

Project: Lennox 32 State 7H
 Site: Lennox 32 State 7H
 Well: Lennox 32 State 7H
 Wellbore: Lennox 32 State 7H
 Design: 181026 Lennox 32 State 7H



Caza
Petroleum

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Azimuths to Grid North
 True North: -0.50°
 Magnetic North: 6.09°

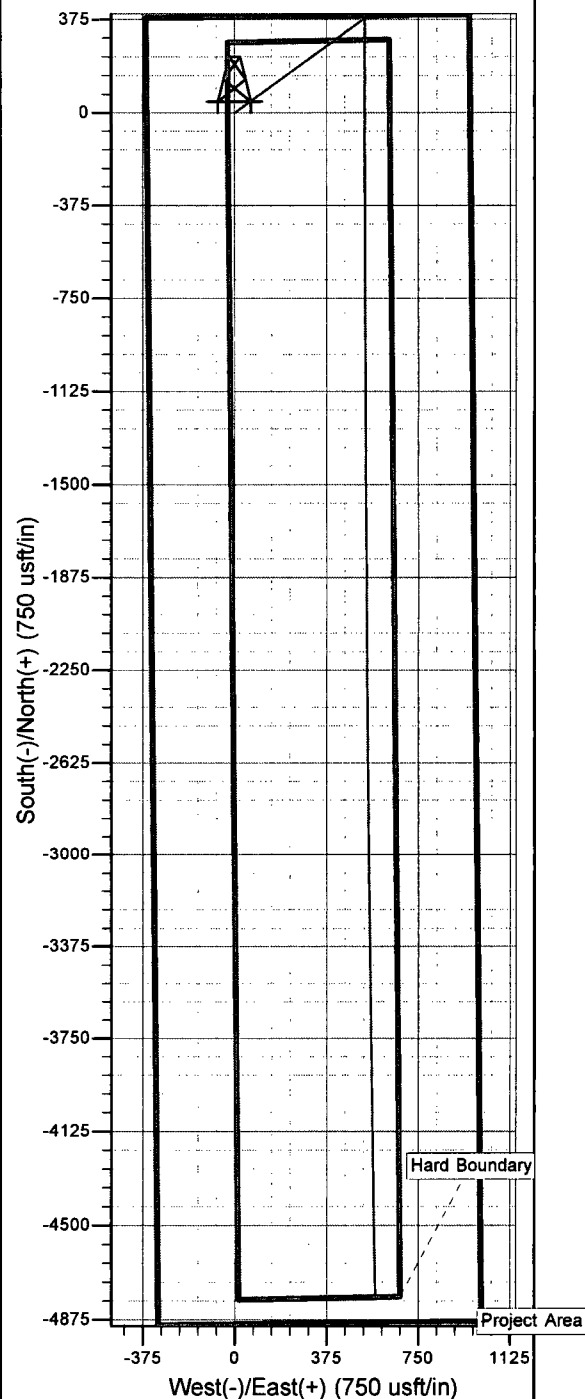
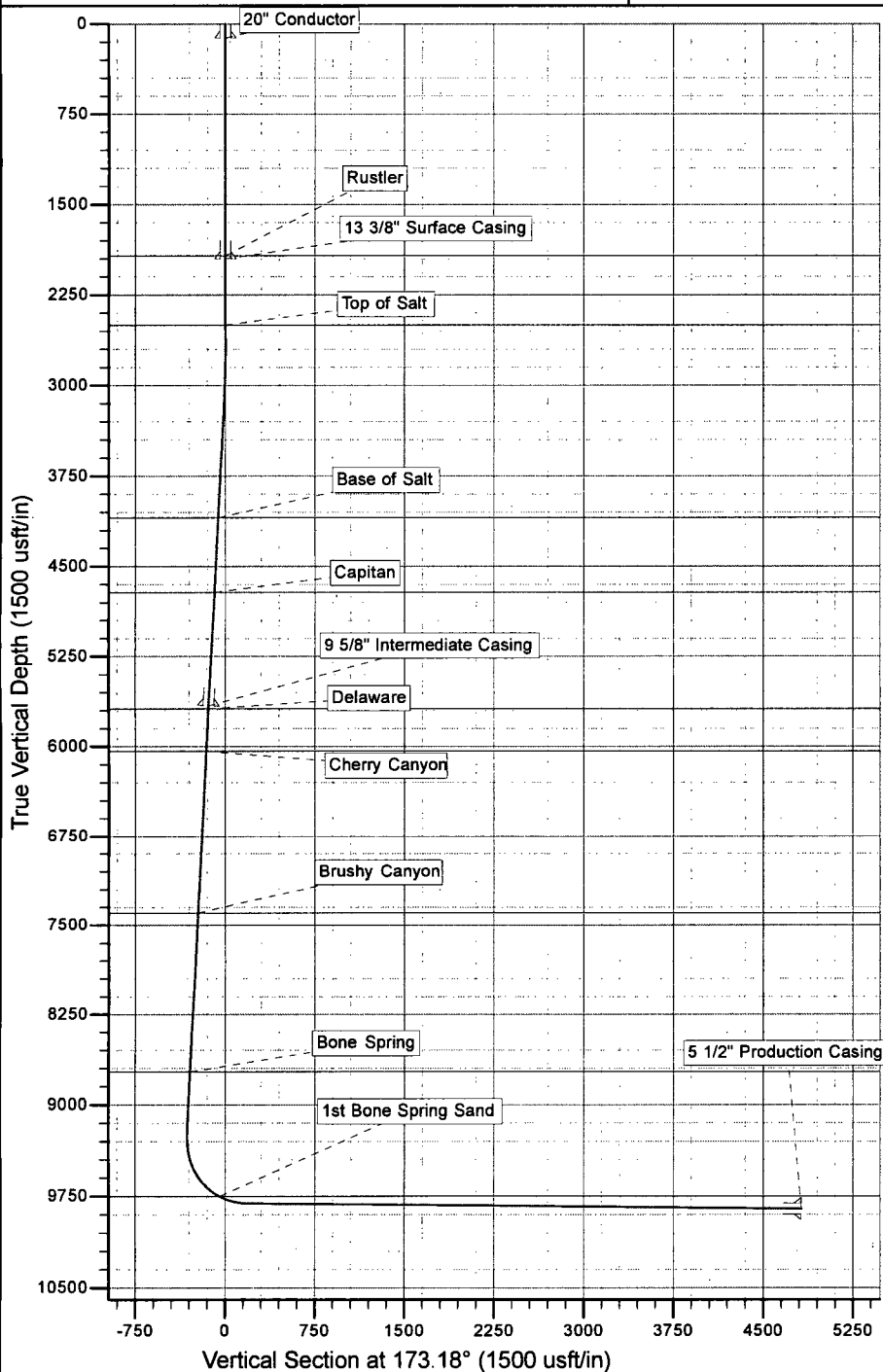
Magnetic Field
 Strength: 47974.5snT
 Dip Angle: 60.15°
 Date: 10/26/2018
 Model: IGRF2010

