

Well Name: GOONCH FED COM 04	Well Location: T23S / R28E / SEC 4 / SWSW / 32.3301063 / -104.0971432	County or Parish/State: EDDY / NM
Well Number: 232H	Type of Well: CONVENTIONAL GAS WELL	Allottee or Tribe Name:
Lease Number: NMNM032636, NMNM18038	Unit or CA Name:	Unit or CA Number:
US Well Number: 3001546515	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: 03/29/2021	Time Sundry Submitted: 08:22
Date proposed operation will begin: 04/29/2021	

Procedure Description: Novo Oil & Gas Northern Delaware, LLC respectfully requests the following APD changes: Change the SHL to 1,080' FSL & 1,115' FWL, from the previously approved SHL 1,180' FSL & 1,180' FWL, Sec. 4- T23S, R28E. There will be no additional surface disturbance with the requested change to the surface hole location. Change the BHL to 130' FNL & 1,650' FWL, from the previously approved BHL 130' FNL & 1,254' FWL, Sec 4. T23S, R28E. Request to change intermediate casing to 8-5/8" from the previously approved 9-5/8". See attachments for technical details.

Surface Disturbance

Is any additional surface disturbance proposed?: No

NOI Attachments

Procedure Description

- NOVO_Goonch_Fed_Com_04_232H_Plan_2_20210329082110.xlsx
- NOVO_Goonch_Fed_Com_04_232H_Plot_Plan_2_20210329082103.pdf
- NOVO_Goonch_Fed_Com_04_232H_Plan_2_20210329082058.pdf
- NOVO_Goonch_Fed_Com_04_232H_AC_Report_Plan_2_20210329082052.pdf
- 5.500_20_P110EC_DWC_C_IS_PLUS_20210329082035.pdf
- 8.625_32.00_P110HSCY_TLW_20210329082030.pdf
- GOONCH_FED_COM_04_232H_v.2_20210329082021.pdf
- Drill_Plan_3S_5K_GOONCH_FED_COM_04_232H_032621_20210329082012.pdf

Received by OCD: 5/13/2021 9:57:55 AM

Page 2 of 77

Well Name: GOONCH FED COM 04	Well Location: T23S / R28E / SEC 4 / SWSW / 32.3301063 / -104.0971432	County or Parish/State: EDDY / NM
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US Well Number: 3001546515	Well Status: Drilling Well	Operator: NOVO OIL AND GAS NORTHERN DELA

Goonch_04_232H_Change_to_Sundry_Request_v.2_20210329082006.pdf

Conditions of Approval

Additional Reviews

Goonch_FED_COM_04_232H_APD_CHANGE_SUNDRY_Drilling_COAs_20210329142537.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 29, 2021 08:21 AM

Name: NOVO OIL AND GAS NORTHERN DELA

Title: Landman

Street Address: 1001 West Wilshire Boulevard Suite 206

City: Oklahoma CityState: OK

Phone: (405) 286-3375

Email address: JCARTER@NOVOOG.COM

Field Representative

Representative Name:

Street Address:

City:State:Zip:

Phone:

Email address:

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

Goonch Fed Com 04 232H

CHANGE TO PLANS

Move Surface Hole Location

From: 1,180' FSL & 1,180' FWL, Section 4, T-23-S, R-28-E, SWSW

To: 1,080' FSL & 1,115' 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 & 1,254' FWL, Section 4, T-23-S, R-28-E, NWNW

To: 130' FNL & 1,650' FWL, Section 4, T-23-S, R-28-E, NENW

Casing Substitution

Hole Size: 9-7/8", Casing: 8-5/8", 32 ppf, P-110, TLW to be set at 9,509' TMD.

Design Safety Factors: Burst 5.95, Collapse 1.39, Tension 3.21 (Casing Specification Sheet is attached)

Hole Size: 7-7/8", Casing: 5-1/2", 20 ppf, P-110, DWC/C IS+ to be set at 16,359' TMD.

Design Safety Factors: Burst 1.25, Collapse 3.67, Tension 2.67 (Casing Specification Sheet is attached)

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

Lead: 643 Sacks; 2,303.1 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.

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

Lead: 745 Sacks; 1,580.7 cu. ft.; 20% excess; 2.12 cu.ft./sx; 11.91 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 30-015-46515	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 232H
⁷ OGRID No. 372920	⁸ Operator Name NOVO OIL & GAS NORTHERN DELAWARE, LLC	⁹ Elevation 3016.0

¹⁰ Surface Location

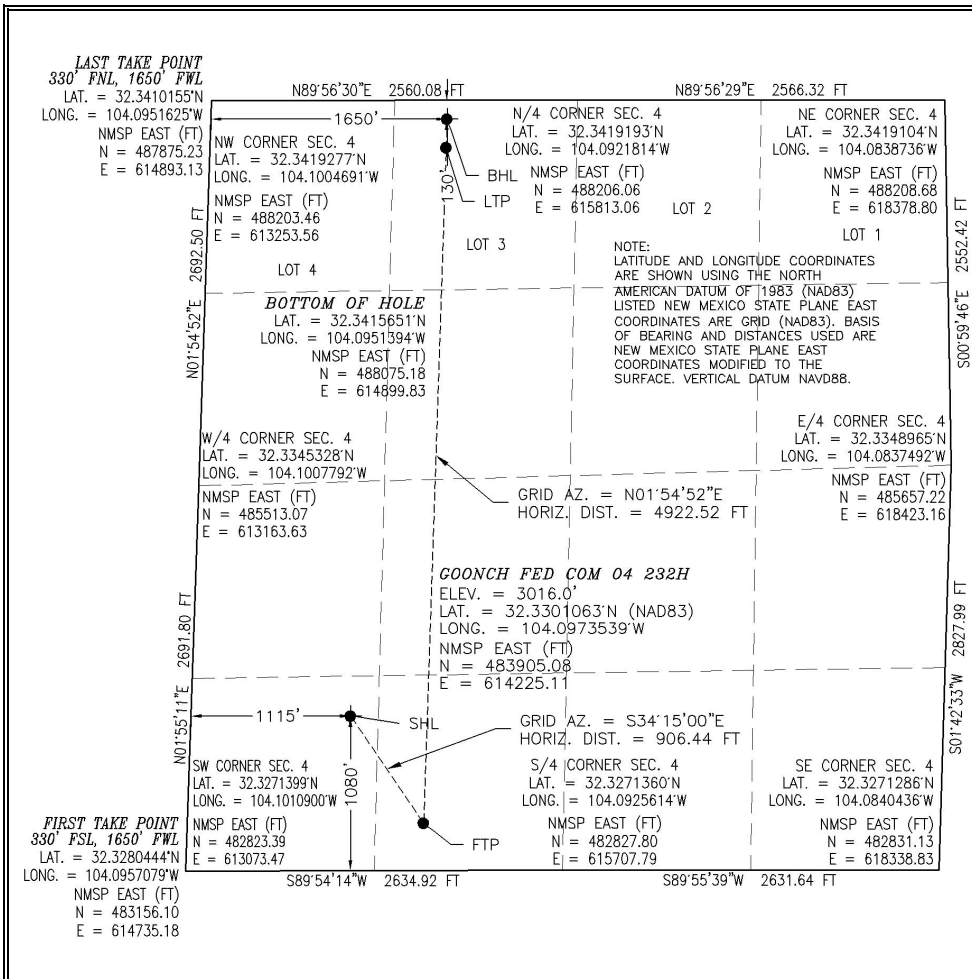
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
M	4	23 S	28 E		1080	SOUTH	1115	WEST	EDDY

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
3	4	23 S	28 E		130	NORTH	1650	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 MONSIEUR MILLO PLS 12797**
SURVEY NO. 7134B

Intent ☐ As Drilled ☐

API #

Operator Name:	Property Name:	Well Number
NOVO OIL & GAS NORTHERN DELAWARE, LLC	GOONCH FED COM 04	232H

Kick Off Point (KOP)

UL M	Section 4	Township 23S	Range 28E	Lot	Feet 1080	From N/S SOUTH	Feet 1115	From E/W WEST	County EDDY
Latitude 32.3301063					Longitude 104.0973539			NAD 83	

First Take Point (FTP)

UL N	Section 4	Township 23S	Range 28E	Lot	Feet 330	From N/S SOUTH	Feet 1650	From E/W WEST	County EDDY
Latitude 32.3280444					Longitude 104.0957079			NAD 83	

Last Take Point (LTP)

UL	Section 4	Township 23S	Range 28E	Lot 3	Feet 330	From N/S NORTH	Feet 1650	From E/W WEST	County EDDY
Latitude 32.3410155					Longitude 104.0951625			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.

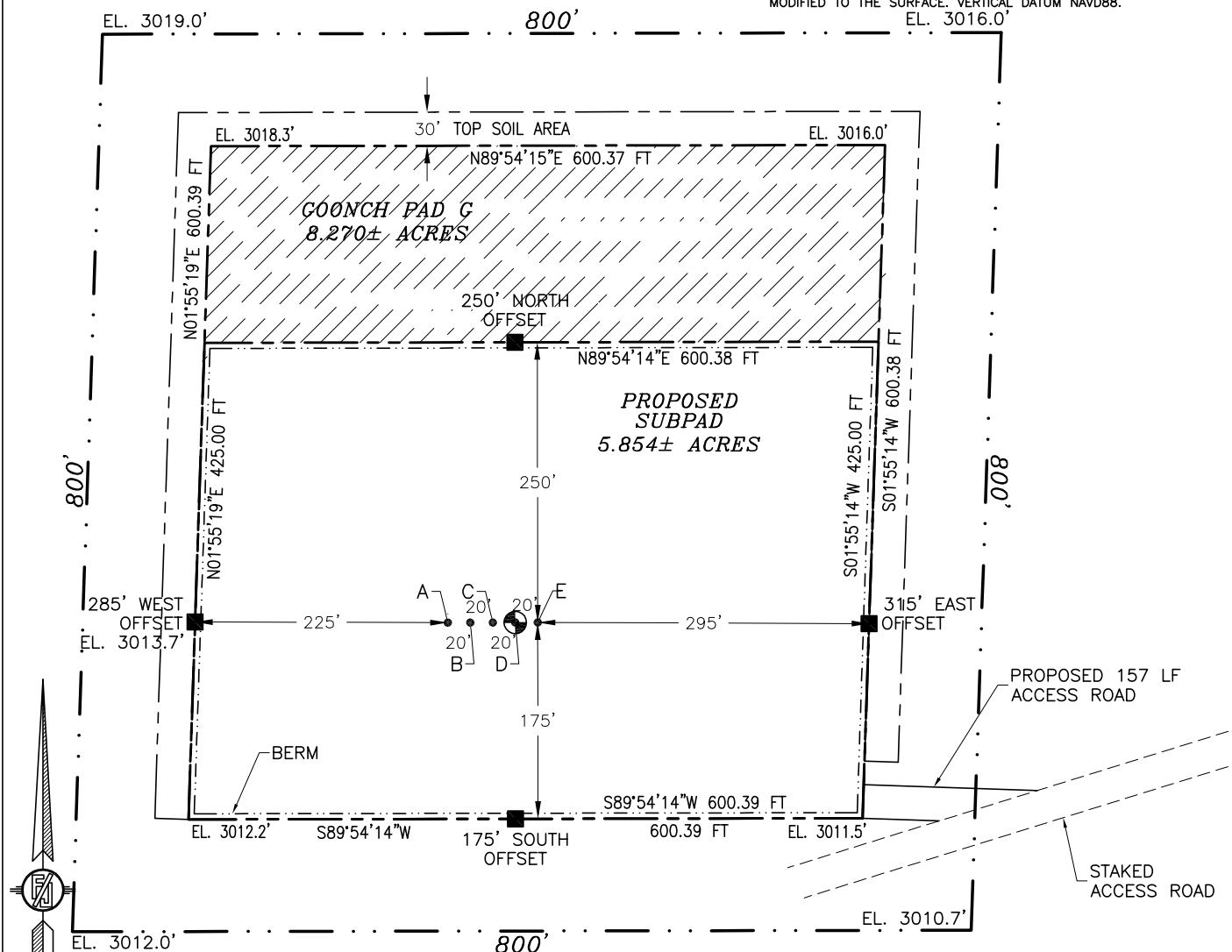
API #

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.



GOONCH FED COM 04 232H

ELEV. = 3016.0'

LAT. = 32.3301063°N (NAD83)

LONG. = 104.0973539°W

NMSP EAST (FT)

N = 483905.08

E = 614225.11

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-SOUTHWEST 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 0.5 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 THIS SURVEY WAS MADE IN ACCORDANCE WITH THE BEST OF MY KNOWLEDGE AND BELIEF, AND THAT THIS SURVEY COMPLIED WITH THE MINIMUM STANDARDS FOR SURVEYING IN NEW MEXICO.

FILIMON F. JARAMILLO, D.E.S. #2797

MADDOX SURVEYING, INC.

301 SOUTH CANAL
(575) 234-3341

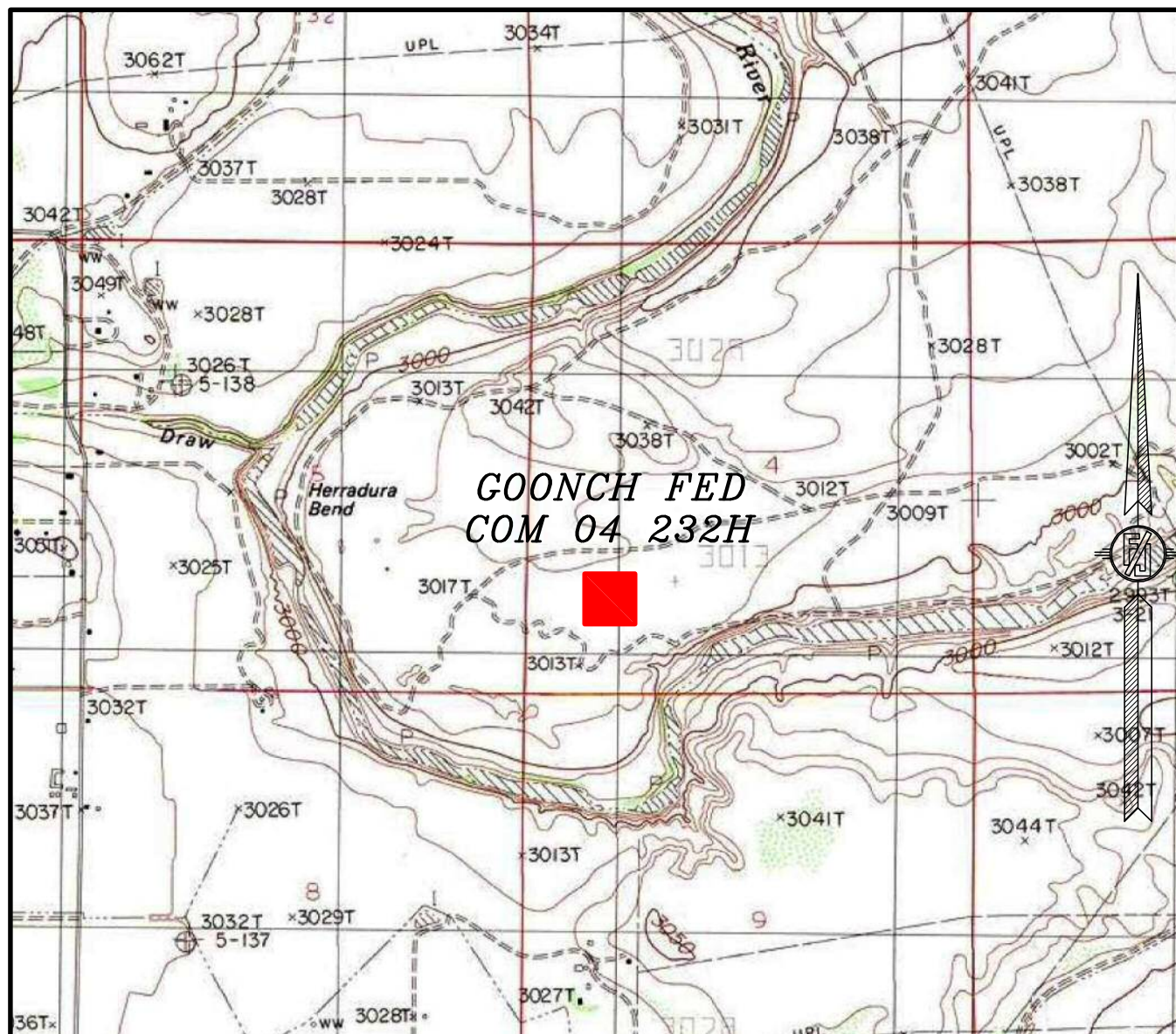
NOVO OIL & GAS NORTHERN DELAWARE, LLC
GOONCH FED COM 04 232H
 LOCATED 1080 FT. FROM THE SOUTH LINE
 AND 1115 FT. FROM THE WEST LINE OF
 SECTION 4, TOWNSHIP 23 SOUTH,
 RANGE 28 EAST, N.M.P.M.
 EDDY COUNTY, STATE OF NEW MEXICO

MARCH 24, 2021

SURVEY NO. 7134B

CARLSBAD, NEW MEXICO

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



USGS/4UAD MAP:
 LOVING

NOT TO SCALE

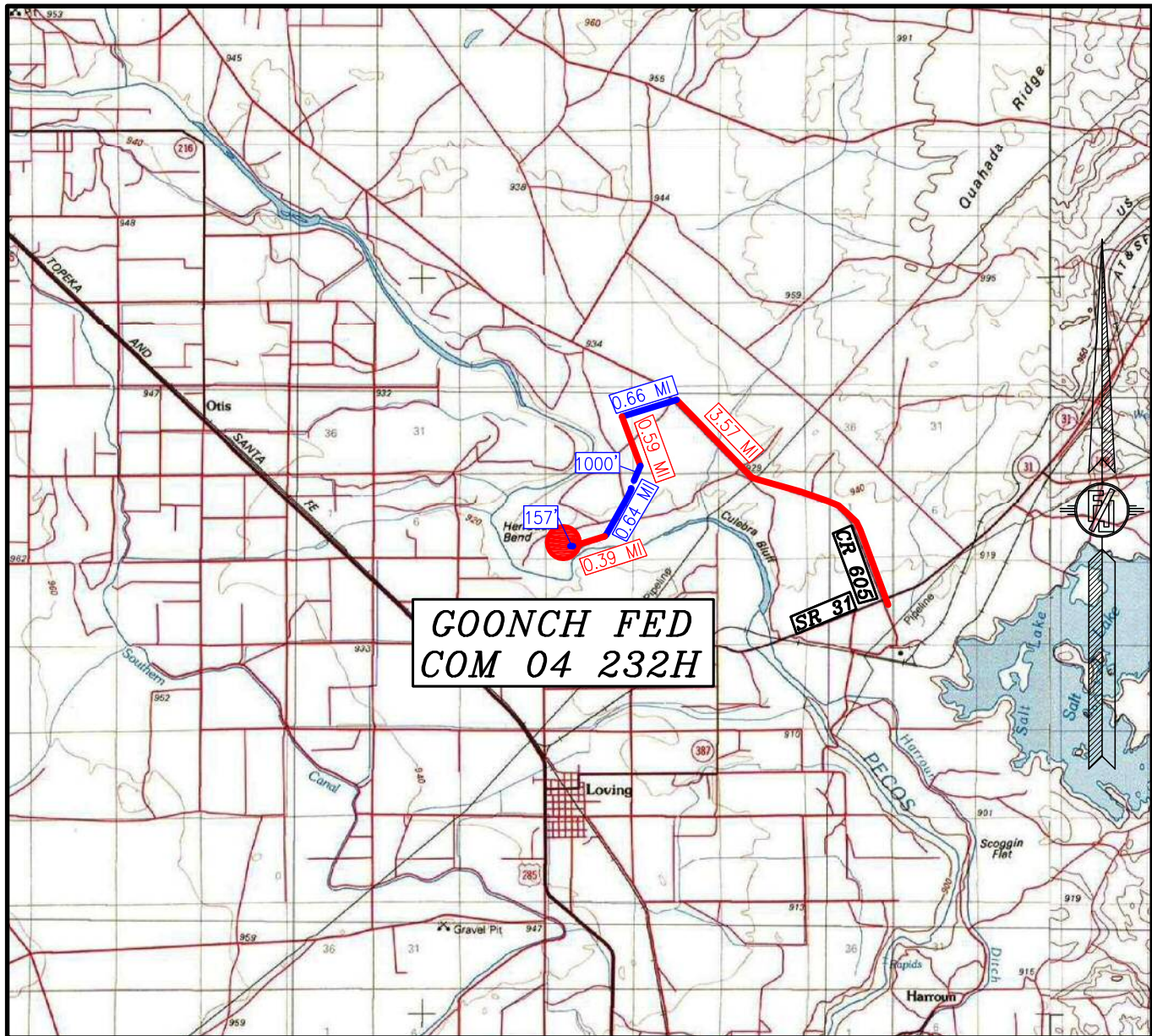
NOVO OIL & GAS NORTHERN DELAWARE, LLC
GOONCH FED COM 04 232H
 LOCATED 1080 FT. FROM THE SOUTH LINE
 AND 1115 FT. FROM THE WEST LINE OF
 SECTION 4, TOWNSHIP 23 SOUTH,
 RANGE 28 EAST, N.M.P.M.
 EDDY COUNTY, STATE OF NEW MEXICO

MARCH 24, 2021

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

SURVEY NO. 7134B
 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 232H

LOCATED 1080 FT. FROM THE SOUTH LINE
AND 1115 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.

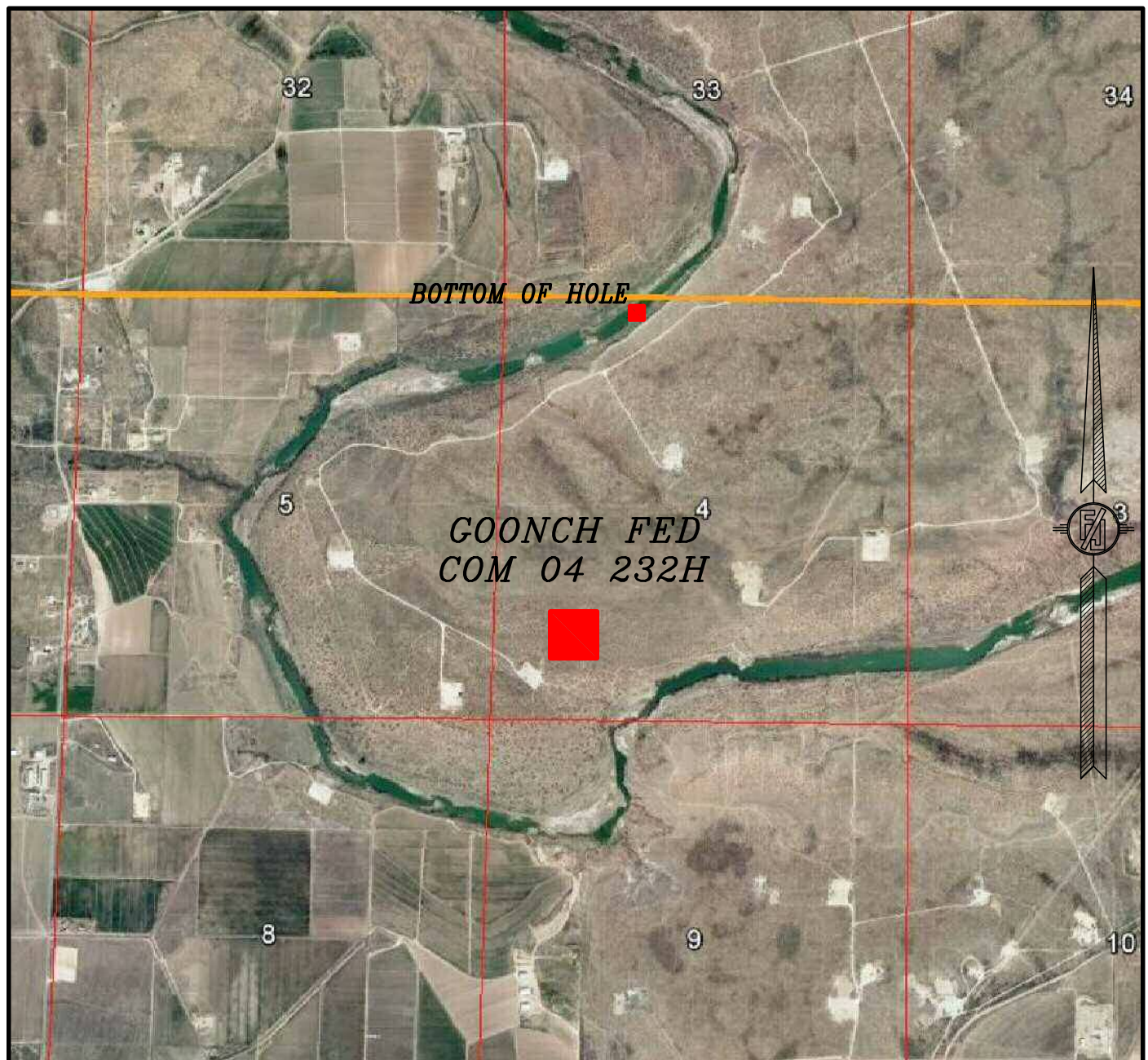
SURVEY NO. 7134B

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 232H
 LOCATED 1080 FT. FROM THE SOUTH LINE
 AND 1115 FT. FROM THE WEST LINE OF
 SECTION 4, TOWNSHIP 23 SOUTH,
 RANGE 28 EAST, N.M.P.M.
 EDDY COUNTY, STATE OF NEW MEXICO

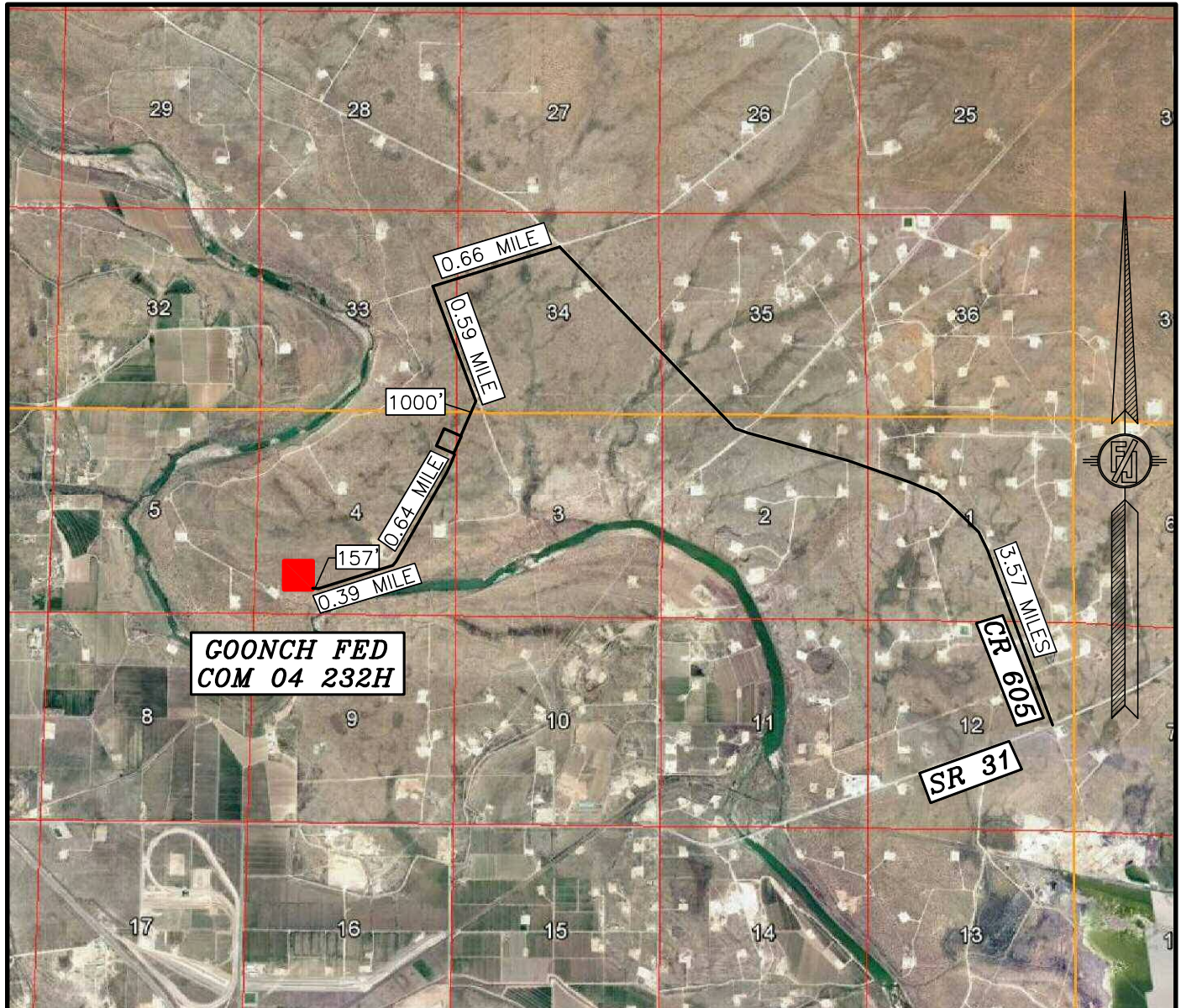
MARCH 24, 2021

SURVEY NO. 7134B

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
 ACCESS AERIAL ROUTE MAP



NOT TO SCALE
 AERIAL PHOTO:
 GOOGLE EARTH
 MARCH 2016

NOVO OIL & GAS NORTHERN DELAWARE, LLC
GOONCH FED COM 04 232H
 LOCATED 1080 FT. FROM THE SOUTH LINE
 AND 1115 FT. FROM THE WEST LINE OF
 SECTION 4, TOWNSHIP 23 SOUTH,
 RANGE 28 EAST, N.M.P.M.
 EDDY COUNTY, STATE OF NEW MEXICO

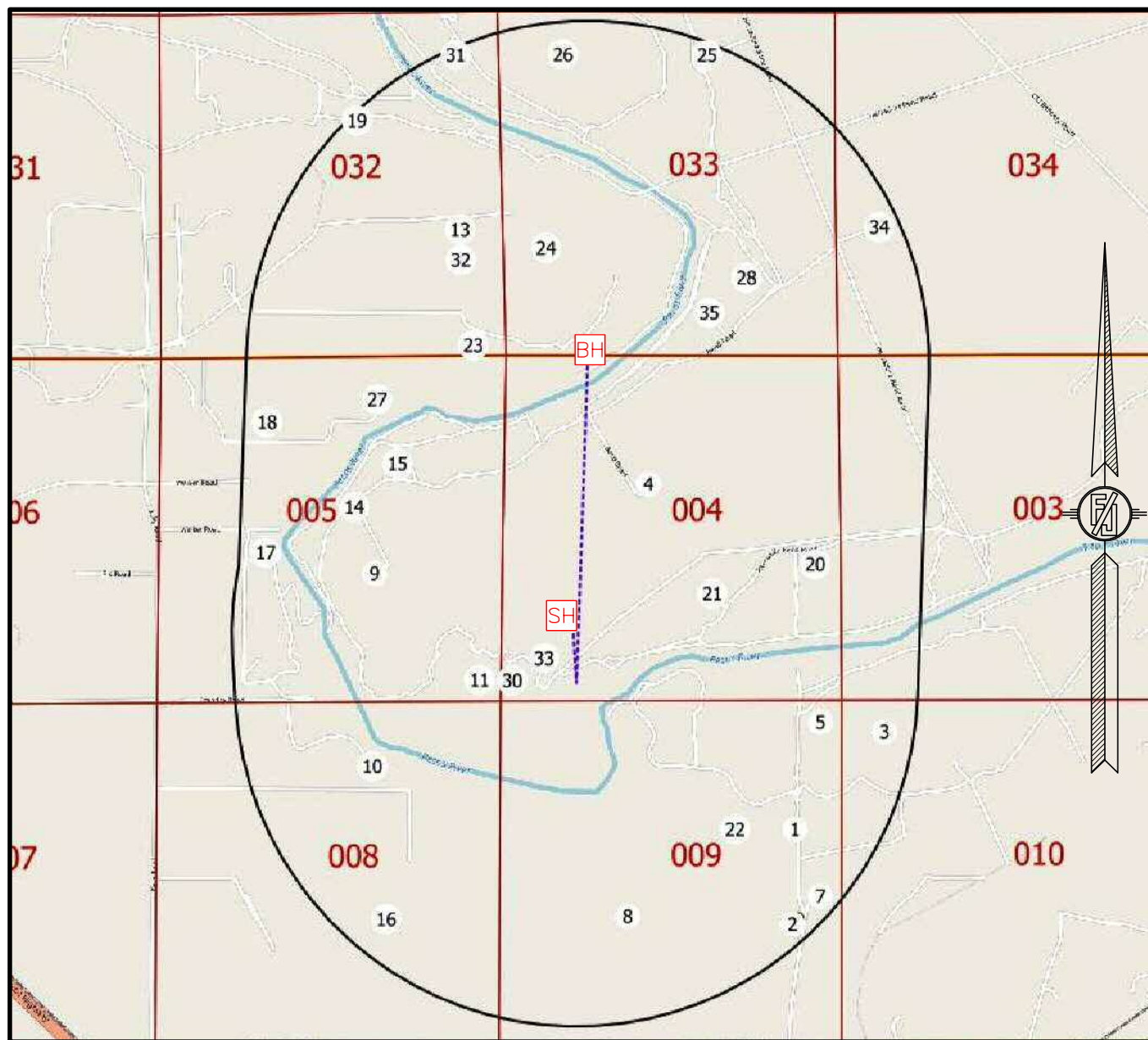
MARCH 24, 2021

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 (575) 234-3341

SURVEY NO. 7134B
 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 232H
 LOCATED 1080 FT. FROM THE SOUTH LINE
 AND 1115 FT. FROM THE WEST LINE OF
 SECTION 4, TOWNSHIP 23 SOUTH,
 RANGE 28 EAST, N.M.P.M.
 EDDY COUNTY, STATE OF NEW MEXICO

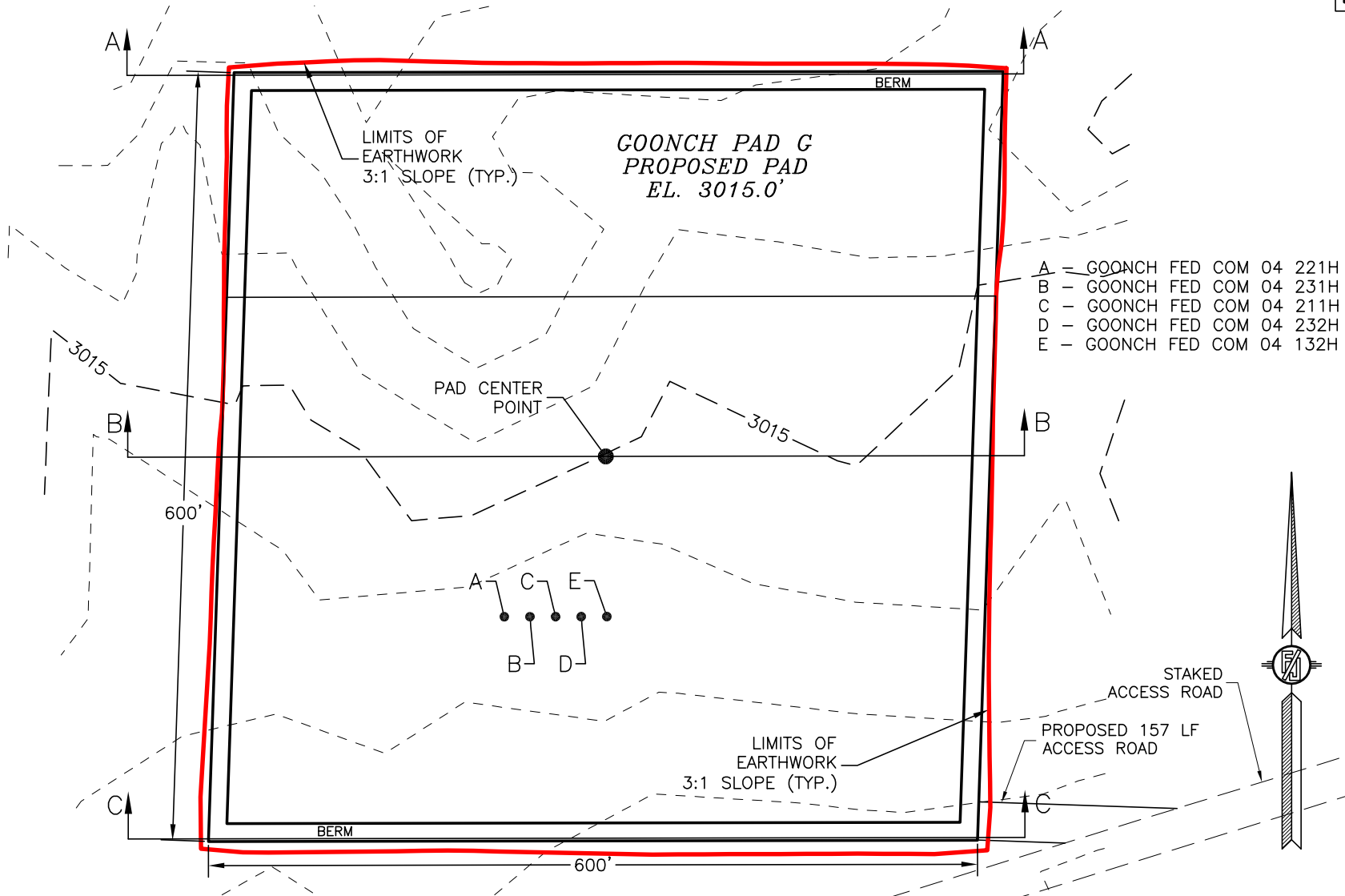
MARCH 24, 2021

SURVEY NO. 7134B

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

CARLSBAD, NEW MEXICO

PLAN VIEW



- A - GOONCH FED COM 04 221H
- B - GOONCH FED COM 04 231H
- C - GOONCH FED COM 04 211H
- D - GOONCH FED COM 04 232H
- E - GOONCH FED COM 04 132H

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 232H
 SECTION 4, TOWNSHIP 23 SOUTH,
 RANGE 28 EAST, N.M.P.M.
 EDDY COUNTY, STATE OF NEW MEXICO

MARCH 24, 2021

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

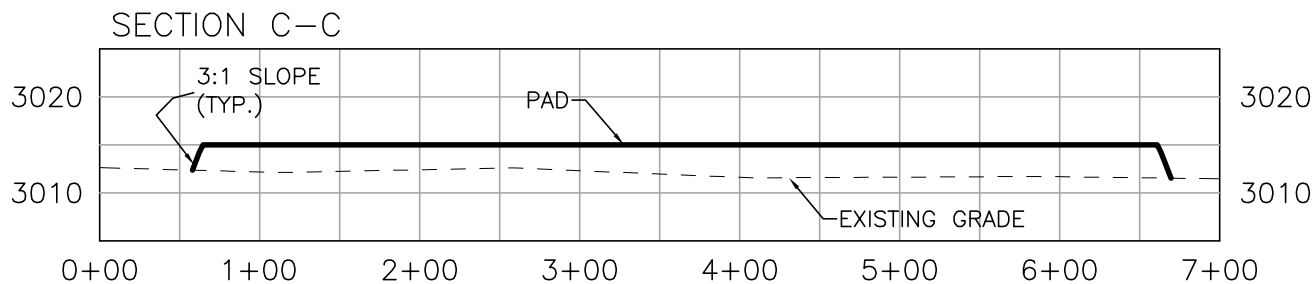
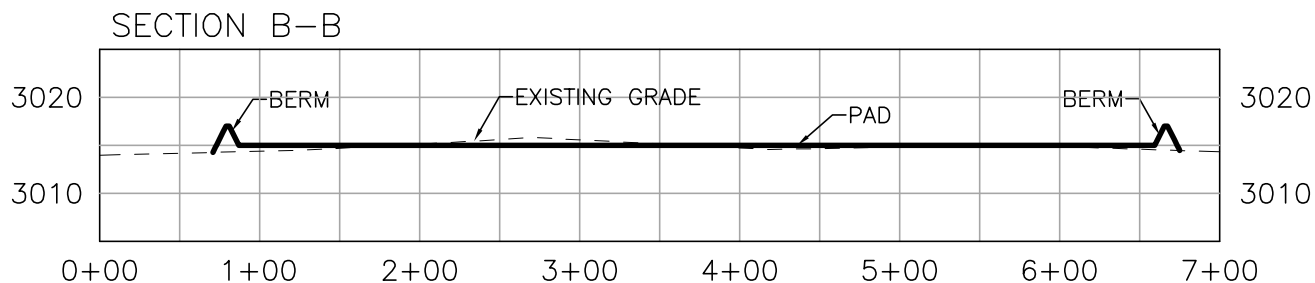
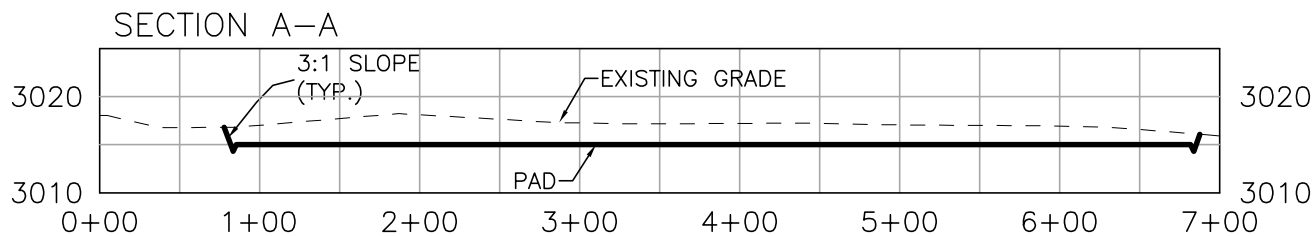
EARTHWORK QUANTITIES ARE ESTIMATED

FILIMON F. JARAMILLO, P.S. 12797

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

SHEET 1-2
 SURVEY NO. 7134B

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.



