

Well Name: GOONCH FED COM 04	Well Location: T23S / R28E / SEC 4 / SWSW / 32.3302165 / -104.0977864	County or Parish/State: EDDY / NM
Well Number: 211H	Type of Well: CONVENTIONAL GAS WELL	Allottee or Tribe Name:
Lease Number: NMNM018038, NMNM18038	Unit or CA Name:	Unit or CA Number:
US Well Number: 3001547054	Well Status: Drilling Well	Operator: NOVO OIL AND GAS NORTHERN DELA

Notice of Intent

Type of Submission: Notice of Intent	Type of Action Other
Date Sundry Submitted: 03/26/2021	Time Sundry Submitted: 01:11
Date proposed operation will begin: 05/04/2021	

Procedure Description: Novo Oil & Gas Northern Delaware, LLC respectfully requests the following changes to the APD: Change SHL to 1,080' FSL & 1,095' FWL, from the previously approved location of 1,120' FSL & 980' FWL, Sec. 4, T23S, R28E. There will be no additional surface distance with the proposed SHL change. Change BHL to 130' FNL & 1,155' FWL, from the previously approved location of 130' FNL & 726' FWL, Sec. 4, T23S, R28E. Change the intermediate casing to 8-5/8" from the previous casing size of 9-5/8". See attachment for technical details.

Surface Disturbance

Is any additional surface disturbance proposed?: No

NOI Attachments

Procedure Description

- NOVO_Goonch_Fed_Com_04_211_plot_Plan_2_20210326131102.pdf
- NOVO_Goonch_Fed_Com_04_211_Plan_2_20210326131056.xlsx
- NOVO_Goonch_Fed_Com_04_211_Plan_2_20210326131051.pdf
- NOVO_Goonch_Fed_Com_04_211_AC_Report_Plan_2_20210326131045.pdf
- 5.500_20_P110EC_DWC_C_IS_PLUS_20210326131035.pdf
- 8.625_32.00_P110HSCY_TLW_20210326131029.pdf
- GOONCH_FED_COM_04_211H_v._2_20210326131022.pdf
- Goonch_04_211H_Exhibit_Change_to_APD_Request_v._2_20210326131013.pdf
- Goonch_04_211H_Exhibit_Change_to_APD_Request_v._2_20210326131004.pdf

Well Name: GOONCH FED COM 04	Well Location: T23S / R28E / SEC 4 / SWSW / 32.3302165 / -104.0977864	County or Parish/State: EDDY / NM
Well Number: 211H	Type of Well: CONVENTIONAL GAS WELL	Allottee or Tribe Name:
Lease Number: NMNM018038, NMNM18038	Unit or CA Name:	Unit or CA Number:
US Well Number: 3001547054	Well Status: Drilling Well	Operator: NOVO OIL AND GAS NORTHERN DELA

Conditions of Approval

Additional Reviews

Goonch_FED_COM_04_211H_APD_CHANGE_SUNDRY_Drilling_COAs_20210317161110.pdf

Operator Certification

I certify that the foregoing is true and correct. Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction. Electronic submission of Sundry Notices through this system satisfies regulations requiring a submission of Form 3160-5 or a Sundry Notice.

Operator Electronic Signature: JUSTIN CARTER
Signed on: MAR 26, 2021 01:11 PM
Name: NOVO OIL AND GAS NORTHERN DELA
Title: Landman
Street Address: 1001 West Wilshire Boulevard Suite 206
City: Oklahoma City **State:** OK
Phone: (405) 286-3375
Email address: JCARTER@NOVOOG.COM

Field Representative

Representative Name: Justin Carter
Street Address: 1001 West Wilshire Blvd, Ste 206
City: OKLAHOMA CITY **State:** OK **Zip:** 73116
Phone: (405)286-3375
Email address: jcarter@novoog.com

BLM Point of Contact

BLM POC Name: CHRISTOPHER WALLS
BLM POC Title: Petroleum Engineer
BLM POC Phone: 5752342234
BLM POC Email Address: cwalls@blm.gov
Disposition: Approved
Disposition Date: 03/31/2021
Signature: Chris Walls

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 Road, Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170

District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
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 30-015-47054	² Pool Code 98220	³ Pool Name Purple Sage; Wolfcamp Gas Pool
⁴ Property Code	⁵ Property Name GOONCH FED COM 04	⁶ Well Number 211H
⁷ OGRID No. 372920	⁸ Operator Name NOVO OIL & GAS NORTHERN DELAWARE, LLC	⁹ Elevation 3016.0

¹⁰ Surface Location

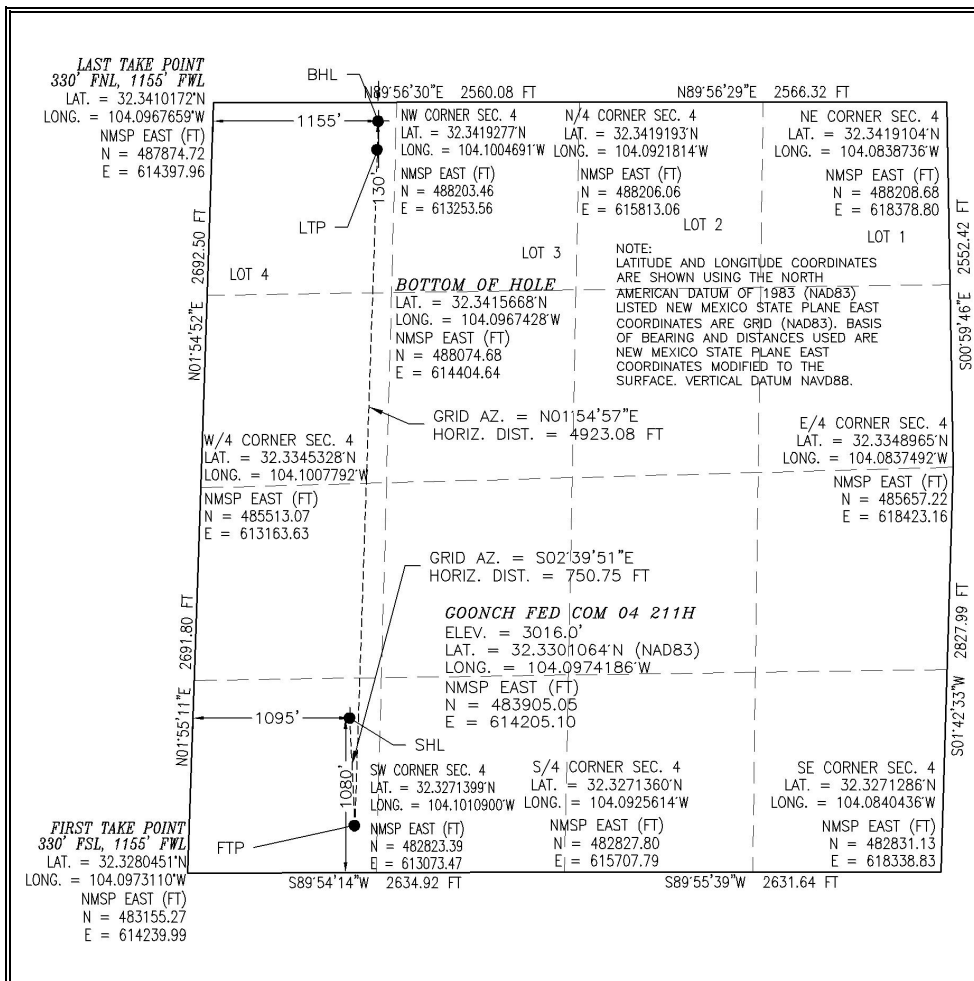
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
M	4	23 S	28 E		1080	SOUTH	1095	WEST	EDDY

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
4	4	23 S	28 E		130	NORTH	1155	WEST	EDDY

¹² Dedicated Acres 320.41	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.
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No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the 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.

Justin Carter 5/12/2021
Signature Date

Printed Name
Justin Carter

E-mail Address
jcarter@novoog.com

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.

MARCH 24, 2021

Date of Survey

[Signature]
Signature and Seal of Professional Surveyor:

Certificate Number: **FILED MON. E. JARVIS, L.S. 12797**
SURVEY NO. 6810D

Intent ☐ As Drilled ☐

API #

Operator Name:	Property Name:	Well Number
NOVO OIL & GAS NORTHERN DELAWARE, LLC	GOONCH FED COM 04	211H

Kick Off Point (KOP)

UL M	Section 4	Township 23S	Range 28E	Lot	Feet 1080	From N/S SOUTH	Feet 1095	From E/W WEST	County EDDY
Latitude 32.3301064					Longitude 104.0974186			NAD 83	

First Take Point (FTP)

UL M	Section 4	Township 23S	Range 28E	Lot	Feet 330	From N/S SOUTH	Feet 1155	From E/W WEST	County EDDY
Latitude 32.3280451					Longitude 104.0973110			NAD 83	

Last Take Point (LTP)

UL	Section 4	Township 23S	Range 28E	Lot 4	Feet 330	From N/S NORTH	Feet 1155	From E/W WEST	County EDDY
Latitude 32.3410172					Longitude 104.0967659			NAD 83	

Is this well the defining well for the Horizontal Spacing Unit? ☐Is this well an infill well? ☐

If infill is yes please provide API if available, Operator Name and well number for Defining well for Horizontal Spacing Unit.

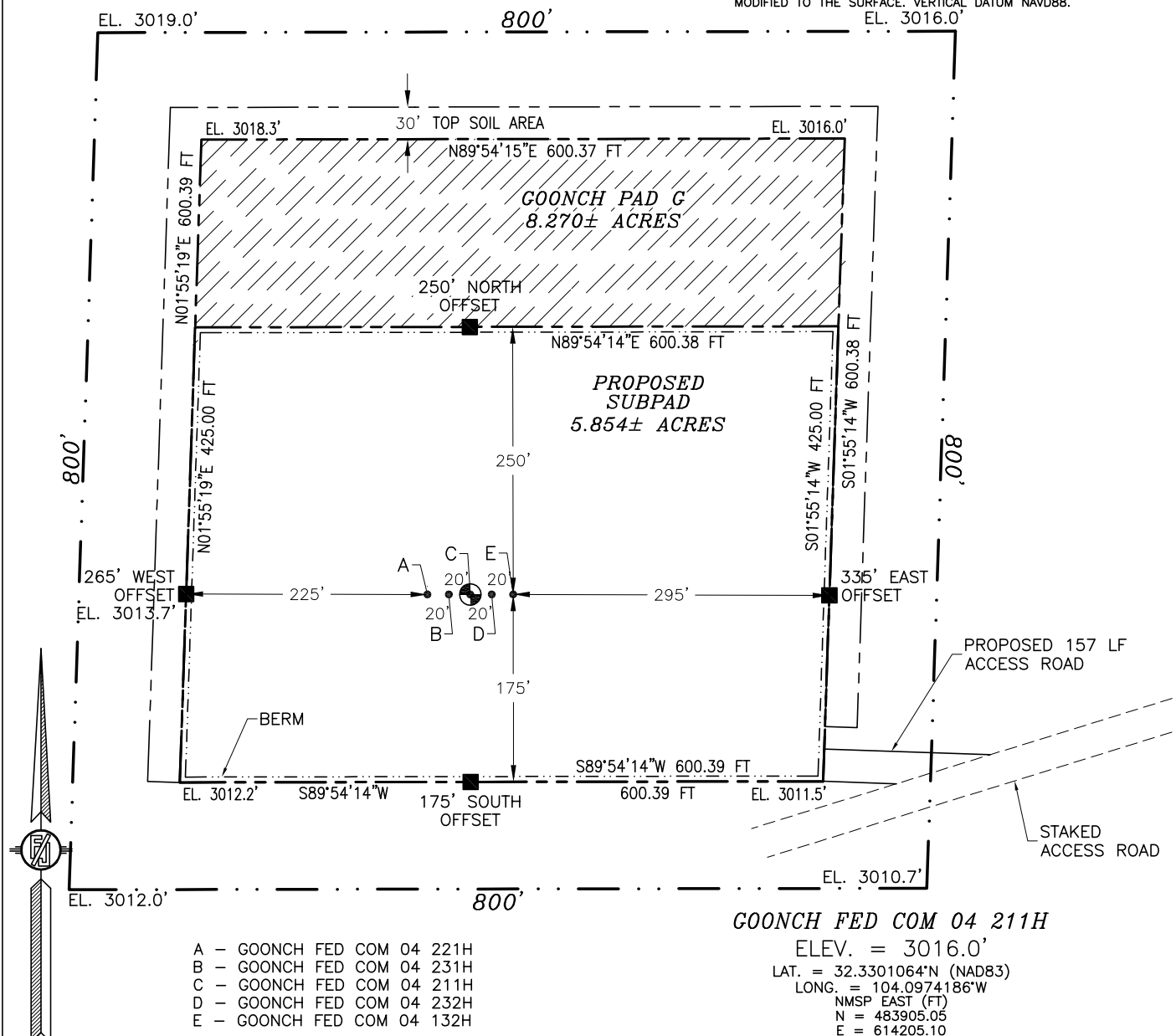
API #

Operator Name:	Property Name:	Well Number

KZ 06/29/2018

SECTION 4, TOWNSHIP 23 SOUTH, RANGE 28 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
SITE MAP

NOTE: LATITUDE AND LONGITUDE COORDINATES ARE SHOWN USING THE NORTH AMERICAN DATUM OF 1983 (NAD83) LISTED NEW MEXICO STATE PLANE EAST COORDINATES ARE GRID (NAD83). BASIS OF BEARING AND DISTANCES USED ARE NEW MEXICO STATE PLANE EAST COORDINATES MODIFIED TO THE SURFACE. VERTICAL DATUM NAVD88.



015 75 150 300
SCALE 1" = 150'

DIRECTIONS TO LOCATION

FROM STATE ROAD 31 (POTASH MINES) & CR 605 (REFINERY) GO NORTHWEST ON REFINERY ROAD APPROX 3.57 MILES TO HERRADURA BEND ROAD, TURN LEFT AND GO WEST-SOUTHWEST ON HERRADURA BEND ROAD APPROX. 0.66 OF A MILE, TURN LEFT AND GO SOUTH-SOUTHEAST APPROX. 0.59 OF A MILE TO A STAKED ACCESS ROAD ON RIGHT (WEST), FOLLOW STAKED ROAD SOUTH-SOUTHWEST 1000' TO CULEBRA BLUFF CTB 1, FROM THE SOUTHEAST CORNER OF THE CTB PAD, GO SOUTH-SOUTHWEST ALONG THE POWER LINE ROAD APPROX. 0.64 OF A MILE TO AN EXISTING CALICHE ROAD (HERRADURA BEND) AND STAKED ACCESS ROAD, FOLLOW STAKED ACCESS ROAD SOUTHWEST 0.39 OF A MILE, GO WEST 157' TO THE SOUTHEAST PAD CORNER FOR THIS LOCATION.

I, FILIMON F. JARAMILLO, A NEW MEXICO REGISTERED PROFESSIONAL SURVEYOR CERTIFY THAT I DIRECTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THE SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND THAT THIS SURVEY MEETS THE MINIMUM STANDARDS FOR SURVEYING IN NEW MEXICO.

FILIMON F. JARAMILLO, S. 12794

MADRON SURVEYING, INC.

