U.S. Department of the Interior
BUREAU OF LAND MANAGEMENT

Sundry Print Report

02/12/2024

Well Name: ROSA UNIT	**Well Location:** T31N / R6W / SEC 22 / SENE /	**County or Parish/State:**
Well Number: 606H	**Type of Well:** CONVENTIONAL GAS WELL	**Allottee or Tribe Name:**
Lease Number: NMSF78766	**Unit or CA Name:**	**Unit or CA Number:** NMNM078407E
US Well Number: 3003931435	**Well Status:** Approved Application for Permit to Drill	**Operator:** LOGOS OPERATING LLC

Notice of Intent

Sundry ID: 2773840

Type of Submission: Notice of Intent

Type of Action: APD Change

Date Sundry Submitted: 02/07/2024

Time Sundry Submitted: 08:34

Date proposed operation will begin: 02/07/2024

Procedure Description: LOGOS Operating requests a change in plans for the following: Original TD @ 16,198' MD 6,825' TVD to new TD @ 16,363' MD 6,845' TVD. Geology tops have been updated per changes. Original KOP @ 6,326' MD 6,229' TVD to new KOP @ 6,234' MD 6,230' TVD Original Landing point @ 7,217' MD 6,845' TVD to new Landing point @ 7,235' MD 6,865' TVD Intermediate: Original 9.625 casing size @ 6,101' MD to new casing size 13.375" @ 3,334' MD Added Intermediate 2 Production: Original depth @ 16,198' MD to new depth @ 16,363' 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

Rosa_Unit_606H_Ops_Plan_Dir_Plan_6_1.26.2024_RH_20240207083307.pdf

Logos___Rosa_Unit_606H_Plan_Data_Prelim_6_20240207083300.pdf

2.Rosa_Unit_606H_Revised_C_102_Plat_20240129_signed_20240207083249.pdf

Well Name: ROSA UNIT

Well Location: T31N / R6W / SEC 22 / SENE /

County or Parish/State:

Well Number: 606H

Type of Well: CONVENTIONAL GAS WELL

Allottee or Tribe Name:

Lease Number: NMSF78766

Unit or CA Name:

Unit or CA Number: NMNM078407E

US Well Number: 3003931435

Well Status: Approved Application for Permit to Drill

Operator: LOGOS OPERATING LLC

Conditions of Approval

Additional

LOGOS_Rosa_Unit_606H_Additional_Casing_String_2773840_MHK_20240212085213.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 07, 2024 08:34 AM

Name: LOGOS OPERATING LLC

Title: REGULATORY SPECIALIST

Street Address: 2010 AFTON PLACE

City: FARMINGTON **State:** 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 # 2773840
Request for Additional Casing String

Operator:	LOGOS Operating LLC
Lease:	NMSF 78766
Agreement:	NMNM 78407E
Well:	Rosa Unit 606H (API # 30-039-31435)
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.

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

State of New Mexico
Energy, Minerals & Natural Resources Department

OIL CONSERVATION DIVISION
1220 South St. Francis Drive
Santa Fe, NM 87505

Form C-102
Revised August 1, 2011

Submit one copy to Appropriate District Office

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

[1] API Number	[2] Pool Code	[3] Pool Name
30-039-31435	97232	BASIN MANCOS

[4] Property Code	[5] Property Name	[6] Well Number
320608	ROSA UNIT	606H

[7] OGRID No.	[8] Operator Name	[9] Elevation
289408	LOGOS OPERATING, LLC	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		1509	NORTH	592	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
E	21	31N	6W		1566	NORTH	160	WEST	RIO ARRIBA

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

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

LAST TAKE POINT (D)
1566' FNL 160' FWL
SEC 21, T31N, R6W
LAT 36.888018 °N
LONG -107.476034 °W
DATUM: NAD1927

LAT 36.888024 °N
LONG -107.476639 °W
DATUM: NAD1983

N89°15.2'W 170.0'

FIRST PERFORATION (C)
1569' FNL 330' FWL
SEC 21, T31N, R6W
LAT 36.888010 °N
LONG -107.475453 °W
DATUM: NAD1927

LAT 36.888016 °N
LONG -107.476058 °W
DATUM: NAD1983

N89°15.2'W 8958.5'

