



DIRECTIONAL TECHNOLOGIES INC.

Mostar Directional Technologies Inc.

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WPX Energy Rocky Mountain, LLC

RU 07-07S-093W

RU 42-7 Pad

RU 41-7 - Slot B07

14-08-125

Final Surveys - Jan.29,2015

License:

UWI:

Survey Report

29 January, 2015





Company:	WPX Energy Rocky Mountain, LLC	Local Co-ordinate Reference:	Well RU 41-7 - Slot B07
Project:	RU 07-07S-093W	TVD Reference:	KELLY BUSHING @ 7763.00usft (Nabors 574 (26' RKB) kjs)
Site:	RU 42-7 Pad	MD Reference:	KELLY BUSHING @ 7763.00usft (Nabors 574 (26' RKB) kjs)
Well:	RU 41-7	North Reference:	True
Wellbore:	14-08-125	Survey Calculation Method:	Minimum Curvature
Design:	Final Surveys - Jan.29,2015	Database:	EDM_2011

Project	RU 07-07S-093W, Garfield County, CO		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Central Zone		Using geodetic scale factor

Site	RU 42-7 Pad				
Site Position:		Northing:	1,600,591.20 usft	Latitude:	39° 27' 34.807 N
From:	Map	Easting:	2,348,404.40 usft	Longitude:	107° 48' 28.938 W
Position Uncertainty:	0.00 usft	Slot Radius:	13.200 in	Grid Convergence:	-1.46 °

Well	RU 41-7 - Slot B07					
Well Position	+N/-S	0.00 usft	Northing:	1,600,636.20 usft	Latitude:	39° 27' 35.249 N
	+E/-W	0.00 usft	Easting:	2,348,394.40 usft	Longitude:	107° 48' 29.080 W
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level:	7,737.00 usft

Wellbore	14-08-125	Well UWI		License	
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	1/5/2015	9.80	65.65	51,881

Design	Final Surveys - Jan.29,2015				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.00	0.00	0.00	350.29	

Survey Program	Date	1/29/2015			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
67.00	10,372.00	Final Surveys (14-08-125)	MWD+sag	/D v3:standard declination + s	

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	SS (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.00	0.00	7,763.00	0.00	0.00	0.00	0.00	0.00	0.00
67.00	1.14	38.23	67.00	7,696.00	0.52	0.41	0.45	1.70	1.70	0.00
KOP										
70.00	1.25	35.68	69.99	7,693.01	0.57	0.45	0.49	4.05	3.65	-85.06
97.00	2.29	24.17	96.98	7,666.02	1.30	0.84	1.14	4.05	3.85	-42.62
128.00	3.70	357.98	127.94	7,635.06	2.87	1.06	2.65	6.23	4.55	-84.48
158.00	5.19	1.49	157.85	7,605.15	5.19	1.06	4.94	5.05	4.97	11.70
189.00	6.33	358.51	188.69	7,574.31	8.30	1.05	8.01	3.80	3.68	-9.61
219.00	6.77	355.96	218.50	7,544.50	11.72	0.89	11.40	1.76	1.47	-8.50