301 SOUTH CANAL
(575) 234-3341

CARLSBAD, NEW MEXICO

NOVO OIL & GAS NORTHERN DELAWARE, LLC
GOONCH FED COM 04 211H
LOCATED 1080 FT. FROM THE SOUTH LINE
AND 1095 FT. FROM THE WEST LINE OF
SECTION 4, TOWNSHIP 23 SOUTH,
RANGE 28 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO


MARCH 24, 2021

SURVEY NO. 6810D

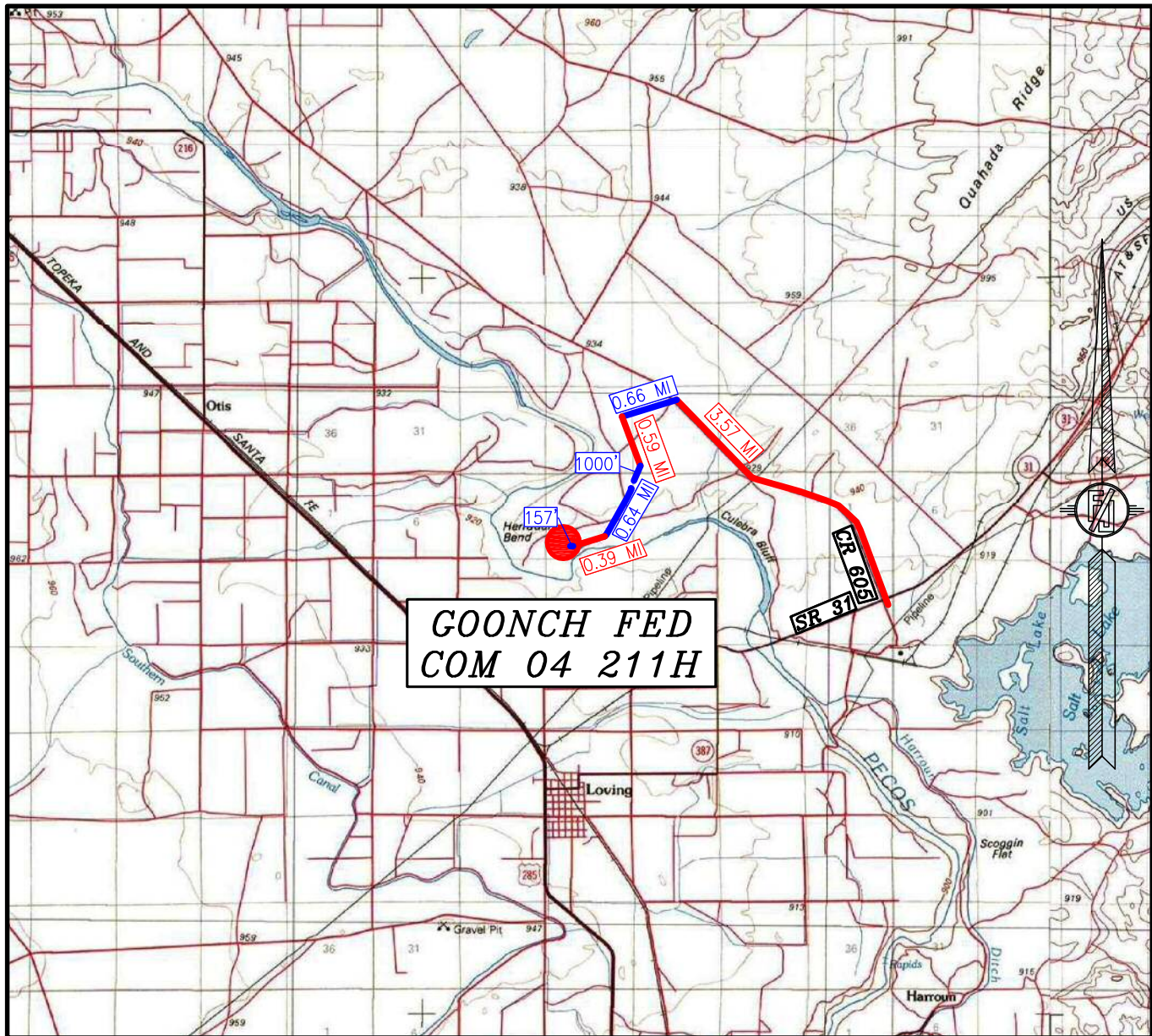
GOONCH FED
COM 04 211H

NOT TO SCALE

MARCH 24, 2021

MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3341 *CARLSBAD, NEW MEXICO* 

SECTION 4, TOWNSHIP 23 SOUTH, RANGE 28 EAST, N.M.P.M.
 EDDY COUNTY, STATE OF NEW MEXICO
 VICINITY MAP



DISTANCES IN MILES

NOT TO SCALE

NOVO OIL & GAS NORTHERN DELAWARE, LLC
GOONCH FED COM 04 211H

LOCATED 1080 FT. FROM THE SOUTH LINE
 AND 1095 FT. FROM THE WEST LINE OF
 SECTION 4, TOWNSHIP 23 SOUTH,
 RANGE 28 EAST, N.M.P.M.
 EDDY COUNTY, STATE OF NEW MEXICO

MARCH 24, 2021

DIRECTIONS TO LOCATION

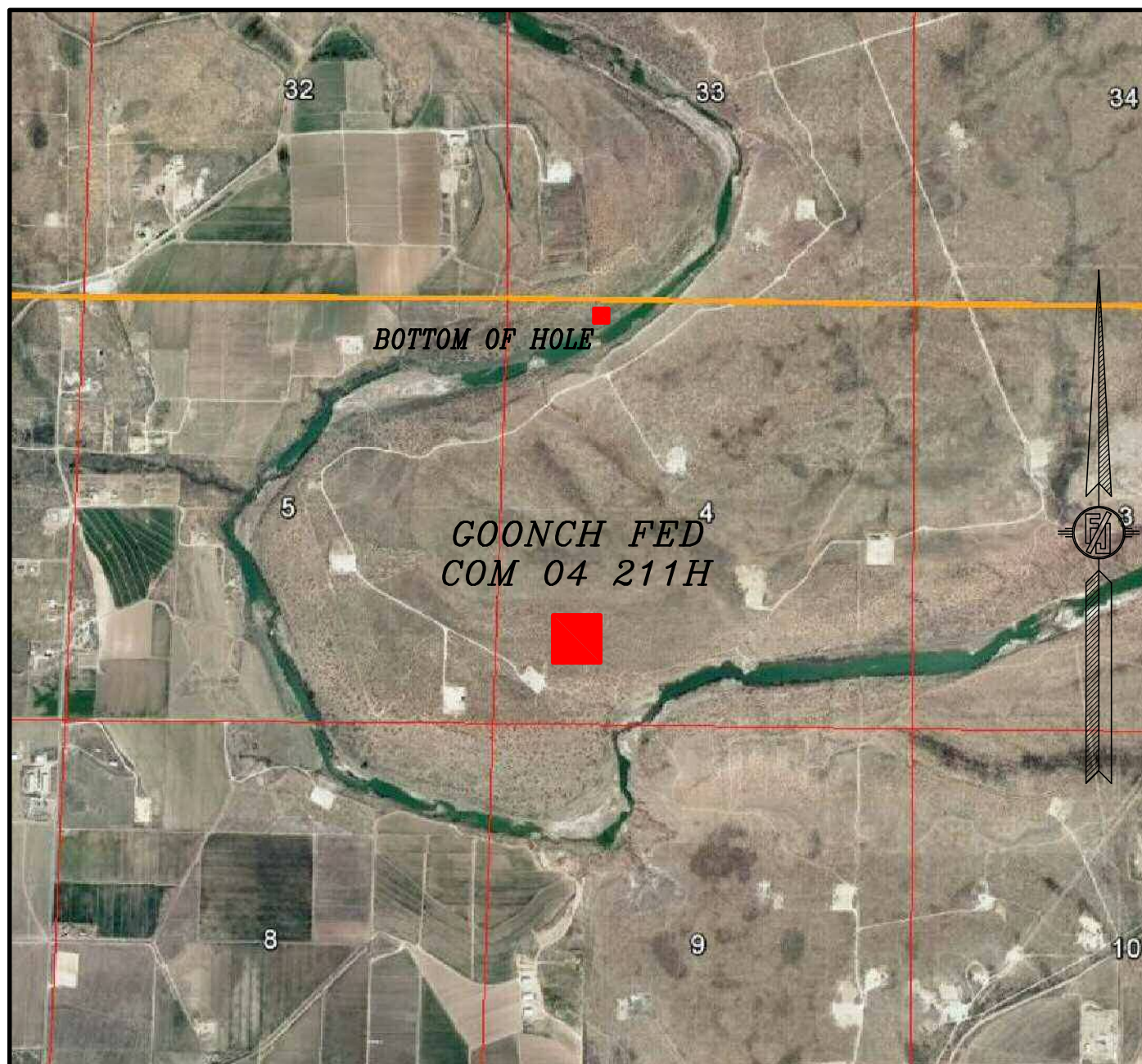
FROM STATE ROAD 31 (POTASH MINES) & CR 605 (REFINERY) GO NORTHWEST ON REFINERY ROAD APPROX 3.57 MILES TO HERRADURA BEND ROAD, TURN LEFT AND GO WEST-SOUTHWEST ON HERRADURA BEND ROAD APPROX. 0.66 OF A MILE, TURN LEFT AND GO SOUTH-SOUTHEAST APPROX. 0.59 OF A MILE TO A STAKED ACCESS ROAD ON RIGHT (WEST), FOLLOW STAKED ROAD SOUTH-SOUTHWEST 1000' TO CULEBRA BLUFF CTB 1, FROM THE SOUTHEAST CORNER OF THE CTB PAD, GO SOUTH-SOUTHWEST ALONG THE POWER LINE ROAD APPROX. 0.64 OF A MILE TO AN EXISTING CALICHE ROAD (HERRADURA BEND) AND STAKED ACCESS ROAD, FOLLOW STAKED ACCESS ROAD SOUTHWEST 0.39 OF A MILE, GO WEST 157' TO THE SOUTHEAST PAD CORNER FOR THIS LOCATION.

SURVEY NO. 6810D

MADRON SURVEYING, INC. 301 SOUTH CANAL
 (575) 234-3341

CARLSBAD, NEW MEXICO

SECTION 4, TOWNSHIP 23 SOUTH, RANGE 28 EAST, N.M.P.M.
 EDDY COUNTY, STATE OF NEW MEXICO
 AERIAL PHOTO



NOT TO SCALE
 AERIAL PHOTO:
 GOOGLE EARTH
 MARCH 2016

NOVO OIL & GAS NORTHERN DELAWARE, LLC
GOONCH FED COM 04 211H
 LOCATED 1080 FT. FROM THE SOUTH LINE
 AND 1095 FT. FROM THE WEST LINE OF
 SECTION 4, TOWNSHIP 23 SOUTH,
 RANGE 28 EAST, N.M.P.M.
 EDDY COUNTY, STATE OF NEW MEXICO

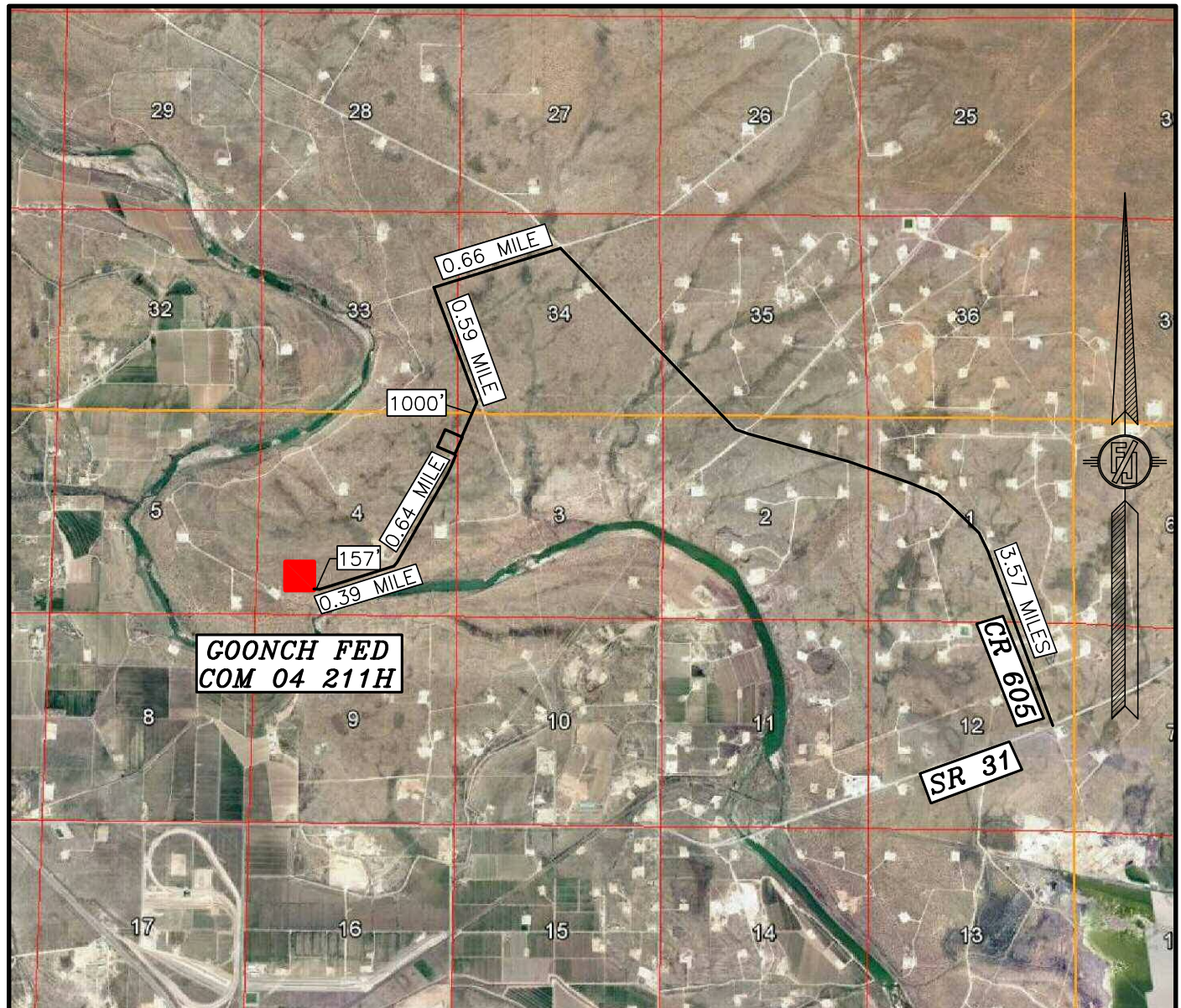
MARCH 24, 2021

MADRON SURVEYING, INC.

301 SOUTH CANAL
 (575) 234-3341

SURVEY NO. 6810D
 CARLSBAD, NEW MEXICO

SECTION 4, TOWNSHIP 23 SOUTH, RANGE 28 EAST, N.M.P.M.
 EDDY COUNTY, STATE OF NEW MEXICO
 ACCESS AERIAL ROUTE MAP



NOT TO SCALE
 AERIAL PHOTO:
 GOOGLE EARTH
 MARCH 2016

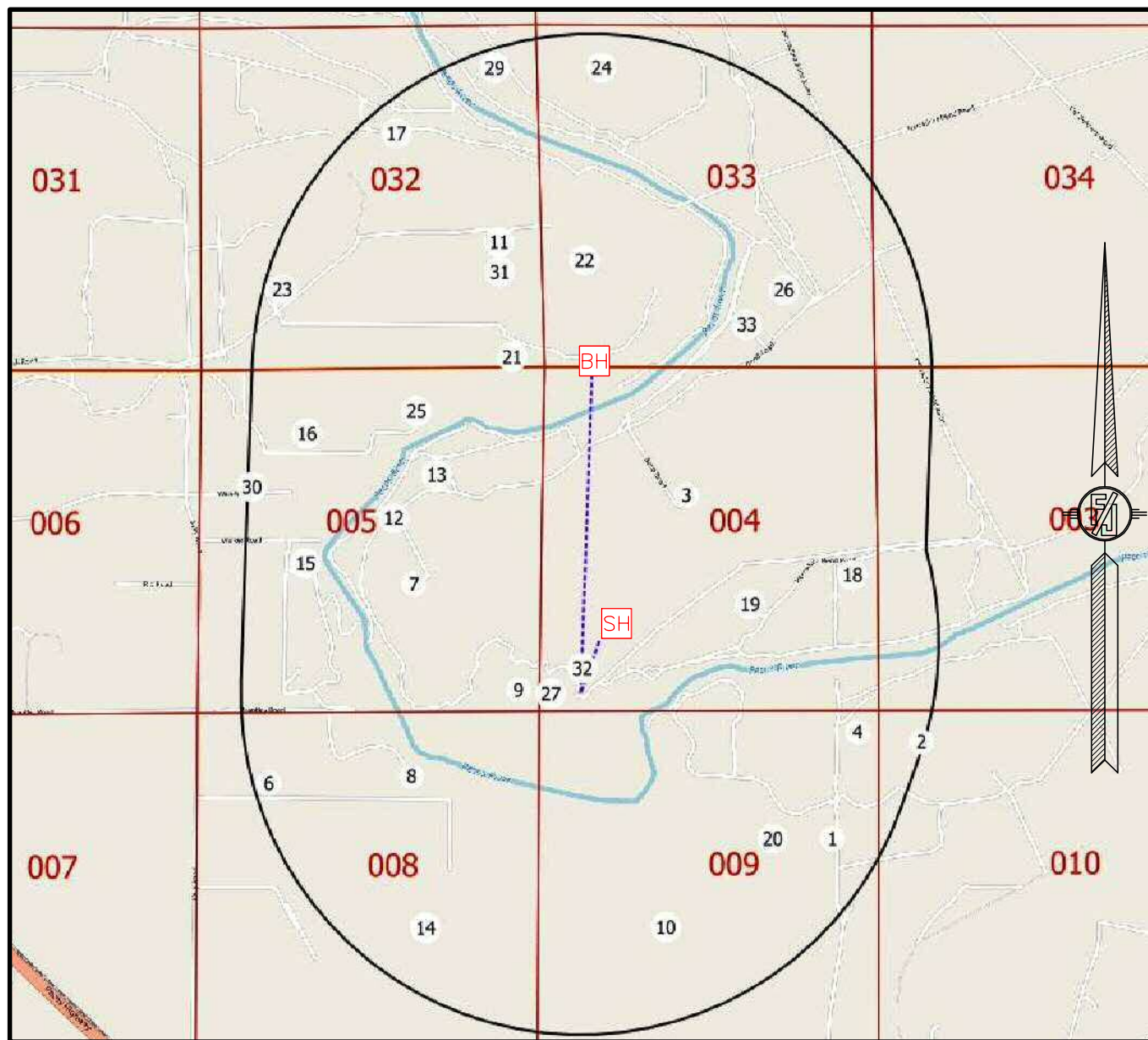
NOVO OIL & GAS NORTHERN DELAWARE, LLC
GOONCH FED COM 04 211H
 LOCATED 1080 FT. FROM THE SOUTH LINE
 AND 1095 FT. FROM THE WEST LINE OF
 SECTION 4, TOWNSHIP 23 SOUTH,
 RANGE 28 EAST, N.M.P.M.
 EDDY COUNTY, STATE OF NEW MEXICO