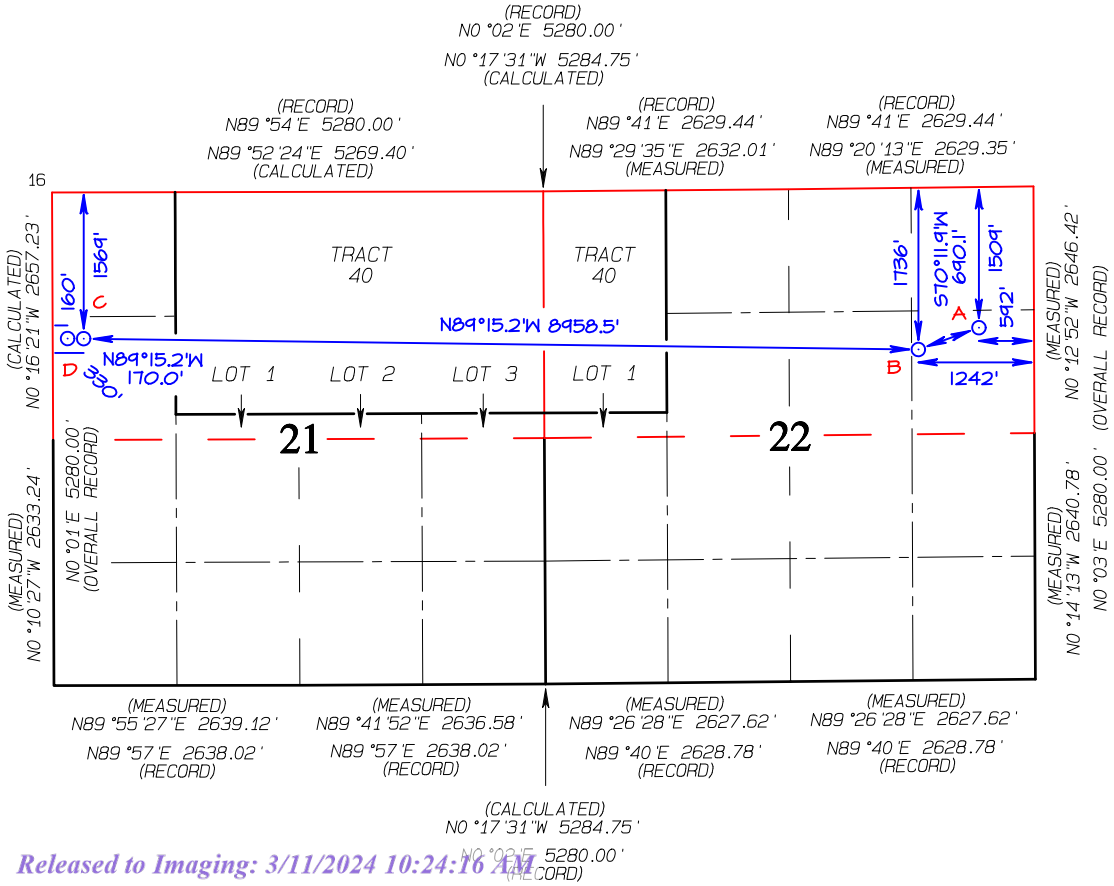
FIRST TAKE POINT (B)
1736' FNL 1242' FEL
SEC 22, T31N, R6W
LAT 36.887594 °N
LONG -107.444824 °W
DATUM: NAD1927

LAT 36.887600 °N
LONG -107.445428 °W
DATUM: NAD1983

S70°11.9'W 690.1'

SURFACE LOCATION (A)
1509' FNL 592' FEL
SEC 22, T31N, R6W
LAT 36.888229 °N
LONG -107.442601 °W
DATUM: NAD1927

LAT 36.888235 °N
LONG -107.443205 °W
DATUM: NAD1983



[17] 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 — Signature — 2/6/24 — 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 29, 2024
Survey Date: JANUARY 13, 2012

Signature and Seal of Professional Surveyor

JASON C. EDWARDS
NEW MEXICO
15269
REGISTERED PROFESSIONAL SURVEYOR

JASON C. EDWARDS
Certificate Number 15269

Logos Operating LLC

Rio Arriba, NM (NAD83)
Rosa Unit 9
Rosa Unit 606H

OH

Plan: Prelim 6

Standard Planning Report

26 January, 2024

SDT

Planning Report

Database:	EDM 5000 Multi User Db	**Local Co-ordinate Reference:**	Well Rosa Unit 606H
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 606H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Prelim 6		

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 606H

Well Position	**+N/-S**	0.00 usft	**Northing:**	2,142,876.25 usft	**Latitude:**	36.888235
	+E/-W	0.00 usft	**Easting:**	2,837,179.08 usft	**Longitude:**	-107.443205
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	49,458.98835378

Design Prelim 6

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	272.00

Plan Survey Tool Program **Date** 1/26/2024

	Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	16,363.27	Prelim 6 (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	
610.04	2.20	183.12	610.01	-2.11	-0.11	2.00	2.00	0.00	183.12	
6,234.27	2.20	183.12	6,230.09	-217.77	-11.85	0.00	0.00	0.00	0.00	
7,234.77	90.13	270.98	6,865.33	-231.31	-650.21	9.00	8.79	8.78	87.86	RU 606H POE
16,193.27	90.13	270.98	6,845.38	-78.09	-9,607.38	0.00	0.00	0.00	0.00	RU 606H FPP
16,363.27	90.13	270.98	6,845.01	-75.18	-9,777.35	0.00	0.00	0.00	0.00	RU 606H PBHL

SDT

Planning Report

Database:	EDM 5000 Multi User Db	**Local Co-ordinate Reference:**	Well Rosa Unit 606H
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 606H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Prelim 6		

