

District I1625 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

Form C-101
August 1, 2011

Permit 275251

APPLICATION FOR PERMIT TO DRILL, RE-ENTER, DEEPEN, PLUGBACK, OR ADD A ZONE

1. Operator Name and Address COG OPERATING LLC 600 W Illinois Ave Midland, TX 79701		2. OGRID Number 229137
4. Property Code 308744		3. API Number 30-015-46498
5. Property Name MYOX 31 STATE COM		6. Well No. 502H

7. Surface Location

UL - Lot O	Section 31	Township 25S	Range 28E	Lot Idn	Feet From 290	N/S Line S	Feet From 1335	E/W Line E	County Eddy
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8. Proposed Bottom Hole Location

UL - Lot B	Section 30	Township 25S	Range 28E	Lot Idn B	Feet From 50	N/S Line N	Feet From 1980	E/W Line E	County Eddy
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9. Pool Information

DELAWARE RIVER,BONE SPRING	16800
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Additional Well Information

11. Work Type New Well	12. Well Type OIL	13. Cable/Rotary	14. Lease Type State	15. Ground Level Elevation 3038
16. Multiple N	17. Proposed Depth 18279	18. Formation 2nd Bone Spring Sand	19. Contractor	20. Spud Date 1/15/2020
Depth to Ground water		Distance from nearest fresh water well		Distance to nearest surface water

☒ We will be using a closed-loop system in lieu of lined pits**21. Proposed Casing and Cement Program**

Type	Hole Size	Casing Size	Casing Weight/ft	Setting Depth	Sacks of Cement	Estimated TOC
Surf	17.5	13.375	54.5	500	400	0
Int1	12.25	9.625	40	2375	800	0
Prod	8.75	5.5	17	18279	3200	2175

Casing/Cement Program: Additional Comments

Drill 17-1/2" hole to 500' into the Rustler. Run 13-3/8" 54.5# J55 STC casing to TD and cement to surface in one stage. Will set in Rustler and cover water depth. Drill 12-1/4" hole to ~2,375' with Brine. Run 9-5/8" 40# J-55 casing to TD and cement to surface in one stage. Drill 8-3/4" vertical hole, curve & lateral to 18,279' with Cut Brine. Run 5-1/2" 17# P110 BTC casing to TD and cement to 2,175' in one stage.

22. Proposed Blowout Prevention Program

Type	Working Pressure	Test Pressure	Manufacturer
Annular	3000	3000	Cameron

23. I hereby certify that the information given above is true and complete to the best of my knowledge and belief.
 I further certify I have complied with 19.15.14.9 (A) NMAC ☒ and/or 19.15.14.9 (B) NMAC ☒ if applicable.

OIL CONSERVATION DIVISION

Signature:

Printed Name: Electronically filed by Diane Kuykendall

Title: Production Accounting Director

Email Address: dkuykendall@concho.com

Date: 12/11/2019

Phone: 432-685-4372

Approved By: Raymond Podany

Title: Geologist

Approved Date: 12/19/2019

Expiration Date: 12/19/2021

Conditions of Approval Attached

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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-	² Pool Code 16800	³ Pool Name Delaware River; Bone Spring
⁴ Property Code 308744	⁵ Property Name MYOX 31 STATE COM	⁶ Well Number 502H
⁷ GRID NO. 229137	⁸ Operator Name COG OPERATING, LLC	⁹ Elevation 3038'

¹⁰ Surface Location

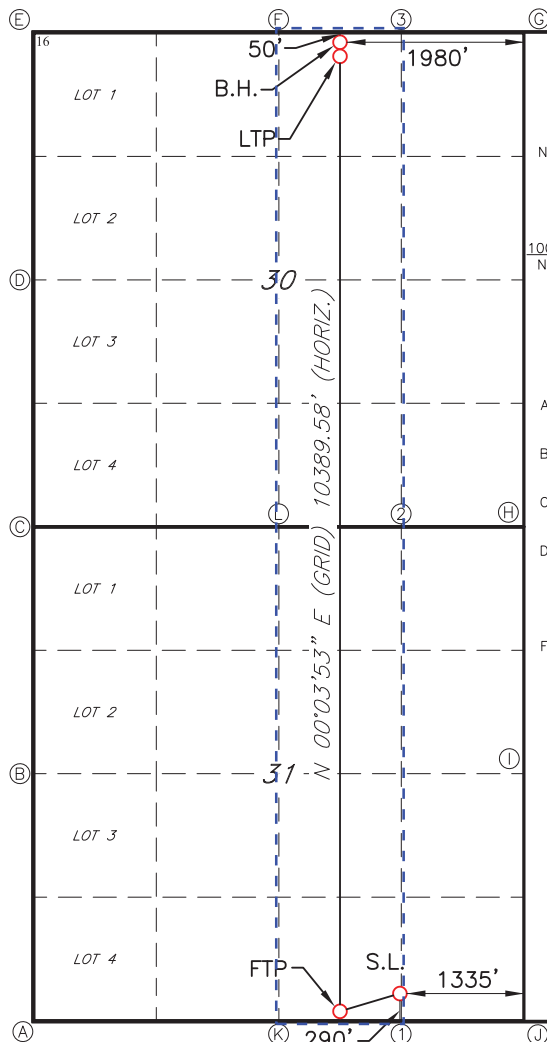
UL or lot no. 0	Section 31	Township 25S	Range 28E	Lot Idn	Feet from the 290	North/South line SOUTH	Feet From the 1335	East/West line EAST	County EDDY
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¹¹ Bottom Hole Location If Different From Surface

UL or lot no. B	Section 30	Township 25S	Range 28E	Lot Idn	Feet from the 50	North/South line NORTH	Feet from the 1980	East/West line EAST	County EDDY
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¹² Dedicated Acres 320	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.
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No allowable will be assigned to this completion until all interest have been consolidated or a non-standard unit has been approved by the division.



GEODETIC DATA
NAD 83 GRID - NM EAST

SURFACE LOCATION (SL)
N: 392805.2 - E: 606693.0
LAT: 32.0797255° N
LONG: 104.1223184° W

LAST TAKE POINT (LTP)
100' FSL & 1980' FEL SEC 30
N: 403003.1 - E: 606058.0
LAT: 32.1077622° N
LONG: 104.1243049° W

FIRST TAKE POINT (FTP)
100' FSL & 1980' FEL SEC 31
N: 392615.8 - E: 606046.3
LAT: 32.0792083° N
LONG: 104.1244078° W

BOTTOM HOLE (BH)
N: 403053.1 - E: 606057.6
LAT: 32.1078996° N
LONG: 104.1243058° W

CORNER DATA
NAD 83 GRID - NM EAST

A: FOUND BRASS CAP "1940"
N 392505.8 - E 602690.5

G: FOUND BRASS CAP "1940"
N 403046.2 - E 608036.0

B: FOUND BRASS CAP "1940"
N 395164.6 - E 602682.1

H: FOUND BRASS CAP "1940"
N 397715.1 - E 608074.9

C: FOUND BRASS CAP "1940"
N 397822.7 - E 602672.6

I: FOUND BRASS CAP "1940"
N 395116.5 - E 608050.9

D: FOUND BRASS CAP "1940"
N 400468.2 - E 602664.3

J: FOUND BRASS CAP "1940"
N 392514.2 - E 608024.8

E: CALCULATED CORNER
N 403132.3 - E 602645.7

K: FOUND BRASS CAP "1940"
N 392516.4 - E 605361.5

F: FOUND BRASS CAP "1940"
N 403125.4 - E 605277.9

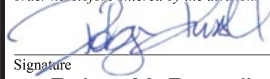
L: FOUND BRASS CAP "1940"
N 397768.3 - E 605379.3

CALCULATED POINTS

1: N 392515.3 - E 606693.2
2: N 397741.7 - E 606727.1
3: N 403085.8 - E 606656.9

¹⁷ OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

Signature  Date **12/11/19**
Printed Name **Robyn M. Russell**
E-mail Address **Russell@concho.com**

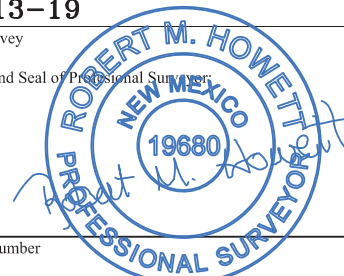
¹⁸ SURVEYOR CERTIFICATION

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.

