



Directional Survey Certification

2948 I-70 Business Loop
Grand Junction, CO 81504
(970)-245-9447 Fax (970)-245-9454

Operator	WPX Energy
Well Name & No.	GM 322-9
County & State	Garfield, CO
SDI Job No.	420616DEFK365676
Rig	H&P 318

I, Janie Collins, having personal knowledge of all the facts, hereby certify that the attached directional survey run from a measured depth of 114 feet to a measured depth of 6,965 feet is true and correct as determined from all available records.



Signature

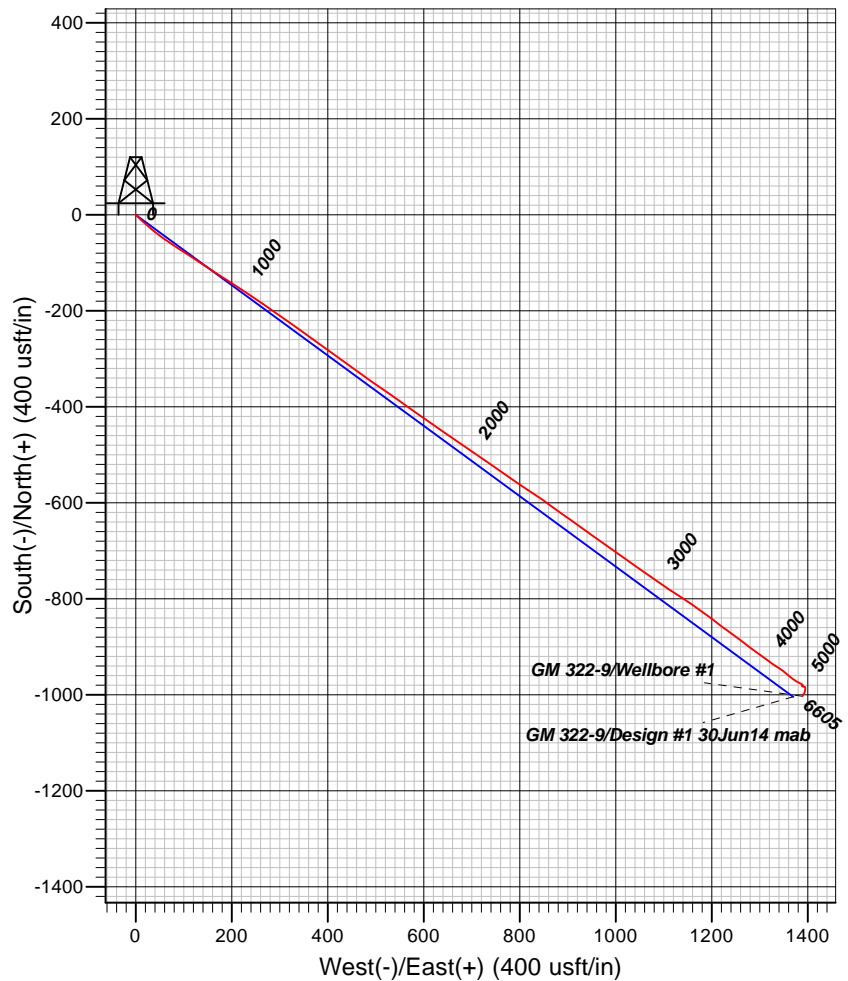
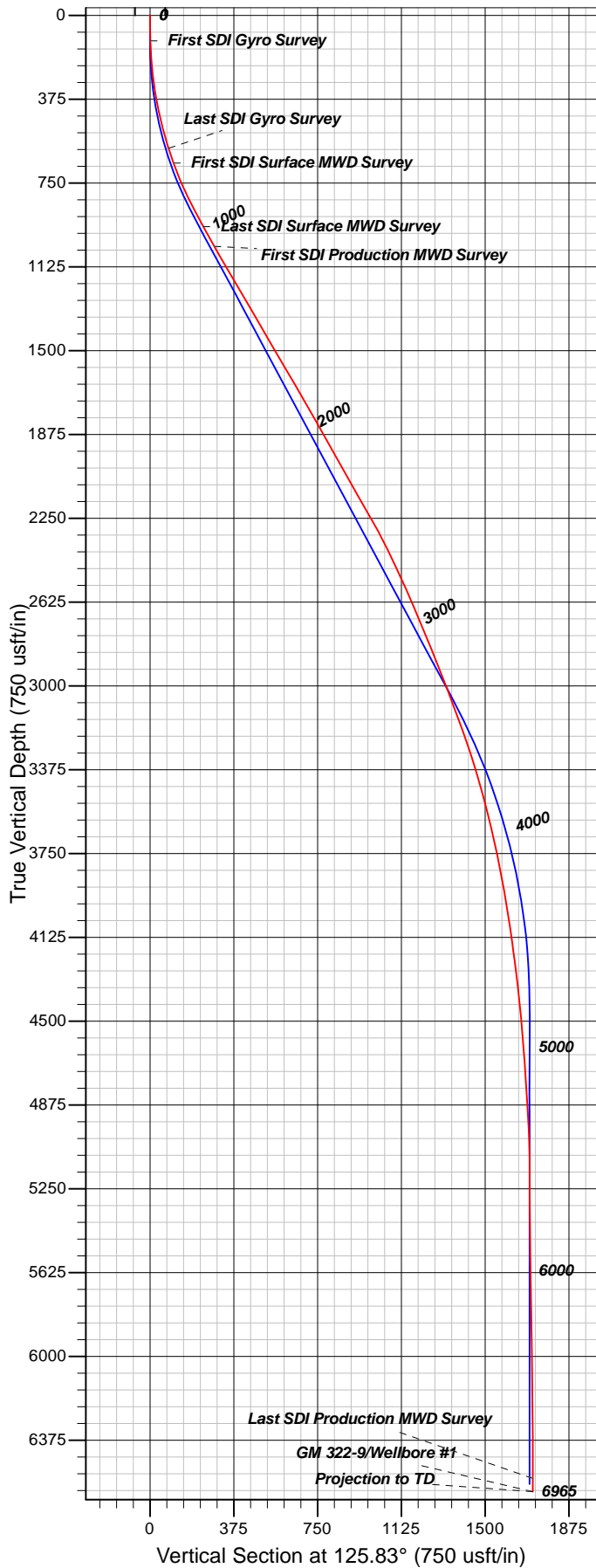
14-Jun-16

