



HOBBS OCD

JAN 23 2020

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Tap Rock Resources, LLC

Lea County, NM (NAD 83 NME)
(Hyperion) Sec-20_T-24-S_R-33-E
Hyperion State #221H

OWB

Design: AWB

Standard Survey Report

16 August, 2019





Intrepid
Survey Report



Company: Tap Rock Resources, LLC
Project: Lea County, NM (NAD 83 NME)
Site: (Hyperion) Sec-20_T-24-S_R-33-E
Well: Hyperion State #221H
Wellbore: OWB
Design: AWB

Local Co-ordinate Reference: Well Hyperion State #221H
TVD Reference: KB @ 3563.5usft (H&P 388)
MD Reference: KB @ 3563.5usft (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	(Hyperion) Sec-20_T-24-S_R-33-E		
Site Position:		Northing:	440,505.00 usft
From: Map		Easting:	767,798.00 usft
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 12' 32.058 N
		Longitude:	103° 36' 4.072 W
		Grid Convergence:	0.39 °

Well	Hyperion State #221H		
Well Position	+N/-S	0.0 usft	Northing:
	+E/-W	0.0 usft	Easting:
Position Uncertainty	0.0 usft	Wellhead Elevation:	usft
		Latitude:	32° 12' 32.350 N
		Longitude:	103° 36' 5.001 W
		Ground Level:	3,537.0 usft

Wellbore	OWB		
Magnetics	Model Name	Sample Date	Declination (°)
	IGRF2015	07/15/19	6.74
		Dip Angle (°)	60.02
		Field Strength (nT)	47,711.77092706

Design	AWB		
Audit Notes:			
Version:	1.0	Phase:	ACTUAL
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)
	0.0	0.0	0.0
		Direction (°)	179.54

Survey Program Date 08/16/19

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
148.0	17,939.0	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)	Bulld 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
148.0	0.57	79.04	148.0	0.1	0.7	-0.1	0.39	0.39	0.00
272.0	0.84	106.28	272.0	0.0	2.2	0.0	0.34	0.22	21.97
392.0	0.22	93.98	392.0	-0.3	3.3	0.3	0.52	-0.52	-10.25
517.0	0.48	125.79	517.0	-0.6	3.9	0.6	0.25	0.21	25.45
608.0	0.22	58.21	608.0	-0.7	4.4	0.7	0.49	-0.29	-74.26
701.0	0.26	198.92	701.0	-0.8	4.5	0.9	0.49	0.04	151.30
793.0	0.44	154.97	793.0	-1.3	4.6	1.4	0.34	0.20	-47.77
885.0	0.13	283.21	885.0	-1.6	4.6	1.7	0.58	-0.34	139.39
977.0	0.31	269.49	977.0	-1.6	4.3	1.6	0.20	0.20	-14.91