11-13-19
Date of Survey

Signature and Seal of Professional Surveyor:

19680
Certificate Number



Job No.: **LS19111069**

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GAS CAPTURE PLAN

Date: 12/19/2019

☒ Original

Operator & OGRID No.: [229137] COG OPERATING LLC

☐ Amended - Reason for
Amendment: _____

This Gas Capture Plan outlines actions to be taken by the Operator to reduce well/production facility flaring/venting for new completion (new drill, recomple to new zone, re-frac) activity.

Note: Form C-129 must be submitted and approved prior to exceeding 60 days allowed by Rule (Subsection A of 19.15.18.12 NMAC).

Well(s)/Production Facility – Name of facility

The well(s) that will be located at the production facility are shown in the table below.

Well Name	API	Well Location (ULSTR)	Footages	Expected MCF/D	Flared or Vented	Comments
MYOX 31 STATE COM #502H	30-015- 46498	O-31-25S- 28E	0290S 1335E	2526	None	Length of additional line is not known at this time. Processing Plant Location: Sec 35, Blk 57, T2S, Culberson County, TX

Gathering System and Pipeline Notification

Well(s) will be connected to a production facility after flowback operations are complete, if gas transporter system is in place. The gas produced from production facility is dedicated to ETC Texas Pipeline, Ltd. and will be connected to ETC Texas Pipeline, Ltd. Low Pressure gathering system located in Eddy County, New Mexico. It will require 0' of pipeline to connect the facility to Low Pressure gathering system. COG OPERATING LLC provides (periodically) to ETC Texas Pipeline, Ltd. a drilling, completion and estimated first production date for wells that are scheduled to be drilled in the foreseeable future. In addition, COG OPERATING LLC and ETC Texas Pipeline, Ltd. have periodic conference calls to discuss changes to drilling and completion schedules. Gas from these wells will be processed at ETC Texas Pipeline, Ltd. Processing Plant located in Sec. 31, Twn. 25S, Rng. 28E, Eddy County, New Mexico. The actual flow of the gas will be based on compression operating parameters and gathering system pressures.

Flowback Strategy

After the fracture treatment/completion operations, well(s) will be produced to temporary production tanks and gas will be flared or vented. During flowback, the fluids and sand content will be monitored. When the produced fluids contain minimal sand, the wells will be turned to production facilities. Gas sales should start as soon as the wells start flowing through the production facilities, unless there are operational issues on ETC Texas Pipeline, Ltd. system at that time. Based on current information, it is COG OPERATING LLC's belief the system can take this gas upon completion of the well(s).

Safety requirements during cleanout operations from the use of underbalanced air cleanout systems may necessitate that sand and non-pipeline quality gas be vented and/or flared rather than sold on a temporary basis.

Alternatives to Reduce Flaring

Below are alternatives considered from a conceptual standpoint to reduce the amount of gas flared.

- Power Generation – On lease
 - Only a portion of gas is consumed operating the generator, remainder of gas will be flared
- Compressed Natural Gas – On lease
 - Gas flared would be minimal, but might be uneconomical to operate when gas volume declines
- NGL Removal – On lease
 - Plants are expensive, residue gas is still flared, and uneconomical to operate when gas volume declines

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Form APD Comments

Permit 275251

PERMIT COMMENTS

Operator Name and Address: COG OPERATING LLC [229137] 600 W Illinois Ave Midland, TX 79701		API Number: 30-015-46498
		Well: MYOX 31 STATE COM #502H

Created By	Comment	Comment Date
rodrom	H2S concentrations of wells in this area from surface to TD are low enough that a contingency plan is not required.	12/11/2019

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Form APD Conditions

Permit 275251

PERMIT CONDITIONS OF APPROVAL

Operator Name and Address: COG OPERATING LLC [229137] 600 W Illinois Ave Midland, TX 79701		API Number: 30-015-46498
		Well: MYOX 31 STATE COM #502H
OCD Reviewer	Condition	
rpodany	Will require a directional survey with the C-104	
rpodany	Cement is required to circulate on both surface and intermediate1 strings of casing	

NORTHERN DELAWARE BASIN

EDDY COUNTY, NM

MYOX 31 ST COM

MYOX 31 ST COM #502H

OWB

Plan: PWP1

Standard Survey Report

10 December, 2019

Survey Report

Company:	NORTHERN DELAWARE BASIN	Local Co-ordinate Reference:	Well MYOX 31 ST COM #502H
Project:	EDDY COUNTY, NM	TVD Reference:	KB=25' @ 3063.0usft (Pioneer 84)
Site:	MYOX 31 ST COM	MD Reference:	KB=25' @ 3063.0usft (Pioneer 84)
Well:	MYOX 31 ST COM #502H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	PWP1	Database:	EDM_Users

Project	EDDY COUNTY, NM		
Map System:	US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico East 3001		

Site		MYOX 31 ST COM				
Site Position: From: Position Uncertainty:	Map	Northing:	392,720.68	usft	Latitude:	32° 4' 46.351 N
		Easting:	562,896.44	usft	Longitude:	104° 7' 48.946 W
		Slot Radius:	13-3/16	"	Grid Convergence:	0.11 °

Well	MYOX 31 ST COM #502H					
Well Position	+N/-S	0.0 usft	Northing:	392,747.80 usft	Latitude:	32° 4' 46.570 N
	+E/-W	0.0 usft	Easting:	565,508.80 usft	Longitude:	104° 7' 18.582 W
Position Uncertainty		3.0 usft	Wellhead Elevation:	usft	Ground Level:	3,038.0 usft

Wellbore	OWB				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	12/2/2019	6.93	59.81	47,544.73336010

Design	PWP1			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0	0.0	0.0	356.45

Survey Tool Program	Date	12/10/2019			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
0.0	18,279.5	PWP1 (OWB)	MWD+IFR1+FDIR	OWSG MWD + IFR1 + FDIR Correction	

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)	
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00	
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00	
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00	
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00	
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00	
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00	
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00	
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00	
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00	
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00	

Survey Report

Company:	NORTHERN DELAWARE BASIN	Local Co-ordinate Reference:	Well MYOX 31 ST COM #502H
Project:	EDDY COUNTY, NM	TVD Reference:	KB=25' @ 3063.0usft (Pioneer 84)
Site:	MYOX 31 ST COM	MD Reference:	KB=25' @ 3063.0usft (Pioneer 84)
Well:	MYOX 31 ST COM #502H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	PWP1	Database:	EDM_Users

