



Tap Rock Resources, LLC

**Lea County, NM (NAD 83 NME)
(Gipple) Sec-33_T-24-S_R-35-E
Gipple Fed Com #138H
API# 30-025-46670
OWB**

Design: AWB

Standard Survey Report

10 May, 2020





Operator: Tap Rock Resources LLC
Well Name: Gipple Fed Com #138H
County: Lea
State: New Mexico
Rig Name: H&P 376
API: 30-025-467000

Intrepid Directional Drilling Specialists certifies that the surveys performed on the above referenced well are true and correct MWD surveys, data provided as follows:

Surveyor: Intrepid Directional Drilling Specialists
Survey Depths: 176' MD – 22,331' MD
Projection to Bit: 22,403' MD
Dates Performed: 2/15/2020 – 5/09/2020
Type of Survey: MWD

Sincerely,

A handwritten signature in blue ink, appearing to read "James Burleson".

James Burleson
Vice President of MWD Operations
Intrepid Directional Drilling Specialists



Company:	Tap Rock Resources, LLC	Local Co-ordinate Reference:	Well Gipple Fed Com #138H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB @ 3309.5usft (H&P 376)
Site:	(Gipple) Sec-33_T-24-S_R-35-E	MD Reference:	KB @ 3309.5usft (H&P 376)
Well:	Gipple Fed Com #138H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	AWB	Database:	EDM 5000.15 Single User Db

Project	Lea County, NM (NAD 83 NME)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site	(Gipple) Sec-33_T-24-S_R-35-E		
Site Position:		Northing:	425,961.00 usft
From:	Map	Easting:	840,662.00 usft
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 10' 2.448 N
		Longitude:	103° 21' 57.572 W
		Grid Convergence:	0.52 °

Well	Gipple Fed Com #138H		
Well Position	+N/-S	0.0 usft	Northing: 425,911.00 usft
	+E/-W	0.0 usft	Easting: 840,662.00 usft
Position Uncertainty	0.0 usft	Wellhead Elevation:	usft
		Latitude:	32° 10' 1.953 N
		Longitude:	103° 21' 57.577 W
		Ground Level:	3,283.0 usft

Wellbore	OWB		
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Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	02/14/20	6.56	60.01	47,652.88093299

Design	AWB		
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Audit Notes:			
Version:	1.0	Phase:	ACTUAL
		Tie On Depth:	0.0

Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0	0.0	0.0	359.45

Survey Program		Date	05/10/20		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
176.0	22,513.0	Intrepid MWD (OWB)	MWD	OWSG MWD - Standard	

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)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
176.0	0.43	200.91	176.0	-0.6	-0.2	-0.6	0.24	0.24	0.00
237.0	0.41	111.98	237.0	-0.9	-0.1	-0.9	0.96	-0.03	-145.79
325.0	0.60	157.86	325.0	-1.5	0.4	-1.5	0.49	0.22	52.14
418.0	1.00	154.73	418.0	-2.6	0.9	-2.7	0.43	0.43	-3.37
469.0	0.91	153.24	469.0	-3.4	1.3	-3.4	0.19	-0.18	-2.93
Rustler Anhydrite									
512.0	0.83	151.72	512.0	-4.0	1.6	-4.0	0.19	-0.18	-3.53
605.0	1.25	123.13	605.0	-5.1	2.7	-5.2	0.70	0.45	-30.74
697.0	1.20	147.83	696.9	-6.5	4.1	-6.5	0.57	-0.05	26.85
790.0	0.86	135.27	789.9	-7.8	5.1	-7.9	0.44	-0.37	-13.51