MARCH 24, 2021

MADRON SURVEYING, INC. 301 SOUTH CANAL
 (575) 234-3341

SURVEY NO. 6810D
 CARLSBAD, NEW MEXICO

1-MILE MAP



NOT TO SCALE

[SH] SURFACE LOCATION

[BH] BOTTOM OF HOLE

[XX] WELLS WITHIN 1 MILE

--- WELL PATH

— 1-MILE BOUNDARY

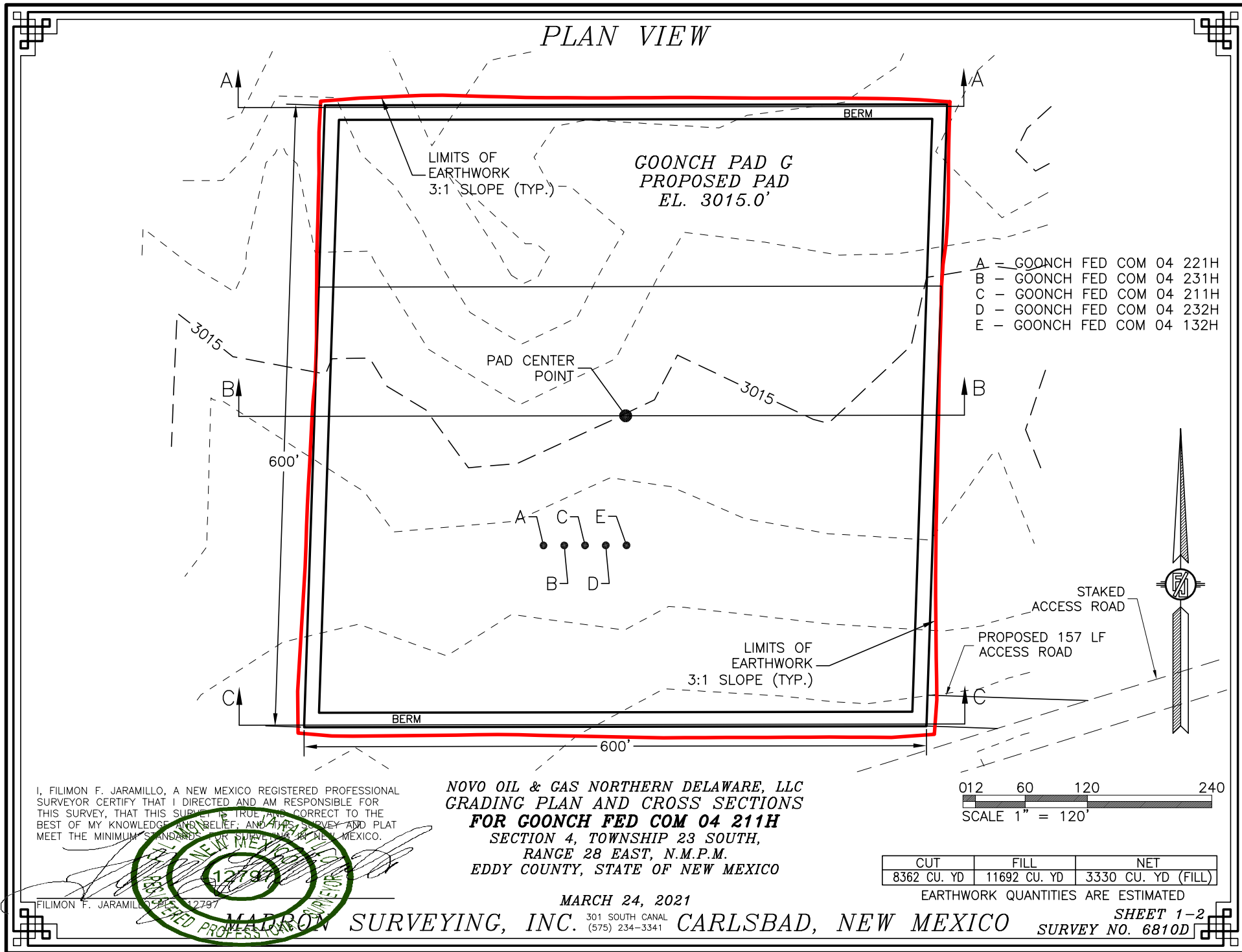
NOVO OIL & GAS NORTHERN DELAWARE, LLC
GOONCH FED COM 04 211H
 LOCATED 1080 FT. FROM THE SOUTH LINE
 AND 1095 FT. FROM THE WEST LINE OF
 SECTION 4, TOWNSHIP 23 SOUTH,
 RANGE 28 EAST, N.M.P.M.
 EDDY COUNTY, STATE OF NEW MEXICO

MARCH 24, 2021

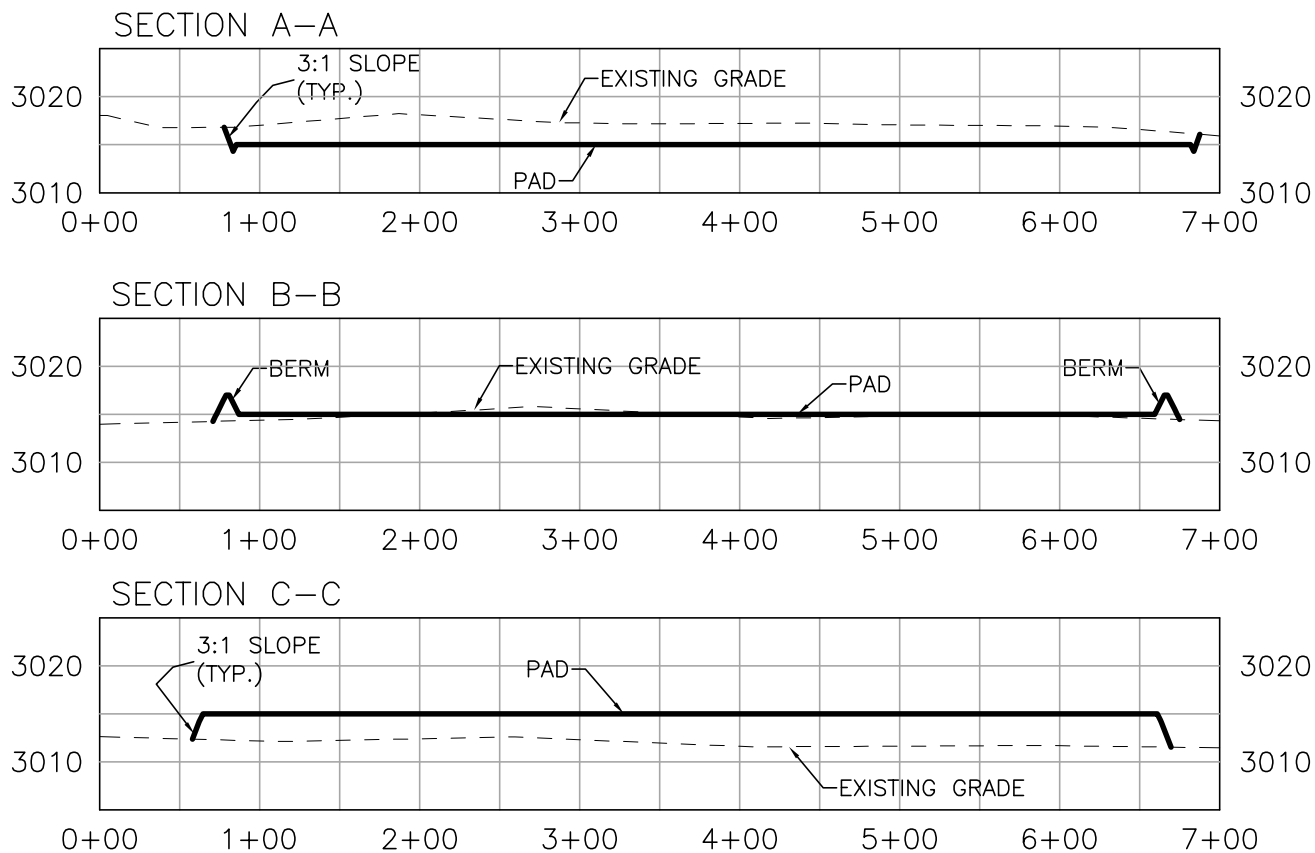
SURVEY NO. 6810D

MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3341

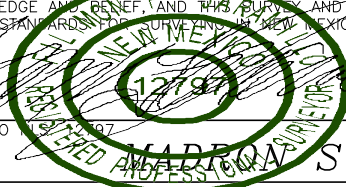
CARLSBAD, NEW MEXICO



CROSS SECTIONS



I, FILIMON F. JARAMILLO, A NEW MEXICO REGISTERED PROFESSIONAL SURVEYOR CERTIFY THAT I DIRECTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND THIS SURVEY AND PLAT MEET THE MINIMUM STANDARDS FOR SURVEYING IN NEW MEXICO.



NOVO OIL & GAS NORTHERN DELAWARE, LLC
GRADING PLAN AND CROSS SECTIONS
FOR GOONCH FED COM 04 211H
SECTION 4, TOWNSHIP 23 SOUTH,
RANGE 28 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

MARCH 24, 2021

FILIMON F. JARAMILLO

SURVEYING, INC. CARLSBAD, NEW MEXICO

301 SOUTH CANAL
 (575) 234-3341

012 60 120 240
 SCALE 1" = 120' - 1" = 20' VER

CUT	FILL	NET
8362 CU. YD	11692 CU. YD	3330 CU. YD (FILL)

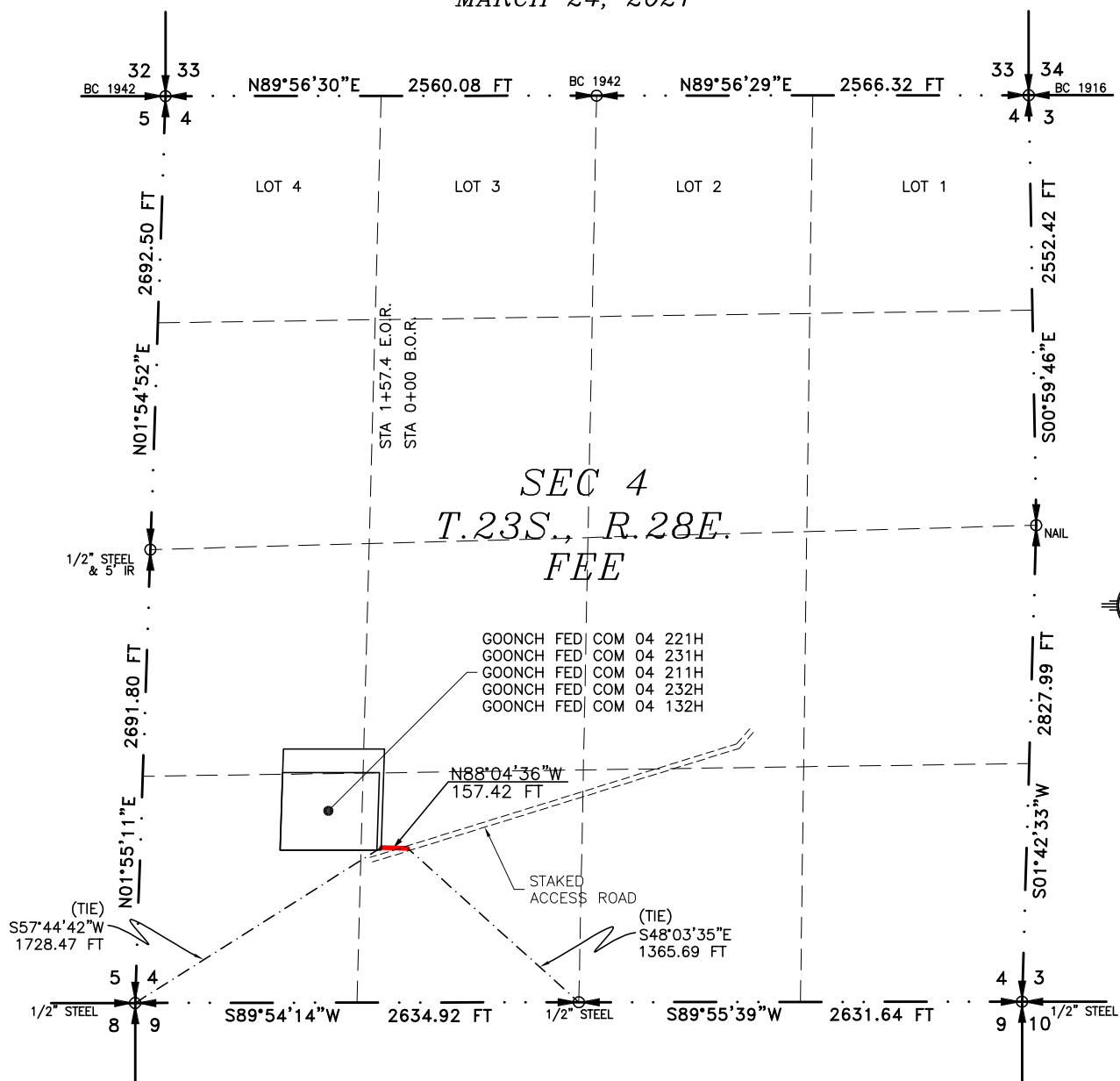
EARTHWORK QUANTITIES ARE ESTIMATED

SHEET 2-2
SURVEY NO. 6810D

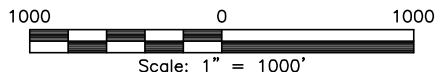
ACCESS ROAD PLAT

ACCESS ROAD TO THE GOONCH FED COM 04 221H, 231H, 211H, 232H, 132H

NOVO OIL & GAS NORTHERN DELAWARE, LLC
CENTERLINE SURVEY OF AN ACCESS ROAD CROSSING
SECTION 4, TOWNSHIP 23 SOUTH, RANGE 28 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
MARCH 24, 2021



SEE NEXT SHEET (2-2) FOR DESCRIPTION

**GENERAL NOTES**

- 1.) THE INTENT OF THIS ROUTE SURVEY IS TO ACQUIRE AN EASEMENT.
- 2.) BASIS OF BEARING AND DISTANCE IS NMSP EAST (NAD83) MODIFIED TO SURFACE COORDINATES. NAD 83 (FEET) AND NAVD 88 (FEET) COORDINATE SYSTEMS USED IN THE SURVEY.

SHEET: 1-2

MADRON SURVEYING, INC. 301 SOUTH CANAL CARLSBAD, NEW MEXICO (575) 234-3341

SURVEYOR CERTIFICATE

I, FILIMON F. JARAMILLO, A NEW MEXICO PROFESSIONAL SURVEYOR NO. 12797, HEREBY CERTIFY THAT I HAVE CONDUCTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND THAT THIS SURVEY AND PLAT MEET THE MINIMUM STANDARDS FOR LAND SURVEYING IN THE STATE OF NEW MEXICO.

IN WITNESS WHEREOF, THIS CERTIFICATE IS EXECUTED AT CARLSBAD, NEW MEXICO, THIS 25th DAY OF MARCH 2021

FILIMON F. JARAMILLO PLS. 12797
 301 SOUTH CANAL
 CARLSBAD, NEW MEXICO 88220
 Phone (575) 234-3341

MADRON SURVEYING, INC.
 301 SOUTH CANAL
 CARLSBAD, NEW MEXICO 88220
 Phone (575) 234-3341

SURVEY NO. 6810D

ACCESS ROAD PLAT

ACCESS ROAD TO THE GOONCH FED COM 04 221H, 231H, 211H, 232H, 132H

NOVO OIL & GAS NORTHERN DELAWARE, LLC
CENTERLINE SURVEY OF AN ACCESS ROAD CROSSING
SECTION 4, TOWNSHIP 23 SOUTH, RANGE 28 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
MARCH 24, 2021

DESCRIPTION

A STRIP OF LAND 30 FEET WIDE CROSSING FEE LAND IN SECTION 4, TOWNSHIP 23 SOUTH, RANGE 28 EAST, N.M.P.M., EDDY COUNTY, STATE OF NEW MEXICO AND BEING 15 FEET EACH SIDE OF THE FOLLOWING DESCRIBED CENTERLINE SURVEY:

BEGINNING AT A POINT WITHIN THE SE/4 SW/4 OF SAID SECTION 4, TOWNSHIP 23 SOUTH, RANGE 28 EAST, N.M.P.M., WHENCE THE SOUTH QUARTER CORNER OF SAID SECTION 4, TOWNSHIP 23 SOUTH, RANGE 28 EAST, N.M.P.M. BEARS S48°03'35"E, A DISTANCE OF 1365.69 FEET;

THENCE N88°04'36"W A DISTANCE OF 157.42 FEET THE TERMINUS OF THIS CENTERLINE SURVEY, WHENCE THE SOUTHWEST CORNER OF SAID SECTION 4, TOWNSHIP 23 SOUTH, RANGE 28 EAST, N.M.P.M. BEARS S57°44'42"W, A DISTANCE OF 1728.47 FEET;

SAID STRIP OF LAND BEING 157.42 FEET OR 9.54 RODS IN LENGTH, CONTAINING 0.108 ACRES MORE OR LESS AND BEING ALLOCATED BY FORTIES AS FOLLOWS:

SE/4 SW/4 157.42 L.F. 9.54 RODS 0.108 ACRES

GENERAL NOTES

1.) THE INTENT OF THIS ROUTE SURVEY IS TO ACQUIRE AN EASEMENT.

