



Tap Rock Resources, LLC

**Lea County, NM (NAD 83 NME)
(Zeus State) Sec-9_T24-S_R-33-E
Zeus State #176H**

OWB

Design: AWB

Standard Survey Report

13 June, 2019

 **INTREPID**



Intrepid Survey Report



Company: Tap Rock Resources, LLC
Project: Lea County, NM (NAD 83 NME)
Site: (Zeus State) Sec-9_T24-S_R-33-E
Well: Zeus State #176H
Wellbore: OWB
Design: AWB

Local Co-ordinate Reference: Well Zeus State #176H
TVD Reference: KB @ 3640.5usft (H&P 388)
MD Reference: KB @ 3640.5usft (H&P 388)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
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 (Zeus State) Sec-9_T24-S_R-33-E						
Site Position:		Northing:	447,193.00 usft	Latitude:	32° 13' 37.575 N	
From:	Map	Easting:	777,416.00 usft	Longitude:	103° 34' 11.577 W	
Position Uncertainty:		0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.41 °

Well	Zeus State #176H					
Well Position	+N/-S	0.0 usft	Northing:	447,193.00 usft	Latitude:	32° 13' 37.575 N
	+E/-W	0.0 usft	Easting:	777,416.00 usft	Longitude:	103° 34' 11.577 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	usft	Ground Level:	3,614.0 usft

Wellbore	OWB				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	05/28/19	6.74	60.04	47,738.70669691

Design	AWB				
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	359.59	

Survey Program	Date 06/13/19				
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
149.0	14,822.0	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
149.0	0.66	40.43	149.0	0.7	0.6	0.6	0.44	0.44	0.00
213.0	0.70	39.99	213.0	1.2	1.0	1.2	0.06	0.06	-0.69
273.0	0.84	53.00	273.0	1.8	1.6	1.8	0.37	0.23	21.68
333.0	0.79	54.05	333.0	2.3	2.3	2.3	0.09	-0.08	1.75
458.0	0.53	7.47	458.0	3.4	3.1	3.3	0.46	-0.21	-37.26
519.0	0.79	307.27	519.0	3.9	2.8	3.9	1.15	0.43	-98.69
610.0	1.58	277.82	610.0	4.5	1.1	4.4	1.07	0.87	-32.36
703.0	2.59	256.38	702.9	4.1	-2.3	4.1	1.35	1.09	-23.05
794.0	3.56	242.40	793.8	2.3	-6.8	2.4	1.34	1.07	-15.36



Intrepid Survey Report



Company: Tap Rock Resources, LLC
Project: Lea County, NM (NAD 83 NME)
Site: (Zeus State) Sec-9_T24-S_R-33-E
Well: Zeus State #176H
Wellbore: OWB
Design: AWB

