

District I
1625 N. French Dr., Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone: (575) 748-1283 Fax: (575) 748-9720
District III
1000 Rio Brazos Road, Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170
District IV
1220 S. St. Francis Dr., Sante Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico
Energy, Minerals & Natural Resources
Department
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

EMNRD-OCD ARTESIA FORM C-102
REC'D: 4/8/2020 Revised August 1, 2011
Submit one copy to appropriate
District Office

AMENDED REPORT
 AS DRILLED

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-015-45641		² Pool Code 98220	³ Pool Name Purple Sage Wolfcamp (Gas)
⁴ Property Code 323012	⁵ Property Name PLINY THE ELDER FEE		⁶ Well Number 202H
⁷ OGRID No. 372043	⁸ Operator Name TAP ROCK OPERATING, LLC.		⁹ Elevation 3151'

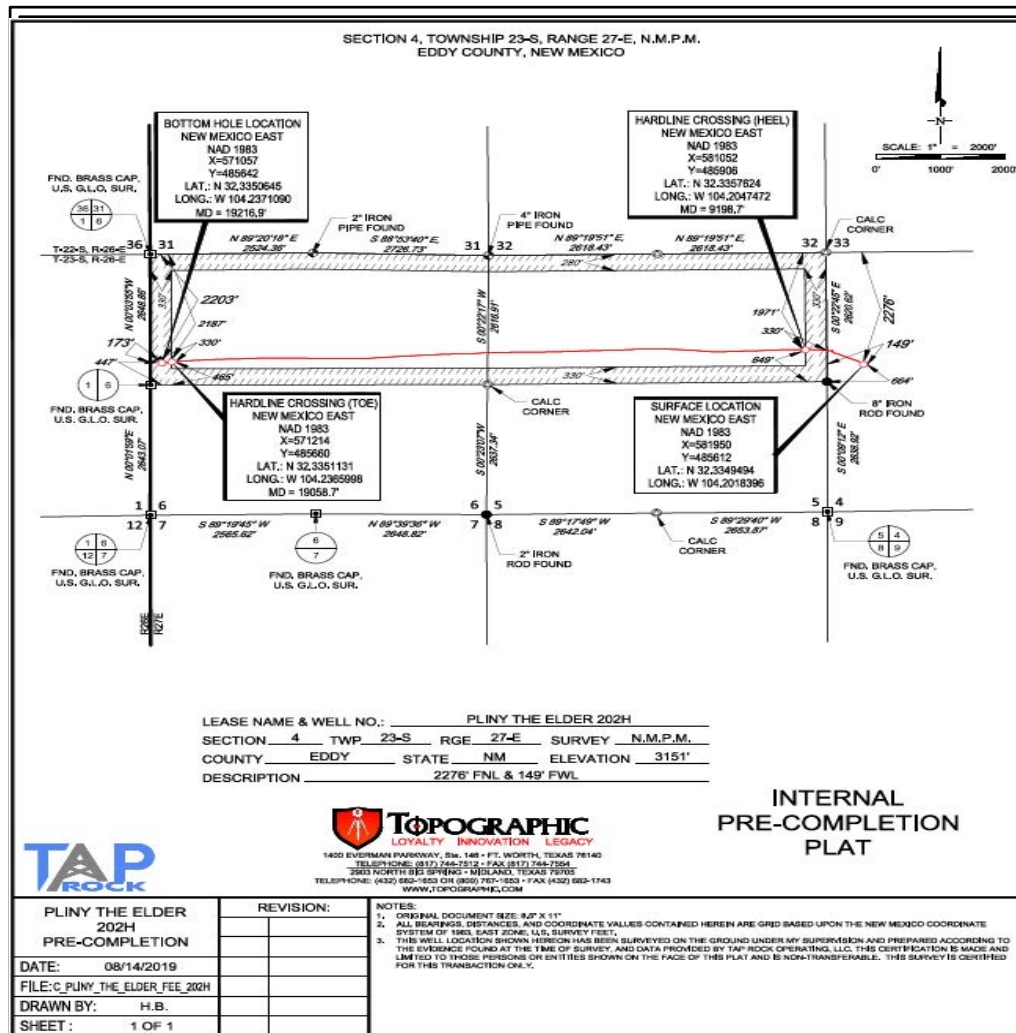
¹⁰Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
E	4	23-S	27-E	-	2276'	NORTH	566'	WEST	EDDY

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
5	6	23-S	27-E	-	1650'	NORTH	200'	WEST	EDDY

¹² Dedicated Acres 635.02	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.
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No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.