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1,069.0	0.62	236.71	1,069.0	-1.9	3.6	1.9	0.43	0.34	-35.63
1,160.0	0.53	278.55	1,160.0	-2.1	2.8	2.1	0.46	-0.10	45.98
1,198.0	0.79	258.75	1,198.0	-2.1	2.3	2.1	0.89	0.68	-52.05
Rustler Anhydrite									
1,215.0	0.92	253.76	1,215.0	-2.2	2.1	2.2	0.89	0.78	-29.43
1,347.0	1.05	259.12	1,346.9	-2.7	-0.1	2.7	0.12	0.10	4.06
1,442.0	1.01	263.78	1,441.9	-3.0	-1.8	2.9	0.10	-0.04	4.91
1,537.0	1.10	274.94	1,536.9	-3.0	-3.5	2.9	0.24	0.09	11.75
1,553.1	1.12	277.76	1,553.0	-2.9	-3.9	2.9	0.35	0.10	17.55
Top Salt									
1,632.0	1.23	290.24	1,631.9	-2.5	-5.4	2.5	0.35	0.14	15.81
1,727.0	1.19	300.78	1,726.9	-1.7	-7.2	1.6	0.24	-0.04	11.09
1,822.0	1.32	308.34	1,821.8	-0.5	-8.9	0.4	0.22	0.14	7.96
1,916.0	1.49	310.01	1,915.8	1.0	-10.7	-1.0	0.19	0.18	1.78
2,011.0	2.59	324.07	2,010.8	3.5	-12.9	-3.6	1.26	1.16	14.80
2,106.0	4.31	333.22	2,105.6	8.4	-15.8	-8.5	1.90	1.81	9.63
2,201.0	6.42	341.74	2,200.2	16.6	-19.0	-16.8	2.37	2.22	8.97
2,296.0	8.22	347.01	2,294.4	28.3	-22.2	-28.5	2.02	1.89	5.55
2,391.0	8.04	348.86	2,388.4	41.4	-25.1	-41.6	0.33	-0.19	1.95
2,486.0	7.78	347.19	2,482.5	54.2	-27.8	-54.5	0.37	-0.27	-1.76
2,581.0	7.34	347.19	2,576.7	66.4	-30.5	-66.7	0.46	-0.46	0.00
2,675.0	7.12	347.19	2,670.0	78.0	-33.2	-78.2	0.23	-0.23	0.00
2,770.0	6.64	347.10	2,764.3	89.1	-35.7	-89.3	0.51	-0.51	-0.09
2,865.0	6.15	347.54	2,858.7	99.4	-38.0	-99.7	0.52	-0.52	0.46
2,960.0	5.67	347.01	2,953.2	108.9	-40.2	-109.2	0.51	-0.51	-0.56
3,055.0	5.32	348.42	3,047.7	117.8	-42.1	-118.1	0.39	-0.37	1.48
3,150.0	4.97	347.98	3,142.4	126.1	-43.8	-126.5	0.37	-0.37	-0.46
3,244.0	4.53	348.16	3,236.0	133.8	-45.5	-134.1	0.47	-0.47	0.19
3,339.0	4.22	346.93	3,330.8	140.8	-47.0	-141.2	0.34	-0.33	-1.29
3,434.0	3.82	345.17	3,425.5	147.3	-48.6	-147.7	0.44	-0.42	-1.85
3,529.0	5.14	335.06	3,520.2	154.2	-51.2	-154.6	1.61	1.39	-10.64
3,624.0	4.75	336.29	3,614.9	161.7	-54.6	-162.1	0.43	-0.41	1.29
3,719.0	4.48	336.20	3,709.6	168.7	-57.7	-169.1	0.28	-0.28	-0.09
3,814.0	3.91	332.42	3,804.3	174.9	-60.7	-175.4	0.67	-0.60	-3.98
3,908.0	6.81	338.58	3,897.9	183.0	-64.2	-183.5	3.14	3.09	6.55
4,003.0	6.07	337.17	3,992.3	192.8	-68.2	-193.4	0.80	-0.78	-1.48
4,098.0	4.92	336.64	4,086.9	201.2	-71.8	-201.8	1.21	-1.21	-0.56
4,193.0	4.40	335.50	4,181.5	208.3	-74.9	-208.9	0.56	-0.55	-1.20
4,288.0	3.16	334.89	4,276.3	214.0	-77.5	-214.6	1.31	-1.31	-0.64
4,383.0	3.25	341.83	4,371.2	218.9	-79.5	-219.5	0.42	0.09	7.31
4,478.0	4.44	341.21	4,466.0	224.9	-81.5	-225.6	1.25	1.25	-0.65
4,573.0	6.51	348.42	4,560.5	233.7	-83.7	-234.3	2.29	2.18	7.59
4,668.0	8.00	352.90	4,654.8	245.5	-85.6	-246.2	1.68	1.57	4.72
4,751.9	6.71	358.35	4,738.0	256.2	-86.5	-256.9	1.74	-1.53	6.50



