

Sante Fe Main Office
Phone: (505) 476-3441

General Information
Phone: (505) 629-6116

Online Phone Directory
<https://www.emnrd.nm.gov/ocd/contact-us>

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 410220

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

1. Operator Name and Address Coterra Energy Operating Co. 6001 Deauville Blvd Midland, TX 79706		2. OGRID Number 215099
4. Property Code 338944		3. API Number 30-025-56024
5. Property Name SOMBRERO STATE COM		6. Well No. 223H

7. Surface Location

UL - Lot B	Section 13	Township 19S	Range 35E	Lot Idn B	Feet From 380	N/S Line N	Feet From 1368	E/W Line E	County Lea
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8. Proposed Bottom Hole Location

UL - Lot B	Section 25	Township 18S	Range 35E	Lot Idn B	Feet From 100	N/S Line N	Feet From 1684	E/W Line E	County Lea
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9. Pool Information

VACUUM;BONE SPRING, SOUTH	61900
WC-025 G-07 S193513B;BONE SPRING	97926

Additional Well Information

11. Work Type New Well	12. Well Type OIL	13. Cable/Rotary	14. Lease Type State	15. Ground Level Elevation 3739
16. Multiple Y	17. Proposed Depth 30218	18. Formation 2nd Bone Spring Sand	19. Contractor	20. Spud Date 3/27/2026
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	1839	1130	0
Int1	12.25	9.625	36	3123	703	0
Prod	8.5	7	29	9045	319	2923
Prod	8.5	5.5	20	30218	5598	9045

Casing/Cement Program: Additional Comments

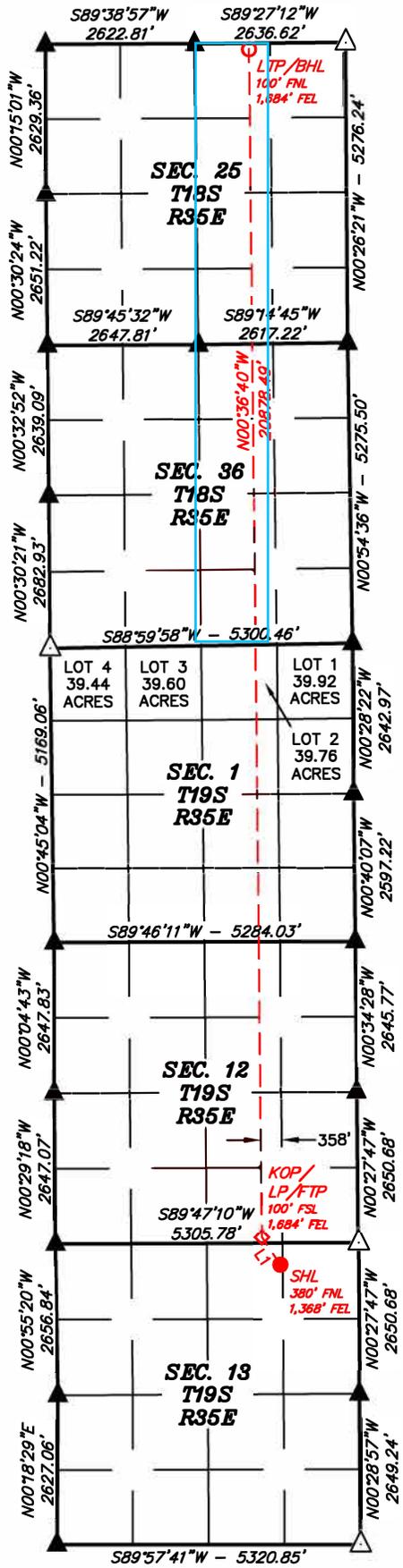
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22. Proposed Blowout Prevention Program

Type	Working Pressure	Test Pressure	Manufacturer
Annular	5000	5000	
Double Ram	10000	10000	
Pipe	10000	10000	

23. I hereby certify that the information given above is true and complete to the best of my knowledge and belief. I hereby certify that no additives containing PFAS chemicals will be added to the completion or recompletion of this well. I further certify I have complied with 19.15.14.9 (A) NMAC <input checked="" type="checkbox"/> and/or 19.15.14.9 (B) NMAC <input checked="" type="checkbox"/> if applicable. Signature:	OIL CONSERVATION DIVISION		
	Printed Name: Electronically filed by Phillip Levasseur	Approved By: Jeffrey Harrison	
	Title: Regulatory Compliance Manager	Title: Petroleum Specialist III	
	Email Address: phillip.levasseur@coterra.com	Approved Date: 3/10/2026	Expiration Date: 3/10/2028
	Date: 3/9/2026	Phone: 412-759-4585	Conditions of Approval Attached

Property Name SOMBRERO STATE COM	Well Number 223H	Drawn By N.R. 07-31-25	Revised By
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- = SURFACE HOLE LOCATION
- ◆ = KICK OFF POINT/LANDING POINT/FIRST TAKE POINT
- = LAST TAKE POINT/BOTTOM HOLE LOCATION
- ▲ = SECTION CORNER LOCATED
- △ = SECTION CORNER RE-ESTABLISHED (Not Set on Ground.)

NOTE:

- Distances referenced on plat to section lines are perpendicular.
- Bearings, Distances, Coordinates and Areas are based on the New Mexico Coordinate Grid System of 1983, East Zone, in U.S. Feet.
- Section breakdown information for this plat may be obtained from Uintah Engineering & Land Surveying.

LINE TABLE		
LINE	DIRECTION	LENGTH
L1	N33°44'33"W	575.74'

NAD 83 (SURFACE HOLE LOCATION)	
LATITUDE = 32°40'00.32" (32.666754°)	
LONGITUDE = -103°24'23.59" (-103.406552°)	
NAD 27 (SURFACE HOLE LOCATION)	
LATITUDE = 32°39'59.87" (32.666632°)	
LONGITUDE = -103°24'21.83" (-103.406064°)	
STATE PLANE NAD 83 (N.M. EAST)	
N: 607541.31' E: 826535.35'	
STATE PLANE NAD 27 (N.M. EAST)	
N: 607478.18' E: 785354.76'	

NAD 83 (KOP/LP/FTP)	
LATITUDE = 32°40'05.08" (32.668078°)	
LONGITUDE = -103°24'27.28" (-103.407578°)	
NAD 27 (KOP/LP/FTP)	
LATITUDE = 32°40'04.64" (32.667955°)	
LONGITUDE = -103°24'25.52" (-103.407089°)	
STATE PLANE NAD 83 (N.M. EAST)	
N: 608020.06' E: 826215.55'	
STATE PLANE NAD 27 (N.M. EAST)	
N: 607956.91' E: 785034.98'	

NAD 83 (LTP/BHL)	
LATITUDE = 32°43'31.66" (32.725461°)	
LONGITUDE = -103°24'27.75" (-103.407709°)	
NAD 27 (LTP/BHL)	
LATITUDE = 32°43'31.22" (32.725339°)	
LONGITUDE = -103°24'25.98" (-103.407218°)	
STATE PLANE NAD 83 (N.M. EAST)	
N: 628897.37' E: 825992.90'	
STATE PLANE NAD 27 (N.M. EAST)	
N: 628833.78' E: 784813.08'	



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: <input checked="" type="checkbox"/> Initial Submittal <input type="checkbox"/> Amended Report <input type="checkbox"/> As Drilled

WELL LOCATION INFORMATION

API Number 30-025-56024	Pool Code 97926	Pool Name WC-025 G-07 S193513B; BONE SPRING
Property Code 338944	Property Name SOMBRERO STATE COM	Well Number 223H
OGRID No. 215099	Operator Name COTERRA ENERGY OPERATING CO.	Ground Level Elevation 3,738.8'
Surface Owner: <input type="checkbox"/> State <input checked="" type="checkbox"/> Fee <input type="checkbox"/> Tribal <input type="checkbox"/> Federal		Mineral Owner: <input checked="" type="checkbox"/> State <input checked="" type="checkbox"/> Fee <input type="checkbox"/> Tribal <input type="checkbox"/> Federal

Surface Location

UL	Section	Township	Range	Lot	Ft. from N/S	Ft. from E/W	Latitude (NAD 83)	Longitude (NAD 83)	County
B	13	19S	35E		380 NORTH	1,368 EAST	32.666754°	-103.406552°	LEA

Bottom Hole Location

UL	Section	Township	Range	Lot	Ft. from N/S	Ft. from E/W	Latitude (NAD 83)	Longitude (NAD 83)	County
B	25	18S	35E		100 NORTH	1,684 EAST	32.725461°	-103.407709°	LEA

Dedicated Acres 319.76	Infill or Defining Well Defining	Defining Well API Pending	Overlapping Spacing Unit (Y/N) N	Consolidation Code C
Order Numbers. R-24083		Well setbacks are under Common Ownership: <input type="checkbox"/> Yes <input type="checkbox"/> No NA		

Kick Off Point (KOP)

UL	Section	Township	Range	Lot	Ft. from N/S	Ft. from E/W	Latitude (NAD 83)	Longitude (NAD 83)	County
O	12	19S	35E		100 SOUTH	1,684 EAST	32.668078°	-103.407578°	LEA

First Take Point (FTP)

UL	Section	Township	Range	Lot	Ft. from N/S	Ft. from E/W	Latitude (NAD 83)	Longitude (NAD 83)	County
O	12	19S	35E		100 SOUTH	1,684 EAST	32.668078°	-103.407578°	LEA

Last Take Point (LTP)

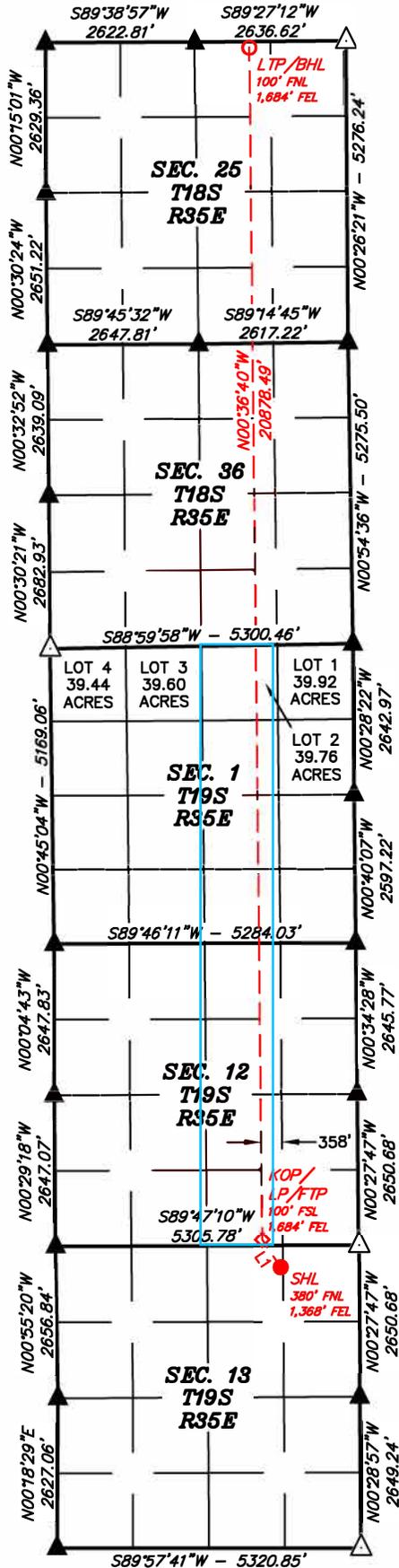
UL	Section	Township	Range	Lot	Ft. from N/S	Ft. from E/W	Latitude (NAD 83)	Longitude (NAD 83)	County
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Unitized Area or Area of Uniform Interest W2E2 Sec 25,36,1,12	Spacing Unit Type <input checked="" type="checkbox"/> Horizontal <input type="checkbox"/> Vertical	Ground Floor Elevation: 3738.8
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<p>OPERATOR CERTIFICATIONS</p> <p><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></p> <p><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></p> <p><i>Shelly Bowen</i> 3/4/2026</p>	<p>SURVEYOR CERTIFICATIONS</p> <p><i>I hereby certify that the well location shown on this plat was plotted from the 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></p> <div style="text-align: center;">  </div>
Signature Shelly Bowen	Signature and Seal of Professional Surveyor 23782 July 30, 2025
Printed Name shelly.bowen@coterra.com	Certificate Number Date of Survey
Email Address	

Note: 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.

