Form 3160-3
(June 2015)

FORM APPROVED
OMB No. 1004-0137
Expires: January 31, 2018

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No.: NMSF78766

6. If Indian, Allotee or Tribe Name:

1a. Type of work: ☑ DRILL ☐ REENTER

1b. Type of Well: ☐ Oil Well ☑ Gas Well ☐ Other

1c. Type of Completion: ☐ Hydraulic Fracturing ☑ Single Zone ☐ Multiple Zone

7. If Unit or CA Agreement, Name and No.: ROSA UNIT / NMNM 078407E

8. Lease Name and Well No.: ROSA UNIT 614H

2. Name of Operator: LOGOS OPERATING LLC

9. API Well No.: 30-039-31433

3a. Address: 2010 AFTON PLACE, FARMINGTON, NM 87401

3b. Phone No. *(include area code)*: (505) 278-8720

10. Field and Pool, or Exploratory: BASIN MANCOS/BASIN MANCOS

4. Location of Well *(Report location clearly and in accordance with any State requirements.*)*

At surface: NWSW / 1811 FSL / 434 FWL / LAT 36.882844 / LONG -107.439701

At proposed prod. zone: SWSW / 1188 FSL / 159 FWL / LAT 36.881057 / LONG -107.476642

11. Sec., T. R. M. or Blk. and Survey or Area: SEC 23/T31N/R6W/NMP

14. Distance in miles and direction from nearest town or post office*: 38 miles

12. County or Parish: RIO ARRIBA

13. State: NM

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any): 159 feet

16. No of acres in lease:

17. Spacing Unit dedicated to this well: 640.0

18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.: 9 feet

19. Proposed Depth: 6857 feet / 17283 feet

20. BLM/BIA Bond No. in file: FED:

21. Elevations (Show whether DF, KDB, RT, GL, etc.): 6287 feet

22. Approximate date work will start*: 10/03/2022

23. Estimated duration: 45 days

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No. 1, and the Hydraulic Fracturing rule per 43 CFR 3162.3-3 (as applicable)

1. Well plat certified by a registered surveyor.
2. A Drilling Plan.
3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO must be filed with the appropriate Forest Service Office).
4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).
5. Operator certification.
6. Such other site specific information and/or plans as may be requested by the BLM.

25. Signature	Name *(Printed/Typed)*	Date
(Electronic Submission)	ETTA TRUJILLO / Ph: (505) 324-4145	09/07/2022

Title: Regulatory Specialist

Approved by *(Signature)*	Name *(Printed/Typed)*	Date
(Electronic Submission)	DAVE J MANKIEWICZ / Ph: (505) 564-7761	09/19/2023

Title	Office
AFM-Minerals	Farmington Field Office

Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.
Conditions of approval, if any, are attached.

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.

APPROVED WITH CONDITIONS

(Continued on page 2)

*(Instructions on page 2)

Approval Date: 09/19/2023

INSTRUCTIONS

GENERAL: This form is designed for submitting proposals to perform certain well operations, as indicated on Federal and Indian lands and leases for action by appropriate Federal agencies, pursuant to applicable Federal laws and regulations. Any necessary special instructions concerning the use of this form and the number of copies to be submitted, particularly with regard to local, area, or regional procedures and practices, either are shown below or will be issued by, or may be obtained from local Federal offices.

ITEM I: If the proposal is to redrill to the same reservoir at a different subsurface location or to a new reservoir, use this form with appropriate notations. Consult applicable Federal regulations concerning subsequent work proposals or reports on the well.

ITEM 4: Locations on Federal or Indian land should be described in accordance with Federal requirements. Consult local Federal offices for specific instructions.

ITEM 14: Needed only when location of well cannot readily be found by road from the land or lease description. A plat, or plats, separate or on the reverse side, showing the roads to, and the surveyed location of, the wen, and any other required information, should be furnished when required by Federal agency offices.

ITEMS 15 AND 18: If well is to be, or has been directionany drilled, give distances for subsurface location of hole in any present or objective productive zone.

ITEM 22: Consult applicable Federal regulations, or appropriate officials, concerning approval of the proposal before operations are started.

ITEM 24: If the proposal will involve hydraulic fracturing operations, you must comply with 43 CFR 3162.3-3, including providing information about the protection of usable water. Operators should provide the best available information about all formations containing water and their depths. This information could include data and interpretation of resistivity logs run on nearby wells. Information may also be obtained from state or tribal regulatory agencies and from local BLM offices.

NOTICES

The Privacy Act of 1974 and regulation in 43 CFR 2.48(d) provide that you be furnished the following information in connection with information required by this application.

AUTHORITY: 30 U.S.C. 181 et seq., 25 U.S.C. 396; 43 CFR 3160

PRINCIPAL PURPOSES: The information will be used to: (1) process and evaluate your application for a permit to drill a new oil, gas, or service wen or to reenter a plugged and abandoned well; and (2) document, for administrative use, information for the management, disposal and use of National Resource Lands and resources including (a) analyzing your proposal to discover and extract the Federal or Indian resources encountered; (b) reviewing procedures and equipment and the projected impact on the land involved; and (c) evaluating the effects of the proposed operation on the surface and subsurface water and other environmental impacts.

ROUTINE USE: Information from the record and/or the record win be transferred to appropriate Federal, State, and local or foreign agencies, when relevant to civil, criminal or regulatory investigations or prosecution, in connection with congressional inquiries and for regulatory responsibilities.

EFFECT OF NOT PROVIDING INFORMATION: Filing of this application and disclosure of the information is mandatory only if you elect to initiate a drilling or reentry operation on an oil and gas lease.

The Paperwork Reduction Act of 1995 requires us to inform you that:
The BLM conects this information to anow evaluation of the technical, safety, and environmental factors involved with drilling for oil and/or gas on Federal and Indian oil and gas leases. This information will be used to analyze and approve applications. Response to this request is mandatory only if the operator elects to initiate drilling or reentry operations on an oil and gas lease. The BLM would like you to know that you do not have to respond to this or any other Federal agency-sponsored information collection unless it displays a currently valid OMB control number.

BURDEN HOURS STATEMENT: Public reporting burden for this form is estimated to average 8 hours per response, including the time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding the burden estimate or any other aspect of this form to U.S. Department of the Interior, Bureau of Land Management (1004-0137), Bureau Information Conection Clearance Officer (WO-630), 1849 C Street, N.W., Mail Stop 401 LS, Washington, D.C. 20240.

(Continued on page 3)

Approval Date: 09/19/2023

Additional Operator Remarks

Location of Well

0. SHL: NWSW / 1811 FSL / 434 FWL / TWSP: 31N / RANGE: 6W / SECTION: 23 / LAT: 36.882844 / LONG: -107.439701 (TVD: 0 feet, MD: 0 feet)

PPP: SESE / 0 FSL / 0 FEL / TWSP: 31N / RANGE: 6W / SECTION: 21 / LAT: 0.0 / LONG: 0.0 (TVD: 0 feet, MD: 0 feet)

PPP: SESE / 741 FSL / 446 FEL / TWSP: 31N / RANGE: 6W / SECTION: 22 / LAT: 36.879899 / LONG: -107.442706 (TVD: 6874 feet, MD: 7349 feet)

BHL: SWSW / 1188 FSL / 159 FWL / TWSP: 31N / RANGE: 6W / SECTION: 21 / LAT: 36.881057 / LONG: -107.476642 (TVD: 6857 feet, MD: 17283 feet)

BLM Point of Contact

Name: JEFFREY J TAFOYA
Title: Assistant Field Manager
Phone: (505) 564-7672
Email: JTAFOYA@BLM.GOV

Review and Appeal Rights

A person contesting a decision shall request a State Director review. This request must be filed within 20 working days of receipt of the Notice with the appropriate State Director (see 43 CFR 3165.3). The State Director review decision may be appealed to the Interior Board of Land Appeals, 801 North Quincy Street, Suite 300, Arlington, VA 22203 (see 43 CFR 3165.4). Contact the above listed Bureau of Land Management office for further information.

District I
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
30-039-31433	97232	BASIN MANCOS

[4] Property Code	[5] Property Name	[6] Well Number
320608	ROSA UNIT	614H

[7] OGRID No.	[8] Operator Name	[9] Elevation
289408	LOGOS OPERATING, LLC	6287'

[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
L	23	31N	6W		1811	SOUTH	434	WEST	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
M	21	31N	6W		1188	SOUTH	159	WEST	RIO ARRIBA

[12] Dedicated Acres		[13] Joint or Infill	[14] Consolidation Code	[15] Order No.
640.00	S/2 - Section 21 S/2 - Section 22			R-13457

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

[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.

Etta Trujillo — Signature — 8/1/2022 — Date

Etta Trujillo
Printed Name

etrujillo@logosresourcesllc.com
E-mail Address

[18] SURVEYOR CERTIFICATION

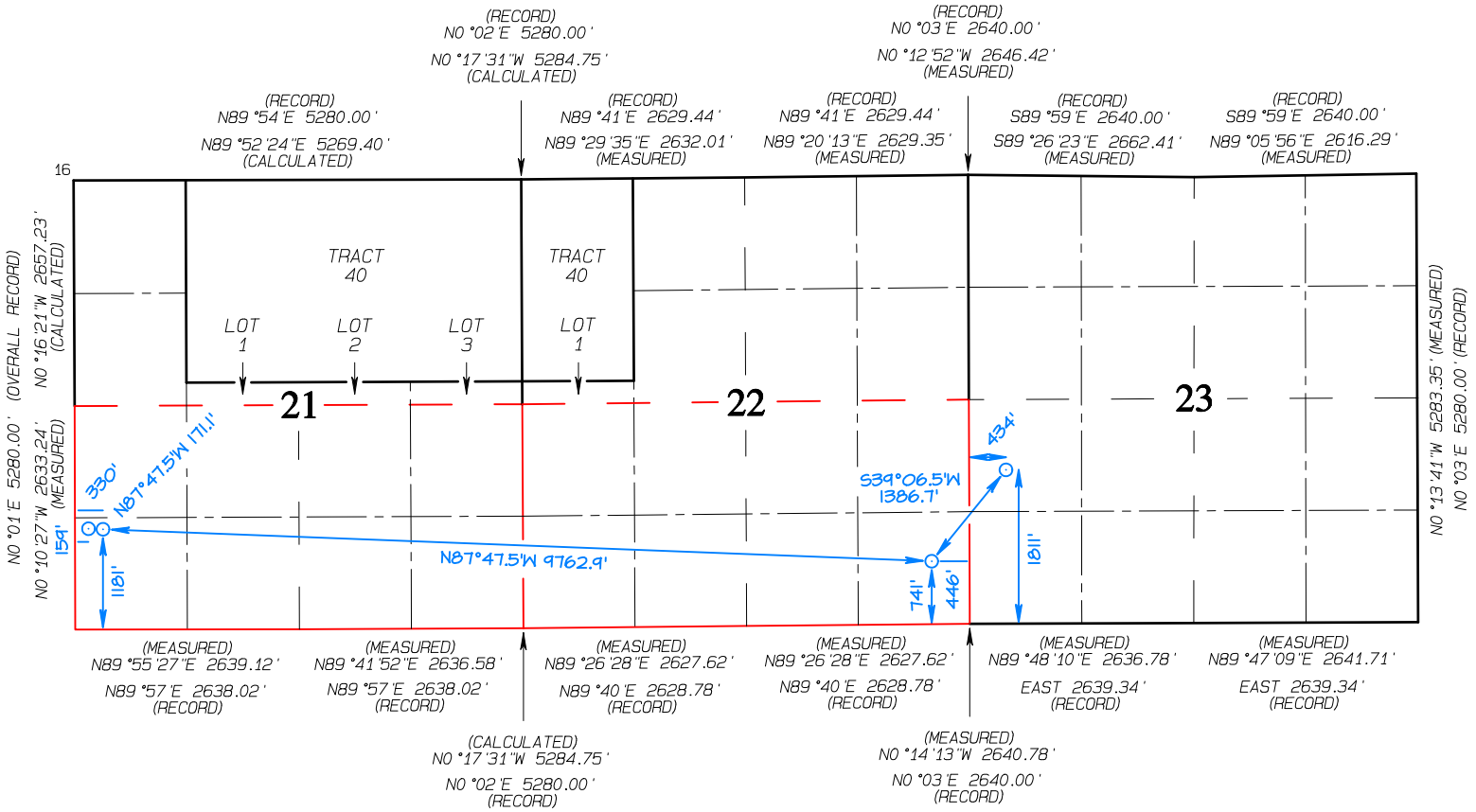
I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

Date Revised: JULY 29, 2022
Survey Date: JANUARY 4, 2017

Signature and Seal of Professional Surveyor

JASON C. EDWARDS
NEW MEXICO
15269
REGISTERED PROFESSIONAL SURVEYOR

JASON C. EDWARDS
Certificate Number 15269



LAST TAKE POINT
1188' FSL 159' FWL
SEC 21, T31N, R6W
LAT: 36.881052 °N
LONG: 107.476037 °W
DATUM: NAD1927

LAT: 36.881057 °N
LONG: 107.476642 °W
DATUM: NAD1983

LAST PERFORATION
1181' FSL 330' FWL
SEC 21, T31N, R6W
LAT: 36.881032 °N
LONG: 107.475452 °W
DATUM: NAD1927

LAT: 36.881037 °N
LONG: 107.476057 °W
DATUM: NAD1983

FIRST TAKE POINT
741' FSL 446' FEL
SEC 22, T31N, R6W
LAT: 36.879893 °N
LONG: 107.442102 °W
DATUM: NAD1927

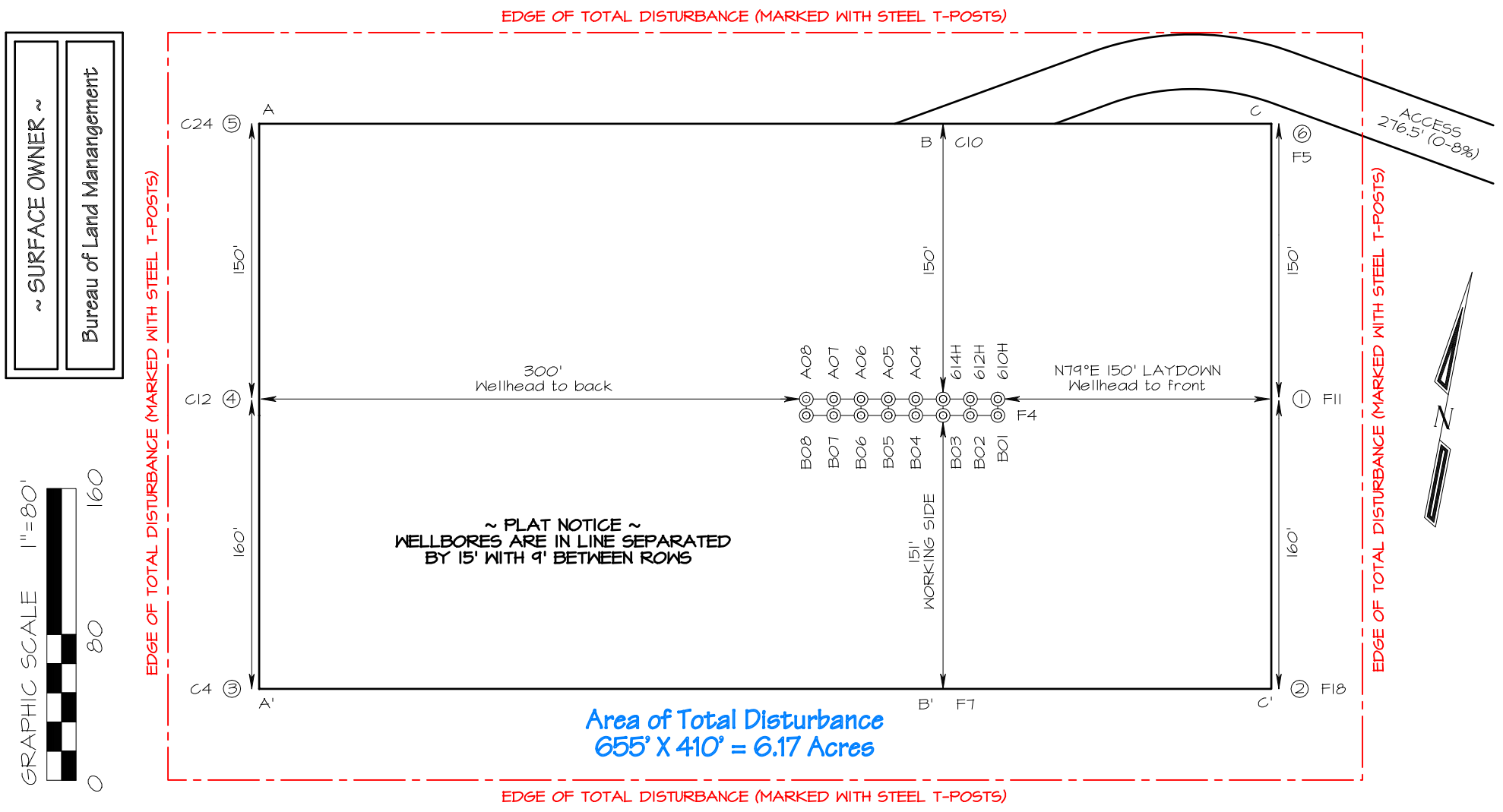
LAT: 36.879899 °N
LONG: 107.442706 °W
DATUM: NAD1983

SURFACE LOCATION
1811' FSL 434' FWL
SEC 23, T31N, R6W
LAT: 36.882838 °N
LONG: 107.439097 °W
DATUM: NAD1927

LAT: 36.882844 °N
LONG: 107.439701 °W
DATUM: NAD1983

LOGOS OPERATING, LLC ROSA UNIT #614H
1811' FSL & 434' FWL, SECTION 23, T31N, R6W, NMPM
RIO ARRIBA COUNTY, NEW MEXICO ELEVATION: 6287'
LAT: 36.882844°N LONG: 107.439701°W DATUM: NAD1983

~ SURFACE OWNER ~
Bureau of Land Manangement

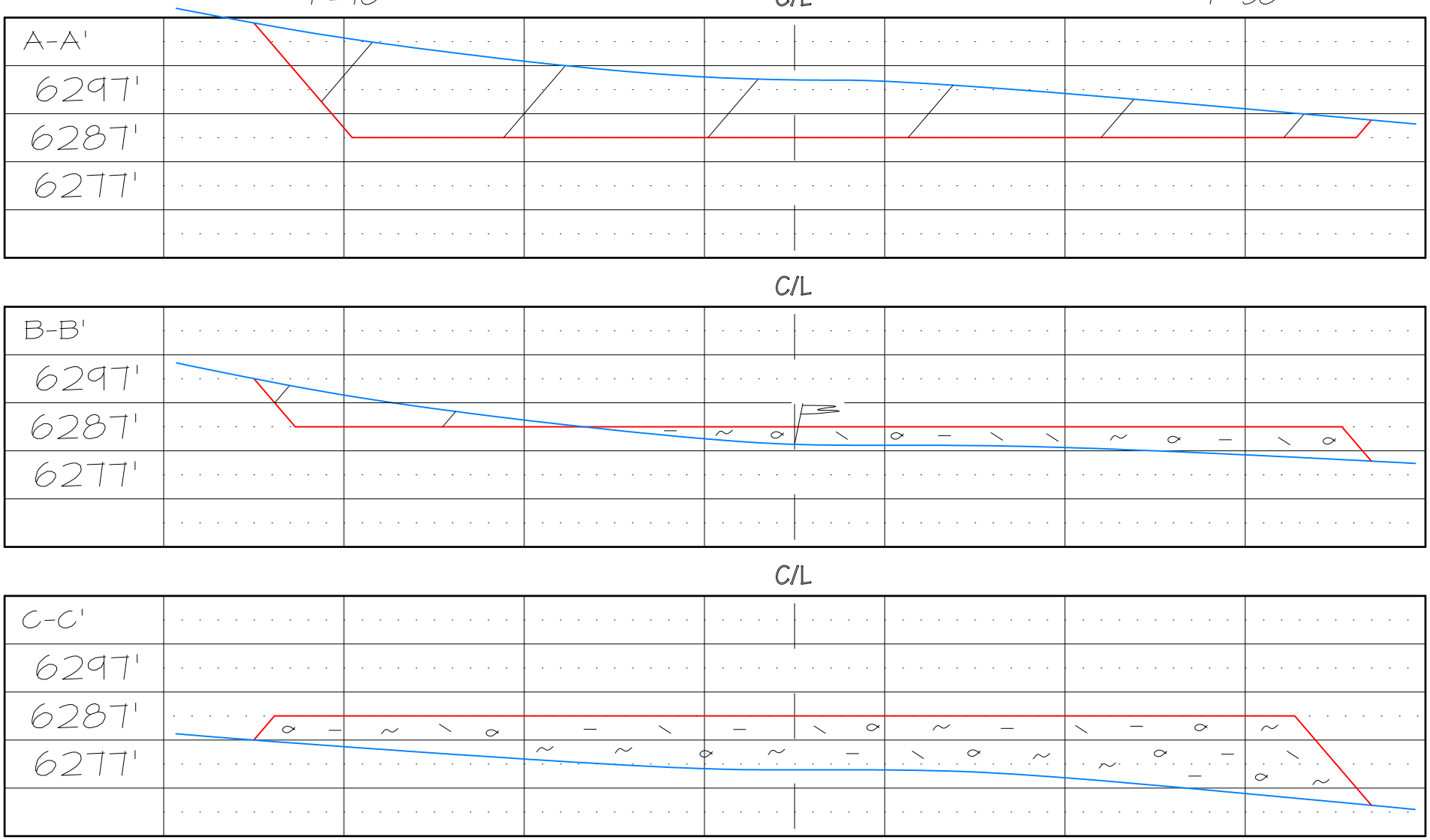


Steel T-Posts have been set to define the Edge of Disturbance limits which are 50' offset from the edge of the staked wellpad.

LOGOS OPERATING, LLC ROSA UNIT #614H
1811' FSL & 434' FWL, SECTION 23, T31N, R6W, NMPM
RIO ARRIBA COUNTY, NEW MEXICO ELEVATION: 6287'

HORIZONTAL SCALE
1"=40'

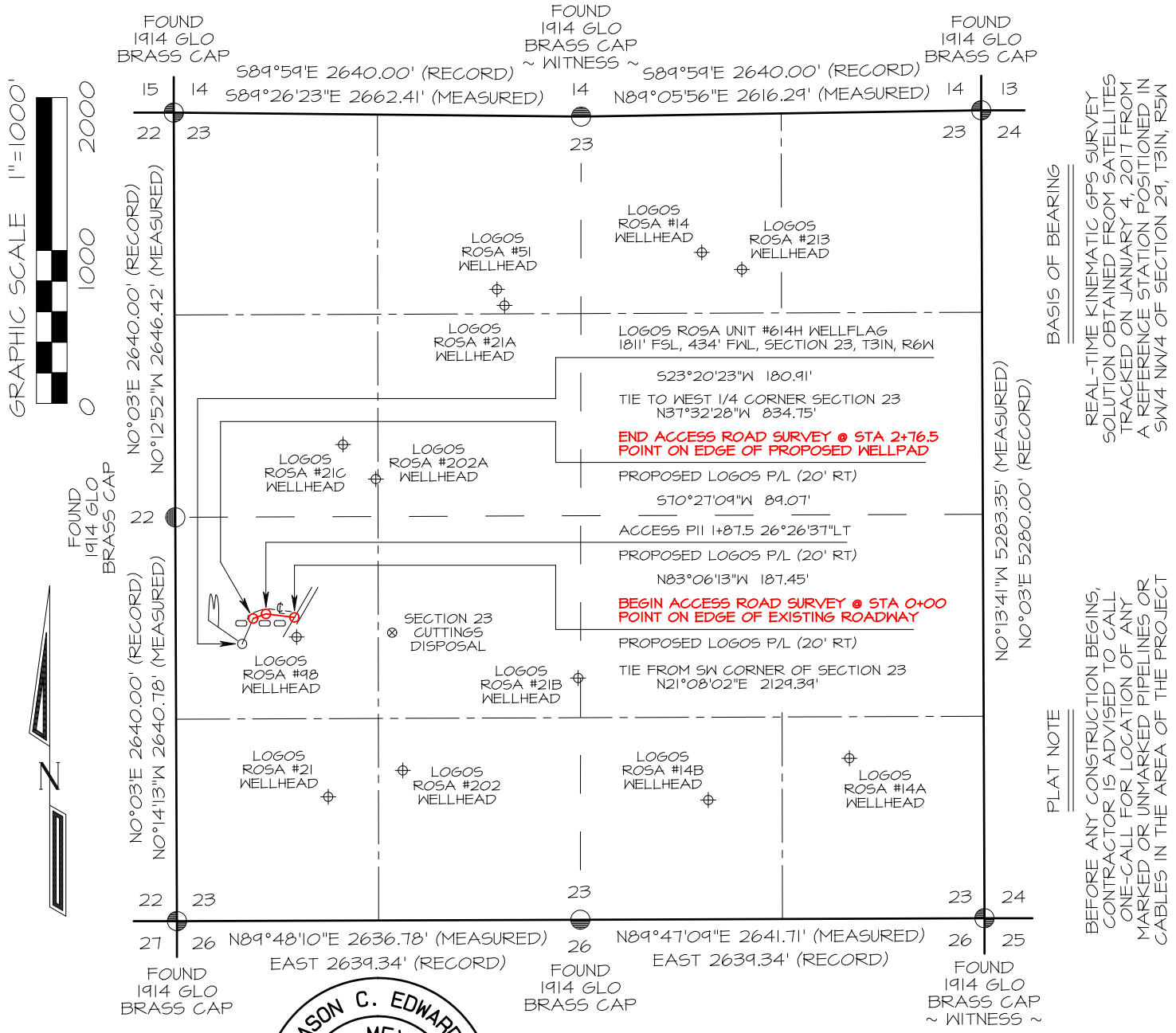
VERTICAL SCALE
1"=30'



NCE SURVEYS IS NOT LIABLE FOR LOCATION OF UNDERGROUND UTILITIES OR PIPELINES.

CONTRACTOR SHOULD CONTACT ONE-CALL FOR LOCATION OF ANY MARKED OR UNMARKED UNDERGROUND UTILITIES OR PIPELINES ON WELLPAD AND/OR ACCESS ROAD AT LEAST TWO WORKING DAYS PRIOR TO CONSTRUCTION.

LOGOS OPERATING, LLC ROSA UNIT #614H
PROPOSED ACCESS ROAD SURVEY LOCATED IN NW/4 SW/4 OF SECTION 23, T31N, R6W, NMPM RIO ARRIBA COUNTY, NEW MEXICO



~ SURFACE OWNERSHIP ~ Bureau of Land Management	
0+00 TO 2+76.5	276.5 FT / 16.8 RODS

JASON C. EDWARDS NEW MEXICO 15269 REGISTERED PROFESSIONAL SURVEYOR

I, Jason C. Edwards, a registered Professional Surveyor under the laws of the State of New Mexico, hereby certify that this plat was prepared from field notes of an actual survey meeting the minimum requirements of the standards for easement surveys and is true and correct to the best of my knowledge and belief.

JASON C. EDWARDS Date: July 29, 2022

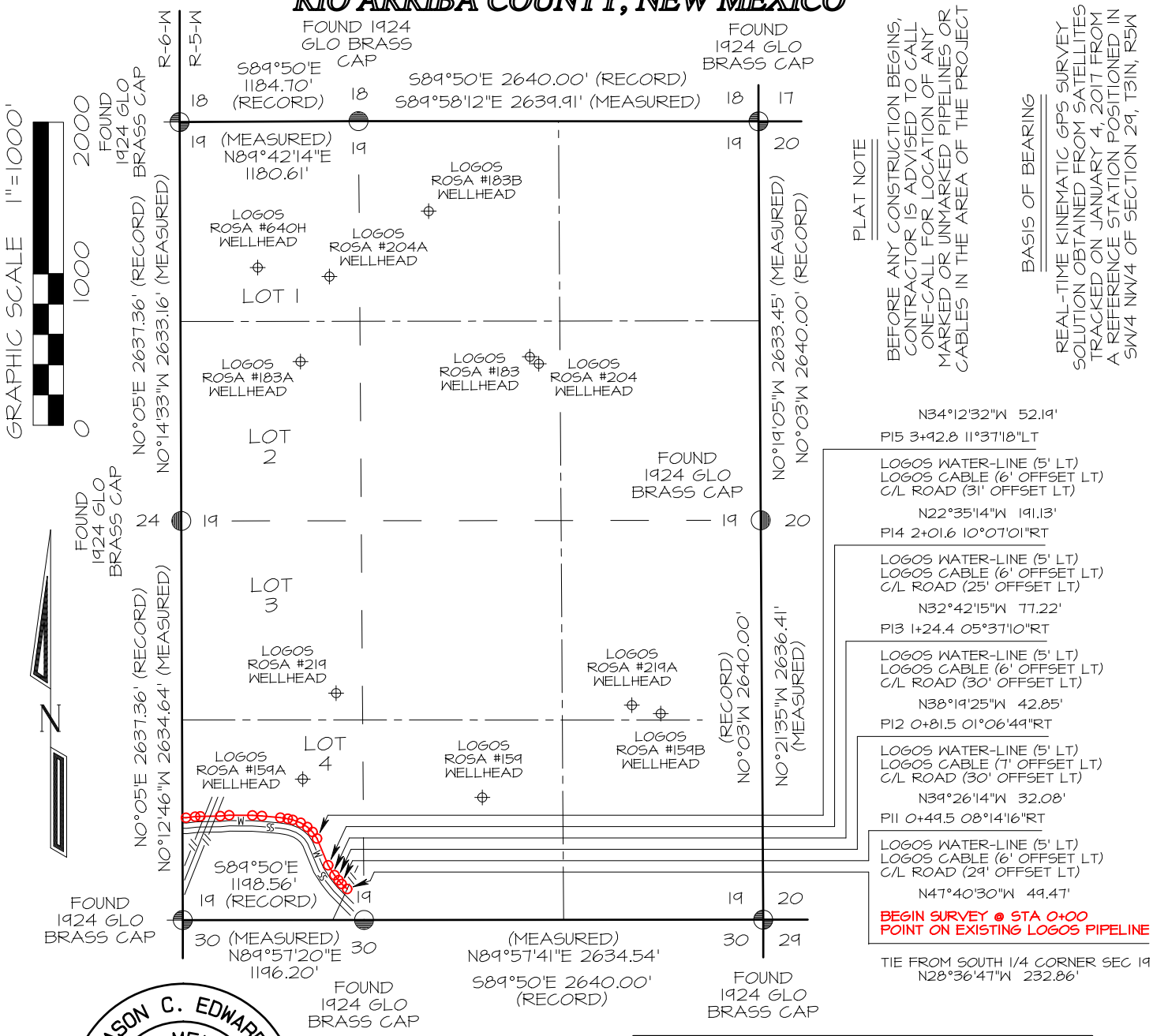
Jason C. Edwards, P.L.S.
New Mexico L.S. #15269

Prepared for:
LOGOS OPERATING, LLC
2010 AFTON PLACE
FARMINGTON, NM 87401

N C E SURVEYS, INC.
Land Surveyor: Jason C. Edwards
Mailing Address: Post Office Box 6612 Farmington, NM 87499
Business Address: 111 East Pinon Street Farmington, NM 87402
(505) 486-1695 (Office)
ncesurveys@comcast.net

CHECKED BY: JCE
DRAWN BY: EDO
SHEET 4 OF 23
FILENAME: 31623AP1

LOGOS OPERATING, LLC ROSA UNIT #614H
PROPOSED PIPELINE SURVEY LOCATED IN SW/4 SW/4 OF SECTION 19, T31N, R5W, NMPM
RIO ARRIBA COUNTY, NEW MEXICO



PLAT NOTE

BEFORE ANY CONSTRUCTION BEGINS, CONTRACTOR IS ADVISED TO CALL ONE-CALL FOR LOCATION OF ANY MARKED OR UNMARKED PIPELINES OR CABLES IN THE AREA OF THE PROJECT

BASIS OF BEARING

REAL-TIME KINEMATIC GPS SURVEY SOLUTION OBTAINED FROM SATELLITES TRACKED ON JANUARY 4, 2017 FROM A REFERENCE STATION POSITIONED IN SW4 NW4 OF SECTION 29, T31N, R5W

~ SURFACE OWNERSHIP ~ Bureau of Land Management	
0+00 TO 13+31.4	1331.4 FT / 80.7 RODS

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Land Surveyor:
Jason C. Edwards
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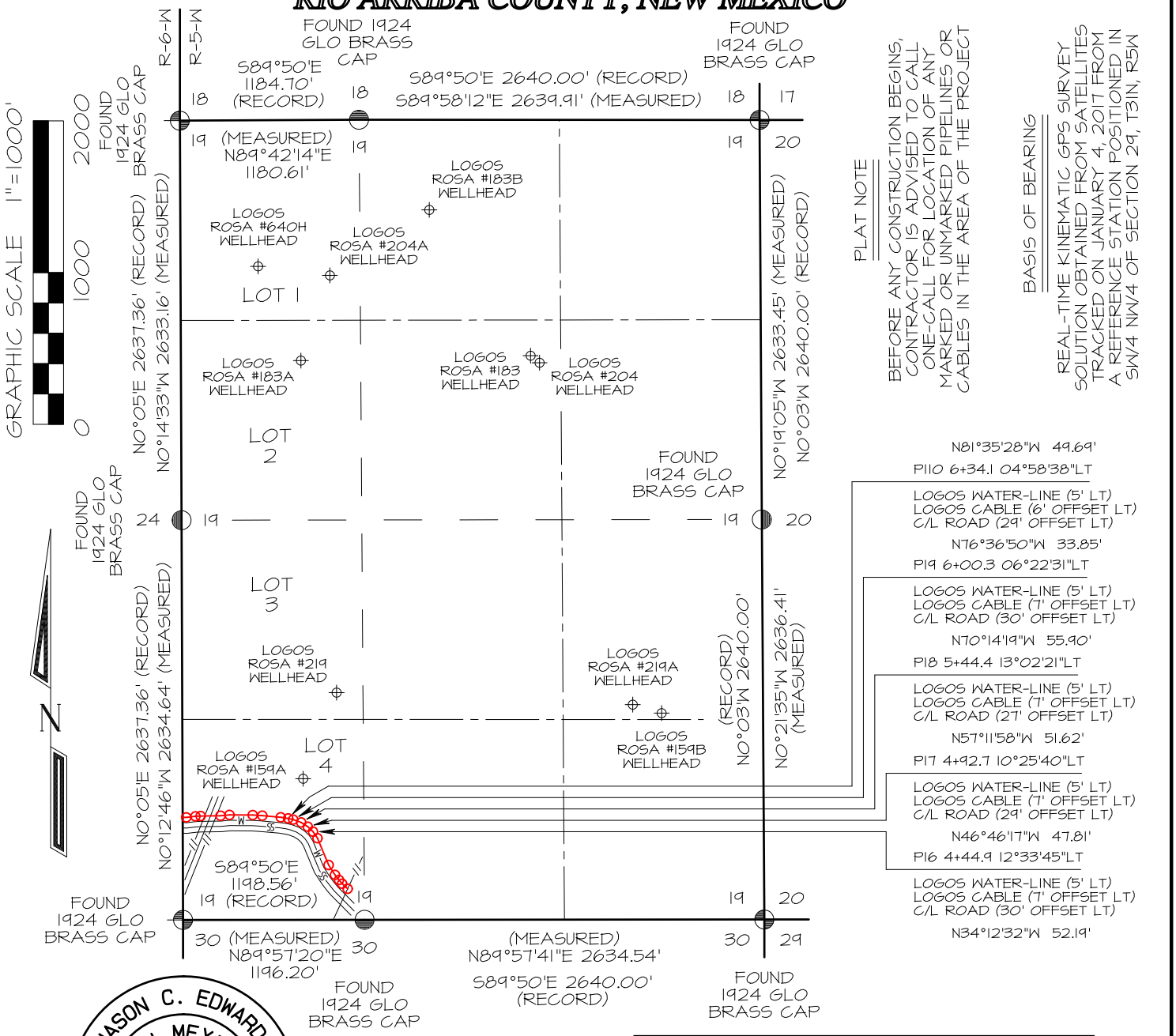
Farmington, NM 87499
Business Address:
111 East Pinon Street
Farmington, NM 87402
(505) 486-1695 (Office)
ncesurveys@comcast.net
NCE SURVEYS, INC.

CHECKED BY: JCE
DRAWN BY: EDO
SHEET 5 OF 23
FILENAME: 3151GPI

LOGOS OPERATING, LLC ROSA UNIT #614H
PROPOSED PIPELINE SURVEY LOCATED IN SW/4 SW/4 OF SECTION 19, T31N, R5W, NMPM RIO ARRIBA COUNTY, NEW MEXICO



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BASIS OF BEARING

REAL-TIME KINEMATIC GPS SURVEY SOLUTION OBTAINED FROM SATELLITES TRACKED ON JANUARY 4, 2017 FROM A REFERENCE STATION POSITIONED IN SW4 NW4 OF SECTION 29, T31N, R5W

JASON C. EDWARDS NEW MEXICO 15269 REGISTERED PROFESSIONAL SURVEYOR

~ SURFACE OWNERSHIP ~ Bureau of Land Management	
0+00 TO 13+31.4	1331.4 FT / 80.7 RODS

I, Jason C. Edwards, a registered Professional Surveyor under the laws of the State of New Mexico, hereby certify that this plat was prepared from field notes of an actual survey meeting the minimum requirements of the standards for easement surveys and is true and correct to the best of my knowledge and belief.

JASON C. EDWARDS Date: July 29, 2022

Jason C. Edwards, P.L.S.
New Mexico L.S. #15269

Prepared for:
LOGOS OPERATING, LLC
2010 AFTON PLACE
FARMINGTON, NM 87401

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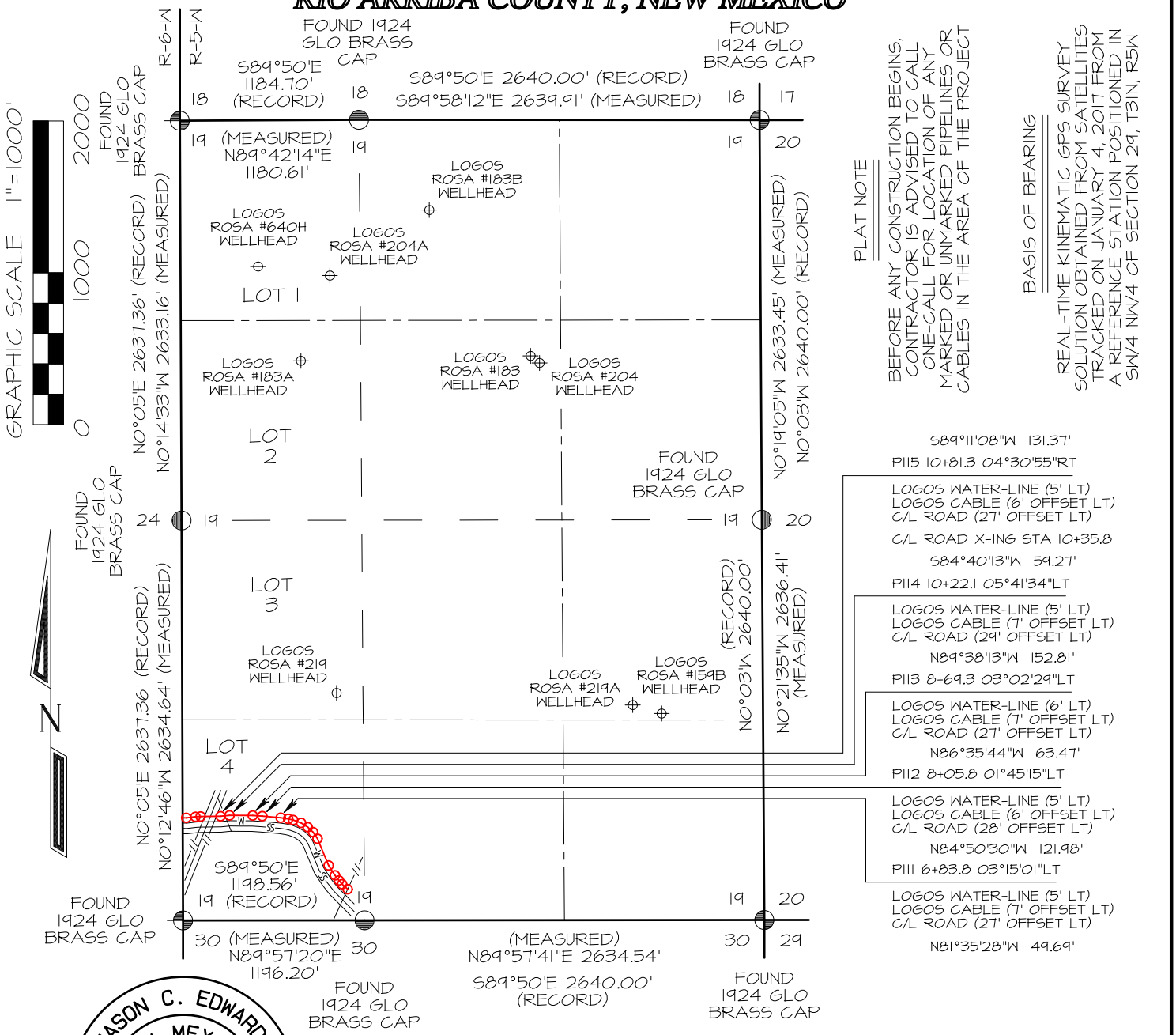
(505) 486-1695 (Office)
ncesurveys@comcast.net

CHECKED BY: JCE
DRAWN BY: EDO
SHEET 6 OF 23
FILENAME: 31519GP2

LOGOS OPERATING, LLC ROSA UNIT #614H
PROPOSED PIPELINE SURVEY LOCATED IN SW/4 SW/4 OF SECTION 19, T31N, R5W, NMPM RIO ARRIBA COUNTY, NEW MEXICO



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BASIS OF BEARING

REAL-TIME KINEMATIC GPS SURVEY SOLUTION OBTAINED FROM SATELLITES TRACKED ON JANUARY 4, 2017 FROM A REFERENCE STATION POSITIONED IN SW4 NW4 OF SECTION 29, T31N, R5W

~ SURFACE OWNERSHIP ~ Bureau of Land Management	
0+00 TO 13+31.4	1331.4 FT / 80.7 RODS

JASON C. EDWARDS NEW MEXICO 15269 REGISTERED PROFESSIONAL SURVEYOR

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JASON C. EDWARDS Date: July 29, 2022

Jason C. Edwards, P.L.S.
New Mexico L.S. #15269

Prepared for:
LOGOS OPERATING, LLC
2010 AFTON PLACE
FARMINGTON, NM 87401

Land Surveyor:
Jason C. Edwards
Mailing Address:
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Business Address:
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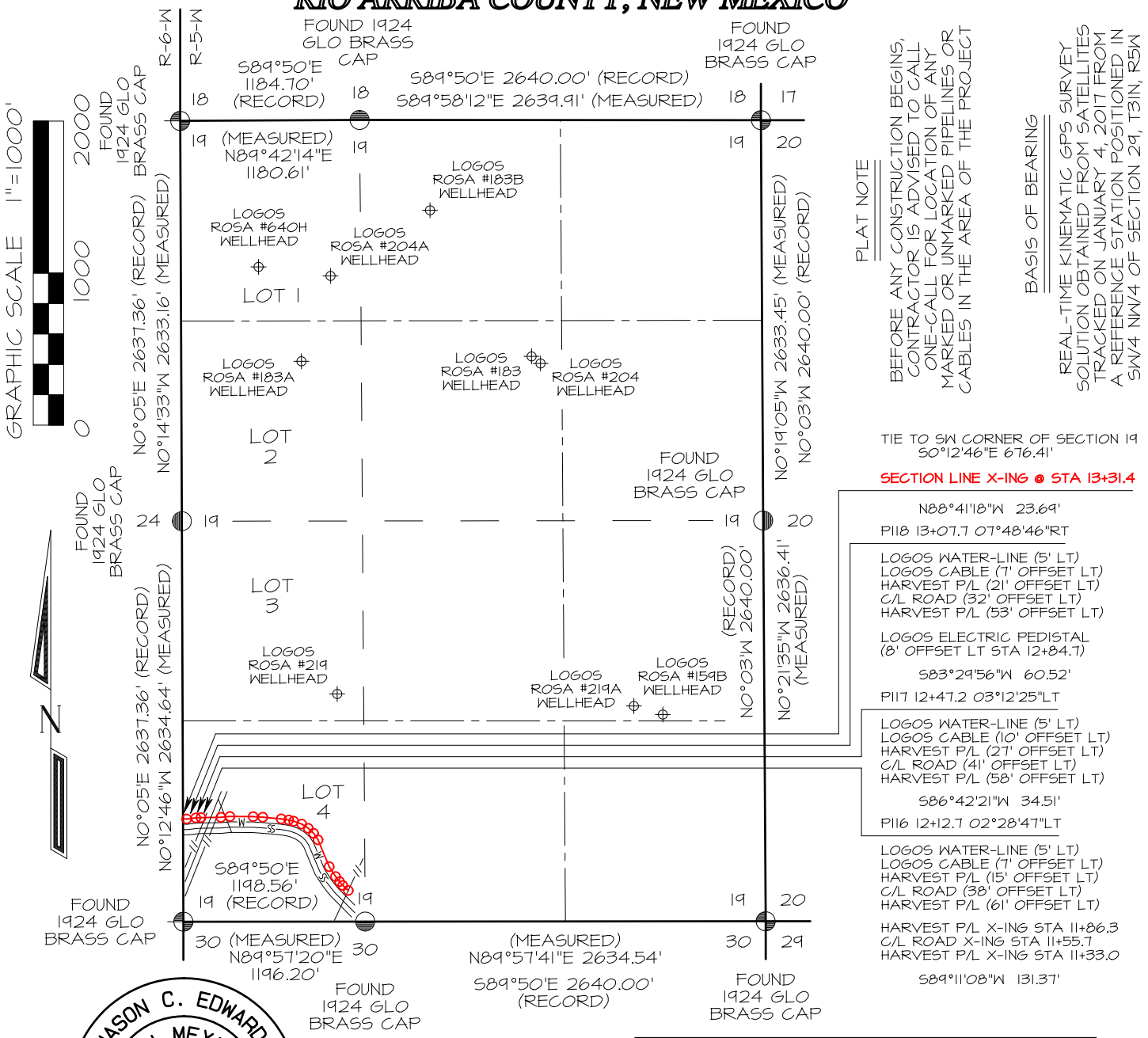
Farmington, NM 87402
(505) 486-1695 (Office)
ncesurveys@comcast.net
NCE SURVEYS, INC.

