

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

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 RT - Test Allowable
⁴ API Number 30 – 039-31413	⁵ Pool Name Basin Mancos	⁶ Pool Code 97232
⁷ Property Code 32608	⁸ Property Name Rosa Unit	⁹ Well Number 652H

II. ¹⁰ Surface Location

UL or lot no. A	Section 25	Township 31N	Range 6W	Lot Idn 1	Feet from the 1076	North/South Line North	Feet from the 253	East/West line East	County Rio Arriba
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¹¹ Bottom Hole Location

UL or lot no. D	Section 26	Township 31N	Range 6W	Lot Idn	Feet from the 1007	North/South line North	Feet from the 168	East/West line West	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

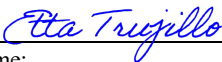
¹⁸ Transporter OGRID	¹⁹ Transporter Name and Address	²⁰ O/G/W
373888	Harvest Four Corners, LLC 1755 Arroyo Dr. Bloomfield, NM 87413	G

IV. Well Completion Data

²¹ Spud Date 4/11/2022	²² Ready Date ~10/17/2023	²³ TD 16,165’ MD / 7,232’ TVD	²⁴ PBTD 16,043’ MD / 7,230’ TVD	²⁵ Perforations 7,610’ MD /15,998’ MD 7,244’ TVD / 7,230’ TVD	²⁶ DHC, MC R-13457
²⁷ Hole Size		²⁸ Casing & Tubing Size	²⁹ Depth Set		³⁰ Sacks Cement
17.5”		13-3/8”, 54.5#, J-55	322’		365sx (75bbbls, 427cf)
12.5”		9-5/8”, 47#, L-80	6241’		2487sx (767bbbls, 4306cf) DV tool @ 4658’ & 3101’
8.5”		5.5”, 20#, HCP-110	16,137’		2133sx (634bbbls, 3448cf) TOC @ 1,200’
		2-7/8”, 6.5#, J-55	pending		

V. Well Test Data

³¹ Date New Oil	³² Gas Delivery Date ~10/17/2023	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: 		OIL CONSERVATION DIVISION	
Printed name: Etta Trujillo		Approved by: PATRICIA MARTINEZ	
Title: Regulatory Specialist		Title: PETROLEUM SPECIALIST	
E-mail Address: etrujillo@logosresourcesllc.com		Approval Date: 10/18/2023	
Date: 10/17/2023	Phone: (505) 324-4154	RT EXPIRES 1/17/2024	

1625 N. French Drive, Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720District II
811 S. First Street, Artesia, NM 88210
Phone: (575) 748-1283 Fax: (575) 748-9720District III
1000 Rio Brazos Road, Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170District IV
1220 S. St. Francis Drive, Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462State of New Mexico
Energy, Minerals & Natural Resources DepartmentForm O-18 Page 2 of 18
Revised August 1, 2011Submit one copy to
Appropriate District OfficeOIL CONSERVATION DIVISION
1220 South St. Francis Drive
Santa Fe, NM 87505☐ AMENDED REPORT

AS-DRILLED WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-039-31413	² Pool Code 97232	³ Pool Name BASIN MANCOS
⁴ Property Code 320608	⁵ Property Name ROSA UNIT	⁶ Well Number 652H
⁷ OGRID No. 289408	⁸ Operator Name LOGOS OPERATING, LLC	⁹ Elevation 6372'

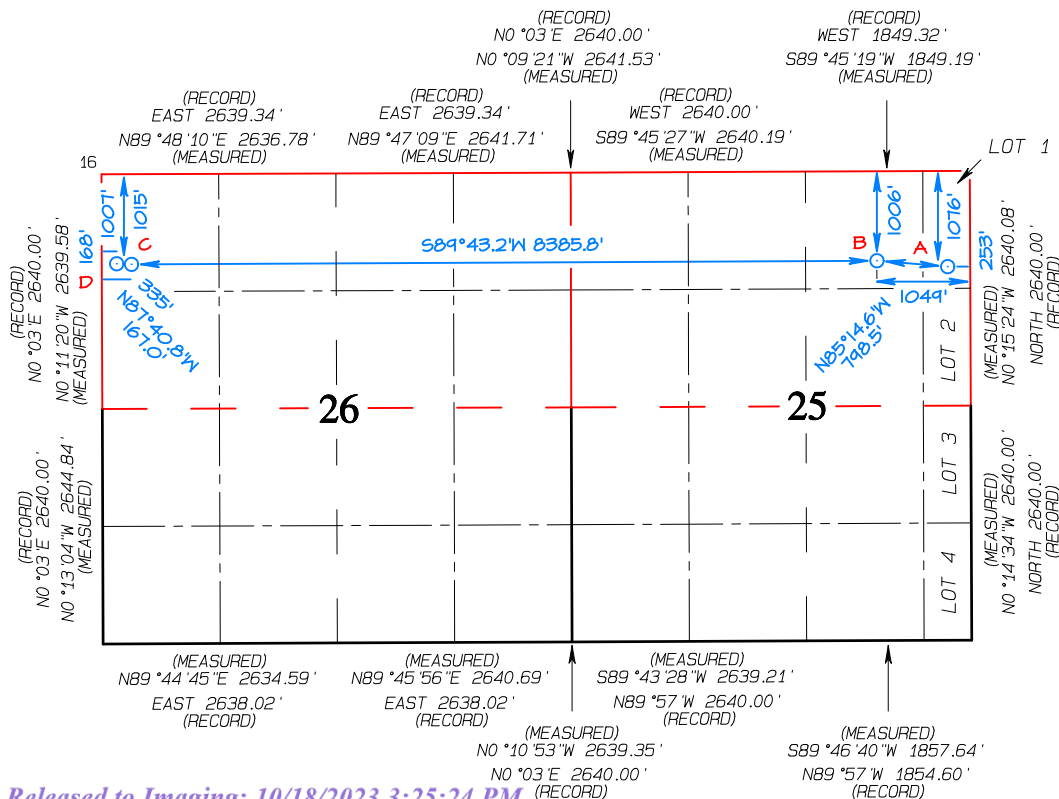
¹⁰ Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
A	25	31N	6W	1	1076	NORTH	253	EAST	RIO ARriba

¹¹ Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
D	26	31N	6W		1007	NORTH	168	WEST	RIO ARriba

¹² Dedicated Acres 592.16	N/2 - Section 25 N/2 - Section 26	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No. R-13457
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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 DIVISIONLAST TAKE POINT (D)
1007' FNL 168' FWL
SECTION 26, T31N, R6W
LAT 36.8750969°N
LONG -107.4400075°W
DATUM: NAD1927LAT 36.8751028°N
LONG -107.4406114°W
DATUM: NAD1983FIRST PERFORATION (C)
1015' FNL 335' FWL
SECTION 26, T31N, R6W
LAT 36.8750764°N
LONG -107.4394372°W
DATUM: NAD1927LAT 36.8750824°N
LONG -107.4400411°W
DATUM: NAD1983FIRST TAKE POINT (B)
1006' FNL 1049' FEL
SECTION 25, T31N, R6W
LAT 36.8750904°N
LONG -107.4107676°W
DATUM: NAD1927LAT 36.8750964°N
LONG -107.4113707°W
DATUM: NAD1983SURFACE LOCATION (A)
1076' FNL 253' FEL
SECTION 25, T31N, R6W
LAT 36.874899°N
LONG -107.408048°W
DATUM: NAD1927LAT 36.874905°N
LONG -107.408651°W
DATUM: NAD1983¹⁷ OPERATOR 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 Etta Trujillo Date 10/17/2023Printed Name
etrujillo@logosresourcesllc.com

E-mail Address

¹⁸ SURVEYOR 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 and correct to the best of my belief.