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Base Salt									
4,763.0	6.55	359.23	4,749.0	257.5	-86.5	-258.2	1.74	-1.48	7.92
4,858.0	7.12	355.72	4,843.3	268.8	-87.0	-269.5	0.74	0.60	-3.69
4,952.0	8.13	351.50	4,936.5	281.2	-88.5	-281.9	1.23	1.07	-4.49
5,047.0	6.99	350.53	5,030.7	293.5	-90.4	-294.2	1.21	-1.20	-1.02
5,054.4	6.90	350.47	5,038.0	294.4	-90.6	-295.1	1.22	-1.21	-0.87
Delaware Mountain Gp									
5,059.4	6.84	350.42	5,043.0	295.0	-90.7	-295.7	1.22	-1.21	-0.89
Bell Canyon									
5,084.6	6.53	350.18	5,068.0	297.9	-91.2	-298.6	1.22	-1.21	-0.94
Lamar									
5,094.0	6.42	350.09	5,077.3	298.9	-91.3	-299.7	1.22	-1.21	-1.00
5,104.7	6.40	349.97	5,088.0	300.1	-91.5	-300.8	0.19	-0.14	-1.14
Ramsey Sand									
5,221.0	6.24	348.60	5,203.6	312.7	-93.9	-313.4	0.19	-0.14	-1.18
5,316.0	7.78	344.03	5,297.9	323.9	-96.7	-324.7	1.72	1.62	-4.81
5,410.0	8.57	343.76	5,390.9	336.8	-100.4	-337.6	0.84	0.84	-0.29
5,505.0	8.66	344.11	5,484.8	350.4	-104.4	-351.3	0.11	0.09	0.37
5,600.0	8.75	343.94	5,578.7	364.3	-108.3	-365.1	0.10	0.09	-0.18
5,695.0	8.70	342.00	5,672.6	378.0	-112.5	-378.9	0.31	-0.05	-2.04
5,790.0	7.82	337.26	5,766.7	390.8	-117.3	-391.8	1.17	-0.93	-4.99
5,885.0	6.55	337.08	5,860.9	401.8	-121.9	-402.8	1.34	-1.34	-0.19
5,980.0	4.88	337.35	5,955.4	410.5	-125.5	-411.5	1.76	-1.76	0.28
6,032.8	4.83	336.43	6,008.0	414.6	-127.3	-415.6	0.18	-0.10	-1.74
Cherry Canyon									
6,075.0	4.79	335.68	6,050.1	417.9	-128.7	-418.9	0.18	-0.09	-1.78
6,170.0	4.79	336.20	6,144.8	425.1	-132.0	-426.1	0.05	0.00	0.55
6,264.0	4.75	335.15	6,238.4	432.2	-135.2	-433.3	0.10	-0.04	-1.12
6,359.0	4.79	334.36	6,333.1	439.4	-138.5	-440.5	0.08	0.04	-0.83
6,454.0	4.84	334.53	6,427.8	446.6	-142.0	-447.7	0.05	0.05	0.18
6,549.0	4.92	332.51	6,522.4	453.8	-145.6	-454.9	0.20	0.08	-2.13
6,643.0	3.96	338.84	6,616.1	460.4	-148.6	-461.6	1.15	-1.02	6.73
6,738.0	1.89	355.89	6,711.0	465.0	-149.9	-466.2	2.34	-2.18	17.95
6,833.0	0.97	8.37	6,806.0	467.4	-149.9	-468.6	1.02	-0.97	13.14
6,928.0	0.62	315.64	6,901.0	468.5	-150.1	-469.7	0.81	-0.37	-55.51
7,023.0	0.35	257.81	6,996.0	468.8	-150.8	-470.0	0.55	-0.28	-60.87
7,118.0	0.53	238.91	7,091.0	468.6	-151.5	-469.8	0.24	0.19	-19.89
7,213.0	0.66	238.82	7,186.0	468.0	-152.3	-469.3	0.14	0.14	-0.09
7,308.0	0.88	235.13	7,281.0	467.3	-153.4	-468.6	0.24	0.23	-3.88
7,402.0	0.84	215.44	7,374.9	466.4	-154.4	-467.6	0.32	-0.04	-20.95
7,497.0	1.05	214.83	7,469.9	465.1	-155.3	-466.3	0.22	0.22	-0.64
7,540.1	1.07	209.23	7,513.0	464.4	-155.7	-465.7	0.24	0.04	-12.99
Brushy Canyon									
7,592.0	1.10	202.79	7,564.9	463.5	-156.1	-464.8	0.24	0.06	-12.41
7,687.0	1.14	206.21	7,659.9	461.8	-156.9	-463.1	0.08	0.04	3.60