CHECKED BY: JCE
DRAWN BY: EDO
SHEET 1 OF 23
FILENAME: 31519GP3

LOGOS OPERATING, LLC ROSA UNIT #614H
PROPOSED PIPELINE SURVEY LOCATED IN SW/4 SW/4 OF SECTION 19, T31N, R5W, NMPM RIO ARRIBA COUNTY, NEW MEXICO



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BASIS OF BEARING

REAL-TIME KINEMATIC GPS SURVEY SOLUTION OBTAINED FROM SATELLITES TRACKED ON JANUARY 4, 2017 FROM A REFERENCE STATION POSITIONED IN SW4 NW4 OF SECTION 29, T31N, R5W

TIE TO SW CORNER OF SECTION 19
S0°12'46"E 676.41'

SECTION LINE X-ING @ STA 13+31.4

N88°41'18"W 23.69'

PI18 13+07.7 07°48'46"RT

LOGOS WATER-LINE (5' LT)
LOGOS CABLE (7' OFFSET LT)
HARVEST P/L (21' OFFSET LT)
C/L ROAD (32' OFFSET LT)
HARVEST P/L (53' OFFSET LT)

LOGOS ELECTRIC PEDISTAL (8' OFFSET LT STA 12+84.7)

S83°29'56"W 60.52'

PI17 12+47.2 03°12'25"LT

LOGOS WATER-LINE (5' LT)
LOGOS CABLE (10' OFFSET LT)
HARVEST P/L (27' OFFSET LT)
C/L ROAD (41' OFFSET LT)
HARVEST P/L (58' OFFSET LT)

S86°42'21"W 34.51'

PI16 12+12.7 02°28'47"LT

LOGOS WATER-LINE (5' LT)
LOGOS CABLE (7' OFFSET LT)
HARVEST P/L (15' OFFSET LT)
C/L ROAD (38' OFFSET LT)
HARVEST P/L (61' OFFSET LT)

HARVEST P/L X-ING STA 11+86.3
C/L ROAD X-ING STA 11+55.7
HARVEST P/L X-ING STA 11+33.0

S89°11'08"W 131.37'

~ SURFACE OWNERSHIP ~ Bureau of Land Management	
0+00 TO 13+31.4	1331.4 FT / 80.7 RODS

JASON C. EDWARDS NEW MEXICO 15269 REGISTERED PROFESSIONAL SURVEYOR

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JASON C. EDWARDS Date: July 29, 2022

Jason C. Edwards, P.L.S.
New Mexico L.S. #15269

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LOGOS OPERATING, LLC
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FARMINGTON, NM 87401

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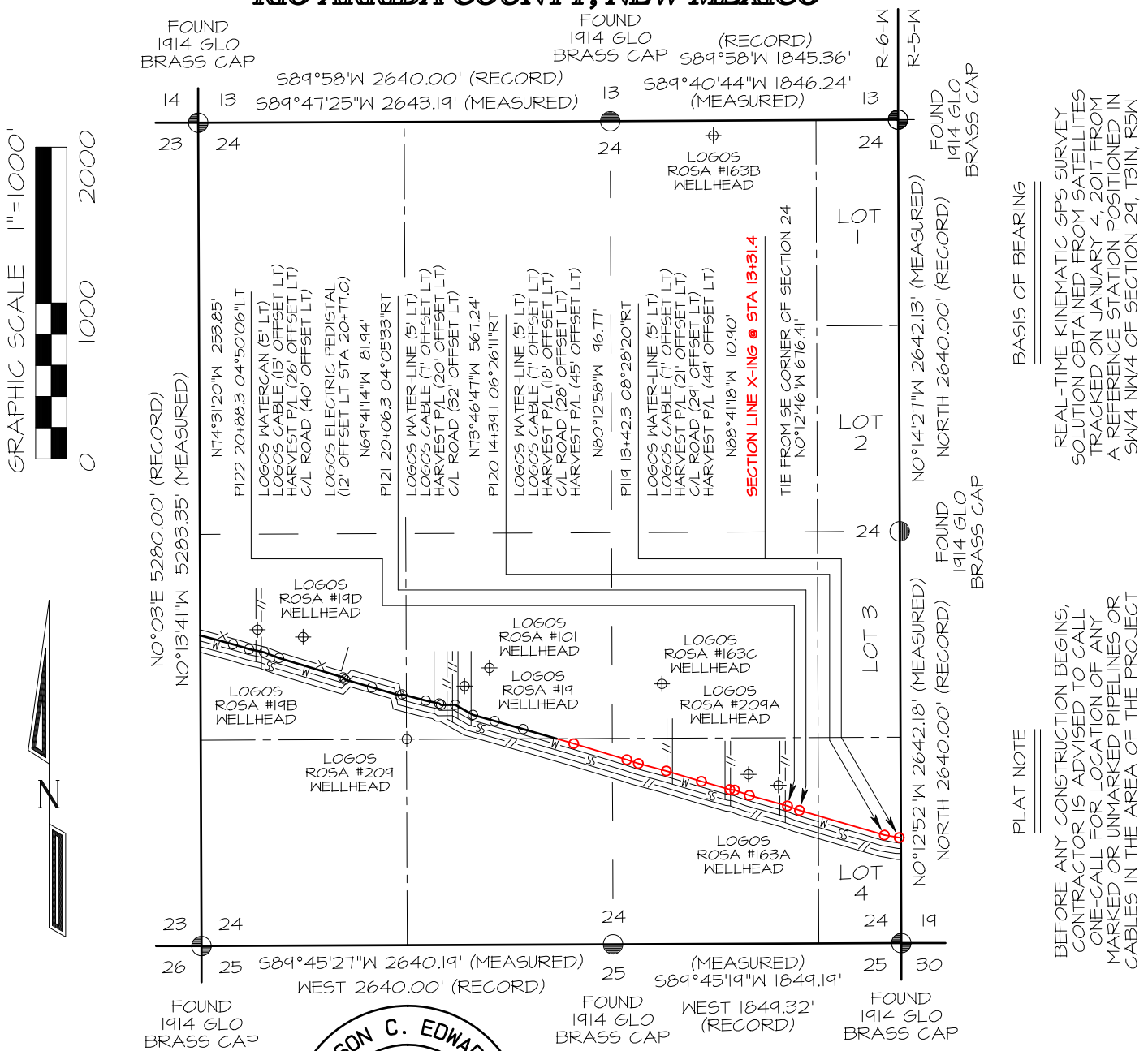
Land Surveyor: Jason C. Edwards
Mailing Address: Post Office Box 6612 Farmington, NM 87499
Business Address: 111 East Pinon Street Farmington, NM 87402
(505) 486-1695 (Office)
ncesurveys@comcast.net

CHECKED BY: JCE
DRAWN BY: EDO
SHEET 8 OF 23
FILENAME: 31519GP4

LOGOS OPERATING, LLC ROSA UNIT #614H
PROPOSED PIPELINE SURVEY LOCATED IN S/2 S/2 OF SECTION 24, T31N, R6W, NMPM RIO ARRIBA COUNTY, NEW MEXICO



BASIS OF BEARING

REAL-TIME KINEMATIC GPS SURVEY SOLUTION OBTAINED FROM SATELLITES TRACKED ON JANUARY 4, 2017 FROM A REFERENCE STATION POSITIONED IN SW/4 NW/4 OF SECTION 29, T31N, R5W

PLAT NOTE

BEFORE ANY CONSTRUCTION BEGINS, CONTRACTOR IS ADVISED TO CALL ONE-CALL FOR LOCATION OF ANY MARKED OR UNMARKED PIPELINES OR CABLES IN THE AREA OF THE PROJECT

~ SURFACE OWNERSHIP ~ Bureau of Land Management	
13+31.4 TO 36+31.7	2300.3 FT / 139.4 RODS

JASON C. EDWARDS NEW MEXICO 15269 REGISTERED PROFESSIONAL SURVEYOR

I, Jason C. Edwards, a registered Professional Surveyor under the laws of the State of New Mexico, hereby certify that this plat was prepared from field notes of an actual survey meeting the minimum requirements of the standards for easement surveys and is true and correct to the best of my knowledge and belief.

JASON C. EDWARDS Date: July 29, 2022

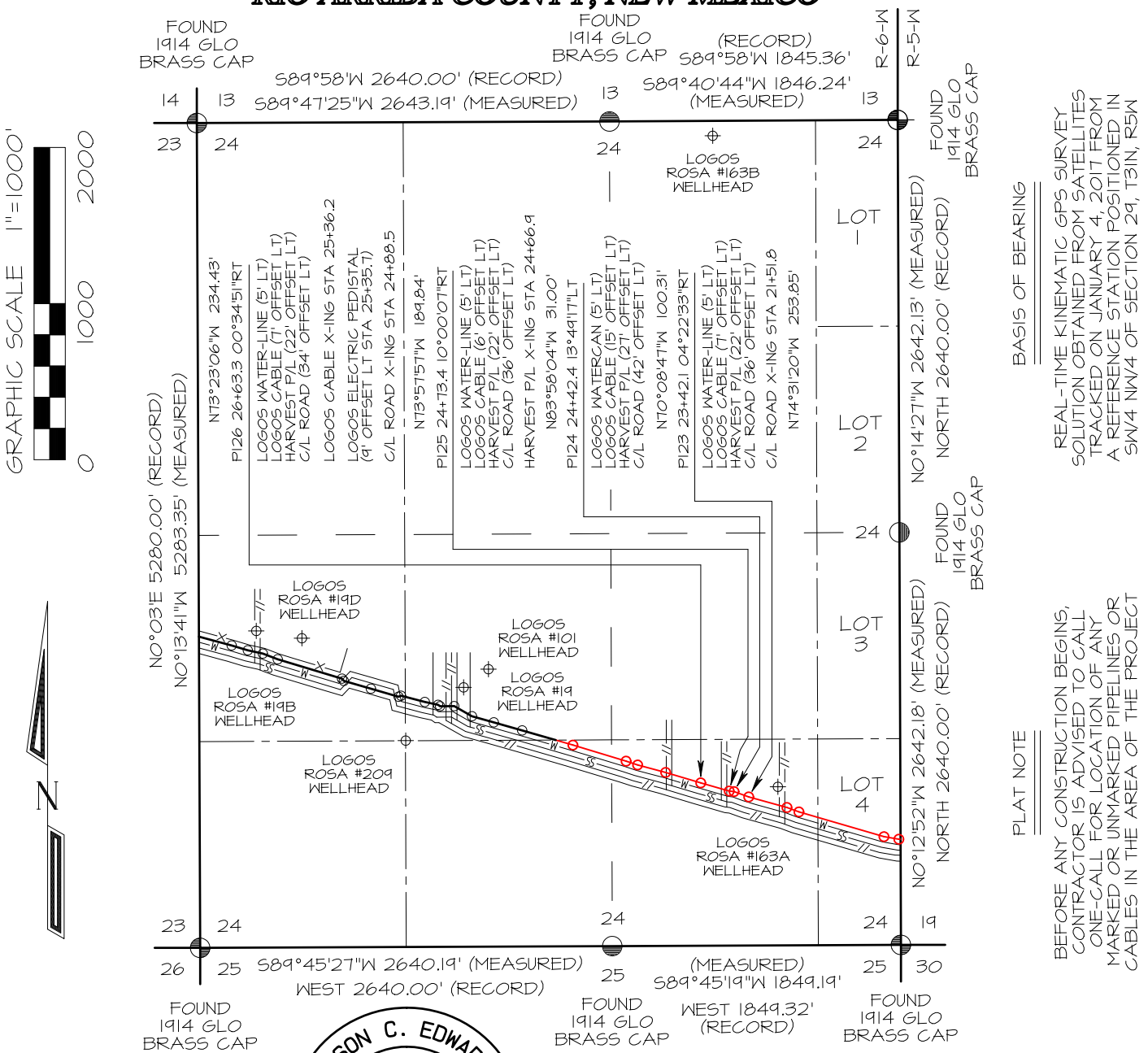
Jason C. Edwards, P.L.S.
New Mexico L.S. #15269

Prepared for:
LOGOS OPERATING, LLC
2010 AFTON PLACE
FARMINGTON, NM 87401

Land Surveyor:
Jason C. Edwards
Mailing Address:
Post Office Box 6612
Farmington, NM 87499
Business Address:
111 East Pinon Street
Farmington, NM 87402
(505) 486-1695 (Office)
ncesurveys@comcast.net
NCE SURVEYS, INC.

CHECKED BY: JCE
DRAWN BY: EDO
SHEET 9 OF 23
FILENAME: 316246P5

LOGOS OPERATING, LLC ROSA UNIT #614H
PROPOSED PIPELINE SURVEY LOCATED IN S/2 S/2 OF SECTION 24, T31N, R6W, NMPM RIO ARRIBA COUNTY, NEW MEXICO



BASIS OF BEARING

REAL-TIME KINEMATIC GPS SURVEY SOLUTION OBTAINED FROM SATELLITES TRACKED ON JANUARY 4, 2017 FROM A REFERENCE STATION POSITIONED IN SW/4 NW/4 OF SECTION 29, T31N, R5W

PLAT NOTE

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~ SURFACE OWNERSHIP ~ Bureau of Land Management	
13+31.4 TO 36+31.7	2300.3 FT / 139.4 RODS

JASON C. EDWARDS NEW MEXICO 15269 REGISTERED PROFESSIONAL SURVEYOR

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JASON C. EDWARDS Date: July 29, 2022

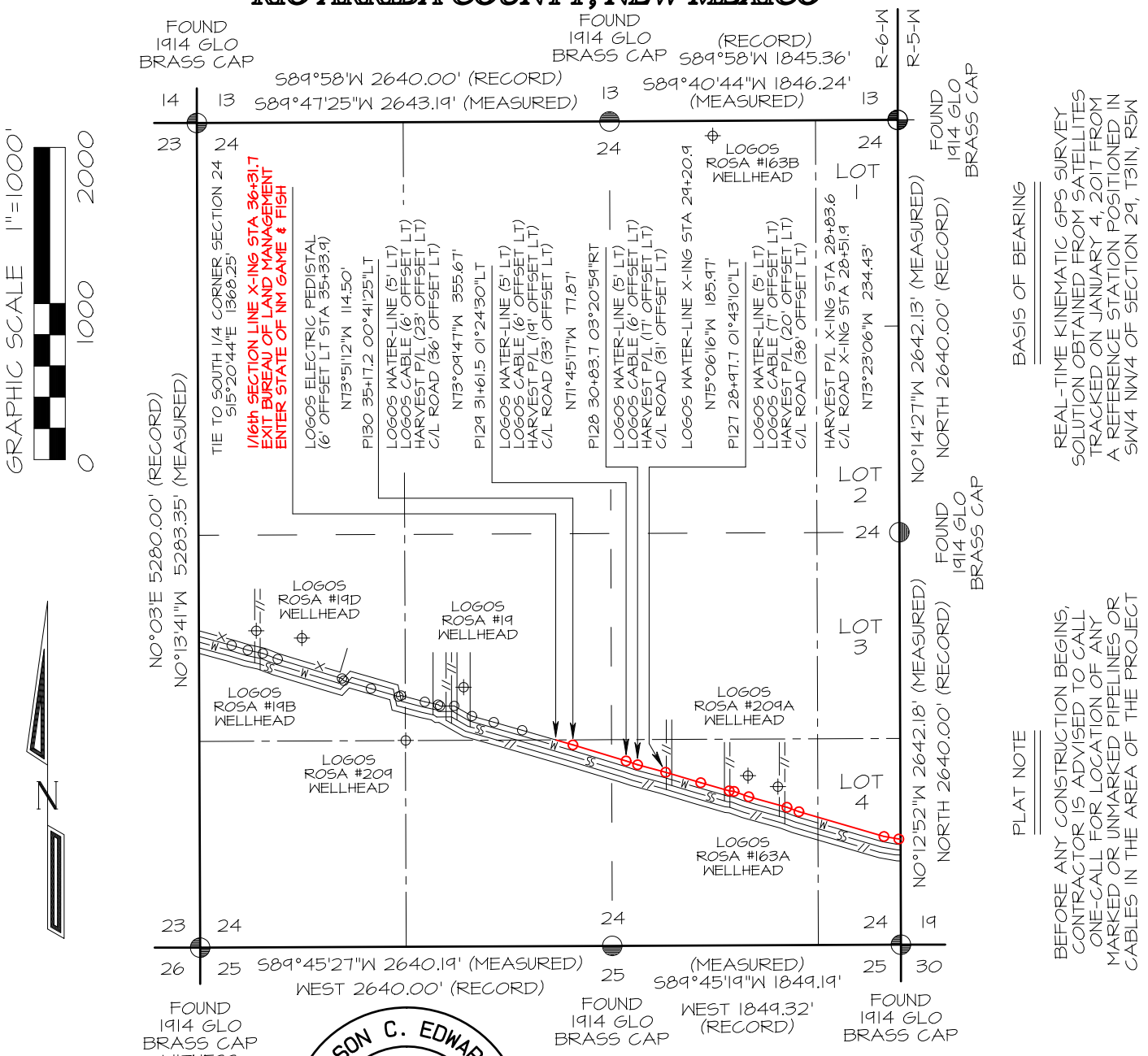
Jason C. Edwards, P.L.S.
New Mexico L.S. #15269

Prepared for:
LOGOS OPERATING, LLC
2010 AFTON PLACE
FARMINGTON, NM 87401

Land Surveyor:
Jason C. Edwards
Mailing Address:
Post Office Box 6612
Farmington, NM 87499
Business Address:
111 East Pinon Street
Farmington, NM 87402
(505) 486-1695 (Office)
ncesurveys@comcast.net
NCE SURVEYS, INC.

CHECKED BY: JCE
DRAWN BY: EDO
SHEET 10 OF 23
FILENAME: 316246P6

LOGOS OPERATING, LLC ROSA UNIT #614H
PROPOSED PIPELINE SURVEY LOCATED IN S/2 S/2 OF SECTION 24, T31N, R6W, NMPM RIO ARRIBA COUNTY, NEW MEXICO



BASIS OF BEARING

REAL-TIME KINEMATIC GPS SURVEY SOLUTION OBTAINED FROM SATELLITES TRACKED ON JANUARY 4, 2017 FROM A REFERENCE STATION POSITIONED IN SW/4 NW/4 OF SECTION 29, T31N, R5W

PLAT NOTE

BEFORE ANY CONSTRUCTION BEGINS, CONTRACTOR IS ADVISED TO CALL ONE-CALL FOR LOCATION OF ANY MARKED OR UNMARKED PIPELINES OR CABLES IN THE AREA OF THE PROJECT

~ SURFACE OWNERSHIP ~ Bureau of Land Management	
13+31.4 TO 36+31.7	2300.3 FT / 139.4 RODS

JASON C. EDWARDS NEW MEXICO 15269 REGISTERED PROFESSIONAL SURVEYOR

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JASON C. EDWARDS Date: July 29, 2022

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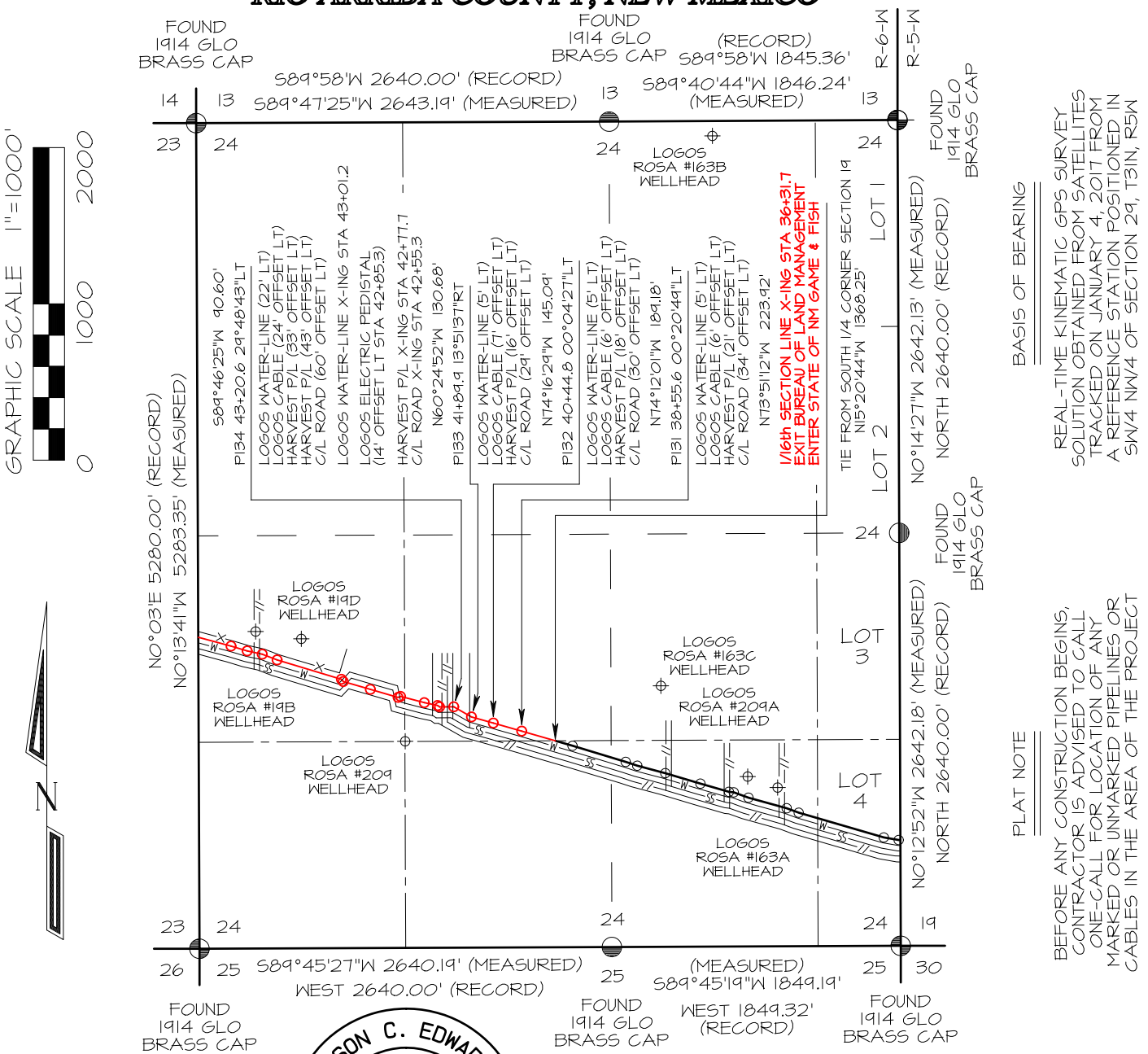
New Mexico L.S. #15269

Prepared for:
LOGOS OPERATING, LLC
2010 AFTON PLACE
FARMINGTON, NM 87401

N C E SURVEYS, INC.
Land Surveyor: Jason C. Edwards
Mailing Address: Post Office Box 6612 Farmington, NM 87499
Business Address: 111 East Pinon Street Farmington, NM 87402
(505) 486-1695 (Office)
ncesurveys@comcast.net

SHEET 11 OF 23 | FILENAME: 31624GPT | DRAWN BY: EDO | CHECKED BY: JCE

LOGOS OPERATING, LLC ROSA UNIT #614H
PROPOSED PIPELINE SURVEY LOCATED IN N/2 SW/4 OF SECTION 24, T31N, R6W, NMPM RIO ARRIBA COUNTY, NEW MEXICO



~ SURFACE OWNERSHIP ~ State of NM Game & Fish Department	
36+31.7 TO 60+27.9	2396.2 FT / 145.2 RODS

JASON C. EDWARDS NEW MEXICO 15269 REGISTERED PROFESSIONAL SURVEYOR

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JASON C. EDWARDS Date: July 29, 2022

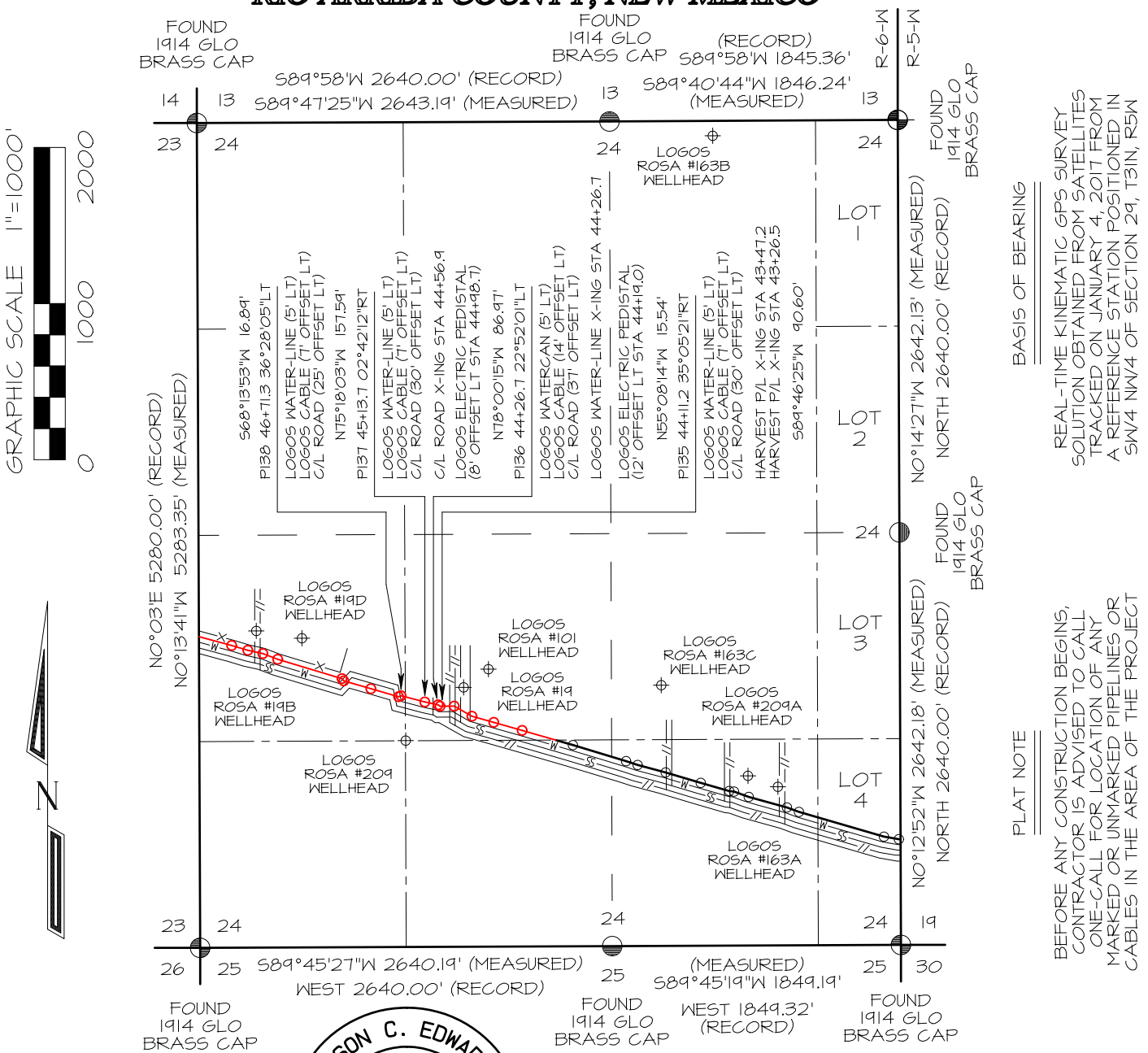
Jason C. Edwards, P.L.S.
New Mexico L.S. #15269

Prepared for:
LOGOS OPERATING, LLC
2010 AFTON PLACE
FARMINGTON, NM 87401

Land Surveyor:
Jason C. Edwards
Mailing Address:
Post Office Box 6612
Farmington, NM 87499
Business Address:
111 East Pinon Street
Farmington, NM 87402
(505) 486-1695 (Office)
ncesurveys@comcast.net
NCE SURVEYS, INC.

SHEET 12 OF 23 | CHECKED BY: JCE
FILENAME: 316246PB | DRAWN BY: EDO

LOGOS OPERATING, LLC ROSA UNIT #614H
PROPOSED PIPELINE SURVEY LOCATED IN N/2 SW/4 OF SECTION 24, T31N, R6W, NMPM RIO ARRIBA COUNTY, NEW MEXICO



BASIS OF BEARING

REAL-TIME KINEMATIC GPS SURVEY SOLUTION OBTAINED FROM SATELLITES TRACKED ON JANUARY 4, 2017 FROM A REFERENCE STATION POSITIONED IN SW/4 NW/4 OF SECTION 29, T31N, R5W

PLAT NOTE

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~ SURFACE OWNERSHIP ~ State of NM Game & Fish Department	
36+31.7 TO 60+27.9	2396.2 FT / 145.2 RODS

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New Mexico L.S. #15269

Prepared for:
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2010 AFTON PLACE
FARMINGTON, NM 87401

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Land Surveyor: Jason C. Edwards
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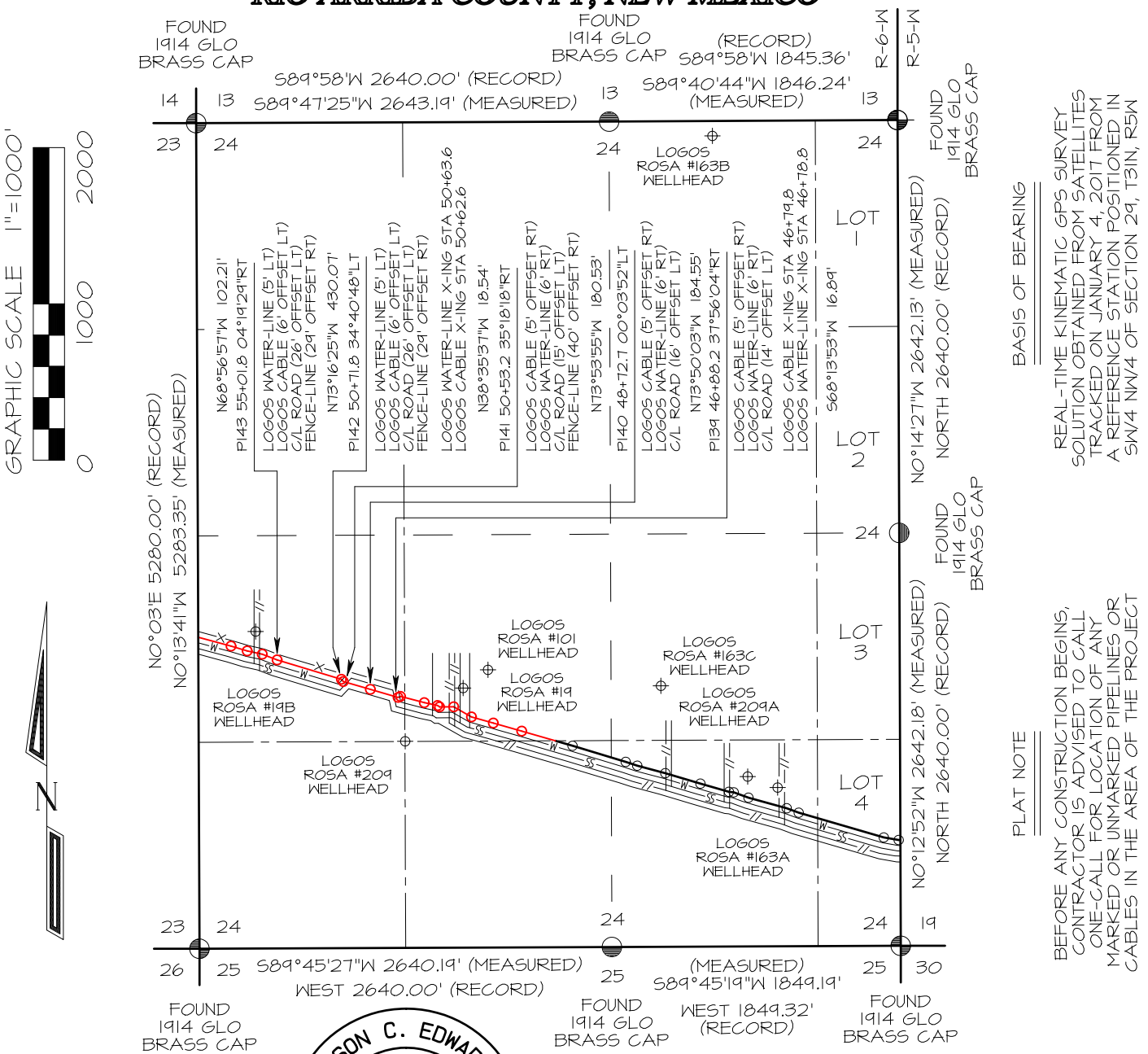
Business Address: 111 East Pinon Street Farmington, NM 87402
(505) 486-1695 (Office)
ncesurveys@comcast.net

SHEET 13 OF 23 | CHECKED BY: JCE
FILENAME: 316246P4 | DRAWN BY: EDO

LOGOS OPERATING, LLC ROSA UNIT #614H
PROPOSED PIPELINE SURVEY LOCATED IN N/2 SW/4 OF SECTION 24, T31N, R6W, NMPM RIO ARRIBA COUNTY, NEW MEXICO



BASIS OF BEARING

REAL-TIME KINEMATIC GPS SURVEY SOLUTION OBTAINED FROM SATELLITES TRACKED ON JANUARY 4, 2017 FROM A REFERENCE STATION POSITIONED IN SW/4 NW/4 OF SECTION 29, T31N, R5W

PLAT NOTE

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~ SURFACE OWNERSHIP ~ State of NM Game & Fish Department	
36+31.7 TO 60+27.9	2396.2 FT / 145.2 RODS

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New Mexico L.S. #15269

Prepared for:
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2010 AFTON PLACE
FARMINGTON, NM 87401

N C E SURVEYS, INC.
Land Surveyor: Jason C. Edwards
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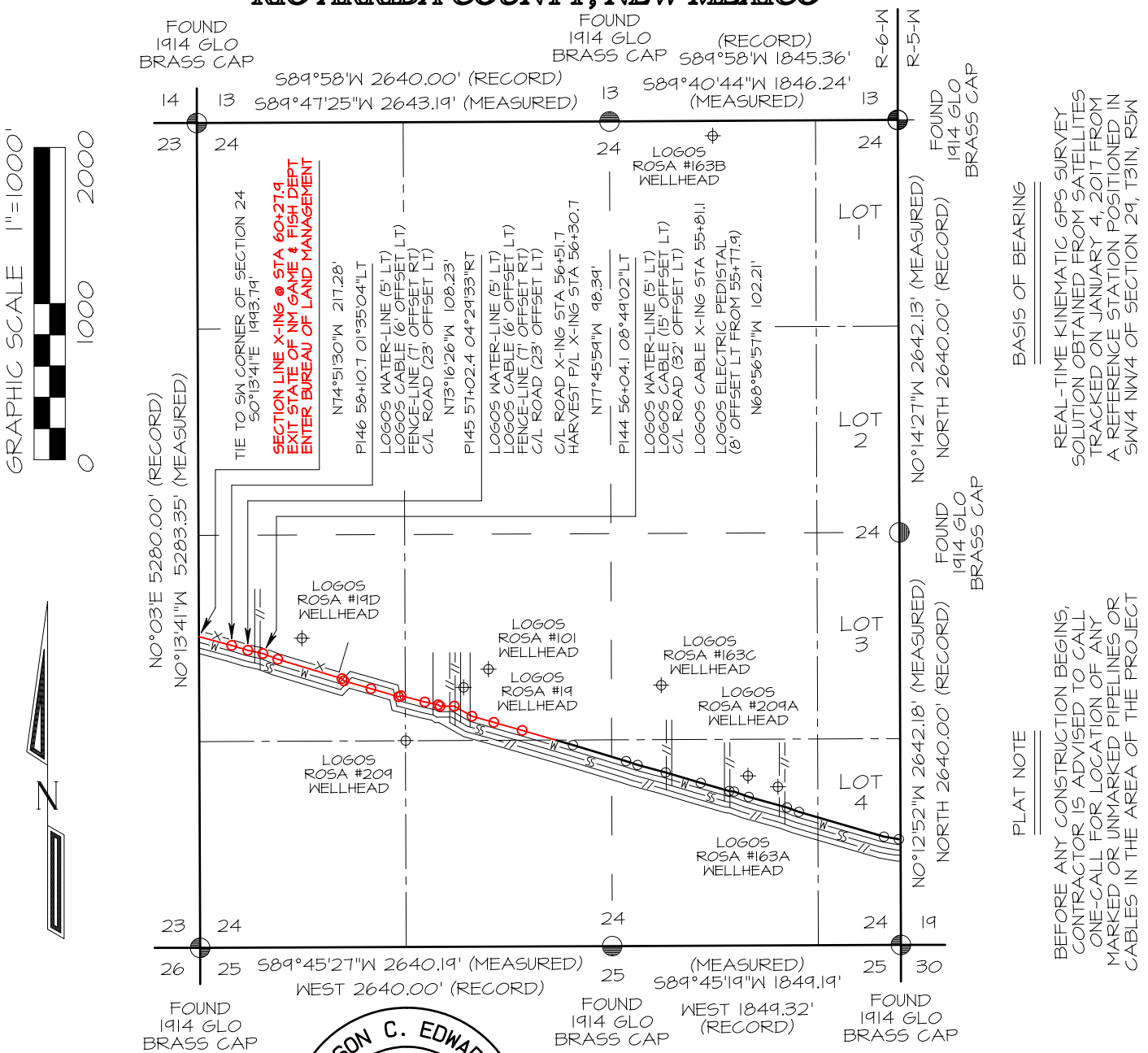
(505) 486-1695 (Office)
ncesurveys@comcast.net

CHECKED BY: JCE
DRAWN BY: EDO
SHEET 14 OF 23
FILENAME: 31624610

LOGOS OPERATING, LLC ROSA UNIT #614H
PROPOSED PIPELINE SURVEY LOCATED IN N/2 SW/4 OF SECTION 24, T31N, R6W, NMPM RIO ARRIBA COUNTY, NEW MEXICO



BASIS OF BEARING

REAL-TIME KINEMATIC GPS SURVEY SOLUTION OBTAINED FROM SATELLITES TRACKED ON JANUARY 4, 2017 FROM A REFERENCE STATION POSITIONED IN SW/4 NW/4 OF SECTION 29, T31N, R5W

PLAT NOTE

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~ SURFACE OWNERSHIP ~ State of NM Game & Fish Department	
36+31.7 TO 60+27.9	2396.2 FT / 145.2 RODS

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JASON C. EDWARDS Date: July 29, 2022