Property Name SOMBRERO STATE COM	Well Number 223H	Drawn By N.R. 07-31-25	Revised By
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1220 S. St Francis Dr.
Santa Fe, NM 87505

Form APD Comments

Permit 410220

PERMIT COMMENTS

Operator Name and Address: Coterra Energy Operating Co. [215099] 6001 Deauville Blvd Midland, TX 79706	API Number: 30-025-56024
	Well: SOMBRERO STATE COM #223H

Created By	Comment	Comment Date
jeffrey.harrison	Submitted as defining well.	3/10/2026

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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**

Form APD Conditions

Permit 410220

PERMIT CONDITIONS OF APPROVAL

Operator Name and Address: Coterra Energy Operating Co. [215099] 6001 Deauville Blvd Midland, TX 79706	API Number: 30-025-56024
	Well: SOMBRERO STATE COM #223H

OCD Reviewer	Condition
jeffrey.harrison	No additives containing PFAS chemicals will be added to the drilling fluids or completion fluids used during drilling, completions, or recompletions operations.
jeffrey.harrison	Cement must be in place for at least 8 hours and achieve a minimum compressive strength of 500 psi before performing further operations on the well.
jeffrey.harrison	Cement is required to circulate on both surface and intermediate1 strings of casing.
jeffrey.harrison	If the method of isolation was not by circulation, a CBL must be performed; if strata isolation is not achieved, then remediation will be required before further operations.
jeffrey.harrison	File As Drilled C-102 and a directional Survey with C-104 completion packet.
jeffrey.harrison	Notify the OCD 24 hours prior to casing & cement.
jeffrey.harrison	A [C-103] Sub. Drilling (C-103N) is required within (10) days of spud.
jeffrey.harrison	Oil base muds are not to be used until fresh water zones are cased and cemented providing isolation from the oil or diesel. This includes synthetic oils. Oil based mud, drilling fluids and solids must be contained in a steel closed loop system.
jeffrey.harrison	Once the well is spud, to prevent ground water contamination through whole or partial conduits from the surface, the operator shall drill without interruption through the fresh water zone or zones and shall immediately set in cement the water protection string.

1. Geological Formations

TVD of target 9,570
MD at TD 30,218

Pilot Hole TD N/A
Deepest expected fresh water

Formation	Depth (TVD) from KB	Water/Mineral Bearing/Target Zone	Hazards
Rustler	1740	N/A	
Top of Salt	2000	N/A	
Base of Salt	3098	N/A	
Yates	3256	N/A	
Seven Rivers	3670	N/A	
Queen	4416	N/A	
Cherry Canyon	5706	N/A	
Brushy Canyon	5920	N/A	
Bone Spring	7310	Hydrocarbons	
1st Bone Spring Sand	9098	Hydrocarbons	
2nd Bone Spring Carbonate	9238	Hydrocarbons	
2nd Bone Spring Sand	9282	Hydrocarbons	
2nd Bone Spring Sand - Target	9570	Hydrocarbons	

2. Casing Program

Hole Size	Casing Depth From	Casing Depth To	Setting Depth TVD	Casing Size	Weight (lb/ft)	Grade	Conn.	SF Collapse	SF Burst	SF Tension
17 1/2	0	1839	1839	13-3/8"	54.50	J-55	ST&C	1.42	3.44	5.13
12 1/4	0	3123	3123	9-5/8"	36.00	J-55	LT&C	1.21	2.10	4.03
8 1/2	0	9045	9045	7"	29.00	P-110	BT&C	2.02	2.65	4.85
8 1/2	9045	30218	9570	5-1/2"	20.00	P-110	BT&C	2.48	2.76	61.05
BLM Minimum Safety Factor								1.125	1	1.6 Dry 1.8 Wet

TVD was used on all calculations.
All casing strings will be tested in accordance with 43 CFR 3172.

Cimarex Energy Co., Sombrero State Com 223H

	Y or N
Is casing new? If used, attach certification as required in Onshore Order #1	Y
Does casing meet API specifications? If no, attach casing specification sheet.	Y
Is premium or uncommon casing planned? If yes attach casing specification sheet.	N
Does the above casing design meet or exceed BLM's minimum standards? If not provide justification (loading assumptions, casing design criteria).	Y
Will the intermediate pipe be kept at a minimum 1/3 fluid filled to avoid approaching the collapse pressure rating of the casing?	Y
Is well located within Capitan Reef?	N
If yes, does production casing cement tie back a minimum of 50' above the Reef?	N
Is well within the designated 4 string boundary.	N
Is well located in SOPA but not in R-111-P?	N
If yes, are the first 2 strings cemented to surface and 3rd string cement tied back 500' into previous casing?	N
Is well located in R-111-P and SOPA?	N
If yes, are the first three strings cemented to surface?	N
Is 2nd string set 100' to 600' below the base of salt?	N
Is well located in high Cave/Karst?	N
If yes, are there two strings cemented to surface?	N
(For 2 string wells) If yes, is there a contingency casing if lost circulation occurs?	N
Is well located in critical Cave/Karst?	N
If yes, are there three strings cemented to surface?	N
Is AC Report included?	Y

3. Cementing Program

Casing	# Sks	Wt. lb/gal	Yld ft3/sack	H2O gal/sk	500# Comp. Strength (hours)	Slurry Description
Surface	891	13.50	1.72	9.15	15.5	Lead: Class C + Bentonite
	239	14.80	1.34	6.32	9.5	Tail: Class C + LCM
Intermediate	520	12.90	1.88	9.65	12	Lead: 35:65 (Poz:C) + Salt + Bentonite
	183	14.80	1.34	6.32	9.5	Tail: Class C + LCM
Production	319	10.30	3.64	22.18		Lead: Tuned Light + LCM
	5598	14.20	1.30	5.86	14:30	Tail: 50:50 (Poz:H) + Salt + Bentonite + Fluid Loss + Dispersant + SMS

Casing String	TOC	% Excess
Surface	0	45
Intermediate	0	61
Production	2923	25

Cimarex request the ability to perform casing integrity tests after plug bump of cement job.

4. Pressure Control Equipment

	A variance is requested for the use of a diverter on the surface casing. See attached for schematic.
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BOP installed and tested before drilling which hole?	Size	Min Required WP	Type		Tested To
12 1/4	13 5/8	10M	Annular	5M	100% of working pressure
			Blind Ram		10M
			Pipe Ram		
			Double Ram	X	
			Other		
8 1/2	13 5/8	10M	Annular	5M	100% of working pressure
			Blind Ram		10M
			Pipe Ram	X	
			Double Ram	X	
			Other		

X	Formation integrity test will be performed per Onshore Order #2. On Exploratory wells or on that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.i.
X	A variance is requested for the use of a flexible choke line from the BOP to Choke Manifold. See attached for specs and hydrostatic test chart.
N	Are anchors required by manufacturer?

5. Mud Program

Depth	Type	Weight (ppg)	Viscosity	Water Loss
0' to 1839'	Fresh Water	7.83 - 8.33	28	N/C
1839' to 3123'	Brine Water	9.80 - 10.30	30-32	N/C
3123' to 30218'	Oil Based Mud	8.50 - 9.00	50-70	N/C

Sufficient mud materials to maintain mud properties and meet minimum lost circulation and weight increase requirements will be kept on location at all times.

What will be used to monitor the loss or gain of fluid?	PVT/Pason/Visual Monitoring
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6. Logging and Testing Procedures

Logging, Coring and Testing	
	Will run GR/CNL from TD to surface (horizontal well – vertical portion of hole). Stated logs run will be in the Completion Report and submitted to the BLM.
X	No logs are planned based on well control or offset log information.
	Drill stem test?
	Coring?

Additional Logs Planned	Interval

7. Drilling Conditions

Condition	
BH Pressure at deepest TVD	4478 psi
Abnormal Temperature	No

Hydrogen Sulfide (H2S) monitors will be installed prior to drilling out the surface shoe. If H2S is detected in concentrations greater than 100 ppm, the operator will comply with the provisions of Onshore Oil and Gas Order #6. If Hydrogen Sulfide is encountered, measured values and formations will be provided to the BLM.	
X	H2S is present
X	H2S plan is attached

8. Other Facets of Operation

9. Wellhead

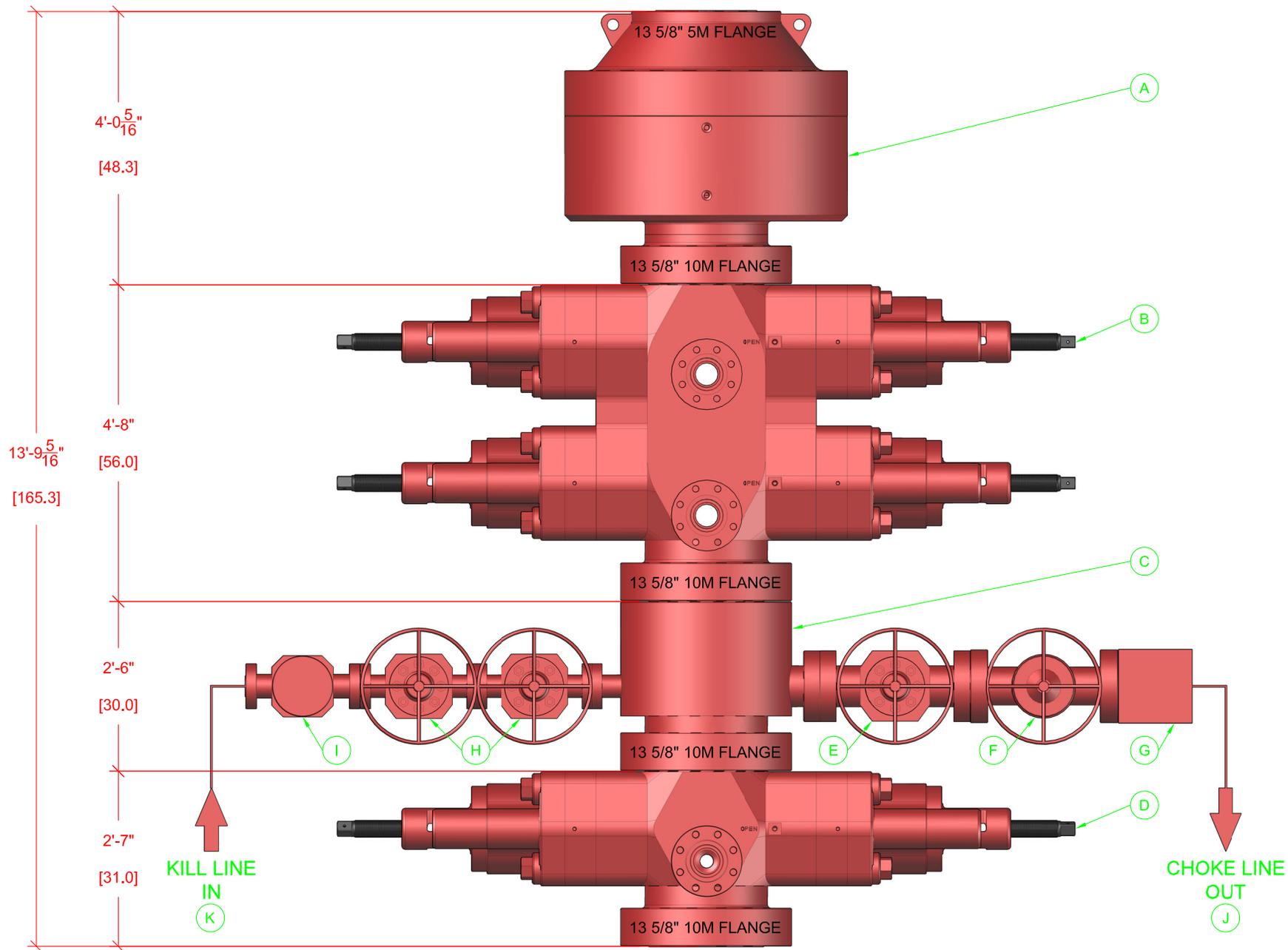
1. The multi-bowl wellhead will be installed by a vendor representative. A copy of the installation instructions has been sent to the BLM field office.
2. A packoff will be installed after running and cementing the production casing. This packoff will be tested to 10K psi.

