING		Azm. In:	0	BHT°:	0	PUMPS									
Size	Lb/Ft	Incl. Out:	0	Flow T°:	0	Liner	0					0			
MD		Azm. Out:	0	Oil %:	0	Stroke	0	0							
		COST BREAKDOWN				Effic.	95.00%	95.00%							
						Gal/Stk	0.00	0.00							
						BBL/Stk	0.000	0.000							

GENERAL COMMENT

Start Time	End Time	Hours	Start Depth	End Depth	Delta Depth	ROP	Activity Code	COMMENT
00:00	17:45	17.75	0	0	0	.00	Standby	
17:45	18:45	1.00	0	0	0	.00	Other	Pick up Directional tools
18:45	21:43	2.97	0	0	0	.00	TIH	TIH
21:43	22:25	0.70	1534	1585	51	72.86	Reaming	Drill out float equip. Displace w/OBM
22:25	22:53	0.47	1585	1730	145	310.71	Drilling	
22:53	23:00	0.12	1730	1730	0	.00	Survey & Conn.	Survey & Conn.@1662' Inc 7° Azm 132.42°
23:00	24:00	1.00	1730	1730	0	.00	Rig repair	Rig repair



JOB NO.: 376608
Company: Extraction Oil & Gas
LOCATION: Winder South
RIG NAME: Patterson 346
STATE: Colorado
COUNTY: Weld
WELL NAME: Winder South 1
Lead Directional : Chris Apodaca

Report Time: 2400 **3 of 7**
API JOB # 05-123-43402
WORK ORDER#
FIELD: Wattenburg
Township: 6N
Range/Section 67W 9
Company Man Hugh McGraw
2nd Dir Hand : Colby Hansen

From Tuesday, August 16, 2016 at 0000 to Tuesday, August 16, 2016 at 2400

DAILY TOTALS		ASSEMBLY TOTALS									
Start Depth	1730.00	BHA #	Motor SN / R.S. SN	Slide Ftg	Slide Hrs	Rotate Ftg	Rotate Hrs	Circ Hrs	D & C Hrs	BHA Ftg	Avg ROP
End Depth	6304.00	1	650-0070	535.00	5.55	4,617.00	8.72	6.52	20.78	5,152.00	256.53
Below Rot Hrs.	24.00										
Total Drilled:	4574.00										
Avg. Total ROP:	389.83										
Slide Footage:	433.00	Drilling Parameters WOB: 34 Rot Wt: 0 Pick UP: 0 Slack Off: 0 SPP: 3900 Flow: 700 - 700 SPM: 240 Rot. RPM 40 - 50 Mot RPM: 40 - 50 Incl. In: 0 Azm. In: 0 Incl. Out: 0 Azm. Out: 0		Mud Record Weight: 0 Visc: 0 Chlorides: 0 YP: 0 PV: 0 PH: 0 GAS: 0 SAND: 0 WL: 0 SOLID: 0 BHT°: 0 Flow T°: 0 Oil %: 0		Bit Record Bit No: Model PDC SN.: A230298 MFG. REED Type PDC IADC JETS 7-12 TFA: 0.773 Hole ID: 7 7/8 Bit Hrs: 14.27 Bit Ftg: 5152.00		Current BHA # 1 PDC 2.0 FBH Non Mag DC Pony Non Mag DC HANG OFF SUB Pony Non Mag DC Non Mag DC Filter Sub 3 Stands H.W.D.P.			
Slide Hours	4.27										
Avg. Slide ROP:	101.48										
Rotate Footage:	4141.00										
Rotary Hours	7.47										
Avg. Rot ROP:	554.60										
Circ Hours	4.42										
Ream Hours	0.00										
Rotary Hrs%:	63.64										
Slide Hrs%:	36.36										
Rotary Ftg%:	90.53										
Slide Ftg%:	9.47										
Casing											
Size	Lb/Ft	MD	COST BREAKDOWN					PUMPS			
								Liner	0	0	
								Stroke	0	0	
								Effic.	95.00%	95.00%	
								Gal/Stk	0.00	0.00	
								BBL/Stk	0.000	0.000	

GENERAL COMMENT

Start Time	End Time	Hours	Start Depth	End Depth	Delta Depth	ROP	Activity Code	COMMENT
00:00	02:10	2.17	1730	1730	0	.00	Rig repair	Rig repair
02:10	02:24	0.23	1730	1730	0	.00	Other	Troubleshoot MWD gear
02:24	02:28	0.07	1730	1750	20	300.00	Drilling	Drilling - (WOB:20;GPM :700;RPM:40)
02:28	02:32	0.07	1750	1758	8	120.00	Sliding	Drilling - (WOB:20;GPM :700;RPM:40)
02:32	02:38	0.10	1758	1825	67	670.00	Drilling	Drilling - (WOB:30;GPM :700;RPM:50)
02:38	02:48	0.17	1825	1825	0	.00	Survey & Conn.	Survey & Conn.@1757' Inc 5.12° Azm 138.95°
02:48	02:51	0.05	1825	1873	48	960.00	Drilling	Drilling - (WOB:30;GPM :700;RPM:50)
02:51	02:54	0.05	1873	1878	5	100.00	Sliding	Sliding - (WOB:20;GPM :700;TFO:90R)
02:54	02:56	0.03	1878	1920	42	1260.00	Drilling	Drilling - (WOB:30;GPM :700;RPM:50)
02:56	03:13	0.28	1920	1920	0	.00	Survey & Conn.	Survey & Conn.@1947' Inc 3.43° Azm 165.29°
03:13	03:24	0.18	1920	2015	95	518.18	Drilling	Drilling - (WOB:30;GPM :700;RPM:50)
03:24	03:31	0.12	2015	2015	0	.00	Survey & Conn.	Survey & Conn.@1947' Inc 3.43° Azm 165.29°
03:31	03:35	0.07	2015	2072	57	855.00	Drilling	Drilling - (WOB:30;GPM :700;RPM:50)
03:35	03:37	0.03	2072	2077	5	150.00	Sliding	Sliding - (WOB:20;GPM :700;TFO:130M)

Start Time	End Time	Hours	Start Depth	End Depth	Delta Depth	ROP	Activity Code	COMMENT
03:37	03:41	0.07	2077	2111	34	510.00	Drilling	Drilling - (WOB:30;GPM :700;RPM:50)
03:41	03:47	0.10	2111	2111	0	.00	Survey & Conn.	Survey & Conn.@2043' Inc 2.88° Azm 169.7°
03:47	03:51	0.07	2111	2162	51	765.00	Drilling	Drilling - (WOB:30;GPM :700;RPM:50)
03:51	03:54	0.05	2162	2169	7	140.00	Sliding	Sliding - (WOB:20;GPM :700;TFO:110M)
03:54	03:58	0.07	2169	2206	37	555.00	Drilling	Drilling - (WOB:30;GPM :700;RPM:50)
03:58	04:03	0.08	2206	2206	0	.00	Survey & Conn.	Survey & Conn.@2138' Inc 1.78° Azm 183.25°
04:03	04:05	0.03	2206	2226	20	600.00	Drilling	Drilling - (WOB:30;GPM :700;RPM:50)
04:05	04:12	0.12	2226	2241	15	128.57	Sliding	Sliding - (WOB:20;GPM :700;TFO:130M)
04:12	04:19	0.12	2241	2302	61	522.86	Drilling	Drilling - (WOB:30;GPM :700;RPM:50)
04:19	04:24	0.08	2302	2302	0	.00	Survey & Conn.	Survey & Conn.@2234' Inc 3.09° Azm 163.37°
04:24	04:26	0.03	2302	2322	20	600.00	Drilling	Drilling - (WOB:30;GPM :700;RPM:50)
04:26	04:30	0.07	2322	2330	8	120.00	Sliding	Sliding - (WOB:20;GPM :700;TFO:150M)
04:30	04:40	0.17	2330	2397	67	402.00	Drilling	Drilling - (WOB:30;GPM :700;RPM:50)
04:40	04:46	0.10	2397	2397	0	.00	Survey & Conn.	Survey & Conn.@2329' Inc 2.73° Azm 174.55°
04:46	04:49	0.05	2397	2422	25	500.00	Drilling	Drilling - (WOB:30;GPM :700;RPM:50)
04:49	04:54	0.08	2422	2440	18	216.00	Sliding	Sliding - (WOB:20;GPM :700;TFO:135M)
04:54	05:02	0.13	2440	2492	52	390.00	Drilling	Drilling - (WOB:30;GPM :700;RPM:50)
05:02	05:08	0.10	2492	2492	0	.00	Survey & Conn.	Survey & Conn.@2424' Inc 2.89° Azm 180.75°
05:08	05:10	0.03	2492	2512	20	600.00	Drilling	Drilling - (WOB:30;GPM :700;RPM:50)
05:10	05:16	0.10	2512	2532	20	200.00	Sliding	Sliding - (WOB:20;GPM :700;TFO:130M)
05:16	05:45	0.48	2532	2532	0	.00	Rig repair	Mud line
05:45	05:50	0.08	2532	2587	55	660.00	Drilling	Drilling - (WOB:30;GPM :700;RPM:50)
05:50	05:55	0.08	2587	2587	0	.00	Survey & Conn.	Survey & Conn.@2519' Inc 5.28° Azm 166.33°
05:55	06:05	0.17	2587	2664	77	462.00	Drilling	Drilling - (WOB:30;GPM :700;RPM:50)
06:05	06:14	0.15	2664	2664	0	.00	Circulating	Circulating - Make Up Stand
06:14	06:16	0.03	2664	2682	18	540.00	Drilling	Drilling - (WOB:30;GPM :700;RPM:50)
06:16	06:25	0.15	2682	2682	0	.00	Survey & Conn.	Survey & Conn.@2614' Inc 6.98° Azm 166.94°
06:25	06:27	0.03	2682	2703	21	630.00	Drilling	Drilling - (WOB:30;GPM :700;RPM:50)
06:27	06:38	0.18	2703	2708	5	27.27	Sliding	Sliding - (WOB:20;GPM :700;TFO:90L)
06:38	06:45	0.12	2708	2778	70	600.00	Drilling	Drilling - (WOB:30;GPM :700;RPM:50)
06:45	06:52	0.12	2778	2778	0	.00	Survey & Conn.	Survey & Conn.@2710' Inc 6.83° Azm 167.25°
06:52	06:54	0.03	2778	2794	16	480.00	Drilling	Drilling - (WOB:30;GPM :700;RPM:50)
06:54	07:00	0.10	2794	2802	8	80.00	Sliding	Sliding - (WOB:20;GPM :700;TFO:60L)
07:00	07:09	0.15	2802	2873	71	473.33	Drilling	Drilling - (WOB:30;GPM :700;RPM:50)
07:09	07:17	0.13	2873	2873	0	.00	Survey & Conn.	Survey & Conn.@2805' Inc 7.58° Azm 168.83°
07:17	07:20	0.05	2873	2892	19	380.00	Drilling	Drilling - (WOB:30;GPM :700;RPM:50)
07:20	07:35	0.25	2892	2908	16	64.00	Sliding	Sliding - (WOB:20;GPM :700;TFO:140L)
07:35	07:40	0.08	2908	2968	60	720.00	Drilling	Drilling - (WOB:30;GPM :700;RPM:50)
07:40	07:47	0.12	2968	2968	0	.00	Survey & Conn.	Survey & Conn.@2900' Inc 8.33° Azm 169.24°
07:47	07:49	0.03	2968	2983	15	450.00	Drilling	Drilling - (WOB:30;GPM :700;RPM:50)
07:49	08:00	0.18	2983	3001	18	98.18	Sliding	Sliding - (WOB:20;GPM :700;TFO:140L)
08:00	08:05	0.08	3001	3068	67	804.00	Drilling	Drilling - (WOB:30;GPM :700;RPM:50)
08:05	08:13	0.13	3068	3068	0	.00	Survey & Conn.	Survey & Conn.@2995' Inc 7.74° Azm 153.73°
08:13	08:15	0.03	3068	3082	14	420.00	Drilling	Drilling - (WOB:30;GPM :700;RPM:50)
08:15	08:20	0.08	3082	3090	8	96.00	Sliding	Sliding - (WOB:20;GPM :700;TFO:135L)
08:20	08:27	0.12	3090	3159	69	591.43	Drilling	Drilling - (WOB:30;GPM :700;RPM:50)
08:27	08:35	0.13	3159	3159	0	.00	Survey & Conn.	Survey & Conn.@3091' Inc 6.42° Azm 135.79°
08:35	08:44	0.15	3159	3254	95	633.33	Drilling	Drilling - (WOB:30;GPM :700;RPM:50)

Start Time	End Time	Hours	Start Depth	End Depth	Delta Depth	ROP	Activity Code	COMMENT
08:44	08:51	0.12	3254	3254	0	.00	Survey & Conn.	Survey & Conn.@3186' Inc 5.64° Azm 131.45°
08:51	09:02	0.18	3254	3350	96	523.64	Drilling	Drilling - (WOB:30;GPM :700;RPM:50)
09:02	09:10	0.13	3350	3350	0	.00	Survey & Conn.	Survey & Conn.@3282' Inc 4.89° Azm 130.65°
09:10	09:12	0.03	3350	3367	17	510.00	Drilling	Drilling - (WOB:30;GPM :700;RPM:50)
09:12	09:20	0.13	3367	3377	10	75.00	Sliding	Sliding - (WOB:20;GPM :700;TFO:50R)
09:20	09:25	0.08	3377	3445	68	816.00	Drilling	Drilling - (WOB:30;GPM :700;RPM:50)
09:25	09:33	0.13	3445	3445	0	.00	Survey & Conn.	Survey & Conn.@3377' Inc 4.79° Azm 143.41°
09:33	09:35	0.03	3445	3463	18	540.00	Drilling	Drilling - (WOB:30;GPM :700;RPM:50)
09:35	09:40	0.08	3463	3475	12	144.00	Sliding	Sliding - (WOB:20;GPM :700;TFO:0G)
09:40	09:52	0.20	3475	3540	65	325.00	Drilling	Drilling - (WOB:30;GPM :700;RPM:50)
09:52	10:00	0.13	3540	3540	0	.00	Survey & Conn.	Survey & Conn.@3472' Inc 5.35° Azm 152.21°
10:00	10:06	0.10	3540	3540	0	.00	Circulating	Circulating - Make Up Stand
10:06	10:11	0.08	3540	3546	6	72.00	Sliding	Sliding - (WOB:20;GPM :700;TFO:60L)
10:11	10:19	0.13	3546	3635	89	667.50	Drilling	Drilling - (WOB:30;GPM :700;RPM:50)
10:19	10:24	0.08	3635	3635	0	.00	Survey & Conn.	Survey & Conn.@3567' Inc 6.33° Azm 143.91°
10:24	10:37	0.22	3635	3635	0	.00	Circulating	Circulating - Make Up Stand
10:37	10:45	0.13	3635	3730	95	712.50	Drilling	Drilling - (WOB:30;GPM :700;RPM:50)
10:45	10:51	0.10	3730	3730	0	.00	Survey & Conn.	Survey & Conn.@3662' Inc 5.86° Azm 144.08°
10:51	10:59	0.13	3730	3730	0	.00	Circulating	Circulating - Make Up Stand
10:59	11:07	0.13	3730	3826	96	720.00	Drilling	Drilling - (WOB:30;GPM :700;RPM:50)
11:07	11:12	0.08	3826	3826	0	.00	Survey & Conn.	Survey & Conn.@3758' Inc 5.92° Azm 143.84°
11:12	11:19	0.12	3826	3826	0	.00	Circulating	Circulating - Make Up Stand
11:19	11:21	0.03	3826	3831	5	150.00	Sliding	Sliding - (WOB:20;GPM :700;TFO:180)
11:21	11:30	0.15	3831	3920	89	593.33	Drilling	Drilling - (WOB:30;GPM :700;RPM:50)
11:30	11:39	0.15	3920	3920	0	.00	Survey & Conn.	Survey & Conn.@3852' Inc 5.3° Azm 141.65°
11:39	11:48	0.15	3920	3920	0	.00	Circulating	Circulating - Make Up Stand
11:48	11:56	0.13	3920	4016	96	720.00	Drilling	Drilling - (WOB:30;GPM :700;RPM:50)
11:56	12:02	0.10	4016	4016	0	.00	Survey & Conn.	Survey & Conn.@3948' Inc 5.13° Azm 143.91°
12:02	12:10	0.13	4016	4016	0	.00	Circulating	Circulating - Make Up Stand
12:10	12:12	0.03	4016	4020	4	120.00	Sliding	Sliding - (WOB:20;GPM :700;TFO:180)
12:12	12:21	0.15	4020	4111	91	606.67	Drilling	Drilling - (WOB:30;GPM :700;RPM:50)
12:21	12:26	0.08	4111	4111	0	.00	Survey & Conn.	Survey & Conn.@4043' Inc 4.17° Azm 148.01°
12:26	12:32	0.10	4111	4111	0	.00	Circulating	Circulating - Make Up Stand
12:32	12:39	0.12	4111	4206	95	814.29	Drilling	Drilling - (WOB:30;GPM :700;RPM:50)
12:39	12:43	0.07	4206	4206	0	.00	Survey & Conn.	Survey & Conn.@4138' Inc 3.84° Azm 153.53°
12:43	12:50	0.12	4206	4206	0	.00	Circulating	Circulating - Make Up Stand
12:50	12:55	0.08	4206	4214	8	96.00	Sliding	Sliding - (WOB:20;GPM :700;TFO:30L)
12:55	13:03	0.13	4214	4301	87	652.50	Drilling	Drilling - (WOB:30;GPM :700;RPM:50)
13:03	13:08	0.08	4301	4301	0	.00	Survey & Conn.	Survey & Conn.@4233' Inc 3.46° Azm 150.82°
13:08	13:15	0.12	4301	4301	0	.00	Circulating	Circulating - Make Up Stand
13:15	13:20	0.08	4301	4315	14	168.00	Sliding	Sliding - (WOB:20;GPM :700;TFO:30L)
13:20	13:28	0.13	4315	4397	82	615.00	Drilling	Drilling - (WOB:30;GPM :700;RPM:50)
13:28	13:33	0.08	4397	4397	0	.00	Survey & Conn.	Survey & Conn.@4329' Inc 3.82° Azm 148.72°
13:33	13:39	0.10	4397	4397	0	.00	Circulating	Circulating - Make Up Stand
13:39	13:43	0.07	4397	4409	12	180.00	Sliding	Sliding - (WOB:20;GPM :700;TFO:30L)
13:43	13:51	0.13	4409	4492	83	622.50	Drilling	Drilling - (WOB:30;GPM :700;RPM:50)
13:51	13:57	0.10	4492	4492	0	.00	Survey & Conn.	Survey & Conn.@4424' Inc 4.86° Azm 150.17°
13:57	14:03	0.10	4492	4492	0	.00	Circulating	Circulating - Make Up Stand