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249.00	7.39	356.22	248.27	7,514.73	15.41	0.63	15.08	2.07	2.07	0.87
280.00	8.18	357.89	278.98	7,484.02	19.60	0.42	19.25	2.65	2.55	5.39
310.00	8.89	357.10	308.65	7,454.35	24.05	0.23	23.67	2.40	2.37	-2.63
340.00	9.33	356.40	338.27	7,424.73	28.79	-0.04	28.39	1.51	1.47	-2.33
370.00	10.29	352.44	367.83	7,395.17	33.88	-0.55	33.48	3.91	3.20	-13.20
429.00	11.61	350.07	425.76	7,337.24	44.95	-2.27	44.69	2.36	2.24	-4.02
520.00	13.37	349.28	514.60	7,248.40	64.31	-5.80	64.37	1.94	1.93	-0.87
591.00	15.19	351.51	583.40	7,179.60	81.57	-8.70	81.87	2.68	2.56	3.14
682.00	17.32	350.82	670.76	7,092.24	106.74	-12.62	107.34	2.35	2.34	-0.76
772.00	19.96	348.53	756.03	7,006.97	135.03	-17.82	136.10	3.04	2.93	-2.54
863.00	20.84	348.18	841.33	6,921.67	166.09	-24.22	167.80	0.98	0.97	-0.38
954.00	22.20	348.62	925.98	6,837.02	198.79	-30.93	201.16	1.50	1.49	0.48
1,050.00	21.21	348.03	1,015.17	6,747.83	233.56	-38.11	236.64	1.06	-1.03	-0.61
1,134.00	22.11	348.13	1,093.24	6,669.76	263.90	-44.51	267.62	1.07	1.07	0.12
Interpolated Casing Point - Surface Casing										
1,188.00	22.24	347.93	1,143.25	6,619.75	283.83	-48.74	287.99	0.28	0.24	-0.36
1,242.00	22.37	347.74	1,193.21	6,569.79	303.87	-53.06	308.47	0.28	0.24	-0.36
1,337.00	20.30	350.82	1,281.69	6,481.31	337.81	-59.53	343.01	2.48	-2.18	3.24
1,433.00	20.08	351.61	1,371.79	6,391.21	370.55	-64.59	376.14	0.36	-0.23	0.82
1,528.00	20.04	349.23	1,461.03	6,301.97	402.68	-70.01	408.72	0.86	-0.04	-2.51
1,623.00	19.69	349.94	1,550.38	6,212.62	434.43	-75.85	440.99	0.45	-0.37	0.75
1,719.00	19.69	347.39	1,640.77	6,122.23	466.13	-82.20	473.32	0.89	0.00	-2.66
1,815.00	19.29	350.46	1,731.27	6,031.73	497.55	-88.36	505.33	1.15	-0.42	3.20
1,910.00	19.20	353.01	1,820.96	5,942.04	528.53	-92.86	536.62	0.89	-0.09	2.68
2,005.00	19.73	353.72	1,910.53	5,852.47	559.98	-96.52	568.23	0.61	0.56	0.75
2,101.00	18.94	350.90	2,001.12	5,761.88	591.47	-100.76	599.99	1.27	-0.82	-2.94
2,196.00	19.86	350.11	2,090.73	5,672.28	622.59	-105.97	631.54	1.01	0.97	-0.83
2,291.00	22.15	353.28	2,179.41	5,583.59	656.28	-110.83	665.57	2.69	2.41	3.34
2,386.00	22.15	353.01	2,267.40	5,495.60	691.84	-115.11	701.35	0.11	0.00	-0.28
2,481.00	22.15	353.72	2,355.39	5,407.61	727.42	-119.25	737.11	0.28	0.00	0.75
2,576.00	22.19	352.49	2,443.36	5,319.64	763.01	-123.55	772.91	0.49	0.04	-1.29
2,670.00	22.28	352.13	2,530.37	5,232.63	798.26	-128.31	808.46	0.17	0.10	-0.38
2,765.00	22.02	352.22	2,618.36	5,144.64	833.74	-133.19	844.26	0.28	-0.27	0.09
2,860.00	21.23	352.05	2,706.68	5,056.32	868.42	-137.98	879.25	0.83	-0.83	-0.18
2,956.00	21.01	351.96	2,796.23	4,966.77	902.68	-142.79	913.83	0.23	-0.23	-0.09
3,051.00	21.31	351.26	2,884.82	4,878.18	936.60	-147.79	948.11	0.41	0.32	-0.74
3,146.00	20.52	349.94	2,973.56	4,789.44	970.06	-153.33	982.02	0.97	-0.83	-1.39
3,242.00	20.00	351.43	3,063.62	4,699.38	1,002.86	-158.71	1,015.26	0.76	-0.54	1.55
3,337.00	19.78	349.23	3,152.96	4,610.04	1,034.72	-164.14	1,047.58	0.82	-0.23	-2.32
3,432.00	19.34	349.32	3,242.48	4,520.52	1,065.97	-170.06	1,079.38	0.46	-0.46	0.09
3,527.00	19.16	348.09	3,332.16	4,430.84	1,096.68	-176.19	1,110.68	0.47	-0.19	-1.29