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New Mexico L.S. #15269

Prepared for:
LOGOS OPERATING, LLC
2010 AFTON PLACE
FARMINGTON, NM 87401

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Land Surveyor: Jason C. Edwards
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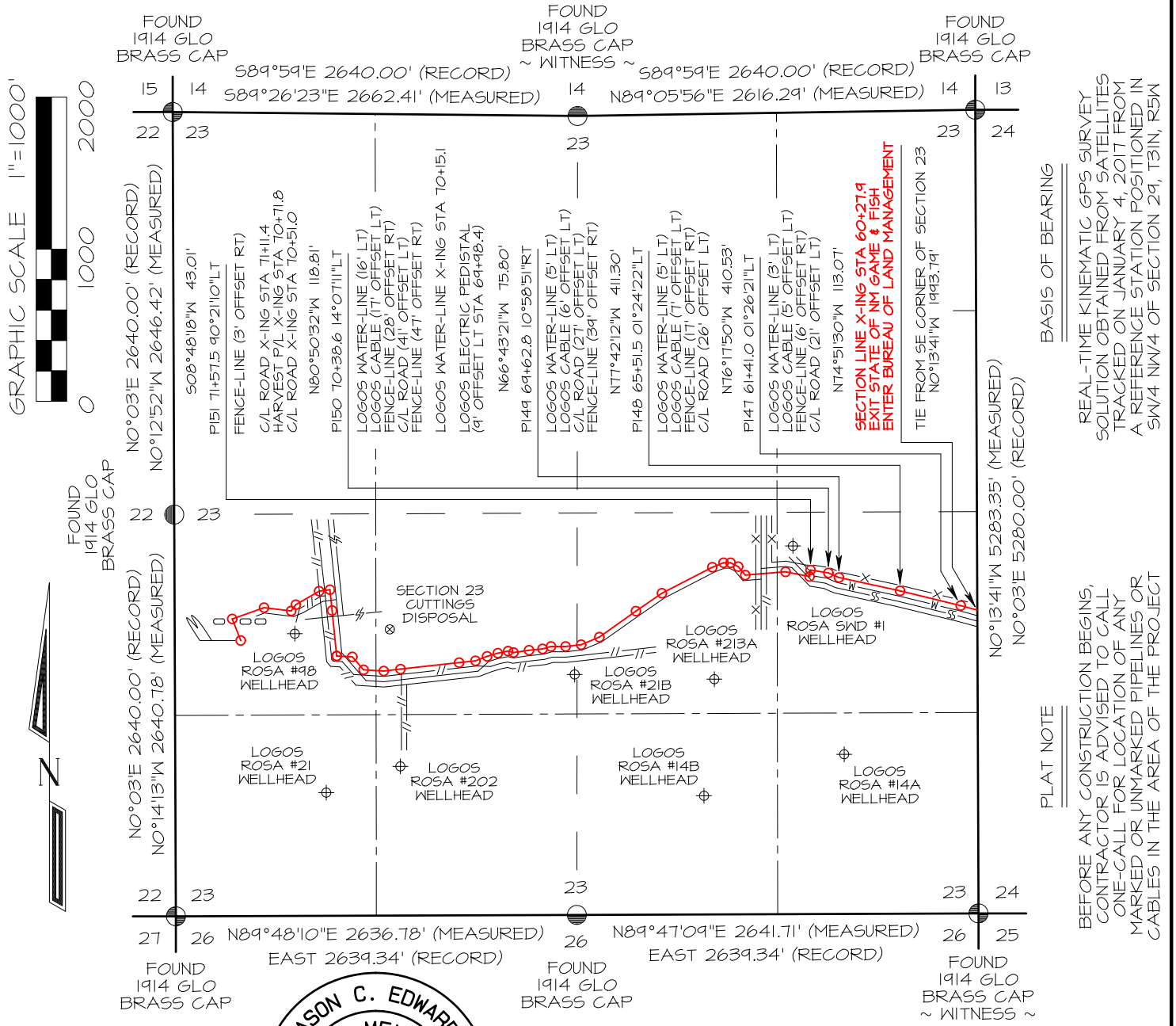
(505) 486-1695 (Office)
ncesurveys@comcast.net

CHECKED BY: JCE
DRAWN BY: EDO
SHEET 15 OF 23
FILENAME: 31624611

LOGOS OPERATING, LLC ROSA UNIT #614H
PROPOSED PIPELINE SURVEY LOCATED IN
N/2 S/2 OF SECTION 23, T31N, R6W, NMPM
RIO ARRIBA COUNTY, NEW MEXICO



BASIS OF BEARING

REAL-TIME KINEMATIC GPS SURVEY SOLUTION OBTAINED FROM SATELLITES TRACKED ON JANUARY 4, 2017 FROM A REFERENCE STATION POSITIONED IN SW4 NW4 OF SECTION 29, T31N, R5W

PLAT NOTE

BEFORE ANY CONSTRUCTION BEGINS, CONTRACTOR IS ADVISED TO CALL ONE-CALL FOR LOCATION OF ANY MARKED OR UNMARKED PIPELINES OR CABLES IN THE AREA OF THE PROJECT

~ SURFACE OWNERSHIP ~ Bureau of Land Management	
60+27.9 TO 118+44.9	5817.0 FT / 352.5 RODS

JASON C. EDWARDS NEW MEXICO 15269 REGISTERED PROFESSIONAL SURVEYOR

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JASON C. EDWARDS Date: July 29, 2022

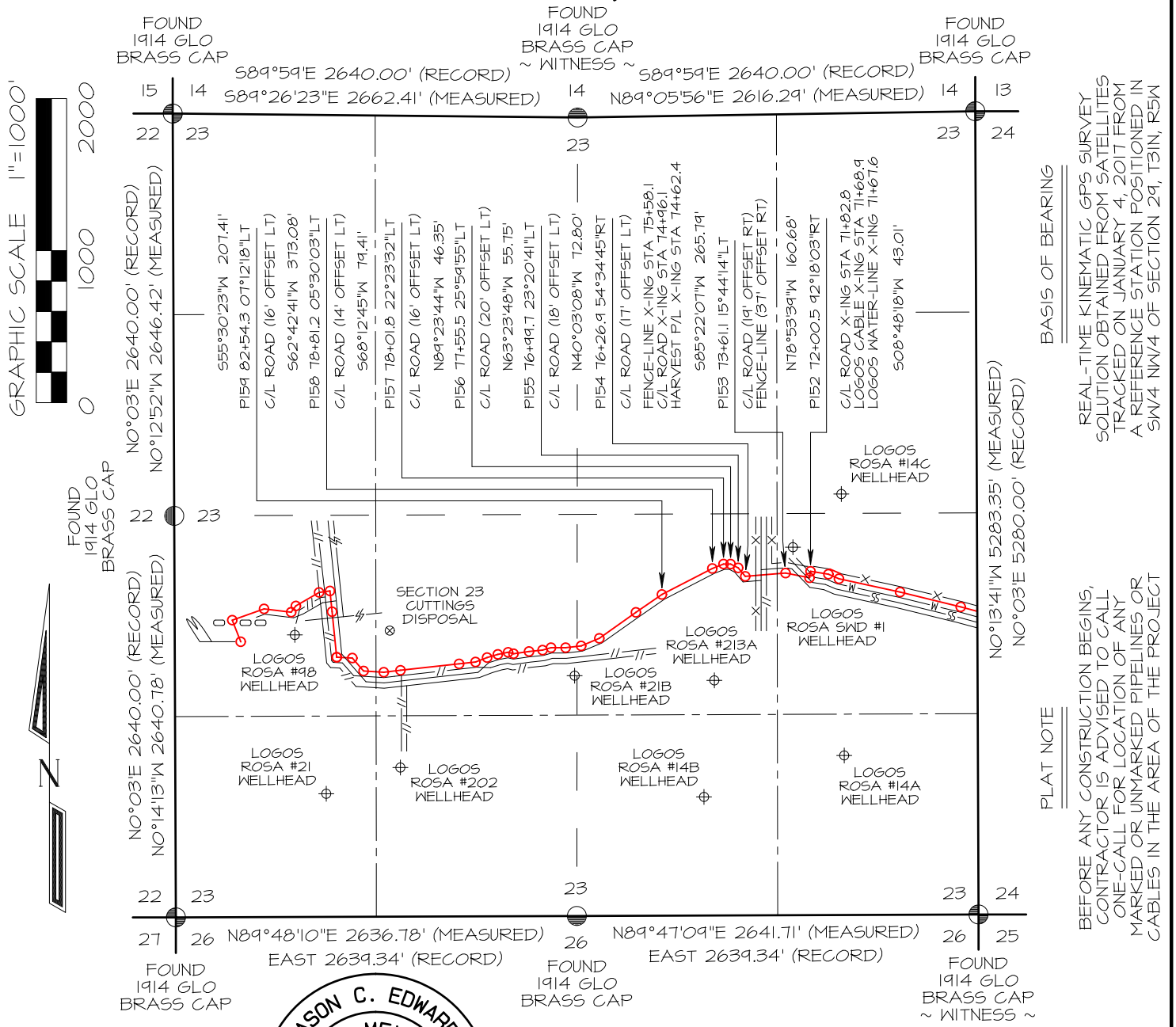
Jason C. Edwards, P.L.S.
New Mexico L.S. #15269

Prepared for:
LOGOS OPERATING, LLC
2010 AFTON PLACE
FARMINGTON, NM 87401

N C E SURVEYS, INC.
Land Surveyor: Jason C. Edwards
Mailing Address: Post Office Box 6612 Farmington, NM 87499
Business Address: 111 East Pinon Street Farmington, NM 87402
(505) 486-1695 (Office)
ncesurveys@comcast.net

CHECKED BY: JCE
DRAWN BY: EDO
SHEET 16 OF 23
FILENAME: 3162316

LOGOS OPERATING, LLC ROSA UNIT #614H
PROPOSED PIPELINE SURVEY LOCATED IN
N/2 S/2 OF SECTION 23, T31N, R6W, NMPM
RIO ARRIBA COUNTY, NEW MEXICO



BASIS OF BEARING

REAL-TIME KINEMATIC GPS SURVEY SOLUTION OBTAINED FROM SATELLITES TRACKED ON JANUARY 4, 2017 FROM A REFERENCE STATION POSITIONED IN SW4 NW4 OF SECTION 29, T31N, R5W

PLAT NOTE

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~ SURFACE OWNERSHIP ~ Bureau of Land Management	
60+27.9 TO 118+44.9	5817.0 FT / 352.5 RODS

JASON C. EDWARDS NEW MEXICO 15269 REGISTERED PROFESSIONAL SURVEYOR

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JASON C. EDWARDS Date: July 29, 2022

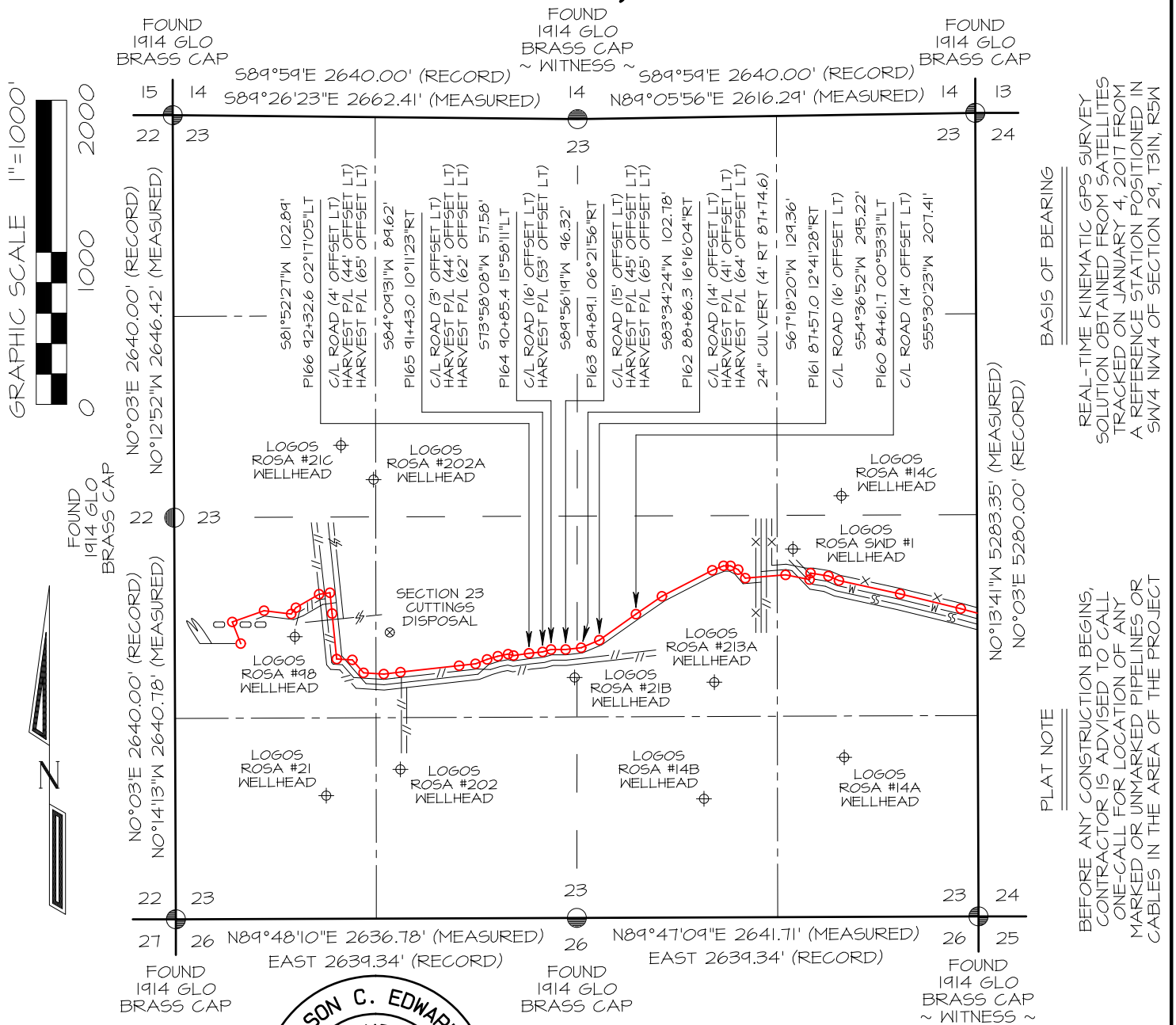
Jason C. Edwards, P.L.S.
New Mexico L.S. #15269

Prepared for:
LOGOS OPERATING, LLC
2010 AFTON PLACE
FARMINGTON, NM 87401

N C E SURVEYS, INC.
Land Surveyor: Jason C. Edwards
Mailing Address: Post Office Box 6612 Farmington, NM 87499
Business Address: 111 East Pinon Street Farmington, NM 87402
(505) 486-1695 (Office)
ncesurveys@comcast.net

CHECKED BY: JCE
DRAWN BY: EDO
SHEET 17 OF 23
FILENAME: 31623613

LOGOS OPERATING, LLC ROSA UNIT #614H
PROPOSED PIPELINE SURVEY LOCATED IN
N/2 S/2 OF SECTION 23, T31N, R6W, NMPM
RIO ARRIBA COUNTY, NEW MEXICO



BASIS OF BEARING

REAL-TIME KINEMATIC GPS SURVEY SOLUTION OBTAINED FROM SATELLITES TRACKED ON JANUARY 4, 2017 FROM A REFERENCE STATION POSITIONED IN SW/4 NW/4 OF SECTION 29, T31N, R5W

PLAT NOTE

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~ SURFACE OWNERSHIP ~ Bureau of Land Management	
60+27.9 TO 118+44.9	5817.0 FT / 352.5 RODS

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JASON C. EDWARDS Date: July 29, 2022

Jason C. Edwards, P.L.S.
New Mexico L.S. #15269

Prepared for:
LOGOS OPERATING, LLC
2010 AFTON PLACE
FARMINGTON, NM 87401

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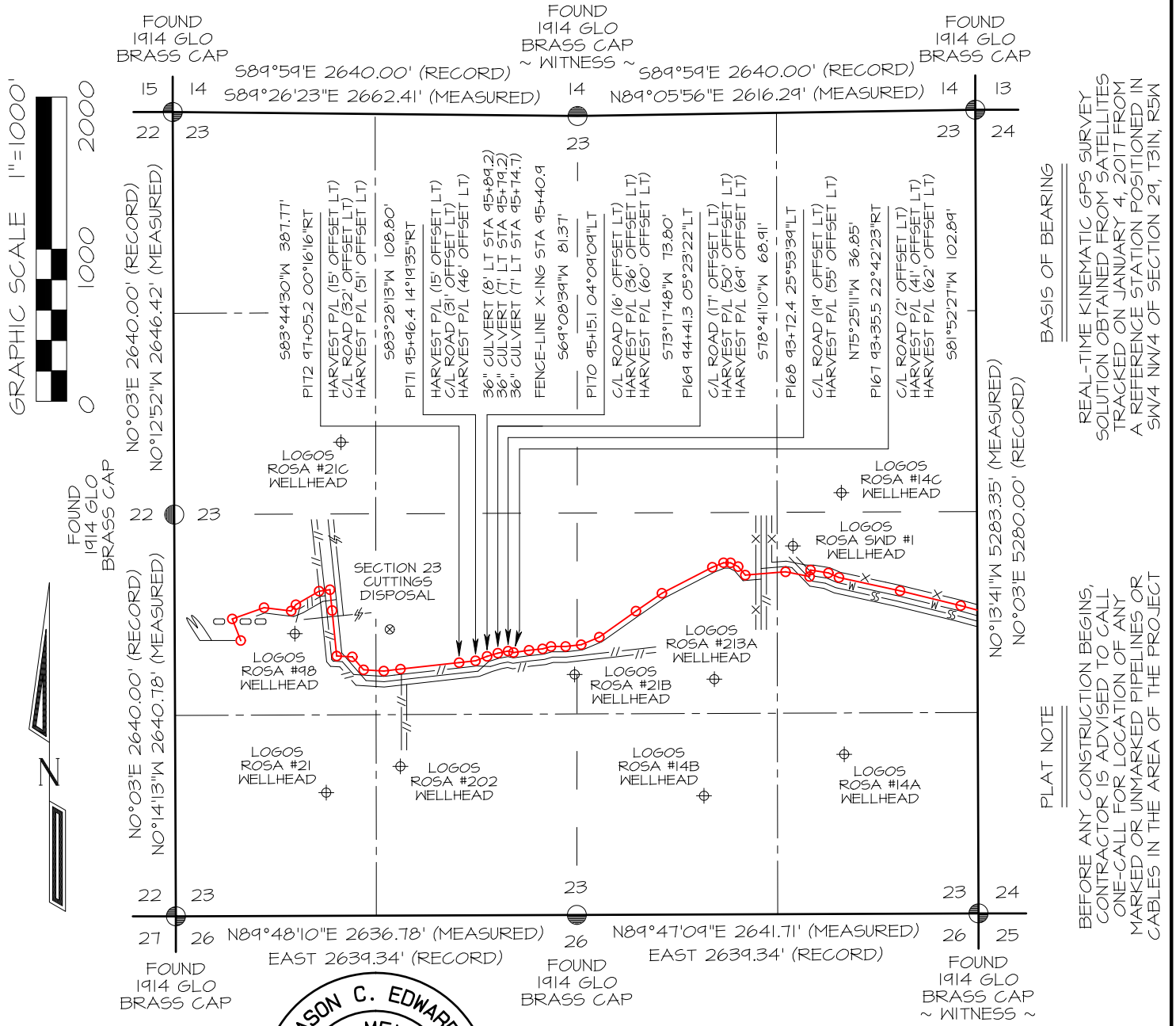
Land Surveyor: Jason C. Edwards
Mailing Address: Post Office Box 6612 Farmington, NM 87499
Business Address: 111 East Pinon Street Farmington, NM 87402
(505) 486-1695 (Office)
ncesurveys@comcast.net

CHECKED BY: JCE
DRAWN BY: EDO
SHEET 18 OF 23
FILENAME: 31623614

LOGOS OPERATING, LLC ROSA UNIT #614H
PROPOSED PIPELINE SURVEY LOCATED IN
N/2 S/2 OF SECTION 23, T31N, R6W, NMPM
RIO ARRIBA COUNTY, NEW MEXICO



BASIS OF BEARING

REAL-TIME KINEMATIC GPS SURVEY SOLUTION OBTAINED FROM SATELLITES TRACKED ON JANUARY 4, 2017 FROM A REFERENCE STATION POSITIONED IN SW/4 NW/4 OF SECTION 29, T31N, R5W

PLAT NOTE

BEFORE ANY CONSTRUCTION BEGINS, CONTRACTOR IS ADVISED TO CALL ONE-CALL FOR LOCATION OF ANY MARKED OR UNMARKED PIPELINES OR CABLES IN THE AREA OF THE PROJECT

~ SURFACE OWNERSHIP ~ Bureau of Land Management	
60+27.9 TO 118+44.9	5817.0 FT / 352.5 RODS

JASON C. EDWARDS NEW MEXICO 15269 REGISTERED PROFESSIONAL SURVEYOR

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JASON C. EDWARDS Date: July 29, 2022

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New Mexico L.S. #15269

Prepared for:
LOGOS OPERATING, LLC
2010 AFTON PLACE
FARMINGTON, NM 87401

N C E SURVEYS, INC.

Land Surveyor:
Jason C. Edwards

Mailing Address:
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Farmington, NM 87499

Business Address:
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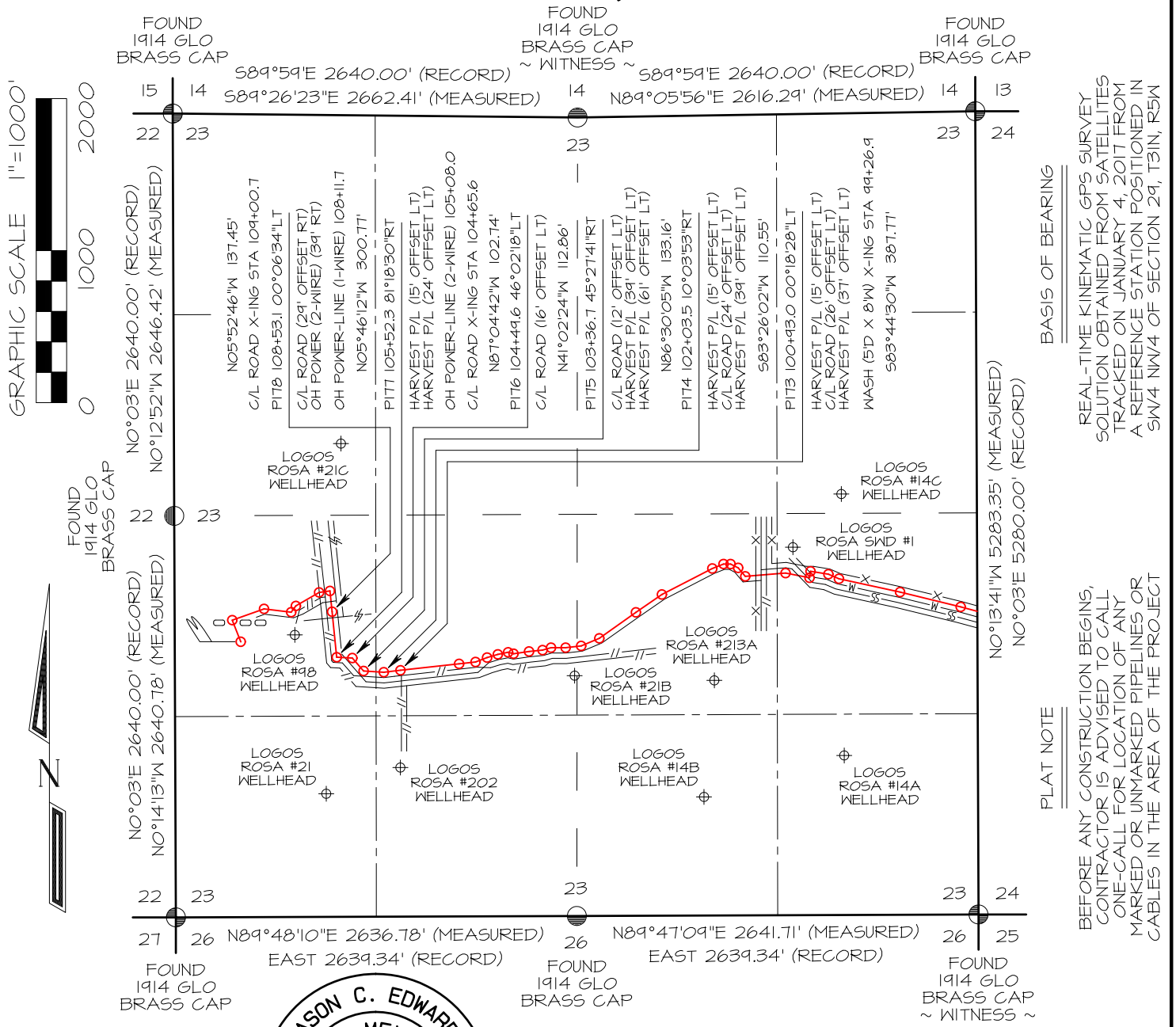
Farmington, NM 87402
(505) 486-1695 (Office)
ncesurveys@comcast.net

CHECKED BY: JCE
DRAWN BY: EDO
SHEET 19 OF 23
FILENAME: 3162315

LOGOS OPERATING, LLC ROSA UNIT #614H
PROPOSED PIPELINE SURVEY LOCATED IN N/2 S/2 OF SECTION 23, T31N, R6W, NMPM RIO ARRIBA COUNTY, NEW MEXICO



JASON C. EDWARDS NEW MEXICO 15269 REGISTERED PROFESSIONAL SURVEYOR

~ SURFACE OWNERSHIP ~ Bureau of Land Management	
60+27.9 TO 118+44.9	5817.0 FT / 352.5 RODS

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New Mexico L.S. #15269

Prepared for:
LOGOS OPERATING, LLC
2010 AFTON PLACE
FARMINGTON, NM 87401

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Land Surveyor: Jason C. Edwards
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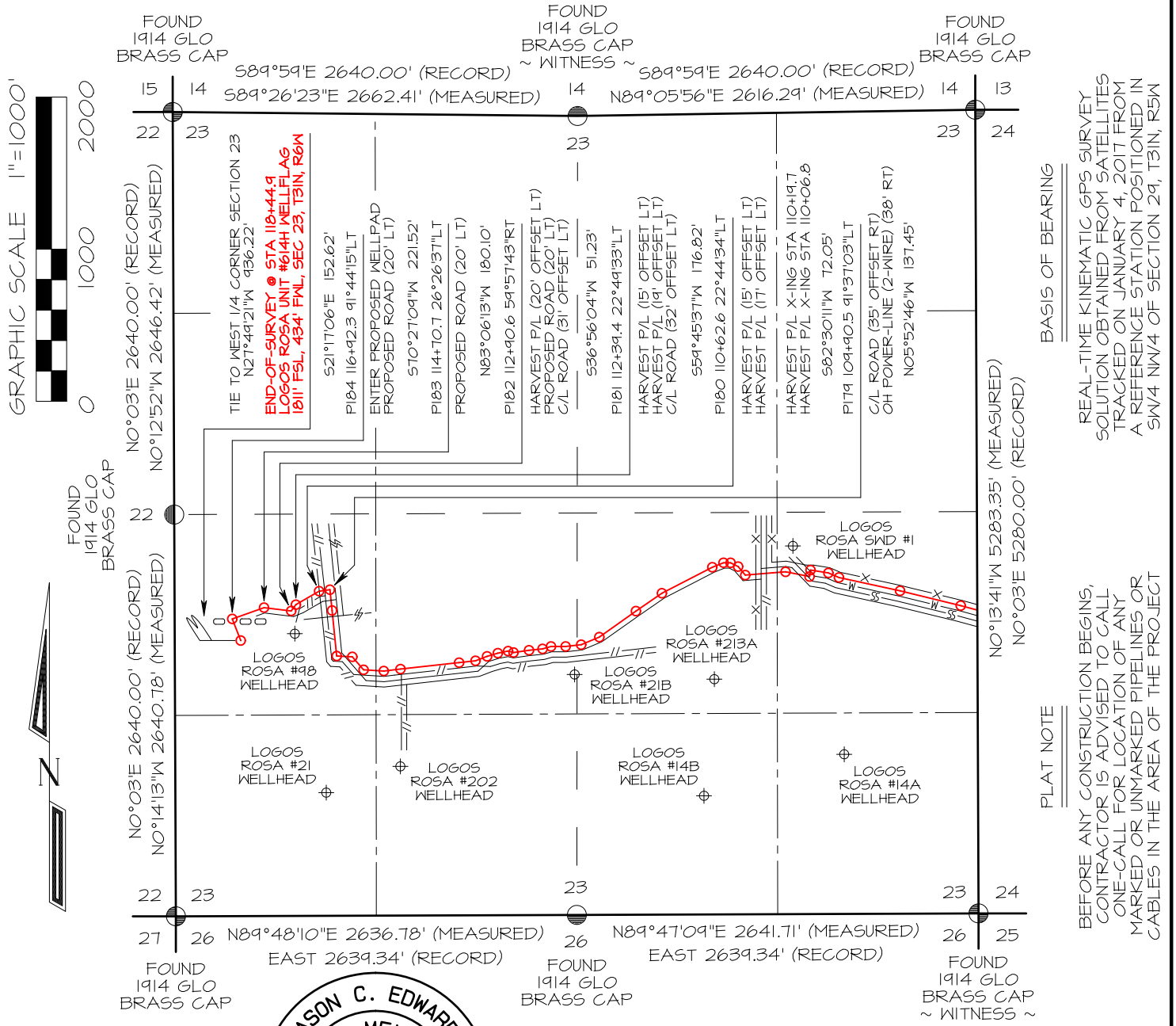
(505) 486-1695 (Office)
ncesurveys@comcast.net

CHECKED BY: JCE
DRAWN BY: EDO
SHEET 20 OF 23
FILENAME: 316236

LOGOS OPERATING, LLC ROSA UNIT #614H
PROPOSED PIPELINE SURVEY LOCATED IN
N/2 S/2 OF SECTION 23, T31N, R6W, NMPM
RIO ARRIBA COUNTY, NEW MEXICO



BASIS OF BEARING

REAL-TIME KINEMATIC GPS SURVEY SOLUTION OBTAINED FROM SATELLITES TRACKED ON JANUARY 4, 2017 FROM A REFERENCE STATION POSITIONED IN SW/4 NW/4 OF SECTION 29, T31N, R5W

PLAT NOTE

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60+27.9 TO 118+44.9	5817.0 FT / 352.5 RODS

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JASON C. EDWARDS Date: July 29, 2022

Jason C. Edwards, P.L.S.
New Mexico L.S. #15269

Prepared for:
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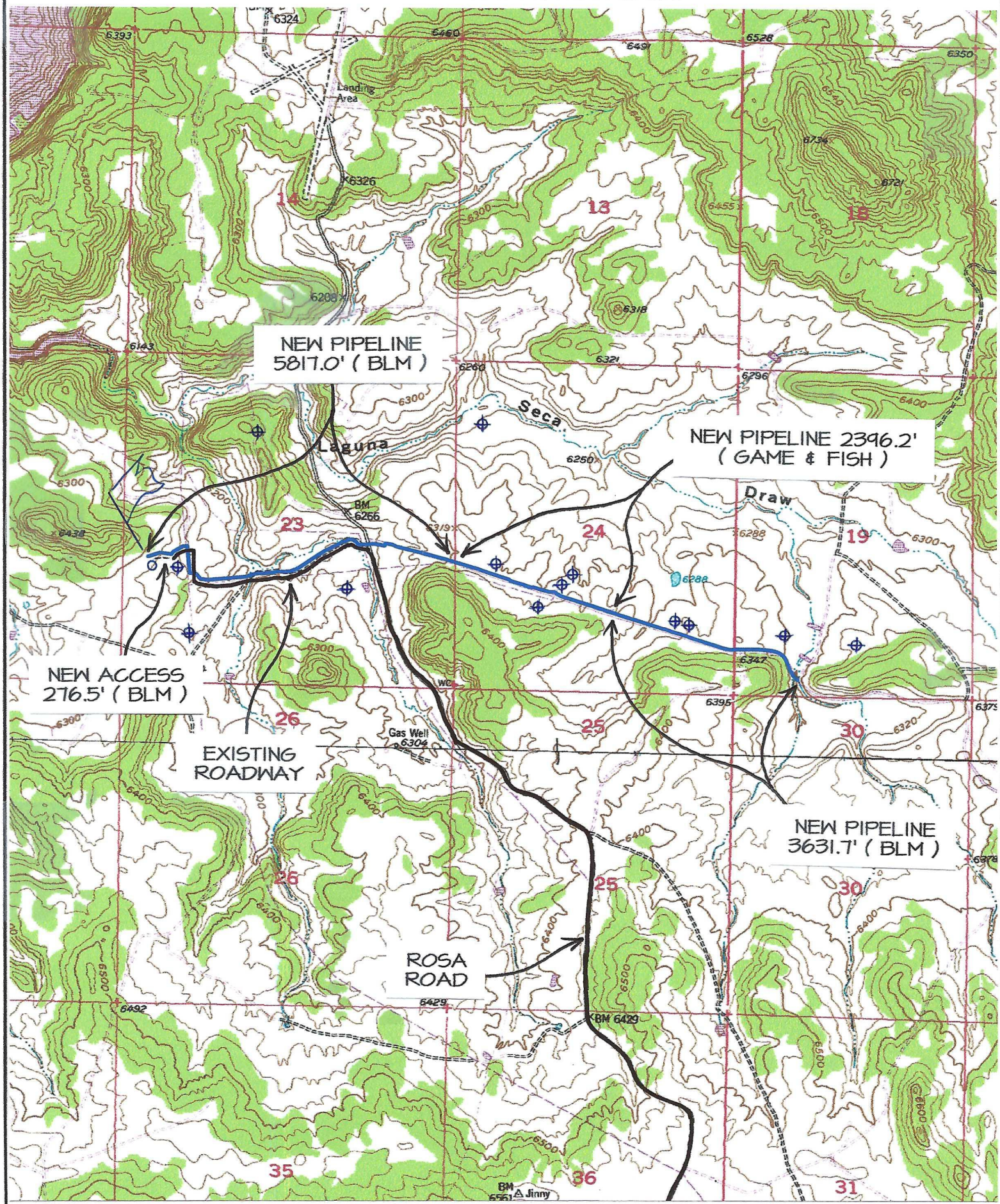
(505) 486-1695 (Office)
ncesurveys@comcast.net
NCE SURVEYS, INC.

CHECKED BY: JCE
DRAWN BY: EDO
SHEET 21 OF 23
FILENAME: 316236I7

LOGOS OPERATING, LLC ROSA UNIT #614H

1811' FSL & 434' FWL, SECTION 23, T31N, R6W, N.M.P.M.
RIO ARRIBA COUNTY, NEW MEXICO



TOPO NAME : BANCOS MESA NW ⊕ PRODUCING WELL ⊗ PLUGGED & ABANDONED WELL

Directions from the Intersection of US Hwy 550 & US Hwy 64

in Bloomfield, NM to Logos Operating, LLC Rosa Unit #614H

1811' FSL & 434' FWL, Section 23, T31N, R6W, N.M.P.M., Rio Arriba County, NM

Latitude: 36.882844°N Longitude: 107.439701°W Datum: NAD1983

From the intersection of US Hwy 550 & US Hwy 64 in Bloomfield, NM, travel Easterly on US Hwy 64 for 38.0 miles to Mile Marker 102.3 to State Hwy 527 (Simms Hwy);

Go Left (North-westerly) on State Hwy 527 (Simms Hwy) for 7.9 miles to Rosa Road @ La Jara Station;

Go Right (Northerly) on Rosa Road for 6.5 miles to fork in roadway;

Go Left (North-westerly) which is straight remaining on Rosa Road for 4.0 miles to 4-way intersection;

Go Left (North-westerly) which is straight remaining on Rosa Road for 1.2 miles to 4-way intersection;

Go Left (Westerly) exiting Rosa Road for 0.4 miles to fork in roadway;

Go Right (Westerly) for 0.3 miles to fork in roadway;

Go Left (Westerly) for 0.1 miles to new access on right-hand side of existing roadway which continues for 276.5' to LOGOS Rosa Unit #614H proposed wellpad.

State of New Mexico
Energy, Minerals and Natural Resources Department

Submit Electronically
Via E-permitting

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

NATURAL GAS MANAGEMENT PLAN

This Natural Gas Management Plan must be submitted with each Application for Permit to Drill (APD) for a new or recompleted well.

Section 1 – Plan Description
Effective May 25, 2021

I. Operator: LOGOS Operating, LLC **OGRID:** 289408 **Date:** 09/19/2023

II. Type: ☒ Original ☐ Amendment due to ☐ 19.15.27.9.D(6)(a) NMAC ☐ 19.15.27.9.D(6)(b) NMAC ☐ Other.

If Other, please describe: _____

III. Well(s): Provide the following information for each new or recompleted well or set of wells proposed to be drilled or proposed to be recompleted from a single well pad or connected to a central delivery point.

Well Name	API	ULSTR	Footages	Anticipated Oil BBL/D	Anticipated Gas MCF/D	Anticipated Produced Water BBL/D
Rosa Unit 612H	30-039-	L 23 T31N R6W	1814FSL 448FWL	N/A	11,536	476
Rosa Unit 614H	30-039-	L 23 T31N R6W	1811FSL 434FWL	N/A	12,138	498

IV. Central Delivery Point Name: Harvest Gathering System [See 19.15.27.9(D)(1) NMAC]

V. Anticipated Schedule: Provide the following information for each new or recompleted well or set of wells proposed to be drilled or proposed to be recompleted from a single well pad or connected to a central delivery point.

Well Name	API	Spud Date	TD Reached Date	Completion Commencement Date	Initial Flow Back Date	First Production Date
Rosa Unit 612H	30-039-	Pending	Pending	Pending	Pending	Pending
Rosa Unit 614H	30-039-	Pending	Pending	Pending	Pending	Pending

VI. Separation Equipment: ☒ Attach a complete description of how Operator will size separation equipment to optimize gas capture.

VII. Operational Practices: ☒ Attach a complete description of the actions Operator will take to comply with the requirements of Subsection A through F of 19.15.27.8 NMAC.

VIII. Best Management Practices: ☒ Attach a complete description of Operator's best management practices to minimize venting during active and planned maintenance.

Section 2 – Enhanced Plan

EFFECTIVE APRIL 1, 2022

Beginning April 1, 2022, an operator that is not in compliance with its statewide natural gas capture requirement for the applicable reporting area must complete this section.

☒ Operator certifies that it is not required to complete this section because Operator is in compliance with its statewide natural gas capture requirement for the applicable reporting area.

IX. Anticipated Natural Gas Production:

Well	API	Anticipated Average Natural Gas Rate MCF/D	Anticipated Volume of Natural Gas for the First Year MCF

X. Natural Gas Gathering System (NGGS):

Operator	System	ULSTR of Tie-in	Anticipated Gathering Start Date	Available Maximum Daily Capacity of System Segment Tie-in

XI. Map. ☐ Attach an accurate and legible map depicting the location of the well(s), the anticipated pipeline route(s) connecting the production operations to the existing or planned interconnect of the natural gas gathering system(s), and the maximum daily capacity of the segment or portion of the natural gas gathering system(s) to which the well(s) will be connected.

XII. Line Capacity. The natural gas gathering system ☐ will ☐ will not have capacity to gather 100% of the anticipated natural gas production volume from the well prior to the date of first production.

XIII. Line Pressure. Operator ☐ does ☐ does not anticipate that its existing well(s) connected to the same segment, or portion, of the natural gas gathering system(s) described above will continue to meet anticipated increases in line pressure caused by the new well(s).

☐ Attach Operator's plan to manage production in response to the increased line pressure.

XIV. Confidentiality: ☐ Operator asserts confidentiality pursuant to Section 71-2-8 NMSA 1978 for the information provided in Section 2 as provided in Paragraph (2) of Subsection D of 19.15.27.9 NMAC, and attaches a full description of the specific information for which confidentiality is asserted and the basis for such assertion.

Section 3 - Certifications

Effective May 25, 2021

Operator certifies that, after reasonable inquiry and based on the available information at the time of submittal:

☒ Operator will be able to connect the well(s) to a natural gas gathering system in the general area with sufficient capacity to transport one hundred percent of the anticipated volume of natural gas produced from the well(s) commencing on the date of first production, taking into account the current and anticipated volumes of produced natural gas from other wells connected to the pipeline gathering system; or

☐ Operator will not be able to connect to a natural gas gathering system in the general area with sufficient capacity to transport one hundred percent of the anticipated volume of natural gas produced from the well(s) commencing on the date of first production, taking into account the current and anticipated volumes of produced natural gas from other wells connected to the pipeline gathering system. ***If Operator checks this box, Operator will select one of the following:***

Well Shut-In. ☐ Operator will shut-in and not produce the well until it submits the certification required by Paragraph (4) of Subsection D of 19.15.27.9 NMAC; or

Venting and Flaring Plan. ☐ Operator has attached a venting and flaring plan that evaluates and selects one or more of the potential alternative beneficial uses for the natural gas until a natural gas gathering system is available, including:

- **(a)** power generation on lease;
- **(b)** power generation for grid;
- **(c)** compression on lease;
- **(d)** liquids removal on lease;
- **(e)** reinjection for underground storage;
- **(f)** reinjection for temporary storage;
- **(g)** reinjection for enhanced oil recovery;
- **(h)** fuel cell production; and
- **(i)** other alternative beneficial uses approved by the division.

Section 4 - Notices

1. If, at any time after Operator submits this Natural Gas Management Plan and before the well is spud:

(a) Operator becomes aware that the natural gas gathering system it planned to connect the well(s) to has become unavailable or will not have capacity to transport one hundred percent of the production from the well(s), no later than 20 days after becoming aware of such information, Operator shall submit for OCD's approval a new or revised venting and flaring plan containing the information specified in Paragraph (5) of Subsection D of 19.15.27.9 NMAC; or

(b) Operator becomes aware that it has, cumulatively for the year, become out of compliance with its baseline natural gas capture rate or natural gas capture requirement, no later than 20 days after becoming aware of such information, Operator shall submit for OCD's approval a new or revised Natural Gas Management Plan for each well it plans to spud during the next 90 days containing the information specified in Paragraph (2) of Subsection D of 19.15.27.9 NMAC, and shall file an update for each Natural Gas Management Plan until Operator is back in compliance with its baseline natural gas capture rate or natural gas capture requirement.

2. OCD may deny or conditionally approve an APD if Operator does not make a certification, fails to submit an adequate venting and flaring plan which includes alternative beneficial uses for the anticipated volume of natural gas produced, or if OCD determines that Operator will not have adequate natural gas takeaway capacity at the time a well will be spud.