Start Time	End Time	Hours	Start Depth	End Depth	Delta Depth	ROP	Activity Code	COMMENT
14:03	14:12	0.15	4492	4587	95	633.33	Drilling	Drilling - (WOB:30;GPM :700;RPM:50)
14:12	14:18	0.10	4587	4587	0	.00	Survey & Conn.	Survey & Conn.@4519' Inc 4.21° Azm 152.25°
14:18	14:25	0.12	4587	4587	0	.00	Circulating	Circulating - Make Up Stand
14:25	14:28	0.05	4587	4599	12	240.00	Sliding	Sliding - (WOB:20;GPM :700;TFO:30L)
14:28	14:37	0.15	4599	4683	84	560.00	Drilling	Drilling - (WOB:30;GPM :700;RPM:50)
14:37	14:43	0.10	4683	4683	0	.00	Survey & Conn.	Survey & Conn.@4615' Inc 4.78° Azm 147.06°
14:43	14:50	0.12	4683	4683	0	.00	Circulating	Circulating - Make Up Stand
14:50	14:59	0.15	4683	4778	95	633.33	Drilling	Drilling - (WOB:30;GPM :700;RPM:50)
14:59	15:04	0.08	4778	4778	0	.00	Survey & Conn.	Survey & Conn.@4710' Inc 3.4° Azm 150.34°
15:04	15:10	0.10	4778	4778	0	.00	Circulating	Circulating - Make Up Stand
15:10	15:14	0.07	4778	4793	15	225.00	Sliding	Sliding - (WOB:20;GPM :700;TFO:30L)
15:14	15:22	0.13	4793	4873	80	600.00	Drilling	Drilling - (WOB:30;GPM :700;RPM:50)
15:22	15:28	0.10	4873	4873	0	.00	Survey & Conn.	Survey & Conn.@4805' Inc 5.05° Azm 140.7°
15:28	15:36	0.13	4873	4873	0	.00	Circulating	Circulating - Make Up Stand
15:36	15:44	0.13	4873	4968	95	712.50	Drilling	Drilling - (WOB:30;GPM :700;RPM:50)
15:44	15:49	0.08	4968	4968	0	.00	Survey & Conn.	Survey & Conn.@4900' Inc 4.38° Azm 142.17°
15:49	15:57	0.13	4968	4968	0	.00	Circulating	Circulating - Make Up Stand
15:57	16:05	0.13	4968	5064	96	720.00	Drilling	Drilling - (WOB:34;GPM :700;RPM:50)
16:05	16:10	0.08	5064	5064	0	.00	Survey & Conn.	Survey & Conn.@4996' Inc 3.78° Azm 141.33°
16:10	16:16	0.10	5064	5064	0	.00	Circulating	Circulating - Make Up Stand
16:16	16:26	0.17	5064	5079	15	90.00	Sliding	Sliding - (WOB:20;GPM :700;TFO:0)
16:26	16:36	0.17	5079	5159	80	480.00	Drilling	Drilling - (WOB:34;GPM :700;RPM:50)
16:36	16:41	0.08	5159	5159	0	.00	Survey & Conn.	Survey & Conn.@5091' Inc 2.15° Azm 148.07°
16:41	16:48	0.12	5159	5159	0	.00	Circulating	Circulating - Make Up Stand
16:48	16:58	0.17	5159	5184	25	150.00	Sliding	Sliding - (WOB:20;GPM :700;TFO:150M)
16:58	17:06	0.13	5184	5255	71	532.50	Drilling	Drilling - (WOB:34;GPM :700;RPM:50)
17:06	17:11	0.08	5255	5255	0	.00	Survey & Conn.	Survey & Conn.@5187' Inc 3.4° Azm 145.45°
17:11	17:16	0.08	5255	5255	0	.00	Circulating	Circulating - Make Up Stand
17:16	17:23	0.12	5255	5277	22	188.57	Sliding	Sliding - (WOB:20;GPM :700;TFO:0)
17:23	17:31	0.13	5277	5350	73	547.50	Drilling	Drilling - (WOB:34;GPM :700;RPM:50)
17:31	17:36	0.08	5350	5350	0	.00	Survey & Conn.	Survey & Conn.@5282' Inc 3.93° Azm 151.33°
17:36	17:43	0.12	5350	5350	0	.00	Circulating	Circulating
17:43	17:48	0.08	5350	5365	15	180.00	Sliding	Sliding - (WOB:20;GPM :700;TFO:0)
17:48	17:59	0.18	5365	5445	80	436.36	Drilling	Drilling - (WOB:34;GPM :700;RPM:50)
17:59	18:15	0.27	5445	5445	0	.00	Circulating	Circulating-make up stand
18:15	18:31	0.27	5445	5455	10	37.50	Sliding	Sliding - (WOB:20;GPM :700;TFO:0)
18:31	18:41	0.17	5455	5541	86	516.00	Drilling	Drilling - (WOB:34;GPM :700;RPM:50)
18:41	18:49	0.13	5541	5541	0	.00	Connection	Connection
18:49	18:52	0.05	5541	5541	0	.00	Circulating	Circulating
18:52	19:01	0.15	5541	5556	15	100.00	Sliding	Sliding - (WOB:20;GPM :700;TFO:0)
19:01	19:09	0.13	5556	5636	80	600.00	Drilling	Drilling - (WOB:34;GPM :700;RPM:50)
19:09	19:17	0.13	5636	5636	0	.00	Connection	Connection
19:17	19:44	0.45	5636	5666	30	66.67	Sliding	Sliding - (WOB:20;GPM :700;TFO:0)
19:44	19:53	0.15	5666	5732	66	440.00	Drilling	Drilling - (WOB:34;GPM :700;RPM:50)
19:53	19:59	0.10	5732	5732	0	.00	Connection	
19:59	20:10	0.18	5732	5732	0	.00	Circulating	Circulating-make up stand
20:10	20:21	0.18	5732	5828	96	523.64	Drilling	Drilling - (WOB:34;GPM :700;RPM:50)
20:21	20:28	0.12	5828	5828	0	.00	Connection	Connection

Start Time	End Time	Hours	Start Depth	End Depth	Delta Depth	ROP	Activity Code	COMMENT
20:28	20:31	0.05	5828	5828	0	.00	Circulating	Circulating
20:31	20:45	0.23	5828	5848	20	85.71	Sliding	Sliding - (WOB:20;GPM :700;TFO:0)
20:45	20:57	0.20	5848	5923	75	375.00	Drilling	Drilling - (WOB:34;GPM :700;RPM:50)
20:57	21:01	0.07	5923	5923	0	.00	Connection	Connection
21:01	21:12	0.18	5923	5923	0	.00	Circulating	Circulating
21:12	21:19	0.12	5923	6018	95	814.29	Drilling	Drilling - (WOB:34;GPM :700;RPM:50)
21:19	21:25	0.10	6018	6018	0	.00	Connection	Connection
21:25	21:29	0.07	6018	6018	0	.00	Circulating	Circulating
21:29	21:43	0.23	6018	6038	20	85.71	Sliding	Sliding - (WOB:20;GPM :700;TFO:0)
21:43	21:51	0.13	6038	6114	76	570.00	Drilling	Drilling - (WOB:34;GPM :700;RPM:50)
21:51	21:56	0.08	6114	6114	0	.00	Connection	Connection
21:56	22:01	0.08	6114	6114	0	.00	Circulating	Circulating
22:01	22:10	0.15	6114	6129	15	100.00	Sliding	Sliding - (WOB:20;GPM :700;TFO:0)
22:10	22:19	0.15	6129	6209	80	533.33	Drilling	Drilling - (WOB:34;GPM :700;RPM:50)
22:19	22:24	0.08	6209	6209	0	.00	Connection	Connection
22:24	22:56	0.53	6209	6209	0	.00	Circulating	Circulating
22:56	23:06	0.17	6209	6216	7	42.00	Sliding	Sliding - (WOB:20;GPM :700;TFO:0)
23:06	23:14	0.13	6216	6278	62	465.00	Drilling	Drilling - (WOB:34;GPM :700;RPM:50)
23:14	23:41	0.45	6278	6278	0	.00	Circulating	Circulating
23:41	24:00	0.32	6278	6304	26	82.11	Drilling	Drilling - (WOB:34;GPM :700;RPM:50)



JOB NO.: 376608
Company: Extraction Oil & Gas
LOCATION: Winder South
RIG NAME: Patterson 346
STATE: Colorado
COUNTY: Weld
WELL NAME: Winder South 1
Lead Directional : Chris Apodaca

Report Time: 2400 4 of 7
API JOB # 05-123-43402
WORK ORDER#
FIELD: Wattenburg
Township: 6N
Range/Section 67W 9
Company Man Hugh McGraw
2nd Dir Hand : Colby Hansen

From Wednesday, August 17, 2016 at 0000 to Wednesday, August 17, 2016 at 2400

DAILY TOTALS			ASSEMBLY TOTALS								
Start Depth	6304.00	BHA #	Motor SN / R.S. SN	Slide Ftg	Slide Hrs	Rotate Ftg	Rotate Hrs	Circ Hrs	D & C Hrs	BHA Ftg	Avg ROP
End Depth	7628.00	1	650-0070	535.00	5.55	4,617.00	8.72	6.52	20.78	5,152.00	256.53
Below Rot Hrs.	24.00	2	G1669	588.00	4.30	303.00	1.40	.32	6.02	891.00	148.09
Total Drilled:	1324.00	3	G1674	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Avg. Total ROP:	170.47	Drilling Parameters		Mud Record		Bit Record		Current BHA # 3			
Slide Footage:	690.00	WOB: 20		Weight: 0		Bit No: Model PDC		PDC 2.0 FBH Non Mag DC Pony Non Mag DC HANG OFF SUB Pony Non Mag DC Non Mag DC Filter Sub 3 Stands H.W.D.P.			
Slide Hours	5.58	Rot Wt: 0		Visc: 0		SN.: A230298					
Avg. Slide ROP:	123.58	Pick UP: 0		Chlorides: 0		MFG.					
Rotate Footage:	634.00	Slack Off: 0		YP: 0		Type					
Rotary Hours	2.18	SPP: 3700		PV: 0		IADC					
Avg. Rot ROP:	290.38	Flow: 700 - 700		PH: 0		JETS N/A					
Circ Hours	1.72	SPM: 240		GAS: 0		TFA: 0					
Ream Hours	0.00	Rot. RPM 25 - 50		SAND: 0		Hole ID: 7 7/8					
Rotary Hrs%:	28.11	Mot RPM: 25 - 50		WL: 0		Bit Hrs: 14.27					
Slide Hrs%:	71.89	Incl. In: 0		SOLID: 0		Bit Ftg: 5152.00					
Rotary Ftg%:	47.89	Azm. In: 0		BHT°: 0		PUMPS					
Slide Ftg%:	52.11	Incl. Out: 0		Flow T°: 0		Liner 0 0					
Casing			Azm. Out: 0		Oil %: 0		Stroke 0 0				
Size	Lb/Ft	MD	COST BREAKDOWN				Effic. 95.00% 95.00%				
				Gal/Stk 0.00 0.00		BBL/Stk 0.000 0.000					

GENERAL COMMENT

Start Time	End Time	Hours	Start Depth	End Depth	Delta Depth	ROP	Activity Code	COMMENT
00:00	00:06	0.10	6304	6304	0	.00	Connection	Connection
00:06	00:10	0.07	6304	6304	0	.00	Circulating	Survey
00:10	00:18	0.13	6304	6312	8	60.00	Sliding	Sliding - (WOB:20;GPM :700;TFO:0)
00:18	00:30	0.20	6312	6399	87	435.00	Drilling	Drilling - (WOB:34;GPM :700;RPM:50)
00:30	00:35	0.08	6399	6399	0	.00	Connection	Connection
00:35	00:41	0.10	6399	6399	0	.00	Circulating	Circulating
00:41	00:54	0.22	6399	6414	15	69.23	Sliding	Sliding - (WOB:20;GPM :700;TFO:0)
00:54	01:03	0.15	6414	6495	81	540.00	Drilling	Drilling - (WOB:34;GPM :700;RPM:50)
01:03	01:07	0.07	6495	6495	0	.00	Connection	Connection
01:07	01:16	0.15	6495	6495	0	.00	Circulating	Circulating
01:16	01:27	0.18	6495	6507	12	65.45	Sliding	Sliding - (WOB:20;GPM :700;TFO:0)
01:27	01:39	0.20	6507	6590	83	415.00	Drilling	Drilling - (WOB:34;GPM :700;RPM:50)
01:39	01:47	0.13	6590	6590	0	.00	Survey & Conn.	Survey & Conn. @6522' Inc 4.61° Azm 143.73°
01:47	01:59	0.20	6590	6605	15	75.00	Sliding	Sliding - (WOB:20;GPM :700;TFO:0)

Start Time	End Time	Hours	Start Depth	End Depth	Delta Depth	ROP	Activity Code	COMMENT
01:59	02:13	0.23	6605	6685	80	342.86	Drilling	Drilling - (WOB:34;GPM :700;RPM:50)
02:13	02:22	0.15	6685	6685	0	.00	Survey & Conn.	Survey & Conn.@6617' Inc 4.84° Azm 159.12°
02:22	02:55	0.55	6685	6737	52	94.55	Sliding	Sliding - (WOB:20;GPM :700;TFO:85R)
02:55	04:00	1.08	6737	6737	0	.00	Circulating	Circulating
04:00	06:30	2.50	6737	6737	0	.00	POOH	POOH For New Motor
06:30	07:00	0.50	6737	6737	0	.00	Change BHA	Change BHA - Lay Down Motor
07:00	07:30	0.50	6737	6737	0	.00	Other	Pick Up New Motor, Orient Tools
07:30	10:15	2.75	6737	6737	0	.00	TIH	TIH
10:15	10:40	0.42	6737	6769	32	76.80	Sliding	Sliding - (WOB:20;GPM :700;TFO:65R)
10:40	10:41	0.02	6769	6773	4	240.00	Drilling	Drilling - (WOB:34;GPM :700;RPM:50)
10:41	10:52	0.18	6773	6773	0	.00	Survey & Conn.	Survey & Conn.@6711' Inc 6.13° Azm 195.15°
10:52	11:15	0.38	6773	6782	9	23.48	Sliding	Sliding - (WOB:20;GPM :700;TFO:35R)
11:15	11:18	0.05	6782	6787	5	100.00	Drilling	Drilling - (WOB:30;GPM :700;RPM:30)
11:18	11:45	0.45	6787	6837	50	111.11	Sliding	Sliding - (WOB:20;GPM :700;TFO:30R)
11:45	12:04	0.32	6837	6837	0	.00	Other	Check shot
12:04	12:14	0.17	6837	6868	31	186.00	Sliding	Sliding - (WOB:20;GPM :700;TFO:30R)
12:14	12:22	0.13	6868	6868	0	.00	Survey & Conn.	Survey & Conn.@6806' Inc 14.05° Azm 231.16°
12:22	12:56	0.57	6868	6964	96	169.41	Sliding	Sliding - (WOB:20;GPM :700;TFO:45R)
12:56	13:10	0.23	6964	6964	0	.00	Survey & Conn.	Survey & Conn.@6902' Inc 25.9° Azm 249.24°
13:10	13:15	0.08	6964	6979	15	180.00	Drilling	Drilling - (WOB:30;GPM :700;RPM:30)
13:15	13:56	0.68	6979	7059	80	117.07	Sliding	Sliding - (WOB:25;GPM :700;TFO:30R)
13:56	14:12	0.27	7059	7059	0	.00	Survey & Conn.	Survey & Conn.@6997' Inc 34.53° Azm 262.62°
14:12	14:16	0.07	7059	7084	25	375.00	Drilling	Drilling - (WOB:15;GPM :700;RPM:25)
14:16	14:38	0.37	7084	7155	71	193.64	Sliding	Sliding - (WOB:25;GPM :700;TFO:30R)
14:38	14:57	0.32	7155	7190	35	110.53	Drilling	Drilling - (WOB:15;GPM :700;RPM:25)
14:57	15:17	0.33	7190	7250	60	180.00	Sliding	Sliding - (WOB:25;GPM :700;TFO:30R)
15:17	15:41	0.40	7250	7311	61	152.50	Drilling	Drilling - (WOB:15;GPM :700;RPM:25)
15:41	15:55	0.23	7311	7345	34	145.71	Sliding	Sliding - (WOB:25;GPM :700;TFO:30R)
15:55	16:10	0.25	7345	7345	0	.00	Survey & Conn.	Survey & Conn.@7283' Inc 61.45° Azm 273.85°
16:10	16:38	0.47	7345	7440	95	203.57	Sliding	Sliding - (WOB:25;GPM :700;TFO:30R)
16:38	16:46	0.13	7440	7440	0	.00	Survey & Conn.	Survey & Conn.@7378' Inc 73.88° Azm 273.5°
16:46	16:58	0.20	7440	7485	45	225.00	Drilling	Drilling - (WOB:15;GPM :700;RPM:25)
16:58	17:12	0.23	7485	7515	30	128.57	Sliding	Sliding - (WOB:25;GPM :700;TFO:30R)
17:12	17:15	0.05	7515	7535	20	400.00	Drilling	Drilling - (WOB:20;GPM :700;RPM:25)
17:15	17:28	0.22	7535	7535	0	.00	Survey & Conn.	Survey & Conn.@7473' Inc 84.28° Azm 272.15°
17:28	17:41	0.22	7535	7628	93	429.23	Drilling	Drilling - (WOB:20;GPM :700;RPM:25)
17:41	18:00	0.32	7628	7628	0	.00	Circulating	Circulating
18:00	21:33	3.55	7628	7628	0	.00	POOH	POOH
21:33	22:14	0.68	7628	7628	0	.00	Other	L/D Motor and Mwd
22:14	22:39	0.42	7628	7628	0	.00	Other	P/U New Motor and MWD
22:39	24:00	1.35	7628	7628	0	.00	TIH	Trip in W/ BHA ##



Daily Report for JOB#: 376608 - Page 1 of 4

Start Time	End Time	Hours	Start Depth	End Depth	Delta Depth	ROP	Activity Code	COMMENT
04:29	04:33	0.07	8138	8138	0	.00	Connection	Connection
04:33	04:36	0.05	8138	8146	8	160.00	Drilling	Drilling - (WOB:35;GPM :700;RPM:60)
04:36	04:46	0.17	8146	8146	0	.00	Circulating	Cycle Pumps for Survey
04:46	04:51	0.08	8146	8152	6	72.00	Sliding	Sliding - (WOB:25;GPM :700;TFO:135R)
04:51	05:01	0.17	8152	8233	81	486.00	Drilling	Drilling - (WOB:35;GPM :700;RPM:60)
05:01	05:06	0.08	8233	8233	0	.00	Connection	Connection
05:06	05:12	0.10	8233	8248	15	150.00	Drilling	Drilling - (WOB:35;GPM :700;RPM:60)
05:12	05:20	0.13	8248	8248	0	.00	Circulating	SURVEY
05:20	05:24	0.07	8248	8329	81	1215.00	Drilling	Drilling - (WOB:35;GPM :700;RPM:60)
05:24	05:29	0.08	8329	8329	0	.00	Connection	Connection
05:29	05:42	0.22	8329	8425	96	443.08	Drilling	Drilling - (WOB:35;GPM :700;RPM:60)
05:42	05:47	0.08	8425	8425	0	.00	Connection	Connection
05:47	05:52	0.08	8425	8432	7	84.00	Drilling	Drilling - (WOB:35;GPM :700;RPM:60)
05:52	05:57	0.08	8432	8441	9	108.00	Sliding	Sliding - (WOB:25;GPM :700;TFO:90R)
05:57	06:06	0.15	8441	8520	79	526.67	Drilling	Drilling - (WOB:40;GPM :700;RPM:65)
06:06	06:12	0.10	8520	8520	0	.00	Survey & Conn.	Survey & Conn.@8458' Inc 90.4° Azm 270.12°
06:12	06:24	0.20	8520	8615	95	475.00	Drilling	Drilling - (WOB:40;GPM :700;RPM:65)
06:24	06:30	0.10	8615	8615	0	.00	Survey & Conn.	Survey & Conn.@8553' Inc 90.57° Azm 270.17°
06:30	06:33	0.05	8615	8627	12	240.00	Drilling	Drilling - (WOB:40;GPM :700;RPM:65)
06:33	06:39	0.10	8627	8627	0	.00	Circulating	Circulating - Cycle Pumps For Survey
06:39	06:48	0.15	8627	8710	83	553.33	Drilling	Drilling - (WOB:40;GPM :700;RPM:65)
06:48	06:53	0.08	8710	8710	0	.00	Survey & Conn.	Survey & Conn.@8648' Inc 90.87° Azm 269.97°
06:53	06:59	0.10	8710	8733	23	230.00	Drilling	Drilling - (WOB:40;GPM :700;RPM:65)
06:59	07:08	0.15	8733	8743	10	66.67	Sliding	Sliding - (WOB:25;GPM :700;TFO:135R)
07:08	07:15	0.12	8743	8806	63	540.00	Drilling	Drilling - (WOB:40;GPM :700;RPM:65)
07:15	07:21	0.10	8806	8806	0	.00	Survey & Conn.	Survey & Conn.@8744' Inc 90.77° Azm 270.75°
07:21	07:23	0.03	8806	8816	10	300.00	Drilling	Drilling - (WOB:40;GPM :700;RPM:65)
07:23	07:30	0.12	8816	8816	0	.00	Circulating	Circulating - Cycle Pumps For Survey
07:30	07:40	0.17	8816	8829	13	78.00	Sliding	Sliding - (WOB:35;GPM :700;TFO:160R)
07:40	07:48	0.13	8829	8901	72	540.00	Drilling	Drilling - (WOB:40;GPM :700;RPM:65)
07:48	07:53	0.08	8901	8901	0	.00	Other	Change MWD Transducer
07:53	08:00	0.12	8901	8901	0	.00	Survey & Conn.	Survey & Conn.@8839' Inc 89.19° Azm 271.96°
08:00	08:11	0.18	8901	8996	95	518.18	Drilling	Drilling - (WOB:40;GPM :700;RPM:65)
08:11	08:16	0.08	8996	8996	0	.00	Survey & Conn.	Survey & Conn.@8934' Inc 88.99° Azm 271.01°
08:16	08:28	0.20	8996	9092	96	480.00	Drilling	Drilling - (WOB:40;GPM :700;RPM:65)
08:28	09:07	0.65	9092	9092	0	.00	Other	Turn Kelley Hose, Fix Bale Clamp on Top Drive
09:07	09:12	0.08	9092	9092	0	.00	Survey & Conn.	Survey & Conn.@9030' Inc 88.22° Azm 270.4°
09:12	09:16	0.07	9092	9115	23	345.00	Drilling	Drilling - (WOB:40;GPM :700;RPM:65)
09:16	09:30	0.23	9115	9126	11	47.14	Sliding	Sliding - (WOB:35;GPM :700;TFO:0)
09:30	09:38	0.13	9126	9187	61	457.50	Drilling	Drilling - (WOB:40;GPM :700;RPM:65)
09:38	09:43	0.08	9187	9187	0	.00	Survey & Conn.	Survey & Conn.@9125' Inc 89.8° Azm 270.86°
09:43	09:55	0.20	9187	9283	96	480.00	Drilling	Drilling - (WOB:40;GPM :700;RPM:65)
09:55	10:01	0.10	9283	9283	0	.00	Survey & Conn.	Survey & Conn.@9221' Inc 90.03° Azm 270.51°
10:01	10:13	0.20	9283	9378	95	475.00	Drilling	Drilling - (WOB:40;GPM :700;RPM:65)
10:13	10:18	0.08	9378	9378	0	.00	Survey & Conn.	Survey & Conn.@9316' Inc 90.54° Azm 270.82°
10:18	10:30	0.20	9378	9473	95	475.00	Drilling	Drilling - (WOB:40;GPM :700;RPM:65)
10:30	10:36	0.10	9473	9473	0	.00	Survey & Conn.	Survey & Conn.@9411' Inc 92.42° Azm 271.27°
10:36	10:40	0.07	9473	9499	26	390.00	Drilling	Drilling - (WOB:40;GPM :700;RPM:65)

