

Well Name: CARDIGAN FED COM	Well Location: T19S / R27E / SEC 13 / NESW / 32.6587957 / -104.2351445	County or Parish/State: EDDY / NM
Well Number: 132H	Type of Well: OIL WELL	Allottee or Tribe Name:
Lease Number: NMNM19597	Unit or CA Name:	Unit or CA Number:
US Well Number:	Operator: FLAT CREEK RESOURCES LLC	

Notice of Intent

Sundry ID: 2837107

Type of Submission: Notice of Intent	Type of Action: APD Change
Date Sundry Submitted: 02/15/2025	Time Sundry Submitted: 08:30
Date proposed operation will begin: 03/01/2025	

Procedure Description: API# 30-015-56003. Request to move the Surface Hole Location from 2083' FSL & 1766' FWL, Section 13, T. 19S, R. 27E, NESW (32.6587959, -104.2351447) to 2043' FSL & 1765' FWL, Section 13, T. 19S, R. 27E, NESW (32.6586859, -104.2351447). Please see attached directional plan, anticollision report, and C102 plat for more detailed information. Please see Sundry 2837105 for request to change well pad configuration.

NOI Attachments

Procedure Description

Cardigan_132H_SHL_Sundry_Attachment_20250215081347.pdf

Received by OCD: 3/11/2025 9:39:22 AM

Page 2 of 26

Well Name: CARDIGAN FED COM	Well Location: T19S / R27E / SEC 13 / NESW / 32.6587957 / -104.2351445	County or Parish/State: EDDY / NM
Well Number: 132H	Type of Well: OIL WELL	Allottee or Tribe Name:
Lease Number: NMNM19597	Unit or CA Name:	Unit or CA Number:
US Well Number:	Operator: FLAT CREEK RESOURCES LLC	

Operator

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

Operator Electronic Signature: BRIAN WOOD	Signed on: FEB 15, 2025 08:13 AM
Name: FLAT CREEK RESOURCES LLC	
Title: Permitting Agent	
Street Address: 37 VERANO LOOP	
City: SANTA FE	State: NM
Phone: (505) 466-8120	
Email address: AFMSS@PERMITSWEST.COM	

Field

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: 03/11/2025
Signature: Chris Walls	

C-102 Submit Electronically Via OCD Permitting	State of New Mexico Energy, Minerals & Natural Resources Department OIL CONSERVATION DIVISION	Revised July 9, 2024	
		Submittal Type:	☐ Initial Submittal
			☒ Amended Report
		☐ As Drilled	

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number 30-015- 56003	Pool Code 97569	Pool Name WINCHESTER; BONE SPRING, WEST
Property Code 336864	Property Name CARDIGAN FED COM	Well Number 132H
OGRID No. 374034	Operator Name FLAT CREEK RESOURCES, LLC.	Ground Level Elevation 3480'
Surface Owner: ☒ State ☐ Fee ☐ Tribal ☐ Federal		Mineral Owner: ☒ State ☐ Fee ☐ Tribal ☒ Federal

Surface Location

UL or lot no. K	Section 13	Township 19-S	Range 27-E	Lot Idn -	Feet from the N/S 2043' S	Feet from the E/W 1765' W	Latitude N 32.6586859	Longitude W 104.2351447	County EDDY
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Bottom Hole Location

UL or lot no. G	Section 15	Township 19-S	Range 27-E	Lot Idn -	Feet from the N/S 1728' N	Feet from the E/W 2632' E	Latitude N 32.6631877	Longitude W 104.2666819	County EDDY
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Dedicated Acres 960	Infill or Defining Well	Defining Well API	Overlapping Spacing Unit (Y/N)	Consolidated Code
Order Numbers			Well Setbacks are under Common Ownership: ☐ Yes ☐ No	

Kick Off Point (KOP)

UL or lot no. F	Section 13	Township 19-S	Range 27-E	Lot Idn -	Feet from the N/S 1651' N	Feet from the E/W 2652' W	Latitude N 32.6629740	Longitude W 104.2323484	County EDDY
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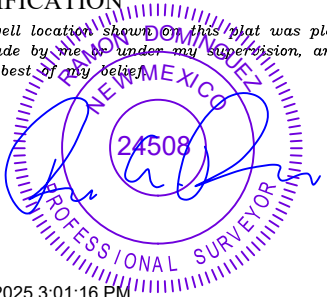
First Take Point (FTP)

UL or lot no. F	Section 13	Township 19-S	Range 27-E	Lot Idn -	Feet from the N/S 1652' N	Feet from the E/W 2567' W	Latitude N 32.6629757	Longitude W 104.2326247	County EDDY
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Last Take Point (LTP)

UL or lot no. G	Section 15	Township 19-S	Range 27-E	Lot Idn -	Feet from the N/S 1730' N	Feet from the E/W 2547' E	Latitude N 32.6631860	Longitude W 104.2664055	County EDDY
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Unitized Area or Area of Uniform Intrest	Spacing Unity Type ☒ Horizontal ☐ Vertical	Ground Floor Elevation ----
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OPERATOR CERTIFICATION <i>I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief; and, if the well is a vertical or directional well, 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 a working interest or unleased mineral interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.</i> <i>If this well is a horizontal well, I further certify that this organization has received The consent of at least one lessee or owner of a working interest or unleased mineral interest in each tract (in the target pool or formation) in which any part of the well's completed interval will be located or obtained a compulsory pooling order from the division.</i> Rodney Littleton 02/07/2025 Signature Date Rodney Littleton Print Name rlittleton@freedomenergy.com E-mail Address		SURVEYORS CERTIFICATION <i>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.</i>  2/6/2025 3:01:16 PM Signature and Seal of Professional Surveyor Date Certificate Number Date of Survey 02/01/2024	
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C-102

Submit Electronically
Via OCD PermittingState of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION

Revised July 9, 2024

Submittal
Type:

- ☐ Initial Submittal
- ☒ Amended Report
- ☐ As Drilled

Property Name and Well Number

CARDIGAN FED COM 132H

SURFACE LOCATION (SHL)

NEW MEXICO EAST
NAD 1983
X=571555 Y=603375
LAT.: N 32.6586859
LONG.: W 104.2351447
NAD 1927
X=530375 Y=603313
LAT.: N 32.6585698
LONG.: W 104.2346344
2043' FSL 1765' FWL

KICK OFF POINT (KOP)

NEW MEXICO EAST
NAD 1983
X=572414 Y=604936
LAT.: N 32.6629740
LONG.: W 104.2323484
NAD 1927
X=531235 Y=604874
LAT.: N 32.6628578
LONG.: W 104.2318381
1651' FNL 2652' FWL

FIRST TAKE POINT (FTP)

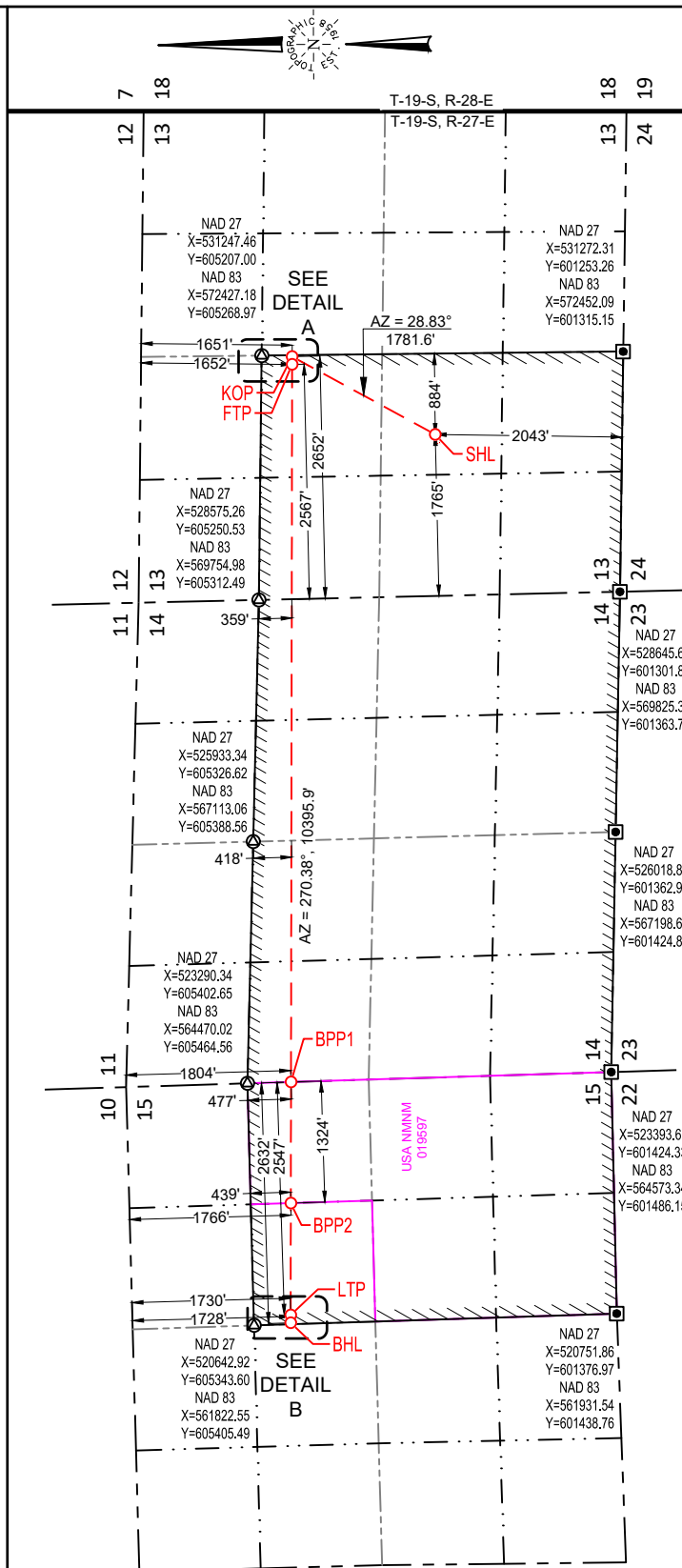
NEW MEXICO EAST
NAD 1983
X=572329 Y=604936
LAT.: N 32.6629757
LONG.: W 104.2326247
NAD 1927
X=531150 Y=604874
LAT.: N 32.6628596
LONG.: W 104.2321143
1652' FNL 2567' FWL

BLM PERF. POINT (BPP1)

NEW MEXICO EAST
NAD 1983
X=564482 Y=604988
LAT.: N 32.6631353
LONG.: W 104.2581233
NAD 1927
X=523303 Y=604926
LAT.: N 32.6630194
LONG.: W 104.2576122
1804' FNL 0' FWL

BLM PERF. POINT (BPP2)

NEW MEXICO EAST
NAD 1983
X=563158 Y=604997
LAT.: N 32.6631617
LONG.: W 104.2624269
NAD 1927
X=521978 Y=604935
LAT.: N 32.6630459
LONG.: W 104.2619156
1766' FNL 1324' FEL

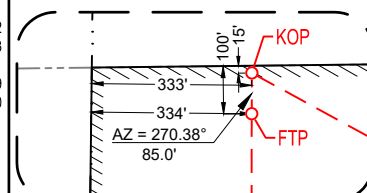
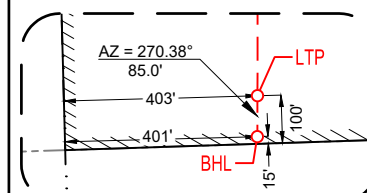


LAST TAKE POINT (LTP)

NEW MEXICO EAST
NAD 1983
X=561934 Y=605005
LAT.: N 32.6631860
LONG.: W 104.2664055
NAD 1927
X=520754 Y=604943
LAT.: N 32.6630702
LONG.: W 104.2658941
1730' FNL 2547' FEL

BOTTOM HOLE LOCATION (BHL)

NEW MEXICO EAST
NAD 1983
X=561849 Y=605005
LAT.: N 32.6631877
LONG.: W 104.2666819
NAD 1927
X=520669 Y=604943
LAT.: N 32.6630719
LONG.: W 104.2661705
1728' FNL 2632' FEL

DETAIL VIEW A
SCALE: 1" = 400'DETAIL VIEW B
SCALE: 1" = 400'

SURVEYORS 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.

02/01/2024

Date of Survey

Signature and Seal of Professional Surveyor:

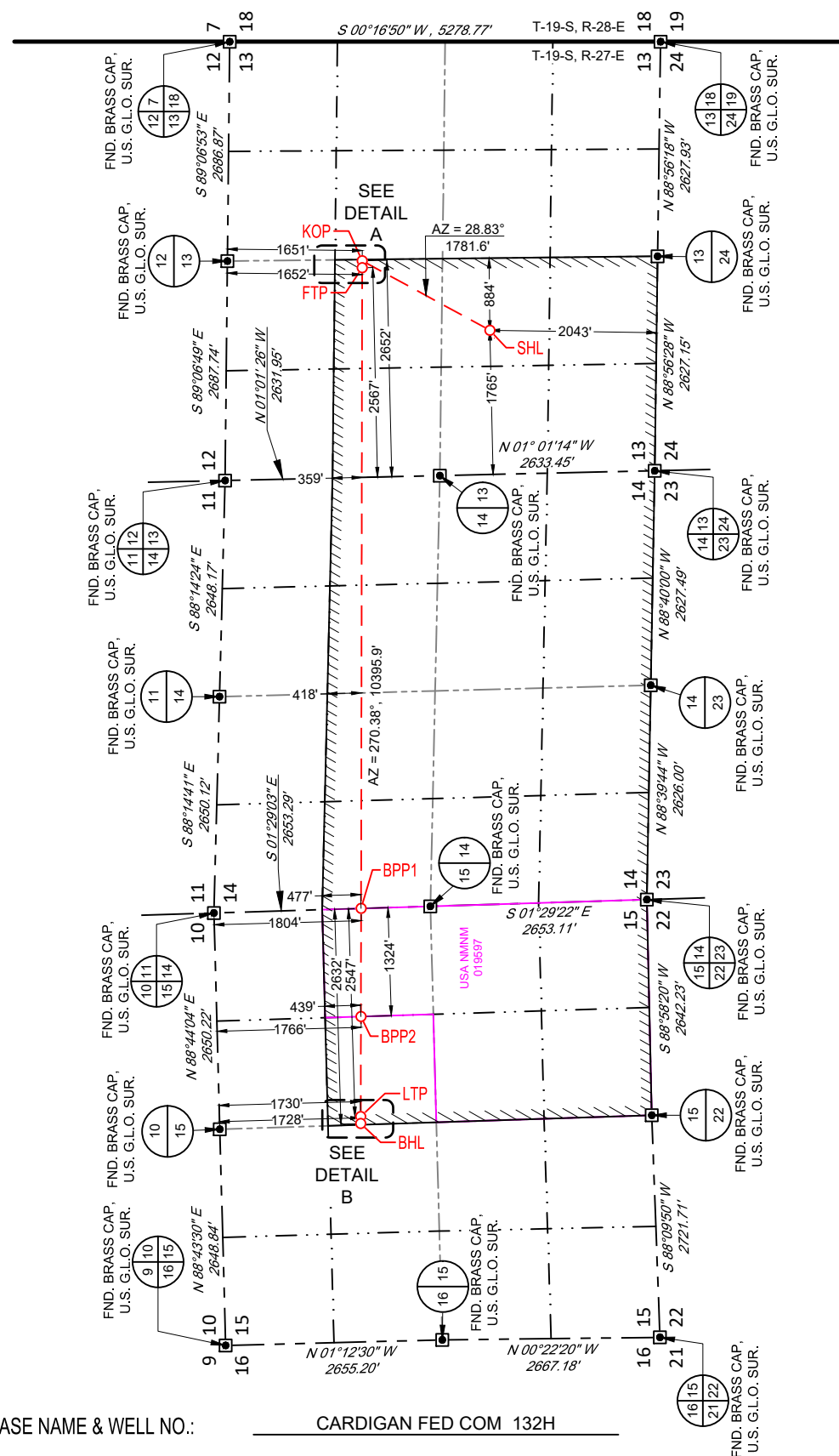


2/6/2025 3:01:16 PM



SECTION 13, TOWNSHIP 19-S, RANGE 27-E, N.M.P.M.
EDDY COUNTY, NEW MEXICO

SCALE: 1" = 2000'



