



Comet Ridge

# **COMET RIDGE RESOURCES, LLC**

**FREMONT COUNTY, CO**

**LIBERTY 32-32**

**LIBERTY 32-32**

**LIBERTY 32-32**

**Survey: Survey #1**

## **Standard Survey Report**

**27 July, 2010**



**Weatherford®**

<b>Company:</b>	COMET RIDGE RESOURCES, LLC	<b>Local Co-ordinate Reference:</b>	Well LIBERTY 32-32
<b>Project:</b>	FREMONT COUNTY, CO	<b>TVD Reference:</b>	WELL @ 5435.00ft (Original Well Elev)
<b>Site:</b>	LIBERTY 32-32	<b>MD Reference:</b>	WELL @ 5435.00ft (Original Well Elev)
<b>Well:</b>	LIBERTY 32-32	<b>North Reference:</b>	True
<b>Wellbore:</b>	LIBERTY 32-32	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	LIBERTY 32-32	<b>Database:</b>	EDM 2003.21 Single User Db

<b>Project</b>	FREMONT 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 Central Zone		

<b>Site</b>	LIBERTY 32-32		
<b>Site Position:</b>		<b>Northing:</b>	1,189,599.52 ft
<b>From:</b>	Lat/Long	<b>Easting:</b>	3,105,412.83 ft
<b>Position Uncertainty:</b>	0.00 ft	<b>Slot Radius:</b>	"
		<b>Latitude:</b>	38° 21' 12.020 N
		<b>Longitude:</b>	105° 7' 56.737 W
		<b>Grid Convergence:</b>	0.23 °

<b>Well</b>	LIBERTY 32-32		
<b>Well Position</b>	<b>+N/-S</b>	0.00 ft	<b>Northing:</b> 1,189,599.52 ft
	<b>+E/-W</b>	0.00 ft	<b>Easting:</b> 3,105,412.83 ft
<b>Position Uncertainty</b>	0.00 ft	<b>Wellhead Elevation:</b>	ft
		<b>Latitude:</b>	38° 21' 12.020 N
		<b>Longitude:</b>	105° 7' 56.737 W
		<b>Ground Level:</b>	5,424.00 ft

<b>Wellbore</b>	LIBERTY 32-32		
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>
	BGGM2009	4/12/2010	9.01
			<b>Dip Angle (°)</b> 65.38
			<b>Field Strength (nT)</b> 52,111

<b>Design</b>	LIBERTY 32-32		
<b>Audit Notes:</b>			
<b>Version:</b>	1.0	<b>Phase:</b>	ACTUAL
		<b>Tie On Depth:</b>	0.00
<b>Vertical Section:</b>	<b>Depth From (TVD) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>
	0.00	0.00	0.00
			<b>Direction (°)</b> 138.69

<b>Survey Program</b>	<b>Date</b> 7/19/2010		
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>
747.00	5,104.00	Survey #1 (LIBERTY 32-32)	MWD
			<b>Description</b> MWD - Standard

<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>Turn Rate (°/100ft)</b>
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
747.00	1.13	106.99	746.95	-2.15	7.04	6.27	0.15	0.15	0.00
842.00	0.25	281.62	841.95	-2.38	7.74	6.90	1.45	-0.93	183.82
937.00	0.25	239.64	936.95	-2.45	7.36	6.69	0.19	0.00	-44.19
1,032.00	0.38	191.62	1,031.94	-2.86	7.11	6.84	0.30	0.14	-50.55
1,127.00	0.19	129.49	1,126.94	-3.27	7.17	7.19	0.35	-0.20	-65.40
1,222.00	0.50	125.99	1,221.94	-3.61	7.63	7.75	0.33	0.33	-3.68
1,317.00	0.75	103.12	1,316.94	-4.00	8.57	8.66	0.37	0.26	-24.07
1,411.00	0.94	97.62	1,410.93	-4.24	9.93	9.74	0.22	0.20	-5.85
1,504.00	0.31	314.24	1,503.92	-4.17	10.51	10.07	1.29	-0.68	-154.17
1,597.00	0.38	258.37	1,596.92	-4.05	10.03	9.66	0.35	0.08	-60.08
1,695.00	0.25	278.87	1,694.92	-4.08	9.50	9.34	0.17	-0.13	20.92
1,789.00	0.44	233.12	1,788.92	-4.27	9.01	9.15	0.34	0.20	-48.67