CASING DETAILS

TVD	MD	Name	Size
120.0	120.0	20" Conductor	20
1950.0	1950.0	13 3/8" Surface Casing	13-3/8
5660.0	5674.7	9 5/8" Intermediate Casing	9-5/8
9853.8	14790.0	5 1/2" Production Casing	5-1/2

FORMATION TOP DETAILS

TVDPath	MDPath	Formation	DipAngle	DipDir
1925.0	1925.0	Rustler	0.00	
2500.0	2500.0	Top of Salt	0.00	
4095.0	4101.1	Base of Salt	0.00	
4715.0	4724.5	Capitan	0.00	
5685.0	5699.9	Delaware	0.00	
6040.0	6056.8	Cherry Canyon	0.00	
7395.0	7419.3	Brushy Canyon	0.00	
8730.0	8761.7	Bone Spring	0.00	
9750.0	9885.8	1st Bone Spring Sand	0.00	





Caza Operating LLC

Lennox 32 State 7H

Lennox 32 State 7H

Lennox 32 State 7H

Lennox 32 State 7H

Plan: 181026 Lennox 32 State 7H

Morcor Standard Plan

26 October, 2018

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OCT 29 2018
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**MORCOR
ENGINEERING**

Company:	Caza Operating LLC	Local Co-ordinate Reference:	Well Lennox 32 State 7H
Project:	Lennox 32 State 7H	TVD Reference:	WELL @ 3556.0usft (Original Well Elev)
Site:	Lennox 32 State 7H	MD Reference:	WELL @ 3556.0usft (Original Well Elev)
Well:	Lennox 32 State 7H	North Reference:	Grid
Wellbore:	Lennox 32 State 7H	Survey Calculation Method:	Minimum Curvature
Design:	181026 Lennox 32 State 7H	Database:	EDM 5000.1 Single User Db

Project	Lennox 32 State 7H		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site	Lennox 32 State 7H		
Site Position:		Northing:	493,933.37 usft
From:	Lat/Long	Easting:	831,787.23 usft
Position Uncertainty:	1.0 usft	Slot Radius:	17-1/2 "
		Latitude:	32° 21' 15.790 N
		Longitude:	103° 23' 33.882 W
		Grid Convergence:	0.50 °

Well	Lennox 32 State 7H					
Well Position	+N/-S	0.0 usft	Northing:	493,933.37 usft	Latitude:	32° 21' 15.790 N
	+E/-W	0.0 usft	Easting:	831,787.23 usft	Longitude:	103° 23' 33.882 W
Position Uncertainty	0.0 usft		Wellhead Elevation:	usft	Ground Level:	3,534.0 usft