2.) BASIS OF BEARING AND DISTANCE IS NMSP EAST (NAD83) MODIFIED TO SURFACE COORDINATES. NAD 83 (FEET) AND NAVD 88 (FEET) COORDINATE SYSTEMS USED IN THE SURVEY.

SHEET: 2-2

MADRON SURVEYING, INC. 301 SOUTH CANAL CARLSBAD, NEW MEXICO (575) 234-3341

SURVEYOR CERTIFICATE

I, FILIMON F. JARAMILLO, A NEW MEXICO PROFESSIONAL SURVEYOR NO. 12797, HEREBY CERTIFY THAT I HAVE CONDUCTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND THAT THIS SURVEY AND PLAT MEET THE MINIMUM STANDARDS FOR LAND SURVEYING IN THE STATE OF NEW MEXICO.

IN WITNESS WHEREOF, THIS CERTIFICATE IS EXECUTED AT CARLSBAD, NEW MEXICO, THIS 25 DAY OF MARCH 2021

(Signature of Filimon F. Jaramillo)
FILIMON F. JARAMILLO PLS. 12797

MADRON SURVEYING, INC.
 301 SOUTH CANAL
 CARLSBAD, NEW MEXICO 88220
 Phone (575) 234-3341

SURVEY NO. 6810D

Goonch Fed Com 04 211H

CHANGE TO PLANS

Move Surface Hole Location

From: 1,120' FSL & 980' FWL, Section 4, T-23-S, R-28-E, SWSW

To: 1,080' FSL & 1,095' FWL, Section 4, T-23-S, R-28-E, SWSW

Moved on the same pad site and there will be no new surface disturbance.

Move Bottom Hole Location

From: 130' FNL & 726' FWL, Section 4, T-23-S, R-28-E, NWNW

To: 130' FNL & 1,155' FWL, Section 4, T-23-S, R-28-E, NWNW

Casing Substitution

Intermediate Casing:

Hole Size: 9-7/8", Casing: 8-5/8", 32 ppf, P-110, TLW to be set at 8,994' TMD.

Design Safety Factors: Burst 5.95, Collapse 1.47, Tension 3.34 (Casing Specification Sheet is attached)

Production Casing:

Hole Size: 7-7/8", Casing: 5-1/2", 20 ppf, P-110, DWC/C IS+ to be set at 15,844' TMD.

Design Safety Factors: Burst 1.25, Collapse 3.79, Tension 2.76 (Casing Specification Sheet is attached)

Cement Job for 8-5/8" Intermediate Casing String (TOC = Surface)

Lead: 607 Sacks; 2,173.2 cu. ft.; 100% excess; 3.58 cu.ft./sx; 10 ppg; Class C + retarder + LCM + beads; 900 psi 24-hour compressive strength.

Tail: 130 Sacks; 180.7 cu. ft; 50% excess; 1.39 cu.ft./sx; 13.80 ppg; Class C + retarder + LCM; 1,200 psi 24-hour compressive strength.

Cement Job for 5-1/2" Production Casing String (TOC = Surface)

Lead: 694 Sacks; 1,472.3 cu. ft.; 20% excess; 2.12 cu.ft./sx; 12 ppg; Class C + retarder; 1,200 psi 24-hour compressive strength.

Tail: 1,378 Sacks; 2,191 cu. ft; 20% excess; 1.59 cu.ft./sx; 13.20 ppg; Class C + retarder; 1,200 psi 24-hour compressive strength.

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 Road, Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170

District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
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 30-015-47054	² Pool Code 98220	³ Pool Name Purple Sage; Wolfcamp Gas Pool
⁴ Property Code	⁵ Property Name GOONCH FED COM 04	⁶ Well Number 211H
⁷ OGRID No. 372920	⁸ Operator Name NOVO OIL & GAS NORTHERN DELAWARE, LLC	⁹ Elevation 3016.0

¹⁰ Surface Location

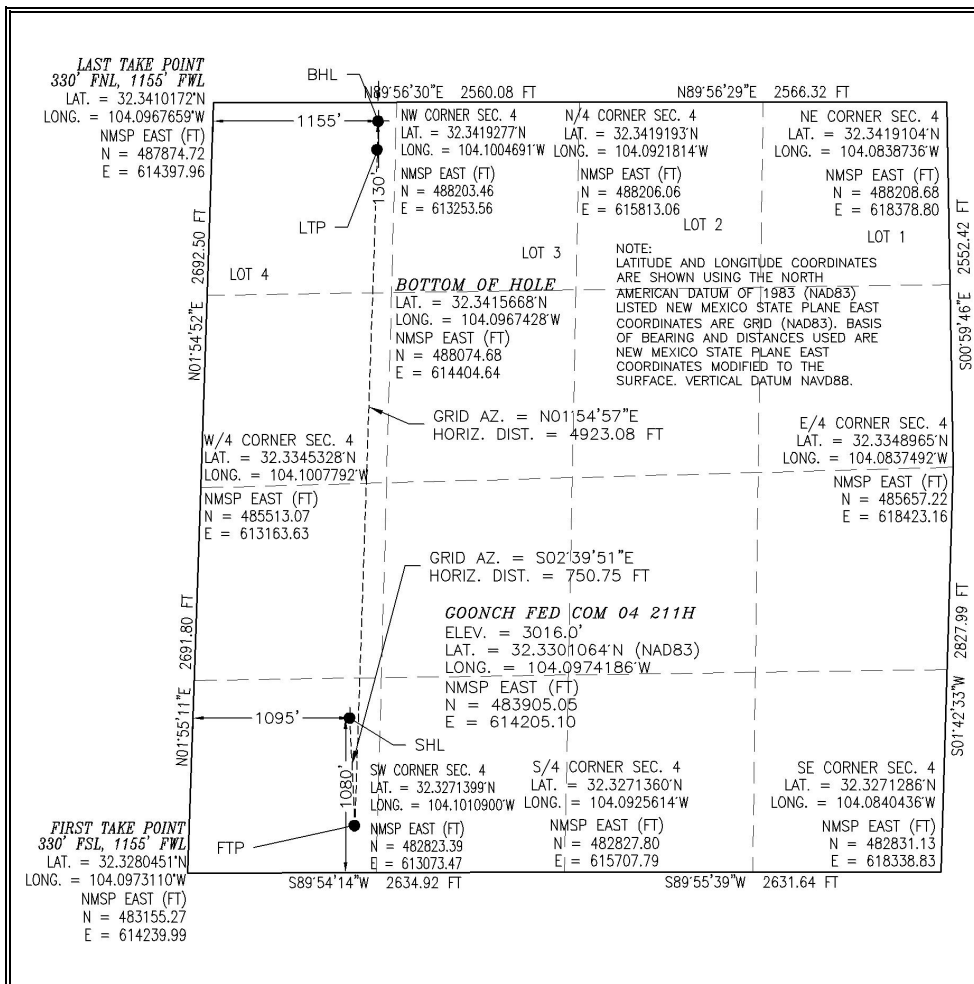
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
M	4	23 S	28 E		1080	SOUTH	1095	WEST	EDDY

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
4	4	23 S	28 E		130	NORTH	1155	WEST	EDDY

¹² Dedicated Acres 320.41	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.
--	-------------------------------	----------------------------------	-------------------------

No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the 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.

Signature: *Justin Carter* Date: **5/12/2021**

Printed Name: **Justin Carter**

E-mail Address: **jcarter@novoog.com**

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.

MARCH 24, 2021

Date of Survey

Signature and Seal of Professional Surveyor: *[Signature]*

Certificate Number: **FILED MON F JARVIS LICO PLS 12797**
SURVEY NO. 6810D



NOVO OIL & GAS NORTHERN DELAWARE, LLC

Goonch Fed Com 04 211H

SHL: 1080' FSL & 1095' FWL Section 4-23S-28E

BHL: 130' FNL & 1155' FWL Section 4-23S-28E

Eddy County, New Mexico

DRILLING OPERATIONS PLAN**Standard Wolfcamp 3-STRING CASING DESIGN (Not Secretary's Potash or R-111-P)****Estimated Drilling Conditions**

Target Formation	Wolfcamp A
Target Depth - TVD (ft)	9694
Planned MD (ft)	15844
Anticipated Bottom-Hole Pressure (psi)	6301.1
Anticipated Maximum Surface Pressure (psi)	4168.42
Abnormal Pressure (Yes/No)	No
Anticipated Bottom-Hole Temperature (deg F)	215 deg F
H2S Contingency Plan Required (Yes/No)	Yes

Geologic Formations

	GR	KB (25')	
Elevation	3,014	3,039	
Formation Tops	TVDss	TVD - KB	Mineral Resources
Rustler	2,639	400	Water
Bell Canyon (base of salt)	500	2,539	Water
Cherry Canyon	-575	3,614	Water
Brushy Canyon	-1,588	4,627	Oil, Gas, Water
Bone Spring Lime	-3,031	6,070	Oil, Gas, Water
Lower Avalon	-3,539	6,578	Oil, Gas, Water
1st Bone Spring Sand	-3,998	7,037	Oil, Gas, Water
2nd Bone Spring Carbonate	-4,211	7,250	Oil, Gas, Water
2nd Bone Spring Sand	-4,746	7,785	Oil, Gas, Water
3rd Bone Spring Carbonate	-5,043	8,082	Oil, Gas, Water
3rd Bone Spring Sand	-6,090	9,129	Oil, Gas, Water
Wolfcamp XY	-6,370	9,409	Oil, Gas, Water
Wolfcamp A	-6,575	9,614	Oil, Gas, Water
Wolfcamp B	-6,780	9,819	Oil, Gas, Water
Wolfcamp B Flow Unit	-7,115	10,154	Oil, Gas, Water
Wolfcamp C	-7,233	10,272	Oil, Gas, Water

Pressure Control Equipment and Pressure Testing Procedure

A 13-5/8" 5M Blowout Preventer system will be installed on a multi-bowl wellhead with a 13-5/8 flanged casing spool.

The top flange of casing spool will be set in a cellar below ground level. The blowout preventor system will consist of a single pipe ram on bottom, mud cross, double pipe ram with blind rams on bottom and pipe rams on top and annular preventer. The blowout preventer will be installed on top of the 13-3/8" surface casing and will remain installed to total depth of the well. Wellhead, blowout preventer and choke manifold diagrams have been included. A co-flex line will be used between the BOP system and the choke manifold. A pressure test certification form for the co-flex hose will be available on the location at the time of the BOP testing.

The BOP system will be isolated with a test plug and tested by an independent tester to 250 psi low and 5,000 psi high for 10 minutes.

The Surface Casing will be pressure tested to 250 psi low and 1500 psi high. Intermediate Casing will be pressure tested to 250 psi low and (.22 psi x Shoe TVD, which is equivalent to 1978.68 psi) high for 30 minutes

Drilling Fluid Program

Depth Interval (ft)	Hole Size (in.)	Fluid Type	Mud Weight (ppg)	Funnel Viscosity (sec/qt)	API Fluid Loss (ml/30min)	Total Solids (%)
0 - 450	17-1/2	Water Based Spud Mud	8.3	30-60	N/C	2.0-8.0
450 - 8,994	9-7/8"	Brine Diesel Emulsion or Brine	8.8-9.6	35-45	N/C	1.0-4.0
8,994 - 15,844	7-7/8"	Oil Based Mud	12-13.3	35-65	4-6 cc's	1.0-8.0
Drilling Fluid System		A closed loop drilling system will be used.				

Casing Program

Depth Interval	Length (ft)	Hole Size	Casing Size	Weight (ppf)	Grade	Coupling	Notes
0' - 450'	450	17-1/2	13-3/8"	54.50	J-55	BTC	
0' - 8,994'	8,994	9-7/8"	8-5/8"	32.00	P-110	TLW	
0' - 15,844'	15,844	7-7/8"	5-1/2"	20.00	P-110	DWC/C IS+	

Casing Centralizers

Surface Casing: Centralizers will be run on the bottom 3 joints of casing and then 1 centralizer per joint to surface.

Casing Performance Properties and Design Criteria

Depth Interval	Collapse (psi)	Burst (psi)	Joint Strength (1000 lbs)	Actual Design Safety Factors			Notes
				Collapse	Burst	Tension	
0' - 450'	1,130	2,730	853	5.80	1.82	7.03	
0' - 8,994'	4,230	8,930	1144	1.47	5.95	3.34	Collapse: 1/3 fluid filled at all times
0' - 15,844'	12,090	14,360	729	3.79	1.25	2.76	
Design Safety Factors		Design safety factors will meet or exceed as shown.					

Surface Casing

Collapse: $DF_C = 1.125$

- Full Internal Evacuation: Collapse force is equal to mud gradient (0.433 psi/ft) in which the casing will be run and internal evacuation of casing.
- Cementing: Collapse force is equal net force of the planned cement slurry gradient (0.718 psi/ft) in which the casing will be run and internal force equivalent to fresh water displacement gradient (0.433 psi/ft).

Burst: $DF_B = 1.125$

- Casing Pressure Test: According to BLM Onshore Order No. 2 with 0.22 psi/ft or 1500 psi, whichever is greater but not to exceed 70 percent of the minimum internal yield.

Tensile: $DF_T = 1.60$

- Overpull: A tensile force of 100,000 lbs over string weight with a bouyancy factor of 0.8727 in water (8.33 ppg).

Intermediate Casing

Collapse: $DF_C = 1.125$

- Partial (2/3rd) Internal Evacuation: Casing will remain greater than 1/3 fluid filled at all times with a mud weight greater than 11 ppg**
- Collapse force is equal to mud gradient (0.531 psi/ft) in which the casing will be run.
- Cementing: Collapse force is equal net force of the planned cement slurry gradient (0.626 psi/ft) in which the casing will be run and internal force equivalent to the displacement fluid gradient.

Burst: $DF_B = 1.125$

- Casing Pressure Test: According to BLM Onshore Order No. 2 with 0.22 psi/ft or 1500 psi, whichever is greater but not to exceed 70 percent of the minimum internal yield.
- Gas Kick: Internal burst load of a 50 bbl gas kick at the casing with drillpipe in the hole. External force will be 10.2 ppg brine water gradient (0.531 psi/ft) and internal force will be with 10.0 ppg brine water gradient (0.521 psi/ft) with gas kick.

Tensile: $DF_T = 1.60$

- Overpull: A tensile force of 100,000 lbs over string weight with a bouyancy factor of 0.8441 in brine water (10.2 ppg).

Production CasingCollapse: $DF_C = 1.125$

- a. Full Internal Evacuation: Collapse force is equal to mud gradient (0.531 psi/ft) in which the casing will be run and internal evacuation of casing.
- b. Cementing: Collapse force is equal net force of the planned cement slurry gradient (0.688 psi/ft) in which the casing will be run and internal force equivalent to fresh water displacement gradient (0.433 psi/ft).

Burst: $DF_B = 1.125$

- a. Pressure Test: Pressure test will be to 80% of Internal Yield Pressure of casing intended for fracture stimulation.

Tensile: $DF_T = 1.60$

- a. Overpull: A tensile force of 100,000 lbs over string weight with a bouyancy factor of 0.8472 in oil-based mud (10.0 ppg).

Cementing Program**Surface Casing Cement:**

0' - 450'

Top of Cement: Surface

Cement	Amount (sacks)	Slurry Volume (cu. ft.)	Slurry Volume (bbls)	Weight (ppg)	Yield (cu. ft./sx)	Mix Water (gal/sx)	24hr 115deg Strength (psi)	Excess Cement (%)
Lead								
Tail	386	625.2	111.3	13.80	1.62	7.67	1,200	100.0%

Lead: N/A

Tail: Class C Cement with Gel, Accelerator, LCM

Intermediate Casing Cement:

Top of Lead 0

Top of Tail 7,994

Surface Shoe Depth

450

Intermediate Shoe Depth

8,994

Cement	Amount (sacks)	Slurry Volume (cu. ft.)	Slurry Volume (bbls)	Weight (ppg)	Yield (cu. ft./sx)	Mix Water (gal/sx)	24hr 115deg Strength (psi)	Excess Cement (%)
Lead	607	2173.2	387.0	10.00	3.58	19.15	900	100.0%
Tail	130.0	180.7	32.2	13.80	1.39	6.57	1,200	50.0%

Lead: Class C or H Cement with Fluid Loss, Retarder, LCM, Possibly beaded for desired compressive strength

Tail: Class C or H Cement with Fluid Loss, Retarder, LCM

Production Casing Cement:

0' - 15,844'

Top of Cement/Lead: 0'

Top of Tail: 6,994'

Cement	Amount (sacks)	Slurry Volume (cu. ft.)	Slurry Volume (bbls)	Weight (ppg)	Yield (cu. ft./sx)	Mix Water (gal/sx)	24hr 115deg Strength (psi)	Excess Cement (%)
Lead	694	1472.3	262.2	12.00	2.12	11.91	1,200	20.0%
Tail	1378	2191.0	390.2	13.20	1.59	7.98	1,200	20.0%

Lead: Class H Cement with Fluid Loss, Retarder, LCM

Tail: Class H Cement with Fluid Loss, Retarder, LCM

Logging, Testing & Coring Program

A gamma ray log will be acquired by directional drilling Measure While Drilling tools from the intermediate casing to Total Depth.



