

Well Name: ROSA UNIT	Well Location: T31N / R6W / SEC 22 / SENE /	County or Parish/State:
Well Number: 604H	Type of Well: CONVENTIONAL GAS WELL	Allottee or Tribe Name:
Lease Number: NMSF78766	Unit or CA Name: ROSA UNIT	Unit or CA Number: NMNM78407E
US Well Number: 3003931434	Well Status: Approved Application for Permit to Drill	Operator: LOGOS OPERATING LLC

Notice of Intent

Sundry ID: 2773780

Type of Submission: Notice of Intent

Type of Action: APD Change

Date Sundry Submitted: 02/06/2024

Time Sundry Submitted: 03:35

Date proposed operation will begin: 02/06/2024

Procedure Description: LOGOS Operating request a change in plans for the following: Original TD @ 16,893' MD 6,835' TVD to new TD @ 16,903' MD 6,855' TVD. Geology tops have been updated per changes. Original KOP @6,272' MD 6,169' TVD to new KOP @ 6,287' MD 6,194' TVD Original Landing point @ 7,329 MD 6,850' TVD to new Landing point @ 7,338' MD 6,870' TVD Surface: Original 13.375" casing size to new casing size 20" Intermediate: Original 9.625 casing size @ 6,199' MD to new casing size 13.375" @ 3,380' MD Added Intermediate 2 Production: Original depth @ 16,893' MD to new depth @ 16,903' MD The 2 new Intermediate & 5.5" production cementing bbls and sacks have been update per casing depth changes. Attached: New C102, Operation and Directional Drill plans.

NOI Attachments

Procedure Description

- Logos__Rosa_Unit_604H_Plan_Data_Prelim_5_20240206153416.pdf
- Rosa_Unit_604H_Operations_Plan_REV_1_1.25.24_RH_20240206153405.pdf
- 3.Rosa_Unit_604H_C_102_plat_20240122_signed_20240206153353.PDF

Well Name: ROSA UNIT	Well Location: T31N / R6W / SEC 22 / SENE /	County or Parish/State:
Well Number: 604H	Type of Well: CONVENTIONAL GAS WELL	Allottee or Tribe Name:
Lease Number: NMSF78766	Unit or CA Name: ROSA UNIT	Unit or CA Number: NMNM78407E
US Well Number: 3003931434	Well Status: Approved Application for Permit to Drill	Operator: LOGOS OPERATING LLC

Conditions of Approval

Additional

LOGOS_Rosa_Unit_604H_Additional_Casing_String_2773780_MHK_20240212083643.pdf

Operator

I certify that the foregoing is true and correct. Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction. Electronic submission of Sundry Notices through this system satisfies regulations requiring a

Operator Electronic Signature: LACEY GRANILLO

Signed on: FEB 06, 2024 03:35 PM

Name: LOGOS OPERATING LLC

Title: REGULATORY SPECIALIST

Street Address: 2010 AFTON PLACE

City: FARMINGTONState: NM

Phone: (505) 324-4145

Email address: LGRANILLO@LOGOSRESOURCESLLC.COM

Field

Representative Name:

Street Address:

City:State:Zip:

Phone:

Email address:

BLM Point of Contact

BLM POC Name: MATTHEW H KADE

BLM POC Title: Petroleum Engineer

BLM POC Phone: 5055647736

BLM POC Email Address: MKADE@BLM.GOV

Disposition: Approved

Disposition Date: 02/12/2024

Signature: Matthew Kade



United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Farmington District Office
6251 College Boulevard, Suite A
Farmington, New Mexico 87402
<http://www.blm.gov/nm>



February 12, 2024

CONDITIONS OF APPROVAL

Sundry Notice of Intent ID # 2773780 Request for Bottomhole Location Change

Operator: LOGOS Operating LLC
Lease: NMSF 78766
Agreement: NMNM 78407E
Well: Rosa Unit 604H
Location: SENE Sec 22 T31N R6W (Rio Arriba County, NM)

The requested change to the Application for Permit to Drill is approved with the following Conditions of Approval:

1. This approval is only for the sundry notice and well listed above.
2. No changes to the original APD or COA are granted with the approval of this Sundry Notice other than the addition of an additional intermediate string, change to casing sizes, directional plans, and cement volumes.

If you have any questions regarding this, please feel free to contact Matthew Kade of this office at (505) 564-7736 or mkade@blm.gov.

Submit one copy to
Appropriate District OfficeOIL CONSERVATION DIVISION
1220 South St. Francis Drive
Santa Fe, NM 87505☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-039-31434	² Pool Code 97232	³ Pool Name BASIN MANCOS
⁴ Property Code 320608	⁵ Property Name ROSA UNIT	⁶ Well Number 604H
⁷ GRID No. 289408	⁸ Operator Name LOGOS OPERATING, LLC	⁹ Elevation 6260'

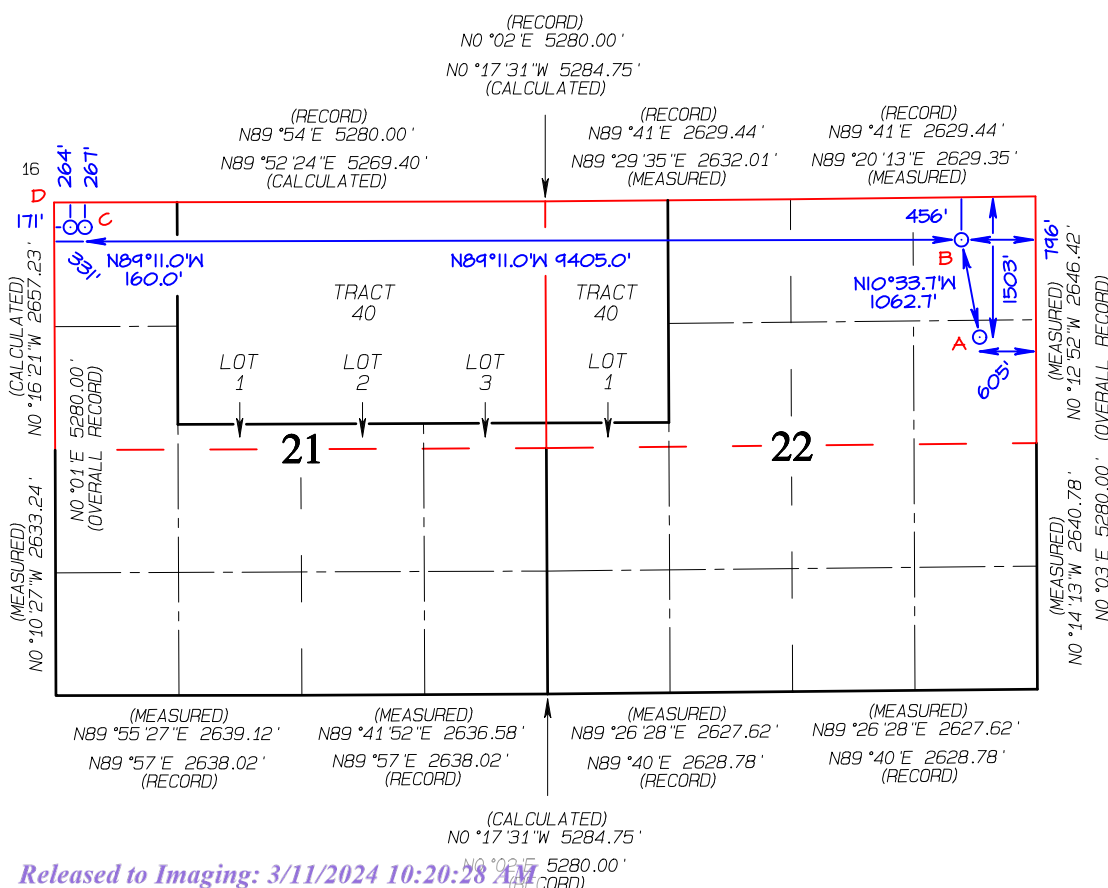
¹⁰ Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
H	22	31N	6W		1503	NORTH	605	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	21	31N	6W		264	NORTH	171	WEST	RIO ARriba