Local Co-ordinate Reference: Well Zeus State #176H
TVD Reference: KB @ 3640.5usft (H&P 388)
MD Reference: KB @ 3640.5usft (H&P 388)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
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)
886.0	4.62	234.14	885.5	-1.2	-12.3	-1.1	1.32	1.15	-8.98
978.0	5.85	232.38	977.1	-6.2	-19.0	-6.1	1.35	1.34	-1.91
1,070.0	6.95	232.65	1,068.6	-12.4	-27.2	-12.2	1.20	1.20	0.29
1,162.0	7.87	234.76	1,159.8	-19.4	-36.7	-19.2	1.04	1.00	2.29
1,279.0	9.89	237.75	1,275.4	-29.4	-51.8	-29.1	1.77	1.73	2.56
1,309.1	9.82	238.17	1,305.0	-32.2	-56.1	-31.8	0.34	-0.25	1.39
Rustler Anhydrite									
1,369.9	9.67	239.03	1,365.0	-37.5	-64.9	-37.1	0.34	-0.24	1.42
Top Salt									
1,444.0	9.49	240.12	1,438.0	-43.8	-75.5	-43.2	0.34	-0.24	1.47
1,539.0	9.85	242.67	1,531.7	-51.4	-89.6	-50.8	0.59	0.38	2.68
1,633.0	12.00	244.95	1,624.0	-59.2	-105.5	-58.5	2.33	2.29	2.43
1,728.0	13.36	246.62	1,716.7	-67.8	-124.6	-66.9	1.48	1.43	1.76
1,823.0	13.19	246.54	1,809.1	-76.4	-144.6	-75.4	0.18	-0.18	-0.08
1,918.0	12.97	246.97	1,901.7	-84.9	-164.3	-83.7	0.25	-0.23	0.45
2,013.0	12.84	248.56	1,994.3	-92.9	-184.0	-91.6	0.40	-0.14	1.67
2,108.0	12.48	247.41	2,086.9	-100.7	-203.3	-99.3	0.46	-0.38	-1.21
2,203.0	11.60	237.13	2,179.9	-109.9	-220.8	-108.3	2.44	-0.93	-10.82
2,298.0	11.25	238.10	2,273.0	-120.0	-236.7	-118.3	0.42	-0.37	1.02
2,393.0	10.86	240.47	2,366.2	-129.3	-252.3	-127.5	0.63	-0.41	2.49
2,488.0	10.42	240.82	2,459.6	-137.9	-267.6	-135.9	0.47	-0.46	0.37
2,583.0	10.20	241.70	2,553.1	-146.0	-282.5	-144.0	0.28	-0.23	0.93
2,677.0	9.71	243.02	2,645.6	-153.6	-296.9	-151.5	0.57	-0.52	1.40
2,772.0	9.85	236.96	2,739.3	-161.6	-310.9	-159.4	1.09	0.15	-6.38
2,867.0	11.16	230.36	2,832.7	-171.9	-324.8	-169.6	1.87	1.38	-6.95
2,962.0	10.73	230.01	2,925.9	-183.5	-338.6	-181.1	0.46	-0.45	-0.37
3,057.0	10.24	231.51	3,019.4	-194.4	-352.0	-191.9	0.59	-0.52	1.58
3,152.0	10.37	231.86	3,112.8	-205.0	-365.3	-202.3	0.15	0.14	0.37
3,247.0	11.34	232.91	3,206.1	-215.9	-379.5	-213.2	1.04	1.02	1.11
3,342.0	10.77	233.97	3,299.4	-226.7	-394.1	-223.9	0.64	-0.60	1.12
3,437.0	11.21	233.88	3,392.6	-237.4	-408.8	-234.5	0.46	0.46	-0.09
3,532.0	11.87	235.72	3,485.7	-248.3	-424.3	-245.3	0.80	0.69	1.94
3,627.0	11.34	235.55	3,578.7	-259.1	-440.1	-256.0	0.56	-0.56	-0.18
3,722.0	10.55	235.64	3,672.0	-269.3	-455.0	-266.1	0.83	-0.83	0.09
3,816.0	10.42	238.62	3,764.5	-278.6	-469.3	-275.2	0.59	-0.14	3.17
3,911.0	10.86	240.21	3,857.8	-287.5	-484.4	-284.1	0.56	0.46	1.67
4,006.0	11.69	240.56	3,951.0	-296.7	-500.6	-293.1	0.88	0.87	0.37
4,101.0	12.53	240.47	4,043.9	-306.5	-517.9	-302.8	0.88	0.88	-0.09
4,196.0	11.60	239.24	4,136.8	-316.5	-535.1	-312.6	1.02	-0.98	-1.29
4,291.0	10.64	238.01	4,230.0	-326.0	-550.7	-322.1	1.04	-1.01	-1.29
4,386.0	11.08	239.59	4,323.3	-335.3	-566.1	-331.2	0.56	0.46	1.66
4,480.0	10.51	238.45	4,415.6	-344.3	-581.2	-340.2	0.65	-0.61	-1.21
4,575.0	10.15	234.32	4,509.1	-353.8	-595.3	-349.5	0.87	-0.38	-4.35
4,670.0	10.29	231.68	4,602.6	-363.9	-608.8	-359.5	0.51	0.15	-2.78



Intrepid Survey Report



Company: Tap Rock Resources, LLC
Project: Lea County, NM (NAD 83 NME)
Site: (Zeus State) Sec-9_T24-S_R-33-E
Well: Zeus State #176H
Wellbore: OWB
Design: AWB