Mostar Survey Report



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3,622.00	18.50	348.79	3,422.08	4,340.92	1,126.72	-182.34	1,141.33	0.73	-0.69	0.74
3,717.00	19.78	348.44	3,511.83	4,251.17	1,157.25	-188.49	1,172.46	1.35	1.35	-0.37
3,812.00	19.47	348.97	3,601.31	4,161.69	1,188.54	-194.74	1,204.36	0.38	-0.33	0.56
3,907.00	18.59	348.00	3,691.11	4,071.89	1,218.89	-200.91	1,235.32	0.98	-0.93	-1.02
4,003.00	20.13	350.29	3,781.69	3,981.31	1,250.14	-206.88	1,267.13	1.79	1.60	2.39
4,098.00	20.35	348.71	3,870.82	3,892.18	1,282.46	-212.87	1,299.99	0.62	0.23	-1.66
4,194.00	20.08	349.76	3,960.91	3,802.09	1,315.04	-219.07	1,333.15	0.47	-0.28	1.09
4,289.00	19.95	349.06	4,050.17	3,712.83	1,347.00	-225.05	1,365.66	0.29	-0.14	-0.74
4,385.00	20.52	349.23	4,140.24	3,622.76	1,379.61	-231.30	1,398.86	0.60	0.59	0.18
4,479.00	19.47	349.06	4,228.58	3,534.42	1,411.18	-237.35	1,431.00	1.12	-1.12	-0.18
4,575.00	20.57	349.59	4,318.77	3,444.23	1,443.48	-243.43	1,463.86	1.16	1.15	0.55
4,670.00	20.92	349.23	4,407.61	3,355.39	1,476.55	-249.62	1,497.50	0.39	0.37	-0.38
4,765.00	20.00	350.11	4,496.62	3,266.38	1,509.22	-255.58	1,530.71	1.02	-0.97	0.93
4,861.00	19.06	350.02	4,587.10	3,175.90	1,540.83	-261.12	1,562.80	0.98	-0.98	-0.09
4,955.00	20.52	349.94	4,675.54	3,087.46	1,572.17	-266.65	1,594.62	1.55	1.55	-0.09
5,050.00	19.82	349.59	4,764.72	2,998.28	1,604.41	-272.47	1,627.38	0.75	-0.74	-0.37
5,146.00	21.01	350.38	4,854.69	2,908.31	1,637.38	-278.29	1,660.86	1.27	1.24	0.82
5,240.00	20.70	350.73	4,942.53	2,820.47	1,670.39	-283.78	1,694.33	0.36	-0.33	0.37
5,335.00	20.26	349.59	5,031.52	2,731.48	1,703.14	-289.46	1,727.56	0.63	-0.46	-1.20
5,430.00	19.91	349.32	5,120.74	2,642.26	1,735.22	-295.43	1,760.18	0.38	-0.37	-0.28