I certify that, after reasonable inquiry, the statements in and attached to this Natural Gas Management Plan are true and correct to the best of my knowledge and acknowledge that a false statement may be subject to civil and criminal penalties under the Oil and Gas Act.

Signature:	Etta Trujillo
Printed Name:	Etta Trujillo
Title:	Regulatory Specialist
E-mail Address:	etrujillo@logosresourcesllc.com
Date:	09/19/2023
Phone:	(505) 324-4154

OIL CONSERVATION DIVISION
(Only applicable when submitted as a standalone form)

Approved By:	
Title:	
Approval Date:	
Conditions of Approval:	

VI. Separation Equipment

The operator will select separation equipment for the maximum anticipated throughput and pressure to optimize gas capture. Separation equipment is sized according to manufacturer's design specifications. Separation vessels are built following the A.S.M.E. section VII division 1 codes for pressure vessel design, fabrication, inspection, testing and certification. Anticipated well pressures and production rates are evaluated to select separation equipment according to the equipment's designed operating pressure and throughput.

After completion, the operator utilizes flowback equipment, including separators, to manage wellbore fluids and solids during the initial separation period. After the initial flowback period is complete the operator utilizes iterative facility separation equipment to ensure that optimal separation is achieved.

VII. Operational Practices 19.15.27.8 NMAC A through F

A. The operator will maximize the recovery of natural gas and minimize the amount of gas vented or flared when technically and safely feasible as further described and detailed within the following subsections (B-F of 19.15.27.8). In all cases where natural gas venting and flaring requires regulatory reporting, reporting will be submitted accurately and within the required time frames.
B. Venting and flaring during drilling operations:
    a. New Drill HZ Oil Wells: The operator drills wells in the area by utilizing a balanced mud to safely drill the wellbore. This technique prevents gas from coming to surface during the drilling process. If there is an emergency or malfunction and natural gas does come to surface the natural gas will be captured or combusted, with an appropriately sized and located flare stack, if technically and safely feasible.
    b. New Drill HZ Gas Wells: The operator drills wells in the area by balancing the mud weight to safely drill the wellbore with as minimal flaring as possible. When gas kicks enter the wellbore, sometimes it is necessary to circulate it out of the wellbore to an appropriately sized and located flare stack. The operator will estimate the volume flared and appropriately report.
C. Venting and flaring during completion or recompletion operations:
    a. New Drill HZ Oil Wells: The operator's facilities are designed to handle the maximum throughput and pressures from the newly drilled and completed wellbores. The amount of gas vented and flared will be minimized when technically and safely feasible. During initial flowback and initial separation flowback the operator will utilize contracted flowback equipment, including separators, to manage wellbore fluids and solids. The initial flowback period will be minimized and flow will be sent to separation equipment as soon as possible to reduce the amount of gas that is vented to atmosphere. During the separation flowback period natural gas will be routed to a properly sized and located flare until the natural gas is of pipeline quality (less than 60 days). The natural gas will also be utilized on site as needed for fuel gas or injection gas.

    b. New Drill HZ Gas Wells: The operator's facilities are designed to handle the maximum throughput and pressures from the newly drilled and completed wellbores. The amount of gas vented and flared will be minimized when technically and safely feasible. During initial flowback and initial separation flowback the operator will utilize contracted flowback equipment, including separators, to manage wellbore fluids and solids. The initial flowback period will be minimized and flow will be sent to separation equipment as soon as possible to reduce the amount of gas that is vented to atmosphere. The natural gas will be utilized on site as needed for fuel gas and natural gas will be sold.

D. Venting and flaring during production operations:

a. New Drill HZ Oil Wells: The operator's facilities are designed to handle the maximum throughput and pressures from producing wellbores. The amount of gas vented and flared will be minimized when technically and safely feasible. This facility will operate under a notice of intent (NOI) from the New Mexico Environment Department (NMED).

Operations will effectively manage the following scenarios to minimize the quantity of natural gas that is vented or flared:

(a) If there is an emergency or malfunction, vented or flared natural gas will be reported, if required, and the emergency or malfunction will be resolved as soon as technically and safely feasible.
(b) If the wellbore requires liquids to be unloaded to atmosphere, the operator will not vent the well after the well has achieved a stabilized rate and pressure. The operator will remain on site during unloading. Plunger lift systems will be optimized to reduce the amount of natural gas venting. Downhole maintenance, such as workovers, swabbing, etc. will only be conducted as needed and best management practices will be utilized to reduce venting of natural gas.
(c) The operator will minimize the amount of time that natural gas is vented to atmosphere from gauging and sampling a storage tank or low-pressure vessel, automatic tank gauges will be the primary means of gauging with minor exceptions.
(d) The operator will reduce the amount of time needed for loading out liquids from a storage tanks or other low-pressure vessels whenever feasible. Operations will utilize a LACT system when available to minimize gas vented during oil tank loading.
(e) Equipment will be repaired and maintained routinely to minimize the venting or flaring of natural gas. Repairs and maintenance will be conducted in a manner that minimizes the amount of natural gas vented to atmosphere through the isolation of the equipment that is being repaired or maintained.
(f) Electric controllers and pumps will be installed to replace pneumatic controllers whenever feasible. Pneumatic controllers and pumps will be inspected frequently to ensure that no excess gas is vented to atmosphere.
(g) Storage tanks and other low-pressure vessel normal operational venting will be minimized during the early life of the well with the installation of a vapor recovery unit to limit the flash and working and breathing emissions to atmosphere.
(h) No dehydration or amine units are anticipated to be set on location.
(i) Compressors, compressor engines, turbines, flanges, connectors, valves, and flanges will be routinely inspected to ensure that no excess venting occurs outside of normal operation.
(j) Regulatory required testing, such as bradenhead and packer testing will be performed in a manner that minimizes the amount of natural gas vented to atmosphere.
(k) When natural gas does not meet gathering pipeline specifications, for example high nitrogen content after a nearby frac, gas samples will be collected twice per week to determine when pipeline specification gas content has been achieved. During this time frame gas will be flared and not vented to atmosphere. Natural gas that meets pipeline specifications will be sold via pipeline and natural gas that can be utilized for fuel gas will be used during this time.
(l) If pipeline, equipment, or facilities need purged of impurities gas losses will be minimized as much as technically and safely feasible.

b. New Drill HZ Gas Wells: The operator's facilities are designed to handle the maximum throughput and pressures from producing wellbores. The amount of gas vented and flared will be minimized when technically and safely feasible.

Operations will effectively manage the following scenarios to minimize the quantity of natural gas that is vented or flared:

(a) If there is an emergency or malfunction vented or flared natural gas will be reported, if required, and the emergency or malfunction will be resolved as soon as technically and safely feasible.
(b) If the wellbore needs to be unloaded to atmosphere the operator will not vent the well after the well has achieved a stabilized rate and pressure. The operator will remain on site during unloading. Plunger lift systems will be optimized to reduce the amount of natural gas venting. Downhole maintenance, such as workovers, swabbing, etc. will only be conducted as needed and best management practices will be utilized to reduce venting of natural gas.
(c) The operator will minimize the amount of time that natural gas is vented to atmosphere from gauging and sampling a storage tank or low-pressure vessel, automatic tank gauges will be the primary means of gauging. The formation is only anticipated to produce water and therefore tank emissions are anticipated to be negligible.
(d) The operator will reduce the amount of time needed for loading out liquids from a storage tanks or other low-pressure vessels whenever feasible. Operations will always utilize the water transfer systems when available. Water loading emissions are anticipated to be negligible.
(e) Equipment will be repaired and maintained routinely to minimize the venting or flaring of natural gas. Repairs and maintenance will be conducted in a manner that minimizes the amount of natural gas vented to atmosphere through the isolation of the equipment that is being repaired or maintained.
(f) Electric controllers and pumps, or instrument air, will be installed to replace pneumatic controllers whenever feasible. Pneumatic controllers and pumps will be inspected frequently to ensure that no excess gas is vented to atmosphere.
(g) No dehydration or amine units are anticipated to be set on location.
(h) Compressors, compressor engines, turbines, flanges, connectors, valves, storage tanks, and other low-pressure vessels and flanges will be routinely inspected to ensure that no excess venting occurs outside of normal operations.
(i) Regulatory required testing, such as bradenhead and packer testing will be performed in a manner that minimizes the amount of natural gas vented to atmosphere.
(j) If natural gas does not meet gathering pipeline specifications gas samples will be collected twice per week to determine when pipeline specification gas content has been achieved. During this time frame gas will be flared and not vented to atmosphere. Natural gas that meets pipeline specifications will be sold via pipeline and natural gas that can be utilized for fuel gas will be used during this time.
(k) If pipeline, equipment, or facilities need purged of impurities gas losses will be minimized as much as technically and safely feasible.

E. Performance standards:
a. The production facilities are designed to handle the maximum throughput and pressures from producing wellbores and will be designed to minimize waste. The amount of gas vented and flared will be minimized when technically and safely feasible.

b. All tanks that are routed to a control device that is installed after 5/25/2021 will have an automatic gauging system to minimize the amount of vented natural gas.
c. If a flare stack is installed or replaced after 5/25/2021 it will be equipped with an automatic ignitor or continuous pilot. The flare stack will be properly sized and designed to ensure proper combustion efficiency. The flare stack will be located 100 feet away from the nearest wellhead or storage tank.
d. AVO inspections will be conducted weekly for the year after completion and for all wells producing greater than 60,000 cubic feet of natural gas daily. The AVO inspection will include all components, including flare stacks, thief hatches, closed vent systems, pumps, compressors, pressure relief devices, valves, lines, flanges, connectors, and associated pipeline to identify any leaks and releases by comprehensive auditory, visual, and olfactory inspection. The AVO inspection records will be maintained for 5 years which will be available at the department's request. Identified leaks will be repaired as soon as feasible to minimize the amount of vented natural gas.

F. Measurement or estimation of vented and flared natural gas.
a. The volume of natural gas that is vented, flared or consumed for beneficial use will be measured when possible, or estimated, during drilling, completions, or production operations.
b. Equipment will be installed to measure the volume of natural gas flared for all APD's issued after 5/25/2021 on facilities that will have an average daily gas rate greater than 60,000 cubic feet of natural gas. Measurement equipment will conform to API MPMS Chapter 14.10 regulations. The measurement equipment will not have a manifold that allows the diversion of natural gas around the metering element except for the sole purpose of inspecting and servicing the measurement equipment. If metering is not practical, then the volume of gas will be estimated.

LOGOS Operating, LLC
Operations Plan

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

Date:	July 29, 2022	Pool:	Basin Mancos
Well Name:	**Rosa Unit 614H**	GL Elevation:	6,287’
Surface Location:	Sec 23, T31N, R6W 1811 FSL, 434 FWL (36.882844º N, 107.439701º W – NAD83)	Measured Depth:	17,283’ (KB)
Bottom Hole Location:	Sec 21, T31N, R6W 1188 FSL, 159 FWL (36.881057º N, 107.476642º W – NAD83)	County:	Rio Arriba

Lease Serial #NMSF078766 CA Serial #NMNM78407E

I. GEOLOGY

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

NAME	MD	TVD	NAME	MD	TVD
OJO ALAMO	2,357'	2,338'	*POINT LOOKOUT	5,655'	5,570'
KIRTLAND	2,487'	2,465'	*MANCOS	6,140'	6,046'
*FRUITLAND	2,955'	2,924'	KICKOFF POINT	6,373'	6,274'
*PICTURED CLIFFS	3,333'	3,294'	LANDING POINT	7,349'	6,874'
LEWIS	3,436'	3,395'			
CHACRA	4,546'	4,483'			
*CLIFF HOUSE	5,362'	5,283'			
MENEFEE	5,411'	5,331'	TD	17,283'	6,857'

* 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 17-1/2" surface hole as well as the 12-1/4” directional 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 **1500 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:** 6874' TVD x 0.43 = 2956 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	17.5"	320' or greater	13.375"	54.5 LBS	J-55 or equiv	LTC/BTC
INTERMEDIATE	12.25"	6,125'	9.625"	43.5 LBS	N-80 or equiv	LTC/BTC
PRODUCTION	8.5"	17,283'	5.5"	20 LBS	P-110 or equiv	LTC/BTC

NOTE: All casing depths are approximate, based on GL 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: 13-3/8" notched regular pattern guide shoe. Run (1) standard centralizer on each of the bottom (3) joints of Surface Casing.
2. INTERMEDIATE CASING: 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.
3. 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. 263 sks of 15.8 ppg Type Neat G, 1.18 cuft/sk yield or equivalent 223 sks of 14.6 ppg Type III with 1.39 cuf/sk yield, 30% excess.

2. INTERMEDIATE: 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 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.

	Top	Footage	Cement (ft3/ft) Annular Capacity	Excess (30%)	Total (ft3)	Total (bbl)	Slurry Yield (ft3/sk)	Sacks Cement	Density (PPG)
Stage 1 Tail	5,105	1,111	0.3132	1.3	470	84	1.15	408	15.8
Stage 1 Lead	4,597	508	0.31318	1.3	207	37	2.30	90	12.3
					677	**120**		**498**	
Stage 2 Tail	3,422	1,175	0.31318	1.3	478	85	1.50	319	13.5
Stage 2 Lead	2,986	436	0.31318	1.3	178	32	2.30	77	12.3
					656	**117**		**396**	
Stage 3 Tail	2,336	650	0.31318	1.3	265	47	1.99	133	12.8
Stage 3 Lead	320	2,016	0.31318	1.3	821	146	2.53	324	12
Stage 3 Lead	-	320	0.36268	1	116	21	2.53	46	12
					1,201	**214**		**503**	

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

3. 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	**5,215**	**100**	**0.2531**	**1**	**25**	**5**	**1.56**	**16**	13
Open Hole Lead	**6,215**	**11,068**	**0.2291**	**1.15**	**2,926**	**521**	**1.56**	**1,876**	13
					2,952	**526**		**1,892**	

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.

ROSA UNIT 614H

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 * 6,857' TVD=1509 psi for 30 minutes. Increase pressure to Open RSI sleeves.

D. STIMULATION

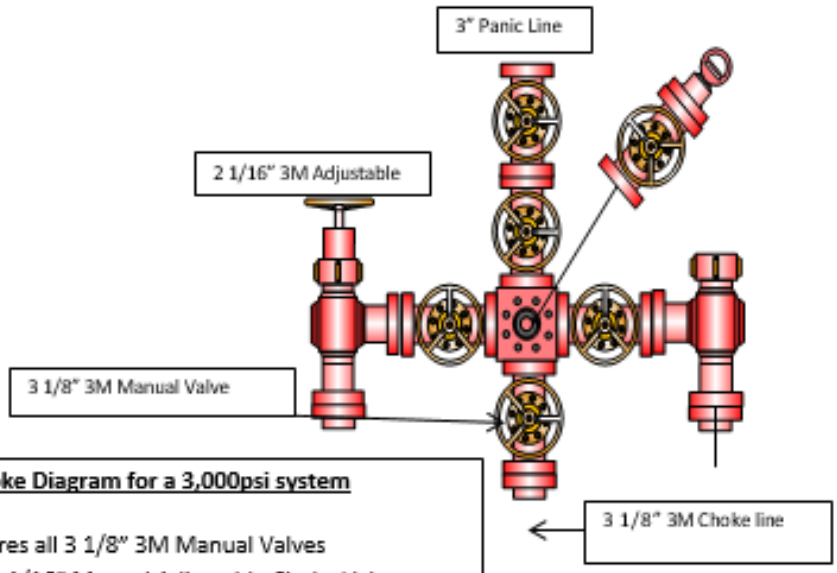
Stimulate with sand and water. Isolate stages with flow through or dissolvable frac plugs. Drill out frac plugs and flowback lateral.

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 12-18 months after completion.

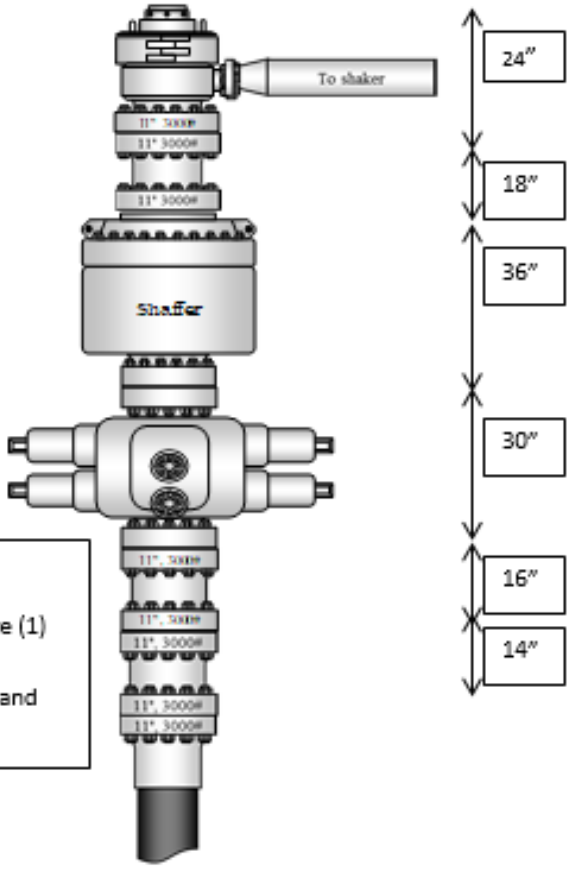
*NOTE: Although this horizontal well may be drilled past the applicable setbacks, an unorthodox location application is not required because the completed interval in this well, as defined by 19.15.16.7 8(1) NMAC, will be entirely within the applicable setbacks. This approach complies with all applicable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



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

ROSA UNIT 614H

LOGOS RESOURCES II, LLC

Company: Logos Operating LLC
Project: Rio Arriba, NM NAD83
Site: Rosa Unit 10
Well: Rosa Unit 614H
Wellbore: OH
Design: Plan #1

PROJECT DETAILS: Rio Arriba, NM NAD83

Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: New Mexico Western Zone
System Datum: Mean Sea Level
Local North: True

LONESTAR CONSULTING

WELL DETAILS: Rosa Unit 614H

WELL @ 6287.01ft (Original Well Elev)

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	
0.00	0.00	2140917.78	2838211.87	36.8828440	-107.4397010	A03 (610H)

Plan: Plan #1 (Rosa Unit 614H/OH)

Created By: Janie Collins Date: 15:36, July 08 2022

Azimuths to True North
Magnetic North: 8.55°
Magnetic Field
Strength: 49621.1nT
Dip Angle: 63.33°
Date: 12/31/2021
Model: HDGM2021_FILE

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
614H POE JC	6874.01	-1072.27	-878.99	2139841.89	2837337.31	36.8798987	-107.4427064
614H BHL	6857.01	-648.41	-10803.96	2140224.82	2827410.70	36.8810572	-107.4766418

SECTION DETAILS

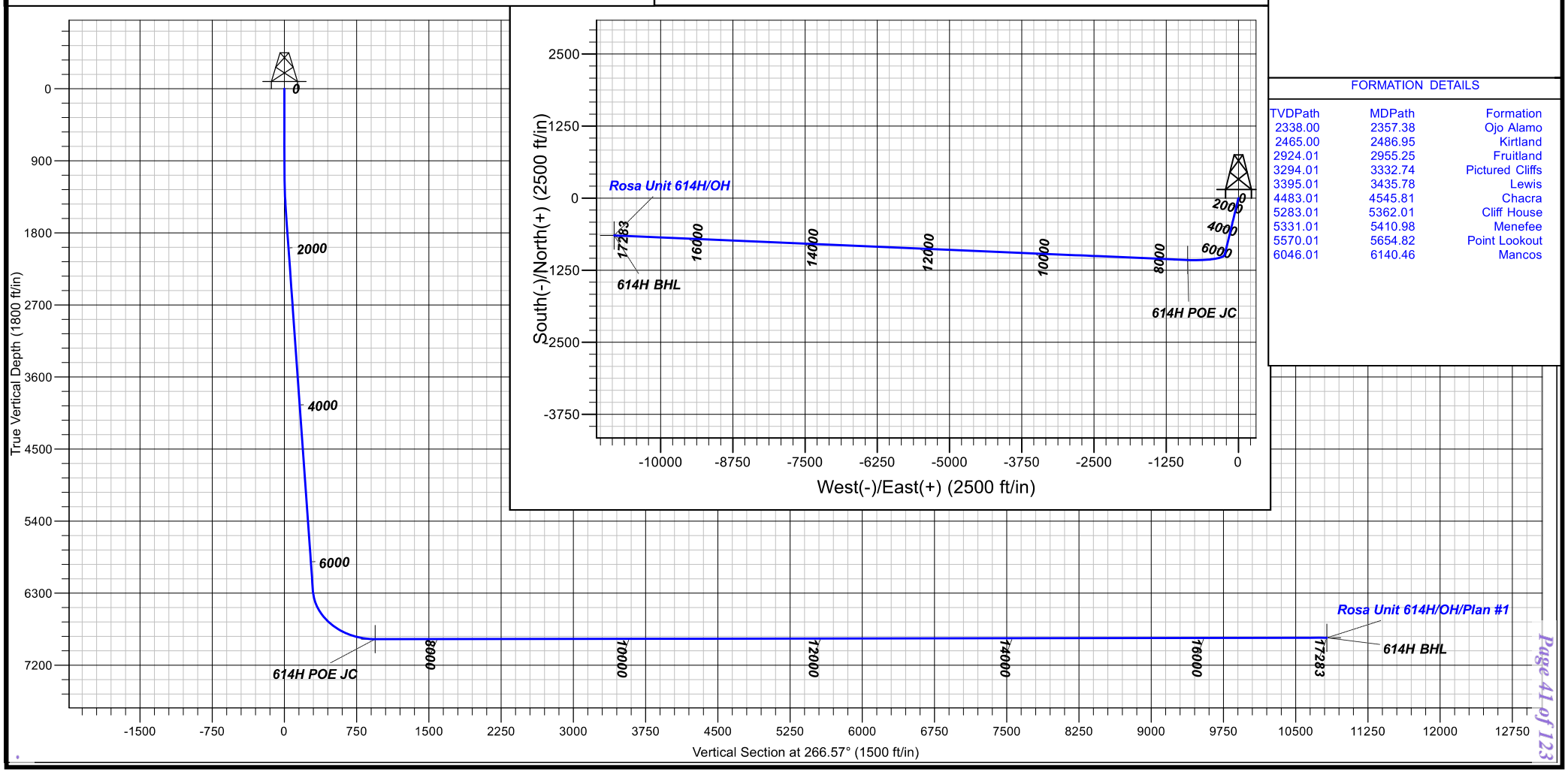
MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSect
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1000.00	0.00	0.00	1000.00	0.00	0.00	0.00	0.00	0.00
1571.67	11.43	193.61	1567.88	-55.25	-13.37	2.00	193.61	16.66
6372.62	11.43	193.61	6273.57	-980.22	-237.24	0.00	0.00	295.54
7349.28	90.10	272.45	6874.01	-1072.27	-878.99	9.00	79.04	941.65
17283.31	90.10	272.45	6857.01	-648.41	-10803.96	0.00	0.00	10823.40

CASING DETAILS

No casing data is available

FORMATION DETAILS

TVDPath	MDPath	Formation
2338.00	2357.38	Ojo Alamo
2465.00	2486.95	Kirtland
2924.01	2955.25	Fruitland
3294.01	3332.74	Pictured Cliffs
3395.01	3435.78	Lewis
4483.01	4545.81	Chacra
5283.01	5362.01	Cliff House
5331.01	5410.98	Menefee
5570.01	5654.82	Point Lookout
6046.01	6140.46	Mancos



Logos Operating LLC

Rio Arriba, NM NAD83
Rosa Unit 10
Rosa Unit 614H - Slot A03 (610H)

OH

Plan: Plan #1

Standard Planning Report

08 July, 2022

Lonestar Consulting, LLC

Planning Report

Database:	Grand Junction	**Local Co-ordinate Reference:**	Well Rosa Unit 614H - Slot A03 (610H)
Company:	Logos Operating LLC	**TVD Reference:**	WELL @ 6287.01ft (Original Well Elev)
Project:	Rio Arriba, NM NAD83	**MD Reference:**	WELL @ 6287.01ft (Original Well Elev)
Site:	Rosa Unit 10	**North Reference:**	True
Well:	Rosa Unit 614H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

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 10

Site Position:		**Northing:**	2,140,914.63 usft	**Latitude:**	36.8828349
From:	Lat/Long	**Easting:**	2,838,243.18 usft	**Longitude:**	-107.4395940
Position Uncertainty:	0.00 ft	**Slot Radius:**	13.200 in		

Well Rosa Unit 614H - Slot A03 (610H)

Well Position	**+N/-S**	0.00 ft	**Northing:**	2,140,917.78 usft	**Latitude:**	36.8828439
	+E/-W	0.00 ft	**Easting:**	2,838,211.88 usft	**Longitude:**	-107.4397010
Position Uncertainty		0.00 ft	**Wellhead Elevation:**	ft	**Ground Level:**	6,287.01 ft
Grid Convergence:		0.24 °				

Wellbore OH

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM2021_FILE	12/31/2021	8.65	63.35	49,621.30000000

Design Plan #1

Audit Notes:

Version:		**Phase:**	PLAN	**Tie On Depth:**	0.00

Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.00	0.00	0.00	266.57

Plan Survey Tool Program **Date** 7/8/2022

	Depth From (ft)	Depth To (ft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	17,283.31	Plan #1 (OH)	MWD-SDI	

Plan Sections

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,571.67	11.43	193.61	1,567.88	-55.25	-13.37	2.00	2.00	0.00	193.61	
6,372.62	11.43	193.61	6,273.57	-980.22	-237.24	0.00	0.00	0.00	0.00	
7,349.28	90.10	272.45	6,874.01	-1,072.27	-878.99	9.00	8.05	8.07	79.04	614H POE JC
17,283.31	90.10	272.45	6,857.01	-648.41	-10,803.96	0.00	0.00	0.00	0.00	614H BHL

Lonestar Consulting, LLC

Planning Report

Database:	Grand Junction	**Local Co-ordinate Reference:**	Well Rosa Unit 614H - Slot A03 (610H)
Company:	Logos Operating LLC	**TVD Reference:**	WELL @ 6287.01ft (Original Well Elev)
Project:	Rio Arriba, NM NAD83	**MD Reference:**	WELL @ 6287.01ft (Original Well Elev)
Site:	Rosa Unit 10	**North Reference:**	True
Well:	Rosa Unit 614H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
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
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	2.00	193.61	1,099.98	-1.70	-0.41	0.51	2.00	2.00	0.00
1,200.00	4.00	193.61	1,199.84	-6.78	-1.64	2.04	2.00	2.00	0.00
1,300.00	6.00	193.61	1,299.45	-15.25	-3.69	4.60	2.00	2.00	0.00
1,400.00	8.00	193.61	1,398.70	-27.10	-6.56	8.17	2.00	2.00	0.00
1,500.00	10.00	193.61	1,497.47	-42.30	-10.24	12.75	2.00	2.00	0.00
1,571.67	11.43	193.61	1,567.88	-55.25	-13.37	16.66	2.00	2.00	0.00
1,600.00	11.43	193.61	1,595.65	-60.71	-14.69	18.30	0.00	0.00	0.00
1,700.00	11.43	193.61	1,693.67	-79.98	-19.36	24.11	0.00	0.00	0.00
1,800.00	11.43	193.61	1,791.68	-99.24	-24.02	29.92	0.00	0.00	0.00
1,900.00	11.43	193.61	1,889.70	-118.51	-28.68	35.73	0.00	0.00	0.00
2,000.00	11.43	193.61	1,987.71	-137.78	-33.35	41.54	0.00	0.00	0.00
2,100.00	11.43	193.61	2,085.73	-157.04	-38.01	47.35	0.00	0.00	0.00
2,200.00	11.43	193.61	2,183.75	-176.31	-42.67	53.16	0.00	0.00	0.00
2,300.00	11.43	193.61	2,281.76	-195.58	-47.33	58.97	0.00	0.00	0.00
2,400.00	11.43	193.61	2,379.78	-214.84	-52.00	64.78	0.00	0.00	0.00
2,500.00	11.43	193.61	2,477.79	-234.11	-56.66	70.58	0.00	0.00	0.00
2,600.00	11.43	193.61	2,575.81	-253.38	-61.32	76.39	0.00	0.00	0.00
2,700.00	11.43	193.61	2,673.82	-272.64	-65.99	82.20	0.00	0.00	0.00
2,800.00	11.43	193.61	2,771.84	-291.91	-70.65	88.01	0.00	0.00	0.00
2,900.00	11.43	193.61	2,869.85	-311.17	-75.31	93.82	0.00	0.00	0.00
3,000.00	11.43	193.61	2,967.87	-330.44	-79.98	99.63	0.00	0.00	0.00
3,100.00	11.43	193.61	3,065.89	-349.71	-84.64	105.44	0.00	0.00	0.00
3,200.00	11.43	193.61	3,163.90	-368.97	-89.30	111.25	0.00	0.00	0.00
3,300.00	11.43	193.61	3,261.92	-388.24	-93.96	117.05	0.00	0.00	0.00
3,400.00	11.43	193.61	3,359.93	-407.51	-98.63	122.86	0.00	0.00	0.00
3,500.00	11.43	193.61	3,457.95	-426.77	-103.29	128.67	0.00	0.00	0.00
3,600.00	11.43	193.61	3,555.96	-446.04	-107.95	134.48	0.00	0.00	0.00
3,700.00	11.43	193.61	3,653.98	-465.30	-112.62	140.29	0.00	0.00	0.00
3,800.00	11.43	193.61	3,752.00	-484.57	-117.28	146.10	0.00	0.00	0.00
3,900.00	11.43	193.61	3,850.01	-503.84	-121.94	151.91	0.00	0.00	0.00
4,000.00	11.43	193.61	3,948.03	-523.10	-126.61	157.72	0.00	0.00	0.00
4,100.00	11.43	193.61	4,046.04	-542.37	-131.27	163.53	0.00	0.00	0.00
4,200.00	11.43	193.61	4,144.06	-561.64	-135.93	169.33	0.00	0.00	0.00
4,300.00	11.43	193.61	4,242.07	-580.90	-140.59	175.14	0.00	0.00	0.00
4,400.00	11.43	193.61	4,340.09	-600.17	-145.26	180.95	0.00	0.00	0.00
4,500.00	11.43	193.61	4,438.10	-619.44	-149.92	186.76	0.00	0.00	0.00
4,600.00	11.43	193.61	4,536.12	-638.70	-154.58	192.57	0.00	0.00	0.00
4,700.00	11.43	193.61	4,634.14	-657.97	-159.25	198.38	0.00	0.00	0.00
4,800.00	11.43	193.61	4,732.15	-677.23	-163.91	204.19	0.00	0.00	0.00
4,900.00	11.43	193.61	4,830.17	-696.50	-168.57	210.00	0.00	0.00	0.00
5,000.00	11.43	193.61	4,928.18	-715.77	-173.24	215.80	0.00	0.00	0.00
5,100.00	11.43	193.61	5,026.20	-735.03	-177.90	221.61	0.00	0.00	0.00
5,200.00	11.43	193.61	5,124.21	-754.30	-182.56	227.42	0.00	0.00	0.00

Lonestar Consulting, LLC

Planning Report

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Company:	Logos Operating LLC	**TVD Reference:**	WELL @ 6287.01ft (Original Well Elev)
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Site:	Rosa Unit 10	**North Reference:**	True
Well:	Rosa Unit 614H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
5,300.00	11.43	193.61	5,222.23	-773.57	-187.22	233.23	0.00	0.00	0.00
5,400.00	11.43	193.61	5,320.25	-792.83	-191.89	239.04	0.00	0.00	0.00
5,500.00	11.43	193.61	5,418.26	-812.10	-196.55	244.85	0.00	0.00	0.00
5,600.00	11.43	193.61	5,516.28	-831.37	-201.21	250.66	0.00	0.00	0.00
5,700.00	11.43	193.61	5,614.29	-850.63	-205.88	256.47	0.00	0.00	0.00
5,800.00	11.43	193.61	5,712.31	-869.90	-210.54	262.28	0.00	0.00	0.00
5,900.00	11.43	193.61	5,810.32	-889.16	-215.20	268.08	0.00	0.00	0.00
6,000.00	11.43	193.61	5,908.34	-908.43	-219.87	273.89	0.00	0.00	0.00
6,100.00	11.43	193.61	6,006.36	-927.70	-224.53	279.70	0.00	0.00	0.00
6,200.00	11.43	193.61	6,104.37	-946.96	-229.19	285.51	0.00	0.00	0.00
6,300.00	11.43	193.61	6,202.39	-966.23	-233.85	291.32	0.00	0.00	0.00
6,372.62	11.43	193.61	6,273.57	-980.22	-237.24	295.54	0.00	0.00	0.00
6,400.00	12.14	205.18	6,300.37	-985.47	-239.10	297.71	9.00	2.59	42.28
6,500.00	17.62	233.75	6,397.11	-1,003.97	-255.82	315.50	9.00	5.47	28.57
6,600.00	25.16	247.44	6,490.21	-1,021.10	-287.72	348.37	9.00	7.55	13.69
6,700.00	33.40	254.91	6,577.39	-1,036.45	-334.02	395.51	9.00	8.24	7.47
6,800.00	41.93	259.66	6,656.49	-1,049.64	-393.58	455.76	9.00	8.53	4.75
6,900.00	50.59	263.04	6,725.58	-1,060.34	-464.94	527.63	9.00	8.66	3.38
7,000.00	59.33	265.67	6,782.94	-1,068.28	-546.34	609.36	9.00	8.74	2.63
7,100.00	68.12	267.85	6,827.17	-1,073.27	-635.77	698.93	9.00	8.78	2.19
7,200.00	76.93	269.78	6,857.18	-1,075.20	-731.04	794.14	9.00	8.81	1.93
7,300.00	85.75	271.58	6,872.23	-1,074.00	-829.79	892.64	9.00	8.82	1.80
7,349.28	90.10	272.45	6,874.01	-1,072.27	-878.99	941.65	9.00	8.83	1.75
7,400.00	90.10	272.45	6,873.93	-1,070.11	-929.67	992.11	0.00	0.00	0.00
7,500.00	90.10	272.45	6,873.75	-1,065.84	-1,029.58	1,091.58	0.00	0.00	0.00
7,600.00	90.10	272.45	6,873.58	-1,061.58	-1,129.49	1,191.05	0.00	0.00	0.00
7,700.00	90.10	272.45	6,873.40	-1,057.31	-1,229.39	1,290.53	0.00	0.00	0.00
7,800.00	90.10	272.45	6,873.23	-1,053.04	-1,329.30	1,390.00	0.00	0.00	0.00
7,900.00	90.10	272.45	6,873.05	-1,048.77	-1,429.21	1,489.47	0.00	0.00	0.00
8,000.00	90.10	272.45	6,872.88	-1,044.51	-1,529.12	1,588.95	0.00	0.00	0.00
8,100.00	90.10	272.45	6,872.71	-1,040.24	-1,629.03	1,688.42	0.00	0.00	0.00
8,200.00	90.10	272.45	6,872.53	-1,035.97	-1,728.94	1,787.90	0.00	0.00	0.00
8,300.00	90.10	272.45	6,872.36	-1,031.71	-1,828.85	1,887.37	0.00	0.00	0.00
8,400.00	90.10	272.45	6,872.18	-1,027.44	-1,928.76	1,986.84	0.00	0.00	0.00
8,500.00	90.10	272.45	6,872.01	-1,023.17	-2,028.66	2,086.32	0.00	0.00	0.00
8,600.00	90.10	272.45	6,871.84	-1,018.91	-2,128.57	2,185.79	0.00	0.00	0.00
8,700.00	90.10	272.45	6,871.66	-1,014.64	-2,228.48	2,285.26	0.00	0.00	0.00
8,800.00	90.10	272.45	6,871.49	-1,010.37	-2,328.39	2,384.74	0.00	0.00	0.00
8,900.00	90.10	272.45	6,871.31	-1,006.11	-2,428.30	2,484.21	0.00	0.00	0.00
9,000.00	90.10	272.45	6,871.14	-1,001.84	-2,528.21	2,583.69	0.00	0.00	0.00
9,100.00	90.10	272.45	6,870.96	-997.57	-2,628.12	2,683.16	0.00	0.00	0.00
9,200.00	90.10	272.45	6,870.79	-993.31	-2,728.03	2,782.63	0.00	0.00	0.00
9,300.00	90.10	272.45	6,870.62	-989.04	-2,827.93	2,882.11	0.00	0.00	0.00
9,400.00	90.10	272.45	6,870.44	-984.77	-2,927.84	2,981.58	0.00	0.00	0.00
9,500.00	90.10	272.45	6,870.27	-980.51	-3,027.75	3,081.05	0.00	0.00	0.00
9,600.00	90.10	272.45	6,870.09	-976.24	-3,127.66	3,180.53	0.00	0.00	0.00
9,700.00	90.10	272.45	6,869.92	-971.97	-3,227.57	3,280.00	0.00	0.00	0.00
9,800.00	90.10	272.45	6,869.74	-967.71	-3,327.48	3,379.48	0.00	0.00	0.00
9,900.00	90.10	272.45	6,869.57	-963.44	-3,427.39	3,478.95	0.00	0.00	0.00
10,000.00	90.10	272.45	6,869.40	-959.17	-3,527.30	3,578.42	0.00	0.00	0.00
10,100.00	90.10	272.45	6,869.22	-954.91	-3,627.20	3,677.90	0.00	0.00	0.00
10,200.00	90.10	272.45	6,869.05	-950.64	-3,727.11	3,777.37	0.00	0.00	0.00
10,300.00	90.10	272.45	6,868.87	-946.37	-3,827.02	3,876.84	0.00	0.00	0.00
10,400.00	90.10	272.45	6,868.70	-942.11	-3,926.93	3,976.32	0.00	0.00	0.00

Lonestar Consulting, LLC

Planning Report

Database:	Grand Junction	**Local Co-ordinate Reference:**	Well Rosa Unit 614H - Slot A03 (610H)
Company:	Logos Operating LLC	**TVD Reference:**	WELL @ 6287.01ft (Original Well Elev)
Project:	Rio Arriba, NM NAD83	**MD Reference:**	WELL @ 6287.01ft (Original Well Elev)
Site:	Rosa Unit 10	**North Reference:**	True
Well:	Rosa Unit 614H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
10,500.00	90.10	272.45	6,868.53	-937.84	-4,026.84	4,075.79	0.00	0.00	0.00
10,600.00	90.10	272.45	6,868.35	-933.57	-4,126.75	4,175.27	0.00	0.00	0.00
10,700.00	90.10	272.45	6,868.18	-929.31	-4,226.66	4,274.74	0.00	0.00	0.00
10,800.00	90.10	272.45	6,868.00	-925.04	-4,326.57	4,374.21	0.00	0.00	0.00
10,900.00	90.10	272.45	6,867.83	-920.77	-4,426.48	4,473.69	0.00	0.00	0.00
11,000.00	90.10	272.45	6,867.65	-916.50	-4,526.38	4,573.16	0.00	0.00	0.00
11,100.00	90.10	272.45	6,867.48	-912.24	-4,626.29	4,672.63	0.00	0.00	0.00
11,200.00	90.10	272.45	6,867.31	-907.97	-4,726.20	4,772.11	0.00	0.00	0.00
11,300.00	90.10	272.45	6,867.13	-903.70	-4,826.11	4,871.58	0.00	0.00	0.00
11,400.00	90.10	272.45	6,866.96	-899.44	-4,926.02	4,971.06	0.00	0.00	0.00
11,500.00	90.10	272.45	6,866.78	-895.17	-5,025.93	5,070.53	0.00	0.00	0.00
11,600.00	90.10	272.45	6,866.61	-890.90	-5,125.84	5,170.00	0.00	0.00	0.00
11,700.00	90.10	272.45	6,866.44	-886.64	-5,225.75	5,269.48	0.00	0.00	0.00
11,800.00	90.10	272.45	6,866.26	-882.37	-5,325.65	5,368.95	0.00	0.00	0.00
11,900.00	90.10	272.45	6,866.09	-878.10	-5,425.56	5,468.42	0.00	0.00	0.00
12,000.00	90.10	272.45	6,865.91	-873.84	-5,525.47	5,567.90	0.00	0.00	0.00
12,100.00	90.10	272.45	6,865.74	-869.57	-5,625.38	5,667.37	0.00	0.00	0.00
12,200.00	90.10	272.45	6,865.56	-865.30	-5,725.29	5,766.84	0.00	0.00	0.00
12,300.00	90.10	272.45	6,865.39	-861.04	-5,825.20	5,866.32	0.00	0.00	0.00
12,400.00	90.10	272.45	6,865.22	-856.77	-5,925.11	5,965.79	0.00	0.00	0.00
12,500.00	90.10	272.45	6,865.04	-852.50	-6,025.02	6,065.27	0.00	0.00	0.00
12,600.00	90.10	272.45	6,864.87	-848.24	-6,124.92	6,164.74	0.00	0.00	0.00
12,700.00	90.10	272.45	6,864.69	-843.97	-6,224.83	6,264.21	0.00	0.00	0.00
12,800.00	90.10	272.45	6,864.52	-839.70	-6,324.74	6,363.69	0.00	0.00	0.00
12,900.00	90.10	272.45	6,864.34	-835.44	-6,424.65	6,463.16	0.00	0.00	0.00
13,000.00	90.10	272.45	6,864.17	-831.17	-6,524.56	6,562.63	0.00	0.00	0.00
13,100.00	90.10	272.45	6,864.00	-826.90	-6,624.47	6,662.11	0.00	0.00	0.00
13,200.00	90.10	272.45	6,863.82	-822.64	-6,724.38	6,761.58	0.00	0.00	0.00
13,300.00	90.10	272.45	6,863.65	-818.37	-6,824.29	6,861.06	0.00	0.00	0.00
13,400.00	90.10	272.45	6,863.47	-814.10	-6,924.19	6,960.53	0.00	0.00	0.00
13,500.00	90.10	272.45	6,863.30	-809.84	-7,024.10	7,060.00	0.00	0.00	0.00
13,600.00	90.10	272.45	6,863.13	-805.57	-7,124.01	7,159.48	0.00	0.00	0.00
13,700.00	90.10	272.45	6,862.95	-801.30	-7,223.92	7,258.95	0.00	0.00	0.00
13,800.00	90.10	272.45	6,862.78	-797.04	-7,323.83	7,358.42	0.00	0.00	0.00
13,900.00	90.10	272.45	6,862.60	-792.77	-7,423.74	7,457.90	0.00	0.00	0.00
14,000.00	90.10	272.45	6,862.43	-788.50	-7,523.65	7,557.37	0.00	0.00	0.00
14,100.00	90.10	272.45	6,862.25	-784.24	-7,623.56	7,656.85	0.00	0.00	0.00
14,200.00	90.10	272.45	6,862.08	-779.97	-7,723.47	7,756.32	0.00	0.00	0.00
14,300.00	90.10	272.45	6,861.91	-775.70	-7,823.37	7,855.79	0.00	0.00	0.00
14,400.00	90.10	272.45	6,861.73	-771.43	-7,923.28	7,955.27	0.00	0.00	0.00
14,500.00	90.10	272.45	6,861.56	-767.17	-8,023.19	8,054.74	0.00	0.00	0.00
14,600.00	90.10	272.45	6,861.38	-762.90	-8,123.10	8,154.21	0.00	0.00	0.00
14,700.00	90.10	272.45	6,861.21	-758.63	-8,223.01	8,253.69	0.00	0.00	0.00
14,800.00	90.10	272.45	6,861.04	-754.37	-8,322.92	8,353.16	0.00	0.00	0.00
14,900.00	90.10	272.45	6,860.86	-750.10	-8,422.83	8,452.64	0.00	0.00	0.00
15,000.00	90.10	272.45	6,860.69	-745.83	-8,522.74	8,552.11	0.00	0.00	0.00
15,100.00	90.10	272.45	6,860.51	-741.57	-8,622.64	8,651.58	0.00	0.00	0.00
15,200.00	90.10	272.45	6,860.34	-737.30	-8,722.55	8,751.06	0.00	0.00	0.00
15,300.00	90.10	272.45	6,860.16	-733.03	-8,822.46	8,850.53	0.00	0.00	0.00
15,400.00	90.10	272.45	6,859.99	-728.77	-8,922.37	8,950.00	0.00	0.00	0.00
15,500.00	90.10	272.45	6,859.82	-724.50	-9,022.28	9,049.48	0.00	0.00	0.00
15,600.00	90.10	272.45	6,859.64	-720.23	-9,122.19	9,148.95	0.00	0.00	0.00
15,700.00	90.10	272.45	6,859.47	-715.97	-9,222.10	9,248.43	0.00	0.00	0.00
15,800.00	90.10	272.45	6,859.29	-711.70	-9,322.01	9,347.90	0.00	0.00	0.00