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	183.12	599.98	-1.74	-0.09	0.03	2.00	2.00	0.00
610.04	2.20	183.12	610.01	-2.11	-0.11	0.04	2.00	2.00	0.00
Start 5624.23 hold at 610.04 MD									
700.00	2.20	183.12	699.91	-5.56	-0.30	0.11	0.00	0.00	0.00
800.00	2.20	183.12	799.83	-9.39	-0.51	0.18	0.00	0.00	0.00
900.00	2.20	183.12	899.76	-13.23	-0.72	0.26	0.00	0.00	0.00
1,000.00	2.20	183.12	999.69	-17.06	-0.93	0.33	0.00	0.00	0.00
1,100.00	2.20	183.12	1,099.61	-20.90	-1.14	0.41	0.00	0.00	0.00
1,200.00	2.20	183.12	1,199.54	-24.73	-1.35	0.48	0.00	0.00	0.00
1,300.00	2.20	183.12	1,299.46	-28.57	-1.55	0.56	0.00	0.00	0.00
1,400.00	2.20	183.12	1,399.39	-32.40	-1.76	0.63	0.00	0.00	0.00
1,500.00	2.20	183.12	1,499.32	-36.24	-1.97	0.71	0.00	0.00	0.00
1,600.00	2.20	183.12	1,599.24	-40.07	-2.18	0.78	0.00	0.00	0.00
1,700.00	2.20	183.12	1,699.17	-43.91	-2.39	0.86	0.00	0.00	0.00
1,800.00	2.20	183.12	1,799.10	-47.74	-2.60	0.93	0.00	0.00	0.00
1,900.00	2.20	183.12	1,899.02	-51.57	-2.81	1.01	0.00	0.00	0.00
2,000.00	2.20	183.12	1,998.95	-55.41	-3.02	1.08	0.00	0.00	0.00
2,100.00	2.20	183.12	2,098.87	-59.24	-3.22	1.15	0.00	0.00	0.00
2,200.00	2.20	183.12	2,198.80	-63.08	-3.43	1.23	0.00	0.00	0.00
2,300.00	2.20	183.12	2,298.73	-66.91	-3.64	1.30	0.00	0.00	0.00
2,326.29	2.20	183.12	2,325.00	-67.92	-3.70	1.32	0.00	0.00	0.00
Ojo Alamo									
2,400.00	2.20	183.12	2,398.65	-70.75	-3.85	1.38	0.00	0.00	0.00
2,431.37	2.20	183.12	2,430.00	-71.95	-3.92	1.40	0.00	0.00	0.00
Kirkland									
2,500.00	2.20	183.12	2,498.58	-74.58	-4.06	1.45	0.00	0.00	0.00
2,600.00	2.20	183.12	2,598.51	-78.42	-4.27	1.53	0.00	0.00	0.00
2,700.00	2.20	183.12	2,698.43	-82.25	-4.48	1.60	0.00	0.00	0.00
2,800.00	2.20	183.12	2,798.36	-86.09	-4.68	1.68	0.00	0.00	0.00
2,852.68	2.20	183.12	2,851.00	-88.11	-4.79	1.72	0.00	0.00	0.00
Fruitland									
2,900.00	2.20	183.12	2,898.28	-89.92	-4.89	1.75	0.00	0.00	0.00
2,940.75	2.20	183.12	2,939.00	-91.48	-4.98	1.78	0.00	0.00	0.00
Top of Coals									
3,000.00	2.20	183.12	2,998.21	-93.75	-5.10	1.83	0.00	0.00	0.00
3,100.00	2.20	183.12	3,098.14	-97.59	-5.31	1.90	0.00	0.00	0.00
3,106.87	2.20	183.12	3,105.00	-97.85	-5.33	1.91	0.00	0.00	0.00
Base of Coals									
3,200.00	2.20	183.12	3,198.06	-101.42	-5.52	1.98	0.00	0.00	0.00
3,284.00	2.20	183.12	3,282.00	-104.64	-5.70	2.04	0.00	0.00	0.00
Picture Cliffs									
3,300.00	2.20	183.12	3,297.99	-105.26	-5.73	2.05	0.00	0.00	0.00
3,378.07	2.20	183.12	3,376.00	-108.25	-5.89	2.11	0.00	0.00	0.00
Lewis									
3,400.00	2.20	183.12	3,397.92	-109.09	-5.94	2.13	0.00	0.00	0.00
3,500.00	2.20	183.12	3,497.84	-112.93	-6.15	2.20	0.00	0.00	0.00

SDT

Planning Report

Database:	EDM 5000 Multi User Db	**Local Co-ordinate Reference:**	Well Rosa Unit 606H
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 606H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Prelim 6		