¹⁷OPERATOR CERTIFICATION
I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

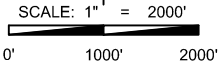
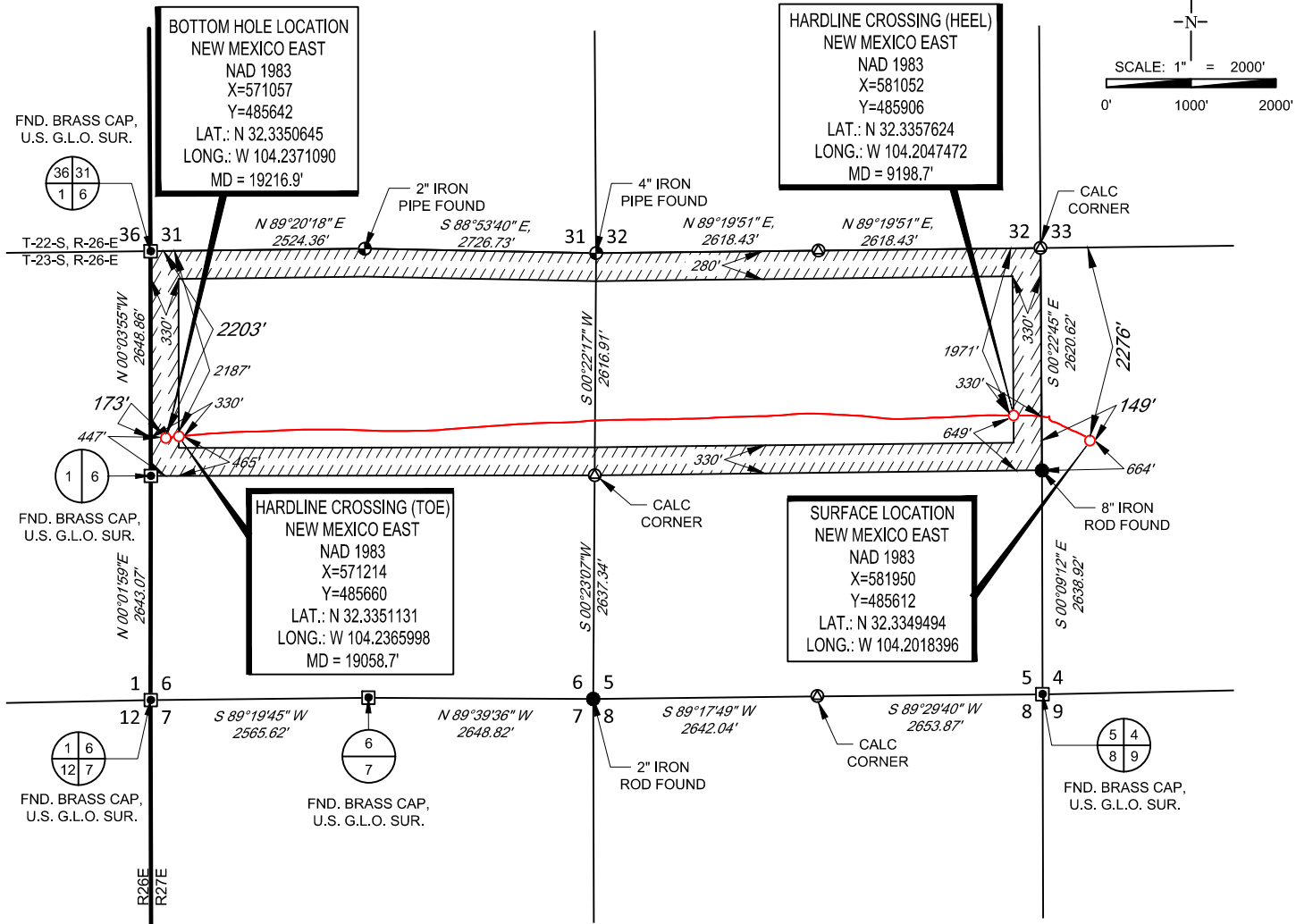
Signature: *Rachel Bierma* Date: 01/18/2019
Printed Name: Rachel Bierma
E-mail Address: rbierma@taprk.com

¹⁸SURVEYOR CERTIFICATION
I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true to the best of my belief.

Date of Survey: 12/12/2018
Signature and Seal of Professional Surveyor: *Michael J. Brown*
Professional Surveyor, New Mexico, License No. 18329

Certificate Number: _____

SECTION 4, TOWNSHIP 23-S, RANGE 27-E, N.M.P.M.
EDDY COUNTY, NEW MEXICO



LEASE NAME & WELL NO.: PLINY THE ELDER 202H
 SECTION 4 TWP 23-S RGE 27-E SURVEY N.M.P.M.
 COUNTY EDDY STATE NM ELEVATION 3151'
 DESCRIPTION 2276' FNL & 149' FWL

INTERNAL
PRE-COMPLETION
PLAT



1400 EVERMAN PARKWAY, Ste. 146 • FT. WORTH, TEXAS 76140
 TELEPHONE: (817) 744-7512 • FAX (817) 744-7554
 2903 NORTH BIG SPRING • MIDLAND, TEXAS 79705
 TELEPHONE: (432) 682-1653 OR (800) 767-1653 • FAX (432) 682-1743
 WWW.TOPOGRAPHIC.COM

PLINY THE ELDER 202H PRE-COMPLETION DATE: 08/14/2019 FILE: C_PLINY_THE_ELDER_FEE_202H DRAWN BY: H.B. SHEET: 1 OF 1	REVISION:	NOTES: 1. ORIGINAL DOCUMENT SIZE: 8.5" X 11" 2. ALL BEARINGS, DISTANCES, AND COORDINATE VALUES CONTAINED HEREIN ARE GRID BASED UPON THE NEW MEXICO COORDINATE SYSTEM OF 1983, EAST ZONE, U.S. SURVEY FEET. 3. THIS WELL LOCATION SHOWN HEREON HAS BEEN SURVEYED ON THE GROUND UNDER MY SUPERVISION AND PREPARED ACCORDING TO THE EVIDENCE FOUND AT THE TIME OF SURVEY, AND DATA PROVIDED BY TAP ROCK OPERATING, LLC. THIS CERTIFICATION IS MADE AND LIMITED TO THOSE PERSONS OR ENTITIES SHOWN ON THE FACE OF THIS PLAT AND IS NON-TRANSFERABLE. THIS SURVEY IS CERTIFIED FOR THIS TRANSACTION ONLY.