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7,782.0	1.19	219.57	7,754.9	460.2	-157.9	-461.5	0.29	0.05	14.06
7,877.0	0.92	207.27	7,849.9	458.8	-158.9	-460.1	0.37	-0.28	-12.95
7,972.0	1.23	215.79	7,944.8	457.3	-159.8	-458.6	0.37	0.33	8.97
8,066.0	0.48	295.77	8,038.8	456.6	-160.8	-457.9	1.32	-0.80	85.09
8,161.0	0.66	293.05	8,133.8	457.0	-161.7	-458.3	0.19	0.19	-2.86
8,256.0	0.75	267.74	8,228.8	457.2	-162.8	-458.5	0.34	0.09	-26.64
8,351.0	0.79	250.33	8,323.8	457.0	-164.0	-458.3	0.25	0.04	-18.33
8,446.0	0.66	235.74	8,418.8	456.5	-165.1	-457.8	0.24	-0.14	-15.36
8,541.0	0.84	232.40	8,513.8	455.7	-166.1	-457.0	0.19	0.19	-3.52
8,636.0	0.84	215.44	8,608.8	454.7	-167.0	-456.1	0.26	0.00	-17.85
8,730.0	0.22	297.88	8,702.8	454.3	-167.6	-455.6	0.89	-0.66	87.70
8,825.0	0.66	349.21	8,797.8	454.9	-167.9	-456.2	0.58	0.46	54.03
8,920.0	1.49	25.07	8,892.8	456.5	-167.4	-457.9	1.08	0.87	37.75
9,015.0	1.54	18.57	8,987.7	458.9	-166.5	-460.2	0.19	0.05	-6.84
9,075.3	1.57	33.98	9,048.0	460.3	-165.8	-461.6	0.69	0.04	25.57
Bone Spring Lime									
9,110.0	1.63	42.30	9,082.7	461.1	-165.2	-462.4	0.69	0.18	23.95
9,205.0	1.05	42.39	9,177.7	462.7	-163.7	-464.0	0.61	-0.61	0.09
9,265.3	0.93	30.06	9,238.0	463.5	-163.1	-464.8	0.41	-0.20	-20.44
Upper Avalon									
9,300.0	0.88	21.64	9,272.7	464.0	-162.8	-465.3	0.41	-0.14	-24.29
9,395.0	0.70	313.79	9,367.7	465.1	-163.0	-466.4	0.94	-0.19	-71.42
9,489.0	0.75	322.32	9,461.6	466.0	-163.8	-467.3	0.13	0.05	9.07
9,550.4	0.98	283.66	9,523.0	466.4	-164.5	-467.7	1.00	0.38	-63.01
Middle Avalon									
9,584.0	1.23	271.60	9,556.6	466.5	-165.2	-467.8	1.00	0.73	-35.84
9,679.0	1.98	256.93	9,651.6	466.2	-167.8	-467.5	0.89	0.79	-15.44
9,774.0	2.33	268.88	9,746.5	465.8	-171.3	-467.1	0.60	0.37	12.58
9,869.0	3.03	274.94	9,841.4	465.9	-175.8	-467.3	0.79	0.74	6.38
9,880.6	3.01	276.33	9,853.0	466.0	-176.4	-467.4	0.65	-0.14	12.01
Lower Avalon									
9,963.0	2.95	286.55	9,935.3	466.8	-180.6	-468.3	0.65	-0.08	12.40
10,058.0	2.51	307.02	10,030.2	468.8	-184.6	-470.3	1.12	-0.46	21.55
10,105.8	1.29	352.10	10,078.0	470.0	-185.5	-471.4	3.85	-2.56	94.25
1st Bone Spring Sand									
10,153.0	1.93	57.33	10,125.2	470.9	-184.9	-472.4	3.85	1.36	138.29
10,247.0	3.38	88.09	10,219.1	471.9	-180.8	-473.3	2.11	1.54	32.72
10,342.0	3.74	91.96	10,313.9	471.8	-174.9	-473.2	0.46	0.38	4.07
10,436.3	1.99	83.81	10,408.0	471.9	-170.2	-473.3	1.90	-1.85	-8.65
2nd Bone Spring Carb									
10,437.0	1.98	83.69	10,408.7	471.9	-170.2	-473.3	1.90	-1.81	-16.27
10,532.0	1.89	85.01	10,503.7	472.2	-167.0	-473.6	0.11	-0.09	1.39
10,627.0	1.89	81.85	10,598.6	472.6	-163.9	-473.9	0.11	0.00	-3.33
10,721.0	1.67	70.69	10,692.6	473.3	-161.0	-474.5	0.44	-0.23	-11.87