SURFACE LOCATION (SHL)

NEW MEXICO EAST
NAD 1983
X=571555 Y=603375
LAT.: N 32.6586859
LONG.: W 104.2351447
2043' FSL 1765' FWL

KICK OFF POINT (KOP)

NEW MEXICO EAST
NAD 1983
X=572414 Y=604936
LAT.: N 32.6629740
LONG.: W 104.2323484
1651' FNL 2652' FWL

FIRST TAKE POINT (FTP)

NEW MEXICO EAST
NAD 1983
X=572329 Y=604936
LAT.: N 32.6629757
LONG.: W 104.2326247
1652' FNL 2567' FWL

BLM PERF. POINT (BPP1)

NEW MEXICO EAST
NAD 1983
X=564482 Y=604988
LAT.: N 32.6631353
LONG.: W 104.2581233
1804' FNL 0' FWL

BLM PERF. POINT (BPP2)

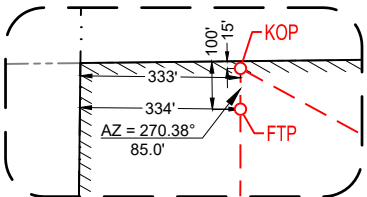
NEW MEXICO EAST
NAD 1983
X=563158 Y=604997
LAT.: N 32.6631617
LONG.: W 104.2624269
1766' FNL 1324' FEL

LAST TAKE POINT (LTP)

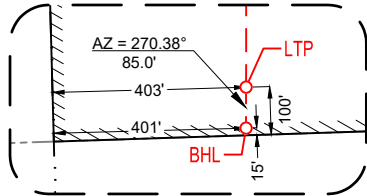
NEW MEXICO EAST
NAD 1983
X=561934 Y=605005
LAT.: N 32.6631860
LONG.: W 104.2664055
1730' FNL 2547' FEL

BOTTOM HOLE LOCATION (BHL)

NEW MEXICO EAST
NAD 1983
X=561849 Y=605005
LAT.: N 32.6631877
LONG.: W 104.2666819
1728' FNL 2632' FEL



DETAIL VIEW A
SCALE: 1" = 400'



DETAIL VIEW B
SCALE: 1" = 400'

LEASE NAME & WELL NO.: CARDIGAN FED COM 132H

SECTION 13 TWP 19-S RGE 27-E SURVEY N.M.P.M.
COUNTY EDDY STATE NM
DESCRIPTION 2043' FSL & 1765' FWL

DISTANCE & DIRECTION

FROM INT. OF NM-529 & US-82W, GO WEST ON US-82W ±18.9 MILES,
THENCE LEFT ON ILLINOIS CAMP RD ±9.4 MILES, THENCE RIGHT ON
NETHERLIN RD. ±0.2 MILES, THENCE SOUTHWEST (LEFT) ON A
PROPOSED RD. ±1510 FEET TO A POINT ±334 FEET SOUTHEAST OF
THE LOCATION.



2/6/2025 3:01:17 PM

Ramon A. Dominguez, P.S. No. 24508



481 WINSOTT ROAD, Ste. 200 • BENBROOK, TEXAS 76126
TELEPHONE: (817) 744-7512 • FAX: (817) 744-7554
2903 NORTH BIG SPRING • MIDLAND, TEXAS 79705
TELEPHONE: (432) 682-1653 OR (800) 767-1653 • FAX: (432) 682-1743
WWW.TOPOGRAPHIC.COM

ALL BEARINGS, DISTANCES, AND COORDINATE VALUES CONTAINED HEREON ARE GRID
BASED UPON THE NEW MEXICO COORDINATE SYSTEM OF 1983, EAST ZONE, U.S. SURVEY
FEET.

THIS EASEMENT/SERVITUDE LOCATION SHOWN HEREON HAS BEEN SURVEYED ON THE GROUND
UNDER MY SUPERVISION AND PREPARED ACCORDING TO THE EVIDENCE FOUND AT THE TIME OF
SURVEY, AND DATA PROVIDED BY FLAT CREEK RESOURCES, LLC. THIS CERTIFICATION IS MADE AND
LIMITED TO THOSE PERSONS OR ENTITIES SHOWN ON THE FACE OF THIS PLAT AND IS
NON-TRANSFERABLE. THIS SURVEY IS CERTIFIED FOR THIS TRANSACTION ONLY.

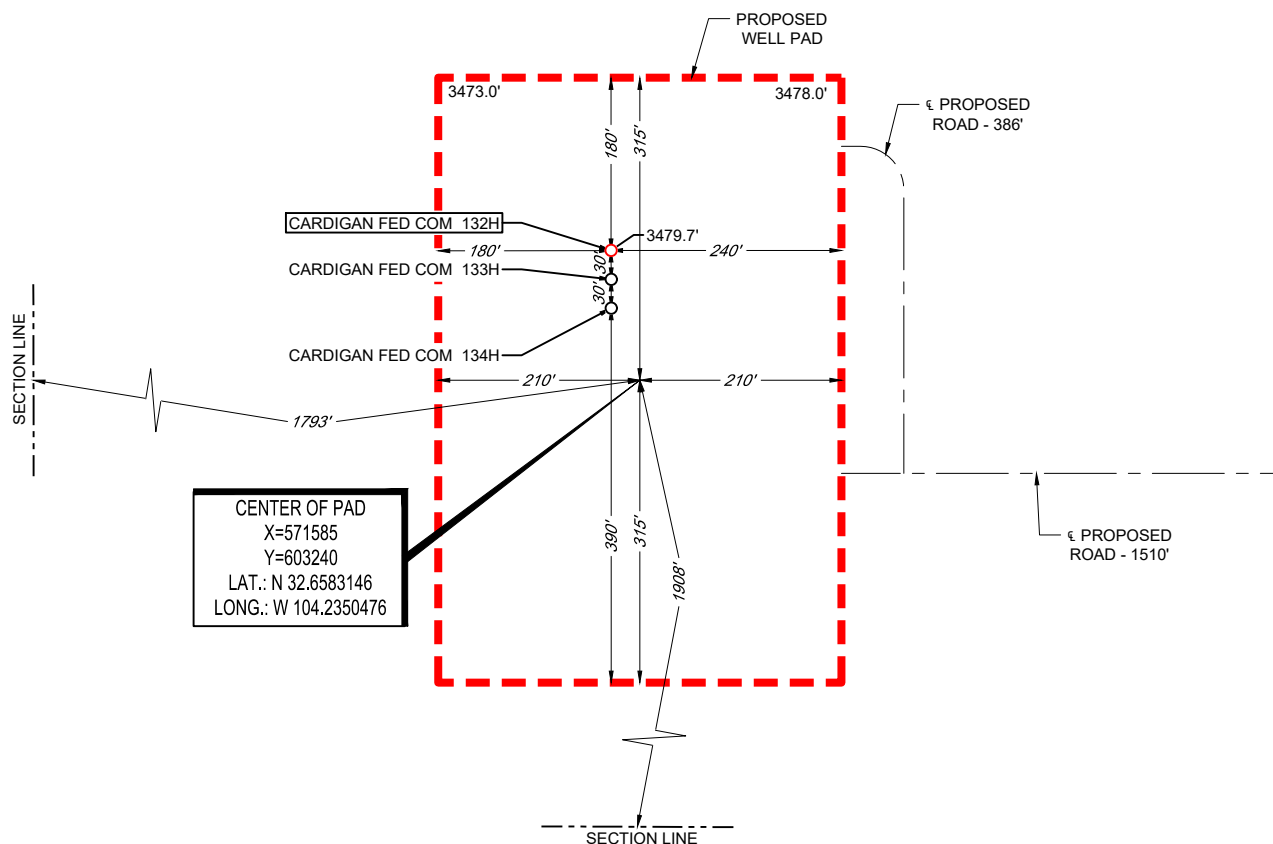
FLAT CREEK
RESOURCES

DETAIL VIEW
SCALE: 1" = 200'

LEGEND

 SECTION LINE
 PROPOSED ROAD

SECTION 13, TOWNSHIP 19-S, RANGE 27-E, N.M.P.M.
EDDY COUNTY, NEW MEXICO



2/6/2025 3:01:17 PM

Ramon A. Dominguez, P.S. No. 24508

LEASE NAME & WELL NO.: CARDIGAN FED COM 132H
132H LATITUDE N 32.6586859 132H LONGITUDE W 104.2351447

CENTER OF PAD IS 1908' FSL & 1793' FWL



SCALE: 1" = 200'



0' 100' 200'



481 WINSKOTT ROAD, Ste. 200 • BENBROOK, TEXAS 76126
TELEPHONE: (817) 744-7512 • FAX (817) 744-7554
 2903 NORTH BIG SPRING • MIDLAND, TEXAS 79705
 TELEPHONE: (432) 682-1653 OR (800) 767-1653 • FAX (432) 682-1743
 WWW.TOPOGRAPHIC.COM

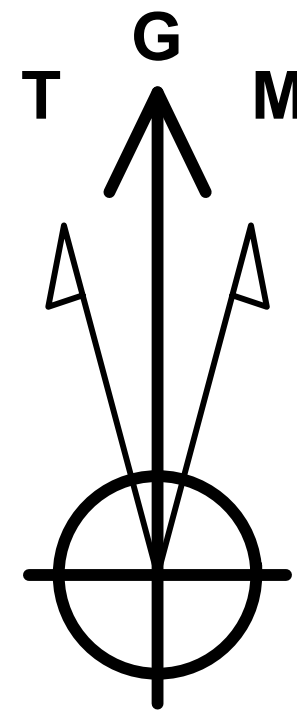
ALL BEARINGS, DISTANCES, AND COORDINATE VALUES CONTAINED HEREON ARE GRID BASED UPON THE NEW MEXICO COORDINATE SYSTEM OF 1983, EAST ZONE, U.S. SURVEY FEET. ELEVATIONS USED ARE NAVD88, OBTAINED THROUGH AN OPUS SOLUTION.

THIS PROPOSED PAD SITE LOCATION SHOWN HEREON HAS BEEN SURVEYED ON THE GROUND UNDER MY SUPERVISION AND PREPARED ACCORDING TO THE EVIDENCE FOUND AT THE TIME OF SURVEY, AND DATA PROVIDED BY FLAT CREEK RESOURCES, LLC. ONLY THE DATA SHOWN ABOVE IS BEING CERTIFIED TO, ALL OTHER INFORMATION WAS INTENTIONALLY OMITTED. THIS PLAT IS ONLY INTENDED TO BE USED FOR A PERMIT AND IS NOT A BOUNDARY SURVEY. THIS CERTIFICATION IS MADE AND LIMITED TO THOSE PERSONS OR ENTITIES SHOWN ON THE FACE OF THIS PLAT AND IS NON-TRANSFERABLE. THIS SURVEY IS CERTIFIED FOR THIS TRANSACTION ONLY.

ORIGINAL DOCUMENT SIZE: 8.5" X 11"

Freedom Energy

Company: Freedom Energy
Field: Eddy County, NM NAD83
Location: Cardigan Fed Com
Well: Cardigan Fed Com 132H
Wellbore: OH
Plan: Plan 2
GL: 3480' + 26.5' KB @ 3506.50usft



Azimuths to Grid North
True North: -0.05°
Magnetic North: 6.41°

Magnetic Field
Strength: 47302.7nT
Dip Angle: 60.08°
Date: 2/7/2025
Model: IGRF2020



WELL DETAILS: Cardigan Fed Com 132H

To convert a Magnetic Direction to a Grid Direction, Add 6.41°

		3480' + 26.5' KB @ 3506.50usft		3480.00		
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	603375.00	571555.00	32.658686	-104.235145	