Date Revised: OCTOBER 17, 2023
Date of Survey: MARCH 15, 2019

Signature and Seal of Professional Surveyor

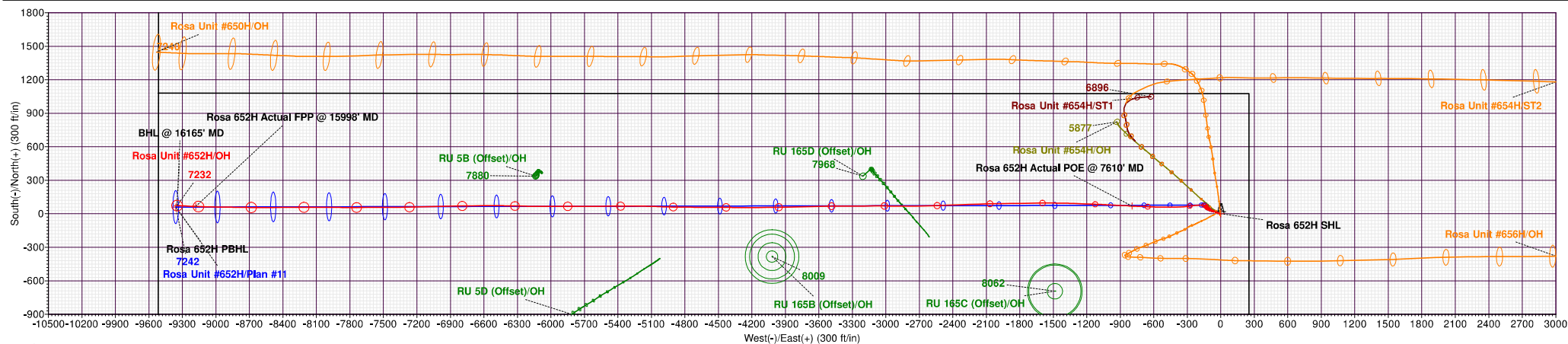


JASON C. EDWARDS

Certificate Number 15269



County: Rio Arriba, NM NAD83
 Site: Rosa Unit 29
 Well: Rosa Unit #652H
 Depth Reference: 6372+30 @ 6402.00ft (H&P 530)
 Rig: H&P 530
 Plan: OH
 Job #: 16820

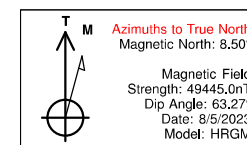
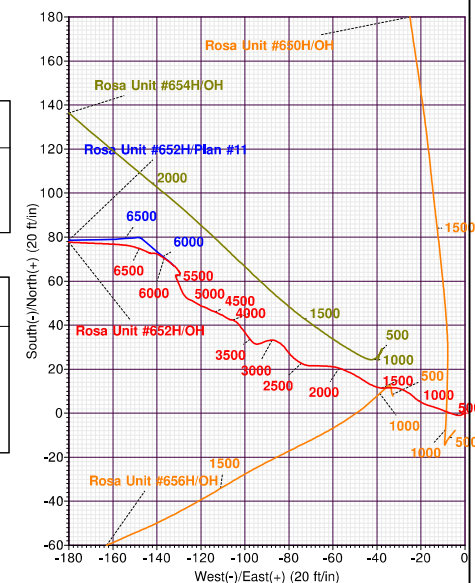


ANNOTATIONS

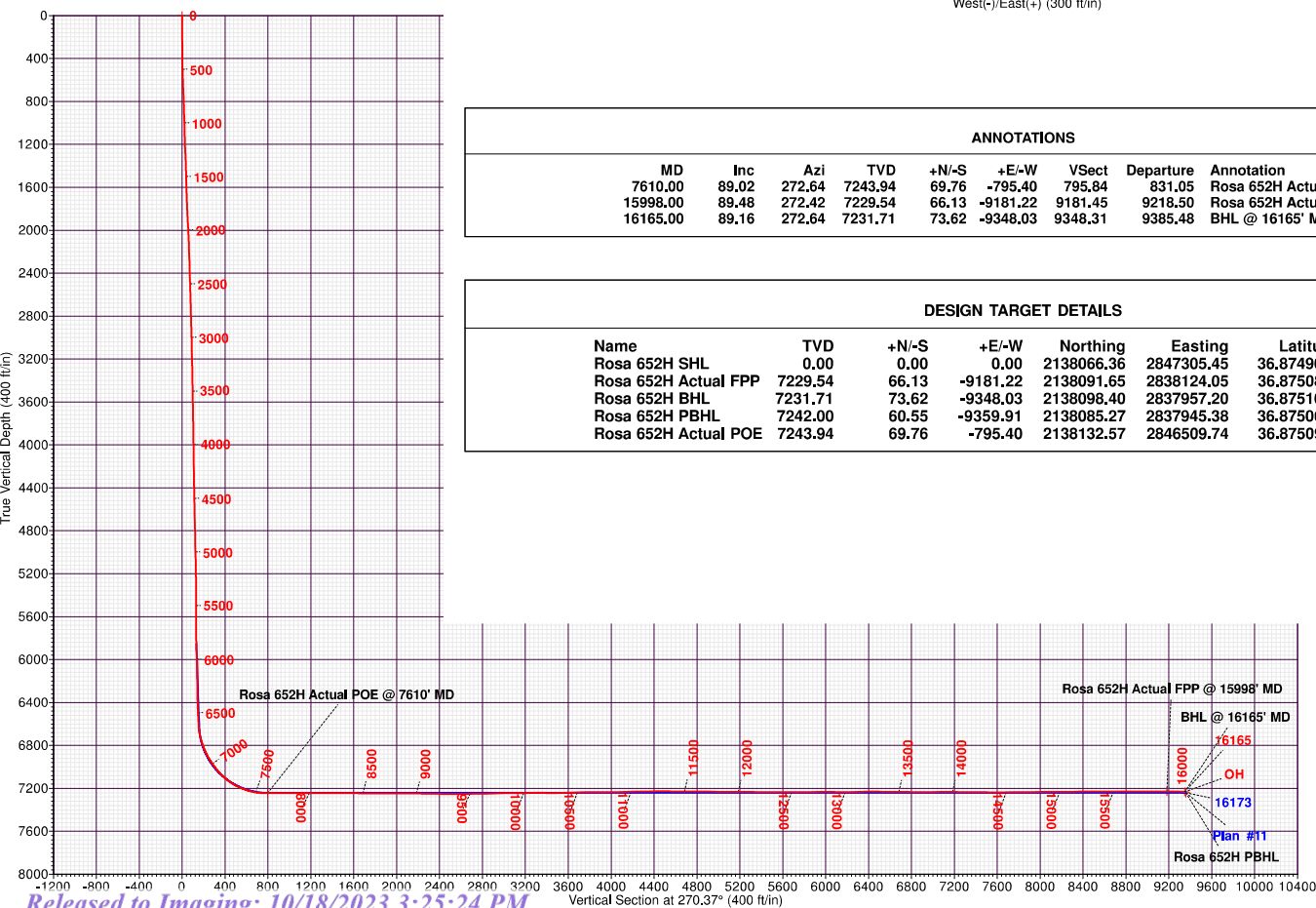
MD	Inc	Azi	TVD	+N/-S	+E/-W	VSec	Departure	Annotation
7610.00	89.02	272.64	7243.94	69.76	-795.40	795.84	831.05	Rosa 652H Actual POE @ 7610' MD
15998.00	89.48	272.42	7229.54	66.13	-9181.22	9181.45	9218.50	Rosa 652H Actual FPP @ 15998' MD
16165.00	89.16	272.64	7231.71	73.62	-9348.03	9348.31	9385.48	BHL @ 16165' MD

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
Rosa 652H SHL	0.00	0.00	0.00	2138066.36	2847305.45	36.8749049	-107.4086513
Rosa 652H Actual FPP	7229.54	66.13	-9181.22	2138091.65	2838124.05	36.8750824	-107.4400411
Rosa 652H BHL	7231.71	73.62	-9348.03	2138098.40	2837957.20	36.8751028	-107.4406114
Rosa 652H PBHL	7242.00	60.55	-9359.91	2138085.27	2837945.38	36.8750669	-107.4406520
Rosa 652H Actual POE	7243.94	69.76	-795.40	2138132.57	2846509.74	36.8750964	-107.4113707



TOTAL CORRECTION: 8.50°



Logos Operating LLC

Rio Arriba, NM NAD83

Rosa Unit 29

Rosa Unit #652H - Slot A10 (652H Adjusted)

OH

Design: OH

Standard Survey Report

16 October, 2023

SDT
Survey Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #652H - Slot A10 (652H Adjusted)
Project:	Rio Arriba, NM NAD83	TVD Reference:	6372+30 @ 6402.00ft (H&P 530)
Site:	Rosa Unit 29	MD Reference:	6372+30 @ 6402.00ft (H&P 530)
Well:	Rosa Unit #652H	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000 Multi User Db

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 29			
Site Position:		Northing:	2,138,126.53 usft	Latitude: 36.8750715
From:	Map	Easting:	2,847,195.58 usft	Longitude: -107.4090261
Position Uncertainty:	0.00 ft	Slot Radius:	13-3/16 "	

Well	Rosa Unit #652H - Slot A10 (652H Adjusted)			
Well Position	+N/-S	0.00 ft	Northing:	2,138,066.35 usft
	+E/-W	0.00 ft	Easting:	2,847,305.45 usft
Position Uncertainty		0.00 ft	Wellhead Elevation:	0.00 ft
Grid Convergence:		0.25 °	Ground Level:	6,372.00 ft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HRGM	8/5/2023	8.50	63.27	49,445.02102073

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	270.37

Survey Program	Date	10/16/2023		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
378.50	16,098.00	Survey #1 (OH)	MWD-SDI	
16,165.00	16,165.00	Survey #2 (OH)	Project	Projection

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
378.50	0.68	243.86	378.49	-0.99	-2.02	2.01	0.18	0.18	0.00
472.50	1.17	286.09	472.48	-0.97	-3.44	3.43	0.86	0.52	44.93
567.50	1.89	286.66	567.45	-0.25	-5.87	5.87	0.76	0.76	0.60
661.50	2.37	293.37	661.38	0.96	-9.14	9.15	0.57	0.51	7.14
756.50	2.51	288.17	756.29	2.39	-12.92	12.94	0.28	0.15	-5.47
852.50	2.11	287.44	852.22	3.58	-16.60	16.63	0.42	-0.42	-0.76
945.50	1.63	296.85	945.17	4.69	-19.42	19.45	0.61	-0.52	10.12