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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)
10,756.4	1.55	67.37	10,728.0	473.6	-160.1	-474.9	0.43	-0.34	-9.38
2nd Bone Spring Sand									
10,816.0	1.36	60.49	10,787.6	474.3	-158.7	-475.5	0.43	-0.32	-11.54
10,911.0	1.23	56.71	10,882.5	475.4	-156.9	-476.6	0.16	-0.14	-3.98
11,006.0	0.35	81.50	10,977.5	476.0	-155.8	-477.2	0.97	-0.93	26.09
11,101.0	0.44	268.70	11,072.5	476.0	-155.8	-477.3	0.83	0.09	-181.89
11,196.0	0.79	296.13	11,167.5	476.3	-156.8	-477.6	0.47	0.37	28.87
11,290.0	1.05	280.48	11,261.5	476.8	-158.2	-478.0	0.38	0.28	-16.65
11,366.5	1.19	275.75	11,338.0	477.0	-159.7	-478.2	0.22	0.19	-6.19
3rd Bone Spring Carb									
11,385.0	1.23	274.77	11,356.5	477.0	-160.1	-478.3	0.22	0.19	-5.28
11,480.0	1.01	258.51	11,451.5	476.9	-161.9	-478.2	0.40	-0.23	-17.12
11,575.0	0.79	231.88	11,546.5	476.3	-163.3	-477.6	0.49	-0.23	-28.03
11,670.0	1.01	207.44	11,641.5	475.2	-164.2	-476.5	0.46	0.23	-25.73
11,765.0	1.36	182.66	11,736.4	473.3	-164.6	-474.6	0.64	0.37	-26.08
11,859.0	1.23	183.10	11,830.4	471.2	-164.7	-472.5	0.14	-0.14	0.47
11,954.0	1.19	183.89	11,925.4	469.2	-164.8	-470.5	0.05	-0.04	0.83
11,996.6	1.26	186.60	11,968.0	468.3	-164.9	-469.6	0.22	0.18	6.35
3rd Bone Spring Sand									
12,049.0	1.36	189.51	12,020.4	467.1	-165.1	-468.4	0.22	0.18	5.56
12,144.0	1.54	186.17	12,115.3	464.7	-165.4	-466.0	0.21	0.19	-3.52
12,239.0	1.49	182.22	12,210.3	462.2	-165.6	-463.5	0.12	-0.05	-4.16
12,286.7	1.61	179.51	12,258.0	460.9	-165.6	-462.3	0.29	0.24	-5.68
3rd BS W Sand									
12,313.0	1.67	178.18	12,284.3	460.2	-165.6	-461.5	0.29	0.25	-5.06
12,360.0	1.76	172.81	12,331.3	458.8	-165.5	-460.1	0.39	0.19	-11.43
12,372.8	2.04	169.96	12,344.0	458.4	-165.4	-459.7	2.29	2.16	-22.37
Wolfcamp A X Sand									
12,455.0	3.87	161.56	12,426.1	454.3	-164.3	-455.6	2.29	2.23	-10.21
12,487.0	6.93	171.51	12,458.0	451.4	-163.7	-452.7	9.97	9.57	31.09
Wolfcamp A Y Sand									
12,550.0	13.14	177.30	12,520.0	440.4	-162.8	-441.7	9.97	9.85	9.19
12,591.4	16.47	177.68	12,560.0	429.9	-162.3	-431.2	8.06	8.05	0.92
Wolfcamp A Lower									
12,620.1	18.78	177.87	12,587.4	421.2	-162.0	-422.5	8.06	8.05	0.65
FTP @ 12620.1'MD, 100'FNL & 301.6'FWL									
12,645.0	20.79	178.00	12,610.8	412.8	-161.7	-414.0	8.06	8.05	0.52
12,740.0	31.96	177.39	12,695.8	370.7	-159.9	-371.9	11.76	11.76	-0.64
12,834.0	38.15	174.84	12,772.7	316.8	-156.2	-318.1	6.77	6.59	-2.71
12,904.9	46.61	172.84	12,825.0	269.4	-151.0	-270.6	12.08	11.93	-2.82
Wolfcamp B									
12,929.0	49.49	172.29	12,841.1	251.6	-148.7	-252.8	12.08	11.96	-2.30
13,024.0	59.74	172.55	12,896.1	174.9	-138.5	-176.0	10.79	10.79	0.27
13,119.0	71.47	172.55	12,935.2	89.3	-127.3	-90.3	12.35	12.35	0.00
13,214.0	84.92	171.85	12,954.6	-2.6	-114.7	1.7	14.18	14.16	-0.74



