

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Rd., Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy, Minerals & Natural Resources

Form C-104
Revised August 1, 2011

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Submit one copy to appropriate District Office

☐ AMENDED REPORT

I. REQUEST FOR ALLOWABLE AND AUTHORIZATION TO TRANSPORT

¹ Operator name and Address LOGOS Operating, LLC 2010 Afton Place Farmington NM 87401			² OGRID Number 289408			
			³ Reason for Filing Code/ Effective Date Test Allowable			
⁴ API Number 30-039-31418		⁵ Pool Name Basin Mancos			⁶ Pool Code 97232	
⁷ Property Code 320608		⁸ Property Name Rosa Unit			⁹ Well Number 664H	

II. ¹⁰ Surface Location

UL or lot no. K	Section 30	Township 31N	Range 5W	Lot Idn 3	Feet from the 2260	North/South Line FSL	Feet from the 966	East/West line FWL	County Rio Arriba
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¹¹ Bottom Hole Location

UL or lot no. O	Section 28	Township 31N	Range 5W	Lot Idn	Feet from the 904	North/South line FSL	Feet from the 1516	East/West line FEL	County Rio Arriba
¹² Lse Code F	¹³ Producing Method Code F	¹⁴ Gas Connection Date	¹⁵ C-129 Permit Number		¹⁶ C-129 Effective Date		¹⁷ C-129 Expiration Date		

III. Oil and Gas Transporters

¹⁸ Transporter OGRID	¹⁹ Transporter Name and Address	²⁰ O/G/W
373888	Harvest Four Corners, LLC 1755 Arroyo Dr. Bloomfield NM 87413	G

IV. Well Completion Data

²¹ Spud Date 4/04/2022	²² Ready Date ~9/19/2022	²³ TD 19396' MD / 6,975' TVD	²⁴ PBTD 19285' MD / 6975' TVD	²⁵ Perforations ~7683' MD / ~19218' MD ~6991' TVD / ~6975' TVD	²⁶ DHC, MC R-13457
²⁷ Hole Size		²⁸ Casing & Tubing Size	²⁹ Depth Set		³⁰ Sacks Cement
17-1/2"		13-3/8", 54.5#, J-55	324'		364sx (74.5bbbls - 419cf)
12-1/4"		9-5/8", 43.5#, N-80	6404'		2618sx (887bbbls - 6021cf) DV @ 4758' & DV @ 3191'
8-1/2"		5 1/2", 20#, P-110	19,377'		2702sx (736.3bbbls - 4134cf)
		2 7/8", 6.5#, J-55	pending		

V. Well Test Data

³¹ Date New Oil	³² Gas Delivery Date ~9/19/2022	³³ Test Date	³⁴ Test Length	³⁵ Tbg. Pressure	³⁶ Csg. Pressure
³⁷ Choke Size	³⁸ Oil	³⁹ Water	⁴⁰ Gas		⁴¹ Test Method

⁴² I hereby certify that the rules of the Oil Conservation Division have been complied with and that the information given above is true and complete to the best of my knowledge and belief. Signature: <i>Etta Trujillo</i> Printed name: Etta Trujillo Title: Regulatory Specialist E-mail Address: etrujillo@logosresourcesllc.com Date: 9/16/2022	Phone: 505-324-4154	OIL CONSERVATION DIVISION	
	Approved by:		
	Title:		
	Approval Date:		

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 and Seal of Professional Surveyor