SDT Survey Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #652H - Slot A10 (652H Adjusted)
Project:	Rio Arriba, NM NAD83	TVD Reference:	6372+30 @ 6402.00ft (H&P 530)
Site:	Rosa Unit 29	MD Reference:	6372+30 @ 6402.00ft (H&P 530)
Well:	Rosa Unit #652H	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000 Multi User Db

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
1,041.50	1.72	307.48	1,041.13	6.18	-21.78	21.82	0.34	0.09	11.07
1,136.50	2.29	309.38	1,136.07	8.25	-24.38	24.43	0.60	0.60	2.00
1,231.50	2.69	295.82	1,230.98	10.43	-27.85	27.92	0.75	0.42	-14.27
1,322.50	2.07	275.37	1,321.90	11.51	-31.41	31.48	1.15	-0.68	-22.47
1,416.50	2.24	263.30	1,415.83	11.46	-34.92	35.00	0.51	0.18	-12.84
1,510.50	1.60	277.85	1,509.78	11.42	-38.05	38.12	0.85	-0.68	15.48
1,605.50	1.70	289.02	1,604.74	12.06	-40.70	40.77	0.35	0.11	11.76
1,700.50	2.04	298.95	1,699.69	13.34	-43.51	43.59	0.49	0.36	10.45
1,795.50	2.87	304.04	1,794.60	15.49	-46.96	47.06	0.90	0.87	5.36
1,889.50	3.46	296.39	1,888.46	18.07	-51.45	51.56	0.77	0.63	-8.14
1,985.50	3.10	289.19	1,984.30	20.21	-56.50	56.62	0.57	-0.38	-7.50
2,080.50	2.55	274.75	2,079.19	21.23	-61.03	61.16	0.94	-0.58	-15.20
2,175.50	1.62	272.65	2,174.13	21.46	-64.47	64.61	0.98	-0.98	-2.21
2,268.50	1.62	271.89	2,267.09	21.57	-67.10	67.24	0.02	0.00	-0.82
2,364.50	1.85	268.53	2,363.04	21.57	-70.01	70.14	0.26	0.24	-3.50
2,458.50	1.85	290.68	2,457.00	22.07	-72.94	73.08	0.76	0.00	23.56
2,553.50	2.24	303.52	2,551.94	23.64	-75.93	76.08	0.63	0.41	13.52
2,649.50	2.00	315.69	2,647.87	25.87	-78.66	78.83	0.53	-0.25	12.68
2,743.50	2.53	324.13	2,741.80	28.73	-81.02	81.21	0.66	0.56	8.98
2,838.50	2.13	307.21	2,836.72	31.49	-83.66	83.86	0.83	-0.42	-17.81
2,933.50	1.37	289.96	2,931.68	32.95	-86.13	86.34	0.96	-0.80	-18.16
3,028.50	1.24	264.64	3,026.65	33.24	-88.22	88.43	0.62	-0.14	-26.65
3,123.50	1.54	250.43	3,121.62	32.72	-90.45	90.66	0.48	0.32	-14.96
3,218.50	1.51	245.47	3,216.59	31.77	-92.79	92.99	0.14	-0.03	-5.22
3,314.50	0.91	277.90	3,312.57	31.35	-94.69	94.89	0.92	-0.63	33.78
3,409.50	1.18	308.99	3,407.55	32.07	-96.20	96.41	0.65	0.28	32.73
3,505.50	1.45	322.57	3,503.53	33.66	-97.71	97.92	0.43	0.28	14.15
3,600.50	1.66	322.99	3,598.49	35.71	-99.27	99.50	0.22	0.22	0.44
3,696.50	1.94	323.11	3,694.45	38.12	-101.08	101.32	0.29	0.29	0.13
3,790.50	1.44	320.38	3,788.41	40.30	-102.79	103.05	0.54	-0.53	-2.90
3,883.50	0.88	302.05	3,881.39	41.58	-104.14	104.40	0.72	-0.60	-19.71
3,979.50	0.66	298.69	3,977.38	42.24	-105.25	105.52	0.23	-0.23	-3.50
4,075.50	0.53	262.50	4,073.37	42.44	-106.17	106.45	0.41	-0.14	-37.70
4,171.50	1.26	296.96	4,169.36	42.86	-107.55	107.83	0.91	0.76	35.90
4,266.50	1.19	305.50	4,264.34	43.91	-109.29	109.57	0.21	-0.07	8.99
4,360.50	0.87	290.35	4,358.32	44.73	-110.75	111.04	0.44	-0.34	-16.12
4,456.50	1.49	297.38	4,454.30	45.55	-112.54	112.84	0.66	0.65	7.32
4,552.50	1.25	288.20	4,550.28	46.45	-114.65	114.94	0.34	-0.25	-9.56
4,649.50	1.28	301.94	4,647.25	47.36	-116.57	116.88	0.31	0.03	14.16
4,744.50	1.33	288.82	4,742.23	48.28	-118.52	118.83	0.32	0.05	-13.81
4,838.50	1.45	297.33	4,836.20	49.17	-120.60	120.92	0.25	0.13	9.05
4,933.50	1.52	300.92	4,931.17	50.37	-122.75	123.08	0.12	0.07	3.78

SDT Survey Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #652H - Slot A10 (652H Adjusted)
Project:	Rio Arriba, NM NAD83	TVD Reference:	6372+30 @ 6402.00ft (H&P 530)
Site:	Rosa Unit 29	MD Reference:	6372+30 @ 6402.00ft (H&P 530)
Well:	Rosa Unit #652H	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000 Multi User Db

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
5,028.50	1.45	291.96	5,026.14	51.47	-124.95	125.28	0.25	-0.07	-9.43
5,124.50	1.27	316.34	5,122.11	52.69	-126.81	127.15	0.63	-0.19	25.40
5,219.50	1.61	330.67	5,217.08	54.62	-128.19	128.54	0.52	0.36	15.08
5,313.50	2.04	338.23	5,311.03	57.32	-129.46	129.83	0.52	0.46	8.04
5,409.50	1.95	336.06	5,406.97	60.40	-130.75	131.14	0.12	-0.09	-2.26
5,472.50	1.19	342.39	5,469.95	62.01	-131.39	131.79	1.24	-1.21	10.05
5,535.50	0.48	65.46	5,532.95	62.74	-131.35	131.75	1.95	-1.13	131.86
5,599.50	0.64	94.95	5,596.94	62.82	-130.75	131.15	0.51	0.25	46.08
5,663.50	0.82	90.65	5,660.94	62.78	-129.93	130.33	0.29	0.28	-6.72
5,726.50	0.84	4.15	5,723.93	63.24	-129.45	129.85	1.81	0.03	-137.30
5,789.50	2.68	323.62	5,786.90	64.89	-130.29	130.70	3.35	2.92	-64.33
5,852.50	2.52	310.03	5,849.84	66.96	-132.22	132.65	1.01	-0.25	-21.57
6,271.00	0.62	264.72	6,268.17	72.67	-141.52	141.99	0.51	-0.45	-10.83
6,334.00	0.67	257.63	6,331.17	72.56	-142.22	142.69	0.15	0.08	-11.25
6,428.00	2.77	296.84	6,425.12	73.47	-144.79	145.26	2.44	2.23	41.71
6,523.00	2.55	286.60	6,520.02	75.11	-148.86	149.34	0.55	-0.23	-10.78
6,617.00	3.11	280.65	6,613.90	76.18	-153.37	153.86	0.67	0.60	-6.33
6,712.00	12.41	272.36	6,707.93	77.08	-166.13	166.62	9.83	9.79	-8.73
6,806.00	19.19	272.92	6,798.33	78.28	-191.68	192.18	7.21	7.21	0.60
6,901.00	27.87	263.10	6,885.38	76.41	-229.40	229.89	10.00	9.14	-10.34
6,996.00	35.08	260.82	6,966.35	69.37	-278.46	278.91	7.69	7.59	-2.40
7,090.00	41.15	264.95	7,040.29	62.33	-336.00	336.40	7.00	6.46	4.39
7,185.00	49.47	270.20	7,107.06	59.70	-403.38	403.76	9.59	8.76	5.53
7,279.00	59.11	270.85	7,161.86	60.43	-479.61	479.99	10.27	10.26	0.69
7,374.00	68.55	270.22	7,203.71	61.20	-564.77	565.16	9.95	9.94	-0.66
7,468.00	76.98	272.67	7,231.54	63.51	-654.43	654.83	9.31	8.97	2.61
7,563.00	88.99	272.42	7,243.13	67.69	-748.46	748.88	12.64	12.64	-0.26
7,610.00	89.02	272.64	7,243.94	69.76	-795.40	795.84	0.46	0.07	0.46
Rosa 652H Actual POE @ 7610' MD									
7,657.00	89.06	272.85	7,244.73	72.01	-842.34	842.79	0.46	0.07	0.46
7,751.00	90.50	272.53	7,245.09	76.42	-936.24	936.71	1.57	1.53	-0.34
7,846.00	90.10	273.34	7,244.59	81.28	-1,031.11	1,031.61	0.95	-0.42	0.85
7,940.00	90.44	272.09	7,244.15	85.73	-1,125.00	1,125.53	1.38	0.36	-1.33
8,034.00	90.30	272.04	7,243.54	89.12	-1,218.94	1,219.49	0.16	-0.15	-0.05
8,129.00	90.44	272.04	7,242.93	92.50	-1,313.88	1,314.45	0.15	0.15	0.00
8,223.00	89.36	270.74	7,243.09	94.78	-1,407.84	1,408.43	1.80	-1.15	-1.38
8,317.00	89.43	271.34	7,244.08	96.49	-1,501.82	1,502.42	0.64	0.07	0.64
8,412.00	89.29	268.97	7,245.14	96.75	-1,596.81	1,597.40	2.50	-0.15	-2.49
8,506.00	89.90	268.92	7,245.81	95.02	-1,690.79	1,691.37	0.65	0.65	-0.05
8,600.00	89.97	269.23	7,245.91	93.50	-1,784.78	1,785.35	0.34	0.07	0.33
8,694.00	89.50	269.41	7,246.35	92.38	-1,878.77	1,879.33	0.54	-0.50	0.19
8,789.00	89.93	269.92	7,246.82	91.83	-1,973.77	1,974.32	0.70	0.45	0.54
8,883.00	90.13	267.43	7,246.77	89.65	-2,067.74	2,068.27	2.66	0.21	-2.65