FILIMON F. JARAMILLO 12797

NOVO OIL & GAS NORTHERN DELAWARE, LLC
GRADING PLAN AND CROSS SECTIONS
FOR GOONCH FED COM 04 232H
SECTION 4, TOWNSHIP 23 SOUTH,
RANGE 28 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

MARCH 24, 2021

301 SOUTH CANAL
 (575) 234-3341

MADRON SURVEYING, INC. CARLSBAD, NEW MEXICO

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

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

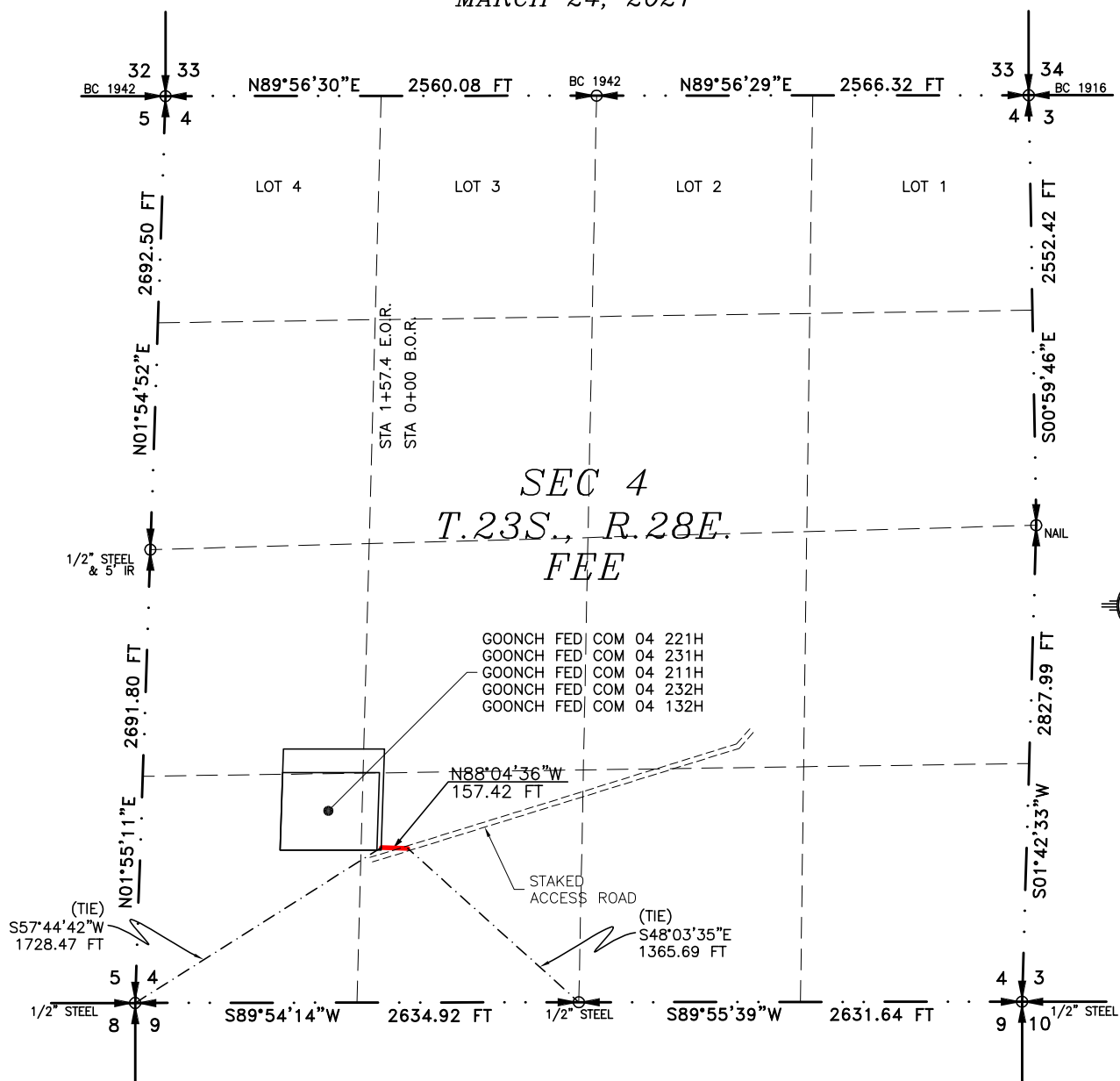
EARTHWORK QUANTITIES ARE ESTIMATED

SHEET 2-2
SURVEY NO. 7134B

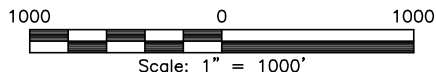
ACCESS ROAD PLAT

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 88220

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
 PROFESSIONAL SURVEYOR

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

SURVEY NO. 7134B

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.

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

(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. 7134B

CARLSBAD, NEW MEXICO



NOVO OIL & GAS NORTHERN DELAWARE, LLC

Goonch Fed Com 04 232H

SHL: 1080' FSL & 1115' FWL Section 4-23S-28E

BHL: 130' FNL & 1,650' 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 B
Target Depth - TVD (ft)	10209
Planned MD (ft)	16359
Anticipated Bottom-Hole Pressure (psi)	6635.85
Anticipated Maximum Surface Pressure (psi)	4389.87
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 2091.98 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 - 9,509	9-7/8"	Brine Diesel Emulsion or Brine	8.8-9.6	35-45	N/C	1.0-4.0
9,509 - 16,359	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' - 9,509'	9,509	9-7/8"	8-5/8"	32.00	P-110	TLW	
0' - 16,359'	16,359	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' - 9,509'	4,230	8,930	1144	1.39	5.95	3.21	Collapse: 1/3 fluid filled at all times
0' - 16,359'	12,090	14,360	729	3.67	1.25	2.67	
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 greather 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 intrenal 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: $DF_C = 1.125$

- 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.
- 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: $DF_B = 1.125$

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

Tensile: $DF_T = 1.60$

- 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 8,509

Surface Shoe Depth

450

Intermediate Shoe Depth

9,509

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	643	2303.1	410.2	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' - 16,359'

Top of Cement/Lead: 0'

Top of Tail: 7,509'

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	746	1580.7	281.5	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.

PECOS DISTRICT DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	NOVO OIL AND GAS
WELL NAME & NO.:	GOONCH FED COM 04 232H
SURFACE HOLE FOOTAGE:	1080'/S & 1115'/W
BOTTOM HOLE FOOTAGE:	130'/N & 1650'/W
LOCATION:	Section 4, T.23 S., R.28 E., NMPM
COUNTY:	EDDY County, New Mexico

COA

H2S	☒ Yes	☐ No	
Potash	☒ None	☐ Secretary	☐ R-111-P
Cave/Karst Potential	☐ Low	☒ Medium	☐ High
Cave/Karst Potential	☐ Critical		
Variance	☐ None	☒ Flex Hose	☐ Other
Wellhead	☐ Conventional	☒ Multibowl	☐ Both
Other	☐ 4 String Area	☐ Capitan Reef	☐ WIPP
Other	☐ Fluid Filled	☐ Cement Squeeze	☐ Pilot Hole
Special Requirements	☐ Water Disposal	☒ COM	☐ 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 **694** 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.

Intermediate casing must be kept at least 1/3 fluid filled to meet the OO#2 collapse requirement.

2. The minimum required fill of cement behind the **8-5/8** inch intermediate casing, which shall be set at **8,900** ft, is:
 - 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.

JJP03292021

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.



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



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

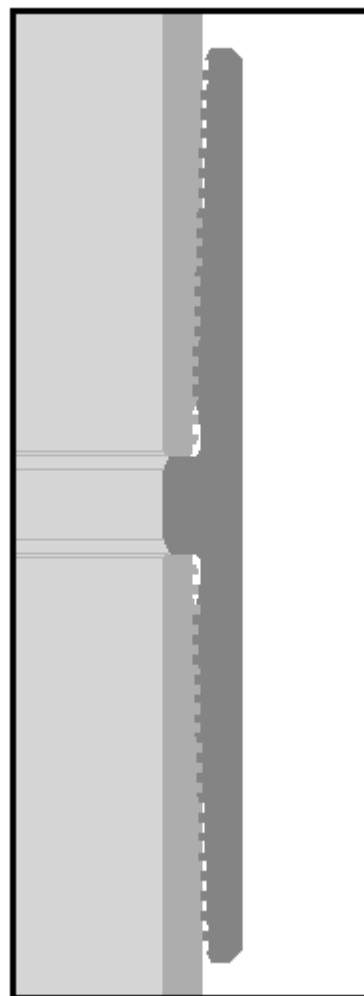
	Pipe Dimensions
5.500	Nominal Pipe Body O.D. (in.)
4.778	Nominal Pipe Body I.D. (in.)
0.361	Nominal Wall Thickness (in.)
20.00	Nominal Weight (lbs./ft.)
19.83	Plain End Weight (lbs./ft.)
5.828	Nominal Pipe Body Area (sq. in.)

	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.)



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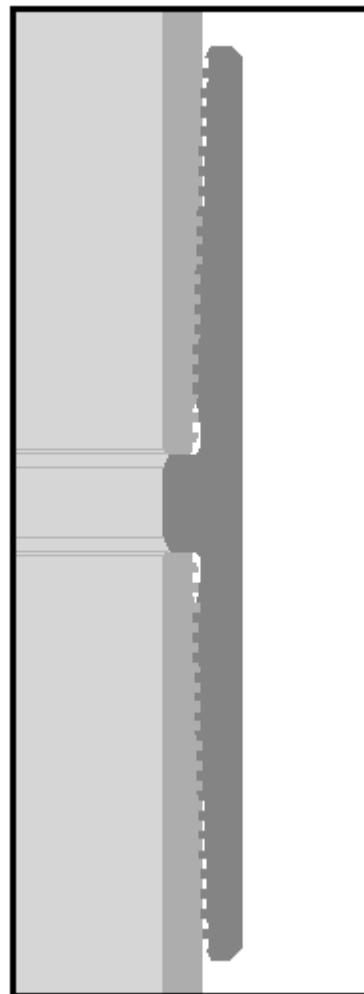
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VAM USA
4424 W. Sam Houston Pkwy. Suite 150
Houston, TX 77041
Phone: 713-479-3200
Fax: 713-479-3234
E-mail: VAMUSAsales@vam-usa.com

DWC Connection Data Notes:

1. DWC connections are available with a seal ring (SR) option.
2. All standard DWC/C connections are interchangeable for a given pipe OD. DWC connections are interchangeable with DWC/C-SR connections of the same OD and wall.
3. Connection performance properties are based on nominal pipe body and connection dimensions.
4. DWC connection internal and external pressure resistance is calculated using the API rating for buttress connections. API Internal pressure resistance is calculated from formulas 31, 32, and 35 in the API Bulletin 5C3.
5. DWC joint strength is the minimum pipe body yield strength multiplied by the connection critical area.
6. API joint strength is for reference only. It is calculated from formulas 42 and 43 in the API Bulletin 5C3.
7. Bending efficiency is equal to the compression efficiency.
8. The torque values listed are recommended. The actual torque required may be affected by field conditions such as temperature, thread compound, speed of make-up, weather conditions, etc.
9. Connection yield torque is not to be exceeded.
10. Reference string length is calculated by dividing the joint strength by both the nominal weight in air and a design factor (DF) of 1.4. These values are offered for reference only and do not include load factors such as bending, buoyancy, temperature, load dynamics, etc.
11. DWC connections will accommodate API standard drift diameters.



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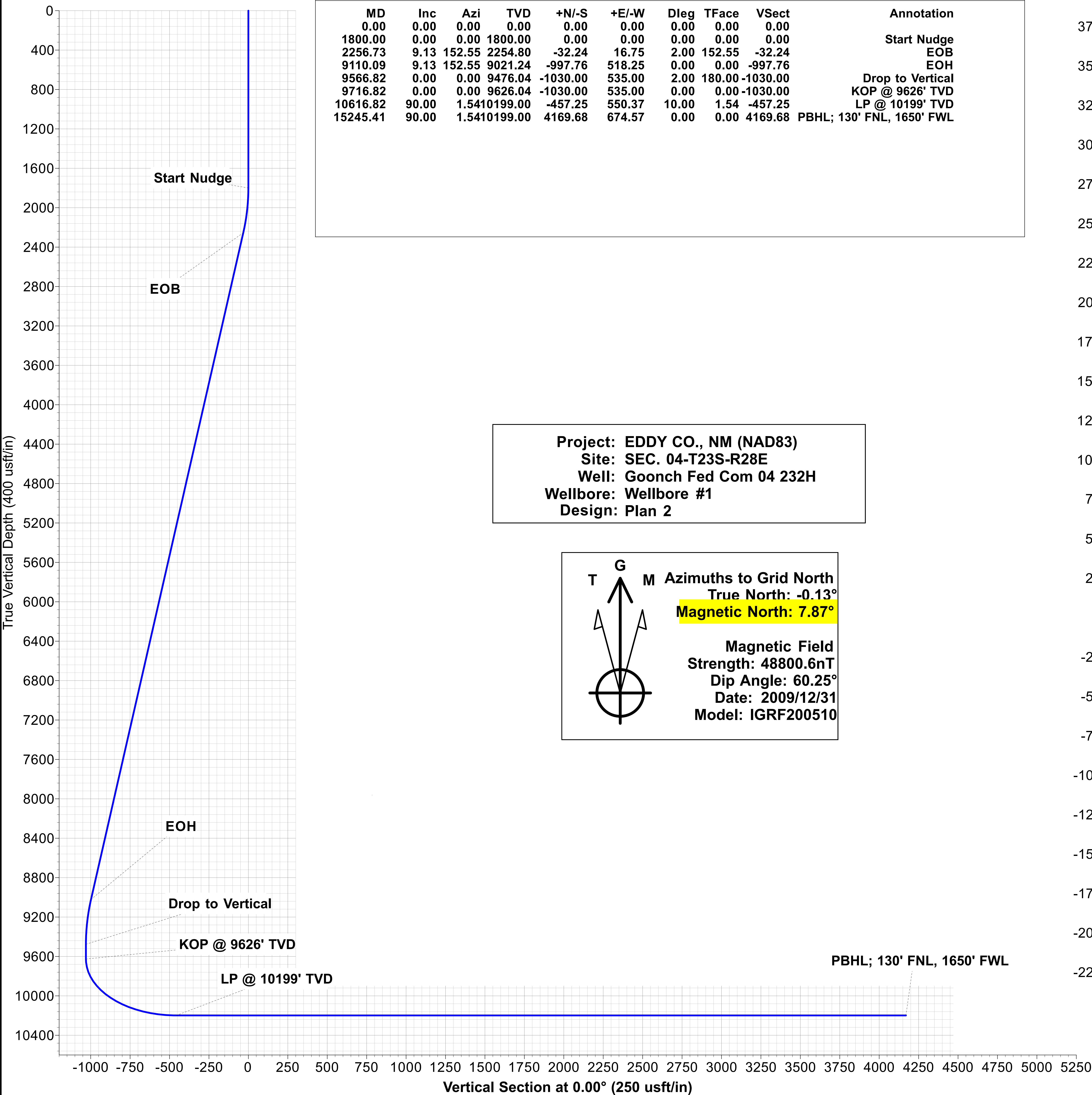


Goonch Fed Com 04 232H

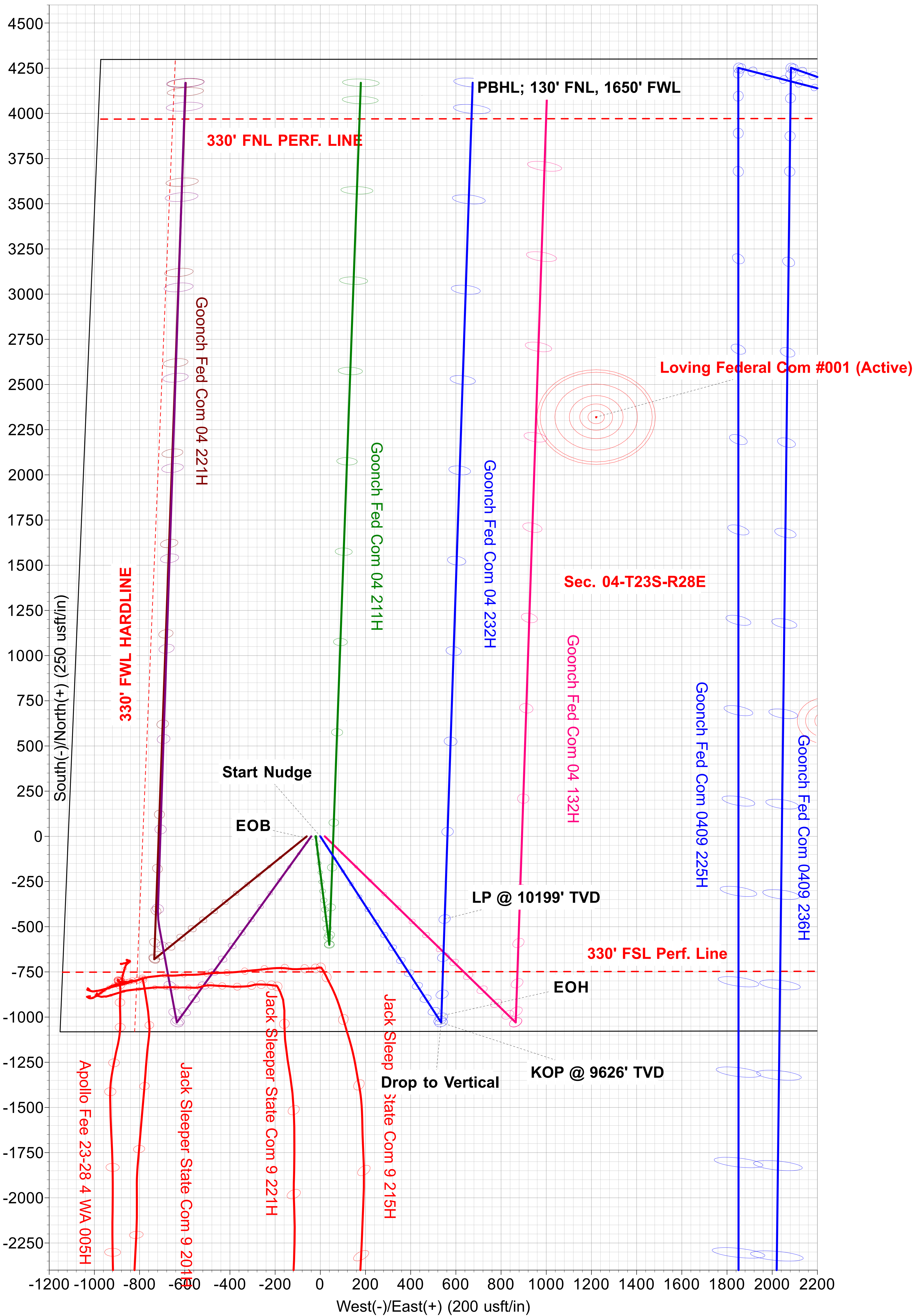
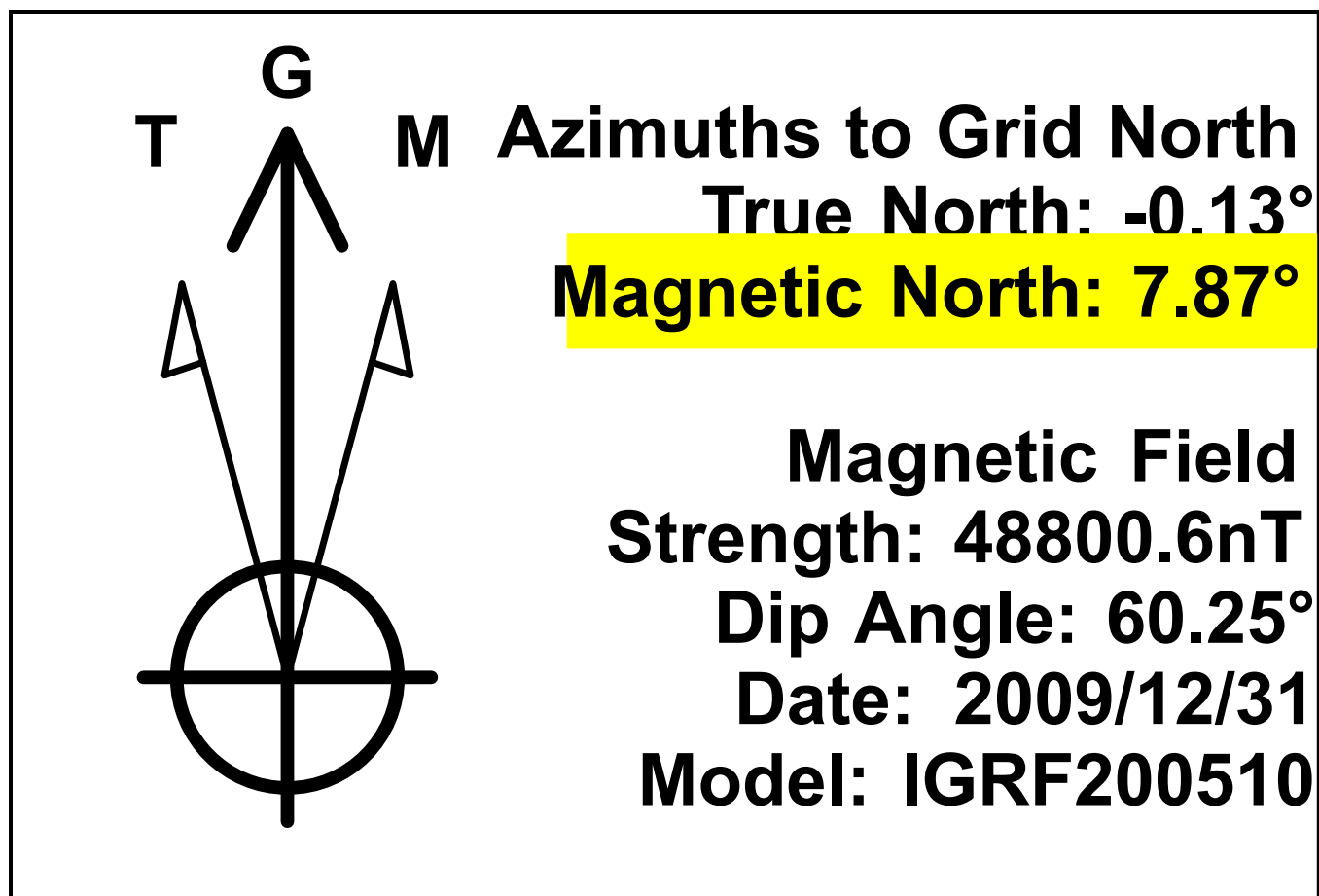
FRONTIER RIG #19



WELL DETAILS: Goonch Fed Com 04 232H Plan 2									
		GL Elev (ft).:		3016.00					
+N/-S	+E/-W	Northing		Easting		Latitude		Longitude	
0.00	0.00	483905.08		614225.11		32.330106		-104.097354	
SECTION DETAILS									
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	
1800.00	0.00	0.00	1800.00	0.00	0.00	0.00	0.00	0.00	Start Nudge
2256.73	9.13	152.55	2254.80	-32.24	16.75	2.00	152.55	-32.24	EOB
9110.09	9.13	152.55	9021.24	-997.76	518.25	0.00	0.00	-997.76	EOH
9566.82	0.00	0.00	9476.04	-1030.00	535.00	2.00	180.00	-1030.00	Drop to Vertical
9716.82	0.00	0.00	9626.04	-1030.00	535.00	0.00	0.00	-1030.00	KOP @ 9626' TVD
10616.82	90.00	1.5410	10199.00	-457.25	550.37	10.00	1.54	-457.25	LP @ 10199' TVD
15245.41	90.00	1.5410	10199.00	4169.68	674.57	0.00	0.00	4169.68	PBHL; 130' FNL, 1650' FWL



Project: EDDY CO., NM (NAD83)
Site: SEC. 04-T23S-R28E
Well: Goonch Fed Com 04 232H
Wellbore: Wellbore #1
Design: Plan 2





NOVO Oil & Gas

EDDY CO., NM (NAD83)

SEC. 04-T23S-R28E

Goonch Fed Com 04 232H

Wellbore #1

Plan 2

Anticollision Report

24 March, 2021





SB Directional

Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well Goonch Fed Com 04 232H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB @ 3041.00usft
Reference Site:	SEC. 04-T23S-R28E	MD Reference:	RKB @ 3041.00usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Goonch Fed Com 04 232H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 2	Offset TVD Reference:	Offset Datum

Reference	Plan 2		
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 1,500.00usft	Error Surface:	Pedal Curve
Warning Levels Evaluated at:	2.00 Sigma	Casing Method:	Not applied

Survey Tool Program		Date	2021/03/24		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
0.00	15,245.41	Plan 2 (Wellbore #1)	MWD	MWD - Standard	

Summary						
Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
SEC. 04-T23S-R28E						
Apollo Fee 23-28 4 WA 005H - Wellbore #1 - Wellbore #1	3,555.94	3,540.49	1,065.92	1,050.12	67.485	CC, ES
Apollo Fee 23-28 4 WA 005H - Wellbore #1 - Wellbore #1	10,200.00	10,084.99	1,427.49	1,379.31	29.631	SF
Goonch Fed 0409 214H - Wellbore #1 - Wellbore #1						Out of range
Goonch Fed Com 04 132H - Wellbore #1 - Plan 3	1,500.00	1,499.50	20.00	13.46	3.060	CC, ES
Goonch Fed Com 04 132H - Wellbore #1 - Plan 3	1,600.00	1,599.02	21.13	14.18	3.039	SF
Goonch Fed Com 04 211H - Wellbore #1 - Plan 2	1,800.00	1,800.00	20.01	12.14	2.541	CC, ES
Goonch Fed Com 04 211H - Wellbore #1 - Plan 2	1,900.00	1,899.98	20.87	12.58	2.517	SF
Goonch Fed Com 04 221H - Wellbore #1 - Plan 2	1,500.00	1,500.00	60.02	53.48	9.179	CC, ES
Goonch Fed Com 04 221H - Wellbore #1 - Plan 2	1,600.00	1,598.50	61.25	54.29	8.807	SF
Goonch Fed Com 04 231H - Wellbore #1 - Plan 2	1,800.00	1,800.00	40.02	32.15	5.082	CC, ES
Goonch Fed Com 04 231H - Wellbore #1 - Plan 2	1,900.00	1,899.98	40.85	32.56	4.926	SF
Goonch Fed Com 0409 134H - Wellbore #1 - Plan 0						Out of range
Goonch Fed Com 0409 136H - Wellbore #1 - Plan 1						Out of range
Goonch Fed Com 0409 225H - Wellbore #1 - Plan 0	9,750.00	14,824.31	1,316.41	1,193.85	10.741	SF
Goonch Fed Com 0409 225H - Wellbore #1 - Plan 0	9,792.64	14,820.26	1,315.77	1,193.31	10.745	ES
Goonch Fed Com 0409 225H - Wellbore #1 - Plan 0	14,822.99	10,079.92	1,289.54	1,195.49	13.712	CC
Goonch Fed Com 0409 234H - Wellbore #1 - Plan 0						Out of range
Goonch Fed Com 0409 235H - Wellbore #1 - Plan 1						Out of range
Goonch Fed Com 0409 236H - Wellbore #1 - Plan 0	10,250.00	15,092.03	1,498.74	1,381.61	12.796	SF
Goonch Fed Com 0409 236H - Wellbore #1 - Plan 0	15,044.39	10,338.62	1,412.05	1,308.39	13.622	CC
Goonch Fed Com 0409 236H - Wellbore #1 - Plan 0	15,100.00	10,294.87	1,412.37	1,307.76	13.502	ES
Jack Sleeper State Com 9 201H - Wellbore #1 - Wellbore	5,693.58	5,692.97	1,197.53	1,169.85	43.264	CC
Jack Sleeper State Com 9 201H - Wellbore #1 - Wellbore	5,900.00	5,895.95	1,198.19	1,169.39	41.596	ES
Jack Sleeper State Com 9 201H - Wellbore #1 - Wellbore	9,566.82	9,475.88	1,297.13	1,249.18	27.055	SF
Jack Sleeper State Com 9 215H - Wellbore #1 - Wellbore	9,612.24	9,817.21	417.10	364.66	7.955	CC, ES, SF
Jack Sleeper State Com 9 221H - Wellbore #1 - Wellbore	10,083.81	10,068.95	698.89	649.19	14.061	CC, ES
Jack Sleeper State Com 9 221H - Wellbore #1 - Wellbore	10,100.00	10,070.90	699.09	649.36	14.058	SF
Loving Federal Com #001 (Active) - Wellbore #1 - Wellbo	13,410.82	10,203.86	595.93	341.05	2.338	CC, ES, SF
Swearingen #001 SWD (Active) - Wellbore #1 - Wellbore						Out of range
SEC. 09-T23S-R28E						
NEL FED #005 (Active) - Wellbore #1 - Wellbore #1						Out of range

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



SB Directional Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well Goonch Fed Com 04 232H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB @ 3041.00usft
Reference Site:	SEC. 04-T23S-R28E	MD Reference:	RKB @ 3041.00usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Goonch Fed Com 04 232H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 2	Offset TVD Reference:	Offset Datum

Offset Design: SEC. 04-T23S-R28E - Apollo Fee 23-28 4 WA 005H - Wellbore #1 - Wellbore #1													Offset Site Error:	0.00 usft
Survey Program: 198-MWD													Offset Well Error:	0.50 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance				Rule Assigned:	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
0.00	0.00	0.00	0.00	0.50	0.50	-128.78	-706.63	-879.45	1,128.17					
100.00	100.00	91.80	91.79	0.51	0.51	-128.76	-706.56	-879.88	1,128.48	1,127.47	1.02	1,111.291		
200.00	200.00	184.50	184.49	0.59	0.53	-128.71	-706.32	-881.22	1,129.44	1,128.32	1.12	1,007.833		
300.00	300.00	298.18	298.15	0.73	0.64	-128.63	-705.64	-882.93	1,130.26	1,128.88	1.37	823.083		
400.00	400.00	407.67	407.64	0.91	0.80	-128.61	-704.99	-882.91	1,129.87	1,128.16	1.71	661.040		
500.00	500.00	511.15	511.11	1.10	0.98	-128.63	-704.81	-881.81	1,128.94	1,126.85	2.08	541.538		
600.00	600.00	609.44	609.39	1.31	1.17	-128.69	-704.94	-880.33	1,127.84	1,125.36	2.48	455.510		
700.00	700.00	713.35	713.29	1.52	1.37	-128.77	-705.65	-878.61	1,126.99	1,124.10	2.89	390.263		
800.00	800.00	821.35	821.26	1.73	1.58	-128.81	-705.14	-876.55	1,125.19	1,121.88	3.32	339.379		
900.00	900.00	926.18	926.07	1.95	1.80	-128.85	-704.31	-874.37	1,123.08	1,119.33	3.75	299.605		
1,000.00	1,000.00	1,027.69	1,027.54	2.17	2.01	-128.89	-703.21	-871.96	1,120.55	1,116.38	4.17	268.427		
1,100.00	1,100.00	1,124.12	1,123.94	2.38	2.21	-128.93	-702.45	-869.59	1,118.14	1,113.55	4.59	243.713		
1,200.00	1,200.00	1,221.80	1,221.58	2.61	2.41	-129.01	-702.30	-867.04	1,116.02	1,111.01	5.01	222.875		
1,300.00	1,300.00	1,336.34	1,336.07	2.83	2.65	-129.09	-701.64	-863.54	1,113.28	1,107.81	5.47	203.659		
1,400.00	1,400.00	1,442.61	1,442.27	3.05	2.88	-129.14	-699.95	-859.95	1,109.65	1,103.74	5.91	187.770		
1,500.00	1,500.00	1,545.68	1,545.25	3.27	3.10	-129.16	-697.52	-856.48	1,105.55	1,099.21	6.35	174.225		
1,600.00	1,600.00	1,645.96	1,645.44	3.49	3.31	-129.15	-694.75	-853.32	1,101.36	1,094.59	6.77	162.564		
1,700.00	1,700.00	1,740.34	1,739.74	3.71	3.51	-129.11	-691.72	-850.78	1,097.25	1,090.06	7.19	152.576		
1,800.00	1,800.00	1,823.07	1,822.43	3.94	3.68	-129.09	-689.70	-849.12	1,094.19	1,086.60	7.58	144.298		
1,900.00	1,899.98	1,902.19	1,901.54	4.13	3.84	78.52	-688.34	-849.18	1,092.77	1,084.84	7.94	137.681		
2,000.00	1,999.84	1,995.80	1,995.13	4.31	4.03	78.86	-687.39	-850.03	1,091.82	1,083.52	8.30	131.562		
2,100.00	2,099.45	2,092.78	2,092.11	4.49	4.22	79.38	-686.75	-851.15	1,090.67	1,081.99	8.68	125.667		
2,200.00	2,198.70	2,192.09	2,191.41	4.69	4.43	80.08	-686.41	-852.11	1,089.03	1,079.95	9.08	119.924		
2,256.73	2,254.80	2,246.82	2,246.13	4.81	4.54	80.55	-686.31	-852.62	1,087.96	1,078.65	9.31	116.799		
2,300.00	2,297.52	2,290.36	2,289.68	4.91	4.63	80.92	-686.23	-853.06	1,087.15	1,077.65	9.50	114.411		
2,400.00	2,396.25	2,394.25	2,393.56	5.14	4.84	81.82	-685.95	-853.81	1,085.16	1,075.21	9.96	109.006		
2,500.00	2,494.98	2,494.23	2,493.53	5.39	5.05	82.70	-685.15	-854.33	1,082.97	1,072.55	10.41	103.982		
2,600.00	2,593.71	2,590.38	2,589.69	5.66	5.25	83.55	-684.51	-855.02	1,081.26	1,070.38	10.88	99.395		
2,700.00	2,692.45	2,689.33	2,688.63	5.93	5.45	84.41	-684.20	-855.55	1,079.85	1,068.49	11.36	95.061		
2,800.00	2,791.18	2,788.05	2,787.35	6.22	5.66	85.27	-683.86	-856.07	1,078.66	1,066.81	11.85	91.019		
2,900.00	2,889.91	2,891.20	2,890.49	6.51	5.87	86.11	-684.34	-855.94	1,077.60	1,065.24	12.36	87.178		
3,000.00	2,988.64	2,999.79	2,999.09	6.81	6.10	87.00	-684.45	-855.15	1,076.05	1,063.16	12.89	83.471		
3,100.00	3,087.37	3,097.94	3,097.22	7.12	6.31	87.76	-684.95	-853.58	1,074.18	1,060.77	13.41	80.126		
3,200.00	3,186.11	3,209.01	3,208.23	7.43	6.54	88.53	-687.07	-850.49	1,072.16	1,058.21	13.95	76.843		
3,300.00	3,284.84	3,312.02	3,311.15	7.75	6.76	89.23	-688.77	-846.70	1,069.39	1,054.90	14.49	73.816		
3,400.00	3,383.57	3,400.13	3,399.22	8.08	6.94	89.89	-689.40	-844.29	1,067.16	1,052.16	14.99	71.171		
3,500.00	3,482.30	3,491.24	3,490.32	8.40	7.13	90.62	-689.69	-843.10	1,066.18	1,050.67	15.51	68.746		
3,555.94	3,537.54	3,540.49	3,539.58	8.59	7.23	91.03	-689.75	-842.67	1,065.92	1,050.12	15.79	67.485 CC, ES		
3,600.00	3,581.03	3,573.96	3,573.04	8.73	7.30	91.30	-690.02	-842.61	1,066.15	1,050.14	16.01	66.601		
3,700.00	3,679.76	3,644.87	3,643.93	9.07	7.45	91.85	-691.54	-843.27	1,068.44	1,051.96	16.48	64.847		
3,800.00	3,778.50	3,711.00	3,709.95	9.40	7.58	92.31	-694.65	-845.41	1,073.95	1,057.03	16.92	63.467		
3,900.00	3,877.23	3,795.64	3,794.33	9.74	7.75	92.87	-699.80	-849.65	1,081.81	1,064.39	17.42	62.115		
4,000.00	3,975.96	3,898.64	3,896.99	10.08	7.96	93.57	-705.75	-855.40	1,090.24	1,072.27	17.97	60.665		
4,100.00	4,074.69	3,995.92	3,993.90	10.42	8.16	94.14	-712.71	-860.09	1,098.64	1,080.13	18.51	59.348		
4,200.00	4,173.42	4,101.63	4,099.05	10.77	8.38	94.60	-723.00	-863.77	1,106.90	1,087.81	19.09	57.996		
4,300.00	4,272.16	4,204.26	4,201.04	11.12	8.60	94.96	-734.15	-866.28	1,114.68	1,095.03	19.66	56.712		
4,400.00	4,370.89	4,301.90	4,298.05	11.46	8.81	95.29	-744.88	-868.78	1,122.65	1,102.44	20.21	55.549		
4,500.00	4,469.62	4,407.22	4,402.78	11.81	9.04	95.67	-755.75	-871.35	1,130.31	1,109.52	20.79	54.363		
4,600.00	4,568.35	4,512.72	4,507.75	12.16	9.28	96.08	-765.95	-873.77	1,137.65	1,116.27	21.38	53.216		
4,700.00	4,667.08	4,615.39	4,609.96	12.51	9.51	96.48	-775.52	-875.58	1,144.42	1,122.46	21.96	52.120		
4,800.00	4,765.81	4,735.59	4,729.73	12.87	9.78	97.00	-785.43	-877.34	1,150.65	1,128.06	22.59	50.942		
4,900.00	4,864.55	4,863.45	4,857.47	13.22	10.06	97.76	-790.78	-877.47	1,154.17	1,130.95	23.22	49.698		

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



SB Directional Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well Goonch Fed Com 04 232H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB @ 3041.00usft
Reference Site:	SEC. 04-T23S-R28E	MD Reference:	RKB @ 3041.00usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Goonch Fed Com 04 232H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 2	Offset TVD Reference:	Offset Datum