Start Time	End Time	Hours	Start Depth	End Depth	Delta Depth	ROP	Activity Code	COMMENT
10:40	10:54	0.23	9499	9513	14	60.00	Sliding	Sliding - (WOB:35;GPM :700;TFO:180)
10:54	11:01	0.12	9513	9569	56	480.00	Drilling	Drilling - (WOB:40;GPM :700;RPM:65)
11:01	11:07	0.10	9569	9569	0	.00	Survey & Conn.	Survey & Conn.@9507' Inc 92.96° Azm 271.04°
11:07	11:11	0.07	9569	9586	17	255.00	Drilling	Drilling - (WOB:40;GPM :700;RPM:65)
11:11	11:19	0.13	9586	9597	11	82.50	Sliding	Sliding - (WOB:35;GPM :700;TFO:160L)
11:19	11:25	0.10	9597	9634	37	370.00	Drilling	Drilling - (WOB:40;GPM :700;RPM:65)
11:25	11:41	0.27	9634	9634	0	.00	Other	Troubleshoot MWD
11:41	11:45	0.07	9634	9664	30	450.00	Drilling	Drilling - (WOB:40;GPM :700;RPM:65)
11:45	11:50	0.08	9664	9664	0	.00	Survey & Conn.	Survey & Conn.@9602' Inc 91.24° Azm 270.55°
11:50	11:53	0.05	9664	9685	21	420.00	Drilling	Drilling - (WOB:40;GPM :700;RPM:65)
11:53	12:00	0.12	9685	9693	8	68.57	Sliding	Sliding - (WOB:35;GPM :700;TFO:180)
12:00	12:09	0.15	9693	9760	67	446.67	Drilling	Drilling - (WOB:40;GPM :700;RPM:65)
12:09	12:14	0.08	9760	9760	0	.00	Survey & Conn.	Survey & Conn.@9698' Inc 91.11° Azm 269.75°
12:14	12:25	0.18	9760	9855	95	518.18	Drilling	Drilling - (WOB:40;GPM :700;RPM:65)
12:25	12:30	0.08	9855	9855	0	.00	Survey & Conn.	Survey & Conn.@9793' Inc 90.34° Azm 269.91°
12:30	12:43	0.22	9855	9951	96	443.08	Drilling	Drilling - (WOB:40;GPM :700;RPM:65)
12:43	12:48	0.08	9951	9951	0	.00	Survey & Conn.	Survey & Conn.@9889' Inc 89.5° Azm 270.01°
12:48	13:00	0.20	9951	10046	95	475.00	Drilling	Drilling - (WOB:40;GPM :700;RPM:65)
13:00	13:05	0.08	10046	10046	0	.00	Survey & Conn.	Survey & Conn.@9984' Inc 88.39° Azm 270.55°
13:05	13:09	0.07	10046	10058	12	180.00	Drilling	Drilling - (WOB:40;GPM :700;RPM:65)
13:09	13:21	0.20	10058	10072	14	70.00	Sliding	Sliding - (WOB:35;GPM :700;TFO:180)
13:21	13:29	0.13	10072	10142	70	525.00	Drilling	Drilling - (WOB:40;GPM :700;RPM:65)
13:29	13:34	0.08	10142	10142	0	.00	Survey & Conn.	Survey & Conn.@10080' Inc 90.13° Azm 271.76°
13:34	13:49	0.25	10142	10237	95	380.00	Drilling	Drilling - (WOB:40;GPM :700;RPM:65)
13:49	13:57	0.13	10237	10237	0	.00	Survey & Conn.	Survey & Conn.@10175' Inc 90.4° Azm 271.99°
13:57	14:08	0.18	10237	10333	96	523.64	Drilling	Drilling - (WOB:40;GPM :700;RPM:65)
14:08	14:13	0.08	10333	10333	0	.00	Survey & Conn.	Survey & Conn.@10271' Inc 89.77° Azm 271.54°
14:13	14:17	0.07	10333	10349	16	240.00	Drilling	Drilling - (WOB:40;GPM :700;RPM:65)
14:17	14:27	0.17	10349	10363	14	84.00	Sliding	Sliding - (WOB:35;GPM :700;TFO:180))
14:27	14:34	0.12	10363	10428	65	557.14	Drilling	Drilling - (WOB:40;GPM :700;RPM:65)
14:34	14:40	0.10	10428	10428	0	.00	Survey & Conn.	Survey & Conn.@10366' Inc 90.24° Azm 270.05°
14:40	14:43	0.05	10428	10440	12	240.00	Drilling	Drilling - (WOB:40;GPM :700;RPM:65)
14:43	14:49	0.10	10440	10448	8	80.00	Sliding	Sliding - (WOB:35;GPM :700;TFO:60L)
14:49	14:56	0.12	10448	10448	0	.00	Circulating	Circulating - Recycle Pumps For MWD
14:56	15:04	0.13	10448	10523	75	562.50	Drilling	Drilling - (WOB:40;GPM :700;RPM:65)
15:04	15:10	0.10	10523	10523	0	.00	Survey & Conn.	Survey & Conn.@10461' Inc 91.85° Azm 269.62°
15:10	15:20	0.17	10523	10619	96	576.00	Drilling	Drilling - (WOB:40;GPM :700;RPM:65)
15:20	15:25	0.08	10619	10619	0	.00	Survey & Conn.	Survey & Conn.@10557' Inc 91.78° Azm 269.43°
15:25	15:37	0.20	10619	10714	95	475.00	Drilling	Drilling - (WOB:40;GPM :700;RPM:55)
15:37	15:43	0.10	10714	10714	0	.00	Survey & Conn.	Survey & Conn.@10652' Inc 91.48° Azm 268.53°
15:43	15:55	0.20	10714	10809	95	475.00	Drilling	Drilling - (WOB:40;GPM :700;RPM:55)
15:55	16:00	0.08	10809	10809	0	.00	Survey & Conn.	Survey & Conn.@10747' Inc 91.11° Azm 268.36°
16:00	16:04	0.07	10809	10827	18	270.00	Drilling	Drilling - (WOB:40;GPM :700;RPM:55)
16:04	16:13	0.15	10827	10834	7	46.67	Sliding	Sliding - (WOB:35;GPM :700;TFO:30R)
16:13	16:21	0.13	10834	10904	70	525.00	Drilling	Drilling - (WOB:40;GPM :700;RPM:55)
16:21	16:26	0.08	10904	10904	0	.00	Survey & Conn.	Survey & Conn.@10842' Inc 91.61° Azm 268.5°
16:26	16:31	0.08	10904	10934	30	360.00	Drilling	Drilling - (WOB:40;GPM :700;RPM:55)
16:31	16:49	0.30	10934	10942	8	26.67	Sliding	Sliding - (WOB:35;GPM :700;TFO:30R)

Start Time	End Time	Hours	Start Depth	End Depth	Delta Depth	ROP	Activity Code	COMMENT
16:49	16:56	0.12	10942	10999	57	488.57	Drilling	Drilling - (WOB:40;GPM :700;RPM:65)
16:56	17:06	0.17	10999	10999	0	.00	Survey & Conn.	Survey & Conn.@10937' Inc 91.95° Azm 268.7°
17:06	17:18	0.20	10999	11095	96	480.00	Drilling	Drilling - (WOB:40;GPM :700;RPM:65)
17:18	17:23	0.08	11095	11095	0	.00	Survey & Conn.	Survey & Conn.@11033' Inc 92.35° Azm 268.24°
17:23	17:35	0.20	11095	11190	95	475.00	Drilling	Drilling - (WOB:40;GPM :700;RPM:65)
17:35	17:41	0.10	11190	11190	0	.00	Survey & Conn.	Survey & Conn.@11128' Inc 91.68° Azm 267.76°
17:41	17:45	0.07	11190	11211	21	315.00	Drilling	Drilling - (WOB:40;GPM :700;RPM:65)
17:45	17:58	0.22	11211	11224	13	60.00	Sliding	Sliding - (WOB:35;GPM :700;TFO:65R)
17:58	18:07	0.15	11224	11285	61	406.67	Drilling	Drilling - (WOB:40;GPM :700;RPM:65)
18:07	18:21	0.23	11285	11285	0	.00	Connection	Connection
18:21	18:24	0.05	11285	11300	15	300.00	Drilling	Drilling - (WOB:40;GPM :700;RPM:65)
18:24	18:34	0.17	11300	11309	9	54.00	Sliding	Sliding - (WOB:35;GPM :700;TFO:65R)
18:34	18:46	0.20	11309	11380	71	355.00	Drilling	Drilling - (WOB:40;GPM :700;RPM:65)
18:46	18:51	0.08	11380	11380	0	.00	Connection	Connection
18:51	19:04	0.22	11380	11476	96	443.08	Drilling	Drilling - (WOB:40;GPM :700;RPM:65)
19:04	19:09	0.08	11476	11476	0	.00	Connection	Circulating
19:09	19:22	0.22	11476	11571	95	438.46	Drilling	Drilling - (WOB:40;GPM :700;RPM:65)
19:22	19:27	0.08	11571	11571	0	.00	Connection	Connection
19:27	19:33	0.10	11571	11589	18	180.00	Drilling	Drilling - (WOB:40;GPM :700;RPM:65)
19:33	19:47	0.23	11589	11603	14	60.00	Sliding	Sliding - (WOB:35;GPM :700;TFO:65R)
19:47	19:57	0.17	11603	11666	63	378.00	Drilling	Drilling - (WOB:40;GPM :700;RPM:65)
19:57	20:03	0.10	11666	11666	0	.00	Connection	Connection
20:03	20:18	0.25	11666	11762	96	384.00	Drilling	Drilling - (WOB:40;GPM :700;RPM:65)
20:18	20:23	0.08	11762	11762	0	.00	Connection	Connection
20:23	20:31	0.13	11762	11775	13	97.50	Drilling	Drilling - (WOB:40;GPM :700;RPM:65)
20:31	20:37	0.10	11775	11785	10	100.00	Sliding	Sliding - (WOB:35;GPM :700;TFO:65R)
20:37	21:04	0.45	11785	11953	168	373.33	Drilling	Drilling - (WOB:40;GPM :700;RPM:65)
21:04	21:15	0.18	11953	11953	0	.00	Connection	Connection
21:15	21:19	0.07	11953	11968	15	225.00	Drilling	Drilling - (WOB:40;GPM :700;RPM:65)
21:19	21:30	0.18	11968	11978	10	54.55	Sliding	Sliding - (WOB:35;GPM :700;TFO:65R)
21:30	22:04	0.57	11978	12159	181	319.41	Drilling	Drilling - (WOB:40;GPM :700;RPM:65)
22:04	22:14	0.17	12159	12159	0	.00	Connection	Connection
22:14	22:30	0.27	12159	12169	10	37.50	Sliding	Sliding - (WOB:35;GPM :700;TFO:65R)
22:30	22:45	0.25	12169	12333	164	656.00	Drilling	Drilling - (WOB:40;GPM :700;RPM:65)
22:45	22:55	0.17	12333	12333	0	.00	Connection	Connection
22:55	22:59	0.07	12333	12352	19	285.00	Drilling	Drilling - (WOB:35;GPM :700;RPM:65)
22:59	23:11	0.20	12352	12367	15	75.00	Sliding	Sliding - (WOB:35;GPM :700;TFO:65R)
23:11	23:25	0.23	12367	12444	77	330.00	Drilling	Drilling - (WOB:35;GPM :700;RPM:65)
23:25	23:31	0.10	12444	12444	0	.00	Connection	Connection
23:31	23:40	0.15	12444	12454	10	66.67	Sliding	Sliding - (WOB:35;GPM :700;TFO:65R)
23:40	24:00	0.33	12454	12593	139	417.00	Drilling	Drilling - (WOB:35;GPM :700;RPM:65)



JOB NO.: 376608
Company: Extraction Oil & Gas
LOCATION: Winder South
RIG NAME: Patterson 346
STATE: Colorado
COUNTY: Weld
WELL NAME: Winder South 1
Lead Directional : Chris Apodaca

Report Time: 2400 **6 of 7**
API JOB # 05-123-43402
WORK ORDER#
FIELD: Wattenburg
Township: 6N
Range/Section 67W 9
Company Man Hugh McGraw
2nd Dir Hand : Colby Hansen

From Friday, August 19, 2016 at 0000 to Friday, August 19, 2016 at 2400

DAILY TOTALS		ASSEMBLY TOTALS									
Start Depth	12593.00	BHA #	Motor SN / R.S. SN	Slide Ftg	Slide Hrs	Rotate Ftg	Rotate Hrs	Circ Hrs	D & C Hrs	BHA Ftg	Avg ROP
End Depth	16960.00	3	G1674	363.00	8.60	8,969.00	23.37	5.03	37.00	9,332.00	271.41
Below Rot Hrs.	24.00										
Total Drilled:	4367.00	Drilling Parameters		Mud Record		Bit Record		Current BHA # 3			
Avg. Total ROP:	261.76										
Slide Footage:	133.00	WOB:	42	Weight:	0	Bit No:	PDC				
Slide Hours	4.90	Rot Wt:	0	Visc:	0	Model	PDC				
Avg. Slide ROP:	27.14	Pick UP:	0	Chlorides:	0	SN.:	A230298				
Rotate Footage:	4234.00	Slack Off:	0	YP:	0	MFG.	HANG OFF SUB				
Rotary Hours	11.78	SPP:	5450	PV:	0	Type	Pony Non Mag DC				
Avg. Rot ROP:	359.32	Flow:	635 - 700	PH:	0	IADC	Non Mag DC				
Circ Hours	4.05	SPM:	220	GAS:	0	JETS	Filter Sub				
Ream Hours	2.62	Rot. RPM	65 - 65	SAND:	0	TFA:	3 Stands H.W.D.P.				
Rotary Hrs%:	70.63	Mot RPM:	65 - 65	WL:	0	Hole ID:	7 7/8				
Slide Hrs%:	29.37	Incl. In:	0	SOLID:	0	Bit Hrs:	14.27				
Rotary Ftg%:	96.95	Azm. In:	0	BHT°:	0	Bit Ftg:	5152.00				
Slide Ftg%:	3.05	Incl. Out:	0	Flow T°:	0	PUMPS					
Casing		Azm. Out:	0	Oil %:	0	Liner	0	0			
Size	Lb/Ft	MD	COST BREAKDOWN					Stroke	0	0	
								Effic.	95.00%	95.00%	
								Gal/Stk	0.00	0.00	
								BBL/Stk	0.000	0.000	

GENERAL COMMENT

Start Time	End Time	Hours	Start Depth	End Depth	Delta Depth	ROP	Activity Code	COMMENT
00:00	00:19	0.32	12593	12715	122	385.26	Drilling	Drilling - (WOB:35;GPM :700;RPM:65)
00:19	00:29	0.17	12715	12715	0	.00	Connection	Connection
00:29	00:32	0.05	12715	12731	16	320.00	Drilling	Drilling - (WOB:35;GPM :700;RPM:65)
00:32	00:48	0.27	12731	12741	10	37.50	Drilling	Drilling - (WOB:35;GPM :700;RPM:65)
00:48	01:24	0.60	12741	12920	179	298.33	Drilling	Drilling - (WOB:35;GPM :700;RPM:65)
01:24	01:34	0.17	12920	12920	0	.00	Connection	Connection
01:34	01:47	0.22	12920	12934	14	64.62	Sliding	Sliding - (WOB:35;GPM :700;TFO:65R)
01:47	03:40	1.88	12934	13584	650	345.13	Drilling	Drilling - (WOB:35;GPM :700;RPM:65)
03:40	03:58	0.30	13584	13584	0	.00	Connection	Connection
03:58	04:15	0.28	13584	13584	0	.00	Circulating	Survey/ SPR
04:15	04:35	0.33	13584	13681	97	291.00	Drilling	Drilling - (WOB:40;GPM :700;RPM:65)
04:35	04:53	0.30	13681	13693	12	40.00	Sliding	Sliding - (WOB:75;GPM :700;TFO:120L)
04:53	05:12	0.32	13693	13779	86	271.58	Drilling	Drilling - (WOB:40;GPM :700;RPM:65)
05:12	05:17	0.08	13779	13779	0	.00	Connection	Connection