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	2.20	183.12	3,597.77	-116.76	-6.35	2.28	0.00	0.00	0.00
3,700.00	2.20	183.12	3,697.69	-120.60	-6.56	2.35	0.00	0.00	0.00
3,800.00	2.20	183.12	3,797.62	-124.43	-6.77	2.43	0.00	0.00	0.00
3,900.00	2.20	183.12	3,897.55	-128.27	-6.98	2.50	0.00	0.00	0.00
4,000.00	2.20	183.12	3,997.47	-132.10	-7.19	2.57	0.00	0.00	0.00
4,100.00	2.20	183.12	4,097.40	-135.93	-7.40	2.65	0.00	0.00	0.00
4,200.00	2.20	183.12	4,197.32	-139.77	-7.61	2.72	0.00	0.00	0.00
4,300.00	2.20	183.12	4,297.25	-143.60	-7.82	2.80	0.00	0.00	0.00
4,400.00	2.20	183.12	4,397.18	-147.44	-8.02	2.87	0.00	0.00	0.00
4,484.89	2.20	183.12	4,482.00	-150.69	-8.20	2.94	0.00	0.00	0.00
Chacra									
4,500.00	2.20	183.12	4,497.10	-151.27	-8.23	2.95	0.00	0.00	0.00
4,600.00	2.20	183.12	4,597.03	-155.11	-8.44	3.02	0.00	0.00	0.00
4,700.00	2.20	183.12	4,696.96	-158.94	-8.65	3.10	0.00	0.00	0.00
4,800.00	2.20	183.12	4,796.88	-162.78	-8.86	3.17	0.00	0.00	0.00
4,900.00	2.20	183.12	4,896.81	-166.61	-9.07	3.25	0.00	0.00	0.00
4,990.26	2.20	183.12	4,987.00	-170.07	-9.26	3.31	0.00	0.00	0.00
Upper Cliff House									
5,000.00	2.20	183.12	4,996.73	-170.45	-9.28	3.32	0.00	0.00	0.00
5,100.00	2.20	183.12	5,096.66	-174.28	-9.48	3.40	0.00	0.00	0.00
5,200.00	2.20	183.12	5,196.59	-178.12	-9.69	3.47	0.00	0.00	0.00
5,282.47	2.20	183.12	5,279.00	-181.28	-9.87	3.53	0.00	0.00	0.00
Cliff House									
5,300.00	2.20	183.12	5,296.51	-181.95	-9.90	3.55	0.00	0.00	0.00
5,327.51	2.20	183.12	5,324.00	-183.00	-9.96	3.57	0.00	0.00	0.00
Menefee									
5,400.00	2.20	183.12	5,396.44	-185.78	-10.11	3.62	0.00	0.00	0.00
5,500.00	2.20	183.12	5,496.37	-189.62	-10.32	3.70	0.00	0.00	0.00
5,568.68	2.20	183.12	5,565.00	-192.25	-10.46	3.75	0.00	0.00	0.00
Point Lookout									
5,600.00	2.20	183.12	5,596.29	-193.45	-10.53	3.77	0.00	0.00	0.00
5,700.00	2.20	183.12	5,696.22	-197.29	-10.74	3.85	0.00	0.00	0.00
5,800.00	2.20	183.12	5,796.14	-201.12	-10.95	3.92	0.00	0.00	0.00
5,900.00	2.20	183.12	5,896.07	-204.96	-11.15	3.99	0.00	0.00	0.00
6,000.00	2.20	183.12	5,996.00	-208.79	-11.36	4.07	0.00	0.00	0.00
6,053.04	2.20	183.12	6,049.00	-210.83	-11.47	4.11	0.00	0.00	0.00
Mancos									
6,100.00	2.20	183.12	6,095.92	-212.63	-11.57	4.14	0.00	0.00	0.00
6,200.00	2.20	183.12	6,195.85	-216.46	-11.78	4.22	0.00	0.00	0.00
6,234.27	2.20	183.12	6,230.09	-217.77	-11.85	4.24	0.00	0.00	0.00
Start DLS 9.00 TFO 87.86									
6,250.00	2.66	215.25	6,245.81	-218.37	-12.08	4.45	9.00	2.92	204.26
6,300.00	6.39	250.91	6,295.65	-220.23	-15.38	7.68	9.00	7.45	71.33
6,350.00	10.72	259.27	6,345.09	-222.01	-22.58	14.82	9.00	8.67	16.73
6,400.00	15.15	262.82	6,393.81	-223.69	-33.64	25.81	9.00	8.86	7.10
6,450.00	19.62	264.79	6,441.51	-225.27	-48.49	40.60	9.00	8.92	3.93
6,500.00	24.09	266.05	6,487.91	-226.74	-67.04	59.09	9.00	8.95	2.52
6,550.00	28.58	266.93	6,532.71	-228.08	-89.17	81.16	9.00	8.97	1.77
6,600.00	33.06	267.59	6,575.63	-229.30	-114.76	106.68	9.00	8.97	1.32
6,650.00	37.55	268.11	6,616.43	-230.37	-143.63	135.50	9.00	8.98	1.04
6,700.00	42.04	268.53	6,654.83	-231.30	-175.61	167.43	9.00	8.98	0.85
6,729.11	44.66	268.75	6,676.00	-231.77	-195.59	187.38	9.00	8.99	0.73
Black Top									

SDT

Planning Report

Database:	EDM 5000 Multi User Db	**Local Co-ordinate Reference:**	Well Rosa Unit 606H
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 606H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Prelim 6		