Tap Rock Resources, LLC

Eddy County, NM (NAD 83 NME)
(Pliny The Elder Fee) Sec-4_T-23-S_R-27-E
Pliny The Elder Fee #202H

OWB

Design: AWB

Standard Survey Report

13 August, 2019





Operator: TapRock Resources LLC
Well Name: Pliny The Elder #202H
County: Eddy
State: New Mexico
Rig Name: H&P 245
API Number: 30-015-45641

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: 53.1' MD – 19,133' MD
Projection to Bit: 19,218' MD
Dates Performed: 07/29/2019 – 08/14/2019
Type of Survey: MWD

Sincerely,

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

James Burlison
Vice President of MWD Operations
Intrepid Directional Drilling Specialists





Company:	Tap Rock Resources, LLC	Local Co-ordinate Reference:	Well Pliny The Elder Fee #202H
Project:	Eddy County, NM (NAD 83 NME)	TVD Reference:	KB @ 3177.5usft (H&P 245)
Site:	(Pliny The Elder Fee) Sec-4_T-23-S_R-27-E	MD Reference:	KB @ 3177.5usft (H&P 245)
Well:	Pliny The Elder Fee #202H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	AWB	Database:	EDM 5000.15 Single User Db

Project	Eddy 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	(Pliny The Elder Fee) Sec-4_T-23-S_R-27-E				
Site Position:		Northing:	485,612.00 usft	Latitude:	32° 20' 5.822 N
From:	Map	Easting:	581,950.00 usft	Longitude:	104° 12' 6.624 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.07 °

Well	Pliny The Elder Fee #202H					
Well Position	+N/-S	0.0 usft	Northing:	485,612.00 usft	Latitude:	32° 20' 5.822 N
	+E/-W	0.0 usft	Easting:	581,950.00 usft	Longitude:	104° 12' 6.624 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	usft	Ground Level:	3,151.0 usft

Wellbore	OWB				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	2019/07/24	7.03	60.04	47,722.76949530

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	269.82	

Survey Program	Date	2019/08/13			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
53.1	2,012.0	VES Gyro (OWB)	GYRO-NS	OWSG Gyrocompass Gyro	
2,196.0	19,218.0	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	
53.1	0.18	351.76	53.1	0.1	0.0	0.0	0.34	0.34	0.00	
146.4	0.25	349.08	146.4	0.4	-0.1	0.1	0.08	0.08	-2.87	
239.7	0.39	2.87	239.7	0.9	-0.1	0.1	0.17	0.15	14.78	
333.0	0.31	84.29	333.0	1.3	0.2	-0.2	0.49	-0.09	87.29	
426.2	0.34	137.34	426.2	1.1	0.6	-0.6	0.31	0.03	56.87	
519.5	0.76	201.70	519.5	0.3	0.6	-0.6	0.73	0.45	69.00	
612.8	1.43	234.58	612.8	-0.9	-0.6	0.6	0.96	0.72	35.25	
706.1	1.10	273.62	706.0	-1.5	-2.4	2.5	0.97	-0.35	41.85	
799.4	0.69	254.26	799.3	-1.6	-3.9	3.9	0.54	-0.44	-20.75	