SDT Survey Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #652H - Slot A10 (652H Adjusted)
Project:	Rio Arriba, NM NAD83	TVD Reference:	6372+30 @ 6402.00ft (H&P 530)
Site:	Rosa Unit 29	MD Reference:	6372+30 @ 6402.00ft (H&P 530)
Well:	Rosa Unit #652H	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000 Multi User Db

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
8,978.00	89.43	268.57	7,247.14	86.34	-2,162.68	2,163.19	1.41	-0.74	1.20
9,072.00	88.01	267.50	7,249.24	83.12	-2,256.59	2,257.08	1.89	-1.51	-1.14
9,167.00	89.53	268.18	7,251.28	79.54	-2,351.50	2,351.96	1.75	1.60	0.72
9,262.00	89.87	268.24	7,251.77	76.57	-2,446.45	2,446.90	0.36	0.36	0.06
9,356.00	89.73	267.98	7,252.10	73.47	-2,540.40	2,540.82	0.31	-0.15	-0.28
9,450.00	90.57	268.57	7,251.86	70.64	-2,634.36	2,634.76	1.09	0.89	0.63
9,545.00	91.18	269.27	7,250.41	68.85	-2,729.33	2,729.71	0.98	0.64	0.74
9,639.00	90.71	270.41	7,248.85	68.59	-2,823.31	2,823.70	1.31	-0.50	1.21
9,734.00	90.77	270.39	7,247.63	69.25	-2,918.30	2,918.69	0.07	0.06	-0.02
9,829.00	91.68	271.12	7,245.60	70.50	-3,013.27	3,013.66	1.23	0.96	0.77
9,923.00	90.74	269.24	7,243.61	70.80	-3,107.24	3,107.64	2.24	-1.00	-2.00
10,018.00	90.40	269.35	7,242.67	69.63	-3,202.23	3,202.61	0.38	-0.36	0.12
10,113.00	90.13	269.61	7,242.23	68.77	-3,297.23	3,297.60	0.39	-0.28	0.27
10,207.00	89.63	270.35	7,242.42	68.73	-3,391.23	3,391.60	0.95	-0.53	0.79
10,302.00	90.24	269.01	7,242.53	68.20	-3,486.22	3,486.59	1.55	0.64	-1.41
10,397.00	91.85	268.66	7,240.80	66.27	-3,581.18	3,581.54	1.73	1.69	-0.37
10,491.00	91.41	268.64	7,238.13	64.06	-3,675.12	3,675.46	0.47	-0.47	-0.02
10,586.00	91.31	268.63	7,235.87	61.79	-3,770.06	3,770.38	0.11	-0.11	-0.01
10,680.00	89.80	269.18	7,234.96	60.00	-3,864.04	3,864.35	1.71	-1.61	0.59
10,775.00	89.70	269.48	7,235.37	58.89	-3,959.03	3,959.33	0.33	-0.11	0.32
10,869.00	91.08	269.30	7,234.73	57.89	-4,053.02	4,053.31	1.48	1.47	-0.19
10,964.00	91.68	268.59	7,232.45	56.14	-4,147.98	4,148.25	0.98	0.63	-0.75
11,058.00	91.18	270.20	7,230.10	55.15	-4,241.94	4,242.21	1.79	-0.53	1.71
11,153.00	90.67	271.13	7,228.57	56.25	-4,336.92	4,337.19	1.12	-0.54	0.98
11,247.00	90.03	270.44	7,227.99	57.54	-4,430.91	4,431.19	1.00	-0.68	-0.73
11,342.00	89.66	270.42	7,228.25	58.25	-4,525.90	4,526.19	0.39	-0.39	-0.02
11,437.00	90.00	269.98	7,228.53	58.58	-4,620.90	4,621.19	0.59	0.36	-0.46
11,531.00	89.39	270.43	7,229.03	58.92	-4,714.90	4,715.18	0.81	-0.65	0.48
11,625.00	89.23	270.26	7,230.16	59.48	-4,808.89	4,809.18	0.25	-0.17	-0.18
11,720.00	89.83	271.51	7,230.94	60.95	-4,903.88	4,904.17	1.46	0.63	1.32
11,814.00	89.80	271.68	7,231.25	63.57	-4,997.84	4,998.14	0.18	-0.03	0.18
11,909.00	89.43	272.08	7,231.89	66.68	-5,092.78	5,093.11	0.57	-0.39	0.42
12,003.00	89.66	270.11	7,232.63	68.48	-5,186.76	5,187.09	2.11	0.24	-2.10
12,098.00	89.63	269.95	7,233.22	68.53	-5,281.76	5,282.09	0.17	-0.03	-0.17
12,192.00	89.46	270.51	7,233.97	68.91	-5,375.75	5,376.09	0.62	-0.18	0.60
12,287.00	89.12	269.57	7,235.14	68.97	-5,470.75	5,471.08	1.05	-0.36	-0.99
12,381.00	89.43	269.31	7,236.33	68.05	-5,564.73	5,565.06	0.43	0.33	-0.28
12,476.00	90.87	269.94	7,236.09	67.43	-5,659.73	5,660.05	1.65	1.52	0.66
12,570.00	90.67	270.08	7,234.82	67.45	-5,753.72	5,754.03	0.26	-0.21	0.15
12,665.00	90.50	269.70	7,233.85	67.27	-5,848.71	5,849.03	0.44	-0.18	-0.40
12,760.00	90.03	270.20	7,233.41	67.18	-5,943.71	5,944.02	0.72	-0.49	0.53
12,854.00	89.97	270.02	7,233.41	67.36	-6,037.71	6,038.02	0.20	-0.06	-0.19
12,949.00	89.09	270.03	7,234.19	67.41	-6,132.71	6,133.02	0.93	-0.93	0.01

SDT

Survey Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #652H - Slot A10 (652H Adjusted)
Project:	Rio Arriba, NM NAD83	TVD Reference:	6372+30 @ 6402.00ft (H&P 530)
Site:	Rosa Unit 29	MD Reference:	6372+30 @ 6402.00ft (H&P 530)
Well:	Rosa Unit #652H	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000 Multi User Db