Local Co-ordinate Reference: Well Zeus State #176H
TVD Reference: KB @ 3640.5usft (H&P 388)
MD Reference: KB @ 3640.5usft (H&P 388)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
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)
4,765.0	10.07	231.51	4,696.1	-374.3	-621.9	-369.9	0.23	-0.23	-0.18
4,860.0	10.86	230.01	4,789.5	-385.2	-635.3	-380.7	0.88	0.83	-1.58
5,049.6	12.92	227.12	4,975.0	-411.1	-664.5	-406.4	1.13	1.08	-1.53
Base Salt									
5,050.0	12.92	227.11	4,975.4	-411.2	-664.6	-406.4	1.13	1.09	-1.29
5,145.0	11.65	233.70	5,068.2	-424.1	-680.1	-419.2	1.99	-1.34	6.94
5,239.0	10.64	240.38	5,160.5	-434.0	-695.3	-429.0	1.74	-1.07	7.11
5,289.4	10.19	240.59	5,210.0	-438.5	-703.2	-433.5	0.90	-0.90	0.42
Delaware Mountain Gp									
5,342.2	9.71	240.84	5,262.0	-443.0	-711.2	-437.9	0.90	-0.90	0.46
Bell Canyon - Lamar									
5,357.0	9.58	240.91	5,276.6	-444.2	-713.3	-439.1	0.90	-0.90	0.49
5,382.7	9.67	240.56	5,302.0	-446.3	-717.1	-441.1	0.41	0.34	-1.36
Ramsey Sand									
5,512.0	10.11	238.89	5,429.4	-457.5	-736.3	-452.2	0.41	0.34	-1.29
5,607.0	12.18	240.91	5,522.6	-466.7	-752.2	-461.3	2.22	2.18	2.13
5,702.0	13.67	241.44	5,615.1	-476.9	-770.8	-471.4	1.57	1.57	0.56
5,797.0	13.45	240.73	5,707.5	-487.7	-790.3	-482.0	0.29	-0.23	-0.75
5,892.0	13.36	240.82	5,799.9	-498.4	-809.5	-492.6	0.10	-0.09	0.09
5,987.0	13.45	240.56	5,892.3	-509.2	-828.7	-503.3	0.11	0.09	-0.27
6,082.0	13.54	239.33	5,984.7	-520.3	-847.9	-514.2	0.32	0.09	-1.29
6,177.0	13.27	239.42	6,077.1	-531.5	-866.8	-525.3	0.29	-0.28	0.09
6,271.0	12.44	238.80	6,168.8	-542.3	-884.8	-535.9	0.90	-0.88	-0.66
6,299.9	12.40	238.88	6,197.0	-545.5	-890.1	-539.1	0.15	-0.14	0.27
Cherry Canyon									
6,366.0	12.31	239.06	6,261.5	-552.8	-902.2	-546.3	0.15	-0.14	0.27
6,461.0	12.00	239.86	6,354.4	-562.9	-919.5	-556.3	0.37	-0.33	0.84
6,556.0	11.78	240.21	6,447.4	-572.7	-936.4	-566.0	0.24	-0.23	0.37
6,651.0	11.87	239.94	6,540.4	-582.4	-953.3	-575.6	0.11	0.09	-0.28
6,746.0	11.96	239.94	6,633.3	-592.3	-970.3	-585.3	0.09	0.09	0.00
6,841.0	11.82	240.03	6,726.3	-602.0	-987.2	-595.0	0.15	-0.15	0.09
6,936.0	11.38	240.21	6,819.3	-611.6	-1,003.8	-604.4	0.46	-0.46	0.19
7,031.0	10.99	241.00	6,912.5	-620.6	-1,019.8	-613.3	0.44	-0.41	0.83
7,126.0	10.59	240.73	7,005.9	-629.3	-1,035.4	-621.8	0.42	-0.42	-0.28
7,220.0	10.46	240.21	7,098.3	-637.7	-1,050.3	-630.2	0.17	-0.14	-0.55
7,315.0	10.37	240.73	7,191.7	-646.2	-1,065.2	-638.6	0.14	-0.09	0.55
7,410.0	10.33	240.82	7,285.2	-654.5	-1,080.1	-646.8	0.05	-0.04	0.09
7,505.0	10.15	241.53	7,378.6	-662.7	-1,094.9	-654.8	0.23	-0.19	0.75
7,600.0	10.15	242.32	7,472.2	-670.5	-1,109.7	-662.6	0.15	0.00	0.83
7,695.0	10.11	241.44	7,565.7	-678.4	-1,124.4	-670.4	0.17	-0.04	-0.93
7,790.0	10.02	241.53	7,659.2	-686.3	-1,139.0	-678.2	0.10	-0.09	0.09
7,837.5	9.43	237.57	7,706.0	-690.4	-1,145.9	-682.2	1.89	-1.25	-8.35
Brushy Canyon									
7,885.0	8.88	233.09	7,752.9	-694.7	-1,152.2	-686.4	1.89	-1.15	-9.42



