



## Survey Report

<b>Company:</b>	Peakview Operating Co.	<b>Local Co-ordinate Reference:</b>	Well Kowach 24-9 SWD
<b>Project:</b>	Moffat County, CO	<b>TVD Reference:</b>	WELL @ 6304.0ft (Original Well Elev)
<b>Site:</b>	S9-T6N-R90W	<b>MD Reference:</b>	WELL @ 6304.0ft (Original Well Elev)
<b>Well:</b>	Kowach 24-9 SWD	<b>North Reference:</b>	True
<b>Wellbore:</b>	VH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	FINAL	<b>Database:</b>	USA EDM 5000 Multi Users DB

<b>Project</b>	Moffat County, CO		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		
<b>Map Zone:</b>	Colorado Northern Zone		

Site		S9-T6N-R90W			
Site Position:		Northing:	1,425,989.84 ft	Latitude:	40.485521
From:	Lat/Long	Easting:	2,443,829.97 ft	Longitude:	-107.499655
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in	Grid Convergence:	-1.29 °

Well	Kowach 24-9 SWD					
Well Position	+N/-S	0.0 ft	Northing:	1,425,848.81 ft	Latitude:	40.485142
	+E/-W	0.0 ft	Easting:	2,443,958.95 ft	Longitude:	-107.499180
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	6,291.0 ft

<b>Wellbore</b>	VH				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	8/16/2013	9.96	66.58	52,622

<b>Design</b>	FINAL				
<b>Audit Notes:</b>					
<b>Version:</b>	1.0	<b>Phase:</b>	ACTUAL	<b>Tie On Depth:</b>	0.0
<b>Vertical Section:</b>	<b>Depth From (TVD)</b>	<b>+N/-S</b>	<b>+E/-W</b>	<b>Direction</b>	
	(ft)	(ft)	(ft)	(°)	
	0.0	0.0	0.0	171.45	

<b>Survey Program</b>	<b>Date</b>	3/26/2014			
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
25.0	2,000.0	Survey #3 (VH)	MWD	Geolink MWD	
2,000.0	4,605.0	Survey #2 (VH)	MWD	Geolink MWD	

<b>Survey</b>										
<b>Measured Depth (ft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Vertical Section (ft)</b>	<b>Dogleg Rate (°/100ft)</b>	<b>Build Rate (°/100ft)</b>	<b>Formations / Comments</b>	
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00		
25.0	0.24	103.43	25.0	0.0	0.1	0.0	0.96	0.96		
100.0	0.54	84.37	100.0	0.0	0.6	0.1	0.43	0.40		
200.0	0.82	72.18	200.0	0.3	1.7	0.0	0.31	0.28		
300.0	0.74	50.90	300.0	0.9	2.9	-0.4	0.30	-0.08		
400.0	0.55	75.58	400.0	1.4	3.9	-0.8	0.33	-0.19		
500.0	0.52	138.58	500.0	1.2	4.6	-0.5	0.56	-0.03		
600.0	0.85	148.55	600.0	0.2	5.3	0.6	0.35	0.33		
700.0	1.29	181.52	699.9	-1.5	5.7	2.4	0.74	0.44		
800.0	1.25	188.57	799.9	-3.8	5.5	4.5	0.16	-0.04		
900.0	1.74	196.47	899.9	-6.3	4.9	6.9	0.53	0.49		
1,000.0	2.03	195.93	999.8	-9.4	4.0	9.9	0.29	0.29		

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<b>Wellbore:</b>	VH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	FINAL	<b>Database:</b>	USA EDM 5000 Multi Users DB

### Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Formations / Comments
1,100.0	2.41	185.10	1,099.8	-13.2	3.3	13.6	0.56	0.38	
1,200.0	2.55	186.18	1,199.7	-17.5	2.9	17.8	0.15	0.14	
1,300.0	2.59	189.63	1,299.6	-22.0	2.2	22.1	0.16	0.04	
1,400.0	2.74	186.48	1,399.5	-26.6	1.6	26.5	0.21	0.15	
1,500.0	3.26	185.96	1,499.3	-31.8	1.0	31.6	0.52	0.52	
1,600.0	3.29	188.30	1,599.2	-37.5	0.3	37.1	0.14	0.03	
1,700.0	3.53	177.40	1,699.0	-43.4	0.0	42.9	0.69	0.24	
1,800.0	3.81	176.55	1,798.8	-49.8	0.4	49.3	0.29	0.28	
1,900.0	4.34	172.87	1,898.5	-56.8	1.1	56.4	0.59	0.53	
2,000.0	3.91	171.45	1,998.3	-64.0	2.0	63.6	0.44	-0.43	
2,097.0	4.20	168.50	2,095.0	-70.7	3.2	70.4	0.37	0.30	
2,160.0	4.40	167.80	2,157.8	-75.3	4.2	75.1	0.33	0.32	
2,224.0	4.80	167.00	2,221.6	-80.3	5.3	80.2	0.63	0.62	
2,350.0	3.00	143.50	2,347.3	-88.1	8.5	88.4	1.88	-1.43	
2,476.0	2.80	135.70	2,473.2	-93.0	12.6	93.8	0.35	-0.16	
2,601.0	3.10	143.20	2,598.0	-97.9	16.7	99.3	0.39	0.24	
2,725.0	3.30	150.20	2,721.8	-103.7	20.5	105.6	0.35	0.16	
2,852.0	3.60	165.40	2,848.6	-110.7	23.3	112.9	0.76	0.24	
2,976.0	4.30	171.80	2,972.3	-119.1	25.0	121.5	0.67	0.56	
3,102.0	4.70	172.30	3,097.9	-128.9	26.4	131.3	0.32	0.32	
3,228.0	5.30	176.80	3,223.4	-139.8	27.4	142.3	0.57	0.48	
3,354.0	4.40	163.90	3,349.0	-150.2	29.0	152.9	1.12	-0.71	
3,480.0	5.00	168.00	3,474.6	-160.2	31.5	163.2	0.55	0.48	
3,607.0	5.30	169.80	3,601.1	-171.4	33.7	174.5	0.27	0.24	
3,732.0	4.90	140.50	3,725.6	-181.2	38.1	184.9	2.08	-0.32	
3,857.0	5.70	150.10	3,850.0	-190.7	44.6	195.3	0.95	0.64	
3,981.0	6.40	156.90	3,973.4	-202.4	50.4	207.7	0.81	0.56	
4,104.0	4.50	150.40	4,095.8	-212.9	55.5	218.8	1.62	-1.54	
4,231.0	5.00	168.10	4,222.4	-222.7	59.1	229.0	1.21	0.39	
4,356.0	5.50	174.30	4,346.8	-234.0	60.8	240.4	0.60	0.40	
4,479.0	5.80	175.00	4,469.2	-246.0	61.9	252.5	0.25	0.24	
4,542.0	6.20	175.10	4,531.9	-252.6	62.5	259.1	0.64	0.63	Last Cathedral Survey @ 4,542' MD
4,605.0	6.20	175.10	4,594.5	-259.4	63.1	265.9	0.00	0.00	Projection to Bit @ 4,605' MD

### Design Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
4,542.0	4,531.9	-252.6	62.5	Last Cathedral Survey @ 4,542' MD
4,605.0	4,594.5	-259.4	63.1	Projection to Bit @ 4,605' MD

Checked By: \_\_\_\_\_ Approved By: \_\_\_\_\_ Date: \_\_\_\_\_