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)
6,750.00	46.54	268.89	6,690.61	-232.08	-210.51	202.28	9.00	8.99	0.68
6,800.00	51.03	269.20	6,723.55	-232.71	-248.10	239.83	9.00	8.99	0.61
6,850.00	55.53	269.46	6,753.44	-233.17	-288.17	279.86	9.00	8.99	0.54
6,900.00	60.02	269.71	6,780.09	-233.48	-330.45	322.11	9.00	8.99	0.48
6,950.00	64.52	269.93	6,803.35	-233.62	-374.70	366.32	9.00	8.99	0.44
7,000.00	69.01	270.13	6,823.07	-233.59	-420.63	412.23	9.00	8.99	0.41
7,050.00	73.51	270.32	6,839.13	-233.40	-467.97	459.54	9.00	8.99	0.39
7,100.00	78.01	270.51	6,851.43	-233.05	-516.42	507.97	9.00	8.99	0.37
7,150.00	82.50	270.69	6,859.89	-232.54	-565.68	557.22	9.00	8.99	0.36
7,200.00	87.00	270.86	6,864.46	-231.87	-615.46	606.99	9.00	8.99	0.35
7,234.77	90.13	270.98	6,865.33	-231.31	-650.21	641.74	9.00	8.99	0.35
Start 8958.50 hold at 7234.77 MD									
7,300.00	90.13	270.98	6,865.18	-230.19	-715.43	706.96	0.00	0.00	0.00
7,400.00	90.13	270.98	6,864.96	-228.48	-815.41	806.94	0.00	0.00	0.00
7,500.00	90.13	270.98	6,864.74	-226.77	-915.40	906.93	0.00	0.00	0.00
7,600.00	90.13	270.98	6,864.52	-225.06	-1,015.38	1,006.91	0.00	0.00	0.00
7,700.00	90.13	270.98	6,864.29	-223.35	-1,115.37	1,106.89	0.00	0.00	0.00
7,800.00	90.13	270.98	6,864.07	-221.64	-1,215.35	1,206.88	0.00	0.00	0.00
7,900.00	90.13	270.98	6,863.85	-219.93	-1,315.34	1,306.86	0.00	0.00	0.00
8,000.00	90.13	270.98	6,863.63	-218.22	-1,415.32	1,406.85	0.00	0.00	0.00
8,100.00	90.13	270.98	6,863.40	-216.51	-1,515.31	1,506.83	0.00	0.00	0.00
8,200.00	90.13	270.98	6,863.18	-214.80	-1,615.29	1,606.81	0.00	0.00	0.00
8,300.00	90.13	270.98	6,862.96	-213.09	-1,715.28	1,706.80	0.00	0.00	0.00
8,400.00	90.13	270.98	6,862.74	-211.38	-1,815.26	1,806.78	0.00	0.00	0.00
8,500.00	90.13	270.98	6,862.51	-209.67	-1,915.25	1,906.77	0.00	0.00	0.00
8,600.00	90.13	270.98	6,862.29	-207.96	-2,015.23	2,006.75	0.00	0.00	0.00
8,700.00	90.13	270.98	6,862.07	-206.25	-2,115.22	2,106.73	0.00	0.00	0.00
8,800.00	90.13	270.98	6,861.85	-204.54	-2,215.21	2,206.72	0.00	0.00	0.00
8,900.00	90.13	270.98	6,861.62	-202.83	-2,315.19	2,306.70	0.00	0.00	0.00
9,000.00	90.13	270.98	6,861.40	-201.12	-2,415.18	2,406.69	0.00	0.00	0.00
9,100.00	90.13	270.98	6,861.18	-199.41	-2,515.16	2,506.67	0.00	0.00	0.00
9,200.00	90.13	270.98	6,860.95	-197.70	-2,615.15	2,606.65	0.00	0.00	0.00
9,300.00	90.13	270.98	6,860.73	-195.99	-2,715.13	2,706.64	0.00	0.00	0.00
9,400.00	90.13	270.98	6,860.51	-194.28	-2,815.12	2,806.62	0.00	0.00	0.00
9,500.00	90.13	270.98	6,860.29	-192.57	-2,915.10	2,906.60	0.00	0.00	0.00
9,600.00	90.13	270.98	6,860.06	-190.86	-3,015.09	3,006.59	0.00	0.00	0.00
9,700.00	90.13	270.98	6,859.84	-189.15	-3,115.07	3,106.57	0.00	0.00	0.00
9,800.00	90.13	270.98	6,859.62	-187.44	-3,215.06	3,206.56	0.00	0.00	0.00
9,900.00	90.13	270.98	6,859.40	-185.72	-3,315.04	3,306.54	0.00	0.00	0.00
10,000.00	90.13	270.98	6,859.17	-184.01	-3,415.03	3,406.52	0.00	0.00	0.00
10,100.00	90.13	270.98	6,858.95	-182.30	-3,515.01	3,506.51	0.00	0.00	0.00
10,200.00	90.13	270.98	6,858.73	-180.59	-3,615.00	3,606.49	0.00	0.00	0.00
10,300.00	90.13	270.98	6,858.51	-178.88	-3,714.98	3,706.48	0.00	0.00	0.00
10,400.00	90.13	270.98	6,858.28	-177.17	-3,814.97	3,806.46	0.00	0.00	0.00
10,500.00	90.13	270.98	6,858.06	-175.46	-3,914.95	3,906.44	0.00	0.00	0.00
10,600.00	90.13	270.98	6,857.84	-173.75	-4,014.94	4,006.43	0.00	0.00	0.00
10,700.00	90.13	270.98	6,857.61	-172.04	-4,114.92	4,106.41	0.00	0.00	0.00
10,800.00	90.13	270.98	6,857.39	-170.33	-4,214.91	4,206.40	0.00	0.00	0.00
10,900.00	90.13	270.98	6,857.17	-168.62	-4,314.89	4,306.38	0.00	0.00	0.00
11,000.00	90.13	270.98	6,856.95	-166.91	-4,414.88	4,406.36	0.00	0.00	0.00
11,100.00	90.13	270.98	6,856.72	-165.20	-4,514.86	4,506.35	0.00	0.00	0.00
11,200.00	90.13	270.98	6,856.50	-163.49	-4,614.85	4,606.33	0.00	0.00	0.00
11,300.00	90.13	270.98	6,856.28	-161.78	-4,714.83	4,706.32	0.00	0.00	0.00

SDT

Planning Report

Database:	EDM 5000 Multi User Db	**Local Co-ordinate Reference:**	Well Rosa Unit 606H
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 606H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Prelim 6		