Intrepid Survey Report



Company: Tap Rock Resources, LLC
Project: Lea County, NM (NAD 83 NME)
Site: (Zeus State) Sec-9_T24-S_R-33-E
Well: Zeus State #176H
Wellbore: OWB
Design: AWB

Local Co-ordinate Reference: Well Zeus State #176H
TVD Reference: KB @ 3640.5usft (H&P 388)
MD Reference: KB @ 3640.5usft (H&P 388)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
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)	Bulld Rate (°/100usft)	Turn Rate (°/100usft)
7,980.0	8.62	221.31	7,846.8	-704.4	-1,162.7	-696.1	1.90	-0.27	-12.40
8,074.0	8.26	216.30	7,939.8	-715.2	-1,171.4	-706.8	0.87	-0.38	-5.33
8,169.0	7.16	203.73	8,034.0	-726.1	-1,177.8	-717.7	2.11	-1.16	-13.23
8,264.0	4.62	203.47	8,128.5	-735.0	-1,181.7	-726.6	2.67	-2.67	-0.27
8,359.0	3.69	210.85	8,223.2	-741.2	-1,184.8	-732.7	1.13	-0.98	7.77
8,454.0	3.60	209.88	8,318.0	-746.4	-1,187.8	-737.9	0.11	-0.09	-1.02
8,549.0	3.52	207.07	8,412.8	-751.6	-1,190.7	-743.0	0.20	-0.08	-2.96
8,643.0	3.52	209.62	8,506.7	-756.6	-1,193.4	-748.1	0.17	0.00	2.71
8,738.0	3.47	210.68	8,601.5	-761.6	-1,196.3	-753.1	0.09	-0.05	1.12
8,833.0	3.52	212.35	8,696.3	-766.6	-1,199.3	-758.0	0.12	0.05	1.76
8,928.0	3.30	211.20	8,791.1	-771.4	-1,202.3	-762.8	0.24	-0.23	-1.21
9,023.0	3.12	211.03	8,886.0	-775.9	-1,205.1	-767.3	0.19	-0.19	-0.18
9,118.0	2.99	213.31	8,980.8	-780.2	-1,207.8	-771.6	0.19	-0.14	2.40
9,181.0	2.81	213.75	9,043.8	-782.9	-1,209.5	-774.2	0.29	-0.29	0.70
9,220.0	2.59	217.09	9,082.7	-784.4	-1,210.6	-775.7	0.69	-0.56	8.56
9,257.3	1.83	285.65	9,120.0	-784.9	-1,211.7	-776.2	6.88	-2.04	183.81
Bone Spring Lime									
9,267.0	2.15	302.61	9,129.7	-784.7	-1,212.0	-776.1	6.88	3.32	174.82
9,314.0	6.81	349.72	9,176.5	-781.5	-1,213.2	-772.8	11.86	9.91	100.23
9,361.0	11.03	359.65	9,223.0	-774.3	-1,213.7	-765.6	9.53	8.98	21.13
9,380.5	13.00	1.52	9,242.0	-770.2	-1,213.7	-761.5	10.33	10.13	9.60
Upper Avalon									
9,409.0	15.91	3.43	9,269.6	-763.1	-1,213.4	-754.4	10.33	10.19	6.70
9,456.0	19.25	2.29	9,314.4	-748.9	-1,212.7	-740.2	7.14	7.11	-2.43
9,504.0	24.66	1.06	9,358.9	-731.0	-1,212.2	-722.3	11.31	11.27	-2.56
9,542.7	28.13	358.91	9,393.6	-713.8	-1,212.2	-705.1	9.30	8.97	-5.56
FTP @ 9542.7'MD, 100'FSL & 257.5'FEL									
9,551.0	28.88	358.51	9,400.9	-709.9	-1,212.3	-701.2	9.30	9.02	-4.80
9,599.0	33.41	356.40	9,442.0	-685.1	-1,213.4	-676.4	9.71	9.44	-4.40
9,646.0	38.29	354.73	9,480.1	-657.6	-1,215.6	-648.9	10.59	10.38	-3.55
9,694.0	42.33	355.08	9,516.6	-626.7	-1,218.3	-618.0	8.43	8.42	0.73
9,720.7	44.85	355.46	9,536.0	-608.3	-1,219.8	-599.6	9.49	9.44	1.44
Middle Avalon									
9,789.0	51.30	356.31	9,581.6	-557.7	-1,223.4	-548.9	9.49	9.44	1.24
9,836.0	58.07	357.72	9,608.8	-519.4	-1,225.4	-510.6	14.61	14.40	3.00
9,884.0	62.86	357.45	9,632.4	-477.7	-1,227.2	-468.9	9.99	9.98	-0.56
9,931.0	66.64	356.40	9,652.5	-435.3	-1,229.5	-426.5	8.29	8.04	-2.23
9,978.0	71.91	355.78	9,669.1	-391.4	-1,232.5	-382.6	11.28	11.21	-1.32
10,025.0	75.91	355.17	9,682.1	-346.4	-1,236.0	-337.6	8.60	8.51	-1.30
10,073.0	80.62	352.79	9,691.9	-299.7	-1,241.0	-290.8	10.95	9.81	-4.96
10,120.0	84.70	352.71	9,697.9	-253.5	-1,246.9	-244.5	8.68	8.68	-0.17
10,168.0	88.97	354.38	9,700.5	-205.9	-1,252.2	-196.9	9.55	8.90	3.48
10,263.0	91.12	354.64	9,700.4	-111.3	-1,261.3	-102.3	2.28	2.26	0.27
10,358.0	92.31	353.76	9,697.6	-16.8	-1,270.9	-7.7	1.56	1.25	-0.93