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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)
882.0	0.22	213.82	881.9	-8.5	5.5	-8.5	0.92	-0.70	85.38
894.1	0.26	195.05	894.0	-8.5	5.5	-8.5	0.71	0.31	-155.37
Top Salt									
949.0	0.58	161.35	948.9	-8.9	5.5	-8.9	0.71	0.59	-61.36
1,067.0	0.27	83.76	1,066.9	-9.4	6.0	-9.5	0.50	-0.26	-65.75
1,162.0	0.55	193.31	1,161.9	-9.8	6.1	-9.9	0.73	0.29	115.32
1,257.0	0.70	220.17	1,256.9	-10.7	5.6	-10.8	0.34	0.16	28.27
1,351.0	0.30	327.36	1,350.9	-11.0	5.1	-11.0	0.89	-0.43	114.03
1,446.0	0.09	350.94	1,445.9	-10.7	5.0	-10.7	0.23	-0.22	24.82
1,541.0	0.81	303.96	1,540.9	-10.2	4.4	-10.3	0.79	0.76	-49.45
1,635.0	0.22	170.11	1,634.9	-10.0	3.9	-10.1	1.04	-0.63	-142.39
1,730.0	0.65	313.67	1,729.9	-9.8	3.5	-9.9	0.88	0.45	151.12
1,825.0	0.54	341.02	1,824.9	-9.0	3.0	-9.1	0.32	-0.12	28.79
1,919.0	0.57	246.11	1,918.9	-8.8	2.4	-8.8	0.87	0.03	-100.97
2,014.0	1.39	63.68	2,013.9	-8.5	3.0	-8.5	2.06	0.86	186.92
2,109.0	4.62	88.27	2,108.7	-7.9	7.9	-7.9	3.58	3.40	25.88
2,204.0	5.41	79.22	2,203.4	-6.9	16.1	-7.1	1.17	0.83	-9.53
2,298.0	5.93	82.56	2,296.9	-5.5	25.3	-5.7	0.65	0.55	3.55
2,393.0	6.62	88.01	2,391.3	-4.6	35.6	-5.0	0.96	0.73	5.74
2,488.0	7.00	87.71	2,485.7	-4.2	46.9	-4.7	0.40	0.40	-0.32
2,583.0	7.17	83.98	2,580.0	-3.4	58.5	-3.9	0.52	0.18	-3.93
2,678.0	7.48	79.83	2,674.2	-1.6	70.5	-2.3	0.65	0.33	-4.37
2,773.0	6.74	85.30	2,768.4	-0.1	82.2	-0.9	1.05	-0.78	5.76
2,867.0	6.78	104.67	2,861.8	-1.0	93.0	-1.9	2.41	0.04	20.61
2,962.0	7.52	112.87	2,956.1	-4.9	104.2	-5.9	1.33	0.78	8.63
3,057.0	6.93	112.54	3,050.3	-9.5	115.2	-10.6	0.62	-0.62	-0.35
3,151.0	6.01	112.60	3,143.7	-13.6	125.0	-14.8	0.98	-0.98	0.06
3,246.0	5.60	106.82	3,238.2	-16.8	134.0	-18.1	0.75	-0.43	-6.08
3,341.0	4.59	115.50	3,332.9	-19.8	141.9	-21.2	1.33	-1.06	9.14
3,435.0	4.17	114.82	3,426.6	-22.8	148.4	-24.3	0.45	-0.45	-0.72
3,530.0	5.08	103.50	3,521.3	-25.3	155.6	-26.8	1.35	0.96	-11.92
3,625.0	6.18	107.31	3,615.8	-27.8	164.6	-29.4	1.22	1.16	4.01
3,720.0	5.36	104.28	3,710.3	-30.4	173.8	-32.1	0.92	-0.86	-3.19
3,814.0	6.05	106.39	3,803.9	-32.9	182.8	-34.6	0.77	0.73	2.24
3,909.0	7.01	108.90	3,898.2	-36.2	193.1	-38.0	1.05	1.01	2.64
4,004.0	7.35	106.35	3,992.5	-39.8	204.4	-41.7	0.49	0.36	-2.68
4,098.0	7.44	105.02	4,085.7	-43.0	216.0	-45.1	0.21	0.10	-1.41
4,193.0	6.64	103.52	4,180.0	-45.9	227.3	-48.1	0.86	-0.84	-1.58
4,288.0	6.86	110.10	4,274.3	-49.1	238.0	-51.4	0.85	0.23	6.93
4,382.0	5.95	112.16	4,367.8	-52.9	247.8	-55.3	1.00	-0.97	2.19
4,477.0	5.99	94.47	4,462.3	-55.1	257.3	-57.6	1.93	0.04	-18.62
4,572.0	5.87	82.54	4,556.7	-54.9	267.0	-57.5	1.30	-0.13	-12.56
4,667.0	6.51	74.62	4,651.2	-52.8	277.0	-55.5	1.12	0.67	-8.34