Intrepid
Survey Report



Company: Tap Rock Resources, LLC
Project: Lea County, NM (NAD 83 NME)
Site: (Hyperion) Sec-20_T-24-S_R-33-E
Well: Hyperion State #221H
Wellbore: OWB
Design: AWB

Local Co-ordinate Reference: Well Hyperion State #221H
TVD Reference: KB @ 3563.5usft (H&P 388)
MD Reference: KB @ 3563.5usft (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)
13,253.0	89.01	173.78	12,956.7	-41.3	-109.8	40.4	11.59	10.49	4.95
13,308.0	91.16	178.70	12,956.6	-96.1	-106.2	95.3	9.76	3.91	8.95
13,403.0	91.21	181.16	12,954.6	-191.1	-106.1	190.2	2.59	0.05	2.59
13,498.0	93.85	181.96	12,950.4	-285.9	-108.7	285.1	2.90	2.78	0.84
13,593.0	88.48	180.90	12,948.5	-380.9	-111.0	380.0	5.76	-5.65	-1.12
13,620.0	88.97	180.81	12,949.1	-407.9	-111.4	406.9	1.85	1.81	-0.33
13,715.0	90.33	181.43	12,949.7	-502.8	-113.3	501.9	1.57	1.43	0.65
13,810.0	90.11	180.64	12,949.3	-597.8	-115.0	596.9	0.86	-0.23	-0.83
13,904.0	90.37	180.02	12,948.9	-691.8	-115.6	690.9	0.72	0.28	-0.66
13,999.0	90.42	179.93	12,948.3	-786.8	-115.5	785.9	0.11	0.05	-0.09
14,093.0	91.30	179.58	12,946.9	-880.8	-115.1	879.8	1.01	0.94	-0.37
14,188.0	91.91	179.49	12,944.2	-975.8	-114.3	974.8	0.65	0.64	-0.09
14,283.0	91.60	179.14	12,941.3	-1,070.7	-113.2	1,069.8	0.49	-0.33	-0.37
14,377.0	91.78	179.06	12,938.5	-1,164.7	-111.7	1,163.7	0.21	0.19	-0.09
14,472.0	91.47	178.97	12,935.8	-1,259.6	-110.1	1,258.7	0.34	-0.33	-0.09
14,567.0	92.00	179.23	12,933.0	-1,354.5	-108.6	1,353.6	0.62	0.56	0.27
14,662.0	91.87	180.46	12,929.8	-1,449.5	-108.3	1,448.6	1.30	-0.14	1.29
14,757.0	92.13	180.90	12,926.4	-1,544.4	-109.5	1,543.5	0.54	0.27	0.46
14,852.0	89.85	180.55	12,924.8	-1,639.4	-110.7	1,638.5	2.43	-2.40	-0.37
14,946.0	87.34	179.93	12,927.1	-1,733.4	-111.1	1,732.4	2.75	-2.67	-0.66
15,041.0	88.35	179.67	12,930.7	-1,828.3	-110.7	1,827.3	1.10	1.06	-0.27
15,136.0	87.52	179.58	12,934.1	-1,923.2	-110.1	1,922.3	0.88	-0.87	-0.09
15,230.0	88.40	179.49	12,937.4	-2,017.2	-109.4	2,016.2	0.94	0.94	-0.10
15,325.0	88.84	178.70	12,939.7	-2,112.1	-107.9	2,111.2	0.95	0.46	-0.83
15,420.0	89.54	177.30	12,941.1	-2,207.0	-104.5	2,206.1	1.65	0.74	-1.47
15,514.0	91.25	178.79	12,940.4	-2,301.0	-101.3	2,300.1	2.41	1.82	1.59