Intrepid Survey Report



Company: Tap Rock Resources, LLC
Project: Lea County, NM (NAD 83 NME)
Site: (Zeus State) Sec-9_T24-S_R-33-E
Well: Zeus State #176H
Wellbore: OWB
Design: AWB

Local Co-ordinate Reference: Well Zeus State #176H
TVD Reference: KB @ 3640.5usft (H&P 388)
MD Reference: KB @ 3640.5usft (H&P 388)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
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)
10,452.0	93.71	354.29	9,692.7	76.5	-1,280.7	85.7	1.59	1.49	0.56
10,547.0	91.21	356.66	9,688.6	171.1	-1,288.2	180.3	3.62	-2.63	2.49
10,642.0	91.78	356.93	9,686.1	265.9	-1,293.5	275.2	0.66	0.60	0.28
10,737.0	90.24	358.60	9,684.4	360.9	-1,297.2	370.1	2.39	-1.62	1.76
10,832.0	90.51	359.39	9,683.8	455.8	-1,298.9	465.1	0.88	0.28	0.83
10,927.0	91.47	359.65	9,682.2	550.8	-1,299.7	560.1	1.05	1.01	0.27
11,021.0	90.55	359.83	9,680.5	644.8	-1,300.1	654.1	1.00	-0.98	0.19
11,116.0	90.95	0.18	9,679.3	739.8	-1,300.1	749.1	0.56	0.42	0.37
11,211.0	91.08	359.83	9,677.6	834.8	-1,300.1	844.1	0.39	0.14	-0.37
11,306.0	91.12	359.83	9,675.8	929.8	-1,300.3	939.0	0.04	0.04	0.00
11,401.0	90.95	359.91	9,674.0	1,024.7	-1,300.6	1,034.0	0.20	-0.18	0.08
11,496.0	91.65	0.44	9,671.9	1,119.7	-1,300.3	1,129.0	0.92	0.74	0.56
11,591.0	92.44	0.70	9,668.5	1,214.6	-1,299.3	1,223.9	0.88	0.83	0.27
11,686.0	90.37	0.27	9,666.2	1,309.6	-1,298.5	1,318.9	2.23	-2.18	-0.45
11,781.0	90.59	0.09	9,665.4	1,404.6	-1,298.2	1,413.9	0.30	0.23	-0.19
11,875.0	88.44	359.39	9,666.2	1,498.6	-1,298.7	1,507.9	2.41	-2.29	-0.74
11,970.0	88.48	359.91	9,668.7	1,593.6	-1,299.2	1,602.8	0.55	0.04	0.55
12,065.0	90.29	0.09	9,669.7	1,688.6	-1,299.2	1,697.8	1.91	1.91	0.19
12,160.0	88.84	359.91	9,670.5	1,783.5	-1,299.2	1,792.8	1.54	-1.53	-0.19