¹² Dedicated Acres 640.00	N/2 - Section 21, T31N, R6W N/2 - Section 22, T31N, R6W	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.
---	--	-------------------------------	----------------------------------	-------------------------

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)
264' FNL 171' FWL
SEC 21, T31N, R6W
LAT 36.891594°N
LONG -107.476002°W
DATUM: NAD1927FIRST PERFORATION (C)
267' FNL 331' FWL
SEC 21, T31N, R6W
LAT 36.891586°N
LONG -107.475455°W
DATUM: NAD1927FIRST TAKE POINT (B)
456' FNL 796' FEL
SEC 22, T31N, R6W
LAT 36.891117°N
LONG -107.443299°W
DATUM: NAD1927SURFACE LOCATION (A)
1503' FNL 605' FEL
SEC 22, T31N, R6W
LAT 36.888246°N
LONG -107.442648°W
DATUM: NAD1927LAT 36.891600°N
LONG -107.476607°W
DATUM: NAD1983LAT 36.891592°N
LONG -107.476060°W
DATUM: NAD1983LAT 36.891123°N
LONG -107.443903°W
DATUM: NAD1983LAT 36.888251°N
LONG -107.443252°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.

Lacey Granillo

2/6/24

Signature

Date

Lacey Granillo

Printed Name

lgranillo@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: JANUARY 22, 2024
Survey Date: JANUARY 13, 2012

Signature and Seal of Professional Surveyor



JASON C. EDWARDS

Certificate Number 15269

Logos Operating LLC

Rio Arriba, NM (NAD83)

Rosa Unit 9

Rosa Unit 604H

OH

Plan: Prelim 5

Standard Planning Report

26 January, 2024

SDT
Planning Report

Database:	EDM 5000 Multi User Db	Local Co-ordinate Reference:	Well Rosa Unit 604H
Company:	Logos Operating LLC	TVD Reference:	6260+30 @ 6290.00usft (H&P 530)
Project:	Rio Arriba, NM (NAD83)	MD Reference:	6260+30 @ 6290.00usft (H&P 530)
Site:	Rosa Unit 9	North Reference:	True
Well:	Rosa Unit 604H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Prelim 5		

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 9				
Site Position:		Northing:	2,142,882.02 usft	Latitude:	36.888251
From:	Lat/Long	Easting:	2,837,165.31 usft	Longitude:	-107.443252
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "		

Well	Rosa Unit 604H					
Well Position	+N/-S	0.00 usft	Northing:	2,142,882.02 usft	Latitude:	36.888251
	+E/-W	0.00 usft	Easting:	2,837,165.31 usft	Longitude:	-107.443252
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level:	6,260.00 usft
Grid Convergence:		0.23 °				

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	12/26/2023	8.48	63.43	49,458.99133393

Design	Prelim 5				
Audit Notes:					
Version:		Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.00	0.00	0.00	271.05	

Plan Survey Tool Program	Date	1/26/2024			
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks	
1	0.00	16,902.66 Prelim 5 (OH)	MWD+HRGM+MS		
			MWD + HRGM + Multi-Station		

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,032.06	10.64	25.76	1,029.00	44.37	21.41	2.00	2.00	0.00	25.76	
6,287.49	10.64	25.76	6,194.05	918.41	443.11	0.00	0.00	0.00	0.00	
7,337.65	90.09	271.05	6,870.00	1,045.60	-190.37	9.00	7.57	-10.92	-114.32	RU 604H POE
16,742.69	90.09	271.05	6,855.25	1,217.95	-9,593.82	0.00	0.00	0.00	0.00	RU 604H FPP
16,902.66	90.09	271.05	6,855.00	1,220.88	-9,753.76	0.00	0.00	0.00	0.00	RU 604H PBHL

SDT

Planning Report

Database:	EDM 5000 Multi User Db	Local Co-ordinate Reference:	Well Rosa Unit 604H
Company:	Logos Operating LLC	TVD Reference:	6260+30 @ 6290.00usft (H&P 530)
Project:	Rio Arriba, NM (NAD83)	MD Reference:	6260+30 @ 6290.00usft (H&P 530)
Site:	Rosa Unit 9	North Reference:	True
Well:	Rosa Unit 604H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Prelim 5		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
Start Build 2.00									
600.00	2.00	25.76	599.98	1.57	0.76	-0.73	2.00	2.00	0.00
700.00	4.00	25.76	699.84	6.29	3.03	-2.92	2.00	2.00	0.00
800.00	6.00	25.76	799.45	14.13	6.82	-6.56	2.00	2.00	0.00
900.00	8.00	25.76	898.70	25.11	12.11	-11.65	2.00	2.00	0.00
1,000.00	10.00	25.76	997.47	39.20	18.91	-18.19	2.00	2.00	0.00
1,032.06	10.64	25.76	1,029.00	44.37	21.41	-20.59	2.00	2.00	0.00
Start 5255.43 hold at 1032.06 MD									
1,100.00	10.64	25.76	1,095.78	55.67	26.86	-25.84	0.00	0.00	0.00
1,200.00	10.64	25.76	1,194.06	72.30	34.88	-33.55	0.00	0.00	0.00
1,300.00	10.64	25.76	1,292.34	88.93	42.91	-41.27	0.00	0.00	0.00
1,400.00	10.64	25.76	1,390.62	105.56	50.93	-48.99	0.00	0.00	0.00
1,500.00	10.64	25.76	1,488.90	122.20	58.96	-56.71	0.00	0.00	0.00
1,600.00	10.64	25.76	1,587.18	138.83	66.98	-64.43	0.00	0.00	0.00
1,700.00	10.64	25.76	1,685.46	155.46	75.00	-72.14	0.00	0.00	0.00
1,800.00	10.64	25.76	1,783.74	172.09	83.03	-79.86	0.00	0.00	0.00
1,900.00	10.64	25.76	1,882.02	188.72	91.05	-87.58	0.00	0.00	0.00
2,000.00	10.64	25.76	1,980.30	205.35	99.08	-95.30	0.00	0.00	0.00
2,100.00	10.64	25.76	2,078.58	221.98	107.10	-103.02	0.00	0.00	0.00
2,200.00	10.64	25.76	2,176.86	238.61	115.13	-110.73	0.00	0.00	0.00
2,300.00	10.64	25.76	2,275.14	255.25	123.15	-118.45	0.00	0.00	0.00
2,355.82	10.64	25.76	2,330.00	264.53	127.63	-122.76	0.00	0.00	0.00
Ojo Alamo									
2,400.00	10.64	25.76	2,373.42	271.88	131.17	-126.17	0.00	0.00	0.00
2,462.66	10.64	25.76	2,435.00	282.30	136.20	-131.01	0.00	0.00	0.00
Kirkland									
2,500.00	10.64	25.76	2,471.70	288.51	139.20	-133.89	0.00	0.00	0.00
2,600.00	10.64	25.76	2,569.98	305.14	147.22	-141.61	0.00	0.00	0.00
2,700.00	10.64	25.76	2,668.26	321.77	155.25	-149.32	0.00	0.00	0.00
2,800.00	10.64	25.76	2,766.54	338.40	163.27	-157.04	0.00	0.00	0.00
2,891.02	10.64	25.76	2,856.00	353.54	170.57	-164.07	0.00	0.00	0.00
Fruitland									
2,900.00	10.64	25.76	2,864.82	355.03	171.29	-164.76	0.00	0.00	0.00
2,980.56	10.64	25.76	2,944.00	368.43	177.76	-170.98	0.00	0.00	0.00
Top of Coals									
3,000.00	10.64	25.76	2,963.10	371.66	179.32	-172.48	0.00	0.00	0.00
3,100.00	10.64	25.76	3,061.38	388.29	187.34	-180.20	0.00	0.00	0.00
3,149.47	10.64	25.76	3,110.00	396.52	191.31	-184.01	0.00	0.00	0.00
Base of Coals									
3,200.00	10.64	25.76	3,159.66	404.93	195.37	-187.91	0.00	0.00	0.00
3,300.00	10.64	25.76	3,257.94	421.56	203.39	-195.63	0.00	0.00	0.00
3,329.56	10.64	25.76	3,287.00	426.47	205.76	-197.91	0.00	0.00	0.00
Picture Cliffs									
3,400.00	10.64	25.76	3,356.23	438.19	211.41	-203.35	0.00	0.00	0.00
3,425.21	10.64	25.76	3,381.00	442.38	213.44	-205.29	0.00	0.00	0.00
Lewis									
3,500.00	10.64	25.76	3,454.51	454.82	219.44	-211.07	0.00	0.00	0.00