Offset Design: SEC. 04-T23S-R28E - Apollo Fee 23-28 4 WA 005H - Wellbore #1 - Wellbore #1													Offset Site Error:	0.00 usft	
Survey Program:		198-MWD		Offset		Semi Maior Axis		Offset Wellbore Centre		Rule Assigned:				Offset Well Error:	0.50 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning		
5,000.00	4,963.28	4,962.86	4,956.85	13.57	10.27	98.41	-793.37	-877.17	1,157.01	1,133.23	23.78	48.652			
5,100.00	5,062.01	5,065.39	5,059.37	13.93	10.49	99.14	-794.68	-876.99	1,159.70	1,135.36	24.34	47.639			
5,200.00	5,160.74	5,164.70	5,158.67	14.28	10.70	99.88	-795.13	-876.98	1,162.49	1,137.60	24.90	46.695			
5,300.00	5,259.47	5,264.35	5,258.32	14.64	10.90	100.63	-795.47	-876.92	1,165.40	1,139.95	25.45	45.797			
5,400.00	5,358.21	5,361.92	5,355.89	15.00	11.11	101.36	-795.89	-876.83	1,168.50	1,142.51	25.99	44.956			
5,500.00	5,456.94	5,460.94	5,454.91	15.36	11.32	102.08	-796.70	-876.75	1,171.91	1,145.37	26.54	44.158			
5,600.00	5,555.67	5,555.30	5,549.27	15.71	11.51	102.75	-797.55	-876.71	1,175.55	1,148.48	27.07	43.420			
5,700.00	5,654.40	5,652.28	5,646.24	16.07	11.71	103.44	-798.59	-877.07	1,179.82	1,152.20	27.61	42.726			
5,800.00	5,753.13	5,745.05	5,739.00	16.43	11.91	104.08	-799.72	-877.52	1,184.42	1,156.28	28.14	42.088			
5,900.00	5,851.86	5,844.31	5,838.24	16.79	12.12	104.76	-801.14	-878.44	1,189.65	1,160.96	28.68	41.474			
6,000.00	5,950.60	5,940.85	5,934.78	17.15	12.32	105.41	-802.70	-879.16	1,194.92	1,165.70	29.22	40.893			
6,100.00	6,049.33	6,046.47	6,040.38	17.51	12.54	106.13	-804.09	-880.02	1,200.35	1,170.58	29.78	40.311			
6,200.00	6,148.06	6,144.12	6,138.02	17.87	12.75	106.81	-804.75	-880.55	1,205.57	1,175.26	30.31	39.773			
6,300.00	6,246.79	6,242.68	6,236.58	18.24	12.95	107.49	-805.42	-881.20	1,211.08	1,180.24	30.84	39.264			
6,400.00	6,345.52	6,350.81	6,344.71	18.60	13.18	108.26	-805.53	-881.54	1,216.34	1,184.94	31.40	38.739			
6,500.00	6,444.26	6,448.67	6,442.56	18.96	13.38	108.97	-805.34	-881.57	1,221.47	1,189.54	31.93	38.260			
6,600.00	6,542.99	6,544.53	6,538.43	19.32	13.58	109.64	-805.32	-881.78	1,227.00	1,194.55	32.44	37.818			
6,700.00	6,641.72	6,645.38	6,639.28	19.69	13.79	110.33	-805.54	-881.93	1,232.66	1,199.68	32.97	37.382			
6,800.00	6,740.45	6,743.48	6,737.38	20.05	13.99	111.01	-805.61	-882.07	1,238.48	1,204.98	33.50	36.974			
6,900.00	6,839.18	6,839.52	6,833.42	20.41	14.19	111.66	-805.68	-882.26	1,244.52	1,210.51	34.01	36.594			
7,000.00	6,937.91	6,931.14	6,925.03	20.78	14.38	112.27	-806.01	-882.86	1,251.22	1,216.71	34.51	36.258			
7,100.00	7,036.65	7,024.49	7,018.38	21.14	14.58	112.88	-806.60	-883.91	1,258.56	1,223.55	35.01	35.948			
7,200.00	7,135.38	7,117.91	7,111.79	21.50	14.77	113.47	-807.35	-885.31	1,266.44	1,230.93	35.51	35.662			
7,300.00	7,234.11	7,219.63	7,213.48	21.87	14.98	114.10	-808.30	-887.25	1,274.88	1,238.84	36.04	35.378			
7,400.00	7,332.84	7,331.73	7,325.57	22.23	15.22	114.86	-807.50	-888.14	1,282.28	1,245.70	36.58	35.055			
7,500.00	7,431.57	7,426.55	7,420.39	22.60	15.41	115.51	-806.65	-888.71	1,289.68	1,252.61	37.07	34.788			
7,600.00	7,530.31	7,516.25	7,510.08	22.96	15.60	116.11	-806.07	-889.71	1,297.77	1,260.22	37.55	34.561			
7,700.00	7,629.04	7,620.75	7,614.56	23.33	15.81	116.79	-805.55	-891.32	1,306.47	1,268.41	38.07	34.319			
7,800.00	7,727.77	7,713.17	7,706.97	23.69	16.00	117.39	-804.78	-892.22	1,314.78	1,276.23	38.55	34.107			
7,900.00	7,826.50	7,805.82	7,799.59	24.06	16.19	118.04	-802.94	-893.96	1,324.14	1,285.12	39.02	33.933			
8,000.00	7,925.23	7,925.99	7,919.70	24.42	16.44	118.91	-799.47	-895.53	1,333.21	1,293.65	39.56	33.698			
8,100.00	8,023.96	8,024.32	8,018.02	24.79	16.64	119.56	-797.99	-895.74	1,341.32	1,301.27	40.05	33.491			
8,200.00	8,122.70	8,110.79	8,104.47	25.15	16.82	120.11	-796.91	-896.37	1,350.09	1,309.59	40.50	33.332			
8,300.00	8,221.43	8,239.27	8,232.95	25.52	17.09	120.91	-795.71	-896.59	1,358.47	1,317.40	41.07	33.077			
8,400.00	8,320.16	8,338.88	8,332.55	25.88	17.29	121.49	-795.46	-895.51	1,365.70	1,324.14	41.56	32.860			
8,500.00	8,418.89	8,427.38	8,421.04	26.25	17.48	122.00	-795.43	-894.98	1,373.53	1,331.51	42.02	32.685			
8,600.00	8,517.62	8,517.71	8,511.38	26.61	17.67	122.51	-795.16	-895.03	1,382.17	1,339.68	42.49	32.531			
8,700.00	8,616.36	8,611.37	8,605.03	26.98	17.86	123.08	-794.07	-895.52	1,391.48	1,348.53	42.95	32.395			
8,800.00	8,715.09	8,726.64	8,720.29	27.35	18.10	123.76	-792.70	-895.53	1,400.43	1,356.96	43.47	32.213			
8,900.00	8,813.82	8,829.99	8,823.63	27.71	18.31	124.27	-793.87	-894.84	1,408.59	1,364.61	43.97	32.033			
9,000.00	8,912.55	8,930.57	8,924.17	28.08	18.53	124.70	-796.73	-894.56	1,417.01	1,372.54	44.48	31.861			
9,100.00	9,011.28	9,034.86	9,028.40	28.45	18.75	125.12	-799.93	-893.72	1,424.95	1,379.96	44.99	31.675			
9,110.09	9,021.24	9,044.66	9,038.20	28.48	18.77	125.17	-800.07	-893.61	1,425.75	1,380.72	45.03	31.659			
9,200.00	9,110.22	9,124.88	9,118.42	28.76	18.94	125.65	-800.33	-892.80	1,432.33	1,386.93	45.41	31.546			
9,300.00	9,209.61	9,219.12	9,212.65	29.00	19.14	126.08	-800.53	-892.55	1,438.51	1,392.73	45.78	31.423			
9,400.00	9,309.32	9,317.12	9,310.65	29.20	19.34	126.36	-801.14	-892.34	1,442.69	1,396.54	46.15	31.261			
9,500.00	9,409.23	9,429.97	9,423.50	29.36	19.58	126.53	-801.48	-891.98	1,444.77	1,398.23	46.54	31.040			
9,566.82	9,476.04	9,505.30	9,498.82	29.46	19.73	-80.93	-802.36	-891.03	1,444.28	1,397.47	46.81	30.852			
9,600.00	9,509.22	9,541.09	9,534.60	29.51	19.81	-80.95	-803.01	-890.50	1,443.70	1,396.76	46.94	30.755			
9,700.00	9,609.22	9,627.90	9,621.39	29.64	19.99	-80.98	-803.89	-889.41	1,442.30	1,395.04	47.26	30.517			
9,716.82	9,626.04	9,642.78	9,636.27	29.66	20.02	-80.98	-803.83	-889.27	1,442.16	1,394.84	47.32	30.480			
9,750.00	9,659.20	9,676.71	9,670.21	29.69	20.09	-82.58	-803.65	-888.96	1,441.77	1,394.34	47.43	30.399			

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



SB Directional

Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well Goonch Fed Com 04 232H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB @ 3041.00usft
Reference Site:	SEC. 04-T23S-R28E	MD Reference:	RKB @ 3041.00usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Goonch Fed Com 04 232H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 2	Offset TVD Reference:	Offset Datum

Offset Design: SEC. 04-T23S-R28E - Apollo Fee 23-28 4 WA 005H - Wellbore #1 - Wellbore #1													Offset Site Error: 0.00 usft
Survey Program: 198-MWD													Offset Well Error: 0.50 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
9,800.00	9,708.93	9,727.61	9,721.10	29.71	20.20	-82.88	-803.43	-888.48	1,440.68	1,393.10	47.58	30.278	
9,850.00	9,758.03	9,774.42	9,767.90	29.70	20.30	-83.38	-803.30	-888.06	1,439.11	1,391.40	47.71	30.165	
9,900.00	9,806.12	9,819.75	9,813.24	29.65	20.39	-84.05	-803.25	-887.75	1,437.22	1,389.40	47.81	30.059	
9,950.00	9,852.84	9,865.00	9,858.49	29.56	20.49	-84.90	-803.27	-887.52	1,435.12	1,387.22	47.90	29.959	
10,000.00	9,897.83	9,908.92	9,902.41	29.44	20.58	-85.88	-803.30	-887.34	1,432.94	1,384.97	47.97	29.870	
10,050.00	9,940.76	9,949.75	9,943.24	29.30	20.66	-86.92	-803.39	-887.20	1,430.88	1,382.86	48.02	29.797	
10,100.00	9,981.29	9,985.20	9,978.68	29.12	20.74	-87.94	-804.18	-887.24	1,429.23	1,381.19	48.04	29.748	
10,150.00	10,019.12	10,032.37	10,025.74	28.93	20.84	-89.38	-807.30	-887.32	1,428.08	1,379.99	48.10	29.690	
10,200.00	10,053.95	10,084.99	10,077.81	28.72	20.96	-91.14	-814.73	-886.93	1,427.49	1,379.31	48.18	29.631 SF	
10,206.72	10,058.39	10,088.25	10,081.02	28.69	20.97	-91.26	-815.33	-886.89	1,427.48	1,379.31	48.17	29.632	
10,250.00	10,085.53	10,114.38	10,106.57	28.49	21.03	-92.14	-820.73	-886.47	1,427.98	1,379.81	48.18	29.641	
10,300.00	10,113.61	10,131.76	10,123.45	28.25	21.08	-92.59	-824.87	-886.13	1,430.03	1,381.90	48.13	29.713	
10,350.00	10,137.99	10,141.35	10,132.70	28.01	21.10	-92.57	-827.37	-885.95	1,433.88	1,385.84	48.04	29.846	
10,400.00	10,158.46	10,146.70	10,137.85	27.77	21.11	-92.21	-828.83	-885.85	1,439.60	1,391.66	47.94	30.032	
10,450.00	10,174.88	10,148.50	10,139.58	27.52	21.12	-91.52	-829.34	-885.82	1,447.17	1,399.36	47.81	30.269	
10,500.00	10,187.13	10,147.34	10,138.46	27.29	21.11	-90.52	-829.01	-885.84	1,456.53	1,408.86	47.67	30.553	
10,550.00	10,195.11	10,143.68	10,134.95	27.06	21.11	-89.24	-828.00	-885.91	1,467.57	1,420.04	47.53	30.878	
10,600.00	10,198.75	10,137.92	10,129.40	26.84	21.09	-87.72	-826.46	-886.01	1,480.12	1,432.74	47.38	31.238	
10,616.82	10,199.00	10,135.57	10,127.13	26.76	21.09	-87.16	-825.84	-886.06	1,484.66	1,437.33	47.33	31.366	

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



SB Directional

Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well Goonch Fed Com 04 232H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB @ 3041.00usft
Reference Site:	SEC. 04-T23S-R28E	MD Reference:	RKB @ 3041.00usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Goonch Fed Com 04 232H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 2	Offset TVD Reference:	Offset Datum

Offset Design: SEC. 04-T23S-R28E - Goonch Fed Com 04 132H - Wellbore #1 - Plan 3												Offset Site Error:	0.00 usft
Survey Program: 0-MWD												Offset Well Error:	0.50 usft
Rule Assigned:												Warning	
Measured Depth (usft)	Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.00	0.00	0.00	0.00	0.50	0.50	89.89	0.04	20.00	20.01				
100.00	100.00	99.50	99.50	0.51	0.51	89.89	0.04	20.00	20.00	18.99	1.01	19.728	
200.00	200.00	199.50	199.50	0.59	0.59	89.89	0.04	20.00	20.00	18.83	1.17	17.034	
300.00	300.00	299.50	299.50	0.73	0.73	89.89	0.04	20.00	20.00	18.54	1.46	13.691	
400.00	400.00	399.50	399.50	0.91	0.91	89.89	0.04	20.00	20.00	18.19	1.81	11.021	
500.00	500.00	499.50	499.50	1.10	1.10	89.89	0.04	20.00	20.00	17.80	2.20	9.075	
600.00	600.00	599.50	599.50	1.31	1.30	89.89	0.04	20.00	20.00	17.39	2.61	7.656	
700.00	700.00	699.50	699.50	1.52	1.51	89.89	0.04	20.00	20.00	16.97	3.03	6.595	
800.00	800.00	799.50	799.50	1.73	1.73	89.89	0.04	20.00	20.00	16.54	3.46	5.780	
900.00	900.00	899.50	899.50	1.95	1.94	89.89	0.04	20.00	20.00	16.11	3.89	5.138	
1,000.00	1,000.00	999.50	999.50	2.17	2.16	89.89	0.04	20.00	20.00	15.67	4.33	4.620	
1,100.00	1,100.00	1,099.50	1,099.50	2.38	2.38	89.89	0.04	20.00	20.00	15.23	4.77	4.195	
1,200.00	1,200.00	1,199.50	1,199.50	2.61	2.60	89.89	0.04	20.00	20.00	14.79	5.21	3.841	
1,300.00	1,300.00	1,299.50	1,299.50	2.83	2.82	89.89	0.04	20.00	20.00	14.35	5.65	3.540	
1,400.00	1,400.00	1,399.50	1,399.50	3.05	3.04	89.89	0.04	20.00	20.00	13.91	6.09	3.283	
1,500.00	1,500.00	1,499.50	1,499.50	3.27	3.27	89.89	0.04	20.00	20.00	13.46	6.54	3.060 CC, ES	
1,600.00	1,600.00	1,599.02	1,599.00	3.49	3.46	93.48	-1.28	21.09	21.13	14.18	6.95	3.039 SF	
1,700.00	1,700.00	1,698.31	1,698.15	3.71	3.64	102.20	-5.26	24.35	24.95	17.61	7.34	3.397	
1,800.00	1,800.00	1,797.11	1,796.58	3.94	3.83	111.73	-11.86	29.76	32.17	24.44	7.73	4.160	
1,900.00	1,899.98	1,895.43	1,894.17	4.13	4.03	-34.32	-21.03	37.28	41.69	33.60	8.09	5.154	
2,000.00	1,999.84	1,993.39	1,990.95	4.31	4.26	-30.99	-32.73	46.88	51.78	43.36	8.42	6.152	
2,100.00	2,099.45	2,091.57	2,087.40	4.49	4.51	-29.38	-46.91	58.51	62.05	53.29	8.76	7.082	
2,200.00	2,198.70	2,191.23	2,185.15	4.69	4.80	-29.37	-61.95	70.86	70.14	60.98	9.16	7.659	
2,256.73	2,254.80	2,247.86	2,240.69	4.81	4.97	-29.96	-70.50	77.87	73.38	63.99	9.40	7.810	
2,300.00	2,297.52	2,291.08	2,283.07	4.91	5.11	-30.57	-77.03	83.22	75.50	65.92	9.58	7.882	
2,400.00	2,396.25	2,390.94	2,381.01	5.14	5.43	-31.85	-92.10	95.59	80.40	70.38	10.02	8.024	
2,500.00	2,494.98	2,490.80	2,478.95	5.39	5.77	-32.98	-107.18	107.96	85.35	74.87	10.48	8.143	
2,600.00	2,593.71	2,590.67	2,576.89	5.66	6.11	-33.99	-122.26	120.33	90.32	79.36	10.96	8.242	
2,700.00	2,692.45	2,690.53	2,674.84	5.93	6.47	-34.89	-137.33	132.70	95.32	83.87	11.45	8.324	
2,800.00	2,791.18	2,790.40	2,772.78	6.22	6.84	-35.70	-152.41	145.07	100.34	88.38	11.96	8.390	
2,900.00	2,889.91	2,890.26	2,870.72	6.51	7.21	-36.44	-167.48	157.44	105.38	92.90	12.48	8.444	
3,000.00	2,988.64	2,990.13	2,968.66	6.81	7.59	-37.11	-182.56	169.80	110.43	97.42	13.01	8.487	
3,100.00	3,087.37	3,089.99	3,066.60	7.12	7.97	-37.72	-197.64	182.17	115.50	101.94	13.55	8.521	
3,200.00	3,186.11	3,189.86	3,164.54	7.43	8.36	-38.27	-212.71	194.54	120.58	106.47	14.11	8.548	
3,300.00	3,284.84	3,289.72	3,262.49	7.75	8.75	-38.79	-227.79	206.91	125.67	111.00	14.67	8.568	
3,400.00	3,383.57	3,389.58	3,360.43	8.08	9.15	-39.26	-242.87	219.28	130.76	115.53	15.24	8.583	
3,500.00	3,482.30	3,489.45	3,458.37	8.40	9.54	-39.70	-257.94	231.65	135.87	120.06	15.81	8.593	
3,600.00	3,581.03	3,589.31	3,556.31	8.73	9.94	-40.10	-273.02	244.02	140.98	124.59	16.39	8.600	
3,700.00	3,679.76	3,689.18	3,654.25	9.07	10.35	-40.48	-288.10	256.38	146.11	129.12	16.98	8.604	
3,800.00	3,778.50	3,789.04	3,752.20	9.40	10.75	-40.83	-303.17	268.75	151.23	133.66	17.57	8.605	
3,900.00	3,877.23	3,888.91	3,850.14	9.74	11.16	-41.16	-318.25	281.12	156.36	138.19	18.17	8.604	
4,000.00	3,975.96	3,988.77	3,948.08	10.08	11.56	-41.47	-333.33	293.49	161.50	142.73	18.78	8.602	
4,100.00	4,074.69	4,088.63	4,046.02	10.42	11.97	-41.76	-348.40	305.86	166.64	147.26	19.38	8.597	
4,200.00	4,173.42	4,188.50	4,143.96	10.77	12.38	-42.03	-363.48	318.23	171.79	151.79	19.99	8.592	
4,300.00	4,272.16	4,288.36	4,241.90	11.12	12.80	-42.28	-378.56	330.60	176.94	156.33	20.61	8.586	
4,400.00	4,370.89	4,388.23	4,339.85	11.46	13.21	-42.53	-393.63	342.97	182.09	160.86	21.22	8.579	
4,500.00	4,469.62	4,488.09	4,437.79	11.81	13.62	-42.75	-408.71	355.33	187.24	165.40	21.85	8.571	
4,600.00	4,568.35	4,587.96	4,535.73	12.16	14.04	-42.97	-423.79	367.70	192.40	169.93	22.47	8.563	
4,700.00	4,667.08	4,687.82	4,633.67	12.51	14.45	-43.17	-438.86	380.07	197.56	174.47	23.09	8.555	
4,800.00	4,765.81	4,787.68	4,731.61	12.87	14.87	-43.37	-453.94	392.44	202.72	179.00	23.72	8.546	
4,900.00	4,864.55	4,887.55	4,829.56	13.22	15.28	-43.55	-469.02	404.81	207.89	183.54	24.35	8.537	
5,000.00	4,963.28	4,987.41	4,927.50	13.57	15.70	-43.73	-484.09	417.18	213.06	188.07	24.98	8.528	

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



SB Directional Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well Goonch Fed Com 04 232H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB @ 3041.00usft
Reference Site:	SEC. 04-T23S-R28E	MD Reference:	RKB @ 3041.00usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Goonch Fed Com 04 232H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 2	Offset TVD Reference:	Offset Datum

Offset Design: SEC. 04-T23S-R28E - Goonch Fed Com 04 132H - Wellbore #1 - Plan 3													Offset Site Error:	0.00 usft
Survey Program: 0-MWD													Offset Well Error:	0.50 usft
Reference		Offset		Semi Major Axis			Offset Wellbore Centre			Rule Assigned:				Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
5,100.00	5,062.01	5,087.28	5,025.44	13.93	16.12	-43.89	-499.17	429.55	218.23	192.61	25.62	8.519		
5,200.00	5,160.74	5,187.14	5,123.38	14.28	16.54	-44.05	-514.25	441.91	223.40	197.14	26.25	8.510		
5,300.00	5,259.47	5,287.01	5,221.32	14.64	16.95	-44.21	-529.32	454.28	228.57	201.68	26.89	8.501		
5,400.00	5,358.21	5,386.87	5,319.26	15.00	17.37	-44.35	-544.40	466.65	233.74	206.22	27.53	8.491		
5,500.00	5,456.94	5,486.74	5,417.21	15.36	17.79	-44.49	-559.48	479.02	238.92	210.75	28.17	8.482		
5,600.00	5,555.67	5,586.60	5,515.15	15.71	18.21	-44.62	-574.55	491.39	244.09	215.29	28.81	8.473		
5,700.00	5,654.40	5,686.46	5,613.09	16.07	18.63	-44.75	-589.63	503.76	249.27	219.82	29.45	8.464		
5,800.00	5,753.13	5,786.33	5,711.03	16.43	19.05	-44.87	-604.71	516.13	254.45	224.36	30.09	8.455		
5,900.00	5,851.86	5,886.19	5,808.97	16.79	19.47	-44.99	-619.78	528.49	259.63	228.89	30.74	8.446		
6,000.00	5,950.60	5,986.06	5,906.92	17.15	19.90	-45.10	-634.86	540.86	264.81	233.43	31.38	8.438		
6,100.00	6,049.33	6,085.92	6,004.86	17.51	20.32	-45.21	-649.94	553.23	270.00	237.96	32.03	8.429		
6,200.00	6,148.06	6,185.79	6,102.80	17.87	20.74	-45.32	-665.01	565.60	275.18	242.50	32.68	8.421		
6,300.00	6,246.79	6,285.65	6,200.74	18.24	21.16	-45.42	-680.09	577.97	280.36	247.04	33.33	8.412		
6,400.00	6,345.52	6,385.51	6,298.68	18.60	21.58	-45.52	-695.16	590.34	285.55	251.57	33.98	8.404		
6,500.00	6,444.26	6,485.38	6,396.62	18.96	22.01	-45.61	-710.24	602.71	290.73	256.11	34.63	8.396		
6,600.00	6,542.99	6,585.24	6,494.57	19.32	22.43	-45.70	-725.32	615.08	295.92	260.64	35.28	8.388		
6,700.00	6,641.72	6,685.11	6,592.51	19.69	22.85	-45.79	-740.39	627.44	301.11	265.18	35.93	8.381		
6,800.00	6,740.45	6,784.97	6,690.45	20.05	23.27	-45.87	-755.47	639.81	306.30	269.71	36.58	8.373		
6,900.00	6,839.18	6,884.84	6,788.39	20.41	23.70	-45.95	-770.55	652.18	311.48	274.25	37.23	8.365		
7,000.00	6,937.91	6,984.70	6,886.33	20.78	24.12	-46.03	-785.62	664.55	316.67	278.79	37.89	8.358		
7,100.00	7,036.65	7,084.56	6,984.28	21.14	24.54	-46.11	-800.70	676.92	321.86	283.32	38.54	8.351		
7,200.00	7,135.38	7,184.43	7,082.22	21.50	24.97	-46.18	-815.78	689.29	327.05	287.86	39.20	8.344		
7,300.00	7,234.11	7,284.29	7,180.16	21.87	25.39	-46.25	-830.85	701.66	332.24	292.39	39.85	8.337		
7,400.00	7,332.84	7,384.16	7,278.10	22.23	25.82	-46.32	-845.93	714.02	337.44	296.93	40.51	8.330		
7,500.00	7,431.57	7,484.02	7,376.04	22.60	26.24	-46.39	-861.01	726.39	342.63	301.46	41.16	8.324		
7,600.00	7,530.31	7,583.89	7,473.99	22.96	26.66	-46.45	-876.08	738.76	347.82	306.00	41.82	8.317		
7,700.00	7,629.04	7,683.75	7,571.93	23.33	27.09	-46.52	-891.16	751.13	353.01	310.54	42.48	8.311		
7,800.00	7,727.77	7,783.62	7,669.87	23.69	27.51	-46.58	-906.24	763.50	358.20	315.07	43.13	8.305		
7,900.00	7,826.50	7,883.48	7,767.81	24.06	27.94	-46.64	-921.31	775.87	363.40	319.61	43.79	8.299		
8,000.00	7,925.23	7,983.34	7,865.75	24.42	28.36	-46.70	-936.39	788.24	368.59	324.14	44.45	8.293		
8,100.00	8,023.96	8,083.21	7,963.69	24.79	28.79	-46.75	-951.47	800.60	373.79	328.68	45.11	8.287		
8,200.00	8,122.70	8,183.07	8,061.64	25.15	29.21	-46.81	-966.54	812.97	378.98	333.22	45.77	8.281		
8,300.00	8,221.43	8,282.94	8,159.58	25.52	29.64	-46.86	-981.62	825.34	384.18	337.75	46.42	8.275		
8,400.00	8,320.16	8,390.55	8,265.28	25.88	30.05	-46.99	-997.22	838.14	388.75	341.63	47.12	8.250		
8,500.00	8,418.89	8,502.95	8,376.36	26.25	30.37	-47.47	-1,010.42	848.97	390.37	342.52	47.85	8.159		
8,600.00	8,517.62	8,615.15	8,487.83	26.61	30.63	-48.32	-1,020.23	857.02	388.85	340.24	48.61	7.999		
8,700.00	8,616.36	8,726.80	8,599.17	26.98	30.84	-49.57	-1,026.64	862.27	384.30	334.87	49.43	7.775		
8,800.00	8,715.09	8,837.57	8,709.87	27.35	31.01	-51.25	-1,029.67	864.76	376.89	326.58	50.32	7.491		
8,900.00	8,813.82	8,941.02	8,813.32	27.71	31.14	-53.22	-1,029.96	865.00	367.36	316.04	51.32	7.158		
9,000.00	8,912.55	9,040.18	8,912.48	28.08	31.25	-55.25	-1,029.92	865.00	357.99	305.62	52.37	6.836		
9,100.00	9,011.28	9,141.82	9,013.48	28.45	31.29	-59.08	-1,019.80	865.27	348.56	294.76	53.80	6.479		
9,110.09	9,021.24	9,151.53	9,023.00	28.48	31.28	-59.60	-1,017.90	865.32	347.66	293.68	53.98	6.440		
9,200.00	9,110.22	9,233.17	9,101.47	28.76	31.19	-64.85	-995.61	865.92	342.10	286.47	55.63	6.149		
9,233.94	9,143.91	9,261.64	9,127.97	28.84	31.14	-67.05	-985.25	866.20	341.58	285.36	56.21	6.077		
9,300.00	9,209.61	9,313.32	9,174.65	29.00	31.02	-71.51	-963.12	866.80	343.84	286.71	57.13	6.019		
9,400.00	9,309.32	9,382.62	9,233.76	29.20	30.81	-78.28	-927.02	867.77	357.21	299.63	57.58	6.204		
9,500.00	9,409.23	9,442.32	9,280.86	29.36	30.59	-84.66	-890.40	868.75	383.77	327.12	56.65	6.774		
9,566.82	9,476.04	9,477.59	9,306.81	29.46	30.45	63.95	-866.53	869.40	408.67	353.30	55.38	7.380		
9,600.00	9,509.22	9,500.00	9,322.51	29.51	30.36	61.81	-850.55	869.83	423.07	368.24	54.83	7.716		
9,700.00	9,609.22	9,537.47	9,347.34	29.64	30.19	58.27	-822.50	870.58	473.28	421.32	51.96	9.109		
9,716.82	9,626.04	9,550.00	9,355.22	29.66	30.13	57.10	-812.77	870.84	482.75	431.06	51.70	9.338		
9,750.00	9,659.20	9,550.00	9,355.22	29.69	30.13	53.69	-812.77	870.84	501.64	451.35	50.30	9.973		

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



SB Directional Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well Goonch Fed Com 04 232H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB @ 3041.00usft
Reference Site:	SEC. 04-T23S-R28E	MD Reference:	RKB @ 3041.00usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Goonch Fed Com 04 232H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 2	Offset TVD Reference:	Offset Datum

Offset Design: SEC. 04-T23S-R28E - Goonch Fed Com 04 132H - Wellbore #1 - Plan 3													Offset Site Error:	0.00 usft	
Survey Program:		0-MWD						Rule Assigned:						Offset Well Error:	0.50 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning		
9,800.00	9,708.93	9,577.09	9,371.53	29.71	30.00	48.88	-791.15	871.42	529.89	480.75	49.14	10.784			
9,850.00	9,758.03	9,600.00	9,384.51	29.70	29.89	44.95	-772.28	871.93	557.76	509.94	47.82	11.663			
9,900.00	9,806.12	9,618.01	9,394.19	29.65	29.80	41.77	-757.09	872.34	584.83	538.46	46.37	12.612			
9,950.00	9,852.84	9,650.00	9,410.16	29.56	29.64	38.39	-729.40	873.09	611.06	565.68	45.38	13.465			
10,000.00	9,897.83	9,650.00	9,410.16	29.44	29.64	36.66	-729.40	873.09	635.80	592.29	43.51	14.612			
10,050.00	9,940.76	9,681.28	9,424.27	29.30	29.48	34.13	-701.50	873.84	659.00	616.39	42.60	15.468			
10,100.00	9,981.29	9,700.00	9,431.98	29.12	29.39	32.31	-684.44	874.30	680.77	639.35	41.42	16.436			
10,150.00	10,019.12	9,724.33	9,441.15	28.93	29.26	30.64	-661.92	874.90	700.81	660.36	40.45	17.325			
10,200.00	10,053.95	9,750.00	9,449.79	28.72	29.13	29.21	-637.75	875.55	719.07	679.48	39.59	18.165			
10,250.00	10,085.53	9,767.87	9,455.16	28.49	29.04	28.13	-620.71	876.01	735.37	696.72	38.65	19.024			
10,300.00	10,113.61	9,800.00	9,463.46	28.25	28.87	27.05	-589.69	876.84	749.88	711.80	38.08	19.691			
10,350.00	10,137.99	9,800.00	9,463.46	28.01	28.87	26.48	-589.69	876.84	762.24	725.13	37.11	20.541			
10,400.00	10,158.46	9,833.81	9,470.31	27.77	28.70	25.76	-556.60	877.73	772.26	735.49	36.77	21.004			
10,450.00	10,174.88	9,850.00	9,472.89	27.52	28.61	25.30	-540.63	878.16	780.40	744.08	36.32	21.487			
10,500.00	10,187.13	9,878.03	9,476.29	27.29	28.47	24.93	-512.82	878.91	786.27	750.15	36.12	21.769			
10,550.00	10,195.11	9,900.00	9,478.00	27.06	28.36	24.72	-490.92	879.50	790.01	754.02	35.98	21.955			
10,600.00	10,198.75	9,922.34	9,478.88	26.84	28.25	24.63	-468.61	880.10	791.54	755.56	35.98	21.999			
10,616.82	10,199.00	9,933.74	9,479.00	26.76	28.20	24.63	-457.21	880.41	791.58	755.56	36.02	21.978			
10,626.55	10,199.00	9,934.56	9,479.00	26.73	28.20	24.63	-456.39	880.43	791.53	755.50	36.03	21.968			
10,700.00	10,199.00	10,008.01	9,479.00	26.44	27.86	24.63	-382.97	882.41	791.53	755.21	36.33	21.790			
10,800.00	10,199.00	10,108.01	9,479.00	26.12	27.44	24.63	-283.00	885.10	791.54	754.72	36.82	21.498			
10,900.00	10,199.00	10,208.01	9,479.00	25.89	27.07	24.63	-183.04	887.78	791.54	754.13	37.41	21.156			
11,000.00	10,199.00	10,308.01	9,479.00	25.77	26.75	24.63	-83.08	890.47	791.54	753.43	38.11	20.771			
11,100.00	10,199.00	10,408.01	9,479.00	25.82	26.46	24.63	16.89	893.16	791.54	752.65	38.90	20.351			
11,200.00	10,199.00	10,508.01	9,479.00	26.10	26.20	24.64	116.85	895.85	791.55	751.78	39.77	19.903			
11,300.00	10,199.00	10,608.01	9,479.00	26.62	26.13	24.64	216.81	898.54	791.55	750.83	40.72	19.437			
11,400.00	10,199.00	10,708.01	9,479.00	27.29	26.75	24.64	316.78	901.23	791.55	749.80	41.76	18.956			
11,500.00	10,199.00	10,808.01	9,479.00	28.10	27.64	24.64	416.74	903.92	791.55	748.70	42.86	18.469			
11,600.00	10,199.00	10,908.01	9,479.00	28.99	28.62	24.64	516.71	906.61	791.56	747.53	44.03	17.979			
11,700.00	10,199.00	11,008.01	9,479.00	29.98	29.66	24.64	616.67	909.30	791.56	746.31	45.25	17.492			
11,800.00	10,199.00	11,108.01	9,479.00	31.03	30.77	24.64	716.63	911.99	791.56	745.03	46.54	17.009			
11,900.00	10,199.00	11,208.01	9,479.00	32.15	31.93	24.64	816.60	914.68	791.56	743.69	47.87	16.535			
12,000.00	10,199.00	11,308.01	9,479.00	33.32	33.15	24.64	916.56	917.37	791.57	742.32	49.25	16.072			
12,100.00	10,199.00	11,408.01	9,479.00	34.55	34.40	24.64	1,016.53	920.06	791.57	740.89	50.68	15.620			
12,200.00	10,199.00	11,508.01	9,479.00	35.83	35.71	24.64	1,116.49	922.75	791.57	739.43	52.14	15.182			
12,300.00	10,199.00	11,608.01	9,479.00	37.15	37.05	24.64	1,216.45	925.43	791.58	737.93	53.64	14.757			
12,400.00	10,199.00	11,708.01	9,479.00	38.51	38.42	24.64	1,316.42	928.12	791.58	736.40	55.17	14.347			
12,500.00	10,199.00	11,808.01	9,479.00	39.90	39.83	24.64	1,416.38	930.81	791.58	734.84	56.74	13.952			
12,600.00	10,199.00	11,908.01	9,479.00	41.32	41.27	24.64	1,516.34	933.50	791.58	733.25	58.33	13.571			
12,700.00	10,199.00	12,008.01	9,479.00	42.78	42.73	24.64	1,616.31	936.19	791.59	731.64	59.95	13.205			
12,800.00	10,199.00	12,108.01	9,479.00	44.26	44.22	24.64	1,716.27	938.88	791.59	730.00	61.59	12.853			
12,900.00	10,199.00	12,208.01	9,479.00	45.76	45.73	24.64	1,816.24	941.57	791.59	728.34	63.25	12.514			
13,000.00	10,199.00	12,308.01	9,479.00	47.28	47.26	24.64	1,916.20	944.26	791.59	726.65	64.94	12.190			
13,100.00	10,199.00	12,408.01	9,479.00	48.83	48.81	24.64	2,016.16	946.95	791.60	724.95	66.64	11.878			
13,200.00	10,199.00	12,508.01	9,479.00	50.39	50.38	24.64	2,116.13	949.64	791.60	723.24	68.36	11.579			
13,300.00	10,199.00	12,608.01	9,479.00	51.97	51.96	24.64	2,216.09	952.33	791.60	721.50	70.10	11.293			
13,400.00	10,199.00	12,708.01	9,479.00	53.56	53.55	24.64	2,316.06	955.02	791.60	719.75	71.85	11.017			
13,500.00	10,199.00	12,808.01	9,479.00	55.17	55.16	24.64	2,416.02	957.71	791.61	717.99	73.62	10.753			
13,600.00	10,199.00	12,908.01	9,479.00	56.78	56.78	24.64	2,515.98	960.40	791.61	716.21	75.40	10.499			
13,700.00	10,199.00	13,008.01	9,479.00	58.41	58.42	24.65	2,615.95	963.08	791.61	714.42	77.19	10.256			
13,800.00	10,199.00	13,108.01	9,479.00	60.05	60.06	24.65	2,715.91	965.77	791.61	712.62	78.99	10.022			
13,900.00	10,199.00	13,208.01	9,479.00	61.71	61.71	24.65	2,815.87	968.46	791.62	710.82	80.80	9.797			

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



SB Directional

Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well Goonch Fed Com 04 232H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB @ 3041.00usft
Reference Site:	SEC. 04-T23S-R28E	MD Reference:	RKB @ 3041.00usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Goonch Fed Com 04 232H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 2	Offset TVD Reference:	Offset Datum

Offset Design: SEC. 04-T23S-R28E - Goonch Fed Com 04 132H - Wellbore #1 - Plan 3													Offset Site Error:	0.00 usft
Survey Program:		0-MWD										Offset Well Error:	0.50 usft	
Reference		Offset		Semi Major Axis			Offset Wellbore Centre			Rule Assigned:			Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
14,000.00	10,199.00	13,308.01	9,479.00	63.37	63.37	24.65	2,915.84	971.15	791.62	709.00	82.62	9.581		
14,100.00	10,199.00	13,408.01	9,479.00	65.03	65.04	24.65	3,015.80	973.84	791.62	707.17	84.45	9.373		
14,200.00	10,199.00	13,508.01	9,479.00	66.71	66.72	24.65	3,115.77	976.53	791.62	705.33	86.29	9.174		
14,300.00	10,199.00	13,608.01	9,479.00	68.39	68.40	24.65	3,215.73	979.22	791.63	703.48	88.14	8.981		
14,400.00	10,199.00	13,708.01	9,479.00	70.08	70.09	24.65	3,315.69	981.91	791.63	701.63	90.00	8.796		
14,500.00	10,199.00	13,808.01	9,479.00	71.78	71.79	24.65	3,415.66	984.60	791.63	699.77	91.86	8.618		
14,600.00	10,199.00	13,908.01	9,479.00	73.48	73.49	24.65	3,515.62	987.29	791.63	697.90	93.73	8.446		
14,700.00	10,199.00	14,008.01	9,479.00	75.19	75.20	24.65	3,615.58	989.98	791.64	696.03	95.60	8.280		
14,800.00	10,199.00	14,108.01	9,479.00	76.90	76.91	24.65	3,715.55	992.67	791.64	694.15	97.49	8.121		
14,900.00	10,199.00	14,208.01	9,479.00	78.62	78.63	24.65	3,815.51	995.36	791.64	692.27	99.37	7.966		
15,000.00	10,199.00	14,308.01	9,479.00	80.34	80.35	24.65	3,915.48	998.05	791.64	690.38	101.27	7.818		
15,100.00	10,199.00	14,408.01	9,479.00	82.06	82.08	24.65	4,015.44	1,000.73	791.65	688.48	103.16	7.674		
15,200.00	10,199.00	14,508.01	9,479.00	83.79	83.81	24.65	4,115.40	1,003.42	791.65	686.58	105.06	7.535		
15,245.41	10,199.00	14,553.42	9,479.00	84.58	84.59	24.65	4,160.80	1,004.65	791.65	685.72	105.93	7.473		

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



SB Directional Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well Goonch Fed Com 04 232H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB @ 3041.00usft
Reference Site:	SEC. 04-T23S-R28E	MD Reference:	RKB @ 3041.00usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Goonch Fed Com 04 232H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 2	Offset TVD Reference:	Offset Datum