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	90.13	270.98	6,856.06	-160.07	-4,814.82	4,806.30	0.00	0.00	0.00
11,500.00	90.13	270.98	6,855.83	-158.36	-4,914.80	4,906.28	0.00	0.00	0.00
11,600.00	90.13	270.98	6,855.61	-156.65	-5,014.79	5,006.27	0.00	0.00	0.00
11,700.00	90.13	270.98	6,855.39	-154.94	-5,114.77	5,106.25	0.00	0.00	0.00
11,800.00	90.13	270.98	6,855.17	-153.23	-5,214.76	5,206.23	0.00	0.00	0.00
11,900.00	90.13	270.98	6,854.94	-151.52	-5,314.74	5,306.22	0.00	0.00	0.00
12,000.00	90.13	270.98	6,854.72	-149.81	-5,414.73	5,406.20	0.00	0.00	0.00
12,100.00	90.13	270.98	6,854.50	-148.10	-5,514.71	5,506.19	0.00	0.00	0.00
12,200.00	90.13	270.98	6,854.27	-146.39	-5,614.70	5,606.17	0.00	0.00	0.00
12,300.00	90.13	270.98	6,854.05	-144.68	-5,714.68	5,706.15	0.00	0.00	0.00
12,400.00	90.13	270.98	6,853.83	-142.97	-5,814.67	5,806.14	0.00	0.00	0.00
12,500.00	90.13	270.98	6,853.61	-141.26	-5,914.65	5,906.12	0.00	0.00	0.00
12,600.00	90.13	270.98	6,853.38	-139.55	-6,014.64	6,006.11	0.00	0.00	0.00
12,700.00	90.13	270.98	6,853.16	-137.84	-6,114.63	6,106.09	0.00	0.00	0.00
12,800.00	90.13	270.98	6,852.94	-136.12	-6,214.61	6,206.07	0.00	0.00	0.00
12,900.00	90.13	270.98	6,852.72	-134.41	-6,314.60	6,306.06	0.00	0.00	0.00
13,000.00	90.13	270.98	6,852.49	-132.70	-6,414.58	6,406.04	0.00	0.00	0.00
13,100.00	90.13	270.98	6,852.27	-130.99	-6,514.57	6,506.03	0.00	0.00	0.00
13,200.00	90.13	270.98	6,852.05	-129.28	-6,614.55	6,606.01	0.00	0.00	0.00
13,300.00	90.13	270.98	6,851.83	-127.57	-6,714.54	6,705.99	0.00	0.00	0.00
13,400.00	90.13	270.98	6,851.60	-125.86	-6,814.52	6,805.98	0.00	0.00	0.00
13,500.00	90.13	270.98	6,851.38	-124.15	-6,914.51	6,905.96	0.00	0.00	0.00
13,600.00	90.13	270.98	6,851.16	-122.44	-7,014.49	7,005.95	0.00	0.00	0.00
13,700.00	90.13	270.98	6,850.94	-120.73	-7,114.48	7,105.93	0.00	0.00	0.00
13,800.00	90.13	270.98	6,850.71	-119.02	-7,214.46	7,205.91	0.00	0.00	0.00
13,900.00	90.13	270.98	6,850.49	-117.31	-7,314.45	7,305.90	0.00	0.00	0.00
14,000.00	90.13	270.98	6,850.27	-115.60	-7,414.43	7,405.88	0.00	0.00	0.00
14,100.00	90.13	270.98	6,850.04	-113.89	-7,514.42	7,505.86	0.00	0.00	0.00
14,200.00	90.13	270.98	6,849.82	-112.18	-7,614.40	7,605.85	0.00	0.00	0.00
14,300.00	90.13	270.98	6,849.60	-110.47	-7,714.39	7,705.83	0.00	0.00	0.00
14,400.00	90.13	270.98	6,849.38	-108.76	-7,814.37	7,805.82	0.00	0.00	0.00
14,500.00	90.13	270.98	6,849.15	-107.05	-7,914.36	7,905.80	0.00	0.00	0.00
14,600.00	90.13	270.98	6,848.93	-105.34	-8,014.34	8,005.78	0.00	0.00	0.00
14,700.00	90.13	270.98	6,848.71	-103.63	-8,114.33	8,105.77	0.00	0.00	0.00
14,800.00	90.13	270.98	6,848.49	-101.92	-8,214.31	8,205.75	0.00	0.00	0.00
14,900.00	90.13	270.98	6,848.26	-100.21	-8,314.30	8,305.74	0.00	0.00	0.00
15,000.00	90.13	270.98	6,848.04	-98.50	-8,414.28	8,405.72	0.00	0.00	0.00
15,100.00	90.13	270.98	6,847.82	-96.79	-8,514.27	8,505.70	0.00	0.00	0.00
15,200.00	90.13	270.98	6,847.60	-95.08	-8,614.25	8,605.69	0.00	0.00	0.00
15,300.00	90.13	270.98	6,847.37	-93.37	-8,714.24	8,705.67	0.00	0.00	0.00
15,400.00	90.13	270.98	6,847.15	-91.66	-8,814.22	8,805.66	0.00	0.00	0.00
15,500.00	90.13	270.98	6,846.93	-89.95	-8,914.21	8,905.64	0.00	0.00	0.00
15,600.00	90.13	270.98	6,846.70	-88.24	-9,014.19	9,005.62	0.00	0.00	0.00
15,700.00	90.13	270.98	6,846.48	-86.53	-9,114.18	9,105.61	0.00	0.00	0.00
15,800.00	90.13	270.98	6,846.26	-84.81	-9,214.16	9,205.59	0.00	0.00	0.00
15,900.00	90.13	270.98	6,846.04	-83.10	-9,314.15	9,305.57	0.00	0.00	0.00
16,000.00	90.13	270.98	6,845.81	-81.39	-9,414.13	9,405.56	0.00	0.00	0.00
16,100.00	90.13	270.98	6,845.59	-79.68	-9,514.12	9,505.54	0.00	0.00	0.00
16,193.27	90.13	270.98	6,845.38	-78.09	-9,607.38	9,598.80	0.00	0.00	0.00
FPP @ 330' FWL									
16,200.00	90.13	270.98	6,845.37	-77.97	-9,614.10	9,605.53	0.00	0.00	0.00
16,300.00	90.13	270.98	6,845.15	-76.26	-9,714.09	9,705.51	0.00	0.00	0.00
16,363.27	90.13	270.98	6,845.01	-75.18	-9,777.35	9,768.77	0.00	0.00	0.00
TD at 16363.27' MD @ 160' FWL									