SDT

Planning Report

Database:	EDM 5000 Multi User Db	Local Co-ordinate Reference:	Well Rosa Unit 604H
Company:	Logos Operating LLC	TVD Reference:	6260+30 @ 6290.00usft (H&P 530)
Project:	Rio Arriba, NM (NAD83)	MD Reference:	6260+30 @ 6290.00usft (H&P 530)
Site:	Rosa Unit 9	North Reference:	True
Well:	Rosa Unit 604H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Prelim 5		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
3,600.00	10.64	25.76	3,552.79	471.45	227.46	-218.79	0.00	0.00	0.00
3,700.00	10.64	25.76	3,651.07	488.08	235.49	-226.50	0.00	0.00	0.00
3,800.00	10.64	25.76	3,749.35	504.71	243.51	-234.22	0.00	0.00	0.00
3,900.00	10.64	25.76	3,847.63	521.34	251.54	-241.94	0.00	0.00	0.00
4,000.00	10.64	25.76	3,945.91	537.98	259.56	-249.66	0.00	0.00	0.00
4,100.00	10.64	25.76	4,044.19	554.61	267.58	-257.38	0.00	0.00	0.00
4,200.00	10.64	25.76	4,142.47	571.24	275.61	-265.09	0.00	0.00	0.00
4,300.00	10.64	25.76	4,240.75	587.87	283.63	-272.81	0.00	0.00	0.00
4,400.00	10.64	25.76	4,339.03	604.50	291.66	-280.53	0.00	0.00	0.00
4,500.00	10.64	25.76	4,437.31	621.13	299.68	-288.25	0.00	0.00	0.00
4,550.56	10.64	25.76	4,487.00	629.54	303.74	-292.15	0.00	0.00	0.00
Chacra									
4,600.00	10.64	25.76	4,535.59	637.76	307.70	-295.97	0.00	0.00	0.00
4,700.00	10.64	25.76	4,633.87	654.39	315.73	-303.68	0.00	0.00	0.00
4,800.00	10.64	25.76	4,732.15	671.02	323.75	-311.40	0.00	0.00	0.00
4,900.00	10.64	25.76	4,830.43	687.66	331.78	-319.12	0.00	0.00	0.00
5,000.00	10.64	25.76	4,928.71	704.29	339.80	-326.84	0.00	0.00	0.00
5,064.40	10.64	25.76	4,992.00	715.00	344.97	-331.81	0.00	0.00	0.00
Upper Cliff House									
5,100.00	10.64	25.76	5,026.99	720.92	347.82	-334.56	0.00	0.00	0.00
5,200.00	10.64	25.76	5,125.27	737.55	355.85	-342.27	0.00	0.00	0.00
5,300.00	10.64	25.76	5,223.55	754.18	363.87	-349.99	0.00	0.00	0.00
5,361.51	10.64	25.76	5,284.00	764.41	368.81	-354.74	0.00	0.00	0.00
Cliff House									
5,400.00	10.64	25.76	5,321.83	770.81	371.90	-357.71	0.00	0.00	0.00
5,407.29	10.64	25.76	5,329.00	772.03	372.48	-358.27	0.00	0.00	0.00
Menefee									
5,500.00	10.64	25.76	5,420.11	787.44	379.92	-365.43	0.00	0.00	0.00
5,600.00	10.64	25.76	5,518.39	804.07	387.95	-373.15	0.00	0.00	0.00
5,652.51	10.64	25.76	5,570.00	812.81	392.16	-377.20	0.00	0.00	0.00
Point Lookout									
5,700.00	10.64	25.76	5,616.67	820.71	395.97	-380.86	0.00	0.00	0.00
5,800.00	10.64	25.76	5,714.95	837.34	403.99	-388.58	0.00	0.00	0.00
5,900.00	10.64	25.76	5,813.23	853.97	412.02	-396.30	0.00	0.00	0.00
6,000.00	10.64	25.76	5,911.51	870.60	420.04	-404.02	0.00	0.00	0.00
6,100.00	10.64	25.76	6,009.79	887.23	428.07	-411.74	0.00	0.00	0.00
6,144.98	10.64	25.76	6,054.00	894.71	431.68	-415.21	0.00	0.00	0.00
Mancos									
6,200.00	10.64	25.76	6,108.07	903.86	436.09	-419.45	0.00	0.00	0.00
6,287.49	10.64	25.76	6,194.05	918.41	443.11	-426.21	0.00	0.00	0.00
Start DLS 9.00 TFO -114.32									
6,300.00	10.23	19.97	6,206.36	920.50	443.99	-427.05	9.00	-3.30	-46.26
6,350.00	9.76	353.96	6,255.63	928.89	445.06	-427.97	9.00	-0.93	-52.02
6,400.00	11.23	330.38	6,304.81	937.34	442.21	-424.96	9.00	2.93	-47.15
6,450.00	14.03	314.14	6,353.61	945.80	435.45	-418.04	9.00	5.61	-32.48
6,500.00	17.55	303.74	6,401.73	954.21	424.82	-407.27	9.00	7.03	-20.81
6,550.00	21.43	296.85	6,448.86	962.53	410.40	-392.69	9.00	7.75	-13.77
6,600.00	25.50	292.04	6,494.72	970.69	392.27	-374.41	9.00	8.15	-9.63
6,650.00	29.69	288.49	6,539.03	978.66	370.54	-352.54	9.00	8.38	-7.10
6,700.00	33.95	285.75	6,581.51	986.38	345.34	-327.21	9.00	8.53	-5.47
6,750.00	38.27	283.56	6,621.89	993.81	316.84	-298.57	9.00	8.62	-4.37
6,800.00	42.61	281.76	6,659.94	1,000.89	285.20	-266.81	9.00	8.69	-3.61
6,829.23	45.16	280.84	6,681.00	1,004.86	265.33	-246.88	9.00	8.73	-3.15