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Well:	Pliny The Elder Fee #202H	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)
892.6	0.54	164.68	892.6	-2.2	-4.3	4.3	0.94	-0.16	-96.03
985.9	0.15	115.99	985.9	-2.7	-4.1	4.1	0.49	-0.42	-52.20
1,079.2	0.37	146.10	1,079.1	-3.0	-3.8	3.8	0.27	0.24	32.28
1,172.5	0.79	97.27	1,172.4	-3.3	-3.0	3.0	0.66	0.45	-52.35
1,265.8	1.20	65.75	1,265.7	-3.0	-1.5	1.5	0.72	0.44	-33.79
1,359.0	1.37	54.69	1,358.9	-2.0	0.3	-0.3	0.32	0.18	-11.86
1,452.3	0.73	91.37	1,452.2	-1.3	1.8	-1.8	0.96	-0.69	39.32
1,545.6	0.64	77.42	1,545.5	-1.2	2.9	-2.9	0.20	-0.10	-14.95
1,638.9	1.40	47.86	1,638.7	-0.3	4.3	-4.3	0.97	0.81	-31.69
1,732.2	1.46	82.09	1,732.0	0.6	6.3	-6.3	0.90	0.06	36.70
1,825.4	1.20	113.57	1,825.2	0.4	8.4	-8.4	0.82	-0.28	33.75
1,918.7	0.81	126.83	1,918.5	-0.4	9.8	-9.8	0.48	-0.42	14.22
2,012.0	0.95	153.12	2,011.8	-1.5	10.7	-10.7	0.45	0.15	28.18
2,196.0	1.93	9.51	2,195.8	0.2	11.9	-11.9	1.50	0.53	-78.05
2,289.0	4.88	330.49	2,288.6	5.2	10.2	-10.2	3.86	3.17	-41.96
2,383.0	6.95	328.29	2,382.1	13.5	5.2	-5.3	2.21	2.20	-2.34
2,476.0	9.10	314.58	2,474.2	23.4	-3.0	2.9	3.08	2.31	-14.74
2,569.0	11.08	304.03	2,565.7	33.6	-15.6	15.5	2.90	2.13	-11.34
2,661.0	11.30	291.99	2,656.0	41.9	-31.3	31.2	2.55	0.24	-13.09
2,754.0	12.09	289.62	2,747.1	48.6	-48.9	48.8	0.99	0.85	-2.55
2,847.0	10.55	296.91	2,838.3	55.7	-65.7	65.5	2.26	-1.66	7.84
2,940.0	10.64	295.59	2,929.7	63.3	-81.0	80.8	0.28	0.10	-1.42
3,034.0	10.81	295.15	3,022.0	70.8	-96.8	96.6	0.20	0.18	-0.47
3,128.0	11.12	296.38	3,114.3	78.6	-112.9	112.7	0.41	0.33	1.31
3,221.0	11.38	296.56	3,205.5	86.6	-129.2	128.9	0.28	0.28	0.19
3,315.0	11.52	295.15	3,297.7	94.8	-146.0	145.7	0.33	0.15	-1.50
3,408.0	11.47	290.76	3,388.8	102.0	-163.0	162.7	0.94	-0.05	-4.72
3,502.0	11.69	291.20	3,480.9	108.8	-180.6	180.3	0.25	0.23	0.47
3,596.0	11.91	288.74	3,572.9	115.3	-198.7	198.3	0.58	0.23	-2.62
3,689.0	11.30	297.97	3,664.0	122.7	-215.8	215.4	2.10	-0.66	9.92
3,783.0	11.82	297.88	3,756.1	131.5	-232.5	232.1	0.55	0.55	-0.10
3,876.0	11.56	296.82	3,847.2	140.2	-249.2	248.8	0.36	-0.28	-1.14
3,969.0	11.65	296.82	3,938.3	148.6	-265.9	265.4	0.10	0.10	0.00
4,063.0	10.81	295.77	4,030.5	156.7	-282.3	281.8	0.92	-0.89	-1.12
4,156.0	10.15	289.53	4,121.9	163.2	-297.9	297.4	1.41	-0.71	-6.71
4,250.0	10.46	297.61	4,214.4	170.0	-313.3	312.7	1.57	0.33	8.60
4,343.0	10.37	297.44	4,305.9	177.7	-328.2	327.6	0.10	-0.10	-0.18
4,437.0	9.49	297.53	4,398.5	185.2	-342.5	342.0	0.94	-0.94	0.10
4,529.0	9.76	297.35	4,489.2	192.3	-356.2	355.6	0.30	0.29	-0.20
4,622.0	10.51	297.53	4,580.7	199.9	-370.7	370.1	0.81	0.81	0.19
4,715.0	9.93	296.30	4,672.2	207.3	-385.4	384.8	0.67	-0.62	-1.32
4,809.0	9.45	290.67	4,764.9	213.6	-399.9	399.2	1.13	-0.51	-5.99
4,902.0	9.23	282.94	4,856.7	218.0	-414.3	413.6	1.37	-0.24	-8.31