BOPE Additional Information & Testing

1. After running the first string of casing, a 10M BOP/BOPE system with 5M annular will be installed. BOPs will be tested according to Onshore Order #2. BOPE will be tested to full rated pressure (10K for all BOPE except the annular, which is tested to 5K). For the low test, the system will be tested to 250 psi.
2. All BOP equipment will be tested utilizing a conventional test plug.
3. A remote kill line is included in the BOPE system
4. All casing strings will be tested per Onshore Order #2, to 0.22 psi/ft or 1,500 psi, whichever is greater, not to exceed 70% of casing burst.
5. If well conditions dictate, conventional slips will be set and BOPE will be tested to appropriate pressures based on permitted pressure requirements.

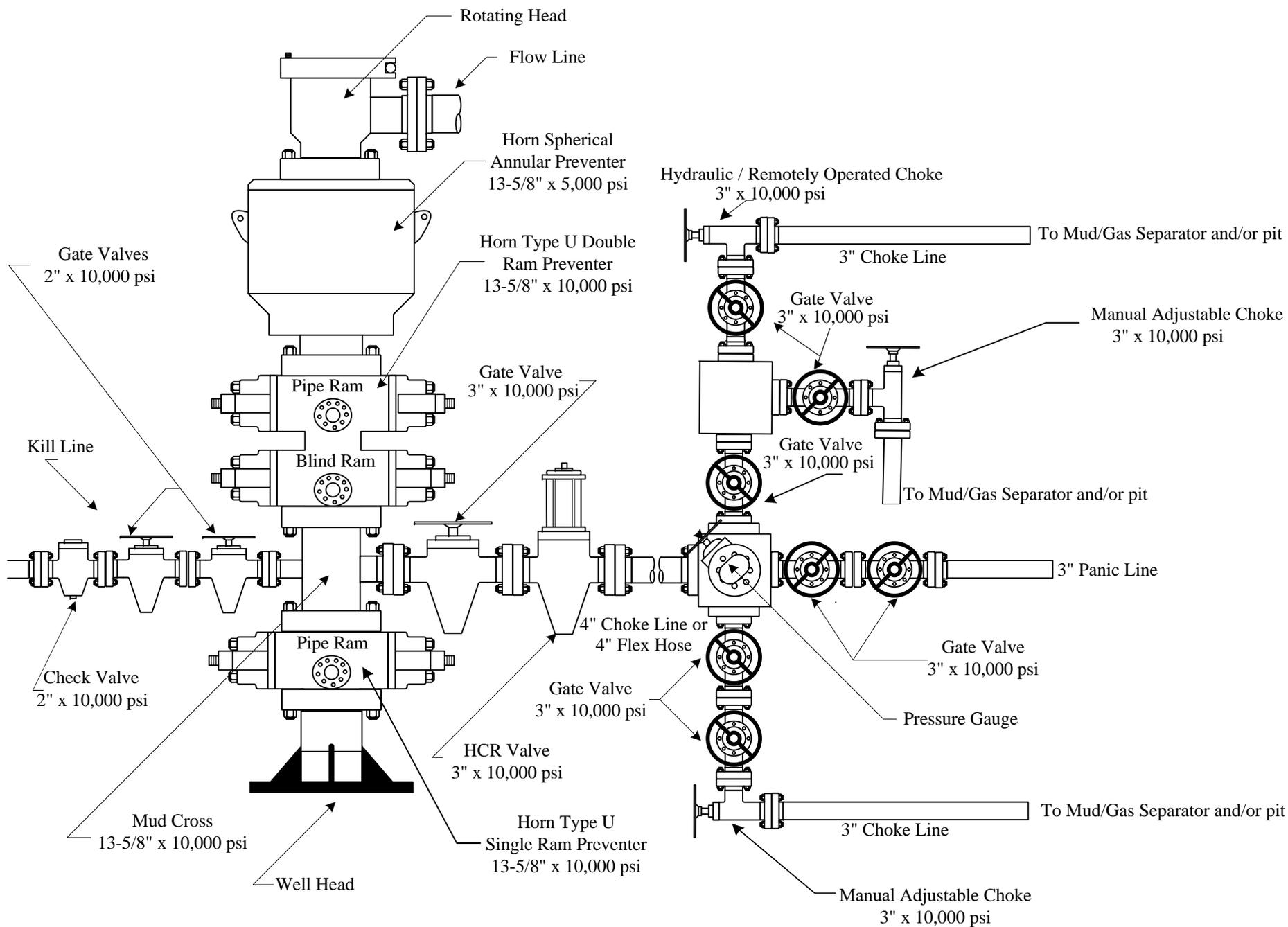
Additional Well Control Notes

1. In the event wellbore pressure encroaches to the maximum rated pressure of the annular, primary pressure control will be switched to the higher rated components (i.e., switch from annular to pipe rams) – upper pipe rams will be closed, and the annular opened in order to not exceed maximum rated pressures.



BOP EQUIPMENT INFORMATION

DESCRIPTION	MODEL	QTY	ITEM	DESCRIPTION	MODEL	QTY
ANNULAR BOP	13 5/8" 5M	1	G	STUDDED BLOCK	4 1/2" 10M	1
DOUBLE RAM BOP	13 5/8" 10M TYPE-U	1	H	GATE VALE	2 1/2" 10M FC MANUAL	2
MUD CROSS	13 5/8" 10M	1	I	CHECK VALVE	2 1/2" 10M	1
SINGLE RAM BOP	13 5/8" 10M TYPE-U	1	J	CHOKE HOSE	4 1/2" 10M	1
GATE VALVE	4 1/2" 10M FC MANUAL	1	K	KILL HOSE	2 1/2" 10M	1
HCR VALVE	4 1/2" 10M HCR	1	L			





CERTIFICATE OF QUALITY

LTYY/QR-5.7.1-19B

No: LT2024-156-001

Customer Name			
Product Name	Choke And Kill Hose		
Product Specification	3"×10000psi×35ft (10.67m)	Quantity	1PCS
Serial Number	VTC-7660257	FSL	FSL3
customer number	PO890145-001	Standard	API Spec 16C 3 rd edition
Temperature Range	-29℃ ~+121℃	Inspection date	2024.09.03

Inspection Items	Inspection results
Appearance Checking	In accordance with API Spec 16C 3 rd edition
Size and Lengths	In accordance with API Spec 16C 3 rd edition
Dimensions and Tolerances	In accordance with API Spec 16C 3 rd edition
End Connections: 4-1/16"×10000psi Integral flange for sour gas service	In accordance with API Spec 6A 21 st edition
End Connections: 4-1/16"×10000psi Integral flange for sour gas service	In accordance with API Spec 17D 3 rd edition
Hydrostatic Testing	In accordance with API Spec 16C 3 rd edition
product Marking	In accordance with API Spec 16C 3 rd edition

Inspection conclusion	The inspected items meet standard requirements of API Spec 16C 3 rd edition
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Remarks	16C-0403 
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Approver	Jane C	Auditor	Alice D	Inspector	Leo W
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LUOHE LETONE HYDRAULICS TECHNOLOGY CO.,LTD	
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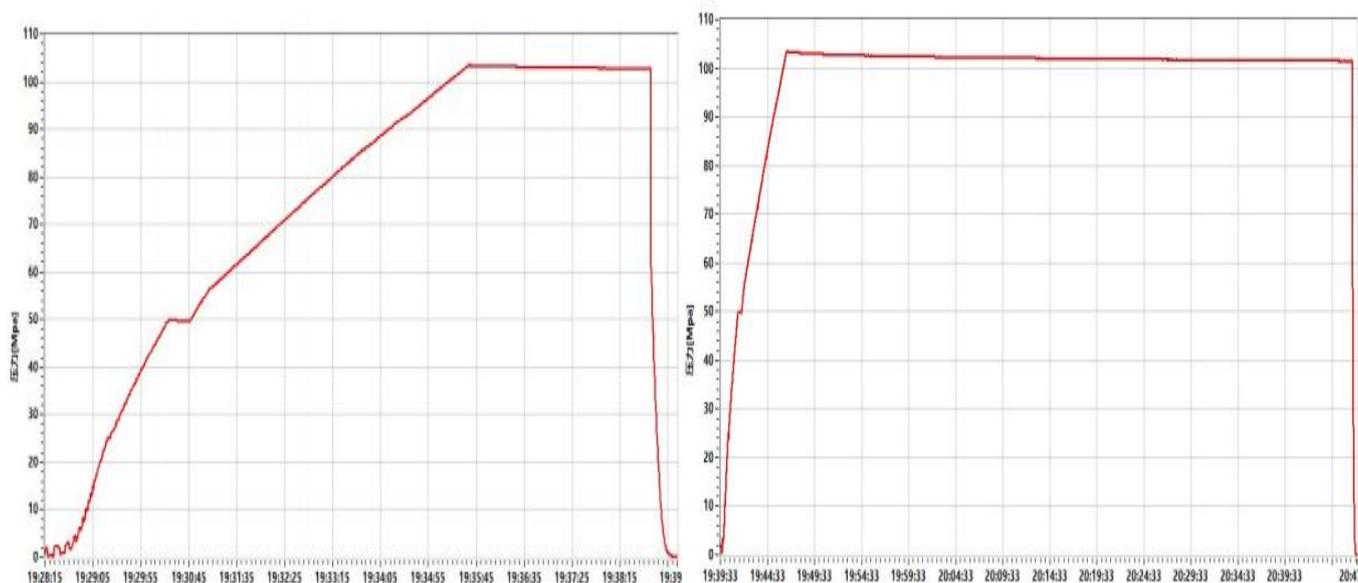
HYDROSTATIC TESTING REPORT

LTYT/QR-5.7.1-28

No: 24090301

Product Name	Choke And Kill Hose	Standard	API Spec 16C 3 rd edition
Product Specification	3"×10000psi×35ft (10.67m)	Serial Number	VTC-7660257
Inspection Equipment	MTU-BS-1600-3200-E	Test medium	Water
customer number	PO890145-001	Inspection Date	2024.08.30
Rate of length change			
Standard requirements	At working pressure ,the rate of length change should not more than ±2%		
Testing result	10000psi (69.0MPa) ,Rate of length change 0.6%		
Hydrostatic testing			
Standard requirements	At 1.5 times working pressure, the initial pressure-holding period of not less than three minutes, the second pressure-holding period of not less than one hour, no leakage.		
Testing result	15000psi (103.5MPa), 3 min for the first time, 60 min for the second time, no leakage		

Graph of pressure testing:



Conclusion	The inspected items meet standard requirements of API Spec 16C 3 rd edition		16C-0403 	
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Approver	Jane C	Auditor	Alice D	Inspector	Leo W
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LUOHE LETONE HYDRAULICS TECHNOLOGY CO.,LTD	
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CERTIFICATE OF CONFORMANCE