Wellbore	Lennox 32 State 7H				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	10/26/2018	6.60	60.15	47,975

Design					181026 Lennox 32 State 7H				
Audit Notes:									
Version:		Phase:		PLAN		Tie On Depth:		0.0	
Vertical Section:		Depth From (TVD)		+N/-S		+E/-W		Direction	
		(usft)		(usft)		(usft)		(°)	
		0.0		0.0		0.0		173.18	

Survey Tool Program		Date 10/26/2018		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.0	14,790.0	181026 Lennox 32 State 7H (Lennox 32 S	MWD	MWD - Standard

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Wellbore:	Lennox 32 State 7H	Survey Calculation Method:	Minimum Curvature
Design:	181026 Lennox 32 State 7H	Database:	EDM 5000.1 Single User Db

Planned Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	Easting (usft)	Northing (usft)	V. Sec (usft)	DLeg (°/100usft)	
0.0	0.00	0.00	0.0	-3,556.0	0.0	0.0	831,787.23	493,933.37	0.00	0.00	
100.0	0.00	54.40	100.0	-3,456.0	0.0	0.0	831,787.23	493,933.37	0.00	0.00	
120.0	0.00	54.40	120.0	-3,436.0	0.0	0.0	831,787.23	493,933.37	0.00	0.00	
20" Conductor											
200.0	0.00	54.40	200.0	-3,356.0	0.0	0.0	831,787.23	493,933.37	0.00	0.00	
300.0	0.00	54.40	300.0	-3,256.0	0.0	0.0	831,787.23	493,933.37	0.00	0.00	
400.0	0.00	54.40	400.0	-3,156.0	0.0	0.0	831,787.23	493,933.37	0.00	0.00	
500.0	0.00	54.40	500.0	-3,056.0	0.0	0.0	831,787.23	493,933.37	0.00	0.00	
600.0	0.00	54.40	600.0	-2,956.0	0.0	0.0	831,787.23	493,933.37	0.00	0.00	
700.0	0.00	54.40	700.0	-2,856.0	0.0	0.0	831,787.23	493,933.37	0.00	0.00	
800.0	0.00	54.40	800.0	-2,756.0	0.0	0.0	831,787.23	493,933.37	0.00	0.00	
900.0	0.00	54.40	900.0	-2,656.0	0.0	0.0	831,787.23	493,933.37	0.00	0.00	
1,000.0	0.00	54.40	1,000.0	-2,556.0	0.0	0.0	831,787.23	493,933.37	0.00	0.00	
1,100.0	0.00	54.40	1,100.0	-2,456.0	0.0	0.0	831,787.23	493,933.37	0.00	0.00	
1,200.0	0.00	54.40	1,200.0	-2,356.0	0.0	0.0	831,787.23	493,933.37	0.00	0.00	
1,300.0	0.00	54.40	1,300.0	-2,256.0	0.0	0.0	831,787.23	493,933.37	0.00	0.00	
1,400.0	0.00	54.40	1,400.0	-2,156.0	0.0	0.0	831,787.23	493,933.37	0.00	0.00	
1,500.0	0.00	54.40	1,500.0	-2,056.0	0.0	0.0	831,787.23	493,933.37	0.00	0.00	
1,600.0	0.00	54.40	1,600.0	-1,956.0	0.0	0.0	831,787.23	493,933.37	0.00	0.00	
1,700.0	0.00	54.40	1,700.0	-1,856.0	0.0	0.0	831,787.23	493,933.37	0.00	0.00	
1,800.0	0.00	54.40	1,800.0	-1,756.0	0.0	0.0	831,787.23	493,933.37	0.00	0.00	
1,900.0	0.00	54.40	1,900.0	-1,656.0	0.0	0.0	831,787.23	493,933.37	0.00	0.00	
1,925.0	0.00	54.40	1,925.0	-1,631.0	0.0	0.0	831,787.23	493,933.37	0.00	0.00	
Rustler											
1,950.0	0.00	54.40	1,950.0	-1,606.0	0.0	0.0	831,787.23	493,933.37	0.00	0.00	
13 3/8" Surface Casing											
2,000.0	0.00	54.40	2,000.0	-1,556.0	0.0	0.0	831,787.23	493,933.37	0.00	0.00	
2,100.0	0.00	54.40	2,100.0	-1,456.0	0.0	0.0	831,787.23	493,933.37	0.00	0.00	

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MD Reference: WELL @ 3556.0usft (Original Well Elev)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.1 Single User Db