Offset Design: SEC. 04-T23S-R28E - Goonch Fed Com 04 211H - Wellbore #1 - Plan 2												Offset Site Error:	0.00 usft
Survey Program: 0-MWD												Offset Well Error:	0.50 usft
Reference	Offset	Semi Major Axis	Highside	Offset Wellbore Centre	Distance	Rule Assigned:							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.00	0.00	0.00	0.00	0.50	0.50	-90.09	-0.03	-20.01	20.01	19.00	1.01	19.732	
100.00	100.00	100.00	100.00	0.51	0.51	-90.09	-0.03	-20.01	20.01	18.83	1.18	17.021	
200.00	200.00	200.00	200.00	0.59	0.59	-90.09	-0.03	-20.01	20.01	18.55	1.46	13.679	
300.00	300.00	300.00	300.00	0.73	0.73	-90.09	-0.03	-20.01	20.01	18.19	1.82	11.012	
400.00	400.00	400.00	400.00	0.91	0.91	-90.09	-0.03	-20.01	20.01	17.80	2.21	9.069	
500.00	500.00	500.00	500.00	1.10	1.10	-90.09	-0.03	-20.01	20.01	17.40	2.61	7.652	
600.00	600.00	600.00	600.00	1.31	1.31	-90.09	-0.03	-20.01	20.01	16.97	3.04	6.593	
700.00	700.00	700.00	700.00	1.52	1.52	-90.09	-0.03	-20.01	20.01	16.55	3.46	5.779	
800.00	800.00	800.00	800.00	1.73	1.73	-90.09	-0.03	-20.01	20.01	16.11	3.90	5.137	
900.00	900.00	900.00	900.00	1.95	1.95	-90.09	-0.03	-20.01	20.01	15.68	4.33	4.620	
1,000.00	1,000.00	1,000.00	1,000.00	2.17	2.17	-90.09	-0.03	-20.01	20.01	15.24	4.77	4.195	
1,100.00	1,100.00	1,100.00	1,100.00	2.38	2.38	-90.09	-0.03	-20.01	20.01	14.80	5.21	3.840	
1,200.00	1,200.00	1,200.00	1,200.00	2.61	2.61	-90.09	-0.03	-20.01	20.01	14.36	5.65	3.540	
1,300.00	1,300.00	1,300.00	1,300.00	2.83	2.83	-90.09	-0.03	-20.01	20.01	13.91	6.10	3.283	
1,400.00	1,400.00	1,400.00	1,400.00	3.05	3.05	-90.09	-0.03	-20.01	20.01	13.47	6.54	3.060	
1,500.00	1,500.00	1,500.00	1,500.00	3.27	3.27	-90.09	-0.03	-20.01	20.01	13.03	6.98	2.865	
1,600.00	1,600.00	1,600.00	1,600.00	3.49	3.49	-90.09	-0.03	-20.01	20.01	12.58	7.43	2.694	
1,700.00	1,700.00	1,700.00	1,700.00	3.71	3.71	-90.09	-0.03	-20.01	20.01	12.14	7.87	2.541 CC, ES	
1,800.00	1,800.00	1,800.00	1,800.00	3.94	3.94	-90.09	-0.03	-20.01	20.01	12.58	8.29	2.517 SF	
1,900.00	1,899.98	1,899.98	1,899.98	4.13	4.16	121.61	-0.03	-20.01	20.87	12.58	8.29	2.517 SF	
2,000.00	1,999.84	1,999.84	1,999.84	4.31	4.38	132.24	-0.03	-20.01	24.03	15.34	8.69	2.766	
2,100.00	2,099.45	2,099.45	2,099.45	4.49	4.61	144.33	-0.03	-20.01	30.58	21.49	9.09	3.364	
2,200.00	2,198.70	2,198.70	2,198.70	4.69	4.83	154.17	-0.03	-20.01	41.12	31.61	9.50	4.328	
2,256.73	2,254.80	2,254.80	2,254.80	4.81	4.95	158.43	-0.03	-20.01	48.87	39.14	9.74	5.020	
2,300.00	2,297.52	2,297.52	2,297.52	4.91	5.05	161.04	-0.03	-20.01	55.33	45.41	9.92	5.580	
2,400.00	2,396.25	2,396.25	2,396.25	5.14	5.27	165.23	-0.03	-20.01	70.55	60.22	10.33	6.830	
2,500.00	2,494.98	2,494.98	2,494.98	5.39	5.49	167.93	-0.03	-20.01	86.00	75.26	10.75	8.003	
2,600.00	2,593.71	2,593.71	2,593.71	5.66	5.71	169.80	-0.03	-20.01	101.59	90.42	11.17	9.096	
2,700.00	2,692.45	2,692.45	2,692.45	5.93	5.93	171.17	-0.03	-20.01	117.25	105.66	11.59	10.113	
2,800.00	2,791.18	2,791.18	2,791.18	6.22	6.15	172.22	-0.03	-20.01	132.97	120.94	12.02	11.059	
2,900.00	2,889.91	2,894.17	2,894.15	6.51	6.36	172.79	-1.57	-19.86	147.42	134.98	12.44	11.852	
3,000.00	2,988.64	2,998.40	2,998.25	6.81	6.54	172.61	-6.86	-19.33	158.74	145.92	12.82	12.381	
3,100.00	3,087.37	3,102.86	3,102.30	7.12	6.72	171.82	-15.94	-18.42	166.92	153.71	13.20	12.641	
3,200.00	3,186.11	3,202.59	3,201.50	7.43	6.89	170.87	-26.16	-17.40	173.76	160.15	13.61	12.769	
3,300.00	3,284.84	3,302.32	3,300.69	7.75	7.08	170.00	-36.39	-16.37	180.65	166.63	14.02	12.886	
3,400.00	3,383.57	3,402.04	3,399.89	8.08	7.28	169.19	-46.61	-15.35	187.58	173.14	14.44	12.992	
3,500.00	3,482.30	3,501.77	3,499.08	8.40	7.48	168.43	-56.84	-14.33	194.54	179.68	14.86	13.088	
3,600.00	3,581.03	3,601.49	3,598.28	8.73	7.69	167.73	-67.07	-13.31	201.53	186.24	15.30	13.175	
3,700.00	3,679.76	3,701.22	3,697.47	9.07	7.90	167.08	-77.29	-12.28	208.55	192.82	15.74	13.253	
3,800.00	3,778.50	3,800.94	3,796.66	9.40	8.12	166.46	-87.52	-11.26	215.60	199.42	16.18	13.323	
3,900.00	3,877.23	3,900.67	3,895.86	9.74	8.34	165.89	-97.75	-10.24	222.67	206.04	16.63	13.387	
4,000.00	3,975.96	4,000.40	3,995.05	10.08	8.57	165.35	-107.97	-9.22	229.76	212.67	17.09	13.443	
4,100.00	4,074.69	4,100.12	4,094.25	10.42	8.80	164.85	-118.20	-8.19	236.87	219.32	17.55	13.494	
4,200.00	4,173.42	4,199.85	4,193.44	10.77	9.03	164.37	-128.42	-7.17	244.00	225.98	18.02	13.540	
4,300.00	4,272.16	4,299.57	4,292.64	11.12	9.27	163.92	-138.65	-6.15	251.14	232.65	18.49	13.581	
4,400.00	4,370.89	4,399.30	4,391.83	11.46	9.51	163.50	-148.88	-5.13	258.30	239.33	18.97	13.617	
4,500.00	4,469.62	4,499.03	4,491.03	11.81	9.76	163.10	-159.10	-4.10	265.47	246.02	19.45	13.650	
4,600.00	4,568.35	4,598.75	4,590.22	12.16	10.00	162.72	-169.33	-3.08	272.65	252.72	19.93	13.678	
4,700.00	4,667.08	4,698.48	4,689.42	12.51	10.25	162.36	-179.56	-2.06	279.84	259.42	20.42	13.704	
4,800.00	4,765.81	4,798.20	4,788.61	12.87	10.50	162.02	-189.78	-1.03	287.05	266.14	20.91	13.727	
4,900.00	4,864.55	4,897.93	4,887.81	13.22	10.76	161.69	-200.01	-0.01	294.26	272.86	21.41	13.747	
5,000.00	4,963.28	4,997.65	4,987.00	13.57	11.01	161.38	-210.23	1.01	301.48	279.58	21.90	13.765	

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



SB Directional Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well Goonch Fed Com 04 232H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB @ 3041.00usft
Reference Site:	SEC. 04-T23S-R28E	MD Reference:	RKB @ 3041.00usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Goonch Fed Com 04 232H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 2	Offset TVD Reference:	Offset Datum

Offset Design: SEC. 04-T23S-R28E - Goonch Fed Com 04 211H - Wellbore #1 - Plan 2													Offset Site Error: 0.00 usft
Survey Program: 0-MWD													Offset Well Error: 0.50 usft
Rule Assigned:													
Measured Depth (usft)	Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,100.00	5,062.01	5,097.38	5,086.20	13.93	11.27	161.08	-220.46	2.03	308.71	286.31	22.40	13.780	
5,200.00	5,160.74	5,197.11	5,185.39	14.28	11.53	160.80	-230.69	3.06	315.95	293.05	22.91	13.794	
5,300.00	5,259.47	5,296.83	5,284.59	14.64	11.79	160.53	-240.91	4.08	323.20	299.79	23.41	13.806	
5,400.00	5,358.21	5,396.56	5,383.78	15.00	12.05	160.28	-251.14	5.10	330.45	306.54	23.92	13.816	
5,500.00	5,456.94	5,496.28	5,482.98	15.36	12.32	160.03	-261.37	6.12	337.71	313.29	24.43	13.825	
5,600.00	5,555.67	5,596.01	5,582.17	15.71	12.58	159.79	-271.59	7.15	344.98	320.04	24.94	13.832	
5,700.00	5,654.40	5,695.74	5,681.37	16.07	12.85	159.57	-281.82	8.17	352.25	326.80	25.45	13.839	
5,800.00	5,753.13	5,795.46	5,780.56	16.43	13.12	159.35	-292.04	9.19	359.53	333.56	25.97	13.844	
5,900.00	5,851.86	5,895.19	5,879.76	16.79	13.39	159.14	-302.27	10.21	366.81	340.32	26.49	13.848	
6,000.00	5,950.60	5,994.91	5,978.95	17.15	13.66	158.94	-312.50	11.24	374.09	347.09	27.01	13.852	
6,100.00	6,049.33	6,094.64	6,078.15	17.51	13.93	158.75	-322.72	12.26	381.38	353.86	27.53	13.854	
6,200.00	6,148.06	6,194.36	6,177.34	17.87	14.20	158.56	-332.95	13.28	388.68	360.63	28.05	13.856	
6,300.00	6,246.79	6,294.09	6,276.54	18.24	14.47	158.38	-343.18	14.30	395.98	367.40	28.57	13.858	
6,400.00	6,345.52	6,393.82	6,375.73	18.60	14.75	158.21	-353.40	15.33	403.28	374.18	29.10	13.858	
6,500.00	6,444.26	6,493.54	6,474.93	18.96	15.02	158.04	-363.63	16.35	410.58	380.96	29.63	13.858	
6,600.00	6,542.99	6,593.27	6,574.12	19.32	15.30	157.88	-373.85	17.37	417.89	387.74	30.16	13.858	
6,700.00	6,641.72	6,692.99	6,673.32	19.69	15.57	157.73	-384.08	18.40	425.21	394.52	30.68	13.857	
6,800.00	6,740.45	6,792.72	6,772.51	20.05	15.85	157.58	-394.31	19.42	432.52	401.31	31.21	13.856	
6,900.00	6,839.18	6,892.45	6,871.71	20.41	16.13	157.43	-404.53	20.44	439.84	408.09	31.75	13.855	
7,000.00	6,937.91	6,992.17	6,970.90	20.78	16.40	157.29	-414.76	21.46	447.16	414.88	32.28	13.853	
7,100.00	7,036.65	7,091.90	7,070.10	21.14	16.68	157.16	-424.99	22.49	454.48	421.67	32.81	13.851	
7,200.00	7,135.38	7,191.62	7,169.29	21.50	16.96	157.03	-435.21	23.51	461.81	428.46	33.35	13.849	
7,300.00	7,234.11	7,291.35	7,268.49	21.87	17.24	156.90	-445.44	24.53	469.14	435.25	33.88	13.846	
7,400.00	7,332.84	7,391.07	7,367.68	22.23	17.52	156.78	-455.66	25.55	476.47	442.05	34.42	13.843	
7,500.00	7,431.57	7,490.80	7,466.87	22.60	17.80	156.66	-465.89	26.58	483.80	448.84	34.96	13.841	
7,600.00	7,530.31	7,590.53	7,566.07	22.96	18.08	156.54	-476.12	27.60	491.13	455.64	35.49	13.837	
7,700.00	7,629.04	7,690.25	7,665.26	23.33	18.36	156.43	-486.34	28.62	498.47	462.44	36.03	13.834	
7,800.00	7,727.77	7,789.98	7,764.46	23.69	18.64	156.32	-496.57	29.64	505.81	469.24	36.57	13.831	
7,900.00	7,826.50	7,889.70	7,863.65	24.06	18.93	156.22	-506.80	30.67	513.15	476.04	37.11	13.827	
8,000.00	7,925.23	7,989.43	7,962.85	24.42	19.21	156.11	-517.02	31.69	520.49	482.84	37.65	13.824	
8,100.00	8,023.96	8,089.16	8,062.04	24.79	19.49	156.01	-527.25	32.71	527.83	489.64	38.19	13.820	
8,200.00	8,122.70	8,188.88	8,161.24	25.15	19.77	155.92	-537.47	33.73	535.18	496.44	38.74	13.816	
8,300.00	8,221.43	8,288.61	8,260.43	25.52	20.06	155.82	-547.70	34.76	542.52	503.25	39.28	13.812	
8,400.00	8,320.16	8,388.33	8,359.63	25.88	20.34	155.73	-557.93	35.78	549.87	510.05	39.82	13.809	
8,500.00	8,418.89	8,488.06	8,458.82	26.25	20.62	155.64	-568.15	36.80	557.22	516.85	40.36	13.805	
8,600.00	8,517.62	8,587.78	8,558.02	26.61	20.91	155.55	-578.38	37.82	564.57	523.66	40.91	13.801	
8,700.00	8,616.36	8,683.06	8,652.80	26.98	21.17	155.48	-587.97	38.78	572.06	530.64	41.43	13.809	
8,800.00	8,715.09	8,770.43	8,739.91	27.35	21.36	155.57	-594.64	39.45	581.25	539.39	41.85	13.888	
8,900.00	8,813.82	8,857.34	8,826.73	27.71	21.54	155.85	-598.64	39.85	592.54	550.32	42.22	14.033	
9,000.00	8,912.55	8,943.63	8,913.00	28.08	21.70	156.29	-600.03	39.99	605.96	563.41	42.55	14.242	
9,100.00	9,011.28	9,041.91	9,011.28	28.45	21.87	156.88	-600.03	39.99	620.56	577.64	42.91	14.461	
9,110.09	9,021.24	9,051.87	9,021.24	28.48	21.89	156.93	-600.03	39.99	622.03	579.08	42.95	14.483	
9,200.00	9,110.22	9,122.81	9,092.17	28.76	22.00	157.44	-599.43	40.01	634.55	591.41	43.14	14.709	
9,300.00	9,209.61	9,180.23	9,149.30	29.00	22.06	158.17	-593.95	40.17	650.78	607.72	43.06	15.113	
9,400.00	9,309.32	9,235.53	9,203.55	29.20	22.08	159.17	-583.29	40.48	670.26	627.47	42.79	15.665	
9,500.00	9,409.23	9,288.29	9,254.11	29.36	22.07	160.38	-568.30	40.92	693.08	650.74	42.34	16.370	
9,566.82	9,476.04	9,321.99	9,285.60	29.46	22.05	-46.19	-556.31	41.27	710.22	668.27	41.96	16.927	
9,600.00	9,509.22	9,338.20	9,300.48	29.51	22.04	-45.79	-549.89	41.46	719.49	677.74	41.75	17.235	
9,700.00	9,609.22	9,384.61	9,342.02	29.64	21.99	-44.55	-529.22	42.06	751.78	710.76	41.02	18.325	
9,716.82	9,626.04	9,400.00	9,355.40	29.66	21.97	-44.10	-521.63	42.28	757.93	716.95	40.98	18.494	
9,750.00	9,659.20	9,400.00	9,355.40	29.69	21.97	-44.74	-521.63	42.28	769.78	729.22	40.56	18.980	
9,800.00	9,708.93	9,428.72	9,379.81	29.71	21.92	-42.81	-506.51	42.72	786.50	746.27	40.23	19.552	

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



SB Directional Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well Goonch Fed Com 04 232H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB @ 3041.00usft
Reference Site:	SEC. 04-T23S-R28E	MD Reference:	RKB @ 3041.00usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Goonch Fed Com 04 232H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 2	Offset TVD Reference:	Offset Datum

Offset Design: SEC. 04-T23S-R28E - Goonch Fed Com 04 211H - Wellbore #1 - Plan 2													Offset Site Error: 0.00 usft
Survey Program: 0-MWD													Offset Well Error: 0.50 usft
Rule Assigned:													
Measured Depth (usft)	Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
9,850.00	9,758.03	9,450.00	9,397.40	29.70	21.89	-41.30	-494.54	43.07	801.82	762.02	39.80	20.147	
9,900.00	9,806.12	9,473.18	9,416.03	29.65	21.85	-39.97	-480.76	43.48	815.57	776.19	39.38	20.709	
9,950.00	9,852.84	9,500.00	9,436.88	29.56	21.81	-38.81	-463.89	43.97	827.69	788.68	39.00	21.220	
10,000.00	9,897.83	9,517.93	9,450.36	29.44	21.77	-37.95	-452.08	44.32	838.02	799.50	38.52	21.757	
10,050.00	9,940.76	9,550.00	9,473.53	29.30	21.71	-37.13	-429.92	44.96	846.69	808.50	38.20	22.166	
10,100.00	9,981.29	9,550.00	9,473.53	29.12	21.71	-36.72	-429.92	44.96	853.49	815.97	37.52	22.749	
10,150.00	10,019.12	9,585.41	9,497.63	28.93	21.65	-36.25	-404.00	45.72	858.09	820.83	37.26	23.032	
10,200.00	10,053.95	9,600.00	9,507.09	28.72	21.62	-36.03	-392.89	46.05	861.07	824.28	36.78	23.409	
10,250.00	10,085.53	9,630.51	9,525.92	28.49	21.57	-35.93	-368.91	46.75	861.94	825.44	36.51	23.609	
10,300.00	10,113.61	9,650.00	9,537.28	28.25	21.53	-36.00	-353.08	47.21	860.98	824.82	36.16	23.813	
10,350.00	10,137.99	9,675.60	9,551.37	28.01	21.49	-36.24	-331.71	47.84	858.05	822.14	35.91	23.898	
10,400.00	10,158.46	9,700.00	9,563.89	27.77	21.46	-36.64	-310.78	48.45	853.22	817.53	35.69	23.906	
10,450.00	10,174.88	9,720.63	9,573.78	27.52	21.43	-37.19	-292.69	48.98	846.49	810.98	35.51	23.840	
10,500.00	10,187.13	9,750.00	9,586.72	27.29	21.39	-37.99	-266.33	49.75	837.97	802.52	35.45	23.641	
10,550.00	10,195.11	9,765.50	9,592.99	27.06	21.38	-38.83	-252.17	50.16	827.53	792.15	35.37	23.394	
10,600.00	10,198.75	9,800.00	9,605.58	26.84	21.35	-40.11	-220.06	51.10	815.59	780.12	35.47	22.992	
10,616.82	10,199.00	9,800.00	9,605.58	26.76	21.35	-40.42	-220.06	51.10	810.98	775.50	35.47	22.861	
10,700.00	10,199.00	9,833.28	9,615.86	26.44	21.34	-40.91	-188.43	52.03	790.63	754.94	35.69	22.152	
10,800.00	10,199.00	9,880.87	9,627.34	26.12	21.34	-41.47	-142.27	53.38	772.07	735.99	36.09	21.394	
10,900.00	10,199.00	9,930.14	9,635.14	25.89	21.37	-41.86	-93.66	54.80	760.00	723.41	36.59	20.768	
11,000.00	10,199.00	9,980.42	9,638.77	25.77	21.43	-42.03	-43.56	56.26	754.46	717.27	37.19	20.286	
11,100.00	10,199.00	10,064.53	9,639.00	25.82	21.62	-42.03	40.52	58.72	753.96	716.24	37.72	19.986	
11,108.54	10,199.00	10,073.07	9,639.00	25.84	21.64	-42.03	49.06	58.97	753.95	716.18	37.77	19.961	
11,200.00	10,199.00	10,164.53	9,639.00	26.10	21.97	-42.02	140.47	61.64	753.80	715.46	38.34	19.661	
11,300.00	10,199.00	10,264.53	9,639.00	26.62	22.47	-42.01	240.43	64.57	753.64	714.51	39.13	19.260	
11,400.00	10,199.00	10,364.53	9,639.00	27.29	23.10	-41.99	340.39	67.49	753.48	713.40	40.08	18.798	
11,500.00	10,199.00	10,464.53	9,639.00	28.10	23.85	-41.98	440.34	70.41	753.32	712.13	41.19	18.291	
11,600.00	10,199.00	10,564.53	9,639.00	28.99	24.71	-41.97	540.30	73.34	753.16	710.73	42.43	17.751	
11,700.00	10,199.00	10,664.53	9,639.00	29.98	25.68	-41.95	640.26	76.26	753.00	709.20	43.80	17.192	
11,800.00	10,199.00	10,764.53	9,639.00	31.03	26.73	-41.94	740.22	79.18	752.84	707.55	45.28	16.625	
11,900.00	10,199.00	10,864.53	9,639.00	32.15	27.86	-41.93	840.17	82.10	752.68	705.81	46.87	16.058	
12,000.00	10,199.00	10,964.53	9,639.00	33.32	29.06	-41.91	940.13	85.03	752.52	703.96	48.55	15.498	
12,100.00	10,199.00	11,064.53	9,639.00	34.55	30.33	-41.90	1,040.09	87.95	752.36	702.04	50.32	14.951	
12,200.00	10,199.00	11,164.53	9,639.00	35.83	31.64	-41.88	1,140.04	90.87	752.20	700.03	52.16	14.420	
12,300.00	10,199.00	11,264.53	9,639.00	37.15	33.01	-41.87	1,240.00	93.80	752.04	697.96	54.07	13.908	
12,400.00	10,199.00	11,364.53	9,639.00	38.51	34.42	-41.86	1,339.96	96.72	751.88	695.84	56.04	13.416	
12,500.00	10,199.00	11,464.53	9,639.00	39.90	35.86	-41.84	1,439.91	99.64	751.72	693.65	58.07	12.946	
12,600.00	10,199.00	11,564.53	9,639.00	41.32	37.34	-41.83	1,539.87	102.57	751.56	691.42	60.14	12.497	
12,700.00	10,199.00	11,664.53	9,639.00	42.78	38.85	-41.82	1,639.83	105.49	751.40	689.14	62.25	12.070	
12,800.00	10,199.00	11,764.53	9,639.00	44.26	40.38	-41.80	1,739.79	108.41	751.24	686.83	64.41	11.664	
12,900.00	10,199.00	11,864.53	9,639.00	45.76	41.93	-41.79	1,839.74	111.33	751.08	684.48	66.60	11.278	
13,000.00	10,199.00	11,964.52	9,639.00	47.28	43.51	-41.78	1,939.70	114.26	750.92	682.10	68.82	10.912	
13,100.00	10,199.00	12,064.52	9,639.00	48.83	45.10	-41.76	2,039.66	117.18	750.76	679.69	71.07	10.564	
13,200.00	10,199.00	12,164.52	9,639.00	50.39	46.71	-41.75	2,139.61	120.10	750.60	677.25	73.34	10.234	
13,300.00	10,199.00	12,264.52	9,639.00	51.97	48.34	-41.73	2,239.57	123.03	750.44	674.79	75.64	9.921	
13,400.00	10,199.00	12,364.52	9,639.00	53.56	49.98	-41.72	2,339.53	125.95	750.28	672.31	77.96	9.623	
13,500.00	10,199.00	12,464.52	9,639.00	55.17	51.63	-41.71	2,439.48	128.87	750.12	669.81	80.30	9.341	
13,600.00	10,199.00	12,564.52	9,639.00	56.78	53.29	-41.69	2,539.44	131.80	749.96	667.30	82.66	9.073	
13,700.00	10,199.00	12,664.52	9,639.00	58.41	54.96	-41.68	2,639.40	134.72	749.80	664.76	85.04	8.817	
13,800.00	10,199.00	12,764.52	9,639.00	60.05	56.64	-41.67	2,739.35	137.64	749.64	662.22	87.42	8.575	
13,900.00	10,199.00	12,864.52	9,639.00	61.71	58.33	-41.65	2,839.31	140.56	749.48	659.66	89.82	8.344	
14,000.00	10,199.00	12,964.52	9,639.00	63.37	60.03	-41.64	2,939.27	143.49	749.32	657.08	92.24	8.124	

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



SB Directional

Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well Goonch Fed Com 04 232H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB @ 3041.00usft
Reference Site:	SEC. 04-T23S-R28E	MD Reference:	RKB @ 3041.00usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Goonch Fed Com 04 232H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 2	Offset TVD Reference:	Offset Datum

Offset Design: SEC. 04-T23S-R28E - Goonch Fed Com 04 211H - Wellbore #1 - Plan 2													Offset Site Error: 0.00 usft
Survey Program: 0-MWD													Offset Well Error: 0.50 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
14,100.00	10,199.00	13,064.52	9,639.00	65.03	61.73	-41.63	3,039.23	146.41	749.16	654.50	94.66	7.914	
14,200.00	10,199.00	13,164.52	9,639.00	66.71	63.44	-41.61	3,139.18	149.33	749.00	651.90	97.10	7.714	
14,300.00	10,199.00	13,264.52	9,639.00	68.39	65.16	-41.60	3,239.14	152.26	748.84	649.30	99.54	7.523	
14,400.00	10,199.00	13,364.52	9,639.00	70.08	66.88	-41.58	3,339.10	155.18	748.68	646.69	102.00	7.340	
14,500.00	10,199.00	13,464.52	9,639.00	71.78	68.61	-41.57	3,439.05	158.10	748.53	644.07	104.46	7.166	
14,600.00	10,199.00	13,564.52	9,639.00	73.48	70.34	-41.56	3,539.01	161.03	748.37	641.44	106.93	6.999	
14,700.00	10,199.00	13,664.52	9,639.00	75.19	72.08	-41.54	3,638.97	163.95	748.21	638.80	109.40	6.839	
14,800.00	10,199.00	13,764.52	9,639.00	76.90	73.82	-41.53	3,738.92	166.87	748.05	636.16	111.88	6.686	
14,900.00	10,199.00	13,864.52	9,639.00	78.62	75.56	-41.52	3,838.88	169.79	747.89	633.52	114.37	6.539	
15,000.00	10,199.00	13,964.52	9,639.00	80.34	77.31	-41.50	3,938.84	172.72	747.73	630.87	116.86	6.398	
15,100.00	10,199.00	14,064.52	9,639.00	82.06	79.06	-41.49	4,038.80	175.64	747.57	628.21	119.36	6.263	
15,200.00	10,199.00	14,164.52	9,639.00	83.79	80.81	-41.47	4,138.75	178.56	747.41	625.55	121.86	6.133	
15,231.87	10,199.00	14,195.21	9,639.00	84.35	81.35	-41.47	4,169.43	179.46	747.36	624.72	122.65	6.094	
15,245.41	10,199.00	14,195.21	9,639.00	84.58	81.35	-41.47	4,169.43	179.46	747.49	624.70	122.78	6.088	

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



SB Directional Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well Goonch Fed Com 04 232H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB @ 3041.00usft
Reference Site:	SEC. 04-T23S-R28E	MD Reference:	RKB @ 3041.00usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Goonch Fed Com 04 232H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 2	Offset TVD Reference:	Offset Datum

Offset Design: SEC. 04-T23S-R28E - Goonch Fed Com 04 221H - Wellbore #1 - Plan 2												Offset Site Error:	0.00 usft
Survey Program: 0-MWD												Offset Well Error:	0.50 usft
Rule Assigned:												Warning	
Measured Depth (usft)	Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
0.00	0.00	0.00	0.00	0.50	0.50	-90.10	-0.10	-60.02	60.02				
100.00	100.00	100.00	100.00	0.51	0.51	-90.10	-0.10	-60.02	60.02	59.01	1.01	59.185	
200.00	200.00	200.00	200.00	0.59	0.59	-90.10	-0.10	-60.02	60.02	58.84	1.18	51.054	
300.00	300.00	300.00	300.00	0.73	0.73	-90.10	-0.10	-60.02	60.02	58.56	1.46	41.030	
400.00	400.00	400.00	400.00	0.91	0.91	-90.10	-0.10	-60.02	60.02	58.20	1.82	33.031	
500.00	500.00	500.00	500.00	1.10	1.10	-90.10	-0.10	-60.02	60.02	57.81	2.21	27.204	
600.00	600.00	600.00	600.00	1.31	1.31	-90.10	-0.10	-60.02	60.02	57.41	2.61	22.952	
700.00	700.00	700.00	700.00	1.52	1.52	-90.10	-0.10	-60.02	60.02	56.98	3.04	19.774	
800.00	800.00	800.00	800.00	1.73	1.73	-90.10	-0.10	-60.02	60.02	56.56	3.46	17.333	
900.00	900.00	900.00	900.00	1.95	1.95	-90.10	-0.10	-60.02	60.02	56.12	3.90	15.408	
1,000.00	1,000.00	1,000.00	1,000.00	2.17	2.17	-90.10	-0.10	-60.02	60.02	55.69	4.33	13.857	
1,100.00	1,100.00	1,100.00	1,100.00	2.38	2.38	-90.10	-0.10	-60.02	60.02	55.25	4.77	12.583	
1,200.00	1,200.00	1,200.00	1,200.00	2.61	2.61	-90.10	-0.10	-60.02	60.02	54.81	5.21	11.520	
1,300.00	1,300.00	1,300.00	1,300.00	2.83	2.83	-90.10	-0.10	-60.02	60.02	54.37	5.65	10.619	
1,400.00	1,400.00	1,400.00	1,400.00	3.05	3.05	-90.10	-0.10	-60.02	60.02	53.93	6.10	9.847	
1,500.00	1,500.00	1,500.00	1,500.00	3.27	3.27	-90.10	-0.10	-60.02	60.02	53.48	6.54	9.179 CC, ES	
1,600.00	1,600.00	1,598.50	1,598.48	3.49	3.47	-91.22	-1.30	-61.21	61.25	54.29	6.95	8.807 SF	
1,700.00	1,700.00	1,696.78	1,696.62	3.71	3.64	-94.32	-4.89	-64.78	65.05	57.70	7.35	8.854	
1,800.00	1,800.00	1,794.59	1,794.07	3.94	3.83	-98.72	-10.84	-70.68	71.75	64.01	7.74	9.272	
1,900.00	1,899.98	1,891.76	1,890.54	4.13	4.03	104.80	-19.08	-78.86	82.12	74.01	8.10	10.135	
2,000.00	1,999.84	1,990.74	1,988.57	4.31	4.25	103.11	-28.80	-88.51	95.14	86.67	8.47	11.231	
2,100.00	2,099.45	2,089.76	2,086.64	4.49	4.49	103.55	-38.52	-98.16	108.98	100.12	8.86	12.300	
2,200.00	2,198.70	2,188.57	2,184.50	4.69	4.74	105.39	-48.23	-107.79	123.72	114.45	9.28	13.339	
2,256.73	2,254.80	2,244.48	2,239.87	4.81	4.88	106.87	-53.72	-113.24	132.59	123.07	9.53	13.920	
2,300.00	2,297.52	2,287.09	2,282.06	4.91	5.00	108.15	-57.90	-117.39	139.55	129.83	9.72	14.357	
2,400.00	2,396.25	2,385.54	2,379.57	5.14	5.26	110.67	-67.57	-126.99	155.86	145.67	10.19	15.298	
2,500.00	2,494.98	2,483.99	2,477.07	5.39	5.54	112.72	-77.24	-136.59	172.41	161.73	10.67	16.151	
2,600.00	2,593.71	2,582.44	2,574.58	5.66	5.82	114.40	-86.90	-146.19	189.13	177.95	11.18	16.921	
2,700.00	2,692.45	2,680.89	2,672.08	5.93	6.10	115.81	-96.57	-155.78	205.99	194.29	11.69	17.615	
2,800.00	2,791.18	2,779.35	2,769.59	6.22	6.40	117.01	-106.24	-165.38	222.94	210.72	12.22	18.241	
2,900.00	2,889.91	2,877.80	2,867.09	6.51	6.69	118.04	-115.91	-174.98	239.99	227.22	12.76	18.806	
3,000.00	2,988.64	2,976.25	2,964.60	6.81	6.99	118.93	-125.58	-184.58	257.09	243.78	13.31	19.317	
3,100.00	3,087.37	3,074.70	3,062.11	7.12	7.29	119.71	-135.25	-194.17	274.25	260.39	13.87	19.780	
3,200.00	3,186.11	3,173.16	3,159.61	7.43	7.60	120.40	-144.92	-203.77	291.45	277.03	14.43	20.201	
3,300.00	3,284.84	3,271.61	3,257.12	7.75	7.90	121.01	-154.58	-213.37	308.69	293.70	15.00	20.584	
3,400.00	3,383.57	3,370.06	3,354.62	8.08	8.21	121.56	-164.25	-222.97	325.96	310.39	15.57	20.934	
3,500.00	3,482.30	3,468.51	3,452.13	8.40	8.53	122.05	-173.92	-232.56	343.26	327.11	16.15	21.254	
3,600.00	3,581.03	3,566.97	3,549.63	8.73	8.84	122.49	-183.59	-242.16	360.58	343.84	16.73	21.548	
3,700.00	3,679.76	3,665.42	3,647.14	9.07	9.15	122.90	-193.26	-251.76	377.91	360.59	17.32	21.818	
3,800.00	3,778.50	3,763.87	3,744.64	9.40	9.47	123.27	-202.93	-261.36	395.27	377.36	17.91	22.068	
3,900.00	3,877.23	3,862.32	3,842.15	9.74	9.79	123.61	-212.59	-270.95	412.64	394.13	18.51	22.298	
4,000.00	3,975.96	3,960.77	3,939.65	10.08	10.11	123.92	-222.26	-280.55	430.02	410.92	19.10	22.511	
4,100.00	4,074.69	4,059.23	4,037.16	10.42	10.43	124.20	-231.93	-290.15	447.41	427.71	19.70	22.709	
4,200.00	4,173.42	4,157.68	4,134.66	10.77	10.75	124.47	-241.60	-299.74	464.81	444.51	20.30	22.893	
4,300.00	4,272.16	4,256.13	4,232.17	11.12	11.07	124.71	-251.27	-309.34	482.22	461.32	20.91	23.065	
4,400.00	4,370.89	4,354.58	4,329.67	11.46	11.39	124.94	-260.94	-318.94	499.64	478.13	21.51	23.225	
4,500.00	4,469.62	4,453.04	4,427.18	11.81	11.72	125.15	-270.61	-328.54	517.07	494.95	22.12	23.375	
4,600.00	4,568.35	4,551.49	4,524.68	12.16	12.04	125.35	-280.27	-338.13	534.50	511.77	22.73	23.515	
4,700.00	4,667.08	4,649.94	4,622.19	12.51	12.37	125.54	-289.94	-347.73	551.94	528.60	23.34	23.647	
4,800.00	4,765.81	4,748.39	4,719.69	12.87	12.69	125.72	-299.61	-357.33	569.39	545.43	23.95	23.771	
4,900.00	4,864.55	4,846.84	4,817.20	13.22	13.02	125.88	-309.28	-366.93	586.84	562.27	24.57	23.888	
5,000.00	4,963.28	4,945.30	4,914.70	13.57	13.34	126.04	-318.95	-376.52	604.29	579.11	25.18	23.998	

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



SB Directional Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well Goonch Fed Com 04 232H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB @ 3041.00usft
Reference Site:	SEC. 04-T23S-R28E	MD Reference:	RKB @ 3041.00usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Goonch Fed Com 04 232H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 2	Offset TVD Reference:	Offset Datum

Offset Design: SEC. 04-T23S-R28E - Goonch Fed Com 04 221H - Wellbore #1 - Plan 2													Offset Site Error:	0.00 usft	
Survey Program:		0-MWD		Offset		Semi Major Axis		Offset Wellbore Centre		Rule Assigned:				Offset Well Error:	0.50 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Distance Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning		
5,100.00	5,062.01	5,043.75	5,012.21	13.93	13.67	126.18	-328.62	-386.12	621.75	595.95	25.80	24.102			
5,200.00	5,160.74	5,142.20	5,109.71	14.28	14.00	126.32	-338.28	-395.72	639.21	612.80	26.41	24.200			
5,300.00	5,259.47	5,240.65	5,207.22	14.64	14.32	126.45	-347.95	-405.32	656.67	629.64	27.03	24.293			
5,400.00	5,358.21	5,339.11	5,304.72	15.00	14.65	126.58	-357.62	-414.91	674.14	646.49	27.65	24.381			
5,500.00	5,456.94	5,437.56	5,402.23	15.36	14.98	126.70	-367.29	-424.51	691.61	663.34	28.27	24.464			
5,600.00	5,555.67	5,536.01	5,499.73	15.71	15.31	126.81	-376.96	-434.11	709.09	680.20	28.89	24.544			
5,700.00	5,654.40	5,634.46	5,597.24	16.07	15.64	126.91	-386.63	-443.70	726.56	697.05	29.51	24.619			
5,800.00	5,753.13	5,732.91	5,694.74	16.43	15.97	127.02	-396.30	-453.30	744.04	713.91	30.13	24.691			
5,900.00	5,851.86	5,831.37	5,792.25	16.79	16.30	127.11	-405.96	-462.90	761.52	730.77	30.76	24.760			
6,000.00	5,950.60	5,929.82	5,889.75	17.15	16.63	127.21	-415.63	-472.50	779.00	747.63	31.38	24.825			
6,100.00	6,049.33	6,028.27	5,987.26	17.51	16.96	127.30	-425.30	-482.09	796.49	764.49	32.00	24.888			
6,200.00	6,148.06	6,126.72	6,084.76	17.87	17.29	127.38	-434.97	-491.69	813.98	781.35	32.63	24.947			
6,300.00	6,246.79	6,225.18	6,182.27	18.24	17.62	127.46	-444.64	-501.29	831.46	798.21	33.25	25.004			
6,400.00	6,345.52	6,323.63	6,279.78	18.60	17.95	127.54	-454.31	-510.89	848.95	815.08	33.88	25.059			
6,500.00	6,444.26	6,422.08	6,377.28	18.96	18.28	127.61	-463.97	-520.48	866.44	831.94	34.50	25.111			
6,600.00	6,542.99	6,520.53	6,474.79	19.32	18.61	127.69	-473.64	-530.08	883.94	848.81	35.13	25.162			
6,700.00	6,641.72	6,618.98	6,572.29	19.69	18.94	127.76	-483.31	-539.68	901.43	865.67	35.76	25.210			
6,800.00	6,740.45	6,717.44	6,669.80	20.05	19.27	127.82	-492.98	-549.28	918.93	882.54	36.38	25.256			
6,900.00	6,839.18	6,815.89	6,767.30	20.41	19.60	127.89	-502.65	-558.87	936.42	899.41	37.01	25.300			
7,000.00	6,937.91	6,914.34	6,864.81	20.78	19.94	127.95	-512.32	-568.47	953.92	916.28	37.64	25.343			
7,100.00	7,036.65	7,012.79	6,962.31	21.14	20.27	128.01	-521.99	-578.07	971.42	933.15	38.27	25.384			
7,200.00	7,135.38	7,111.25	7,059.82	21.50	20.60	128.06	-531.65	-587.67	988.92	950.02	38.90	25.424			
7,300.00	7,234.11	7,209.70	7,157.32	21.87	20.93	128.12	-541.32	-597.26	1,006.42	966.89	39.53	25.462			
7,400.00	7,332.84	7,308.15	7,254.83	22.23	21.26	128.17	-550.99	-606.86	1,023.92	983.76	40.16	25.499			
7,500.00	7,431.57	7,406.60	7,352.33	22.60	21.60	128.23	-560.66	-616.46	1,041.42	1,000.64	40.79	25.534			
7,600.00	7,530.31	7,505.05	7,449.84	22.96	21.93	128.28	-570.33	-626.05	1,058.92	1,017.51	41.42	25.569			
7,700.00	7,629.04	7,603.51	7,547.34	23.33	22.26	128.32	-580.00	-635.65	1,076.43	1,034.38	42.05	25.602			
7,800.00	7,727.77	7,701.96	7,644.85	23.69	22.59	128.37	-589.66	-645.25	1,093.93	1,051.25	42.68	25.633			
7,900.00	7,826.50	7,800.41	7,742.35	24.06	22.93	128.42	-599.33	-654.85	1,111.44	1,068.13	43.31	25.664			
8,000.00	7,925.23	7,898.86	7,839.86	24.42	23.26	128.46	-609.00	-664.44	1,128.94	1,085.00	43.94	25.694			
8,100.00	8,023.96	7,997.32	7,937.36	24.79	23.59	128.50	-618.67	-674.04	1,146.45	1,101.88	44.57	25.723			
8,200.00	8,122.70	8,095.77	8,034.87	25.15	23.92	128.54	-628.34	-683.64	1,163.95	1,118.75	45.20	25.751			
8,300.00	8,221.43	8,194.22	8,132.37	25.52	24.26	128.58	-638.01	-693.24	1,181.46	1,135.63	45.83	25.778			
8,400.00	8,320.16	8,292.67	8,229.88	25.88	24.59	128.62	-647.68	-702.83	1,198.97	1,152.50	46.46	25.804			
8,500.00	8,418.89	8,391.12	8,327.38	26.25	24.92	128.66	-657.34	-712.43	1,216.48	1,169.38	47.10	25.830			
8,600.00	8,517.62	8,509.67	8,444.96	26.61	25.28	128.76	-668.08	-723.09	1,233.45	1,185.65	47.80	25.805			
8,700.00	8,616.36	8,638.68	8,573.47	26.98	25.54	129.06	-675.97	-730.92	1,248.16	1,199.74	48.42	25.778			
8,800.00	8,715.09	8,767.86	8,702.53	27.35	25.76	129.59	-679.75	-734.67	1,260.51	1,211.53	48.98	25.737			
8,900.00	8,813.82	8,879.15	8,813.82	27.71	25.92	130.19	-680.10	-735.02	1,270.97	1,221.51	49.46	25.697			
9,000.00	8,912.55	8,971.37	8,906.04	28.08	26.06	130.69	-680.10	-735.02	1,281.37	1,231.47	49.90	25.680			
9,100.00	9,011.28	9,050.00	8,984.42	28.45	26.13	131.35	-674.72	-734.87	1,293.30	1,243.06	50.24	25.741			
9,110.09	9,021.24	9,050.00	8,984.42	28.48	26.13	131.35	-674.72	-734.87	1,294.61	1,244.35	50.26	25.757			
9,200.00	9,110.22	9,100.00	9,033.59	28.76	26.14	132.16	-665.73	-734.61	1,307.06	1,256.65	50.41	25.930			
9,300.00	9,209.61	9,162.62	9,093.76	29.00	26.10	133.33	-648.49	-734.11	1,321.68	1,271.26	50.42	26.213			
9,400.00	9,309.32	9,217.08	9,144.29	29.20	26.04	134.53	-628.24	-733.53	1,337.42	1,287.12	50.31	26.586			
9,500.00	9,409.23	9,267.42	9,189.10	29.36	25.96	135.78	-605.33	-732.87	1,354.55	1,304.48	50.07	27.052			
9,566.82	9,476.04	9,300.00	9,216.95	29.46	25.90	-70.79	-588.45	-732.39	1,366.88	1,317.02	49.87	27.411			
9,600.00	9,509.22	9,313.76	9,228.41	29.51	25.87	-70.48	-580.85	-732.17	1,373.43	1,323.69	49.74	27.611			
9,700.00	9,609.22	9,350.00	9,257.71	29.64	25.78	-69.62	-559.53	-731.56	1,396.09	1,346.79	49.30	28.318			
9,716.82	9,626.04	9,350.00	9,257.71	29.66	25.78	-69.62	-559.53	-731.56	1,400.42	1,351.21	49.21	28.458			
9,750.00	9,659.20	9,375.26	9,277.30	29.69	25.71	-69.71	-543.60	-731.10	1,408.75	1,359.70	49.05	28.721			
9,800.00	9,708.93	9,400.00	9,295.79	29.71	25.65	-67.96	-527.17	-730.63	1,421.17	1,372.41	48.76	29.145			

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



SB Directional Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well Goonch Fed Com 04 232H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB @ 3041.00usft
Reference Site:	SEC. 04-T23S-R28E	MD Reference:	RKB @ 3041.00usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Goonch Fed Com 04 232H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 2	Offset TVD Reference:	Offset Datum