№:LT24090307

Product Name: Choke And Kill Hose

Product Specification: 3"×10000psi×35ft (10.67m)

Serial Number: VTC-7660257

customer number: PO890145-001

End Connections: 4-1/16"×10000psi Integral flange for sour gas service

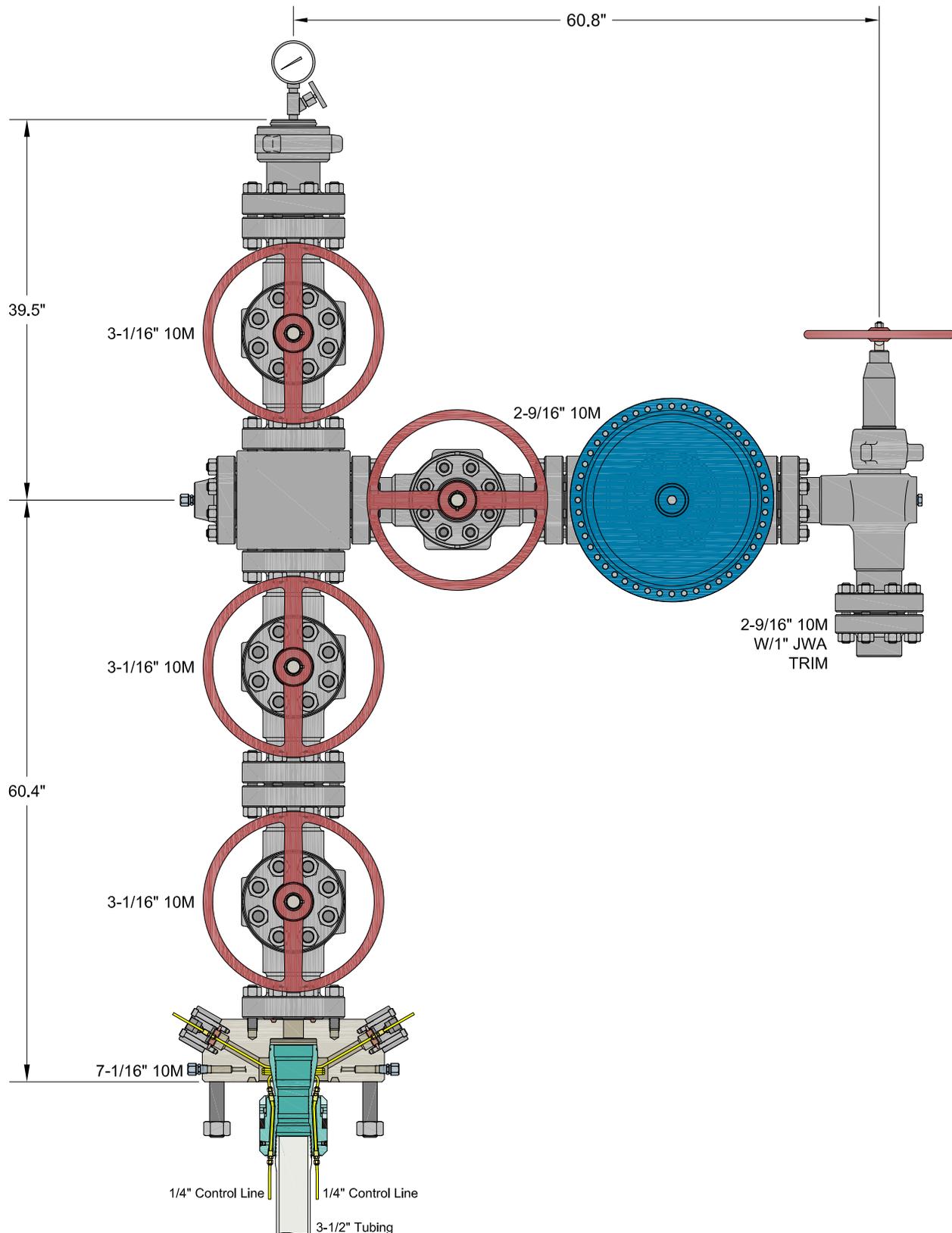
The Choke And Kill Hose assembly was produced by LUOHE LETONE HYDRAULICS TECHNOLOGY CO.,LTD.in Sep,2024, and inspected by LUOHE LETONE HYDRAULICS TECHNOLOGY CO.,LTD. according to API Spec 16C 3rd edition on Sep 3, 2024. The overall condition is good. This is to certify that the Choke And Kill Hose complies with all current standards and specifications for API Spec 16C 3rd edition .

QC Manager: Jane C

Date:Sep 3, 2024



LUOHE LETONE HYDRAULICS TECHNOLOGY CO.,LTD	
--	--



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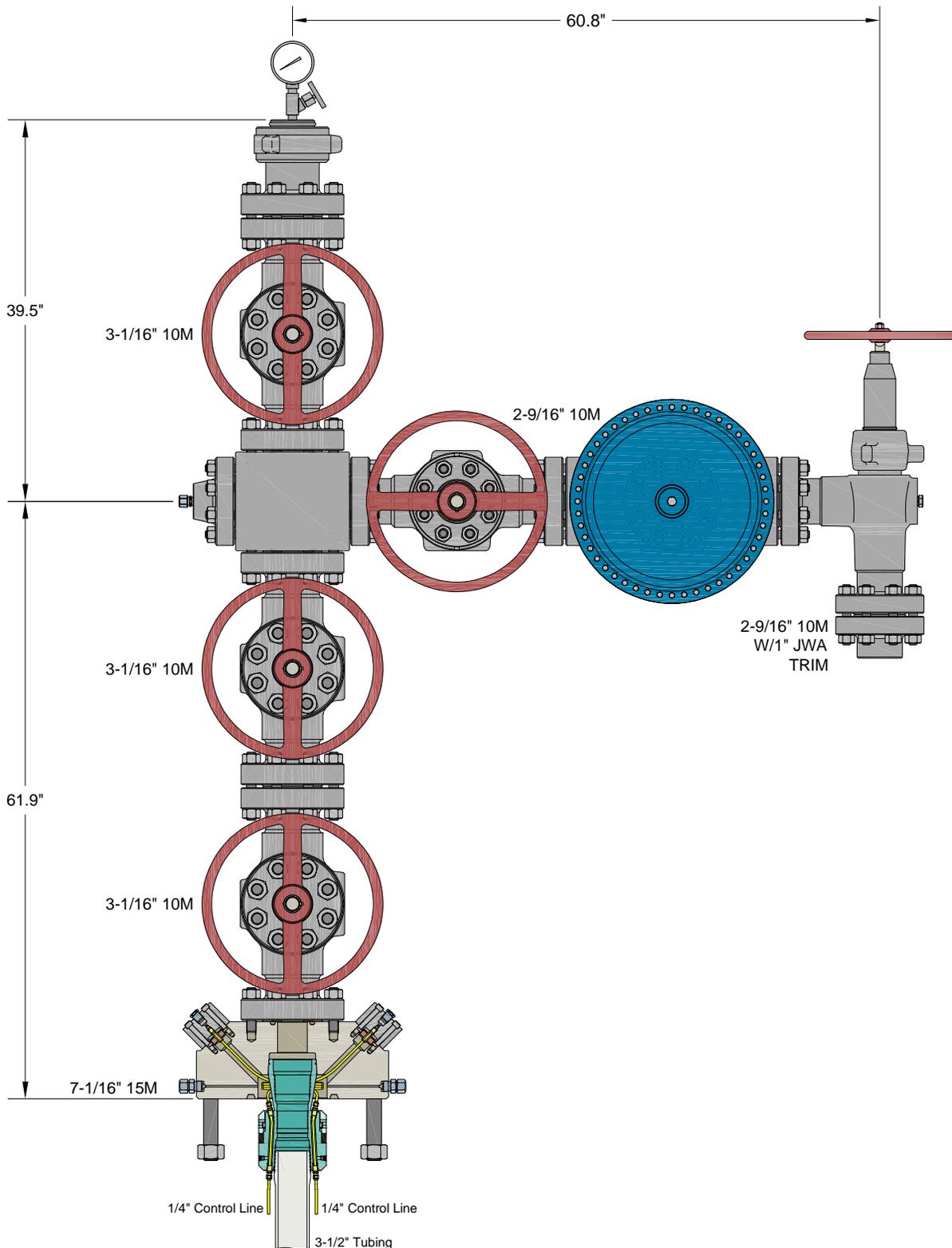
ALL DIMENSIONS APPROXIMATE

CACTUS WELLHEAD LLC

CIMAREX
HOBBS, NM

7-1/16" 10M x 3-1/16" x 2-9/16" 10M Production Tree Assembly
With 7-1/16" 10M x 3-1/16" 10M T40-CCL Tubing Head Adapter
And 7-1/16" 3-1/2" T40-CCL Tubing Hanger

DRAWN	VJK	05SEP23
APPRV		
DRAWING NO.	HBE0001018	



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ALL DIMENSIONS APPROXIMATE

CACTUS WELLHEAD LLC

CIMAREX
HOBBS, NM

7-1/16" 15M x 3-1/16" x 2-9/16" 10M Production Tree Assembly
With 7-1/16" 15M x 3-1/16" 10M T40-CCL Tubing Head Adapter
And 7-1/16" 3-1/2" T40-CCL Tubing Hanger

DRAWN	VJK	13DEC23
APPRV		
DRAWING NO.	HBE0001018	



Cactus

Quotation

Quote Number : HBE0001018

Hobbs, NM
4120 W Carlsbad Hwy
Hobbs NM 88240
Phone: 817-682-8336

Date: 09/08/2023
Valid For 30 Days

Page 1 of 5

Bill To: 7050

CIMAREX
ATTN: DAVID SHAW
202 S CHEYENNE AVENUE SUITE 1000
TULSA OK 74103
US

Ship To: 1016

2023 PRICING REVIEW
202 S Cheyenne Ave Ste 1000
Tulsa OK 74103-3001
US

	Quantity	Price	Ext Price
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CIMAREX

HOBBS, NM

PRODUCTION TREE ASSEMBLY
7-1/16" 10M X 3-1/16" 10M X 2-9/16" 10M
OPTIONAL 15M ADAPTER

QUOTATION SUMMARY:

- PRODUCTION TREE ASSEMBLY - \$49,338.02

CACTUS CONTACT:

RILEY STAFFORD / MIKE SPINKS
OFFICE: 405.708.7217 (RILEY) / 713.396.5762 (MIKE)
MOBILE: 405.445.2222 (RILEY) / 832.691.7724 (MIKE)
EMAIL: riley.stafford@cactuswellhead.com / mike.spinks@cactuswellhead.com

DUE TO VOLATILITY IN THE STEEL MARKET, PRICING FOR ITEMS MADE FROM NICKEL ALLOYS (EX. 410SS, 17-4PHSS, INCONEL, ETC.) WILL BE VALID FOR TWO WEEKS. CW WILL REVIEW AND ADJUST, IF NECESSARY, AT ORDER PLACEMENT.

PREMIUM THREADED CASING HANGERS/RUNNING TOOLS & CUSTOMER SPECIFIC EQUIPMENT ARE NON-CANCELABLE AND MAY REQUIRE A PURCHASE ORDER (PO) PRIOR TO MANUFACTURING.

SUPPLY CHAIN PRICING IS BASED UPON A 135 DAY DELIVERY ARO. EXPEDITED PRICING CAN BE PROVIDED UPON REQUEST. PRICES ARE F.O.B. CACTUS BOSSIER CITY, LA. THE FOLLOWING QUOTATION DOES NOT INCLUDE APPLICABLE MILEAGE AND SERVICE CHARGES THAT MAY BE CHARGED AT TIME OF INVOICING.