Planned Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	Easting (usft)	Northing (usft)	V. Sec (usft)	DLeg (°/100usft)
2,200.0	0.00	54.40	2,200.0	-1,356.0	0.0	0.0	831,787.23	493,933.37	0.00	0.00
2,300.0	0.00	54.40	2,300.0	-1,256.0	0.0	0.0	831,787.23	493,933.37	0.00	0.00
2,400.0	0.00	54.40	2,400.0	-1,156.0	0.0	0.0	831,787.23	493,933.37	0.00	0.00
2,500.0	0.00	54.40	2,500.0	-1,056.0	0.0	0.0	831,787.23	493,933.37	0.00	0.00
Top of Salt										
2,600.0	0.00	54.40	2,600.0	-956.0	0.0	0.0	831,787.23	493,933.37	0.00	0.00
2,700.0	0.00	54.40	2,700.0	-856.0	0.0	0.0	831,787.23	493,933.37	0.00	0.00
2,800.0	0.00	54.40	2,800.0	-756.0	0.0	0.0	831,787.23	493,933.37	0.00	0.00
2,850.0	0.00	54.40	2,850.0	-706.0	0.0	0.0	831,787.23	493,933.37	0.00	0.00
Start Build 3.00										
2,900.0	1.50	54.40	2,900.0	-656.0	0.4	0.5	831,787.76	493,933.75	-0.32	3.00
3,000.0	4.50	54.40	2,999.8	-556.2	3.4	4.8	831,792.02	493,936.79	-2.83	3.00
3,050.0	6.00	54.40	3,049.6	-506.4	6.1	8.5	831,795.74	493,939.46	-5.04	3.00
Start 6050.0 hold at 3050.0 MD										
3,100.0	6.00	54.40	3,099.4	-456.6	9.1	12.8	831,799.99	493,942.50	-7.55	0.00
3,200.0	6.00	54.40	3,198.8	-357.2	15.2	21.3	831,808.49	493,948.58	-12.59	0.00
3,300.0	6.00	54.40	3,298.3	-257.7	21.3	29.8	831,816.99	493,954.67	-17.62	0.00
3,400.0	6.00	54.40	3,397.7	-158.3	27.4	38.3	831,825.49	493,960.75	-22.65	0.00
3,500.0	6.00	54.40	3,497.2	-58.8	33.5	46.8	831,833.98	493,966.84	-27.69	0.00
3,600.0	6.00	54.40	3,596.6	40.6	39.6	55.3	831,842.48	493,972.92	-32.72	0.00
3,700.0	6.00	54.40	3,696.1	140.1	45.6	63.8	831,850.98	493,979.01	-37.75	0.00
3,800.0	6.00	54.40	3,795.5	239.5	51.7	72.3	831,859.48	493,985.09	-42.79	0.00
3,900.0	6.00	54.40	3,895.0	339.0	57.8	80.8	831,867.98	493,991.18	-47.82	0.00
4,000.0	6.00	54.40	3,994.4	438.4	63.9	89.2	831,876.48	493,997.26	-52.85	0.00
4,100.0	6.00	54.40	4,093.9	537.9	70.0	97.7	831,884.98	494,003.35	-57.88	0.00
4,101.1	6.00	54.40	4,095.0	539.0	70.0	97.8	831,885.08	494,003.42	-57.94	0.00
Base of Salt										
4,200.0	6.00	54.40	4,193.3	637.3	76.1	106.2	831,893.48	494,009.43	-62.92	0.00

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Well:	Lennox 32 State 7H	North Reference:	Grid
Wellbore:	Lennox 32 State 7H	Survey Calculation Method:	Minimum Curvature
Design:	181026 Lennox 32 State 7H	Database:	EDM 5000.1 Single User Db