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Well:	Pliny The Elder Fee #202H	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)	
4,994.0	8.92	284.25	4,947.5	221.4	-428.4	427.7	0.40	-0.34	1.42	
5,087.0	8.18	286.01	5,039.5	225.0	-441.8	441.1	0.84	-0.80	1.89	
5,181.0	5.93	307.46	5,132.8	229.8	-452.1	451.3	3.65	-2.39	22.82	
5,275.0	4.18	322.58	5,226.4	235.5	-458.0	457.3	2.32	-1.86	16.09	
5,369.0	3.52	324.25	5,320.2	240.6	-461.8	461.0	0.71	-0.70	1.78	
5,463.0	3.52	315.54	5,414.0	245.0	-465.5	464.7	0.57	0.00	-9.27	
5,556.0	2.07	287.42	5,506.9	247.5	-469.1	468.3	2.10	-1.56	-30.24	
5,650.0	1.41	239.43	5,600.9	247.4	-471.7	470.9	1.64	-0.70	-51.05	
5,743.0	1.19	253.76	5,693.9	246.6	-473.6	472.8	0.42	-0.24	15.41	
5,836.0	0.97	246.20	5,786.8	246.0	-475.3	474.5	0.28	-0.24	-8.13	
5,930.0	1.71	10.39	5,880.8	247.0	-475.7	475.0	2.55	0.79	132.12	
6,023.0	2.46	6.70	5,973.8	250.4	-475.3	474.5	0.82	0.81	-3.97	
6,117.0	2.37	0.28	6,067.7	254.3	-475.0	474.2	0.30	-0.10	-6.83	
6,211.0	2.11	336.99	6,161.6	257.9	-475.7	474.9	1.00	-0.28	-24.78	
6,304.0	1.67	350.88	6,254.6	260.8	-476.6	475.7	0.68	-0.47	14.94	
6,397.0	1.67	2.48	6,347.5	263.5	-476.7	475.9	0.36	0.00	12.47	
6,490.0	1.93	347.71	6,440.5	266.4	-477.0	476.1	0.57	0.28	-15.88	
6,583.0	2.02	1.33	6,533.4	269.5	-477.3	476.4	0.51	0.10	14.65	
6,676.0	1.58	25.86	6,626.4	272.3	-476.7	475.8	0.94	-0.47	26.38	
6,769.0	0.84	14.25	6,719.4	274.1	-476.0	475.1	0.83	-0.80	-12.48	
6,862.0	1.23	320.99	6,812.3	275.6	-476.4	475.6	1.07	0.42	-57.27	
6,956.0	1.36	334.18	6,906.3	277.4	-477.5	476.7	0.34	0.14	14.03	
7,049.0	1.14	354.22	6,999.3	279.3	-478.1	477.2	0.52	-0.24	21.55	
7,142.0	0.62	303.94	7,092.3	280.5	-478.6	477.7	0.95	-0.56	-54.06	
7,236.0	0.88	298.58	7,186.3	281.1	-479.7	478.8	0.29	0.28	-5.70	
7,329.0	1.23	293.92	7,279.3	281.8	-481.2	480.3	0.39	0.38	-5.01	
7,423.0	1.36	300.95	7,373.2	282.8	-483.1	482.2	0.22	0.14	7.48	
7,517.0	1.01	35.61	7,467.2	284.1	-483.6	482.7	1.87	-0.37	100.70	
7,611.0	1.10	37.11	7,561.2	285.5	-482.5	481.6	0.10	0.10	1.60	
7,704.0	1.19	85.62	7,654.2	286.3	-481.0	480.1	1.02	0.10	52.16	
7,797.0	0.97	128.16	7,747.2	285.8	-479.5	478.6	0.87	-0.24	45.74	
7,890.0	1.36	151.54	7,840.2	284.4	-478.3	477.4	0.65	0.42	25.14	
7,984.0	1.14	168.06	7,934.1	282.5	-477.6	476.7	0.45	-0.23	17.57	
8,078.0	1.27	172.37	8,028.1	280.5	-477.3	476.4	0.17	0.14	4.59	
8,172.0	1.63	192.94	8,122.1	278.2	-477.4	476.5	0.67	0.38	21.88	
8,300.0	1.41	199.00	8,250.0	274.9	-478.3	477.5	0.21	-0.17	4.73	
8,386.0	0.84	212.80	8,336.0	273.4	-479.0	478.2	0.73	-0.66	16.05	
8,479.0	1.27	204.01	8,429.0	271.9	-479.8	479.0	0.49	0.46	-9.45	
8,526.0	9.93	276.34	8,475.8	271.9	-484.1	483.2	20.47	18.43	153.89	
8,573.0	16.40	278.72	8,521.5	273.3	-494.7	493.8	13.81	13.77	5.06	
8,620.0	20.57	279.95	8,566.1	275.8	-509.4	508.5	8.91	8.87	2.62	
8,666.0	22.51	280.56	8,608.9	278.8	-526.0	525.1	4.25	4.22	1.33	
8,713.0	24.53	280.04	8,651.9	282.1	-544.4	543.5	4.32	4.30	-1.11	



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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)	
8,760.0	27.74	280.30	8,694.1	285.8	-564.8	563.9	6.83	6.83	0.55	
8,807.0	33.01	276.34	8,734.7	289.1	-588.3	587.4	11.99	11.21	-8.43	
8,853.0	39.38	273.18	8,771.8	291.3	-615.4	614.4	14.43	13.85	-6.87	
8,900.0	46.24	271.34	8,806.2	292.6	-647.3	646.3	14.83	14.60	-3.91	
8,946.0	50.15	270.10	8,836.9	293.0	-681.5	680.6	8.73	8.50	-2.70	
8,993.0	53.49	269.93	8,866.0	293.0	-718.5	717.6	7.11	7.11	-0.36	
9,040.0	55.60	269.75	8,893.2	292.9	-756.8	755.8	4.50	4.49	-0.38	
9,087.0	60.22	270.37	8,918.2	292.9	-796.6	795.6	9.89	9.83	1.32	
9,133.0	64.70	271.07	8,939.4	293.5	-837.3	836.4	9.83	9.74	1.52	
9,180.0	69.01	271.25	8,957.9	294.3	-880.5	879.6	9.18	9.17	0.38	
9,199.0	70.66	271.07	8,964.5	294.7	-898.4	897.4	8.74	8.69	-0.97	
FTP @ 9199'MD, 649.6'FSL & 330'FEL										
9,226.0	73.01	270.81	8,972.9	295.1	-924.0	923.1	8.74	8.70	-0.95	
9,273.0	77.63	270.54	8,984.8	295.6	-969.5	968.5	9.85	9.83	-0.57	
9,320.0	83.34	269.58	8,992.5	295.7	-1,015.8	1,014.9	12.31	12.15	-2.04	
9,412.0	91.65	270.98	8,996.6	296.1	-1,107.6	1,106.7	9.16	9.03	1.52	
9,505.0	92.18	269.84	8,993.5	296.8	-1,200.6	1,199.6	1.35	0.57	-1.23	
9,599.0	89.41	267.56	8,992.2	294.7	-1,294.5	1,293.6	3.82	-2.95	-2.43	
9,692.0	89.98	267.20	8,992.6	290.4	-1,387.4	1,386.5	0.72	0.61	-0.39	
9,785.0	91.74	267.12	8,991.3	285.8	-1,480.3	1,479.4	1.89	1.89	-0.09	
9,879.0	90.42	266.59	8,989.5	280.7	-1,574.1	1,573.3	1.51	-1.40	-0.56	
9,972.0	90.11	266.76	8,989.0	275.3	-1,667.0	1,666.1	0.38	-0.33	0.18	
10,065.0	92.22	268.61	8,987.2	271.5	-1,759.9	1,759.0	3.02	2.27	1.99	
10,159.0	89.76	268.43	8,985.5	269.1	-1,853.8	1,853.0	2.62	-2.62	-0.19	
10,252.0	90.51	266.94	8,985.3	265.3	-1,946.7	1,945.9	1.79	0.81	-1.60	
10,346.0	91.03	266.94	8,984.1	260.3	-2,040.6	2,039.8	0.55	0.55	0.00	
10,439.0	88.26	267.38	8,984.6	255.7	-2,133.5	2,132.7	3.02	-2.98	0.47	
10,533.0	89.76	269.31	8,986.3	253.0	-2,227.4	2,226.6	2.60	1.60	2.05	
10,626.0	90.59	272.74	8,986.0	254.6	-2,320.4	2,319.6	3.79	0.89	3.69	
10,719.0	90.77	275.64	8,984.9	261.4	-2,413.1	2,412.3	3.12	0.19	3.12	
10,812.0	93.27	275.64	8,981.6	270.6	-2,505.6	2,504.7	2.69	2.69	0.00	
10,906.0	95.08	276.96	8,974.7	280.9	-2,598.8	2,597.9	2.38	1.93	1.40	
10,999.0	92.18	274.32	8,968.9	290.0	-2,691.1	2,690.2	4.21	-3.12	-2.84	
11,093.0	92.35	272.57	8,965.1	295.6	-2,784.9	2,783.9	1.87	0.18	-1.86	
11,186.0	92.92	272.65	8,960.9	299.9	-2,877.7	2,876.7	0.62	0.61	0.09	
11,280.0	94.64	272.92	8,954.7	304.4	-2,971.4	2,970.4	1.85	1.83	0.29	
11,374.0	92.92	273.62	8,948.5	309.8	-3,065.0	3,064.0	1.97	-1.83	0.74	
11,468.0	93.14	273.27	8,943.5	315.4	-3,158.7	3,157.7	0.44	0.23	-0.37	
11,561.0	91.60	271.69	8,939.7	319.4	-3,251.5	3,250.5	2.37	-1.66	-1.70	
11,654.0	87.74	267.64	8,940.2	318.9	-3,344.5	3,343.5	6.02	-4.15	-4.35	
11,747.0	85.41	265.62	8,945.7	313.4	-3,437.2	3,436.2	3.31	-2.51	-2.17	
11,841.0	88.18	265.71	8,951.0	306.3	-3,530.7	3,529.8	2.95	2.95	0.10	
11,934.0	88.92	265.27	8,953.4	299.0	-3,623.4	3,622.5	0.93	0.80	-0.47	
12,027.0	89.58	267.12	8,954.6	292.8	-3,716.2	3,715.3	2.11	0.71	1.99	