Offset Design: SEC. 04-T23S-R28E - Goonch Fed Com 04 221H - Wellbore #1 - Plan 2													Offset Site Error: 0.00 usft
Survey Program: 0-MWD													Offset Well Error: 0.50 usft
Rule Assigned:													
Measured Depth (usft)	Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
							+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
9,850.00	9,758.03	9,415.10	9,306.72	29.70	25.60	-66.53	-516.76	-730.33	1,433.05	1,384.62	48.43	29.590	
9,900.00	9,806.12	9,435.34	9,320.94	29.65	25.54	-65.10	-502.36	-729.92	1,444.30	1,396.23	48.07	30.043	
9,950.00	9,852.84	9,450.00	9,330.91	29.56	25.50	-63.89	-491.62	-729.61	1,454.81	1,407.12	47.69	30.506	
10,000.00	9,897.83	9,476.33	9,348.12	29.44	25.41	-62.63	-471.71	-729.04	1,464.40	1,417.10	47.30	30.960	
10,050.00	9,940.76	9,500.00	9,362.80	29.30	25.34	-61.56	-453.14	-728.50	1,473.05	1,426.15	46.90	31.410	
10,100.00	9,981.29	9,517.83	9,373.34	29.12	25.28	-60.71	-438.77	-728.09	1,480.63	1,434.14	46.48	31.852	
10,150.00	10,019.12	9,550.00	9,391.21	28.93	25.17	-59.87	-412.04	-727.32	1,487.18	1,441.09	46.09	32.268	
10,200.00	10,053.95	9,550.00	9,391.21	28.72	25.17	-59.42	-412.04	-727.32	1,492.40	1,446.73	45.67	32.675	
10,250.00	10,085.53	9,580.72	9,406.84	28.49	25.07	-58.90	-385.61	-726.56	1,496.34	1,451.03	45.31	33.027	
10,300.00	10,113.61	9,600.00	9,415.93	28.25	25.00	-58.60	-368.61	-726.08	1,499.07	1,454.12	44.95	33.349	
10,450.00	10,174.88	9,665.04	9,442.25	27.52	24.77	-58.55	-309.20	-724.37	1,499.38	1,455.27	44.10	33.997	
10,500.00	10,187.13	9,700.00	9,453.56	27.29	24.66	-58.88	-276.14	-723.42	1,497.00	1,453.09	43.91	34.093	
10,550.00	10,195.11	9,700.00	9,453.56	27.06	24.66	-59.22	-276.14	-723.42	1,493.07	1,449.31	43.76	34.119	
10,600.00	10,198.75	9,728.12	9,461.18	26.84	24.56	-59.84	-249.09	-722.64	1,487.97	1,444.29	43.67	34.070	
10,616.82	10,199.00	9,735.16	9,462.88	26.76	24.54	-60.06	-242.25	-722.45	1,485.99	1,442.33	43.66	34.039	
10,700.00	10,199.00	9,770.45	9,470.13	26.44	24.42	-60.30	-207.73	-721.46	1,477.21	1,433.60	43.61	33.870	
10,800.00	10,199.00	9,800.00	9,474.56	26.12	24.32	-60.45	-178.54	-720.62	1,470.34	1,426.67	43.66	33.675	
10,900.00	10,199.00	9,858.03	9,478.84	25.89	24.14	-60.60	-120.72	-718.96	1,466.98	1,423.16	43.82	33.476	
11,000.00	10,199.00	9,941.25	9,479.00	25.77	23.91	-60.60	-37.53	-716.57	1,466.64	1,422.52	44.13	33.236	
11,100.00	10,199.00	10,041.25	9,479.00	25.82	23.68	-60.60	62.43	-713.70	1,466.48	1,421.83	44.65	32.847	
11,200.00	10,199.00	10,141.25	9,479.00	26.10	23.56	-60.59	162.39	-710.83	1,466.32	1,420.93	45.39	32.303	
11,300.00	10,199.00	10,241.25	9,479.00	26.62	23.77	-60.59	262.35	-707.96	1,466.15	1,419.80	46.36	31.627	
11,400.00	10,199.00	10,341.25	9,479.00	27.29	24.44	-60.58	362.31	-705.09	1,465.99	1,418.47	47.52	30.848	
11,500.00	10,199.00	10,441.25	9,479.00	28.10	25.25	-60.58	462.27	-702.22	1,465.83	1,416.95	48.88	29.990	
11,600.00	10,199.00	10,541.25	9,479.00	28.99	26.16	-60.58	562.22	-699.35	1,465.67	1,415.26	50.40	29.078	
11,700.00	10,199.00	10,641.25	9,479.00	29.98	27.15	-60.57	662.18	-696.47	1,465.50	1,413.41	52.09	28.134	
11,800.00	10,199.00	10,741.25	9,479.00	31.03	28.22	-60.57	762.14	-693.60	1,465.34	1,411.42	53.92	27.176	
11,900.00	10,199.00	10,841.25	9,479.00	32.15	29.35	-60.57	862.10	-690.73	1,465.18	1,409.30	55.88	26.220	
12,000.00	10,199.00	10,941.25	9,479.00	33.32	30.54	-60.56	962.06	-687.86	1,465.01	1,407.06	57.95	25.279	
12,100.00	10,199.00	11,041.25	9,479.00	34.55	31.79	-60.56	1,062.02	-684.99	1,464.85	1,404.72	60.13	24.360	
12,200.00	10,199.00	11,141.25	9,479.00	35.83	33.08	-60.56	1,161.98	-682.12	1,464.69	1,402.28	62.40	23.471	
12,300.00	10,199.00	11,241.25	9,479.00	37.15	34.42	-60.55	1,261.94	-679.25	1,464.52	1,399.76	64.76	22.615	
12,400.00	10,199.00	11,341.25	9,479.00	38.51	35.80	-60.55	1,361.89	-676.38	1,464.36	1,397.17	67.19	21.794	
12,500.00	10,199.00	11,441.25	9,479.00	39.90	37.22	-60.55	1,461.85	-673.51	1,464.20	1,394.51	69.69	21.011	
12,600.00	10,199.00	11,541.25	9,479.00	41.32	38.66	-60.54	1,561.81	-670.64	1,464.03	1,391.79	72.24	20.266	
12,700.00	10,199.00	11,641.25	9,479.00	42.78	40.14	-60.54	1,661.77	-667.77	1,463.87	1,389.02	74.85	19.557	
12,800.00	10,199.00	11,741.25	9,479.00	44.26	41.64	-60.53	1,761.73	-664.90	1,463.71	1,386.20	77.51	18.884	
12,900.00	10,199.00	11,841.25	9,479.00	45.76	43.16	-60.53	1,861.69	-662.03	1,463.55	1,383.33	80.21	18.246	
13,000.00	10,199.00	11,941.25	9,479.00	47.28	44.71	-60.53	1,961.65	-659.16	1,463.38	1,380.43	82.95	17.641	
13,100.00	10,199.00	12,041.25	9,479.00	48.83	46.27	-60.52	2,061.60	-656.29	1,463.22	1,377.49	85.73	17.068	
13,200.00	10,199.00	12,141.25	9,479.00	50.39	47.86	-60.52	2,161.56	-653.42	1,463.06	1,374.52	88.54	16.525	
13,300.00	10,199.00	12,241.25	9,479.00	51.97	49.46	-60.52	2,261.52	-650.55	1,462.89	1,371.52	91.37	16.010	
13,400.00	10,199.00	12,341.25	9,479.00	53.56	51.07	-60.51	2,361.48	-647.68	1,462.73	1,368.49	94.24	15.522	
13,500.00	10,199.00	12,441.25	9,479.00	55.17	52.69	-60.51	2,461.44	-644.81	1,462.57	1,365.44	97.12	15.059	
13,600.00	10,199.00	12,541.25	9,479.00	56.78	54.33	-60.51	2,561.40	-641.94	1,462.40	1,362.37	100.03	14.619	
13,700.00	10,199.00	12,641.25	9,479.00	58.41	55.98	-60.50	2,661.36	-639.07	1,462.24	1,359.28	102.96	14.202	
13,800.00	10,199.00	12,741.25	9,479.00	60.05	57.64	-60.50	2,761.31	-636.20	1,462.08	1,356.17	105.91	13.805	
13,900.00	10,199.00	12,841.25	9,479.00	61.71	59.30	-60.49	2,861.27	-633.33	1,461.92	1,353.04	108.87	13.428	
14,000.00	10,199.00	12,941.25	9,479.00	63.37	60.98	-60.49	2,961.23	-630.46	1,461.75	1,349.90	111.85	13.069	
14,100.00	10,199.00	13,041.25	9,479.00	65.03	62.66	-60.49	3,061.19	-627.58	1,461.59	1,346.74	114.85	12.727	
14,200.00	10,199.00	13,141.25	9,479.00	66.71	64.35	-60.48	3,161.15	-624.71	1,461.43	1,343.57	117.85	12.400	
14,300.00	10,199.00	13,241.25	9,479.00	68.39	66.05	-60.48	3,261.11	-621.84	1,461.26	1,340.39	120.87	12.089	

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



SB Directional

Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well Goonch Fed Com 04 232H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB @ 3041.00usft
Reference Site:	SEC. 04-T23S-R28E	MD Reference:	RKB @ 3041.00usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Goonch Fed Com 04 232H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 2	Offset TVD Reference:	Offset Datum

Offset Design: SEC. 04-T23S-R28E - Goonch Fed Com 04 221H - Wellbore #1 - Plan 2													Offset Site Error: 0.00 usft
Survey Program: 0-MWD													Offset Well Error: 0.50 usft
Reference	Offset	Semi Major Axis		Offset Wellbore Centre		Distance			Rule Assigned:		Warning		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
14,400.00	10,199.00	13,341.24	9,479.00	70.08	67.75	-60.48	3,361.07	-618.97	1,461.10	1,337.20	123.90	11.792	
14,500.00	10,199.00	13,441.24	9,479.00	71.78	69.46	-60.47	3,461.02	-616.10	1,460.94	1,333.99	126.94	11.508	
14,600.00	10,199.00	13,541.24	9,479.00	73.48	71.18	-60.47	3,560.98	-613.23	1,460.77	1,330.78	130.00	11.237	
14,700.00	10,199.00	13,641.24	9,479.00	75.19	72.90	-60.47	3,660.94	-610.36	1,460.61	1,327.56	133.06	10.977	
14,800.00	10,199.00	13,741.24	9,479.00	76.90	74.62	-60.46	3,760.90	-607.49	1,460.45	1,324.32	136.12	10.729	
14,900.00	10,199.00	13,841.24	9,479.00	78.62	76.35	-60.46	3,860.86	-604.62	1,460.29	1,321.09	139.20	10.491	
15,000.00	10,199.00	13,941.24	9,479.00	80.34	78.08	-60.45	3,960.82	-601.75	1,460.12	1,317.84	142.28	10.262	
15,100.00	10,199.00	14,041.24	9,479.00	82.06	79.82	-60.45	4,060.78	-598.88	1,459.96	1,314.59	145.37	10.043	
15,200.00	10,199.00	14,141.24	9,479.00	83.79	81.56	-60.45	4,160.74	-596.01	1,459.80	1,311.33	148.47	9.832	
15,210.40	10,199.00	14,149.25	9,479.00	83.97	81.70	-60.45	4,168.74	-595.78	1,459.78	1,311.02	148.76	9.813	
15,245.41	10,199.00	14,149.25	9,479.00	84.58	81.70	-60.45	4,168.74	-595.78	1,460.20	1,310.82	149.38	9.775	

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



SB Directional Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well Goonch Fed Com 04 232H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB @ 3041.00usft
Reference Site:	SEC. 04-T23S-R28E	MD Reference:	RKB @ 3041.00usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Goonch Fed Com 04 232H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 2	Offset TVD Reference:	Offset Datum

Offset Design: SEC. 04-T23S-R28E - Goonch Fed Com 04 231H - Wellbore #1 - Plan 2												Offset Site Error:	0.00 usft
Survey Program: 0-MWD												Offset Well Error:	0.50 usft
Rule Assigned:												Warning	
Measured Depth (usft)	Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.00	0.00	0.00	0.00	0.50	0.50	-90.10	-0.07	-40.02	40.02				
100.00	100.00	100.00	100.00	0.51	0.51	-90.10	-0.07	-40.02	40.02	39.01	1.01	39.463	
200.00	200.00	200.00	200.00	0.59	0.59	-90.10	-0.07	-40.02	40.02	38.84	1.18	34.042	
300.00	300.00	300.00	300.00	0.73	0.73	-90.10	-0.07	-40.02	40.02	38.56	1.46	27.358	
400.00	400.00	400.00	400.00	0.91	0.91	-90.10	-0.07	-40.02	40.02	38.20	1.82	22.024	
500.00	500.00	500.00	500.00	1.10	1.10	-90.10	-0.07	-40.02	40.02	37.81	2.21	18.139	
600.00	600.00	600.00	600.00	1.31	1.31	-90.10	-0.07	-40.02	40.02	37.41	2.61	15.304	
700.00	700.00	700.00	700.00	1.52	1.52	-90.10	-0.07	-40.02	40.02	36.98	3.04	13.185	
800.00	800.00	800.00	800.00	1.73	1.73	-90.10	-0.07	-40.02	40.02	36.56	3.46	11.557	
900.00	900.00	900.00	900.00	1.95	1.95	-90.10	-0.07	-40.02	40.02	36.12	3.90	10.274	
1,000.00	1,000.00	1,000.00	1,000.00	2.17	2.17	-90.10	-0.07	-40.02	40.02	35.69	4.33	9.240	
1,100.00	1,100.00	1,100.00	1,100.00	2.38	2.38	-90.10	-0.07	-40.02	40.02	35.25	4.77	8.390	
1,200.00	1,200.00	1,200.00	1,200.00	2.61	2.61	-90.10	-0.07	-40.02	40.02	34.81	5.21	7.681	
1,300.00	1,300.00	1,300.00	1,300.00	2.83	2.83	-90.10	-0.07	-40.02	40.02	34.37	5.65	7.081	
1,400.00	1,400.00	1,400.00	1,400.00	3.05	3.05	-90.10	-0.07	-40.02	40.02	33.92	6.10	6.566	
1,500.00	1,500.00	1,500.00	1,500.00	3.27	3.27	-90.10	-0.07	-40.02	40.02	33.48	6.54	6.120	
1,600.00	1,600.00	1,600.00	1,600.00	3.49	3.49	-90.10	-0.07	-40.02	40.02	33.04	6.98	5.731	
1,700.00	1,700.00	1,700.00	1,700.00	3.71	3.71	-90.10	-0.07	-40.02	40.02	32.59	7.43	5.387	
1,800.00	1,800.00	1,800.00	1,800.00	3.94	3.94	-90.10	-0.07	-40.02	40.02	32.15	7.87	5.082 CC, ES	
1,900.00	1,899.98	1,899.98	1,899.98	4.13	4.16	119.51	-0.07	-40.02	40.85	32.56	8.29	4.926 SF	
2,000.00	1,999.84	1,999.84	1,999.84	4.31	4.38	125.44	-0.07	-40.02	43.67	34.98	8.69	5.026	
2,100.00	2,099.45	2,099.01	2,098.99	4.49	4.58	131.68	-1.55	-40.88	49.68	40.61	9.06	5.481	
2,200.00	2,198.70	2,198.03	2,197.88	4.69	4.75	135.51	-5.99	-43.44	59.34	49.91	9.42	6.296	
2,256.73	2,254.80	2,254.08	2,253.75	4.81	4.85	136.75	-9.82	-45.65	66.31	56.67	9.64	6.880	
2,300.00	2,297.52	2,296.78	2,296.25	4.91	4.93	137.24	-13.37	-47.70	72.09	62.28	9.80	7.353	
2,400.00	2,396.25	2,395.35	2,394.09	5.14	5.12	136.51	-23.65	-53.64	85.87	75.66	10.20	8.415	
2,500.00	2,494.98	2,493.63	2,491.20	5.39	5.33	134.07	-36.79	-61.23	100.36	89.73	10.63	9.439	
2,600.00	2,593.71	2,592.39	2,588.55	5.66	5.56	131.57	-51.19	-69.55	115.35	104.25	11.09	10.397	
2,700.00	2,692.45	2,691.15	2,685.90	5.93	5.80	129.64	-65.58	-77.87	130.51	118.92	11.58	11.270	
2,800.00	2,791.18	2,789.91	2,783.25	6.22	6.06	128.11	-79.98	-86.18	145.78	133.69	12.09	12.059	
2,900.00	2,889.91	2,888.67	2,880.60	6.51	6.33	126.87	-94.38	-94.50	161.13	148.51	12.62	12.773	
3,000.00	2,988.64	2,987.43	2,977.95	6.81	6.61	125.85	-108.77	-102.81	176.54	163.38	13.16	13.417	
3,100.00	3,087.37	3,086.19	3,075.30	7.12	6.90	124.99	-123.17	-111.13	192.00	178.29	13.72	13.998	
3,200.00	3,186.11	3,184.95	3,172.65	7.43	7.20	124.27	-137.56	-119.45	207.50	193.21	14.29	14.524	
3,300.00	3,284.84	3,283.71	3,270.00	7.75	7.51	123.64	-151.96	-127.76	223.02	208.15	14.87	15.000	
3,400.00	3,383.57	3,382.47	3,367.35	8.08	7.82	123.09	-166.35	-136.08	238.57	223.11	15.46	15.432	
3,500.00	3,482.30	3,481.23	3,464.70	8.40	8.14	122.61	-180.75	-144.39	254.13	238.07	16.06	15.824	
3,600.00	3,581.03	3,579.99	3,562.06	8.73	8.46	122.19	-195.15	-152.71	269.71	253.05	16.67	16.182	
3,700.00	3,679.76	3,678.76	3,659.41	9.07	8.79	121.81	-209.54	-161.03	285.31	268.02	17.28	16.509	
3,800.00	3,778.50	3,777.52	3,756.76	9.40	9.12	121.47	-223.94	-169.34	300.91	283.01	17.90	16.808	
3,900.00	3,877.23	3,876.28	3,854.11	9.74	9.45	121.17	-238.33	-177.66	316.52	297.99	18.53	17.082	
4,000.00	3,975.96	3,975.04	3,951.46	10.08	9.79	120.89	-252.73	-185.97	332.15	312.98	19.16	17.334	
4,100.00	4,074.69	4,073.80	4,048.81	10.42	10.13	120.64	-267.13	-194.29	347.77	327.98	19.80	17.567	
4,200.00	4,173.42	4,172.56	4,146.16	10.77	10.47	120.41	-281.52	-202.61	363.41	342.97	20.44	17.782	
4,300.00	4,272.16	4,271.32	4,243.51	11.12	10.82	120.20	-295.92	-210.92	379.05	357.97	21.08	17.980	
4,400.00	4,370.89	4,370.08	4,340.86	11.46	11.16	120.00	-310.31	-219.24	394.69	372.96	21.73	18.165	
4,500.00	4,469.62	4,468.84	4,438.21	11.81	11.51	119.82	-324.71	-227.55	410.34	387.96	22.38	18.336	
4,600.00	4,568.35	4,567.60	4,535.56	12.16	11.86	119.66	-339.10	-235.87	425.99	402.96	23.03	18.496	
4,700.00	4,667.08	4,666.36	4,632.91	12.51	12.22	119.50	-353.50	-244.19	441.65	417.96	23.69	18.645	
4,800.00	4,765.81	4,765.12	4,730.27	12.87	12.57	119.36	-367.90	-252.50	457.30	432.96	24.35	18.784	
4,900.00	4,864.55	4,863.88	4,827.62	13.22	12.93	119.22	-382.29	-260.82	472.96	447.96	25.01	18.914	
5,000.00	4,963.28	4,962.64	4,924.97	13.57	13.28	119.10	-396.69	-269.13	488.63	462.96	25.67	19.036	

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



SB Directional Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well Goonch Fed Com 04 232H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB @ 3041.00usft
Reference Site:	SEC. 04-T23S-R28E	MD Reference:	RKB @ 3041.00usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Goonch Fed Com 04 232H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 2	Offset TVD Reference:	Offset Datum

Offset Design: SEC. 04-T23S-R28E - Goonch Fed Com 04 231H - Wellbore #1 - Plan 2													Offset Site Error: 0.00 usft
Survey Program: 0-MWD													Offset Well Error: 0.50 usft
Rule Assigned:													
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference	Offset	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,100.00	5,062.01	5,061.40	5,022.32	13.93	13.64	118.98	-411.08	-277.45	504.29	477.96	26.33	19.151	
5,200.00	5,160.74	5,160.16	5,119.67	14.28	14.00	118.87	-425.48	-285.77	519.96	492.96	27.00	19.259	
5,300.00	5,259.47	5,258.92	5,217.02	14.64	14.36	118.76	-439.88	-294.08	535.63	507.96	27.67	19.361	
5,400.00	5,358.21	5,357.68	5,314.37	15.00	14.72	118.67	-454.27	-302.40	551.30	522.96	28.33	19.457	
5,500.00	5,456.94	5,456.44	5,411.72	15.36	15.08	118.57	-468.67	-310.71	566.97	537.97	29.01	19.547	
5,600.00	5,555.67	5,555.20	5,509.07	15.71	15.45	118.48	-483.06	-319.03	582.64	552.97	29.68	19.633	
5,700.00	5,654.40	5,653.96	5,606.42	16.07	15.81	118.40	-497.46	-327.35	598.32	567.97	30.35	19.714	
5,800.00	5,753.13	5,752.72	5,703.77	16.43	16.17	118.32	-511.85	-335.66	613.99	582.97	31.02	19.791	
5,900.00	5,851.86	5,851.48	5,801.12	16.79	16.54	118.25	-526.25	-343.98	629.67	597.97	31.70	19.864	
6,000.00	5,950.60	5,950.24	5,898.48	17.15	16.90	118.18	-540.65	-352.29	645.35	612.97	32.38	19.933	
6,100.00	6,049.33	6,049.00	5,995.83	17.51	17.27	118.11	-555.04	-360.61	661.03	627.98	33.05	19.999	
6,200.00	6,148.06	6,147.76	6,093.18	17.87	17.63	118.04	-569.44	-368.93	676.71	642.98	33.73	20.062	
6,300.00	6,246.79	6,246.52	6,190.53	18.24	18.00	117.98	-583.83	-377.24	692.39	657.98	34.41	20.122	
6,400.00	6,345.52	6,345.28	6,287.88	18.60	18.37	117.92	-598.23	-385.56	708.07	672.98	35.09	20.179	
6,500.00	6,444.26	6,444.04	6,385.23	18.96	18.74	117.86	-612.62	-393.87	723.75	687.98	35.77	20.234	
6,600.00	6,542.99	6,542.80	6,482.58	19.32	19.10	117.81	-627.02	-402.19	739.43	702.98	36.45	20.286	
6,700.00	6,641.72	6,641.56	6,579.93	19.69	19.47	117.76	-641.42	-410.51	755.12	717.99	37.13	20.336	
6,800.00	6,740.45	6,740.32	6,677.28	20.05	19.84	117.71	-655.81	-418.82	770.80	732.99	37.81	20.384	
6,900.00	6,839.18	6,839.08	6,774.63	20.41	20.21	117.66	-670.21	-427.14	786.49	747.99	38.50	20.430	
7,000.00	6,937.91	6,937.84	6,871.98	20.78	20.58	117.61	-684.60	-435.45	802.17	762.99	39.18	20.474	
7,100.00	7,036.65	7,036.60	6,969.34	21.14	20.95	117.57	-699.00	-443.77	817.86	777.99	39.86	20.516	
7,200.00	7,135.38	7,135.36	7,066.69	21.50	21.32	117.53	-713.40	-452.09	833.54	792.99	40.55	20.556	
7,300.00	7,234.11	7,234.12	7,164.04	21.87	21.69	117.49	-727.79	-460.40	849.23	807.99	41.23	20.595	
7,400.00	7,332.84	7,332.88	7,261.39	22.23	22.06	117.45	-742.19	-468.72	864.91	822.99	41.92	20.633	
7,500.00	7,431.57	7,431.64	7,358.74	22.60	22.43	117.41	-756.58	-477.03	880.60	838.00	42.61	20.669	
7,600.00	7,530.31	7,530.40	7,456.09	22.96	22.80	117.37	-770.98	-485.35	896.29	853.00	43.29	20.703	
7,700.00	7,629.04	7,629.17	7,553.44	23.33	23.17	117.34	-785.37	-493.67	911.98	868.00	43.98	20.737	
7,800.00	7,727.77	7,727.93	7,650.79	23.69	23.54	117.30	-799.77	-501.98	927.67	883.00	44.67	20.769	
7,900.00	7,826.50	7,826.69	7,748.14	24.06	23.92	117.27	-814.17	-510.30	943.35	898.00	45.35	20.800	
8,000.00	7,925.23	7,925.45	7,845.49	24.42	24.29	117.24	-828.56	-518.61	959.04	913.00	46.04	20.830	
8,100.00	8,023.96	8,024.21	7,942.84	24.79	24.66	117.20	-842.96	-526.93	974.73	928.00	46.73	20.859	
8,200.00	8,122.70	8,122.97	8,040.19	25.15	25.03	117.17	-857.35	-535.25	990.42	943.00	47.42	20.887	
8,300.00	8,221.43	8,221.73	8,137.55	25.52	25.40	117.15	-871.75	-543.56	1,006.11	958.00	48.11	20.914	
8,400.00	8,320.16	8,320.49	8,234.90	25.88	25.78	117.12	-886.15	-551.88	1,021.80	973.00	48.80	20.940	
8,500.00	8,418.89	8,419.25	8,332.25	26.25	26.15	117.09	-900.54	-560.20	1,037.49	988.00	49.49	20.965	
8,600.00	8,517.62	8,518.01	8,429.60	26.61	26.52	117.06	-914.94	-568.51	1,053.18	1,003.00	50.18	20.989	
8,700.00	8,616.36	8,616.77	8,526.95	26.98	26.90	117.04	-929.33	-576.83	1,068.87	1,018.00	50.87	21.013	
8,800.00	8,715.09	8,715.53	8,624.30	27.35	27.27	117.01	-943.73	-585.14	1,084.56	1,033.00	51.56	21.036	
8,900.00	8,813.82	8,814.29	8,721.65	27.71	27.64	116.99	-958.12	-593.46	1,100.25	1,048.00	52.25	21.058	
9,000.00	8,912.55	8,913.05	8,819.00	28.08	28.02	116.96	-972.52	-601.78	1,115.94	1,063.00	52.94	21.080	
9,100.00	9,011.28	9,011.81	8,916.35	28.45	28.39	116.94	-986.92	-610.09	1,131.63	1,078.00	53.63	21.101	
9,110.09	9,021.24	9,021.77	8,926.17	28.48	28.43	116.94	-988.37	-610.93	1,133.22	1,079.52	53.70	21.103	
9,200.00	9,110.22	9,122.05	9,025.11	28.76	28.76	117.10	-1,002.50	-619.09	1,146.47	1,092.16	54.31	21.110	
9,300.00	9,209.61	9,246.38	9,148.43	29.00	29.07	117.23	-1,016.19	-627.00	1,157.90	1,103.01	54.89	21.096	
9,400.00	9,309.32	9,371.47	9,273.07	29.20	29.33	117.34	-1,025.28	-632.25	1,165.58	1,110.20	55.37	21.049	
9,500.00	9,409.23	9,497.01	9,398.49	29.36	29.54	117.41	-1,029.65	-634.78	1,169.47	1,113.70	55.77	20.970	
9,566.82	9,476.04	9,574.56	9,476.04	29.46	29.66	-90.00	-1,030.07	-635.02	1,170.02	1,114.03	55.99	20.896	
9,600.00	9,509.22	9,607.74	9,509.22	29.51	29.70	-90.00	-1,030.07	-635.02	1,170.02	1,113.93	56.09	20.860	
9,613.70	9,522.92	9,621.44	9,522.92	29.53	29.72	-90.00	-1,030.07	-635.02	1,170.02	1,113.89	56.13	20.847	
9,700.00	9,609.22	9,705.86	9,607.34	29.64	29.83	-90.00	-1,030.04	-635.03	1,170.03	1,113.67	56.35	20.762	
9,716.82	9,626.04	9,718.80	9,620.28	29.66	29.84	-89.99	-1,029.75	-635.07	1,170.08	1,113.69	56.39	20.750	
9,750.00	9,659.20	9,750.00	9,651.41	29.69	29.87	-91.46	-1,027.87	-635.34	1,170.40	1,113.94	56.45	20.732	

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



SB Directional Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well Goonch Fed Com 04 232H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB @ 3041.00usft
Reference Site:	SEC. 04-T23S-R28E	MD Reference:	RKB @ 3041.00usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Goonch Fed Com 04 232H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 2	Offset TVD Reference:	Offset Datum

Offset Design: SEC. 04-T23S-R28E - Goonch Fed Com 04 231H - Wellbore #1 - Plan 2													Offset Site Error: 0.00 usft
Survey Program: 0-MWD													Offset Well Error: 0.50 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
9,800.00	9,708.93	9,782.70	9,683.88	29.71	29.88	-91.35	-1,024.09	-635.90	1,171.33	1,114.86	56.47	20.742	
9,850.00	9,758.03	9,821.07	9,721.64	29.70	29.87	-91.22	-1,017.32	-636.90	1,172.88	1,116.45	56.43	20.784	
9,900.00	9,806.12	9,859.46	9,758.85	29.65	29.85	-91.06	-1,008.05	-638.27	1,175.02	1,118.69	56.33	20.860	
9,950.00	9,852.84	9,900.00	9,797.38	29.56	29.80	-90.90	-995.60	-640.10	1,177.73	1,121.56	56.16	20.969	
10,000.00	9,897.83	9,936.36	9,831.10	29.44	29.74	-90.70	-982.15	-642.08	1,180.99	1,125.05	55.94	21.112	
10,050.00	9,940.76	9,974.94	9,865.85	29.30	29.66	-90.49	-965.60	-644.52	1,184.80	1,129.13	55.66	21.285	
10,100.00	9,981.29	10,013.64	9,899.49	29.12	29.56	-90.27	-946.69	-647.31	1,189.12	1,133.77	55.35	21.485	
10,150.00	10,019.12	10,050.00	9,929.86	28.93	29.45	-90.02	-926.91	-650.23	1,193.94	1,138.94	55.00	21.710	
10,200.00	10,053.95	10,091.57	9,962.93	28.72	29.31	-89.80	-902.00	-653.90	1,199.22	1,144.61	54.60	21.962	
10,250.00	10,085.53	10,130.88	9,992.44	28.49	29.17	-89.54	-876.32	-657.69	1,204.94	1,150.75	54.19	22.234	
10,300.00	10,113.61	10,170.48	10,020.29	28.25	29.01	-89.29	-848.48	-661.79	1,211.08	1,157.31	53.77	22.523	
10,350.00	10,137.99	10,210.42	10,046.33	28.01	28.84	-89.02	-818.54	-666.20	1,217.60	1,164.26	53.34	22.827	
10,400.00	10,158.46	10,250.00	10,069.98	27.77	28.67	-88.75	-787.15	-670.83	1,224.47	1,171.56	52.91	23.142	
10,450.00	10,174.88	10,291.53	10,092.38	27.52	28.48	-88.49	-752.56	-675.93	1,231.65	1,179.16	52.49	23.465	
10,500.00	10,187.13	10,332.84	10,112.08	27.29	28.28	-88.23	-716.65	-681.23	1,239.11	1,187.02	52.08	23.792	
10,550.00	10,195.11	10,374.74	10,129.32	27.06	28.09	-87.98	-678.87	-686.79	1,246.80	1,195.10	51.70	24.118	
10,600.00	10,198.75	10,417.33	10,143.92	26.84	27.89	-87.73	-639.31	-692.63	1,254.69	1,203.35	51.34	24.440	
10,616.82	10,199.00	10,431.82	10,148.21	26.76	27.82	-87.65	-625.61	-694.65	1,257.38	1,206.15	51.22	24.546	
10,700.00	10,199.00	10,720.98	10,174.00	26.44	26.48	-88.87	-340.40	-716.99	1,270.29	1,219.96	50.32	25.242	
10,800.00	10,199.00	10,820.98	10,174.00	26.12	26.09	-88.87	-240.43	-714.33	1,270.31	1,220.20	50.12	25.346	
10,900.00	10,199.00	10,920.98	10,174.00	25.89	25.76	-88.87	-140.47	-711.68	1,270.34	1,220.17	50.18	25.316	
11,000.00	10,199.00	11,020.98	10,174.00	25.77	25.49	-88.87	-40.50	-709.03	1,270.37	1,219.87	50.50	25.156	
11,100.00	10,199.00	11,120.98	10,174.00	25.82	25.42	-88.87	59.46	-706.37	1,270.40	1,219.33	51.08	24.872	
11,200.00	10,199.00	11,220.98	10,174.00	26.10	25.88	-88.87	159.43	-703.72	1,270.43	1,218.52	51.91	24.473	
11,300.00	10,199.00	11,320.98	10,174.00	26.62	26.56	-88.87	259.39	-701.07	1,270.46	1,217.49	52.98	23.981	
11,400.00	10,199.00	11,420.98	10,174.00	27.29	27.34	-88.87	359.36	-698.41	1,270.49	1,216.23	54.27	23.412	
11,500.00	10,199.00	11,520.98	10,174.00	28.10	28.20	-88.87	459.32	-695.76	1,270.52	1,214.76	55.77	22.783	
11,600.00	10,199.00	11,620.98	10,174.00	28.99	29.14	-88.87	559.29	-693.11	1,270.55	1,213.10	57.46	22.113	
11,700.00	10,199.00	11,720.98	10,174.00	29.98	30.14	-88.87	659.25	-690.45	1,270.58	1,211.26	59.32	21.418	
11,800.00	10,199.00	11,820.98	10,174.00	31.03	31.21	-88.87	759.22	-687.80	1,270.61	1,209.27	61.35	20.712	
11,900.00	10,199.00	11,920.98	10,174.00	32.15	32.34	-88.87	859.18	-685.15	1,270.64	1,207.13	63.52	20.005	
12,000.00	10,199.00	12,020.98	10,174.00	33.32	33.52	-88.87	959.15	-682.49	1,270.67	1,204.86	65.82	19.306	
12,100.00	10,199.00	12,120.98	10,174.00	34.55	34.75	-88.87	1,059.11	-679.84	1,270.70	1,202.47	68.23	18.623	
12,200.00	10,199.00	12,220.98	10,174.00	35.83	36.02	-88.87	1,159.07	-677.19	1,270.73	1,199.98	70.76	17.959	
12,300.00	10,199.00	12,320.98	10,174.00	37.15	37.34	-88.87	1,259.04	-674.53	1,270.76	1,197.39	73.37	17.320	
12,400.00	10,199.00	12,420.98	10,174.00	38.51	38.70	-88.87	1,359.00	-671.88	1,270.79	1,194.72	76.07	16.705	
12,500.00	10,199.00	12,520.98	10,174.00	39.90	40.09	-88.87	1,458.97	-669.23	1,270.82	1,191.98	78.85	16.118	
12,600.00	10,199.00	12,620.98	10,174.00	41.32	41.51	-88.87	1,558.93	-666.57	1,270.85	1,189.16	81.69	15.557	
12,700.00	10,199.00	12,720.98	10,174.00	42.78	42.95	-88.87	1,658.90	-663.92	1,270.88	1,186.29	84.59	15.023	
12,800.00	10,199.00	12,820.98	10,174.00	44.26	44.43	-88.87	1,758.86	-661.27	1,270.91	1,183.36	87.55	14.516	
12,900.00	10,199.00	12,920.98	10,174.00	45.76	45.93	-88.87	1,858.83	-658.61	1,270.94	1,180.38	90.56	14.034	
13,000.00	10,199.00	13,020.98	10,174.00	47.28	47.45	-88.87	1,958.79	-655.96	1,270.97	1,177.35	93.62	13.576	
13,100.00	10,199.00	13,120.98	10,174.00	48.83	48.98	-88.87	2,058.76	-653.31	1,271.00	1,174.29	96.71	13.142	
13,200.00	10,199.00	13,220.98	10,174.00	50.39	50.54	-88.87	2,158.72	-650.65	1,271.03	1,171.19	99.84	12.730	
13,300.00	10,199.00	13,320.98	10,174.00	51.97	52.11	-88.87	2,258.69	-648.00	1,271.06	1,168.05	103.01	12.339	
13,400.00	10,199.00	13,420.98	10,174.00	53.56	53.70	-88.87	2,358.65	-645.34	1,271.09	1,164.89	106.20	11.968	
13,500.00	10,199.00	13,520.98	10,174.00	55.17	55.30	-88.87	2,458.62	-642.69	1,271.12	1,161.69	109.43	11.616	
13,600.00	10,199.00	13,620.98	10,174.00	56.78	56.92	-88.87	2,558.58	-640.04	1,271.15	1,158.47	112.68	11.281	
13,700.00	10,199.00	13,720.98	10,174.00	58.41	58.54	-88.87	2,658.55	-637.38	1,271.18	1,155.23	115.95	10.963	
13,800.00	10,199.00	13,820.98	10,174.00	60.05	60.18	-88.87	2,758.51	-634.73	1,271.21	1,151.97	119.24	10.661	
13,900.00	10,199.00	13,920.98	10,174.00	61.71	61.83	-88.87	2,858.48	-632.08	1,271.24	1,148.69	122.56	10.373	
14,000.00	10,199.00	14,020.98	10,174.00	63.37	63.48	-88.87	2,958.44	-629.42	1,271.27	1,145.38	125.89	10.099	

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



SB Directional

Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well Goonch Fed Com 04 232H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB @ 3041.00usft
Reference Site:	SEC. 04-T23S-R28E	MD Reference:	RKB @ 3041.00usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Goonch Fed Com 04 232H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 2	Offset TVD Reference:	Offset Datum

Offset Design: SEC. 04-T23S-R28E - Goonch Fed Com 04 231H - Wellbore #1 - Plan 2													Offset Site Error: 0.00 usft
Survey Program: 0-MWD													Offset Well Error: 0.50 usft
Reference	Offset	Semi Major Axis		Offset Wellbore Centre		Distance		Rule Assigned:		Warning			
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
14,100.00	10,199.00	14,120.98	10,174.00	65.03	65.15	-88.87	3,058.41	-626.77	1,271.30	1,142.07	129.23	9.837	
14,200.00	10,199.00	14,220.98	10,174.00	66.71	66.82	-88.87	3,158.37	-624.12	1,271.33	1,138.73	132.60	9.588	
14,300.00	10,199.00	14,320.98	10,174.00	68.39	68.50	-88.87	3,258.34	-621.46	1,271.36	1,135.38	135.98	9.350	
14,400.00	10,199.00	14,420.98	10,174.00	70.08	70.19	-88.87	3,358.30	-618.81	1,271.39	1,132.02	139.37	9.123	
14,500.00	10,199.00	14,520.98	10,174.00	71.78	71.88	-88.87	3,458.26	-616.16	1,271.42	1,128.65	142.77	8.905	
14,600.00	10,199.00	14,620.98	10,174.00	73.48	73.58	-88.87	3,558.23	-613.50	1,271.45	1,125.27	146.18	8.698	
14,700.00	10,199.00	14,720.98	10,174.00	75.19	75.28	-88.87	3,658.19	-610.85	1,271.48	1,121.87	149.61	8.499	
14,800.00	10,199.00	14,820.98	10,174.00	76.90	76.99	-88.87	3,758.16	-608.20	1,271.51	1,118.47	153.04	8.308	
14,900.00	10,199.00	14,920.98	10,174.00	78.62	78.71	-88.87	3,858.12	-605.54	1,271.54	1,115.05	156.49	8.125	
15,000.00	10,199.00	15,020.98	10,174.00	80.34	80.42	-88.87	3,958.09	-602.89	1,271.57	1,111.63	159.94	7.950	
15,100.00	10,199.00	15,120.98	10,174.00	82.06	82.15	-88.87	4,058.05	-600.24	1,271.60	1,108.20	163.40	7.782	
15,200.00	10,199.00	15,220.98	10,174.00	83.79	83.88	-88.87	4,158.02	-597.58	1,271.63	1,104.76	166.87	7.620	
15,245.41	10,199.00	15,231.70	10,174.00	84.58	84.06	-88.87	4,168.74	-597.30	1,272.12	1,104.27	167.85	7.579	



SB Directional Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well Goonch Fed Com 04 232H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB @ 3041.00usft
Reference Site:	SEC. 04-T23S-R28E	MD Reference:	RKB @ 3041.00usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Goonch Fed Com 04 232H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 2	Offset TVD Reference:	Offset Datum