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
13,043.00	90.84	271.09	7,234.25	68.32	-6,226.70	6,227.01	2.18	1.86	1.13
13,138.00	91.55	271.02	7,232.27	70.07	-6,321.66	6,321.98	0.75	0.75	-0.07
13,232.00	90.10	271.21	7,230.91	71.90	-6,415.63	6,415.96	1.56	-1.54	0.20
13,327.00	89.46	270.61	7,231.28	73.41	-6,510.62	6,510.96	0.92	-0.67	-0.63
13,421.00	89.93	269.17	7,231.78	73.23	-6,604.61	6,604.95	1.61	0.50	-1.53
13,516.00	89.33	269.21	7,232.39	71.89	-6,699.60	6,699.93	0.63	-0.63	0.04
13,610.00	88.92	268.78	7,233.83	70.24	-6,793.58	6,793.89	0.63	-0.44	-0.46
13,705.00	90.17	269.16	7,234.58	68.53	-6,888.56	6,888.85	1.38	1.32	0.40
13,800.00	90.40	268.33	7,234.11	66.45	-6,983.53	6,983.81	0.91	0.24	-0.87
13,894.00	90.44	268.70	7,233.42	64.02	-7,077.50	7,077.76	0.40	0.04	0.39
13,989.00	89.87	268.67	7,233.16	61.83	-7,172.47	7,172.72	0.60	-0.60	-0.03
14,083.00	88.82	268.39	7,234.24	59.42	-7,266.43	7,266.66	1.16	-1.12	-0.30
14,178.00	90.00	269.95	7,235.22	58.05	-7,361.41	7,361.63	2.06	1.24	1.64
14,272.00	88.82	269.93	7,236.19	57.95	-7,455.41	7,455.62	1.26	-1.26	-0.02
14,367.00	89.39	269.77	7,237.67	57.70	-7,550.39	7,550.61	0.62	0.60	-0.17
14,461.00	90.94	269.47	7,237.40	57.08	-7,644.39	7,644.60	1.68	1.65	-0.32
14,556.00	90.30	269.66	7,236.37	56.36	-7,739.38	7,739.58	0.70	-0.67	0.20
14,650.00	91.11	270.60	7,235.21	56.57	-7,833.37	7,833.57	1.32	0.86	1.00
14,745.00	90.64	270.48	7,233.76	57.46	-7,928.35	7,928.56	0.51	-0.49	-0.13
14,839.00	90.47	270.50	7,232.85	58.27	-8,022.35	8,022.56	0.18	-0.18	0.02
14,933.00	90.24	269.91	7,232.27	58.60	-8,116.34	8,116.55	0.67	-0.24	-0.63
15,028.00	89.93	269.81	7,232.13	58.37	-8,211.34	8,211.55	0.34	-0.33	-0.11
15,122.00	90.40	269.77	7,231.86	58.03	-8,305.34	8,305.54	0.50	0.50	-0.04
15,217.00	90.64	269.59	7,231.00	57.50	-8,400.34	8,400.53	0.32	0.25	-0.19
15,311.00	90.40	269.67	7,230.14	56.89	-8,494.33	8,494.52	0.27	-0.26	0.09
15,406.00	90.10	269.84	7,229.73	56.48	-8,589.33	8,589.51	0.36	-0.32	0.18
15,500.00	90.03	270.45	7,229.62	56.72	-8,683.33	8,683.51	0.65	-0.07	0.65
15,595.00	89.83	270.87	7,229.74	57.82	-8,778.32	8,778.51	0.49	-0.21	0.44
15,689.00	90.24	271.36	7,229.68	59.65	-8,872.30	8,872.50	0.68	0.44	0.52
15,784.00	90.44	270.72	7,229.12	61.37	-8,967.28	8,967.49	0.71	0.21	-0.67
15,878.00	89.87	270.71	7,228.86	62.54	-9,061.28	9,061.49	0.61	-0.61	-0.01
15,973.00	89.56	272.36	7,229.34	65.09	-9,156.24	9,156.47	1.77	-0.33	1.74
15,998.00	89.48	272.42	7,229.54	66.13	-9,181.22	9,181.45	0.39	-0.32	0.22
Rosa 652H Actual FPP @ 15998' MD									
16,067.00	89.26	272.57	7,230.30	69.13	-9,250.15	9,250.40	0.39	-0.32	0.22
16,098.00	89.16	272.64	7,230.73	70.54	-9,281.11	9,281.37	0.39	-0.32	0.23
16,165.00	89.16	272.64	7,231.71	73.62	-9,348.03	9,348.31	0.00	0.00	0.00
BHL @ 16165' MD									

SDT
Survey Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #652H - Slot A10 (652H Adjusted)
Project:	Rio Arriba, NM NAD83	TVD Reference:	6372+30 @ 6402.00ft (H&P 530)
Site:	Rosa Unit 29	MD Reference:	6372+30 @ 6402.00ft (H&P 530)
Well:	Rosa Unit #652H	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000 Multi User Db

Design Targets									
Target Name									
- hit/miss target	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- Shape	(°)	(°)	(ft)	(ft)	(ft)	(usft)	(usft)		
Rosa 652H SHL	0.00	0.00	0.00	0.00	0.00	2,138,066.35	2,847,305.45	36.8749048	-107.4086514
- actual wellpath hits target center									
- Point									
Rosa 652H Actual FPP	0.00	0.00	7,229.54	66.13	-9,181.22	2,138,091.64	2,838,124.05	36.8750823	-107.4400411
- actual wellpath hits target center									
- Point									
Rosa 652H BHL	0.00	0.00	7,231.71	73.62	-9,348.03	2,138,098.40	2,837,957.20	36.8751028	-107.4406115
- actual wellpath hits target center									
- Point									
Rosa 652H PBHL	0.00	0.00	7,242.00	60.55	-9,359.91	2,138,085.27	2,837,945.38	36.8750668	-107.4406521
- actual wellpath misses target center by 20.44ft at 16165.00ft MD (7231.71 TVD, 73.62 N, -9348.03 E)									
- Point									
Rosa 652H Actual POE	0.00	0.00	7,243.94	69.76	-795.40	2,138,132.57	2,846,509.75	36.8750964	-107.4113708
- actual wellpath hits target center									
- Point									

Design Annotations					
Measured Depth	Vertical Depth	Local Coordinates			
(ft)	(ft)	+N/-S (ft)	+E/-W (ft)	Comment	
7,610.00	7,243.94	69.76	-795.40	Rosa 652H Actual POE @ 7610' MD	
15,998.00	7,229.54	66.13	-9,181.22	Rosa 652H Actual FPP @ 15998' MD	
16,165.00	7,231.71	73.62	-9,348.03	BHL @ 16165' MD	

Checked By: _____	Approved By: _____	Date: _____
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Logos Operating LLC

Rio Arriba, NM NAD83

Rosa Unit 29

Rosa Unit #652H - Slot A10 (652H Adjusted)

OH

Design: OH

Survey Report - Geographic

16 October, 2023

SDT

Survey Report - Geographic

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #652H - Slot A10 (652H Adjusted)
Project:	Rio Arriba, NM NAD83	TVD Reference:	6372+30 @ 6402.00ft (H&P 530)
Site:	Rosa Unit 29	MD Reference:	6372+30 @ 6402.00ft (H&P 530)
Well:	Rosa Unit #652H	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000 Multi User Db

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 29			
Site Position:		Northing:	2,138,126.53 usft	Latitude:	36.8750715
From:	Map	Easting:	2,847,195.58 usft	Longitude:	-107.4090261
Position Uncertainty:	0.00 ft	Slot Radius:	13-3/16 "	Grid Convergence:	0.25 °

Well	Rosa Unit #652H - Slot A10 (652H Adjusted)					
Well Position	+N/-S	0.00 ft	Northing:	2,138,066.35 usft	Latitude:	36.8749048
	+E/-W	0.00 ft	Easting:	2,847,305.45 usft	Longitude:	-107.4086514
Position Uncertainty		0.00 ft	Wellhead Elevation:	0.00 ft	Ground Level:	6,372.00 ft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HRGM	8/5/2023	8.50	63.27	49,445.02102073

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	270.37	

Survey Program	Date	10/16/2023			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
378.50	16,098.00	Survey #1 (OH)	MWD-SDI		
16,165.00	16,165.00	Survey #2 (OH)	Project	Projection	

Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
0.00	0.00	0.00	0.00	0.00	0.00	2,138,066.35	2,847,305.45	36.8749048	-107.4086514	
378.50	0.68	243.86	378.49	-0.99	-2.02	2,138,065.36	2,847,303.44	36.8749021	-107.4086583	
472.50	1.17	286.09	472.48	-0.97	-3.44	2,138,065.37	2,847,302.02	36.8749022	-107.4086631	
567.50	1.89	286.66	567.45	-0.25	-5.87	2,138,066.08	2,847,299.58	36.8749041	-107.4086714	
661.50	2.37	293.37	661.38	0.96	-9.14	2,138,067.28	2,847,296.31	36.8749075	-107.4086826	
756.50	2.51	288.17	756.29	2.39	-12.92	2,138,068.69	2,847,292.52	36.8749114	-107.4086955	
852.50	2.11	287.44	852.22	3.58	-16.60	2,138,069.86	2,847,288.83	36.8749147	-107.4087081	
945.50	1.63	296.85	945.17	4.69	-19.42	2,138,070.95	2,847,286.01	36.8749177	-107.4087177	
1,041.50	1.72	307.48	1,041.13	6.18	-21.78	2,138,072.44	2,847,283.64	36.8749218	-107.4087258	
1,136.50	2.29	309.38	1,136.07	8.25	-24.38	2,138,074.50	2,847,281.04	36.8749275	-107.4087347	

SDT

Survey Report - Geographic

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #652H - Slot A10 (652H Adjusted)
Project:	Rio Arriba, NM NAD83	TVD Reference:	6372+30 @ 6402.00ft (H&P 530)
Site:	Rosa Unit 29	MD Reference:	6372+30 @ 6402.00ft (H&P 530)
Well:	Rosa Unit #652H	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000 Multi User Db