Planned Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	Easting (usft)	Northing (usft)	V. Sec (usft)	DLeg (°/100usft)	
4,300.0	6.00	54.40	4,292.8	736.8	82.2	114.7	831,901.98	494,015.52	-67.95		0.00
4,400.0	6.00	54.40	4,392.2	836.2	88.2	123.2	831,910.48	494,021.60	-72.98		0.00
4,500.0	6.00	54.40	4,491.7	935.7	94.3	131.7	831,918.98	494,027.69	-78.02		0.00
4,600.0	6.00	54.40	4,591.1	1,035.1	100.4	140.2	831,927.48	494,033.77	-83.05		0.00
4,700.0	6.00	54.40	4,690.6	1,134.6	106.5	148.7	831,935.98	494,039.86	-88.08		0.00
4,724.5	6.00	54.40	4,715.0	1,159.0	108.0	150.8	831,938.06	494,041.35	-89.32		0.00
Capitan											
4,800.0	6.00	54.40	4,790.0	1,234.0	112.6	157.2	831,944.47	494,045.94	-93.12		0.00
4,900.0	6.00	54.40	4,889.5	1,333.5	118.7	165.7	831,952.97	494,052.03	-98.15		0.00
5,000.0	6.00	54.40	4,989.0	1,433.0	124.7	174.2	831,961.47	494,058.11	-103.18		0.00
5,100.0	6.00	54.40	5,088.4	1,532.4	130.8	182.7	831,969.97	494,064.20	-108.21		0.00
5,200.0	6.00	54.40	5,187.9	1,631.9	136.9	191.2	831,978.47	494,070.28	-113.25		0.00
5,300.0	6.00	54.40	5,287.3	1,731.3	143.0	199.7	831,986.97	494,076.37	-118.28		0.00
5,400.0	6.00	54.40	5,386.8	1,830.8	149.1	208.2	831,995.47	494,082.45	-123.31		0.00
5,500.0	6.00	54.40	5,486.2	1,930.2	155.2	216.7	832,003.97	494,088.54	-128.35		0.00
5,600.0	6.00	54.40	5,585.7	2,029.7	161.3	225.2	832,012.47	494,094.62	-133.38		0.00
5,674.7	6.00	54.40	5,660.0	2,104.0	165.8	231.6	832,018.82	494,099.17	-137.14		0.00
9 5/8" Intermediate Casing											
5,699.9	6.00	54.40	5,685.0	2,129.0	167.3	233.7	832,020.96	494,100.70	-138.41		0.00
Delaware											
5,700.0	6.00	54.40	5,685.1	2,129.1	167.3	233.7	832,020.97	494,100.71	-138.41		0.00
5,800.0	6.00	54.40	5,784.6	2,228.6	173.4	242.2	832,029.47	494,106.79	-143.45		0.00
5,900.0	6.00	54.40	5,884.0	2,328.0	179.5	250.7	832,037.97	494,112.88	-148.48		0.00
6,000.0	6.00	54.40	5,983.5	2,427.5	185.6	259.2	832,046.47	494,118.96	-153.51		0.00
6,056.8	6.00	54.40	6,040.0	2,484.0	189.1	264.1	832,051.30	494,122.42	-156.37		0.00
Cherry Canyon											
6,100.0	6.00	54.40	6,082.9	2,526.9	191.7	267.7	832,054.96	494,125.05	-158.54		0.00

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6,200.0	6.00	54.40	6,182.4	2,626.4	197.8	276.2	832,063.46	494,131.13	-163.58	0.00	
6,300.0	6.00	54.40	6,281.8	2,725.8	203.8	284.7	832,071.96	494,137.21	-168.61	0.00	
6,400.0	6.00	54.40	6,381.3	2,825.3	209.9	293.2	832,080.46	494,143.30	-173.64	0.00	
6,500.0	6.00	54.40	6,480.7	2,924.7	216.0	301.7	832,088.96	494,149.38	-178.68	0.00	
6,600.0	6.00	54.40	6,580.2	3,024.2	222.1	310.2	832,097.46	494,155.47	-183.71	0.00	
6,700.0	6.00	54.40	6,679.6	3,123.6	228.2	318.7	832,105.96	494,161.55	-188.74	0.00	
6,800.0	6.00	54.40	6,779.1	3,223.1	234.3	327.2	832,114.46	494,167.64	-193.78	0.00	
6,900.0	6.00	54.40	6,878.5	3,322.5	240.4	335.7	832,122.96	494,173.72	-198.81	0.00	
7,000.0	6.00	54.40	6,978.0	3,422.0	246.4	344.2	832,131.46	494,179.81	-203.84	0.00	
7,100.0	6.00	54.40	7,077.4	3,521.4	252.5	352.7	832,139.96	494,185.89	-208.88	0.00	
7,200.0	6.00	54.40	7,176.9	3,620.9	258.6	361.2	832,148.46	494,191.98	-213.91	0.00	
7,300.0	6.00	54.40	7,276.4	3,720.4	264.7	369.7	832,156.95	494,198.06	-218.94	0.00	
7,400.0	6.00	54.40	7,375.8	3,819.8	270.8	378.2	832,165.45	494,204.15	-223.97	0.00	
7,419.3	6.00	54.40	7,395.0	3,839.0	272.0	379.9	832,167.09	494,205.32	-224.95	0.00	
Brushy Canyon											
7,500.0	6.00	54.40	7,475.3	3,919.3	276.9	386.7	832,173.95	494,210.23	-229.01	0.00	
7,600.0	6.00	54.40	7,574.7	4,018.7	283.0	395.2	832,182.45	494,216.32	-234.04	0.00	
7,700.0	6.00	54.40	7,674.2	4,118.2	289.0	403.7	832,190.95	494,222.40	-239.07	0.00	
7,800.0	6.00	54.40	7,773.6	4,217.6	295.1	412.2	832,199.45	494,228.49	-244.11	0.00	
7,900.0	6.00	54.40	7,873.1	4,317.1	301.2	420.7	832,207.95	494,234.57	-249.14	0.00	
8,000.0	6.00	54.40	7,972.5	4,416.5	307.3	429.2	832,216.45	494,240.66	-254.17	0.00	
8,100.0	6.00	54.40	8,072.0	4,516.0	313.4	437.7	832,224.95	494,246.74	-259.21	0.00	
8,200.0	6.00	54.40	8,171.4	4,615.4	319.5	446.2	832,233.45	494,252.83	-264.24	0.00	
8,300.0	6.00	54.40	8,270.9	4,714.9	325.5	454.7	832,241.95	494,258.91	-269.27	0.00	
8,400.0	6.00	54.40	8,370.3	4,814.3	331.6	463.2	832,250.45	494,265.00	-274.30	0.00	
8,500.0	6.00	54.40	8,469.8	4,913.8	337.7	471.7	832,258.95	494,271.08	-279.34	0.00	
8,600.0	6.00	54.40	8,569.2	5,013.2	343.8	480.2	832,267.44	494,277.17	-284.37	0.00	