12,255.0	89.32	359.83	9,672.0	1,878.5	-1,299.4	1,887.8	0.51	0.51	-0.08
12,350.0	90.68	0.00	9,672.0	1,973.5	-1,299.6	1,982.8	1.44	1.43	0.18
12,445.0	90.99	0.00	9,670.6	2,068.5	-1,299.6	2,077.8	0.33	0.33	0.00
12,540.0	89.49	0.09	9,670.2	2,163.5	-1,299.5	2,172.8	1.58	-1.58	0.09
12,635.0	89.27	359.65	9,671.2	2,258.5	-1,299.7	2,267.8	0.52	-0.23	-0.46
12,729.0	88.22	359.74	9,673.3	2,352.5	-1,300.2	2,361.7	1.12	-1.12	0.10
12,824.0	87.74	359.74	9,676.6	2,447.4	-1,300.7	2,456.7	0.51	-0.51	0.00
12,919.0	88.04	359.91	9,680.1	2,542.4	-1,301.0	2,551.6	0.36	0.32	0.18
13,014.0	88.57	359.74	9,683.0	2,637.3	-1,301.2	2,646.6	0.59	0.56	-0.18
13,109.0	88.13	359.56	9,685.7	2,732.3	-1,301.8	2,741.5	0.50	-0.46	-0.19
13,204.0	88.35	359.83	9,688.6	2,827.2	-1,302.3	2,836.5	0.37	0.23	0.28
13,298.0	88.35	359.83	9,691.3	2,921.2	-1,302.6	2,930.4	0.00	0.00	0.00
13,393.0	89.10	0.00	9,693.4	3,016.2	-1,302.7	3,025.4	0.81	0.79	0.18
13,488.0	89.41	359.47	9,694.7	3,111.2	-1,303.2	3,120.4	0.65	0.33	-0.56
13,583.0	89.89	359.30	9,695.2	3,206.1	-1,304.2	3,215.4	0.54	0.51	-0.18
13,703.0	90.99	359.74	9,694.3	3,326.1	-1,305.2	3,335.4	0.99	0.92	0.37
13,798.0	92.53	359.39	9,691.4	3,421.1	-1,305.9	3,430.3	1.66	1.62	-0.37
13,893.0	91.21	359.21	9,688.3	3,516.0	-1,307.1	3,525.3	1.40	-1.39	-0.19
13,988.0	92.35	358.86	9,685.3	3,611.0	-1,308.7	3,620.2	1.26	1.20	-0.37
14,083.0	89.14	358.24	9,684.1	3,705.9	-1,311.1	3,715.2	3.44	-3.38	-0.65
14,178.0	90.07	357.98	9,684.8	3,800.9	-1,314.2	3,810.2	1.02	0.98	-0.27
14,273.0	91.47	357.89	9,683.5	3,895.8	-1,317.7	3,905.1	1.48	1.47	-0.09
14,368.0	90.33	357.98	9,682.0	3,990.7	-1,321.1	4,000.1	1.20	-1.20	0.09
14,463.0	88.79	358.51	9,682.7	4,085.7	-1,324.0	4,095.0	1.71	-1.62	0.56
14,557.0	90.11	358.60	9,683.6	4,179.6	-1,326.4	4,189.0	1.41	1.40	0.10