Lonestar Consulting, LLC

Planning Report

Database:	Grand Junction	**Local Co-ordinate Reference:**	Well Rosa Unit 614H - Slot A03 (610H)
Company:	Logos Operating LLC	**TVD Reference:**	WELL @ 6287.01ft (Original Well Elev)
Project:	Rio Arriba, NM NAD83	**MD Reference:**	WELL @ 6287.01ft (Original Well Elev)
Site:	Rosa Unit 10	**North Reference:**	True
Well:	Rosa Unit 614H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
15,900.00	90.10	272.45	6,859.12	-707.43	-9,421.91	9,447.37	0.00	0.00	0.00
16,000.00	90.10	272.45	6,858.94	-703.17	-9,521.82	9,546.85	0.00	0.00	0.00
16,100.00	90.10	272.45	6,858.77	-698.90	-9,621.73	9,646.32	0.00	0.00	0.00
16,200.00	90.10	272.45	6,858.60	-694.63	-9,721.64	9,745.79	0.00	0.00	0.00
16,300.00	90.10	272.45	6,858.42	-690.37	-9,821.55	9,845.27	0.00	0.00	0.00
16,400.00	90.10	272.45	6,858.25	-686.10	-9,921.46	9,944.74	0.00	0.00	0.00
16,500.00	90.10	272.45	6,858.07	-681.83	-10,021.37	10,044.21	0.00	0.00	0.00
16,600.00	90.10	272.45	6,857.90	-677.57	-10,121.28	10,143.69	0.00	0.00	0.00
16,700.00	90.10	272.45	6,857.73	-673.30	-10,221.18	10,243.16	0.00	0.00	0.00
16,800.00	90.10	272.45	6,857.55	-669.03	-10,321.09	10,342.64	0.00	0.00	0.00
16,900.00	90.10	272.45	6,857.38	-664.77	-10,421.00	10,442.11	0.00	0.00	0.00
17,000.00	90.10	272.45	6,857.20	-660.50	-10,520.91	10,541.58	0.00	0.00	0.00
17,100.00	90.10	272.45	6,857.03	-656.23	-10,620.82	10,641.06	0.00	0.00	0.00
17,200.00	90.10	272.45	6,856.85	-651.97	-10,720.73	10,740.53	0.00	0.00	0.00
17,283.31	90.10	272.45	6,857.01	-648.41	-10,803.96	10,823.40	0.00	0.00	0.00

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
614H BHL - plan hits target center - Point	0.00	0.00	6,857.01	-648.41	-10,803.96	2,140,224.82	2,827,410.70	36.8810572	-107.4766418
614H POE JC - plan hits target center - Point	0.00	0.00	6,874.01	-1,072.27	-878.99	2,139,841.89	2,837,337.31	36.8798986	-107.4427064
614H POE - plan misses target center by 115.41ft at 7000.00ft MD (6782.94 TVD, -1068.28 N, -546.34 E) - Point	0.00	0.00	6,875.01	-1,089.31	-480.01	2,139,826.50	2,837,736.37	36.8798519	-107.4413422

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
2,357.38	2,338.00	Ojo Alamo		0.00	0.00
2,486.95	2,465.00	Kirtland		0.00	0.00
2,955.25	2,924.01	Fruitland		0.00	0.00
3,332.74	3,294.01	Pictured Cliffs		0.00	0.00
3,435.78	3,395.01	Lewis		0.00	0.00
4,545.81	4,483.01	Chacra		0.00	0.00
5,362.01	5,283.01	Cliff House		0.00	0.00
5,410.98	5,331.01	Menefee		0.00	0.00
5,654.82	5,570.01	Point Lookout		0.00	0.00
6,140.46	6,046.01	Mancos		0.00	0.00

Logos Operating LLC

Rio Arriba, NM NAD83
Rosa Unit 10
Rosa Unit 614H

OH
Plan #1

Anticollision Summary Report

21 July, 2022

Lonestar Consulting, LLC

Anticollision Summary Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit 614H - Slot A03 (610H)
Project:	Rio Arriba, NM NAD83	**TVD Reference:**	WELL @ 6287.01ft (Original Well Elev)
Reference Site:	Rosa Unit 10	**MD Reference:**	WELL @ 6287.01ft (Original Well Elev)
Site Error:	0.00 ft	**North Reference:**	True
Reference Well:	Rosa Unit 614H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Reference Plan #1

Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	Stations	**Error Model:**	ISCWSA
Depth Range:	Unlimited	**Scan Method:**	Closest Approach 3D
Results Limited by:	Maximum centre distance of 8,000.02ft	**Error Surface:**	Pedal Curve
Warning Levels Evaluated at:	2.00 **Sigma**	**Casing Method:**	Not applied

Survey Tool Program **Date** 7/8/2022

From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.00	17,283.31	Plan #1 (OH)	MWD-SDI	

Summary

Site Name / Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Rosa Unit 10						
Rosa Unit 100 - OH - OH	15,589.81	6,959.99	204.71	-53.42	0.793	Level 1, CC, ES, SF
Rosa Unit 100B - OH - OH	14,215.20	6,951.08	293.36	234.19	4.957	CC, ES, SF
Rosa Unit 100C - OH - OH	16,555.60	6,130.00	974.86	909.79	14.982	CC, ES
Rosa Unit 100C - OH - OH	16,600.00	6,130.00	975.87	910.69	14.973	SF
Rosa Unit 100E - OH - OH	13,063.68	6,847.71	581.46	334.32	2.353	CC, ES, SF
Rosa Unit 170 - OH - OH	15,600.00	6,175.01	773.24	707.03	11.679	CC
Rosa Unit 170 - OH - OH	15,800.00	6,175.01	797.80	700.27	8.180	ES
Rosa Unit 170 - OH - OH	16,300.00	6,175.01	1,040.65	865.19	5.931	SF
Rosa Unit 18A - OH - OH	6,034.19	5,955.01	1,030.47	831.54	5.180	ES, SF
Rosa Unit 18A - OH - OH	7,700.00	5,955.01	1,003.67	915.03	11.322	CC
Rosa Unit 18B - OH - OH	8,800.00	5,985.01	853.04	792.89	14.181	CC
Rosa Unit 18B - OH - OH	8,900.00	5,985.01	862.11	792.76	12.432	ES
Rosa Unit 18B - OH - OH	9,500.00	5,985.01	1,120.97	971.59	7.504	SF
Rosa Unit 201A - OH - OH	3,010.59	4,706.02	1,096.16	1,041.85	20.182	CC, ES
Rosa Unit 201A - OH - OH	3,100.00	4,695.32	1,099.88	1,045.31	20.156	SF
Rosa Unit 260 - OH - OH	13,600.00	3,219.01	4,492.47	4,396.35	46.740	SF
Rosa Unit 260 - OH - OH	16,100.00	3,219.01	3,704.29	3,650.94	69.432	CC
Rosa Unit 260 - OH - OH	16,200.00	3,219.01	3,704.50	3,650.66	68.802	ES
Rosa Unit 610H - OH - Plan #1	1,000.00	1,000.00	30.04	24.04	5.007	CC, ES
Rosa Unit 610H - OH - Plan #1	1,100.00	1,099.71	31.22	24.62	4.731	SF
Rosa Unit 612H - OH - Plan #1	1,021.60	1,021.65	15.20	9.07	2.479	CC
Rosa Unit 612H - OH - Plan #1	1,100.00	1,100.13	15.49	8.89	2.347	ES, SF
Rosa Unit 79C - OH - OH	400.00	348.00	5,187.38	5,172.26	343.080	CC
Rosa Unit 79C - OH - OH	500.00	370.00	5,187.96	5,171.67	318.312	ES
Rosa Unit 79C - OH - OH	16,300.00	370.00	7,956.38	7,898.79	138.161	SF
Rosa Unit 98 - OH - OH	1,000.00	980.16	355.89	323.12	10.862	CC
Rosa Unit 98 - OH - OH	1,300.00	1,279.68	361.57	318.81	8.456	ES
Rosa Unit 98 - OH - OH	4,700.00	4,616.10	866.10	711.82	5.614	SF

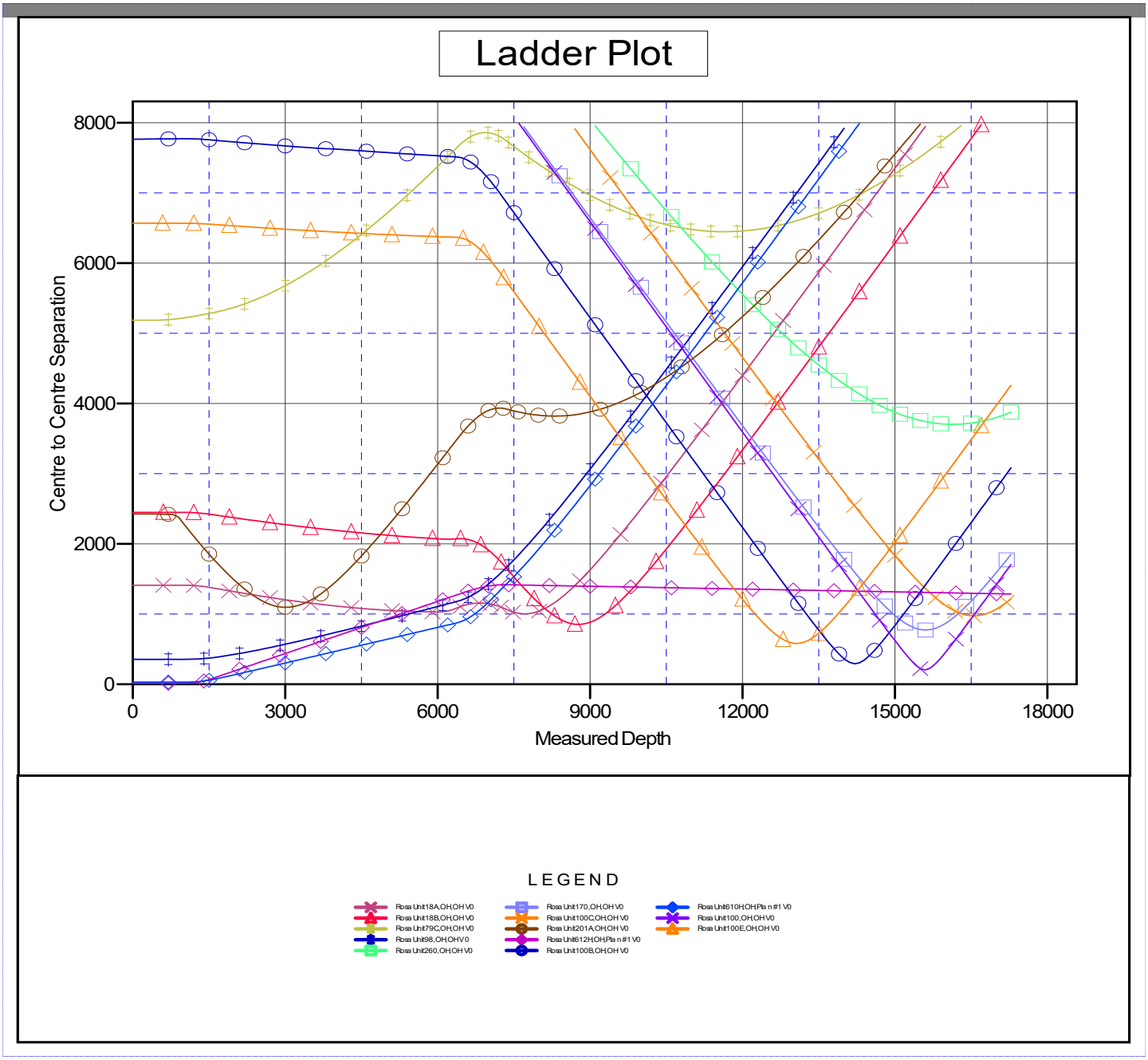
CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Lonestar Consulting, LLC
Anticollision Summary Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit 614H - Slot A03 (610H)
Project:	Rio Arriba, NM NAD83	**TVD Reference:**	WELL @ 6287.01ft (Original Well Elev)
Reference Site:	Rosa Unit 10	**MD Reference:**	WELL @ 6287.01ft (Original Well Elev)
Site Error:	0.00 ft	**North Reference:**	True
Reference Well:	Rosa Unit 614H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to WELL @ 6287.01ft (Original Well Elev
Offset Depths are relative to Offset Datum
Central Meridian is -107.8333334

Coordinates are relative to: Rosa Unit 614H - Slot A03 (610H)
Coordinate System is US State Plane 1983, New Mexico Western Zone
Grid Convergence at Surface is: 0.24°



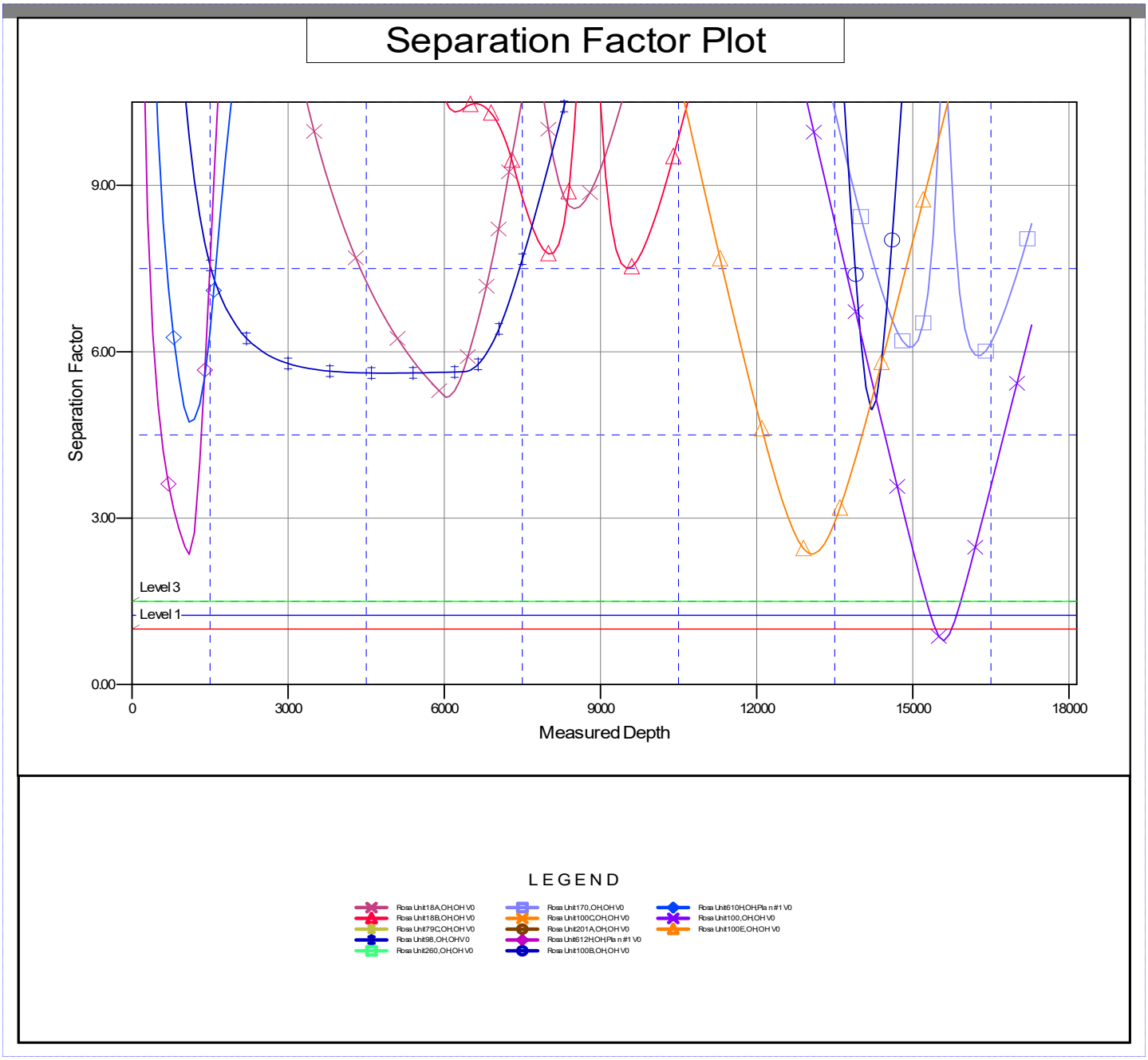
CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Lonestar Consulting, LLC
Anticollision Summary Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit 614H - Slot A03 (610H)
Project:	Rio Arriba, NM NAD83	**TVD Reference:**	WELL @ 6287.01ft (Original Well Elev)
Reference Site:	Rosa Unit 10	**MD Reference:**	WELL @ 6287.01ft (Original Well Elev)
Site Error:	0.00 ft	**North Reference:**	True
Reference Well:	Rosa Unit 614H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to WELL @ 6287.01ft (Original Well Elev
Offset Depths are relative to Offset Datum
Central Meridian is -107.8333334

Coordinates are relative to: Rosa Unit 614H - Slot A03 (610H)
Coordinate System is US State Plane 1983, New Mexico Western Zone
Grid Convergence at Surface is: 0.24°



CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Surface Casing Design - Evacuated/Max SICP (collaspe & burst), 100k overpull (tension)

					1.125	1.000		1.400
	Size	**Weight**	**Grade**	**Conn**	**Collapse**	**Burst**	**70% Burst**	**Tension (Body)**
Surface	13.375	54.5	J-55	BTC	1,130	2,730	1,911	853,000

Collapse							
	Casing Depth TVD	**MW in**	**MW out**	**Pres in**	**Pres out**	**SF**	
54.5 J-55 BTC	320	0.00	15.80	0	263	4.30	full evacuation with 15.8 ppg m

Burst							
54.5 J-55 BTC	320	15.80	0.00	1763	0	1.55	1500 psi casing test

Tension							
54.5 J-55 BTC		**Mud Wt**	**Air Wt**	**Bouy Wt**	**BW +100k**	**SF**	
Tension (Body)	320	15.80	17,440	13,233	113,233	7.53	100k over pull
Tension (Conn)	320	15.80	17,440	13,233	113,233	8.03	100k over pull
		BF					BF= 1- (MW)/65.5
		0.7588					

Intermedate Casing Design - Evacuated/Max SICP (collaspe & burst), 100k overpull (tension)

					1.125	1.000		1.400
	Size	**Weight**	**Grade**	**Conn**	**Collapse**	**Burst**	**80% Burst**	**Tension (Body)**
Intermediate	9.625	43.5	N-80 or L-80	LTC	3,810	6,330	5,064	1,005,000
	9.625	43.5	N-80 or L-80	BTC	3,810	6,330	5,064	1,005,000
	9.625	43.5	P-110	BTC	4,420	8,700	6,960	1,381,000

Collapse							
	Casing Depth TVD	**MW in**	**MW out**	**Pres in**	**Pres out**	**SF**	
43.5 N-80 or L-80 L	6,031	0.00	9.40	0	2948	1.29	full evacuation with 9.4 ppg mu
43.5 N-80 or L-80 E	6,031	0.00	9.40	0	2948	1.29	full evacuation with 9.4 ppg mu

Burst							
43.5 N-80 or L-80 L	6,031	9.40	0.00	4448	0	1.42	Casing full with 9.4 ppg mud , a
43.5 N-80 or L-80 E	6,031	9.40	0.00	4448	0	1.42	Casing full with 9.4 ppg mud , a

Tension							
43.5 N-80 or L-80 LTC		**Mud Wt**	**Air Wt**	**Bouy Wt**	**BW +100k**	**SF**	
Tension (Body)	6,031	9.40	262,349	224,698	324,698	3.10	100k over pull
Tension (Conn)	6,031	9.40	262,349	224,698	324,698	2.54	100k over pull
		BF					BF= 1- (MW)/65.5
		0.8565					
43.5 N-80 or L-80 BTC							
Tension (Body)	6,031	9.40	262,349	224,698	324,698	3.10	100k over pull
Tension (Conn)	6,031	9.40	262,349	224,698	324,698	3.31	100k over pull
		BF					BF= 1- (MW)/65.5
		0.8565					

Production Casing Design - Evacuated/Max SICP (collaspe & burst), 100k overpull (tension)

					1.125	1.000		1.400
	Size	**Weight**	**Grade**	**Conn**	**Collapse**	**Burst**	**80% Burst**	**Tension (Body)**
Production	5.5	20	P110	LTC	11,080	12,630	10,104	641,000
	5.5	20	P110	BTC	11,080	12,360	9,888	641,000

Collapse							
	Casing Depth TVD	**MW in**	**MW out**	**Pres in**	**Pres out**	**SF**	
20 P110 LTC	6,852	0.00	13.30	0	4739	2.34	full evacuation with 13.3 ppg m
20 P110 BTC	6,852	0.00	13.30	0	4739	2.34	full evacuation with 13.3 ppg m

Burst							
20 P110 LTC	6,852	13.30	0.00	6239	0	2.02	1500 psi casing test
20 P110 BTC	6,852	13.30	0.00	6239	0	1.98	1500 psi casing test

Tension							
20 P110 LTC		**Mud Wt**	**Air Wt**	**Bouy Wt**	**BW +100k**	**SF**	
Tension (Body)	6,852	13.30	137,040	109,214	209,214	3.06	100k over pull
Tension (Conn)	6,852	13.30	137,040	109,214	209,214	2.62	100k over pull
		BF					BF= 1- (MW)/65.5
		0.7969					
20 P110 BTC		**Mud Wt**	**Air Wt**	**Bouy Wt**	**BW +100k**	**SF**	
Tension (Body)	6,852	13.30	137,040	109,214	209,214	3.06	100k over pull
Tension (Conn)	6,852	13.30	137,040	109,214	209,214	3.19	100k over pull
		BF					BF= 1- (MW)/65.5

LOGOS Operating, LLC

Surface Use Plan of Operations

Rosa Unit Pad 10 Natural Gas Well Development Project

August 2022

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Pursuant to Onshore Oil and Gas Order No. 1 (43 CFR 3160), this Surface Use Plan of Operations (SUPO) has been prepared for the Bureau of Land Management (BLM) Farmington Field Office (FFO) as part of the LOGOS Operating, LLC (LOGOS) Rosa Unit 609H, 610H, 611H, 612H, 613H and Rosa Unit 614H Application for Permit to Drill (APD). This SUPO is in accordance with Onshore Oil and Gas Order No. 1, 43 Code of Federal Regulation (CFR) 2804.12, 43 CFR 2884.11.

LOGOS proposes the development of the Rosa Unit 609H, 610H, 611H, 612H, 613H and Rosa Unit 614H natural gas wells, a well connect pipeline, access road and the well pad. The Rosa Unit 609H, 610H, 611H, 612H, 613H and 614H wells will be located on a well pad known as Rosa Unit Pad 10, along with slots for an additional two future natural gas wells (Rosa Unit Pad 10 Project). The proposed Rosa Unit Pad 10 Project will also require the temporary installation of surface waterlines for well completions. The proposed project would be located on BLM-managed land and would develop Federal minerals from the Basin Mancos Formation associated with valid existing leases SF-078766, SF-078771, SF-078767 and NM E-289-53 administered by the BLM-FFO. The Project would include the construction, use, and subsequent reclamation of one well pad with associated well pad construction zone and temporary surface waterlines. Six natural gas wells and two potential natural gas wells would be horizontally or vertically drilled, possibly produced and eventually plugged and abandoned from Rosa Unit 10 well pad. Each proposed well would be authorized by an approved APD. The well pad, access road, temporary surface lines and pipeline are located entirely on-lease within the Rosa Unit. The proposed action is the approval of the Rosa Unit 610H, 612H, and 614H APDs for an on-lease pad, buried pipeline and temporary surface waterlines by the BLM-FFO.

A pre-disturbance on-site meeting for the project was held on June 7, 2022. Attendees at the on-site meeting included LOGOS representatives, BLM-FFO representatives, BOR representative, the project surveyor, and environmental & cultural consultants (Adkins Consulting, Inc.), the onsite sign in sheet can be found in Figure 13, Appendix B.

1.0 Existing Roads

A. The project area is located in Rio Arriba County, New Mexico. To access the project area, from the intersection of U. S. Highway 550 and U. S. Highway 64 in Bloomfield, New Mexico:
   - Travel easterly on US HWY 64 for 38.0 miles to mile marker 102.3 to state Hwy 527 (Simms Hwy).
   - Turn left (north-westerly) on State Hwy 527 (Simms Hwy) for 7.9 miles to Rosa Road at La Jara Station.
   - Go right (northerly) on Rosa Road for 6.5 miles to fork in roadway
   - Go left (north-westerly) which is straight, remaining on Rosa Road for 4.0 miles to 4-way intersection
   - Go left (north-westerly) which is straight remaining on Rosa Road for 1.2 miles to 4-way intersection
   - Go left (westerly) exiting Rosa Road for 0.4 miles to fork in roadway.
   - Go right (westerly) which is straight for 0.3 miles to fork in roadway
   - Go left (north-westerly) which is straight for 0.1 miles to the proposed new access road on the right-hand side of existing roadway which continues for 276.5’ to LOGOS Rosa Pad 10 proposed well pad.

B. For existing County Roads or roads that are considered collector roads, LOGOS will defer to the county or to the Roads Committee, when formed, for maintenance determinations. Roads will

be maintained in the same or better condition as existed prior to the commencement of operations, and maintenance will continue until final abandonment and reclamation of the well location and associated facilities.

C. Best management practices (BMPs) for dust abatement and erosion control will be utilized along the road to reduce fugitive dust for the life of the project. Fresh water application, using a rear- spraying truck or other suitable means, will be the primary method of dust suppression along the road.
D. No routine maintenance activities will be performed during periods when the soil is too wet to adequately support construction equipment. If equipment creates ruts deeper than 6 inches, the soil will be deemed too wet for construction or maintenance.
E. The proposed access road will be maintained as outlined in the Road Maintenance Plan (Appendix C). At final abandonment, the access road will be reclaimed as described in the Reclamation Plan (Appendix A).

2.0 New or Reconstructed Access Roads

A. LOGOS will construct a small access road to connect the proposed well pad location to the existing road. This road will be approximately 276.5' in length and at the onsite it was determined that no cattle guards or fences would be required. Although no need for culverts is anticipated, any drainage issues will be addressed during construction. All disturbance will be in the construction zone. Any additional need for water-control features such as diversions and/or silt traps will be determined at interim reclamation. This access road was identified as a resource road during the on-site visit. The proposed road is shown on Figures 1, 2 & 3 in Appendix B.
B. BMPs for dust abatement and erosion control will be utilized along the road to reduce fugitive dust for the life of the project. Fresh water application, using a rear- spraying truck or other suitable means, will be the primary method of dust suppression along the road. If culverts or silt traps are required for erosion control, they will be added as necessary. The access road will be maintained as outlined in the Road Maintenance Plan (Appendix C). At final abandonment, the access road will be reclaimed as described in the Reclamation Plan (Appendix A).

3.0 Location of Existing Wells

Water wells and oil and gas wells (plugged and abandoned, active, and proposed) within a 1-mile radius of the well pad are depicted on Figure 2 (Appendix B). No recorded water wells are located within a 1-mile radius of the proposed project.

4.0 Location of Existing or Proposed Production Facilities

A. Survey Monuments
    1. LOGOS will protect all survey monuments, witness corners, and reference monuments during construction, operation, maintenance, and termination of the facilities. The BLM Authorized Officer will be immediately notified in the event that any corners, monuments, or markers are disturbed or anticipated to be disturbed. LOGOS will secure the services of a Registered Land Surveyor to restore any corners, monuments, or markers in the event disturbance does occur. The surveyor will use procedures found in

the Manual of Surveying Instructions for the Survey of Public Lands in the United States. Recordation of the survey will be in compliance with State of New Mexico regulations.

B. Pipeline: Below Ground

1. LOGOS will mark the exterior boundaries of the proposed pipeline ROW with stake and/or lath at 100-to-200-foot intervals. The stakes and/or laths will be flagged in a distinctive color as determined by the holder. The survey station numbers will be marked on the boundary stakes and/or laths at the entrance to and the exit from BLM and BOR lands. The holder shall maintain all boundary stakes and/or laths in place until final cleanup and restoration is completed and approved by the BLM-FFO. The stakes and/or laths will then be removed.
2. The well-connect pipeline would start at Pad 10 and then be located in Sections 23 and 24, Township 31 North, Range 06 West and Section 19, Township 31 North, Range 05 West.
3. The proposed pipeline system will consist of one trench hosting one steel natural gas line up to 16 inches, one 2-to-4-inch waterline and an AC wire.
4. The proposed well-connect pipeline would connect the Rosa 609H, 610H, 611H, 612H, 613H and 614H (Rosa Unit Pad 10 Wells) and possibly two additional future wells on the Rosa Pad 10 to the existing A-59 Harvest compressor site which will then deliver produced minerals to an existing Harvest gas gathering system in the area.
5. The proposed well-connect pipeline would be 11,853.1 feet in length. The pipeline parallels several resource roads and crosses an existing Harvest pipeline ROW, ending up at the A-59 compressor site as pictured in Figure 4, Appendix B. The proposed pipeline will have 9456.9 feet on BLM surface, and 2396.1 feet on Bureau of Reclamation (BOR) surface. Total disturbance by way of well-connect pipeline installation would be approximately 8.16 acres.
6. Prior to construction, the pipeline ROW will be staked at 100- to 200-foot intervals and, when applicable, BLM boundaries will be marked with station numbers at the entrance to and exit from BLM lands.
7. Soils will be excavated from the well-connect pipeline trenches using a trencher, backhoe, or excavator. The bottom of the trench will be dug to a depth of 4 feet. The trenches will be a minimum 16 inches in width. Soft plugs will be placed within the trenches every ¼ mile. When stringing pipe, one joint of pipe will be set back every ¼ mile. After a pipe has been welded and coated, a side-boom tractor will be used to place the pipe into the trench.
8. All pipelines will be buried to a depth of 4 feet except at road crossings where they will be buried to a depth greater than 4 feet. In areas were the pipeline crosses an existing road, LOGOS will utilize the following backfill method. The pipeline trench will be backfilled with soil halfway and compacted, then whole, intact sacks of Quikrete will be placed side-by-side along the length of the trench across the road. The sacks will be placed with approximate 3- to 4-inch spacing between each sack. Road base will then be backfilled and compacted to the surface. This method has been shown to provide the best road stabilization and to alleviate potholes and depressions that often occur over the pipeline trench after backfill material settles over time.
9. Backfilling operations will be performed within a reasonable amount of time to ensure that the trenches are not left open for more than 24 hours. If a trench is left open overnight, it will be temporarily fenced, or a night watchman will be utilized. The excavated soils will be returned to the trenches, atop the pipe, and compacted to prevent subsidence. The trenches will be compacted after approximately 2 feet of fill

is placed over the pipe and after the ground surface has been leveled.

10. Prior to the well-connect pipelines being placed in service, the pipes will be pressure tested to the recommended standards based on their size and wall thickness.
11. Earthen berms will be constructed at each end of the ROW where it is separated from the road. The berms will be a minimum of 4-feet high with a 1-foot cut at the base facing away from the ROW (towards the direction of potential traffic).
12. Following construction, pipeline markers will be installed along the well-connect pipeline corridor within the line of sight. These markers will not create safety hazards.

C. Temporary Surface Pipelines
   1. Surface lay-flat waterlines would be temporarily installed to transport water from either the 181 POD to the Section 30 freshwater pond and then to the Rosa Pad 10 via the Rosa SWD #1 for well stimulation or directly from the Rosa 181 POD to Rosa Pad 10. (Appendix B - Figure 8) The temporary lay flat surface lines would be installed less than a month prior to the stimulation, and then removed when the well stimulation is completed.
   2. Stimulation pumping may be conducted adjacent to the Section 30 freshwater pond, the Rosa SWD #1 or Rosa Pad 9 and pumped to the Rosa Pad 10. If the freshwater lake tank is on pad 10, then pumping will take place on the pad.
   3. The aboveground stimulation and flowback lines would be installed adjacent to existing resource roads, existing pipeline corridors, and along the proposed pipeline corridor.
      (a) Surface waterlines will only be installed where needed, and each corridor will not contain more than two (2) 5.5-inch high-pressure, heavy walled steel pipelines and up to three (3) 12-inch (or less) heavy duty lay flat lines within at a time. Lay flat lines will only be used for freshwater transfer.
   4. In areas where surface waterlines traverse a side hill or steep slope, they will be secured with metal t-posts. All lines in service will be inspected every day, several times a day.
   5. All temporary lines would be removed following well stimulation activities.

D. Production Facility
   1. Production facilities would be located within a 240-by-80-foot facility area on the south- southeast end of the proposed well pad (Figure 12, Appendix B) to allow for maximum interim reclamation and revegetation of the well location.
   2. As practical, access will be a teardrop-shaped road through the production area to allow for maximum revegetation during interim reclamation.
   3. Within 90 days of installation, production facilities would be painted Juniper Green to blend with the natural color of the landscape and would be located, to the extent practical, to reasonably minimize visual impact.
   4. Berms will be constructed around all storage facilities sufficient in size to contain the storage capacity of tanks. Berm walls will be compacted with appropriate equipment to assure containment.
   5. After the completion phases and pipeline installation, portions of the project area not needed for operation will be reclaimed. When the well is plugged, final reclamation will occur within the remainder of the project area. Reclamation is described in detail in the Reclamation Plan (Appendix A).

5.0 Locations and Types of Water Supply

The Rosa Unit 609H, 610H, 611H, 612H, 613H and 614H wells will be horizontally drilled and will be completed via well stimulation (hydraulic fracturing). Sources of water for drilling and completion may

include produced, recycled, non-potable, and fresh water. LOGOS would ensure that all required permits have been obtained prior to utilizing water from any source. The fresh water may be purchased and/or leased from San Juan Basin Water Haulers Association or the San Juan Water Commission. These leased water rights are specifically designated for commercial and industrial use by LOGOS and will be obtained from the Navajo Reservoir at the permitted POD #181 on Bureau of Reclamation ("BOR") managed surface (Appendix B - Figure 8). Access to the Navajo Reservoir is on BOR land, and has been separately obtained through License Agreement Contract No. 21-LM-48-0001 granted to LOGOS by the BOR.

Water for drilling and completion may be supplied via surface water lines that will follow existing resource roads and the proposed pipeline routes from the Navajo Reservoir POD #181 to the Rosa Unit Pad 10. Alternatively, the surface water lines may travel from the POD #181 to the Section 30 freshwater pond via previously BLM-approved route, and then on to the Rosa Unit Pad 10 as shown in Appendix B – Figure 8. Water may also be piped from the Rosa Section 30 freshwater pond through LOGOS' existing water gathering system in areas where infrastructure is available. Alternatively, water may be truck hauled to location. The fresh water for drilling and completions will be stored either on Rosa Unit Pad 9 and/or on Rosa Unit Pad 10 in one or more lake tank(s), within permitted temporary use areas or in additional upright or laydown tanks on Rosa Unit Pad 9 and/or Rosa Unit Pad 10. When recycled water is used, it will be stored only in upright or laydown tanks.

LOGOS proposes to utilize produced water for drilling if sufficient volumes are available. Use of produced water from existing wells for drilling fluid is authorized under New Mexico State Regulation (NMAC 19.15.2.52). The barrels of water required for drilling each well could vary from 2,500 barrels to up to 10,000 barrels depending on the performance of the wells on Rosa Unit Pad 10. LOGOS may choose to use fresh water for drilling if sufficient produced water is not available or cannot be reasonably delivered to Rosa Unit Pad 10 in a timely manner.

It is estimated that 600,000 barrels (+/- 15%) of fresh or produced water would be required for completion of each 10,000 ft. well to be drilled on Rosa Unit Pad 10. This volume will vary with the length of the horizontal lateral length. Approximately 10% of produced water from completions operations may be recovered for reuse for subsequent operations, based upon factors including but not limited to program timing, permitting and availability and adequacy of storage facilities.

Pumping is expected to operate as much as 24 hours per day for up to 21 days or until sufficient water volume is achieved for the completion of two wells. Additional time would be required for more than two wells. The temporary surface lines would be in place longer to accommodate set up and removal, as well as the total duration of the well completions. LOGOS's current plan to hydraulically fracture two wells simultaneously may require up to 37 days to complete the stimulation program, and if four wells are being stimulated it would be up to double that amount of time.

Once fracturing operations have been completed, pigs would be sent through the fresh water temporary lines from the booster pump at Navajo Reservoir POD #181 towards the Rosa Unit Pad 10 to clear any remaining water and to minimize potential for leaks and waste during the rig down process. The fresh water pigged from the lines would flow into the lake tank(s), the Section 30 freshwater pond, upright tanks, and/or laydown tanks, and would subsequently be used for completion fluid, spraying lease roads, hauled to another project, or hauled for disposal at the permitted, LOGOS-operated Rosa SWD #1 well or Rosa SWD #2 well.

6.0 Construction Materials

The BLM-FFO will be notified (505-564-7600) at least 48 hours prior to the start of construction activities associated with the project. The construction phase of the project is anticipated to last

approximately 2 to 3 weeks. The Rosa Unit 10 well pad is within the Rosa Mesa Wildlife SDA, which has a Winter Closure COA.

A. No additional construction materials are anticipated for the creation of the pad or access road per the attached plat showing cut and fill in Figure 4 (Appendix B). Any topsoil removed during construction of the pad will be stored as shown on Figure 10 (Appendix B).
B. Construction and maintenance activities will cease when soil or road surfaces become saturated to the extent that construction equipment is unable to stay within the project area and/or when activities cause irreparable harm to roads, soils, or streams.

7.0 Methods for Handling Waste

A. Cuttings
   1. Drilling operations will utilize a closed-loop system. Drilling of the vertical section will be accomplished with water-based mud. All cuttings from the water-based mud section of the wellbore will be placed in roll-off bins and hauled to the Rosa Unit Section 23B or 23K cuttings disposal recycling containments. No blow pit will be used. LOGOS will follow Onshore Oil and Gas Order No. 1 regarding the placement, operation, and removal of closed-loop systems. Non-Oil based cuttings will be transported to cuttings pits Section 23K #001 and Section 23B #001 approved cuttings pits.
   2. Oil-based mud will be used in the horizontal lateral portion of the well and a closed-loop system will be used to eliminate potential impacts to surface and groundwater quality. A 30-mil reinforced liner or equivalent will be placed under the drill rig mats and all drilling machinery. This area will be enclosed by a containment berm and ditches, which will drain to sump areas for spill prevention and control. The containment berm will be ramped to allow access to the solids control area. The cuttings from the oil-based mud section of the wellbore will be placed in roll-off bins and hauled to the Envirotech disposal facility or any NMOCD approved licensed disposal facility.
   3. Closed-loop tanks will be adequately sized for containment of all fluids.
B. Drilling Fluids
   1. Drilling fluids will be stored onsite in above-ground storage tanks. Upon termination of drilling operations, the drilling fluids will be recycled and transferred to other permitted closed-loop systems or returned to the vendor for reuse, as practical. Currently it is planned to use NewPark Drilling Fluids as the drilling fluid vendor but that may change depending on logistics and availability. All residual fluids will be hauled to a commercial disposal facility such as the Envirotech disposal facility, or any NMOCD approved licensed disposal facility.
C. Spills
   1. Any spills of non-freshwater fluids will be immediately cleaned up and removed to an approved disposal site.
D. Sewage
   1. Portable toilets will be provided and maintained during construction, as needed.
E. Garbage and other water material
   1. All garbage and trash will be placed in a metal trash containment. The trash and garbage will be hauled off site and dumped in an approved landfill, as needed.
F. Hazardous Waste
   1. No chemicals subject to reporting under Superfund Amendments and Reauthorization Act Title III in an amount equal to or greater than 10,000 pounds will be used, produced, stored, transported, or disposed of annually in association with the drilling, testing, or completing

of these wells.

2. No extremely hazardous substances, as defined in 40 CFR 355, in threshold planning quantities will be used, produced, stored, transported, or disposed of annually in association with the drilling, testing, or completing of these wells.
3. All fluids (i.e., scrubber cleaners) used during washing of production equipment will be properly disposed of to avoid ground contamination or hazard to livestock or wildlife.