Offset Design: SEC. 04-T23S-R28E - Goonch Fed Com 0409 225H - Wellbore #1 - Plan 0												Offset Site Error:	0.00 usft
Survey Program: 0-MWD												Offset Well Error:	0.50 usft
Rule Assigned:												Warning	
Measured Depth (usft)	Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
9,100.00	9,011.28	14,791.60	9,716.00	28.45	94.87	-67.19	-996.11	1,850.89	1,499.32	1,388.12	111.20	13.483	
9,110.09	9,021.24	14,793.03	9,716.00	28.48	94.90	-67.12	-997.53	1,850.89	1,494.13	1,382.64	111.49	13.402	
9,200.00	9,110.22	14,804.46	9,716.00	28.76	95.10	-65.71	-1,008.96	1,850.89	1,450.63	1,336.65	113.98	12.727	
9,300.00	9,209.61	14,814.25	9,716.00	29.00	95.27	-64.44	-1,018.76	1,850.90	1,408.59	1,292.09	116.50	12.091	
9,400.00	9,309.32	14,820.96	9,716.00	29.20	95.39	-63.48	-1,025.47	1,850.90	1,373.93	1,255.23	118.70	11.575	
9,500.00	9,409.23	14,824.58	9,716.00	29.36	95.45	-62.83	-1,029.09	1,850.90	1,347.32	1,226.86	120.47	11.184	
9,566.82	9,476.04	14,825.27	9,716.00	29.46	95.46	89.99	-1,029.78	1,850.90	1,334.30	1,212.93	121.37	10.994	
9,600.00	9,509.22	14,825.27	9,716.00	29.51	95.46	89.99	-1,029.78	1,850.90	1,329.21	1,207.49	121.73	10.920	
9,700.00	9,609.22	14,825.27	9,716.00	29.64	95.46	89.99	-1,029.78	1,850.90	1,318.81	1,196.38	122.43	10.772	
9,716.82	9,626.04	14,825.27	9,716.00	29.66	95.46	89.99	-1,029.78	1,850.90	1,317.80	1,195.30	122.50	10.758	
9,750.00	9,659.20	14,824.31	9,716.00	29.69	95.45	88.55	-1,028.82	1,850.90	1,316.41	1,193.85	122.56	10.741	SF
9,792.64	9,701.64	14,820.26	9,716.00	29.71	95.38	88.44	-1,024.77	1,850.90	1,315.77	1,193.31	122.46	10.745	ES
9,800.00	9,708.93	14,819.24	9,716.00	29.71	95.36	88.39	-1,023.75	1,850.90	1,315.79	1,193.36	122.43	10.748	
9,850.00	9,758.03	14,809.87	9,716.00	29.70	95.19	87.88	-1,014.37	1,850.89	1,316.90	1,194.86	122.04	10.790	
9,900.00	9,806.12	14,796.25	9,716.00	29.65	94.95	87.04	-1,000.75	1,850.89	1,319.64	1,198.21	121.43	10.868	
9,950.00	9,852.84	14,778.49	9,716.00	29.56	94.64	85.89	-982.99	1,850.89	1,323.85	1,203.26	120.59	10.978	
10,000.00	9,897.83	14,756.73	9,716.00	29.44	94.26	84.50	-961.23	1,850.89	1,329.32	1,209.75	119.57	11.118	
10,050.00	9,940.76	14,731.13	9,716.00	29.30	93.81	82.90	-935.64	1,850.88	1,335.80	1,217.41	118.39	11.283	
10,100.00	9,981.29	14,701.89	9,716.00	29.12	93.30	81.16	-906.39	1,850.88	1,343.02	1,225.94	117.08	11.471	
10,150.00	10,019.12	14,669.23	9,716.00	28.93	92.73	79.34	-873.73	1,850.87	1,350.68	1,234.99	115.69	11.675	
10,200.00	10,053.95	14,633.39	9,716.00	28.72	92.10	77.51	-837.90	1,850.86	1,358.48	1,244.24	114.23	11.892	
10,250.00	10,085.53	14,594.66	9,716.00	28.49	91.42	75.74	-799.17	1,850.86	1,366.11	1,253.36	112.75	12.116	
10,300.00	10,113.61	14,553.33	9,716.00	28.25	90.70	74.08	-757.84	1,850.85	1,373.30	1,262.02	111.28	12.341	
10,350.00	10,137.99	14,509.70	9,716.00	28.01	89.94	72.58	-714.21	1,850.84	1,379.78	1,269.95	109.83	12.563	
10,400.00	10,158.46	14,464.12	9,716.00	27.77	89.14	71.30	-668.63	1,850.84	1,385.30	1,276.86	108.43	12.775	
10,450.00	10,174.88	14,416.93	9,716.00	27.52	88.32	70.26	-621.44	1,850.83	1,389.66	1,282.55	107.11	12.974	
10,500.00	10,187.13	14,368.49	9,716.00	27.29	87.47	69.50	-573.00	1,850.82	1,392.69	1,286.83	105.87	13.155	
10,550.00	10,195.11	14,319.16	9,716.00	27.06	86.62	69.03	-523.67	1,850.81	1,394.28	1,289.55	104.72	13.314	
10,600.00	10,198.75	14,269.33	9,716.00	26.84	85.75	68.87	-473.84	1,850.80	1,394.33	1,290.64	103.68	13.448	
10,616.82	10,199.00	14,252.52	9,716.00	26.76	85.46	68.88	-457.03	1,850.80	1,393.99	1,290.63	103.36	13.487	
10,700.00	10,199.00	14,169.37	9,716.00	26.44	84.01	68.85	-373.88	1,850.79	1,391.90	1,290.06	101.83	13.669	
10,800.00	10,199.00	14,069.40	9,716.00	26.12	82.28	68.81	-273.91	1,850.77	1,389.38	1,289.27	100.11	13.879	
10,900.00	10,199.00	13,969.44	9,716.00	25.89	80.56	68.77	-173.95	1,850.75	1,386.86	1,288.36	98.50	14.079	
11,000.00	10,199.00	13,869.48	9,716.00	25.77	78.84	68.73	-73.98	1,850.73	1,384.34	1,287.32	97.02	14.268	
11,100.00	10,199.00	13,769.51	9,716.00	25.82	77.12	68.69	25.98	1,850.72	1,381.83	1,286.16	95.66	14.445	
11,200.00	10,199.00	13,669.55	9,716.00	26.10	75.41	68.65	125.94	1,850.70	1,379.31	1,284.90	94.42	14.609	
11,300.00	10,199.00	13,569.59	9,716.00	26.62	73.70	68.60	225.91	1,850.68	1,376.80	1,283.52	93.28	14.760	
11,400.00	10,199.00	13,469.62	9,716.00	27.29	72.00	68.56	325.87	1,850.67	1,374.28	1,282.03	92.25	14.897	
11,500.00	10,199.00	13,369.66	9,716.00	28.10	70.31	68.52	425.83	1,850.65	1,371.77	1,280.46	91.32	15.022	
11,600.00	10,199.00	13,269.70	9,716.00	28.99	68.62	68.48	525.80	1,850.63	1,369.26	1,278.79	90.47	15.135	
11,700.00	10,199.00	13,169.73	9,716.00	29.98	66.94	68.44	625.76	1,850.62	1,366.75	1,277.03	89.71	15.235	
11,800.00	10,199.00	13,069.77	9,716.00	31.03	65.27	68.40	725.72	1,850.60	1,364.24	1,275.21	89.03	15.323	
11,900.00	10,199.00	12,969.81	9,716.00	32.15	63.61	68.36	825.69	1,850.58	1,361.73	1,273.31	88.42	15.401	
12,000.00	10,199.00	12,869.84	9,716.00	33.32	61.96	68.31	925.65	1,850.56	1,359.22	1,271.34	87.87	15.468	
12,100.00	10,199.00	12,769.88	9,716.00	34.55	60.31	68.27	1,025.61	1,850.55	1,356.71	1,269.32	87.39	15.525	
12,200.00	10,199.00	12,669.91	9,716.00	35.83	58.68	68.23	1,125.58	1,850.53	1,354.20	1,267.24	86.96	15.572	
12,300.00	10,199.00	12,569.95	9,716.00	37.15	57.06	68.19	1,225.54	1,850.51	1,351.69	1,265.11	86.59	15.611	
12,400.00	10,199.00	12,469.99	9,716.00	38.51	55.45	68.14	1,325.50	1,850.50	1,349.18	1,262.93	86.26	15.641	
12,500.00	10,199.00	12,370.02	9,716.00	39.90	53.86	68.10	1,425.47	1,850.48	1,346.68	1,260.70	85.98	15.663	
12,600.00	10,199.00	12,270.06	9,716.00	41.32	52.29	68.06	1,525.43	1,850.46	1,344.17	1,258.44	85.74	15.678	
12,700.00	10,199.00	12,170.10	9,716.00	42.78	50.73	68.02	1,625.40	1,850.45	1,341.67	1,256.13	85.54	15.685	
12,800.00	10,199.00	12,070.13	9,716.00	44.26	49.19	67.97	1,725.36	1,850.43	1,339.17	1,253.78	85.38	15.684	

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



SB Directional Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well Goonch Fed Com 04 232H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB @ 3041.00usft
Reference Site:	SEC. 04-T23S-R28E	MD Reference:	RKB @ 3041.00usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Goonch Fed Com 04 232H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 2	Offset TVD Reference:	Offset Datum

Offset Design: SEC. 04-T23S-R28E - Goonch Fed Com 0409 225H - Wellbore #1 - Plan 0												Offset Site Error:	0.00 usft
Survey Program: 0-MWD												Offset Well Error:	0.50 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
12,900.00	10,199.00	11,970.17	9,716.00	45.76	47.67	67.93	1,825.32	1,850.41	1,336.66	1,251.40	85.26	15.677	
13,000.00	10,199.00	11,870.21	9,716.00	47.28	46.17	67.89	1,925.29	1,850.40	1,334.16	1,248.98	85.18	15.662	
13,100.00	10,199.00	11,770.24	9,716.00	48.83	44.70	67.84	2,025.25	1,850.38	1,331.66	1,246.52	85.14	15.640	
13,200.00	10,199.00	11,670.28	9,716.00	50.39	43.25	67.80	2,125.21	1,850.36	1,329.16	1,244.02	85.14	15.611	
13,300.00	10,199.00	11,570.32	9,716.00	51.97	41.84	67.75	2,225.18	1,850.34	1,326.66	1,241.48	85.18	15.574	
13,400.00	10,199.00	11,470.35	9,716.00	53.56	40.46	67.71	2,325.14	1,850.33	1,324.16	1,238.90	85.26	15.530	
13,500.00	10,199.00	11,370.39	9,716.00	55.17	39.12	67.67	2,425.10	1,850.31	1,321.66	1,236.27	85.39	15.478	
13,600.00	10,199.00	11,270.43	9,716.00	56.78	37.82	67.62	2,525.07	1,850.29	1,319.16	1,233.60	85.56	15.418	
13,700.00	10,199.00	11,170.46	9,716.00	58.41	36.57	67.58	2,625.03	1,850.28	1,316.67	1,230.88	85.78	15.348	
13,800.00	10,199.00	11,070.50	9,716.00	60.05	35.37	67.53	2,724.99	1,850.26	1,314.17	1,228.11	86.06	15.270	
13,900.00	10,199.00	10,970.53	9,716.00	61.71	34.23	67.49	2,824.96	1,850.24	1,311.68	1,225.28	86.40	15.181	
14,000.00	10,199.00	10,870.57	9,716.00	63.37	33.15	67.44	2,924.92	1,850.23	1,309.18	1,222.38	86.81	15.081	
14,100.00	10,199.00	10,770.61	9,716.00	65.03	32.16	67.40	3,024.88	1,850.21	1,306.69	1,219.40	87.29	14.970	
14,200.00	10,199.00	10,670.64	9,716.00	66.71	31.24	67.35	3,124.85	1,850.19	1,304.20	1,216.35	87.85	14.846	
14,300.00	10,199.00	10,570.68	9,716.00	68.39	30.42	67.30	3,224.81	1,850.17	1,301.71	1,213.21	88.50	14.709	
14,400.00	10,199.00	10,470.72	9,716.00	70.08	29.70	67.26	3,324.78	1,850.16	1,299.22	1,209.97	89.24	14.558	
14,500.00	10,199.00	10,370.75	9,716.00	71.78	29.09	67.21	3,424.74	1,850.14	1,296.73	1,206.62	90.10	14.392	
14,600.00	10,199.00	10,270.79	9,716.00	73.48	28.60	67.17	3,524.70	1,850.12	1,294.24	1,203.16	91.08	14.211	
14,700.00	10,199.00	10,170.83	9,716.00	75.19	28.22	67.12	3,624.67	1,850.11	1,291.75	1,199.57	92.17	14.014	
14,800.00	10,199.00	10,100.00	9,715.76	76.90	28.03	67.08	3,695.49	1,850.09	1,289.68	1,195.94	93.74	13.758	
14,822.99	10,199.00	10,079.92	9,714.84	77.29	27.99	67.03	3,715.55	1,850.09	1,289.54	1,195.49	94.05	13.712 CC	
14,900.00	10,199.00	10,050.00	9,712.16	78.62	27.93	66.91	3,745.34	1,850.09	1,290.71	1,195.26	95.45	13.522	
15,000.00	10,199.00	9,987.77	9,701.63	80.34	27.84	66.45	3,806.65	1,850.08	1,295.35	1,198.51	96.85	13.375	
15,100.00	10,199.00	9,950.00	9,692.01	82.06	27.81	66.04	3,843.16	1,850.07	1,304.06	1,205.73	98.33	13.262	
15,200.00	10,199.00	9,900.00	9,675.63	83.79	27.77	65.36	3,890.39	1,850.06	1,316.67	1,217.20	99.47	13.236	
15,245.41	10,199.00	9,871.01	9,664.26	84.58	27.76	64.89	3,917.06	1,850.06	1,323.75	1,223.89	99.87	13.255	

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



SB Directional Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well Goonch Fed Com 04 232H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB @ 3041.00usft
Reference Site:	SEC. 04-T23S-R28E	MD Reference:	RKB @ 3041.00usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Goonch Fed Com 04 232H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 2	Offset TVD Reference:	Offset Datum

Offset Design: SEC. 04-T23S-R28E - Goonch Fed Com 0409 236H - Wellbore #1 - Plan 0												Offset Site Error:	0.00 usft
Survey Program: 0-MWD												Offset Well Error:	0.50 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
10,250.00	10,085.53	15,092.03	10,226.00	28.49	91.08	93.13	-813.52	2,034.96	1,498.74	1,381.61	117.13	12.796 SF	
10,300.00	10,113.61	15,050.68	10,226.00	28.25	90.35	92.51	-772.17	2,035.35	1,496.01	1,379.75	116.26	12.868	
10,350.00	10,137.99	15,007.05	10,226.00	28.01	89.59	91.91	-728.54	2,035.77	1,493.94	1,378.63	115.31	12.956	
10,400.00	10,158.46	14,961.46	10,226.00	27.77	88.79	91.35	-682.95	2,036.20	1,492.35	1,378.04	114.31	13.055	
10,450.00	10,174.88	14,914.26	10,226.00	27.52	87.97	90.88	-635.75	2,036.64	1,491.09	1,377.81	113.27	13.164	
10,500.00	10,187.13	14,865.80	10,226.00	27.29	87.12	90.53	-587.30	2,037.10	1,490.03	1,377.81	112.22	13.278	
10,550.00	10,195.11	14,816.47	10,226.00	27.06	86.26	90.32	-537.97	2,037.57	1,489.09	1,377.93	111.17	13.395	
10,600.00	10,198.75	14,766.62	10,226.00	26.84	85.39	90.27	-488.13	2,038.04	1,488.20	1,378.08	110.13	13.513	
10,616.82	10,199.00	14,749.81	10,226.00	26.76	85.10	90.29	-471.31	2,038.20	1,487.91	1,378.13	109.78	13.553	
10,700.00	10,199.00	14,666.64	10,226.00	26.44	83.65	90.29	-388.15	2,038.98	1,486.46	1,378.33	108.13	13.747	
10,800.00	10,199.00	14,566.66	10,226.00	26.12	81.92	90.29	-288.17	2,039.93	1,484.73	1,378.46	106.27	13.972	
10,900.00	10,199.00	14,466.67	10,226.00	25.89	80.18	90.29	-188.19	2,040.87	1,482.99	1,378.45	104.54	14.186	
11,000.00	10,199.00	14,366.69	10,226.00	25.77	78.46	90.29	-88.21	2,041.82	1,481.25	1,378.31	102.94	14.389	
11,100.00	10,199.00	14,266.70	10,226.00	25.82	76.73	90.29	11.77	2,042.77	1,479.51	1,378.03	101.48	14.580	
11,200.00	10,199.00	14,166.72	10,226.00	26.10	75.02	90.29	111.75	2,043.71	1,477.77	1,377.63	100.14	14.756	
11,300.00	10,199.00	14,066.73	10,226.00	26.62	73.30	90.30	211.73	2,044.66	1,476.04	1,377.10	98.93	14.920	
11,400.00	10,199.00	13,966.75	10,226.00	27.29	71.60	90.30	311.71	2,045.60	1,474.30	1,376.46	97.84	15.069	
11,500.00	10,199.00	13,866.76	10,226.00	28.10	69.89	90.30	411.70	2,046.55	1,472.56	1,375.71	96.85	15.204	
11,600.00	10,199.00	13,766.78	10,226.00	28.99	68.20	90.30	511.68	2,047.49	1,470.82	1,374.86	95.97	15.326	
11,700.00	10,199.00	13,666.79	10,226.00	29.98	66.51	90.30	611.66	2,048.44	1,469.08	1,373.91	95.18	15.435	
11,800.00	10,199.00	13,566.81	10,226.00	31.03	64.83	90.30	711.64	2,049.38	1,467.35	1,372.87	94.47	15.532	
11,900.00	10,199.00	13,466.82	10,226.00	32.15	63.16	90.30	811.62	2,050.33	1,465.61	1,371.76	93.85	15.617	
12,000.00	10,199.00	13,366.84	10,226.00	33.32	61.50	90.30	911.60	2,051.27	1,463.87	1,370.57	93.30	15.691	
12,100.00	10,199.00	13,266.85	10,226.00	34.55	59.84	90.30	1,011.58	2,052.22	1,462.13	1,369.32	92.81	15.754	
12,200.00	10,199.00	13,166.87	10,226.00	35.83	58.20	90.30	1,111.56	2,053.16	1,460.39	1,368.01	92.39	15.807	
12,300.00	10,199.00	13,066.88	10,226.00	37.15	56.57	90.30	1,211.54	2,054.11	1,458.66	1,366.63	92.02	15.851	
12,400.00	10,199.00	12,966.90	10,226.00	38.51	54.95	90.30	1,311.52	2,055.05	1,456.92	1,365.21	91.71	15.886	
12,500.00	10,199.00	12,866.91	10,226.00	39.90	53.34	90.30	1,411.50	2,056.00	1,455.18	1,363.73	91.44	15.913	
12,600.00	10,199.00	12,766.93	10,226.00	41.32	51.75	90.30	1,511.48	2,056.94	1,453.44	1,362.21	91.23	15.932	
12,700.00	10,199.00	12,666.94	10,226.00	42.78	50.18	90.30	1,611.46	2,057.89	1,451.70	1,360.65	91.06	15.943	
12,800.00	10,199.00	12,566.96	10,226.00	44.26	48.62	90.30	1,711.44	2,058.83	1,449.96	1,359.04	90.93	15.946	
12,900.00	10,199.00	12,466.97	10,226.00	45.76	47.08	90.30	1,811.42	2,059.78	1,448.23	1,357.39	90.84	15.942	
13,000.00	10,199.00	12,366.99	10,226.00	47.28	45.56	90.30	1,911.40	2,060.72	1,446.49	1,355.69	90.80	15.931	
13,100.00	10,199.00	12,267.00	10,226.00	48.83	44.07	90.30	2,011.38	2,061.67	1,444.75	1,353.96	90.79	15.913	
13,200.00	10,199.00	12,167.02	10,226.00	50.39	42.60	90.30	2,111.36	2,062.61	1,443.01	1,352.18	90.83	15.887	
13,300.00	10,199.00	12,067.03	10,226.00	51.97	41.16	90.30	2,211.34	2,063.56	1,441.27	1,350.36	90.91	15.854	
13,400.00	10,199.00	11,967.05	10,226.00	53.56	39.75	90.30	2,311.32	2,064.51	1,439.54	1,348.50	91.04	15.813	
13,500.00	10,199.00	11,867.06	10,226.00	55.17	38.38	90.30	2,411.30	2,065.45	1,437.80	1,346.59	91.21	15.764	
13,600.00	10,199.00	11,767.08	10,226.00	56.78	37.05	90.30	2,511.28	2,066.40	1,436.06	1,344.63	91.43	15.707	
13,700.00	10,199.00	11,667.09	10,226.00	58.41	35.76	90.30	2,611.26	2,067.34	1,434.32	1,342.62	91.70	15.641	
13,800.00	10,199.00	11,567.11	10,226.00	60.05	34.52	90.30	2,711.24	2,068.29	1,432.58	1,340.55	92.03	15.566	
13,900.00	10,199.00	11,467.12	10,226.00	61.71	33.34	90.30	2,811.23	2,069.23	1,430.85	1,338.42	92.42	15.482	
14,000.00	10,199.00	11,367.14	10,226.00	63.37	32.22	90.30	2,911.21	2,070.18	1,429.11	1,336.23	92.88	15.386	
14,100.00	10,199.00	11,267.15	10,226.00	65.03	31.16	90.31	3,011.19	2,071.12	1,427.37	1,333.96	93.41	15.280	
14,200.00	10,199.00	11,167.17	10,226.00	66.71	30.19	90.31	3,111.17	2,072.07	1,425.63	1,331.60	94.03	15.162	
14,300.00	10,199.00	11,067.18	10,226.00	68.39	29.30	90.31	3,211.15	2,073.01	1,423.89	1,329.16	94.73	15.031	
14,400.00	10,199.00	10,967.20	10,226.00	70.08	28.51	90.31	3,311.13	2,073.96	1,422.16	1,326.62	95.54	14.886	
14,500.00	10,199.00	10,867.21	10,226.00	71.78	27.83	90.31	3,411.11	2,074.90	1,420.42	1,323.97	96.45	14.727	
14,600.00	10,199.00	10,767.23	10,226.00	73.48	27.27	90.31	3,511.09	2,075.85	1,418.68	1,321.21	97.47	14.554	
14,700.00	10,199.00	10,667.24	10,226.00	75.19	26.84	90.31	3,611.07	2,076.79	1,416.94	1,318.31	98.63	14.366	
14,800.00	10,199.00	10,566.87	10,225.13	76.90	26.54	90.27	3,711.42	2,077.74	1,415.20	1,315.30	99.90	14.166	
14,900.00	10,199.00	10,467.82	10,211.17	78.62	26.36	89.71	3,809.35	2,078.67	1,413.46	1,312.14	101.33	13.950	

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



SB Directional

Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well Goonch Fed Com 04 232H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB @ 3041.00usft
Reference Site:	SEC. 04-T23S-R28E	MD Reference:	RKB @ 3041.00usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Goonch Fed Com 04 232H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 2	Offset TVD Reference:	Offset Datum

Offset Design: SEC. 04-T23S-R28E - Goonch Fed Com 0409 236H - Wellbore #1 - Plan 0													Offset Site Error:	0.00 usft
Survey Program: 0-MWD													Offset Well Error:	0.50 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)				
15,000.00	10,199.00	10,376.07	10,183.37	80.34	26.29	88.58	3,896.69	2,079.49	1,412.21	1,309.30	102.92	13.722		
15,044.39	10,199.00	10,338.62	10,168.08	81.10	26.28	87.96	3,930.86	2,079.82	1,412.05	1,308.39	103.66	13.622	CC	
15,100.00	10,199.00	10,294.87	10,147.42	82.06	26.28	87.12	3,969.42	2,080.18	1,412.37	1,307.76	104.61	13.502	ES	
15,200.00	10,199.00	10,225.17	10,108.63	83.79	26.29	85.55	4,027.27	2,080.73	1,414.98	1,308.68	106.30	13.312		
15,245.41	10,199.00	10,200.00	10,092.93	84.58	26.29	84.91	4,046.94	2,080.91	1,417.25	1,310.21	107.05	13.240		

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



SB Directional Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well Goonch Fed Com 04 232H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB @ 3041.00usft
Reference Site:	SEC. 04-T23S-R28E	MD Reference:	RKB @ 3041.00usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Goonch Fed Com 04 232H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 2	Offset TVD Reference:	Offset Datum

Offset Design: SEC. 04-T23S-R28E - Jack Sleeper State Com 9 201H - Wellbore #1 - Wellbore #1													Offset Site Error: 0.00 usft
Survey Program: 171-MWD													Offset Well Error: 0.50 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
0.00	0.00	0.00	0.00	0.50	0.50	-130.95	-884.14	-1,018.89	1,349.02				
100.00	100.00	95.38	95.38	0.51	0.51	-130.95	-884.20	-1,018.96	1,349.11	1,348.09	1.02	1,328.670	
200.00	200.00	191.19	191.19	0.59	0.54	-130.95	-884.41	-1,019.16	1,349.42	1,348.29	1.13	1,194.253	
300.00	300.00	285.36	285.36	0.73	0.65	-130.96	-885.07	-1,019.57	1,350.20	1,348.81	1.38	975.450	
400.00	400.00	391.62	391.61	0.91	0.81	-130.97	-885.78	-1,020.01	1,350.95	1,349.23	1.71	787.813	
500.00	500.00	491.91	491.91	1.10	0.97	-130.97	-886.04	-1,020.32	1,351.35	1,349.27	2.07	651.819	
600.00	600.00	589.19	589.17	1.31	1.15	-130.95	-886.01	-1,021.04	1,351.90	1,349.44	2.46	549.445	
700.00	700.00	691.78	691.77	1.52	1.35	-130.92	-885.84	-1,022.03	1,352.51	1,349.64	2.87	471.341	
800.00	800.00	787.26	787.23	1.73	1.54	-130.88	-885.62	-1,022.93	1,353.08	1,349.81	3.27	413.748	
900.00	900.00	890.84	890.81	1.95	1.75	-130.85	-885.49	-1,024.05	1,353.82	1,350.12	3.69	366.717	
1,000.00	1,000.00	985.64	985.60	2.17	1.94	-130.82	-885.39	-1,024.99	1,354.50	1,350.40	4.10	330.406	
1,100.00	1,100.00	1,093.66	1,093.62	2.38	2.15	-130.79	-885.31	-1,026.02	1,355.18	1,350.64	4.54	298.684	
1,200.00	1,200.00	1,186.00	1,185.96	2.61	2.34	-130.78	-885.64	-1,026.69	1,355.95	1,351.01	4.94	274.299	
1,300.00	1,300.00	1,281.57	1,281.52	2.83	2.54	-130.79	-886.51	-1,027.47	1,357.16	1,351.80	5.36	253.120	
1,400.00	1,400.00	1,381.40	1,381.34	3.05	2.75	-130.79	-887.27	-1,028.41	1,358.37	1,352.57	5.79	234.492	
1,500.00	1,500.00	1,476.96	1,476.89	3.27	2.95	-130.76	-887.63	-1,029.87	1,359.77	1,353.55	6.22	218.695	
1,600.00	1,600.00	1,580.41	1,580.32	3.49	3.18	-130.70	-887.61	-1,031.94	1,361.27	1,354.61	6.66	204.394	
1,700.00	1,700.00	1,697.81	1,697.72	3.71	3.41	-130.69	-887.92	-1,032.56	1,361.83	1,354.71	7.12	191.241	
1,800.00	1,800.00	1,810.01	1,809.89	3.94	3.64	-130.80	-889.51	-1,030.64	1,361.46	1,353.89	7.57	179.920	
1,900.00	1,899.98	1,908.68	1,908.50	4.13	3.84	76.61	-891.23	-1,027.79	1,360.01	1,352.05	7.96	170.780	
2,000.00	1,999.84	2,006.39	2,006.15	4.31	4.04	76.71	-893.51	-1,025.09	1,358.24	1,349.90	8.34	162.880	
2,100.00	2,099.45	2,120.31	2,119.99	4.49	4.27	77.01	-895.77	-1,021.60	1,355.23	1,346.48	8.76	154.739	
2,200.00	2,198.70	2,223.61	2,223.25	4.69	4.49	77.54	-895.97	-1,018.87	1,350.63	1,341.46	9.17	147.238	
2,256.73	2,254.80	2,282.22	2,281.84	4.81	4.61	77.93	-895.89	-1,017.37	1,347.64	1,338.22	9.42	143.119	
2,300.00	2,297.52	2,327.05	2,326.66	4.91	4.70	78.19	-895.86	-1,016.09	1,345.22	1,335.61	9.61	140.031	
2,400.00	2,396.25	2,415.74	2,415.32	5.14	4.89	78.73	-895.71	-1,013.99	1,340.04	1,330.02	10.03	133.634	
2,500.00	2,494.98	2,513.74	2,513.31	5.39	5.09	79.35	-895.32	-1,012.44	1,335.48	1,325.00	10.48	127.387	
2,600.00	2,593.71	2,615.08	2,614.63	5.66	5.31	80.01	-894.84	-1,010.76	1,330.99	1,320.03	10.96	121.455	
2,700.00	2,692.45	2,718.30	2,717.83	5.93	5.52	80.68	-894.19	-1,008.78	1,326.36	1,314.91	11.45	115.850	
2,800.00	2,791.18	2,815.95	2,815.46	6.22	5.73	81.32	-893.38	-1,006.79	1,321.70	1,309.76	11.94	110.705	
2,900.00	2,889.91	2,936.82	2,936.29	6.51	5.98	82.12	-892.25	-1,004.24	1,317.22	1,304.74	12.48	105.550	
3,000.00	2,988.64	3,062.33	3,061.64	6.81	6.25	82.98	-888.64	-999.18	1,310.05	1,297.02	13.03	100.506	
3,100.00	3,087.37	3,158.85	3,158.01	7.12	6.46	83.66	-885.34	-994.81	1,302.45	1,288.90	13.54	96.158	
3,200.00	3,186.11	3,255.00	3,254.01	7.43	6.66	84.35	-882.06	-990.57	1,295.14	1,281.07	14.06	92.107	
3,300.00	3,284.84	3,350.00	3,348.88	7.75	6.86	85.03	-879.04	-986.62	1,288.36	1,273.78	14.58	88.363	
3,400.00	3,383.57	3,446.00	3,444.76	8.08	7.07	85.74	-876.02	-982.93	1,282.07	1,266.96	15.11	84.869	
3,500.00	3,482.30	3,543.08	3,541.73	8.40	7.28	86.46	-872.82	-979.31	1,276.02	1,260.38	15.64	81.597	
3,600.00	3,581.03	3,641.69	3,640.21	8.73	7.49	87.21	-869.65	-975.69	1,270.26	1,254.09	16.17	78.548	
3,700.00	3,679.76	3,741.77	3,740.17	9.07	7.70	87.97	-866.40	-971.91	1,264.62	1,247.90	16.71	75.667	
3,800.00	3,778.50	3,835.68	3,833.97	9.40	7.90	88.69	-863.40	-968.48	1,259.34	1,242.09	17.25	73.011	
3,900.00	3,877.23	3,930.10	3,928.29	9.74	8.11	89.41	-860.54	-965.33	1,254.63	1,236.84	17.79	70.536	
4,000.00	3,975.96	4,028.67	4,026.77	10.08	8.32	90.18	-857.66	-962.14	1,250.29	1,231.96	18.33	68.197	
4,100.00	4,074.69	4,127.06	4,125.07	10.42	8.53	90.95	-854.71	-959.02	1,246.20	1,227.32	18.88	65.997	
4,200.00	4,173.42	4,228.69	4,226.60	10.77	8.75	91.75	-851.72	-955.59	1,242.19	1,222.75	19.44	63.902	
4,300.00	4,272.16	4,327.91	4,325.71	11.12	8.97	92.53	-848.68	-952.11	1,238.24	1,218.25	19.99	61.936	
4,400.00	4,370.89	4,433.79	4,431.47	11.46	9.20	93.37	-845.55	-948.26	1,234.48	1,213.92	20.56	60.052	
4,500.00	4,469.62	4,546.86	4,544.33	11.81	9.45	94.26	-841.60	-942.72	1,229.55	1,208.41	21.13	58.184	
4,600.00	4,568.35	4,644.28	4,641.55	12.16	9.67	95.05	-837.88	-937.71	1,224.53	1,202.85	21.69	56.463	
4,700.00	4,667.08	4,738.15	4,735.24	12.51	9.88	95.82	-834.28	-933.13	1,220.01	1,197.77	22.24	54.864	
4,800.00	4,765.81	4,834.49	4,831.42	12.87	10.09	96.61	-830.81	-928.72	1,216.08	1,193.29	22.79	53.362	
4,900.00	4,864.55	4,930.72	4,927.48	13.22	10.31	97.41	-827.42	-924.34	1,212.47	1,189.13	23.34	51.946	
5,000.00	4,963.28	5,027.90	5,024.54	13.57	10.52	98.15	-825.36	-919.66	1,209.33	1,185.43	23.89	50.617	

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



SB Directional Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well Goonch Fed Com 04 232H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB @ 3041.00usft
Reference Site:	SEC. 04-T23S-R28E	MD Reference:	RKB @ 3041.00usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Goonch Fed Com 04 232H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 2	Offset TVD Reference:	Offset Datum

Offset Design: SEC. 04-T23S-R28E - Jack Sleeper State Com 9 201H - Wellbore #1 - Wellbore #1													Offset Site Error:	0.00 usft	
Survey Program:		171-MWD		Offset		Semi Maior Axis		Offset Wellbore Centre		Rule Assigned:				Offset Well Error:	0.50 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning		
5,100.00	5,062.01	5,122.71	5,119.22	13.93	10.73	98.86	-823.69	-915.09	1,206.51	1,182.07	24.44	49.370			
5,200.00	5,160.74	5,220.43	5,216.83	14.28	10.95	99.59	-822.15	-910.68	1,204.24	1,179.25	24.99	48.190			
5,300.00	5,259.47	5,318.33	5,314.62	14.64	11.16	100.31	-820.83	-906.14	1,202.13	1,176.59	25.54	47.070			
5,400.00	5,358.21	5,417.74	5,413.91	15.00	11.38	101.03	-819.84	-901.51	1,200.30	1,174.21	26.09	46.005			
5,500.00	5,456.94	5,512.67	5,508.73	15.36	11.59	101.72	-819.03	-897.08	1,198.70	1,172.07	26.63	45.005			
5,600.00	5,555.67	5,605.11	5,601.09	15.71	11.79	102.39	-818.29	-893.23	1,197.78	1,170.60	27.17	44.078			
5,693.58	5,648.06	5,692.97	5,688.89	16.05	11.98	103.02	-817.89	-889.93	1,197.53	1,169.85	27.68	43.264 CC			
5,700.00	5,654.40	5,699.04	5,694.96	16.07	11.99	103.06	-817.87	-889.71	1,197.53	1,169.82	27.71	43.210			
5,800.00	5,753.13	5,796.27	5,792.12	16.43	12.21	103.75	-817.60	-886.32	1,197.76	1,169.50	28.26	42.386			
5,900.00	5,851.86	5,895.95	5,891.74	16.79	12.42	104.48	-817.02	-882.92	1,198.19	1,169.39	28.81	41.596 ES			
6,000.00	5,950.60	5,992.30	5,988.03	17.15	12.63	105.23	-815.28	-879.93	1,198.84	1,169.50	29.34	40.855			
6,100.00	6,049.33	6,082.82	6,078.50	17.51	12.83	105.95	-813.60	-877.52	1,200.14	1,170.27	29.87	40.180			
6,200.00	6,148.06	6,185.19	6,180.82	17.87	13.05	106.76	-811.77	-875.17	1,202.04	1,171.62	30.42	39.521			
6,300.00	6,246.79	6,276.73	6,272.32	18.24	13.25	107.50	-809.65	-873.03	1,204.04	1,173.10	30.94	38.919			
6,400.00	6,345.52	6,388.21	6,383.74	18.60	13.49	108.40	-807.01	-870.54	1,206.38	1,174.88	31.50	38.304			
6,500.00	6,444.26	6,504.11	6,499.53	18.96	13.74	109.29	-805.06	-865.82	1,207.21	1,175.15	32.05	37.661			
6,600.00	6,542.99	6,585.66	6,581.01	19.32	13.92	109.87	-804.61	-862.59	1,208.53	1,175.98	32.56	37.121			
6,700.00	6,641.72	6,693.24	6,688.51	19.69	14.15	110.59	-804.84	-858.50	1,210.30	1,177.20	33.10	36.563			
6,800.00	6,740.45	6,787.84	6,783.03	20.05	14.35	111.19	-805.82	-854.70	1,212.11	1,178.49	33.62	36.050			
6,900.00	6,839.18	6,879.49	6,874.63	20.41	14.55	111.80	-806.12	-851.56	1,214.58	1,180.44	34.13	35.582			
7,000.00	6,937.91	6,974.70	6,969.79	20.78	14.76	112.46	-805.75	-848.88	1,217.76	1,183.11	34.65	35.143			
7,100.00	7,036.65	7,089.29	7,084.28	21.14	15.01	113.36	-803.06	-844.94	1,220.33	1,185.13	35.20	34.669			
7,200.00	7,135.38	7,182.13	7,177.00	21.50	15.21	114.12	-800.05	-841.46	1,222.80	1,187.10	35.70	34.249			
7,300.00	7,234.11	7,269.48	7,264.30	21.87	15.41	114.79	-798.40	-838.99	1,226.47	1,190.27	36.19	33.886			
7,400.00	7,332.84	7,374.28	7,369.05	22.23	15.63	115.52	-797.53	-835.95	1,230.33	1,193.61	36.72	33.508			
7,500.00	7,431.57	7,471.56	7,466.29	22.60	15.84	116.18	-797.22	-832.95	1,234.21	1,196.98	37.22	33.156			
7,600.00	7,530.31	7,581.27	7,575.94	22.96	16.07	116.83	-798.80	-829.62	1,238.37	1,200.61	37.76	32.798			
7,700.00	7,629.04	7,687.12	7,681.65	23.33	16.30	117.44	-800.51	-824.71	1,240.98	1,202.70	38.28	32.419			
7,800.00	7,727.77	7,793.79	7,788.22	23.69	16.54	118.11	-801.01	-820.08	1,244.10	1,205.30	38.80	32.066			
7,900.00	7,826.50	7,907.16	7,901.38	24.06	16.79	118.95	-798.69	-813.60	1,246.00	1,206.69	39.32	31.691			
8,000.00	7,925.23	7,995.95	7,989.98	24.42	16.99	119.63	-796.28	-808.34	1,247.96	1,208.16	39.80	31.357			
8,100.00	8,023.96	8,099.99	8,093.81	24.79	17.23	120.44	-793.20	-802.55	1,250.51	1,210.21	40.30	31.031			
8,200.00	8,122.70	8,188.00	8,181.63	25.15	17.43	121.15	-790.08	-797.66	1,253.32	1,212.55	40.77	30.740			
8,300.00	8,221.43	8,275.12	8,268.62	25.52	17.63	121.81	-787.63	-793.66	1,257.27	1,216.03	41.24	30.488			
8,400.00	8,320.16	8,364.44	8,357.87	25.88	17.83	122.45	-785.84	-790.37	1,262.26	1,220.55	41.71	30.266			
8,500.00	8,418.89	8,460.25	8,453.62	26.25	18.04	123.08	-784.94	-787.42	1,267.93	1,225.75	42.19	30.056			
8,600.00	8,517.62	8,554.73	8,548.06	26.61	18.24	123.66	-784.86	-784.80	1,273.97	1,231.31	42.66	29.863			
8,700.00	8,616.36	8,633.75	8,627.07	26.98	18.41	124.10	-785.82	-783.34	1,280.96	1,237.86	43.10	29.722			
8,800.00	8,715.09	8,713.93	8,707.24	27.35	18.57	124.51	-787.00	-783.44	1,289.89	1,246.36	43.53	29.632			
8,900.00	8,813.82	8,804.53	8,797.83	27.71	18.75	124.98	-788.31	-784.30	1,299.76	1,255.78	43.99	29.548			
9,000.00	8,912.55	8,919.65	8,912.90	28.08	18.98	125.52	-790.63	-785.92	1,310.20	1,265.68	44.52	29.429			
9,100.00	9,011.28	9,240.64	9,208.88	28.45	19.58	122.78	-895.51	-770.85	1,307.62	1,262.01	45.61	28.668			
9,110.09	9,021.24	9,256.92	9,221.47	28.48	19.61	122.42	-905.77	-769.65	1,306.93	1,261.22	45.71	28.593			
9,200.00	9,110.22	9,367.04	9,298.38	28.76	19.87	119.33	-983.81	-760.46	1,298.89	1,252.32	46.57	27.890			
9,300.00	9,209.61	9,407.62	9,322.98	29.00	19.99	117.90	-1,015.97	-757.85	1,292.29	1,245.10	47.19	27.382			
9,400.00	9,309.32	9,442.00	9,342.18	29.20	20.11	116.66	-1,044.45	-756.54	1,289.91	1,242.25	47.66	27.066			
9,401.48	9,310.80	9,442.00	9,342.18	29.20	20.11	116.66	-1,044.45	-756.54	1,289.91	1,242.25	47.66	27.064			
9,500.00	9,409.23	9,442.00	9,342.18	29.36	20.11	116.71	-1,044.45	-756.54	1,292.91	1,245.21	47.70	27.106			
9,566.82	9,476.04	9,475.88	9,359.97	29.46	20.23	-91.92	-1,073.28	-756.38	1,297.13	1,249.18	47.94	27.055 SF			
9,600.00	9,509.22	9,482.10	9,363.16	29.51	20.25	-92.16	-1,078.61	-756.51	1,300.43	1,252.48	47.94	27.125			
9,700.00	9,609.22	9,500.23	9,372.30	29.64	20.32	-92.85	-1,094.26	-757.16	1,314.91	1,267.10	47.82	27.499			
9,716.82	9,626.04	9,503.19	9,373.77	29.66	20.33	-92.96	-1,096.82	-757.31	1,318.01	1,270.23	47.78	27.584			

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



SB Directional

Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well Goonch Fed Com 04 232H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB @ 3041.00usft
Reference Site:	SEC. 04-T23S-R28E	MD Reference:	RKB @ 3041.00usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Goonch Fed Com 04 232H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 2	Offset TVD Reference:	Offset Datum