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		Quantity	Price	Ext Price
PRODUCTION TREE ASSEMBLY				
1	124314P2 ADPT,TBGHD,CW,T40-CCL,7-1/16 10M STD X 3-1/16 10M STD,W/TWO #14 DHCV W/1/4 LP INLETS,10000 PSI MAX WP,TEMP PU,MATL EE,PSL2,PR2	1.00	4,830.00	4,830.00
2	120242MV VLV,CW,SB100,3-1/16 10M FE BB/EE-0,5 (API 6A LU BB/EE-0,5 PSL3 PR1) QPQ TRIM, API 6A PR1 SECTION 10.5.2 (BORE VENT HOLE)	1.00	4,343.00	4,343.00
3	120242MV VLV,CW,SB100,3-1/16 10M FE BB/EE-0,5 (API 6A LU BB/EE-0,5 PSL3 PR1) QPQ TRIM, API 6A PR1 SECTION 10.5.2 (BORE VENT HOLE)	1.00	4,343.00	4,343.00
4	128365 CRSS,STD,AOZE,3-1/16 10M X 2-9/16 10M,6A-LU-EE-3	1.00	2,650.00	2,650.00
5	120242MV VLV,CW,SB100,3-1/16 10M FE BB/EE-0,5 (API 6A LU BB/EE-0,5 PSL3 PR1) QPQ TRIM, API 6A PR1 SECTION 10.5.2 (BORE VENT HOLE)	1.00	4,343.00	4,343.00
6	142800 TREETCAP,NEWAY,BHTA,B15A,3-1/16 10M X 3-1/2 EU ILT,W/1/2 NPT & 3.06 MIN BORE,MONOGRAMMED,TEMP PU,MATL EE,PSL2	1.00	1,270.00	1,270.00
7	BX154 RING GASKET,BX154,3-1/16 10/15/20M	5.00	10.44	52.20
8	780077-20E1 STUD,ALL-THD W/2 HVY HEX NUTS,BLK,1-8UNC X 7,API 20E BSL-1 ASTM A193 GR B7 ALL THREAD STUD W/2 API 20E BSL-1 ASTM A194 GR 2H HEAVY HEX NUTS,NO PLATING	16.00	19.83	317.28
9	132879 FLG,BLIND,AOZE,3-1/16 10M X 1/2 NPT,W/HUB,TEMP LU,MATL EE,PSL3	1.00	495.00	495.00
10	100048 FTG,GRS,VENTED CAP,1/2 NPT,4140 -50F W/ELECTROLESS NICKEL COATING NACE,K-MONEL BALL,INCONEL X-750 SPRING	1.00	59.74	59.74
11	115900MV VLV,CW,SB100,2-9/16 10M FE BB/EE-0,5 (API 6A LU BB/EE-0,5 PSL2 PR2) QPQ TRIM, API 6A PR2 ANNEX F (BORE VENT HOLE)	1.00	3,285.00	3,285.00
12	128567 VLV/ACT,OMNI,FS-R,2-9/16 10M FE EE HF C/W MODEL DX-18 DIAPHRAGM PNEUMATIC ACTUATOR, FORGED BODY, REVERSE ACTING SLAB GATE, FLOATING SEATS & DIRECTIONAL FLOW BODY BUSHING (FLOW FROM RIGHT TO LEFT): MAT'L CLASS EE, HARDFACE TRIM, TEMP PU (-20 TO 250 F), PSL-2, PR-2; ACTUATOR: MATERIAL CLASS BB, TEMP P (-20F TO 180F) PR-2 (FC TYPE) W/MANUAL OVERRIDE,ACTUATOR REQUIRES 112 PSI TO OPEN AT FULL 10,000 PSI	1.00	8,292.00	8,292.00
13	130652 CHOKE,ADJ,HOE,H2,2-9/16 10M FE X FE ALLOY BDY,3" NOMINAL,W/ 2" SSTC TRIM,H2S SERVICE,API MONOGRAMMED,PSL-2 PR-2 TEMP-PU MATL-EE-1.5	1.00	7,500.00	7,500.00
14	120734 FLG,COMP,AOZE,2-9/16 10M X 2-7/8 EU,5000 PSI MAX WP,TEMP LU,PSL3,PR1	1.00	399.00	399.00



Cactus

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 Hobbs NM 88240
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		Quantity	Price	Ext Price
15	BX153 RING GASKET,BX153,2-9/16 10/15/20M	5.00	11.54	57.70
16	780067-20E1 STUD,ALL-THD W/2 HVY HEX NUTS,BLK,7/8-9UNC X 6-1/2,API 20E BSL-1 ASTM A193 GR B7 ALL THREAD STUD W/2 API 20E BSL-1 ASTM A194 GR 2H HEAVY HEX NUTS,NO PLATING	24.00	14.70	352.80
17	135166 TBGHGR,CW,T40-CCL,7-1/16 X 3-1/2 EU API MOD BOX BTM X 3-1/2 EU BOX TOP,W/3 HBPV THD,W/ TWO 1/4 CCL & DOVETAIL SEAL,CF 124316P2,10000 PSI MAX WP,17-4PH SS,TEMP PU,MATL FF-0,5,PSL2,PR2	1.00	4,490.00	4,490.00
18	BX156 RING GASKET,BX156,7-1/16 10/15/20M	1.00	62.48	62.48
19	NVS NEEDLE VALVE,MFS,1/2 NPT MXF,10M PSI WP,CARBON STEEL BODY, 304/316SS STEM, TFE PACKING (NON-NACE)	1.00	61.16	61.16
20	PG10M PRESSURE GAUGE,10M,4-1/2 FACE, LIQUID FILLED,1/2 NPT	1.00	58.24	58.24
21	PRO Prorata Freight	0.75	2,768.56	2,076.42
				49,338.02

OPTIONAL 15M ADAPTER

22	124999P2 ADPT,TBGHD,CW,T40-CCL,7-1/16 15M STD X 3-1/16 10M STD,W/TWO #14 DHCV W/1/4 NPT INLET,10000 PSI MAX WP,TEMP PU,MAT'L EE,PSL2,PR2	0.00	7,423.00	0.00
				0.00

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For Acceptance of this Quotation
 Please Contact Ph: 713-626-8800
 sales@cactuswellhead.com