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)
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	0.00
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	0.00
1,300.0	0.00	0.00	1,300.0	0.0	0.0	0.0	0.00	0.00	0.00
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	0.00
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.0	0.00	0.00	0.00
1,600.0	0.00	0.00	1,600.0	0.0	0.0	0.0	0.00	0.00	0.00
1,700.0	0.00	0.00	1,700.0	0.0	0.0	0.0	0.00	0.00	0.00
1,800.0	0.00	0.00	1,800.0	0.0	0.0	0.0	0.00	0.00	0.00
1,900.0	0.00	0.00	1,900.0	0.0	0.0	0.0	0.00	0.00	0.00
2,000.0	0.00	0.00	2,000.0	0.0	0.0	0.0	0.00	0.00	0.00
2,100.0	0.00	0.00	2,100.0	0.0	0.0	0.0	0.00	0.00	0.00
2,200.0	0.00	0.00	2,200.0	0.0	0.0	0.0	0.00	0.00	0.00
2,300.0	0.00	0.00	2,300.0	0.0	0.0	0.0	0.00	0.00	0.00
2,400.0	0.00	0.00	2,400.0	0.0	0.0	0.0	0.00	0.00	0.00
2,500.0	0.00	0.00	2,500.0	0.0	0.0	0.0	0.00	0.00	0.00
Start Build 2.00									
2,600.0	2.00	225.00	2,600.0	-1.2	-1.2	-1.2	2.00	2.00	0.00
2,700.0	4.00	225.00	2,699.8	-4.9	-4.9	-4.6	2.00	2.00	0.00
2,750.0	5.00	225.00	2,749.7	-7.7	-7.7	-7.2	2.00	2.00	0.00
Start 4585.8 hold at 2750.0 MD									
2,800.0	5.00	225.00	2,799.5	-10.8	-10.8	-10.1	0.00	0.00	0.00
2,900.0	5.00	225.00	2,899.1	-17.0	-17.0	-15.9	0.00	0.00	0.00
3,000.0	5.00	225.00	2,998.7	-23.1	-23.1	-21.6	0.00	0.00	0.00
3,100.0	5.00	225.00	3,098.4	-29.3	-29.3	-27.4	0.00	0.00	0.00
3,200.0	5.00	225.00	3,198.0	-35.4	-35.4	-33.2	0.00	0.00	0.00
3,300.0	5.00	225.00	3,297.6	-41.6	-41.6	-39.0	0.00	0.00	0.00
3,400.0	5.00	225.00	3,397.2	-47.8	-47.8	-44.7	0.00	0.00	0.00
3,500.0	5.00	225.00	3,496.8	-53.9	-53.9	-50.5	0.00	0.00	0.00
3,600.0	5.00	225.00	3,596.4	-60.1	-60.1	-56.3	0.00	0.00	0.00
3,700.0	5.00	225.00	3,696.1	-66.3	-66.3	-62.0	0.00	0.00	0.00
3,800.0	5.00	225.00	3,795.7	-72.4	-72.4	-67.8	0.00	0.00	0.00
3,900.0	5.00	225.00	3,895.3	-78.6	-78.6	-73.6	0.00	0.00	0.00
4,000.0	5.00	225.00	3,994.9	-84.7	-84.7	-79.3	0.00	0.00	0.00
4,100.0	5.00	225.00	4,094.5	-90.9	-90.9	-85.1	0.00	0.00	0.00
4,200.0	5.00	225.00	4,194.2	-97.1	-97.1	-90.9	0.00	0.00	0.00
4,300.0	5.00	225.00	4,293.8	-103.2	-103.2	-96.6	0.00	0.00	0.00
4,400.0	5.00	225.00	4,393.4	-109.4	-109.4	-102.4	0.00	0.00	0.00
4,500.0	5.00	225.00	4,493.0	-115.6	-115.6	-108.2	0.00	0.00	0.00
4,600.0	5.00	225.00	4,592.6	-121.7	-121.7	-114.0	0.00	0.00	0.00
4,700.0	5.00	225.00	4,692.3	-127.9	-127.9	-119.7	0.00	0.00	0.00
4,800.0	5.00	225.00	4,791.9	-134.0	-134.0	-125.5	0.00	0.00	0.00
4,900.0	5.00	225.00	4,891.5	-140.2	-140.2	-131.3	0.00	0.00	0.00
5,000.0	5.00	225.00	4,991.1	-146.4	-146.4	-137.0	0.00	0.00	0.00

Survey Report

Company:	NORTHERN DELAWARE BASIN	Local Co-ordinate Reference:	Well MYOX 31 ST COM #502H
Project:	EDDY COUNTY, NM	TVD Reference:	KB=25' @ 3063.0usft (Pioneer 84)
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Well:	MYOX 31 ST COM #502H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	PWP1	Database:	EDM_Users

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)	
5,100.0	5.00	225.00	5,090.7	-152.5	-152.5	-142.8	0.00	0.00	0.00	
5,200.0	5.00	225.00	5,190.4	-158.7	-158.7	-148.6	0.00	0.00	0.00	
5,300.0	5.00	225.00	5,290.0	-164.9	-164.9	-154.3	0.00	0.00	0.00	
5,400.0	5.00	225.00	5,389.6	-171.0	-171.0	-160.1	0.00	0.00	0.00	
5,500.0	5.00	225.00	5,489.2	-177.2	-177.2	-165.9	0.00	0.00	0.00	
5,600.0	5.00	225.00	5,588.8	-183.3	-183.3	-171.7	0.00	0.00	0.00	
5,700.0	5.00	225.00	5,688.5	-189.5	-189.5	-177.4	0.00	0.00	0.00	
5,800.0	5.00	225.00	5,788.1	-195.7	-195.7	-183.2	0.00	0.00	0.00	
5,900.0	5.00	225.00	5,887.7	-201.8	-201.8	-189.0	0.00	0.00	0.00	
6,000.0	5.00	225.00	5,987.3	-208.0	-208.0	-194.7	0.00	0.00	0.00	
6,100.0	5.00	225.00	6,086.9	-214.2	-214.2	-200.5	0.00	0.00	0.00	
6,200.0	5.00	225.00	6,186.6	-220.3	-220.3	-206.3	0.00	0.00	0.00	
6,300.0	5.00	225.00	6,286.2	-226.5	-226.5	-212.0	0.00	0.00	0.00	
6,400.0	5.00	225.00	6,385.8	-232.7	-232.7	-217.8	0.00	0.00	0.00	
6,500.0	5.00	225.00	6,485.4	-238.8	-238.8	-223.6	0.00	0.00	0.00	
6,600.0	5.00	225.00	6,585.0	-245.0	-245.0	-229.4	0.00	0.00	0.00	
6,700.0	5.00	225.00	6,684.7	-251.1	-251.1	-235.1	0.00	0.00	0.00	
6,800.0	5.00	225.00	6,784.3	-257.3	-257.3	-240.9	0.00	0.00	0.00	
6,900.0	5.00	225.00	6,883.9	-263.5	-263.5	-246.7	0.00	0.00	0.00	
7,000.0	5.00	225.00	6,983.5	-269.6	-269.6	-252.4	0.00	0.00	0.00	
7,100.0	5.00	225.00	7,083.1	-275.8	-275.8	-258.2	0.00	0.00	0.00	
7,200.0	5.00	225.00	7,182.7	-282.0	-282.0	-264.0	0.00	0.00	0.00	
7,300.0	5.00	225.00	7,282.4	-288.1	-288.1	-269.7	0.00	0.00	0.00	
7,335.8	5.00	225.00	7,318.0	-290.3	-290.3	-271.8	0.00	0.00	0.00	
Start DLS 10.00 TFO 117.15										
7,400.0	6.07	295.24	7,382.0	-290.9	-295.4	-272.0	10.00	1.67	109.35	
7,500.0	14.81	325.12	7,480.3	-278.1	-307.5	-258.5	10.00	8.74	29.88	
7,600.0	24.52	332.42	7,574.4	-249.1	-324.5	-228.6	10.00	9.71	7.30	
7,700.0	34.39	335.71	7,661.3	-204.9	-345.7	-183.1	10.00	9.87	3.29	
7,800.0	44.31	337.66	7,738.6	-146.7	-370.7	-123.5	10.00	9.92	1.96	
7,900.0	54.26	339.03	7,803.7	-76.3	-398.6	-51.5	10.00	9.95	1.36	
8,000.0	64.22	340.08	7,854.8	4.1	-428.5	30.6	10.00	9.96	1.06	
8,100.0	74.19	340.97	7,890.3	92.2	-459.6	120.4	10.00	9.97	0.89	
8,200.0	84.16	341.78	7,909.0	185.1	-490.9	215.1	10.00	9.97	0.81	
8,258.0	89.94	342.23	7,912.0	240.2	-508.8	271.2	10.00	9.97	0.78	
Start DLS 2.00 TFO 90.00										
8,300.0	89.94	343.07	7,912.1	280.3	-521.3	312.0	2.00	0.00	2.00	
8,400.0	89.94	345.07	7,912.2	376.4	-548.8	409.7	2.00	0.00	2.00	
8,500.0	89.94	347.07	7,912.3	473.5	-572.9	508.0	2.00	0.00	2.00	
8,600.0	89.94	349.07	7,912.4	571.3	-593.5	606.9	2.00	0.00	2.00	
8,700.0	89.94	351.07	7,912.5	669.8	-610.8	706.3	2.00	0.00	2.00	
8,800.0	89.94	353.07	7,912.6	768.9	-624.6	806.0	2.00	0.00	2.00	
8,900.0	89.94	355.07	7,912.7	868.3	-634.9	905.9	2.00	0.00	2.00	
9,000.0	89.94	357.07	7,912.8	968.1	-641.8	1,005.9	2.00	0.00	2.00	