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<b>Site:</b>	LIBERTY 32-32	<b>MD Reference:</b>	WELL @ 5435.00ft (Original Well Elev)
<b>Well:</b>	LIBERTY 32-32	<b>North Reference:</b>	True
<b>Wellbore:</b>	LIBERTY 32-32	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	LIBERTY 32-32	<b>Database:</b>	EDM 2003.21 Single User 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)	Turn Rate (°/100ft)
1,882.00	0.45	229.64	1,881.91	-4.72	8.44	9.12	0.03	0.01	-3.74
1,944.00	1.69	147.24	1,943.90	-5.65	8.75	10.02	2.73	2.00	-132.90
2,006.00	5.63	141.62	2,005.77	-8.80	11.13	13.96	6.37	6.35	-9.06
2,068.00	9.06	136.74	2,067.25	-14.74	16.37	21.88	5.62	5.53	-7.87
2,131.00	11.63	135.49	2,129.22	-22.88	24.22	33.18	4.09	4.08	-1.98
2,195.00	14.31	136.49	2,191.58	-33.22	34.19	47.53	4.20	4.19	1.56
2,258.00	17.50	135.87	2,252.16	-45.67	46.15	64.77	5.07	5.06	-0.98
2,322.00	20.63	136.49	2,312.64	-60.76	60.62	85.65	4.90	4.89	0.97
2,385.00	23.63	137.74	2,371.00	-78.16	76.75	109.37	4.82	4.76	1.98
2,448.00	27.41	137.07	2,427.84	-98.13	95.13	136.50	6.02	6.00	-1.06
2,512.00	30.75	137.99	2,483.76	-121.08	116.12	167.60	5.27	5.22	1.44
2,575.00	33.56	139.74	2,537.10	-146.34	138.15	201.12	4.70	4.46	2.78
2,639.00	36.56	140.37	2,589.48	-174.52	161.75	237.87	4.72	4.69	0.98
2,703.00	39.13	140.12	2,640.01	-204.71	186.86	277.12	4.02	4.02	-0.39
2,770.00	41.50	139.99	2,691.10	-237.94	214.69	320.45	3.54	3.54	-0.19
2,833.00	43.13	139.87	2,737.68	-270.39	241.99	362.85	2.59	2.59	-0.19
2,897.00	46.06	139.49	2,783.25	-304.64	271.07	407.77	4.60	4.58	-0.59
2,959.00	48.19	139.87	2,825.43	-339.29	300.46	453.20	3.46	3.44	0.61
3,023.00	51.13	139.24	2,866.86	-376.40	332.11	501.97	4.65	4.59	-0.98
3,086.00	54.75	138.12	2,904.82	-414.15	365.31	552.23	5.92	5.75	-1.78
3,149.00	59.44	138.49	2,939.03	-453.63	400.47	605.11	7.46	7.44	0.59
3,212.00	64.89	139.14	2,968.44	-495.55	437.14	660.80	8.70	8.65	1.03
3,276.00	68.44	139.74	2,993.79	-540.19	475.34	719.55	5.61	5.55	0.94
3,339.00	71.81	139.62	3,015.20	-585.35	513.67	778.78	5.35	5.35	-0.19
3,402.00	74.81	138.62	3,033.29	-630.97	553.17	839.12	5.00	4.76	-1.59
3,465.00	77.63	137.99	3,048.30	-676.65	593.86	900.30	4.58	4.48	-1.00
3,529.00	80.94	138.49	3,060.19	-723.56	635.74	963.17	5.23	5.17	0.78
3,560.00	83.25	138.74	3,064.46	-746.59	656.04	993.87	7.49	7.45	0.81
3,662.00	85.31	138.49	3,074.62	-822.74	723.13	1,095.36	2.03	2.02	-0.25
<b>T1</b>									
3,732.13	86.74	137.75	3,079.48	-874.83	769.83	1,165.32	2.30	2.04	-1.05
3,757.00	87.25	137.49	3,080.79	-893.17	786.57	1,190.15	2.30	2.04	-1.05
3,848.00	89.25	137.49	3,083.57	-960.22	848.03	1,281.08	2.20	2.20	0.00
3,939.00	90.13	137.12	3,084.06	-1,027.10	909.74	1,372.05	1.05	0.97	-0.41
4,029.00	91.13	137.99	3,083.07	-1,093.51	970.47	1,462.02	1.47	1.11	0.97
4,124.00	91.00	138.49	3,081.30	-1,164.36	1,033.73	1,557.01	0.54	-0.14	0.53
4,217.00	91.31	139.12	3,079.43	-1,234.32	1,094.97	1,649.99	0.75	0.33	0.68
4,312.00	92.90	139.18	3,075.94	-1,306.13	1,157.06	1,744.92	1.67	1.67	0.06
4,407.00	90.63	139.49	3,073.01	-1,378.15	1,218.94	1,839.86	2.41	-2.39	0.33
4,502.00	89.69	139.37	3,072.75	-1,450.32	1,280.72	1,934.85	1.00	-0.99	-0.13
4,595.00	89.94	138.87	3,073.05	-1,520.63	1,341.59	2,027.85	0.60	0.27	-0.54
4,693.00	90.50	137.87	3,072.67	-1,593.88	1,406.69	2,125.84	1.17	0.57	-1.02
4,788.00	89.19	137.87	3,072.93	-1,664.33	1,470.41	2,220.83	1.38	-1.38	0.00
<b>T2</b>									
4,854.69	89.19	137.17	3,073.87	-1,713.51	1,515.45	2,287.50	1.05	0.00	-1.05
4,883.00	89.19	136.87	3,074.27	-1,734.22	1,534.75	2,315.79	1.05	0.00	-1.05
5,009.00	90.00	137.24	3,075.16	-1,826.45	1,620.59	2,441.74	0.71	0.64	0.29
<b>LAST SVY - PBHL LIBERTY 32-32 - T3</b>									
5,104.00	90.31	136.12	3,074.91	-1,895.56	1,685.76	2,536.68	1.22	0.33	-1.18