Matl:	47,261.60
Labor:	0.00
Misc:	2,076.42
Sales Tax:	0.00
Total:	49,338.02



Cactus

Quotation

Quote Number : HBE0001018

Hobbs, NM
4120 W Carlsbad Hwy
Hobbs NM 88240
Phone: 817-682-8336

Date: 09/08/2023

Valid For 30 Days

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CACTUS WELLHEAD, LLC PURCHASE TERMS AND CONDITIONS

1. **ACCEPTANCE:** Acceptance of Cactus Wellhead, LLC (herein: Company) Purchase Terms and Conditions (herein: CACTUS Purchase Terms) shall be deemed effective upon shipment of the Products and/or rendering of Services which are the subject of an order by Customer (defined as the party purchasing CACTUS Products and or Services referred on the invoice). Any proposal made by Customer for additional or different terms and conditions or any attempt by Customer to vary in any degree any of the terms and conditions of CACTUS Purchase Terms is hereby rejected.
2. **PRICING.** Each Product and Service shall be invoiced at (and Customer shall pay) the respective price shown on the reverse side hereof, or if no price is shown on the reverse side hereof, at the price shown in the current price list of Company. In addition, Customer shall pay any and all additional charges for mileage, transportation, freight, packing and other related charges, as well as any federal, state or local tax, excise, or charge applicable on the sale, transportation, or use of Products and Services, unless otherwise specified.
3. **TERMS OF PAYMENT.** Customer agrees to pay Company any and all payments due on or before thirty (30) days from invoice date at the designated address of Company. Amounts unpaid after such thirty (30) day period shall bear interest at the lesser of (i) one and one-half percent (1½%) per month or (ii) the maximum rate allowed by law. Customer shall also pay any and all of Company's attorney's fees and court costs if any amounts hereunder are collected by an attorney or through legal proceedings. Company reserves the right, among other remedies, either to terminate this agreement or to suspend further deliveries upon failure of Customer to make any payment as provided herein.
4. **LIMITED WARRANTY.** COMPANY MAKES NO WARRANTY, EXPRESSED OR IMPLIED, AS TO THE MERCHANTABILITY, FITNESS FOR PURPOSE, DESCRIPTION, QUALITY, PRODUCTIVENESS, ACCURACY OR ANY OTHER MATTER WITH RESPECT TO PRODUCTS OR SERVICES, ALL SUCH WARRANTIES BEING HEREBY SPECIFICALLY AND EXPRESSLY DISCLAIMED BY COMPANY. COMPANY MAY OFFER TECHNICAL ADVICE OR ASSISTANCE WITH REGARD TO THE PRODUCTS AND SERVICES BASED ON LABORATORY AND/OR FIELD EXPERIENCE AND CUSTOMER UNDERSTANDS AND AGREES THAT SUCH ADVICE REPRESENTS ONLY GOOD FAITH OPINIONS AND DOES NOT CONSTITUTE A WARRANTY OR GUARANTEE. THE SOLE AND EXPRESS WARRANTY PROVIDED BY COMPANY IS TO WARRANT THAT THE PRODUCTS SOLD AS LISTED ON THE REVERSE SIDE HEREOF COMPLY WITH COMPANY'S SOLE SPECIFICATION AT THE DATE AND TIME OF MANUFACTURE. COMPANY MAKES NO WARRANTY THAT SUCH PRODUCTS SHALL MEET SUCH SPECIFICATION AT ANY TIME AFTER SHIPMENT OF PRODUCTS. USE OF SUCH PRODUCTS IS SPECIFICALLY NOT WARRANTED.
5. **REMEDY.** The exclusive remedy for this warranty for Products shall be limited to, in Company's sole discretion and judgment, the replacement of defective part(s), F.O.B. Company's plant (transportation, redesign, dismantling, disposal of material and installation are not included and shall be borne and paid for by Customer), or repair of defective part(s). The exclusive remedy for this warranty for Services shall be limited to the repeat of Services performed F.O.B. Company's plant (transportation, redesign, dismantling, disposal of material and installation are not included and shall be borne and paid for by Customer). Any such repeat of Services or replacement or repair of Products shall not include any materials not sold by Company hereunder, and specifically excludes any obligation by Company related to other property of the Customer or any property of third parties. Provided, however, Company may in its sole discretion, decide to instead give Customer credit memorandum for the amounts already paid by Customer to Company for such Product or Service. IN ANY EVENT AND NOTWITHSTANDING THE LANGUAGE TO THE CONTRARY HEREIN, CUSTOMER ACKNOWLEDGES THAT ANY CLAIM IT MAY HAVE ARISING OUT OF OR IN CONNECTION WITH ANY ORIGINAL PRODUCTS AND SERVICES, ANY REPLACEMENT PRODUCTS OR REPEAT OF SERVICES AND THESE CACTUS PURCHASE TERMS SHALL BE LIMITED TO AND NOT EXCEED THE AMOUNT CUSTOMER HAS ACTUALLY PAID TO COMPANY FOR SUCH PRODUCTS AND/OR SERVICES PURSUANT HERETO. If Customer fails to make any such claim within thirty (30) days after completion of Service or delivery of Products, Customer hereby waives (to the extent permitted by applicable law) any and all claims it may or does have with respect to such Products and Services. Unless Customer is an authorized reseller of Company, Company's liability in connection with Products and Services shall extend only to Customer. CUSTOMER HEREBY INDEMNIFIES AND HOLDS COMPANY (AND ITS AGENTS, REPRESENTATIVES, OFFICERS DIRECTORS AND EMPLOYEES) HARMLESS FOR ANY LOSS, EXPENSE OR DAMAGE (WHETHER OF CUSTOMER OR OF ANY THIRD PARTY) ARISING FROM OR IN CONNECTION WITH PRODUCTS AND SERVICES, INCLUDING WITHOUT LIMITATION ANY FAILURE OF SUCH PRODUCTS AND SERVICES TO CONFORM TO CUSTOMER'S ORDER OR SPECIFICATION OR ANY OTHER STANDARD, OR ANY NEGLIGENCE OR BREACH OF WARRANTY BY COMPANY WITH RESPECT TO ANYTHING DONE OR FAILED TO HAVE BEEN DONE BY COMPANY, IF AND TO THE EXTENT THAT SUCH LOSS, EXPENSE OR DAMAGE EXCEEDS THE AMOUNT CUSTOMER HAS ACTUALLY PAID COMPANY PURSUANT HERETO FOR SUCH PRODUCTS OR SERVICES.
6. **INSPECTION.** The results of any inspection or testing reported by the Company to Customer represents only good faith opinions and are not to be construed as warranties or guarantees of the quality, classification, merchantability, fitness for purpose, condition, or liability of any equipment or material that has been inspected or tested by the Company.
7. **INSURANCE.** Each party agrees to maintain comprehensive general liability insurance in the amount of \$1,000,000 each occurrence, \$2,000,000 general aggregate, and Workers Compensation insurance per statutory requirements providing coverage for the indemnity obligations in this agreement. The Company (and such of its affiliates as it shall designate) including their officers, directors, members, shareholders, partners, joint ventures, employees, agents and representatives shall be named as additional insureds under the policies of Customer on a primary basis to the extent of its indemnification obligations set forth in these CACTUS Purchase Terms, and the policies shall also provide a waiver of subrogation rights in favor of the Company (and such of its affiliates as it shall designate) and their officers, directors, members, shareholders, employees, agents and representatives. The provisions of this Section 7 shall apply and the obligation to maintain insurance of each party in the coverages and amounts set forth herein shall remain in force regardless and independent of the validity or enforceability of the indemnity provisions of Section 8, below; the obligation to obtain insurance is a separate and independent obligation. If the insurance required herein is more or less than allowed by prevailing law, the indemnity obligations in Section 8 below shall be effective only to the maximum extent permitted under applicable law.
8. **INDEMNIFICATION.** The following indemnifications and releases of liability will apply to any Products or Services provided under this contract. COMPANY AND CUSTOMER EXPRESSLY AGREE THAT, TO THE EXTENT REQUIRED BY APPLICABLE LAW TO BE EFFECTIVE, THE INDEMNITIES AND DISCLAIMERS OF WARRANTIES CONTAINED HEREIN ARE "CONSPICUOUS."
 - A. **Customer Indemnity Obligations.** Customer hereby releases Company from any liability for, and shall protect, defend, indemnify, and hold harmless Company, its parents, affiliates, subsidiaries, partners, joint owners, joint ventures, and its contractors and subcontractors of any tier, and the officers, directors, agents, representatives, employees, insurers, and consultants (specifically excluding any member of Customer Group) of all of the foregoing, and its and their respective successors, heirs and assigns ("Company Group") from and against all costs (including the payment of reasonable attorneys' fees), losses, liabilities, demands, causes of action, damages, or claims of every type and character ("Claims"), arising out of or resulting from or related, directly or indirectly, to (i) injury to, illness or death of Customer its parents, affiliates, subsidiaries, partners, joint owners, joint ventures, and its contractors and subcontractors of any tier, and the officers, directors, agents, representatives, employees, customers, insurers, invitees and consultants of all of the foregoing, and its and their respective successors, heirs and assigns ("Customer Group"), or (ii) loss of or damage to any property of any member of Customer Group, REGARDLESS OF THE CAUSE OF SUCH CLAIMS, INCLUDING THE NEGLIGENCE (WHETHER SOLE, JOINT OR CONCURRENT, ACTIVE OR PASSIVE) STRICT LIABILITY, OR ANY OTHER LEGAL FAULT OR RESPONSIBILITY OF ANY MEMBER OF COMPANY GROUP, BUT NOT IN THE CASE OF GROSS NEGLIGENCE OR WILLFUL MISCONDUCT OF ANY MEMBER OF COMPANY GROUP.
 - B. **Company Indemnity Obligations.** Company hereby releases Customer from any liability for, and shall protect, defend, indemnify, and hold harmless Customer from and against all Claims arising out of or resulting from or related, directly or indirectly, to (i) injury to, illness or death of any member of Company Group, or (ii) loss of or damage to any property of any member of Company Group, REGARDLESS OF THE CAUSE OF SUCH CLAIMS, INCLUDING THE NEGLIGENCE (WHETHER SOLE, JOINT OR CONCURRENT, ACTIVE OR PASSIVE) STRICT LIABILITY, OR ANY OTHER LEGAL FAULT OR RESPONSIBILITY OF ANY MEMBER OF CUSTOMER GROUP, BUT NOT IN THE CASE OF GROSS NEGLIGENCE OR WILLFUL MISCONDUCT OF ANY MEMBER OF COMPANY GROUP.
 - C. **Third Party Claims.** Notwithstanding the foregoing, to the extent of its negligence, Company and Customer shall each indemnify, defend and hold harmless from and against all Claims, of every type and character, which are asserted by third parties for bodily injury, death or loss or destruction of property or interests in property in any manner caused by, directly or indirectly resulting from, incident to, connected with or arising out of the work to be performed, Services to be rendered or Products or materials furnished to Customer. When personal injury, death or loss of or damage to property is the result of joint or concurrent negligence of Customer and Company, the indemnitor's duty of indemnification shall be in proportion to its allocable share of such negligence.
 - D. **Pollution.** Company agrees that it shall be totally responsible for, and shall protect, defend and indemnify, Customer for all losses, damages, claims, demands, costs, charges, and other expenses, including attorneys' fees, for any and all waste and/or hazardous substances which are in Company Group's exclusive possession and control and directly associated with Company Group's equipment and facilities, EVEN IF THE LOSSES, DAMAGES, CLAIMS, DEMANDS, COSTS, FEES, AND EXPENSES ARE CAUSED BY OR CONTRIBUTED TO BY THE NEGLIGENCE OF CUSTOMER GROUP. Customer shall assume all responsibility for, including control and removal of, and shall protect, defend and indemnify Company Group from and against all Claims arising directly or indirectly from all other pollution or contamination which may occur during the conduct of operations hereunder, including, but not limited to, that which may result from fire, blowout, cratering, seepage or any other uncontrolled flow of oil, gas, water or other substance, EVEN IF THE LOSSES, DAMAGES, CLAIMS, DEMANDS, COSTS, FEES, AND EXPENSES ARE CAUSED BY OR CONTRIBUTED TO BY THE NEGLIGENCE OF COMPANY GROUP.
 - E. **Wild Well.** Customer shall release Company Group of any liability for, and shall protect, defend and indemnify Company Group for any damages, expenses, losses, fines, penalties, costs, expert fees and attorneys' fees arising out of a fire, blow out, cratering, seepage or wild well, including regaining control thereof, debris removal and property restoration and remediation. THIS INDEMNITY APPLIES EVEN IF THE LOSSES, DAMAGES, CLAIMS, DEMANDS, COSTS, FEES, AND EXPENSES ARE CAUSED NEGLIGENCE (WHETHER SOLE, JOINT OR CONCURRENT, ACTIVE OR PASSIVE, ORDINARY OR GROSS) STRICT LIABILITY, OR ANY OTHER LEGAL FAULT OR RESPONSIBILITY OF ANY MEMBER OF COMPANY GROUP.
 - F. **Underground Damage.** Customer shall release Company Group of any liability for, and shall protect, defend and indemnify Company Group from and against any and all claims, liability and expenses resulting from operations related to the work under this agreement on account of injury to, destruction of, or loss or impairment of any property right in or to oil, gas or other mineral substance or water, if at the time of the act or omission causing such injury, destruction, loss or impairment said substance and not been reduced to physical possession above the surface of the earth, and for any loss or damage to any formation, strata, or reservoir beneath the surface of the earth. THIS INDEMNITY APPLIES EVEN IF THE LOSSES, DAMAGES, CLAIMS, DEMANDS, COSTS, FEES, AND EXPENSES ARE CAUSED NEGLIGENCE (WHETHER SOLE, JOINT OR CONCURRENT, ACTIVE OR PASSIVE, ORDINARY OR GROSS) STRICT LIABILITY, OR ANY OTHER LEGAL FAULT OR RESPONSIBILITY OF ANY MEMBER OF COMPANY GROUP.
 - G. The foregoing indemnities set forth in these CACTUS Purchase Terms are intended to be enforceable against the parties hereto in accordance with the express terms and scope hereof notwithstanding Texas' Express Negligence Rule or any similar directive that would prohibit or otherwise limit indemnities because of the negligence (whether sole, concurrent, active or passive, ordinary or gross) or other fault or strict liability of Company or Customer.
 - H. If a claim is asserted against one of the parties to this agreement which may give rise to a claim for indemnity against the other party hereto, the party against whom the claim is first asserted must notify the potential indemnitor in writing and give the potential indemnitor the right to defend or assist in the defense of the claim.
9. **RISK OF LOSS.**
 - A. Title and risk of loss shall pass to Customer upon delivery as specified in Article 11. Customer's receipt of any material delivered hereunder shall be an unqualified acceptance of, and a waiver by Customer of any and all claims with respect to, such material unless Customer gives Company written notice of claim within thirty (30) days after such receipt. Notwithstanding the foregoing, installation or use of materials or equipment shall unequivocally constitute irrevocable acceptance of said materials. Customer assumes all risk and liability for the results obtained by the use of any material or Products delivered hereunder in work performed by on behalf of Customer or in combination with other or substances. No claim of any kind, whether as to material delivered or for non-delivery of material, and whether or not based on negligence, shall be greater in amount than the purchase price of the


Cactus
Quotation
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 Hobbs, NM
 4120 W Carlsbad Hwy
 Hobbs NM 88240
 Phone: 817-682-8336

Date: 09/08/2023

Valid For 30 Days

Page 5 of 5

material in respect of which such claim is made.

B. For Services, Company shall not be liable for loss or deterioration of any equipment and material of Customer under Company's control or stored on Company's premises after Company has completed its work if such loss or deterioration results from atmospheric condition, Act of God or other occurrence not within the reasonable control of Company.

10. **TERMINATION.** Company reserves the right to terminate the order at issue, or any part hereof, solely for its convenience at any time without cause with notice to Customer. Company shall have the right to cancel any unfilled order without notice to Customer in the event that Customer becomes insolvent, adjudicated bankrupt, petitions for or consents to any relief under any bankruptcy reorganization statute, violates a term of these CACTUS Purchase Terms, or is unable to meet its financial obligations in the normal course of business. In the event of such termination, Company shall immediately stop all work hereunder. Prior to delivery, Customer may terminate this order without cause upon thirty (30) day notice in writing to Company. In the event of such termination, Company at its sole option shall cease work up to thirty (30) days after such notice. Upon the cessation of work, Customer agrees to pay Company a reasonable termination charge consisting of a percentage of the invoice price, such percentage to reflect the value of the Products, Services or work in progress completed upon the cessation of work. Customer shall also pay promptly to Company any costs incurred due to paying and settling claims of Company's vendors or subcontractors arising out of the termination of the order by Customer.

11. **DELIVERY.** Unless different terms are provided on the face of this order, all items are sold FOB Company's manufacturing facility in Bossier City, LA., and Customer shall bear the cost of transportation to any other named destination. Upon notification of Company of delivery, Customer shall become liable and shall bear all risk of loss associated with the Products at issues regardless of whether the Products are at a location controlled by Company and whether or not caused by the negligence of Company. In the case of Customer pick-up, the truck furnished by Customer is the destination and Company's obligations regarding shipments are fulfilled when the Products are loaded on the truck. Items to be shipped to any other destination outside of the United States are sold FOB port of shipment (Customer will deliver and bear the cost of transportation to the named port and will bear the cost of transportation thereafter to the final destination). The means of shipment and carrier to the point at which Company's liability for transportation costs ceases shall be chosen by Company. Excess packing, marking, shipping, and transportation charges resulting from compliance with Customer's request shall be for Customer's account. Unless otherwise agreed in writing, delivery time is not of the essence.