SDT

Planning Report

Database:	EDM 5000 Multi User Db	Local Co-ordinate Reference:	Well Rosa Unit 604H
Company:	Logos Operating LLC	TVD Reference:	6260+30 @ 6290.00usft (H&P 530)
Project:	Rio Arriba, NM (NAD83)	MD Reference:	6260+30 @ 6290.00usft (H&P 530)
Site:	Rosa Unit 9	North Reference:	True
Well:	Rosa Unit 604H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Prelim 5		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
Black Top									
6,850.00	46.98	280.23	6,695.41	1,007.59	250.62	-232.12	9.00	8.75	-2.92
6,900.00	51.37	278.91	6,728.09	1,013.87	213.32	-194.71	9.00	8.77	-2.65
6,950.00	55.77	277.74	6,757.78	1,019.67	173.53	-154.81	9.00	8.80	-2.34
7,000.00	60.18	276.68	6,784.29	1,024.98	131.48	-112.68	9.00	8.82	-2.11
7,050.00	64.60	275.72	6,807.46	1,029.76	87.45	-68.56	9.00	8.84	-1.93
7,100.00	69.02	274.82	6,827.14	1,033.97	41.69	-22.74	9.00	8.85	-1.79
7,150.00	73.45	273.97	6,843.22	1,037.59	-5.50	24.51	9.00	8.86	-1.69
7,200.00	77.88	273.17	6,855.60	1,040.60	-53.83	72.89	9.00	8.86	-1.61
7,250.00	82.31	272.39	6,864.20	1,042.99	-103.02	122.11	9.00	8.87	-1.56
7,300.00	86.75	271.62	6,868.96	1,044.73	-152.75	171.87	9.00	8.87	-1.53
7,337.65	90.09	271.05	6,870.00	1,045.60	-190.37	209.50	9.00	8.87	-1.52
Start 9405.04 hold at 7337.65 MD									
7,400.00	90.09	271.05	6,869.90	1,046.74	-252.71	271.85	0.00	0.00	0.00
7,500.00	90.09	271.05	6,869.75	1,048.58	-352.69	371.85	0.00	0.00	0.00
7,600.00	90.09	271.05	6,869.59	1,050.41	-452.67	471.85	0.00	0.00	0.00
7,700.00	90.09	271.05	6,869.43	1,052.24	-552.66	571.85	0.00	0.00	0.00
7,800.00	90.09	271.05	6,869.28	1,054.07	-652.64	671.85	0.00	0.00	0.00
7,900.00	90.09	271.05	6,869.12	1,055.91	-752.62	771.85	0.00	0.00	0.00
8,000.00	90.09	271.05	6,868.96	1,057.74	-852.61	871.85	0.00	0.00	0.00
8,100.00	90.09	271.05	6,868.80	1,059.57	-952.59	971.85	0.00	0.00	0.00
8,200.00	90.09	271.05	6,868.65	1,061.40	-1,052.57	1,071.85	0.00	0.00	0.00
8,300.00	90.09	271.05	6,868.49	1,063.24	-1,152.56	1,171.85	0.00	0.00	0.00
8,400.00	90.09	271.05	6,868.33	1,065.07	-1,252.54	1,271.85	0.00	0.00	0.00
8,500.00	90.09	271.05	6,868.18	1,066.90	-1,352.52	1,371.85	0.00	0.00	0.00
8,600.00	90.09	271.05	6,868.02	1,068.73	-1,452.50	1,471.85	0.00	0.00	0.00
8,700.00	90.09	271.05	6,867.86	1,070.57	-1,552.49	1,571.85	0.00	0.00	0.00
8,800.00	90.09	271.05	6,867.71	1,072.40	-1,652.47	1,671.85	0.00	0.00	0.00
8,900.00	90.09	271.05	6,867.55	1,074.23	-1,752.45	1,771.85	0.00	0.00	0.00
9,000.00	90.09	271.05	6,867.39	1,076.06	-1,852.44	1,871.84	0.00	0.00	0.00
9,100.00	90.09	271.05	6,867.24	1,077.90	-1,952.42	1,971.84	0.00	0.00	0.00
9,200.00	90.09	271.05	6,867.08	1,079.73	-2,052.40	2,071.84	0.00	0.00	0.00
9,300.00	90.09	271.05	6,866.92	1,081.56	-2,152.39	2,171.84	0.00	0.00	0.00
9,400.00	90.09	271.05	6,866.77	1,083.39	-2,252.37	2,271.84	0.00	0.00	0.00
9,500.00	90.09	271.05	6,866.61	1,085.23	-2,352.35	2,371.84	0.00	0.00	0.00
9,600.00	90.09	271.05	6,866.45	1,087.06	-2,452.34	2,471.84	0.00	0.00	0.00
9,700.00	90.09	271.05	6,866.30	1,088.89	-2,552.32	2,571.84	0.00	0.00	0.00
9,800.00	90.09	271.05	6,866.14	1,090.72	-2,652.30	2,671.84	0.00	0.00	0.00
9,900.00	90.09	271.05	6,865.98	1,092.56	-2,752.28	2,771.84	0.00	0.00	0.00
10,000.00	90.09	271.05	6,865.82	1,094.39	-2,852.27	2,871.84	0.00	0.00	0.00
10,100.00	90.09	271.05	6,865.67	1,096.22	-2,952.25	2,971.84	0.00	0.00	0.00
10,200.00	90.09	271.05	6,865.51	1,098.05	-3,052.23	3,071.84	0.00	0.00	0.00
10,300.00	90.09	271.05	6,865.35	1,099.89	-3,152.22	3,171.84	0.00	0.00	0.00
10,400.00	90.09	271.05	6,865.20	1,101.72	-3,252.20	3,271.84	0.00	0.00	0.00
10,500.00	90.09	271.05	6,865.04	1,103.55	-3,352.18	3,371.84	0.00	0.00	0.00
10,600.00	90.09	271.05	6,864.88	1,105.38	-3,452.17	3,471.84	0.00	0.00	0.00
10,700.00	90.09	271.05	6,864.73	1,107.22	-3,552.15	3,571.84	0.00	0.00	0.00
10,800.00	90.09	271.05	6,864.57	1,109.05	-3,652.13	3,671.84	0.00	0.00	0.00
10,900.00	90.09	271.05	6,864.41	1,110.88	-3,752.12	3,771.84	0.00	0.00	0.00
11,000.00	90.09	271.05	6,864.26	1,112.71	-3,852.10	3,871.84	0.00	0.00	0.00
11,100.00	90.09	271.05	6,864.10	1,114.55	-3,952.08	3,971.84	0.00	0.00	0.00
11,200.00	90.09	271.05	6,863.94	1,116.38	-4,052.07	4,071.84	0.00	0.00	0.00
11,300.00	90.09	271.05	6,863.79	1,118.21	-4,152.05	4,171.84	0.00	0.00	0.00