Company:	Tap Rock Resources, LLC	Local Co-ordinate Reference:	Well Pliny The Elder Fee #202H
Project:	Eddy County, NM (NAD 83 NME)	TVD Reference:	KB @ 3177.5usft (H&P 245)
Site:	(Pliny The Elder Fee) Sec-4_T-23-S_R-27-E	MD Reference:	KB @ 3177.5usft (H&P 245)
Well:	Pliny The Elder Fee #202H	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)	
12,121.0	88.97	267.69	8,955.8	288.6	-3,810.1	3,809.2	0.89	-0.65	0.61	
12,215.0	91.38	269.75	8,955.5	286.5	-3,904.1	3,903.1	3.37	2.56	2.19	
12,308.0	89.19	268.08	8,955.0	284.7	-3,997.0	3,996.1	2.96	-2.35	-1.80	
12,402.0	91.82	268.79	8,954.2	282.2	-4,091.0	4,090.1	2.90	2.80	0.76	
12,530.0	91.12	267.64	8,950.9	278.2	-4,218.9	4,218.0	1.05	-0.55	-0.90	
12,624.0	91.43	267.73	8,948.8	274.4	-4,312.8	4,311.9	0.34	0.33	0.10	
12,717.0	90.81	266.85	8,947.0	270.0	-4,405.7	4,404.8	1.16	-0.67	-0.95	
12,810.0	90.68	266.59	8,945.8	264.7	-4,498.5	4,497.6	0.31	-0.14	-0.28	
12,904.0	90.02	268.26	8,945.2	260.4	-4,592.4	4,591.6	1.91	-0.70	1.78	
12,997.0	91.74	269.40	8,943.8	258.5	-4,685.4	4,684.5	2.22	1.85	1.23	
13,091.0	89.54	267.82	8,942.7	256.3	-4,779.3	4,778.5	2.88	-2.34	-1.68	
13,184.0	89.89	268.00	8,943.2	252.9	-4,872.3	4,871.4	0.42	0.38	0.19	
13,278.0	92.62	270.19	8,941.1	251.4	-4,966.2	4,965.4	3.72	2.90	2.33	
13,372.0	94.59	269.23	8,935.2	250.9	-5,060.0	5,059.2	2.33	2.10	-1.02	
13,466.0	94.02	269.14	8,928.2	249.6	-5,153.7	5,152.9	0.61	-0.61	-0.10	
13,559.0	93.32	269.31	8,922.2	248.3	-5,246.5	5,245.7	0.77	-0.75	0.18	
13,652.0	93.98	269.84	8,916.3	247.6	-5,339.3	5,338.5	0.91	0.71	0.57	
13,746.0	92.09	268.70	8,911.3	246.4	-5,433.2	5,432.4	2.35	-2.01	-1.21	
13,839.0	90.02	268.87	8,909.6	244.5	-5,526.2	5,525.4	2.23	-2.23	0.18	
13,933.0	91.47	268.79	8,908.4	242.5	-5,620.1	5,619.3	1.54	1.54	-0.09	
14,026.0	92.00	268.35	8,905.6	240.2	-5,713.1	5,712.3	0.74	0.57	-0.47	
14,120.0	90.59	267.64	8,903.4	236.9	-5,807.0	5,806.2	1.68	-1.50	-0.76	
14,213.0	88.00	266.24	8,904.6	232.0	-5,899.8	5,899.1	3.17	-2.78	-1.51	
14,307.0	87.87	265.36	8,908.0	225.1	-5,993.5	5,992.8	0.95	-0.14	-0.94	
14,400.0	87.38	265.36	8,911.8	217.6	-6,086.1	6,085.4	0.53	-0.53	0.00	
14,494.0	86.77	267.91	8,916.6	212.1	-6,179.8	6,179.1	2.79	-0.65	2.71	
14,587.0	92.84	270.02	8,916.9	210.4	-6,272.8	6,272.1	6.91	6.53	2.27	
14,681.0	91.21	268.70	8,913.6	209.3	-6,366.7	6,366.0	2.23	-1.73	-1.40	
14,774.0	90.68	268.08	8,912.1	206.7	-6,459.6	6,459.0	0.88	-0.57	-0.67	
14,867.0	90.02	266.76	8,911.5	202.5	-6,552.5	6,551.9	1.59	-0.71	-1.42	
14,961.0	91.78	267.12	8,910.0	197.5	-6,646.4	6,645.7	1.91	1.87	0.38	
15,055.0	91.25	266.50	8,907.6	192.3	-6,740.2	6,739.6	0.87	-0.56	-0.66	
15,148.0	91.91	265.71	8,905.0	186.0	-6,833.0	6,832.3	1.11	0.71	-0.85	
15,242.0	92.84	265.71	8,901.1	179.0	-6,926.6	6,926.0	0.99	0.99	0.00	
15,336.0	92.09	265.18	8,897.1	171.5	-7,020.2	7,019.7	0.98	-0.80	-0.56	
15,430.0	92.04	266.76	8,893.7	164.9	-7,113.9	7,113.4	1.68	-0.05	1.68	
15,523.0	91.12	266.24	8,891.1	159.2	-7,206.7	7,206.2	1.14	-0.99	-0.56	
15,617.0	93.01	266.68	8,887.7	153.4	-7,300.5	7,300.0	2.06	2.01	0.47	
15,710.0	92.35	265.89	8,883.4	147.4	-7,393.2	7,392.7	1.11	-0.71	-0.85	
15,804.0	91.12	264.57	8,880.5	139.6	-7,486.8	7,486.3	1.92	-1.31	-1.40	
15,898.0	91.74	265.18	8,878.2	131.2	-7,580.4	7,580.0	0.93	0.66	0.65	
15,991.0	90.99	265.89	8,876.0	124.0	-7,673.1	7,672.7	1.11	-0.81	0.76	
16,084.0	92.22	266.94	8,873.4	118.1	-7,765.9	7,765.5	1.74	1.32	1.13	