Released to Imaging: 9/19/2022 3:49:03 PM



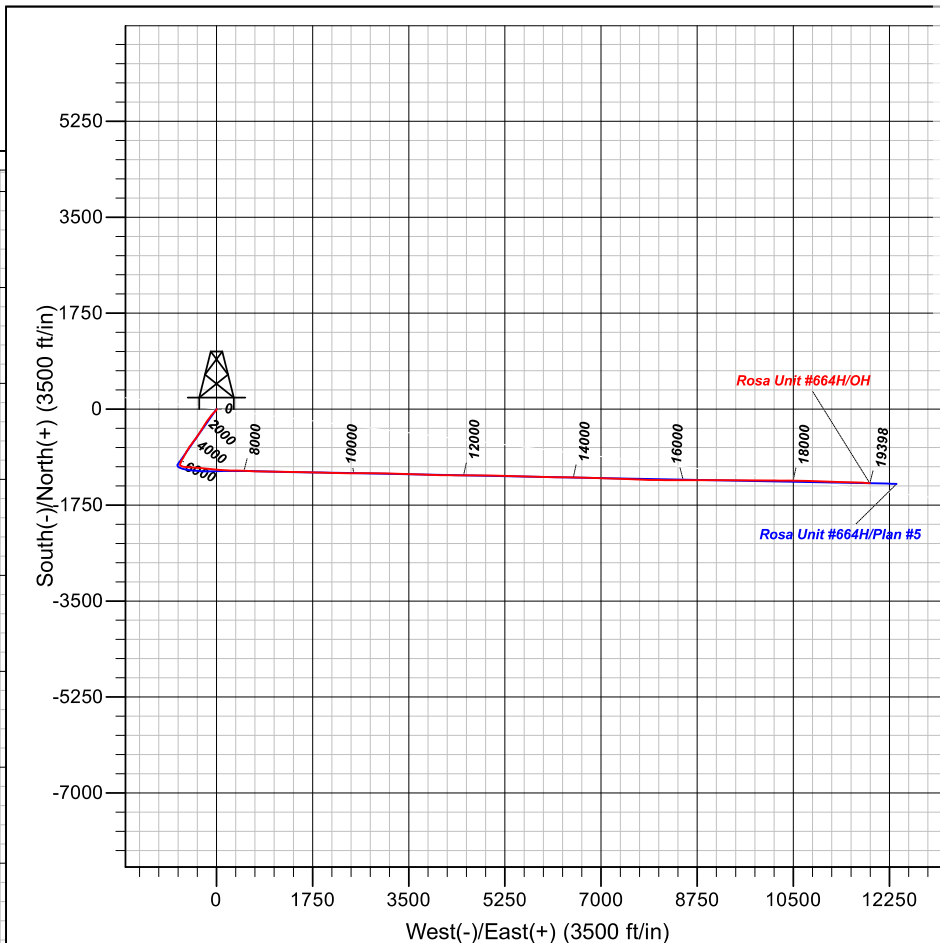
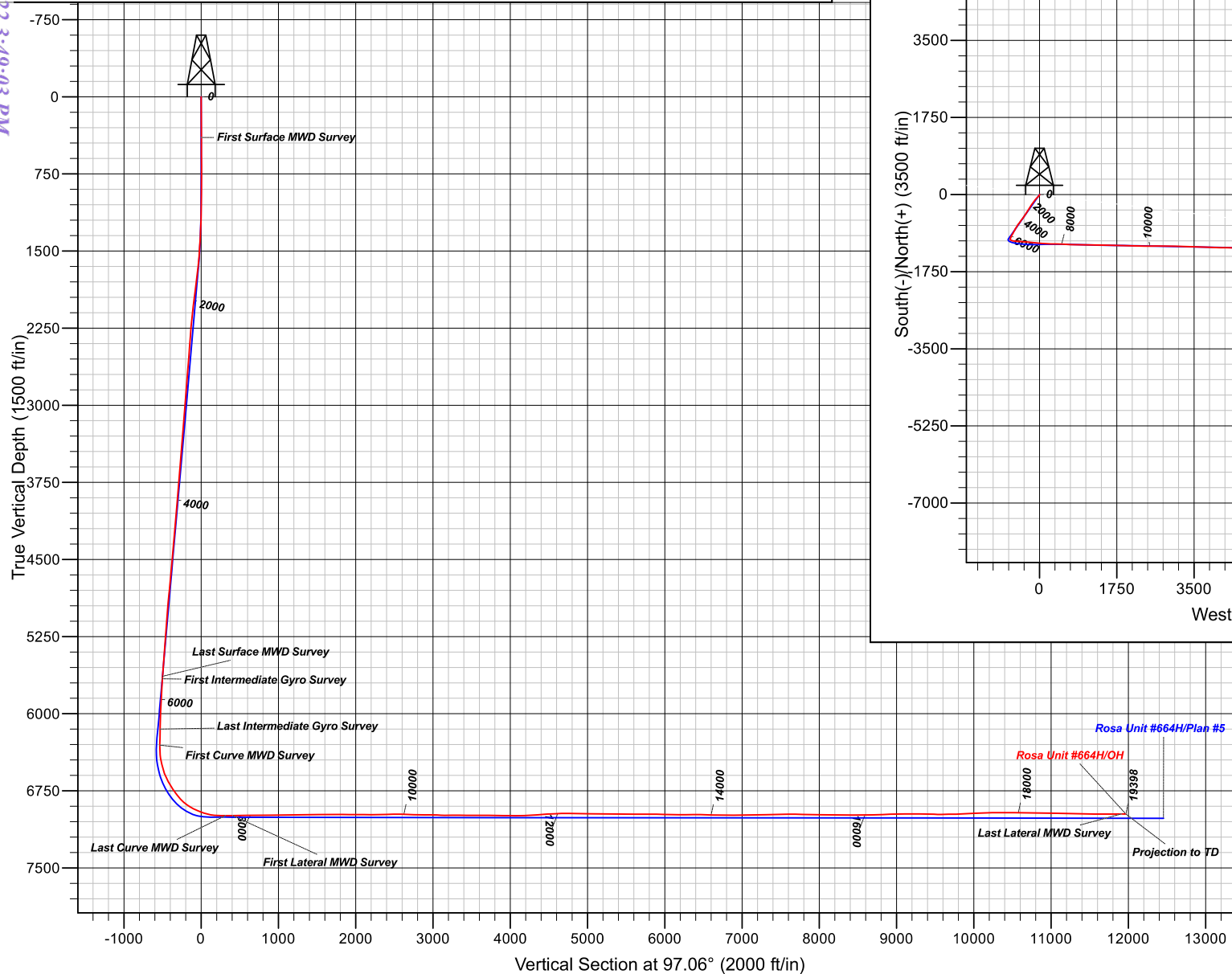
Company Name: Logos Operating LLC
 Project: Rio Arriba, NM NAD83
 Site: Rosa Unit 30
 Well: Rosa Unit #664H
 Wellbore: OH



WELL DETAILS: Rosa Unit #664H

GL 6394' & RKB 24.5' @ 6418.50ft (Ensign T223) 6394.00

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	
0.00	0.00	2136125.13	2848533.64	36.8695578	-107.4044821	B5 (664H)



Design: OH (Rosa Unit #664H/OH)

Created By: Janie Collins Date: 11:59, July 08 2022

PROJECT DETAILS: Rio Arriba, NM NAD83

Geodetic System: US State Plane 1983
 Datum: North American Datum 1983
 Ellipsoid: GRS 1980
 Zone: New Mexico Western Zone

System Datum: Mean Sea Level
 Local North: True



Logos Operating LLC

Rio Arriba, NM NAD83

Rosa Unit 30

Rosa Unit #664H - Slot B5 (664H)

OH

Design: OH

Standard Survey Report

08 July, 2022





Lonestar Consulting, LLC

Survey Report



Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #664H - Slot B5 (664H)
Project:	Rio Arriba, NM NAD83	TVD Reference:	GL 6394' & RKB 24.5' @ 6418.50ft (Ensign T223)
Site:	Rosa Unit 30	MD Reference:	GL 6394' & RKB 24.5' @ 6418.50ft (Ensign T223)
Well:	Rosa Unit #664H	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	edm

Project	Rio Arriba, NM NAD83		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Western Zone		

Site		Rosa Unit 30			
Site Position:		Northing:	2,136,112.13 usft	Latitude:	36.8695220
From:	Lat/Long	Easting:	2,848,540.75 usft	Longitude:	-107.4044580
Position Uncertainty:	0.00 ft	Slot Radius:	13.200 in		

Well	Rosa Unit #664H - Slot B5 (664H)					
Well Position	+N/-S	0.00 ft	Northing:	2,136,125.13 usft	Latitude:	36.8695578
	+E/-W	0.00 ft	Easting:	2,848,533.65 usft	Longitude:	-107.4044821
Position Uncertainty		0.00 ft	Wellhead Elevation:	ft	Ground Level:	6,394.00 ft
Grid Convergence:		0.26 °				

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM2022	6/2/2022	8.58	63.32	49,575.00000000

Design	OH				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)	
	0.00	0.00	0.00	97.06	

Survey Program	Date	7/8/2022			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
396.00	5,768.00	Survey #1 - Surface MWD Survey (OH)	MWD+HDGM	OWSG MWD + HDGM	
5,794.05	6,292.33	Survey #2 - Intermediate Gyro Survey (OH)	Standard Keeper 104	Standard Wireline Keeper ver 1.0.4	
6,450.01	7,680.00	Survey #3 - Curve MWD Survey (OH)	MWD+HDGM	OWSG MWD + HDGM	
7,774.00	19,398.00	Survey #4 - Lateral MWD Survey (OH)	MWD+HDGM	OWSG MWD + HDGM	

Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
396.00	0.82	147.10	395.99	-2.38	1.54	1.82	0.21	0.21	0.00	
485.00	0.87	150.54	484.98	-3.50	2.22	2.63	0.08	0.06	3.87	
574.00	0.77	152.32	573.97	-4.62	2.83	3.37	0.12	-0.11	2.00	
665.00	0.66	155.23	664.96	-5.64	3.33	4.00	0.13	-0.12	3.20	



Lonestar Consulting, LLC

Survey Report



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Site:	Rosa Unit 30	MD Reference:	GL 6394' & RKB 24.5' @ 6418.50ft (Ensign T223)
Well:	Rosa Unit #664H	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	edm

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
756.00	1.05	208.94	755.95	-6.84	3.15	3.96	0.93	0.43	59.02
851.00	1.18	211.52	850.94	-8.44	2.21	3.24	0.15	0.14	2.72
951.00	1.14	215.40	950.92	-10.13	1.10	2.34	0.09	-0.04	3.88
1,040.00	1.11	218.49	1,039.90	-11.52	0.05	1.47	0.08	-0.03	3.47
1,130.00	3.06	223.52	1,129.83	-13.95	-2.15	-0.42	2.17	2.17	5.59
1,222.00	4.34	218.55	1,221.64	-18.45	-6.01	-3.69	1.43	1.39	-5.40
1,316.00	6.20	219.82	1,315.24	-25.13	-11.47	-8.30	1.98	1.98	1.35
1,412.00	8.20	219.18	1,410.48	-34.42	-19.12	-14.74	2.08	2.08	-0.67
1,507.00	10.17	221.24	1,504.26	-45.98	-28.93	-23.06	2.10	2.07	2.17
1,601.00	12.13	221.13	1,596.48	-59.66	-40.90	-33.25	2.09	2.09	-0.12
1,695.00	13.96	221.38	1,688.05	-75.61	-54.89	-45.18	1.95	1.95	0.27
1,790.00	15.40	222.69	1,779.94	-93.48	-71.02	-58.99	1.56	1.52	1.38
1,886.00	15.88	222.70	1,872.39	-112.50	-88.57	-74.07	0.50	0.50	0.01
1,981.00	16.35	223.82	1,963.66	-131.70	-106.64	-89.65	0.59	0.49	1.18
2,076.00	16.26	222.64	2,054.84	-151.13	-124.91	-105.39	0.36	-0.09	-1.24
2,171.00	15.14	216.78	2,146.30	-170.86	-141.35	-119.28	2.04	-1.18	-6.17
2,267.00	14.10	211.72	2,239.19	-190.85	-155.00	-130.37	1.71	-1.08	-5.27
2,364.00	13.51	210.20	2,333.39	-210.69	-166.91	-139.75	0.71	-0.61	-1.57
2,459.00	13.76	211.62	2,425.71	-229.90	-178.42	-148.81	0.44	0.26	1.49
2,554.00	13.61	212.44	2,518.01	-248.95	-190.34	-158.30	0.26	-0.16	0.86
2,650.00	13.92	212.33	2,611.25	-268.24	-202.57	-168.07	0.32	0.32	-0.11
2,745.00	14.25	212.84	2,703.39	-287.72	-215.02	-178.03	0.37	0.35	0.54
2,840.00	14.33	213.28	2,795.45	-307.37	-227.82	-188.31	0.14	0.08	0.46
2,935.00	13.65	213.09	2,887.64	-326.59	-240.39	-198.42	0.72	-0.72	-0.20
3,031.00	13.13	212.25	2,981.03	-345.31	-252.39	-208.04	0.58	-0.54	-0.87
3,126.00	12.98	213.58	3,073.57	-363.32	-264.05	-217.39	0.35	-0.16	1.40
3,221.00	12.63	214.09	3,166.21	-380.81	-275.77	-226.88	0.39	-0.37	0.54
3,317.00	13.07	212.13	3,259.80	-398.69	-287.43	-236.25	0.65	0.46	-2.04
3,412.00	13.49	213.55	3,352.26	-417.03	-299.26	-245.74	0.56	0.44	1.49
3,507.00	13.51	215.41	3,444.64	-435.30	-311.82	-255.95	0.46	0.02	1.96
3,602.00	14.15	214.63	3,536.89	-453.90	-324.85	-266.59	0.70	0.67	-0.82
3,698.00	13.29	213.75	3,630.15	-472.73	-337.65	-276.98	0.92	-0.90	-0.92
3,793.00	13.55	212.82	3,722.55	-491.17	-349.74	-286.72	0.36	0.27	-0.98
3,888.00	13.17	211.54	3,814.98	-509.74	-361.44	-296.04	0.51	-0.40	-1.35
3,983.00	13.13	212.16	3,907.49	-528.10	-372.84	-305.11	0.15	-0.04	0.65
4,078.00	13.99	215.34	3,999.84	-546.60	-385.23	-315.12	1.20	0.91	3.35
4,173.00	13.59	216.71	4,092.11	-564.92	-398.54	-326.09	0.54	-0.42	1.44
4,269.00	14.16	216.81	4,185.30	-583.36	-412.32	-337.49	0.59	0.59	0.10
4,364.00	15.25	216.82	4,277.19	-602.67	-426.77	-349.46	1.15	1.15	0.01
4,459.00	13.20	215.49	4,369.27	-621.50	-440.56	-360.83	2.19	-2.16	-1.40
4,554.00	12.13	217.05	4,461.96	-638.30	-452.87	-370.98	1.18	-1.13	1.64
4,649.00	12.67	218.45	4,554.75	-654.43	-465.36	-381.40	0.65	0.57	1.47



Lonestar Consulting, LLC

Survey Report



Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #664H - Slot B5 (664H)
Project:	Rio Arriba, NM NAD83	TVD Reference:	GL 6394' & RKB 24.5' @ 6418.50ft (Ensign T223)
Site:	Rosa Unit 30	MD Reference:	GL 6394' & RKB 24.5' @ 6418.50ft (Ensign T223)
Well:	Rosa Unit #664H	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	edm

Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
4,745.00	14.07	217.03	4,648.14	-671.99	-478.93	-392.71	1.50	1.46	-1.48	
4,840.00	15.19	214.46	4,740.06	-691.47	-492.93	-404.21	1.36	1.18	-2.71	
4,935.00	17.41	211.71	4,831.24	-713.82	-507.45	-415.86	2.47	2.34	-2.89	
5,030.00	16.68	212.74	4,922.07	-737.38	-522.29	-427.70	0.83	-0.77	1.08	
5,125.00	15.30	211.04	5,013.39	-759.59	-536.13	-438.70	1.53	-1.45	-1.79	
5,198.00	14.39	208.31	5,083.95	-775.83	-545.40	-445.91	1.57	-1.25	-3.74	
5,293.00	15.72	207.67	5,175.69	-797.62	-556.97	-454.71	1.41	1.40	-0.67	
5,388.00	15.34	207.06	5,267.22	-820.21	-568.66	-463.54	0.44	-0.40	-0.64	
5,484.00	14.32	207.08	5,360.02	-842.09	-579.85	-471.95	1.06	-1.06	0.02	
5,579.00	13.82	209.35	5,452.17	-862.44	-590.76	-480.28	0.78	-0.53	2.39	
5,673.00	13.60	212.79	5,543.50	-881.52	-602.24	-489.33	0.90	-0.23	3.66	
5,768.00	12.77	212.28	5,635.99	-899.78	-613.90	-498.65	0.88	-0.87	-0.54	
5,794.05	12.54	213.40	5,661.41	-904.58	-617.00	-501.14	1.29	-0.88	4.30	
5,819.85	13.25	213.31	5,686.56	-909.39	-620.16	-503.69	2.75	2.75	-0.35	
5,845.45	13.16	212.18	5,711.48	-914.31	-623.32	-506.22	1.07	-0.35	-4.41	
5,871.36	12.79	211.94	5,736.73	-919.24	-626.41	-508.68	1.44	-1.43	-0.93	
5,893.66	12.72	210.94	5,758.48	-923.44	-628.98	-510.71	1.04	-0.31	-4.48	
5,920.92	12.59	208.75	5,785.08	-928.62	-631.95	-513.03	1.82	-0.48	-8.03	
5,943.64	12.63	207.84	5,807.25	-932.98	-634.30	-514.82	0.89	0.18	-4.01	
5,968.82	12.36	205.40	5,831.83	-937.85	-636.74	-516.65	2.35	-1.07	-9.69	
5,995.09	12.10	203.36	5,857.51	-942.92	-639.04	-518.30	1.92	-0.99	-7.77	
6,019.15	11.94	201.89	5,881.04	-947.54	-640.97	-519.65	1.44	-0.67	-6.11	
6,045.74	11.95	199.40	5,907.05	-952.69	-642.91	-520.94	1.94	0.04	-9.36	
6,069.24	11.55	199.27	5,930.06	-957.21	-644.49	-521.96	1.71	-1.70	-0.55	
6,094.70	11.23	200.90	5,955.02	-961.93	-646.22	-523.09	1.78	-1.26	6.40	
6,119.83	10.80	201.02	5,979.69	-966.41	-647.94	-524.24	1.71	-1.71	0.48	
6,143.73	10.20	202.64	6,003.19	-970.46	-649.56	-525.35	2.80	-2.51	6.78	
6,168.63	9.86	202.99	6,027.71	-974.46	-651.24	-526.53	1.39	-1.37	1.41	
6,194.06	9.28	202.95	6,052.78	-978.35	-652.89	-527.69	2.28	-2.28	-0.16	
6,218.63	9.27	203.49	6,077.03	-981.99	-654.45	-528.79	0.36	-0.04	2.20	
6,243.64	8.90	201.81	6,101.73	-985.63	-655.97	-529.85	1.82	-1.48	-6.72	
6,268.44	8.77	201.56	6,126.23	-989.17	-657.38	-530.82	0.55	-0.52	-1.01	
6,292.33	8.43	201.06	6,149.85	-992.50	-658.68	-531.70	1.46	-1.42	-2.09	
6,450.00	6.88	192.56	6,306.12	-1,012.50	-664.88	-535.40	1.21	-0.98	-5.39	
6,545.00	9.41	149.56	6,400.24	-1,024.77	-662.18	-531.21	6.74	2.66	-45.26	
6,577.00	13.78	126.68	6,431.59	-1,029.30	-657.80	-526.30	19.58	13.66	-71.50	
6,640.00	18.43	114.57	6,492.12	-1,037.93	-642.71	-510.27	9.07	7.38	-19.22	
6,735.00	26.69	103.44	6,579.81	-1,049.16	-608.23	-474.66	9.75	8.69	-11.72	
6,830.00	35.85	96.49	6,660.95	-1,057.28	-559.72	-425.52	10.35	9.64	-7.32	
6,925.00	41.51	90.39	6,735.11	-1,060.65	-500.52	-366.37	7.18	5.96	-6.42	
6,973.00	45.05	91.72	6,770.05	-1,061.26	-467.63	-333.65	7.62	7.37	2.77	
7,020.00	47.09	93.41	6,802.66	-1,062.79	-433.82	-299.90	5.05	4.34	3.60	



Lonestar Consulting, LLC

Survey Report



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Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	edm

Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
7,067.00	50.74	92.91	6,833.54	-1,064.74	-398.45	-264.57	7.81	7.77	-1.06	
7,114.00	56.67	94.32	6,861.35	-1,067.14	-360.67	-226.77	12.85	12.62	3.00	
7,161.00	61.38	96.03	6,885.54	-1,070.79	-320.55	-186.51	10.49	10.02	3.64	
7,208.00	65.45	97.50	6,906.57	-1,075.75	-278.82	-144.49	9.10	8.66	3.13	
7,256.00	69.17	96.78	6,925.08	-1,081.25	-234.89	-100.21	7.87	7.75	-1.50	
7,303.00	72.56	96.31	6,940.48	-1,086.31	-190.78	-55.82	7.27	7.21	-1.00	
7,350.00	74.17	96.09	6,953.94	-1,091.17	-146.01	-10.79	3.45	3.43	-0.47	
7,397.00	75.76	96.15	6,966.13	-1,096.01	-100.88	34.59	3.39	3.38	0.13	
7,444.01	78.72	95.89	6,976.51	-1,100.81	-55.30	80.42	6.32	6.30	-0.55	
7,491.01	83.56	94.68	6,983.75	-1,105.09	-9.07	126.82	10.61	10.30	-2.57	
7,585.00	88.19	92.05	6,990.51	-1,110.58	84.48	220.34	5.66	4.93	-2.80	
7,680.00	90.50	91.92	6,991.59	-1,113.87	179.41	314.96	2.44	2.43	-0.14	
7,774.00	90.44	91.79	6,990.82	-1,116.91	273.36	408.56	0.15	-0.06	-0.14	
7,868.00	90.48	92.34	6,990.07	-1,120.30	367.29	502.20	0.59	0.04	0.59	
7,963.00	90.54	92.28	6,989.22	-1,124.13	462.21	596.87	0.09	0.06	-0.06	
8,057.00	90.37	92.22	6,988.47	-1,127.82	556.14	690.54	0.19	-0.18	-0.06	
8,151.00	89.97	92.33	6,988.20	-1,131.55	650.06	784.21	0.44	-0.43	0.12	
8,247.00	90.97	91.29	6,987.41	-1,134.58	746.01	879.80	1.50	1.04	-1.08	
8,342.00	90.57	91.42	6,986.13	-1,136.83	840.97	974.32	0.44	-0.42	0.14	
8,437.00	90.44	91.09	6,985.29	-1,138.91	935.95	1,068.83	0.37	-0.14	-0.35	
8,532.00	90.07	91.01	6,984.87	-1,140.65	1,030.93	1,163.31	0.40	-0.39	-0.08	
8,627.00	91.20	91.49	6,983.82	-1,142.72	1,125.90	1,257.81	1.29	1.19	0.51	
8,722.00	90.80	91.24	6,982.16	-1,144.99	1,220.86	1,352.33	0.50	-0.42	-0.26	
8,818.00	90.27	91.26	6,981.26	-1,147.08	1,316.83	1,447.83	0.55	-0.55	0.02	
8,912.00	89.67	91.49	6,981.31	-1,149.34	1,410.80	1,541.37	0.68	-0.64	0.24	
9,007.00	90.84	91.05	6,980.89	-1,151.44	1,505.78	1,635.88	1.32	1.23	-0.46	
9,101.00	90.17	90.60	6,980.06	-1,152.80	1,599.76	1,729.32	0.86	-0.71	-0.48	
9,196.00	89.70	90.52	6,980.17	-1,153.72	1,694.76	1,823.71	0.50	-0.49	-0.08	
9,291.00	89.13	90.56	6,981.14	-1,154.62	1,789.75	1,918.09	0.60	-0.60	0.04	
9,387.00	90.40	91.46	6,981.53	-1,156.31	1,885.73	2,013.55	1.62	1.32	0.94	
9,482.00	89.80	91.64	6,981.37	-1,158.88	1,980.70	2,108.12	0.66	-0.63	0.19	
9,577.00	89.26	91.88	6,982.15	-1,161.80	2,075.65	2,202.71	0.62	-0.57	0.25	
9,673.00	91.37	91.09	6,981.62	-1,164.29	2,171.61	2,298.24	2.35	2.20	-0.82	
9,768.00	90.80	91.35	6,979.82	-1,166.31	2,266.57	2,392.73	0.66	-0.60	0.27	
9,863.00	90.57	91.79	6,978.68	-1,168.91	2,361.53	2,487.29	0.52	-0.24	0.46	
9,958.00	89.60	89.84	6,978.54	-1,170.26	2,456.51	2,581.72	2.29	-1.02	-2.05	
10,054.00	88.89	89.66	6,979.81	-1,169.84	2,552.50	2,676.93	0.76	-0.74	-0.19	
10,149.00	88.23	90.20	6,982.20	-1,169.73	2,647.47	2,771.17	0.90	-0.69	0.57	
10,244.00	90.20	90.20	6,983.50	-1,170.06	2,742.46	2,865.47	2.07	2.07	0.00	
10,340.00	89.13	90.02	6,984.06	-1,170.24	2,838.45	2,960.77	1.13	-1.11	-0.19	
10,435.00	88.33	90.59	6,986.16	-1,170.75	2,933.43	3,055.08	1.03	-0.84	0.60	
10,530.00	89.53	90.91	6,987.94	-1,171.99	3,028.40	3,149.49	1.31	1.26	0.34	



Lonestar Consulting, LLC

Survey Report



Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #664H - Slot B5 (664H)
Project:	Rio Arriba, NM NAD83	TVD Reference:	GL 6394' & RKB 24.5' @ 6418.50ft (Ensign T223)
Site:	Rosa Unit 30	MD Reference:	GL 6394' & RKB 24.5' @ 6418.50ft (Ensign T223)
Well:	Rosa Unit #664H	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	edm

Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
10,626.00	90.77	91.54	6,987.69	-1,174.04	3,124.38	3,244.99	1.45	1.29	0.66	
10,721.00	89.93	91.33	6,987.11	-1,176.42	3,219.35	3,339.53	0.91	-0.88	-0.22	
10,816.00	89.16	90.82	6,987.86	-1,178.21	3,314.32	3,434.01	0.97	-0.81	-0.54	
10,911.00	90.40	92.01	6,988.23	-1,180.55	3,409.29	3,528.54	1.81	1.31	1.25	
11,007.00	89.77	92.33	6,988.08	-1,184.19	3,505.22	3,624.19	0.74	-0.66	0.33	
11,102.00	89.20	93.00	6,988.94	-1,188.60	3,600.12	3,718.91	0.93	-0.60	0.71	
11,197.00	88.93	92.81	6,990.49	-1,193.42	3,694.98	3,813.65	0.35	-0.28	-0.20	
11,293.00	90.37	91.70	6,991.07	-1,197.19	3,790.90	3,909.30	1.89	1.50	-1.16	
11,388.00	90.00	92.02	6,990.77	-1,200.28	3,885.85	4,003.91	0.51	-0.39	0.34	
11,482.00	89.30	91.45	6,991.34	-1,203.12	3,979.80	4,097.50	0.96	-0.74	-0.61	
11,578.00	91.27	90.48	6,990.86	-1,204.74	4,075.78	4,192.95	2.29	2.05	-1.01	
11,673.00	93.78	90.75	6,986.68	-1,205.76	4,170.68	4,287.25	2.66	2.64	0.28	
11,768.00	93.08	90.11	6,981.00	-1,206.47	4,265.50	4,381.45	1.00	-0.74	-0.67	
11,863.00	92.51	90.40	6,976.36	-1,206.89	4,360.39	4,475.67	0.67	-0.60	0.31	
11,958.00	91.74	90.03	6,972.84	-1,207.25	4,455.32	4,569.93	0.90	-0.81	-0.39	
12,054.00	90.77	90.57	6,970.74	-1,207.75	4,551.30	4,665.23	1.16	-1.01	0.56	
12,149.00	90.07	90.26	6,970.04	-1,208.44	4,646.29	4,759.59	0.81	-0.74	-0.33	
12,244.00	89.40	90.89	6,970.48	-1,209.39	4,741.29	4,853.98	0.97	-0.71	0.66	
12,339.00	89.06	90.66	6,971.76	-1,210.68	4,836.27	4,948.40	0.43	-0.36	-0.24	
12,434.01	88.56	90.28	6,973.73	-1,211.46	4,931.24	5,042.75	0.66	-0.53	-0.40	
12,530.00	90.13	91.40	6,974.83	-1,212.86	5,027.21	5,138.17	2.01	1.64	1.17	
12,625.00	89.77	91.63	6,974.91	-1,215.38	5,122.18	5,232.72	0.45	-0.38	0.24	
12,720.00	89.43	91.17	6,975.57	-1,217.70	5,217.15	5,327.26	0.60	-0.36	-0.48	
12,815.00	89.26	91.01	6,976.66	-1,219.50	5,312.13	5,421.74	0.25	-0.18	-0.17	
12,911.00	89.00	90.91	6,978.12	-1,221.11	5,408.10	5,517.18	0.29	-0.27	-0.10	
13,006.00	90.54	91.14	6,978.50	-1,222.81	5,503.08	5,611.65	1.64	1.62	0.24	
13,101.00	90.33	91.68	6,977.78	-1,225.15	5,598.05	5,706.19	0.61	-0.22	0.57	
13,196.00	89.80	91.92	6,977.67	-1,228.13	5,693.00	5,800.79	0.61	-0.56	0.25	
13,290.00	89.60	92.16	6,978.16	-1,231.48	5,786.94	5,894.43	0.33	-0.21	0.26	
13,386.00	88.93	92.59	6,979.39	-1,235.46	5,882.85	5,990.10	0.83	-0.70	0.45	
13,481.00	89.60	91.35	6,980.61	-1,238.72	5,977.79	6,084.71	1.48	0.71	-1.31	
13,576.00	88.83	91.23	6,981.91	-1,240.86	6,072.75	6,179.22	0.82	-0.81	-0.13	
13,670.00	90.64	90.64	6,982.35	-1,242.40	6,166.74	6,272.68	2.03	1.93	-0.63	
13,765.00	90.23	90.81	6,981.63	-1,243.60	6,261.73	6,367.10	0.47	-0.43	0.18	
13,861.00	89.77	90.76	6,981.63	-1,244.91	6,357.72	6,462.52	0.48	-0.48	-0.05	
13,955.00	89.33	91.16	6,982.37	-1,246.49	6,451.70	6,555.99	0.63	-0.47	0.43	
14,050.00	89.13	91.18	6,983.64	-1,248.43	6,546.67	6,650.48	0.21	-0.21	0.02	
14,146.00	88.73	91.51	6,985.43	-1,250.68	6,642.63	6,745.98	0.54	-0.42	0.34	
14,241.00	88.63	91.24	6,987.62	-1,252.96	6,737.58	6,840.49	0.30	-0.11	-0.28	
14,336.00	90.67	91.32	6,988.20	-1,255.08	6,832.55	6,935.00	2.15	2.15	0.08	
14,431.00	89.90	91.80	6,987.73	-1,257.67	6,927.51	7,029.56	0.96	-0.81	0.51	
14,525.00	92.07	91.50	6,986.12	-1,260.37	7,021.45	7,123.12	2.33	2.31	-0.32	



Lonestar Consulting, LLC

Survey Report



Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #664H - Slot B5 (664H)
Project:	Rio Arriba, NM NAD83	TVD Reference:	GL 6394' & RKB 24.5' @ 6418.50ft (Ensign T223)
Site:	Rosa Unit 30	MD Reference:	GL 6394' & RKB 24.5' @ 6418.50ft (Ensign T223)
Well:	Rosa Unit #664H	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	edm

Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
14,620.00	91.51	91.30	6,983.15	-1,262.69	7,116.37	7,217.61	0.63	-0.59	-0.21	
14,715.00	91.04	92.03	6,981.03	-1,265.45	7,211.31	7,312.17	0.91	-0.49	0.77	
14,810.00	90.50	91.89	6,979.76	-1,268.70	7,306.25	7,406.78	0.59	-0.57	-0.15	
14,905.00	90.47	92.29	6,978.95	-1,272.17	7,401.18	7,501.42	0.42	-0.03	0.42	
15,001.00	90.00	93.36	6,978.56	-1,276.90	7,497.06	7,597.16	1.22	-0.49	1.11	
15,096.00	89.77	93.86	6,978.75	-1,282.88	7,591.87	7,691.99	0.58	-0.24	0.53	
15,190.00	89.77	91.37	6,979.13	-1,287.17	7,685.77	7,785.70	2.65	0.00	-2.65	
15,285.00	89.00	91.51	6,980.15	-1,289.55	7,780.73	7,880.23	0.82	-0.81	0.15	
15,379.00	88.76	91.08	6,981.98	-1,291.68	7,874.69	7,973.74	0.52	-0.26	-0.46	
15,474.00	89.83	90.57	6,983.15	-1,293.05	7,969.67	8,068.17	1.25	1.13	-0.54	
15,569.00	89.03	90.66	6,984.10	-1,294.07	8,064.66	8,162.56	0.85	-0.84	0.09	
15,664.00	88.89	90.50	6,985.82	-1,295.03	8,159.64	8,256.94	0.22	-0.15	-0.17	
15,759.00	90.00	90.63	6,986.74	-1,295.96	8,254.63	8,351.33	1.18	1.17	0.14	
15,854.00	91.31	89.85	6,985.66	-1,296.36	8,349.62	8,445.65	1.60	1.38	-0.82	
15,949.00	90.57	89.38	6,984.10	-1,295.72	8,444.60	8,539.83	0.92	-0.78	-0.49	
16,044.00	90.23	89.13	6,983.44	-1,294.49	8,539.59	8,633.95	0.44	-0.36	-0.26	
16,139.00	89.80	89.41	6,983.41	-1,293.28	8,634.58	8,728.07	0.54	-0.45	0.29	
16,234.00	92.34	90.57	6,981.64	-1,293.26	8,729.56	8,822.32	2.94	2.67	1.22	
16,329.00	91.61	90.54	6,978.36	-1,294.18	8,824.50	8,916.66	0.77	-0.77	-0.03	
16,424.00	91.00	90.46	6,976.20	-1,295.01	8,919.47	9,011.01	0.65	-0.64	-0.08	
16,520.00	90.40	90.57	6,975.03	-1,295.87	9,015.46	9,106.38	0.64	-0.62	0.11	
16,615.00	89.93	90.80	6,974.75	-1,297.01	9,110.45	9,200.79	0.55	-0.49	0.24	
16,710.00	89.73	90.45	6,975.03	-1,298.04	9,205.44	9,295.19	0.42	-0.21	-0.37	
16,805.00	89.06	90.17	6,976.04	-1,298.56	9,300.44	9,389.52	0.76	-0.71	-0.29	
16,900.00	88.59	90.72	6,977.99	-1,299.30	9,395.41	9,483.87	0.76	-0.49	0.58	
16,995.00	90.47	90.23	6,978.76	-1,300.08	9,490.40	9,578.24	2.05	1.98	-0.52	
17,091.00	89.70	89.53	6,978.62	-1,299.88	9,586.40	9,673.48	1.08	-0.80	-0.73	
17,186.00	91.07	90.25	6,977.98	-1,299.70	9,681.40	9,767.74	1.63	1.44	0.76	
17,281.00	92.71	90.69	6,974.85	-1,300.48	9,776.34	9,862.05	1.79	1.73	0.46	
17,376.01	92.38	90.65	6,970.63	-1,301.59	9,871.24	9,956.37	0.35	-0.35	-0.04	
17,472.01	91.64	90.49	6,967.27	-1,302.54	9,967.17	10,051.70	0.79	-0.77	-0.17	
17,567.00	91.41	90.23	6,964.74	-1,303.14	10,062.13	10,146.00	0.37	-0.24	-0.27	
17,661.00	90.67	90.76	6,963.03	-1,303.95	10,156.11	10,239.37	0.97	-0.79	0.56	
17,757.00	90.13	90.02	6,962.36	-1,304.60	10,252.10	10,334.72	0.95	-0.56	-0.77	
17,852.00	89.60	90.01	6,962.58	-1,304.63	10,347.10	10,429.00	0.56	-0.56	-0.01	
17,947.00	89.23	89.45	6,963.55	-1,304.18	10,442.10	10,523.22	0.71	-0.39	-0.59	
18,043.00	90.23	92.07	6,964.01	-1,305.46	10,538.08	10,618.63	2.92	1.04	2.73	
18,138.00	89.56	91.33	6,964.18	-1,308.27	10,633.03	10,713.21	1.05	-0.71	-0.78	
18,233.00	89.40	91.60	6,965.04	-1,310.70	10,728.00	10,807.76	0.33	-0.17	0.28	
18,328.00	88.90	91.26	6,966.45	-1,313.07	10,822.96	10,902.29	0.64	-0.53	-0.36	
18,424.00	89.60	91.79	6,967.71	-1,315.63	10,918.92	10,997.83	0.91	0.73	0.55	
18,519.00	89.26	91.83	6,968.65	-1,318.63	11,013.86	11,092.43	0.36	-0.36	0.04	



Lonestar Consulting, LLC

Survey Report



Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #664H - Slot B5 (664H)
Project:	Rio Arriba, NM NAD83	TVD Reference:	GL 6394' & RKB 24.5' @ 6418.50ft (Ensign T223)
Site:	Rosa Unit 30	MD Reference:	GL 6394' & RKB 24.5' @ 6418.50ft (Ensign T223)
Well:	Rosa Unit #664H	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	edm

Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
18,614.00	88.46	91.82	6,970.54	-1,321.65	11,108.80	11,187.01	0.84	-0.84	-0.01	
18,709.00	89.40	91.63	6,972.32	-1,324.51	11,203.74	11,281.58	1.01	0.99	-0.20	
18,804.00	89.00	92.33	6,973.65	-1,327.79	11,298.67	11,376.20	0.85	-0.42	0.74	
18,895.00	88.76	92.49	6,975.42	-1,331.62	11,389.57	11,466.88	0.32	-0.26	0.18	
18,984.00	89.87	91.45	6,976.49	-1,334.68	11,478.51	11,555.52	1.71	1.25	-1.17	
19,073.00	89.73	91.78	6,976.80	-1,337.19	11,567.47	11,644.12	0.40	-0.16	0.37	
19,162.00	90.64	91.18	6,976.51	-1,339.49	11,656.44	11,732.70	1.22	1.02	-0.67	
19,254.00	90.27	92.24	6,975.78	-1,342.23	11,748.40	11,824.29	1.22	-0.40	1.15	
19,341.00	89.83	93.87	6,975.70	-1,346.87	11,835.27	11,911.08	1.94	-0.51	1.87	
19,398.00	89.83	93.87	6,975.87	-1,350.71	11,892.14	11,967.99	0.00	0.00	0.00	

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
664H POE Rev 2	0.00	0.00	7,007.00	-1,126.80	182.19	2,134,999.16	2,848,720.90	36.8664627	-107.4038593	
- hit/miss target										
- Shape										
- Point										
- actual wellpath misses target center by 20.07ft at 7683.07ft MD (6991.57 TVD, -1113.97 N, 182.48 E)										
664H FPerf	0.00	0.00	7,017.00	-1,361.03	12,280.00	2,134,819.26	2,860,819.62	36.8658120	-107.3625030	
- hit/miss target										
- Shape										
- Point										
- actual wellpath misses target center by 390.17ft at 19398.00ft MD (6975.87 TVD, -1350.71 N, 11892.14 E)										
664H BHL Rev 2	0.00	0.00	7,017.00	-1,363.17	12,380.05	2,134,817.57	2,860,919.67	36.8658060	-107.3621610	
- hit/miss target										
- Shape										
- Point										
- actual wellpath misses target center by 489.80ft at 19398.00ft MD (6975.87 TVD, -1350.71 N, 11892.14 E)										

Design Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
396.00	395.99	-2.38	1.54	First Surface MWD Survey	
5,768.00	5,635.99	-899.78	-613.90	Last Surface MWD Survey	
5,794.05	5,661.41	-904.58	-616.99	First Intermediate Gyro Survey	
6,292.33	6,149.85	-992.50	-658.68	Last Intermediate Gyro Survey	
6,450.00	6,306.12	-1,012.50	-664.88	First Curve MWD Survey	
7,680.00	6,991.59	-1,113.87	179.41	Last Curve MWD Survey	
7,774.00	6,990.82	-1,116.91	273.36	First Lateral MWD Survey	
19,341.00	6,975.70	-1,346.87	11,835.27	Last Lateral MWD Survey	
19,398.00	6,975.87	-1,350.71	11,892.14	Projection to TD	