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
1,231.50	2.69	295.82	1,230.98	10.43	-27.85	2,138,076.66	2,847,277.55	36.8749335	-107.4087466
1,322.50	2.07	275.37	1,321.90	11.51	-31.41	2,138,077.73	2,847,273.99	36.8749365	-107.4087587
1,416.50	2.24	263.30	1,415.83	11.46	-34.92	2,138,077.65	2,847,270.48	36.8749363	-107.4087708
1,510.50	1.60	277.85	1,509.78	11.42	-38.05	2,138,077.61	2,847,267.35	36.8749362	-107.4087814
1,605.50	1.70	289.02	1,604.74	12.06	-40.70	2,138,078.23	2,847,264.70	36.8749380	-107.4087905
1,700.50	2.04	298.95	1,699.69	13.34	-43.51	2,138,079.50	2,847,261.88	36.8749415	-107.4088001
1,795.50	2.87	304.04	1,794.60	15.49	-46.96	2,138,081.63	2,847,258.42	36.8749474	-107.4088119
1,889.50	3.46	296.39	1,888.46	18.07	-51.45	2,138,084.19	2,847,253.92	36.8749545	-107.4088273
1,985.50	3.10	289.19	1,984.30	20.21	-56.50	2,138,086.31	2,847,248.87	36.8749603	-107.4088445
2,080.50	2.55	274.75	2,079.19	21.23	-61.03	2,138,087.31	2,847,244.33	36.8749631	-107.4088600
2,175.50	1.62	272.65	2,174.13	21.46	-64.47	2,138,087.53	2,847,240.88	36.8749638	-107.4088718
2,268.50	1.62	271.89	2,267.09	21.57	-67.10	2,138,087.62	2,847,238.25	36.8749641	-107.4088808
2,364.50	1.85	268.53	2,363.04	21.57	-70.01	2,138,087.62	2,847,235.35	36.8749641	-107.4088907
2,458.50	1.85	290.68	2,457.00	22.07	-72.94	2,138,088.10	2,847,232.41	36.8749655	-107.4089007
2,553.50	2.24	303.52	2,551.94	23.64	-75.93	2,138,089.65	2,847,229.42	36.8749698	-107.4089109
2,649.50	2.00	315.69	2,647.87	25.87	-78.66	2,138,091.88	2,847,226.68	36.8749759	-107.4089203
2,743.50	2.53	324.13	2,741.80	28.73	-81.02	2,138,094.72	2,847,224.30	36.8749837	-107.4089284
2,838.50	2.13	307.21	2,836.72	31.49	-83.66	2,138,097.48	2,847,221.66	36.8749913	-107.4089374
2,933.50	1.37	289.96	2,931.68	32.95	-86.13	2,138,098.92	2,847,219.18	36.8749953	-107.4089458
3,028.50	1.24	264.64	3,026.65	33.24	-88.22	2,138,099.20	2,847,217.08	36.8749961	-107.4089530
3,123.50	1.54	250.43	3,121.62	32.72	-90.45	2,138,098.67	2,847,214.86	36.8749947	-107.4089606
3,218.50	1.51	245.47	3,216.59	31.77	-92.79	2,138,097.71	2,847,212.52	36.8749921	-107.4089686
3,314.50	0.91	277.90	3,312.57	31.35	-94.69	2,138,097.28	2,847,210.62	36.8749909	-107.4089751
3,409.50	1.18	308.99	3,407.55	32.07	-96.20	2,138,097.99	2,847,209.11	36.8749929	-107.4089803
3,505.50	1.45	322.57	3,503.53	33.66	-97.71	2,138,099.57	2,847,207.59	36.8749973	-107.4089854
3,600.50	1.66	322.99	3,598.49	35.71	-99.27	2,138,101.62	2,847,206.03	36.8750029	-107.4089907
3,696.50	1.94	323.11	3,694.45	38.12	-101.08	2,138,104.02	2,847,204.20	36.8750095	-107.4089969
3,790.50	1.44	320.38	3,788.41	40.30	-102.79	2,138,106.20	2,847,202.48	36.8750155	-107.4090028
3,883.50	0.88	302.05	3,881.39	41.58	-104.14	2,138,107.47	2,847,201.13	36.8750190	-107.4090074
3,979.50	0.66	298.69	3,977.38	42.24	-105.25	2,138,108.12	2,847,200.02	36.8750208	-107.4090112
4,075.50	0.53	262.50	4,073.37	42.44	-106.17	2,138,108.33	2,847,199.09	36.8750214	-107.4090144
4,171.50	1.26	296.96	4,169.36	42.86	-107.55	2,138,108.74	2,847,197.71	36.8750226	-107.4090191
4,266.50	1.19	305.50	4,264.34	43.91	-109.29	2,138,109.78	2,847,195.97	36.8750254	-107.4090250
4,360.50	0.87	290.35	4,358.32	44.73	-110.75	2,138,110.59	2,847,194.50	36.8750277	-107.4090300
4,456.50	1.49	297.38	4,454.30	45.55	-112.54	2,138,111.41	2,847,192.71	36.8750300	-107.4090361
4,552.50	1.25	288.20	4,550.28	46.45	-114.65	2,138,112.30	2,847,190.60	36.8750324	-107.4090433
4,649.50	1.28	301.94	4,647.25	47.36	-116.57	2,138,113.19	2,847,188.67	36.8750349	-107.4090499
4,744.50	1.33	288.82	4,742.23	48.28	-118.52	2,138,114.10	2,847,186.72	36.8750374	-107.4090566
4,838.50	1.45	297.33	4,836.20	49.17	-120.60	2,138,114.99	2,847,184.63	36.8750399	-107.4090637
4,933.50	1.52	300.92	4,931.17	50.37	-122.75	2,138,116.18	2,847,182.47	36.8750432	-107.4090710
5,028.50	1.45	291.96	5,026.14	51.47	-124.95	2,138,117.27	2,847,180.27	36.8750462	-107.4090785
5,124.50	1.27	316.34	5,122.11	52.69	-126.81	2,138,118.48	2,847,178.41	36.8750496	-107.4090849
5,219.50	1.61	330.67	5,217.08	54.62	-128.19	2,138,120.40	2,847,177.02	36.8750549	-107.4090896
5,313.50	2.04	338.23	5,311.03	57.32	-129.46	2,138,123.10	2,847,175.74	36.8750623	-107.4090940
5,409.50	1.95	336.06	5,406.97	60.40	-130.75	2,138,126.17	2,847,174.43	36.8750707	-107.4090984
5,472.50	1.19	342.39	5,469.95	62.01	-131.39	2,138,127.77	2,847,173.79	36.8750751	-107.4091006
5,535.50	0.48	65.46	5,532.95	62.74	-131.35	2,138,128.51	2,847,173.83	36.8750772	-107.4091004
5,599.50	0.64	94.95	5,596.94	62.82	-130.75	2,138,128.59	2,847,174.43	36.8750774	-107.4090984
5,663.50	0.82	90.65	5,660.94	62.78	-129.93	2,138,128.56	2,847,175.24	36.8750773	-107.4090956
5,726.50	0.84	4.15	5,723.93	63.24	-129.45	2,138,129.02	2,847,175.72	36.8750785	-107.4090939
5,789.50	2.68	323.62	5,786.90	64.89	-130.29	2,138,130.66	2,847,174.88	36.8750831	-107.4090968
5,852.50	2.52	310.03	5,849.84	66.96	-132.22	2,138,132.73	2,847,172.93	36.8750888	-107.4091034
6,271.00	0.62	264.72	6,268.17	72.67	-141.52	2,138,138.40	2,847,163.61	36.8751044	-107.4091352
6,334.00	0.67	257.63	6,331.17	72.56	-142.22	2,138,138.28	2,847,162.91	36.8751041	-107.4091376

SDT

Survey Report - Geographic

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #652H - Slot A10 (652H Adjusted)
Project:	Rio Arriba, NM NAD83	TVD Reference:	6372+30 @ 6402.00ft (H&P 530)
Site:	Rosa Unit 29	MD Reference:	6372+30 @ 6402.00ft (H&P 530)
Well:	Rosa Unit #652H	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000 Multi User Db