Offset Design: SEC. 04-T23S-R28E - Jack Sleeper State Com 9 201H - Wellbore #1 - Wellbore #1													Offset Site Error: 0.00 usft
Survey Program: 171-MWD													Offset Well Error: 0.50 usft
Reference	Offset	Semi Major Axis		Offset Wellbore Centre		Distance		Rule Assigned:		Warning			
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
9,750.00	9,659.20	9,537.00	9,390.15	29.69	20.47	-95.14	-1,126.29	-759.76	1,325.61	1,277.61	48.00	27.617	
9,800.00	9,708.93	9,537.00	9,390.15	29.71	20.47	-93.97	-1,126.29	-759.76	1,337.03	1,289.29	47.74	28.007	
9,850.00	9,758.03	9,537.00	9,390.15	29.70	20.47	-92.58	-1,126.29	-759.76	1,350.49	1,303.06	47.43	28.474	
9,900.00	9,806.12	9,537.00	9,390.15	29.65	20.47	-90.97	-1,126.29	-759.76	1,365.83	1,318.75	47.08	29.011	
9,950.00	9,852.84	9,537.00	9,390.15	29.56	20.47	-89.15	-1,126.29	-759.76	1,382.88	1,336.18	46.70	29.610	
10,000.00	9,897.83	9,537.00	9,390.15	29.44	20.47	-87.15	-1,126.29	-759.76	1,401.45	1,355.14	46.31	30.264	
10,050.00	9,940.76	9,537.00	9,390.15	29.30	20.47	-84.99	-1,126.29	-759.76	1,421.34	1,375.43	45.91	30.962	
10,100.00	9,981.29	9,537.00	9,390.15	29.12	20.47	-82.69	-1,126.29	-759.76	1,442.34	1,396.83	45.51	31.695	
10,150.00	10,019.12	9,537.00	9,390.15	28.93	20.47	-80.28	-1,126.29	-759.76	1,464.25	1,419.13	45.12	32.451	
10,200.00	10,053.95	9,537.00	9,390.15	28.72	20.47	-77.79	-1,126.29	-759.76	1,486.87	1,442.12	44.76	33.221	

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



SB Directional Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well Goonch Fed Com 04 232H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB @ 3041.00usft
Reference Site:	SEC. 04-T23S-R28E	MD Reference:	RKB @ 3041.00usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Goonch Fed Com 04 232H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 2	Offset TVD Reference:	Offset Datum

Offset Design: SEC. 04-T23S-R28E - Jack Sleeper State Com 9 215H - Wellbore #1 - Wellbore #1													Offset Site Error: 0.00 usft
Survey Program: 170-MWD													Offset Well Error: 0.50 usft
Rule Assigned:													
Measured Depth (usft)	Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.00	0.00	0.00	0.00	0.50	0.50	-129.97	-854.08	-1,019.11	1,329.68				
100.00	100.00	104.52	104.51	0.51	0.51	-129.93	-853.29	-1,019.39	1,329.40	1,328.38	1.02	1,306.562	
200.00	200.00	204.38	204.34	0.59	0.56	-129.84	-851.13	-1,020.23	1,328.66	1,327.52	1.14	1,161.972	
300.00	300.00	302.54	302.48	0.73	0.67	-129.73	-848.93	-1,021.60	1,328.30	1,326.90	1.40	947.525	
400.00	400.00	400.64	400.56	0.91	0.82	-129.65	-847.32	-1,022.43	1,327.90	1,326.17	1.73	767.687	
464.22	464.22	461.31	461.22	1.03	0.93	-129.61	-846.57	-1,022.93	1,327.81	1,325.85	1.96	678.143	
500.00	500.00	494.61	494.52	1.10	0.99	-129.59	-846.18	-1,023.30	1,327.84	1,325.75	2.09	635.604	
600.00	600.00	591.97	591.86	1.31	1.17	-129.51	-844.96	-1,024.73	1,328.18	1,325.70	2.48	535.396	
700.00	700.00	697.04	696.90	1.52	1.39	-129.41	-843.31	-1,026.43	1,328.43	1,325.53	2.90	457.657	
800.00	800.00	795.12	794.95	1.73	1.58	-129.30	-841.41	-1,028.04	1,328.47	1,325.16	3.31	400.959	
900.00	900.00	888.89	888.71	1.95	1.76	-129.24	-840.61	-1,029.15	1,328.85	1,325.14	3.71	357.967	
1,000.00	1,000.00	981.83	981.64	2.17	1.94	-129.27	-841.64	-1,029.38	1,329.74	1,325.63	4.11	323.557	
1,100.00	1,100.00	1,082.33	1,082.12	2.38	2.14	-129.33	-843.52	-1,029.37	1,330.92	1,326.39	4.53	293.962	
1,200.00	1,200.00	1,181.39	1,181.17	2.61	2.34	-129.38	-845.14	-1,029.50	1,332.06	1,327.12	4.95	269.284	
1,300.00	1,300.00	1,282.09	1,281.86	2.83	2.55	-129.43	-846.81	-1,029.65	1,333.23	1,327.86	5.37	248.204	
1,400.00	1,400.00	1,385.71	1,385.46	3.05	2.76	-129.47	-848.09	-1,029.94	1,334.23	1,328.42	5.81	229.767	
1,500.00	1,500.00	1,486.67	1,486.42	3.27	2.97	-129.48	-848.72	-1,030.42	1,334.99	1,328.75	6.24	213.966	
1,600.00	1,600.00	1,590.45	1,590.20	3.49	3.19	-129.45	-848.73	-1,031.53	1,335.83	1,329.15	6.68	200.001	
1,700.00	1,700.00	1,706.34	1,706.09	3.71	3.42	-129.47	-848.99	-1,031.14	1,335.71	1,328.57	7.14	187.179	
1,800.00	1,800.00	1,816.12	1,815.83	3.94	3.64	-129.58	-850.31	-1,028.51	1,334.62	1,327.04	7.58	176.114	
1,900.00	1,899.98	1,909.68	1,909.34	4.13	3.83	77.86	-851.40	-1,026.06	1,332.99	1,325.02	7.97	167.328	
2,000.00	1,999.84	2,012.69	2,012.32	4.31	4.05	78.04	-852.35	-1,024.01	1,330.95	1,322.60	8.35	159.340	
2,100.00	2,099.45	2,119.10	2,118.69	4.49	4.27	78.37	-853.72	-1,020.94	1,327.74	1,318.99	8.75	151.664	
2,200.00	2,198.70	2,225.30	2,224.80	4.69	4.49	78.84	-855.28	-1,016.97	1,323.32	1,314.15	9.17	144.261	
2,256.73	2,254.80	2,279.43	2,278.89	4.81	4.60	79.17	-855.91	-1,014.99	1,320.47	1,311.06	9.41	140.356	
2,300.00	2,297.52	2,320.52	2,319.96	4.91	4.69	79.40	-856.28	-1,013.64	1,318.30	1,308.71	9.59	137.449	
2,400.00	2,396.25	2,414.16	2,413.56	5.14	4.88	79.95	-856.86	-1,011.11	1,313.64	1,303.62	10.02	131.057	
2,500.00	2,494.98	2,505.22	2,504.60	5.39	5.08	80.50	-857.46	-1,009.28	1,309.71	1,299.24	10.46	125.152	
2,600.00	2,593.71	2,653.91	2,653.22	5.66	5.39	81.39	-858.07	-1,004.96	1,305.46	1,294.42	11.03	118.345	
2,700.00	2,692.45	2,772.16	2,771.18	5.93	5.64	82.06	-856.54	-996.91	1,296.69	1,285.14	11.55	112.307	
2,800.00	2,791.18	2,868.01	2,866.80	6.22	5.85	82.60	-855.47	-990.37	1,288.28	1,276.25	12.03	107.070	
2,900.00	2,889.91	3,018.64	3,016.79	6.51	6.18	83.45	-852.29	-977.14	1,277.70	1,265.09	12.61	101.305	
3,000.00	2,988.64	3,117.93	3,115.49	6.81	6.41	84.00	-849.30	-966.67	1,265.44	1,252.32	13.12	96.425	
3,100.00	3,087.37	3,255.05	3,251.68	7.12	6.73	84.81	-844.39	-951.60	1,252.89	1,239.21	13.68	91.553	
3,200.00	3,186.11	3,346.70	3,342.49	7.43	6.96	85.36	-839.86	-940.04	1,238.13	1,223.92	14.20	87.185	
3,300.00	3,284.84	3,474.54	3,468.95	7.75	7.29	86.11	-833.87	-922.40	1,222.62	1,207.86	14.76	82.853	
3,400.00	3,383.57	3,574.49	3,567.61	8.08	7.56	86.68	-829.07	-907.10	1,205.92	1,190.63	15.29	78.846	
3,500.00	3,482.30	3,684.57	3,676.26	8.40	7.86	87.33	-823.72	-890.28	1,189.39	1,173.55	15.84	75.074	
3,600.00	3,581.03	3,804.37	3,793.99	8.73	8.21	88.02	-817.19	-869.10	1,170.48	1,154.08	16.40	71.378	
3,700.00	3,679.76	3,892.68	3,880.76	9.07	8.48	88.56	-811.81	-853.56	1,151.56	1,134.61	16.95	67.958	
3,800.00	3,778.50	3,999.77	3,986.08	9.40	8.81	89.27	-805.26	-835.37	1,133.29	1,115.79	17.50	64.765	
3,900.00	3,877.23	4,107.06	4,091.35	9.74	9.16	90.01	-797.93	-815.90	1,113.78	1,095.72	18.05	61.689	
4,000.00	3,975.96	4,200.10	4,182.59	10.08	9.46	90.67	-791.46	-798.89	1,094.25	1,075.64	18.61	58.791	
4,100.00	4,074.69	4,293.70	4,274.46	10.42	9.77	91.37	-784.91	-782.23	1,075.29	1,056.12	19.17	56.087	
4,200.00	4,173.42	4,395.84	4,374.67	10.77	10.11	92.08	-779.08	-763.36	1,056.49	1,036.76	19.73	53.538	
4,300.00	4,272.16	4,489.72	4,466.60	11.12	10.43	92.60	-776.24	-744.62	1,037.67	1,017.37	20.30	51.111	
4,400.00	4,370.89	4,582.04	4,557.09	11.46	10.74	93.11	-773.90	-726.45	1,019.42	998.54	20.88	48.832	
4,500.00	4,469.62	4,668.75	4,642.24	11.81	11.04	93.64	-771.48	-710.24	1,002.04	980.59	21.45	46.711	
4,600.00	4,568.35	4,760.44	4,732.41	12.16	11.35	94.19	-769.64	-693.76	985.73	963.70	22.03	44.750	
4,700.00	4,667.08	4,850.25	4,820.68	12.51	11.65	94.62	-770.03	-677.24	970.14	947.53	22.61	42.913	
4,800.00	4,765.81	4,934.18	4,903.37	12.87	11.92	95.05	-770.48	-662.82	955.77	932.59	23.19	41.222	
4,900.00	4,864.55	5,058.85	5,026.32	13.22	12.33	95.78	-770.31	-642.23	942.06	918.30	23.76	39.652	

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



SB Directional Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well Goonch Fed Com 04 232H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB @ 3041.00usft
Reference Site:	SEC. 04-T23S-R28E	MD Reference:	RKB @ 3041.00usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Goonch Fed Com 04 232H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 2	Offset TVD Reference:	Offset Datum

Offset Design: SEC. 04-T23S-R28E - Jack Sleeper State Com 9 215H - Wellbore #1 - Wellbore #1													Offset Site Error: 0.00 usft
Survey Program: 170-MWD													Offset Well Error: 0.50 usft
Rule Assigned:													
Measured Depth (usft)	Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,000.00	4,963.28	5,161.94	5,127.58	13.57	12.69	96.48	-768.10	-623.06	925.52	901.19	24.33	38.038	
5,100.00	5,062.01	5,275.98	5,239.36	13.93	13.11	97.22	-766.16	-600.55	908.22	883.32	24.89	36.484	
5,200.00	5,160.74	5,384.55	5,345.26	14.28	13.53	97.80	-765.78	-576.67	889.38	863.92	25.46	34.929	
5,300.00	5,259.47	5,482.04	5,440.24	14.64	13.91	98.32	-765.67	-554.67	870.19	844.14	26.05	33.406	
5,400.00	5,358.21	5,573.37	5,529.38	15.00	14.27	98.95	-764.01	-534.88	851.35	824.71	26.64	31.958	
5,500.00	5,456.94	5,658.01	5,612.29	15.36	14.59	99.64	-761.68	-518.02	833.96	806.72	27.23	30.623	
5,600.00	5,555.67	5,748.66	5,701.34	15.71	14.92	100.44	-759.15	-501.26	818.06	790.25	27.81	29.415	
5,700.00	5,654.40	5,858.05	5,808.65	16.07	15.33	101.35	-757.16	-480.10	801.85	773.49	28.36	28.274	
5,800.00	5,753.13	5,954.65	5,903.20	16.43	15.69	102.12	-756.12	-460.35	784.96	756.03	28.93	27.131	
5,900.00	5,851.86	6,039.21	5,986.20	16.79	16.01	102.84	-755.24	-444.20	769.53	740.01	29.52	26.066	
6,000.00	5,950.60	6,133.27	6,078.77	17.15	16.35	103.69	-754.33	-427.59	755.66	725.57	30.09	25.113	
6,100.00	6,049.33	6,244.19	6,187.63	17.51	16.75	104.68	-753.45	-406.31	740.48	709.86	30.63	24.177	
6,200.00	6,148.06	6,327.79	6,269.75	17.87	17.06	105.48	-752.65	-390.75	726.10	694.89	31.21	23.263	
6,300.00	6,246.79	6,407.12	6,348.09	18.24	17.33	106.32	-751.61	-378.26	714.57	682.78	31.79	22.480	
6,400.00	6,345.52	6,521.27	6,460.68	18.60	17.72	107.62	-749.42	-359.61	702.54	670.24	32.31	21.747	
6,500.00	6,444.26	6,607.02	6,545.38	18.96	18.01	108.69	-747.13	-346.48	691.72	658.86	32.86	21.050	
6,600.00	6,542.99	6,726.16	6,662.86	19.32	18.43	110.13	-744.95	-326.79	680.19	646.84	33.36	20.392	
6,700.00	6,641.72	6,826.51	6,761.43	19.69	18.79	111.38	-742.84	-308.10	666.86	632.98	33.88	19.680	
6,800.00	6,740.45	6,931.76	6,864.91	20.05	19.19	112.79	-740.29	-289.05	654.40	620.01	34.39	19.026	
6,900.00	6,839.18	7,022.68	6,954.02	20.41	19.53	114.01	-738.39	-271.13	640.73	605.79	34.95	18.334	
7,000.00	6,937.91	7,119.49	7,049.36	20.78	19.89	115.42	-735.84	-254.46	629.80	594.32	35.48	17.752	
7,100.00	7,036.65	7,220.02	7,148.05	21.14	20.26	116.96	-732.92	-235.55	617.67	581.68	35.99	17.161	
7,200.00	7,135.38	7,318.50	7,244.85	21.50	20.63	118.46	-730.74	-217.63	606.63	570.12	36.51	16.614	
7,300.00	7,234.11	7,412.58	7,337.30	21.87	20.97	119.88	-729.42	-200.25	595.74	558.69	37.05	16.079	
7,400.00	7,332.84	7,524.91	7,447.71	22.23	21.39	121.59	-728.26	-179.60	585.42	547.90	37.51	15.605	
7,500.00	7,431.57	7,625.31	7,545.96	22.60	21.79	123.00	-729.06	-158.94	573.08	535.06	38.03	15.071	
7,600.00	7,530.31	7,712.16	7,631.11	22.96	22.12	124.11	-731.35	-142.06	562.10	523.50	38.60	14.563	
7,700.00	7,629.04	7,812.01	7,729.25	23.33	22.48	125.37	-734.41	-123.93	552.59	513.48	39.11	14.130	
7,800.00	7,727.77	7,916.35	7,831.62	23.69	22.88	127.03	-734.87	-103.79	542.60	503.01	39.59	13.704	
7,900.00	7,826.50	8,005.66	7,919.26	24.06	23.22	128.67	-733.74	-86.59	533.36	493.21	40.15	13.284	
8,000.00	7,925.23	8,098.87	8,010.95	24.42	23.57	130.38	-732.70	-69.88	525.96	485.27	40.69	12.927	
8,100.00	8,023.96	8,187.51	8,098.37	24.79	23.88	132.00	-731.86	-55.22	520.41	479.18	41.23	12.623	
8,200.00	8,122.70	8,269.70	8,179.73	25.15	24.14	133.48	-731.02	-43.68	517.83	476.07	41.76	12.401	
8,217.76	8,140.23	8,284.12	8,194.05	25.22	24.18	133.73	-730.89	-41.95	517.77	475.92	41.85	12.373	
8,300.00	8,221.43	8,352.55	8,262.12	25.52	24.36	134.85	-730.56	-34.96	518.95	476.71	42.24	12.285	
8,400.00	8,320.16	8,438.56	8,347.90	25.88	24.57	136.04	-731.22	-28.82	523.26	480.57	42.70	12.256	
8,500.00	8,418.89	8,533.39	8,442.60	26.25	24.77	137.29	-731.75	-23.91	529.77	486.61	43.16	12.275	
8,600.00	8,517.62	8,633.68	8,542.65	26.61	25.00	138.92	-729.45	-17.41	536.39	492.75	43.64	12.291	
8,700.00	8,616.36	8,731.69	8,640.42	26.98	25.22	140.48	-727.04	-11.03	543.46	499.34	44.12	12.319	
8,800.00	8,715.09	8,827.49	8,736.05	27.35	25.43	141.81	-725.97	-5.58	551.13	506.55	44.58	12.363	
8,900.00	8,813.82	8,921.78	8,830.25	27.71	25.62	142.97	-725.68	-1.38	559.87	514.85	45.03	12.434	
9,000.00	8,912.55	9,015.81	8,924.23	28.08	25.80	143.99	-725.92	1.68	569.65	524.19	45.46	12.530	
9,100.00	9,011.28	9,165.25	9,073.40	28.45	26.08	145.14	-731.03	6.59	579.38	533.37	46.01	12.593	
9,110.09	9,021.24	9,195.88	9,103.66	28.48	26.15	145.15	-735.19	8.90	579.38	533.37	46.01	12.592	
9,200.00	9,110.22	9,550.26	9,407.13	28.76	27.29	134.97	-892.54	70.74	556.03	512.81	43.22	12.865	
9,300.00	9,209.61	9,676.06	9,474.31	29.00	27.85	123.31	-994.83	98.09	508.11	463.27	44.84	11.332	
9,400.00	9,309.32	9,748.39	9,499.76	29.20	28.23	114.04	-1,060.75	113.29	463.26	415.24	48.02	9.648	
9,500.00	9,409.23	9,792.29	9,512.25	29.36	28.48	107.79	-1,101.65	123.21	430.99	379.99	50.99	8.452	
9,566.82	9,476.04	9,808.35	9,516.37	29.46	28.58	-102.00	-1,116.73	126.91	419.45	367.30	52.15	8.043	
9,600.00	9,509.22	9,814.94	9,517.93	29.51	28.62	-102.88	-1,122.95	128.39	417.27	364.87	52.40	7.963	
9,612.24	9,521.46	9,817.21	9,518.46	29.52	28.63	-103.18	-1,125.11	128.89	417.10	364.66	52.43	7.955 CC, ES, SF	
9,700.00	9,609.22	9,831.56	9,521.55	29.64	28.72	-105.10	-1,138.76	132.03	425.89	374.15	51.74	8.231	

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



SB Directional Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well Goonch Fed Com 04 232H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB @ 3041.00usft
Reference Site:	SEC. 04-T23S-R28E	MD Reference:	RKB @ 3041.00usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Goonch Fed Com 04 232H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 2	Offset TVD Reference:	Offset Datum

Offset Design: SEC. 04-T23S-R28E - Jack Sleeper State Com 9 215H - Wellbore #1 - Wellbore #1												Offset Site Error:	0.00 usft
Survey Program: 170-MWD												Offset Well Error:	0.50 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
9,716.82	9,626.04	9,833.96	9,522.04	29.66	28.74	-105.43	-1,141.06	132.54	429.54	378.10	51.44	8.350	
9,750.00	9,659.20	9,837.81	9,522.79	29.69	28.76	-106.56	-1,144.74	133.36	438.77	388.06	50.71	8.652	
9,800.00	9,708.93	9,840.85	9,523.37	29.71	28.78	-105.00	-1,147.65	134.00	457.77	408.41	49.36	9.274	
9,850.00	9,758.03	9,841.01	9,523.40	29.70	28.79	-102.30	-1,147.81	134.04	482.18	434.32	47.86	10.075	
9,900.00	9,806.12	9,838.74	9,522.97	29.65	28.77	-98.49	-1,145.63	133.56	511.06	464.70	46.37	11.022	
9,950.00	9,852.84	9,834.39	9,522.12	29.56	28.74	-93.65	-1,141.46	132.63	543.46	498.47	44.99	12.079	
10,000.00	9,897.83	9,828.28	9,520.88	29.44	28.70	-87.92	-1,135.63	131.32	578.47	534.68	43.79	13.210	
10,050.00	9,940.76	9,820.67	9,519.24	29.30	28.65	-81.53	-1,128.39	129.66	615.29	572.50	42.79	14.378	
10,100.00	9,981.29	9,811.79	9,517.20	29.12	28.60	-74.81	-1,119.97	127.68	653.26	611.26	42.00	15.553	
10,150.00	10,019.12	9,786.00	9,510.52	28.93	28.45	-66.67	-1,095.79	121.73	692.18	651.27	40.91	16.919	
10,200.00	10,053.95	9,786.00	9,510.52	28.72	28.45	-61.34	-1,095.79	121.73	730.44	689.60	40.83	17.889	
10,250.00	10,085.53	9,767.68	9,505.33	28.49	28.34	-55.19	-1,078.73	117.50	768.58	728.20	40.37	19.037	
10,300.00	10,113.61	9,750.00	9,500.23	28.25	28.23	-49.92	-1,062.26	113.63	805.52	765.42	40.10	20.089	
10,350.00	10,137.99	9,727.63	9,493.33	28.01	28.11	-45.30	-1,041.51	108.88	841.18	801.35	39.83	21.120	
10,400.00	10,158.46	9,711.79	9,487.96	27.77	28.03	-41.60	-1,027.00	105.55	875.60	835.73	39.87	21.962	
10,450.00	10,174.88	9,696.00	9,482.21	27.52	27.95	-38.47	-1,012.66	102.25	908.52	868.51	40.01	22.707	
10,500.00	10,187.13	9,696.00	9,482.21	27.29	27.95	-36.00	-1,012.66	102.25	940.13	899.46	40.67	23.115	
10,550.00	10,195.11	9,667.81	9,470.81	27.06	27.81	-33.62	-987.56	96.36	969.42	928.78	40.63	23.857	
10,600.00	10,198.75	9,633.00	9,454.57	26.84	27.65	-31.65	-957.66	89.08	997.80	957.30	40.50	24.637	
10,616.82	10,199.00	9,633.00	9,454.57	26.76	27.65	-31.13	-957.66	89.08	1,006.44	965.67	40.77	24.683	
10,700.00	10,199.00	9,633.00	9,454.57	26.44	27.65	-31.13	-957.66	89.08	1,051.25	1,009.13	42.11	24.961	
10,800.00	10,199.00	9,633.00	9,454.57	26.12	27.65	-31.13	-957.66	89.08	1,110.98	1,067.41	43.57	25.496	
10,900.00	10,199.00	9,578.23	9,424.49	25.89	27.40	-30.85	-913.52	77.15	1,171.77	1,128.15	43.62	26.865	
11,000.00	10,199.00	9,538.00	9,399.14	25.77	27.24	-30.58	-883.71	67.84	1,238.20	1,194.22	43.99	28.149	
11,100.00	10,199.00	9,538.00	9,399.14	25.82	27.24	-30.58	-883.71	67.84	1,306.77	1,261.67	45.09	28.979	
11,200.00	10,199.00	9,538.00	9,399.14	26.10	27.24	-30.58	-883.71	67.84	1,379.18	1,333.12	46.05	29.948	
11,300.00	10,199.00	9,538.00	9,399.14	26.62	27.24	-30.58	-883.71	67.84	1,454.86	1,407.98	46.88	31.032	

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



SB Directional Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well Goonch Fed Com 04 232H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB @ 3041.00usft
Reference Site:	SEC. 04-T23S-R28E	MD Reference:	RKB @ 3041.00usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Goonch Fed Com 04 232H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 2	Offset TVD Reference:	Offset Datum

Offset Design: SEC. 04-T23S-R28E - Jack Sleeper State Com 9 221H - Wellbore #1 - Wellbore #1													Offset Site Error: 0.00 usft
Survey Program: 94-MWD													Offset Well Error: 0.50 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
0.00	0.00	0.00	0.00	0.50	0.50	-131.79	-884.08	-989.11	1,326.63				
100.00	100.00	115.32	115.32	0.51	0.52	-131.76	-882.96	-989.00	1,325.90	1,324.88	1.02	1,295.314	
200.00	200.00	219.59	219.56	0.59	0.62	-131.68	-880.58	-988.99	1,324.38	1,323.17	1.20	1,099.156	
300.00	300.00	318.81	318.74	0.73	0.77	-131.59	-877.99	-989.17	1,322.78	1,321.29	1.50	883.032	
400.00	400.00	426.84	426.73	0.91	0.96	-131.48	-874.86	-989.40	1,321.03	1,319.16	1.87	707.639	
500.00	500.00	525.00	524.83	1.10	1.14	-131.39	-871.69	-989.23	1,318.77	1,316.53	2.24	588.124	
600.00	600.00	617.00	616.81	1.31	1.31	-131.33	-869.70	-988.89	1,317.06	1,314.45	2.61	504.702	
700.00	700.00	709.00	708.80	1.52	1.48	-131.31	-868.66	-988.29	1,315.83	1,312.84	2.99	440.017	
762.31	762.31	760.48	760.28	1.65	1.58	-131.31	-868.37	-988.15	1,315.49	1,312.27	3.22	408.140	
800.00	800.00	789.66	789.47	1.73	1.64	-131.31	-868.46	-988.21	1,315.61	1,312.25	3.36	391.436	
900.00	900.00	873.01	872.80	1.95	1.80	-131.33	-869.50	-988.77	1,316.94	1,313.20	3.74	351.987	
1,000.00	1,000.00	971.10	970.86	2.17	1.99	-131.37	-871.57	-989.76	1,319.09	1,314.93	4.15	317.692	
1,100.00	1,100.00	1,072.77	1,072.51	2.38	2.19	-131.41	-873.67	-990.58	1,321.06	1,316.48	4.57	288.828	
1,200.00	1,200.00	1,170.90	1,170.62	2.61	2.39	-131.45	-875.58	-991.48	1,323.04	1,318.04	4.99	264.903	
1,300.00	1,300.00	1,278.46	1,278.15	2.83	2.61	-131.48	-877.47	-992.45	1,324.88	1,319.44	5.44	243.724	
1,400.00	1,400.00	1,382.60	1,382.29	3.05	2.82	-131.50	-878.71	-993.20	1,326.20	1,320.33	5.87	225.854	
1,500.00	1,500.00	1,485.52	1,485.20	3.27	3.04	-131.49	-879.37	-994.28	1,327.42	1,321.11	6.31	210.375	
1,600.00	1,600.00	1,626.44	1,626.09	3.49	3.33	-131.56	-880.02	-992.72	1,326.92	1,320.10	6.82	194.569	
1,700.00	1,700.00	1,757.31	1,756.68	3.71	3.60	-131.86	-882.36	-984.71	1,323.51	1,316.20	7.31	181.174	
1,800.00	1,800.00	1,851.00	1,850.01	3.94	3.79	-132.18	-885.10	-976.94	1,319.28	1,311.56	7.72	170.781	
1,900.00	1,899.98	1,935.90	1,934.69	4.13	3.98	75.17	-887.13	-971.18	1,315.43	1,307.33	8.10	162.344	
2,000.00	1,999.84	2,034.24	2,032.93	4.31	4.19	75.32	-887.96	-966.88	1,311.43	1,302.94	8.49	154.538	
2,100.00	2,099.45	2,156.12	2,154.69	4.49	4.45	75.76	-886.91	-961.62	1,305.39	1,296.47	8.93	146.251	
2,200.00	2,198.70	2,238.40	2,236.89	4.69	4.63	76.25	-886.12	-958.22	1,298.68	1,289.38	9.30	139.656	
2,256.73	2,254.80	2,287.26	2,285.72	4.81	4.73	76.59	-885.96	-956.53	1,295.06	1,285.53	9.52	135.994	
2,300.00	2,297.52	2,326.00	2,324.45	4.91	4.81	76.82	-885.92	-955.36	1,292.44	1,282.74	9.70	133.231	
2,400.00	2,396.25	2,415.39	2,413.81	5.14	5.00	77.37	-885.91	-953.24	1,287.01	1,276.88	10.12	127.118	
2,500.00	2,494.98	2,509.81	2,508.22	5.39	5.20	77.98	-886.01	-951.53	1,282.24	1,271.67	10.57	121.279	
2,600.00	2,593.71	2,607.93	2,606.32	5.66	5.41	78.60	-886.28	-949.85	1,277.82	1,266.78	11.04	115.738	
2,700.00	2,692.45	2,708.74	2,707.12	5.93	5.62	79.27	-886.16	-948.37	1,273.51	1,261.98	11.53	110.491	
2,800.00	2,791.18	2,808.04	2,806.41	6.22	5.83	79.95	-885.77	-946.91	1,269.20	1,257.18	12.02	105.618	
2,900.00	2,889.91	2,962.94	2,961.23	6.51	6.16	80.97	-884.79	-942.73	1,264.54	1,251.92	12.62	100.215	
3,000.00	2,988.64	3,107.18	3,105.05	6.81	6.48	81.86	-881.12	-932.51	1,255.03	1,241.84	13.19	95.114	
3,100.00	3,087.37	3,248.38	3,245.19	7.12	6.81	82.69	-874.97	-916.42	1,240.72	1,226.96	13.76	90.151	
3,200.00	3,186.11	3,339.61	3,335.64	7.43	7.04	83.22	-870.73	-905.24	1,225.94	1,211.66	14.28	85.860	
3,300.00	3,284.84	3,435.39	3,430.64	7.75	7.28	83.81	-866.41	-893.93	1,211.73	1,196.92	14.80	81.847	
3,400.00	3,383.57	3,535.72	3,530.17	8.08	7.53	84.44	-861.78	-882.16	1,197.65	1,182.31	15.34	78.064	
3,500.00	3,482.30	3,634.16	3,627.82	8.40	7.78	85.08	-857.08	-870.57	1,183.60	1,167.72	15.88	74.521	
3,600.00	3,581.03	3,747.26	3,739.81	8.73	8.09	85.72	-853.03	-855.37	1,168.93	1,152.49	16.44	71.100	
3,700.00	3,679.76	3,842.60	3,834.10	9.07	8.34	86.21	-850.71	-841.41	1,153.99	1,137.00	16.99	67.928	
3,800.00	3,778.50	3,938.97	3,929.43	9.40	8.61	86.70	-848.54	-827.45	1,139.36	1,121.82	17.54	64.951	
3,900.00	3,877.23	4,036.75	4,026.16	9.74	8.88	87.21	-846.49	-813.31	1,124.92	1,106.82	18.10	62.150	
4,000.00	3,975.96	4,135.19	4,123.54	10.08	9.16	87.73	-844.54	-799.06	1,110.62	1,091.96	18.66	59.512	
4,100.00	4,074.69	4,234.54	4,221.80	10.42	9.45	88.27	-842.67	-784.54	1,096.34	1,077.11	19.23	57.018	
4,200.00	4,173.42	4,333.62	4,319.80	10.77	9.73	88.81	-840.86	-770.00	1,082.13	1,062.34	19.80	54.664	
4,300.00	4,272.16	4,433.42	4,418.47	11.12	10.03	89.37	-838.92	-755.24	1,067.87	1,047.50	20.37	52.435	
4,400.00	4,370.89	4,530.17	4,514.14	11.46	10.31	89.92	-837.12	-740.91	1,053.73	1,032.79	20.94	50.332	
4,500.00	4,469.62	4,613.77	4,596.86	11.81	10.56	90.42	-835.66	-728.88	1,040.17	1,018.67	21.50	48.381	
4,600.00	4,568.35	4,683.00	4,665.58	12.16	10.75	90.83	-835.36	-720.56	1,029.29	1,007.25	22.05	46.684	
4,700.00	4,667.08	4,773.61	4,755.70	12.51	10.99	91.39	-835.68	-711.16	1,020.39	997.78	22.61	45.131	
4,800.00	4,765.81	4,864.38	4,846.05	12.87	11.23	91.98	-835.95	-702.40	1,012.24	989.07	23.17	43.689	
4,900.00	4,864.55	4,957.49	4,938.80	13.22	11.46	92.61	-836.09	-694.22	1,004.94	981.21	23.73	42.350	

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



SB Directional Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well Goonch Fed Com 04 232H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB @ 3041.00usft
Reference Site:	SEC. 04-T23S-R28E	MD Reference:	RKB @ 3041.00usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Goonch Fed Com 04 232H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 2	Offset TVD Reference:	Offset Datum

Offset Design: SEC. 04-T23S-R28E - Jack Sleeper State Com 9 221H - Wellbore #1 - Wellbore #1												Offset Site Error:	0.00 usft
Survey Program: 94-MWD												Offset Well Error:	0.50 usft
Rule Assigned:												Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
5,000.00	4,963.28	5,077.41	5,058.18	13.57	11.77	93.46	-835.65	-682.90	996.96	972.64	24.32	40.999	
5,100.00	5,062.01	5,172.52	5,152.79	13.93	12.02	94.13	-835.14	-673.19	988.37	963.49	24.88	39.726	
5,200.00	5,160.74	5,270.74	5,250.51	14.28	12.29	94.83	-834.79	-663.27	980.11	954.66	25.45	38.515	
5,300.00	5,259.47	5,367.03	5,346.30	14.64	12.54	95.50	-834.85	-653.55	972.16	946.15	26.01	37.372	
5,400.00	5,358.21	5,460.98	5,439.80	15.00	12.79	96.15	-835.33	-644.30	964.76	938.19	26.58	36.300	
5,500.00	5,456.94	5,553.70	5,532.13	15.36	13.03	96.82	-835.71	-635.81	958.11	930.97	27.14	35.307	
5,600.00	5,555.67	5,651.30	5,629.38	15.71	13.28	97.56	-836.03	-627.56	952.22	924.52	27.70	34.380	
5,700.00	5,654.40	5,771.72	5,749.23	16.07	13.59	98.47	-835.96	-615.81	945.13	916.86	28.27	33.429	
5,800.00	5,753.13	5,899.38	5,875.91	16.43	13.95	99.38	-836.05	-600.14	935.97	907.14	28.84	32.457	
5,900.00	5,851.86	5,998.88	5,974.35	16.79	14.25	100.04	-836.45	-585.67	924.85	895.44	29.40	31.452	
6,000.00	5,950.60	6,086.51	6,061.15	17.15	14.51	100.65	-836.85	-573.62	914.62	884.64	29.97	30.514	
6,100.00	6,049.33	6,171.48	6,145.47	17.51	14.75	101.28	-837.19	-563.19	905.92	875.39	30.53	29.669	
6,200.00	6,148.06	6,253.56	6,227.10	17.87	14.98	101.93	-837.39	-554.58	899.04	867.96	31.08	28.925	
6,300.00	6,246.79	6,344.09	6,317.30	18.24	15.21	102.71	-837.23	-546.88	894.09	862.47	31.62	28.274	
6,400.00	6,345.52	6,443.21	6,415.94	18.60	15.51	103.84	-835.38	-536.42	888.84	856.67	32.17	27.630	
6,500.00	6,444.26	6,540.31	6,512.48	18.96	15.77	104.87	-832.00	-526.55	881.99	849.29	32.70	26.972	
6,600.00	6,542.99	6,639.86	6,611.56	19.32	16.02	105.90	-828.62	-517.86	876.26	843.03	33.23	26.371	
6,700.00	6,641.72	6,738.41	6,709.68	19.69	16.27	106.89	-826.16	-509.26	871.24	837.48	33.76	25.810	
6,800.00	6,740.45	6,836.98	6,807.54	20.05	16.62	108.17	-824.01	-495.94	865.56	831.27	34.29	25.245	
6,900.00	6,839.18	6,935.55	6,905.30	20.41	16.90	109.00	-824.24	-483.44	857.92	823.09	34.82	24.636	
7,000.00	6,937.91	7,033.00	7,002.19	20.78	17.14	109.70	-825.11	-473.79	851.86	816.50	35.36	24.090	
7,100.00	7,036.65	7,131.00	7,100.61	21.14	17.40	110.50	-825.99	-463.40	846.55	810.66	35.89	23.587	
7,200.00	7,135.38	7,229.00	7,198.08	21.50	17.66	111.32	-826.91	-453.44	841.87	805.45	36.42	23.118	
7,300.00	7,234.11	7,327.66	7,296.30	21.87	17.91	112.23	-827.02	-444.21	838.31	801.38	36.93	22.698	
7,400.00	7,332.84	7,425.92	7,394.79	22.23	18.26	113.32	-828.03	-430.51	833.46	796.01	37.45	22.257	
7,500.00	7,431.57	7,524.01	7,492.51	22.60	18.63	114.39	-829.16	-412.43	824.92	786.98	37.94	21.742	
7,600.00	7,530.31	7,621.93	7,589.42	22.96	18.90	115.12	-830.44	-399.31	816.35	777.87	38.48	21.215	
7,700.00	7,629.04	7,719.72	7,686.42	23.33	19.17	115.92	-831.88	-387.35	810.11	771.10	39.00	20.770	
7,800.00	7,727.77	7,817.09	7,783.83	23.69	19.48	116.92	-831.86	-373.47	803.37	763.87	39.50	20.336	
7,900.00	7,826.50	7,915.08	7,881.08	24.06	19.74	117.85	-831.44	-362.03	797.73	757.72	40.01	19.938	
8,000.00	7,925.23	8,013.54	7,978.91	24.42	20.00	118.78	-831.33	-351.37	793.54	753.03	40.51	19.588	
8,100.00	8,023.96	8,111.82	8,076.61	24.79	20.27	119.78	-831.03	-340.81	790.18	749.18	41.00	19.272	
8,200.00	8,122.70	8,210.22	8,175.42	25.15	20.55	120.88	-830.22	-329.98	787.41	745.93	41.48	18.981	
8,300.00	8,221.43	8,308.29	8,272.86	25.52	20.82	122.01	-828.40	-319.14	784.52	742.57	41.96	18.698	
8,400.00	8,320.16	8,406.71	8,374.76	25.88	21.08	123.10	-827.04	-309.37	782.93	740.50	42.43	18.453	
8,500.00	8,418.89	8,504.93	8,472.38	26.25	21.34	124.35	-823.64	-299.25	781.52	738.63	42.89	18.223	
8,600.00	8,517.62	8,603.05	8,570.90	26.61	21.64	125.74	-820.06	-288.42	781.15	737.80	43.34	18.022	
8,700.00	8,616.36	8,701.55	8,668.52	26.98	21.96	126.98	-819.26	-274.62	778.08	734.27	43.81	17.762	
8,800.00	8,715.09	8,800.30	8,771.71	27.35	22.21	127.89	-819.68	-264.72	776.48	732.20	44.28	17.537	
8,900.00	8,813.82	8,908.81	8,879.65	27.71	22.48	128.94	-819.86	-254.14	775.84	731.10	44.74	17.342	
9,000.00	8,912.55	9,007.13	8,977.40	28.08	22.75	129.96	-820.17	-243.63	775.28	730.08	45.20	17.154	
9,029.00	8,941.18	9,036.56	9,006.68	28.19	22.82	130.24	-820.33	-240.76	775.24	729.91	45.33	17.103	
9,100.00	9,011.28	9,106.73	9,076.52	28.45	23.00	130.90	-820.80	-234.24	775.54	729.89	45.65	16.988	
9,110.00	9,021.24	9,116.00	9,085.75	28.48	23.02	130.99	-820.87	-233.35	775.63	729.93	45.70	16.973	
9,200.00	9,110.22	9,205.46	9,174.84	28.76	23.25	131.74	-821.76	-225.49	775.88	729.81	46.07	16.841	
9,300.00	9,209.61	9,304.50	9,278.54	29.00	23.49	132.34	-823.02	-217.68	774.71	728.27	46.44	16.682	
9,400.00	9,309.32	9,404.83	9,378.60	29.20	23.72	132.73	-824.25	-210.74	772.29	725.49	46.80	16.502	
9,500.00	9,409.23	9,499.73	9,468.30	29.36	23.93	132.93	-825.25	-204.74	768.41	721.27	47.14	16.300	
9,566.82	9,476.04	9,561.12	9,534.59	29.46	24.07	-74.49	-825.65	-201.30	765.20	717.83	47.38	16.152	
9,600.00	9,509.22	9,599.56	9,568.99	29.51	24.15	-74.47	-825.84	-199.66	763.48	715.99	47.49	16.076	
9,700.00	9,609.22	9,699.23	9,678.54	29.64	24.36	-74.42	-826.42	-195.07	758.70	710.87	47.83	15.861	
9,716.82	9,626.04	9,704.41	9,677.70	29.66	24.39	-74.41	-826.51	-194.34	757.95	710.06	47.89	15.827	

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



SB Directional

Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well Goonch Fed Com 04 232H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB @ 3041.00usft
Reference Site:	SEC. 04-T23S-R28E	MD Reference:	RKB @ 3041.00usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Goonch Fed Com 04 232H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 2	Offset TVD Reference:	Offset Datum