TEC-LOCK WEDGE

8.625" 32.00 LB/FT (.352" Wall)
BORUSAN MANNESMANN P110 HSCY

Pipe Body Data

Nominal OD:	8.625	in
Nominal Wall:	.352	in
Nominal Weight:	32.00	lb/ft
Plain End Weight:	31.13	lb/ft
Material Grade:	P110 HSCY	
Mill/Specification:	BORUSAN MANNESMANN	
Yield Strength:	125,000	psi
Tensile Strength:	125,000	psi
Nominal ID:	7.921	in
API Drift Diameter:	7.796	in
Special Drift Diameter:	7.875	in
RBW:	87.5 %	
Body Yield:	1,144,000	lbf
Burst:	8,930	psi
Collapse:	4,230	psi

Connection Data

Standard OD:	9.000	in
Pin Bored ID:	7.921	in
Critical Section Area:	8.61433	in ²
Tensile Efficiency:	94.2 %	
Compressive Efficiency:	100.0 %	
Longitudinal Yield Strength:	1,077,000	lbf
Compressive Limit:	1,144,000	lbf
Internal Pressure Rating:	8,930	psi
External Pressure Rating:	4,230	psi
Maximum Bend:	62.6	°/100

Operational Data

Minimum Makeup Torque:	29,900	ft*lb
Optimum Makeup Torque:	37,375	ft*lb
Maximum Makeup Torque:	80,900	ft*lb
Minimum Yield:	89,900	ft*lb
Makeup Loss:	5.97	in

Notes

Operational Torque is equivalent to the Maximum Make-Up Torque.



Technical Specifications

Connection Type: DWC/C-IS PLUS Casing STANDARD	Size(O.D.): 5-1/2 in	Weight (Wall): 20.00 lb/ft (0.361 in)	Grade: VST P110 EC
---	--------------------------------	---	------------------------------

Material	
VST P110 EC	Grade
125,000	Minimum Yield Strength (psi.)
135,000	Minimum Ultimate Strength (psi.)

Pipe Dimensions	
5.500	Nominal Pipe Body O.D. (in.)
4.778	Nominal Pipe Body I.D. (in.)
0.361	Nominal Wall Thickness (in.)
20.00	Nominal Weight (lbs./ft.)
19.83	Plain End Weight (lbs./ft.)
5.828	Nominal Pipe Body Area (sq. in.)

Pipe Body Performance Properties	
729,000	Minimum Pipe Body Yield Strength (lbs.)
12,090	Minimum Collapse Pressure (psi.)
14,360	Minimum Internal Yield Pressure (psi.)
13,100	Hydrostatic Test Pressure (psi.)

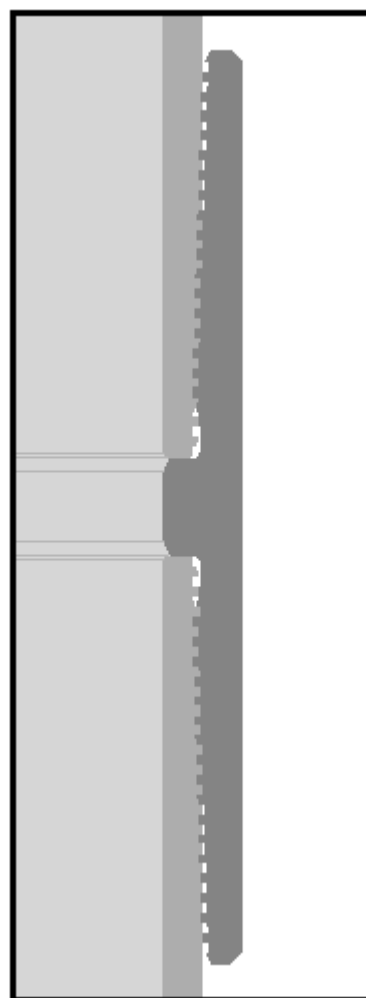
Connection Dimensions	
6.300	Connection O.D. (in.)
4.778	Connection I.D. (in.)
4.653	Connection Drift Diameter (in.)
4.13	Make-up Loss (in.)
5.828	Critical Area (sq. in.)
100.0	Joint Efficiency (%)

Connection Performance Properties	
729,000	Joint Strength (lbs.)
26,040	Reference String Length (ft) 1.4 Design Factor
728,000	API Joint Strength (lbs.)
729,000	Compression Rating (lbs.)
12,090	API Collapse Pressure Rating (psi.)
14,360	API Internal Pressure Resistance (psi.)
104.2	Maximum Uniaxial Bend Rating [degrees/100 ft]

Approximated Field End Torque Values	
16,600	Minimum Final Torque (ft.-lbs.)
19,100	Maximum Final Torque (ft.-lbs.)
21,600	Connection Yield Torque (ft.-lbs.)



VAM USA
4424 W. Sam Houston Pkwy. Suite 150
Houston, TX 77041
Phone: 713-479-3200
Fax: 713-479-3234
E-mail: VAMUSAsales@vam-usa.com



For detailed information on performance properties, refer to DWC Connection Data Notes on following page(s).

Connection specifications within the control of VAM USA were correct as of the date printed. Specifications are subject to change without notice. Certain connection specifications are dependent on the mechanical properties of the pipe. Mechanical properties of mill proprietary pipe grades were obtained from mill publications and are subject to change. Properties of mill proprietary grades should be confirmed with the mill. Users are advised to obtain current connection specifications and verify pipe mechanical properties for each application.

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11/29/2018 6:04 PM



FRONTIER RIG #19

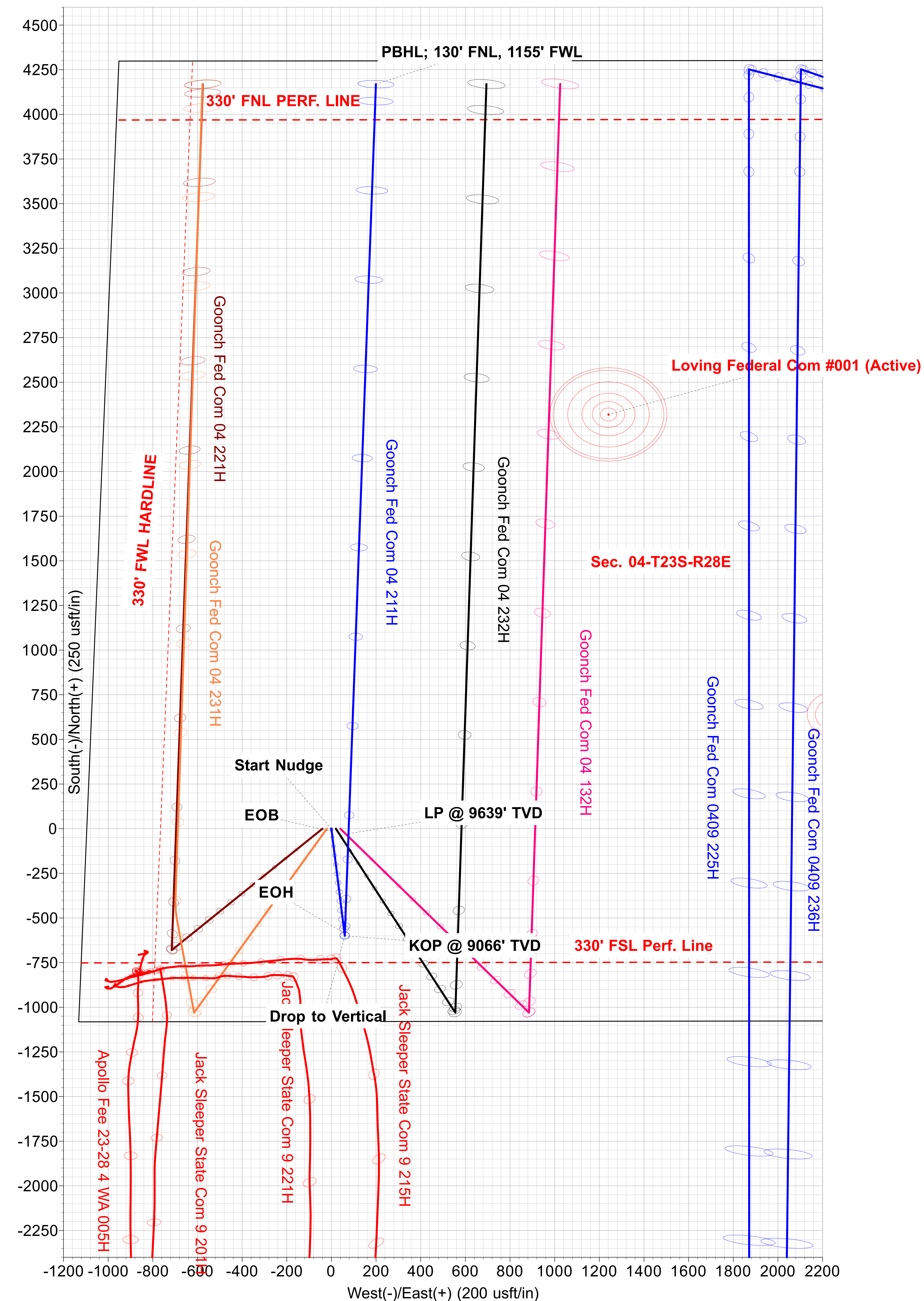


MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Annotation
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2800.00	0.00	0.00	2800.00	0.00	0.00	0.00	0.00	0.00	Start Nudge
3095.76	5.92	174.29	3095.23	-15.18	1.52	2.00	174.29	-15.18	EOB
8650.91	5.92	174.29	8620.81	-584.82	58.48	0.00	0.00	-584.82	EOH
8946.67	0.00	0.00	8916.04	-600.00	60.00	2.00	180.00	-600.00	Drop to Vertical
9096.67	0.00	0.00	9066.04	-600.00	60.00	0.00	0.00	-600.00	KOP @ 9066' TVD
9996.67	90.00	1.67	9639.00	-27.29	76.75	10.00	1.67	-27.29	LP @ 9639' TVD
14195.21	90.00	1.67	9639.00	4169.46	199.47	0.00	0.00	4169.46	PBHL; 130' FNL, 1155' FWL

Project: EDDY CO., NM (NAD83)
Site: SEC. 04-T23S-R28E
Well: Goonch Fed Com 04 211H
Wellbore: Wellbore #1
Design: Plan 2

Azimuths to Grid North
True North: -0.13°
Magnetic North: 7.87°

Magnetic Field
Strength: 48800.6nT
Dip Angle: 60.25°
Date: 2009/12/31
Model: IGRF200510





NOVO Oil & Gas

EDDY CO., NM (NAD83)

SEC. 04-T23S-R28E

Goonch Fed Com 04 211H

Wellbore #1

Plan: Plan 2

Standard Planning Report - Geographic

24 March, 2021





SB Directional

Planning Report - Geographic



Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well Goonch Fed Com 04 211H
Company:	NOVO Oil & Gas	TVD Reference:	RKB @ 3041.00usft
Project:	EDDY CO., NM (NAD83)	MD Reference:	RKB @ 3041.00usft
Site:	SEC. 04-T23S-R28E	North Reference:	Grid
Well:	Goonch Fed Com 04 211H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan 2		

Project	EDDY CO., NM (NAD83)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site	SEC. 04-T23S-R28E				
Site Position:		Northing:	487,875.76 usft	Latitude:	32.341014
From:	Map	Easting:	615,421.32 usft	Longitude:	-104.093453
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "		

Well	Goonch Fed Com 04 211H					
Well Position	+N/-S	0.00 usft	Northing:	483,905.05 usft	Latitude:	32.330106
	+E/-W	0.00 usft	Easting:	614,205.10 usft	Longitude:	-104.097419
Position Uncertainty		0.50 usft	Wellhead Elevation:	usft	Ground Level:	3,016.00 usft
Grid Convergence:		0.13 °				

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	2009/12/31	8.00	60.25	48,800.58772639

Design	Plan 2				
Audit Notes:					
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.00	
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.00	0.00	0.00	0.00	

Plan Survey Tool Program	Date	2021/03/24			
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks	
1	0.00	14,195.21 Plan 2 (Wellbore #1)	MWD		
			MWD - Standard		

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,800.00	0.00	0.00	2,800.00	0.00	0.00	0.00	0.00	0.00	0.00	
3,095.76	5.92	174.29	3,095.23	-15.18	1.52	2.00	2.00	0.00	174.29	
8,650.91	5.92	174.29	8,620.81	-584.82	58.48	0.00	0.00	0.00	0.00	
8,946.67	0.00	0.00	8,916.04	-600.00	60.00	2.00	-2.00	0.00	180.00	
9,096.67	0.00	0.00	9,066.04	-600.00	60.00	0.00	0.00	0.00	0.00	
9,996.67	90.00	1.67	9,639.00	-27.29	76.75	10.00	10.00	0.00	1.67	PBHL - Goonch Fed C
14,195.21	90.00	1.67	9,639.00	4,169.46	199.47	0.00	0.00	0.00	0.00	PBHL - Goonch Fed C



SB Directional

Planning Report - Geographic



Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well Goonch Fed Com 04 211H
Company:	NOVO Oil & Gas	TVD Reference:	RKB @ 3041.00usft
Project:	EDDY CO., NM (NAD83)	MD Reference:	RKB @ 3041.00usft
Site:	SEC. 04-T23S-R28E	North Reference:	Grid
Well:	Goonch Fed Com 04 211H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan 2		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
0.00	0.00	0.00	0.00	0.00	0.00	483,905.05	614,205.10	32.330106	-104.097419
100.00	0.00	0.00	100.00	0.00	0.00	483,905.05	614,205.10	32.330106	-104.097419
200.00	0.00	0.00	200.00	0.00	0.00	483,905.05	614,205.10	32.330106	-104.097419
300.00	0.00	0.00	300.00	0.00	0.00	483,905.05	614,205.10	32.330106	-104.097419
400.00	0.00	0.00	400.00	0.00	0.00	483,905.05	614,205.10	32.330106	-104.097419
500.00	0.00	0.00	500.00	0.00	0.00	483,905.05	614,205.10	32.330106	-104.097419
600.00	0.00	0.00	600.00	0.00	0.00	483,905.05	614,205.10	32.330106	-104.097419
700.00	0.00	0.00	700.00	0.00	0.00	483,905.05	614,205.10	32.330106	-104.097419
800.00	0.00	0.00	800.00	0.00	0.00	483,905.05	614,205.10	32.330106	-104.097419
900.00	0.00	0.00	900.00	0.00	0.00	483,905.05	614,205.10	32.330106	-104.097419
1,000.00	0.00	0.00	1,000.00	0.00	0.00	483,905.05	614,205.10	32.330106	-104.097419
1,100.00	0.00	0.00	1,100.00	0.00	0.00	483,905.05	614,205.10	32.330106	-104.097419
1,200.00	0.00	0.00	1,200.00	0.00	0.00	483,905.05	614,205.10	32.330106	-104.097419
1,300.00	0.00	0.00	1,300.00	0.00	0.00	483,905.05	614,205.10	32.330106	-104.097419
1,400.00	0.00	0.00	1,400.00	0.00	0.00	483,905.05	614,205.10	32.330106	-104.097419
1,500.00	0.00	0.00	1,500.00	0.00	0.00	483,905.05	614,205.10	32.330106	-104.097419
1,600.00	0.00	0.00	1,600.00	0.00	0.00	483,905.05	614,205.10	32.330106	-104.097419
1,700.00	0.00	0.00	1,700.00	0.00	0.00	483,905.05	614,205.10	32.330106	-104.097419
1,800.00	0.00	0.00	1,800.00	0.00	0.00	483,905.05	614,205.10	32.330106	-104.097419
1,900.00	0.00	0.00	1,900.00	0.00	0.00	483,905.05	614,205.10	32.330106	-104.097419
2,000.00	0.00	0.00	2,000.00	0.00	0.00	483,905.05	614,205.10	32.330106	-104.097419
2,100.00	0.00	0.00	2,100.00	0.00	0.00	483,905.05	614,205.10	32.330106	-104.097419
2,200.00	0.00	0.00	2,200.00	0.00	0.00	483,905.05	614,205.10	32.330106	-104.097419
2,300.00	0.00	0.00	2,300.00	0.00	0.00	483,905.05	614,205.10	32.330106	-104.097419
2,400.00	0.00	0.00	2,400.00	0.00	0.00	483,905.05	614,205.10	32.330106	-104.097419
2,500.00	0.00	0.00	2,500.00	0.00	0.00	483,905.05	614,205.10	32.330106	-104.097419
2,600.00	0.00	0.00	2,600.00	0.00	0.00	483,905.05	614,205.10	32.330106	-104.097419
2,700.00	0.00	0.00	2,700.00	0.00	0.00	483,905.05	614,205.10	32.330106	-104.097419
2,800.00	0.00	0.00	2,800.00	0.00	0.00	483,905.05	614,205.10	32.330106	-104.097419
Start Nudge									
2,900.00	2.00	174.29	2,899.98	-1.74	0.17	483,903.31	614,205.28	32.330102	-104.097418
3,000.00	4.00	174.29	2,999.84	-6.94	0.69	483,898.11	614,205.80	32.330087	-104.097417
3,095.76	5.92	174.29	3,095.23	-15.18	1.52	483,889.87	614,206.62	32.330065	-104.097414
EOB									
3,100.00	5.92	174.29	3,099.45	-15.61	1.56	483,889.44	614,206.66	32.330064	-104.097414
3,200.00	5.92	174.29	3,198.92	-25.87	2.59	483,879.18	614,207.69	32.330035	-104.097411
3,300.00	5.92	174.29	3,298.39	-36.12	3.61	483,868.93	614,208.72	32.330007	-104.097407
3,400.00	5.92	174.29	3,397.86	-46.38	4.64	483,858.68	614,209.74	32.329979	-104.097404
3,500.00	5.92	174.29	3,497.32	-56.63	5.66	483,848.42	614,210.77	32.329951	-104.097401
3,600.00	5.92	174.29	3,596.79	-66.88	6.69	483,838.17	614,211.79	32.329923	-104.097398
3,700.00	5.92	174.29	3,696.26	-77.14	7.71	483,827.91	614,212.82	32.329894	-104.097394
3,800.00	5.92	174.29	3,795.73	-87.39	8.74	483,817.66	614,213.84	32.329866	-104.097391
3,900.00	5.92	174.29	3,895.19	-97.65	9.76	483,807.40	614,214.87	32.329838	-104.097388
4,000.00	5.92	174.29	3,994.66	-107.90	10.79	483,797.15	614,215.89	32.329810	-104.097385
4,100.00	5.92	174.29	4,094.13	-118.16	11.82	483,786.89	614,216.92	32.329782	-104.097382
4,200.00	5.92	174.29	4,193.60	-128.41	12.84	483,776.64	614,217.94	32.329753	-104.097378
4,300.00	5.92	174.29	4,293.06	-138.66	13.87	483,766.39	614,218.97	32.329725	-104.097375
4,400.00	5.92	174.29	4,392.53	-148.92	14.89	483,756.13	614,220.00	32.329697	-104.097372
4,500.00	5.92	174.29	4,492.00	-159.17	15.92	483,745.88	614,221.02	32.329669	-104.097369
4,600.00	5.92	174.29	4,591.47	-169.43	16.94	483,735.62	614,222.05	32.329641	-104.097365
4,700.00	5.92	174.29	4,690.93	-179.68	17.97	483,725.37	614,223.07	32.329612	-104.097362
4,800.00	5.92	174.29	4,790.40	-189.94	18.99	483,715.11	614,224.10	32.329584	-104.097359
4,900.00	5.92	174.29	4,889.87	-200.19	20.02	483,704.86	614,225.12	32.329556	-104.097356
5,000.00	5.92	174.29	4,989.34	-210.45	21.04	483,694.61	614,226.15	32.329528	-104.097352