SDT

Planning Report

Database:	EDM 5000 Multi User Db	**Local Co-ordinate Reference:**	Well Rosa Unit 606H
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 606H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Prelim 6		

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)

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
RU 606H SHL - plan hits target center - Point	0.00	0.00	0.00	0.00	0.00	2,142,876.25	2,837,179.08	36.888235	-107.443205
RU 606H PBHL - plan hits target center - Point	0.00	0.00	6,845.01	-75.18	-9,777.35	2,142,761.11	2,827,402.12	36.888024	-107.476639
RU 606H FPP - plan hits target center - Point	0.00	0.00	6,845.38	-78.09	-9,607.38	2,142,758.89	2,827,572.10	36.888016	-107.476058
RU 606H POE - plan hits target center - Point	0.00	0.00	6,865.33	-231.31	-650.21	2,142,642.29	2,836,529.82	36.887600	-107.445429

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
2,326.29	2,325.00	Ojo Alamo			
2,431.37	2,430.00	Kirkland			
2,852.68	2,851.00	Fruitland			
2,940.75	2,939.00	Top of Coals			
3,106.87	3,105.00	Base of Coals			
3,284.00	3,282.00	Picture Cliffs			
3,378.07	3,376.00	Lewis			
4,484.89	4,482.00	Chacra			
4,990.26	4,987.00	Upper Cliff House			
5,282.47	5,279.00	Cliff House			
5,327.51	5,324.00	Menefee			
5,568.68	5,565.00	Point Lookout			
6,053.04	6,049.00	Mancos			
6,729.11	6,676.00	Black Top			

SDT

Planning Report

Database:	EDM 5000 Multi User Db	**Local Co-ordinate Reference:**	Well Rosa Unit 606H
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 606H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Prelim 6		

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Comment
500.00	500.00	0.00	0.00	Start Build 2.00
610.04	610.01	-2.11	-0.11	Start 5624.23 hold at 610.04 MD
6,234.27	6,230.09	-217.77	-11.85	Start DLS 9.00 TFO 87.86
7,234.77	6,865.33	-231.31	-650.21	Start 8958.50 hold at 7234.77 MD
16,193.27	6,845.38	-78.09	-9,607.38	FPP @ 330' FWL
16,363.27	6,845.01	-75.18	-9,777.35	TD at 16363.27' MD @ 160' FWL

LOGOS Operating, LLC
Operations Plan

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

Date:	January 26, 2024	Pool:	Basin Mancos
Well Name:	**Rosa Unit 606H**	GL Elevation:	6,260’
Surface Location:	Sec 22, T31N, R6W 1509’ FNL, 592’ FEL (36.888235º N, 107.443205º W – NAD83)	KB:	30’
Bottom Hole Location:	Sec 21, T31N, R6W 1566’ FNL, 160’ FWL (36.888024º N, 107.476639º W – NAD83)	Measured Depth:	16,363’ (KB)
Lease Serial CA Serial	**#NMSF078771 #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	2,326'	2,325'	*POINT LOOKOUT	5,569'	5,565'
KIRTLAND	2,431'	2,430'	*MANCOS	6,053'	6,049'
*FRUITLAND	2,853'	2,851'	KICKOFF POINT	6,234'	6,230'
*PICTURED CLIFFS	3,284'	3,282'	LANDING POINT	7,235'	6,865'
LEWIS	3,378'	3,376'	TD	16,363'	6,845'
CHACRA	4,485'	4,482'			
*CLIFF HOUSE	5,283'	5,279'			
MENEFEE	5,328'	5,324'			

* 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:** 6,865' TVD x 0.43 = 2,952 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	OH SIZE (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"	3,334'	13.375"	54.5 LBS	J-55 or equiv	LTC/BTC
INTERMEDIATE 2	12.25"	6,128'	9.625"	43.5 LBS	N-80 or equiv	LTC/BTC
PRODUCTION	8.5"	16,363'	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:

1. SURFACE CASING: 20" cement nose guide shoe. Run (1) standard centralizer on each of the bottom (3) joints of Surface Casing.
2. 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
3. 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 cancelation 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	2,734	600	0.6947	1.3	575	102	1.10	523	15.8
Stage 1 Lead - OH	320	2,414	0.6947	1.3	2,180	388	1.90	1147	12.4
Stage 2 Lead - Cased	-	320	1.019	1	326	58	1.90	172	12.4
					3,082	**549**		**1842**	
Set Depth	3334								