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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)
4,761.0	7.73	59.16	4,744.5	-48.2	287.6	-50.9	2.41	1.30	-16.45
4,826.1	7.21	61.74	4,809.0	-44.0	294.9	-46.8	0.96	-0.81	3.96
Base Salt									
4,856.0	6.97	63.05	4,838.7	-42.3	298.2	-45.2	0.96	-0.79	4.39
4,951.0	6.14	67.49	4,933.1	-37.7	308.0	-40.7	1.02	-0.87	4.67
4,983.0	6.00	68.58	4,964.9	-36.5	311.2	-39.5	0.57	-0.44	3.41
5,127.0	5.37	66.23	5,108.2	-31.0	324.4	-34.1	0.47	-0.44	-1.63
5,222.0	5.76	104.95	5,202.8	-30.5	333.0	-33.6	3.90	0.41	40.76
5,288.6	5.55	110.41	5,269.0	-32.4	339.3	-35.7	0.87	-0.32	8.21
Delaware Mountain Gp									
5,293.6	5.53	110.84	5,274.0	-32.6	339.7	-35.9	0.87	-0.28	8.54
Lamar									
5,317.0	5.47	112.87	5,297.3	-33.4	341.8	-36.7	0.87	-0.26	8.65
5,318.7	5.48	112.92	5,299.0	-33.5	342.0	-36.8	0.67	0.61	2.78
Bell Canyon									
5,343.8	5.63	113.60	5,324.0	-34.5	344.2	-37.8	0.67	0.61	2.70
Ramsey Sand									
5,411.0	6.05	115.24	5,390.8	-37.3	350.4	-40.7	0.67	0.62	2.45
5,506.0	6.14	109.26	5,485.3	-41.1	359.7	-44.6	0.67	0.09	-6.29
5,601.0	5.95	112.90	5,579.8	-44.7	369.1	-48.2	0.45	-0.20	3.83
5,696.0	5.95	109.77	5,674.3	-48.3	378.2	-51.9	0.34	0.00	-3.29
5,790.0	6.46	108.34	5,767.7	-51.6	387.8	-55.3	0.57	0.54	-1.52
5,885.0	6.15	105.36	5,862.1	-54.6	397.8	-58.4	0.47	-0.33	-3.14
5,979.0	6.54	119.13	5,955.6	-58.6	407.4	-62.5	1.67	0.41	14.65
6,074.0	6.32	121.52	6,050.0	-63.9	416.5	-67.9	0.36	-0.23	2.52
6,169.0	5.59	116.58	6,144.5	-68.7	425.1	-72.8	0.94	-0.77	-5.20
6,263.0	5.35	118.60	6,238.0	-72.9	433.1	-77.0	0.33	-0.26	2.15
6,289.1	5.38	116.82	6,264.0	-74.0	435.2	-78.2	0.65	0.12	-6.83
Cherry Canyon									
6,358.0	5.49	112.23	6,332.6	-76.7	441.2	-80.9	0.65	0.16	-6.66
6,452.0	5.51	118.13	6,426.2	-80.5	449.3	-84.9	0.60	0.02	6.28
6,547.0	5.23	119.98	6,520.8	-84.9	457.1	-89.2	0.35	-0.29	1.95
6,642.0	4.96	115.25	6,615.4	-88.8	464.6	-93.2	0.53	-0.28	-4.98
6,737.0	5.44	114.30	6,710.0	-92.4	472.4	-96.9	0.51	0.51	-1.00
6,831.0	5.56	118.15	6,803.6	-96.4	480.5	-101.0	0.41	0.13	4.10
6,926.0	5.50	115.68	6,898.1	-100.5	488.6	-105.2	0.26	-0.06	-2.60
7,020.0	4.89	113.19	6,991.7	-104.0	496.4	-108.8	0.69	-0.65	-2.65
7,115.0	4.87	104.23	7,086.4	-106.6	504.0	-111.5	0.80	-0.02	-9.43
7,210.0	5.02	108.88	7,181.0	-109.0	511.8	-113.9	0.45	0.16	4.89
7,304.0	4.56	111.81	7,274.7	-111.7	519.2	-116.7	0.55	-0.49	3.12
7,399.0	4.45	96.53	7,369.4	-113.5	526.4	-118.5	1.26	-0.12	-16.08
7,494.0	3.96	95.16	7,464.2	-114.2	533.3	-119.3	0.53	-0.52	-1.44
7,589.0	3.78	98.69	7,558.9	-115.0	539.6	-120.2	0.31	-0.19	3.72
7,683.0	3.56	100.40	7,652.8	-116.0	545.6	-121.2	0.26	-0.23	1.82