5,525.00	19.56	348.88	5,210.16	2,552.84	1,766.72	-301.49	1,792.26	0.40	-0.37	-0.46
5,620.00	19.16	349.41	5,299.79	2,463.21	1,797.64	-307.43	1,823.74	0.46	-0.42	0.56
5,716.00	19.34	348.71	5,390.43	2,372.57	1,828.72	-313.43	1,855.38	0.30	0.19	-0.73
5,813.00	18.19	349.94	5,482.27	2,280.73	1,859.38	-319.22	1,886.58	1.25	-1.19	1.27
5,907.00	17.84	350.38	5,571.66	2,191.34	1,888.02	-324.19	1,915.65	0.40	-0.37	0.47
6,003.00	16.96	350.64	5,663.27	2,099.73	1,916.34	-328.93	1,944.36	0.92	-0.92	0.27
6,098.00	15.91	353.54	5,754.38	2,008.62	1,942.95	-332.64	1,971.22	1.40	-1.11	3.05
6,193.00	16.17	351.87	5,845.69	1,917.31	1,968.98	-335.98	1,997.44	0.56	0.27	-1.76
6,289.00	14.90	354.07	5,938.18	1,824.82	1,994.49	-339.15	2,023.12	1.46	-1.32	2.29
6,384.00	13.97	352.84	6,030.18	1,732.82	2,018.02	-341.84	2,046.76	1.03	-0.98	-1.29
6,479.00	13.23	355.21	6,122.51	1,640.49	2,040.23	-344.17	2,069.05	0.97	-0.78	2.49
6,573.00	13.01	354.93	6,214.06	1,548.94	2,061.49	-346.01	2,090.31	0.24	-0.23	-0.30
6,669.00	12.39	356.44	6,307.71	1,455.29	2,082.53	-347.60	2,111.32	0.73	-0.65	1.57
6,763.00	10.15	356.18	6,399.89	1,363.11	2,100.86	-348.78	2,129.59	2.38	-2.38	-0.28
6,858.00	9.40	357.14	6,493.51	1,269.49	2,116.96	-349.73	2,145.62	0.81	-0.79	1.01
6,954.00	8.66	357.23	6,588.32	1,174.68	2,132.01	-350.47	2,160.58	0.77	-0.77	0.09
7,050.00	8.53	358.99	6,683.25	1,079.75	2,146.35	-350.94	2,174.79	0.31	-0.14	1.83
7,145.00	7.91	356.62	6,777.27	985.73	2,159.92	-351.45	2,188.25	0.74	-0.65	-2.49
7,240.00	6.15	358.99	6,871.55	891.45	2,171.53	-351.92	2,199.78	1.88	-1.85	2.49
7,336.00	4.66	348.44	6,967.12	795.88	2,180.50	-352.80	2,208.76	1.86	-1.55	-10.99
7,431.00	4.17	354.86	7,061.84	701.16	2,187.72	-353.88	2,216.06	0.73	-0.52	6.76