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
6,428.00	2.77	296.84	6,425.12	73.47	-144.79	2,138,139.18	2,847,160.34	36.8751066	-107.4091464
6,523.00	2.55	286.60	6,520.02	75.11	-148.86	2,138,140.80	2,847,156.26	36.8751111	-107.4091603
6,617.00	3.11	280.65	6,613.90	76.18	-153.37	2,138,141.85	2,847,151.75	36.8751141	-107.4091757
6,712.00	12.41	272.36	6,707.93	77.08	-166.13	2,138,142.69	2,847,138.98	36.8751165	-107.4092193
6,806.00	19.19	272.92	6,798.33	78.28	-191.68	2,138,143.78	2,847,113.43	36.8751199	-107.4093067
6,901.00	27.87	263.10	6,885.38	76.41	-229.40	2,138,141.74	2,847,075.71	36.8751147	-107.4094357
6,996.00	35.08	260.82	6,966.35	69.37	-278.46	2,138,134.49	2,847,026.68	36.8750954	-107.4096034
7,090.00	41.15	264.95	7,040.29	62.33	-336.00	2,138,127.19	2,846,969.18	36.8750760	-107.4098001
7,185.00	49.47	270.20	7,107.06	59.70	-403.38	2,138,124.26	2,846,901.81	36.8750688	-107.4100305
7,279.00	59.11	270.85	7,161.86	60.43	-479.61	2,138,124.65	2,846,825.58	36.8750708	-107.4102911
7,374.00	68.55	270.22	7,203.71	61.20	-564.77	2,138,125.04	2,846,740.41	36.8750729	-107.4105823
7,468.00	76.98	272.67	7,231.54	63.51	-654.43	2,138,126.95	2,846,650.74	36.8750793	-107.4108888
7,563.00	88.99	272.42	7,243.13	67.69	-748.46	2,138,130.71	2,846,556.70	36.8750907	-107.4112103
7,610.00	89.02	272.64	7,243.94	69.76	-795.40	2,138,132.57	2,846,509.75	36.8750964	-107.4113708
Rosa 652H Actual POE @ 7610' MD									
7,657.00	89.06	272.85	7,244.73	72.01	-842.34	2,138,134.61	2,846,462.80	36.8751026	-107.4115313
7,751.00	90.50	272.53	7,245.09	76.42	-936.24	2,138,138.61	2,846,368.89	36.8751147	-107.4118523
7,846.00	90.10	273.34	7,244.59	81.28	-1,031.11	2,138,143.05	2,846,273.99	36.8751280	-107.4121766
7,940.00	90.44	272.09	7,244.15	85.73	-1,125.00	2,138,147.08	2,846,180.08	36.8751403	-107.4124976
8,034.00	90.30	272.04	7,243.54	89.12	-1,218.94	2,138,150.05	2,846,086.13	36.8751496	-107.4128188
8,129.00	90.44	272.04	7,242.93	92.50	-1,313.88	2,138,153.01	2,845,991.18	36.8751588	-107.4131434
8,223.00	89.36	270.74	7,243.09	94.78	-1,407.84	2,138,154.87	2,845,897.20	36.8751651	-107.4134647
8,317.00	89.43	271.34	7,244.08	96.49	-1,501.82	2,138,156.16	2,845,803.22	36.8751698	-107.4137860
8,412.00	89.29	268.97	7,245.14	96.75	-1,596.81	2,138,156.00	2,845,708.23	36.8751704	-107.4141107
8,506.00	89.90	268.92	7,245.81	95.02	-1,690.79	2,138,153.85	2,845,614.26	36.8751657	-107.4144320
8,600.00	89.97	269.23	7,245.91	93.50	-1,784.78	2,138,151.91	2,845,520.28	36.8751615	-107.4147534
8,694.00	89.50	269.41	7,246.35	92.38	-1,878.77	2,138,150.38	2,845,426.29	36.8751584	-107.4150747
8,789.00	89.93	269.92	7,246.82	91.83	-1,973.77	2,138,149.40	2,845,331.30	36.8751569	-107.4153995
8,883.00	90.13	267.43	7,246.77	89.65	-2,067.74	2,138,146.81	2,845,237.34	36.8751509	-107.4157208
8,978.00	89.43	268.57	7,247.14	86.34	-2,162.68	2,138,143.07	2,845,142.42	36.8751418	-107.4160454
9,072.00	88.01	267.50	7,249.24	83.12	-2,256.59	2,138,139.43	2,845,048.52	36.8751329	-107.4163665
9,167.00	89.53	268.18	7,251.28	79.54	-2,351.50	2,138,135.43	2,844,953.62	36.8751230	-107.4166909
9,262.00	89.87	268.24	7,251.77	76.57	-2,446.45	2,138,132.04	2,844,858.69	36.8751149	-107.4170156
9,356.00	89.73	267.98	7,252.10	73.47	-2,540.40	2,138,128.52	2,844,764.75	36.8751063	-107.4173368
9,450.00	90.57	268.57	7,251.86	70.64	-2,634.36	2,138,125.27	2,844,670.81	36.8750985	-107.4176580
9,545.00	91.18	269.27	7,250.41	68.85	-2,729.33	2,138,123.06	2,844,575.85	36.8750936	-107.4179827
9,639.00	90.71	270.41	7,248.85	68.59	-2,823.31	2,138,122.38	2,844,481.87	36.8750928	-107.4183040
9,734.00	90.77	270.39	7,247.63	69.25	-2,918.30	2,138,122.62	2,844,386.88	36.8750946	-107.4186288
9,829.00	91.68	271.12	7,245.60	70.50	-3,013.27	2,138,123.45	2,844,291.90	36.8750980	-107.4189535
9,923.00	90.74	269.24	7,243.61	70.80	-3,107.24	2,138,123.33	2,844,197.93	36.8750988	-107.4192747
10,018.00	90.40	269.35	7,242.67	69.63	-3,202.23	2,138,121.74	2,844,102.95	36.8750956	-107.4195995
10,113.00	90.13	269.61	7,242.23	68.77	-3,297.23	2,138,120.45	2,844,007.96	36.8750932	-107.4199243
10,207.00	89.63	270.35	7,242.42	68.73	-3,391.23	2,138,120.00	2,843,913.96	36.8750931	-107.4202457
10,302.00	90.24	269.01	7,242.53	68.20	-3,486.22	2,138,119.05	2,843,818.97	36.8750916	-107.4205704
10,397.00	91.85	268.66	7,240.80	66.27	-3,581.18	2,138,116.69	2,843,724.02	36.8750862	-107.4208951
10,491.00	91.41	268.64	7,238.13	64.06	-3,675.12	2,138,114.06	2,843,630.09	36.8750801	-107.4212163
10,586.00	91.31	268.63	7,235.87	61.79	-3,770.06	2,138,111.38	2,843,535.16	36.8750739	-107.4215409
10,680.00	89.80	269.18	7,234.96	60.00	-3,864.04	2,138,109.16	2,843,441.19	36.8750689	-107.4218622
10,775.00	89.70	269.48	7,235.37	58.89	-3,959.03	2,138,107.63	2,843,346.20	36.8750658	-107.4221869
10,869.00	91.08	269.30	7,234.73	57.89	-4,053.02	2,138,106.21	2,843,252.22	36.8750630	-107.4225083
10,964.00	91.68	268.59	7,232.45	56.14	-4,147.98	2,138,104.04	2,843,157.27	36.8750582	-107.4228329
11,058.00	91.18	270.20	7,230.10	55.15	-4,241.94	2,138,102.63	2,843,063.32	36.8750554	-107.4231542
11,153.00	90.67	271.13	7,228.57	56.25	-4,336.92	2,138,103.31	2,842,968.33	36.8750584	-107.4234789
11,247.00	90.03	270.44	7,227.99	57.54	-4,430.91	2,138,104.18	2,842,874.34	36.8750619	-107.4238002

SDT

Survey Report - Geographic

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #652H - Slot A10 (652H Adjusted)
Project:	Rio Arriba, NM NAD83	TVD Reference:	6372+30 @ 6402.00ft (H&P 530)
Site:	Rosa Unit 29	MD Reference:	6372+30 @ 6402.00ft (H&P 530)
Well:	Rosa Unit #652H	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000 Multi User Db