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7,774.4	3.41	103.39	7,744.0	-117.1	551.0	-122.4	0.26	-0.17	3.27
Brushy Canyon									
7,778.0	3.40	103.51	7,747.6	-117.2	551.2	-122.5	0.26	-0.16	3.42
7,873.0	2.97	121.88	7,842.4	-119.1	556.1	-124.5	1.16	-0.45	19.34
7,967.0	2.98	110.85	7,936.3	-121.3	560.4	-126.7	0.61	0.01	-11.73
8,062.0	3.12	104.23	8,031.2	-122.8	565.2	-128.2	0.40	0.15	-6.97
8,157.0	2.94	120.88	8,126.0	-124.7	569.8	-130.1	0.94	-0.19	17.53
8,252.0	1.81	121.16	8,221.0	-126.7	573.2	-132.2	1.19	-1.19	0.29
8,346.0	1.96	97.14	8,314.9	-127.7	576.1	-133.2	0.85	0.16	-25.55
8,441.0	2.19	109.88	8,409.8	-128.5	579.4	-134.1	0.54	0.24	13.41
8,536.0	2.24	111.56	8,504.8	-129.8	582.8	-135.4	0.09	0.05	1.77
8,630.0	1.40	114.43	8,598.7	-130.9	585.6	-136.6	0.90	-0.89	3.05
8,725.0	1.17	124.31	8,693.7	-132.0	587.4	-137.6	0.34	-0.24	10.40
8,820.0	1.56	168.84	8,788.7	-133.8	588.5	-139.4	1.15	0.41	46.87
8,914.0	2.28	155.58	8,882.6	-136.7	589.5	-142.4	0.90	0.77	-14.11
9,009.0	2.35	178.51	8,977.6	-140.4	590.3	-146.1	0.97	0.07	24.14
9,075.5	1.83	192.33	9,044.0	-142.8	590.1	-148.5	1.08	-0.78	20.78
Bone Spring Lime									
9,095.5	1.71	198.00	9,064.0	-143.4	590.0	-149.1	1.08	-0.63	28.36
Upper Avalon									
9,104.0	1.66	200.66	9,072.5	-143.6	589.9	-149.3	1.08	-0.57	31.29
9,199.0	1.97	185.20	9,167.4	-146.6	589.3	-152.2	0.61	0.33	-16.27
9,293.0	1.30	205.67	9,261.4	-149.1	588.6	-154.8	0.93	-0.71	21.78
9,388.0	1.69	201.85	9,356.4	-151.4	587.7	-157.0	0.42	0.41	-4.02
9,420.6	1.13	212.32	9,389.0	-152.1	587.3	-157.8	1.89	-1.73	32.10
Middle Avalon									
9,482.0	0.59	290.56	9,450.4	-152.5	586.7	-158.1	1.89	-0.87	127.49
9,577.0	1.05	238.28	9,545.4	-152.8	585.5	-158.4	0.88	0.48	-55.03
9,672.0	0.55	104.68	9,640.3	-153.4	585.2	-159.0	1.56	-0.53	-140.63
9,767.0	0.95	126.78	9,735.3	-154.0	586.3	-159.6	0.51	0.42	23.26
9,861.0	0.80	148.93	9,829.3	-155.0	587.2	-160.6	0.39	-0.16	23.56
9,891.7	1.09	150.39	9,860.0	-155.4	587.5	-161.1	0.96	0.96	4.77
Lower Avalon									
9,956.0	1.71	151.83	9,924.3	-156.8	588.2	-162.5	0.96	0.96	2.23
10,051.0	1.14	337.24	10,019.3	-157.2	588.5	-162.8	3.00	-0.60	-183.78
10,145.0	1.04	323.22	10,113.3	-155.6	587.7	-161.3	0.30	-0.11	-14.91
10,240.0	1.22	355.57	10,208.3	-153.9	587.1	-159.6	0.69	0.19	34.05
10,335.0	1.07	315.50	10,303.2	-152.3	586.4	-157.9	0.84	-0.16	-42.18
10,355.8	1.03	314.68	10,324.0	-152.0	586.1	-157.7	0.22	-0.20	-3.95
1st Bone Spring Sand									
10,429.0	0.88	311.16	10,397.2	-151.2	585.2	-156.8	0.22	-0.20	-4.81
10,524.0	0.67	11.73	10,492.2	-150.2	584.8	-155.8	0.84	-0.22	63.76
10,595.8	1.06	359.90	10,564.0	-149.1	584.9	-154.7	0.59	0.54	-16.48
2nd Bone Spring Carb									
10,619.0	1.19	357.76	10,587.2	-148.6	584.9	-154.3	0.59	0.57	-9.22

Company:	Tap Rock Resources, LLC	Local Co-ordinate Reference:	Well Gipple Fed Com #138H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB @ 3309.5usft (H&P 376)
Site:	(Gipple) Sec-33_T-24-S_R-35-E	MD Reference:	KB @ 3309.5usft (H&P 376)
Well:	Gipple Fed Com #138H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	AWB	Database:	EDM 5000.15 Single User Db