Start Time	End Time	Hours	Start Depth	End Depth	Delta Depth	ROP	Activity Code	COMMENT
05:17	05:29	0.20	13779	13789	10	50.00	Sliding	Sliding - (WOB:75;GPM :700;TFO:120L)
05:29	05:41	0.20	13789	13869	80	400.00	Drilling	Drilling - (WOB:40;GPM :700;RPM:65)
05:41	05:50	0.15	13869	13869	0	.00	Connection	Connection
05:50	06:20	0.50	13869	13884	15	30.00	Sliding	Sliding - (WOB:75;GPM :700;TFO:135L)
06:20	06:30	0.17	13884	13952	68	408.00	Drilling	Drilling - (WOB:40;GPM :700;RPM:65)
06:30	06:35	0.08	13952	13952	0	.00	Reaming	Ream Full Stand
06:35	06:42	0.12	13952	13952	0	.00	Survey & Conn.	Survey & Conn.@13890' Inc 89.3° Azm 269.06°
06:42	06:52	0.17	13952	14047	95	570.00	Drilling	Drilling - (WOB:40;GPM :700;RPM:65)
06:52	06:58	0.10	14047	14047	0	.00	Reaming	Ream Full Stand
06:58	07:03	0.08	14047	14047	0	.00	Survey & Conn.	Survey & Conn.@13985' Inc 89.36° Azm 269.51°
07:03	07:14	0.18	14047	14143	96	523.64	Drilling	Drilling - (WOB:42;GPM :700;RPM:65)
07:14	07:19	0.08	14143	14143	0	.00	Reaming	Ream Full Stand
07:19	07:23	0.07	14143	14143	0	.00	Survey & Conn.	Survey & Conn.@14080' Inc 88.76° Azm 269.13°
07:23	07:27	0.07	14143	14165	22	330.00	Drilling	Drilling - (WOB:42;GPM :700;RPM:65)
07:27	07:45	0.30	14165	14175	10	33.33	Sliding	Sliding - (WOB:75;GPM :700;TFO:30R)
07:45	07:53	0.13	14175	14237	62	465.00	Drilling	Drilling - (WOB:42;GPM :700;RPM:65)
07:53	07:58	0.08	14237	14237	0	.00	Reaming	Drilling - (WOB:42;GPM :700;RPM:65)
07:58	08:02	0.07	14237	14237	0	.00	Survey & Conn.	Survey & Conn.@14175' Inc 88.76° Azm 269.55°
08:02	08:06	0.07	14237	14258	21	315.00	Drilling	Drilling - (WOB:42;GPM :700;RPM:65)
08:06	08:52	0.77	14258	14276	18	23.48	Sliding	Sliding - (WOB:75;GPM :700;TFO:30R)
08:52	09:01	0.15	14276	14333	57	380.00	Drilling	Drilling - (WOB:42;GPM :700;RPM:65)
09:01	09:06	0.08	14333	14333	0	.00	Reaming	Ream Full Stand
09:06	09:10	0.07	14333	14333	0	.00	Survey & Conn.	Survey & Conn.@14271' Inc 89.53° Azm 270.04°
09:10	09:21	0.18	14333	14428	95	518.18	Drilling	Drilling - (WOB:42;GPM :700;RPM:65)
09:21	09:25	0.07	14428	14428	0	.00	Reaming	Ream Full Stand
09:25	09:30	0.08	14428	14428	0	.00	Survey & Conn.	Survey & Conn.@14366' Inc 89.77° Azm 269.9°
09:30	09:42	0.20	14428	14523	95	475.00	Drilling	Drilling - (WOB:42;GPM :700;RPM:65)
09:42	09:47	0.08	14523	14523	0	.00	Reaming	Ream Full Stand
09:47	09:52	0.08	14523	14523	0	.00	Survey & Conn.	Survey & Conn.@14461' Inc 89.83° Azm 270.55°
09:52	09:55	0.05	14523	14545	22	440.00	Drilling	Drilling - (WOB:42;GPM :700;RPM:65)
09:55	10:15	0.33	14545	14553	8	24.00	Sliding	Sliding - (WOB:75;GPM :700;TFO:30L)
10:15	10:24	0.15	14553	14618	65	433.33	Drilling	Drilling - (WOB:42;GPM :700;RPM:65)
10:24	10:30	0.10	14618	14618	0	.00	Reaming	Ream Full Stand
10:30	10:35	0.08	14618	14618	0	.00	Survey & Conn.	Survey & Conn.@14556' Inc 90.67° Azm 270.53°
10:35	10:46	0.18	14618	14713	95	518.18	Drilling	Drilling - (WOB:42;GPM :700;RPM:65)
10:46	10:50	0.07	14713	14713	0	.00	Reaming	Ream Full Stand
10:50	10:55	0.08	14713	14713	0	.00	Survey & Conn.	Survey & Conn.@14651' Inc 91.11° Azm 271.45°
10:55	11:07	0.20	14713	14808	95	475.00	Drilling	Drilling - (WOB:42;GPM :700;RPM:65)
11:07	11:11	0.07	14808	14808	0	.00	Reaming	Ream Full Stand
11:11	11:15	0.07	14808	14808	0	.00	Survey & Conn.	Survey & Conn.@14746' Inc 91.04° Azm 273°
11:15	11:20	0.08	14808	14832	24	288.00	Drilling	Drilling - (WOB:42;GPM :700;RPM:65)
11:20	11:50	0.50	14832	14848	16	32.00	Sliding	Sliding - (WOB:75;GPM :700;TFO:90L)
11:50	11:58	0.13	14848	14903	55	412.50	Drilling	Drilling - (WOB:42;GPM :700;RPM:65)
11:58	12:03	0.08	14903	14903	0	.00	Reaming	Ream Full Stand
12:03	12:08	0.08	14903	14903	0	.00	Survey & Conn.	Survey & Conn.@14841' Inc 90.84° Azm 271.57°
12:08	12:19	0.18	14903	14998	95	518.18	Drilling	Drilling - (WOB:42;GPM :700;RPM:65)
12:19	12:24	0.08	14998	14998	0	.00	Reaming	Ream Full Stand
12:24	12:29	0.08	14998	14998	0	.00	Survey & Conn.	Survey & Conn.@14936' Inc 90.67° Azm 270.74°

Start Time	End Time	Hours	Start Depth	End Depth	Delta Depth	ROP	Activity Code	COMMENT
12:29	12:40	0.18	14998	15093	95	518.18	Drilling	Drilling - (WOB:42;GPM :700;RPM:65)
12:40	12:48	0.13	15093	15093	0	.00	Reaming	Ream Full Stand
12:48	12:52	0.07	15093	15093	0	.00	Survey & Conn.	Survey & Conn.@15031' Inc 90.57° Azm 270.48°
12:52	13:04	0.20	15093	15188	95	475.00	Drilling	Drilling - (WOB:42;GPM :700;RPM:65)
13:04	13:09	0.08	15188	15188	0	.00	Reaming	Ream Full Stand
13:09	13:14	0.08	15188	15188	0	.00	Survey & Conn.	Survey & Conn.@15126' Inc 90.07° Azm 269.72°
13:14	13:30	0.27	15188	15283	95	356.25	Drilling	Drilling - (WOB:42;GPM :700;RPM:65)
13:30	13:35	0.08	15283	15283	0	.00	Reaming	Ream Full Stand
13:35	13:41	0.10	15283	15283	0	.00	Survey & Conn.	Survey & Conn.@15221' Inc 90.47° Azm 270.92°
13:41	13:52	0.18	15283	15379	96	523.64	Drilling	Drilling - (WOB:42;GPM :700;RPM:65)
13:52	13:57	0.08	15379	15379	0	.00	Reaming	Ream Full Stand
13:57	14:02	0.08	15379	15379	0	.00	Survey & Conn.	Survey & Conn.@15317' Inc 90.2° Azm 271.52°
14:02	14:05	0.05	15379	15396	17	340.00	Drilling	Drilling - (WOB:42;GPM :635;RPM:65)
14:05	14:28	0.38	15396	15406	10	26.09	Sliding	Sliding - (WOB:75;GPM :635;TFO:45L)
14:28	14:38	0.17	15406	15473	67	402.00	Drilling	Drilling - (WOB:42;GPM :635;RPM:65)
14:38	14:44	0.10	15473	15473	0	.00	Reaming	Ream Full Stand
14:44	14:49	0.08	15473	15473	0	.00	Survey & Conn.	Survey & Conn.@15411' Inc 90.84° Azm 270.92°
14:49	15:00	0.18	15473	15568	95	518.18	Drilling	Drilling - (WOB:42;GPM :635;RPM:65)
15:00	15:05	0.08	15568	15568	0	.00	Reaming	Ream Full Stand
15:05	15:10	0.08	15568	15568	0	.00	Survey & Conn.	Survey & Conn.@15506' Inc 90.54° Azm 270.26°
15:10	15:22	0.20	15568	15664	96	480.00	Drilling	Drilling - (WOB:42;GPM :635;RPM:65)
15:22	15:27	0.08	15664	15664	0	.00	Reaming	Ream Full Stand
15:27	15:32	0.08	15664	15664	0	.00	Survey & Conn.	Survey & Conn.@15602' Inc 91.21° Azm 271.09°
15:32	15:35	0.05	15664	15685	21	420.00	Drilling	Drilling - (WOB:42;GPM :635;RPM:65)
15:35	16:01	0.43	15685	15695	10	23.08	Sliding	Sliding - (WOB:75;GPM :635;TFO:90L)
16:01	16:10	0.15	15695	15759	64	426.67	Drilling	Drilling - (WOB:42;GPM :635;RPM:65)
16:10	16:16	0.10	15759	15759	0	.00	Reaming	Ream Full Stand
16:16	16:21	0.08	15759	15759	0	.00	Survey & Conn.	Survey & Conn.@15697' Inc 91.31° Azm 270.37°
16:21	16:35	0.23	15759	15855	96	411.43	Drilling	Drilling - (WOB:42;GPM :635;RPM:65)
16:35	16:40	0.08	15855	15855	0	.00	Reaming	Ream Full Stand
16:40	16:45	0.08	15855	15855	0	.00	Survey & Conn.	Survey & Conn.@15793' Inc 90.47° Azm 268.83°
16:45	16:58	0.22	15855	15950	95	438.46	Drilling	Drilling - (WOB:42;GPM :635;RPM:65)
16:58	17:03	0.08	15950	15950	0	.00	Reaming	Ream Full Stand
17:03	17:21	0.30	15950	15950	0	.00	Rig Service-Inhole	Rig Service-Inhole
17:21	17:25	0.07	15950	15950	0	.00	Survey & Conn.	Survey & Conn.@15888' Inc 90.4° Azm 268.89°
17:25	17:38	0.22	15950	16045	95	438.46	Drilling	Drilling - (WOB:42;GPM :635;RPM:65)
17:38	17:43	0.08	16045	16045	0	.00	Reaming	Ream Full Stand
17:43	17:48	0.08	16045	16045	0	.00	Survey & Conn.	Survey & Conn.@15983' Inc 90.84° Azm 269.32°
17:48	18:35	0.78	16045	16236	191	243.83	Drilling	Drilling - (WOB:42;GPM :635;RPM:65)
18:35	18:46	0.18	16236	16236	0	.00	Reaming	Ream Full Stand
18:46	18:53	0.12	16236	16236	0	.00	Connection	Connection
18:53	19:06	0.22	16236	16332	96	443.08	Drilling	Drilling - (WOB:42;GPM :635;RPM:65)
19:06	19:16	0.17	16332	16332	0	.00	Reaming	
19:16	19:20	0.07	16332	16332	0	.00	Connection	Connection
19:20	19:35	0.25	16332	16427	95	380.00	Drilling	Drilling - (WOB:42;GPM :635;RPM:65)
19:35	19:42	0.12	16427	16427	0	.00	Reaming	Drilling - (WOB:42;GPM :635;RPM:65)
19:42	19:47	0.08	16427	16427	0	.00	Connection	Connection
19:47	20:20	0.55	16427	16536	109	198.18	Drilling	Drilling - (WOB:42;GPM :635;RPM:65)

Start Time	End Time	Hours	Start Depth	End Depth	Delta Depth	ROP	Activity Code	COMMENT
20:20	20:27	0.12	16536	16536	0	.00	Connection	Connection
20:27	21:25	0.97	16536	16546	10	10.34	Sliding	Sliding - (WOB:75;GPM :635;TFO:90L)
21:25	21:35	0.17	16546	16617	71	426.00	Drilling	Drilling - (WOB:42;GPM :635;RPM:65)
21:35	21:45	0.17	16617	16617	0	.00	Reaming	Drilling - (WOB:42;GPM :635;RPM:65)
21:45	21:49	0.07	16617	16617	0	.00	Connection	Connection
21:49	22:11	0.37	16617	16712	95	259.09	Drilling	Drilling - (WOB:42;GPM :635;RPM:65)
22:11	22:16	0.08	16712	16712	0	.00	Connection	Connection
22:16	23:09	0.88	16712	16960	248	280.75	Drilling	Drilling - (WOB:42;GPM :635;RPM:65)
23:09	24:00	0.85	16960	16960	0	.00	Circulating	Circulating



JOB NO.: 376608
Company: Extraction Oil & Gas
LOCATION: Winder South
RIG NAME: Patterson 346
STATE: Colorado
COUNTY: Weld
WELL NAME: Winder South 1
Lead Directional : Chris Apodaca

Report Time: 2400 **7 of 7**
API JOB # 05-123-43402
WORK ORDER#
FIELD: Wattenburg
Township: 6N
Range/Section 67W 9
Company Man Hugh McGraw
2nd Dir Hand : Colby Hansen

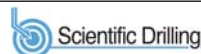
From Saturday, August 20, 2016 at 0000 to Saturday, August 20, 2016 at 2400

DAILY TOTALS		ASSEMBLY TOTALS									
Start Depth	12593.00	BHA #	Motor SN / R.S. SN	Slide Ftg	Slide Hrs	Rotate Ftg	Rotate Hrs	Circ Hrs	D & C Hrs	BHA Ftg	Avg ROP
End Depth	16960.00	3	G1674	363.00	8.60	8,969.00	23.37	5.03	37.00	9,332.00	271.41
Below Rot Hrs.	24.00										
Total Drilled:	4367.00										
Avg. Total ROP:	261.76										
Slide Footage:	133.00	Drilling Parameters WOB: 42 Rot Wt: 0 Pick UP: 0 Slack Off: 0 SPP: 5450 Flow: 635 - 635 SPM: 220 Rot. RPM - Mot RPM: - Incl. In: 0 Azm. In: 0 Incl. Out: 0 Azm. Out: 0		Mud Record Weight: 0 Visc: 0 Chlorides: 0 YP: 0 PV: 0 PH: 0 GAS: 0 SAND: 0 WL: 0 SOLID: 0 BHT°: 0 Flow T°: 0 Oil %: 0		Bit Record Bit No: PDC Model SN.: A230298 MFG. Type IADC JETS N/A TFA: 0 Hole ID: 7 7/8 Bit Hrs: 14.27 Bit Ftg: 5152.00		Current BHA # 3 PDC 2.0 FBH Non Mag DC Pony Non Mag DC HANG OFF SUB Pony Non Mag DC Non Mag DC Filter Sub 3 Stands H.W.D.P.			
Slide Hours	4.90										
Avg. Slide ROP:	27.14										
Rotate Footage:	4234.00										
Rotary Hours	11.78										
Avg. Rot ROP:	359.32										
Circ Hours	4.05										
Ream Hours	0.00										
Rotary Hrs%:	70.63										
Slide Hrs%:	29.37										
Rotary Ftg%:	96.95										
Slide Ftg%:	3.05										
Casing											
Size	Lb/Ft	MD									
			COST BREAKDOWN								

GENERAL COMMENT

Start Time	End Time	Hours	Start Depth	End Depth	Delta Depth	ROP	Activity Code	COMMENT
00:00	00:39	0.65	16960	16960	0	.00	Circulating	Pump Sweeps
00:39	06:00	5.35	16960	16960	0	.00	Short Trip	Short Trip
06:00	11:20	5.33	16960	16960	0	.00	POOH	POOH
11:20	11:45	0.42	16960	16960	0	.00	Other	Lay Down MWD & Motor
11:45	24:00	12.25	16960	16960	0	.00	Standby	Standby - Run Casing

BHA # 1



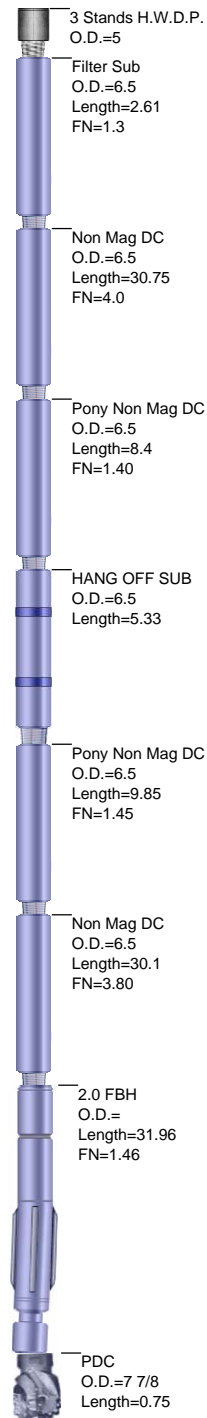
JOB NO.: 376608 Work Order: FIELD: Wattenburg
 Company: Extraction Oil & Gas Township: 6N
 LOCATION: Winder South SECT. RANGE: 9 67W
 RIG NAME: Patterson 346 Lead DD: Chris Apodaca
 STATE: Colorado Co. Man: Hugh McGraw
 COUNTY: Weld BHA TYPE:
 WELL NAME: Winder South 1 BHA WT: 15460 Wt @ Jars: N/A

Time and Depths	MOTOR DATA	Drilling Parameters
Date In: 15-Aug-16 @ 17:45	Motor 2.38 ABH	SO/PU: 0 - 0 / 0-0
Date Out: 17-Aug-16 @ 06:30	MFG.:	Rot Strg Wt: 0-0
Hrs In Hole: 36.75	Pad OD:	WOB: 20 - 34
Start Depth: 1585.00	NB Stab: 0	TORQ: 4500 - 12000
End Depth: 6737.00	Bit to Bend: 0	SPP: 2850 - 3900
Total Drilled: 5152.00	Bent Hsg/Sub°: 2.38 /	Motor RPM: No Rev/Gal Input
Avg. Total ROP: 361.12	Lobe/Stage: /	Rotary RPM: 40 - 50
Circ Hrs: Tot/Only 20.78 / 6.52	Rev/GAL: 0	Flow Rate: 700 - 700
Percent Slide: 10.38	Rotor Jet: 0	Avg Diff:
Percent Hrs: 38.90	Prop BUR:	Stall Pres.:
Slide Hours: 5.55	Act BUR:	Off Bot Pres.:
Total Sliding: 535.00		
Avg. Slide ROP: 96.40		
Percent Rotary: 89.62		
Percent Hrs: 61.10		
Rotary Hours: 8.72		
Total Rotary: 4617.00		
Avg. Rotary ROP: 529.68		
Reason POOH:		

MWD Spacing	Gamma: 0	Restiv: 0	Sensor: 60	Last Casing	O.D.
	GYRO: 0	DNSC: 0	Sonic: 0	Shoe @:	Hanger @:

INC IN: .0 INC OUT: .0 AZM IN: .00 AZM OUT: .00

BHA Detail							
Description	Serial #	I.D.	O.D.	Length	Sum	Top Conn	MFG.
PDC	A230298		7 7/8	0.75	0.75	4 1/2 REGP	REED
2.0 FBH	650-0070			31.96	32.71	4 1/2 IFB	OTHER
Non Mag DC	122-978	3.25	6.5	30.10	62.81	4 1/2 IFB	SDI
Pony Non Mag DC	125-297	3.25	6.5	9.85	72.66	4 1/2 IFB	SDI
HANG OFF SUB	188-	3.25	6.5	5.33	77.99	4 1/2 IFB	SDI
Pony Non Mag DC	125-218	3.25	6.5	8.40	86.39	4 1/2 IFB	SDI
Non Mag DC	189-012	3.25	6.5	30.75	117.14	4 1/2 IFB	SDI
Filter Sub	DR16287	3.25	6.5	2.61	119.75	4 1/2 IFB	SDI
3 Stands H.W.D.P.	N/A	3.76	5	275.51	395.26	4 1/2 IFB	Other





JOB NO.: 376608
Company: Extraction Oil & Gas
LOCATION: Winder South
RIG NAME: Patterson 346
STATE: Colorado
COUNTY: Country
WELL NAME: Winder South 1

FIELD: Wattenburg
Township: 6N
Range 67W

MOTOR INFORMATION

Desc: Motor 2.38 ABH
Bent Hsg/Sub: 2.3 / 0 **Bit to Bend:** 0
Pad OD: **NB Stab:**