Offset Design: SEC. 04-T23S-R28E - Jack Sleeper State Com 9 221H - Wellbore #1 - Wellbore #1													Offset Site Error: 0.00 usft
Survey Program: 94-MWD													Offset Well Error: 0.50 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
9,750.00	9,659.20	9,741.65	9,694.91	29.69	24.48	-76.19	-826.85	-192.71	756.24	708.23	48.01	15.750	
9,800.00	9,708.93	9,946.96	9,892.39	29.71	24.99	-81.66	-872.25	-173.28	747.87	699.79	48.08	15.556	
9,850.00	9,758.03	9,988.90	9,929.28	29.70	25.11	-85.01	-891.36	-167.60	734.46	686.04	48.41	15.170	
9,900.00	9,806.12	10,015.00	9,951.49	29.65	25.18	-87.78	-904.68	-164.44	722.01	673.24	48.77	14.804	
9,950.00	9,852.84	10,039.14	9,971.42	29.56	25.23	-90.42	-918.07	-162.00	711.58	662.46	49.12	14.485	
10,000.00	9,897.83	10,053.41	9,982.88	29.44	25.26	-92.22	-926.51	-160.90	704.01	654.60	49.42	14.247	
10,050.00	9,940.76	10,063.84	9,991.08	29.30	25.29	-93.44	-932.92	-160.25	699.74	650.12	49.62	14.102	
10,083.81	9,968.45	10,068.95	9,995.05	29.18	25.30	-93.93	-936.14	-159.98	698.89	649.19	49.70	14.061 CC, ES	
10,100.00	9,981.29	10,070.90	9,996.55	29.12	25.30	-94.06	-937.37	-159.89	699.09	649.36	49.73	14.058 SF	
10,150.00	10,019.12	10,075.06	9,999.73	28.93	25.31	-94.09	-940.04	-159.70	702.22	652.48	49.74	14.118	
10,200.00	10,053.95	10,076.73	10,001.01	28.72	25.32	-93.52	-941.12	-159.63	709.15	659.49	49.66	14.279	
10,250.00	10,085.53	10,076.29	10,000.67	28.49	25.32	-92.40	-940.83	-159.65	719.76	670.24	49.52	14.535	
10,300.00	10,113.61	10,074.04	9,998.96	28.25	25.31	-90.76	-939.39	-159.74	733.78	684.46	49.33	14.876	
10,350.00	10,137.99	10,070.26	9,996.05	28.01	25.30	-88.63	-936.97	-159.92	750.90	701.79	49.11	15.289	
10,400.00	10,158.46	10,065.15	9,992.10	27.77	25.29	-86.07	-933.74	-160.18	770.73	721.83	48.90	15.761	
10,450.00	10,174.88	10,058.93	9,987.23	27.52	25.28	-83.14	-929.88	-160.54	792.85	744.14	48.71	16.278	
10,500.00	10,187.13	10,051.73	9,981.54	27.29	25.26	-79.92	-925.50	-161.01	816.83	768.28	48.54	16.827	
10,550.00	10,195.11	10,015.00	9,951.49	27.06	25.18	-74.60	-904.68	-164.44	843.67	795.72	47.95	17.595	
10,600.00	10,198.75	10,015.00	9,951.49	26.84	25.18	-71.73	-904.68	-164.44	869.43	821.41	48.02	18.106	
10,616.82	10,199.00	10,015.00	9,951.49	26.76	25.18	-70.74	-904.68	-164.44	878.31	830.26	48.05	18.279	
10,700.00	10,199.00	10,015.00	9,951.49	26.44	25.18	-70.74	-904.68	-164.44	925.17	876.96	48.22	19.188	
10,800.00	10,199.00	10,015.00	9,951.49	26.12	25.18	-70.74	-904.68	-164.44	987.86	939.47	48.40	20.412	
10,900.00	10,199.00	9,978.33	9,920.11	25.89	25.08	-68.63	-886.28	-168.96	1,054.61	1,006.52	48.09	21.931	
11,000.00	10,199.00	9,961.82	9,905.62	25.77	25.03	-67.69	-878.69	-171.19	1,125.92	1,077.81	48.11	23.404	
11,100.00	10,199.00	9,920.00	9,868.00	25.82	24.91	-65.34	-861.49	-177.32	1,201.68	1,153.84	47.84	25.119	
11,200.00	10,199.00	9,920.00	9,868.00	26.10	24.91	-65.34	-861.49	-177.32	1,278.82	1,230.79	48.04	26.623	
11,300.00	10,199.00	9,920.00	9,868.00	26.62	24.91	-65.34	-861.49	-177.32	1,358.95	1,310.75	48.20	28.192	
11,400.00	10,199.00	9,920.00	9,868.00	27.29	24.91	-65.34	-861.49	-177.32	1,441.57	1,393.22	48.35	29.816	

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



SB Directional Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well Goonch Fed Com 04 232H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB @ 3041.00usft
Reference Site:	SEC. 04-T23S-R28E	MD Reference:	RKB @ 3041.00usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Goonch Fed Com 04 232H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 2	Offset TVD Reference:	Offset Datum

Offset Design: SEC. 04-T23S-R28E - Loving Federal Com #001 (Active) - Wellbore #1 - Wellbore #1												Offset Site Error:	0.00 usft
Survey Program: 125-INC-ONLY												Offset Well Error:	0.50 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
12,100.00	10,199.00	10,212.49	10,211.56	34.55	201.72	90.82	2,319.70	1,221.06	1,439.90	1,213.57	226.33	6.362	
12,200.00	10,199.00	10,211.82	10,210.89	35.83	201.70	90.76	2,319.70	1,221.06	1,349.50	1,122.87	226.63	5.955	
12,300.00	10,199.00	10,211.15	10,210.22	37.15	201.69	90.69	2,319.71	1,221.06	1,260.56	1,033.48	227.08	5.551	
12,400.00	10,199.00	10,210.48	10,209.55	38.51	201.67	90.63	2,319.71	1,221.06	1,173.39	945.66	227.73	5.153	
12,500.00	10,199.00	10,210.00	10,208.84	39.90	201.66	90.56	2,319.72	1,221.06	1,088.43	859.79	228.65	4.760	
12,600.00	10,199.00	10,209.16	10,208.22	41.32	201.64	90.50	2,319.72	1,221.06	1,006.25	776.36	229.89	4.377	
12,700.00	10,199.00	10,208.49	10,207.56	42.78	201.63	90.44	2,319.73	1,221.06	927.56	696.01	231.55	4.006	
12,800.00	10,199.00	10,207.84	10,206.90	44.26	201.61	90.38	2,319.73	1,221.06	853.36	619.64	233.72	3.651	
12,900.00	10,199.00	10,207.18	10,206.25	45.76	201.59	90.31	2,319.74	1,221.06	784.89	548.44	236.45	3.319	
13,000.00	10,199.00	10,206.53	10,205.59	47.28	201.58	90.25	2,319.74	1,221.06	723.81	484.05	239.76	3.019	
13,100.00	10,199.00	10,205.87	10,204.94	48.83	201.56	90.19	2,319.74	1,221.06	672.11	428.56	243.55	2.760	
13,200.00	10,199.00	10,205.22	10,204.29	50.39	201.55	90.12	2,319.75	1,221.06	632.12	384.53	247.59	2.553	
13,300.00	10,199.00	10,204.58	10,203.64	51.97	201.53	90.06	2,319.75	1,221.06	606.15	354.71	251.44	2.411	
13,400.00	10,199.00	10,203.93	10,203.00	53.56	201.52	90.00	2,319.76	1,221.06	596.03	341.43	254.60	2.341	
13,410.82	10,199.00	10,203.86	10,202.93	53.73	201.52	89.99	2,319.76	1,221.06	595.93	341.05	254.88	2.338	CC, ES, SF
13,500.00	10,199.00	10,203.29	10,202.35	55.17	201.50	89.94	2,319.76	1,221.06	602.57	345.90	256.66	2.348	
13,600.00	10,199.00	10,202.64	10,201.71	56.78	201.49	89.88	2,319.76	1,221.06	625.24	367.74	257.50	2.428	
13,700.00	10,199.00	10,202.00	10,201.07	58.41	201.47	89.81	2,319.77	1,221.06	662.39	405.12	257.27	2.575	
13,800.00	10,199.00	10,201.37	10,200.44	60.05	201.46	89.75	2,319.77	1,221.06	711.75	455.45	256.30	2.777	
13,900.00	10,199.00	10,200.73	10,199.80	61.71	201.44	89.69	2,319.78	1,221.06	770.99	516.08	254.91	3.025	
14,000.00	10,199.00	10,200.10	10,199.17	63.37	201.43	89.63	2,319.78	1,221.06	838.00	584.66	253.35	3.308	
14,100.00	10,199.00	10,199.47	10,198.54	65.03	201.42	89.57	2,319.78	1,221.06	911.09	659.31	251.77	3.619	
14,200.00	10,199.00	10,198.84	10,197.91	66.71	201.40	89.51	2,319.79	1,221.06	988.89	738.62	250.27	3.951	
14,300.00	10,199.00	10,198.21	10,197.28	68.39	201.39	89.45	2,319.79	1,221.06	1,070.39	821.51	248.88	4.301	
14,400.00	10,199.00	10,197.58	10,196.65	70.08	201.37	89.39	2,319.80	1,221.06	1,154.80	907.18	247.62	4.664	
14,500.00	10,199.00	10,196.96	10,196.03	71.78	201.36	89.33	2,319.80	1,221.06	1,241.53	995.05	246.48	5.037	
14,600.00	10,199.00	10,196.34	10,195.41	73.48	201.34	89.27	2,319.80	1,221.06	1,330.12	1,084.66	245.47	5.419	
14,700.00	10,199.00	10,195.72	10,194.79	75.19	201.33	89.21	2,319.81	1,221.06	1,420.23	1,175.68	244.55	5.807	

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



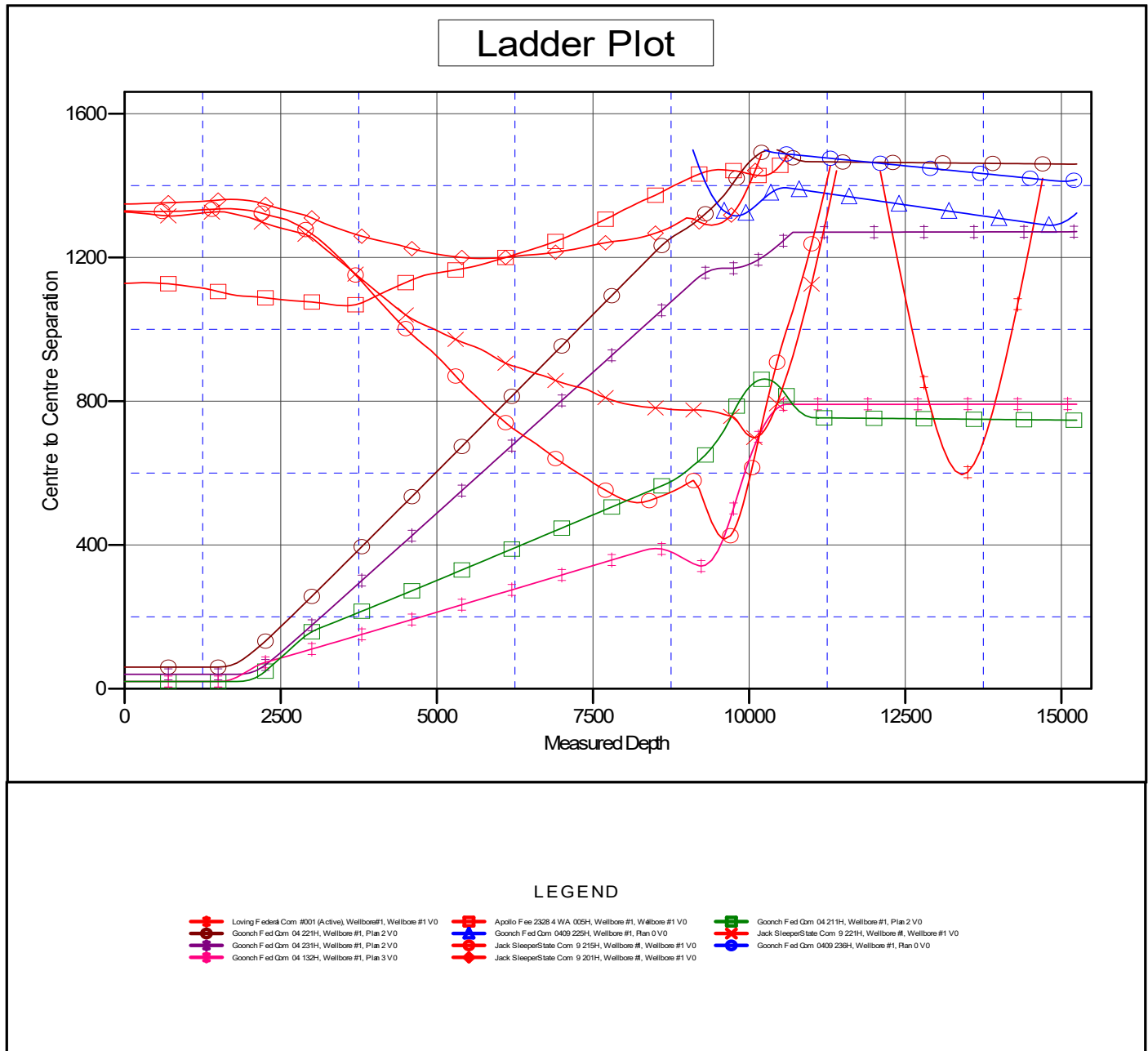
SB Directional Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well Goonch Fed Com 04 232H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB @ 3041.00usft
Reference Site:	SEC. 04-T23S-R28E	MD Reference:	RKB @ 3041.00usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Goonch Fed Com 04 232H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 2	Offset TVD Reference:	Offset Datum

Reference Depths are relative to RKB @ 3041.00usft
Offset Depths are relative to Offset Datum
Central Meridian is -104.333334

Coordinates are relative to: Goonch Fed Com 04 232H
Coordinate System is US State Plane 1983, New Mexico Eastern Zone
Grid Convergence at Surface is: 0.13°



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



SB Directional Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well Goonch Fed Com 04 232H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB @ 3041.00usft
Reference Site:	SEC. 04-T23S-R28E	MD Reference:	RKB @ 3041.00usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Goonch Fed Com 04 232H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 2	Offset TVD Reference:	Offset Datum

Reference Depths are relative to RKB @ 3041.00usft

Offset Depths are relative to Offset Datum

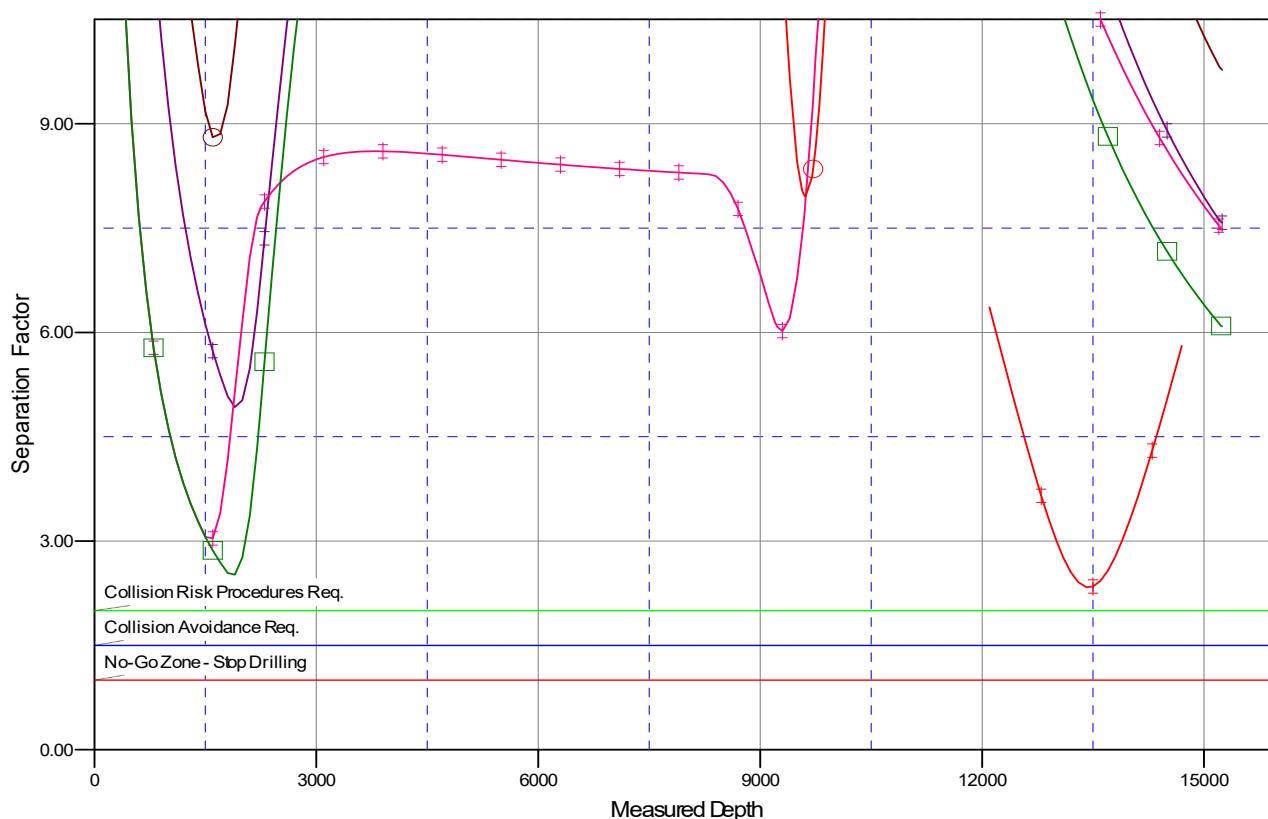
Central Meridian is -104.333334

Coordinates are relative to: Goonch Fed Com 04 232H

Coordinate System is US State Plane 1983, New Mexico Eastern Zone

Grid Convergence at Surface is: 0.13°

Separation Factor Plot



LEGEND

Loving Fedest Com #001 (Active), Wellbore #1, Wellbore #1 V0	Apollo Fee 2328.4 WA 005H, Wellbore #1, Wellbore #1 V0	Goonch Fed Com 04 211H, Wellbore #1, Plan 2 V0
Goonch Fed Com 04 221H, Wellbore #1, Plan 2 V0	Goonch Fed Com 0409 225H, Wellbore #1, Plan 0 V0	Jack SleeperState Com 9 221H, Wellbore #1, Wellbore #1 V0
Goonch Fed Com 04 231H, Wellbore #1, Plan 2 V0	Jack SleeperState Com 9 215H, Wellbore #1, Wellbore #1 V0	Goonch Fed Com 0409 236H, Wellbore #1, Plan 0 V0
Goonch Fed Com 04 132H, Wellbore #1, Plan 3 V0	Jack SleeperState Com 9 201H, Wellbore #1, Wellbore #1 V0	

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



NOVO Oil & Gas

EDDY CO., NM (NAD83)

SEC. 04-T23S-R28E

Goonch Fed Com 04 232H

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 232H
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 232H	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 232H					
Well Position	+N/-S	0.00 usft	Northing:	483,905.08 usft	Latitude:	32.330106
	+E/-W	0.00 usft	Easting:	614,225.11 usft	Longitude:	-104.097354
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	48,800.60639558

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	15,245.41 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	
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,256.73	9.13	152.55	2,254.80	-32.24	16.75	2.00	2.00	0.00	152.55	
9,110.09	9.13	152.55	9,021.24	-997.76	518.25	0.00	0.00	0.00	0.00	
9,566.82	0.00	0.00	9,476.04	-1,030.00	535.00	2.00	-2.00	0.00	180.00	
9,716.82	0.00	0.00	9,626.04	-1,030.00	535.00	0.00	0.00	0.00	0.00	
10,616.82	90.00	1.54	10,199.00	-457.25	550.37	10.00	10.00	0.00	1.54	PBHL - Goonch Fed C
15,245.41	90.00	1.54	10,199.00	4,169.68	674.57	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 232H
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 232H	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	483,905.08	614,225.11	32.330106	-104.097354
100.00	0.00	0.00	100.00	0.00	0.00	483,905.08	614,225.11	32.330106	-104.097354
200.00	0.00	0.00	200.00	0.00	0.00	483,905.08	614,225.11	32.330106	-104.097354
300.00	0.00	0.00	300.00	0.00	0.00	483,905.08	614,225.11	32.330106	-104.097354
400.00	0.00	0.00	400.00	0.00	0.00	483,905.08	614,225.11	32.330106	-104.097354
500.00	0.00	0.00	500.00	0.00	0.00	483,905.08	614,225.11	32.330106	-104.097354
600.00	0.00	0.00	600.00	0.00	0.00	483,905.08	614,225.11	32.330106	-104.097354
700.00	0.00	0.00	700.00	0.00	0.00	483,905.08	614,225.11	32.330106	-104.097354
800.00	0.00	0.00	800.00	0.00	0.00	483,905.08	614,225.11	32.330106	-104.097354
900.00	0.00	0.00	900.00	0.00	0.00	483,905.08	614,225.11	32.330106	-104.097354
1,000.00	0.00	0.00	1,000.00	0.00	0.00	483,905.08	614,225.11	32.330106	-104.097354
1,100.00	0.00	0.00	1,100.00	0.00	0.00	483,905.08	614,225.11	32.330106	-104.097354
1,200.00	0.00	0.00	1,200.00	0.00	0.00	483,905.08	614,225.11	32.330106	-104.097354
1,300.00	0.00	0.00	1,300.00	0.00	0.00	483,905.08	614,225.11	32.330106	-104.097354
1,400.00	0.00	0.00	1,400.00	0.00	0.00	483,905.08	614,225.11	32.330106	-104.097354
1,500.00	0.00	0.00	1,500.00	0.00	0.00	483,905.08	614,225.11	32.330106	-104.097354
1,600.00	0.00	0.00	1,600.00	0.00	0.00	483,905.08	614,225.11	32.330106	-104.097354
1,700.00	0.00	0.00	1,700.00	0.00	0.00	483,905.08	614,225.11	32.330106	-104.097354
1,800.00	0.00	0.00	1,800.00	0.00	0.00	483,905.08	614,225.11	32.330106	-104.097354
Start Nudge									
1,900.00	2.00	152.55	1,899.98	-1.55	0.80	483,903.53	614,225.92	32.330102	-104.097352
2,000.00	4.00	152.55	1,999.84	-6.19	3.22	483,898.89	614,228.33	32.330089	-104.097344
2,100.00	6.00	152.55	2,099.45	-13.93	7.23	483,891.15	614,232.35	32.330068	-104.097331
2,200.00	8.00	152.55	2,198.70	-24.74	12.85	483,880.34	614,237.96	32.330038	-104.097313
2,256.73	9.13	152.55	2,254.80	-32.24	16.75	483,872.84	614,241.86	32.330018	-104.097300
EOB									
2,300.00	9.13	152.55	2,297.52	-38.34	19.91	483,866.74	614,245.03	32.330001	-104.097290
2,400.00	9.13	152.55	2,396.25	-52.43	27.23	483,852.66	614,252.34	32.329962	-104.097266
2,500.00	9.13	152.55	2,494.98	-66.51	34.55	483,838.57	614,259.66	32.329923	-104.097243
2,600.00	9.13	152.55	2,593.71	-80.60	41.87	483,824.48	614,266.98	32.329885	-104.097219
2,700.00	9.13	152.55	2,692.45	-94.69	49.18	483,810.39	614,274.30	32.329846	-104.097196
2,800.00	9.13	152.55	2,791.18	-108.78	56.50	483,796.30	614,281.62	32.329807	-104.097172
2,900.00	9.13	152.55	2,889.91	-122.87	63.82	483,782.21	614,288.93	32.329768	-104.097148
3,000.00	9.13	152.55	2,988.64	-136.95	71.14	483,768.13	614,296.25	32.329730	-104.097125
3,100.00	9.13	152.55	3,087.37	-151.04	78.45	483,754.04	614,303.57	32.329691	-104.097101
3,200.00	9.13	152.55	3,186.11	-165.13	85.77	483,739.95	614,310.89	32.329652	-104.097078
3,300.00	9.13	152.55	3,284.84	-179.22	93.09	483,725.86	614,318.20	32.329613	-104.097054
3,400.00	9.13	152.55	3,383.57	-193.31	100.41	483,711.77	614,325.52	32.329574	-104.097030
3,500.00	9.13	152.55	3,482.30	-207.40	107.73	483,697.68	614,332.84	32.329536	-104.097007
3,600.00	9.13	152.55	3,581.03	-221.48	115.04	483,683.60	614,340.16	32.329497	-104.096983
3,700.00	9.13	152.55	3,679.76	-235.57	122.36	483,669.51	614,347.47	32.329458	-104.096960
3,800.00	9.13	152.55	3,778.50	-249.66	129.68	483,655.42	614,354.79	32.329419	-104.096936
3,900.00	9.13	152.55	3,877.23	-263.75	137.00	483,641.33	614,362.11	32.329381	-104.096912
4,000.00	9.13	152.55	3,975.96	-277.84	144.31	483,627.24	614,369.43	32.329342	-104.096889
4,100.00	9.13	152.55	4,074.69	-291.93	151.63	483,613.16	614,376.74	32.329303	-104.096865
4,200.00	9.13	152.55	4,173.42	-306.01	158.95	483,599.07	614,384.06	32.329264	-104.096842
4,300.00	9.13	152.55	4,272.16	-320.10	166.27	483,584.98	614,391.38	32.329225	-104.096818
4,400.00	9.13	152.55	4,370.89	-334.19	173.58	483,570.89	614,398.70	32.329187	-104.096795
4,500.00	9.13	152.55	4,469.62	-348.28	180.90	483,556.80	614,406.02	32.329148	-104.096771
4,600.00	9.13	152.55	4,568.35	-362.37	188.22	483,542.71	614,413.33	32.329109	-104.096747
4,700.00	9.13	152.55	4,667.08	-376.45	195.54	483,528.63	614,420.65	32.329070	-104.096724
4,800.00	9.13	152.55	4,765.81	-390.54	202.85	483,514.54	614,427.97	32.329032	-104.096700
4,900.00	9.13	152.55	4,864.55	-404.63	210.17	483,500.45	614,435.29	32.328993	-104.096677
5,000.00	9.13	152.55	4,963.28	-418.72	217.49	483,486.36	614,442.60	32.328954	-104.096653



SB Directional

Planning Report - Geographic



Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well Goonch Fed Com 04 232H
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 232H	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	9.13	152.55	5,062.01	-432.81	224.81	483,472.27	614,449.92	32.328915	-104.096629
5,200.00	9.13	152.55	5,160.74	-446.90	232.13	483,458.18	614,457.24	32.328877	-104.096606
5,300.00	9.13	152.55	5,259.47	-460.98	239.44	483,444.10	614,464.56	32.328838	-104.096582
5,400.00	9.13	152.55	5,358.21	-475.07	246.76	483,430.01	614,471.87	32.328799	-104.096559
5,500.00	9.13	152.55	5,456.94	-489.16	254.08	483,415.92	614,479.19	32.328760	-104.096535
5,600.00	9.13	152.55	5,555.67	-503.25	261.40	483,401.83	614,486.51	32.328721	-104.096511
5,700.00	9.13	152.55	5,654.40	-517.34	268.71	483,387.74	614,493.83	32.328683	-104.096488
5,800.00	9.13	152.55	5,753.13	-531.43	276.03	483,373.66	614,501.15	32.328644	-104.096464
5,900.00	9.13	152.55	5,851.86	-545.51	283.35	483,359.57	614,508.46	32.328605	-104.096441
6,000.00	9.13	152.55	5,950.60	-559.60	290.67	483,345.48	614,515.78	32.328566	-104.096417
6,100.00	9.13	152.55	6,049.33	-573.69	297.98	483,331.39	614,523.10	32.328528	-104.096393
6,200.00	9.13	152.55	6,148.06	-587.78	305.30	483,317.30	614,530.42	32.328489	-104.096370
6,300.00	9.13	152.55	6,246.79	-601.87	312.62	483,303.21	614,537.73	32.328450	-104.096346
6,400.00	9.13	152.55	6,345.52	-615.96	319.94	483,289.13	614,545.05	32.328411	-104.096323
6,500.00	9.13	152.55	6,444.26	-630.04	327.26	483,275.04	614,552.37	32.328373	-104.096299
6,600.00	9.13	152.55	6,542.99	-644.13	334.57	483,260.95	614,559.69	32.328334	-104.096276
6,700.00	9.13	152.55	6,641.72	-658.22	341.89	483,246.86	614,567.00	32.328295	-104.096252
6,800.00	9.13	152.55	6,740.45	-672.31	349.21	483,232.77	614,574.32	32.328256	-104.096228
6,900.00	9.13	152.55	6,839.18	-686.40	356.53	483,218.68	614,581.64	32.328217	-104.096205
7,000.00	9.13	152.55	6,937.91	-700.48	363.84	483,204.60	614,588.96	32.328179	-104.096181
7,100.00	9.13	152.55	7,036.65	-714.57	371.16	483,190.51	614,596.28	32.328140	-104.096158
7,200.00	9.13	152.55	7,135.38	-728.66	378.48	483,176.42	614,603.59	32.328101	-104.096134
7,300.00	9.13	152.55	7,234.11	-742.75	385.80	483,162.33	614,610.91	32.328062	-104.096110
7,400.00	9.13	152.55	7,332.84	-756.84	393.11	483,148.24	614,618.23	32.328024	-104.096087
7,500.00	9.13	152.55	7,431.57	-770.93	400.43	483,134.15	614,625.55	32.327985	-104.096063
7,600.00	9.13	152.55	7,530.31	-785.01	407.75	483,120.07	614,632.86	32.327946	-104.096040
7,700.00	9.13	152.55	7,629.04	-799.10	415.07	483,105.98	614,640.18	32.327907	-104.096016
7,800.00	9.13	152.55	7,727.77	-813.19	422.39	483,091.89	614,647.50	32.327869	-104.095992
7,900.00	9.13	152.55	7,826.50	-827.28	429.70	483,077.80	614,654.82	32.327830	-104.095969
8,000.00	9.13	152.55	7,925.23	-841.37	437.02	483,063.71	614,662.13	32.327791	-104.095945
8,100.00	9.13	152.55	8,023.96	-855.46	444.34	483,049.63	614,669.45	32.327752	-104.095922
8,200.00	9.13	152.55	8,122.70	-869.54	451.66	483,035.54	614,676.77	32.327713	-104.095898
8,300.00	9.13	152.55	8,221.43	-883.63	458.97	483,021.45	614,684.09	32.327675	-104.095875
8,400.00	9.13	152.55	8,320.16	-897.72	466.29	483,007.36	614,691.41	32.327636	-104.095851
8,500.00	9.13	152.55	8,418.89	-911.81	473.61	482,993.27	614,698.73	32.327597	-104.095827
8,600.00	9.13	152.55	8,517.62	-925.90	480.93	482,979.18	614,706.04	32.327558	-104.095804
8,700.00	9.13	152.55	8,616.36	-939.98	488.24	482,965.10	614,713.36	32.327520	-104.095780
8,800.00	9.13	152.55	8,715.09	-954.07	495.56	482,951.01	614,720.68	32.327481	-104.095757
8,900.00	9.13	152.55	8,813.82	-968.16	502.88	482,936.92	614,727.99	32.327442	-104.095733
9,000.00	9.13	152.55	8,912.55	-982.25	510.20	482,922.83	614,735.31	32.327403	-104.095709
9,100.00	9.13	152.55	9,011.28	-996.34	517.52	482,908.74	614,742.63	32.327364	-104.095686
9,110.09	9.13	152.55	9,021.25	-997.76	518.25	482,907.32	614,743.37	32.327361	-104.095683
EOH									
9,200.00	7.34	152.55	9,110.22	-1,009.19	524.19	482,895.89	614,749.30	32.327329	-104.095664
9,300.00	5.34	152.55	9,209.61	-1,018.98	529.28	482,886.10	614,754.39	32.327302	-104.095648
9,400.00	3.34	152.55	9,309.32	-1,025.69	532.76	482,879.39	614,757.88	32.327284	-104.095637
9,500.00	1.34	152.55	9,409.23	-1,029.31	534.64	482,875.77	614,759.75	32.327274	-104.095631
9,566.82	0.00	0.00	9,476.04	-1,030.00	535.00	482,875.08	614,760.11	32.327272	-104.095629
Drop to Vertical									
9,600.00	0.00	0.00	9,509.22	-1,030.00	535.00	482,875.08	614,760.11	32.327272	-104.095629
9,700.00	0.00	0.00	9,609.22	-1,030.00	535.00	482,875.08	614,760.11	32.327272	-104.095629
9,716.82	0.00	0.00	9,626.04	-1,030.00	535.00	482,875.08	614,760.11	32.327272	-104.095629
KOP @ 9626' TVD									
9,800.00	8.32	1.54	9,708.93	-1,023.97	535.16	482,881.11	614,760.28	32.327288	-104.095629



SB Directional

Planning Report - Geographic



Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well Goonch Fed Com 04 232H
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 232H	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	18.32	1.54	9,806.12	-1,000.98	535.78	482,904.10	614,760.89	32.327352	-104.095627
10,000.00	28.32	1.54	9,897.83	-961.46	536.84	482,943.62	614,761.95	32.327460	-104.095623
10,100.00	38.32	1.54	9,981.29	-906.62	538.31	482,998.46	614,763.43	32.327611	-104.095618
10,200.00	48.32	1.54	10,053.95	-838.12	540.15	483,066.96	614,765.26	32.327799	-104.095611
10,300.00	58.32	1.54	10,113.61	-758.06	542.30	483,147.02	614,767.41	32.328019	-104.095604
10,400.00	68.32	1.54	10,158.46	-668.85	544.69	483,236.23	614,769.81	32.328265	-104.095595
10,500.00	78.32	1.54	10,187.13	-573.22	547.26	483,331.86	614,772.37	32.328527	-104.095586
10,600.00	88.32	1.54	10,198.75	-474.06	549.92	483,431.02	614,775.04	32.328800	-104.095577
10,616.82	90.00	1.54	10,199.00	-457.25	550.37	483,447.83	614,775.49	32.328846	-104.095576
LP @ 10199' TVD									
10,700.00	90.00	1.54	10,199.00	-374.10	552.61	483,530.98	614,777.72	32.329075	-104.095568
10,800.00	90.00	1.54	10,199.00	-274.13	555.29	483,630.95	614,780.40	32.329349	-104.095558
10,900.00	90.00	1.54	10,199.00	-174.17	557.97	483,730.91	614,783.09	32.329624	-104.095549
11,000.00	90.00	1.54	10,199.00	-74.20	560.66	483,830.88	614,785.77	32.329899	-104.095540
11,100.00	90.00	1.54	10,199.00	25.76	563.34	483,930.84	614,788.45	32.330174	-104.095530
11,200.00	90.00	1.54	10,199.00	125.72	566.02	484,030.80	614,791.14	32.330449	-104.095521
11,300.00	90.00	1.54	10,199.00	225.69	568.71	484,130.77	614,793.82	32.330723	-104.095511
11,400.00	90.00	1.54	10,199.00	325.65	571.39	484,230.73	614,796.50	32.330998	-104.095502
11,500.00	90.00	1.54	10,199.00	425.62	574.07	484,330.70	614,799.19	32.331273	-104.095492
11,600.00	90.00	1.54	10,199.00	525.58	576.75	484,430.66	614,801.87	32.331548	-104.095483
11,700.00	90.00	1.54	10,199.00	625.54	579.44	484,530.62	614,804.55	32.331822	-104.095474
11,800.00	90.00	1.54	10,199.00	725.51	582.12	484,630.59	614,807.24	32.332097	-104.095464
11,900.00	90.00	1.54	10,199.00	825.47	584.80	484,730.55	614,809.92	32.332372	-104.095455
12,000.00	90.00	1.54	10,199.00	925.44	587.49	484,830.52	614,812.60	32.332647	-104.095445
12,100.00	90.00	1.54	10,199.00	1,025.40	590.17	484,930.48	614,815.28	32.332921	-104.095436
12,200.00	90.00	1.54	10,199.00	1,125.36	592.85	485,030.44	614,817.97	32.333196	-104.095427
12,300.00	90.00	1.54	10,199.00	1,225.33	595.54	485,130.41	614,820.65	32.333471	-104.095417
12,400.00	90.00	1.54	10,199.00	1,325.29	598.22	485,230.37	614,823.33	32.333746	-104.095408
12,500.00	90.00	1.54	10,199.00	1,425.26	600.90	485,330.34	614,826.02	32.334021	-104.095398
12,600.00	90.00	1.54	10,199.00	1,525.22	603.59	485,430.30	614,828.70	32.334295	-104.095389
12,700.00	90.00	1.54	10,199.00	1,625.18	606.27	485,530.26	614,831.38	32.334570	-104.095380
12,800.00	90.00	1.54	10,199.00	1,725.15	608.95	485,630.23	614,834.07	32.334845	-104.095370
12,900.00	90.00	1.54	10,199.00	1,825.11	611.64	485,730.19	614,836.75	32.335120	-104.095361
13,000.00	90.00	1.54	10,199.00	1,925.08	614.32	485,830.16	614,839.43	32.335394	-104.095351
13,100.00	90.00	1.54	10,199.00	2,025.04	617.00	485,930.12	614,842.12	32.335669	-104.095342
13,200.00	90.00	1.54	10,199.00	2,125.00	619.69	486,030.08	614,844.80	32.335944	-104.095333
13,300.00	90.00	1.54	10,199.00	2,224.97	622.37	486,130.05	614,847.48	32.336219	-104.095323
13,400.00	90.00	1.54	10,199.00	2,324.93	625.05	486,230.01	614,850.17	32.336493	-104.095314
13,500.00	90.00	1.54	10,199.00	2,424.90	627.74	486,329.98	614,852.85	32.336768	-104.095304
13,600.00	90.00	1.54	10,199.00	2,524.86	630.42	486,429.94	614,855.53	32.337043	-104.095295
13,700.00	90.00	1.54	10,199.00	2,624.82	633.10	486,529.90	614,858.22	32.337318	-104.095286
13,800.00	90.00	1.54	10,199.00	2,724.79	635.79	486,629.87	614,860.90	32.337593	-104.095276
13,900.00	90.00	1.54	10,199.00	2,824.75	638.47	486,729.83	614,863.58	32.337867	-104.095267
14,000.00	90.00	1.54	10,199.00	2,924.72	641.15	486,829.80	614,866.27	32.338142	-104.095257
14,100.00	90.00	1.54	10,199.00	3,024.68	643.84	486,929.76	614,868.95	32.338417	-104.095248
14,200.00	90.00	1.54	10,199.00	3,124.64	646.52	487,029.72	614,871.63	32.338692	-104.095239
14,300.00	90.00	1.54	10,199.00	3,224.61	649.20	487,129.69	614,874.32	32.338966	-104.095229
14,400.00	90.00	1.54	10,199.00	3,324.57	651.89	487,229.65	614,877.00	32.339241	-104.095220
14,500.00	90.00	1.54	10,199.00	3,424.54	654.57	487,329.62	614,879.68	32.339516	-104.095210
14,600.00	90.00	1.54	10,199.00	3,524.50	657.25	487,429.58	614,882.37	32.339791	-104.095201
14,700.00	90.00	1.54	10,199.00	3,624.46	659.94	487,529.54	614,885.05	32.340065	-104.095191
14,800.00	90.00	1.54	10,199.00	3,724.43	662.62	487,629.51	614,887.73	32.340340	-104.095182
14,900.00	90.00	1.54	10,199.00	3,824.39	665.30	487,729.47	614,890.42	32.340615	-104.095173
15,000.00	90.00	1.54	10,199.00	3,924.36	667.99	487,829.44	614,893.10	32.340890	-104.095163



SB Directional

Planning Report - Geographic



Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well Goonch Fed Com 04 232H
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 232H	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
15,100.00	90.00	1.54	10,199.00	4,024.32	670.67	487,929.40	614,895.78	32.341165	-104.095154
15,200.00	90.00	1.54	10,199.00	4,124.28	673.35	488,029.36	614,898.47	32.341439	-104.095144
15,245.40	90.00	1.54	10,199.00	4,169.67	674.57	488,074.75	614,899.68	32.341564	-104.095140
PBHL; 130' FNL, 1650' FWL									
15,245.41	90.00	1.54	10,199.00	4,169.68	674.57	488,074.76	614,899.68	32.341564	-104.095140

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
PBHL - Goonch Fed Cor	0.00	0.00	0.00	4,169.68	674.57	488,074.76	614,899.68	32.341564	-104.095140
- plan misses target center by 4223.89usft 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 (")
15,249.92		20" Casing	20	24

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Comment
1,800.00	1,800.00	0.00	0.00	Start Nudge
2,256.73	2,254.80	-32.24	16.75	EOB
9,110.09	9,021.25	-997.76	518.25	EOH
9,566.82	9,476.04	-1,030.00	535.00	Drop to Vertical
9,716.82	9,626.04	-1,030.00	535.00	KOP @ 9626' TVD
10,616.82	10,199.00	-457.25	550.37	LP @ 10199' TVD
15,245.40	10,199.00	4,169.67	674.57	PBHL; 130' FNL, 1650' FWL

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 28073

COMMENTS

Operator: NOVO OIL & GAS NORTHERN DELAWARE, LLC 1001 West Wilshire Blvd Oklahoma City, OK 73116	OGRID: 372920
	Action Number: 28073
	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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State of New Mexico
Energy, Minerals and Natural Resources
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1220 S. St Francis Dr.
Santa Fe, NM 87505

CONDITIONS

Action 28073

CONDITIONS

Operator: NOVO OIL & GAS NORTHERN DELAWARE, LLC 1001 West Wilshire Blvd Oklahoma City, OK 73116	OGRID: 372920
	Action Number: 28073
	Action Type: [C-103] NOI Change of Plans (C-103A)

CONDITIONS

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