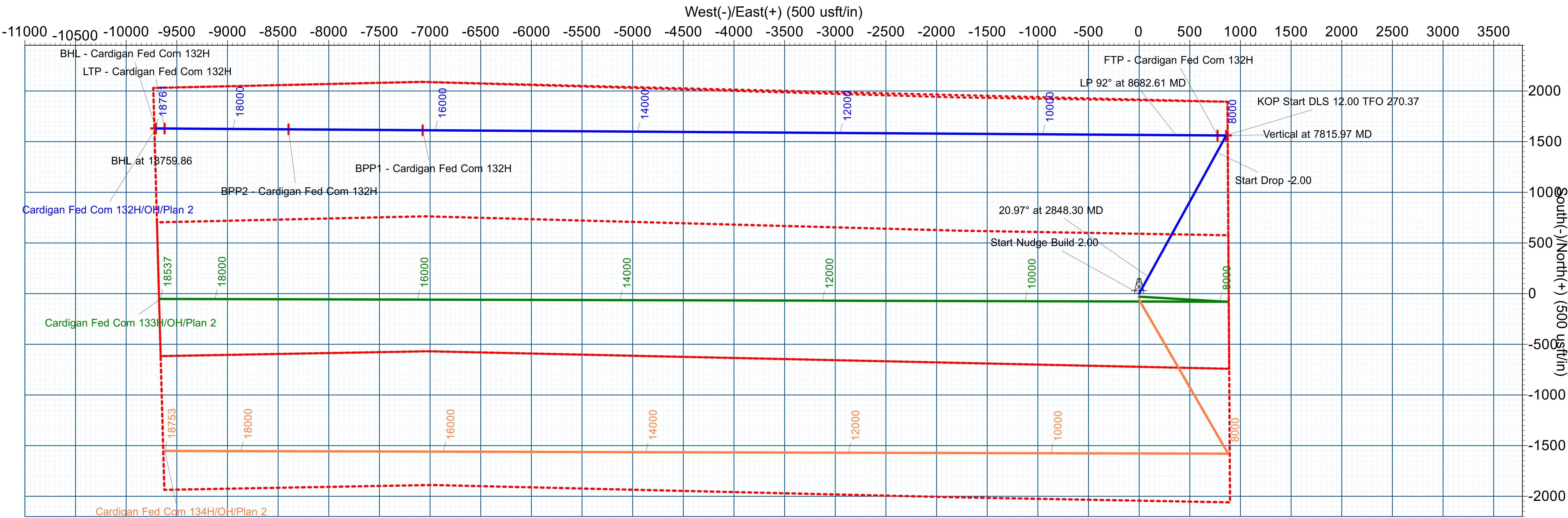
PROJECT DETAILS: Eddy County, NM NAD83

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

DESIGN TARGET DETAILS

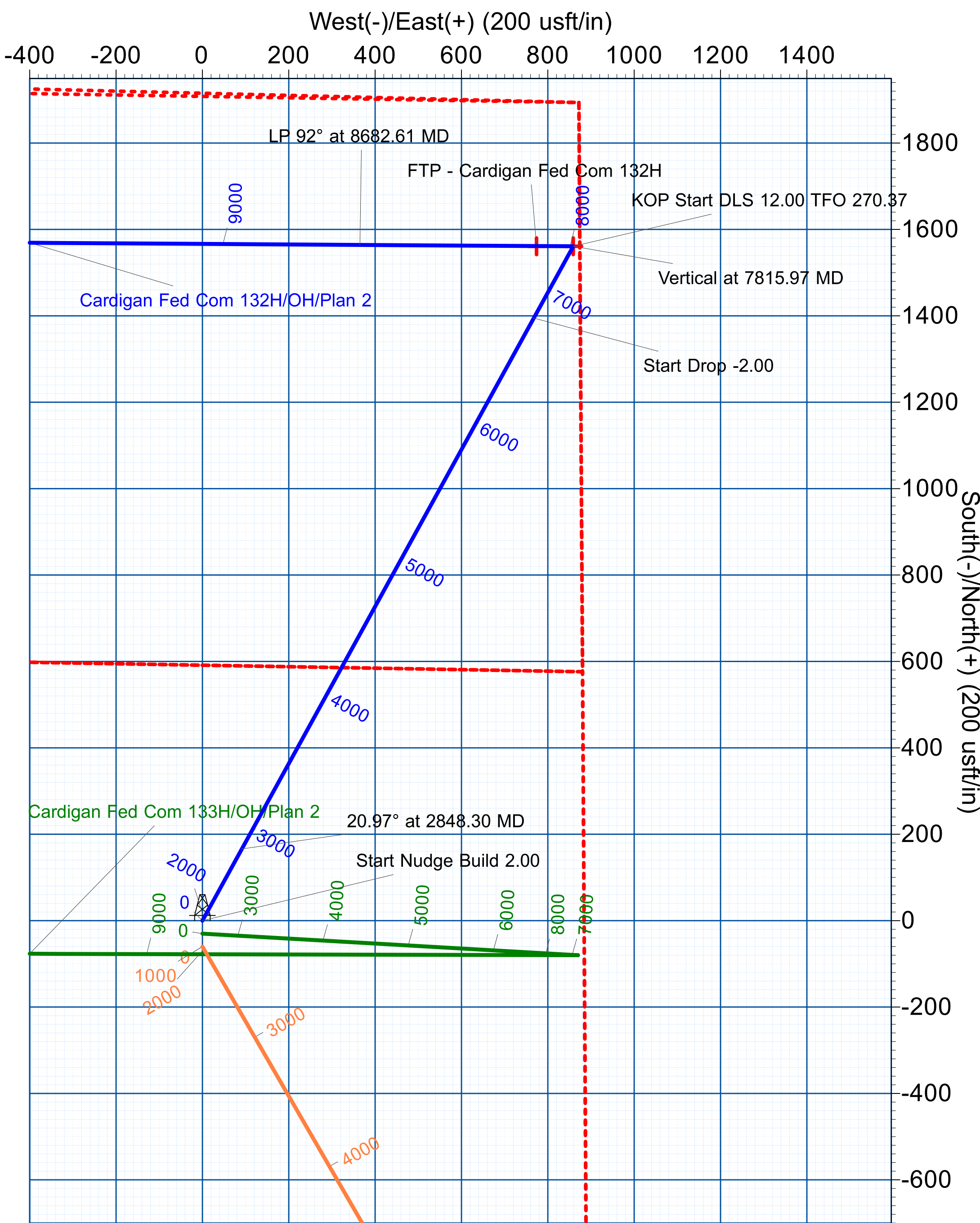
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
KOP - Cardigan Fed Com 132H	7610.00	1561.00	859.00	604936.00	572414.00	32.662975	-104.232349
BHL - Cardigan Fed Com 132H	7735.88	1630.00	-9706.00	605005.00	561849.00	32.663187	-104.266680
LTP - Cardigan Fed Com 132H	7739.20	1630.00	-9621.00	605005.00	561934.00	32.663187	-104.266404
BPP2 - Cardigan Fed Com 132H	7782.00	1622.00	-8397.00	604997.00	563158.00	32.663163	-104.262427
BPP1 - Cardigan Fed Com 132H	7827.33	1613.00	-7073.00	604988.00	564482.00	32.663136	-104.258124
FTP - Cardigan Fed Com 132H	8112.00	1561.00	774.00	604936.00	572329.00	32.662975	-104.232626

Rig: H&P 370



SECTION DETAILS: OH

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 Build 2.00
2848.30	20.97	28.82	2825.06	166.17	91.44	2.00	28.82	-90.34	20.97° at 2848.30 MD
6767.67	20.97	28.82	6484.94	1394.83	767.56	0.00	0.00	-758.29	Start Drop -2.00
7815.97	0.00	0.00	7510.00	1561.00	859.00	2.00	180.00	-848.63	Vertical at 7815.97 MD
7915.97	0.00	0.00	7610.00	1561.00	859.00	0.00	0.00	-848.63	KOP Start DLS 12.00 TFO 270.37
8682.61	92.00	270.37	8087.17	1564.23	364.90	12.00	270.37	-354.52	LP 92° at 8682.61 MD
18759.86	92.00	270.37	7735.88	1630.00	-9706.00	0.00	0.00	9716.60	BHL at 18759.86



Freedom Energy

Eddy County, NM NAD83

Cardigan Fed Com

Cardigan Fed Com 132H

OH

Plan: Plan 2

Standard Planning Report

07 February, 2025

Legacy Directional Drilling

Planning Report

Database:	EDM_WA	Local Co-ordinate Reference:	Well Cardigan Fed Com 132H
Company:	Freedom Energy	TVD Reference:	3480' + 26.5' KB @ 3506.50usft
Project:	Eddy County, NM NAD83	MD Reference:	3480' + 26.5' KB @ 3506.50usft
Site:	Cardigan Fed Com	North Reference:	Grid
Well:	Cardigan Fed Com 132H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan 2		

Project	Eddy County, 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		Cardigan Fed Com			
Site Position:		Northing:	603,414.93 usft	Latitude:	32.658796
From:	Map	Easting:	571,554.75 usft	Longitude:	-104.235146
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "		

Well	Cardigan Fed Com 132H					
Well Position	+N/-S	0.00 usft	Northing:	603,375.00 usft	Latitude:	32.658686
	+E/-W	0.00 usft	Easting:	571,555.00 usft	Longitude:	-104.235146
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level:	3,480.00 usft
Grid Convergence:		0.05 °				

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2020	2/7/2025	6.46	60.08	47,302.74276233

Design	Plan 2				
Audit Notes:					
Version:		Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.00	0.00	0.00	270.38	

Plan Survey Tool Program	Date	2/7/2025			
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks	
1	0.00	18,759.86 Plan 2 (OH)	MWD		
			OWSG 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	
2,848.30	20.97	28.82	2,825.06	166.17	91.44	2.00	2.00	0.00	28.82	
6,767.67	20.97	28.82	6,484.94	1,394.83	767.56	0.00	0.00	0.00	0.00	
7,815.97	0.00	0.01	7,510.00	1,561.00	859.00	2.00	-2.00	0.00	180.00	
7,915.97	0.00	0.01	7,610.00	1,561.00	859.00	0.00	0.00	0.00	0.00	KOP - Cardigan Fed C
8,682.61	92.00	270.37	8,087.17	1,564.23	364.90	12.00	12.00	-11.69	270.37	
18,759.86	92.00	270.37	7,735.88	1,630.00	-9,706.00	0.00	0.00	0.00	0.00	BHL - Cardigan Fed C

Legacy Directional Drilling

Planning Report

Database:	EDM_WA	Local Co-ordinate Reference:	Well Cardigan Fed Com 132H
Company:	Freedom Energy	TVD Reference:	3480' + 26.5' KB @ 3506.50usft
Project:	Eddy County, NM NAD83	MD Reference:	3480' + 26.5' KB @ 3506.50usft
Site:	Cardigan Fed Com	North Reference:	Grid
Well:	Cardigan Fed Com 132H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan 2		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
26.50	0.00	0.00	26.50	0.00	0.00	0.00	0.00	0.00	0.00
ALLUVIUM									
98.00	0.00	0.00	98.00	0.00	0.00	0.00	0.00	0.00	0.00
TANSILL									
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
350.00	0.00	0.00	350.00	0.00	0.00	0.00	0.00	0.00	0.00
YATES									
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
689.00	0.00	0.00	689.00	0.00	0.00	0.00	0.00	0.00	0.00
SEVEN RIVERS									
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,261.00	0.00	0.00	1,261.00	0.00	0.00	0.00	0.00	0.00	0.00
QUEEN									
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,592.00	0.00	0.00	1,592.00	0.00	0.00	0.00	0.00	0.00	0.00
GRAYBURG									
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	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
Start Nudge Build 2.00									
1,900.00	2.00	28.82	1,899.98	1.53	0.84	-0.83	2.00	2.00	0.00
2,000.00	4.00	28.82	1,999.84	6.11	3.36	-3.32	2.00	2.00	0.00
2,092.76	5.86	28.82	2,092.25	13.09	7.21	-7.12	2.00	2.00	0.00
SAN ANDRES									
2,100.00	6.00	28.82	2,099.45	13.75	7.57	-7.47	2.00	2.00	0.00
2,200.00	8.00	28.82	2,198.70	24.43	13.44	-13.28	2.00	2.00	0.00
2,300.00	10.00	28.82	2,297.47	38.13	20.98	-20.73	2.00	2.00	0.00
2,400.00	12.00	28.82	2,395.62	54.85	30.18	-29.82	2.00	2.00	0.00
2,500.00	14.00	28.82	2,493.06	74.55	41.03	-40.53	2.00	2.00	0.00
2,600.00	16.00	28.82	2,589.64	97.23	53.50	-52.86	2.00	2.00	0.00
2,700.00	18.00	28.82	2,685.27	122.84	67.60	-66.78	2.00	2.00	0.00
2,800.00	20.00	28.82	2,779.82	151.36	83.29	-82.29	2.00	2.00	0.00
2,848.30	20.97	28.82	2,825.06	166.17	91.44	-90.34	2.00	2.00	0.00
20.97° at 2848.30 MD									
2,900.00	20.97	28.82	2,873.34	182.38	100.36	-99.15	0.00	0.00	0.00
3,000.00	20.97	28.82	2,966.72	213.73	117.61	-116.19	0.00	0.00	0.00
3,100.00	20.97	28.82	3,060.10	245.07	134.86	-133.23	0.00	0.00	0.00
3,200.00	20.97	28.82	3,153.48	276.42	152.11	-150.28	0.00	0.00	0.00
3,300.00	20.97	28.82	3,246.86	307.77	169.36	-167.32	0.00	0.00	0.00
3,311.84	20.97	28.82	3,257.91	311.48	171.41	-169.34	0.00	0.00	0.00
BONE SPRING LIME									

Legacy Directional Drilling

Planning Report

Database:	EDM_WA	Local Co-ordinate Reference:	Well Cardigan Fed Com 132H
Company:	Freedom Energy	TVD Reference:	3480' + 26.5' KB @ 3506.50usft
Project:	Eddy County, NM NAD83	MD Reference:	3480' + 26.5' KB @ 3506.50usft
Site:	Cardigan Fed Com	North Reference:	Grid
Well:	Cardigan Fed Com 132H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan 2		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
3,400.00	20.97	28.82	3,340.23	339.12	186.61	-184.36	0.00	0.00	0.00	
3,500.00	20.97	28.82	3,433.61	370.47	203.86	-201.40	0.00	0.00	0.00	
3,600.00	20.97	28.82	3,526.99	401.82	221.12	-218.45	0.00	0.00	0.00	
3,700.00	20.97	28.82	3,620.37	433.17	238.37	-235.49	0.00	0.00	0.00	
3,800.00	20.97	28.82	3,713.75	464.51	255.62	-252.53	0.00	0.00	0.00	
3,900.00	20.97	28.82	3,807.13	495.86	272.87	-269.57	0.00	0.00	0.00	
4,000.00	20.97	28.82	3,900.51	527.21	290.12	-286.61	0.00	0.00	0.00	
4,100.00	20.97	28.82	3,993.89	558.56	307.37	-303.66	0.00	0.00	0.00	
4,200.00	20.97	28.82	4,087.27	589.91	324.62	-320.70	0.00	0.00	0.00	
4,300.00	20.97	28.82	4,180.65	621.26	341.87	-337.74	0.00	0.00	0.00	
4,400.00	20.97	28.82	4,274.03	652.60	359.12	-354.78	0.00	0.00	0.00	
4,500.00	20.97	28.82	4,367.41	683.95	376.37	-371.83	0.00	0.00	0.00	
4,600.00	20.97	28.82	4,460.79	715.30	393.62	-388.87	0.00	0.00	0.00	
4,700.00	20.97	28.82	4,554.17	746.65	410.87	-405.91	0.00	0.00	0.00	
4,800.00	20.97	28.82	4,647.55	778.00	428.12	-422.95	0.00	0.00	0.00	
4,900.00	20.97	28.82	4,740.92	809.35	445.37	-440.00	0.00	0.00	0.00	
5,000.00	20.97	28.82	4,834.30	840.69	462.62	-457.04	0.00	0.00	0.00	
5,100.00	20.97	28.82	4,927.68	872.04	479.87	-474.08	0.00	0.00	0.00	
5,200.00	20.97	28.82	5,021.06	903.39	497.13	-491.12	0.00	0.00	0.00	
5,224.88	20.97	28.82	5,044.30	911.19	501.42	-495.36	0.00	0.00	0.00	
1ST BONE SPRING SAND										
5,300.00	20.97	28.82	5,114.44	934.74	514.38	-508.17	0.00	0.00	0.00	
5,356.37	20.97	28.82	5,167.08	952.41	524.10	-517.77	0.00	0.00	0.00	
2ND BONE SPRING CARBONATE										
5,400.00	20.97	28.82	5,207.82	966.09	531.63	-525.21	0.00	0.00	0.00	
5,500.00	20.97	28.82	5,301.20	997.44	548.88	-542.25	0.00	0.00	0.00	
5,600.00	20.97	28.82	5,394.58	1,028.78	566.13	-559.29	0.00	0.00	0.00	
5,700.00	20.97	28.82	5,487.96	1,060.13	583.38	-576.33	0.00	0.00	0.00	
5,800.00	20.97	28.82	5,581.34	1,091.48	600.63	-593.38	0.00	0.00	0.00	
5,900.00	20.97	28.82	5,674.72	1,122.83	617.88	-610.42	0.00	0.00	0.00	
6,000.00	20.97	28.82	5,768.10	1,154.18	635.13	-627.46	0.00	0.00	0.00	
6,100.00	20.97	28.82	5,861.48	1,185.53	652.38	-644.50	0.00	0.00	0.00	
6,200.00	20.97	28.82	5,954.86	1,216.87	669.63	-661.55	0.00	0.00	0.00	
6,300.00	20.97	28.82	6,048.23	1,248.22	686.88	-678.59	0.00	0.00	0.00	
6,400.00	20.97	28.82	6,141.61	1,279.57	704.13	-695.63	0.00	0.00	0.00	
6,500.00	20.97	28.82	6,234.99	1,310.92	721.38	-712.67	0.00	0.00	0.00	
6,600.00	20.97	28.82	6,328.37	1,342.27	738.63	-729.72	0.00	0.00	0.00	
6,700.00	20.97	28.82	6,421.75	1,373.62	755.89	-746.76	0.00	0.00	0.00	
6,767.67	20.97	28.82	6,484.94	1,394.83	767.56	-758.29	0.00	0.00	0.00	
Start Drop -2.00										
6,800.00	20.32	28.82	6,515.20	1,404.82	773.05	-763.72	2.00	-2.00	0.00	
6,900.00	18.32	28.82	6,609.56	1,433.80	789.00	-779.48	2.00	-2.00	0.00	
7,000.00	16.32	28.82	6,705.02	1,459.88	803.35	-793.65	2.00	-2.00	0.00	
7,083.08	14.66	28.82	6,785.08	1,479.32	814.05	-804.22	2.00	-2.00	0.00	
2ND BONE SPRING SAND										
7,100.00	14.32	28.82	6,801.46	1,483.02	816.09	-806.24	2.00	-2.00	0.00	
7,191.54	12.49	28.82	6,890.51	1,501.62	826.32	-816.34	2.00	-2.00	0.00	
3RD BONE SPRING CARBONATE										
7,200.00	12.32	28.82	6,898.77	1,503.21	827.20	-817.21	2.00	-2.00	0.00	
7,300.00	10.32	28.82	6,996.82	1,520.40	836.66	-826.56	2.00	-2.00	0.00	
7,400.00	8.32	28.82	7,095.49	1,534.59	844.47	-834.27	2.00	-2.00	0.00	
7,500.00	6.32	28.82	7,194.67	1,545.75	850.61	-840.34	2.00	-2.00	0.00	
7,600.00	4.32	28.82	7,294.24	1,553.87	855.08	-844.75	2.00	-2.00	0.00	