Company:	Caza Operating LLC	Local Co-ordinate Reference:	Well Lennox 32 State 7H
Project:	Lennox 32 State 7H	TVD Reference:	WELL @ 3556.0usft (Original Well Elev)
Site:	Lennox 32 State 7H	MD Reference:	WELL @ 3556.0usft (Original Well Elev)
Well:	Lennox 32 State 7H	North Reference:	Grid
Wellbore:	Lennox 32 State 7H	Survey Calculation Method:	Minimum Curvature
Design:	181026 Lennox 32 State 7H	Database:	EDM 5000.1 Single User Db

Planned Survey										
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	Easting (usft)	Northing (usft)	V. Sec (usft)	DLeg (°/100usft)
8,700.0	6.00	54.40	8,668.7	5,112.7	349.9	488.7	832,275.94	494,283.25	-289.40	0.00
8,761.7	6.00	54.40	8,730.0	5,174.0	353.6	494.0	832,281.18	494,287.00	-292.51	0.00
Bone Spring										
8,800.0	6.00	54.40	8,768.1	5,212.1	356.0	497.2	832,284.44	494,289.34	-294.44	0.00
8,900.0	6.00	54.40	8,867.6	5,311.6	362.1	505.7	832,292.94	494,295.42	-299.47	0.00
9,000.0	6.00	54.40	8,967.0	5,411.0	368.1	514.2	832,301.44	494,301.51	-304.50	0.00
9,100.0	6.00	54.40	9,066.5	5,510.5	374.2	522.7	832,309.94	494,307.59	-309.54	0.00
Start Drop -3.00										
9,200.0	3.00	54.40	9,166.2	5,610.2	378.8	529.1	832,316.32	494,312.16	-313.31	3.00
9,300.0	0.00	0.00	9,266.1	5,710.1	380.3	531.2	832,318.45	494,313.68	-314.57	3.00
Start 36.0 hold at 9300.0 MD										
9,336.0	0.00	180.00	9,302.1	5,746.1	380.3	531.2	832,318.45	494,313.68	-314.57	0.00
Start Build 11.32										
9,400.0	7.25	180.00	9,366.0	5,810.0	376.3	531.2	832,318.45	494,309.64	-310.56	11.32
9,500.0	18.57	180.00	9,463.3	5,907.3	354.0	531.2	832,318.45	494,287.34	-288.42	11.32
9,600.0	29.89	180.00	9,554.3	5,998.3	313.0	531.2	832,318.45	494,246.37	-247.74	11.32
9,700.0	41.21	180.00	9,635.5	6,079.5	255.0	531.2	832,318.45	494,188.32	-190.10	11.32
9,800.0	52.53	180.00	9,703.8	6,147.8	182.1	531.2	832,318.45	494,115.46	-117.75	11.32
9,885.8	62.25	180.00	9,750.0	6,194.0	109.9	531.2	832,318.45	494,043.24	-46.04	11.32
1st Bone Spring Sand										
9,900.0	63.85	180.00	9,756.4	6,200.4	97.2	531.2	832,318.45	494,030.62	-33.51	11.32
10,000.0	75.17	180.00	9,791.4	6,235.4	3.7	531.2	832,318.45	493,937.09	59.35	11.32
10,100.0	86.50	180.00	9,807.3	6,251.3	-94.8	531.2	832,318.45	493,838.53	157.22	11.32
10,126.0	89.44	180.00	9,808.2	6,252.2	-120.8	531.2	832,318.45	493,812.55	183.02	11.32
Start Turn -0.02										
10,200.0	89.44	179.98	9,808.9	6,252.9	-194.8	531.2	832,318.46	493,738.55	256.49	0.02
10,300.0	89.44	179.96	9,809.9	6,253.9	-294.8	531.3	832,318.50	493,638.56	355.78	0.02
10,400.0	89.44	179.94	9,810.9	6,254.9	-394.8	531.4	832,318.59	493,538.56	455.08	0.02