15,609.0	91.25	178.97	12,938.4	-2,395.9	-99.5	2,395.1	0.19	0.00	0.19
15,704.0	93.14	180.81	12,934.7	-2,490.9	-99.3	2,490.0	2.78	1.99	1.94
15,798.0	92.40	181.43	12,930.2	-2,584.7	-101.1	2,583.8	1.03	-0.79	0.66
15,893.0	91.60	180.99	12,926.9	-2,679.7	-103.1	2,678.7	0.96	-0.84	-0.46
15,987.0	91.16	180.64	12,924.6	-2,773.6	-104.5	2,772.7	0.60	-0.47	-0.37
16,082.0	92.48	180.81	12,921.6	-2,868.6	-105.7	2,867.6	1.40	1.39	0.18
16,177.0	91.12	180.73	12,918.6	-2,963.5	-106.9	2,962.6	1.43	-1.43	-0.08
16,272.0	90.77	180.73	12,917.0	-3,058.5	-108.2	3,057.5	0.37	-0.37	0.00
16,367.0	90.24	180.64	12,916.2	-3,153.5	-109.3	3,152.5	0.57	-0.56	-0.09
16,461.0	91.16	180.99	12,915.0	-3,247.5	-110.6	3,246.5	1.05	0.98	0.37
16,556.0	90.29	180.81	12,913.8	-3,342.4	-112.1	3,341.4	0.94	-0.92	-0.19
16,651.0	88.18	179.76	12,915.1	-3,437.4	-112.6	3,436.4	2.48	-2.22	-1.11
16,745.0	89.01	180.20	12,917.4	-3,531.4	-112.6	3,530.4	1.00	0.88	0.47
16,840.0	88.97	180.11	12,919.1	-3,626.4	-112.8	3,625.4	0.10	-0.04	-0.09
16,935.0	90.11	180.29	12,919.8	-3,721.4	-113.1	3,720.3	1.21	1.20	0.19
17,029.0	89.23	179.76	12,920.4	-3,815.4	-113.2	3,814.3	1.09	-0.94	-0.56
17,124.0	89.58	179.58	12,921.4	-3,910.4	-112.6	3,909.3	0.41	0.37	-0.19



Intrepid Survey Report



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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)
17,218.0	89.45	179.23	12,922.2	-4,004.4	-111.7	4,003.3	0.40	-0.14	-0.37
17,313.0	89.27	178.88	12,923.2	-4,099.3	-110.1	4,098.3	0.41	-0.19	-0.37
17,408.0	88.13	178.62	12,925.4	-4,194.3	-108.0	4,193.3	1.23	-1.20	-0.27
17,503.0	87.82	178.00	12,928.7	-4,289.2	-105.2	4,288.2	0.73	-0.33	-0.65
17,597.0	89.76	177.74	12,930.7	-4,383.1	-101.7	4,382.1	2.08	2.06	-0.28
17,692.0	92.75	177.56	12,928.6	-4,478.0	-97.8	4,477.0	3.15	3.15	-0.19
17,786.0	93.01	177.39	12,923.9	-4,571.8	-93.7	4,570.9	0.33	0.28	-0.18
17,864.0	93.63	177.30	12,919.4	-4,649.6	-90.1	4,648.7	0.80	0.79	-0.12
LAST SVY									
17,879.7	93.63	177.30	12,918.4	-4,665.2	-89.4	4,664.3	0.00	0.00	0.00
LTP @ 17879.7'MD, 100'FSL & 333.8'FWL									
17,939.0	93.63	177.30	12,914.7	-4,724.3	-86.6	4,723.5	0.00	0.00	0.00
Projection to TD @ 17939'MD, 30.8'FSL & 336.5'FWL									