Legacy Directional Drilling

Planning Report

Database:	EDM_WA	Local Co-ordinate Reference:	Well Cardigan Fed Com 132H
Company:	Freedom Energy	TVD Reference:	3480' + 26.5' KB @ 3506.50usft
Project:	Eddy County, NM NAD83	MD Reference:	3480' + 26.5' KB @ 3506.50usft
Site:	Cardigan Fed Com	North Reference:	Grid
Well:	Cardigan Fed Com 132H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan 2		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
7,700.00	2.32	28.82	7,394.07	1,558.94	857.87	-847.51	2.00	-2.00	0.00
7,800.00	0.32	28.82	7,494.03	1,560.96	858.98	-848.61	2.00	-2.00	0.00
7,815.97	0.00	0.01	7,510.00	1,561.00	859.00	-848.63	2.00	-2.00	0.00
Vertical at 7815.97 MD									
7,900.00	0.00	0.00	7,594.03	1,561.00	859.00	-848.63	0.00	0.00	0.00
7,915.97	0.00	0.00	7,610.00	1,561.00	859.00	-848.63	0.00	0.00	0.00
KOP Start DLS 12.00 TFO 270.37									
7,925.00	1.08	270.37	7,619.03	1,561.00	858.91	-848.54	12.00	12.00	0.00
7,950.00	4.08	270.37	7,644.00	1,561.01	857.79	-847.42	12.00	12.00	0.00
7,975.00	7.08	270.37	7,668.88	1,561.02	855.36	-844.98	12.00	12.00	0.00
8,000.00	10.08	270.37	7,693.60	1,561.05	851.62	-841.25	12.00	12.00	0.00
8,025.00	13.08	270.37	7,718.09	1,561.08	846.60	-836.23	12.00	12.00	0.00
8,050.00	16.08	270.37	7,742.28	1,561.12	840.31	-829.94	12.00	12.00	0.00
8,075.00	19.08	270.37	7,766.11	1,561.17	832.76	-822.39	12.00	12.00	0.00
8,100.00	22.08	270.37	7,789.51	1,561.23	823.97	-813.60	12.00	12.00	0.00
8,125.00	25.08	270.37	7,812.42	1,561.29	813.97	-803.60	12.00	12.00	0.00
8,150.00	28.08	270.37	7,834.77	1,561.37	802.78	-792.41	12.00	12.00	0.00
8,175.00	31.08	270.37	7,856.51	1,561.45	790.44	-780.07	12.00	12.00	0.00
8,189.68	32.85	270.37	7,868.97	1,561.50	782.67	-772.30	12.00	12.00	0.00
3RD BONE SPRING SAND									
8,200.00	34.08	270.37	7,877.58	1,561.54	776.98	-766.61	12.00	12.00	0.00
8,225.00	37.08	270.37	7,897.90	1,561.63	762.44	-752.06	12.00	12.00	0.00
8,250.00	40.08	270.37	7,917.44	1,561.73	746.85	-736.47	12.00	12.00	0.00
8,275.00	43.08	270.37	7,936.14	1,561.84	730.26	-719.88	12.00	12.00	0.00
8,300.00	46.08	270.37	7,953.95	1,561.96	712.71	-702.33	12.00	12.00	0.00
8,325.00	49.08	270.37	7,970.81	1,562.08	694.26	-683.88	12.00	12.00	0.00
8,350.00	52.08	270.37	7,986.68	1,562.20	674.94	-664.57	12.00	12.00	0.00
8,375.00	55.08	270.37	8,001.52	1,562.33	654.83	-644.45	12.00	12.00	0.00
8,400.00	58.08	270.37	8,015.28	1,562.47	633.96	-623.59	12.00	12.00	0.00
8,425.00	61.08	270.37	8,027.94	1,562.61	612.41	-602.03	12.00	12.00	0.00
8,450.00	64.08	270.37	8,039.45	1,562.76	590.22	-579.84	12.00	12.00	0.00
8,475.00	67.08	270.37	8,049.78	1,562.90	567.46	-557.08	12.00	12.00	0.00
8,500.00	70.08	270.37	8,058.91	1,563.06	544.19	-533.81	12.00	12.00	0.00
8,525.00	73.08	270.37	8,066.81	1,563.21	520.47	-510.09	12.00	12.00	0.00
8,550.00	76.08	270.37	8,073.45	1,563.37	496.37	-485.99	12.00	12.00	0.00
8,575.00	79.08	270.37	8,078.83	1,563.53	471.96	-461.58	12.00	12.00	0.00
8,600.00	82.08	270.37	8,082.92	1,563.69	447.30	-436.92	12.00	12.00	0.00
8,625.00	85.08	270.37	8,085.71	1,563.85	422.46	-412.08	12.00	12.00	0.00
8,650.00	88.08	270.37	8,087.20	1,564.01	397.51	-387.13	12.00	12.00	0.00
8,675.00	91.08	270.37	8,087.38	1,564.18	372.51	-362.13	12.00	12.00	0.00
8,682.61	92.00	270.37	8,087.17	1,564.23	364.90	-354.52	12.00	12.00	0.00
LP 92° at 8682.61 MD									
8,700.00	92.00	270.37	8,086.57	1,564.34	347.53	-337.14	0.00	0.00	0.00
8,800.00	92.00	270.37	8,083.08	1,564.99	247.59	-237.20	0.00	0.00	0.00
8,900.00	92.00	270.37	8,079.60	1,565.65	147.65	-137.27	0.00	0.00	0.00
9,000.00	92.00	270.37	8,076.11	1,566.30	47.72	-37.33	0.00	0.00	0.00
9,100.00	92.00	270.37	8,072.62	1,566.95	-52.22	62.61	0.00	0.00	0.00
9,200.00	92.00	270.37	8,069.14	1,567.60	-152.16	162.55	0.00	0.00	0.00
9,300.00	92.00	270.37	8,065.65	1,568.26	-252.10	262.49	0.00	0.00	0.00
9,400.00	92.00	270.37	8,062.17	1,568.91	-352.03	362.43	0.00	0.00	0.00
9,500.00	92.00	270.37	8,058.68	1,569.56	-451.97	462.37	0.00	0.00	0.00
9,600.00	92.00	270.37	8,055.19	1,570.21	-551.91	562.31	0.00	0.00	0.00
9,700.00	92.00	270.37	8,051.71	1,570.87	-651.84	662.25	0.00	0.00	0.00

Legacy Directional Drilling

Planning Report

Database:	EDM_WA	Local Co-ordinate Reference:	Well Cardigan Fed Com 132H
Company:	Freedom Energy	TVD Reference:	3480' + 26.5' KB @ 3506.50usft
Project:	Eddy County, NM NAD83	MD Reference:	3480' + 26.5' KB @ 3506.50usft
Site:	Cardigan Fed Com	North Reference:	Grid
Well:	Cardigan Fed Com 132H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan 2		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
9,800.00	92.00	270.37	8,048.22	1,571.52	-751.78	762.19	0.00	0.00	0.00
9,900.00	92.00	270.37	8,044.74	1,572.17	-851.72	862.13	0.00	0.00	0.00
10,000.00	92.00	270.37	8,041.25	1,572.83	-951.66	962.07	0.00	0.00	0.00
10,100.00	92.00	270.37	8,037.76	1,573.48	-1,051.59	1,062.00	0.00	0.00	0.00
10,200.00	92.00	270.37	8,034.28	1,574.13	-1,151.53	1,161.94	0.00	0.00	0.00
10,300.00	92.00	270.37	8,030.79	1,574.78	-1,251.47	1,261.88	0.00	0.00	0.00
10,400.00	92.00	270.37	8,027.31	1,575.44	-1,351.40	1,361.82	0.00	0.00	0.00
10,500.00	92.00	270.37	8,023.82	1,576.09	-1,451.34	1,461.76	0.00	0.00	0.00
10,600.00	92.00	270.37	8,020.33	1,576.74	-1,551.28	1,561.70	0.00	0.00	0.00
10,700.00	92.00	270.37	8,016.85	1,577.39	-1,651.21	1,661.64	0.00	0.00	0.00
10,800.00	92.00	270.37	8,013.36	1,578.05	-1,751.15	1,761.58	0.00	0.00	0.00
10,900.00	92.00	270.37	8,009.88	1,578.70	-1,851.09	1,861.52	0.00	0.00	0.00
11,000.00	92.00	270.37	8,006.39	1,579.35	-1,951.03	1,961.46	0.00	0.00	0.00
11,100.00	92.00	270.37	8,002.90	1,580.01	-2,050.96	2,061.40	0.00	0.00	0.00
11,200.00	92.00	270.37	7,999.42	1,580.66	-2,150.90	2,161.34	0.00	0.00	0.00
11,300.00	92.00	270.37	7,995.93	1,581.31	-2,250.84	2,261.28	0.00	0.00	0.00
11,400.00	92.00	270.37	7,992.45	1,581.96	-2,350.77	2,361.21	0.00	0.00	0.00
11,500.00	92.00	270.37	7,988.96	1,582.62	-2,450.71	2,461.15	0.00	0.00	0.00
11,600.00	92.00	270.37	7,985.47	1,583.27	-2,550.65	2,561.09	0.00	0.00	0.00
11,700.00	92.00	270.37	7,981.99	1,583.92	-2,650.59	2,661.03	0.00	0.00	0.00
11,800.00	92.00	270.37	7,978.50	1,584.57	-2,750.52	2,760.97	0.00	0.00	0.00
11,900.00	92.00	270.37	7,975.02	1,585.23	-2,850.46	2,860.91	0.00	0.00	0.00
12,000.00	92.00	270.37	7,971.53	1,585.88	-2,950.40	2,960.85	0.00	0.00	0.00
12,100.00	92.00	270.37	7,968.04	1,586.53	-3,050.33	3,060.79	0.00	0.00	0.00
12,200.00	92.00	270.37	7,964.56	1,587.18	-3,150.27	3,160.73	0.00	0.00	0.00
12,300.00	92.00	270.37	7,961.07	1,587.84	-3,250.21	3,260.67	0.00	0.00	0.00
12,400.00	92.00	270.37	7,957.59	1,588.49	-3,350.15	3,360.61	0.00	0.00	0.00
12,500.00	92.00	270.37	7,954.10	1,589.14	-3,450.08	3,460.55	0.00	0.00	0.00
12,600.00	92.00	270.37	7,950.61	1,589.80	-3,550.02	3,560.49	0.00	0.00	0.00
12,700.00	92.00	270.37	7,947.13	1,590.45	-3,649.96	3,660.42	0.00	0.00	0.00
12,800.00	92.00	270.37	7,943.64	1,591.10	-3,749.89	3,760.36	0.00	0.00	0.00
12,900.00	92.00	270.37	7,940.16	1,591.75	-3,849.83	3,860.30	0.00	0.00	0.00
13,000.00	92.00	270.37	7,936.67	1,592.41	-3,949.77	3,960.24	0.00	0.00	0.00
13,100.00	92.00	270.37	7,933.18	1,593.06	-4,049.71	4,060.18	0.00	0.00	0.00
13,200.00	92.00	270.37	7,929.70	1,593.71	-4,149.64	4,160.12	0.00	0.00	0.00
13,300.00	92.00	270.37	7,926.21	1,594.36	-4,249.58	4,260.06	0.00	0.00	0.00
13,400.00	92.00	270.37	7,922.73	1,595.02	-4,349.52	4,360.00	0.00	0.00	0.00
13,500.00	92.00	270.37	7,919.24	1,595.67	-4,449.45	4,459.94	0.00	0.00	0.00
13,600.00	92.00	270.37	7,915.75	1,596.32	-4,549.39	4,559.88	0.00	0.00	0.00
13,700.00	92.00	270.37	7,912.27	1,596.97	-4,649.33	4,659.82	0.00	0.00	0.00
13,800.00	92.00	270.37	7,908.78	1,597.63	-4,749.26	4,759.76	0.00	0.00	0.00
13,900.00	92.00	270.37	7,905.30	1,598.28	-4,849.20	4,859.70	0.00	0.00	0.00
14,000.00	92.00	270.37	7,901.81	1,598.93	-4,949.14	4,959.63	0.00	0.00	0.00
14,100.00	92.00	270.37	7,898.32	1,599.59	-5,049.08	5,059.57	0.00	0.00	0.00
14,200.00	92.00	270.37	7,894.84	1,600.24	-5,149.01	5,159.51	0.00	0.00	0.00
14,300.00	92.00	270.37	7,891.35	1,600.89	-5,248.95	5,259.45	0.00	0.00	0.00
14,400.00	92.00	270.37	7,887.87	1,601.54	-5,348.89	5,359.39	0.00	0.00	0.00
14,500.00	92.00	270.37	7,884.38	1,602.20	-5,448.82	5,459.33	0.00	0.00	0.00
14,600.00	92.00	270.37	7,880.89	1,602.85	-5,548.76	5,559.27	0.00	0.00	0.00
14,700.00	92.00	270.37	7,877.41	1,603.50	-5,648.70	5,659.21	0.00	0.00	0.00
14,800.00	92.00	270.37	7,873.92	1,604.15	-5,748.64	5,759.15	0.00	0.00	0.00
14,900.00	92.00	270.37	7,870.44	1,604.81	-5,848.57	5,859.09	0.00	0.00	0.00
15,000.00	92.00	270.37	7,866.95	1,605.46	-5,948.51	5,959.03	0.00	0.00	0.00
15,100.00	92.00	270.37	7,863.46	1,606.11	-6,048.45	6,058.97	0.00	0.00	0.00