G. Completion Fluids (pre-frac):
1. One or more lake tanks, each up to 80,000 barrel capacity, would be installed at Rosa Unit Pad 10 (Figure 11 Appendix B) and/or the Rosa Pad 9 for short term storage of fresh water needed for well completions and potentially drilling operations. A lake tank may also be located on the Rosa Unit #201 pad, or the Rosa Unit 18C pad, or at the Rosa SWD #1. Only fresh water would be stored in the lake tank(s).
2. Additional storage tanks may be installed on Rosa Unit Pad 10 or Rosa Unit Pad 9, on any existing Rosa Unit well pad, or on the Rosa Unit SWD #1 for storage of fresh water and/or produced water, if needed for completions and for storage of flowback resulting from the fracturing operations. (Figure 11 Appendix B)

H. Produced Water (post frac):
1. LOGOS will attempt to recycle, and reuse produced water from the wells for use in drill-out and subsequent wells in the area as operations allow. Recycled produced water will be filtered, treated and stored in tanks on location (Figure 11 Appendix B). No recycled water will be stored in lake tanks.
2. Once operations are complete, LOGOS will dispose of produced water from these wells at one of the following facilities:
    a. Lybrook Yard WDW #1, API #30-039-27533, NMOCD permit #SWD-907, operated by Elm Ridge Resources, located in NE ¼, Section 14, Township 23 North, Range 7 West
    b. Jillson Federal #1, NMOCD order #R-10168, operated by Hilcorp Energy, located in NW ¼, Section 8, Township 24 North, Range 3 West
    c. Rosa Unit SWD #001, API #30-039-27055, NMOCD permit SWD-916, operated by LOGOS, located in SE ¼, Section 23, Township 31 North, Range 6 West
    d. Rosa Unit SWD #002, API #30-039-30182, NMOCD permit SWD-1236, operated by LOGOS, located in NW ¼, Section 25, Township 31 North, Range 5 West
    e. Basin Disposal, permit #NM-01-005, located in the NW ¼, Section 3, Township 29 North, Range 11 West
    f. Sunco SWD #001, API #30-045-28653, NMOCD permit SWD-457, operated by Key Energy, located in NW ¼, Section 2, Township 29 North, Range 12 West
    g. Any other NMOCD approved licensed water disposal facility
3. Water will be piped thru the existing subsurface water gathering system in the Rosa Unit where possible and will be hauled by truck where infrastructure has not yet been installed. Some produced water may also be used in drilling and completion operations as an alternative disposal method.

8.0 Ancillary Facilities

Standard drilling operation equipment that will be on location includes drilling rig with associated equipment, temporary trailers equipped with sleeping quarters necessary for company personnel, toilet facilities, and trash containers.

Any existing Rosa Pad may possibly be used for the staging or storage of equipment during the

drilling and completion process. Only existing disturbances will be utilized, no new disturbances will be created. This may include offset well pads (producing or TA'ed), proposed booster stations for the temporary lay flatlines, existing disturbances around the Rosa SWDs and existing disturbances around the Rosa freshwater pond.

9.0 Well Site Layout

The approximate cuts and fills and well pad orientation for the well pad are shown on the construction plats in the APD permit package and on Figure 4 (Appendix B). Rig orientation and the location of drilling equipment are depicted on Figure 10 (Appendix B). The layout of the completions rig is depicted on Figure 11 (Appendix B). The interim reclamation/long-term disturbance layout of the well pad site is depicted on Figure 12 (Appendix B) and is described below.

Drilling of the proposed Rosa well would require constructing a well pad 310 feet by 555 feet (3.95 acres), with an additional 50-foot construction buffer zone on all four sides (2.22 acres). Total disturbance from the proposed well pad would be approximately 6.17 acres. No additional disturbance beyond the already approved pad site is requested at this time. After completion, a 16-foot-wide teardrop driving surface (0.035 acre) and the facilities area (0.44 acre) will remain unreclaimed for the life of the well. A working area including the center of the teardrop and a level surface surrounding the well heads (1.25 acres) will not be recontoured; however, they will be reseeded. The remainder of the well pad and construction zone (3.615 acres) will be recontoured and reseeded.

A. Well Site Layout Details

1. The construction phase of the project will commence upon receipt of the approved APDs or as logistics, planning, and commodity prices allow.
2. Vegetation and topsoil removal, storage, and protection are described in detail in the Reclamation Plan (Appendix A), and the location of the topsoil storage is on Figure 10 (Appendix B).
3. The well pad will be leveled to provide space and a level surface for vehicles and equipment. Excavated materials from cuts will be used on fill portions of the well pad to level the pad. Construction of the Rosa Pad 9 will require no cut and fill. No additional surfacing materials will be required for construction.
4. As determined during the onsite on May 27, 2022, the following best management practices will be implemented:
    a. Culverts will be installed where needed as needed.
    b. Any additional need for water control features such as diversions and/or silt traps, will be determined at interim reclamation.
    c. Diversions will be installed upon reclamation
    d. No additional fill would be required to construct the pad.
    e. Facilities will be painted Juniper Green
    f. Upon site clearing, vegetation including trees that measure less than 3 inches in diameter (at ground level) and slash/brush, will be chipped or mulched and incorporated into the topsoil as additional organic matter. If trees are present, all trees 3 inches in diameter or greater (at ground level) will be cut to ground level and delimbed.
    g. The top six inches of topsoil will be stripped (if available) and stored separately on the construction buffer zone as shown in Figures 10, 11 & 12 (Appendix B).
    h. All project activities will be confined to permitted areas only.

i. Construction equipment may include chain saws, a brush hog, scraper, maintainer, excavator, trencher, backhoe, and a dozer.
j. One or more lake tanks up to 80,000 barrel capacity would be installed at Rosa Unit Pad 10 as shown on Figure 11 (Appendix B) and/or the Rosa Unit Pad 9 for short term storage of fresh water needed for well completions. No recycled or produced water would be stored in lake tank(s).
k. Additional storage tanks may be installed on Rosa Unit Pad 9 or Rosa Unit Pad 10 for storage of fresh water and/or produced water if such storage is needed for drilling, completions and/or flowback from fracturing operations. Such potential additional storage tanks are shown on Figure 11 Appendix B. All water remaining in these tanks after completions would be hauled away by truck for reuse in other oil and gas operations or for disposal at permitted locations.
l. Facilities to maintain stormwater BMPs will be installed and maintained as necessary.
m. If drilling has not been initiated on the well pad within 120 days of the well pad being constructed, the operator will consult with the BLM to address a site-stabilization plan.

10.0 Plans for Surface Reclamation

A Reclamation Plan was prepared in accordance with Procedure B of the BLM-FFO Bare Soil Reclamation Procedures. Procedure B is required for surface disturbing actions, grants, or permits authorized by the BLM-FFO resulting in bare mineral soil across an area greater than or equal to 1 acre, not including a BLM-FFO-approved working area. Based on observations made during the pre-disturbance site visit, the BLM-FFO representative has determined that the vegetation community which best represents the proposed project area is Sagebrush Shrubland Community.

The noxious weed pre-construction survey results and methods for controlling and preventing noxious weeds are provided in the Reclamation Plan (Appendix A). Prior to construction equipment entering the project area, operator will use BMPs to control noxious weeds. The operator will comply with applicable federal and state laws and regulations concerning the use of pesticides. The operator will acquire approval from the BLM-FFO prior to the use of pesticides.

11.0 Surface Ownership

The project is located on BLM-managed and on BOR-managed land. The field office contact information is:

Bureau of Land Management Farmington Field Office
6251 College Boulevard, Suite A
Farmington, New Mexico 87401
(505) 564-7600

12.0 Other Information

A. Construction contractors will call New Mexico One-Call (or equivalent) to identify the location of any marked or unmarked pipelines or cables located in proximity to the proposed well pad,

access road, and pipeline at least two working days prior to ground disturbance.

B. The project area has been surveyed by Adkins Consulting Inc (ACI). The cultural survey report (LAC Report No. 2015-6e) was submitted to the BLM-FFO. Cultural mitigation will occur if any is listed in the approved APDs.
C. All activities associated within the construction, use/operation, maintenance, and abandonment or termination of the Rosa Pad 10 are limited to areas approved in the Rosa Unit 609H, 610H, 611H, 612H, 613H or 614H APDs.
D. All LOGOS approved locations may be utilized for staging or storing equipment during drilling or completions operations.
E. All BLM-FFO general COAs will apply to this action.

Surface Use Reclamation Plan Appendix A

Rosa Unit Pad 10 Natural Gas Well Development Project

August 2022

United States Department of the Interior
Bureau of Land Management

Surface Reclamation
&
Re-vegetation Plan

For the:

Rosa Unit Pad 10

Sponsored by:

LOGOS Resources, LLC

August 2022

U.S. Department of the Interior Bureau of Land Management
Farmington District Farmington Field Office
6251 N. College Blvd., Ste. A Farmington, NM 87402
Phone: (505) 564-7600
FAX: (505) 564-7608

BLM

Contents

Reclamation Plan (Procedure B)

Applicant	LOGOS Resources, LLC (LOGOS)
Project Type	Gas Well
Well, Oil and Gas Lease, or Right-of-Way (ROW) Name	Rosa Unit #610H
Legal Location of well pad	1817' FSL & 463' FWL, Section 23, T31N, R6W, NMPM Lat: 36.882859°N Long: 107.439600°W Datum: NAD1983

Introduction

This reclamation plan has been prepared based on requirements and guidelines of the Bureau of Land Management (BLM) Farmington Field Office (FFO) Bare Soil Reclamation Procedures (BLM 2013a) and Onshore Oil and Gas Order No. 1 (43 CFR Part 3160).

The LOGOS contact person for this Reclamation Plan is:

Marcia Brueggenjohann
505-787-2220 (Office)
918-284-2541 (Cell)
MBrueggenjohann@LogosResourcesllc.com

Vegetation Reclamation Procedure B

Completion of a Vegetation Reclamation Plan based on Procedure B of the BLM/FFO Bare Soil Reclamation Procedures is recommended given that the proposed action would result in bare mineral soil **across an area greater than or equal to 1 acre**, not including working areas routinely used to operate and maintain facilities or improvements (BLM 2013a).

Revision of the Reclamation Plan

LOGOS may submit a request to the BLM to revise the Reclamation Plan at any time during the life of the project in accordance to page 44 of the Gold Book (USDI-USDA 2007). LOGOS will include justification for the revision request.

Project Description

LOGOS' Rosa Unit Pad 10 gas well pad and associated project features exist on Bureau of Land Management Lands. Included as part of the project will be an access road and well-connect pipeline.

LOGOS proposes to construct eight new gas wells that would develop federal minerals. A new pipeline would be required. The proposed development would be located in the San Juan Basin of northwestern New Mexico (NM) approximately 34 miles west of Dulce, New Mexico, in Section 23, Township 31N, Range 6W, Rio Arriba County, New Mexico. Local terrain consists of hilly Sagebrush/grass and Pinyon/Juniper vegetation communities.

Estimated Total Area of Disturbance

The project would result in a total of 14.52 acres of disturbance with approximately 14.52 acres of new surface disturbance. LOGOS would need to add a small section of access road (0.19 acres), but mostly utilize an existing roadway to eliminate the total amount of new disturbance. During interim reclamation, approximately 11.29 acres of the total proposed surface disturbance would be fully reclaimed, and 1.50 acres would be reseeded (but not recontoured). The remainder (1.73 acres) would be stabilized and used as a working surface throughout the life of the proposed project and would be fully reclaimed during final reclamation.

Well Pad

The well pad and access road will be new disturbance. The dimensions of the well pad are 655' x 410' (6.17 acres). The well pad will also have a 50-foot buffer construction zone surrounding the perimeter of the well pad. The proposed well pad would require a maximum fill of approximately 5' on corner 6 and 18' on corner 2, and a cut of 24' on corner 5 and 4' on corner 3. The entire area will be utilized during construction, setting of production equipment, and drilling and completion phases. After completion, a 16-foot-wide teardrop driving surface (0.04 acre) and the facilities area (1.50 acre) will remain unreclaimed for the life of the well. A working area including the center of the teardrop and a level surface surrounding the well heads (1.50 acres) will not be recontoured; however, they will be reseeded. The remainder of the well pad and construction zone (3.13 acres) will be recontoured and reseeded.

Well-connect pipeline corridor

The pipeline will have a 30-foot ROW and will be 11,853.10' long (2.24 miles). The pipeline will run along

existing ROW disturbance to avoid new disturbance. Total disturbance will be 8.16 acres. All disturbance will be fully reclaimed.

Surface Waterlines

A temporary surface water line (590.0' long) will be used to transport water from Rosa Unit Pad 9 to Rosa Unit Pad 10. The temporary line will be removed following all well stimulation activities. The aboveground stimulation and flowback lines would be installed adjacent to existing resource roads, and existing pipeline corridors. Surface waterlines will only be installed where needed, and each corridor will not contain more than two (2) 5.5-inch high-pressure, heavy walled steel pipelines and up to three (3) 12-inch (or less) heavy duty lay flat lines within at a time. Lay flat lines will only be used for freshwater transfer. There will be no disturbance from the surface lay flat.

Access Road

The new access road will be 276.50' long and will have a 30-foot ROW (0.03 acres). Total disturbance for the access road will be 0.19 acres. The access road will be long-term disturbance.

All surface disturbance associated with the well pad would be reclaimed to a BLM-approved working area. Production equipment will be placed on the location in such a manner to allow safe access to produce and service the well/facilities while minimizing long-term disturbance and maximizing interim reclamation. As practical, access will be provided by a tear-drop shaped road through the production area. Existing roads and pipeline corridors will be utilized to reduce the need for new disturbance.

Table 1. Proposed Action Surface Disturbance

Project Feature	Surface Disturbance		Acreage Following Post Construction Reclamation		
	Total	New	Fully Reclaimed	Reseed Only	Long-term Disturbance
Well Pad + Construction Zone	6.17	6.17	3.13	1.50	1.54
Access Road	0.19	0.19	-	-	0.19
Well-Connect Pipeline Corridor	8.16	8.16	8.16	-	-
TOTAL	14.52	14.52	11.29	1.50	1.73

Pre-Disturbance Site Visit and Site Conditions

This plan is based on observations made during pre- and post-disturbance site visits and compiled from information obtained from consultation with agencies including BLM/FFO and LOGOS. The pre-disturbance site visit occurred on June 7, 2022.

Vegetation Community

Most of the area has been previously disturbed. Previously disturbed vegetation consists of mixed desert shrub, comprised of widely scattered, Big Sage brush (Artemesia tridentada), Beaver tail cactus (Opuntia sp.), Viviporus Foxtail cactus (Escobaria vivipara), Pinyon pine (Pinus edulus), Juniper (Juniperus monosperma), Four wing salt bush (Atriplex canescens), Broom snakeweed (Gutierrezia sarothrae), Rabbit brush (Ericameria nauseosa), Musk thistle (Carduus nutans) Noxious weed, Bind weed (Convolvulus arvensis), Plantain (Plantago patagonica), Claret cup hedgehog cactus (Echinocereus triglochidiatus), and Wolfberry (Lycium torreyi).

Grass cover is represented by Squirel tail grass (Elymus elymoides), Bind weed (Convolvulus arvensis), Western Wheat (Pascopyrum smithii), Kochia (Bassia scoparia), Blue grama (Bouteloua gracilis), Cheat grass (Bromus tectorum), Indian rice grass (Oryzopsis hymenoides), Scarlet globemallow (Sphaeralcea coccinea), Western tansy mustard (Descurania pinnata), Storks bill (Erodium circutarium), Purple three-awn (Aristida purpurea), Galletta grass (Galletta jamesii), and Needle and thread grass (Stipa comata).

Surrounding the existing pad is undisturbed dense pinyon-juniper woodland. Undisturbed vegetation in this area includes piñon-juniper woodland dominated by piñon pine (*Pinus edulis*) and Utah juniper (*Juniperus osteosperma*), with an understory dominated by broom snakeweed (*Gutierrezia sarothrae*), big sagebrush (*Artemisia tridentata*),) Indian ricegrass (*Achnatherum hymenoides*), Blue Grama (*Bouteloua gracilis*), and James' galleta grass (*Pleuraphis jamesii*).

Soil composition primarily consists of well drained Orlie sandy loam, 1 to 8 percent slopes (USDA 2021).

Proposed Reclamation Seed Mix

Disturbance will be re-contoured and topsoil will be redistributed and prepared for seeding by the construction contractor. Ripping, disking, and seeding of the site will be done by LOGOS or the reclamation contractor. Details describing seedbed preparation can be found below. LOGOS would use a BLM-approved seed mixture appropriate for reclamation within a Sagebrush/grass community (see Table 2 below).

*Table 2. Reclamation Seed Mix**

Common Name	Scientific Name	Cultivar	Pounds/PLS/acre
Western wheatgrass	*Pascopyrum smithii*	Arriba	3.00
Indian ricegrass	*Achnatherum hymenoides*	Paloma or Rimrock	4.00
Sand dropseed	*Sporobolus cryptandrus*	VNS	0.50
Blue flax	*Linum lewisii*	Apar	0.25
Rocky Mtn. bee plant	*Cleome serrulata*	Local collection or VNS	0.25
Bottlebrush squirreltail	*Elymus elymoides*	Unknown	3.00
Fourwing saltbush	*Atripliex canescens*	Delar	2.00
TOTAL PLS/ACRE			**13.00**

** Smith, 2019, Bureau of Land Management, Natural Resource Specialist*

Vegetation Reclamation Standards

Requirements for determining reclamation and if it is successfully completed for the selected vegetation community are determined by the reclamation percent cover standards for the community, as outlined in Tables 3 and 4. Meeting these standards during post-disturbance monitoring indicate the attainment of vegetation reclamation standards.

Table 3. Reclamation Goal for Sagebrush/grass Community Cover

Functional Group	Percent (%) Foliar Cover	Common Species
Trees/Shrubs/Grasses/Forbs	≥35	Utah Juniper, piñon pine; big sagebrush, four- wing saltbush, antelope bitterbrush, alkali sacaton, Western wheatgrass, Indian ricegrass, galleta, sand dropseed, scarlet globemallow, wooly Indianwheat, fleabane, *Penstemon* sp., buckwheat, threadleaf groundsel
Invasive/undesirables **10% allowed toward meeting standard of 35%.**	≤10	Plants that have the potential to become a dominant species on a site where its presence is a detriment to revegetation efforts or the native plant community. Examples of invasive species include cheatgrass, Russian thistle, and kochia.

Table 4. Reclamation Goal for Pinyon-juniper Community Cover

Functional Group	Percent (%) Foliar Cover	Common Species
Trees/Shrubs/Grasses/Forbs	>20	Utah Juniper, piñon pine; Utah serviceberry, alderleaf mountain mohagany, rubber rabbitbrush, cliff fendlerbrush, big sagebrush, antelope bitterbrush, green jointfir, Bigelow sagebrush, broom snakeweed, black sagebrush, Indian ricegrass, blue grama, bottlebrush squirreltail, muttongrass, needle-and-thread grass, sand dropseed, threeawn grass, prairie Junegrass, Arizona fescue, western wheatgrass, Wright's birdbeak, Eriogonum spp., hairy false goldenaster, pingue rubberweed, multi-lobed senecio, scarlet globemallow, *Penstemon* sp., Wyoming paint brush, and machaeranthera spp.
Invasive/undesirables **10% allowed toward meeting standard of 35%.**	≤10	Plants that have the potential to become a dominant species on a site where its presence is a detriment to revegetation efforts or the native plant community. Examples of invasive species include cheatgrass, Russian thistle, and kochia.

Pre-Disturbance Weed Survey

During the pre-disturbance site visit, the proposed action area was surveyed for noxious weeds listed on the New Mexico Department of Agriculture's Class A and Class B list. No noxious weeds were observed during the field survey. LOGOS will follow BLM requirements and instructions for weed management and treatments.

Pre-Disturbance Soil Evaluation

Soil testing was not completed for the proposed action area.

Pre- and Post-Disturbance Site Photographs

Photographs were taken of pre and post-disturbance conditions using a cell phone camera and each photograph in the Surface Reclamation Plan is notated with the direction the photograph was taken. The photograph locations are listed in Table 5.

Table 5. List of Pre-Disturbance Site Photographs

Photographs	Location Description
1, 2, 3, 4	From well pad corners, looking toward the center
5, 6, 7, 8	From first well pad head, looking each cardinal direction
9, 10, 11, 12	From second well pad head, looking each cardinal direction
13	Pipeline along road looking toward project
14	Lay flat at station looking E along line

Location:	Well Pad SW Corner (3)		
Photo Number	1	**Photo Direction:**	NE

Location:	Well Pad NW Corner (5)		
Photo Number	2	**Photo Direction:**	SE

Location:	Well Pad SE Corner (2)		
Photo Number	3	**Photo Direction:**	NW

Location:	Well Pad NE Corner (6)		
Photo Number	4	**Photo Direction:**	SW

Location:	North Well Head		
Photo Number	5	**Photo Direction:**	North

Location:	North Well Head		
Photo Number	6	**Photo Direction:**	East

Location:	North Well Head		
Photo Number	7	**Photo Direction:**	South

Location:	North Well Head		
Photo Number	8	**Photo Direction:**	West

Location:	South Well Head		
Photo Number	9	**Photo Direction:**	North

Location:	South Well Head		
Photo Number	10	**Photo Direction:**	East

Location:	South Well Head		
Photo Number	11	**Photo Direction:**	West

Location:	South Well Head		
Photo Number	12	**Photo Direction:**	South

Location:	Pipeline along road looking toward project		
Photo Number	13	**Photo Direction:**	North

Location:	Lay flat at station looking E along line		
Photo Number	14	**Photo Direction:**	East

Reclamation Techniques for Successful Revegetation

Vegetation and Site Clearing

Woody vegetation, such as large shrubs and trees, will be cleared from the staked project area and stockpiled for later use as soil mulch, visual mitigation, and/or wildlife shelter. Trees larger than 6 inches in diameter will be cut in 4 foot lengths and stacked off site for public use. Smaller logs and trees (less than 6-inches in diameter) removed during construction will be chipped or mulched and incorporated into topsoil, along with all slash, as additional organic matter during reclamation.

Surface rocks (where present and useful for reclamation) will be stockpiled adjacent to the topsoil stockpile. During reclamation activities, the surface rock will be placed within the area of reclamation for erosion control or in a manner that visually blends with the adjacent undisturbed area.

Topsoil Stripping, Storage, and Replacement

If available, the upper 6 inches of topsoil will be stripped, following vegetation and site clearing during construction activities. LOGOS (or its contractor) will take care not to mix topsoil with the underlying subsoil horizons and will stockpile the topsoil separately from subsoil or other excavated material along the western edge of location for redistribution for reclamation. Topsoil and sub-surface soils will be replaced in the proper order, prior to final seedbed preparation. Stained topsoil will be stored separately to facilitate removal and reclamation. Stockpiled topsoil will be utilized, and amendments added if necessary, for proper revegetation.

Water Management/Erosion Control Features

LOGOS will use appropriate erosion control/water management design features within the proposed action area. Potential erosion control or water management features that may be used include (but are not limited to), water bars or rolling dips for roads, sediment basins or sediment traps, check dams, silt fencing, outlet protection for culverts, erosion control blankets or geotextiles, and straw wattles.

LOGOS (or its contractors) will use erosion control blankets, straw bales, or straw wattles as appropriate to limit erosion and sediment transport from any stockpiled soils. A silt trap will be installed at reclamation in the southeast corner of the pad and a thorough inspection of any other drainage issues will be conducted and drainage systems, if any, will be identified.

Seedbed Preparation

For cut and fill slopes, initial seedbed preparation will consist of backfilling and re-contouring to achieve a configuration as close to pre-disturbance conditions as possible. Areas to be reclaimed will be re-contoured to blend with the surrounding landscape, emphasizing restoration of existing drainage patterns and landform to pre-construction condition, to the extent practicable.

Seedbed preparation of compacted areas will be ripped to a minimum depth of 18 inches. Disking will

be conducted if large clumps or clods remain after ripping. Any tilling or disking that occurs along the contour of the slope and seed drills will also be run along the contour to provide terracing and prevent rapid run- off and erosion. If broadcast seeding is used, a dozer or other tracked equipment will track perpendicular to the slope prior to broadcast seeding.

Following final contouring, the backfilled or ripped surfaces will be covered evenly with stockpiled topsoil. Final seedbed preparation will consist of raking or harrowing the spread topsoil prior to seeding to promote a firm (but not compacted) seedbed without surface crusting. Seedbed preparation may not be necessary for topsoil storage piles or other areas of temporary seeding.

Soil Amendments

Amendments will be used if determined necessary by BLM for successful reclamation.

Seeding

Seeding will occur within 90 days of well completion or 120 days from spud date.

A disc type drill with two boxes for various seed sizes will used. The drill rows will be 8-10 inches apart and seed planted ½ to 1 inch deep. Where slopes are too steep for contour drilling a hand seeder will be utilized. In situations where differing planting depths are not practicable using available equipment, the entire seed mix will be planted no deeper than 0.25 inch.

Drill seeding may be used on well-packed and stable soils that occur on gentler slopes and where equipment and drills can safely operate. Where drill seeding is not practicable due to topography, the reclamation contractor will hand-broadcast seed. Broadcast application of seed requires a doubling of the drill-seeding rate. The seed will then be raked into the ground so the seed is planted no deeper than 0.25 inch below the surface.

Mulching

Hand seeding with hydro-mulch, excelsior netting, and/or mulch with netting shall be required on slopes in excess of 1H:1V (1 horizontal to 1 vertical – equivalent to a 45 degree slope). Mulch should be grass or straw spread at 2,000 to 3,000 pounds per acre, or approximately 1 to 2 inches deep. Mulching will consist of crimping certified weed-free straw or certified weed-free native grass hay into the soil.

Straw or native grass hay mulch can be applied by hand broadcasting or blowing to a relatively uniform depth of 2 to 3 inches, equivalent to a rate of approximately 2 tons per acre (one 74-pound bale per 800 square feet). When applied properly, approximately 20 to 40 percent of the original ground surface will be visible.

Straw or native grass hay mulch will then be anchored using one of the following methods:

- Hand Punching – a spade or shovel is used to punch mulch into the topsoil at 1-foot intervals until all areas have mulch standing perpendicular to the slope and the mulch is embedded at least 4 inches into the soil.
- Roller Punching – a roller is used to spread mulch over an area; the roller is equipped with straight studs not less than 6 inches long, from 4 to 6 inches wide, and approximately 1 inch thick.
- Crimper Punching – similar to roller punching, a crimper is used over the soil. The crimper has serrated disk blades about 4 to 8 inches apart that force the mulch into the soil. Crimping should be done in two directions with the final pass across the slope.

Mulch applications in extremely clayey soils should be evaluated carefully to avoid developing an adobe mixture. In these cases, a soil amendment may be beneficial.

Noxious and Invasive Weed Control

Inspection of the project area for noxious or invasive weeds listed by New Mexico Department of Agriculture as Class A or Class B will occur after earthwork and seeding activities. LOGOS will follow BLM requirements and instructions for weed treatments, including the period of treatment, approved herbicides that may be used, required documentation to be submitted to the BLM after treatment, and any other site-specific instructions that may be applicable. LOGOS will manage weeds at the proposed site with the following general practices:

- Any "listed" weeds will be treated prior to commencement of construction to prevent incorporation into the soil.
- Equipment will be inspected and cleaned prior to entering the construction site, and earthmoving equipment will be cleaned prior to exiting the site.
- Potential weed introduction will be minimized by using only weed-free seed mix, straw, mulch or other materials that may be brought to the site.
- Ongoing weed inspection and appropriate treatment will continue until percentage cover standards have been attained and final abandonment has occurred.

Fencing

Fenced re-seeded area is encouraged and optional but, failure of seed germination and growth as a result of livestock and wildlife grazing is strictly the responsibility of the contractor, company completing project. Re-seeding shall be repeated until material materials are well established.

Disturbance to existing fences and other improvements on public land will be minimized and will be promptly repair to at least their former state. Their functional use will be maintained at all times. The owner of any improvement will be contacted prior to disturbing them

- Each fence crossed by will be H-braced and secured on both sides to prevent slacking of the wire, before cutting the wire. The opening thus created will be temporarily closed as necessary during construction to prevent passage of livestock. Upon completion of construction, install a cattle guard with an adjacent 16

foot gate. The cattle guard shall be constructed to Bureau of Land Management specifications. Cattle guards will be kept clean and repaired or replaced when needed.

- A minimum of 10 feet of undisturbed surface will be maintained between fence lines and roads that are constructed parallel to fences.
- Gaps opened in natural barriers used for livestock control during construction will be fenced to prevent drift of livestock, as directed by the AO.

Monitoring Requirements

Monitoring will be completed according to BLM-FFO Bare Soil Reclamation Procedure B (BLM 2013b). Monitoring activities will be initiated after the project is completed (Interim Monitoring), during the post- disturbance earthwork, and seeding inspection process.

Percentage cover will be monitored annually until attainment of the vegetation reclamation cover standard has been met. LOGOS will keep a record of the monitoring for future submittal to the BIA and/or BLM at reclamation attainment.

Interim Reclamation

Initiation

During the post-disturbance inspection at the project site, the BLM-FFO representative (in collaboration with the LOGOS Representative) will determine site-specific monitoring locations for photo point monitoring and vegetation line point intercept transects. The BLM-FFO will GPS the monitoring locations, take the initial monitoring photographs, and complete the initial monitoring report within 60 days of the post-disturbance earthwork and seeding inspection. The initial report will be available from the BLM-FFO.

Annual Monitoring and Reporting

LOGOS will be responsible for annual monitoring of the photo points and the vegetation line point intercept transects for the on-lease project starting two years after the completion and approval of the earthwork and seeding. Monitoring may occur during any time of the year. LOGOS will submit the initial monitoring report to the BLM by December 31 of the year monitored.

Vegetation line point intercept transects will be monitored annually by LOGOS until attainment of vegetation reclamation standards is met.

Attainment of Vegetation Reclamation Standards

When vegetation on a reclaimed site appears to meet the required percent revegetation standard (see Section 3.3), LOGOS may request BLM-FFO concurrence that vegetation percent cover standards have been attained any time after two calendar years of completion of earthwork and seeding. LOGOS will

submit a written report identifying that revegetation standards have been attained. The BLM-FFO will reply to the operator to confirm concurrence (or not) with a rational for the determination within 60 days of receiving the request.

If the revegetation standards are not attained, LOGOS and the BLM-FFO will analyze the issues that may have contributed to vegetation reclamation failure or lack of meaningful progress. Remedial actions will be developed in collaboration with the BLM if vegetation percent cover standards are not being attained.

Long-Term Monitoring

After the required percent revegetation standard has been attained, LOGOS will begin long-term monitoring. Every fifth year after attainment, LOGOS will monitor the site at all established photo points to ensure the site remains productive and stable.

Final Abandonment

Upon final abandonment, LOGOS will file for ROW Grant termination with the BLM. LOGOS would relinquish ROW Grants for the well pad and access roads. Surface disturbances within the ROW Grant areas will be returned to pre-disturbance conditions as practicable according to BLM procedure.

Ninety days prior to termination of the right-of-way the holder shall contact the Authorized Officer (AO) to arrange a joint inspection of the ROW. This inspection will be held to agree to an acceptable termination (and rehabilitation) plan. The plan will include, but is not limited to, removal of facilities, drainage structures, or surfacing material, re-contouring, top soiling or seeding. The AO must approve the plan in writing prior to the holder's commencement of any termination actions.

If, upon abandonment of wells, the retention of access road is not considered necessary for the management and multiple use of the natural resources, it will be ripped a minimum of 12" in depth. After ripping, water bars will be installed. All ripped surfaces are to be protected from vehicular travel by construction of a dead end ditch and earthen barricade at the entrance to these ripped areas. (Re-seeding of affected areas may be required).

The well will be abandoned per BLM and New Mexico Oil Conservation Division (NMOCD) regulations. This includes site preparation which may require gouging, scarifying, dozer track-walking, mulching, fertilizing, seeding and planting. Any topsoil removed during P&A operations will be respread. The disturbed areas will be seeded with the recommended BLM/FFO seed mix.

If 1 acre or more of bare soil results from earthwork required in preparation for final abandonment, LOGOS will follow the Vegetation Reclamation Plan in accordance with Procedure B of the BLM-FFO Bare Soil Reclamation Procedures (2013a).

If final abandonment or relinquishment earthwork results in less than 1 acre, but more than 0.1 acre of bare soil, LOGOS will initiate the Vegetation Reclamation Plan in accordance with Procedure A of the BLM-FFO Bare Soil Reclamation Procedures. Disturbed areas less than 0.1 acre are expected to revegetate naturally from seed sources adjacent to the disturbance (2013a).

Revegetation percent cover standards will be attained, documented, and submitted to the BLM-FFO by LOGOS, or an exception granted before the BLM-FFO will approve a final abandonment notice (FAN) or relinquishment.

Cessation of Monitoring

Monitoring requirements will remain in effect as long as the permit, grant, or authorization remains in force and until all infrastructure or associated facilities are abandoned by established BLM procedure and a FAN or relinquishment is issued by the BLM-FFO. LOGOS will document that percent cover standards have been obtained when submitting a request for a FAN or a relinquishment.

References

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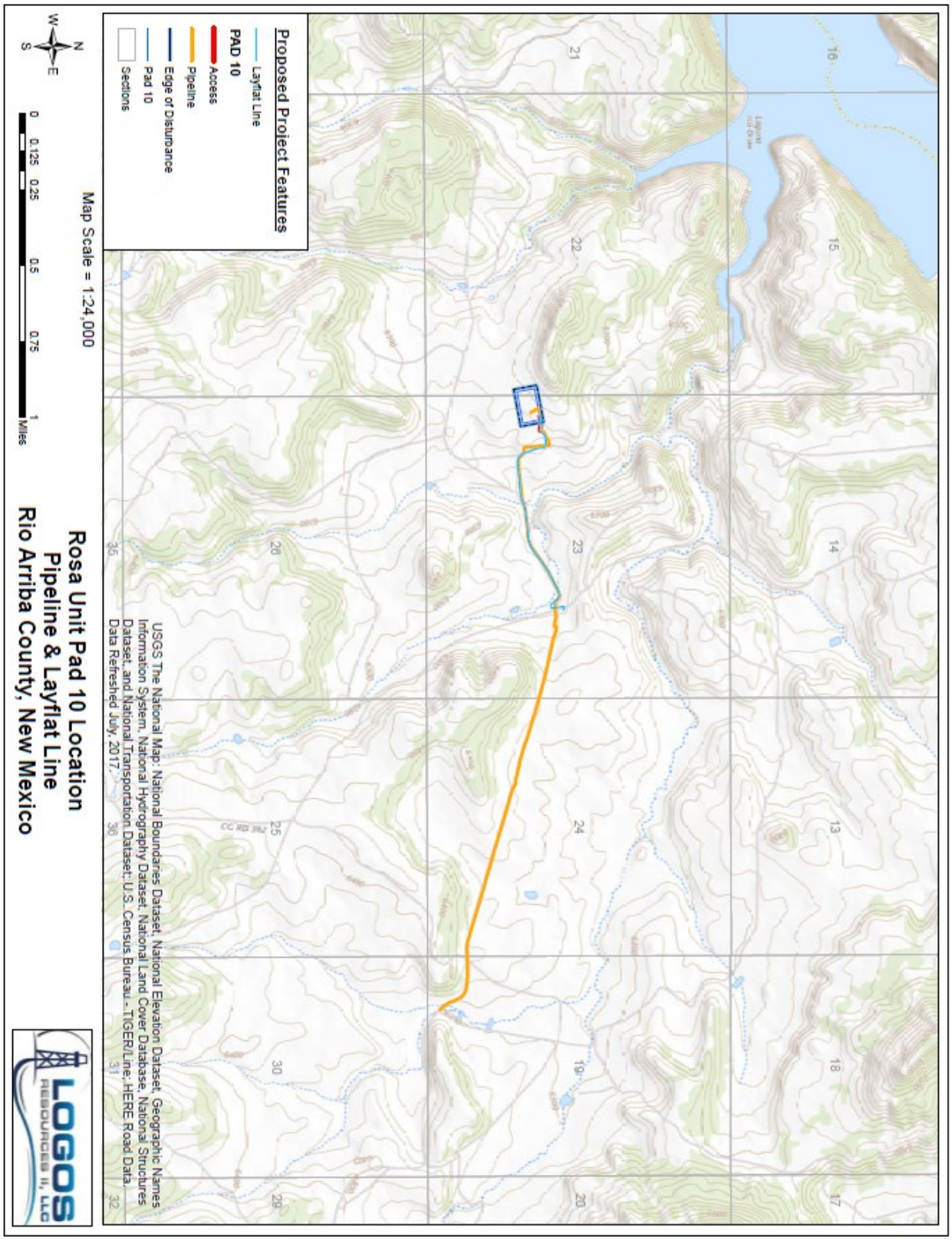
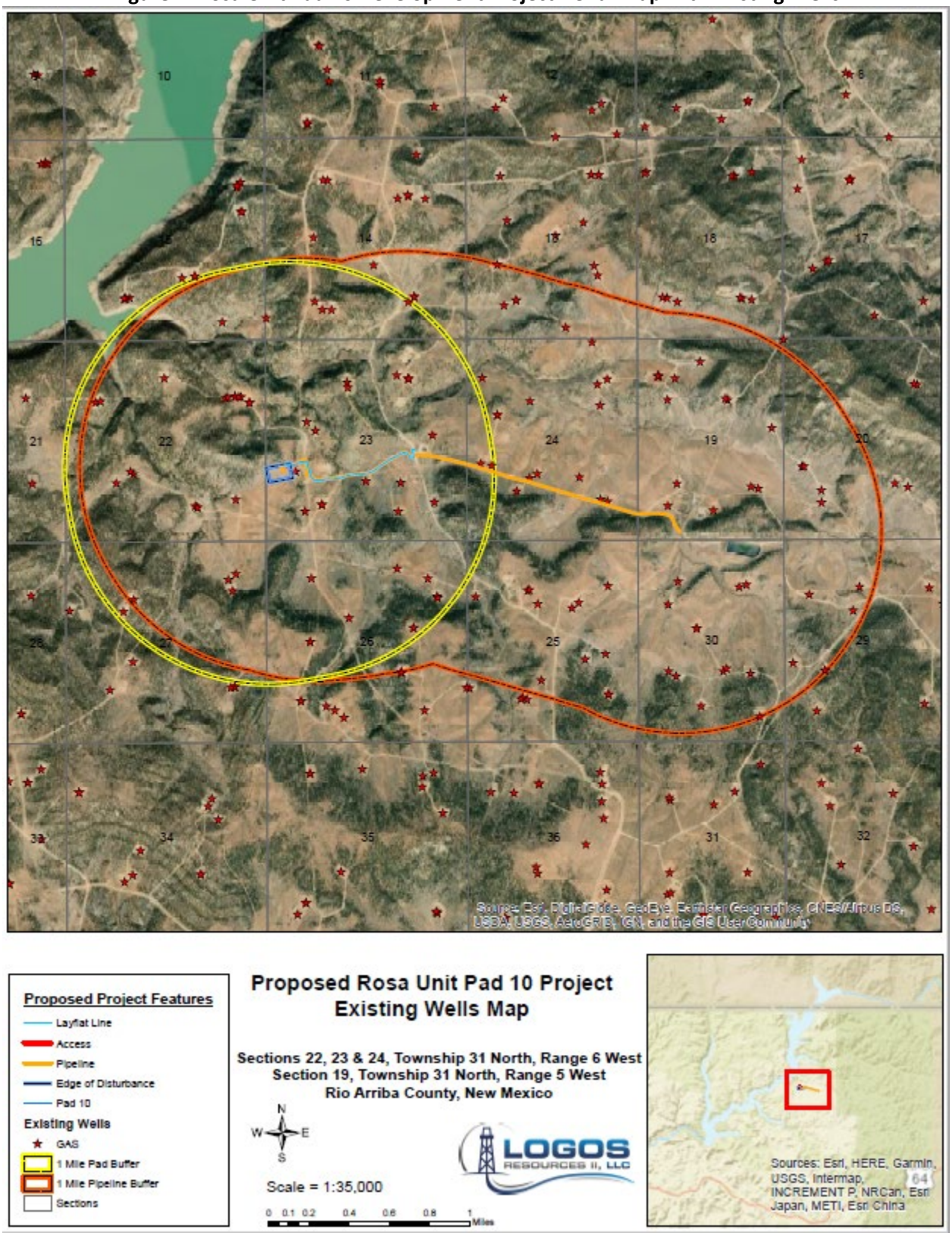
Figures
Appendix B

Figure 1. Rosa Unit Pad 10 Development Project Topographic Map



(Access road shown in red)

Figure 2. Rosa Unit Pad 10 Development Project Aerial Map with Existing Wells



(Access road in Red)