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<b>Site:</b>	LIBERTY 32-32	<b>MD Reference:</b>	WELL @ 5435.00ft (Original Well Elev)
<b>Well:</b>	LIBERTY 32-32	<b>North Reference:</b>	True
<b>Wellbore:</b>	LIBERTY 32-32	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	LIBERTY 32-32	<b>Database:</b>	EDM 2003.21 Single User Db

**Design Targets**

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
PBHL LIBERTY 32-32 - survey misses target center by 265.49ft at 5104.00ft MD (3074.91 TVD, -1895.56 N, 1685.76 E) - Point	0.00	0.00	3,070.00	-2,105.50	1,848.20	1,187,501.52	3,107,269.53	38° 20' 51.207 N	105° 7' 33.538 W
T1 - survey misses target center by 11.46ft at 3732.29ft MD (3079.49 TVD, -874.94 N, 769.94 E) - Rectangle (sides W100.00 H175.00 D0.00)	90.50	138.15	3,070.00	-871.00	775.00	1,188,731.66	3,106,191.35	38° 21' 3.410 N	105° 7' 47.009 W
T2 - survey misses target center by 3.93ft at 4854.69ft MD (3073.87 TVD, -1713.51 N, 1515.45 E) - Rectangle (sides W100.00 H285.00 D0.00)	90.50	138.15	3,070.00	-1,714.00	1,515.00	1,187,891.67	3,106,934.75	38° 20' 55.077 N	105° 7' 37.720 W
T3 - survey misses target center by 103.55ft at 5104.00ft MD (3074.91 TVD, -1895.56 N, 1685.76 E) - Rectangle (sides W100.00 H285.00 D0.00)	90.50	138.15	3,070.00	-1,975.00	1,752.00	1,187,631.63	3,107,172.80	38° 20' 52.497 N	105° 7' 34.746 W

**Survey Annotations**

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
5,104.00	3,074.91	-1,895.56	1,685.76	LAST SVY

Checked By: _____	Approved By: _____	Date: _____
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