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7,526.00	3.69	350.55	7,156.62	606.38	2,194.17	-354.69	2,222.56	0.59	-0.51	-4.54
7,622.00	3.74	345.63	7,252.42	510.58	2,200.25	-355.98	2,228.77	0.34	0.05	-5.13
7,717.00	2.15	5.14	7,347.29	415.71	2,205.03	-356.58	2,233.58	1.96	-1.67	20.54
7,813.00	2.11	358.99	7,443.23	319.77	2,208.59	-356.45	2,237.07	0.24	-0.04	-6.41
7,908.00	1.91	350.11	7,538.17	224.83	2,211.90	-356.76	2,240.38	0.39	-0.21	-9.35
8,002.00	1.54	342.47	7,632.12	130.88	2,214.65	-357.41	2,243.20	0.46	-0.39	-8.13
8,097.00	1.41	341.59	7,727.09	35.91	2,216.97	-358.16	2,245.62	0.14	-0.14	-0.93
8,192.00	0.83	353.63	7,822.07	-59.07	2,218.77	-358.61	2,247.46	0.66	-0.61	12.67
8,287.00	0.31	305.73	7,917.07	-154.07	2,219.60	-358.89	2,248.33	0.70	-0.55	-50.42
8,382.00	0.26	208.60	8,012.07	-249.07	2,219.56	-359.20	2,248.35	0.45	-0.05	-102.24
8,476.00	0.75	11.73	8,106.07	-343.07	2,219.98	-359.18	2,248.75	1.07	0.52	173.54
8,571.00	0.88	14.37	8,201.06	-438.06	2,221.29	-358.87	2,250.00	0.14	0.14	2.78
8,666.00	1.05	7.25	8,296.04	-533.04	2,222.86	-358.58	2,251.50	0.22	0.18	-7.49
8,761.00	1.05	0.13	8,391.03	-628.03	2,224.60	-358.47	2,253.19	0.14	0.00	-7.49
8,855.00	0.70	2.86	8,485.02	-722.02	2,226.03	-358.44	2,254.60	0.37	-0.37	2.90
8,951.00	0.75	326.82	8,581.01	-818.01	2,227.14	-358.75	2,255.74	0.47	0.05	-37.54
9,045.00	0.66	299.05	8,675.00	-912.00	2,227.92	-359.56	2,256.65	0.37	-0.10	-29.54
9,139.00	0.70	287.53	8,769.00	-1,006.00	2,228.35	-360.58	2,257.25	0.15	0.04	-12.26
9,234.00	0.88	283.14	8,863.99	-1,100.99	2,228.70	-361.85	2,257.80	0.20	0.19	-4.62
9,329.00	0.83	254.22	8,958.98	-1,195.98	2,228.67	-363.22	2,258.01	0.45	-0.05	-30.44
9,424.00	0.88	242.97	9,053.97	-1,290.97	2,228.16	-364.53	2,257.72	0.18	0.05	-11.84
9,520.00	1.14	242.62	9,149.95	-1,386.95	2,227.38	-366.04	2,257.21	0.27	0.27	-0.36
9,614.00	1.49	234.98	9,243.93	-1,480.93	2,226.25	-367.87	2,256.40	0.42	0.37	-8.13
9,708.00	1.45	222.76	9,337.90	-1,574.90	2,224.68	-369.68	2,255.16	0.34	-0.04	-13.00
9,804.00	1.89	223.64	9,433.86	-1,670.86	2,222.64	-371.59	2,253.47	0.46	0.46	0.92
9,899.00	1.49	230.58	9,528.81	-1,765.81	2,220.72	-373.63	2,251.92	0.47	-0.42	7.31
9,994.00	1.45	252.64	9,623.78	-1,860.78	2,219.58	-375.73	2,251.15	0.59	-0.04	23.22
10,089.00	0.97	224.08	9,718.76	-1,955.76	2,218.64	-377.44	2,250.52	0.80	-0.51	-30.06
10,183.00	1.10	225.84	9,812.75	-2,049.75	2,217.44	-378.64	2,249.54	0.14	0.14	1.87
10,279.00	1.19	218.72	9,908.73	-2,145.73	2,216.02	-379.92	2,248.35	0.18	0.09	-7.42
Last Survey										
10,327.00	1.19	223.64	9,956.72	-2,193.72	2,215.27	-380.58	2,247.72	0.21	0.00	10.25
Extrapolation to TD										
10,372.00	1.19	223.64	10,001.71	-2,238.71	2,214.60	-381.22	2,247.17	0.00	0.00	0.00

Casing Points				
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (in)	Hole Diameter (in)
1,188.00	1,143.25	Surface Casing		



Company:	WPX Energy Rocky Mountain, LLC	Local Co-ordinate Reference:	Well RU 41-7 - Slot B07
Project:	RU 07-07S-093W	TVD Reference:	KELLY BUSHING @ 7763.00usft (Nabors 574 (26' RKB) kjs)
Site:	RU 42-7 Pad	MD Reference:	KELLY BUSHING @ 7763.00usft (Nabors 574 (26' RKB) kjs)
Well:	RU 41-7	North Reference:	True
Wellbore:	14-08-125	Survey Calculation Method:	Minimum Curvature
Design:	Final Surveys - Jan.29,2015	Database:	EDM_2011

Survey Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment	
		+N/-S (usft)	+E/-W (usft)		
70.00	69.99	0.57	0.45	KOP	
1,188.00	1,143.25	283.83	-48.74	Interpolated Casing Point	
10,327.00	9,956.72	2,215.27	-380.58	Last Survey	
10,372.00	10,001.71	2,214.60	-381.22	Extrapolation to TD	