Date

Janie Collins
Colorado District Well Planner
Scientific Drilling International



Company: WPX Energy Rocky Mountain, LLC
Project: Garfield County, CO NAD83
Site: MV 16-9 Pad
Well: GM 322-9
Wellbore: Wellbore #1
Design: Wellbore #1



Well Details: GM 322-9

+N/-S	+E/-W	TVD Reference: KB @ 6111.00usft (HP 318)	Ground Level: 6087.00	Slot
0.00	0.00	Northing: 1601944.61	Easting: 2260334.90	B07
		Latitude: 39.4568256	Longitude: -108.1199678	

REFERENCE INFORMATION

Co-ordinate (N/E) Reference: Well GM 322-9 - Slot B07, True North
Vertical (TVD) Reference: KB @ 6111.00usft (HP 318)
Section (VS) Reference: Slot - B07(0.00N, 0.00E)
Measured Depth Reference: KB @ 6111.00usft (HP 318)
Calculation Method: Minimum Curvature

PROJECT DETAILS: Garfield County, CO NAD83

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

System Datum: Mean Sea Level

Plan: Wellbore #1

9:37, June 14 2016
Created By: Janie Collins

Company:	WPX Energy Rocky Mountain, LLC	Local Co-ordinate Reference:	Well GM 322-9 - Slot B07
Project:	Garfield County, CO NAD83	TVD Reference:	KB @ 6111.00usft (HP 318)
Site:	MV 16-9 Pad	MD Reference:	KB @ 6111.00usft (HP 318)
Well:	GM 322-9	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Grand Junction District

Project	Garfield County, CO NAD83		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Central Zone		

Site		MV 16-9 Pad			
Site Position:		Northing:	1,601,987.30 usft	Latitude:	39.4569442
From:	Map	Easting:	2,260,352.30 usft	Longitude:	-108.1199106
Position Uncertainty:	0.00 usft	Slot Radius:	13.20 in	Grid Convergence:	-1.65 °