Legacy Directional Drilling

Planning Report

Database:	EDM_WA	Local Co-ordinate Reference:	Well Cardigan Fed Com 132H
Company:	Freedom Energy	TVD Reference:	3480' + 26.5' KB @ 3506.50usft
Project:	Eddy County, NM NAD83	MD Reference:	3480' + 26.5' KB @ 3506.50usft
Site:	Cardigan Fed Com	North Reference:	Grid
Well:	Cardigan Fed Com 132H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan 2		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
15,200.00	92.00	270.37	7,859.98	1,606.77	-6,148.38	6,158.91	0.00	0.00	0.00
15,300.00	92.00	270.37	7,856.49	1,607.42	-6,248.32	6,258.84	0.00	0.00	0.00
15,400.00	92.00	270.37	7,853.01	1,608.07	-6,348.26	6,358.78	0.00	0.00	0.00
15,500.00	92.00	270.37	7,849.52	1,608.72	-6,448.20	6,458.72	0.00	0.00	0.00
15,600.00	92.00	270.37	7,846.03	1,609.38	-6,548.13	6,558.66	0.00	0.00	0.00
15,700.00	92.00	270.37	7,842.55	1,610.03	-6,648.07	6,658.60	0.00	0.00	0.00
15,800.00	92.00	270.37	7,839.06	1,610.68	-6,748.01	6,758.54	0.00	0.00	0.00
15,900.00	92.00	270.37	7,835.58	1,611.33	-6,847.94	6,858.48	0.00	0.00	0.00
16,000.00	92.00	270.37	7,832.09	1,611.99	-6,947.88	6,958.42	0.00	0.00	0.00
16,100.00	92.00	270.37	7,828.60	1,612.64	-7,047.82	7,058.36	0.00	0.00	0.00
16,200.00	92.00	270.37	7,825.12	1,613.29	-7,147.75	7,158.30	0.00	0.00	0.00
16,300.00	92.00	270.37	7,821.63	1,613.94	-7,247.69	7,258.24	0.00	0.00	0.00
16,400.00	92.00	270.37	7,818.15	1,614.60	-7,347.63	7,358.18	0.00	0.00	0.00
16,500.00	92.00	270.37	7,814.66	1,615.25	-7,447.57	7,458.12	0.00	0.00	0.00
16,600.00	92.00	270.37	7,811.17	1,615.90	-7,547.50	7,558.05	0.00	0.00	0.00
16,700.00	92.00	270.37	7,807.69	1,616.56	-7,647.44	7,657.99	0.00	0.00	0.00
16,800.00	92.00	270.37	7,804.20	1,617.21	-7,747.38	7,757.93	0.00	0.00	0.00
16,900.00	92.00	270.37	7,800.72	1,617.86	-7,847.31	7,857.87	0.00	0.00	0.00
17,000.00	92.00	270.37	7,797.23	1,618.51	-7,947.25	7,957.81	0.00	0.00	0.00
17,100.00	92.00	270.37	7,793.74	1,619.17	-8,047.19	8,057.75	0.00	0.00	0.00
17,200.00	92.00	270.37	7,790.26	1,619.82	-8,147.13	8,157.69	0.00	0.00	0.00
17,300.00	92.00	270.37	7,786.77	1,620.47	-8,247.06	8,257.63	0.00	0.00	0.00
17,400.00	92.00	270.37	7,783.29	1,621.12	-8,347.00	8,357.57	0.00	0.00	0.00
17,500.00	92.00	270.37	7,779.80	1,621.78	-8,446.94	8,457.51	0.00	0.00	0.00
17,600.00	92.00	270.37	7,776.31	1,622.43	-8,546.87	8,557.45	0.00	0.00	0.00
17,700.00	92.00	270.37	7,772.83	1,623.08	-8,646.81	8,657.39	0.00	0.00	0.00
17,800.00	92.00	270.37	7,769.34	1,623.74	-8,746.75	8,757.32	0.00	0.00	0.00
17,900.00	92.00	270.37	7,765.85	1,624.39	-8,846.69	8,857.26	0.00	0.00	0.00
18,000.00	92.00	270.37	7,762.37	1,625.04	-8,946.62	8,957.20	0.00	0.00	0.00
18,100.00	92.00	270.37	7,758.88	1,625.69	-9,046.56	9,057.14	0.00	0.00	0.00
18,200.00	92.00	270.37	7,755.40	1,626.35	-9,146.50	9,157.08	0.00	0.00	0.00
18,300.00	92.00	270.37	7,751.91	1,627.00	-9,246.43	9,257.02	0.00	0.00	0.00
18,400.00	92.00	270.37	7,748.42	1,627.65	-9,346.37	9,356.96	0.00	0.00	0.00
18,500.00	92.00	270.37	7,744.94	1,628.30	-9,446.31	9,456.90	0.00	0.00	0.00
18,600.00	92.00	270.37	7,741.45	1,628.96	-9,546.25	9,556.84	0.00	0.00	0.00
18,700.00	92.00	270.37	7,737.97	1,629.61	-9,646.18	9,656.78	0.00	0.00	0.00
18,759.86	92.00	270.37	7,735.88	1,630.00	-9,706.00	9,716.60	0.00	0.00	0.00
BHL at 18759.86									

Legacy Directional Drilling

Planning Report

Database:	EDM_WA	Local Co-ordinate Reference:	Well Cardigan Fed Com 132H
Company:	Freedom Energy	TVD Reference:	3480' + 26.5' KB @ 3506.50usft
Project:	Eddy County, NM NAD83	MD Reference:	3480' + 26.5' KB @ 3506.50usft
Site:	Cardigan Fed Com	North Reference:	Grid
Well:	Cardigan Fed Com 132H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan 2		

Design Targets									
Target Name									
- hit/miss target	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- Shape	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)		
KOP - Cardigan Fed Cor - plan hits target center - Point	0.00	0.08	7,610.00	1,561.00	859.00	604,936.00	572,414.00	32.662975	-104.232350
BHL - Cardigan Fed Cor - plan hits target center - Point	0.00	0.08	7,735.88	1,630.00	-9,706.00	605,005.00	561,849.00	32.663187	-104.266681
LTP - Cardigan Fed Cor - plan misses target center by 0.66usft at 18674.79usft MD (7738.85 TVD, 1629.44 N, -9620.99 E) - Point	0.00	0.08	7,739.20	1,630.00	-9,621.00	605,005.00	561,934.00	32.663187	-104.266405
BPP2 - Cardigan Fed Cor - plan misses target center by 0.72usft at 17450.02usft MD (7781.54 TVD, 1621.45 N, -8396.99 E) - Point	0.00	0.08	7,782.00	1,622.00	-8,397.00	604,997.00	563,158.00	32.663163	-104.262427
BPP1 - Cardigan Fed Cor - plan misses target center by 0.44usft at 16125.21usft MD (7827.72 TVD, 1612.80 N, -7073.02 E) - Point	0.00	0.08	7,827.33	1,613.00	-7,073.00	604,988.00	564,482.00	32.663136	-104.258125
FTP - Cardigan Fed Cor - plan misses target center by 159.75usft at 8350.00usft MD (7986.68 TVD, 1562.20 N, 674.94 E) - Point	0.00	0.08	8,112.00	1,561.00	774.00	604,936.00	572,329.00	32.662975	-104.232626

Formations					
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
26.50	26.50	ALLUVIUM		-2.00	270.38
98.00	98.00	TANSILL		-2.00	270.38
350.00	350.00	YATES		-2.00	270.38
689.00	689.00	SEVEN RIVERS		-2.00	270.38
1,261.00	1,261.00	QUEEN		-2.00	270.38
1,592.00	1,592.00	GRAYBURG		-2.00	270.38
2,092.76	2,092.25	SAN ANDRES		-2.00	270.38
3,311.84	3,257.91	BONE SPRING LIME		-2.00	270.38
5,224.88	5,044.30	1ST BONE SPRING SAND		-2.00	270.38
5,356.37	5,167.08	2ND BONE SPRING CARBONATE		-2.00	270.38
7,083.08	6,785.08	2ND BONE SPRING SAND		-2.00	270.38
7,191.54	6,890.51	3RD BONE SPRING CARBONATE		-2.00	270.38
8,189.68	7,868.97	3RD BONE SPRING SAND		-2.00	270.38

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
1,800.00	1,800.00	0.00	0.00	Start Nudge Build 2.00
2,848.30	2,825.06	166.17	91.44	20.97° at 2848.30 MD
6,767.67	6,484.94	1,394.83	767.56	Start Drop -2.00
7,815.97	7,510.00	1,561.00	859.00	Vertical at 7815.97 MD
7,915.97	7,610.00	1,561.00	859.00	KOP Start DLS 12.00 TFO 270.37
8,682.61	8,087.17	1,564.23	364.90	LP 92° at 8682.61 MD
18,759.86	7,735.88	1,630.00	-9,706.00	BHL at 18759.86

Freedom Energy

Eddy County, NM NAD83

Cardigan Fed Com

Cardigan Fed Com 132H

OH

Plan 2

Anticollision Report

07 February, 2025

Legacy Directional Drilling

Anticollision Report

Company:	Freedom Energy	Local Co-ordinate Reference:	Well Cardigan Fed Com 132H
Project:	Eddy County, NM NAD83	TVD Reference:	3480' + 26.5' KB @ 3506.50usft
Reference Site:	Cardigan Fed Com	MD Reference:	3480' + 26.5' KB @ 3506.50usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Cardigan Fed Com 132H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM_WA
Reference Design:	Plan 2	Offset TVD Reference:	Reference Datum

Reference	Plan 2		
Filter type:	GLOBAL FILTER APPLIED: All wellpaths within 200'+ 100/1000 of reference		
Interpolation Method:	MD Interval 100.00usft	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum centre distance of 2,076.08usft	Error Surface:	Pedal Curve
Warning Levels Evaluated at:	2.00 Sigma	Casing Method:	Not applied

Survey Tool Program	Date	2/7/2025		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.00	18,759.86	Plan 2 (OH)	MWD	OWSG 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						
Cardigan Fed Com						
Cardigan Fed Com 133H - OH - Plan 2	1,800.00	1,800.00	30.00	17.29	2.359	CC, ES
Cardigan Fed Com 133H - OH - Plan 2	1,900.00	1,899.98	31.54	18.11	2.348	SF
Cardigan Fed Com 134H - OH - Plan 2	1,800.00	1,800.00	60.00	47.29	4.719	CC, ES
Cardigan Fed Com 134H - OH - Plan 2	1,900.00	1,898.13	63.01	49.61	4.701	SF

Offset Design: Cardigan Fed Com - Cardigan Fed Com 133H - OH - Plan 2													Offset Site Error:	0.00 usft
Survey Program:		0-MWD						Rule Assigned:					Offset Well Error:	0.00 usft
Reference	Offset	Semi Major Axis		Offset Wellbore Centre		Distance		Minimum Separation		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)	Separation Factor			
0.00	0.00	0.00	0.00	0.00	0.00	180.00	-30.00	0.00	30.00					
100.00	100.00	100.00	100.00	0.26	0.26	180.00	-30.00	0.00	30.00	29.47	0.53	56.931		
200.00	200.00	200.00	200.00	0.62	0.62	180.00	-30.00	0.00	30.00	28.76	1.24	24.118		
300.00	300.00	300.00	300.00	0.98	0.98	180.00	-30.00	0.00	30.00	28.04	1.96	15.300		
400.00	400.00	400.00	400.00	1.34	1.34	180.00	-30.00	0.00	30.00	27.32	2.68	11.203		
500.00	500.00	500.00	500.00	1.70	1.70	180.00	-30.00	0.00	30.00	26.61	3.39	8.837		
600.00	600.00	600.00	600.00	2.06	2.06	180.00	-30.00	0.00	30.00	25.89	4.11	7.296		
700.00	700.00	700.00	700.00	2.41	2.41	180.00	-30.00	0.00	30.00	25.17	4.83	6.213		
800.00	800.00	800.00	800.00	2.77	2.77	180.00	-30.00	0.00	30.00	24.45	5.55	5.410		
900.00	900.00	900.00	900.00	3.13	3.13	180.00	-30.00	0.00	30.00	23.74	6.26	4.790		
1,000.00	1,000.00	1,000.00	1,000.00	3.49	3.49	180.00	-30.00	0.00	30.00	23.02	6.98	4.298		
1,100.00	1,100.00	1,100.00	1,100.00	3.85	3.85	180.00	-30.00	0.00	30.00	22.30	7.70	3.898		
1,200.00	1,200.00	1,200.00	1,200.00	4.21	4.21	180.00	-30.00	0.00	30.00	21.59	8.41	3.566		
1,300.00	1,300.00	1,300.00	1,300.00	4.57	4.57	180.00	-30.00	0.00	30.00	20.87	9.13	3.286		
1,400.00	1,400.00	1,400.00	1,400.00	4.92	4.92	180.00	-30.00	0.00	30.00	20.15	9.85	3.047		
1,500.00	1,500.00	1,500.00	1,500.00	5.28	5.28	180.00	-30.00	0.00	30.00	19.44	10.56	2.840		
1,600.00	1,600.00	1,600.00	1,600.00	5.64	5.64	180.00	-30.00	0.00	30.00	18.72	11.28	2.659		
1,700.00	1,700.00	1,700.00	1,700.00	6.00	6.00	180.00	-30.00	0.00	30.00	18.00	12.00	2.500		
1,800.00	1,800.00	1,800.00	1,800.00	6.36	6.36	180.00	-30.00	0.00	30.00	17.29	12.71	2.359 CC, ES		
1,900.00	1,899.98	1,899.98	1,899.98	6.71	6.72	152.69	-30.00	0.00	31.54	18.11	13.43	2.348 SF		
2,000.00	1,999.84	1,999.84	1,999.84	7.07	7.07	156.45	-30.00	0.00	36.27	22.12	14.15	2.564		
2,100.00	2,099.45	2,099.45	2,099.45	7.43	7.43	160.89	-30.00	0.00	44.40	29.54	14.86	2.988		
2,200.00	2,198.70	2,198.70	2,198.70	7.79	7.79	164.91	-30.00	0.00	56.06	40.49	15.57	3.600		

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

Legacy Directional Drilling
Anticollision Report

Company:	Freedom Energy	Local Co-ordinate Reference:	Well Cardigan Fed Com 132H
Project:	Eddy County, NM NAD83	TVD Reference:	3480' + 26.5' KB @ 3506.50usft
Reference Site:	Cardigan Fed Com	MD Reference:	3480' + 26.5' KB @ 3506.50usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Cardigan Fed Com 132H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM_WA
Reference Design:	Plan 2	Offset TVD Reference:	Reference Datum