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 (Hyperion State #	0.00	0.00	12,925.0	-4,655.0	-93.0	435,879.00	767,625.00	32° 11' 46.294 N	103° 36' 6.452 W
- actual wellpath misses target center by 6.7usft at 17868.9usft MD (12919.1 TVD, -4654.5 N, -89.9 E)									
- Point									
PBHL (Hyperion State	-0.30	179.54	12,925.0	-4,725.0	-92.0	435,809.00	767,626.00	32° 11' 45.601 N	103° 36' 6.446 W
- actual wellpath misses target center by 11.7usft at 17938.8usft MD (12914.7 TVD, -4724.1 N, -86.6 E)									
- Rectangle (sides W100.0 H5,147.0 D30.0)									
FTP (Hyperion State #	0.00	0.00	12,949.4	421.0	-133.0	440,955.00	767,585.00	32° 12' 36.525 N	103° 36' 6.515 W
- actual wellpath misses target center by 196.2usft at 12896.5usft MD (12819.2 TVD, 275.4 N, -151.7 E)									
- Point									



Intrepid
Survey Report



Company: Tap Rock Resources, LLC
Project: Lea County, NM (NAD 83 NME)
Site: (Hyperion) Sec-20_T-24-S_R-33-E
Well: Hyperion State #221H
Wellbore: OWB
Design: AWB

Local Co-ordinate Reference: Well Hyperion State #221H
TVD Reference: KB @ 3563.5usft (H&P 388)
MD Reference: KB @ 3563.5usft (H&P 388)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.15 Single User Db

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,198.0	1,198.0	Rustler Anhydrite			
1,553.1	1,553.0	Top Salt			
4,751.9	4,738.0	Base Salt			
5,054.4	5,038.0	Delaware Mountain Gp			
5,059.4	5,043.0	Bell Canyon			
5,084.6	5,068.0	Lamar			
5,104.7	5,088.0	Ramsey Sand			
6,032.8	6,008.0	Cherry Canyon			
7,540.1	7,513.0	Brushy Canyon			
9,075.3	9,048.0	Bone Spring Lime			
9,265.3	9,238.0	Upper Avalon			
9,550.4	9,523.0	Middle Avalon			
9,880.6	9,853.0	Lower Avalon			
10,105.8	10,078.0	1st Bone Spring Sand			
10,436.3	10,408.0	2nd Bone Spring Carb			
10,756.4	10,728.0	2nd Bone Spring Sand			
11,366.5	11,338.0	3rd Bone Spring Carb			
11,996.6	11,968.0	3rd Bone Spring Sand			
12,286.7	12,258.0	3rd BS W Sand			
12,372.8	12,344.0	Wolfcamp A X Sand			
12,487.0	12,458.0	Wolfcamp A Y Sand			
12,591.4	12,560.0	Wolfcamp A Lower			
12,904.9	12,825.0	Wolfcamp B			

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
12,620.1	12,587.4	421.2	-162.0	FTP @ 12620.1'MD, 100'FNL & 301.6'FWL
17,864.0	12,919.4	-4,649.6	-90.1	LAST SVY
17,879.7	12,918.4	-4,665.2	-89.4	LTP @ 17879.7'MD, 100'FSL & 333.8'FWL
17,939.0	12,914.7	-4,724.3	-86.6	Projection to TD @ 17939'MD, 30.8'FSL & 336.5'FWL

Checked By: _____ Approved By: _____ Date: _____