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
11,342.00	89.66	270.42	7,228.25	58.25	-4,525.90	2,138,104.47	2,842,779.34	36.8750638	-107.4241250
11,437.00	90.00	269.98	7,228.53	58.58	-4,620.90	2,138,104.38	2,842,684.34	36.8750647	-107.4244498
11,531.00	89.39	270.43	7,229.03	58.92	-4,714.90	2,138,104.30	2,842,590.34	36.8750656	-107.4247712
11,625.00	89.23	270.26	7,230.16	59.48	-4,808.89	2,138,104.45	2,842,496.35	36.8750671	-107.4250925
11,720.00	89.83	271.51	7,230.94	60.95	-4,903.88	2,138,105.49	2,842,401.36	36.8750711	-107.4254173
11,814.00	89.80	271.68	7,231.25	63.57	-4,997.84	2,138,107.69	2,842,307.39	36.8750782	-107.4257385
11,909.00	89.43	272.08	7,231.89	66.68	-5,092.78	2,138,110.38	2,842,212.43	36.8750867	-107.4260631
12,003.00	89.66	270.11	7,232.63	68.48	-5,186.76	2,138,111.76	2,842,118.45	36.8750916	-107.4263844
12,098.00	89.63	269.95	7,233.22	68.53	-5,281.76	2,138,111.39	2,842,023.45	36.8750917	-107.4267092
12,192.00	89.46	270.51	7,233.97	68.91	-5,375.75	2,138,111.35	2,841,929.45	36.8750927	-107.4270306
12,287.00	89.12	269.57	7,235.14	68.97	-5,470.75	2,138,110.99	2,841,834.46	36.8750928	-107.4273554
12,381.00	89.43	269.31	7,236.33	68.05	-5,564.73	2,138,109.66	2,841,740.48	36.8750902	-107.4276767
12,476.00	90.87	269.94	7,236.09	67.43	-5,659.73	2,138,108.61	2,841,645.49	36.8750885	-107.4280015
12,570.00	90.67	270.08	7,234.82	67.45	-5,753.72	2,138,108.21	2,841,551.50	36.8750885	-107.4283228
12,665.00	90.50	269.70	7,233.85	67.27	-5,848.71	2,138,107.60	2,841,456.51	36.8750879	-107.4286476
12,760.00	90.03	270.20	7,233.41	67.18	-5,943.71	2,138,107.10	2,841,361.51	36.8750876	-107.4289724
12,854.00	89.97	270.02	7,233.41	67.36	-6,037.71	2,138,106.86	2,841,267.51	36.8750881	-107.4292938
12,949.00	89.09	270.03	7,234.19	67.41	-6,132.71	2,138,106.48	2,841,172.52	36.8750881	-107.4296186
13,043.00	90.84	271.09	7,234.25	68.32	-6,226.70	2,138,106.98	2,841,078.52	36.8750906	-107.4299399
13,138.00	91.55	271.02	7,232.27	70.07	-6,321.66	2,138,108.31	2,840,983.55	36.8750953	-107.4302646
13,232.00	90.10	271.21	7,230.91	71.90	-6,415.63	2,138,109.72	2,840,889.58	36.8751003	-107.4305858
13,327.00	89.46	270.61	7,231.28	73.41	-6,510.62	2,138,110.80	2,840,794.58	36.8751044	-107.4309106
13,421.00	89.93	269.17	7,231.78	73.23	-6,604.61	2,138,110.21	2,840,700.59	36.8751038	-107.4312320
13,516.00	89.33	269.21	7,232.39	71.89	-6,699.60	2,138,108.44	2,840,605.61	36.8751001	-107.4315567
13,610.00	88.92	268.78	7,233.83	70.24	-6,793.58	2,138,106.37	2,840,511.64	36.8750955	-107.4318780
13,705.00	90.17	269.16	7,234.58	68.53	-6,888.56	2,138,104.24	2,840,416.67	36.8750907	-107.4322027
13,800.00	90.40	268.33	7,234.11	66.45	-6,983.53	2,138,101.74	2,840,321.71	36.8750850	-107.4325274
13,894.00	90.44	268.70	7,233.42	64.02	-7,077.50	2,138,098.89	2,840,227.75	36.8750782	-107.4328487
13,989.00	89.87	268.67	7,233.16	61.83	-7,172.47	2,138,096.28	2,840,132.79	36.8750721	-107.4331734
14,083.00	88.82	268.39	7,234.24	59.42	-7,266.43	2,138,093.45	2,840,038.84	36.8750655	-107.4334947
14,178.00	90.00	269.95	7,235.22	58.05	-7,361.41	2,138,091.66	2,839,943.87	36.8750616	-107.4338194
14,272.00	88.82	269.93	7,236.19	57.95	-7,455.41	2,138,091.14	2,839,849.88	36.8750613	-107.4341407
14,367.00	89.39	269.77	7,237.67	57.70	-7,550.39	2,138,090.47	2,839,754.89	36.8750605	-107.4344655
14,461.00	90.94	269.47	7,237.40	57.08	-7,644.39	2,138,089.43	2,839,660.90	36.8750587	-107.4347869
14,556.00	90.30	269.66	7,236.37	56.36	-7,739.38	2,138,088.28	2,839,565.91	36.8750567	-107.4351116
14,650.00	91.11	270.60	7,235.21	56.57	-7,833.37	2,138,088.08	2,839,471.92	36.8750572	-107.4354330
14,745.00	90.64	270.48	7,233.76	57.46	-7,928.35	2,138,088.55	2,839,376.94	36.8750596	-107.4357577
14,839.00	90.47	270.50	7,232.85	58.27	-8,022.35	2,138,088.94	2,839,282.94	36.8750617	-107.4360791
14,933.00	90.24	269.91	7,232.27	58.60	-8,116.34	2,138,088.86	2,839,188.94	36.8750626	-107.4364004
15,028.00	89.93	269.81	7,232.13	58.37	-8,211.34	2,138,088.20	2,839,093.95	36.8750618	-107.4367252
15,122.00	90.40	269.77	7,231.86	58.03	-8,305.34	2,138,087.44	2,838,999.95	36.8750608	-107.4370466
15,217.00	90.64	269.59	7,231.00	57.50	-8,400.34	2,138,086.49	2,838,904.96	36.8750593	-107.4373714
15,311.00	90.40	269.67	7,230.14	56.89	-8,494.33	2,138,085.46	2,838,810.97	36.8750575	-107.4376927
15,406.00	90.10	269.84	7,229.73	56.48	-8,589.33	2,138,084.63	2,838,715.97	36.8750563	-107.4380175
15,500.00	90.03	270.45	7,229.62	56.72	-8,683.33	2,138,084.45	2,838,621.97	36.8750569	-107.4383389
15,595.00	89.83	270.87	7,229.74	57.82	-8,778.32	2,138,085.12	2,838,526.98	36.8750598	-107.4386637
15,689.00	90.24	271.36	7,229.68	59.65	-8,872.30	2,138,086.53	2,838,432.99	36.8750648	-107.4389850
15,784.00	90.44	270.72	7,229.12	61.37	-8,967.28	2,138,087.84	2,838,338.00	36.8750694	-107.4393097
15,878.00	89.87	270.71	7,228.86	62.54	-9,061.28	2,138,088.59	2,838,244.00	36.8750726	-107.4396311
15,973.00	89.56	272.36	7,229.34	65.09	-9,156.24	2,138,090.71	2,838,149.03	36.8750795	-107.4399557
15,998.00	89.48	272.42	7,229.54	66.13	-9,181.22	2,138,091.64	2,838,124.05	36.8750823	-107.4400411
Rosa 652H Actual FPP @ 15998' MD									
16,067.00	89.26	272.57	7,230.30	69.13	-9,250.15	2,138,094.34	2,838,055.11	36.8750905	-107.4402768
16,098.00	89.16	272.64	7,230.73	70.54	-9,281.11	2,138,095.61	2,838,024.14	36.8750943	-107.4403827

SDT
Survey Report - Geographic

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #652H - Slot A10 (652H Adjusted)
Project:	Rio Arriba, NM NAD83	TVD Reference:	6372+30 @ 6402.00ft (H&P 530)
Site:	Rosa Unit 29	MD Reference:	6372+30 @ 6402.00ft (H&P 530)
Well:	Rosa Unit #652H	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000 Multi User Db

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
16,165.00	89.16	272.64	7,231.71	73.62	-9,348.03	2,138,098.40	2,837,957.20	36.8751028	-107.4406115
BHL @ 16165' MD									

Design Targets									
Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
Rosa 652H SHL - actual wellpath hits target center - Point	0.00	0.00	0.00	0.00	0.00	2,138,066.35	2,847,305.45	36.8749048	-107.4086514
Rosa 652H Actual FPP - actual wellpath hits target center - Point	0.00	0.00	7,229.54	66.13	-9,181.22	2,138,091.64	2,838,124.05	36.8750823	-107.4400411
Rosa 652H BHL - actual wellpath hits target center - Point	0.00	0.00	7,231.71	73.62	-9,348.03	2,138,098.40	2,837,957.20	36.8751028	-107.4406115
Rosa 652H PBHL - actual wellpath misses target center by 20.44ft at 16165.00ft MD (7231.71 TVD, 73.62 N, -9348.03 E) - Point	0.00	0.00	7,242.00	60.55	-9,359.91	2,138,085.27	2,837,945.38	36.8750668	-107.4406521
Rosa 652H Actual POE - actual wellpath hits target center - Point	0.00	0.00	7,243.94	69.76	-795.40	2,138,132.57	2,846,509.75	36.8750964	-107.4113708

Design Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
7,610.00	7,243.94	69.76	-795.40	Rosa 652H Actual POE @ 7610' MD	
15,998.00	7,229.54	66.13	-9,181.22	Rosa 652H Actual FPP @ 15998' MD	
16,165.00	7,231.71	73.62	-9,348.03	BHL @ 16165' MD	

Checked By: _____

Approved By: _____

Date: _____

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 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 276336

ACKNOWLEDGMENTS

Operator: LOGOS OPERATING, LLC 2010 Afton Place Farmington, NM 87401	OGRID: 289408
	Action Number: 276336
	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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State of New Mexico
Energy, Minerals and Natural Resources
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1220 S. St Francis Dr.
Santa Fe, NM 87505

CONDITIONS

Action 276336

CONDITIONS

Operator: LOGOS OPERATING, LLC 2010 Afton Place Farmington, NM 87401	OGRID: 289408
	Action Number: 276336
	Action Type: [C-104] Completion Packet (C-104C)

CONDITIONS

Created By	Condition	Condition Date
plmartinez	RT EXPIRES 1/17/2024.	10/18/2023