SDT

Planning Report

Database:	EDM 5000 Multi User Db	Local Co-ordinate Reference:	Well Rosa Unit 604H
Company:	Logos Operating LLC	TVD Reference:	6260+30 @ 6290.00usft (H&P 530)
Project:	Rio Arriba, NM (NAD83)	MD Reference:	6260+30 @ 6290.00usft (H&P 530)
Site:	Rosa Unit 9	North Reference:	True
Well:	Rosa Unit 604H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Prelim 5		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
11,400.00	90.09	271.05	6,863.63	1,120.04	-4,252.03	4,271.84	0.00	0.00	0.00
11,500.00	90.09	271.05	6,863.47	1,121.88	-4,352.01	4,371.84	0.00	0.00	0.00
11,600.00	90.09	271.05	6,863.32	1,123.71	-4,452.00	4,471.84	0.00	0.00	0.00
11,700.00	90.09	271.05	6,863.16	1,125.54	-4,551.98	4,571.84	0.00	0.00	0.00
11,800.00	90.09	271.05	6,863.00	1,127.37	-4,651.96	4,671.84	0.00	0.00	0.00
11,900.00	90.09	271.05	6,862.84	1,129.21	-4,751.95	4,771.84	0.00	0.00	0.00
12,000.00	90.09	271.05	6,862.69	1,131.04	-4,851.93	4,871.84	0.00	0.00	0.00
12,100.00	90.09	271.05	6,862.53	1,132.87	-4,951.91	4,971.84	0.00	0.00	0.00
12,200.00	90.09	271.05	6,862.37	1,134.70	-5,051.90	5,071.84	0.00	0.00	0.00
12,300.00	90.09	271.05	6,862.22	1,136.54	-5,151.88	5,171.84	0.00	0.00	0.00
12,400.00	90.09	271.05	6,862.06	1,138.37	-5,251.86	5,271.84	0.00	0.00	0.00
12,500.00	90.09	271.05	6,861.90	1,140.20	-5,351.85	5,371.84	0.00	0.00	0.00
12,600.00	90.09	271.05	6,861.75	1,142.03	-5,451.83	5,471.84	0.00	0.00	0.00
12,700.00	90.09	271.05	6,861.59	1,143.87	-5,551.81	5,571.84	0.00	0.00	0.00
12,800.00	90.09	271.05	6,861.43	1,145.70	-5,651.79	5,671.84	0.00	0.00	0.00
12,900.00	90.09	271.05	6,861.28	1,147.53	-5,751.78	5,771.84	0.00	0.00	0.00
13,000.00	90.09	271.05	6,861.12	1,149.36	-5,851.76	5,871.84	0.00	0.00	0.00
13,100.00	90.09	271.05	6,860.96	1,151.20	-5,951.74	5,971.84	0.00	0.00	0.00
13,200.00	90.09	271.05	6,860.81	1,153.03	-6,051.73	6,071.84	0.00	0.00	0.00
13,300.00	90.09	271.05	6,860.65	1,154.86	-6,151.71	6,171.84	0.00	0.00	0.00
13,400.00	90.09	271.05	6,860.49	1,156.69	-6,251.69	6,271.84	0.00	0.00	0.00
13,500.00	90.09	271.05	6,860.34	1,158.53	-6,351.68	6,371.84	0.00	0.00	0.00
13,600.00	90.09	271.05	6,860.18	1,160.36	-6,451.66	6,471.84	0.00	0.00	0.00
13,700.00	90.09	271.05	6,860.02	1,162.19	-6,551.64	6,571.84	0.00	0.00	0.00
13,800.00	90.09	271.05	6,859.87	1,164.02	-6,651.63	6,671.84	0.00	0.00	0.00
13,900.00	90.09	271.05	6,859.71	1,165.86	-6,751.61	6,771.84	0.00	0.00	0.00
14,000.00	90.09	271.05	6,859.55	1,167.69	-6,851.59	6,871.84	0.00	0.00	0.00
14,100.00	90.09	271.05	6,859.39	1,169.52	-6,951.57	6,971.84	0.00	0.00	0.00
14,200.00	90.09	271.05	6,859.24	1,171.35	-7,051.56	7,071.84	0.00	0.00	0.00
14,300.00	90.09	271.05	6,859.08	1,173.19	-7,151.54	7,171.84	0.00	0.00	0.00
14,400.00	90.09	271.05	6,858.92	1,175.02	-7,251.52	7,271.84	0.00	0.00	0.00
14,500.00	90.09	271.05	6,858.77	1,176.85	-7,351.51	7,371.84	0.00	0.00	0.00
14,600.00	90.09	271.05	6,858.61	1,178.68	-7,451.49	7,471.84	0.00	0.00	0.00
14,700.00	90.09	271.05	6,858.45	1,180.52	-7,551.47	7,571.84	0.00	0.00	0.00
14,800.00	90.09	271.05	6,858.30	1,182.35	-7,651.46	7,671.84	0.00	0.00	0.00
14,900.00	90.09	271.05	6,858.14	1,184.18	-7,751.44	7,771.84	0.00	0.00	0.00
15,000.00	90.09	271.05	6,857.98	1,186.01	-7,851.42	7,871.84	0.00	0.00	0.00
15,100.00	90.09	271.05	6,857.83	1,187.85	-7,951.41	7,971.84	0.00	0.00	0.00
15,200.00	90.09	271.05	6,857.67	1,189.68	-8,051.39	8,071.84	0.00	0.00	0.00
15,300.00	90.09	271.05	6,857.51	1,191.51	-8,151.37	8,171.84	0.00	0.00	0.00
15,400.00	90.09	271.05	6,857.36	1,193.34	-8,251.35	8,271.84	0.00	0.00	0.00
15,500.00	90.09	271.05	6,857.20	1,195.18	-8,351.34	8,371.84	0.00	0.00	0.00
15,600.00	90.09	271.05	6,857.04	1,197.01	-8,451.32	8,471.84	0.00	0.00	0.00
15,700.00	90.09	271.05	6,856.89	1,198.84	-8,551.30	8,571.84	0.00	0.00	0.00
15,800.00	90.09	271.05	6,856.73	1,200.67	-8,651.29	8,671.84	0.00	0.00	0.00
15,900.00	90.09	271.05	6,856.57	1,202.51	-8,751.27	8,771.84	0.00	0.00	0.00
16,000.00	90.09	271.05	6,856.41	1,204.34	-8,851.25	8,871.84	0.00	0.00	0.00
16,100.00	90.09	271.05	6,856.26	1,206.17	-8,951.24	8,971.84	0.00	0.00	0.00
16,200.00	90.09	271.05	6,856.10	1,208.00	-9,051.22	9,071.84	0.00	0.00	0.00
16,300.00	90.09	271.05	6,855.94	1,209.84	-9,151.20	9,171.84	0.00	0.00	0.00
16,400.00	90.09	271.05	6,855.79	1,211.67	-9,251.19	9,271.84	0.00	0.00	0.00
16,500.00	90.09	271.05	6,855.63	1,213.50	-9,351.17	9,371.84	0.00	0.00	0.00
16,600.00	90.09	271.05	6,855.47	1,215.33	-9,451.15	9,471.84	0.00	0.00	0.00
16,700.00	90.09	271.05	6,855.32	1,217.17	-9,551.13	9,571.84	0.00	0.00	0.00