SB Directional

Planning Report - Geographic



Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well Goonch Fed Com 04 211H
Company:	NOVO Oil & Gas	TVD Reference:	RKB @ 3041.00usft
Project:	EDDY CO., NM (NAD83)	MD Reference:	RKB @ 3041.00usft
Site:	SEC. 04-T23S-R28E	North Reference:	Grid
Well:	Goonch Fed Com 04 211H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan 2		

Planned Survey										
Measured			Vertical			Map	Map			
Depth	Inclination	Azimuth	Depth	+N/-S	+E/-W	Northing	Easting		Latitude	Longitude
(usft)	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)			
5,100.00	5.92	174.29	5,088.80	-220.70	22.07	483,684.35	614,227.17		32.329500	-104.097349
5,200.00	5.92	174.29	5,188.27	-230.95	23.10	483,674.10	614,228.20		32.329471	-104.097346
5,300.00	5.92	174.29	5,287.74	-241.21	24.12	483,663.84	614,229.22		32.329443	-104.097343
5,400.00	5.92	174.29	5,387.21	-251.46	25.15	483,653.59	614,230.25		32.329415	-104.097339
5,500.00	5.92	174.29	5,486.67	-261.72	26.17	483,643.33	614,231.28		32.329387	-104.097336
5,600.00	5.92	174.29	5,586.14	-271.97	27.20	483,633.08	614,232.30		32.329359	-104.097333
5,700.00	5.92	174.29	5,685.61	-282.23	28.22	483,622.83	614,233.33		32.329330	-104.097330
5,800.00	5.92	174.29	5,785.08	-292.48	29.25	483,612.57	614,234.35		32.329302	-104.097326
5,900.00	5.92	174.29	5,884.54	-302.73	30.27	483,602.32	614,235.38		32.329274	-104.097323
6,000.00	5.92	174.29	5,984.01	-312.99	31.30	483,592.06	614,236.40		32.329246	-104.097320
6,100.00	5.92	174.29	6,083.48	-323.24	32.32	483,581.81	614,237.43		32.329218	-104.097317
6,200.00	5.92	174.29	6,182.95	-333.50	33.35	483,571.55	614,238.45		32.329190	-104.097313
6,300.00	5.92	174.29	6,282.41	-343.75	34.38	483,561.30	614,239.48		32.329161	-104.097310
6,400.00	5.92	174.29	6,381.88	-354.01	35.40	483,551.04	614,240.50		32.329133	-104.097307
6,500.00	5.92	174.29	6,481.35	-364.26	36.43	483,540.79	614,241.53		32.329105	-104.097304
6,600.00	5.92	174.29	6,580.82	-374.51	37.45	483,530.54	614,242.56		32.329077	-104.097300
6,700.00	5.92	174.29	6,680.28	-384.77	38.48	483,520.28	614,243.58		32.329049	-104.097297
6,800.00	5.92	174.29	6,779.75	-395.02	39.50	483,510.03	614,244.61		32.329020	-104.097294
6,900.00	5.92	174.29	6,879.22	-405.28	40.53	483,499.77	614,245.63		32.328992	-104.097291
7,000.00	5.92	174.29	6,978.69	-415.53	41.55	483,489.52	614,246.66		32.328964	-104.097287
7,100.00	5.92	174.29	7,078.16	-425.79	42.58	483,479.26	614,247.68		32.328936	-104.097284
7,200.00	5.92	174.29	7,177.62	-436.04	43.60	483,469.01	614,248.71		32.328908	-104.097281
7,300.00	5.92	174.29	7,277.09	-446.30	44.63	483,458.76	614,249.73		32.328879	-104.097278
7,400.00	5.92	174.29	7,376.56	-456.55	45.65	483,448.50	614,250.76		32.328851	-104.097274
7,500.00	5.92	174.29	7,476.03	-466.80	46.68	483,438.25	614,251.78		32.328823	-104.097271
7,600.00	5.92	174.29	7,575.49	-477.06	47.71	483,427.99	614,252.81		32.328795	-104.097268
7,700.00	5.92	174.29	7,674.96	-487.31	48.73	483,417.74	614,253.84		32.328767	-104.097265
7,800.00	5.92	174.29	7,774.43	-497.57	49.76	483,407.48	614,254.86		32.328738	-104.097261
7,900.00	5.92	174.29	7,873.90	-507.82	50.78	483,397.23	614,255.89		32.328710	-104.097258
8,000.00	5.92	174.29	7,973.36	-518.08	51.81	483,386.97	614,256.91		32.328682	-104.097255
8,100.00	5.92	174.29	8,072.83	-528.33	52.83	483,376.72	614,257.94		32.328654	-104.097252
8,200.00	5.92	174.29	8,172.30	-538.58	53.86	483,366.47	614,258.96		32.328626	-104.097248
8,300.00	5.92	174.29	8,271.77	-548.84	54.88	483,356.21	614,259.99		32.328597	-104.097245
8,400.00	5.92	174.29	8,371.23	-559.09	55.91	483,345.96	614,261.01		32.328569	-104.097242
8,500.00	5.92	174.29	8,470.70	-569.35	56.93	483,335.70	614,262.04		32.328541	-104.097239
8,600.00	5.92	174.29	8,570.17	-579.60	57.96	483,325.45	614,263.06		32.328513	-104.097235
8,650.91	5.92	174.29	8,620.81	-584.82	58.48	483,320.23	614,263.59		32.328499	-104.097234
EOH										
8,700.00	4.93	174.29	8,669.68	-589.44	58.94	483,315.61	614,264.05		32.328486	-104.097232
8,800.00	2.93	174.29	8,769.44	-596.27	59.63	483,308.79	614,264.73		32.328467	-104.097230
8,900.00	0.93	174.29	8,869.37	-599.62	59.96	483,305.43	614,265.07		32.328458	-104.097229
8,946.67	0.00	0.00	8,916.04	-600.00	60.00	483,305.05	614,265.10		32.328457	-104.097229
Drop to Vertical										
9,000.00	0.00	0.00	8,969.37	-600.00	60.00	483,305.05	614,265.10		32.328457	-104.097229
9,096.67	0.00	0.00	9,066.04	-600.00	60.00	483,305.05	614,265.10		32.328457	-104.097229
KOP @ 9066' TVD										
9,100.00	0.33	1.67	9,069.37	-599.99	60.00	483,305.06	614,265.10		32.328457	-104.097229
9,200.00	10.33	1.67	9,168.81	-590.71	60.27	483,314.34	614,265.38		32.328482	-104.097228
9,300.00	20.33	1.67	9,265.13	-564.31	61.04	483,340.74	614,266.15		32.328555	-104.097225
9,400.00	30.33	1.67	9,355.40	-521.60	62.29	483,383.45	614,267.40		32.328672	-104.097221
9,500.00	40.33	1.67	9,436.88	-463.86	63.98	483,441.19	614,269.08		32.328831	-104.097215
9,600.00	50.33	1.67	9,507.09	-392.86	66.06	483,512.19	614,271.16		32.329026	-104.097208
9,700.00	60.33	1.67	9,563.89	-310.75	68.46	483,594.30	614,273.56		32.329252	-104.097199
9,800.00	70.33	1.67	9,605.58	-220.03	71.11	483,685.02	614,276.21		32.329501	-104.097190



SB Directional

Planning Report - Geographic



Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well Goonch Fed Com 04 211H
Company:	NOVO Oil & Gas	TVD Reference:	RKB @ 3041.00usft
Project:	EDDY CO., NM (NAD83)	MD Reference:	RKB @ 3041.00usft
Site:	SEC. 04-T23S-R28E	North Reference:	Grid
Well:	Goonch Fed Com 04 211H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan 2		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
9,900.00	80.33	1.67	9,630.86	-123.46	73.94	483,781.60	614,279.04	32.329767	-104.097180
9,996.67	90.00	1.67	9,639.00	-27.28	76.75	483,877.77	614,281.85	32.330031	-104.097171
LP @ 9639' TVD									
10,000.00	90.00	1.67	9,639.00	-23.96	76.84	483,881.09	614,281.95	32.330040	-104.097170
10,100.00	90.00	1.67	9,639.00	76.00	79.77	483,981.05	614,284.87	32.330315	-104.097160
10,200.00	90.00	1.67	9,639.00	175.96	82.69	484,081.01	614,287.79	32.330590	-104.097150
10,300.00	90.00	1.67	9,639.00	275.92	85.61	484,180.97	614,290.72	32.330864	-104.097140
10,400.00	90.00	1.67	9,639.00	375.87	88.54	484,280.92	614,293.64	32.331139	-104.097130
10,500.00	90.00	1.67	9,639.00	475.83	91.46	484,380.88	614,296.56	32.331414	-104.097119
10,600.00	90.00	1.67	9,639.00	575.79	94.38	484,480.84	614,299.49	32.331689	-104.097109
10,700.00	90.00	1.67	9,639.00	675.74	97.31	484,580.80	614,302.41	32.331963	-104.097099
10,800.00	90.00	1.67	9,639.00	775.70	100.23	484,680.75	614,305.33	32.332238	-104.097089
10,900.00	90.00	1.67	9,639.00	875.66	103.15	484,780.71	614,308.26	32.332513	-104.097079
11,000.00	90.00	1.67	9,639.00	975.62	106.07	484,880.67	614,311.18	32.332788	-104.097069
11,100.00	90.00	1.67	9,639.00	1,075.57	109.00	484,980.62	614,314.10	32.333062	-104.097058
11,200.00	90.00	1.67	9,639.00	1,175.53	111.92	485,080.58	614,317.02	32.333337	-104.097048
11,300.00	90.00	1.67	9,639.00	1,275.49	114.84	485,180.54	614,319.95	32.333612	-104.097038
11,400.00	90.00	1.67	9,639.00	1,375.45	117.77	485,280.50	614,322.87	32.333887	-104.097028
11,500.00	90.00	1.67	9,639.00	1,475.40	120.69	485,380.45	614,325.79	32.334161	-104.097018
11,600.00	90.00	1.67	9,639.00	1,575.36	123.61	485,480.41	614,328.72	32.334436	-104.097007
11,700.00	90.00	1.67	9,639.00	1,675.32	126.54	485,580.37	614,331.64	32.334711	-104.096997
11,800.00	90.00	1.67	9,639.00	1,775.27	129.46	485,680.33	614,334.56	32.334986	-104.096987
11,900.00	90.00	1.67	9,639.00	1,875.23	132.38	485,780.28	614,337.49	32.335260	-104.096977
12,000.00	90.00	1.67	9,639.00	1,975.19	135.30	485,880.24	614,340.41	32.335535	-104.096967
12,100.00	90.00	1.67	9,639.00	2,075.15	138.23	485,980.20	614,343.33	32.335810	-104.096957
12,200.00	90.00	1.67	9,639.00	2,175.10	141.15	486,080.15	614,346.25	32.336085	-104.096946
12,300.00	90.00	1.67	9,639.00	2,275.06	144.07	486,180.11	614,349.18	32.336359	-104.096936
12,400.00	90.00	1.67	9,639.00	2,375.02	147.00	486,280.07	614,352.10	32.336634	-104.096926
12,500.00	90.00	1.67	9,639.00	2,474.98	149.92	486,380.03	614,355.02	32.336909	-104.096916
12,600.00	90.00	1.67	9,639.00	2,574.93	152.84	486,479.98	614,357.95	32.337184	-104.096906
12,700.00	90.00	1.67	9,639.00	2,674.89	155.77	486,579.94	614,360.87	32.337458	-104.096896
12,800.00	90.00	1.67	9,639.00	2,774.85	158.69	486,679.90	614,363.79	32.337733	-104.096885
12,900.00	90.00	1.67	9,639.00	2,874.80	161.61	486,779.86	614,366.72	32.338008	-104.096875
13,000.00	90.00	1.67	9,639.00	2,974.76	164.53	486,879.81	614,369.64	32.338283	-104.096865
13,100.00	90.00	1.67	9,639.00	3,074.72	167.46	486,979.77	614,372.56	32.338557	-104.096855
13,200.00	90.00	1.67	9,639.00	3,174.68	170.38	487,079.73	614,375.48	32.338832	-104.096845
13,300.00	90.00	1.67	9,639.00	3,274.63	173.30	487,179.68	614,378.41	32.339107	-104.096834
13,400.00	90.00	1.67	9,639.00	3,374.59	176.23	487,279.64	614,381.33	32.339382	-104.096824
13,500.00	90.00	1.67	9,639.00	3,474.55	179.15	487,379.60	614,384.25	32.339656	-104.096814
13,600.00	90.00	1.67	9,639.00	3,574.51	182.07	487,479.56	614,387.18	32.339931	-104.096804
13,700.00	90.00	1.67	9,639.00	3,674.46	185.00	487,579.51	614,390.10	32.340206	-104.096794
13,800.00	90.00	1.67	9,639.00	3,774.42	187.92	487,679.47	614,393.02	32.340481	-104.096784
13,900.00	90.00	1.67	9,639.00	3,874.38	190.84	487,779.43	614,395.94	32.340755	-104.096773
14,000.00	90.00	1.67	9,639.00	3,974.33	193.76	487,879.39	614,398.87	32.341030	-104.096763
14,100.00	90.00	1.67	9,639.00	4,074.29	196.69	487,979.34	614,401.79	32.341305	-104.096753
14,195.20	90.00	1.67	9,639.00	4,169.45	199.47	488,074.50	614,404.57	32.341566	-104.096743
PBHL; 1130' FNL, 1155' FWL									
14,195.21	90.00	1.67	9,639.00	4,169.46	199.47	488,074.51	614,404.57	32.341566	-104.096743



SB Directional

Planning Report - Geographic



Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well Goonch Fed Com 04 211H
Company:	NOVO Oil & Gas	TVD Reference:	RKB @ 3041.00usft
Project:	EDDY CO., NM (NAD83)	MD Reference:	RKB @ 3041.00usft
Site:	SEC. 04-T23S-R28E	North Reference:	Grid
Well:	Goonch Fed Com 04 211H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan 2		

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
PBHL - Goonch Fed Cor	0.00	0.00	0.00	4,169.46	199.47	488,074.51	614,404.57	32.341566	-104.096743
- hit/miss target									
- Shape									
- plan misses target center by 4174.23usft at 0.00usft MD (0.00 TVD, 0.00 N, 0.00 E)									
- Point									

Casing Points				
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
14,510.64		20" Casing	20	24

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
2,800.00	2,800.00	0.00	0.00	Start Nudge
3,095.76	3,095.23	-15.18	1.52	EOB
8,650.91	8,620.81	-584.82	58.48	EOH
8,946.67	8,916.04	-600.00	60.00	Drop to Vertical
9,096.67	9,066.04	-600.00	60.00	KOP @ 9066' TVD
9,996.67	9,639.00	-27.28	76.75	LP @ 9639' TVD
14,195.20	9,639.00	4,169.45	199.47	PBHL; 130' FNL, 1155' FWL



NOVO Oil & Gas

EDDY CO., NM (NAD83)

SEC. 04-T23S-R28E

Goonch Fed Com 04 211H

Wellbore #1

Plan: Plan 2

Standard Planning Report - Geographic

24 March, 2021





SB Directional

Planning Report - Geographic



Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well Goonch Fed Com 04 211H
Company:	NOVO Oil & Gas	TVD Reference:	RKB @ 3041.00usft
Project:	EDDY CO., NM (NAD83)	MD Reference:	RKB @ 3041.00usft
Site:	SEC. 04-T23S-R28E	North Reference:	Grid
Well:	Goonch Fed Com 04 211H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan 2		