Figure 3. Rosa Unit Pad 10 Plat showing 276.7' Access Road

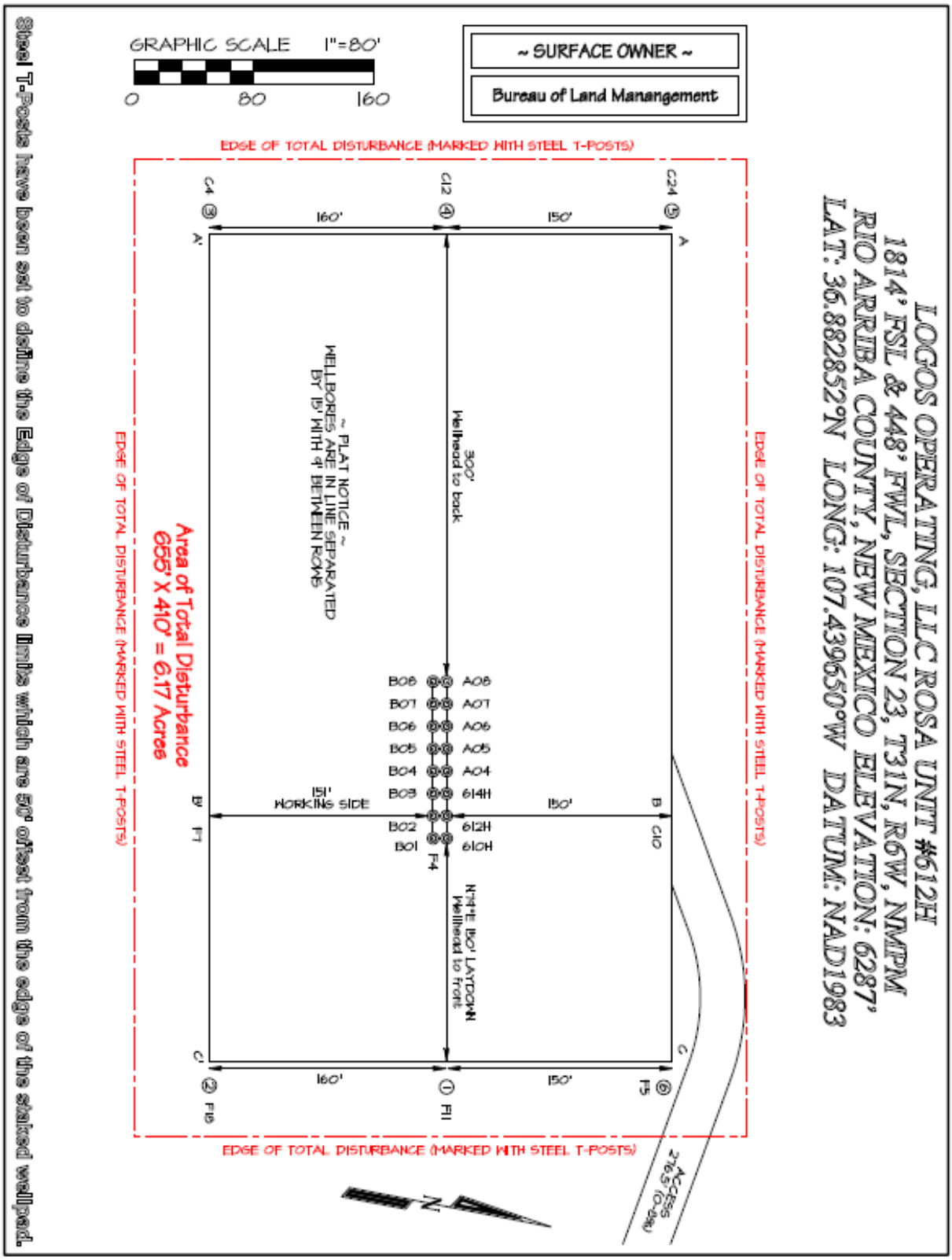


Figure 4. Rosa Unit Pad 10 Cut and Fill Diagram

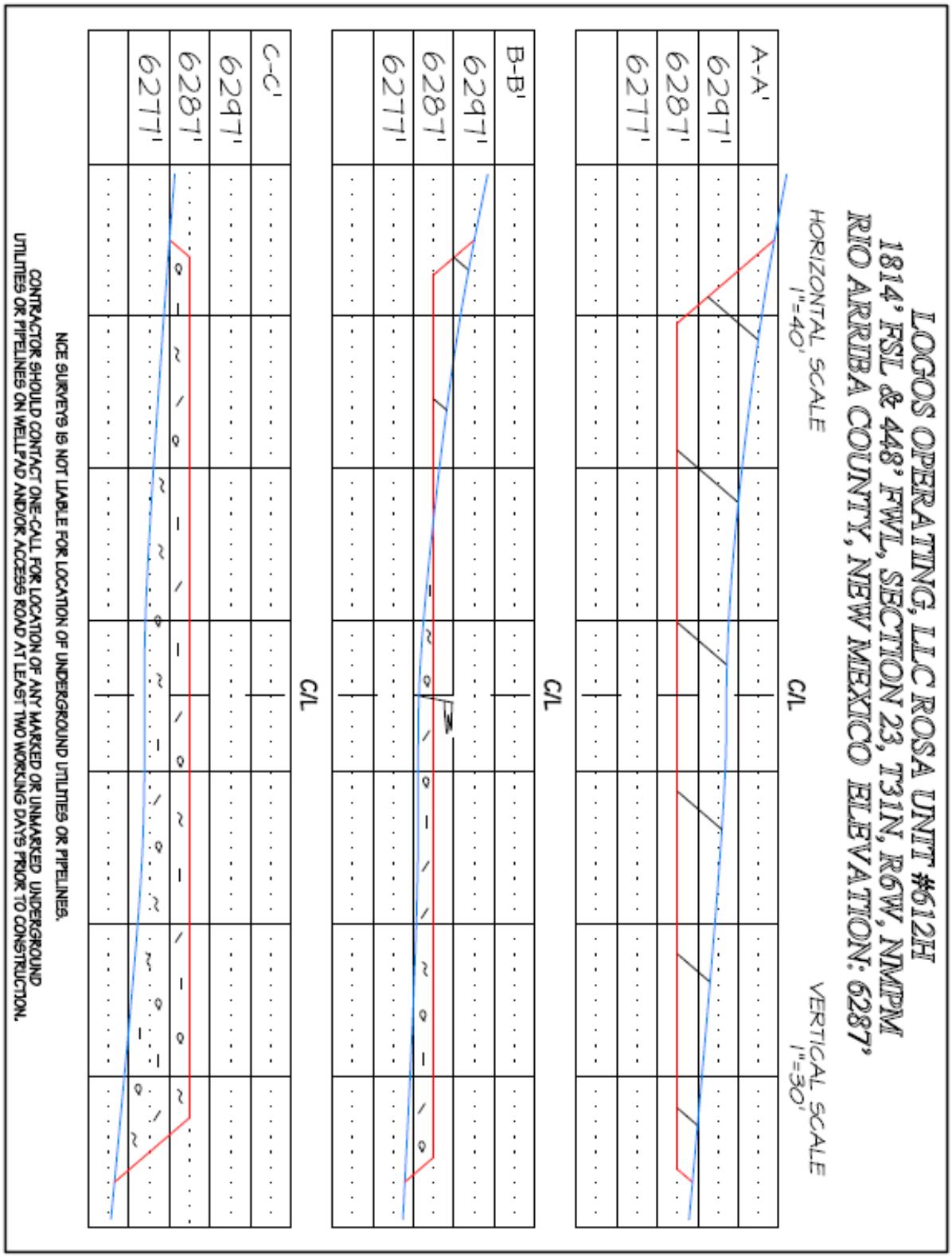
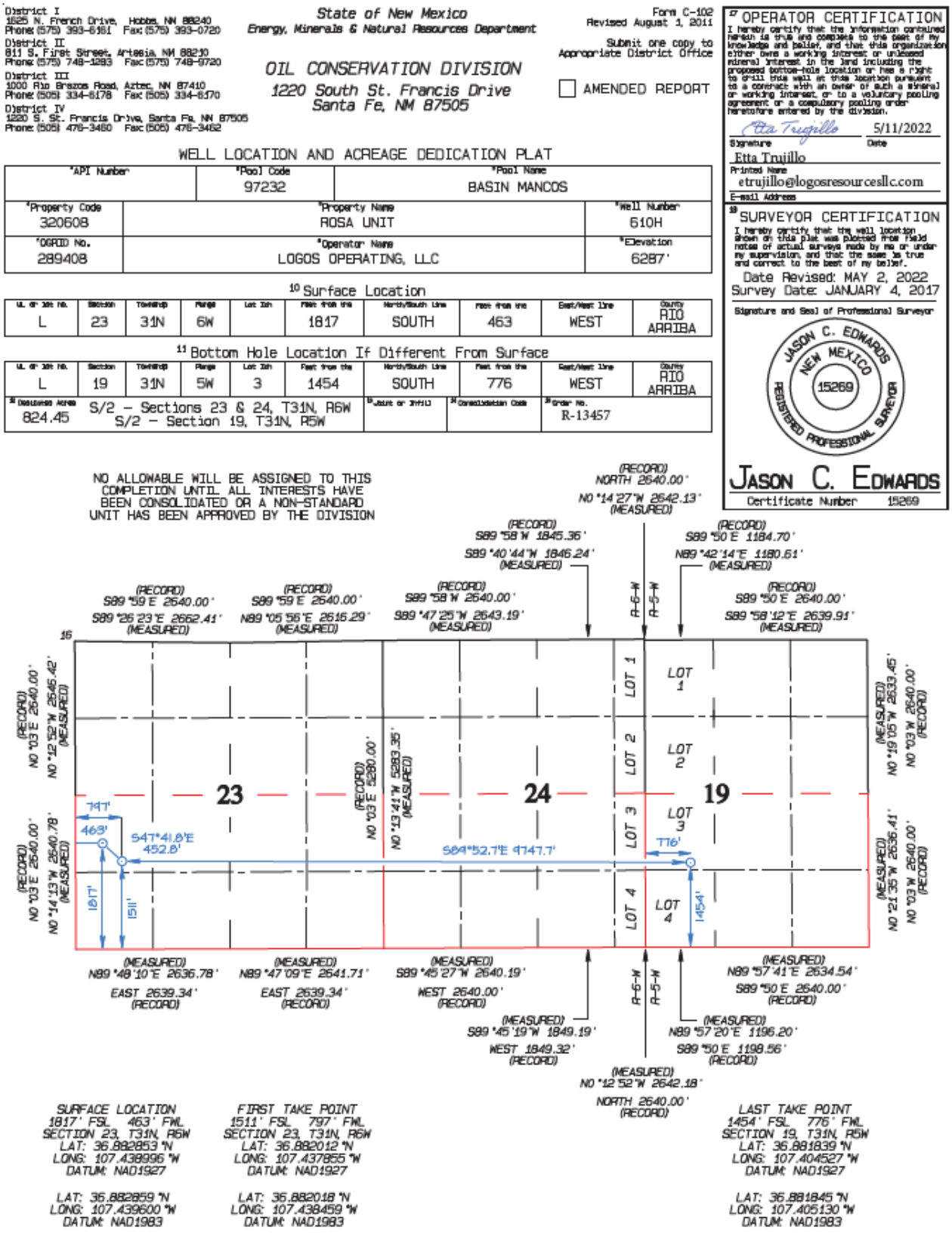


Figure 5. Rosa Unit 610H C102



District I
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
	97232	BASIN MANCOS

4 Property Code	5 Property Name	6 Well Number
320608	ROSA UNIT	610H
7 OGRID No.	8 Operator Name	9 Elevation
289408	LOGOS OPERATING, LLC	6287'

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
L	23	31N	6W		1817	SOUTH	463	WEST	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
L	19	31N	5W	3	1454	SOUTH	776	WEST	RIO ARRIBA

12 Dedicated Acres	13 Joint or Infill	14 Consolidation Code	15 Order No.
824.45 S/2 – Sections 23 & 24, T31N, R6W S/2 – Section 19, T31N, R5W			R-13457

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

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.

Etta Trujillo 5/11/2022
Signature Date

Etta Trujillo
Printed 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: MAY 2, 2022
Survey Date: JANUARY 4, 2017

Signature and Seal of Professional Surveyor

JASON C. EDWARDS NEW MEXICO 15269 REGISTERED PROFESSIONAL SURVEYOR

JASON C. EDWARDS
Certificate Number 15269

(RECORD) NORTH 2640.00'
N0°14'27"W 2642.13' (MEASURED)

(RECORD) S89°58'W 1845.36'
S89°40'44"W 1846.24' (MEASURED)

(RECORD) S89°50'E 1184.70'
N89°42'14"E 1180.61' (MEASURED)

(RECORD) S89°59'E 2640.00'
S89°26'23"E 2662.41' (MEASURED)

(RECORD) S89°59'E 2640.00'
N89°05'56"E 2616.29' (MEASURED)

(RECORD) S89°58'W 2640.00'
S89°47'25"W 2643.19' (MEASURED)

(RECORD) S89°50'E 2640.00'
S89°58'12"E 2639.91' (MEASURED)

R-6-W R-5-W

16

LOT 1 LOT 2 LOT 3 LOT 4

23 24 19

(RECORD) N0°03'E 2640.00'
N0°12'52"W 2645.42' (MEASURED)

(RECORD) N0°03'E 2280.00'
N0°13'41"W 5283.35' (MEASURED)

(MEASURED) N89°19'05"W 2633.45'
N0°03'W 2640.00' (RECORD)

(RECORD) N0°03'E 2640.00'
N0°14'13"W 2640.78' (MEASURED)

(MEASURED) N0°21'35"W 2636.41'
N0°03'W 2640.00' (RECORD)

747'
463'
S47°41.8'E 452.8'
S89°52.7'E 4747.7'
776'
1817'
1511'
1454'

(MEASURED) N89°48'10"E 2636.78'
EAST 2639.34' (RECORD)

(MEASURED) N89°47'09"E 2641.71'
EAST 2639.34' (RECORD)

(MEASURED) S89°45'27"W 2640.19'
WEST 2640.00' (RECORD)

(MEASURED) N89°57'41"E 2634.54'
S89°50'E 2640.00' (RECORD)

(MEASURED) S89°45'19"W 1849.19'
WEST 1849.32' (RECORD)

(MEASURED) N89°57'20"E 1196.20'
S89°50'E 1198.56' (RECORD)

(MEASURED) N0°12'52"W 2642.18'
NORTH 2640.00' (RECORD)

SURFACE LOCATION
1817' FSL 463' FWL
SECTION 23, T31N, R6W
LAT: 36.882853 °N
LONG: 107.438996 °W
DATUM: NAD1927

LAT: 36.882859 °N
LONG: 107.439600 °W
DATUM: NAD1983

FIRST TAKE POINT
1511' FSL 797' FWL
SECTION 23, T31N, R6W
LAT: 36.882012 °N
LONG: 107.437855 °W
DATUM: NAD1927

LAT: 36.882018 °N
LONG: 107.438459 °W
DATUM: NAD1983

LAST TAKE POINT
1454' FSL 776' FWL
SECTION 19, T31N, R5W
LAT: 36.881839 °N
LONG: 107.404527 °W
DATUM: NAD1927

LAT: 36.881845 °N
LONG: 107.405130 °W
DATUM: NAD1983

Figure 6. Rosa Unit 612H C102

District I
1625 N. French Drive, Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720
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1000 Rio Brazos Road, Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170
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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

*API Number	*Pool Code	*Pool Name
	97232	BASIN MANCOS

*Property Code	*Property Name	*Well Number
320608	ROSA UNIT	612H

*OGRID No.	*Operator Name	*Elevation
289408	LOGOS OPERATING, LLC	6287'

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
L	23	31N	6W		1814	SOUTH	448	WEST	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
L	21	31N	6W		2475	SOUTH	163	WEST	RIO ARRIBA

12 Dedicated Acres	Joint or Infill	14 Consolidation Code	15 Order No.
640.00 S/2 - Section 21 S/2 - Section 22			

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

16 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 Date

Printed Name

E-mail Address

18 SURVEYOR CERTIFICATION

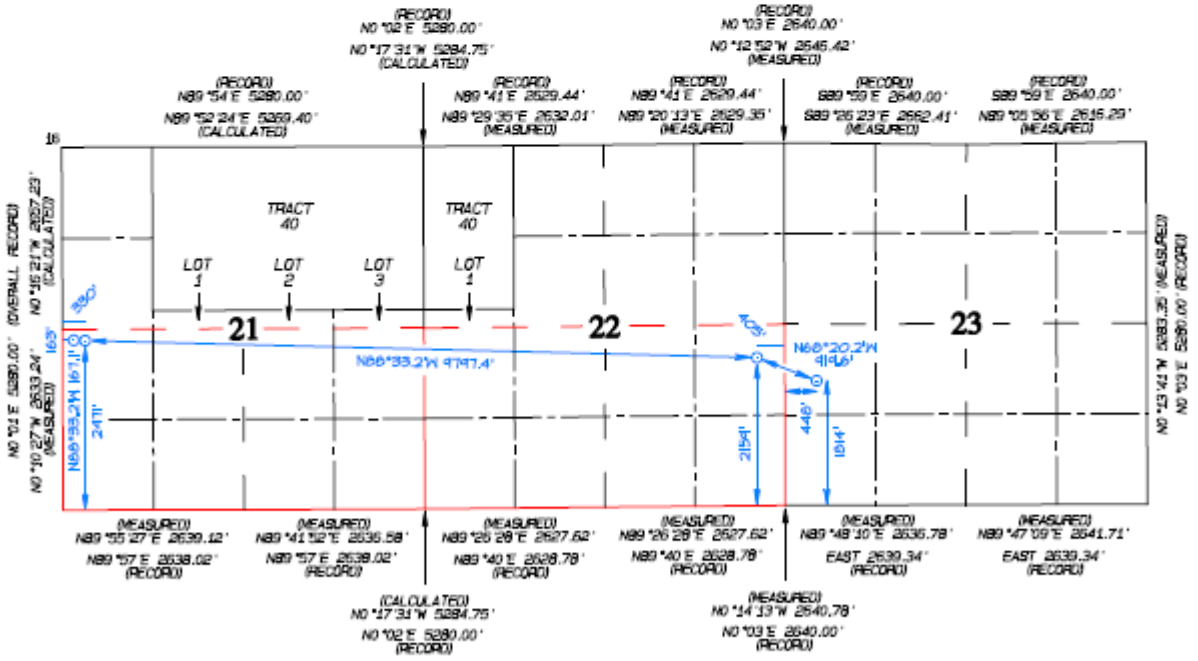
I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

Date Revised JULY 29, 2022
Survey Date: JANUARY 4, 2017

Signature and Seal of Professional Surveyor

JASON C. EDWARDS
NEW MEXICO
15269
REGISTERED PROFESSIONAL SURVEYOR

JASON C. EDWARDS
Certificate Number 15269



LAST TAKE POINT
2475' FSL, 163' FWL
SEC. 21, T31N, R6W
LAT: 36.884686°N
LONG: 107.476020°W
DATUM: NAD1927

LAT: 36.884592°N
LONG: 107.476625°W
DATUM: NAD1983

LAST PERFORATION
2471' FSL, 330' FWL
SEC. 21, T31N, R6W
LAT: 36.884673°N
LONG: 107.475449°W
DATUM: NAD1927

LAT: 36.884579°N
LONG: 107.476054°W
DATUM: NAD1983

FIRST TAKE POINT
2159' FSL, 405' FEL
SEC. 22, T31N, R6W
LAT: 36.883788°N
LONG: 107.441964°W
DATUM: NAD1927

LAT: 36.883794°N
LONG: 107.442569°W
DATUM: NAD1983

SURFACE LOCATION
1814' FSL, 448' FWL
SEC. 23, T31N, R6W
LAT: 36.882846°N
LONG: 107.439046°W
DATUM: NAD1927

LAT: 36.882852°N
LONG: 107.439650°W
DATUM: NAD1983

Figure 7. Rosa Unit 614H C102

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*API Number	*Pool Code	*Pool Name
	97232	BASIN MANCOS

*Property Code	*Property Name	*Well Number
320608	ROSA UNIT	614H
*OGRID No.	*Operator Name	*Elevation
289408	LOGOS OPERATING, LLC	6287'

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
L	23	31N	6W		1811	SOUTH	434	WEST	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
M	21	31N	6W		1188	SOUTH	159	WEST	RIO ARRIBA

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

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Signature Date

Printed Name

E-mail Address

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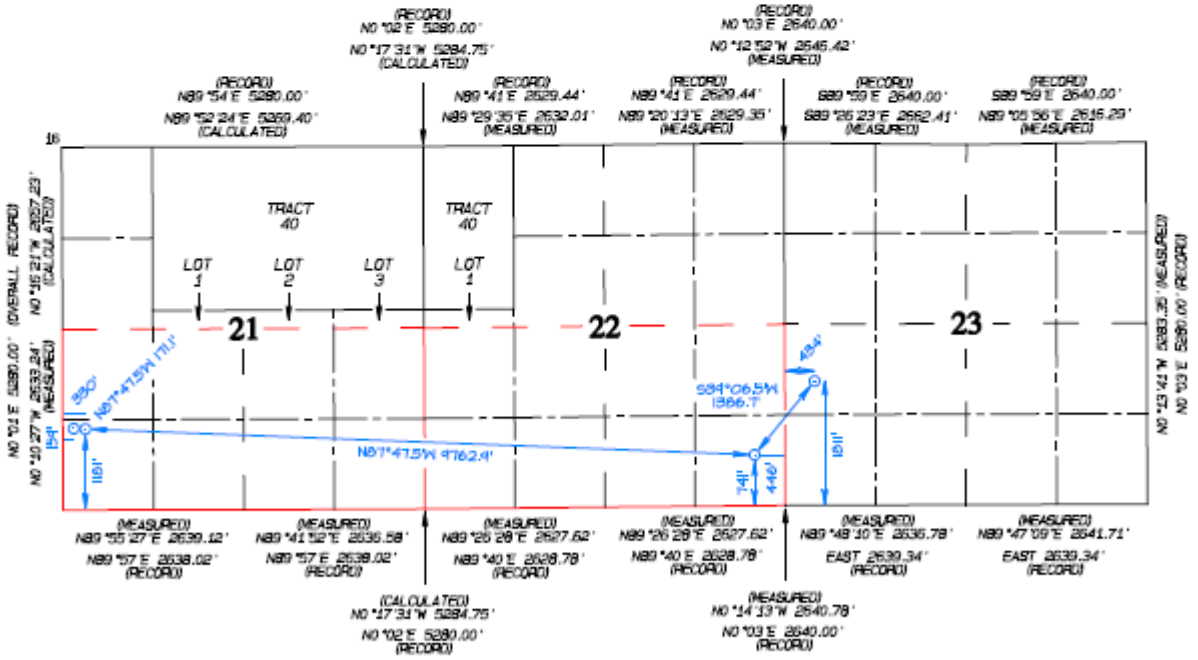
Signature and Seal of Professional Surveyor

JASON C. EDWARDS NEW MEXICO 15269 REGISTERED PROFESSIONAL SURVEYOR

JASON C. EDWARDS
Certificate Number 15269



LAST TAKE POINT
1188' FSL, 159' FWL
SEC. 21, T31N, R6W
LAT: 36.881052°N
LONG: 107.476037°W
DATUM: NAD1927

LAT: 36.881057°N
LONG: 107.476542°W
DATUM: NAD1983

LAST PERFORATION
1191' FSL, 330' FWL
SEC. 21, T31N, R6W
LAT: 36.881032°N
LONG: 107.475452°W
DATUM: NAD1927

LAT: 36.881037°N
LONG: 107.476057°W
DATUM: NAD1983

FIRST TAKE POINT
741' FSL, 446' FEL
SEC. 22, T31N, R6W
LAT: 36.879893°N
LONG: 107.442102°W
DATUM: NAD1927

LAT: 36.879899°N
LONG: 107.442706°W
DATUM: NAD1983

SURFACE LOCATION
1811' FSL, 434' FWL
SEC. 23, T31N, R6W
LAT: 36.882838°N
LONG: 107.439097°W
DATUM: NAD1927

LAT: 36.882844°N
LONG: 107.439701°W
DATUM: NAD1983

Figure 8. Rosa Pad 10 – Waterline Route Map to Pad 10

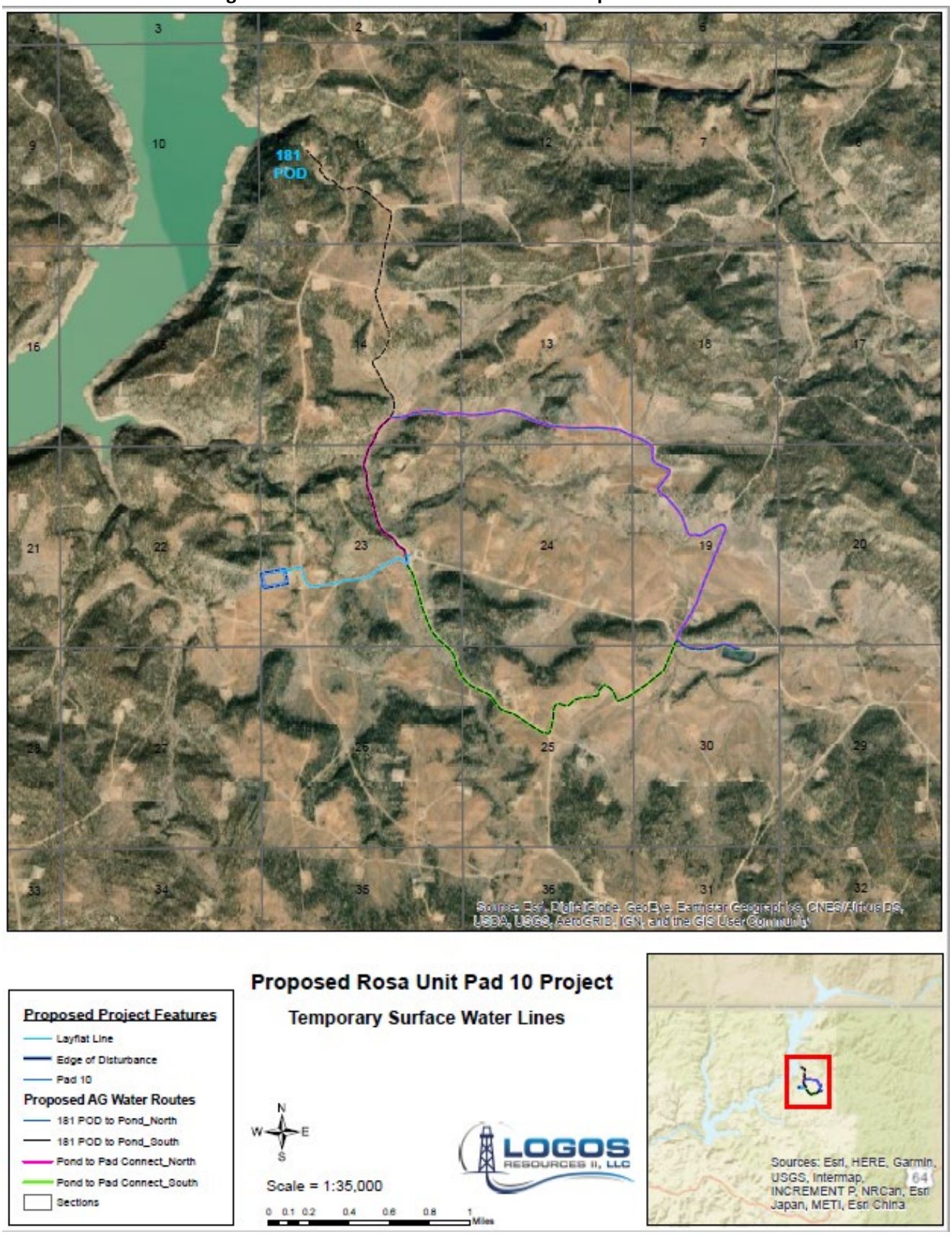


Figure 9. Rosa Pad 10 – New Pipeline Route

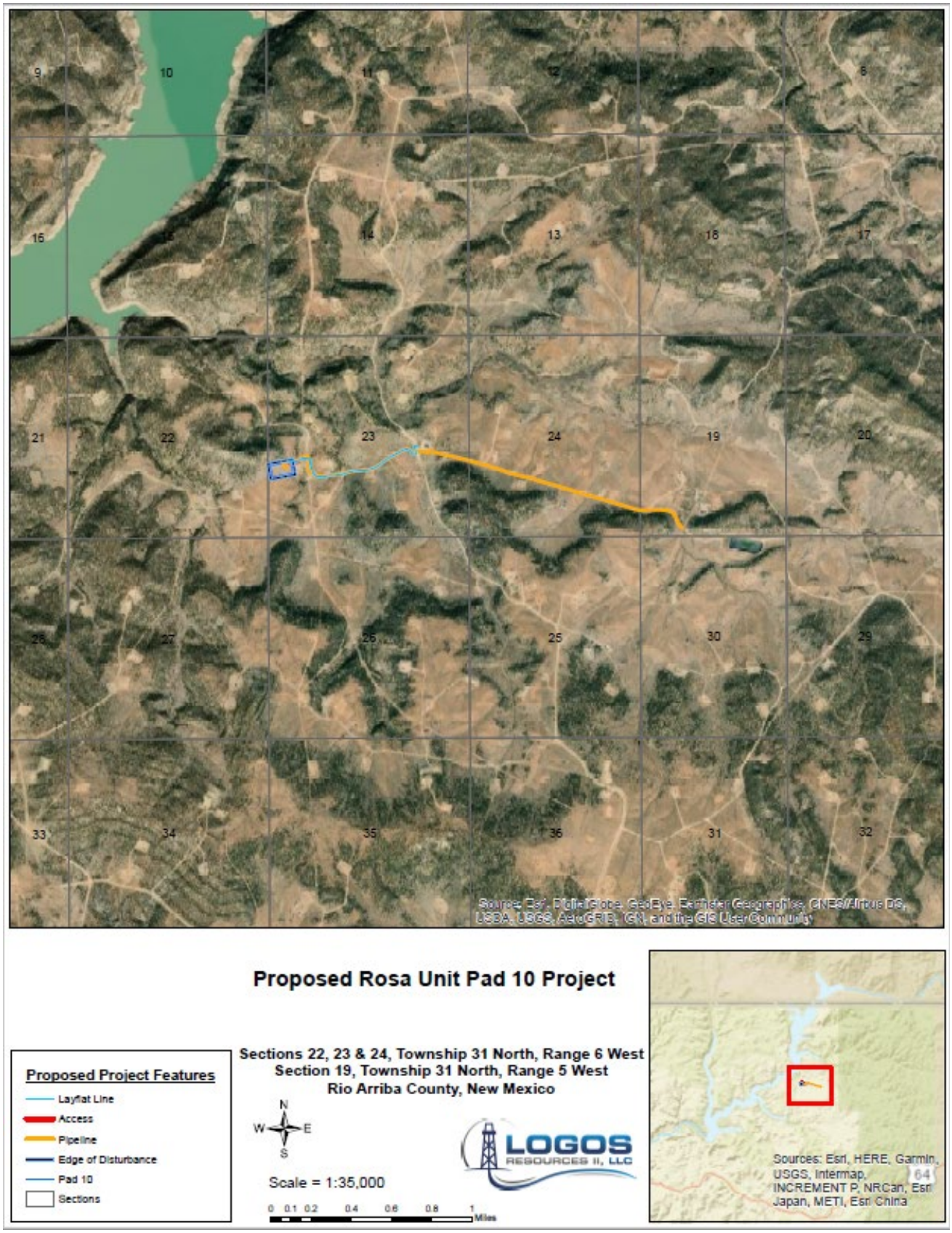
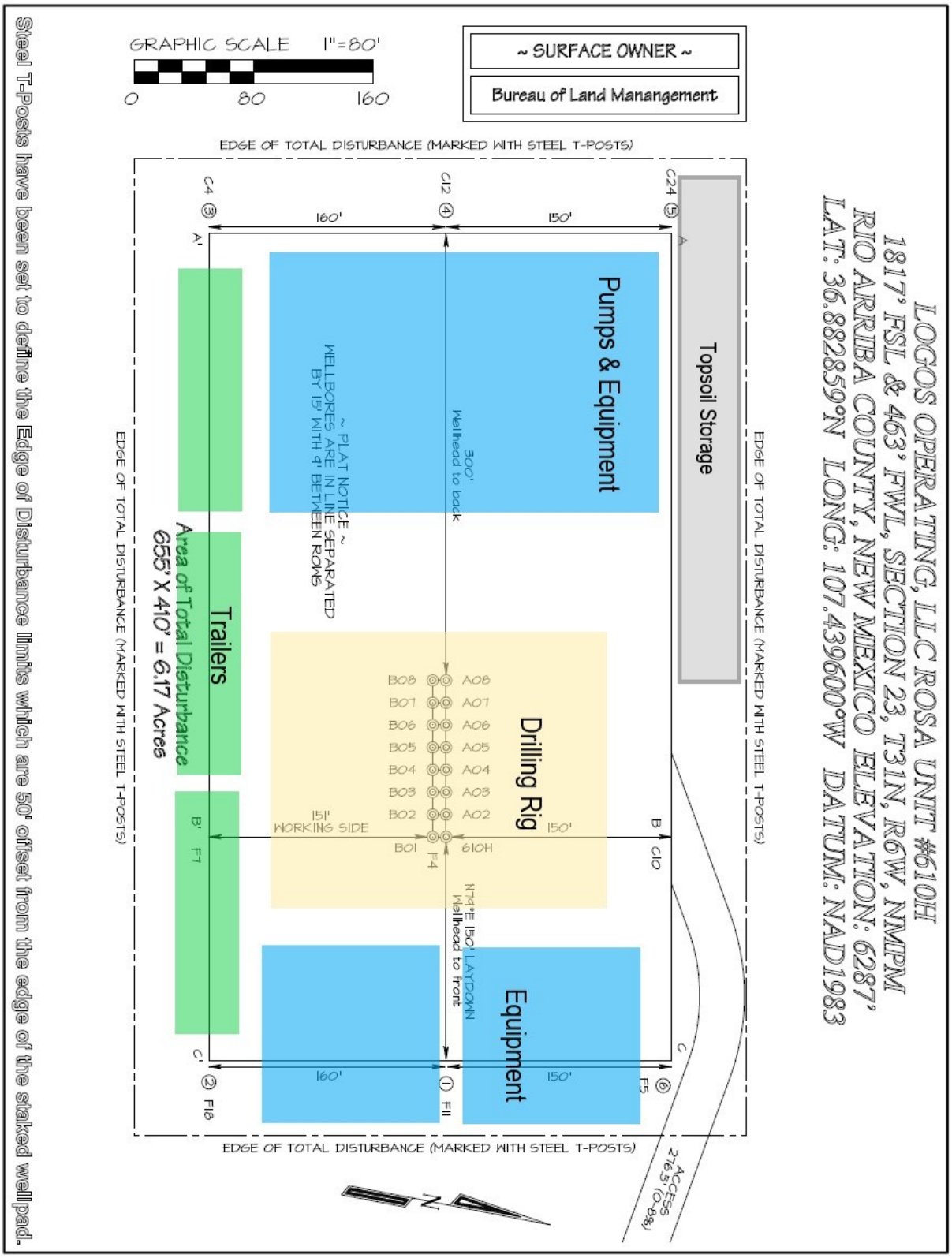
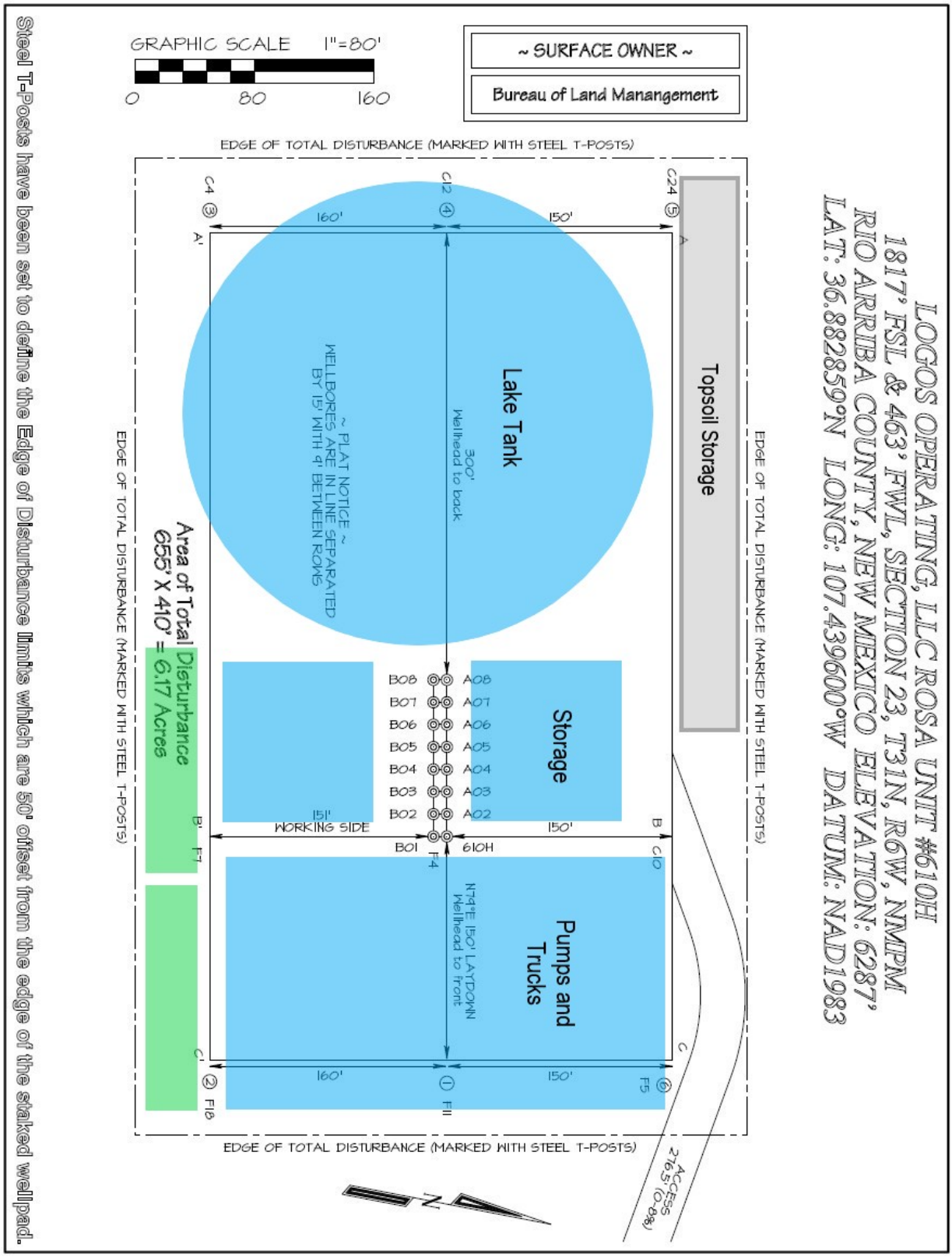


Figure 10. Rosa Pad 10 Drilling Layout



Drilling layout may be modified as need for safety reasons during operations

Figure 11. Rosa Pad 10 Completion Layout



Completion layout may be modified as need for safety reasons during operations

Figure 12. Pad 10 Interim Reclamation Diagram

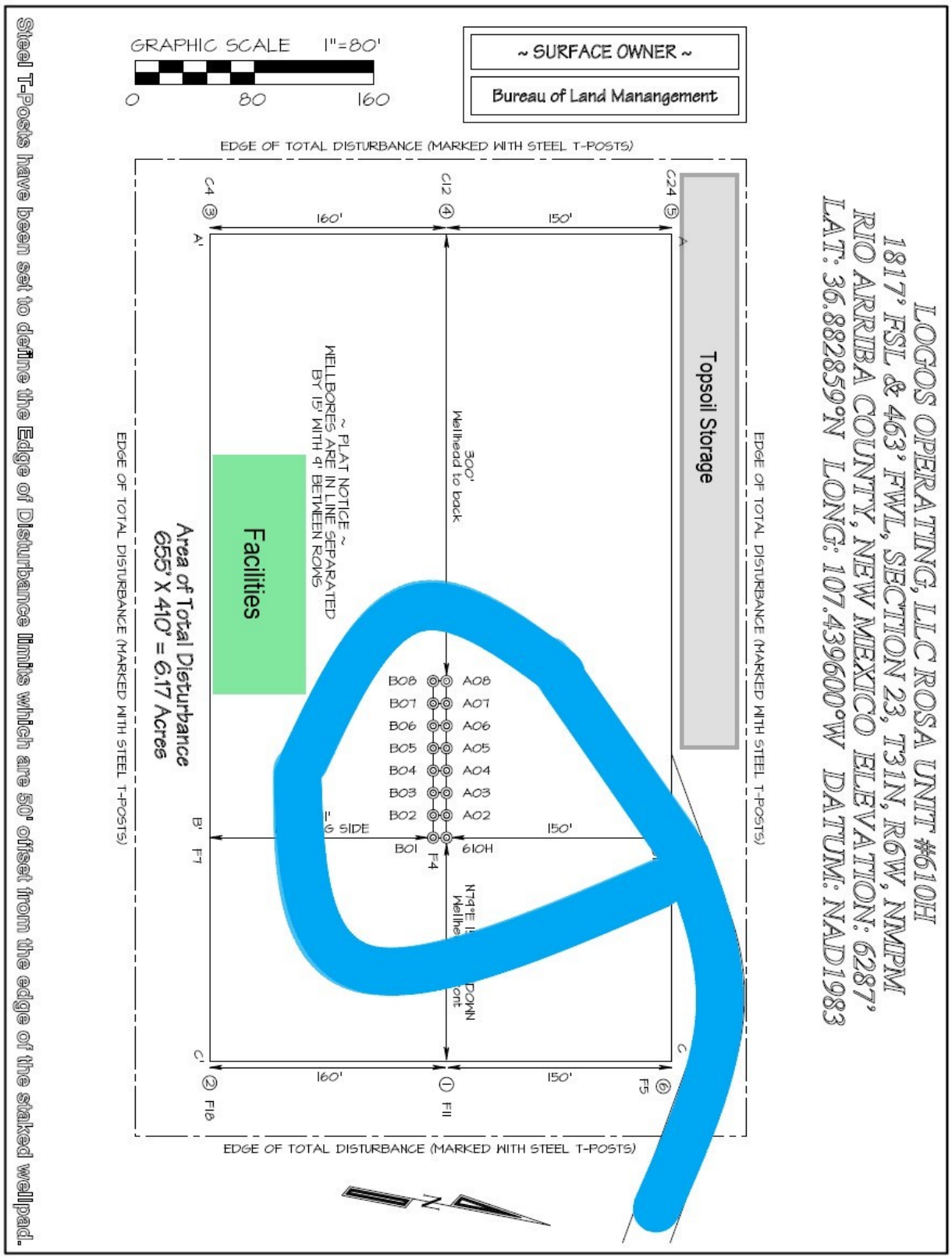


Figure 13. Pad 10 Onsite Sign-In Sheet

TODAY'S DATE: 06/07/2022

SIGN IN SHEET FOR ONSITES

WELL SITE:

Man Camp / Pad 9 PAD 10 PAD 25 PAD 26

	Print Name	Signature	Company/Agency
1	Jaime DeMarco	970-903-2143	Blm
2	Ryan McBee	rmcbee@blm.gov	Blm
3	Jim E. Foreman	970-385-6533	BOR
4	Michael J Ryan	505-608-1057	DCI
5	RYAN EDWARDS	505-486-1695	NCE
6	Jon Talmo	505-486-1695	NCE
7	Robert Bixler	505-635-1663	LOGOS
8	Deborah K Gibson	505-486-2616	ACI
9	Sam Hunt	513-562-7460	ACI
10	Eryn Bordes	802 881 8567	ACI
11	Jessica Karpa	215-622-1856	ACI
12	Vanessa Fields	505-320-1243	Logos
13			
14			
15			
16			
17			
18			
19			
20			
21			
22			

Road Maintenance Plan
Appendix C

LOGOS Operating, LLC

Road Maintenance Plan

Rosa Unit Pad 30 Natural Gas Well Development Project

August 2022

LOGOS Operating, LLC
2010 Afton Place
Farmington, New Mexico 87401
Phone: (505) 278-8720
FAX: (505) 326-6112

1.0 Introduction

LOGOS Operating, LLC (LOGOS) is providing this Road Maintenance Plan (Plan) to the Bureau of Land Management/Farmington Field Office (BLM/FFO) as part of the Surface Use Plan of Operations (SUPO) for the Rosa Unit Pad 10 Natural Gas Well Development Project. The road addressed in this Plan will be permitted under the Application for Permit to Drill (APD) for Rosa Unit 610H well. The Rosa Unit 610H well will be located on a well pad known as Rosa Unit Pad 10, along with slots for an additional fifteen future natural gas wells (Rosa Unit Pad 30 Project). The coordinates (Universal Transverse Mercator, North American Datum 1983, Zone 13 South) for the access road are as follows:

- Start: 36° 52' 6.82" North, 107° 24' 17.11" West
- End: 36° 52' 7.80" North, 107° 24' 16.62" West

The road maintenance procedures provided in this Plan meet the standards established in The Gold Book: Surface Operating Standards and Guidelines for Oil and Gas Exploration and Development and BLM Manual 9113.