SDT

Planning Report

Database:	EDM 5000 Multi User Db	Local Co-ordinate Reference:	Well Rosa Unit 604H
Company:	Logos Operating LLC	TVD Reference:	6260+30 @ 6290.00usft (H&P 530)
Project:	Rio Arriba, NM (NAD83)	MD Reference:	6260+30 @ 6290.00usft (H&P 530)
Site:	Rosa Unit 9	North Reference:	True
Well:	Rosa Unit 604H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Prelim 5		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
16,742.69	90.09	271.05	6,855.25	1,217.95	-9,593.82	9,614.52	0.00	0.00	0.00	
FPP @ 331' FWL										
16,800.00	90.09	271.05	6,855.16	1,219.00	-9,651.12	9,671.84	0.00	0.00	0.00	
16,902.66	90.09	271.05	6,855.00	1,220.88	-9,753.76	9,774.49	0.00	0.00	0.00	
TD at 16902.66' MD @ 171' FWL										

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
- hit/miss target - Shape										
RU 604H SHL - plan hits target center - Point	0.00	0.00	0.00	0.00	0.00	2,142,882.02	2,837,165.31	36.888251	-107.443252	
RU 604H PBHL - plan hits target center - Point	0.00	0.00	6,855.00	1,220.88	-9,753.76	2,144,063.03	2,827,406.65	36.891600	-107.476607	
RU 604H FPP - plan hits target center - Point	0.00	0.00	6,855.25	1,217.95	-9,593.82	2,144,060.75	2,827,566.60	36.891592	-107.476060	
RU 604H POE - plan hits target center - Point	0.00	0.00	6,870.00	1,045.60	-190.37	2,143,926.84	2,836,970.67	36.891123	-107.443903	

Formations							
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)		
2,355.82	2,330.00	Ojo Alamo					
2,462.66	2,435.00	Kirkland					
2,891.02	2,856.00	Fruitland					
2,980.56	2,944.00	Top of Coals					
3,149.47	3,110.00	Base of Coals					
3,329.56	3,287.00	Picture Cliffs					
3,425.21	3,381.00	Lewis					
4,550.56	4,487.00	Chacra					
5,064.40	4,992.00	Upper Cliff House					
5,361.51	5,284.00	Cliff House					
5,407.29	5,329.00	Menefee					
5,652.51	5,570.00	Point Lookout					
6,144.98	6,054.00	Mancos					
6,829.23	6,681.00	Black Top					

SDT
Planning Report

Database:	EDM 5000 Multi User Db	Local Co-ordinate Reference:	Well Rosa Unit 604H
Company:	Logos Operating LLC	TVD Reference:	6260+30 @ 6290.00usft (H&P 530)
Project:	Rio Arriba, NM (NAD83)	MD Reference:	6260+30 @ 6290.00usft (H&P 530)
Site:	Rosa Unit 9	North Reference:	True
Well:	Rosa Unit 604H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Prelim 5		

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
500.00	500.00	0.00	0.00	Start Build 2.00
1,032.06	1,029.00	44.37	21.41	Start 5255.43 hold at 1032.06 MD
6,287.49	6,194.05	918.41	443.11	Start DLS 9.00 TFO -114.32
7,337.65	6,870.00	1,045.60	-190.37	Start 9405.04 hold at 7337.65 MD
16,742.69	6,855.25	1,217.95	-9,593.82	FPP @ 331' FWL
16,902.66	6,855.00	1,220.88	-9,753.76	TD at 16902.66' MD @ 171' FWL



LOGOS Operating, LLC Operations Plan

Note: This procedure will be adjusted onsite based upon actual conditions

Date:	January 25, 2024	Pool:	Basin Mancos
Well Name:	Rosa Unit 604H	GL Elevation:	6,260'
Surface Location:	Sec 22, T31N, R6W 1503' FNL, 605' FEL (36.888251° N, 107.443252° W – NAD83)	KB:	30'
Bottom Hole Location:	Sec 21, T31N, R6W 264' FNL, 171' FWL (36.891600° N, 107.476607° W – NAD83)	Measured Depth:	16,903' (KB)
Lease Serial CA Serial	#NMSF078766 #NMNM78407E	County:	Rio Arriba

I. GEOLOGY

A. Formation Tops (Based on KB Elevation): Estimated top of important geological markers:
SURFACE FORMATION – NACIMIENTO

NAME	MD	TVD	NAME	MD	TVD
OJO ALAMO	2,356'	2,330'	*POINT LOOKOUT	5,653'	5,570'
KIRTLAND	2,463'	2,435'	*MANCOS	6,145'	6,054'
*FRUITLAND	2,891'	2,856'	KICKOFF POINT	6,287'	6,194'
*PICTURED CLIFFS	3,330'	3,287'	LANDING POINT	7,338'	6,870'
LEWIS	3,425'	3,381'	TD	16,903'	6,855'
CHACRA	4,551'	4,487'			
*CLIFF HOUSE	5,362'	5,284'			
MENEFEE	5,407'	5,329'			

* indicates depth at which anticipated water, oil, gas or other mineral bearing formations are expected to be encountered.

B. MUD LOGGING PROGRAM: Mudlogger on location from KOP to TD.

C. LOGGING PROGRAM: LWD GR from surface casing to TD.

D. NATURAL GAUGES: Gauge any noticeable increases in gas flow. Record all gauges in Tour book and on morning reports.

II. DRILLING

A. MUD PROGRAM: LSND mud (WBM) will be used to drill the 26"/24" surface hole, 17-1/2" intermediate 1 and 12-1/4" intermediate hole 2 vertical hole. A LSND (WBM) or (OBM) will be used to drill the 8-1/2" curve and lateral portion of the wellbore. Treat for lost circulation as necessary. Obtain 100% returns prior to cementing. Notify Engineering of any mud losses.

Above ground steel pits will be used for fluid and cuttings while drilling. In the unlikely event that a tank develops a leak, upon immediate visual discovery, the fluid would be transferred to another tank and contaminated soil would be removed and disposed. Any leaks, spills or other undesirable events will be reported in accordance with BLM NTL 3A. Rig crews will monitor the tanks at all times.



- B. BOP TESTING:** The BOPE will be tested to **250 psi (Low) for 5 minutes** and **3000 psi (High) for 10 minutes**. Pressure test surface casing to **600 psi for 30 minutes** and intermediate casing to **1500 psi for 30 minutes**. Utilize a BOPE Testing Unit with a recording chart and appropriate test plug for testing. The drum brakes will be inspected and tested each tour. BOP equipment will be tested every 30 days, after any repairs are made to the BOP equipment, and after the BOP equipment is subjected to pressure. Annular preventers will be functionally operated at least once per week. Pipe and blind rams shall be activated each trip or but not more than once a day. The New Mexico Oil & Gas Conservation Commission and the BLM will be notified 24 hours in advance of testing of BOPE. **All tests and inspections will be recorded and logged with time and results.** A full BOP test will be conducted when initially installed for the first well on the pad or if seals subject to test pressure are broken, following related repairs and at a minimum of 30 day intervals. A BOPE Shell Test only will be conducted for subsequent wells on the pad when seals subject to pressure have not been broken or repaired and fall within the 30 day interval of first full test.
- C. GeoHazards:** There are no Geohazards
- D. Maximum Anticipated Pressure:** 6,870' TVD x 0.43 = 2,954 psi
- E. H2S Concerns:** There is no record of any naturally occurring H2S in any formation in the Rosa Unit. No H2S is anticipated in this formation or this well.