Project	EDDY CO., NM (NAD83)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site		SEC. 04-T23S-R28E			
Site Position:		Northing:	487,875.76 usft	Latitude:	32.341014
From:	Map	Easting:	615,421.32 usft	Longitude:	-104.093453
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "		

Well	Goonch Fed Com 04 211H					
Well Position	+N/-S	0.00 usft	Northing:	483,905.05 usft	Latitude:	32.330106
	+E/-W	0.00 usft	Easting:	614,205.10 usft	Longitude:	-104.097419
Position Uncertainty		0.50 usft	Wellhead Elevation:	usft	Ground Level:	3,016.00 usft
Grid Convergence:		0.13 °				

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	2009/12/31	8.00	60.25	48,800.58772639

Design	Plan 2				
Audit Notes:					
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.00	
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.00	0.00	0.00	0.00	

Plan Survey Tool Program	Date	2021/03/24			
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks	
1	0.00	14,195.21 Plan 2 (Wellbore #1)	MWD		
			MWD - Standard		

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,800.00	0.00	0.00	2,800.00	0.00	0.00	0.00	0.00	0.00	0.00	
3,095.76	5.92	174.29	3,095.23	-15.18	1.52	2.00	2.00	0.00	174.29	
8,650.91	5.92	174.29	8,620.81	-584.82	58.48	0.00	0.00	0.00	0.00	
8,946.67	0.00	0.00	8,916.04	-600.00	60.00	2.00	-2.00	0.00	180.00	
9,096.67	0.00	0.00	9,066.04	-600.00	60.00	0.00	0.00	0.00	0.00	
9,996.67	90.00	1.67	9,639.00	-27.29	76.75	10.00	10.00	0.00	1.67	PBHL - Goonch Fed C
14,195.21	90.00	1.67	9,639.00	4,169.46	199.47	0.00	0.00	0.00	0.00	PBHL - Goonch Fed C



SB Directional

Planning Report - Geographic



Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well Goonch Fed Com 04 211H
Company:	NOVO Oil & Gas	TVD Reference:	RKB @ 3041.00usft
Project:	EDDY CO., NM (NAD83)	MD Reference:	RKB @ 3041.00usft
Site:	SEC. 04-T23S-R28E	North Reference:	Grid
Well:	Goonch Fed Com 04 211H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan 2		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
0.00	0.00	0.00	0.00	0.00	0.00	483,905.05	614,205.10	32.330106	-104.097419
100.00	0.00	0.00	100.00	0.00	0.00	483,905.05	614,205.10	32.330106	-104.097419
200.00	0.00	0.00	200.00	0.00	0.00	483,905.05	614,205.10	32.330106	-104.097419
300.00	0.00	0.00	300.00	0.00	0.00	483,905.05	614,205.10	32.330106	-104.097419
400.00	0.00	0.00	400.00	0.00	0.00	483,905.05	614,205.10	32.330106	-104.097419
500.00	0.00	0.00	500.00	0.00	0.00	483,905.05	614,205.10	32.330106	-104.097419
600.00	0.00	0.00	600.00	0.00	0.00	483,905.05	614,205.10	32.330106	-104.097419
700.00	0.00	0.00	700.00	0.00	0.00	483,905.05	614,205.10	32.330106	-104.097419
800.00	0.00	0.00	800.00	0.00	0.00	483,905.05	614,205.10	32.330106	-104.097419
900.00	0.00	0.00	900.00	0.00	0.00	483,905.05	614,205.10	32.330106	-104.097419
1,000.00	0.00	0.00	1,000.00	0.00	0.00	483,905.05	614,205.10	32.330106	-104.097419
1,100.00	0.00	0.00	1,100.00	0.00	0.00	483,905.05	614,205.10	32.330106	-104.097419
1,200.00	0.00	0.00	1,200.00	0.00	0.00	483,905.05	614,205.10	32.330106	-104.097419
1,300.00	0.00	0.00	1,300.00	0.00	0.00	483,905.05	614,205.10	32.330106	-104.097419
1,400.00	0.00	0.00	1,400.00	0.00	0.00	483,905.05	614,205.10	32.330106	-104.097419
1,500.00	0.00	0.00	1,500.00	0.00	0.00	483,905.05	614,205.10	32.330106	-104.097419
1,600.00	0.00	0.00	1,600.00	0.00	0.00	483,905.05	614,205.10	32.330106	-104.097419
1,700.00	0.00	0.00	1,700.00	0.00	0.00	483,905.05	614,205.10	32.330106	-104.097419
1,800.00	0.00	0.00	1,800.00	0.00	0.00	483,905.05	614,205.10	32.330106	-104.097419
1,900.00	0.00	0.00	1,900.00	0.00	0.00	483,905.05	614,205.10	32.330106	-104.097419
2,000.00	0.00	0.00	2,000.00	0.00	0.00	483,905.05	614,205.10	32.330106	-104.097419
2,100.00	0.00	0.00	2,100.00	0.00	0.00	483,905.05	614,205.10	32.330106	-104.097419
2,200.00	0.00	0.00	2,200.00	0.00	0.00	483,905.05	614,205.10	32.330106	-104.097419
2,300.00	0.00	0.00	2,300.00	0.00	0.00	483,905.05	614,205.10	32.330106	-104.097419
2,400.00	0.00	0.00	2,400.00	0.00	0.00	483,905.05	614,205.10	32.330106	-104.097419
2,500.00	0.00	0.00	2,500.00	0.00	0.00	483,905.05	614,205.10	32.330106	-104.097419
2,600.00	0.00	0.00	2,600.00	0.00	0.00	483,905.05	614,205.10	32.330106	-104.097419
2,700.00	0.00	0.00	2,700.00	0.00	0.00	483,905.05	614,205.10	32.330106	-104.097419
2,800.00	0.00	0.00	2,800.00	0.00	0.00	483,905.05	614,205.10	32.330106	-104.097419
Start Nudge									
2,900.00	2.00	174.29	2,899.98	-1.74	0.17	483,903.31	614,205.28	32.330102	-104.097418
3,000.00	4.00	174.29	2,999.84	-6.94	0.69	483,898.11	614,205.80	32.330087	-104.097417
3,095.76	5.92	174.29	3,095.23	-15.18	1.52	483,889.87	614,206.62	32.330065	-104.097414
EOB									
3,100.00	5.92	174.29	3,099.45	-15.61	1.56	483,889.44	614,206.66	32.330064	-104.097414
3,200.00	5.92	174.29	3,198.92	-25.87	2.59	483,879.18	614,207.69	32.330035	-104.097411
3,300.00	5.92	174.29	3,298.39	-36.12	3.61	483,868.93	614,208.72	32.330007	-104.097407
3,400.00	5.92	174.29	3,397.86	-46.38	4.64	483,858.68	614,209.74	32.329979	-104.097404
3,500.00	5.92	174.29	3,497.32	-56.63	5.66	483,848.42	614,210.77	32.329951	-104.097401
3,600.00	5.92	174.29	3,596.79	-66.88	6.69	483,838.17	614,211.79	32.329923	-104.097398
3,700.00	5.92	174.29	3,696.26	-77.14	7.71	483,827.91	614,212.82	32.329894	-104.097394
3,800.00	5.92	174.29	3,795.73	-87.39	8.74	483,817.66	614,213.84	32.329866	-104.097391
3,900.00	5.92	174.29	3,895.19	-97.65	9.76	483,807.40	614,214.87	32.329838	-104.097388
4,000.00	5.92	174.29	3,994.66	-107.90	10.79	483,797.15	614,215.89	32.329810	-104.097385
4,100.00	5.92	174.29	4,094.13	-118.16	11.82	483,786.89	614,216.92	32.329782	-104.097382
4,200.00	5.92	174.29	4,193.60	-128.41	12.84	483,776.64	614,217.94	32.329753	-104.097378
4,300.00	5.92	174.29	4,293.06	-138.66	13.87	483,766.39	614,218.97	32.329725	-104.097375
4,400.00	5.92	174.29	4,392.53	-148.92	14.89	483,756.13	614,220.00	32.329697	-104.097372
4,500.00	5.92	174.29	4,492.00	-159.17	15.92	483,745.88	614,221.02	32.329669	-104.097369
4,600.00	5.92	174.29	4,591.47	-169.43	16.94	483,735.62	614,222.05	32.329641	-104.097365
4,700.00	5.92	174.29	4,690.93	-179.68	17.97	483,725.37	614,223.07	32.329612	-104.097362
4,800.00	5.92	174.29	4,790.40	-189.94	18.99	483,715.11	614,224.10	32.329584	-104.097359
4,900.00	5.92	174.29	4,889.87	-200.19	20.02	483,704.86	614,225.12	32.329556	-104.097356
5,000.00	5.92	174.29	4,989.34	-210.45	21.04	483,694.61	614,226.15	32.329528	-104.097352



SB Directional

Planning Report - Geographic



Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well Goonch Fed Com 04 211H
Company:	NOVO Oil & Gas	TVD Reference:	RKB @ 3041.00usft
Project:	EDDY CO., NM (NAD83)	MD Reference:	RKB @ 3041.00usft
Site:	SEC. 04-T23S-R28E	North Reference:	Grid
Well:	Goonch Fed Com 04 211H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan 2		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
5,100.00	5.92	174.29	5,088.80	-220.70	22.07	483,684.35	614,227.17	32.329500	-104.097349	
5,200.00	5.92	174.29	5,188.27	-230.95	23.10	483,674.10	614,228.20	32.329471	-104.097346	
5,300.00	5.92	174.29	5,287.74	-241.21	24.12	483,663.84	614,229.22	32.329443	-104.097343	
5,400.00	5.92	174.29	5,387.21	-251.46	25.15	483,653.59	614,230.25	32.329415	-104.097339	
5,500.00	5.92	174.29	5,486.67	-261.72	26.17	483,643.33	614,231.28	32.329387	-104.097336	
5,600.00	5.92	174.29	5,586.14	-271.97	27.20	483,633.08	614,232.30	32.329359	-104.097333	
5,700.00	5.92	174.29	5,685.61	-282.23	28.22	483,622.83	614,233.33	32.329330	-104.097330	
5,800.00	5.92	174.29	5,785.08	-292.48	29.25	483,612.57	614,234.35	32.329302	-104.097326	
5,900.00	5.92	174.29	5,884.54	-302.73	30.27	483,602.32	614,235.38	32.329274	-104.097323	
6,000.00	5.92	174.29	5,984.01	-312.99	31.30	483,592.06	614,236.40	32.329246	-104.097320	
6,100.00	5.92	174.29	6,083.48	-323.24	32.32	483,581.81	614,237.43	32.329218	-104.097317	
6,200.00	5.92	174.29	6,182.95	-333.50	33.35	483,571.55	614,238.45	32.329190	-104.097313	
6,300.00	5.92	174.29	6,282.41	-343.75	34.38	483,561.30	614,239.48	32.329161	-104.097310	
6,400.00	5.92	174.29	6,381.88	-354.01	35.40	483,551.04	614,240.50	32.329133	-104.097307	
6,500.00	5.92	174.29	6,481.35	-364.26	36.43	483,540.79	614,241.53	32.329105	-104.097304	
6,600.00	5.92	174.29	6,580.82	-374.51	37.45	483,530.54	614,242.56	32.329077	-104.097300	
6,700.00	5.92	174.29	6,680.28	-384.77	38.48	483,520.28	614,243.58	32.329049	-104.097297	
6,800.00	5.92	174.29	6,779.75	-395.02	39.50	483,510.03	614,244.61	32.329020	-104.097294	
6,900.00	5.92	174.29	6,879.22	-405.28	40.53	483,499.77	614,245.63	32.328992	-104.097291	
7,000.00	5.92	174.29	6,978.69	-415.53	41.55	483,489.52	614,246.66	32.328964	-104.097287	
7,100.00	5.92	174.29	7,078.16	-425.79	42.58	483,479.26	614,247.68	32.328936	-104.097284	
7,200.00	5.92	174.29	7,177.62	-436.04	43.60	483,469.01	614,248.71	32.328908	-104.097281	
7,300.00	5.92	174.29	7,277.09	-446.30	44.63	483,458.76	614,249.73	32.328879	-104.097278	
7,400.00	5.92	174.29	7,376.56	-456.55	45.65	483,448.50	614,250.76	32.328851	-104.097274	
7,500.00	5.92	174.29	7,476.03	-466.80	46.68	483,438.25	614,251.78	32.328823	-104.097271	
7,600.00	5.92	174.29	7,575.49	-477.06	47.71	483,427.99	614,252.81	32.328795	-104.097268	
7,700.00	5.92	174.29	7,674.96	-487.31	48.73	483,417.74	614,253.84	32.328767	-104.097265	
7,800.00	5.92	174.29	7,774.43	-497.57	49.76	483,407.48	614,254.86	32.328738	-104.097261	
7,900.00	5.92	174.29	7,873.90	-507.82	50.78	483,397.23	614,255.89	32.328710	-104.097258	
8,000.00	5.92	174.29	7,973.36	-518.08	51.81	483,386.97	614,256.91	32.328682	-104.097255	
8,100.00	5.92	174.29	8,072.83	-528.33	52.83	483,376.72	614,257.94	32.328654	-104.097252	
8,200.00	5.92	174.29	8,172.30	-538.58	53.86	483,366.47	614,258.96	32.328626	-104.097248	
8,300.00	5.92	174.29	8,271.77	-548.84	54.88	483,356.21	614,259.99	32.328597	-104.097245	
8,400.00	5.92	174.29	8,371.23	-559.09	55.91	483,345.96	614,261.01	32.328569	-104.097242	
8,500.00	5.92	174.29	8,470.70	-569.35	56.93	483,335.70	614,262.04	32.328541	-104.097239	
8,600.00	5.92	174.29	8,570.17	-579.60	57.96	483,325.45	614,263.06	32.328513	-104.097235	
8,650.91	5.92	174.29	8,620.81	-584.82	58.48	483,320.23	614,263.59	32.328499	-104.097234	
EOH										
8,700.00	4.93	174.29	8,669.68	-589.44	58.94	483,315.61	614,264.05	32.328486	-104.097232	
8,800.00	2.93	174.29	8,769.44	-596.27	59.63	483,308.79	614,264.73	32.328467	-104.097230	
8,900.00	0.93	174.29	8,869.37	-599.62	59.96	483,305.43	614,265.07	32.328458	-104.097229	
8,946.67	0.00	0.00	8,916.04	-600.00	60.00	483,305.05	614,265.10	32.328457	-104.097229	
Drop to Vertical										
9,000.00	0.00	0.00	8,969.37	-600.00	60.00	483,305.05	614,265.10	32.328457	-104.097229	
9,096.67	0.00	0.00	9,066.04	-600.00	60.00	483,305.05	614,265.10	32.328457	-104.097229	
KOP @ 9066' TVD										
9,100.00	0.33	1.67	9,069.37	-599.99	60.00	483,305.06	614,265.10	32.328457	-104.097229	
9,200.00	10.33	1.67	9,168.81	-590.71	60.27	483,314.34	614,265.38	32.328482	-104.097228	
9,300.00	20.33	1.67	9,265.13	-564.31	61.04	483,340.74	614,266.15	32.328555	-104.097225	
9,400.00	30.33	1.67	9,355.40	-521.60	62.29	483,383.45	614,267.40	32.328672	-104.097221	
9,500.00	40.33	1.67	9,436.88	-463.86	63.98	483,441.19	614,269.08	32.328831	-104.097215	
9,600.00	50.33	1.67	9,507.09	-392.86	66.06	483,512.19	614,271.16	32.329026	-104.097208	
9,700.00	60.33	1.67	9,563.89	-310.75	68.46	483,594.30	614,273.56	32.329252	-104.097199	
9,800.00	70.33	1.67	9,605.58	-220.03	71.11	483,685.02	614,276.21	32.329501	-104.097190	