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 cancelation 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	5,628	500	0.3132	1.3	220	39	1.10	200	15.8
Stage 1 Lead	4,560	1,068	0.3132	1.3	435	77	1.90	229	12.4
					655	**117**		**429**	
Stage 2 Tail	3,960	600	0.3132	1.3	244	44	1.58	155	13.2
Stage 2 Lead	3,234	726	0.3132	1.3	296	53	1.90	156	12.4
Stage 2 Lead - Cased	3,134	100	0.3627	1	36	6	1.90	19	12.4
Stage 2 Totals					**576**	**103**		**329**	
Int 2 Totals					**1,231**	**219**		**758**	
Contingency									
Stage 3 Tail	3,334	75	0.3132	1.3	31	5	1.58	19	13.2
Stage 3 Tail - Cased	2,834	500	0.3490	1	175	31	1.58	110	13.2
Stage 3 Lead - Cased	-	2,834	0.3490	1	989	176	1.90	521	12.4
Contingency Stage 3 Totals					**1,194**	**213**		**650**	

Set Depth 6128

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.

	Top	ft	Cement (ft3/ft) Annular Capacity	Excess (15%)	Total (ft3)	Total (bbl)	Slurry Yield (ft3/sk)	Sacks Cement	Density (PPG)
Cased Lead	**6,028**	**100**	**0.2531**	**1**	**25**	**5**	**1.59**	**16**	13.2
Open Hole Lead	**6,128**	**10,236**	**0.2291**	**1.15**	**2,702**	**481**	**1.59**	**1,699**	13.2
					2,727	**486**		**1,715**	

Set Depth 16364

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.

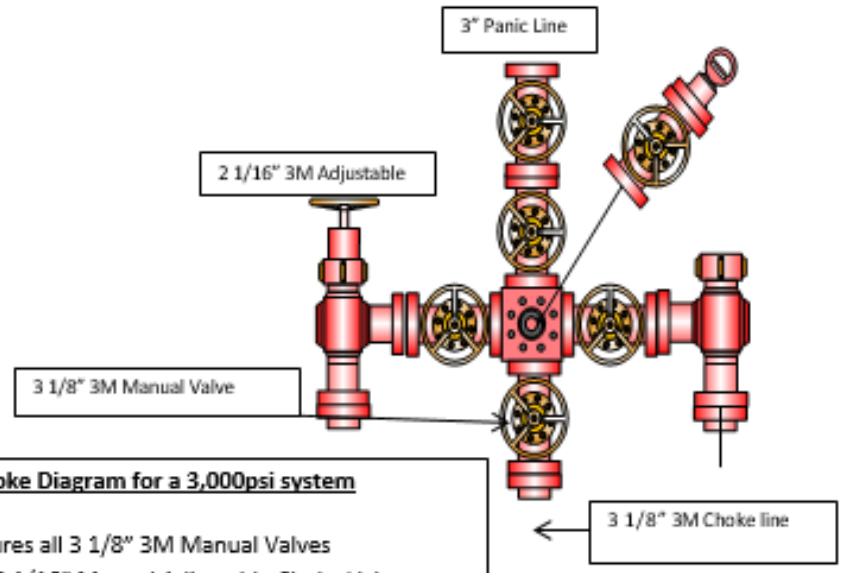
E. PRODUCTION TUBING

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.

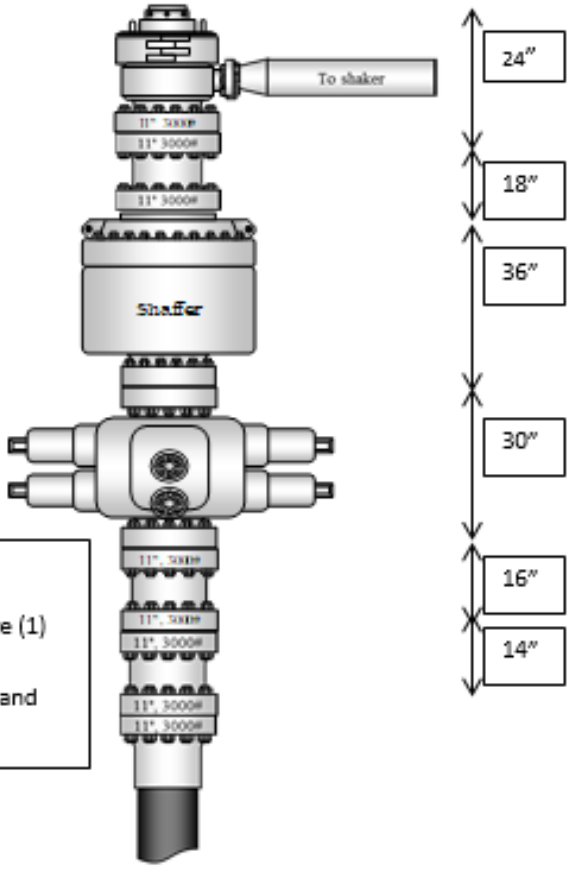
LOGOS RESOURCES II, LLC

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



11" 3,000psi BOP

- Choke Side has (1) manual 3 1/8" Valve (1) HCR
- Kill Side has (2) 2 1/16" Manual Valve and (1) check valve

District I
1625 N. French Dr., Hobbs, NM 88240
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District III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170
District IV
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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 313366

CONDITIONS

Operator: LOGOS OPERATING, LLC 2010 Afton Place Farmington, NM 87401	OGRID: 289408
	Action Number: 313366
	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