Well	GM 322-9 - Slot B07					
Well Position	+N/-S	0.00 usft	Northing:	1,601,944.61 usft	Latitude:	39.4568257
	+E/-W	0.00 usft	Easting:	2,260,334.90 usft	Longitude:	-108.1199678
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	6,087.00 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2016	5/19/2016	9.76	65.59	51,621

Design	Wellbore #1				
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	125.83	

Survey Program	Date	6/14/2016			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
114.00	603.00	Survey #1 - Gyro Survey (Wellbore #1)	SDI Gyro MWD 104	SDI Gyro MWD Error Model Ver 1.0.4	
673.00	987.00	Survey #2 - Surface MWD Survey (Wellbo	SDI MWD	SDI MWD - Standard ver 1.0.1	
1,088.00	6,965.00	Survey #3 - Production MWD Survey (Wel	SDI MWD	SDI MWD - Standard ver 1.0.1	

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
114.00	1.58	141.33	113.99	-1.23	0.98	1.51	1.39	1.39	0.00	
First SDI Gyro Survey										
148.00	2.46	123.49	147.96	-2.00	1.88	2.70	3.15	2.59	-52.47	
239.00	5.89	134.74	238.71	-6.36	6.83	9.26	3.86	3.77	12.36	
330.00	8.71	132.71	328.96	-14.32	15.21	20.72	3.11	3.10	-2.23	
421.00	11.79	129.73	418.50	-24.94	27.43	36.84	3.43	3.38	-3.27	
511.00	14.69	129.55	506.10	-38.09	43.30	57.40	3.22	3.22	-0.20	
603.00	17.77	124.98	594.43	-53.57	63.80	83.09	3.62	3.35	-4.97	

Company:	WPX Energy Rocky Mountain, LLC	Local Co-ordinate Reference:	Well GM 322-9 - Slot B07
Project:	Garfield County, CO NAD83	TVD Reference:	KB @ 6111.00usft (HP 318)
Site:	MV 16-9 Pad	MD Reference:	KB @ 6111.00usft (HP 318)
Well:	GM 322-9	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Grand Junction District