Survey Report

Company:	NORTHERN DELAWARE BASIN	Local Co-ordinate Reference:	Well MYOX 31 ST COM #502H
Project:	EDDY COUNTY, NM	TVD Reference:	KB=25' @ 3063.0usft (Pioneer 84)
Site:	MYOX 31 ST COM	MD Reference:	KB=25' @ 3063.0usft (Pioneer 84)
Well:	MYOX 31 ST COM #502H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	PWP1	Database:	EDM_Users

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)
9,100.0	89.94	359.07	7,912.9	1,068.0	-645.1	1,105.9	2.00	0.00	2.00
9,149.8	89.94	0.06	7,912.9	1,117.8	-645.5	1,155.6	2.00	0.00	2.00
Start 9129.8 hold at 9149.8 MD									
9,200.0	89.94	0.06	7,913.0	1,168.0	-645.4	1,205.7	0.00	0.00	0.00
9,300.0	89.94	0.06	7,913.1	1,268.0	-645.3	1,305.5	0.00	0.00	0.00
9,400.0	89.94	0.06	7,913.2	1,368.0	-645.2	1,405.3	0.00	0.00	0.00
9,500.0	89.94	0.06	7,913.3	1,468.0	-645.1	1,505.1	0.00	0.00	0.00
9,600.0	89.94	0.06	7,913.4	1,568.0	-645.0	1,604.9	0.00	0.00	0.00
9,700.0	89.94	0.06	7,913.5	1,668.0	-644.9	1,704.7	0.00	0.00	0.00
9,800.0	89.94	0.06	7,913.6	1,768.0	-644.8	1,804.5	0.00	0.00	0.00
9,900.0	89.94	0.06	7,913.7	1,868.0	-644.7	1,904.3	0.00	0.00	0.00
10,000.0	89.94	0.06	7,913.8	1,968.0	-644.5	2,004.1	0.00	0.00	0.00
10,100.0	89.94	0.06	7,913.9	2,068.0	-644.4	2,103.9	0.00	0.00	0.00
10,200.0	89.94	0.06	7,914.0	2,168.0	-644.3	2,203.7	0.00	0.00	0.00
10,300.0	89.94	0.06	7,914.1	2,268.0	-644.2	2,303.5	0.00	0.00	0.00
10,400.0	89.94	0.06	7,914.2	2,368.0	-644.1	2,403.3	0.00	0.00	0.00
10,500.0	89.94	0.06	7,914.3	2,468.0	-644.0	2,503.1	0.00	0.00	0.00
10,600.0	89.94	0.06	7,914.4	2,568.0	-643.9	2,602.9	0.00	0.00	0.00
10,700.0	89.94	0.06	7,914.5	2,668.0	-643.8	2,702.7	0.00	0.00	0.00
10,800.0	89.94	0.06	7,914.6	2,768.0	-643.6	2,802.5	0.00	0.00	0.00
10,900.0	89.94	0.06	7,914.7	2,868.0	-643.5	2,902.3	0.00	0.00	0.00
11,000.0	89.94	0.06	7,914.8	2,968.0	-643.4	3,002.1	0.00	0.00	0.00
11,100.0	89.94	0.06	7,914.9	3,068.0	-643.3	3,101.9	0.00	0.00	0.00
11,200.0	89.94	0.06	7,915.0	3,168.0	-643.2	3,201.7	0.00	0.00	0.00
11,300.0	89.94	0.06	7,915.1	3,268.0	-643.1	3,301.5	0.00	0.00	0.00
11,400.0	89.94	0.06	7,915.2	3,368.0	-643.0	3,401.3	0.00	0.00	0.00
11,500.0	89.94	0.06	7,915.3	3,468.0	-642.9	3,501.1	0.00	0.00	0.00
11,600.0	89.94	0.06	7,915.4	3,568.0	-642.7	3,600.9	0.00	0.00	0.00
11,700.0	89.94	0.06	7,915.5	3,668.0	-642.6	3,700.7	0.00	0.00	0.00
11,800.0	89.94	0.06	7,915.6	3,768.0	-642.5	3,800.5	0.00	0.00	0.00
11,900.0	89.94	0.06	7,915.7	3,868.0	-642.4	3,900.3	0.00	0.00	0.00
12,000.0	89.94	0.06	7,915.8	3,968.0	-642.3	4,000.1	0.00	0.00	0.00
12,100.0	89.94	0.06	7,915.9	4,068.0	-642.2	4,099.9	0.00	0.00	0.00
12,200.0	89.94	0.06	7,916.0	4,168.0	-642.1	4,199.7	0.00	0.00	0.00
12,300.0	89.94	0.06	7,916.1	4,268.0	-641.9	4,299.5	0.00	0.00	0.00
12,400.0	89.94	0.06	7,916.2	4,368.0	-641.8	4,399.3	0.00	0.00	0.00
12,500.0	89.94	0.06	7,916.3	4,468.0	-641.7	4,499.1	0.00	0.00	0.00
12,600.0	89.94	0.06	7,916.4	4,568.0	-641.6	4,598.9	0.00	0.00	0.00
12,700.0	89.94	0.06	7,916.5	4,668.0	-641.5	4,698.7	0.00	0.00	0.00
12,800.0	89.94	0.06	7,916.6	4,768.0	-641.4	4,798.5	0.00	0.00	0.00
12,900.0	89.94	0.06	7,916.7	4,868.0	-641.3	4,898.4	0.00	0.00	0.00
13,000.0	89.94	0.06	7,916.8	4,968.0	-641.2	4,998.2	0.00	0.00	0.00
13,100.0	89.94	0.06	7,916.9	5,068.0	-641.0	5,098.0	0.00	0.00	0.00

Survey Report

Company:	NORTHERN DELAWARE BASIN	Local Co-ordinate Reference:	Well MYOX 31 ST COM #502H
Project:	EDDY COUNTY, NM	TVD Reference:	KB=25' @ 3063.0usft (Pioneer 84)
Site:	MYOX 31 ST COM	MD Reference:	KB=25' @ 3063.0usft (Pioneer 84)
Well:	MYOX 31 ST COM #502H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	PWP1	Database:	EDM_Users