Offset Design: Cardigan Fed Com - Cardigan Fed Com 133H - OH - Plan 2													Offset Site Error:	0.00 usft
Survey Program: 0-MWD													Offset Well Error:	0.00 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)				
2,300.00	2,297.47	2,297.47	2,297.47	8.16	8.14	168.12	-30.00	0.00	71.29	55.00	16.28	4.378		
2,400.00	2,395.62	2,396.44	2,396.42	8.53	8.49	169.56	-30.09	1.62	89.62	72.63	16.99	5.276		
2,500.00	2,493.06	2,495.14	2,494.99	8.92	8.82	169.05	-30.38	6.63	110.44	92.76	17.68	6.247		
2,600.00	2,589.64	2,593.35	2,592.84	9.33	9.16	167.53	-30.86	14.98	133.79	115.42	18.38	7.280		
2,700.00	2,685.27	2,690.89	2,689.67	9.76	9.51	165.50	-31.53	26.58	159.79	140.70	19.08	8.373		
2,800.00	2,779.82	2,787.56	2,785.21	10.22	9.85	163.25	-32.37	41.32	188.55	168.75	19.80	9.523		
2,900.00	2,873.34	2,883.17	2,879.16	10.70	10.20	161.02	-33.39	59.02	219.77	199.24	20.53	10.706		
3,000.00	2,966.72	2,977.76	2,971.88	11.21	10.56	159.20	-34.46	77.68	251.44	230.17	21.27	11.822		
3,100.00	3,060.10	3,072.35	3,064.60	11.73	10.93	157.78	-35.54	96.34	283.28	261.25	22.02	12.862		
3,200.00	3,153.48	3,166.93	3,157.32	12.27	11.30	156.64	-36.61	115.00	315.25	292.45	22.79	13.830		
3,300.00	3,246.86	3,261.52	3,250.05	12.82	11.68	155.72	-37.68	133.66	347.31	323.73	23.58	14.730		
3,400.00	3,340.23	3,356.10	3,342.77	13.38	12.06	154.95	-38.75	152.32	379.44	355.06	24.37	15.568		
3,500.00	3,433.61	3,450.69	3,435.49	13.95	12.45	154.30	-39.83	170.98	411.61	386.44	25.18	16.348		
3,600.00	3,526.99	3,545.28	3,528.21	14.53	12.84	153.74	-40.90	189.64	443.83	417.84	25.99	17.074		
3,700.00	3,620.37	3,639.86	3,620.93	15.11	13.23	153.26	-41.97	208.29	476.09	449.27	26.82	17.752		
3,800.00	3,713.75	3,734.45	3,713.65	15.71	13.63	152.85	-43.04	226.95	508.37	480.71	27.65	18.384		
3,900.00	3,807.13	3,829.03	3,806.37	16.30	14.04	152.48	-44.12	245.61	540.67	512.17	28.49	18.976		
4,000.00	3,900.51	3,923.62	3,899.09	16.91	14.44	152.15	-45.19	264.27	572.98	543.64	29.34	19.530		
4,100.00	3,993.89	4,018.20	3,991.81	17.52	14.85	151.86	-46.26	282.93	605.32	575.12	30.19	20.049		
4,200.00	4,087.27	4,112.79	4,084.53	18.13	15.27	151.59	-47.33	301.59	637.66	606.61	31.05	20.536		
4,300.00	4,180.65	4,207.38	4,177.26	18.75	15.68	151.36	-48.40	320.25	670.02	638.10	31.92	20.993		
4,400.00	4,274.03	4,301.96	4,269.98	19.37	16.10	151.14	-49.48	338.91	702.38	669.60	32.79	21.424		
4,500.00	4,367.41	4,396.55	4,362.70	20.00	16.52	150.94	-50.55	357.56	734.76	701.10	33.66	21.829		
4,600.00	4,460.79	4,491.13	4,455.42	20.63	16.94	150.76	-51.62	376.22	767.14	732.60	34.54	22.212		
4,700.00	4,554.17	4,585.72	4,548.14	21.26	17.36	150.60	-52.69	394.88	799.53	764.11	35.42	22.573		
4,800.00	4,647.55	4,680.31	4,640.86	21.89	17.79	150.44	-53.77	413.54	831.92	795.61	36.30	22.915		
4,900.00	4,740.92	4,774.89	4,733.58	22.52	18.21	150.30	-54.84	432.20	864.32	827.12	37.19	23.238		
5,000.00	4,834.30	4,869.48	4,826.30	23.16	18.64	150.17	-55.91	450.86	896.72	858.63	38.09	23.545		
5,100.00	4,927.68	4,964.06	4,919.02	23.80	19.07	150.05	-56.98	469.52	929.12	890.14	38.98	23.836		
5,200.00	5,021.06	5,058.65	5,011.74	24.44	19.50	149.94	-58.06	488.18	961.53	921.66	39.88	24.112		
5,300.00	5,114.44	5,153.23	5,104.47	25.08	19.93	149.83	-59.13	506.83	993.95	953.17	40.78	24.375		
5,400.00	5,207.82	5,247.82	5,197.19	25.73	20.36	149.73	-60.20	525.49	1,026.36	984.68	41.68	24.625		
5,500.00	5,301.20	5,342.41	5,289.91	26.37	20.79	149.64	-61.27	544.15	1,058.78	1,016.19	42.59	24.863		
5,600.00	5,394.58	5,436.99	5,382.63	27.02	21.23	149.55	-62.35	562.81	1,091.20	1,047.71	43.49	25.090		
5,700.00	5,487.96	5,531.58	5,475.35	27.67	21.66	149.47	-63.42	581.47	1,123.62	1,079.22	44.40	25.306		
5,800.00	5,581.34	5,626.16	5,568.07	28.32	22.10	149.39	-64.49	600.13	1,156.05	1,110.74	45.31	25.513		
5,900.00	5,674.72	5,720.75	5,660.79	28.97	22.54	149.31	-65.56	618.79	1,188.47	1,142.25	46.22	25.711		
6,000.00	5,768.10	5,815.34	5,753.51	29.62	22.97	149.24	-66.63	637.44	1,220.90	1,173.76	47.14	25.901		
6,100.00	5,861.48	5,909.92	5,846.23	30.27	23.41	149.18	-67.71	656.10	1,253.33	1,205.28	48.05	26.082		
6,200.00	5,954.86	6,004.51	5,938.95	30.92	23.85	149.12	-68.78	674.76	1,285.76	1,236.79	48.97	26.256		
6,300.00	6,048.23	6,099.09	6,031.68	31.57	24.29	149.06	-69.85	693.42	1,318.20	1,268.31	49.89	26.422		
6,400.00	6,141.61	6,193.68	6,124.40	32.23	24.73	149.00	-70.92	712.08	1,350.63	1,299.82	50.81	26.582		
6,500.00	6,234.99	6,288.26	6,217.12	32.88	25.17	148.94	-72.00	730.74	1,383.06	1,331.33	51.73	26.736		
6,600.00	6,328.37	6,382.85	6,309.84	33.54	25.61	148.89	-73.07	749.40	1,415.50	1,362.85	52.65	26.883		
6,700.00	6,421.75	6,477.44	6,402.56	34.19	26.06	148.84	-74.14	768.06	1,447.94	1,394.36	53.58	27.025		
6,800.00	6,515.20	6,572.07	6,495.33	34.85	26.50	148.90	-75.21	786.72	1,480.23	1,425.72	54.50	27.160		
6,900.00	6,609.56	6,667.39	6,588.77	35.47	26.94	149.12	-76.29	805.53	1,510.33	1,454.90	55.42	27.250		
7,000.00	6,705.02	6,765.73	6,685.28	36.06	27.40	149.26	-77.38	824.36	1,537.53	1,481.17	56.36	27.282		
7,100.00	6,801.46	6,866.74	6,784.98	36.61	27.84	149.42	-78.31	840.55	1,561.61	1,504.35	57.26	27.271		
7,200.00	6,898.77	6,968.67	6,886.09	37.12	28.26	149.60	-79.04	853.32	1,582.51	1,524.40	58.12	27.229		
7,300.00	6,996.82	7,071.31	6,988.31	37.58	28.65	149.82	-79.57	862.55	1,600.21	1,541.29	58.92	27.159		
7,400.00	7,095.49	7,174.44	7,091.28	38.01	29.01	150.06	-79.89	868.12	1,614.66	1,555.00	59.66	27.063		

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

Legacy Directional Drilling
Anticollision Report

Company:	Freedom Energy	Local Co-ordinate Reference:	Well Cardigan Fed Com 132H
Project:	Eddy County, NM NAD83	TVD Reference:	3480' + 26.5' KB @ 3506.50usft
Reference Site:	Cardigan Fed Com	MD Reference:	3480' + 26.5' KB @ 3506.50usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Cardigan Fed Com 132H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM_WA
Reference Design:	Plan 2	Offset TVD Reference:	Reference Datum

Offset Design: Cardigan Fed Com - Cardigan Fed Com 133H - OH - Plan 2												Offset Site Error:	0.00 usft
Survey Program: 0-MWD												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		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)			
7,500.00	7,194.67	7,277.84	7,194.66	38.39	29.34	150.34	-80.00	870.00	1,625.87	1,565.52	60.35	26.941	
7,600.00	7,294.24	7,377.42	7,294.24	38.74	29.65	150.58	-80.00	870.00	1,633.94	1,572.97	60.97	26.797	
7,700.00	7,394.07	7,477.24	7,394.07	39.04	29.96	150.73	-80.00	870.00	1,638.99	1,577.40	61.59	26.611	
7,800.00	7,494.03	7,577.21	7,494.03	39.31	30.26	150.79	-80.00	870.00	1,641.00	1,578.80	62.20	26.384	
7,900.00	7,594.03	7,677.21	7,594.03	39.55	30.57	179.62	-80.00	870.00	1,641.04	1,578.24	62.80	26.132	
8,000.00	7,693.60	7,779.02	7,695.74	39.75	30.87	-90.92	-79.99	867.30	1,641.12	1,577.75	63.36	25.900	
8,100.00	7,789.51	7,883.97	7,798.04	39.86	31.06	-91.13	-79.93	844.81	1,641.32	1,577.57	63.74	25.749	
8,200.00	7,877.58	7,990.37	7,894.21	39.89	31.17	-91.30	-79.81	799.80	1,641.59	1,577.65	63.94	25.672	
8,300.00	7,953.95	8,097.93	7,978.89	39.84	31.24	-91.40	-79.64	733.84	1,641.92	1,577.88	64.04	25.639	
8,400.00	8,015.28	8,206.28	8,047.12	39.72	31.32	-91.44	-79.41	649.98	1,642.27	1,578.13	64.14	25.605	
8,500.00	8,058.91	8,314.95	8,094.83	39.55	31.47	-91.41	-79.16	552.60	1,642.63	1,578.26	64.37	25.520	
8,600.00	8,082.92	8,423.47	8,119.33	39.35	31.75	-91.31	-78.88	447.12	1,642.97	1,578.16	64.81	25.352	
8,700.00	8,086.57	8,528.78	8,120.99	39.14	32.16	-91.19	-78.60	341.96	1,643.31	1,577.80	65.51	25.086	
8,800.00	8,083.08	8,628.78	8,117.50	38.96	32.72	-91.19	-78.33	242.02	1,643.69	1,577.16	66.54	24.703	
8,900.00	8,079.60	8,728.78	8,114.01	38.79	33.44	-91.19	-78.06	142.08	1,644.08	1,576.17	67.91	24.210	
9,000.00	8,076.11	8,828.78	8,110.53	38.65	34.33	-91.19	-77.80	42.14	1,644.47	1,574.87	69.60	23.627	
9,100.00	8,072.62	8,928.78	8,107.04	38.53	35.36	-91.19	-77.53	-57.80	1,644.85	1,573.26	71.59	22.975	
9,200.00	8,069.14	9,028.78	8,103.55	38.44	36.54	-91.19	-77.27	-157.73	1,645.24	1,571.38	73.86	22.276	
9,300.00	8,065.65	9,128.78	8,100.06	38.56	37.83	-91.19	-77.00	-257.67	1,645.63	1,569.25	76.37	21.547	
9,400.00	8,062.17	9,228.78	8,096.58	39.75	39.24	-91.19	-76.74	-357.61	1,646.01	1,566.90	79.11	20.806	
9,500.00	8,058.68	9,328.78	8,093.09	41.25	40.75	-91.19	-76.47	-457.55	1,646.40	1,564.34	82.06	20.064	
9,600.00	8,055.19	9,428.78	8,089.60	42.84	42.35	-91.19	-76.20	-557.49	1,646.79	1,561.60	85.19	19.332	
9,700.00	8,051.71	9,528.78	8,086.11	44.51	44.03	-91.19	-75.94	-657.42	1,647.17	1,558.70	88.48	18.617	
9,800.00	8,048.22	9,628.78	8,082.62	46.24	45.78	-91.19	-75.67	-757.36	1,647.56	1,555.65	91.91	17.925	
9,900.00	8,044.74	9,728.78	8,079.14	48.04	47.59	-91.19	-75.41	-857.30	1,647.95	1,552.47	95.48	17.260	
10,000.00	8,041.25	9,828.77	8,075.65	49.89	49.46	-91.19	-75.14	-957.24	1,648.34	1,549.17	99.16	16.623	
10,100.00	8,037.76	9,928.77	8,072.16	51.78	51.37	-91.19	-74.88	-1,057.18	1,648.72	1,545.78	102.95	16.015	
10,200.00	8,034.28	10,028.77	8,068.67	53.72	53.34	-91.19	-74.61	-1,157.11	1,649.11	1,542.29	106.82	15.438	
10,300.00	8,030.79	10,128.77	8,065.18	55.70	55.34	-91.19	-74.34	-1,257.05	1,649.50	1,538.71	110.78	14.889	
10,400.00	8,027.31	10,228.77	8,061.70	57.71	57.37	-91.19	-74.08	-1,356.99	1,649.88	1,535.06	114.82	14.369	
10,500.00	8,023.82	10,328.77	8,058.21	59.76	59.44	-91.19	-73.81	-1,456.93	1,650.27	1,531.35	118.92	13.877	
10,600.00	8,020.33	10,428.77	8,054.72	61.83	61.54	-91.19	-73.55	-1,556.87	1,650.66	1,527.58	123.08	13.411	
10,700.00	8,016.85	10,528.77	8,051.23	63.93	63.67	-91.19	-73.28	-1,656.80	1,651.04	1,523.75	127.30	12.970	
10,800.00	8,013.36	10,628.77	8,047.75	66.06	65.81	-91.19	-73.02	-1,756.74	1,651.43	1,519.87	131.56	12.553	
10,900.00	8,009.88	10,728.77	8,044.26	68.20	67.98	-91.19	-72.75	-1,856.68	1,651.82	1,515.95	135.87	12.157	
11,000.00	8,006.39	10,828.77	8,040.77	70.37	70.17	-91.19	-72.48	-1,956.62	1,652.20	1,511.99	140.22	11.783	
11,100.00	8,002.90	10,928.77	8,037.28	72.55	72.38	-91.18	-72.22	-2,056.56	1,652.59	1,507.99	144.60	11.428	
11,200.00	7,999.42	11,028.77	8,033.79	74.75	74.60	-91.18	-71.95	-2,156.49	1,652.98	1,503.96	149.02	11.092	
11,300.00	7,995.93	11,128.76	8,030.31	76.97	76.83	-91.18	-71.69	-2,256.43	1,653.36	1,499.89	153.47	10.773	
11,400.00	7,992.45	11,228.76	8,026.82	79.20	79.08	-91.18	-71.42	-2,356.37	1,653.75	1,495.80	157.95	10.470	
11,500.00	7,988.96	11,328.76	8,023.33	81.44	81.34	-91.18	-71.16	-2,456.31	1,654.14	1,491.69	162.45	10.182	
11,600.00	7,985.47	11,428.76	8,019.84	83.69	83.62	-91.18	-70.89	-2,556.25	1,654.52	1,487.55	166.98	9.909	
11,700.00	7,981.99	11,528.76	8,016.35	85.96	85.90	-91.18	-70.62	-2,656.18	1,654.91	1,483.39	171.52	9.648	
11,800.00	7,978.50	11,628.76	8,012.87	88.23	88.19	-91.18	-70.36	-2,756.12	1,655.30	1,479.21	176.09	9.400	
11,900.00	7,975.02	11,728.76	8,009.38	90.51	90.49	-91.18	-70.09	-2,856.06	1,655.68	1,475.01	180.68	9.164	
12,000.00	7,971.53	11,828.76	8,005.89	92.81	92.80	-91.18	-69.83	-2,956.00	1,656.07	1,470.79	185.28	8.938	
12,100.00	7,968.04	11,928.76	8,002.40	95.11	95.12	-91.18	-69.56	-3,055.94	1,656.46	1,466.56	189.90	8.723	
12,200.00	7,964.56	12,028.76	7,998.92	97.42	97.44	-91.18	-69.29	-3,155.88	1,656.85	1,462.31	194.53	8.517	
12,300.00	7,961.07	12,128.76	7,995.43	99.73	99.77	-91.18	-69.03	-3,255.81	1,657.23	1,458.05	199.18	8.320	
12,400.00	7,957.59	12,228.76	7,991.94	102.05	102.11	-91.18	-68.76	-3,355.75	1,657.62	1,453.78	203.84	8.132	
12,500.00	7,954.10	12,328.76	7,988.45	104.38	104.45	-91.18	-68.50	-3,455.69	1,658.01	1,449.49	208.51	7.952	
12,600.00	7,950.61	12,428.76	7,984.96	106.71	106.80	-91.18	-68.23	-3,555.63	1,658.39	1,445.20	213.20	7.779	

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

Legacy Directional Drilling

Anticollision Report

Company:	Freedom Energy	Local Co-ordinate Reference:	Well Cardigan Fed Com 132H
Project:	Eddy County, NM NAD83	TVD Reference:	3480' + 26.5' KB @ 3506.50usft
Reference Site:	Cardigan Fed Com	MD Reference:	3480' + 26.5' KB @ 3506.50usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Cardigan Fed Com 132H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM_WA
Reference Design:	Plan 2	Offset TVD Reference:	Reference Datum