Company:	Tap Rock Resources, LLC	Local Co-ordinate Reference:	Well Pliny The Elder Fee #202H
Project:	Eddy County, NM (NAD 83 NME)	TVD Reference:	KB @ 3177.5usft (H&P 245)
Site:	(Pliny The Elder Fee) Sec-4_T-23-S_R-27-E	MD Reference:	KB @ 3177.5usft (H&P 245)
Well:	Pliny The Elder Fee #202H	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)	
16,178.0	92.26	270.10	8,869.7	115.7	-7,859.8	7,859.4	3.36	0.04	3.36	
16,272.0	91.74	269.23	8,866.4	115.2	-7,953.7	7,953.3	1.08	-0.55	-0.93	
16,367.0	92.44	269.31	8,862.9	114.0	-8,048.6	8,048.2	0.74	0.74	0.08	
16,461.0	90.42	269.05	8,860.6	112.6	-8,142.6	8,142.2	2.17	-2.15	-0.28	
16,555.0	90.42	269.14	8,859.9	111.1	-8,236.6	8,236.2	0.10	0.00	0.10	
16,648.0	91.43	271.42	8,858.4	111.6	-8,329.6	8,329.2	2.68	1.09	2.45	
16,741.0	90.55	272.65	8,856.8	114.9	-8,422.5	8,422.1	1.63	-0.95	1.32	
16,835.0	92.18	272.48	8,854.6	119.1	-8,516.4	8,515.9	1.74	1.73	-0.18	
16,928.0	93.58	272.21	8,849.9	122.9	-8,609.2	8,608.7	1.53	1.51	-0.29	
17,022.0	93.14	271.77	8,844.4	126.2	-8,702.9	8,702.5	0.66	-0.47	-0.47	
17,116.0	91.69	271.34	8,840.4	128.7	-8,796.8	8,796.4	1.61	-1.54	-0.46	
17,209.0	92.79	270.54	8,836.8	130.2	-8,889.7	8,889.3	1.46	1.18	-0.86	
17,303.0	90.95	269.75	8,833.7	130.5	-8,983.7	8,983.2	2.13	-1.96	-0.84	
17,396.0	92.48	270.10	8,830.9	130.3	-9,076.6	9,076.2	1.69	1.65	0.38	
17,490.0	92.84	269.40	8,826.6	129.9	-9,170.5	9,170.1	0.84	0.38	-0.74	
17,583.0	92.26	268.52	8,822.4	128.2	-9,263.4	9,263.0	1.13	-0.62	-0.95	
17,677.0	90.99	268.17	8,819.8	125.5	-9,357.3	9,356.9	1.40	-1.35	-0.37	
17,770.0	93.10	268.08	8,816.4	122.5	-9,450.2	9,449.8	2.27	2.27	-0.10	
17,864.0	87.96	266.15	8,815.6	117.8	-9,544.1	9,543.6	5.84	-5.47	-2.05	
17,957.0	88.57	266.68	8,818.4	111.9	-9,636.8	9,636.4	0.87	0.66	0.57	
18,050.0	90.51	268.43	8,819.1	108.0	-9,729.7	9,729.4	2.81	2.09	1.88	
18,143.0	92.44	268.96	8,816.7	105.9	-9,822.7	9,822.3	2.15	2.08	0.57	
18,236.0	95.78	269.67	8,810.1	104.8	-9,915.4	9,915.0	3.67	3.59	0.76	
18,328.0	94.07	268.17	8,802.2	103.0	-10,007.1	10,006.7	2.47	-1.86	-1.63	
18,422.0	91.34	266.76	8,797.7	98.9	-10,100.9	10,100.5	3.27	-2.90	-1.50	
18,515.0	90.33	265.53	8,796.4	92.6	-10,193.6	10,193.3	1.71	-1.09	-1.32	
18,608.0	94.42	266.94	8,792.5	86.5	-10,286.3	10,286.0	4.65	4.40	1.52	
18,702.0	91.52	265.53	8,787.7	80.4	-10,380.0	10,379.7	3.43	-3.09	-1.50	
18,795.0	92.75	265.09	8,784.2	72.8	-10,472.6	10,472.3	1.40	1.32	-0.47	
18,889.0	92.92	264.66	8,779.5	64.4	-10,566.1	10,565.9	0.49	0.18	-0.46	
18,982.0	91.82	264.74	8,775.7	55.8	-10,658.6	10,658.4	1.19	-1.18	0.09	
19,059.6	91.71	263.95	8,773.3	48.1	-10,735.8	10,735.6	1.03	-0.14	-1.02	
LTP @ 19059.6'MD, 464.9'FSL & 330'FWL										
19,076.0	91.69	263.78	8,772.8	46.4	-10,752.1	10,751.9	1.03	-0.14	-1.02	
19,133.0	91.12	263.42	8,771.4	40.0	-10,808.8	10,808.6	1.18	-1.00	-0.63	
LAST SVY										
19,218.0	91.12	263.42	8,769.8	30.3	-10,893.2	10,893.0	0.00	0.00	0.00	
Projection to TD @ 19218'MD, 447.4'FSL & 172.6'FWL										