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)
10,714.0	0.91	31.90	10,682.2	-147.0	585.2	-152.6	0.71	-0.29	35.94
10,808.0	0.71	22.65	10,776.2	-145.9	585.8	-151.5	0.25	-0.21	-9.84
10,903.0	0.70	104.28	10,871.2	-145.5	586.6	-151.1	0.97	-0.01	85.93
10,955.8	0.23	99.46	10,924.0	-145.5	587.0	-151.2	0.89	-0.89	-9.12
2nd Bone Spring Sand									
10,998.0	0.15	297.69	10,966.2	-145.5	587.1	-151.2	0.89	-0.19	-383.58
11,092.0	0.56	302.40	11,060.2	-145.2	586.6	-150.9	0.44	0.44	5.01
11,187.0	1.99	353.78	11,155.1	-143.3	586.0	-149.0	1.79	1.51	54.08
11,282.0	2.55	330.35	11,250.1	-139.9	584.8	-145.5	1.13	0.59	-24.66
11,371.0	3.14	272.11	11,339.0	-138.1	581.4	-143.6	3.16	0.66	-65.43
3rd Bone Spring Carb									
11,376.0	3.24	269.96	11,344.0	-138.1	581.1	-143.6	3.16	2.06	-43.11
11,471.0	2.07	239.19	11,438.9	-138.9	576.9	-144.5	1.90	-1.23	-32.39
11,534.0	2.14	254.48	11,501.8	-139.8	574.8	-145.3	0.90	0.11	24.27
11,667.0	2.09	247.68	11,634.7	-141.4	570.2	-146.9	0.19	-0.04	-5.11
11,761.0	8.33	344.53	11,728.4	-135.5	566.8	-140.9	9.39	6.64	103.03
11,855.0	25.54	351.94	11,818.0	-108.7	562.1	-114.1	18.42	18.31	7.88
11,932.9	34.07	353.42	11,885.5	-70.3	557.2	-75.6	11.00	10.96	1.90
FTP @ 11932.9'MD, 100'FSL & 88.5'FEL									
11,950.0	35.95	353.66	11,899.5	-60.5	556.1	-65.9	11.00	10.97	1.40
12,044.0	40.40	354.96	11,973.4	-2.7	550.4	-8.0	4.81	4.73	1.38
12,138.0	45.19	6.42	12,042.5	60.9	551.4	55.6	9.71	5.10	12.19
12,233.0	51.35	14.10	12,105.7	130.5	564.3	125.0	8.85	6.48	8.08
12,238.3	51.67	13.25	12,109.0	134.5	565.2	129.0	14.11	6.11	-16.25
3rd Bone Spring Sand									
12,327.0	57.92	359.94	12,160.3	206.2	573.2	200.7	14.11	7.04	-14.99
12,422.0	67.50	357.84	12,203.8	290.5	571.5	285.0	10.27	10.08	-2.21
12,500.9	75.23	359.75	12,229.0	365.2	570.0	359.7	10.06	9.80	2.42
3rd BS W Sand									
12,517.0	76.81	0.12	12,232.9	380.8	570.0	375.4	10.06	9.81	2.30
12,611.0	86.93	2.54	12,246.2	473.7	572.1	468.2	11.06	10.77	2.57
12,638.0	89.42	3.24	12,247.0	500.7	573.5	495.2	9.58	9.22	2.59
12,732.0	89.31	3.36	12,248.1	594.5	578.9	588.9	0.17	-0.12	0.13
12,826.0	89.57	3.41	12,249.0	688.4	584.5	682.7	0.28	0.28	0.05
12,921.0	88.54	3.21	12,250.5	783.2	589.9	777.5	1.10	-1.08	-0.21
13,015.0	89.09	1.76	12,252.5	877.1	594.0	871.3	1.65	0.59	-1.54
13,110.0	89.33	1.14	12,253.8	972.0	596.4	966.3	0.70	0.25	-0.65
13,204.0	89.50	0.10	12,254.8	1,066.0	597.4	1,060.2	1.12	0.18	-1.11
13,299.0	88.47	359.39	12,256.4	1,161.0	597.0	1,155.2	1.32	-1.08	-0.75
13,393.0	88.45	359.06	12,259.0	1,255.0	595.7	1,249.2	0.35	-0.02	-0.35
13,488.0	87.44	357.95	12,262.4	1,349.9	593.3	1,344.1	1.58	-1.06	-1.17
13,583.0	88.44	357.97	12,265.8	1,444.7	589.9	1,439.0	1.05	1.05	0.02
13,677.0	91.21	357.91	12,266.1	1,538.7	586.5	1,533.0	2.95	2.95	-0.06
13,772.0	92.67	359.38	12,262.9	1,633.6	584.3	1,627.9	2.18	1.54	1.55

Company:	Tap Rock Resources, LLC	Local Co-ordinate Reference:	Well Gipple Fed Com #138H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB @ 3309.5usft (H&P 376)
Site:	(Gipple) Sec-33_T-24-S_R-35-E	MD Reference:	KB @ 3309.5usft (H&P 376)
Well:	Gipple Fed Com #138H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	AWB	Database:	EDM 5000.15 Single User Db