Company:	Caza Operating LLC	Local Co-ordinate Reference:	Well Lennox 32 State 7H
Project:	Lennox 32 State 7H	TVD Reference:	WELL @ 3556.0usft (Original Well Elev)
Site:	Lennox 32 State 7H	MD Reference:	WELL @ 3556.0usft (Original Well Elev)
Well:	Lennox 32 State 7H	North Reference:	Grid
Wellbore:	Lennox 32 State 7H	Survey Calculation Method:	Minimum Curvature
Design:	181026 Lennox 32 State 7H	Database:	EDM 5000.1 Single User Db

Planned Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	Easting (usft)	Northing (usft)	V. Sec (usft)	DLeg (°/100usft)
10,500.0	89.44	179.92	9,811.8	6,255.8	-494.8	531.5	832,318.71	493,438.57	554.39	0.02
10,600.0	89.44	179.90	9,812.8	6,256.8	-594.8	531.6	832,318.87	493,338.57	653.69	0.02
10,700.0	89.44	179.88	9,813.8	6,257.8	-694.8	531.8	832,319.06	493,238.58	753.00	0.02
10,800.0	89.44	179.86	9,814.8	6,258.8	-794.8	532.1	832,319.30	493,138.58	852.32	0.02
10,900.0	89.44	179.83	9,815.7	6,259.7	-894.8	532.3	832,319.57	493,038.59	951.64	0.02
11,000.0	89.44	179.81	9,816.7	6,260.7	-994.8	532.6	832,319.88	492,938.59	1,050.96	0.02
11,100.0	89.44	179.79	9,817.7	6,261.7	-1,094.8	533.0	832,320.22	492,838.60	1,150.29	0.02
11,200.0	89.44	179.77	9,818.7	6,262.7	-1,194.8	533.4	832,320.61	492,738.60	1,249.63	0.02
11,300.0	89.44	179.75	9,819.7	6,263.7	-1,294.8	533.8	832,321.03	492,638.61	1,348.96	0.02
11,400.0	89.44	179.73	9,820.6	6,264.6	-1,394.8	534.3	832,321.48	492,538.61	1,448.31	0.02
11,500.0	89.44	179.71	9,821.6	6,265.6	-1,494.7	534.7	832,321.98	492,438.62	1,547.65	0.02
11,600.0	89.44	179.68	9,822.6	6,266.6	-1,594.7	535.3	832,322.51	492,338.63	1,647.00	0.02
11,700.0	89.44	179.66	9,823.6	6,267.6	-1,694.7	535.9	832,323.08	492,238.63	1,746.36	0.02
11,800.0	89.44	179.64	9,824.5	6,268.5	-1,794.7	536.5	832,323.69	492,138.64	1,845.71	0.02
11,900.0	89.44	179.62	9,825.5	6,269.5	-1,894.7	537.1	832,324.34	492,038.65	1,945.08	0.02
12,000.0	89.44	179.60	9,826.5	6,270.5	-1,994.7	537.8	832,325.02	491,938.65	2,044.44	0.02
12,100.0	89.44	179.58	9,827.5	6,271.5	-2,094.7	538.5	832,325.74	491,838.66	2,143.82	0.02
12,200.0	89.44	179.56	9,828.5	6,272.5	-2,194.7	539.3	832,326.50	491,738.67	2,243.19	0.02
12,300.0	89.44	179.53	9,829.4	6,273.4	-2,294.7	540.1	832,327.29	491,638.68	2,342.57	0.02
12,400.0	89.44	179.51	9,830.4	6,274.4	-2,394.7	540.9	832,328.12	491,538.68	2,441.95	0.02
12,500.0	89.44	179.49	9,831.4	6,275.4	-2,494.7	541.8	832,328.99	491,438.69	2,541.34	0.02
12,600.0	89.44	179.47	9,832.4	6,276.4	-2,594.7	542.7	832,329.90	491,338.70	2,640.73	0.02
12,700.0	89.44	179.45	9,833.3	6,277.3	-2,694.7	543.6	832,330.84	491,238.71	2,740.13	0.02
12,800.0	89.44	179.43	9,834.3	6,278.3	-2,794.6	544.6	832,331.83	491,138.72	2,839.53	0.02
12,900.0	89.44	179.41	9,835.3	6,279.3	-2,894.6	545.6	832,332.85	491,038.73	2,938.93	0.02
13,000.0	89.44	179.38	9,836.3	6,280.3	-2,994.6	546.7	832,333.90	490,938.74	3,038.34	0.02
13,100.0	89.44	179.36	9,837.2	6,281.2	-3,094.6	547.8	832,335.00	490,838.75	3,137.76	0.02