Slide Report for BHA # 1

Note: Surveys listed are interpolated from the actual surveys

#	Date	Drill Mode	Start Time	End Time	Hours	Start MD	End MD	Depth Drilled	WOB	ROP	RPM	Surf. Torque	Flow Rate	SPP	TFO	INC	AZM	DLS	Note
1	15-Aug	Drilling	22:25	22:53	0.47	1585	1730	145	20	310.7	40	4500	700	2850		7.00	132.42	0.00	
1	16-Aug	Drilling	02:24	02:28	0.07	1730	1750	20	20	300.0	40	4500	700	2850		7.00	132.42	0.00	
1	16-Aug	Sliding	02:28	02:32	0.07	1750	1758	8	20	120.0	40	4500	700	2850		5.12	138.95	0.00	
1	16-Aug	Drilling	02:32	02:38	0.10	1758	1825	67	30	670.0	50	6000	700	2900		5.12	138.95	0.00	
1	16-Aug	Drilling	02:48	02:51	0.05	1825	1873	48	30	960.0	50	6000	700	2900		5.12	138.95	0.00	
1	16-Aug	Sliding	02:51	02:54	0.05	1873	1878	5	20	100.0	50	6000	700	2900	90R	5.12	138.95	0.00	
1	16-Aug	Drilling	02:54	02:56	0.03	1878	1920	42	30	1260.0	50	6000	700	2900		5.12	138.95	0.00	
1	16-Aug	Drilling	03:13	03:24	0.18	1920	2015	95	30	518.2	50	6000	700	2900		3.43	165.29	0.00	
1	16-Aug	Drilling	03:31	03:35	0.07	2015	2072	57	30	855.0	50	6000	700	2900		2.88	169.70	0.00	
1	16-Aug	Sliding	03:35	03:37	0.03	2072	2077	5	20	150.0	50	6000	700	2900	130M	2.88	169.70	0.00	
1	16-Aug	Drilling	03:37	03:41	0.07	2077	2111	34	30	510.0	50	6000	700	2900		2.88	169.70	0.00	
1	16-Aug	Drilling	03:47	03:51	0.07	2111	2162	51	30	765.0	50	6000	700	2900		1.78	183.25	0.00	
1	16-Aug	Sliding	03:51	03:54	0.05	2162	2169	7	20	140.0	50	6000	700	2900	110M	1.78	183.25	0.00	
1	16-Aug	Drilling	03:54	03:58	0.07	2169	2206	37	30	555.0	50	6000	700	2900		1.78	183.25	0.00	
1	16-Aug	Drilling	04:03	04:05	0.03	2206	2226	20	30	600.0	50	6000	700	2900		1.78	183.25	0.00	
1	16-Aug	Sliding	04:05	04:12	0.12	2226	2241	15	20	128.6	50	6000	700	2900	130M	3.09	163.37	0.00	
1	16-Aug	Drilling	04:12	04:19	0.12	2241	2302	61	30	522.9	50	6000	700	2900		3.09	163.37	0.00	
1	16-Aug	Drilling	04:24	04:26	0.03	2302	2322	20	30	600.0	50	6000	700	2900		3.09	163.37	0.00	
1	16-Aug	Sliding	04:26	04:30	0.07	2322	2330	8	20	120.0	50	6000	700	2900	150M	2.73	174.55	0.00	
1	16-Aug	Drilling	04:30	04:40	0.17	2330	2397	67	30	402.0	50	6000	700	2900		2.73	174.55	0.00	
1	16-Aug	Drilling	04:46	04:49	0.05	2397	2422	25	30	500.0	50	6000	700	2900		2.73	174.55	0.00	
1	16-Aug	Sliding	04:49	04:54	0.08	2422	2440	18	20	216.0	50	6000	700	2900	135M	2.89	180.75	0.00	
1	16-Aug	Drilling	04:54	05:02	0.13	2440	2492	52	30	390.0	50	6000	700	2900		2.89	180.75	0.00	
1	16-Aug	Drilling	05:08	05:10	0.03	2492	2512	20	30	600.0	50	6000	700	2900		2.89	180.75	0.00	
1	16-Aug	Sliding	05:10	05:16	0.10	2512	2532	20	20	200.0	50	6000	700	2900	130M	5.28	166.33	0.00	
1	16-Aug	Drilling	05:45	05:50	0.08	2532	2587	55	30	660.0	50	6000	700	2900		5.28	166.33	0.00	

Slide Report for BHA # 1

Note: Surveys listed are interpolated from the actual surveys

#	Date	Drill Mode	Start Time	End Time	Hours	Start MD	End MD	Depth Drilled	WOB	ROP	RPM	Surf. Torque	Flow Rate	SPP	TFO	INC	AZM	DLS	Note
1	16-Aug	Drilling	05:55	06:05	0.17	2587	2664	77	30	462.0	50	6000	700	2900		6.98	166.94	0.00	
1	16-Aug	Drilling	06:14	06:16	0.03	2664	2682	18	30	540.0	50	6000	700	2900		6.98	166.94	0.00	
1	16-Aug	Drilling	06:25	06:27	0.03	2682	2703	21	30	630.0	50	6000	700	2900		6.98	166.94	0.00	
1	16-Aug	Sliding	06:27	06:38	0.18	2703	2708	5	20	27.3	50	6000	700	2900	90L	6.98	166.94	0.00	
1	16-Aug	Drilling	06:38	06:45	0.12	2708	2778	70	30	600.0	50	6000	700	2900		6.83	167.25	0.00	
1	16-Aug	Drilling	06:52	06:54	0.03	2778	2794	16	30	480.0	50	6000	700	2900		6.83	167.25	0.00	
1	16-Aug	Sliding	06:54	07:00	0.10	2794	2802	8	20	80.0	50	6000	700	2900	60L	6.83	167.25	0.00	
1	16-Aug	Drilling	07:00	07:09	0.15	2802	2873	71	30	473.3	50	6000	700	2900		7.58	168.83	0.00	
1	16-Aug	Drilling	07:17	07:20	0.05	2873	2892	19	30	380.0	50	6000	700	2900		7.58	168.83	0.00	
1	16-Aug	Sliding	07:20	07:35	0.25	2892	2908	16	20	64.0	50	6000	700	2900	140L	8.33	169.24	0.00	
1	16-Aug	Drilling	07:35	07:40	0.08	2908	2968	60	30	720.0	50	6000	700	2900		8.33	169.24	0.00	
1	16-Aug	Drilling	07:47	07:49	0.03	2968	2983	15	30	450.0	50	6000	700	2900		8.33	169.24	0.00	
1	16-Aug	Sliding	07:49	08:00	0.18	2983	3001	18	20	98.2	50	6000	700	2900	140L	7.74	153.73	0.00	
1	16-Aug	Drilling	08:00	08:05	0.08	3001	3068	67	30	804.0	50	6000	700	2900		7.74	153.73	0.00	
1	16-Aug	Drilling	08:13	08:15	0.03	3068	3082	14	30	420.0	50	6000	700	2900		7.74	153.73	0.00	
1	16-Aug	Sliding	08:15	08:20	0.08	3082	3090	8	20	96.0	50	6000	700	2900	135L	7.74	153.73	0.00	
1	16-Aug	Drilling	08:20	08:27	0.12	3090	3159	69	30	591.4	50	6000	700	2900		6.42	135.79	0.00	
1	16-Aug	Drilling	08:35	08:44	0.15	3159	3254	95	30	633.3	50	8200	700	3300		5.64	131.45	0.00	
1	16-Aug	Drilling	08:51	09:02	0.18	3254	3350	96	30	523.6	50	8200	700	3300		4.89	130.65	0.00	
1	16-Aug	Drilling	09:10	09:12	0.03	3350	3367	17	30	510.0	50	8200	700	3300		4.89	130.65	0.00	
1	16-Aug	Sliding	09:12	09:20	0.13	3367	3377	10	20	75.0	50	8200	700	3300	50R	4.89	130.65	0.00	
1	16-Aug	Drilling	09:20	09:25	0.08	3377	3445	68	30	816.0	50	8200	700	3300		4.79	143.41	0.00	
1	16-Aug	Drilling	09:33	09:35	0.03	3445	3463	18	30	540.0	50	8200	700	3300		4.79	143.41	0.00	
1	16-Aug	Sliding	09:35	09:40	0.08	3463	3475	12	20	144.0	50	8200	700	3300	0G	5.35	152.21	0.00	
1	16-Aug	Drilling	09:40	09:52	0.20	3475	3540	65	30	325.0	50	8200	700	3300		5.35	152.21	0.00	
1	16-Aug	Sliding	10:06	10:11	0.08	3540	3546	6	20	72.0	50	8200	700	3300	60L	5.35	152.21	0.00	
1	16-Aug	Drilling	10:11	10:19	0.13	3546	3635	89	30	667.5	50	8200	700	3300		6.33	143.91	0.00	
1	16-Aug	Drilling	10:37	10:45	0.13	3635	3730	95	30	712.5	50	8200	700	3300		5.86	144.08	0.00	
1	16-Aug	Drilling	10:59	11:07	0.13	3730	3826	96	30	720.0	50	8200	700	3300		5.92	143.84	0.00	
1	16-Aug	Sliding	11:19	11:21	0.03	3826	3831	5	20	150.0	50	8200	700	3300	180	5.92	143.84	0.00	
1	16-Aug	Drilling	11:21	11:30	0.15	3831	3920	89	30	593.3	50	8200	700	3300		5.30	141.65	0.00	
1	16-Aug	Drilling	11:48	11:56	0.13	3920	4016	96	30	720.0	50	8200	700	3300		5.13	143.91	0.00	
1	16-Aug	Sliding	12:10	12:12	0.03	4016	4020	4	20	120.0	50	8200	700	3300	180	5.13	143.91	0.00	
1	16-Aug	Drilling	12:12	12:21	0.15	4020	4111	91	30	606.7	50	8200	700	3300		4.17	148.01	0.00	
1	16-Aug	Drilling	12:32	12:39	0.12	4111	4206	95	30	814.3	50	8200	700	3300		3.84	153.53	0.00	

Slide Report for BHA # 1

Note: Surveys listed are interpolated from the actual surveys

#	Date	Drill Mode	Start Time	End Time	Hours	Start MD	End MD	Depth Drilled	WOB	ROP	RPM	Surf. Torque	Flow Rate	SPP	TFO	INC	AZM	DLS	Note
1	16-Aug	Sliding	12:50	12:55	0.08	4206	4214	8	20	96.0	50	8200	700	3300	30L	3.84	153.53	0.00	
1	16-Aug	Drilling	12:55	13:03	0.13	4214	4301	87	30	652.5	50	8200	700	3300		3.46	150.82	0.00	
1	16-Aug	Sliding	13:15	13:20	0.08	4301	4315	14	20	168.0	50	8200	700	3300	30L	3.46	150.82	0.00	
1	16-Aug	Drilling	13:20	13:28	0.13	4315	4397	82	30	615.0	50	8200	700	3300		3.82	148.72	0.00	
1	16-Aug	Sliding	13:39	13:43	0.07	4397	4409	12	20	180.0	50	8200	700	3300	30L	3.82	148.72	0.00	
1	16-Aug	Drilling	13:43	13:51	0.13	4409	4492	83	30	622.5	50	8200	700	3300		4.86	150.17	0.00	
1	16-Aug	Drilling	14:03	14:12	0.15	4492	4587	95	30	633.3	50	8200	700	3300		4.21	152.25	0.00	
1	16-Aug	Sliding	14:25	14:28	0.05	4587	4599	12	20	240.0	50	8200	700	3300	30L	4.21	152.25	0.00	
1	16-Aug	Drilling	14:28	14:37	0.15	4599	4683	84	30	560.0	50	8200	700	3300		4.78	147.06	0.00	
1	16-Aug	Drilling	14:50	14:59	0.15	4683	4778	95	30	633.3	50	8200	700	3300		3.40	150.34	0.00	
1	16-Aug	Sliding	15:10	15:14	0.07	4778	4793	15	20	225.0	50	8200	700	3300	30L	3.40	150.34	0.00	
1	16-Aug	Drilling	15:14	15:22	0.13	4793	4873	80	30	600.0	50	8200	700	3300		5.05	140.70	0.00	
1	16-Aug	Drilling	15:36	15:44	0.13	4873	4968	95	30	712.5	50	8200	700	3300		4.38	142.17	0.00	
1	16-Aug	Drilling	15:57	16:05	0.13	4968	5064	96	34	720.0	50	12000	700	3900		3.78	141.33	0.00	
1	16-Aug	Sliding	16:16	16:26	0.17	5064	5079	15	20	90.0	50	12000	700	3900		3.78	141.33	0.00	
1	16-Aug	Drilling	16:26	16:36	0.17	5079	5159	80	34	480.0	50	12000	700	3900		2.15	148.07	0.00	
1	16-Aug	Sliding	16:48	16:58	0.17	5159	5184	25	20	150.0	50	12000	700	3900	150M	2.15	148.07	0.00	
1	16-Aug	Drilling	16:58	17:06	0.13	5184	5255	71	34	532.5	50	12000	700	3900		3.40	145.45	0.00	
1	16-Aug	Sliding	17:16	17:23	0.12	5255	5277	22	20	188.6	50	12000	700	3900		3.40	145.45	0.00	
1	16-Aug	Drilling	17:23	17:31	0.13	5277	5350	73	34	547.5	50	12000	700	3900		3.93	151.33	0.00	
1	16-Aug	Sliding	17:43	17:48	0.08	5350	5365	15	20	180.0	50	12000	700	3900		3.93	151.33	0.00	
1	16-Aug	Drilling	17:48	17:59	0.18	5365	5445	80	34	436.4	50	12000	700	3900		4.37	154.91	0.00	
1	16-Aug	Sliding	18:15	18:31	0.27	5445	5455	10	20	37.5	50	12000	700	3900		4.37	154.91	0.00	
1	16-Aug	Drilling	18:31	18:41	0.17	5455	5541	86	34	516.0	50	12000	700	3900		4.47	162.38	0.00	
1	16-Aug	Sliding	18:52	19:01	0.15	5541	5556	15	20	100.0	50	12000	700	3900		4.47	162.38	0.00	
1	16-Aug	Drilling	19:01	19:09	0.13	5556	5636	80	34	600.0	50	12000	700	3900		5.90	145.46	0.00	
1	16-Aug	Sliding	19:17	19:44	0.45	5636	5666	30	20	66.7	50	12000	700	3900		7.06	165.19	0.00	
1	16-Aug	Drilling	19:44	19:53	0.15	5666	5732	66	34	440.0	50	12000	700	3900		7.06	165.19	0.00	
1	16-Aug	Drilling	20:10	20:21	0.18	5732	5828	96	34	523.6	50	12000	700	3900		6.04	167.28	0.00	
1	16-Aug	Sliding	20:31	20:45	0.23	5828	5848	20	20	85.7	50	12000	700	3900		6.04	167.28	0.00	
1	16-Aug	Drilling	20:45	20:57	0.20	5848	5923	75	34	375.0	50	12000	700	3900		6.91	147.66	0.00	
1	16-Aug	Drilling	21:12	21:19	0.12	5923	6018	95	34	814.3	50	12000	700	3900		4.57	152.25	0.00	
1	16-Aug	Sliding	21:29	21:43	0.23	6018	6038	20	20	85.7	50	12000	700	3900		4.57	152.25	0.00	
1	16-Aug	Drilling	21:43	21:51	0.13	6038	6114	76	34	570.0	50	12000	700	3900		6.18	146.03	0.00	
1	16-Aug	Sliding	22:01	22:10	0.15	6114	6129	15	20	100.0	50	12000	700	3900		6.18	146.03	0.00	

Slide Report for BHA # 1

Note: Surveys listed are interpolated from the actual surveys

#	Date	Drill Mode	Start Time	End Time	Hours	Start MD	End MD	Depth Drilled	WOB	ROP	RPM	Surf. Torque	Flow Rate	SPP	TFO	INC	AZM	DLS	Note
1	16-Aug	Drilling	22:10	22:19	0.15	6129	6209	80	34	533.3	50	12000	700	3900		6.59	152.04	0.00	
1	16-Aug	Sliding	22:56	23:06	0.17	6209	6216	7	20	42.0	50	12000	700	3900		6.59	152.04	0.00	
1	16-Aug	Drilling	23:06	23:14	0.13	6216	6278	62	34	465.0	50	12000	700	3900		5.67	151.26	0.00	
1	16-Aug	Drilling	23:41	24:00	0.32	6278	6304	26	34	82.1	50	12000	700	3900		5.67	151.26	0.00	
1	17-Aug	Sliding	00:10	00:18	0.13	6304	6312	8	20	60.0	50	12000	700	3900		5.67	151.26	0.00	
1	17-Aug	Drilling	00:18	00:30	0.20	6312	6399	87	34	435.0	50	12000	700	3900		4.72	152.82	0.00	
1	17-Aug	Sliding	00:41	00:54	0.22	6399	6414	15	20	69.2	50	12000	700	3900		4.72	152.82	0.00	
1	17-Aug	Drilling	00:54	01:03	0.15	6414	6495	81	34	540.0	50	12000	700	3900		4.87	149.35	0.00	
1	17-Aug	Sliding	01:16	01:27	0.18	6495	6507	12	20	65.5	50	12000	700	3900		4.87	149.35	0.00	
1	17-Aug	Drilling	01:27	01:39	0.20	6507	6590	83	34	415.0	50	12000	700	3900		4.61	143.73	0.00	
1	17-Aug	Sliding	01:47	01:59	0.20	6590	6605	15	20	75.0	50	12000	700	3900		4.61	143.73	0.00	
1	17-Aug	Drilling	01:59	02:13	0.23	6605	6685	80	34	342.9	50	12000	700	3900		4.84	159.12	0.00	
1	17-Aug	Sliding	02:22	02:55	0.55	6685	6737	52	20	94.5	50	12000	700	3900	85R	6.13	195.15	0.00	

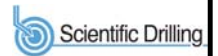
Total Drilled: 5152 **Avg. Total ROP:** 361.12

DEPTH% - TIME %

Total Rotary Drilled: 4617 **Avg. Rotary ROP:** 529.68 **Percent Rotary:** 89.62 - 61.10

Total Drilled Sliding: 535 **Avg. Slide ROP:** 96.40 **Percent Slide:** 10.38 - 38.90

BHA # 2



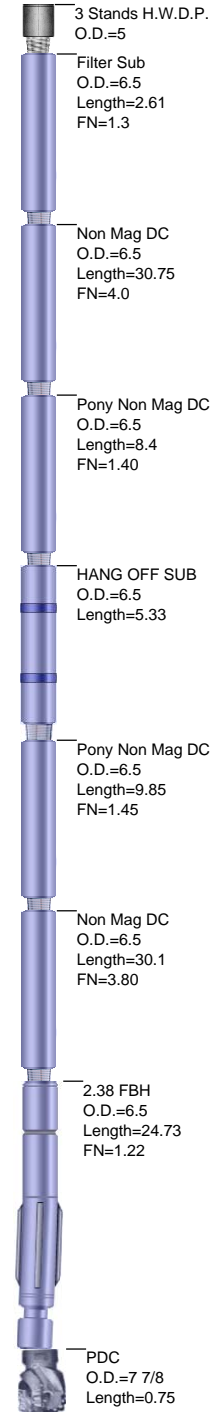
JOB NO.: 376608	Work Order:	FIELD: Wattenburg
Company: Extraction Oil & Gas		Township: 6N
LOCATION: Winder South		SECT. RANGE: 9 67W
RIG NAME: Patterson 346		Lead DD: Chris Apodaca
STATE: Colorado		Co. Man: Hugh McGraw
COUNTY: Weld		BHA TYPE:
WELL NAME: Winder South 1		BHA WT: 17555 Wt @ Jars: N/A

Time and Depths	MOTOR DATA	Drilling Parameters
Date In: 17-Aug-16 @ 06:30	Motor 2.38 FBH	SO/PU: 0 - 0 / 0-0
Date Out: 17-Aug-16 @ 21:33	MFG.:	Rot Strg Wt: 0-0
Hrs In Hole: 15.05	Pad OD:	WOB: 15 - 34
Start Depth: 6737.00	NB Stab: 0	TORQ: 11000 - 12000
End Depth: 7628.00	Bit to Bend: 0	SPP: 3500 - 3950
Total Drilled: 891.00	Bent Hsg/Sub°: 2.38 /	Motor RPM: No Rev/Gal Input
Avg. Total ROP: 156.32	Lobe/Stage: /	Rotary RPM: 25 - 50
Circ Hrs: Tot/Only 6.02 / .32	Rev/GAL: 0	Flow Rate: 700 - 700
Percent Slide: 65.99	Rotor Jet: 0	Avg Diff:
Percent Hrs: 75.44	Prop BUR:	Stall Pres.:
Slide Hours: 4.30	Act BUR:	Off Bot Pres.:
Total Sliding: 588.00		
Avg. Slide ROP: 136.74		
Percent Rotary: 34.01		
Percent Hrs: 24.56		
Rotary Hours: 1.40		
Total Rotary: 303.00		
Avg. Rotary ROP: 216.43		
Reason POOH:		