Under the Rosa Unit 610H APD, LOGOS will be responsible for road maintenance associated with the Rosa Unit 658H. This responsibility will continue until LOGOS transfers the permit or abandons the project and obtains a Final Abandonment Notice or relinquishment from the BLM/FFO. Refer to Conditions of Approval (COAs) attached to the approved APD for any upgrades to existing roads.

2.0 Road Inspections

LOGOS Representatives will formally inspect the road biannually, in the spring and fall, to assess the condition of the road. The formal road inspection will be recorded on a Road Inspection Form (blank form attached to this Plan). Completed Road Inspection Forms will be kept on file at LOGOS and can be provided to the BLM/FFO, if requested (See Attached Road Inspection Form).

Additionally, outside of the formal inspection period, LOGOS Representatives driving to/from the project area will assess the condition of the road and notify the LOGOS Construction Supervisor if maintenance is needed.

Road maintenance activities will be documented at LOGOS and can be provided to the BLM/FFO, if requested.

3.0 Road Maintenance

The following maintenance may be performed on an as needed basis:

- Water control structures (such as culverts, ditches, and silt traps) and/or cattle guards may be cleaned. If this occurs, the soil/sediment material will be spread on area roads or locations.
- Bar ditches may be pulled.
- Low-water crossings and drainage dips may be cleared and/or repaired.
- Crowning may be repaired.
- Litter may be collected.

- Noxious weeds may be controlled following the BLM-FFO noxious weed guidelines.
- The access road may be bladed.

In addition to inspection-triggered maintenance procedures, the road will be maintained following this Plan, as needed.

Attachment: Road Inspection Form

Road Inspection Form

Road Name:	**County:**
Date:	**Time (a.m./p.m.):**
Weather:	
Inspector(s):	
Road Surface Type:	

Road Condition Inspection Items	Road Condition		
	Good	Poor	Comments
Water-Control Structure(s)			
Low-Water Crossing(s)			
Road Crowning/Ruts/Potholes			
Road Surfacing			
Cattle guard(s)			
Litter			
Noxious Weeds Within/Adjacent to Roadway			
Vegetation Within Roadway			
Additional Site-Specific Inspection Notes:			

Conditions of Approval

Operator:	Logos Operating, LLC
Well Name:	Rosa Unit Pad 10 (Rosa Unit 612H & 614H)
Legal Location:	Twn 31N, Rng 06W, Sec 23
NEPA Log Number:	DOI-BLM-NM-F010-2023-0022-EA
Inspection Date:	June 7, 2022
Lease Number:	NMSF078771

The following conditions of approval will apply to Logos Operating, LLC's Rosa Unit Pads 9 and 10 Natural Gas Wells Project well pads, access roads and other associated facilities, unless a particular Surface Managing Agency or private surface owner has supplied to Bureau of Land Management and the operator a contradictory environmental stipulation. The failure of the operator to comply with these requirements may result in an assessment or civil penalties pursuant to 43 CFR 3163.1 or 3163.2.

Disclaimers: BLM's approval of the APD does not relieve the lessee and operator from obtaining any other authorizations that may be required by the BIA, Navajo Tribe, State or other jurisdictional entities.

Copy of Plans: A complete copy of the APD package, including: Surface Use Plan of Operations, Bare Soil Reclamation Plan, Plan of Development (if required), Conditions of Approval, Cultural Resource Record of Review, Cultural Resources Compliance Form (if required), and Project Stipulations (if required) shall be at the project area at all times and available to all persons.

Review of NEPA documents: It is the responsibility of the operator to follow all the design features, best management practices, and mitigation measures as contained in Environmental Assessment DOI-BLM-NM-F010-2023-0022-EA. Copies of the EA, Decision Record, and Finding of No Significant Impact may be obtained from the BLM FFO public room, or online at: EplanningUi (blm.gov).

Best Management Practices (BMPs): Farmington Field Office established environmental Best Management Practices (BMP's) will be followed during construction and reclamation of well site pads, access roads, pipeline ties, facility placement or any other surface disturbing activity associated with this project. Bureau wide standard BMP's are found in the Gold Book, Fourth Edition-Revised 2007 and at http://www.blm.gov/wo/st/en/prog/energy/oil_and_gas/best_management_practices.html. Farmington Field Office BMP's are integrated into the Environmental Assessment, Surface Use Plan of Operations, Bare Soil Reclamation Plan, and COAs.

Construction, Reclamation & Maintenance

Construction & Reclamation Notification: The operator or their contractor will contact the Bureau of Land Management, Farmington Field Office Environmental Protection Staff at (505) 564-7600 or by email, at least 48 hours prior to any construction or reclamation on this project.

Production Facilities: Design and layout of facilities will be deferred until an onsite with BLM-FFO surface protection staff is conducted to determine the best location. Logos or their contractor will contact the Bureau of Land Management, Farmington Field Office, Surface, and Environmental Protection Staff to schedule a facility layout onsite.

Staking: The holder shall place slope stakes, culvert location and grade stakes, and other construction control stakes as deemed necessary by the authorized officer to ensure construction in accordance with

the plan of development. If stakes are disturbed, they shall be replaced before proceeding with construction.

Weather: No construction or routine maintenance activities shall be performed during periods when the soil is too wet to adequately support construction equipment. If such equipment creates ruts in excess of 6 inches deep, the soil shall be deemed too wet.

Stockpile of Soil: The top 6 inches of soil material will be stripped and stockpiled in the construction zones around the pad [construction zones may be restricted or deleted to provide resource avoidance]. The stockpiled soil will be free of brush and tree limbs, trunks and roots. The stockpiled soil material will be spread on the reclaimed portions of the pad [including the reserve pit, cut and fill slopes] prior to re-seeding. Spreading shall not be done when the ground or topsoil is frozen or wet.

Storage Tanks: All open top permanent production or storage tanks regardless of diameter made of fiberglass, steel, or other material used for the containment of oil, condensate, produced water and or other production waste shall be screened, netted or otherwise covered to protect migratory birds and other wildlife from access.

Compressors: Compressor units on this well location not equipped with a drip pan for containment of fluids shall be lined with an impervious material at least 8 mils thick and a 12 inch berm. The compressor will be painted to match the well facilities. Any variance to this will be approved by the Authorized Officer (AO).

Culverts: Silt Traps/Bell Holes will be built upstream of all culvert locations.

Driving Surface Area: All activities associated within the construction, operation, maintenance, and abandonment of the well location is limited to areas approved in the APD or ROW permit. During the production of the well, vehicular traffic is limited to the daily driving surface area established during interim reclamation construction operations. This area typically forms a keyhole or teardrop driving surface from which all production facilities may be serviced or inspected. A v-type ditch will be constructed on the outside of the driving surface to further define the driving surface and to deter vehicular traffic from entering onto the interim reclamation areas.

Contouring of Cut and Fill Slopes: The interim cut and fill slope grade shall be as close to the original contour as possible. To obtain this ratio, pits and slopes shall be back sloped into the pad during interim reclamation. Only subsurface soil and material shall be utilized in the contouring of the cut and fill slopes. Under no circumstances shall topsoil be utilized as substrate material for contouring of cut and fill slopes.

Maintenance: In order to perform subsequent well operations, right-of-way (ROW) operations, or install new/additional equipment, it may be necessary to drive, park, and operate on restored, interim vegetation within the previously disturbed area. This is generally acceptable provided damage is promptly repaired and reclaimed following use. Where vehicular travel has occurred as a “convenience” and interim reclamation/vegetation has been compromised, immediate remediation of the affected areas is required. Additionally, where erosion has occurred and compromised the reclamation of the well location, the affected area must be promptly remediated so that future erosion is prevented, and the landform is stabilized.

Layflat Lines: Layflat lines used for development of the wells may be on the ground for a maximum of 6 months and shall be retrieved immediately following completion operations. If the layflat lines are needed for longer than 6 months a Sundry NOI shall be submitted to the BLM FFO for review and decision that includes a rationale for the time extension.

Noxious Weeds

Inventory the proposed site for the presence of noxious and invasive weeds. Noxious weeds are those listed on the New Mexico Noxious Weed List and USDA's Federal Noxious Weed List. The New Mexico Noxious Weed List or USDA's Noxious Weed List can be updated at any time and should be regularly check for any changes. Invasive species may or may not be listed as a noxious weed, but have been identified to likely cause economic or environmental harm or harm to human health. The following noxious weeds have been identified as occurring on lands within the boundaries of the Farmington Field Office (FFO). There are numerous invasive species on the FFO such as Russian thistle (*Salsola spp.)* and field bindweed (*Convolvulus arvensis*).

Russian Knapweed (*Centaurea repens*)	Musk Thistle (*Carduss nutans*)
Bull Thistle (*Cirsium vulgare*)	Canada Thistle (*Cirsium arvense*)
Scotch Thistle (*Onopordum acanthium)*	Hoary Cress (*Cardaria draba*)
Perennial Pepperweed (*Lepdium latiofolfium*)	Halogeton (*Halogeton glomeratus*)
Spotted Knapweed (*Centaurea maculosa*)	Dalmation Toadflax (*Linaria genistifolia*)
Yellow Toadflax (*Linaria vulgaris*)	Camelthorn (*Alhagi pseudalhagi*)
African Rue (*Penganum harmala*)	Salt Cedar (*Tamarix spp*.)
Diffuse Knapweed (*Centaurea diffusa*)	Leafy Spurge (*Euphorbia esula*)

a. Identified weeds will be treated prior to new surface disturbance if determined by the FFO Noxious Weed Coordinator. A Pesticide Use Proposal (PUP) must be submitted to and approved by the FFO Noxious Weed Coordinator prior to application of pesticide. The FFO Noxious Weeds Coordinator (505-564-7600) can provide assistance in the development of the PUP.

b. Vehicles and equipment should be inspected and cleaned prior to coming onto the work site. This is especially important on vehicles from out of state or if coming from a weed-infested site.

c. Fill dirt or gravel may be needed for excavation, road construction/repair, or for spill remediation. If fill dirt or gravel will be required, the source shall be noxious weed free and approved by the FFO Noxious Weed Coordinator.

d. The site shall be monitored for the life of the project for the presence of noxious weeds (includes maintenance and construction activities). If weeds are found the FFO Coordinator shall be notified at (505) 564-7600 and provided with a Weed Management Plan and if necessary, a Pesticide Use Proposal (PUP) . The FFO Coordintaor can provide assistance developing the Weed Management Plan and/or the Pesticide Use Proposal.

e. Only pesticides authorized for use on BLM lands would be used and applied by a licensed pesticide applicator. The use of pesticides would comply with federal and state laws and used only in accordance with their registered use and limitations. Logos' weed-control contractor would contact the BLM-FFO prior to using these chemicals.

f. Noxious/invasive weed treatments must be reported to the FFO Noxious Weed Coordinator. A Pesticide Use Report (PUR) is required to report any mechanical, chemical, biological or cultural treatments used to eradicate, and/or control noxious or invasive species. Reporting will be required quarterly and annually or per request from the FFO Noxious Weed Coordinator.

Bare ground vegetation trim-out: If bare ground vegetation treatment (trim-out) is desired around facility structures, the operator will submit a bare ground/trim-out design included in their Surface Use Plan of Operations (SUPO). The design will address vegetation safety concerns of the operator and BLM while minimizing impacts to interim reclamation efforts. The design must include what structures to be treated and buffer distances of trim-out. Pesticide use for vegetation control around anchor structures is not approved. If pesticides are used for bare ground trim-out, the trim-out will not exceed three feet from the edge of any eligible permanent structure (i.e. well heads, fences, tanks). Additional distance/areas may be requested and must be approved by the FFO authorized officer. The additional information below must also be provided to the FFO:

a. Pesticide use for trim out will require a Pesticide Use Proposal (PUP). A PUP is required ***prior*** to any treatment and must be approved by the FFO Noxious Weed Coordinator. Only pesticides authorized for use on BLM lands would be used and applied by a licensed pesticide applicator. The use of pesticides would comply with federal and state laws and used only in accordance with their registered use and limitations. Logos' weed-control contractor would contact the BLM-FFO prior to using these chemicals and provide Pesticide Use Reports (PURs) post treatment.

b. A Pesticide Use Report (PUR) or a Biological Use Report (BUR) is required to report any chemical, or biological treatments used to eradicate, or control vegetation on site. Reporting will be required quarterly and annually or per request from the FFO Noxious Weed Coordinator.

Paleontology

Any paleontological resource discovered by the Operator, or any person working on his behalf, on public or Federal land shall be immediately reported to the Authorized Officer. Holder shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery will be made by the Authorized Officer to determine appropriate actions to prevent the loss of significant scientific values. The Holder will be responsible for the cost of evaluation and any decision as to proper mitigation measures will be made by the Authorized Officer after consulting with the Holder.

Wildlife

Migratory Bird: The BLM/FFO migratory bird policy requires a bird nest survey between May 15-July 31 for any projects that would remove 4.0 or more acres or vegetation. The proposed project is estimated to disturb more than four acres of vegetation, a survey will be required.

Threatened, Endangered or Sensitive Species: If, in operations the operator/holder discovers any Threatened, Endangered or Sensitive species, work in the vicinity of the discovery will be suspended and the discovery promptly reported to the Bureau of Land Management T&E specialist @ (505) 564-7600. The Bureau of Land Management will then specify what action is to be taken. Failure to notify the BLM about a discovery may result in civil or criminal penalties in accordance with The Endangered Species Act (as amended).

Nesting: If a bird nest containing eggs or young is encountered in the path of construction the operator will cease construction and consult with BLM to determine appropriate actions.

Soil, Air, Water

Land Farming: No excavation, remediation or closure activities will be authorized without prior approval, on any federal or Indian mineral estate, federal surface or federal ROW. A Sundry Notice (DOI, BLM Form 3160-5) must be submitted with an explanation of the remediation or closure plan for on-lease actions.

Emission Control Standard: Compressor engines 300 horsepower or less used during well production must be rated by the manufacturer as emitting NOx at 2 grams per horsepower hour or less to comply with the New Mexico Environmental Department, Air Quality Bureau's guidance.

Waste Disposal: All fluids (i.e., scrubber cleaners) used during washing of production equipment, including compressors, will be properly disposed of to avoid ground contamination, or hazard to livestock or wildlife.

Cultural Resources

Non-Permitted Disturbance: Construction, construction maintenance or any other activity outside the areas permitted by the APD will require additional approval and may require a new cultural survey and clearance.

Employee Education: All employees of the project, including the Project Sponsor and its contractors and sub-contractors will be informed and educated that cultural sites are to be avoided by all personnel, personal vehicles, and company equipment. This includes personnel associated with construction, use, maintenance, and abandonment of the well pad, well facilities, access, and pipeline. They will also be notified that it is illegal to collect, damage, or disturb historic or prehistoric cultural resources, and that such activities are punishable by criminal and or administrative penalties under the provisions of the ARPA (16 U.S.C. 470aa-mm), NAGPRA (25 U.S.C. 3001-3013), and other laws, as applicable (for example, NM Stat. § 18-6-9 through § 18-6-11.2, as amended, and NM Stat. § 30-12-12, as amended).

Discovery of Cultural Resources in the Presence or Absence of Monitoring: If any previously unidentified historic or prehistoric cultural resources are discovered during construction or project operations, work in the vicinity of the discovery will be suspended and the discovery will promptly be reported to the BLM Field Manager.

Discovery of Cultural Resources during Monitoring: If monitoring confirms the presence of previously unidentified **historic or prehistoric** cultural resources, then work in the vicinity of the discovery will be suspended and the monitor will promptly report the discovery to the BLM Field Manager. BLM will then specify what action is to be taken. **If there is an approved "discovery plan" in place for the project, then the plan will be executed. In the absence of an approved plan, the BLM will evaluate the significance of the discovery in accordance with 36 CFR Section 800.13, in consultation with the appropriate State or Tribal Historic Preservation Officer(s) and Indian tribe(s) that might attach religious and cultural significance to the affected property, or in accordance with an approved program alternative. Minor recordation, stabilization, or data recovery may be performed by BLM or a third party acting on its behalf, such as a permitted cultural resources consultant. If warranted, more extensive archaeological or alternative mitigation, likely implemented by a permitted cultural resources consultant, may be required of the operator/holder prior to allowing the project to proceed. Further damage to significant cultural resources will not be allowed until any mitigations determined appropriate through the agency's Section 106 consultation are completed.**

Damage to Sites: If, in its operations, operator/holder damages, or is found to have damaged any previously documented or undocumented historic or prehistoric cultural resources, excluding

"discoveries" as noted above, the operator/holder agrees at his/her expense to have a permitted cultural resources consultant prepare a BLM approved damage assessment and/or data recovery plan. The operator/holder agrees at his/her expense to implement a **mitigation** that the agency finds appropriate given the significance of the site, which the agency determines in consultation with the appropriate State or Tribal Historic Preservation Officer(s) and Indian tribe(s) that might attach religious and cultural significance to the affected property. **This mitigation may** entail execution of the data recovery plan by a permitted cultural resources consultant and/or alternative mitigations. Damage to cultural resources may result in **civil or criminal penalties in accordance with the Archeological Resources Protection Act (ARPA) of 1979, as amended, the Native American Graves Protection and Repatriation Act (NAGRPA) of 1990, as amended, and other applicable laws.**

1. SITE PROTECTION AND EMPLOYEE EDUCATION:
All employees of the project, including the Project Sponsor and its contractors and sub-contractors will be informed that cultural sites are to be avoided by all personnel, personal vehicles and company equipment. They will also be notified that it is illegal to collect, damage, or disturb cultural resources, and that such activities are punishable by criminal and or administrative penalties under the provisions of the Archaeological Resources Protection Act (16 U.S.C. 470aa-mm) when on federal land and the New Mexico Cultural Properties Act NMSA 1978 when on state land.

2. ARCHAEOLOGICAL MONITORING IS REQUIRED:
A copy of these stipulations will be supplied to the archeological monitor at least two working days prior to the start of construction activities. No construction activities, including vegetation removal, may begin before the arrival of the archaeological monitor.

The monitor will:

- Ensure that the site protection barriers are located as indicated on the attached map in the vicinity of LA49871, LA89016, & LA126640.
- Inform BLM-FFO archaeologists that monitoring will be occurring within 24 hours of the scheduled monitoring.
- Observe all construction activities within 100'of LA49871, LA89016, & LA126640.
- Submit a report of the monitoring activities within 30 days of completion of monitoring unless other arrangements are made with the BLM. These stipulations must be attached to the report.

3. SITE PROTECTION BARRIER:
- The temporary site protection barriers will be erected prior to the start of construction. The barriers will consist of upright wooden survey lath spaced no more than 10 feet apart and marked with blue flagging or blue paint. The barriers will remain in place through reclamation and reseeding and shall be promptly removed after reclamation.
- The barriers will be placed as indicated on the attached map.

There will be no surface-disturbing activities or vehicle traffic past the barriers

See Cultural Resource Records of Review below for detailed cultural stipulations.

BLM Report Number: 2023(I)018F
USGS Map: Bancos Mesa NW, NM
Activity Code: 1310
NMCRIS No: 151955

CULTURAL RESOURCE RECORD OF REVIEW

BUREAU OF LAND MANAGEMENT
FARMINGTON FIELD OFFICE

1. Description of Report/Project:
Project Name: Rosa 610H Well Pad, Access Road, and Pipeline.
Project Sponsor: Logos Resources II, LLC.
Arch. Firm & Report No.: Adkins Consulting, Inc.; Adkins Report No. ACI(F)016.
Location: T31N R5W Section 19.
T31N R6W Sections 22, 23, & 24.
Well Footages: See Plats
Split Estate: Yes
Project Dimensions: 655 ft x 410 ft – well pad (that includes a 50 ft construction zone).
277 ft x 40 ft – access road.
11,853 ft x 30/40 ft – pipeline. (9,457 ft x 40 ft on BLM/2,396 ft x 30 ft on State)

Sites Located: LA49871/NM-01-32499 (NRHP: Eligible; Update; Avoided).
LA89016/NM-01-38804 (NRHP: Eligible; Update; Avoided).
LA126640/NM-070-41394 (NRHP: Eligible; Update; Avoided).

Determination: No Effect to Historic Properties.
2. Field Check: none.
3. Cultural ACEC: No.
4. Sensitive Cultural Area: No.
5. Recommendation: *PROCEED WITH ACTION:* X *STIPULATIONS ATTACHED*: _X_
6. Reviewer /Archaeologist: Kim Adams **Date**: 1/27/2023

Report Summary	BLM	Other	Total
Acres Inventoried	65.6	12.65	78.25
Sites Recorded	0	0	0
Prev. Recorded Sites	3	0	3
Sites Avoided	3	0	3
Sites Treated	0	0	0

Discovery of Cultural Resources in the Presence or Absence of Monitoring: If any previously unidentified historic or prehistoric cultural resources are discovered during construction or project operations, work in the vicinity of the discovery will be suspended and the discovery will promptly be reported to the BLM Field Manager.
Note: If there are questions about these stipulations, contact Kim Adams (BLM) at 505.564.7683 or kadams@blm.gov.

Approval Date: 09/19/2023

CULTURAL RESOURCE STIPULATIONS
Farmington Field Office
BLM Report Number: 2023(I)018F

Project Name: Rosa 610H Well Pad, Access Road, and Pipeline.
Project Sponsor: Logos Resources II, LLC.

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- The barriers will be placed as indicated on the attached map.
- There will be no surface-disturbing activities or vehicle traffic past the barriers.

Note: If there are questions about these stipulations, contact Kim Adams (BLM) at 505.564.7683 or kadams@blm.gov.

For Official Use Only: Disclosure of site locations prohibited (43 CFR 7.18)
CULTURAL RESOURCE STIPULATIONS
Farmington Field Office
BLM Report Number: 2023(I)018F

Project Name: Rosa 610H Well Pad, Access Road, and Pipeline.
Project Sponsor: Logos Resources II, LLC.
MONITOR ZONE = TEMPORARY FENCING =

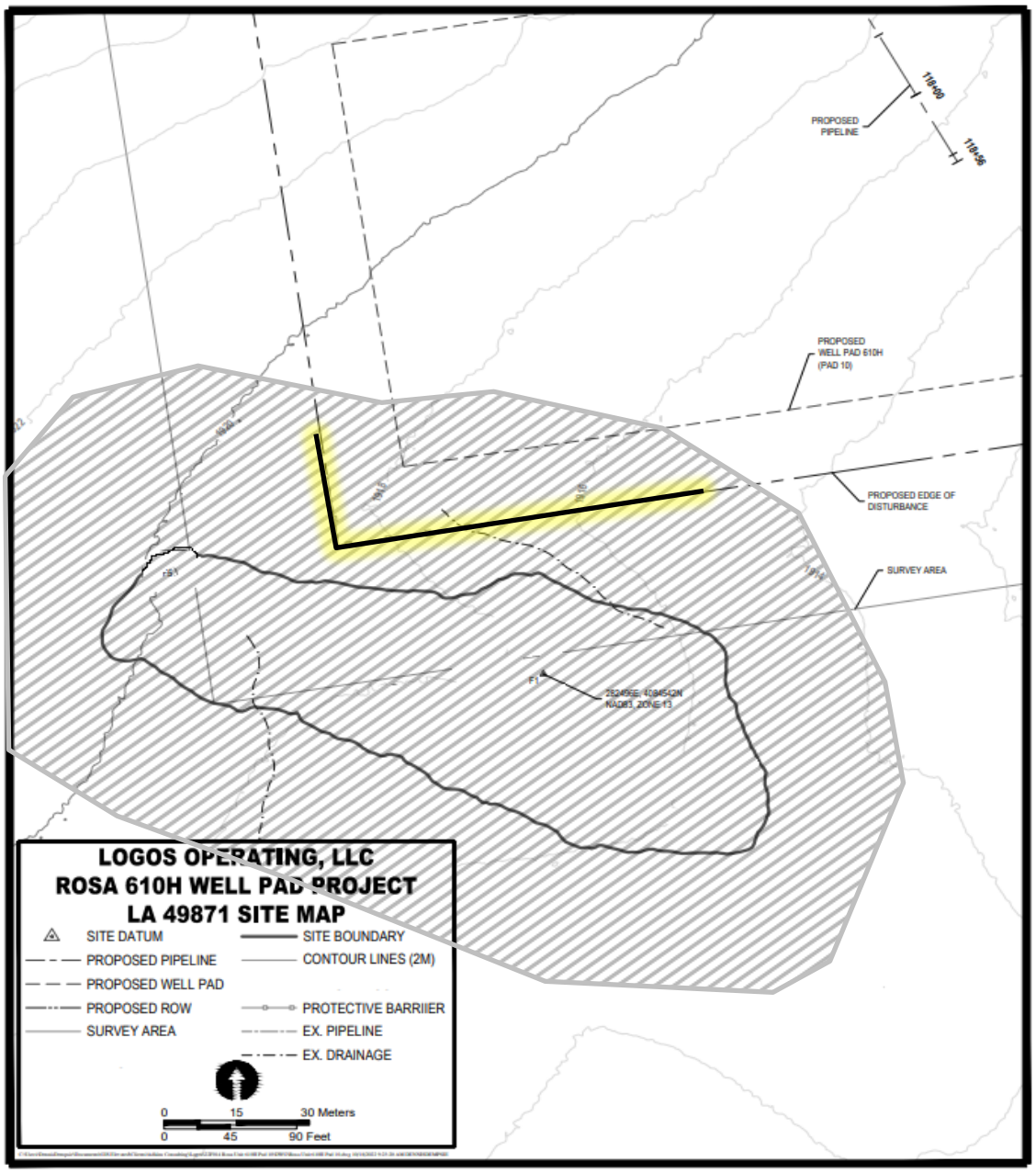

Figure 3. Site map, LA 49871

Approval Date: 09/19/2023

For Official Use Only: Disclosure of site locations prohibited (43 CFR 7.18)
CULTURAL RESOURCE STIPULATIONS
Farmington Field Office
BLM Report Number: 2023(I)018F

Project Name: Rosa 610H Well Pad, Access Road, and Pipeline.
Project Sponsor: Logos Resources II, LLC.
MONITOR ZONE = TEMPORARY FENCING =

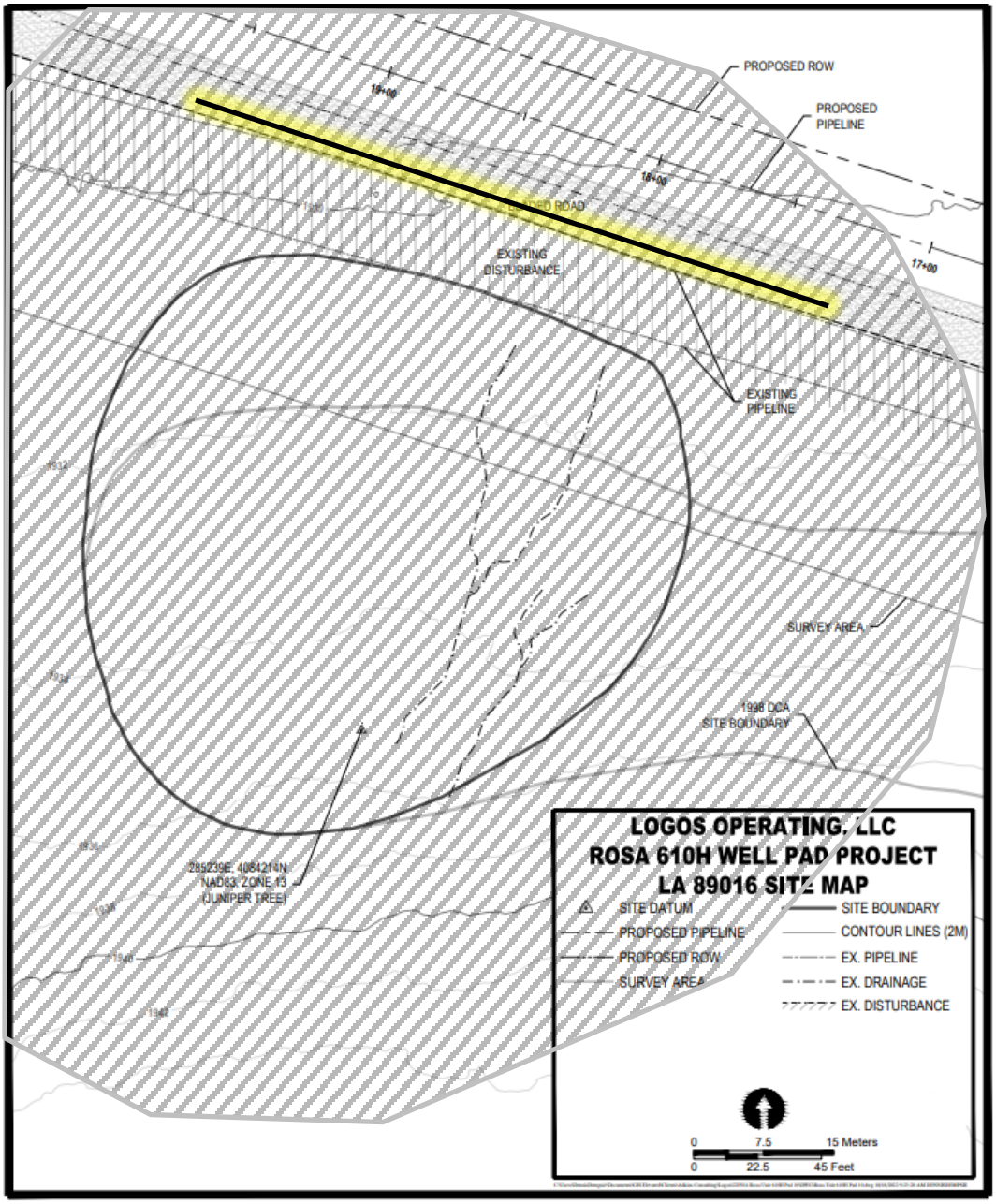

Figure 5. Site map, LA 89016

Approval Date: 09/19/2023

For Official Use Only: Disclosure of site locations prohibited (43 CFR 7.18)
CULTURAL RESOURCE STIPULATIONS
Farmington Field Office
BLM Report Number: 2023(I)018F

Project Name: Rosa 610H Well Pad, Access Road, and Pipeline.
Project Sponsor: Logos Resources II, LLC.
MONITOR ZONE = TEMPORARY FENCING =

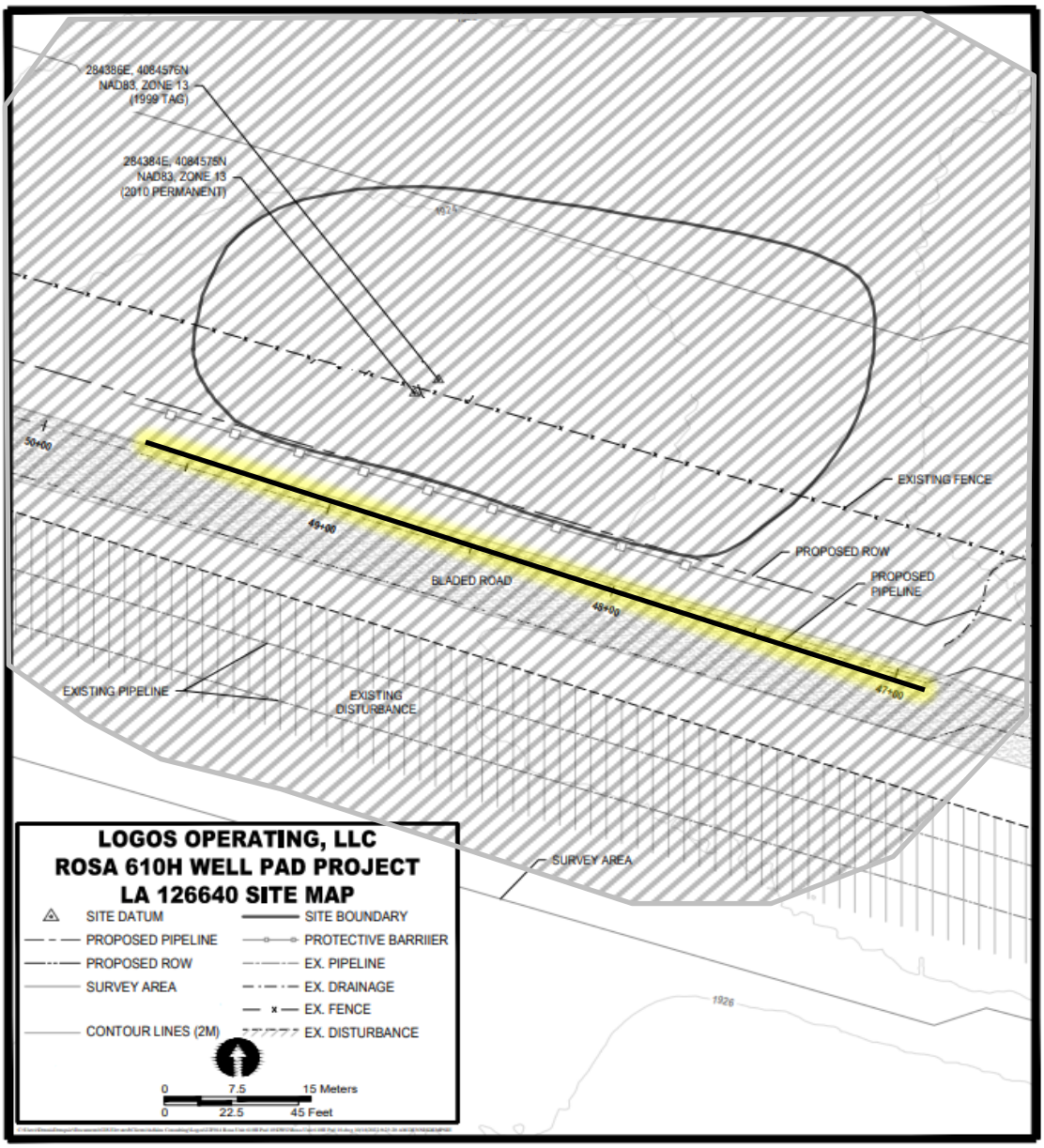

Figure 6. Site map, LA 126640

Approval Date: 09/19/2023

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Farmington District Office
6251 College Blvd, Suite A
Farmington, New Mexico 87402

In Reply Refer To:
3162.3-1(NMF0110)

* LOGOS OPERATING LLC

#614H ROSA UNIT

Lease: NMSF78766 Unit: NMNM78407E
SH: NW¼SW¼ Section 23, T.31 N., R.6 W.
Rio Arriba County, New Mexico
BH: SW¼SW¼ Section 21, T.31 N., R.6 W.
San Juan County, New Mexico
***Above Data Required on Well Sign**

GENERAL REQUIREMENTS FOR OIL AND GAS OPERATIONS ON FEDERAL AND INDIAN LEASES

The following special requirements apply and are effective when **checked**:

A. ☒ Note all surface/drilling conditions of approval attached.

B. ☒ The required wait on cement (WOC) time will be a minimum of 500 psi compressive strength at 60 degrees. Blowout preventor (BOP) nipple-up operations may then be initiated

C. ☐ Test the surface casing to a minimum of _____ psi for 30 minutes.

D. ☐ Test all casing strings below the surface casing to .22 psi/ft. of casing string length or 1500 psi, whichever is greater, but not to exceed 70% of the minimum internal yield burst) for a minimum of 30 minutes.

E. ☐ Communitization Agreement covering the acreage dedicated to this well must be filed for approval with the Bureau of Land Management, New Mexico State Office, Reservoir Management Group, 301 Dinosaur Trail, Santa Fe, New Mexico 87508.
The effective date of the agreement must be **prior** to any sales.

F. ☐ The use of co-flex hose is authorized contingent upon the following:
1. From the BOP to the choke manifold: the co-flex hose must be hobbled on both ends and saddle to prevent whip.
2. From the choke manifold to the discharge tank: the co-flex hoses must be as straight as practical, hobbled on both ends and anchored to prevent whip.
3. The co-flex hose pressure rating must be at least commensurate with approved BOPE.

I. GENERAL

A. Full compliance with all applicable laws, regulations, and Onshore Orders, with the approved Permit to drill, and with the approved Surface Use and Operations Plan is required. Lessees and/or operators are fully accountable for the actions of their contractors and subcontractors. Failure to comply with these requirements and the filing of required reports will result in strict enforcement pursuant to 43 CFR 3163.1 or 3163.2.

B. Each well shall have a well sign in legible condition from spud date to final abandonment. The sign should show the operator's name, lease serial number, or unit name, well number, location of the well, and whether lease is Tribal or Allotted, (See 43 CFR 3162.6(b)).

C. A complete copy of the approved Application for Permit to Drill, along with any conditions of approval, shall be available to authorized personnel at the drill site whenever active drilling operations are under way.

D. For Wildcat wells only, a drilling operations progress report is to be submitted, to the BLM-Field Office, weekly from the spud date until the well is completed and the Well Completion Report is filed. The report should be on 8-1/2 x 11 inch paper, and each page should identify the well by; operator's name, well number, location and lease number.

E. As soon as practical, notice is required of all blowouts, fires and accidents involving life-threatening injuries or loss of life. (See NTL-3A).

F. Prior approval by the BLM-Authorized Office (Drilling and Production Section) is required for variance from the approved drilling program and before commencing plugging operations, plug back work casing repair work, corrective cementing operations, or suspending drilling operations indefinitely. Emergency approval may be obtained orally, but such approval is contingent upon filing of a notice of intent within three business days. **Any changes to the approved plan or any questions regarding drilling operations should be directed to BLM during regular business hours at 505-564-7600. Emergency program changes after hours should be directed to at Virgil Lucero at 505-793-1836.**

G. The Inspection and Enforcement Section (I&E), phone number (505-564-7750) is to be notified at least 24 hours in advance of BOP test, spudding, cementing, or plugging operations so that a BLM representative may witness the operations.

H. Unless drilling operations are commenced within two years, approval of the Application for Permit to Drill will expire. A written request for a two year extension may be granted if submitted prior to expiration.

I. From the time drilling operations are initiated and until drilling operations are completed, a member of the drilling crew or the tool pusher shall maintain rig surveillance at all times, unless the well is secured with blowout preventers or cement plugs.

J. If for any reason, drilling operations are suspended for more than 90 days, a written notice must be provided to this office outlining your plans for this well.

II. REPORTING REQUIREMENTS

A. For reporting purposes, all well Sundry notices, well completion and other well actions shall be referenced by the appropriate lease, communitization agreement and/or unit agreement numbers.

B. The following reports shall be filed with the BLM-Authorized Officer within 30 days after the work is completed.

1. Provide complete information concerning.

a. Setting of each string of casing. Show size and depth of hole, grade and weight of casing, depth set, depth of all cementing tools that are used, amount (in cubic feet) and types of cement used, whether cement circulated to surface and all cement tops in the casing annulus, casing test method and results, and the date work was done. Show spud date on first report submitted.

b. Intervals tested, perforated (include size, number and location of perforations), acidized, or fractured; and results obtained. Provide date work was done on well completion report and completion sundry notice.

c. Subsequent Report of Abandonment, show the way the well was plugged, including depths where casing was cut and pulled, intervals (by depths) where cement plugs were replaced, and dates of the operations.

2. Well Completion Report will be submitted with 30 days after well has been completed.

a. Initial Bottom Hole Pressure (BHP) for the producing formations. Show the BHP on the completion report. The pressure may be: 1) measured with a bottom hole bomb, or; 2) calculated based on shut in surface pressures (minimum seven day buildup) and fluid level shot.

3. Submit a cement evaluation log if cement is not circulated to surface.

III. DRILLER'S LOG

The following shall be entered in the daily driller's log: 1) Blowout preventer pressures tests, including test pressures and results. 2) Blowout preventer tests for proper functioning, 3) Blowout prevention drills conducted, 4) Casing run, including size, grade, weight, and depth set, 5) How pipe was cemented, including amount of cement, type, whether cement circulated to surface, location of cementing tools, etc., 6) Waiting on cement time for each casing string, 7) Casing pressure tests after cementing, including test pressure and results and 8) Estimated amounts of oil and gas recovered and/or produced during drill stem test.

IV. GAS FLARING

Gas produced from this well may not be vented or flared beyond an initial, authorized test period of * Days or 50 MMCF following its (completion)(recompletion), whichever first occurs, without the prior, written approval of the authorized officer. Should gas be vented or flared without approval beyond the test period authorized above, you may be directed to shut-in the well until the gas can be captured or approval to continue venting or flaring as uneconomic is granted. You shall be required to compensate the lessor for the portion of the gas vented or flared without approval which is determined to have been avoidably lost.

*30 days, unless a longer test period is specifically approved by the authorized officer. The 30-day period will commence upon the first gas to surface.

V. SAFETY

A. All rig heating stoves are to be of the explosion-proof type.

B. Rig safety lines are to be installed.

C. Hard hats and other Personal Protective Equipment (PPE) must be utilized.

VI. CHANGE OF PLANS OR ABANDONMENT

A. Any changes of plans required to mitigate unanticipated conditions encountered during drilling operations, will require approval as set forth in Section 1.F.

B. If the well is dry, it is to be plugged in accordance with 43 CFR 3162.3-4, approval of the proposed plugging program is required as set forth in Section 1.F. The report should show the total depth reached, the reason for plugging, and the proposed intervals, by depths, where cement plugs are to be placed, type of plugging mud, etc. A Subsequent Report of Abandonment is required as set forth in Section II.B.1c.

C. Unless a well has been properly cased and cemented, or properly plugged, the drilling rig must not be moved from the drill site without prior approval from the BLM-Authorized Officer.

VII. PHONE NUMBERS

A. For BOPE tests, cementing, and plugging operations the phone number is 505-564-7750 and must be called 24 hours in advance in order that a BLM representative may witness the operations.

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 267207

CONDITIONS

Operator: LOGOS OPERATING, LLC 2010 Afton Place Farmington, NM 87401	OGRID: 289408
	Action Number: 267207
	Action Type: [C-101] BLM - Federal/Indian Land Lease (Form 3160-3)

CONDITIONS

Created By	Condition	Condition Date
ward.rikala	Notify OCD 24 hours prior to casing & cement	9/21/2023
ward.rikala	Will require a File As Drilled C-102 and a Directional Survey with the C-104	9/21/2023
ward.rikala	Once the well is spud, to prevent ground water contamination through whole or partial conduits from the surface, the operator shall drill without interruption through the fresh water zone or zones and shall immediately set in cement the water protection string	9/21/2023
ward.rikala	Cement is required to circulate on both surface and intermediate1 strings of casing	9/21/2023
ward.rikala	Oil base muds are not to be used until fresh water zones are cased and cemented providing isolation from the oil or diesel. This includes synthetic oils. Oil based mud, drilling fluids and solids must be contained in a steel closed loop system	9/21/2023