Company:	Caza Operating LLC	Local Co-ordinate Reference:	Well Lennox 32 State 7H
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Site:	Lennox 32 State 7H	MD Reference:	WELL @ 3556.0usft (Original Well Elev)
Well:	Lennox 32 State 7H	North Reference:	Grid
Wellbore:	Lennox 32 State 7H	Survey Calculation Method:	Minimum Curvature
Design:	181026 Lennox 32 State 7H	Database:	EDM 5000.1 Single User Db

Planned Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	Easting (usft)	Northing (usft)	V. Sec (usft)	DLeg (°/100usft)
13,200.0	89.44	179.34	9,838.2	6,282.2	-3,194.6	548.9	832,336.13	490,738.76	3,237.17	0.02
13,300.0	89.44	179.32	9,839.2	6,283.2	-3,294.6	550.1	832,337.30	490,638.77	3,336.59	0.02
13,400.0	89.44	179.30	9,840.2	6,284.2	-3,394.6	551.3	832,338.50	490,538.79	3,436.02	0.02
13,500.0	89.44	179.28	9,841.2	6,285.2	-3,494.6	552.5	832,339.75	490,438.80	3,535.44	0.02
13,600.0	89.44	179.26	9,842.1	6,286.1	-3,594.6	553.8	832,341.03	490,338.81	3,634.88	0.02
13,700.0	89.44	179.23	9,843.1	6,287.1	-3,694.5	555.1	832,342.35	490,238.83	3,734.31	0.02
13,800.0	89.44	179.21	9,844.1	6,288.1	-3,794.5	556.5	832,343.70	490,138.84	3,833.75	0.02
13,900.0	89.44	179.19	9,845.1	6,289.1	-3,894.5	557.9	832,345.10	490,038.85	3,933.20	0.02
14,000.0	89.44	179.17	9,846.0	6,290.0	-3,994.5	559.3	832,346.53	489,938.87	4,032.65	0.02
14,100.0	89.44	179.15	9,847.0	6,291.0	-4,094.5	560.8	832,348.00	489,838.88	4,132.10	0.02
14,200.0	89.44	179.13	9,848.0	6,292.0	-4,194.5	562.3	832,349.50	489,738.90	4,231.55	0.02
14,300.0	89.44	179.11	9,849.0	6,293.0	-4,294.4	563.8	832,351.04	489,638.92	4,331.01	0.02
14,400.0	89.44	179.08	9,850.0	6,294.0	-4,394.4	565.4	832,352.62	489,538.93	4,430.48	0.02
14,500.0	89.44	179.06	9,850.9	6,294.9	-4,494.4	567.0	832,354.24	489,438.95	4,529.94	0.02
14,600.0	89.44	179.04	9,851.9	6,295.9	-4,594.4	568.7	832,355.90	489,338.97	4,629.41	0.02
14,700.0	89.44	179.02	9,852.9	6,296.9	-4,694.4	570.4	832,357.59	489,238.99	4,728.89	0.02
14,790.0	89.44	179.00	9,853.8	6,297.8	-4,784.4	571.9	832,359.15	489,149.01	4,818.42	0.02

TD at 14790.0 - 5 1/2" Production Casing

Casing Points

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
1,950.0	1,950.0	13 3/8" Surface Casing	13-3/8	17-1/2
120.0	120.0	20" Conductor	20	26
14,790.0	9,853.8	5 1/2" Production Casing	5-1/2	8-3/4
5,674.7	5,660.0	9 5/8" Intermediate Casing	9-5/8	12-1/4

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Well:	Lennox 32 State 7H	North Reference:	Grid
Wellbore:	Lennox 32 State 7H	Survey Calculation Method:	Minimum Curvature
Design:	181026 Lennox 32 State 7H	Database:	EDM 5000.1 Single User Db

Formations					
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
7,419.3	7,395.0	Brushy Canyon		0.00	
8,761.7	8,730.0	Bone Spring		0.00	
6,056.8	6,040.0	Cherry Canyon		0.00	
9,885.8	9,750.0	1st Bone Spring Sand		0.00	
2,500.0	2,500.0	Top of Salt		0.00	
4,724.5	4,715.0	Capitan		0.00	
1,925.0	1,925.0	Rustler		0.00	
4,101.1	4,095.0	Base of Salt		0.00	
5,699.9	5,685.0	Delaware		0.00	

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
2,850.0	2,850.0	0.0	0.0	Start Build 3.00
3,050.0	3,049.6	6.1	8.5	Start 6050.0 hold at 3050.0 MD
9,100.0	9,066.5	374.2	522.7	Start Drop -3.00
9,300.0	9,266.1	380.3	531.2	Start 36.0 hold at 9300.0 MD
9,336.0	9,302.1	380.3	531.2	Start Build 11.32
10,126.0	9,808.2	-120.8	531.2	Start Turn -0.02
14,790.0	9,853.8	-4,784.4	571.9	TD at 14790.0

Checked By: _____	Approved By: _____	Date: _____
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