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
Last SDI Gyro Survey									
673.00	19.20	122.53	660.81	-65.88	82.26	105.26	2.32	2.04	-3.50
First SDI Surface MWD Survey									
763.00	23.46	122.99	744.63	-83.60	109.78	137.94	4.74	4.73	0.51
854.00	26.64	123.50	827.06	-104.73	141.99	176.43	3.50	3.49	0.56
945.00	28.05	123.32	907.89	-127.75	176.89	218.19	1.55	1.55	-0.20
987.00	28.58	122.88	944.86	-138.62	193.57	238.09	1.36	1.26	-1.05
Last SDI Surface MWD Survey									
1,088.00	29.94	122.91	1,032.97	-165.43	235.02	287.39	1.35	1.35	0.03
First SDI Production MWD Survey									
1,149.00	30.16	124.59	1,085.78	-182.41	260.42	317.91	1.43	0.36	2.75
1,240.00	30.12	125.17	1,164.47	-208.53	297.90	363.60	0.32	-0.04	0.64
1,334.00	30.49	126.37	1,245.63	-236.26	336.39	411.03	0.75	0.39	1.28
1,428.00	30.36	125.59	1,326.69	-264.23	374.90	458.63	0.44	-0.14	-0.83
1,523.00	29.65	124.41	1,408.95	-291.48	413.82	506.13	0.97	-0.75	-1.24
1,617.00	30.60	126.20	1,490.26	-318.75	452.31	553.30	1.39	1.01	1.90
1,712.00	30.42	125.81	1,572.11	-347.10	491.32	601.53	0.28	-0.19	-0.41
1,806.00	30.66	124.30	1,653.07	-374.53	530.42	649.29	0.86	0.26	-1.61
1,900.00	29.66	126.41	1,734.34	-401.85	568.94	696.51	1.55	-1.06	2.24
1,994.00	29.73	124.57	1,816.00	-428.88	606.85	743.07	0.97	0.07	-1.96
2,089.00	28.95	123.41	1,898.81	-454.90	645.44	789.59	1.02	-0.82	-1.22
2,183.00	29.10	125.46	1,981.01	-480.69	683.05	835.18	1.07	0.16	2.18
2,277.00	29.70	124.68	2,062.90	-507.20	720.82	881.32	0.76	0.64	-0.83
2,372.00	30.23	124.99	2,145.21	-534.31	759.77	928.76	0.58	0.56	0.33
2,466.00	30.28	124.05	2,226.40	-561.15	798.79	976.11	0.51	0.05	-1.00
2,560.00	27.64	123.82	2,308.64	-586.56	836.54	1,021.60	2.81	-2.81	-0.24
2,654.00	26.07	126.59	2,392.50	-611.01	871.25	1,064.04	2.14	-1.67	2.95
2,748.00	25.14	124.55	2,477.27	-634.64	904.28	1,104.66	1.36	-0.99	-2.17
2,843.00	24.05	126.00	2,563.65	-657.47	936.56	1,144.19	1.31	-1.15	1.53
2,937.00	23.47	125.12	2,649.69	-679.49	967.37	1,182.07	0.72	-0.62	-0.94
3,031.00	22.54	125.46	2,736.21	-700.72	997.35	1,218.80	1.00	-0.99	0.36
3,125.00	21.97	125.23	2,823.21	-721.31	1,026.39	1,254.40	0.61	-0.61	-0.24
3,219.00	21.75	124.77	2,910.45	-741.39	1,055.06	1,289.39	0.30	-0.23	-0.49
3,314.00	21.62	125.34	2,998.73	-761.55	1,083.80	1,324.49	0.26	-0.14	0.60
3,408.00	19.75	123.65	3,086.66	-780.37	1,111.15	1,357.68	2.09	-1.99	-1.80
3,502.00	20.22	123.15	3,175.00	-798.05	1,137.97	1,389.78	0.53	0.50	-0.53
3,597.00	18.99	124.68	3,264.49	-815.82	1,164.43	1,421.64	1.40	-1.29	1.61
3,691.00	16.97	126.42	3,353.90	-832.67	1,188.04	1,450.65	2.22	-2.15	1.85
3,785.00	16.28	127.91	3,443.97	-848.91	1,209.48	1,477.53	0.86	-0.73	1.59
3,880.00	13.94	126.04	3,535.68	-863.83	1,229.24	1,502.29	2.52	-2.46	-1.97
3,974.00	13.95	125.80	3,626.91	-877.12	1,247.59	1,524.94	0.06	0.01	-0.26
4,069.00	12.01	127.89	3,719.48	-889.89	1,264.67	1,546.27	2.10	-2.04	2.20
4,163.00	11.57	127.09	3,811.49	-901.58	1,279.91	1,565.47	0.50	-0.47	-0.85
4,258.00	9.83	124.52	3,904.84	-911.92	1,294.19	1,583.10	1.90	-1.83	-2.71

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Project:	Garfield County, CO NAD83	TVD Reference:	KB @ 6111.00usft (HP 318)
Site:	MV 16-9 Pad	MD Reference:	KB @ 6111.00usft (HP 318)
Well:	GM 322-9	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Grand Junction District