III. MATERIALS

A. CASING EQUIPMENT:

CASING TYPE	OHSIZE (IN)	DEPTH (MD)	CSG SIZE	WEIGHT	GRADE	CONN
SURFACE	26" or 24"	320' or greater	20"	94 LBS	J-55 or equiv	LTC/BTC
INTERMEDIATE 1	17.5"	3,380'	13.375"	54.5 LBS	J-55 or equiv	LTC/BTC
INTERMEDIATE 2	12.25"	6,220'	9.625"	43.5 LBS	N-80 or equiv	LTC/BTC
PRODUCTION	8.5"	16,903'	5.5"	20 LBS	P-110 or equiv	LTC/BTC

NOTE: All casing depths are approximate, based on KB elevation and will be based on drilling conditions +/- 50'. Weights, grades and connections will be based on availability and may vary but will be equivalent or greater.

B. FLOAT EQUIPMENT:

- SURFACE CASING:** 20" cement nose guide shoe. Run (1) standard centralizer on each of the bottom (3) joints of Surface Casing.
- INTERMEDIATE CASING 1:** 13-3/8" cement nose guide shoe with a self-fill insert float. Place float collar one joint above the shoe. Install (1) centralizer on each of the bottom (3) joints and one standard centralizer every (3) joints to 2,500 ft. Run (1) centralizer at 2,500 ft., 2,000ft., 1,500 ft., 1,000 ft., and 500ft.
 - Casing will be kept fluid filled during drilling
- INTERMEDIATE CASING 2:** 9-5/8" cement nose guide shoe with a self-fill insert float. Place float collar one joint above the shoe. Install (1) centralizer on each of the bottom (3) joints and one standard centralizer every (3) joints to 2,500 ft. Run (1) centralizer at 2,500 ft., 2,300ft., 2,000ft., 1,500 ft., and 1,000 ft. Optional use of DV Tools (2) will be strategically placed above loss circulation zones anticipated in the Mesaverde and Fruitland Coal. Optional use of cancellation plugs for DV tools may be used if losses while cementing are not encountered. Optional use of an ICP may be used in conjunction with DV Tools.



4. **PRODUCTION CASING:** Run 5-1/2" casing with cement nose guide Float Shoe, 5-1/2" full or pup joints as necessary, Landing Collar, 5-1/2" full or pup joints as necessary, at least (1) one Toe Sleeve (Sliding Sleeve) positioned inside the applicable production area. Centralizer program will be determined by wellbore conditions. Production casing to be pressure tested during completion operations with frac stack installed.

C. **CEMENTING:**

(Note: Cement type and volumes may be adjusted onsite due to actual conditions and availability)

1. **SURFACE:** Casing shall be set at ~ 320' and cemented to surface. TOC at Surface.

Surface - 20"	Top	Footage	Cement (ft3/ft) Annular Capacity	Excess (30%)	Total (ft3)	Total (bbl)	Slurry Yield (ft3/sk)	Sacks Cement	Density (PPG)
Type G	-	320	0.9599	1.3	449	80	1.10	408	15.8
Type III		320	0.9599	1.3	449	80	1.39	323	14.6

24" hole

Set Depth

320

2. **INTERMEDIATE 1:** Intermediate casing shall be kept fluid-filled while running into the hole to meet BLM minimum collapse requirements. The intermediate casing will be cemented in 1 stage. If cement does not circulate to the surface, a CBL will be run to determine TOC.

Intermediate 1 -13-3/8"	Top	Footage	Cement (ft3/ft) Annular Capacity	Excess (30%)	Total (ft3)	Total (bbl)	Slurry Yield (ft3/sk)	Sacks Cement	Density (PPG)
Stage 1 Tail	2,780	600	0.6947	1.3	575	102	1.10	523	15.8
Stage 1 Lead - OH	320	2,460	0.6947	1.3	2,222	396	1.90	1169	12.4
Stage 2 Lead - Cased	-	320	1.019	1	326	58	1.90	172	12.4
					3,123	556		1864	

Set Depth

3380

Calculations based on 30% excess for open hole and cement to the surface. Actual excess pumped will be determined by well conditions.

3. **INTERMEDIATE 2:** Intermediate casing shall be kept fluid filled while running in to the hole to meet BLM minimum collapse requirements. The intermediate casing will be cemented in 2 or 3 stages using DV/STAGE tools in order to reduce cement losses and maximize cement coverage. Operator proposes optional DV tools and optional ICP's above anticipated loss circulation zones in the Mesaverde and in the Fruitland coal. If losses are not observed during the second stage a cancellation plug will be pumped and the remaining cement will be pumped during stage 2. If cement does not circulate to the DV tool(s) or to surface, a CBL will be run to determine TOC.



Intermediate 2 -9-5/8"	Top	Footage	Cement (ft3/ft) Annular Capacity	Excess (30%)	Total (ft3)	Total (bbl)	Slurry Yield (ft3/sk)	Sacks Cement	Density (PPG)
Stage 1 Tail	5,720	500	0.3132	1.3	220	39	1.10	200	15.8
Stage 1 Lead	4,626	1,094	0.3132	1.3	445	79	1.90	234	12.4
					665	119		434	
Stage 2 Tail	4,026	600	0.3132	1.3	244	44	1.58	155	13.2
Stage 2 Lead	3,280	746	0.3132	1.3	304	54	1.90	160	12.4
Stage 2 Lead - Cased	3,180	100	0.3627	1	36	6	1.90	19	12.4
Stage 2 Totals					584	104		334	
Int 2 Totals					1,250	223		768	
Contingency									
Stage 3 Tail	3,380	75	0.3132	1.3	31	5	1.58	19	13.2
Stage 3 Tail - Cased	2,880	500	0.3490	1	175	31	1.58	110	13.2
Stage 3 Lead - Cased	-	2,880	0.3490	1	1,005	179	1.90	529	12.4
Contingency Stage 3 Totals					1,210	216		659	

Set Depth 6220

Calculations based on 30% excess for open hole and cement to surface. Actual excess pumped will be determined by well conditions.

4. **PRODUCTION:** Production casing will be cemented in 1 stage with 100' of cement overlap above intermediate shoe. A CBL, or alternatively, a Temperature Survey will be used to determine TOC.

Production 5-1/2"	Top	ft	Cement (ft3/ft) Annular Capacity	Excess (15%)	Total (ft3)	Total (bbl)	Slurry Yield (ft3/sk)	Sacks Cement	Density (PPG)
Cased Lead	6,120	100	0.2531	1	25	5	1.59	16	13.2
Open Hole Lead	6,220	10,683	0.2291	1.15	2,820	502	1.59	1,773	13.2
					2,845	507		1,789	

Set Depth 16903

Calculations based on 15% excess for open hole and 100' overlap into intermediate casing. Actual volumes will vary.