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)
13,867.0	92.06	359.49	12,258.9	1,728.5	583.3	1,722.8	0.65	-0.64	0.12
13,962.0	91.52	359.02	12,256.0	1,823.4	582.1	1,817.8	0.75	-0.57	-0.49
14,056.0	90.78	358.61	12,254.1	1,917.4	580.1	1,911.8	0.90	-0.79	-0.44
14,150.0	91.27	358.35	12,252.4	2,011.4	577.7	2,005.7	0.59	0.52	-0.28
14,244.0	90.22	357.91	12,251.2	2,105.3	574.6	2,099.7	1.21	-1.12	-0.47
14,339.0	89.94	357.96	12,251.1	2,200.2	571.2	2,194.7	0.30	-0.29	0.05
14,433.0	88.75	357.18	12,252.1	2,294.1	567.2	2,288.6	1.51	-1.27	-0.83
14,527.0	90.08	355.76	12,253.1	2,388.0	561.4	2,382.5	2.07	1.41	-1.51
14,622.0	89.61	356.98	12,253.3	2,482.8	555.4	2,477.3	1.38	-0.49	1.28
14,716.0	89.13	358.42	12,254.4	2,576.7	551.6	2,571.3	1.61	-0.51	1.53
14,811.0	89.07	358.41	12,255.9	2,671.6	549.0	2,666.2	0.06	-0.06	-0.01
14,905.0	90.71	359.20	12,256.1	2,765.6	547.0	2,760.2	1.94	1.74	0.84
15,000.0	91.28	359.50	12,254.4	2,860.6	545.9	2,855.2	0.68	0.60	0.32
15,094.0	89.99	359.47	12,253.4	2,954.6	545.1	2,949.2	1.37	-1.37	-0.03
15,189.0	88.17	0.01	12,254.9	3,049.6	544.7	3,044.2	2.00	-1.92	0.57
15,283.0	90.65	0.89	12,255.9	3,143.5	545.4	3,138.2	2.80	2.64	0.94
15,378.0	92.51	0.35	12,253.2	3,238.5	546.4	3,233.1	2.04	1.96	-0.57
15,473.0	93.87	359.66	12,247.9	3,333.3	546.4	3,327.9	1.60	1.43	-0.73
15,567.0	94.11	359.84	12,241.4	3,427.1	546.0	3,421.7	0.32	0.26	0.19
15,662.0	92.89	0.12	12,235.6	3,521.9	546.0	3,516.5	1.32	-1.28	0.29
15,757.0	92.41	359.71	12,231.2	3,616.8	545.9	3,611.4	0.66	-0.51	-0.43
15,852.0	91.51	359.31	12,228.0	3,711.8	545.0	3,706.4	1.04	-0.95	-0.42
15,946.0	94.44	359.93	12,223.1	3,805.6	544.4	3,800.2	3.19	3.12	0.66
16,041.0	90.36	0.43	12,219.1	3,900.5	544.7	3,895.1	4.33	-4.29	0.53
16,136.0	89.09	0.64	12,219.6	3,995.5	545.6	3,990.1	1.35	-1.34	0.22
16,231.0	88.09	359.66	12,221.9	4,090.5	545.9	4,085.1	1.47	-1.05	-1.03
16,326.0	91.37	0.59	12,222.4	4,185.5	546.1	4,180.0	3.59	3.45	0.98
16,421.0	88.63	0.27	12,222.4	4,280.5	546.8	4,275.0	2.90	-2.88	-0.34
16,516.0	89.40	0.25	12,224.0	4,375.5	547.2	4,370.0	0.81	0.81	-0.02
16,611.0	89.39	0.37	12,225.0	4,470.4	547.7	4,465.0	0.13	-0.01	0.13
16,705.0	89.12	0.07	12,226.2	4,564.4	548.1	4,559.0	0.43	-0.29	-0.32
16,800.0	89.76	0.35	12,227.1	4,659.4	548.4	4,653.9	0.74	0.67	0.29
16,895.0	92.26	0.77	12,225.5	4,754.4	549.4	4,748.9	2.67	2.63	0.44
16,989.0	91.36	0.33	12,222.5	4,848.3	550.3	4,842.8	1.07	-0.96	-0.47
17,084.0	93.07	359.51	12,218.8	4,943.3	550.1	4,937.8	2.00	1.80	-0.86
17,178.0	93.53	358.91	12,213.4	5,037.1	548.8	5,031.6	0.80	0.49	-0.64
17,272.0	92.84	358.71	12,208.2	5,130.9	546.9	5,125.5	0.76	-0.73	-0.21
17,367.0	92.39	357.99	12,203.9	5,225.8	544.1	5,220.3	0.89	-0.47	-0.76
17,462.0	92.26	357.70	12,200.0	5,320.7	540.6	5,315.2	0.33	-0.14	-0.31
17,556.0	92.10	357.59	12,196.4	5,414.5	536.7	5,409.1	0.21	-0.17	-0.12
17,651.0	90.23	357.91	12,194.5	5,509.4	533.0	5,504.0	2.00	-1.97	0.34
17,745.0	89.80	357.91	12,194.5	5,603.4	529.6	5,598.0	0.46	-0.46	0.00
17,840.0	89.69	357.62	12,194.9	5,698.3	525.9	5,693.0	0.33	-0.12	-0.31

Company:	Tap Rock Resources, LLC	Local Co-ordinate Reference:	Well Gipple Fed Com #138H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB @ 3309.5usft (H&P 376)
Site:	(Gipple) Sec-33_T-24-S_R-35-E	MD Reference:	KB @ 3309.5usft (H&P 376)
Well:	Gipple Fed Com #138H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	AWB	Database:	EDM 5000.15 Single User Db