Intrepid Survey Report



Company: Tap Rock Resources, LLC
Project: Lea County, NM (NAD 83 NME)
Site: (Zeus State) Sec-9_T24-S_R-33-E
Well: Zeus State #176H
Wellbore: OWB
Design: AWB

Local Co-ordinate Reference: Well Zeus State #176H
TVD Reference: KB @ 3640.5usft (H&P 388)
MD Reference: KB @ 3640.5usft (H&P 388)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
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)
14,652.0	91.34	358.16	9,682.4	4,274.6	-1,329.0	4,284.0	1.38	1.29	-0.46
14,742.2	92.21	357.80	9,679.6	4,364.7	-1,332.2	4,374.1	1.04	0.96	-0.40
LTP @ 14742.2'MD, 100'FNL & 342'FEL									
14,762.0	92.40	357.72	9,678.8	4,384.4	-1,333.0	4,393.9	1.04	0.96	-0.40
LAST SVY									
14,822.0	92.40	357.72	9,676.3	4,444.3	-1,335.4	4,453.8	0.00	0.00	0.00
Projection to TD @ 14822'MD, 20'FNL & 344'FEL									

Design Targets

Target Name

- hit/miss target	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- Shape									
LTP (Zeus State #176)	0.00	0.00	9,693.4	4,365.0	-1,320.0	451,558.00	776,096.00	32° 14' 20.860 N	103° 34' 26.584 W
- actual wellpath misses target center by 18.4usft at 14741.7usft MD (9679.7 TVD, 4364.1 N, -1332.2 E)									
- Point									
PBHL (Zeus State #176)	0.30	359.59	9,693.4	4,460.0	-1,321.0	451,653.00	776,095.00	32° 14' 21.800 N	103° 34' 26.588 W
- actual wellpath misses target center by 27.3usft at 14822.0usft MD (9676.3 TVD, 4444.3 N, -1335.4 E)									
- Rectangle (sides W100.0 H5,179.0 D30.0)									
FTP (Zeus State #176)	0.00	0.00	9,715.0	-714.0	-1,284.0	446,479.00	776,132.00	32° 13' 30.599 N	103° 34' 26.583 W
- actual wellpath misses target center by 212.1usft at 9765.3usft MD (9566.5 TVD, -575.8 N, -1222.2 E)									
- Point									

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,309.1	1,305.0	Rustler Anhydrite			
1,369.9	1,365.0	Top Salt			
5,049.6	4,975.0	Base Salt			
5,289.4	5,210.0	Delaware Mountain Gp			
5,342.2	5,262.0	Bell Canyon			
5,342.2	5,262.0	Lamar			
5,382.7	5,302.0	Ramsey Sand			
6,299.9	6,197.0	Cherry Canyon			
7,837.5	7,706.0	Brushy Canyon			
9,257.3	9,120.0	Bone Spring Lime			
9,380.5	9,242.0	Upper Avalon			
9,720.7	9,536.0	Middle Avalon			



Intrepid
Survey Report



Company:	Tap Rock Resources, LLC	Local Co-ordinate Reference:	Well Zeus State #176H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB @ 3640.5usft (H&P 388)
Site:	(Zeus State) Sec-9_T24-S_R-33-E	MD Reference:	KB @ 3640.5usft (H&P 388)
Well:	Zeus State #176H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	AWB	Database:	EDM 5000.15 Single User Db

Design Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
9,542.7	9,393.6	-713.8	-1,212.2	FTP @ 9542.7'MD, 100'FSL & 257.5'FEL
14,742.2	9,679.6	4,364.7	-1,332.2	LTP @ 14742.2'MD, 100'FNL & 342'FEL
14,762.0	9,678.8	4,384.4	-1,333.0	LAST SVY
14,822.0	9,676.3	4,444.3	-1,335.4	Projection to TD @ 14822'MD, 20'FNL & 344'FEL

Checked By: _____	Approved By: _____	Date: _____
-------------------	--------------------	-------------