Offset Design: Cardigan Fed Com - Cardigan Fed Com 133H - OH - Plan 2													Offset Site Error: 0.00 usft
Survey Program: 0-MWD													Offset Well Error: 0.00 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)			
12,700.00	7,947.13	12,528.75	7,981.48	109.05	109.15	-91.18	-67.97	-3,655.57	1,658.78	1,440.89	217.89	7.613	
12,800.00	7,943.64	12,628.75	7,977.99	111.40	111.51	-91.18	-67.70	-3,755.50	1,659.17	1,436.57	222.59	7.454	
12,900.00	7,940.16	12,728.75	7,974.50	113.75	113.87	-91.18	-67.43	-3,855.44	1,659.55	1,432.25	227.31	7.301	
13,000.00	7,936.67	12,828.75	7,971.01	116.10	116.24	-91.18	-67.17	-3,955.38	1,659.94	1,427.91	232.03	7.154	
13,100.00	7,933.18	12,928.75	7,967.52	118.46	118.61	-91.18	-66.90	-4,055.32	1,660.33	1,423.57	236.76	7.013	
13,200.00	7,929.70	13,028.75	7,964.04	120.82	120.98	-91.18	-66.64	-4,155.26	1,660.71	1,419.22	241.49	6.877	
13,300.00	7,926.21	13,128.75	7,960.55	123.18	123.36	-91.18	-66.37	-4,255.19	1,661.10	1,414.86	246.24	6.746	
13,400.00	7,922.73	13,228.75	7,957.06	125.55	125.73	-91.18	-66.11	-4,355.13	1,661.49	1,410.50	250.99	6.620	
13,500.00	7,919.24	13,328.75	7,953.57	127.93	128.12	-91.18	-65.84	-4,455.07	1,661.87	1,406.13	255.75	6.498	
13,600.00	7,915.75	13,428.75	7,950.09	130.30	130.50	-91.18	-65.57	-4,555.01	1,662.26	1,401.75	260.51	6.381	
13,700.00	7,912.27	13,528.75	7,946.60	132.68	132.89	-91.18	-65.31	-4,654.95	1,662.65	1,397.37	265.28	6.268	
13,800.00	7,908.78	13,628.75	7,943.11	135.06	135.28	-91.18	-65.04	-4,754.88	1,663.03	1,392.98	270.05	6.158	
13,900.00	7,905.30	13,728.75	7,939.62	137.45	137.67	-91.18	-64.78	-4,854.82	1,663.42	1,388.59	274.83	6.053	
14,000.00	7,901.81	13,828.74	7,936.13	139.83	140.07	-91.18	-64.51	-4,954.76	1,663.81	1,384.19	279.62	5.950	
14,100.00	7,898.32	13,928.74	7,932.65	142.22	142.47	-91.17	-64.25	-5,054.70	1,664.19	1,379.79	284.40	5.852	
14,200.00	7,894.84	14,028.74	7,929.16	144.61	144.87	-91.17	-63.98	-5,154.64	1,664.58	1,375.38	289.20	5.756	
14,300.00	7,891.35	14,128.74	7,925.67	147.01	147.27	-91.17	-63.71	-5,254.57	1,664.97	1,370.97	293.99	5.663	
14,400.00	7,887.87	14,228.74	7,922.18	149.40	149.67	-91.17	-63.45	-5,354.51	1,665.36	1,366.56	298.80	5.574	
14,500.00	7,884.38	14,328.74	7,918.69	151.80	152.08	-91.17	-63.18	-5,454.45	1,665.74	1,362.14	303.60	5.487	
14,600.00	7,880.89	14,428.74	7,915.21	154.20	154.49	-91.17	-62.92	-5,554.39	1,666.13	1,357.72	308.41	5.402	
14,700.00	7,877.41	14,528.74	7,911.72	156.60	156.89	-91.17	-62.65	-5,654.33	1,666.52	1,353.29	313.22	5.321	
14,800.00	7,873.92	14,628.74	7,908.23	159.00	159.30	-91.17	-62.39	-5,754.26	1,666.90	1,348.87	318.04	5.241	
14,900.00	7,870.44	14,728.74	7,904.74	161.41	161.72	-91.17	-62.12	-5,854.20	1,667.29	1,344.43	322.86	5.164	
15,000.00	7,866.95	14,828.74	7,901.26	163.82	164.13	-91.17	-61.85	-5,954.14	1,667.68	1,340.00	327.68	5.089	
15,100.00	7,863.46	14,928.74	7,897.77	166.22	166.54	-91.17	-61.59	-6,054.08	1,668.06	1,335.56	332.50	5.017	
15,200.00	7,859.98	15,028.74	7,894.28	168.63	168.96	-91.17	-61.32	-6,154.02	1,668.45	1,331.12	337.33	4.946	
15,300.00	7,856.49	15,128.74	7,890.79	171.04	171.38	-91.17	-61.06	-6,253.95	1,668.84	1,326.68	342.16	4.877	
15,400.00	7,853.01	15,228.73	7,887.30	173.46	173.79	-91.17	-60.79	-6,353.89	1,669.22	1,322.23	346.99	4.811	
15,500.00	7,849.52	15,328.73	7,883.82	175.87	176.21	-91.17	-60.53	-6,453.83	1,669.61	1,317.78	351.83	4.746	
15,600.00	7,846.03	15,428.73	7,880.33	178.28	178.63	-91.17	-60.26	-6,553.77	1,670.00	1,313.33	356.66	4.682	
15,700.00	7,842.55	15,528.73	7,876.84	180.70	181.06	-91.17	-59.99	-6,653.71	1,670.38	1,308.88	361.50	4.621	
15,800.00	7,839.06	15,628.73	7,873.35	183.12	183.48	-91.17	-59.73	-6,753.65	1,670.77	1,304.43	366.34	4.561	
15,900.00	7,835.58	15,728.73	7,869.86	185.54	185.90	-91.17	-59.46	-6,853.58	1,671.16	1,299.97	371.19	4.502	
16,000.00	7,832.09	15,828.73	7,866.38	187.96	188.33	-91.17	-59.20	-6,953.52	1,671.54	1,295.51	376.03	4.445	
16,100.00	7,828.60	15,928.73	7,862.89	190.38	190.75	-91.17	-58.93	-7,053.46	1,671.93	1,291.05	380.88	4.390	
16,200.00	7,825.12	16,028.73	7,859.40	192.80	193.18	-91.17	-58.67	-7,153.40	1,672.32	1,286.59	385.73	4.335	
16,300.00	7,821.63	16,128.73	7,855.91	195.22	195.61	-91.17	-58.40	-7,253.34	1,672.71	1,282.13	390.58	4.283	
16,400.00	7,818.15	16,228.73	7,852.43	197.64	198.03	-91.17	-58.13	-7,353.27	1,673.09	1,277.66	395.43	4.231	
16,500.00	7,814.66	16,328.73	7,848.94	200.07	200.46	-91.17	-57.87	-7,453.21	1,673.48	1,273.19	400.29	4.181	
16,600.00	7,811.17	16,428.73	7,845.45	202.49	202.89	-91.17	-57.60	-7,553.15	1,673.87	1,268.72	405.14	4.132	
16,700.00	7,807.69	16,528.72	7,841.96	204.92	205.32	-91.17	-57.34	-7,653.09	1,674.25	1,264.25	410.00	4.084	
16,800.00	7,804.20	16,628.72	7,838.47	207.35	207.75	-91.17	-57.07	-7,753.03	1,674.64	1,259.78	414.86	4.037	
16,900.00	7,800.72	16,728.72	7,834.99	209.77	210.18	-91.17	-56.81	-7,852.96	1,675.03	1,255.31	419.72	3.991	
17,000.00	7,797.23	16,828.72	7,831.50	212.20	212.62	-91.17	-56.54	-7,952.90	1,675.41	1,250.83	424.58	3.946	
17,100.00	7,793.74	16,928.72	7,828.01	214.63	215.05	-91.16	-56.27	-8,052.84	1,675.80	1,246.36	429.44	3.902	
17,200.00	7,790.26	17,028.72	7,824.52	217.06	217.48	-91.16	-56.01	-8,152.78	1,676.19	1,241.88	434.31	3.859	
17,300.00	7,786.77	17,128.72	7,821.03	219.49	219.92	-91.16	-55.74	-8,252.72	1,676.57	1,237.40	439.17	3.818	
17,400.00	7,783.29	17,228.72	7,817.55	221.92	222.35	-91.16	-55.48	-8,352.65	1,676.96	1,232.92	444.04	3.777	
17,500.00	7,779.80	17,328.72	7,814.06	224.35	224.79	-91.16	-55.21	-8,452.59	1,677.35	1,228.44	448.91	3.737	
17,600.00	7,776.31	17,428.72	7,810.57	226.78	227.22	-91.16	-54.94	-8,552.53	1,677.73	1,223.96	453.78	3.697	
17,700.00	7,772.83	17,528.72	7,807.08	229.22	229.66	-91.16	-54.68	-8,652.47	1,678.12	1,219.48	458.65	3.659	
17,800.00	7,769.34	17,628.72	7,803.60	231.65	232.10	-91.16	-54.41	-8,752.41	1,678.51	1,214.99	463.52	3.621	

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

Legacy Directional Drilling
Anticollision Report

Company:	Freedom Energy	Local Co-ordinate Reference:	Well Cardigan Fed Com 132H
Project:	Eddy County, NM NAD83	TVD Reference:	3480' + 26.5' KB @ 3506.50usft
Reference Site:	Cardigan Fed Com	MD Reference:	3480' + 26.5' KB @ 3506.50usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Cardigan Fed Com 132H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM_WA
Reference Design:	Plan 2	Offset TVD Reference:	Reference Datum

Offset Design: Cardigan Fed Com - Cardigan Fed Com 133H - OH - Plan 2													Offset Site Error:	0.00 usft
Survey Program: 0-MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Rule Assigned:				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)	Minimum Separation (usft)	Separation Factor		
17,900.00	7,765.85	17,728.72	7,800.11	234.08	234.53	-91.16	-54.15	-8,852.34	1,678.89	1,210.51	468.39	3.584		
18,000.00	7,762.37	17,828.71	7,796.62	236.52	236.97	-91.16	-53.88	-8,952.28	1,679.28	1,206.02	473.26	3.548		
18,100.00	7,758.88	17,928.71	7,793.13	238.95	239.41	-91.16	-53.62	-9,052.22	1,679.67	1,201.53	478.13	3.513		
18,200.00	7,755.40	18,028.71	7,789.64	241.39	241.85	-91.16	-53.35	-9,152.16	1,680.05	1,197.05	483.01	3.478		
18,300.00	7,751.91	18,128.71	7,786.16	243.83	244.29	-91.16	-53.08	-9,252.10	1,680.44	1,192.56	487.89	3.444		
18,400.00	7,748.42	18,228.71	7,782.67	246.26	246.72	-91.16	-52.82	-9,352.03	1,680.83	1,188.07	492.76	3.411		
18,500.00	7,744.94	18,328.71	7,779.18	248.70	249.16	-91.16	-52.55	-9,451.97	1,681.22	1,183.58	497.64	3.378		
18,600.00	7,741.45	18,428.71	7,775.69	251.14	251.60	-91.16	-52.29	-9,551.91	1,681.60	1,179.08	502.52	3.346		
18,700.00	7,737.97	18,528.71	7,772.20	253.57	253.81	-91.16	-52.02	-9,651.85	1,681.99	1,174.83	507.16	3.316		
18,760.82	7,735.85	18,536.87	7,771.92	255.06	253.94	-91.16	-52.00	-9,660.00	1,683.05	1,174.86	508.19	3.312		

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

Legacy Directional Drilling

Anticollision Report

Company:	Freedom Energy	Local Co-ordinate Reference:	Well Cardigan Fed Com 132H
Project:	Eddy County, NM NAD83	TVD Reference:	3480' + 26.5' KB @ 3506.50usft
Reference Site:	Cardigan Fed Com	MD Reference:	3480' + 26.5' KB @ 3506.50usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Cardigan Fed Com 132H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM_WA
Reference Design:	Plan 2	Offset TVD Reference:	Reference Datum