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)	
13,200.0	89.94	0.06	7,917.0	5,168.0	-640.9	5,197.8	0.00	0.00	0.00	
13,300.0	89.94	0.06	7,917.1	5,268.0	-640.8	5,297.6	0.00	0.00	0.00	
13,400.0	89.94	0.06	7,917.2	5,368.0	-640.7	5,397.4	0.00	0.00	0.00	
13,500.0	89.94	0.06	7,917.3	5,468.0	-640.6	5,497.2	0.00	0.00	0.00	
13,600.0	89.94	0.06	7,917.4	5,568.0	-640.5	5,597.0	0.00	0.00	0.00	
13,700.0	89.94	0.06	7,917.5	5,668.0	-640.4	5,696.8	0.00	0.00	0.00	
13,800.0	89.94	0.06	7,917.6	5,768.0	-640.3	5,796.6	0.00	0.00	0.00	
13,900.0	89.94	0.06	7,917.7	5,868.0	-640.1	5,896.4	0.00	0.00	0.00	
14,000.0	89.94	0.06	7,917.7	5,968.0	-640.0	5,996.2	0.00	0.00	0.00	
14,100.0	89.94	0.06	7,917.8	6,068.0	-639.9	6,096.0	0.00	0.00	0.00	
14,200.0	89.94	0.06	7,917.9	6,168.0	-639.8	6,195.8	0.00	0.00	0.00	
14,300.0	89.94	0.06	7,918.0	6,268.0	-639.7	6,295.6	0.00	0.00	0.00	
14,400.0	89.94	0.06	7,918.1	6,368.0	-639.6	6,395.4	0.00	0.00	0.00	
14,500.0	89.94	0.06	7,918.2	6,468.0	-639.5	6,495.2	0.00	0.00	0.00	
14,600.0	89.94	0.06	7,918.3	6,568.0	-639.4	6,595.0	0.00	0.00	0.00	
14,700.0	89.94	0.06	7,918.4	6,668.0	-639.2	6,694.8	0.00	0.00	0.00	
14,800.0	89.94	0.06	7,918.5	6,768.0	-639.1	6,794.6	0.00	0.00	0.00	
14,900.0	89.94	0.06	7,918.6	6,868.0	-639.0	6,894.4	0.00	0.00	0.00	
15,000.0	89.94	0.06	7,918.7	6,968.0	-638.9	6,994.2	0.00	0.00	0.00	
15,100.0	89.94	0.06	7,918.8	7,068.0	-638.8	7,094.0	0.00	0.00	0.00	
15,200.0	89.94	0.06	7,918.9	7,168.0	-638.7	7,193.8	0.00	0.00	0.00	
15,300.0	89.94	0.06	7,919.0	7,268.0	-638.6	7,293.6	0.00	0.00	0.00	
15,400.0	89.94	0.06	7,919.1	7,368.0	-638.4	7,393.4	0.00	0.00	0.00	
15,500.0	89.94	0.06	7,919.2	7,468.0	-638.3	7,493.2	0.00	0.00	0.00	
15,600.0	89.94	0.06	7,919.3	7,568.0	-638.2	7,593.0	0.00	0.00	0.00	
15,700.0	89.94	0.06	7,919.4	7,668.0	-638.1	7,692.8	0.00	0.00	0.00	
15,800.0	89.94	0.06	7,919.5	7,768.0	-638.0	7,792.6	0.00	0.00	0.00	
15,900.0	89.94	0.06	7,919.6	7,868.0	-637.9	7,892.4	0.00	0.00	0.00	
16,000.0	89.94	0.06	7,919.7	7,968.0	-637.8	7,992.2	0.00	0.00	0.00	
16,100.0	89.94	0.06	7,919.8	8,068.0	-637.7	8,092.0	0.00	0.00	0.00	
16,200.0	89.94	0.06	7,919.9	8,168.0	-637.5	8,191.8	0.00	0.00	0.00	
16,300.0	89.94	0.06	7,920.0	8,268.0	-637.4	8,291.6	0.00	0.00	0.00	
16,400.0	89.94	0.06	7,920.1	8,368.0	-637.3	8,391.4	0.00	0.00	0.00	
16,500.0	89.94	0.06	7,920.2	8,468.0	-637.2	8,491.2	0.00	0.00	0.00	
16,600.0	89.94	0.06	7,920.3	8,568.0	-637.1	8,591.0	0.00	0.00	0.00	
16,700.0	89.94	0.06	7,920.4	8,668.0	-637.0	8,690.8	0.00	0.00	0.00	
16,800.0	89.94	0.06	7,920.5	8,768.0	-636.9	8,790.6	0.00	0.00	0.00	
16,900.0	89.94	0.06	7,920.6	8,868.0	-636.8	8,890.4	0.00	0.00	0.00	
17,000.0	89.94	0.06	7,920.7	8,968.0	-636.6	8,990.2	0.00	0.00	0.00	
17,100.0	89.94	0.06	7,920.8	9,068.0	-636.5	9,090.0	0.00	0.00	0.00	
17,200.0	89.94	0.06	7,920.9	9,168.0	-636.4	9,189.8	0.00	0.00	0.00	
17,300.0	89.94	0.06	7,921.0	9,268.0	-636.3	9,289.6	0.00	0.00	0.00	
17,400.0	89.94	0.06	7,921.1	9,368.0	-636.2	9,389.4	0.00	0.00	0.00	
17,500.0	89.94	0.06	7,921.2	9,468.0	-636.1	9,489.2	0.00	0.00	0.00	

Survey Report

Company:	NORTHERN DELAWARE BASIN	Local Co-ordinate Reference:	Well MYOX 31 ST COM #502H
Project:	EDDY COUNTY, NM	TVD Reference:	KB=25' @ 3063.0usft (Pioneer 84)
Site:	MYOX 31 ST COM	MD Reference:	KB=25' @ 3063.0usft (Pioneer 84)
Well:	MYOX 31 ST COM #502H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	PWP1	Database:	EDM_Users

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)
17,600.0	89.94	0.06	7,921.3	9,568.0	-636.0	9,589.0	0.00	0.00	0.00
17,700.0	89.94	0.06	7,921.4	9,668.0	-635.9	9,688.8	0.00	0.00	0.00
17,800.0	89.94	0.06	7,921.5	9,768.0	-635.7	9,788.6	0.00	0.00	0.00
17,900.0	89.94	0.06	7,921.6	9,868.0	-635.6	9,888.4	0.00	0.00	0.00
18,000.0	89.94	0.06	7,921.7	9,968.0	-635.5	9,988.2	0.00	0.00	0.00
18,100.0	89.94	0.06	7,921.8	10,068.0	-635.4	10,088.0	0.00	0.00	0.00
18,200.0	89.94	0.06	7,921.9	10,168.0	-635.3	10,187.8	0.00	0.00	0.00
18,279.6	89.94	0.06	7,922.0	10,247.6	-635.2	10,267.3	0.00	0.00	0.00
TD at 18279.6									

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									
FTP (MYOX 31 ST CO) - plan misses target center by 289.9usft at 7938.7usft MD (7825.3 TVD, -46.2 N, -410.0 E) - Circle (radius 50.0)	0.00	0.01	7,912.0	-189.4	-646.7	392,558.40	564,862.10	32° 4' 44.708 N	104° 7' 26.103 W
LTP (MYOX 31 ST CO) - plan misses target center by 29.6usft at 18200.0usft MD (7921.9 TVD, 10168.0 N, -635.3 E) - Point	0.00	0.00	7,922.0	10,197.6	-634.8	402,945.40	564,874.00	32° 6' 27.503 N	104° 7' 25.730 W
PBHL (MYOX 31 ST CO) - plan hits target center - Rectangle (sides W100.0 H10,531.8 D20.0)	-0.06	179.06	7,922.0	10,247.6	-635.2	402,995.40	564,873.60	32° 6' 27.998 N	104° 7' 25.733 W

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
2500	2500	0	0	Start Build 2.00
2750	2750	-8	-8	Start 4585.8 hold at 2750.0 MD
7336	7318	-290	-290	Start DLS 10.00 TFO 117.15
8258	7912	240	-509	Start DLS 2.00 TFO 90.00
9150	7913	1118	-646	Start 9129.8 hold at 9149.8 MD
18,280	7922	10,248	-635	TD at 18279.6