12. **RETURNS/REFUND.** Within ninety (90) days of delivery, Customer has the option to return any non-defective Products (any Products found to be defective will be subject to the warranty and remedies expressed in paragraphs four (4) and five (5) above). Customer shall bear all costs of shipment and/or transportation for such return and risk of loss for the returned Products shall remain with Customer until re-delivered to Company's Yard. Customer shall receive a full refund for any returns, less a twenty percent (20%) restocking fee. Company at all times reserves the right to designate certain Products as non-refundable in Company's Sales Quote or Sales Order. In addition, any made-to-order, special order, and/or Product manufactured to Customer specifications are NOT returnable.

13. **DELAYS.** If a specific shipping date is either not given or is estimated only, and is not promised on the face of this order or in a separate writing signed by Company, Company will not be responsible for delays in filling this order nor liable for any loss or damages resulting from such delays. If a specific shipping date is promised, Company will not be liable for delays resulting from causes beyond Company's control, including without limitation accidents to machinery, fire, flood, act of God or other casualty, vendor delays, labor disputes, labor shortages, lack of transportation facilities, priorities required by, requested by, or granted for the benefit of any governmental agency, or restrictions imposed by law or governmental regulation.

14. **LIMITATION OF DAMAGES.** Notwithstanding any other provision contained herein, Company shall not be liable to Customer Group or any third party for consequential (whether direct or indirect damages), indirect, incidental, special or punitive damages, howsoever arising, including, but not limited to loss of profits (whether direct or indirect damages), revenues, production or business opportunities, WHETHER OR NOT SUCH LOSSES ARE THE RESULT IN WHOLE OR IN PART FROM THE NEGLIGENCE (WHETHER SOLE, JOINT, CONCURRENT OR COMPARATIVE, ACTIVE OR PASSIVE, ORDINARY OR GROSS) OF COMPANY GROUP, OR ANY DEFECT IN THE PREMISES, PRE-EXISTING CONDITIONS, PATENT OR LATENT, BREACH OF STATUTORY DUTY, STRICT LIABILITY OR ANY OTHER THEORY OF LEGAL LIABILITY OF COMPANY GROUP (EXCLUDING ONLY LOSSES CAUSED BY THE WILLFUL MISCONDUCT OF COMPANY GROUP).

15. **SECURITY INTEREST.** Customer grants Company, and Company reserves, a security interest, covering all Customer's obligations under these terms (including any liability for breach of Customer's obligations), and applying to all of Customer's right, title, and interest in the Leased Equipment, together with all accessions thereto and any proceeds that may arise in connection with the sale or disposition thereof. Customer shall cooperate with Company in the filing of Financing Statements to perfect such security interest. Furthermore, Customer authorizes Company to execute and file Financing Statements without Customer's signature in any jurisdiction in which such procedure is authorized. Customer warrants, covenants and agrees that it will not, without prior written consent of Company, sell, contract to sell, lease, encumber, or dispose of the Leased Equipment or any interest in it until all obligations secured by this security interest have been fully satisfied.

16. **PATENT AND INTELLECTUAL PROPERTY.** The sale of any Products hereunder does not convey any intellectual property license by implication, estoppel or otherwise regarding the Products. Company retains the copyright in all documents, catalogs and plans supplied to Customer pursuant to or ancillary to the contract. Unless otherwise agreed in writing, Customer shall obtain no intellectual property interest in any Company Product.

17. **TAXES.** Unless otherwise specifically provided for herein, Customer shall be liable for all federal, state, or local taxes or import duties assessed by any governmental entity of any jurisdiction in connection with the Products or Services furnished hereunder.

18. **DECEPTIVE TRADE PRACTICES.** Customer acknowledges the application of Section 17.45(4) of the Texas Deceptive Trade Practices Act (Texas Business Commission Code §17.41 et. seq.) (the "Act") to any transaction contemplated hereby and represents that it is not a "consumer" for the purposes of the Act.

19. **NO WAIVER.** Failure to enforce any or all of the provisions in these CACTUS Purchase Terms in any particular instance shall not constitute or be deemed to constitute a waiver of or preclude subsequent enforcement of the same provision or any other provision of these CACTUS Purchase Terms. Should any provision of these CACTUS Purchase Terms be declared invalid or unenforceable all other provisions of these CACTUS Purchase Terms shall remain in full force and effect.

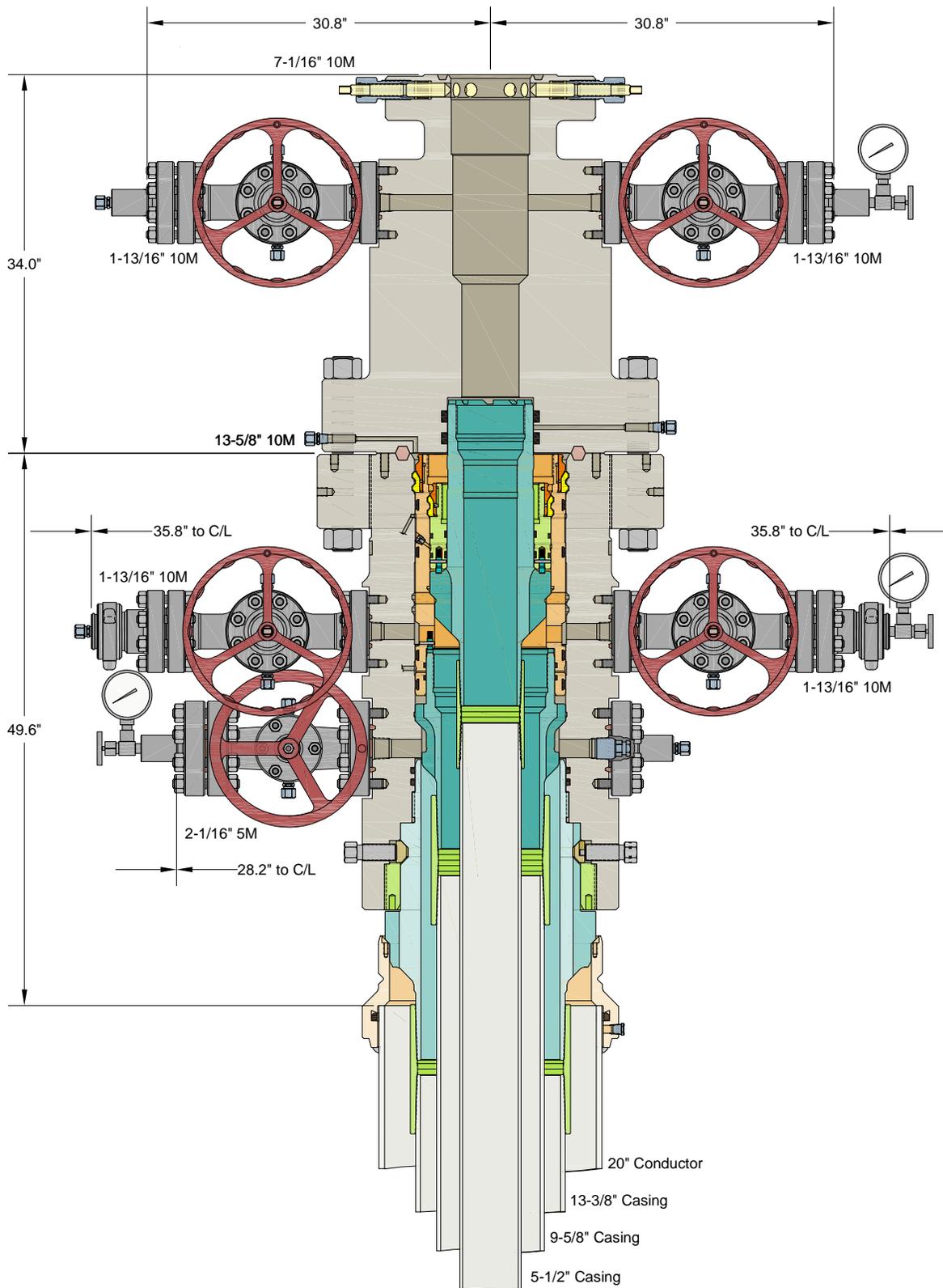
20. **CHOICE OF LAW.** THIS AGREEMENT SHALL BE GOVERNED BY AND CONSTRUED IN ACCORDANCE WITH THE LAWS OF THE STATE OF TEXAS AND SHALL BE PERFORMABLE IN HARRIS COUNTY, TEXAS. WITHOUT REGARD TO CONFLICTS OF LAW PRINCIPALS AND WAIVER OF SAME, EACH PARTY HERETO SUBMITS TO THE JURISDICTION OF THE COURTS OF THE STATE OF TEXAS IN HARRIS COUNTY, TEXAS AND THE FEDERAL COURTS IN AND FOR THE SOUTHERN DISTRICT OF TEXAS SITTING IN HOUSTON, TEXAS IN CONNECTION WITH ANY DISPUTE ARISING UNDER THIS AGREEMENT OR ANY DOCUMENT OR INSTRUMENT ENTERED INTO IN CONNECTION HEREWITH.

21. **AUTHORITY.** Customer warrants and represents that the individual receiving this order at issue on behalf of Customer has the authority to enter into these CACTUS Purchase Terms on behalf of Customer, and that upon receipt these CACTUS Purchase Terms shall be binding upon Customer.

22. **FORCE MAJEURE.** If Company is unable to carry out its obligations hereunder by reason of force majeure, then upon Company's giving of notice and reasonably full particulars of such force majeure in writing to Customer, Company's obligations that are affected by force majeure shall be suspended during the continuance of the force majeure and Company shall not be liable to Customer for any damages incurred by the Customer as a result thereof.

23. **CONFIDENTIALITY.** Customer acknowledges the highly secret and valuable nature of all proprietary inventions, methods, processes, designs, know-how, and trade secrets embodied in the Company's equipment, Products and Services and its components (hereinafter referred to as "Confidential Data"). Accordingly, Customer agrees not to disclose or use any Confidential Data. Customer further agrees to take any and all necessary precautions to prevent disclosure of the Confidential Data associated with the Company's equipment, Products and Services and components thereof to persons other than those employees of Customer for whom such disclosure is necessary for performance of the work hereunder.

24. **COMPLIANCE.** Customer expressly agrees to comply with and abide by, all of the laws of the United States and of the State of Texas, including, but not limited to, OSHA, EPA and all rules and regulations now existing or that may be hereafter promulgated under and in accordance with any such law or laws, and hereby agrees to indemnify and hold Company harmless from any and all claims, demands, or damages incurred by Company arising from Customer's failure to comply with all laws and governmental regulations. The indemnities in this paragraph shall be in addition to any other indemnity obligations between Customer and Company, including any other indemnity obligations contained herein.



INFORMATION CONTAINED HEREIN IS THE PROPERTY OF CACTUS WELLHEAD, LLC. REPRODUCTION, DISCLOSURE, OR USE THEREOF IS PERMISSIBLE ONLY AS PROVIDED BY CONTRACT OR AS EXPRESSLY AUTHORIZED BY CACTUS WELLHEAD, LLC.