MWD Spacing	Gamma: 0	Restiv: 0	Sensor: 0	Last Casing	O.D.
	GYRO: 0	DNSC: 0	Sonic: 0	Shoe @:	Hanger @:

INC IN: .0 **INC OUT:** .0 **AZM IN:** .00 **AZM OUT:** .00

BHA Detail							
Description	Serial #	I.D.	O.D.	Length	Sum	Top Conn	MFG.
PDC	A230298		7 7/8	0.75	0.75	4 1/2 REGP	REED
2.38 FBH	G1669		6.5	24.73	25.48	4 1/2 IFB	OTHER
Non Mag DC	122-978	3.25	6.5	30.10	55.58	4 1/2 IFB	SDI
Pony Non Mag DC	125-297	3.25	6.5	9.85	65.43	4 1/2 IFB	SDI
HANG OFF SUB	188-	3.25	6.5	5.33	70.76	4 1/2 IFB	SDI
Pony Non Mag DC	125-218	3.25	6.5	8.40	79.16	4 1/2 IFB	SDI
Non Mag DC	189-012	3.25	6.5	30.75	109.91	4 1/2 IFB	SDI
Filter Sub	DR16287	3.25	6.5	2.61	112.52	4 1/2 IFB	SDI
3 Stands H.W.D.P.	N/A	3.76	5	275.51	388.03	4 1/2 IFB	Other





JOB NO.: 376608
Company: Extraction Oil & Gas
LOCATION: Winder South
RIG NAME: Patterson 346
STATE: Colorado
COUNTY: Country
WELL NAME: Winder South 1

FIELD: Wattenburg
Township: 6N
Range 67W

MOTOR INFORMATION

Desc: Motor 2.38 FBH
Bent Hsg/Sub: 2.3 / 0 **Bit to Bend:** 0
Pad OD: **NB Stab:**

Slide Report for BHA # 2

Note: Surveys listed are interpolated from the actual surveys

#	Date	Drill Mode	Start Time	End Time	Hours	Start MD	End MD	Depth Drilled	WOB	ROP	RPM	Surf. Torque	Flow Rate	SPP	TFO	INC	AZM	DLS	Note
2	17-Aug	Sliding	10:15	10:40	0.42	6737	6769	32	20	76.8	50	12000	700	3900	65R	6.13	195.15	0.00	
2	17-Aug	Drilling	10:40	10:41	0.02	6769	6773	4	34	240.0	50	12000	700	3900		6.13	195.15	0.00	
2	17-Aug	Sliding	10:52	11:15	0.38	6773	6782	9	20	23.5	50	12000	700	3900	35R	6.13	195.15	0.00	
2	17-Aug	Drilling	11:15	11:18	0.05	6782	6787	5	30	100.0	30	11000	700	3950		6.13	195.15	0.00	
2	17-Aug	Sliding	11:18	11:45	0.45	6787	6837	50	20	111.1	30	11000	700	3950	30R	14.05	231.16	0.00	
2	17-Aug	Sliding	12:04	12:14	0.17	6837	6868	31	20	186.0	30	11000	700	3950	30R	14.05	231.16	0.00	
2	17-Aug	Sliding	12:22	12:56	0.57	6868	6964	96	20	169.4	30	11000	700	3950	45R	25.90	249.24	0.00	
2	17-Aug	Drilling	13:10	13:15	0.08	6964	6979	15	30	180.0	30	11000	700	3950		25.90	249.24	0.00	
2	17-Aug	Sliding	13:15	13:56	0.68	6979	7059	80	25	117.1	30	11000	700	3500	30R	34.53	262.62	0.00	
2	17-Aug	Drilling	14:12	14:16	0.07	7059	7084	25	15	375.0	25	11000	700	3700		34.53	262.62	0.00	
2	17-Aug	Sliding	14:16	14:38	0.37	7084	7155	71	25	193.6	25	11000	700	3700	30R	44.60	268.43	0.00	
2	17-Aug	Drilling	14:38	14:57	0.32	7155	7190	35	15	110.5	25	11000	700	3700		53.84	270.40	0.00	
2	17-Aug	Sliding	14:57	15:17	0.33	7190	7250	60	25	180.0	25	11000	700	3700	30R	53.84	270.40	0.00	
2	17-Aug	Drilling	15:17	15:41	0.40	7250	7311	61	15	152.5	25	11000	700	3700		61.45	273.85	0.00	
2	17-Aug	Sliding	15:41	15:55	0.23	7311	7345	34	25	145.7	25	11000	700	3700	30R	61.45	273.85	0.00	
2	17-Aug	Sliding	16:10	16:38	0.47	7345	7440	95	25	203.6	25	11000	700	3700	30R	73.88	273.50	0.00	
2	17-Aug	Drilling	16:46	16:58	0.20	7440	7485	45	15	225.0	25	11000	700	3700		84.28	272.15	0.00	
2	17-Aug	Sliding	16:58	17:12	0.23	7485	7515	30	25	128.6	25	11000	700	3700	30R	84.28	272.15	0.00	
2	17-Aug	Drilling	17:12	17:15	0.05	7515	7535	20	20	400.0	25	11000	700	3700		84.28	272.15	0.00	
2	17-Aug	Drilling	17:28	17:41	0.22	7535	7628	93	20	429.2	25	11000	700	3700		90.40	270.35	0.00	

Total Drilled: 891 **Avg. Total ROP:** 156.32

DEPTH% - TIME %

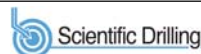
Total Rotary Drilled: 303 **Avg. Rotary ROP:** 216.43

Percent Rotary: 34.01 - 24.56

Total Drilled Sliding: 588 **Avg. Slide ROP:** 136.74

Percent Slide: 65.99 - 75.44

BHA # 3



JOB NO.: 376608 Work Order: FIELD: Wattenburg
 Company: Extraction Oil & Gas Township: 6N
 LOCATION: Winder South SECT. RANGE: 9 67W
 RIG NAME: Patterson 346 Lead DD: Chris Apodaca
 STATE: Colorado Co. Man: Hugh McGraw
 COUNTY: Weld BHA TYPE:
 WELL NAME: Winder South 1 BHA WT: 17563 Wt @ Jars: N/A

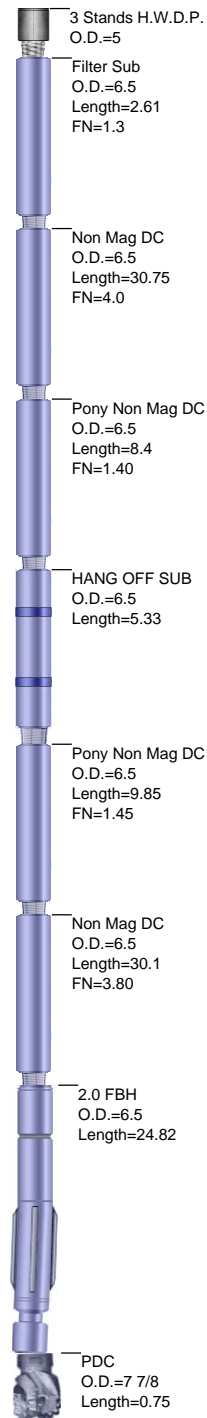
Time and Depths	MOTOR DATA	Drilling Parameters
Date In: 17-Aug-16 @ 21:33	Motor 2.0 FBH	SO/PU: 0 - 0 / 0-0
Date Out: 20-Aug-16 @ 11:45	MFG.:	Rot Strg Wt: 0-0
Hrs In Hole: 62.20	Pad OD:	WOB: 20 - 75
Start Depth: 7628.00	NB Stab: 0	TORQ: 11000 - 25000
End Depth: 16960.00	Bit to Bend: 0	SPP: 3700 - 5750
Total Drilled: 9332.00	Bent Hsg/Sub°: 2 /	Motor RPM: No Rev/Gal Input
Avg. Total ROP: 291.93	Lobe/Stage: /	Rotary RPM: 25 - 65
Circ Hrs: Tot/Only 37.30 / 5.33	Rev/GAL: 0	Flow Rate: 635 - 700
Percent Slide: 3.89	Rotor Jet: 0	Avg Diff:
Percent Hrs: 26.90	Prop BUR:	Stall Pres.:
Slide Hours: 8.60	Act BUR:	Off Bot Pres.:
Total Sliding: 363.00		
Avg. Slide ROP: 42.21		
Percent Rotary: 96.11		
Percent Hrs: 73.10		
Rotary Hours: 23.37		
Total Rotary: 8969.00		
Avg. Rotary ROP: 383.84		
Reason POOH:		

MWD Spacing	Gamma: 0	Restiv: 0	Sensor: 0	Last Casing	O.D.
	GYRO: 0	DNSC: 0	Sonic: 0	Shoe @:	Hanger @:

INC IN: .0 INC OUT: .0 AZM IN: .00 AZM OUT: .00

BHA Detail

Description	Serial #	I.D.	O.D.	Length	Sum	Top Conn	MFG.
PDC	A230298		7 7/8	0.75	0.75	4 1/2 REGP	REED
2.0 FBH	G1674		6.5	24.82	25.57	4 1/2 IFB	OTHER
Non Mag DC	122-978	3.25	6.5	30.10	55.67	4 1/2 IFB	SDI
Pony Non Mag DC	125-297	3.25	6.5	9.85	65.52	4 1/2 IFB	SDI
HANG OFF SUB	188-	3.25	6.5	5.33	70.85	4 1/2 IFB	SDI
Pony Non Mag DC	125-218	3.25	6.5	8.40	79.25	4 1/2 IFB	SDI
Non Mag DC	189-012	3.25	6.5	30.75	110.00	4 1/2 IFB	SDI
Filter Sub	DR16287	3.25	6.5	2.61	112.61	4 1/2 IFB	SDI
3 Stands H.W.D.P.	N/A	3.76	5	275.51	388.12	4 1/2 IFB	Other





JOB NO.: 376608
Company: Extraction Oil & Gas
LOCATION: Winder South
RIG NAME: Patterson 346
STATE: Colorado
COUNTY: Country
WELL NAME: Winder South 1

FIELD: Wattenburg
Township: 6N
Range 67W

MOTOR INFORMATION

Desc: Motor 2.0 FBH
Bent Hsg/Sub: 2 / 0 **Bit to Bend:** 0
Pad OD: **NB Stab:**

Slide Report for BHA # 3

Note: Surveys listed are interpolated from the actual surveys

#	Date	Drill Mode	Start Time	End Time	Hours	Start MD	End MD	Depth Drilled	WOB	ROP	RPM	Surf. Torque	Flow Rate	SPP	TFO	INC	AZM	DLS	Note
3	18-Aug	Drilling	02:20	02:37	0.28	7628	7661	33	20	116.5	25	11000	700	3700		90.40	270.35	0.00	
3	18-Aug	Drilling	02:42	02:45	0.05	7661	7671	10	20	200.0	25	11000	700	3700		90.40	270.35	0.00	
3	18-Aug	Sliding	02:45	02:49	0.07	7671	7677	6	25	90.0	25	11000	700	3700	30R	90.40	270.35	0.00	
3	18-Aug	Drilling	02:49	03:04	0.25	7677	7757	80	20	320.0	25	11000	700	3700		89.29	269.58	0.00	
3	18-Aug	Drilling	03:08	03:28	0.33	7757	7852	95	35	285.0	60	11000	700	4700		89.43	269.55	0.00	
3	18-Aug	Drilling	03:33	03:49	0.27	7852	7947	95	35	356.3	60	11000	700	4700		89.33	269.60	0.00	
3	18-Aug	Drilling	03:54	04:10	0.27	7947	8043	96	35	360.0	60	11000	700	4700		89.73	270.22	0.00	
3	18-Aug	Drilling	04:15	04:29	0.23	8043	8138	95	35	407.1	60	11000	700	4700		90.91	270.23	0.00	
3	18-Aug	Drilling	04:33	04:36	0.05	8138	8146	8	35	160.0	60	11000	700	4700		90.91	270.23	0.00	
3	18-Aug	Sliding	04:46	04:51	0.08	8146	8152	6	25	72.0	60	11000	700	4700	135R	90.91	270.23	0.00	
3	18-Aug	Drilling	04:51	05:01	0.17	8152	8233	81	35	486.0	60	11000	700	4700		89.70	269.91	0.00	
3	18-Aug	Drilling	05:06	05:12	0.10	8233	8248	15	35	150.0	60	11000	700	4700		89.70	269.91	0.00	
3	18-Aug	Drilling	05:20	05:24	0.07	8248	8329	81	35	1215.0	60	11000	700	4700		90.50	269.28	0.00	
3	18-Aug	Drilling	05:29	05:42	0.22	8329	8425	96	35	443.1	60	11000	700	4700		90.10	268.77	0.00	
3	18-Aug	Drilling	05:47	05:52	0.08	8425	8432	7	35	84.0	60	11000	700	4700		90.10	268.77	0.00	
3	18-Aug	Sliding	05:52	05:57	0.08	8432	8441	9	25	108.0	60	11000	700	4700	90R	90.10	268.77	0.00	
3	18-Aug	Drilling	05:57	06:06	0.15	8441	8520	79	40	526.7	65	17000	700	4725		90.40	270.12	0.00	
3	18-Aug	Drilling	06:12	06:24	0.20	8520	8615	95	40	475.0	65	17000	700	4725		90.57	270.17	0.00	
3	18-Aug	Drilling	06:30	06:33	0.05	8615	8627	12	40	240.0	65	17000	700	4725		90.57	270.17	0.00	
3	18-Aug	Drilling	06:39	06:48	0.15	8627	8710	83	40	553.3	65	17000	700	4725		90.87	269.97	0.00	
3	18-Aug	Drilling	06:53	06:59	0.10	8710	8733	23	40	230.0	65	17000	700	4725		90.87	269.97	0.00	
3	18-Aug	Sliding	06:59	07:08	0.15	8733	8743	10	25	66.7	65	17000	700	4725	135R	90.87	269.97	0.00	
3	18-Aug	Drilling	07:08	07:15	0.12	8743	8806	63	40	540.0	65	17000	700	4725		90.77	270.75	0.00	
3	18-Aug	Drilling	07:21	07:23	0.03	8806	8816	10	40	300.0	65	17000	700	4725		90.77	270.75	0.00	
3	18-Aug	Sliding	07:30	07:40	0.17	8816	8829	13	35	78.0	65	17000	700	4725	160R	90.77	270.75	0.00	
3	18-Aug	Drilling	07:40	07:48	0.13	8829	8901	72	40	540.0	65	17000	700	4725		89.19	271.96	0.00	

Slide Report for BHA # 3

Note: Surveys listed are interpolated from the actual surveys

#	Date	Drill Mode	Start Time	End Time	Hours	Start MD	End MD	Depth Drilled	WOB	ROP	RPM	Surf. Torque	Flow Rate	SPP	TFO	INC	AZM	DLS	Note
3	18-Aug	Drilling	08:00	08:11	0.18	8901	8996	95	40	518.2	65	17000	700	4725		88.99	271.01	0.00	
3	18-Aug	Drilling	08:16	08:28	0.20	8996	9092	96	40	480.0	65	17000	700	4725		88.22	270.40	0.00	
3	18-Aug	Drilling	09:12	09:16	0.07	9092	9115	23	40	345.0	65	17000	700	4725		88.22	270.40	0.00	
3	18-Aug	Sliding	09:16	09:30	0.23	9115	9126	11	35	47.1	65	17000	700	4725		89.80	270.86	0.00	
3	18-Aug	Drilling	09:30	09:38	0.13	9126	9187	61	40	457.5	65	17000	700	4725		89.80	270.86	0.00	
3	18-Aug	Drilling	09:43	09:55	0.20	9187	9283	96	40	480.0	65	17000	700	4725		90.03	270.51	0.00	
3	18-Aug	Drilling	10:01	10:13	0.20	9283	9378	95	40	475.0	65	17000	700	4725		90.54	270.82	0.00	
3	18-Aug	Drilling	10:18	10:30	0.20	9378	9473	95	40	475.0	65	17000	700	4725		92.42	271.27	0.00	
3	18-Aug	Drilling	10:36	10:40	0.07	9473	9499	26	40	390.0	65	17000	700	4725		92.42	271.27	0.00	
3	18-Aug	Sliding	10:40	10:54	0.23	9499	9513	14	35	60.0	65	17000	700	4725	180	92.96	271.04	0.00	
3	18-Aug	Drilling	10:54	11:01	0.12	9513	9569	56	40	480.0	65	17000	700	4725		92.96	271.04	0.00	
3	18-Aug	Drilling	11:07	11:11	0.07	9569	9586	17	40	255.0	65	17000	700	4725		92.96	271.04	0.00	
3	18-Aug	Sliding	11:11	11:19	0.13	9586	9597	11	35	82.5	65	17000	700	4725	160L	92.96	271.04	0.00	
3	18-Aug	Drilling	11:19	11:25	0.10	9597	9634	37	40	370.0	65	17000	700	4725		91.24	270.55	0.00	
3	18-Aug	Drilling	11:41	11:45	0.07	9634	9664	30	40	450.0	65	17000	700	4725		91.24	270.55	0.00	
3	18-Aug	Drilling	11:50	11:53	0.05	9664	9685	21	40	420.0	65	17000	700	4725		91.24	270.55	0.00	
3	18-Aug	Sliding	11:53	12:00	0.12	9685	9693	8	35	68.6	65	17000	700	4725	180	91.24	270.55	0.00	
3	18-Aug	Drilling	12:00	12:09	0.15	9693	9760	67	40	446.7	65	17000	700	4725		91.11	269.75	0.00	
3	18-Aug	Drilling	12:14	12:25	0.18	9760	9855	95	40	518.2	65	17000	700	4725		90.34	269.91	0.00	
3	18-Aug	Drilling	12:30	12:43	0.22	9855	9951	96	40	443.1	65	17000	700	4725		89.50	270.01	0.00	
3	18-Aug	Drilling	12:48	13:00	0.20	9951	10046	95	40	475.0	65	17000	700	4725		88.39	270.55	0.00	
3	18-Aug	Drilling	13:05	13:09	0.07	10046	10058	12	40	180.0	65	17000	700	4725		88.39	270.55	0.00	
3	18-Aug	Sliding	13:09	13:21	0.20	10058	10072	14	35	70.0	65	17000	700	4725	180	88.39	270.55	0.00	
3	18-Aug	Drilling	13:21	13:29	0.13	10072	10142	70	40	525.0	65	19000	700	5050		90.13	271.76	0.00	
3	18-Aug	Drilling	13:34	13:49	0.25	10142	10237	95	40	380.0	65	19000	700	5050		90.40	271.99	0.00	
3	18-Aug	Drilling	13:57	14:08	0.18	10237	10333	96	40	523.6	65	19000	700	5050		89.77	271.54	0.00	
3	18-Aug	Drilling	14:13	14:17	0.07	10333	10349	16	40	240.0	65	19000	700	5050		89.77	271.54	0.00	
3	18-Aug	Sliding	14:17	14:27	0.17	10349	10363	14	35	84.0	65	19000	700	5050	60L	89.77	271.54	0.00	
3	18-Aug	Drilling	14:27	14:34	0.12	10363	10428	65	40	557.1	65	19000	700	5050		90.24	270.05	0.00	
3	18-Aug	Drilling	14:40	14:43	0.05	10428	10440	12	40	240.0	65	19000	700	5050		90.24	270.05	0.00	
3	18-Aug	Sliding	14:43	14:49	0.10	10440	10448	8	35	80.0	65	19000	700	5050	60L	90.24	270.05	0.00	
3	18-Aug	Drilling	14:56	15:04	0.13	10448	10523	75	40	562.5	65	19000	700	5050		91.85	269.62	0.00	
3	18-Aug	Drilling	15:10	15:20	0.17	10523	10619	96	40	576.0	65	19000	700	5050		91.78	269.43	0.00	
3	18-Aug	Drilling	15:25	15:37	0.20	10619	10714	95	40	475.0	55	19000	700	5050		91.48	268.53	0.00	
3	18-Aug	Drilling	15:43	15:55	0.20	10714	10809	95	40	475.0	55	19000	700	5050		91.11	268.36	0.00	