Checked By: _____ Approved By: _____ Date: _____



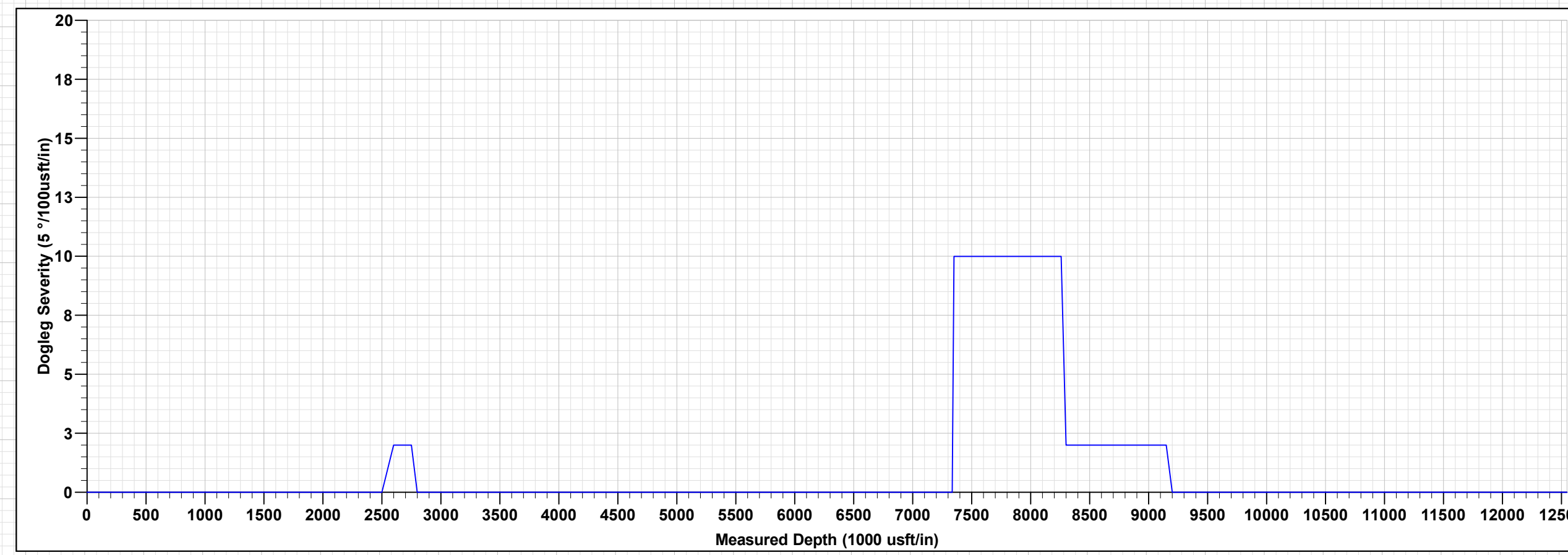
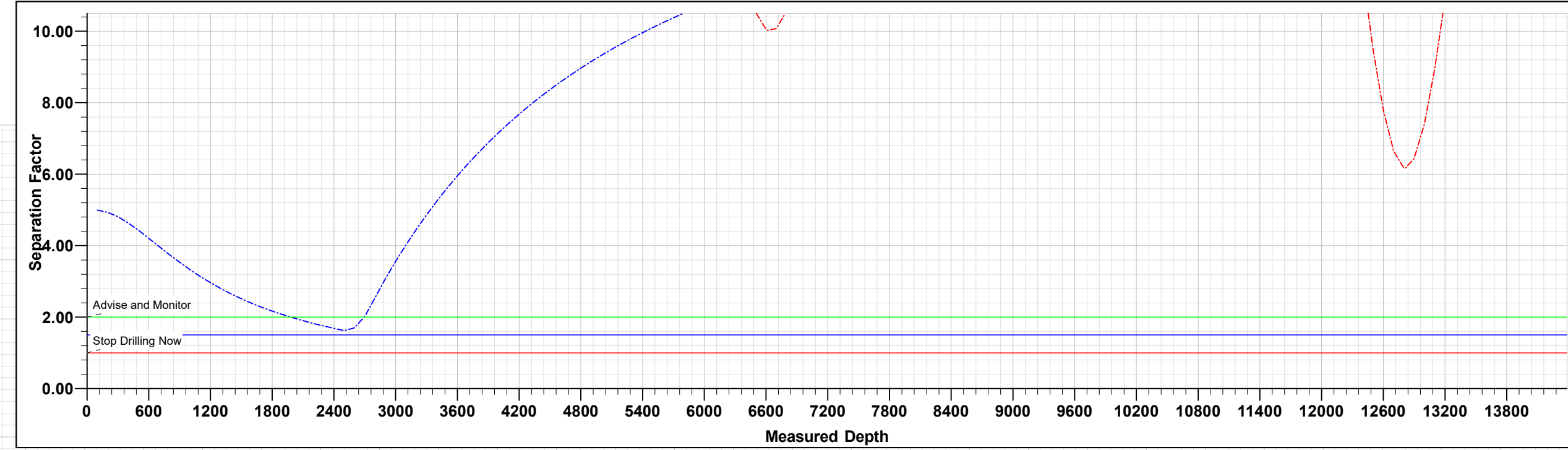
Project: EDDY COUNTY, NM
Site: MYOX 31 ST COM
Well: MYOX 31 ST COM #502H
Wellbore: OWB
Design: PWP1
GL: 3038.0
KB=25' @ 3063.0usft (Pioneer 84)

WELL DETAILS: MYOX 31 ST COM #502H

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.0	0.0	392747.80	565508.80	32° 4' 46.570 N	104° 7' 18.582 W