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)
17,934.0	89.19	357.69	12,195.8	5,792.2	522.0	5,786.9	0.54	-0.53	0.07
18,028.0	89.01	357.34	12,197.3	5,886.1	517.9	5,880.9	0.42	-0.19	-0.37
18,123.0	88.66	357.09	12,199.2	5,981.0	513.3	5,975.8	0.45	-0.37	-0.26
18,217.0	88.45	357.32	12,201.6	6,074.8	508.7	6,069.7	0.33	-0.22	0.24
18,312.0	92.67	357.92	12,200.7	6,169.7	504.8	6,164.6	4.49	4.44	0.63
18,406.0	93.66	358.09	12,195.5	6,263.5	501.5	6,258.4	1.07	1.05	0.18
18,500.0	93.90	357.75	12,189.3	6,357.2	498.1	6,352.2	0.44	0.26	-0.36
18,595.0	92.47	358.07	12,184.0	6,452.0	494.7	6,447.0	1.54	-1.51	0.34
18,689.0	91.18	358.47	12,181.0	6,545.9	491.8	6,540.9	1.44	-1.37	0.43
18,783.0	88.26	358.41	12,181.5	6,639.9	489.3	6,634.9	3.11	-3.11	-0.06
18,878.0	88.10	359.38	12,184.5	6,734.8	487.4	6,729.8	1.03	-0.17	1.02
18,973.0	89.95	0.61	12,186.1	6,829.8	487.4	6,824.8	2.34	1.95	1.29
19,067.0	90.61	0.94	12,185.6	6,923.8	488.7	6,918.8	0.78	0.70	0.35
19,162.0	90.52	0.70	12,184.7	7,018.8	490.1	7,013.8	0.27	-0.09	-0.25
19,256.0	90.74	1.15	12,183.7	7,112.8	491.6	7,107.7	0.53	0.23	0.48
19,351.0	92.18	1.56	12,181.2	7,207.7	493.8	7,202.6	1.58	1.52	0.43
19,445.0	91.51	1.21	12,178.2	7,301.6	496.1	7,296.5	0.80	-0.71	-0.37
19,540.0	90.84	1.00	12,176.3	7,396.6	497.9	7,391.5	0.74	-0.71	-0.22
19,634.0	90.09	0.56	12,175.5	7,490.6	499.2	7,485.4	0.93	-0.80	-0.47
19,729.0	89.82	0.43	12,175.6	7,585.6	500.0	7,580.4	0.32	-0.28	-0.14
19,823.0	91.53	359.95	12,174.5	7,679.6	500.3	7,674.4	1.89	1.82	-0.51
19,917.0	92.12	359.75	12,171.5	7,773.5	500.1	7,768.4	0.66	0.63	-0.21
20,011.0	90.43	358.96	12,169.4	7,867.5	499.0	7,862.3	1.98	-1.80	-0.84
20,105.0	91.07	359.75	12,168.2	7,961.5	498.0	7,956.3	1.08	0.68	0.84
20,200.0	90.93	0.02	12,166.5	8,056.4	497.8	8,051.3	0.32	-0.15	0.28
20,294.0	87.49	359.20	12,167.8	8,150.4	497.1	8,145.3	3.76	-3.66	-0.87
20,389.0	89.12	359.31	12,170.6	8,245.4	495.9	8,240.2	1.72	1.72	0.12
20,482.0	92.75	359.43	12,169.1	8,338.3	494.9	8,333.2	3.91	3.90	0.13
20,577.0	93.91	359.44	12,163.6	8,433.2	494.0	8,428.0	1.22	1.22	0.01
20,671.0	93.68	359.07	12,157.4	8,527.0	492.7	8,521.8	0.46	-0.24	-0.39
20,766.0	93.73	359.04	12,151.2	8,621.7	491.2	8,616.6	0.06	0.05	-0.03
20,860.0	93.60	358.87	12,145.2	8,715.5	489.5	8,710.4	0.23	-0.14	-0.18
20,954.0	92.95	359.90	12,139.8	8,809.4	488.5	8,804.3	1.29	-0.69	1.10
21,049.0	91.28	0.67	12,136.3	8,904.3	488.9	8,899.2	1.94	-1.76	0.81
21,143.0	88.63	1.07	12,136.4	8,998.3	490.4	8,993.2	2.85	-2.82	0.43
21,238.0	88.13	0.81	12,139.1	9,093.2	491.9	9,088.1	0.59	-0.53	-0.27
21,332.0	87.89	0.41	12,142.4	9,187.2	492.9	9,182.0	0.50	-0.26	-0.43
21,426.0	88.46	359.88	12,145.3	9,281.1	493.1	9,276.0	0.83	0.61	-0.56
21,521.0	90.71	359.26	12,146.0	9,376.1	492.4	9,371.0	2.46	2.37	-0.65
21,615.0	90.41	358.69	12,145.1	9,470.1	490.8	9,464.9	0.69	-0.32	-0.61
21,710.0	92.04	359.42	12,143.1	9,565.1	489.2	9,559.9	1.88	1.72	0.77
21,804.0	91.87	358.54	12,139.9	9,659.0	487.5	9,653.9	0.95	-0.18	-0.94
21,898.0	92.00	358.28	12,136.7	9,752.9	484.9	9,747.8	0.31	0.14	-0.28
21,992.0	91.39	358.24	12,133.9	9,846.8	482.1	9,841.7	0.65	-0.65	-0.04