Offset Design: Cardigan Fed Com - Cardigan Fed Com 134H - OH - Plan 2												Offset Site Error:	0.00 usft
Survey Program: 0-MWD												Offset Well Error:	0.00 usft
Reference	Offset	Semi Major Axis	Highside	Offset Wellbore Centre		Distance		Minimum	Separation	Warning			
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)	Separation (usft)	Factor	
0.00	0.00	0.00	0.00	0.00	0.00	180.00	-60.00	0.00	60.00				
100.00	100.00	100.00	100.00	0.26	0.26	180.00	-60.00	0.00	60.00	59.47	0.53	113.862	
200.00	200.00	200.00	200.00	0.62	0.62	180.00	-60.00	0.00	60.00	58.76	1.24	48.236	
300.00	300.00	300.00	300.00	0.98	0.98	180.00	-60.00	0.00	60.00	58.04	1.96	30.599	
400.00	400.00	400.00	400.00	1.34	1.34	180.00	-60.00	0.00	60.00	57.32	2.68	22.407	
500.00	500.00	500.00	500.00	1.70	1.70	180.00	-60.00	0.00	60.00	56.61	3.39	17.674	
600.00	600.00	600.00	600.00	2.06	2.06	180.00	-60.00	0.00	60.00	55.89	4.11	14.593	
700.00	700.00	700.00	700.00	2.41	2.41	180.00	-60.00	0.00	60.00	55.17	4.83	12.426	
800.00	800.00	800.00	800.00	2.77	2.77	180.00	-60.00	0.00	60.00	54.45	5.55	10.819	
900.00	900.00	900.00	900.00	3.13	3.13	180.00	-60.00	0.00	60.00	53.74	6.26	9.581	
1,000.00	1,000.00	1,000.00	1,000.00	3.49	3.49	180.00	-60.00	0.00	60.00	53.02	6.98	8.597	
1,100.00	1,100.00	1,100.00	1,100.00	3.85	3.85	180.00	-60.00	0.00	60.00	52.30	7.70	7.796	
1,200.00	1,200.00	1,200.00	1,200.00	4.21	4.21	180.00	-60.00	0.00	60.00	51.59	8.41	7.132	
1,300.00	1,300.00	1,300.00	1,300.00	4.57	4.57	180.00	-60.00	0.00	60.00	50.87	9.13	6.572	
1,400.00	1,400.00	1,400.00	1,400.00	4.92	4.92	180.00	-60.00	0.00	60.00	50.15	9.85	6.093	
1,500.00	1,500.00	1,500.00	1,500.00	5.28	5.28	180.00	-60.00	0.00	60.00	49.44	10.56	5.680	
1,600.00	1,600.00	1,600.00	1,600.00	5.64	5.64	180.00	-60.00	0.00	60.00	48.72	11.28	5.319	
1,700.00	1,700.00	1,700.00	1,700.00	6.00	6.00	180.00	-60.00	0.00	60.00	48.00	12.00	5.001	
1,766.67	1,766.67	1,766.67	1,766.67	6.24	6.24	180.00	-60.00	0.00	60.00	47.52	12.48	4.809	
1,800.00	1,800.00	1,800.00	1,800.00	6.36	6.36	180.00	-60.00	0.00	60.00	47.29	12.71	4.719 CC, ES	
1,900.00	1,899.98	1,898.13	1,898.11	6.71	6.69	151.13	-61.45	0.84	63.01	49.61	13.40	4.701 SF	
2,000.00	1,999.84	1,995.73	1,995.58	7.07	7.01	151.02	-65.79	3.35	72.03	57.96	14.07	5.121	
2,100.00	2,099.45	2,092.29	2,091.78	7.43	7.33	150.86	-72.90	7.46	86.98	72.27	14.72	5.911	
2,200.00	2,198.70	2,187.30	2,186.12	7.79	7.65	150.67	-82.63	13.09	107.79	92.44	15.35	7.021	
2,300.00	2,297.47	2,280.31	2,278.07	8.16	7.98	150.46	-94.77	20.11	134.32	118.34	15.97	8.408	
2,400.00	2,395.62	2,370.92	2,367.14	8.53	8.30	150.23	-109.08	28.38	166.40	149.82	16.58	10.036	
2,500.00	2,493.06	2,458.74	2,452.95	8.92	8.63	149.97	-125.27	37.75	203.84	186.67	17.17	11.874	
2,600.00	2,589.64	2,543.46	2,535.15	9.33	8.96	149.68	-143.04	48.02	246.44	228.70	17.74	13.893	
2,700.00	2,685.27	2,624.84	2,613.49	9.76	9.29	149.35	-162.09	59.04	293.95	275.66	18.29	16.069	
2,800.00	2,779.82	2,700.00	2,685.27	10.22	9.62	148.97	-181.38	70.19	346.16	327.37	18.79	18.425	
2,900.00	2,873.34	2,776.98	2,758.15	10.70	9.97	148.89	-202.82	82.59	402.44	383.09	19.36	20.790	
3,000.00	2,966.72	2,853.98	2,830.47	11.21	10.34	148.98	-225.71	95.83	460.59	440.64	19.94	23.094	
3,100.00	3,060.10	2,935.19	2,906.67	11.73	10.74	149.04	-250.03	109.89	518.93	498.32	20.61	25.175	
3,200.00	3,153.48	3,016.40	2,982.86	12.27	11.16	149.08	-274.35	123.96	577.28	555.99	21.29	27.112	
3,300.00	3,246.86	3,097.61	3,059.06	12.82	11.58	149.12	-298.67	138.02	635.63	613.65	21.98	28.913	
3,400.00	3,340.23	3,178.83	3,135.26	13.38	12.02	149.15	-323.00	152.09	693.98	671.29	22.69	30.591	
3,500.00	3,433.61	3,260.04	3,211.45	13.95	12.47	149.18	-347.32	166.15	752.33	728.93	23.40	32.156	
3,600.00	3,526.99	3,341.25	3,287.65	14.53	12.92	149.20	-371.64	180.22	810.68	786.56	24.12	33.617	
3,700.00	3,620.37	3,422.46	3,363.85	15.11	13.38	149.22	-395.96	194.28	869.02	844.18	24.84	34.983	
3,800.00	3,713.75	3,503.67	3,440.04	15.71	13.85	149.24	-420.29	208.35	927.37	901.80	25.57	36.262	
3,900.00	3,807.13	3,584.88	3,516.24	16.30	14.32	149.26	-444.61	222.42	985.72	959.41	26.31	37.459	
4,000.00	3,900.51	3,666.10	3,592.44	16.91	14.80	149.27	-468.93	236.48	1,044.07	1,017.01	27.06	38.583	
4,100.00	3,993.89	3,747.31	3,668.63	17.52	15.29	149.28	-493.25	250.55	1,102.42	1,074.61	27.81	39.638	
4,200.00	4,087.27	3,828.52	3,744.83	18.13	15.77	149.29	-517.58	264.61	1,160.77	1,132.20	28.57	40.631	
4,300.00	4,180.65	3,909.73	3,821.03	18.75	16.27	149.30	-541.90	278.68	1,219.12	1,189.79	29.33	41.567	
4,400.00	4,274.03	3,990.94	3,897.22	19.37	16.76	149.31	-566.22	292.74	1,277.47	1,247.37	30.09	42.448	
4,500.00	4,367.41	4,072.16	3,973.42	20.00	17.26	149.32	-590.54	306.81	1,335.82	1,304.95	30.86	43.280	
4,600.00	4,460.79	4,153.37	4,049.62	20.63	17.76	149.33	-614.87	320.87	1,394.17	1,362.53	31.64	44.066	
4,700.00	4,554.17	4,234.58	4,125.81	21.26	18.27	149.34	-639.19	334.94	1,452.51	1,420.10	32.41	44.810	
4,800.00	4,647.55	4,315.79	4,202.01	21.89	18.77	149.34	-663.51	349.00	1,510.86	1,477.67	33.20	45.515	
4,900.00	4,740.92	4,397.00	4,278.21	22.52	19.28	149.35	-687.83	363.07	1,569.21	1,535.23	33.98	46.183	
5,000.00	4,834.30	4,478.21	4,354.40	23.16	19.80	149.35	-712.16	377.14	1,627.56	1,592.80	34.76	46.816	

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

Legacy Directional Drilling
Anticollision Report

Company:	Freedom Energy	Local Co-ordinate Reference:	Well Cardigan Fed Com 132H
Project:	Eddy County, NM NAD83	TVD Reference:	3480' + 26.5' KB @ 3506.50usft
Reference Site:	Cardigan Fed Com	MD Reference:	3480' + 26.5' KB @ 3506.50usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Cardigan Fed Com 132H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM_WA
Reference Design:	Plan 2	Offset TVD Reference:	Reference Datum

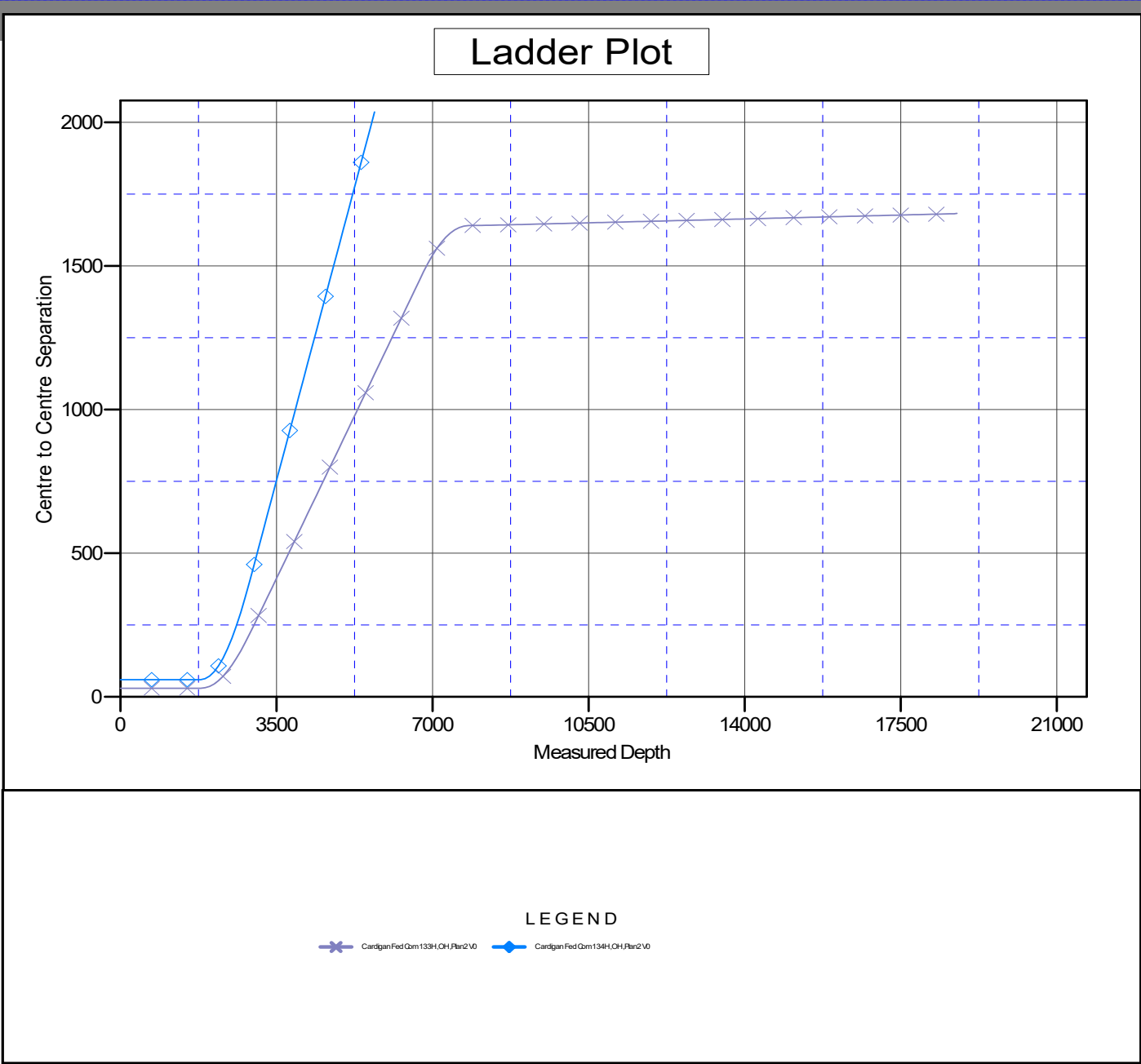
Offset Design: Cardigan Fed Com - Cardigan Fed Com 134H - OH - Plan 2													Offset Site Error:	0.00 usft
Survey Program: 0-MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Rule Assigned:			
Measured Depth (usft)	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	
5,100.00	4,927.68	4,559.43	4,430.60	23.80	20.31	149.36	-736.48	391.20	1,685.91	1,650.36	35.55	47.418		
5,200.00	5,021.06	4,640.64	4,506.80	24.44	20.83	149.36	-760.80	405.27	1,744.26	1,707.91	36.35	47.991		
5,300.00	5,114.44	4,721.85	4,582.99	25.08	21.34	149.37	-785.12	419.33	1,802.61	1,765.47	37.14	48.536		
5,400.00	5,207.82	4,803.06	4,659.19	25.73	21.86	149.37	-809.45	433.40	1,860.96	1,823.02	37.94	49.055		
5,500.00	5,301.20	4,884.27	4,735.39	26.37	22.38	149.38	-833.77	447.46	1,919.31	1,880.57	38.74	49.549		
5,600.00	5,394.58	4,965.49	4,811.58	27.02	22.90	149.38	-858.09	461.53	1,977.66	1,938.12	39.54	50.022		
5,700.00	5,487.96	5,046.70	4,887.78	27.67	23.43	149.38	-882.41	475.59	2,036.01	1,995.67	40.34	50.472		

Legacy Directional Drilling
Anticollision Report

Company:	Freedom Energy	Local Co-ordinate Reference:	Well Cardigan Fed Com 132H
Project:	Eddy County, NM NAD83	TVD Reference:	3480' + 26.5' KB @ 3506.50usft
Reference Site:	Cardigan Fed Com	MD Reference:	3480' + 26.5' KB @ 3506.50usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Cardigan Fed Com 132H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM_WA
Reference Design:	Plan 2	Offset TVD Reference:	Reference Datum

Reference Depths are relative to 3480' + 26.5' KB @ 3506.50usft
Offset Depths are relative to Offset Datum
Central Meridian is -104.333334

Coordinates are relative to: Cardigan Fed Com 132H
Coordinate System is US State Plane 1983, New Mexico Eastern Zone
Grid Convergence at Surface is: 0.05°

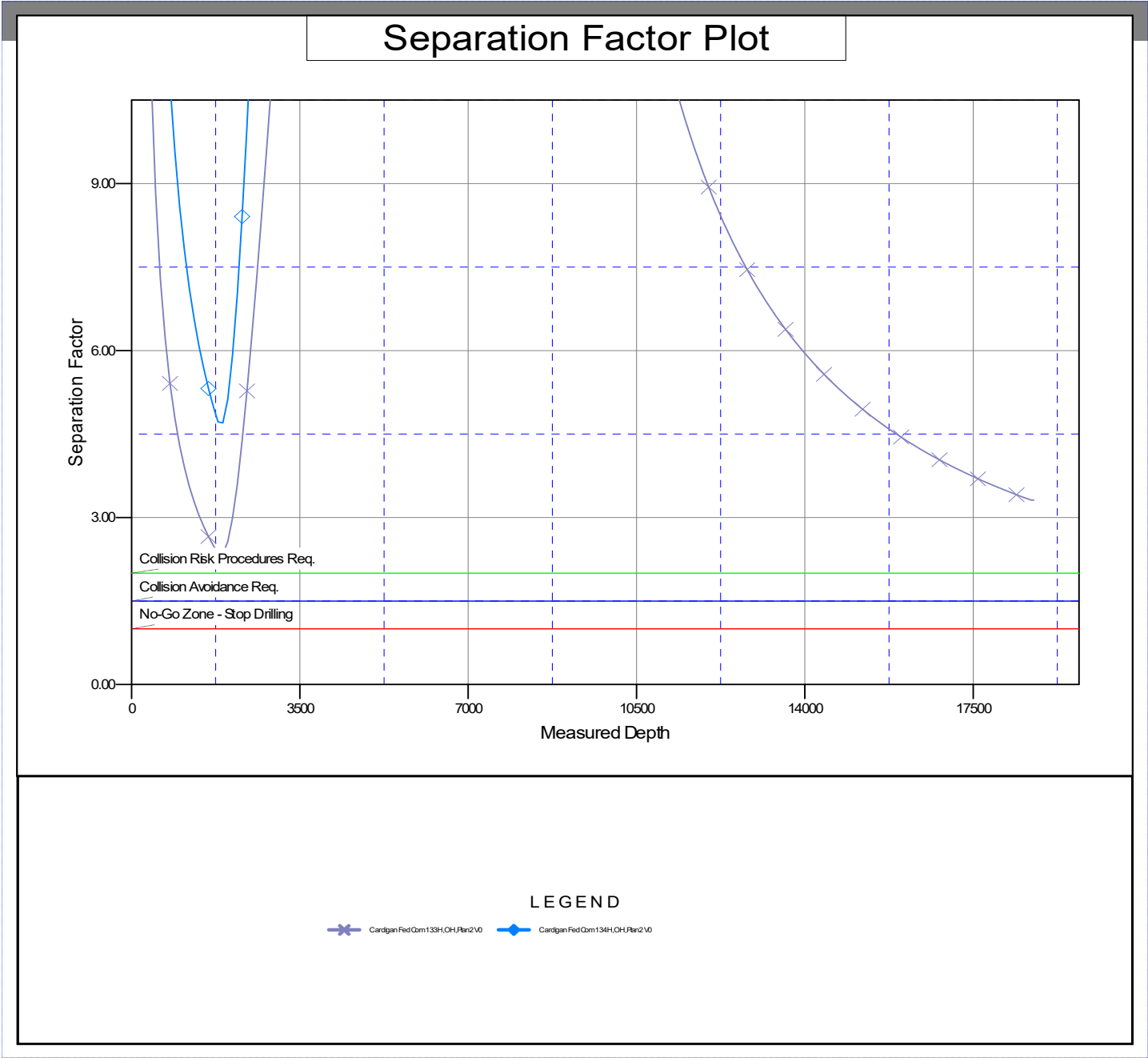


Legacy Directional Drilling
Anticollision Report

Company:	Freedom Energy	Local Co-ordinate Reference:	Well Cardigan Fed Com 132H
Project:	Eddy County, NM NAD83	TVD Reference:	3480' + 26.5' KB @ 3506.50usft
Reference Site:	Cardigan Fed Com	MD Reference:	3480' + 26.5' KB @ 3506.50usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Cardigan Fed Com 132H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM_WA
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Reference Depths are relative to 3480' + 26.5' KB @ 3506.50usft
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Central Meridian is -104.333334

Coordinates are relative to: Cardigan Fed Com 132H
Coordinate System is US State Plane 1983, New Mexico Eastern Zone
Grid Convergence at Surface is: 0.05°



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State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

CONDITIONS

Action 441118

CONDITIONS

Operator: Flat Creek Resources, LLC 777 Main St. Fort Worth, TX 76102	OGRID: 374034
	Action Number: 441118
	Action Type: [C-103] NOI Change of Plans (C-103A)

CONDITIONS

Created By	Condition	Condition Date
ward.rikala	Any previous COA's not addressed within the updated COA's still apply.	4/7/2025