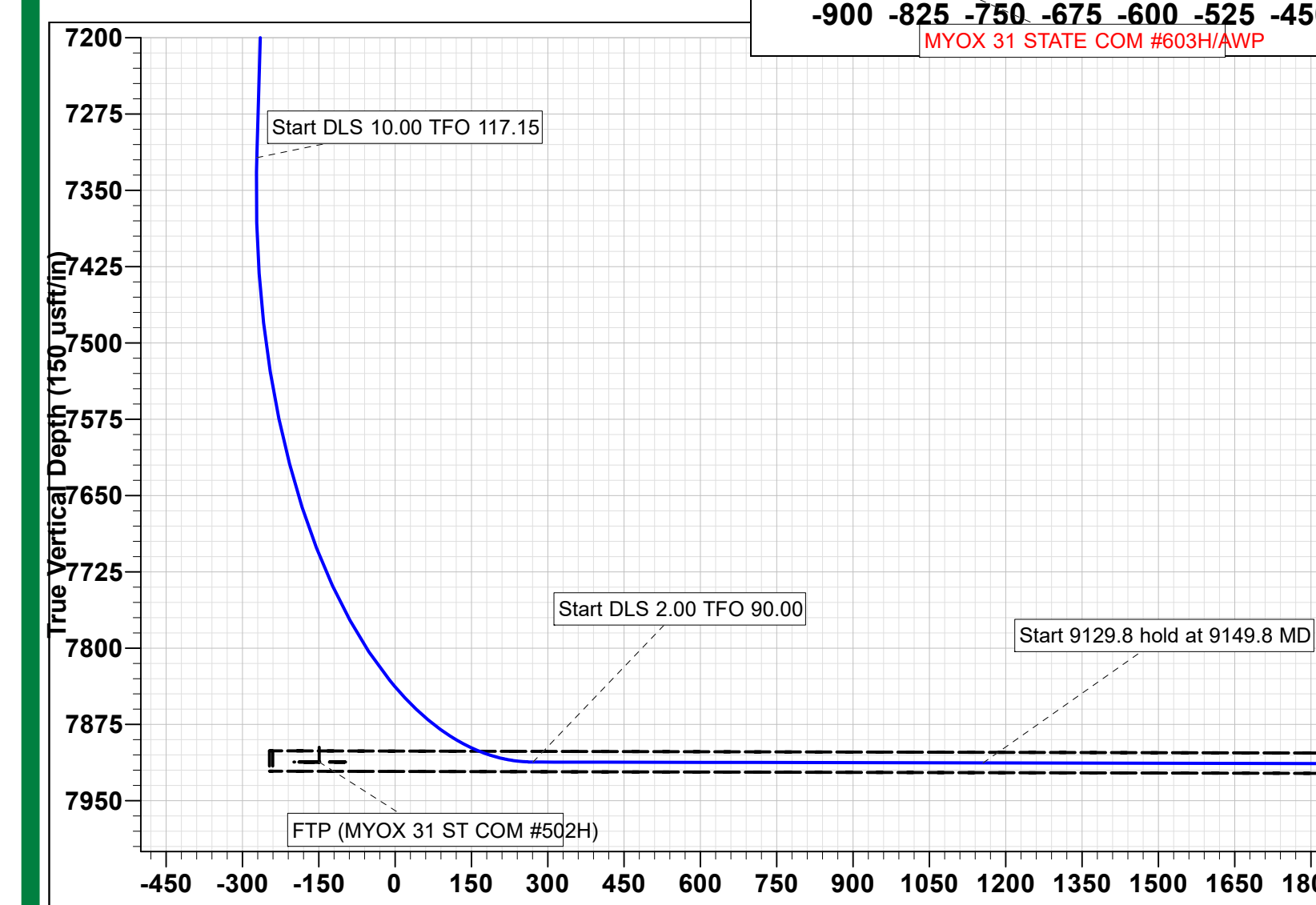
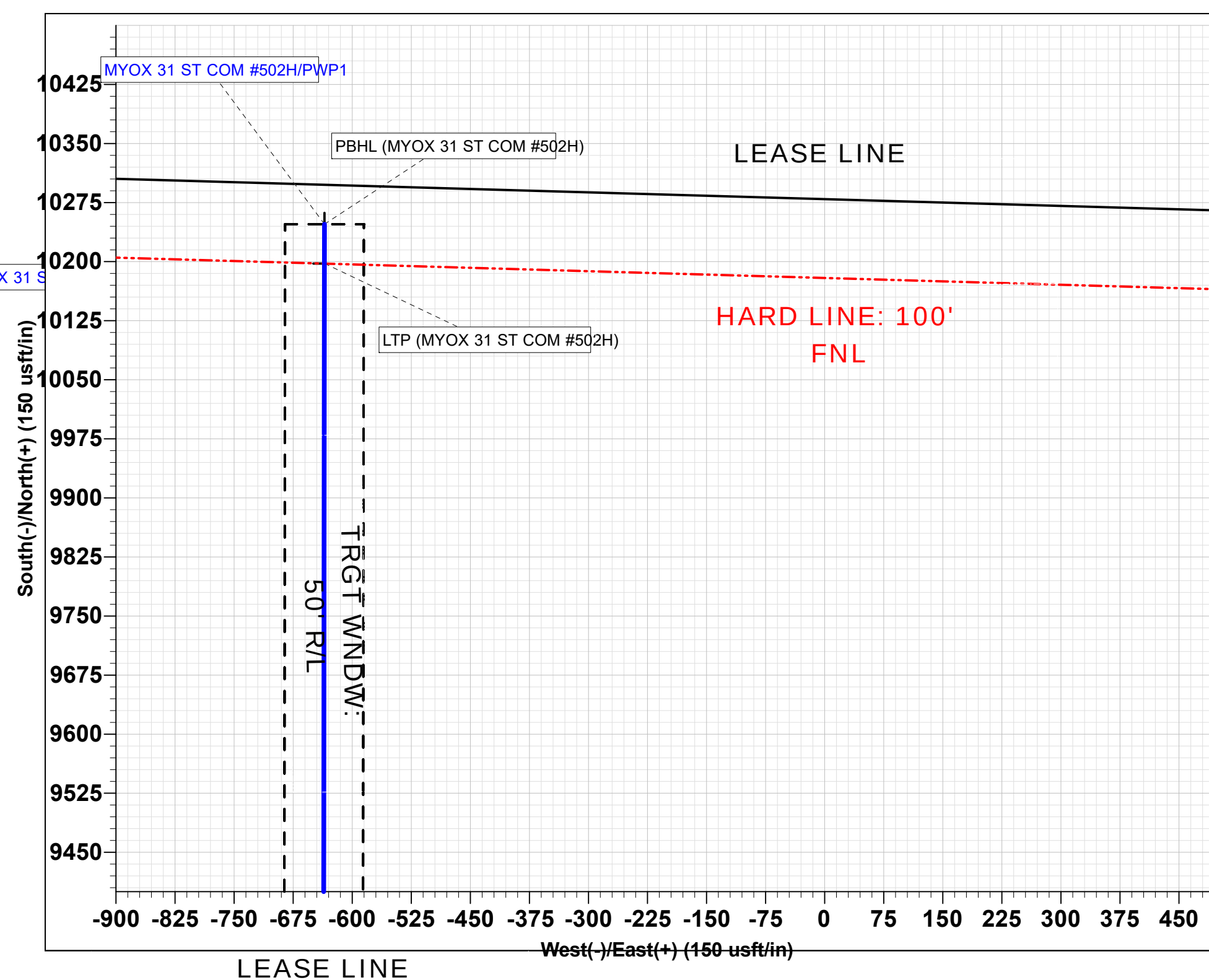
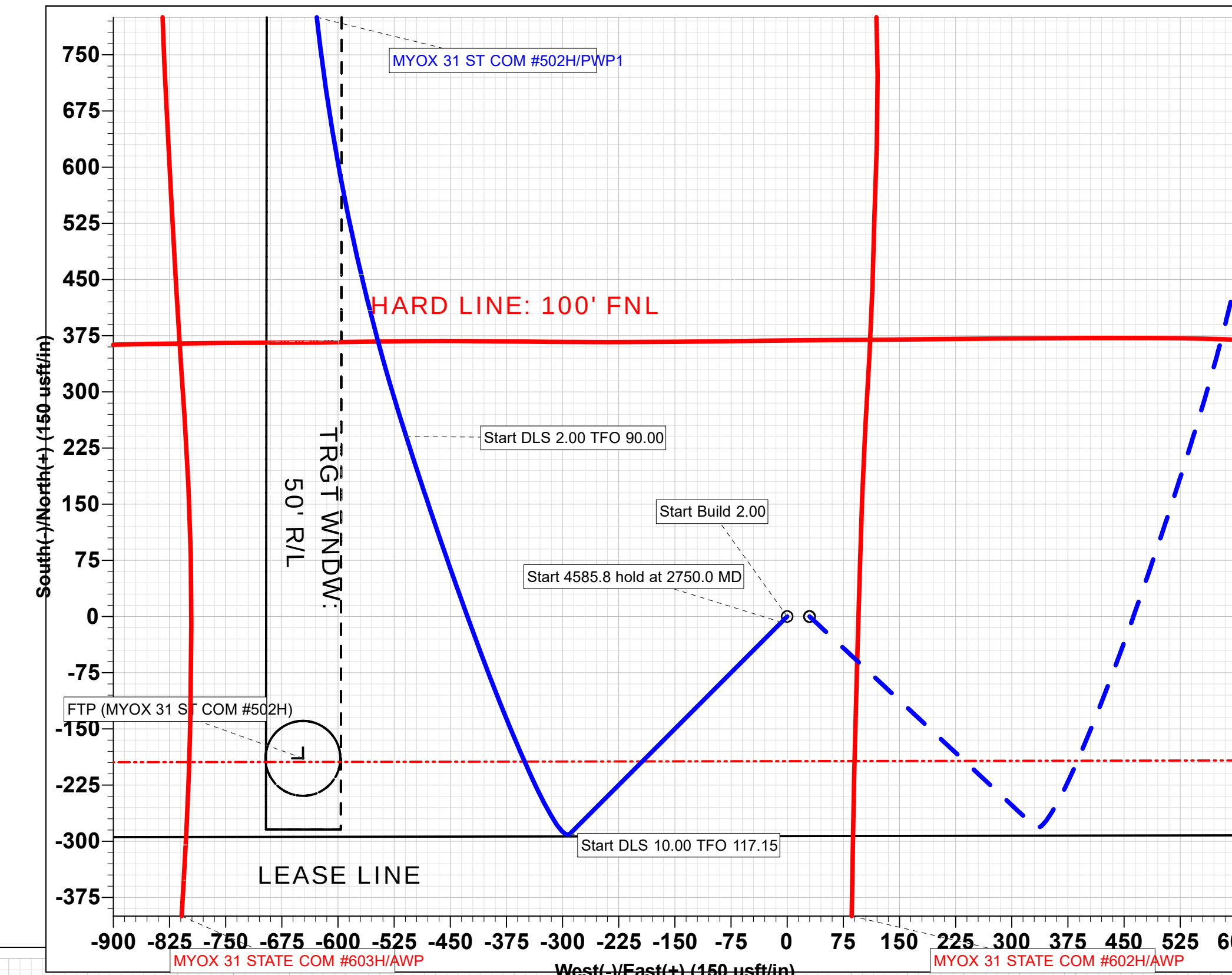
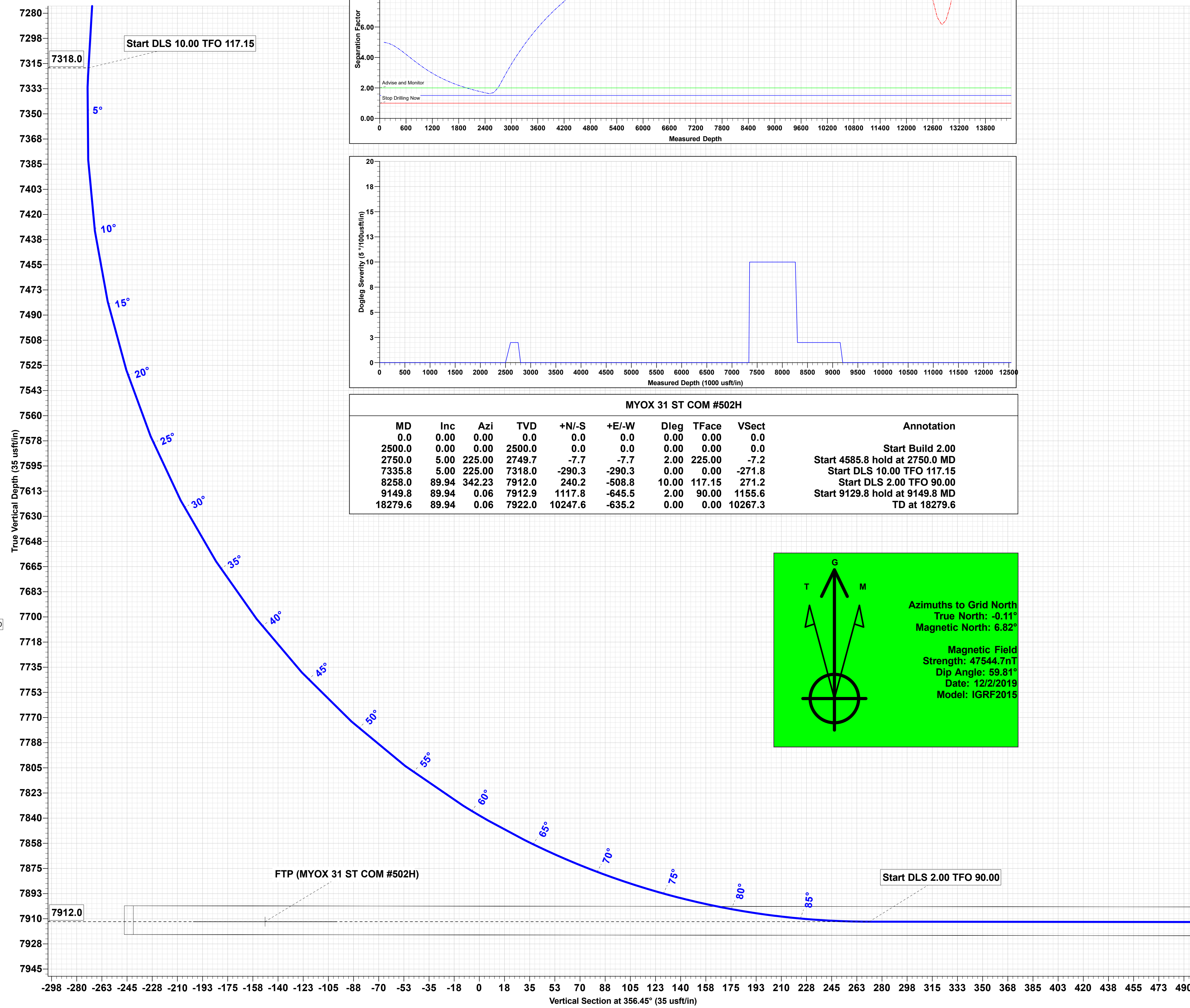
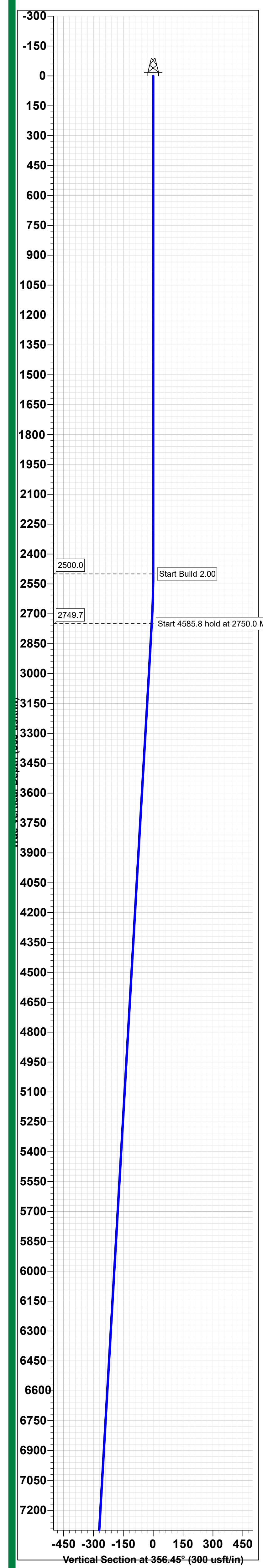
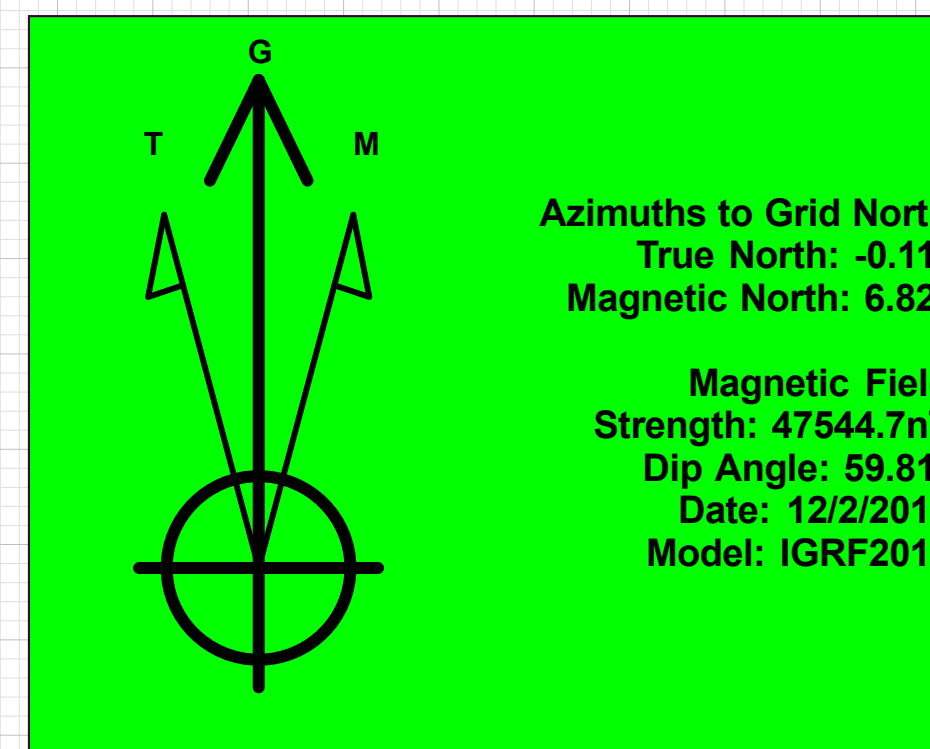
DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
FTP (MYOX 31 ST COM #502H)	7912.0	-189.4	-646.7	392558.40	564862.10	32° 4' 44.708 N	104° 7' 26.103 W
LTP (MYOX 31 ST COM #502H)	7922.0	10197.6	-634.8	402945.40	564874.00	32° 6' 27.503 N	104° 7' 25.730 W
PBHL (MYOX 31 ST COM #502H)	7922.0	10247.6	-635.2	402995.40	564873.60	32° 6' 27.998 N	104° 7' 25.733 W



MYOX 31 ST COM #502H

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Annotation
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2500.0	0.00	0.00	2500.0	0.0	0.0	0.00	0.00	0.0	Start Build 2.00
2750.0	5.00	225.00	2749.7	-7.7	-7.7	2.00	225.00	-7.2	Start 4585.8 hold at 2750.0 MD
7335.8	5.00	225.00	7318.0	-290.3	-290.3	0.00	0.00	-271.8	Start DLS 10.00 TFO 117.15
8258.0	89.94	342.23	7912.0	240.2	-508.8	10.00	117.15	271.2	Start DLS 2.00 TFO 90.00
9149.8	89.94	0.06	7912.9	1117.8	-645.5	2.00	90.00	1155.6	Start 9129.8 hold at 9149.8 MD
18279.6	89.94	0.06	7922.0	10247.6	-635.2	0.00	0.00	10267.3	TD at 18279.6



TRGT WNDW:
10 A/B