Company:	Tap Rock Resources, LLC	Local Co-ordinate Reference:	Well Gipple Fed Com #138H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB @ 3309.5usft (H&P 376)
Site:	(Gipple) Sec-33_T-24-S_R-35-E	MD Reference:	KB @ 3309.5usft (H&P 376)
Well:	Gipple Fed Com #138H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	AWB	Database:	EDM 5000.15 Single User Db

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)
22,087.0	91.54	357.86	12,131.5	9,941.7	478.8	9,936.7	0.43	0.16	-0.40
22,181.0	89.43	357.21	12,130.7	10,035.6	474.8	10,030.6	2.35	-2.24	-0.69
22,275.0	89.97	357.11	12,131.2	10,129.5	470.1	10,124.5	0.58	0.57	-0.11
22,331.0	89.24	356.14	12,131.6	10,185.4	466.8	10,180.5	2.17	-1.30	-1.73
LAST SVY									
22,436.2	89.24	356.14	12,133.0	10,290.4	459.7	10,285.5	0.00	0.00	0.00
LTP @ 22436.2'MD, 100'FNL & 85.8'FEL									
22,513.0	89.24	356.14	12,134.0	10,367.0	454.6	10,362.1	0.00	0.00	0.00
Projection to TD @ 22513'MD, 23.4'FNL & 90.3'FEL									

Design Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
LTP (Gipple Fed Com	0.00	0.00	12,138.0	10,291.0	495.0	436,202.00	841,157.00	32° 11' 43.735 N	103° 21' 50.740 W
- actual wellpath misses target center by 35.6usft at 22434.5usft MD (12132.9 TVD, 10288.7 N, 459.9 E)									
- Point									
PBHL (Gipple Fed Co	-0.70	359.45	12,138.0	10,386.0	494.0	436,297.00	841,156.00	32° 11' 44.675 N	103° 21' 50.742 W
- actual wellpath misses target center by 44.0usft at 22513.0usft MD (12134.0 TVD, 10367.0 N, 454.6 E)									
- Rectangle (sides W75.0 H6,881.4 D30.0)									
T1 (Gipple Fed Com #	-0.50	359.45	12,222.0	3,505.5	560.1	429,416.50	841,222.11	32° 10' 36.589 N	103° 21' 50.694 W
- actual wellpath misses target center by 20.2usft at 15646.4usft MD (12236.4 TVD, 3506.4 N, 546.0 E)									
- Rectangle (sides W75.0 H3,575.0 D30.0)									
FTP (Gipple Fed Com	0.00	0.01	12,249.0	-70.0	595.0	425,841.00	841,257.00	32° 10' 1.207 N	103° 21' 50.663 W
- actual wellpath misses target center by 242.9usft at 12185.6usft MD (12075.1 TVD, 95.1 N, 556.6 E)									
- Point									

Company:	Tap Rock Resources, LLC	Local Co-ordinate Reference:	Well Gipple Fed Com #138H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB @ 3309.5usft (H&P 376)
Site:	(Gipple) Sec-33_T-24-S_R-35-E	MD Reference:	KB @ 3309.5usft (H&P 376)
Well:	Gipple Fed Com #138H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	AWB	Database:	EDM 5000.15 Single User Db

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
469.0	469.0	Rustler Anhydrite			
894.1	894.0	Top Salt			
4,826.1	4,809.0	Base Salt			
5,288.6	5,269.0	Delaware Mountain Gp			
5,293.6	5,274.0	Lamar			
5,318.7	5,299.0	Bell Canyon			
5,343.8	5,324.0	Ramsey Sand			
6,289.1	6,264.0	Cherry Canyon			
7,774.4	7,744.0	Brushy Canyon			
9,075.5	9,044.0	Bone Spring Lime			
9,095.5	9,064.0	Upper Avalon			
9,420.6	9,389.0	Middle Avalon			
9,891.7	9,860.0	Lower Avalon			
10,355.8	10,324.0	1st Bone Spring Sand			
10,595.8	10,564.0	2nd Bone Spring Carb			
10,955.8	10,924.0	2nd Bone Spring Sand			
11,371.0	11,339.0	3rd Bone Spring Carb			
12,238.3	12,109.0	3rd Bone Spring Sand			
12,500.9	12,229.0	3rd BS W Sand			

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
11,932.9	11,885.5	-70.3	557.2	FTP @ 11932.9'MD, 100'FSL & 88.5'FEL
22,331.0	12,131.6	10,185.4	466.8	LAST SVY
22,436.2	12,133.0	10,290.4	459.7	LTP @ 22436.2'MD, 100'FNL & 85.8'FEL
22,513.0	12,134.0	10,367.0	454.6	Projection to TD @ 22513'MD, 23.4'FNL & 90.3'FEL

Checked By: _____ Approved By: _____ Date: _____