Slide Report for BHA # 3

Note: Surveys listed are interpolated from the actual surveys

#	Date	Drill Mode	Start Time	End Time	Hours	Start MD	End MD	Depth Drilled	WOB	ROP	RPM	Surf. Torque	Flow Rate	SPP	TFO	INC	AZM	DLS	Note
3	18-Aug	Drilling	16:00	16:04	0.07	10809	10827	18	40	270.0	55	19000	700	5050		91.11	268.36	0.00	
3	18-Aug	Sliding	16:04	16:13	0.15	10827	10834	7	35	46.7	55	19000	700	5050	30R	91.11	268.36	0.00	
3	18-Aug	Drilling	16:13	16:21	0.13	10834	10904	70	40	525.0	55	19000	700	5050		91.61	268.50	0.00	
3	18-Aug	Drilling	16:26	16:31	0.08	10904	10934	30	40	360.0	55	19000	700	5050		91.61	268.50	0.00	
3	18-Aug	Sliding	16:31	16:49	0.30	10934	10942	8	35	26.7	55	19000	700	5225	30R	91.95	268.70	0.00	
3	18-Aug	Drilling	16:49	16:56	0.12	10942	10999	57	40	488.6	65	19000	700	5225		91.95	268.70	0.00	
3	18-Aug	Drilling	17:06	17:18	0.20	10999	11095	96	40	480.0	65	19000	700	5225		92.35	268.24	0.00	
3	18-Aug	Drilling	17:23	17:35	0.20	11095	11190	95	40	475.0	65	19000	700	5225		91.68	267.76	0.00	
3	18-Aug	Drilling	17:41	17:45	0.07	11190	11211	21	40	315.0	65	19000	700	5225		91.68	267.76	0.00	
3	18-Aug	Sliding	17:45	17:58	0.22	11211	11224	13	35	60.0	65	19000	700	5225	65R	92.76	269.24	0.00	
3	18-Aug	Drilling	17:58	18:07	0.15	11224	11285	61	40	406.7	65	19000	700	5225		92.76	269.24	0.00	
3	18-Aug	Drilling	18:21	18:24	0.05	11285	11300	15	40	300.0	65	19000	700	5225		92.76	269.24	0.00	
3	18-Aug	Sliding	18:24	18:34	0.17	11300	11309	9	35	54.0	65	19000	700	5225	65R	92.76	269.24	0.00	
3	18-Aug	Drilling	18:34	18:46	0.20	11309	11380	71	40	355.0	65	19000	700	5225		92.89	270.47	0.00	
3	18-Aug	Drilling	18:51	19:04	0.22	11380	11476	96	40	443.1	65	19000	700	5225		92.85	270.23	0.00	
3	18-Aug	Drilling	19:09	19:22	0.22	11476	11571	95	40	438.5	65	19000	700	5225		93.26	270.25	0.00	
3	18-Aug	Drilling	19:27	19:33	0.10	11571	11589	18	40	180.0	65	19000	700	5225		93.26	270.25	0.00	
3	18-Aug	Sliding	19:33	19:47	0.23	11589	11603	14	35	60.0	65	19000	700	5225	65R	93.26	270.25	0.00	
3	18-Aug	Drilling	19:47	19:57	0.17	11603	11666	63	40	378.0	65	19000	700	5225		92.32	270.73	0.00	
3	18-Aug	Drilling	20:03	20:18	0.25	11666	11762	96	40	384.0	65	19000	700	5225		93.17	270.74	0.00	
3	18-Aug	Drilling	20:23	20:31	0.13	11762	11775	13	40	97.5	65	19000	700	5225		93.17	270.74	0.00	
3	18-Aug	Sliding	20:31	20:37	0.10	11775	11785	10	35	100.0	65	19000	700	5225	65R	93.17	270.74	0.00	
3	18-Aug	Drilling	20:37	21:04	0.45	11785	11953	168	40	373.3	65	19000	700	5225		90.67	269.96	0.00	
3	18-Aug	Drilling	21:15	21:19	0.07	11953	11968	15	40	225.0	65	19000	700	5225		90.67	269.96	0.00	
3	18-Aug	Sliding	21:19	21:30	0.18	11968	11978	10	35	54.5	65	19000	700	5225	65R	90.67	269.96	0.00	
3	18-Aug	Drilling	21:30	22:04	0.57	11978	12159	181	40	319.4	65	19000	700	5225		93.09	272.15	0.00	
3	18-Aug	Sliding	22:14	22:30	0.27	12159	12169	10	35	37.5	65	19000	700	5225	65R	93.09	272.15	0.00	
3	18-Aug	Drilling	22:30	22:45	0.25	12169	12333	164	35	656.0	65	19000	700	5225	65R	93.73	272.45	0.00	
3	18-Aug	Drilling	22:55	22:59	0.07	12333	12352	19	35	285.0	65	19000	700	5225		93.73	272.45	0.00	
3	18-Aug	Sliding	22:59	23:11	0.20	12352	12367	15	35	75.0	65	19000	700	5225	65R	93.73	272.45	0.00	
3	18-Aug	Drilling	23:11	23:25	0.23	12367	12444	77	35	330.0	65	19000	700	5225		92.49	271.36	0.00	
3	18-Aug	Sliding	23:31	23:40	0.15	12444	12454	10	35	66.7	65	19000	700	5225	65R	92.49	271.36	0.00	
3	18-Aug	Drilling	23:40	24:00	0.33	12454	12593	139	35	417.0	65	19000	700	5225		92.19	269.46	0.00	
3	19-Aug	Drilling	00:00	00:19	0.32	12593	12715	122	35	385.3	65	19000	700	5225		91.84	268.54	0.00	
3	19-Aug	Drilling	00:29	00:32	0.05	12715	12731	16	35	320.0	65	19000	700	5225		91.84	268.54	0.00	

Slide Report for BHA # 3

Note: Surveys listed are interpolated from the actual surveys

#	Date	Drill Mode	Start Time	End Time	Hours	Start MD	End MD	Depth Drilled	WOB	ROP	RPM	Surf. Torque	Flow Rate	SPP	TFO	INC	AZM	DLS	Note
3	19-Aug	Drilling	00:32	00:48	0.27	12731	12741	10	35	37.5	65	19000	700	5225		91.84	268.54	0.00	
3	19-Aug	Drilling	00:48	01:24	0.60	12741	12920	179	35	298.3	65	19000	700	5225		93.05	269.49	0.00	
3	19-Aug	Sliding	01:34	01:47	0.22	12920	12934	14	35	64.6	65	19000	700	5225	65R	93.05	269.49	0.00	
3	19-Aug	Drilling	01:47	03:40	1.88	12934	13584	650	35	345.1	65	19000	700	5225		91.88	271.60	0.00	
3	19-Aug	Drilling	04:15	04:35	0.33	13584	13681	97	40	291.0	65	22000	700	5700		92.18	272.15	0.00	
3	19-Aug	Sliding	04:35	04:53	0.30	13681	13693	12	75	40.0	65	22000	700	5100	120L	92.18	272.15	0.00	
3	19-Aug	Drilling	04:53	05:12	0.32	13693	13779	86	40	271.6	65	22000	700	5100		91.44	271.86	0.00	
3	19-Aug	Sliding	05:17	05:29	0.20	13779	13789	10	75	50.0	65	22000	700	5100	120L	91.44	271.86	0.00	
3	19-Aug	Drilling	05:29	05:41	0.20	13789	13869	80	40	400.0	65	22000	700	5100		91.38	271.15	0.00	
3	19-Aug	Sliding	05:50	06:20	0.50	13869	13884	15	75	30.0	65	22000	700	5100	135L	91.38	271.15	0.00	
3	19-Aug	Drilling	06:20	06:30	0.17	13884	13952	68	40	408.0	65	22000	700	5100		89.30	269.06	0.00	
3	19-Aug	Drilling	06:42	06:52	0.17	13952	14047	95	40	570.0	65	22000	700	5100		89.36	269.51	0.00	
3	19-Aug	Drilling	07:03	07:14	0.18	14047	14143	96	42	523.6	65	22000	700	5750		88.76	269.13	0.00	
3	19-Aug	Drilling	07:23	07:27	0.07	14143	14165	22	42	330.0	65	22000	700	5750		88.76	269.13	0.00	
3	19-Aug	Sliding	07:27	07:45	0.30	14165	14175	10	75	33.3	65	22000	700	5750	30R	88.76	269.13	0.00	
3	19-Aug	Drilling	07:45	07:53	0.13	14175	14237	62	42	465.0	65	22000	700	5750		88.76	269.55	0.00	
3	19-Aug	Drilling	08:02	08:06	0.07	14237	14258	21	42	315.0	65	22000	700	5750		88.76	269.55	0.00	
3	19-Aug	Sliding	08:06	08:52	0.77	14258	14276	18	75	23.5	65	22000	700	5750	30R	89.53	270.04	0.00	
3	19-Aug	Drilling	08:52	09:01	0.15	14276	14333	57	42	380.0	65	22000	700	5750		89.53	270.04	0.00	
3	19-Aug	Drilling	09:10	09:21	0.18	14333	14428	95	42	518.2	65	22000	700	5750		89.77	269.90	0.00	
3	19-Aug	Drilling	09:30	09:42	0.20	14428	14523	95	42	475.0	65	22000	700	5750		89.83	270.55	0.00	
3	19-Aug	Drilling	09:52	09:55	0.05	14523	14545	22	42	440.0	65	22000	700	5750		89.83	270.55	0.00	
3	19-Aug	Sliding	09:55	10:15	0.33	14545	14553	8	75	24.0	65	22000	700	5750	30L	89.83	270.55	0.00	
3	19-Aug	Drilling	10:15	10:24	0.15	14553	14618	65	42	433.3	65	22000	700	5750		90.67	270.53	0.00	
3	19-Aug	Drilling	10:35	10:46	0.18	14618	14713	95	42	518.2	65	22000	700	5750		91.11	271.45	0.00	
3	19-Aug	Drilling	10:55	11:07	0.20	14713	14808	95	42	475.0	65	22000	700	5750		91.04	273.00	0.00	
3	19-Aug	Drilling	11:15	11:20	0.08	14808	14832	24	42	288.0	65	22000	700	5750		91.04	273.00	0.00	
3	19-Aug	Sliding	11:20	11:50	0.50	14832	14848	16	75	32.0	65	22000	700	5750	90L	90.84	271.57	0.00	
3	19-Aug	Drilling	11:50	11:58	0.13	14848	14903	55	42	412.5	65	25000	700	5750		90.84	271.57	0.00	
3	19-Aug	Drilling	12:08	12:19	0.18	14903	14998	95	42	518.2	65	25000	700	5750		90.67	270.74	0.00	
3	19-Aug	Drilling	12:29	12:40	0.18	14998	15093	95	42	518.2	65	25000	700	5750		90.57	270.48	0.00	
3	19-Aug	Drilling	12:52	13:04	0.20	15093	15188	95	42	475.0	65	25000	700	5750		90.07	269.72	0.00	
3	19-Aug	Drilling	13:14	13:30	0.27	15188	15283	95	42	356.3	65	25000	700	5750		90.47	270.92	0.00	
3	19-Aug	Drilling	13:41	13:52	0.18	15283	15379	96	42	523.6	65	25000	700	5750		90.20	271.52	0.00	
3	19-Aug	Drilling	14:02	14:05	0.05	15379	15396	17	42	340.0	65	25000	635	5450		90.20	271.52	0.00	

Slide Report for BHA # 3

Note: Surveys listed are interpolated from the actual surveys

#	Date	Drill Mode	Start Time	End Time	Hours	Start MD	End MD	Depth Drilled	WOB	ROP	RPM	Surf. Torque	Flow Rate	SPP	TFO	INC	AZM	DLS	Note
3	19-Aug	Sliding	14:05	14:28	0.38	15396	15406	10	75	26.1	65	25000	635	5450	45L	90.20	271.52	0.00	
3	19-Aug	Drilling	14:28	14:38	0.17	15406	15473	67	42	402.0	65	25000	635	5450		90.84	270.92	0.00	
3	19-Aug	Drilling	14:49	15:00	0.18	15473	15568	95	42	518.2	65	25000	635	5450		90.54	270.26	0.00	
3	19-Aug	Drilling	15:10	15:22	0.20	15568	15664	96	42	480.0	65	25000	635	5450		91.21	271.09	0.00	
3	19-Aug	Drilling	15:32	15:35	0.05	15664	15685	21	42	420.0	65	25000	635	5450		91.21	271.09	0.00	
3	19-Aug	Sliding	15:35	16:01	0.43	15685	15695	10	75	23.1	65	25000	635	5450	90L	91.21	271.09	0.00	
3	19-Aug	Drilling	16:01	16:10	0.15	15695	15759	64	42	426.7	65	25000	635	5450		91.31	270.37	0.00	
3	19-Aug	Drilling	16:21	16:35	0.23	15759	15855	96	42	411.4	65	25000	635	5450		90.47	268.83	0.00	
3	19-Aug	Drilling	16:45	16:58	0.22	15855	15950	95	42	438.5	65	25000	635	5450		90.40	268.89	0.00	
3	19-Aug	Drilling	17:25	17:38	0.22	15950	16045	95	42	438.5	65	25000	635	5450		90.84	269.32	0.00	
3	19-Aug	Drilling	17:48	18:35	0.78	16045	16236	191	42	243.8	65	25000	635	5450		90.50	269.48	0.00	
3	19-Aug	Drilling	18:53	19:06	0.22	16236	16332	96	42	443.1	65	25000	635	5450		90.10	269.61	0.00	
3	19-Aug	Drilling	19:20	19:35	0.25	16332	16427	95	42	380.0	65	25000	635	5450		90.07	269.42	0.00	
3	19-Aug	Drilling	19:47	20:20	0.55	16427	16536	109	42	198.2	65	25000	635	5450		89.77	269.31	0.00	
3	19-Aug	Sliding	20:27	21:25	0.97	16536	16546	10	75	10.3	65	25000	635	5450	90L	89.77	269.31	0.00	
3	19-Aug	Drilling	21:25	21:35	0.17	16546	16617	71	42	426.0	65	25000	635	5450		91.31	270.00	0.00	
3	19-Aug	Drilling	21:49	22:11	0.37	16617	16712	95	42	259.1	65	25000	635	5450		91.27	269.33	0.00	
3	19-Aug	Drilling	22:16	23:09	0.88	16712	16960	248	42	280.8	65	25000	635	5450		91.48	270.09	0.00	

Total Drilled: 9332 **Avg. Total ROP:** 291.93

DEPTH% - TIME %

Total Rotary Drilled: 8969 **Avg. Rotary ROP:** 383.84

Percent Rotary: 96.11 - 73.10

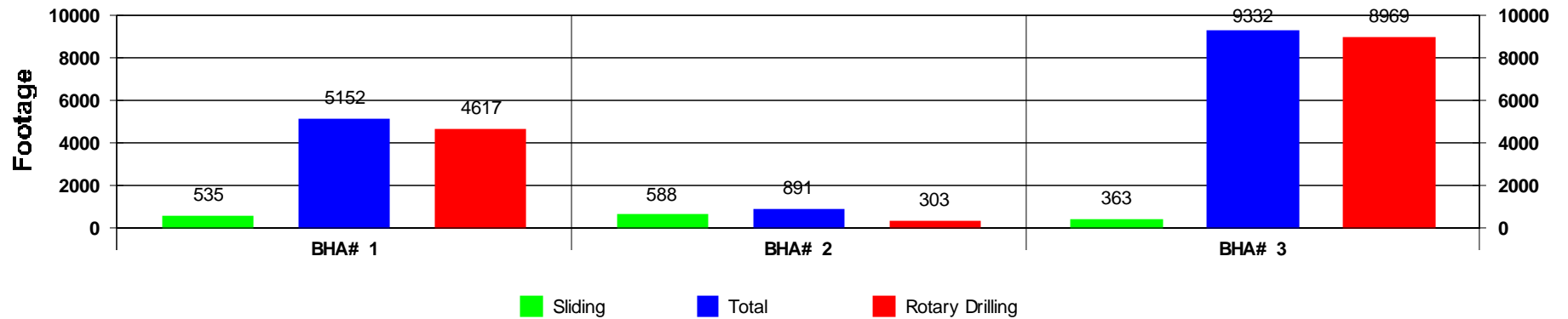
Total Drilled Sliding: 363 **Avg. Slide ROP:** 42.21

Percent Slide: 3.89 - 26.90

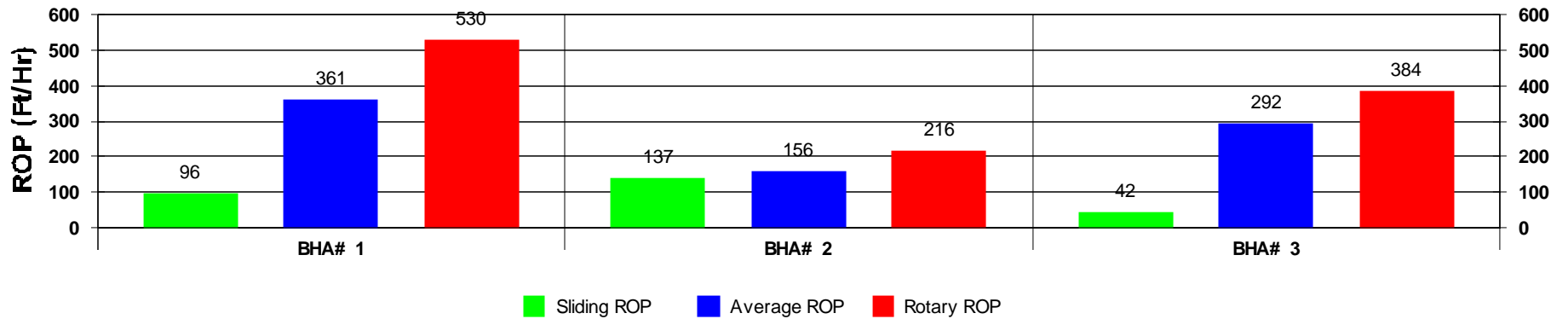


JOB NO.:	376608	FIELD:	Wattenburg
Company:	Extraction Oil & Gas	Township:	6N
LOCATION:	Winder South	SECTRANGE:	9 67W
RIG NAME:	Patterson 346	COMMENT	
STATE:	Colorado		
COUNTY:	Weld		
WELL NAME:	Winder South 1		