Checked By: _____	Approved By: _____	Date: _____
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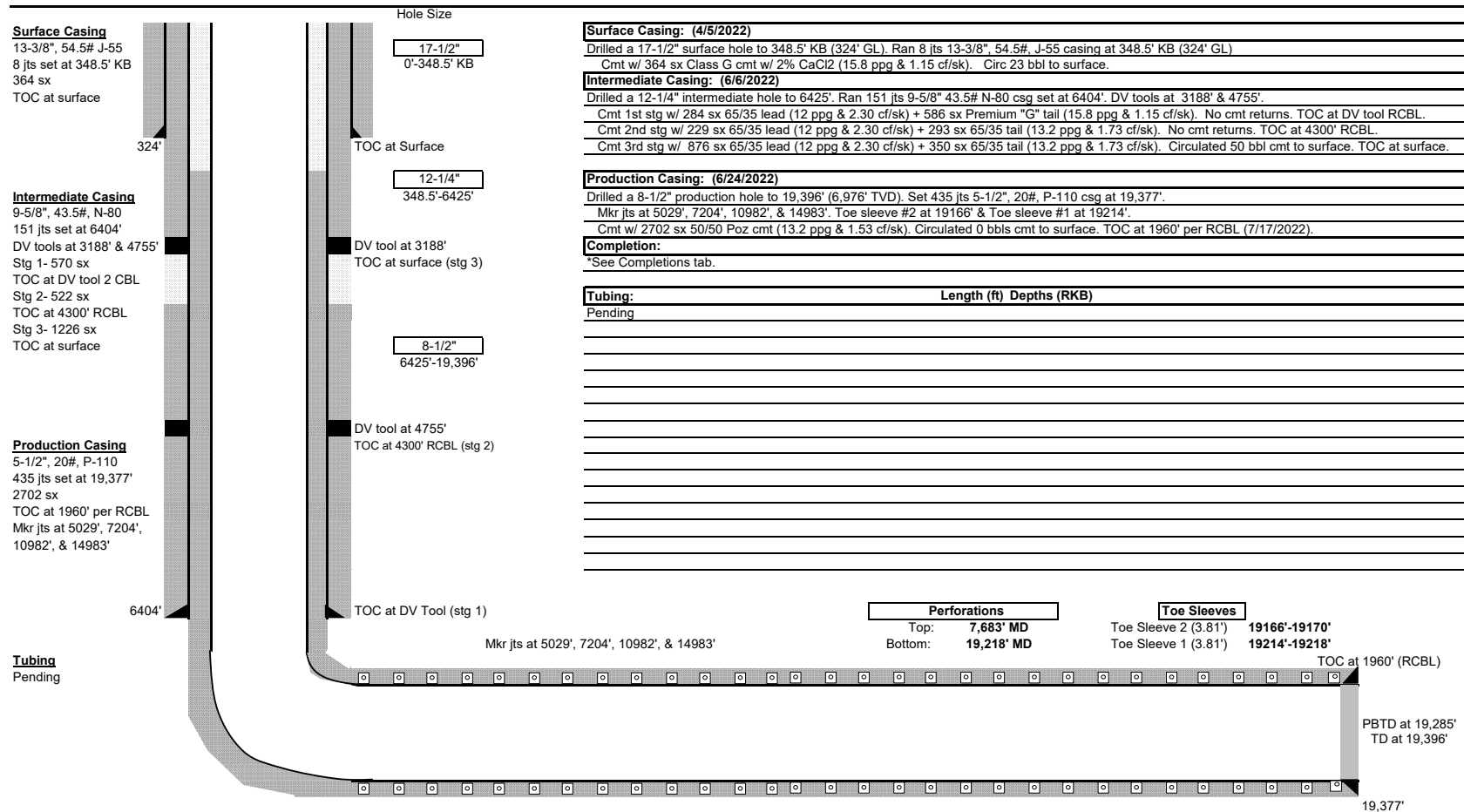


Well Name: Rosa Unit 664H
 Location: K - Sec 30, T31N, R05W, 2260' FSL, 966' FWL
 County: Rio Arriba
 API #: 30-039-31418
 Co-ordinates: 36.8695578, -107.4044821 NAD83
 Operator: LOGOS Operating, LLC

Wellbore Schematic

Ground Elevation: 6394'
 KB Elevation: 6418.5'
 TD (TVD): 6976'
 TD (MD): 19,396'
 PBTD: 19,285'

Prepared By: 7/21/2022 Gomez
 Reviewed By: 8/1/2022 Moss
 Last Updated: 9/12/2022 Moss
 Spud Date: 4/4/2022
 Completion Date:
 Last Workover Date:



Formation Tops: (MD)			
Nacimiento	Surface	Chacra	4697'
Ojo Alamo	2549'	Cliff House	5549'
Kirtland	2678'	Menefee	5591'
Fruitland	3127'	Point Lookout	5770'
Pictured Cliffs	3492'	Mancos	6296'
Lewis	3588'		

District I

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District II

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Phone:(575) 748-1283 Fax:(575) 748-9720

District III

1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170

District IV

1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

ACKNOWLEDGMENTS

Action 144454

ACKNOWLEDGMENTS

Operator: LOGOS OPERATING, LLC 2010 Afton Place Farmington, NM 87401	OGRID: 289408
	Action Number: 144454
	Action Type: [C-104] Completion Packet (C-104C)

ACKNOWLEDGMENTS

☒	I hereby certify that the required Water Use Report has been, or will be, submitted for this wells completion.
☒	I hereby certify that the required FracFocus disclosure has been, or will be, submitted for this wells completion.

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COMMENTS

Action 144454

COMMENTS

Operator: LOGOS OPERATING, LLC 2010 Afton Place Farmington, NM 87401	OGRID: 289408
	Action Number: 144454
	Action Type: [C-104] Completion Packet (C-104C)

COMMENTS

Created By	Comment	Comment Date
jagarcia	Approved, John Garcia, Petroleum Engineer	9/19/2022

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CONDITIONS

Action 144454

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Operator: LOGOS OPERATING, LLC 2010 Afton Place Farmington, NM 87401	OGRID: 289408
	Action Number: 144454
	Action Type: [C-104] Completion Packet (C-104C)

CONDITIONS

Created By	Condition	Condition Date
jagarcia	C-104RT expires 12/18/2022	9/19/2022