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
4,352.00	9.05	126.79	3,997.57	-920.90	1,306.73	1,598.51	0.92	-0.83	2.41	
4,447.00	8.91	127.59	4,091.40	-929.86	1,318.54	1,613.34	0.20	-0.15	0.84	
4,541.00	6.92	122.95	4,184.50	-937.38	1,329.06	1,626.27	2.22	-2.12	-4.94	
4,636.00	7.06	122.86	4,278.80	-943.66	1,338.77	1,637.82	0.15	0.15	-0.09	
4,730.00	6.92	126.99	4,372.10	-950.20	1,348.14	1,649.25	0.55	-0.15	4.39	
4,824.00	4.77	130.49	4,465.60	-956.15	1,355.64	1,658.81	2.32	-2.29	3.72	
4,918.00	4.87	130.24	4,559.27	-961.26	1,361.66	1,666.68	0.11	0.11	-0.27	
5,013.00	4.63	129.39	4,653.95	-966.30	1,367.70	1,674.53	0.26	-0.25	-0.89	
5,107.00	3.66	116.12	4,747.70	-970.03	1,373.33	1,681.27	1.44	-1.03	-14.12	
5,202.00	3.47	120.22	4,842.52	-972.81	1,378.53	1,687.12	0.33	-0.20	4.32	
5,296.00	3.51	117.84	4,936.34	-975.59	1,383.53	1,692.80	0.16	0.04	-2.53	
5,391.00	1.84	123.97	5,031.24	-977.80	1,387.37	1,697.21	1.78	-1.76	6.45	
5,485.00	1.04	131.26	5,125.21	-979.20	1,389.26	1,699.56	0.87	-0.85	7.76	
5,579.00	0.43	228.61	5,219.20	-980.00	1,389.64	1,700.34	1.25	-0.65	103.56	
5,674.00	0.57	218.25	5,314.20	-980.61	1,389.08	1,700.24	0.17	0.15	-10.91	
5,768.00	0.89	215.92	5,408.19	-981.56	1,388.36	1,700.22	0.34	0.34	-2.48	
5,862.00	1.08	115.49	5,502.18	-982.54	1,388.73	1,701.09	1.62	0.20	-106.84	
5,956.00	1.41	90.46	5,596.16	-982.93	1,390.69	1,702.90	0.67	0.35	-26.63	
6,050.00	1.19	103.27	5,690.13	-983.16	1,392.80	1,704.75	0.39	-0.23	13.63	
6,145.00	0.80	130.65	5,785.12	-983.82	1,394.26	1,706.32	0.64	-0.41	28.82	
6,239.00	1.07	166.07	5,879.11	-985.10	1,394.97	1,707.64	0.66	0.29	37.68	
6,334.00	1.27	183.40	5,974.09	-987.01	1,395.12	1,708.88	0.43	0.21	18.24	
6,428.00	1.46	179.23	6,068.06	-989.25	1,395.07	1,710.16	0.23	0.20	-4.44	
6,522.00	1.58	197.13	6,162.03	-991.68	1,394.71	1,711.28	0.52	0.13	19.04	
6,617.00	1.43	198.96	6,257.00	-994.06	1,393.94	1,712.05	0.17	-0.16	1.93	
6,711.00	1.32	199.79	6,350.97	-996.18	1,393.19	1,712.69	0.12	-0.12	0.88	
6,806.00	1.75	214.60	6,445.94	-998.41	1,392.00	1,713.02	0.61	0.45	15.59	
6,905.99	1.99	215.57	6,545.87	-1,001.08	1,390.12	1,713.06	0.24	0.24	0.97	
Last SDI Production MWD Survey										
6,906.00	1.99	215.57	6,545.88	-1,001.08	1,390.12	1,713.06	0.24	0.24	0.85	
6,964.99	1.99	215.57	6,604.83	-1,002.74	1,388.93	1,713.07	0.00	0.00	0.00	
Projection to TD										
6,965.00	1.99	215.57	6,604.85	-1,002.74	1,388.93	1,713.07	0.01	0.00	0.00	



Company: WPX Energy Rocky Mountain, LLC
Project: Garfield County, CO NAD83
Site: MV 16-9 Pad
Well: GM 322-9
Wellbore: Wellbore #1
Design: Wellbore #1

Local Co-ordinate Reference: Well GM 322-9 - Slot B07
TVD Reference: KB @ 6111.00usft (HP 318)
MD Reference: KB @ 6111.00usft (HP 318)
North Reference: True
Survey Calculation Method: Minimum Curvature
Database: Grand Junction District

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
114.00	113.99	-1.23	0.98	First SDI Gyro Survey
603.00	594.43	-53.57	63.80	Last SDI Gyro Survey
673.00	660.81	-65.88	82.26	First SDI Surface MWD Survey
987.00	944.86	-138.62	193.57	Last SDI Surface MWD Survey
1,088.00	1,032.97	-165.43	235.02	First SDI Production MWD Survey
6,905.99	6,545.87	-1,001.08	1,390.12	Last SDI Production MWD Survey
6,964.99	6,604.83	-1,002.74	1,388.93	Projection to TD

Checked By: _____ Approved By: _____ Date: _____