SB Directional

Planning Report - Geographic



Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well Goonch Fed Com 04 211H
Company:	NOVO Oil & Gas	TVD Reference:	RKB @ 3041.00usft
Project:	EDDY CO., NM (NAD83)	MD Reference:	RKB @ 3041.00usft
Site:	SEC. 04-T23S-R28E	North Reference:	Grid
Well:	Goonch Fed Com 04 211H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan 2		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
9,900.00	80.33	1.67	9,630.86	-123.46	73.94	483,781.60	614,279.04	32.329767	-104.097180
9,996.67	90.00	1.67	9,639.00	-27.28	76.75	483,877.77	614,281.85	32.330031	-104.097171
LP @ 9639' TVD									
10,000.00	90.00	1.67	9,639.00	-23.96	76.84	483,881.09	614,281.95	32.330040	-104.097170
10,100.00	90.00	1.67	9,639.00	76.00	79.77	483,981.05	614,284.87	32.330315	-104.097160
10,200.00	90.00	1.67	9,639.00	175.96	82.69	484,081.01	614,287.79	32.330590	-104.097150
10,300.00	90.00	1.67	9,639.00	275.92	85.61	484,180.97	614,290.72	32.330864	-104.097140
10,400.00	90.00	1.67	9,639.00	375.87	88.54	484,280.92	614,293.64	32.331139	-104.097130
10,500.00	90.00	1.67	9,639.00	475.83	91.46	484,380.88	614,296.56	32.331414	-104.097119
10,600.00	90.00	1.67	9,639.00	575.79	94.38	484,480.84	614,299.49	32.331689	-104.097109
10,700.00	90.00	1.67	9,639.00	675.74	97.31	484,580.80	614,302.41	32.331963	-104.097099
10,800.00	90.00	1.67	9,639.00	775.70	100.23	484,680.75	614,305.33	32.332238	-104.097089
10,900.00	90.00	1.67	9,639.00	875.66	103.15	484,780.71	614,308.26	32.332513	-104.097079
11,000.00	90.00	1.67	9,639.00	975.62	106.07	484,880.67	614,311.18	32.332788	-104.097069
11,100.00	90.00	1.67	9,639.00	1,075.57	109.00	484,980.62	614,314.10	32.333062	-104.097058
11,200.00	90.00	1.67	9,639.00	1,175.53	111.92	485,080.58	614,317.02	32.333337	-104.097048
11,300.00	90.00	1.67	9,639.00	1,275.49	114.84	485,180.54	614,319.95	32.333612	-104.097038
11,400.00	90.00	1.67	9,639.00	1,375.45	117.77	485,280.50	614,322.87	32.333887	-104.097028
11,500.00	90.00	1.67	9,639.00	1,475.40	120.69	485,380.45	614,325.79	32.334161	-104.097018
11,600.00	90.00	1.67	9,639.00	1,575.36	123.61	485,480.41	614,328.72	32.334436	-104.097007
11,700.00	90.00	1.67	9,639.00	1,675.32	126.54	485,580.37	614,331.64	32.334711	-104.096997
11,800.00	90.00	1.67	9,639.00	1,775.27	129.46	485,680.33	614,334.56	32.334986	-104.096987
11,900.00	90.00	1.67	9,639.00	1,875.23	132.38	485,780.28	614,337.49	32.335260	-104.096977
12,000.00	90.00	1.67	9,639.00	1,975.19	135.30	485,880.24	614,340.41	32.335535	-104.096967
12,100.00	90.00	1.67	9,639.00	2,075.15	138.23	485,980.20	614,343.33	32.335810	-104.096957
12,200.00	90.00	1.67	9,639.00	2,175.10	141.15	486,080.15	614,346.25	32.336085	-104.096946
12,300.00	90.00	1.67	9,639.00	2,275.06	144.07	486,180.11	614,349.18	32.336359	-104.096936
12,400.00	90.00	1.67	9,639.00	2,375.02	147.00	486,280.07	614,352.10	32.336634	-104.096926
12,500.00	90.00	1.67	9,639.00	2,474.98	149.92	486,380.03	614,355.02	32.336909	-104.096916
12,600.00	90.00	1.67	9,639.00	2,574.93	152.84	486,479.98	614,357.95	32.337184	-104.096906
12,700.00	90.00	1.67	9,639.00	2,674.89	155.77	486,579.94	614,360.87	32.337458	-104.096896
12,800.00	90.00	1.67	9,639.00	2,774.85	158.69	486,679.90	614,363.79	32.337733	-104.096885
12,900.00	90.00	1.67	9,639.00	2,874.80	161.61	486,779.86	614,366.72	32.338008	-104.096875
13,000.00	90.00	1.67	9,639.00	2,974.76	164.53	486,879.81	614,369.64	32.338283	-104.096865
13,100.00	90.00	1.67	9,639.00	3,074.72	167.46	486,979.77	614,372.56	32.338557	-104.096855
13,200.00	90.00	1.67	9,639.00	3,174.68	170.38	487,079.73	614,375.48	32.338832	-104.096845
13,300.00	90.00	1.67	9,639.00	3,274.63	173.30	487,179.68	614,378.41	32.339107	-104.096834
13,400.00	90.00	1.67	9,639.00	3,374.59	176.23	487,279.64	614,381.33	32.339382	-104.096824
13,500.00	90.00	1.67	9,639.00	3,474.55	179.15	487,379.60	614,384.25	32.339656	-104.096814
13,600.00	90.00	1.67	9,639.00	3,574.51	182.07	487,479.56	614,387.18	32.339931	-104.096804
13,700.00	90.00	1.67	9,639.00	3,674.46	185.00	487,579.51	614,390.10	32.340206	-104.096794
13,800.00	90.00	1.67	9,639.00	3,774.42	187.92	487,679.47	614,393.02	32.340481	-104.096784
13,900.00	90.00	1.67	9,639.00	3,874.38	190.84	487,779.43	614,395.94	32.340755	-104.096773
14,000.00	90.00	1.67	9,639.00	3,974.33	193.76	487,879.39	614,398.87	32.341030	-104.096763
14,100.00	90.00	1.67	9,639.00	4,074.29	196.69	487,979.34	614,401.79	32.341305	-104.096753
14,195.20	90.00	1.67	9,639.00	4,169.45	199.47	488,074.50	614,404.57	32.341566	-104.096743
PBHL; 1130' FNL, 1155' FWL									
14,195.21	90.00	1.67	9,639.00	4,169.46	199.47	488,074.51	614,404.57	32.341566	-104.096743



SB Directional

Planning Report - Geographic



Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well Goonch Fed Com 04 211H
Company:	NOVO Oil & Gas	TVD Reference:	RKB @ 3041.00usft
Project:	EDDY CO., NM (NAD83)	MD Reference:	RKB @ 3041.00usft
Site:	SEC. 04-T23S-R28E	North Reference:	Grid
Well:	Goonch Fed Com 04 211H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan 2		

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
PBHL - Goonch Fed Cor	0.00	0.00	0.00	4,169.46	199.47	488,074.51	614,404.57	32.341566	-104.096743
- hit/miss target									
- Shape									
- plan misses target center by 4174.23usft at 0.00usft MD (0.00 TVD, 0.00 N, 0.00 E)									
- Point									

Casing Points				
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
14,510.64		20" Casing	20	24

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
2,800.00	2,800.00	0.00	0.00	Start Nudge
3,095.76	3,095.23	-15.18	1.52	EOB
8,650.91	8,620.81	-584.82	58.48	EOH
8,946.67	8,916.04	-600.00	60.00	Drop to Vertical
9,096.67	9,066.04	-600.00	60.00	KOP @ 9066' TVD
9,996.67	9,639.00	-27.28	76.75	LP @ 9639' TVD
14,195.20	9,639.00	4,169.45	199.47	PBHL; 130' FNL, 1155' FWL

PECOS DISTRICT DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	NOVO OIL AND GAS
WELL NAME & NO.:	GOONCH FED COM 04 211H
SURFACE HOLE FOOTAGE:	1080'/S & 1075'/W
BOTTOM HOLE FOOTAGE:	130'/N & 990'/W
LOCATION:	Section 4, T.23 S., R.28 E., NMPM
COUNTY:	EDDY County, New Mexico

COA

H2S	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
Potash	<input checked="" type="radio"/> None	<input type="radio"/> Secretary	<input type="radio"/> R-111-P
Cave/Karst Potential	<input type="radio"/> Low	<input checked="" type="radio"/> Medium	<input type="radio"/> High
Cave/Karst Potential	<input type="radio"/> Critical		
Variance	<input type="radio"/> None	<input checked="" type="radio"/> Flex Hose	<input type="radio"/> Other
Wellhead	<input type="radio"/> Conventional	<input checked="" type="radio"/> Multibowl	<input type="radio"/> Both
Other	<input type="checkbox"/> 4 String Area	<input type="checkbox"/> Capitan Reef	<input type="checkbox"/> WIPP
Other	<input type="checkbox"/> Fluid Filled	<input type="checkbox"/> Cement Squeeze	<input type="checkbox"/> Pilot Hole
Special Requirements	<input type="checkbox"/> Water Disposal	<input checked="" type="checkbox"/> COM	<input type="checkbox"/> Unit

All previous COAs still apply, except for the following:

A. CASING

1. The **13-3/8** inch surface casing shall be set at approximately **594** feet (a minimum of **70 feet (Eddy County)** into the Rustler Anhydrite and above the salt) and cemented to the surface.
 - a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.
 - b. Wait on cement (WOC) time for a primary cement job will be a minimum of **8 hours** or 500 pounds compressive strength, whichever is greater. (This is to include the lead cement)
 - c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.
 - d. If cement falls back, remedial cementing will be done prior to drilling out that string.

2. The **8 5/8** inch intermediate casing shall be set at approximately **7009** feet. The minimum required fill of cement behind the **8 5/8** inch intermediate casing is:

Operator has proposed a DV tool, the depth may be adjusted as long as the cement is changed proportionally. The DV tool may be cancelled if cement circulates to surface on the first stage.

- a. First stage to DV tool: Cement to circulate. If cement does not circulate off the DV tool, contact the appropriate BLM office before proceeding with second stage cement job.
 - b. Second stage above DV tool:
 - Cement to surface. If cement does not circulate, contact the appropriate BLM office. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst or potash.**
- ❖ In Medium Cave/Karst Areas if cement does not circulate to surface on the first two casing strings, the cement on the 3rd casing string must come to surface.
3. The minimum required fill of cement behind the **5-1/2** inch production casing is:
 - Cement should tie-back at least **200 feet** into previous casing string. Operator shall provide method of verification.

B. PRESSURE CONTROL

1. Variance approved to use flex line from BOP to choke manifold. Manufacturer's specification to be readily available. No external damage to flex line. Flex line to be installed as straight as possible (no hard bends).'
2. Operator has proposed a multi-bowl wellhead assembly. This assembly will only be tested when installed on the surface casing. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **5000 (5M)** psi.
 - a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
 - b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
 - c. Manufacturer representative shall install the test plug for the initial BOP test.
 - d. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.

- e. Whenever any seal subject to test pressure is broken, all the tests in OOGO2.III.A.2.i must be followed.

C. SPECIAL REQUIREMENT (S)

Communitization Agreement

- The operator will submit a Communitization Agreement to the Santa Fe Office, 301 Dinosaur Trail Santa Fe, New Mexico 87508, at least 90 days before the anticipated date of first production from a well subject to a spacing order issued by the New Mexico Oil Conservation Division. The Communitization Agreement will include the signatures of all working interest owners in all Federal and Indian leases subject to the Communitization Agreement (i.e., operating rights owners and lessees of record), or certification that the operator has obtained the written signatures of all such owners and will make those signatures available to the BLM immediately upon request.
- If the operator does not comply with this condition of approval, the BLM may take enforcement actions that include, but are not limited to, those specified in 43 CFR 3163.1.
- In addition, the well sign shall include the surface and bottom hole lease numbers. When the Communitization Agreement number is known, it shall also be on the sign.

JJP03172021

GENERAL REQUIREMENTS

The BLM is to be notified in advance for a representative to witness:

- a. Spudding well (minimum of 24 hours)
- b. Setting and/or Cementing of all casing strings (minimum of 4 hours)
- c. BOPE tests (minimum of 4 hours)

☒ Eddy County

Call the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220,
(575) 361-2822

☒ Lea County

Call the Hobbs Field Station, 414 West Taylor, Hobbs NM 88240, (575)
393-3612

1. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval.
 - a. In the event the operator has proposed to drill multiple wells utilizing a skid/walking rig. Operator shall secure the wellbore on the current well, after installing and testing the wellhead, by installing a blind flange of like pressure

- rating to the wellhead and a pressure gauge that can be monitored while drilling is performed on the other well(s).
- b. When the operator proposes to set surface casing with Spudder Rig
 - Notify the BLM when moving in and removing the Spudder Rig.
 - Notify the BLM when moving in the 2nd Rig. Rig to be moved in within 90 days of notification that Spudder Rig has left the location.
 - BOP/BOPE test to be conducted per Onshore Oil and Gas Order No. 2 as soon as 2nd Rig is rigged up on well.
 2. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works are located, this does not include the dog house or stairway area.
 3. The record of the drilling rate along with the GR/N well log run from TD to surface (horizontal well – vertical portion of hole) shall be submitted to the BLM office as well as all other logs run on the borehole 30 days from completion. If available, a digital copy of the logs is to be submitted in addition to the paper copies. The Rustler top and top and bottom of Salt are to be recorded on the Completion Report.

A. CASING

1. Changes to the approved APD casing program need prior approval if the items substituted are of lesser grade or different casing size or are Non-API. The Operator can exchange the components of the proposal with that of superior strength (i.e. changing from J-55 to N-80, or from 36# to 40#). Changes to the approved cement program need prior approval if the altered cement plan has less volume or strength or if the changes are substantial (i.e. Multistage tool, ECP, etc.). The initial wellhead installed on the well will remain on the well with spools used as needed.
2. Wait on cement (WOC) for Potash Areas: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi for all cement blends, 2) until cement has been in place at least 24 hours. WOC time will be recorded in the driller's log. The casing integrity test can be done (prior to the cement setting up) immediately after bumping the plug.
3. Wait on cement (WOC) for Water Basin: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi at the shoe, 2) until cement has been in place at least 8 hours. WOC time will be recorded in the driller's log. See individual casing strings for details regarding lead cement slurry requirements. The casing integrity test can be done (prior to the cement setting up) immediately after bumping the plug.

4. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. Have well specific cement details onsite prior to pumping the cement for each casing string.
5. No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.
6. On that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Formation at the shoe shall be tested to a minimum of the mud weight equivalent anticipated to control the formation pressure to the next casing depth or at total depth of the well. This test shall be performed before drilling more than 20 feet of new hole.
7. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.
8. Whenever a casing string is cemented in the R-111-P potash area, the NMOCD requirements shall be followed.

B. PRESSURE CONTROL

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API RP 53 Sec. 17.
2. If a variance is approved for a flexible hose to be installed from the BOP to the choke manifold, the following requirements apply: The flex line must meet the requirements of API 16C. Check condition of flexible line from BOP to choke manifold, replace if exterior is damaged or if line fails test. Line to be as straight as possible with no hard bends and is to be anchored according to Manufacturer's requirements. The flexible hose can be exchanged with a hose of equal size and equal or greater pressure rating. Anchor requirements, specification sheet and hydrostatic pressure test certification matching the hose in service, to be onsite for review. These documents shall be posted in the company man's trailer and on the rig floor.
3. 5M or higher system requires an HCR valve, remote kill line and annular to match. The remote kill line is to be installed prior to testing the system and tested to stack pressure.
4. If the operator has proposed a multi-bowl wellhead assembly in the APD. The following requirements must be met:

- a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
 - b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
 - c. Manufacturer representative shall install the test plug for the initial BOP test.
 - d. Whenever any seal subject to test pressure is broken, all the tests in OOGO2.III.A.2.i must be followed.
 - e. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.
5. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.
 - a. In a water basin, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. The casing cut-off and BOP installation can be initiated four hours after installing the slips, which will be approximately six hours after bumping the plug. For those casing strings not using slips, the minimum wait time before cut-off is eight hours after bumping the plug. BOP/BOPE testing can begin after cut-off or once cement reaches 500 psi compressive strength (including lead when specified), whichever is greater. However, if the float does not hold, cut-off cannot be initiated until cement reaches 500 psi compressive strength (including lead when specified).
 - b. In potash areas, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. For all casing strings, casing cut-off and BOP installation can be initiated at twelve hours after bumping the plug. However, **no tests** shall commence until the cement has had a minimum of 24 hours setup time, except the casing pressure test can be initiated immediately after bumping the plug (only applies to single stage cement jobs).
 - c. The tests shall be done by an independent service company utilizing a test plug not a cup or J-packer. The operator also has the option of utilizing an independent tester to test without a plug (i.e. against the casing) pursuant to Onshore Order 2 with the pressure not to exceed 70% of the burst rating for the casing. Any test against the casing must meet the WOC time for water basin (8 hours) or potash (24 hours) or 500 pounds compressive strength, whichever is greater, prior to initiating the test (see casing segment as lead cement may be critical item).
 - d. The test shall be run on a 5000 psi chart for a 2-3M BOP/BOP, on a 10000 psi chart for a 5M BOP/BOPE and on a 15000 psi chart for a 10M BOP/BOPE.

If a linear chart is used, it shall be a one hour chart. A circular chart shall have a maximum 2 hour clock. If a twelve hour or twenty-four hour chart is used, tester shall make a notation that it is run with a two hour clock.

- e. The results of the test shall be reported to the appropriate BLM office.
- f. All tests are required to be recorded on a calibrated test chart. A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.
- g. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug. This test shall be performed prior to the test at full stack pressure.
- h. BOP/BOPE must be tested by an independent service company within 500 feet of the top of the Wolfcamp formation if the time between the setting of the intermediate casing and reaching this depth exceeds 20 days. This test does not exclude the test prior to drilling out the casing shoe as per Onshore Order No. 2.

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

COMMENTS

Action 28071

COMMENTS

Operator: NOVO OIL & GAS NORTHERN DELAWARE, LLC 1001 West Wilshire Blvd Oklahoma City, OK 73116	OGRID: 372920
	Action Number: 28071
	Action Type: [C-103] NOI Change of Plans (C-103A)

COMMENTS

Created By	Comment	Comment Date
kpickford	KP GEO Review 5/14/2021	5/14/2021

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CONDITIONS

Action 28071

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Operator: NOVO OIL & GAS NORTHERN DELAWARE, LLC 1001 West Wilshire Blvd Oklahoma City, OK 73116	OGRID: 372920
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CONDITIONS

Created By	Condition	Condition Date
kpickford	Adhere to previous NMOCD Conditions of Approval	5/14/2021