Cement calculations are used for volume estimation. Well conditions will dictate final cement job design. Actual volumes will be calculated and determined by conditions onsite. All cement slurries will meet or exceed minimum BLM and New Mexico Oil Conservation Division requirements. Slurries used will be the slurries listed above or equivalent slurries depending on service provider selected. Cement yields may change depending on slurries selected. All waiting on cement times shall be a minimum of 8 hours or adequate to achieve a minimum of 500 psi compressive strength at the casing shoe prior to drilling out.

IV. **COMPLETION**

A. **CBL**

CBLs and/or Temperature Surveys will be performed as needed or required to determine cement top if cement is not circulated.

B. **PRESSURE TEST**

- C. Pressure test 5-1/2" casing to 0.22 psi/ft * 6,865' TVD = 1510 psi for 30 minutes. Increase pressure to Open RSI sleeves.

D. **STIMULATION**



Stimulate with sand and water. Isolate stages with flow through or dissolvable frac plugs. Drill out frac plugs and flowback lateral.

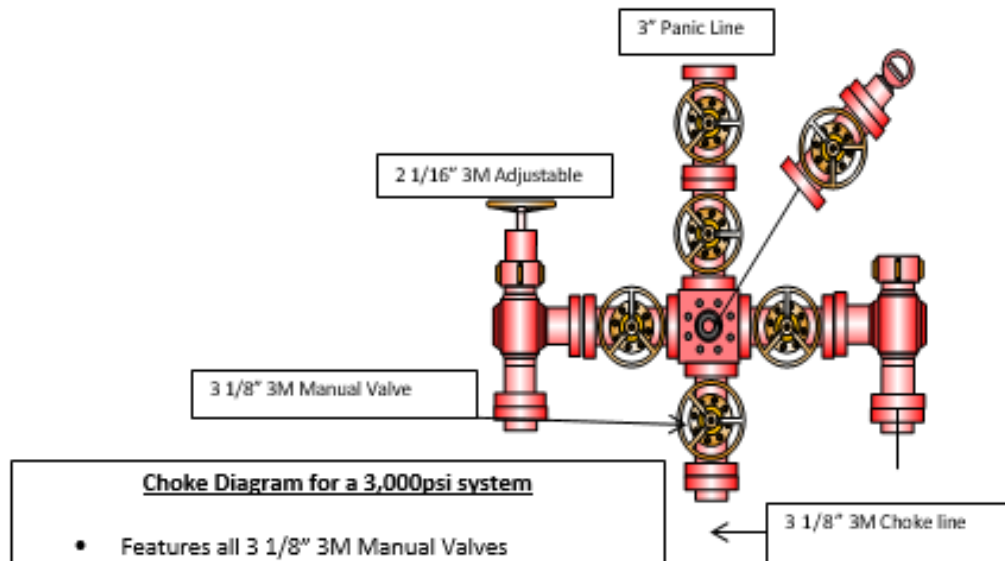
E. PRODUCTION TUBING

2-7/8", 6.5#, J-55 or L-80, EUE tubing will be run once volumes and pressures dictate. Due to the extremely high initial flow rates and pressures seen in offset wells, tubing will be installed once it is safe to do so, typically 12-36 months after completion.

*NOTE: Although this horizontal well may be drilled past the applicable setbacks, an unorthodox location application is not required because the completed interval in this well, as defined by 19.15.16.7 8(1) NMAC, will be entirely within the applicable setbacks. This approach complies with all applicable rules, including 19.15.16.14 A(3) NMAC, 19.15.16.14 8(2) NMAC, 19.15.16.15 8(2)NMAC, and 19.15.16.15. 8(4) NMAC.

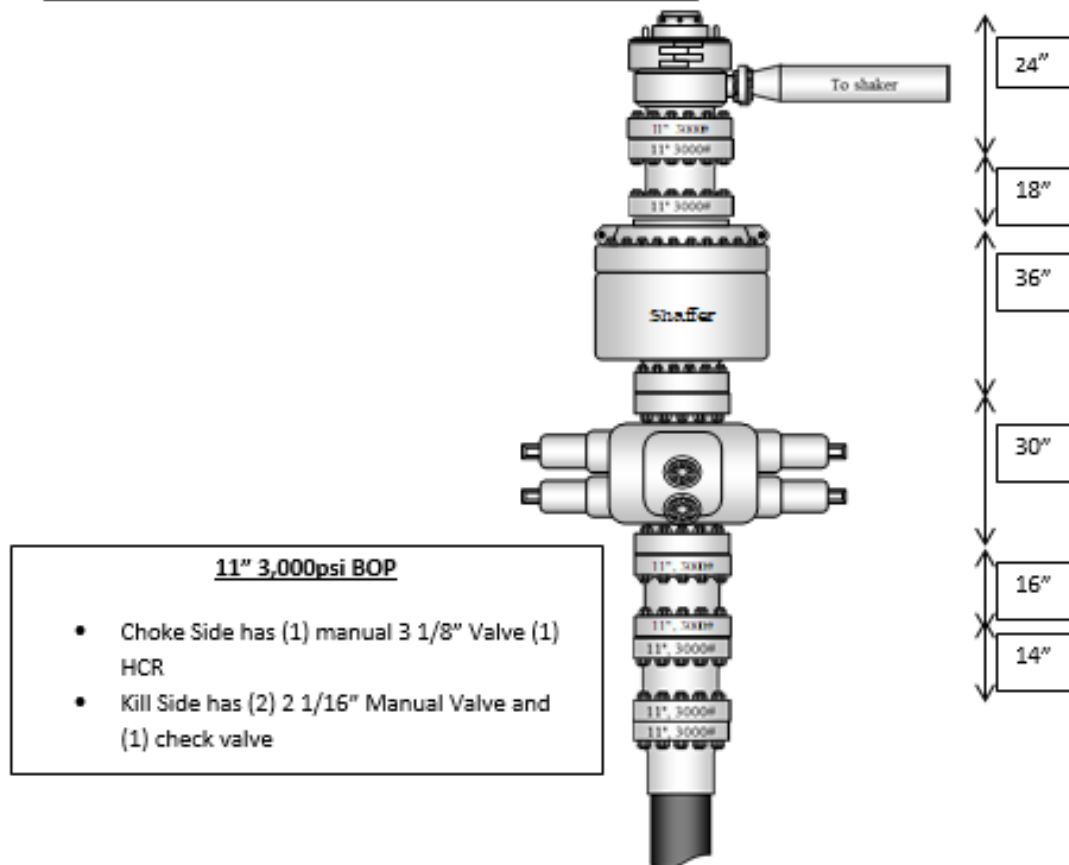


3M 11" B.O.P.E Diagram



Choke Diagram for a 3,000psi system

- Features all 3 1/8" 3M Manual Valves
- Two 2 1/16" Manual Adjustable Choke Valves
- 3" Panic Line and 2" Vent lines
- (2) 3 1/8" 3M ~~Coflex~~ Hose f/Choke to BOP



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

CONDITIONS

Action 313358

CONDITIONS

Operator: LOGOS OPERATING, LLC 2010 Afton Place Farmington, NM 87401	OGRID: 289408
	Action Number: 313358
	Action Type: [C-103] NOI Change of Plans (C-103A)

CONDITIONS

Created By	Condition	Condition Date
ward.rikala	All original COA's still apply. Additionally, if cement is not circulated to surface during cementing operations, then a CBL is required.	3/11/2024