Company:	Tap Rock Resources, LLC	Local Co-ordinate Reference:	Well Pliny The Elder Fee #202H
Project:	Eddy County, NM (NAD 83 NME)	TVD Reference:	KB @ 3177.5usft (H&P 245)
Site:	(Pliny The Elder Fee) Sec-4_T-23-S_R-27-E	MD Reference:	KB @ 3177.5usft (H&P 245)
Well:	Pliny The Elder Fee #202H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	AWB	Database:	EDM 5000.15 Single User Db

Design Targets									
Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- hit/miss target	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)		
- Shape									
LTP (Pliny The Elder I - actual wellpath misses target center by 32.9usft at 19059.9usft MD (8773.3 TVD, 48.1 N, -10736.1 E) - Point	-2.60	269.82	8,741.0	54.4	-10,735.8	485,666.40	571,214.16	32° 20' 6.474 N	104° 14' 11.759 W
PBHL (Pliny The Elde - actual wellpath misses target center by 21.6usft at 19187.9usft MD (8770.4 TVD, 33.7 N, -10863.3 E) - Rectangle (sides W100.0 H1,347.3 D30.0)	-1.50	267.81	8,785.0	49.4	-10,865.4	485,661.45	571,084.64	32° 20' 6.426 N	104° 14' 13.269 W
9000'VS (Pliny The EI - actual wellpath misses target center by 9.6usft at 17319.7usft MD (8833.4 TVD, 130.4 N, -9000.4 E) - Point	0.00	0.00	8,834.0	120.8	-9,000.4	485,732.82	572,949.60	32° 20' 7.115 N	104° 13' 51.530 W
FTP (Pliny The Elder I - actual wellpath misses target center by 38.8usft at 9210.8usft MD (8968.3 TVD, 294.9 N, -909.6 E) - Point	0.00	0.00	9,004.0	285.0	-898.0	485,897.00	581,052.00	32° 20' 8.653 N	104° 12' 17.087 W

Design Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
9,199.0	8,964.5	294.7	-898.4	FTP @ 9199'MD, 649.6'FSL & 330'FEL
19,059.6	8,773.3	48.1	-10,735.8	LTP @ 19059.6'MD, 464.9'FSL & 330'FWL
19,133.0	8,771.4	40.0	-10,808.8	LAST SVY
19,218.0	8,769.8	30.3	-10,893.2	Projection to TD @ 19218'MD, 447.4'FSL & 172.6'FWL

Checked By: _____ Approved By: _____ Date: _____