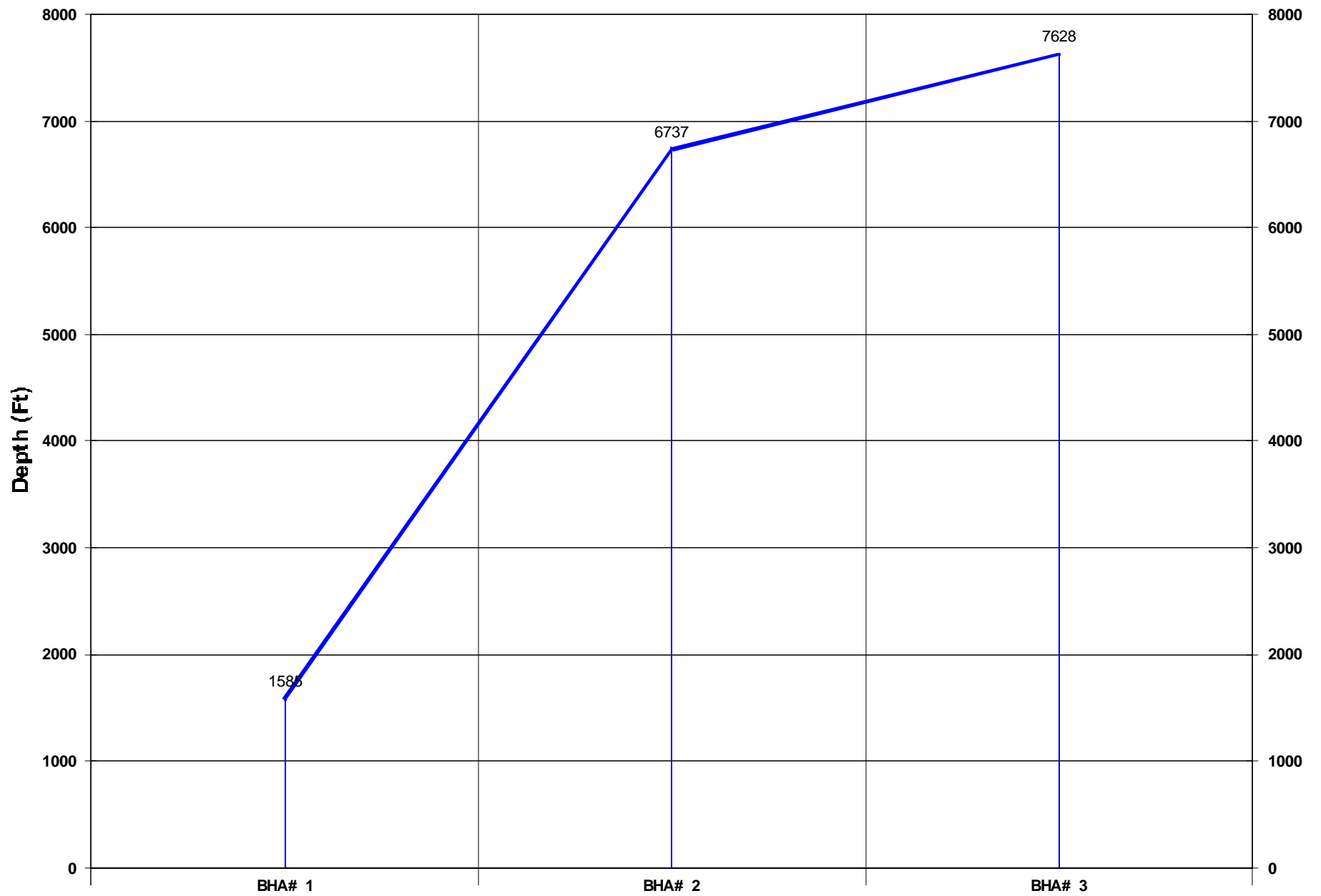
Footage Drilled with BHA



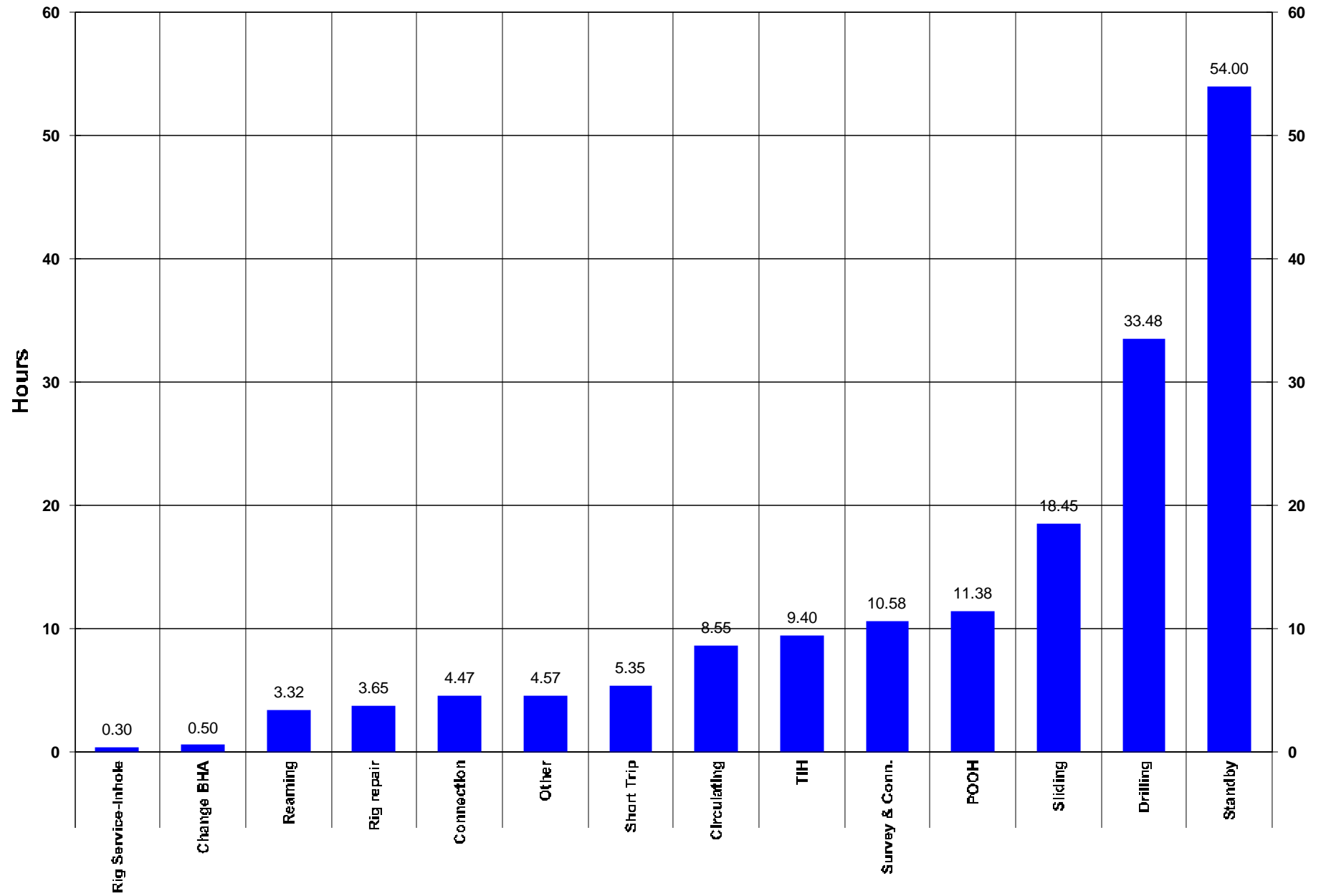
ROP vs BHA



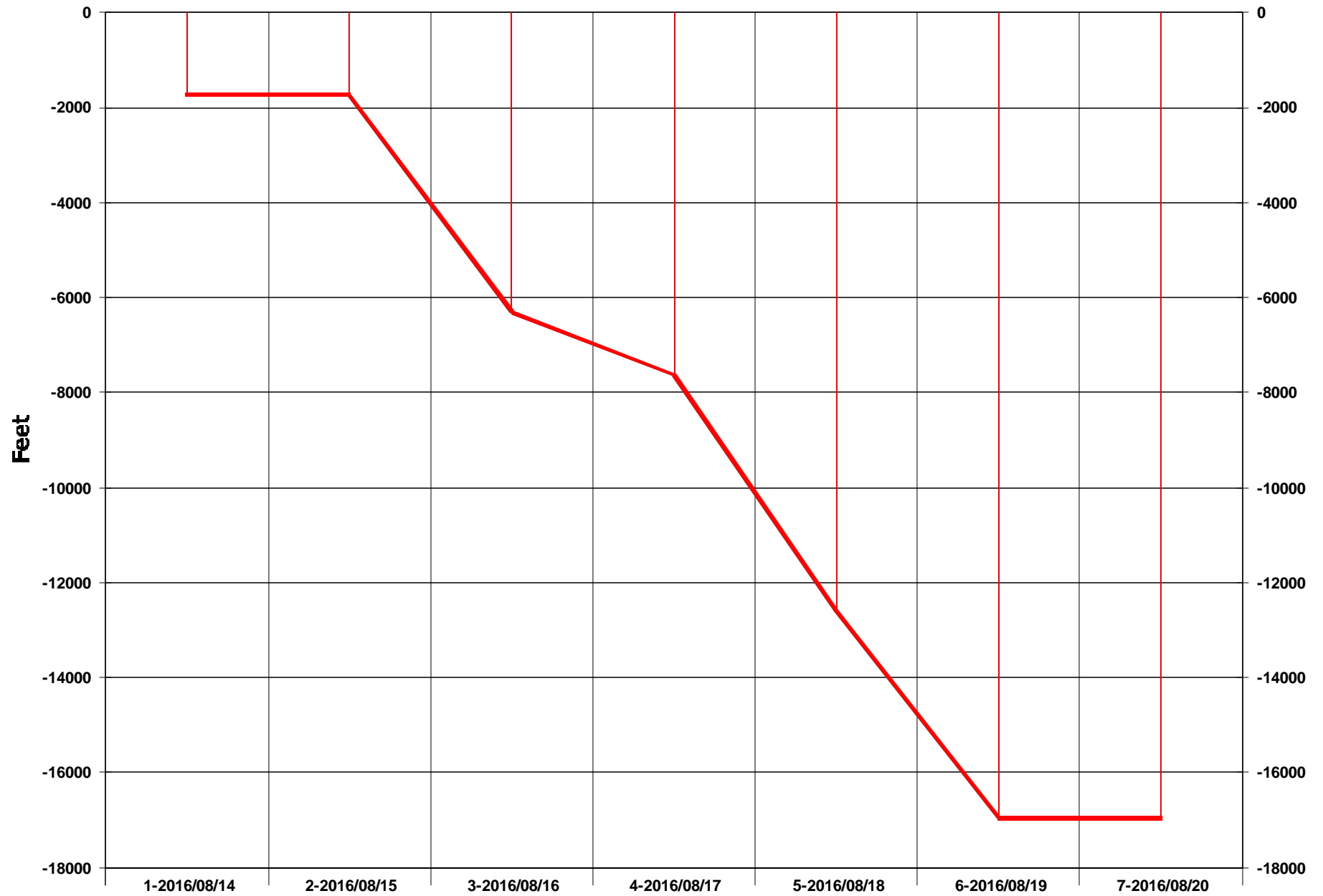
Depth vs BHA



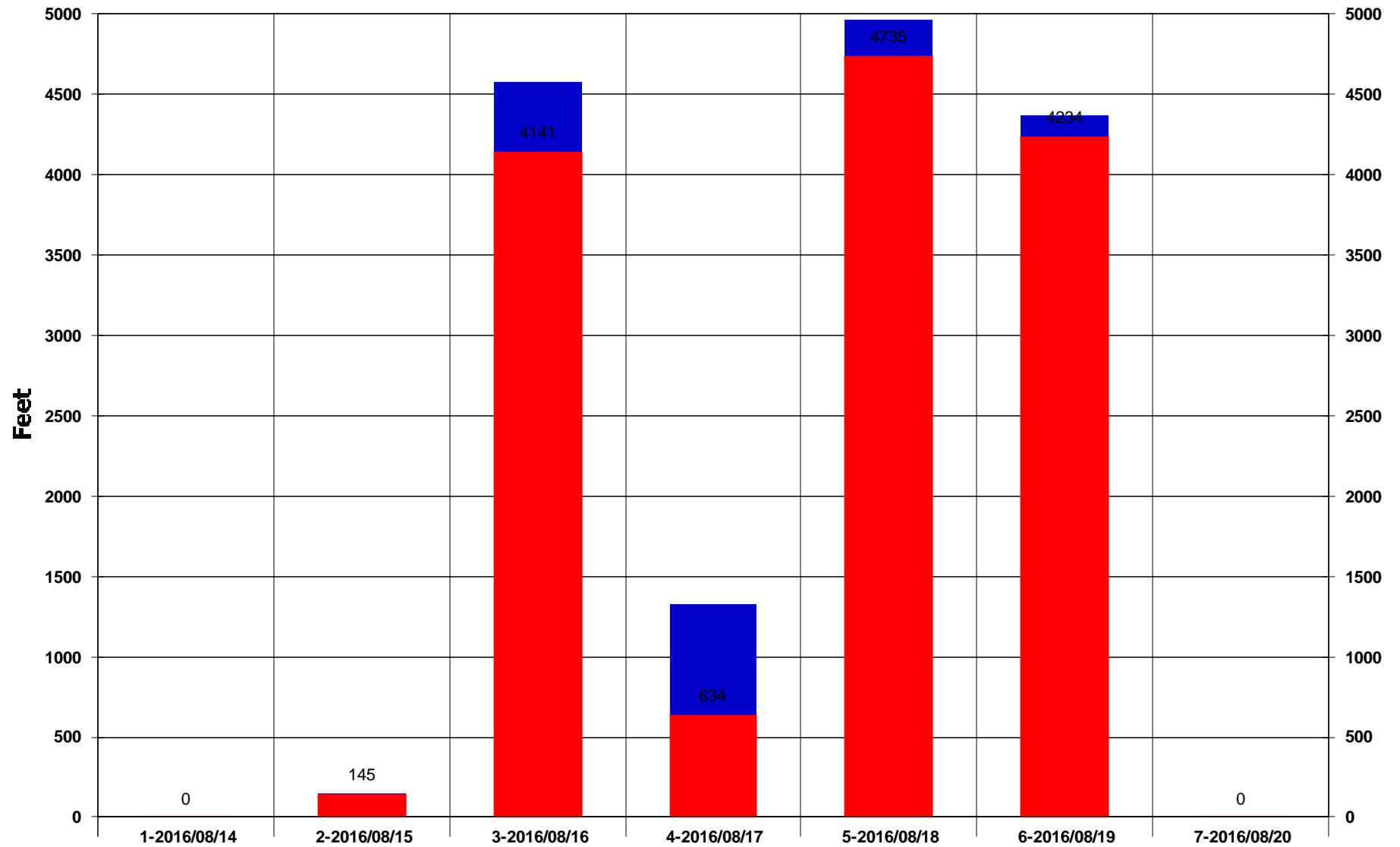
Activity Histogram



Measured Depth vs Days

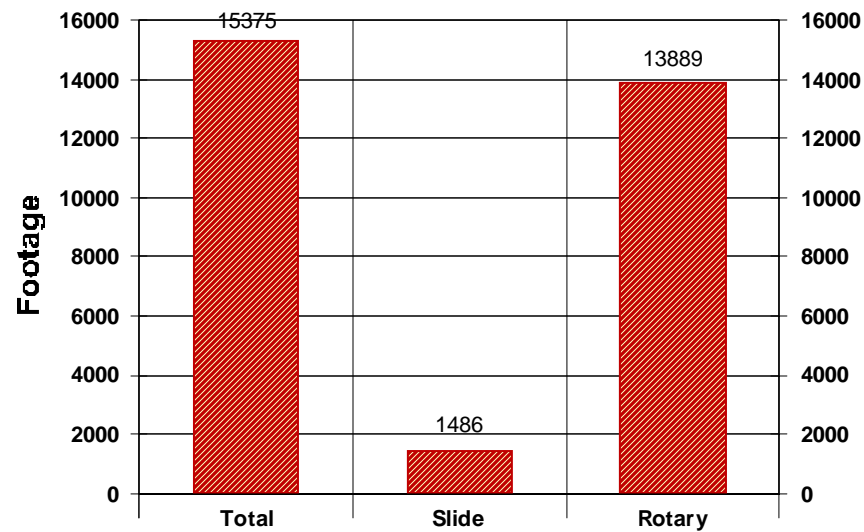


Daily Footage

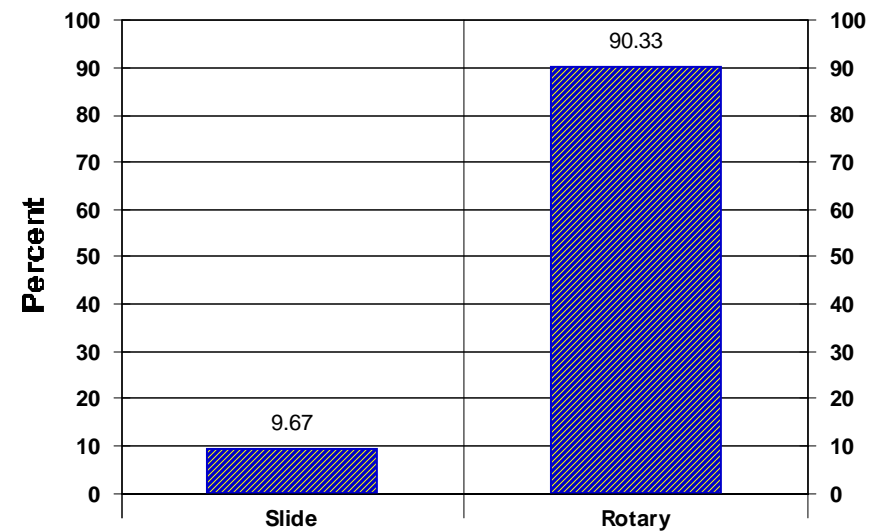


Rotary Drilling Sliding

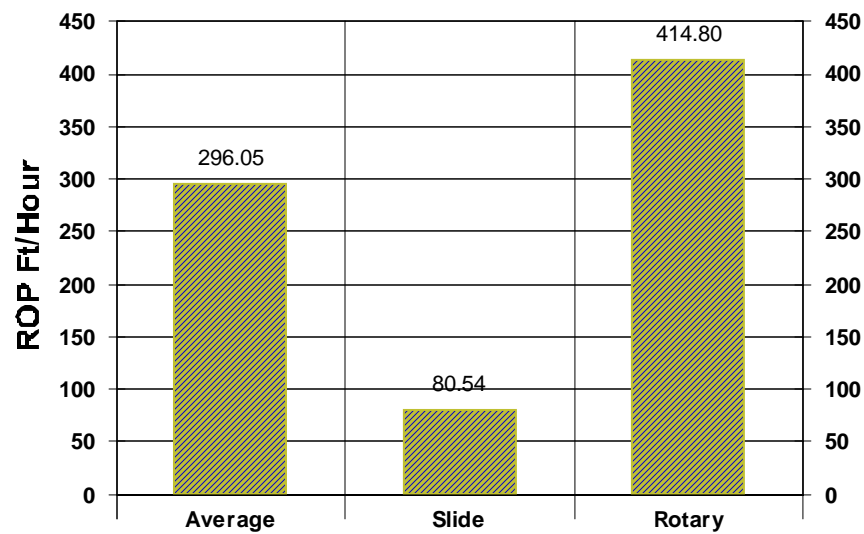
Footage Drilled Totals



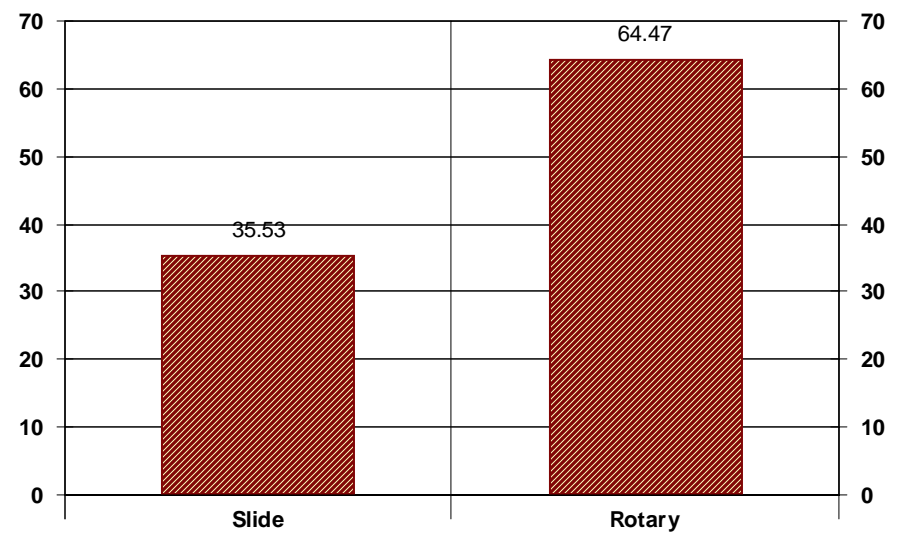
Footage Percent



Rate of Penetration Totals



Time Percent





SUPPORT STAFF

Dee Bailey – Rockies Region Manager
(307) 472-6621
dee.bailey@scientificdrilling.com

Directional Drillers:
C. Hansen, S. Sanford

MWD Operators:
J. Walsh, R. Perry

7237 W. Barton Rd., Casper, WY 82604
P.O. Box 1600, Mills, WY 82644
(307) 472-6621