ALL DIMENSIONS APPROXIMATE

CACTUS WELLHEAD LLC

CIMAREX
HOBBS, NM

20" x 13-3/8" x 9-5/8" x 5-1/2" MBU-3T-CFL Wellhead Sys.
With 13-5/8" 10M x 7-1/16" 10M CTH-DBLHPS Tubing Head
And 9-5/8" & 5-1/2" Fluted Mandrel Casing Hangers

DRAWN	VJK	01MAY24
APPRV		
DRAWING NO.	HBE0001215	

Standard New Mexico Variances

Variance Request #1: Skid Rig after Cementing Surface Casing

Coterra requests permission to skid the rig to the next well on the pad in order to begin operations immediately after the cement job for the surface casing has been completed. After the cement job is completed, no operations on the subject well will be conducted until at least 8 hours have elapsed, and both lead and tail slurries have achieved 500 psi compressive strength. While cement cures, the surface casing of the subject well will be suspended in the well by a mandrel and landing ring system, which is independent from the rig and ensures that casing remains centered while the rig is active on other wells. Before skidding the rig, a TA cap is installed on the subject well.

Variance Request #2: Offline Cement Intermediate Casing

Coterra requests approval to execute an offline cement job on the Intermediate casing string. The procedure will include the following:

- Land casing in the wellhead with a solid-body casing hanger
- Install backpressure valve
- Skid rig to next well in drilling sequence
- Check for pressure and remove backpressure valve
- Install cement head and risers from casing valves
- Circulate down casing taking returns through appropriately designed flowback equipment
- Pump lead & tail cement
- Displace cement and land plug
- Verify floats are holding
- Rig down cement crew
- Install backpressure valve and TA cap

Variance Request #4: Utilize Co-Flex Choke Line

Coterra requests approval to utilize a co-flex choke line between the BOP and choke manifold. Certification for the proposed co-flex choke line is attached. The choke line is not required by the manufacturer to be anchored. In the event the specific co-flex choke line is not available, one of equal or higher rating will be used. Variance to include Hammer Union connections on lines downstream of the buffer tank only.

Variance Request #5: 10M BOPE & 5M Annular

Coterra requests permission to utilize a 5M annular BOP with a 10M BOP primary system. The 10M BOP system will include upper pipe rams, blind rams, and lower pipe rams, all tested to 10K, 100% of the rated working pressure. The annular element will be tested to 5K, 100% of the

rated working pressure. As noted in the well control plan, if pressure approaches the rated working pressure of the 5K annular element while in use, the upper pipe rams will be closed, and the annular opened so as to not exceed the rated working pressures.

Variance Request #6: Break Testing BOPE

In compliance with API Standard 53, Coterra requests a variance to complete a BOP *break test* following any rig walking operation during the batch drilling sequence of multi-well pads. For this variance, the following stipulations will be met:

1. The first well in the batch drilling sequence for each hole section will be drilled to a depth sufficient to identify any depth-dependent drilling hazards prior to conducting break tests in subsequent wells.
2. On the first well in the drilling sequence, a full BOP test will be completed.
 - a. For the full BOP test, the Annular Preventer will be tested to 100% of its rated working pressure.
3. For each break test, the upper pipe rams will serve as the top barrier, and the BOP test plug will serve as the bottom barrier against which the BOP connection will be tested.
4. Each break test will include a choke manifold shell test, conducted as a single test against the adjustable choke to 100% of the BOP system's maximum working pressure.
5. *Break tests* will only be conducted for drilling intervals terminating above the Wolfcamp formation.
6. For any drilling sequence utilizing consecutive *break tests*, no more than 21 days will elapse between full BOP tests.

Variance Request #7: Offline Cement Production Casing

Coterra requests approval to execute an offline cement job on the production casing string. The procedure will include the following:

- Land casing in the wellhead with a solid-body casing hanger
- Install backpressure valve
- Skid rig to next well in drilling sequence
- Check for pressure and remove backpressure valve
- Install cement head and risers from casing valves
- Circulate down casing taking returns through appropriately designed flowback equipment
- Pump cement volumes
- Displace cement and land plug
- Verify floats are holding
- Rig down cement crew
- Install backpressure valve and TA cap

Variance Request #8: Offline Testing BOPE

Coterra requests approval to test the BOPE prior to the first installation of BOPE on a wellhead system. In this case, the following procedure will be followed:

- While batch drilling the surface sections of the wells on pad, each BOP element will undergo a full test to 100% working pressure, as defined in the Well Control Plan.
- The BOPE will be tested utilizing a blank 13-5/8" 10M flanged connection below the lower pipe rams
- Once equipment is installed on the first well, the full BOP test will be completed by inserting the test plug in the wellhead and testing the break and any BOP equipment that was not tested prior to installation.

Coterra: Well Control Plan



Well Control Plan

Warning Signs of a Kick

If a kick is ever suspected, perform flow check.

While Drilling:

1. Drilling break or increase in penetration rate
2. Increase of flow
3. Pit gain
4. Flow without pumping
5. Circulating pressure decrease and/or spm increase
6. Increase in gas cutting at the shakers
7. Decrease in cuttings at shakers

While Tripping:

1. Hole not taking the proper fill on trip out of hole
2. Hole returns too much mud on trip in hole
3. Flow without pumping

While Out of the Hole:

1. Flow
2. Pit gain

Well Control Procedures with Diverter

A TIW valve in the open position must be on the rig floor at all times.

If rotating head is installed:

1. Perform flow check.
2. If well is flowing, divert flow down flow line and through separator, before returning across shakers.
3. Swap to 10 ppg brine and circulate around. Notify superintendent.

Coterra: Well Control Plan

4. If well becomes uncontrollable, close annular, which will open HCR to divert flow away from rig.

If rotating head is not installed:

1. Perform flow check.
2. If well is flowing uncontrollably, close annular, which will open HCR to divert flow away from rig.
3. Swap to 10 ppg brine and circulate around. Notify superintendent.
4. After 10 ppg is circulated around shut pumps off and perform flow check.

Well Control Procedures

Coterra follows a hard shut-in procedure. Choke will be in the closed position.

General Well Control

1. If in doubt, secure the well first, then inform your supervisor.
2. Never wait for approval to shut in the well.
3. Verify that the mud pump is off before you close the BOP.
4. Always check and verify the well is properly secured after shut in.
5. Always install TIW valve in the open position.
6. If TIW valve is installed and then closed, apply estimated DP shut-in pressure above valve before opening.
7. The weak link in the mud system and mud lines is the pressure relief valve or pop off valve on the mud pump.
8. Keep the TIW valve wrench in a designated location on the rig floor and in the open position.
9. Use a drill string float above the bit. Don't perforate or disable the float.
10. In the event wellbore pressure encroaches to the maximum rated pressure of the annular, primary pressure control will be switched to the higher rated components (i.e., switch from annular to pipe rams) – upper pipe rams will be closed, and the annular opened in order to not exceed maximum rated pressures.

Hard Shut-In

1. Remote choke is closed.
2. Stop pumping and space out.
3. Check for flow.
4. To shut in, close annular or pipe ram if no annular is present.
5. Open the HCR valve.
6. Check systems, bump float. Record Initial Shut in Drill pipe pressure and Initial shut in casing pressure.

Coterra: Well Control Plan

Flow Check when on Bottom

1. Alert crew & stop rotating
2. Pick up and space out
3. Shut down pumps
4. Observe well for flow
5. Shut-in if flowing

Shutting in while Drilling

1. After flow has been detected via flow check, kill pumps, shut in well and open HCR
2. Verify well is shut-in and flow has stopped
3. Notify supervisory personnel
4. Record data
5. Begin go forward planning

Flow Check while Tripping

1. Alert crew & pick up / space out
2. Stop pipe movement. Set slips with tool joint accessible at rotary table
3. Install open TIW safety valve and close valve
4. Observe well for flow
5. Shut-in if flowing

Shutting in while Tripping

1. Install open TIW safety valve and close valve
2. Shut-in the well
3. Verify well is shut-in and flow has stopped
4. Install IBOP
5. Notify supervisory personnel
6. Record data; SICP, shut-in time, kick depth, and pit gain
7. Begin go forward planning

Shutting in while Out of Hole

1. Sound alarm
2. Shut-in well: close blind rams.
3. Verify well is shut-in and monitor pressures.
4. Notify supervisory personnel
5. Record data; SICP, shut-in time, kick depth, and pit gain
6. Begin go forward planning

Information to Record while Shut-In

1. Shut in drill pipe pressure every 5 minutes

Coterra: Well Control Plan

2. Shut in casing pressure every 5 minutes
3. Pit gain
4. Total volume in pit system
5. Mud weight in suction pit
6. Current depth
7. Total depth
8. Time the well is shut in

H2S with Annular Diverter:

1. Kill Pumps, close annular, which will open HCR, to divert flow away from rig.
2. Muster and take head count.
3. Call ASSI to check location for H2S. Call Coterra superintendent.
4. After ASSI has checked for H2S the path forward will be decided from Coterra superintendent.

H2S with BOP's:

1. Kill pumps
2. Shut in annular with HCR open and chokes closed.
3. Muster and take head count.
4. Call ASSI to check location for H2S. Call Coterra superintendent.
5. After ASSI has checked for H2S. discuss path forward with Coterra superintendent

Procedure for Closing Blind Rams

- Open HCR valve (visually check that the HCR valve is open – stem in the valve is open, stem out the valve is closed).
- Verify all circulating pumps are off (mud pumps, trip tank pump, etc.)
- Ensure that the hydraulic choke is in the closed position.
- Close the blind rams and place the “blind rams closed, bleed pressure and remove hole cover before opening” sign on the console.
- Monitor the shut in casing pressure gauge periodically while the blinds are closed to ensure that wellbore pressure isn't building. If pressure build up is observed, monitor the shut in casing pressure more frequently & document. Notify rig management and Coterra representative of the pressure build up.
- Ensure that the inner bushings are locked into the master bushings if applicable.
- Install hole cover.

Procedure for Opening Blind Rams

- Make sure choke manifold is aligned correctly.
- Open the hydraulic choke to bleed any trapped pressure that may be under the blind rams. (Even if the casing pressure gauge is reading zero).

Coterra: Well Control Plan

- Confirm that no flow is discharging into the trip tank or possum bellies of the shale shaker (wherever the separator is discharging into).
- Remove hole cover.
- Confirm that the inner bushing are locked into the master bushings if applicable.
- Clear all personnel from the rig floor.
- Remove sign and open blind rams.
- Return the BOPE to its original operating alignment.

BOP Drills

- Drilling crews should conduct BOP drills weekly from BOP nipple up to TD for reaction time to properly simulate securing the well. Record BOP drills on that day's report.
- Standard precautions such as checking the accumulator for proper working pressure, function testing rams, and recording slow pump rates are performed on a daily basis or on trips..
- All supervisory personnel onsite need to be properly trained and currently hold certification from an approved blowout prevention school. Any deviation from this needs to be discussed prior to spud.
- Drillers should always notify the tool pusher and the drilling foreman before performing a blowout drill.

Choke Manifold Freeze Prevention

- When possible, blow out the choke & kill lines as well as the choke manifold with rig air to remove water based fluids.
- When clear water is being placed into the choke & kill line as well as the choke manifold, make sure that the water has a mixture of 30% methanol added.
- When applicable, choke & kill lines as well as choke manifold needs to be pumped through with the rig pump by the driller to ensure that the lines aren't plugged with settling barite or solids.

Coterra Energy
 Site: Sun-Sombrero Pad
 Well: Sombrero State Com 223H
 Wellbore: OH
 Design: Plan #1
 Rig: Cactus 148



Azimuths to Grid North
 True North: -0.50°
 Magnetic North: 5.52°

Magnetic Field
 Strength: 47261.9nT
 Dip Angle: 60.38°
 Date: 3/29/2026
 Model: HDGM2026

SHL

320' FNL, 1408' FEL
 RKB Elevation: GE 3739.2' + KB 23' @ 3762.20usft (Cactus 148)

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	607601.13	826495.09	32.6669197	-103.4066815	

To convert a Magnetic Direction to a Grid Direction, Add 5.52°

PROJECT DETAILS: Lea County, NM (NAD 83)
 Geodetic System: US State Plane 1983
 Datum: North American Datum 1983
 Ellipsoid: GRS 1980
 Zone: New Mexico Eastern Zone



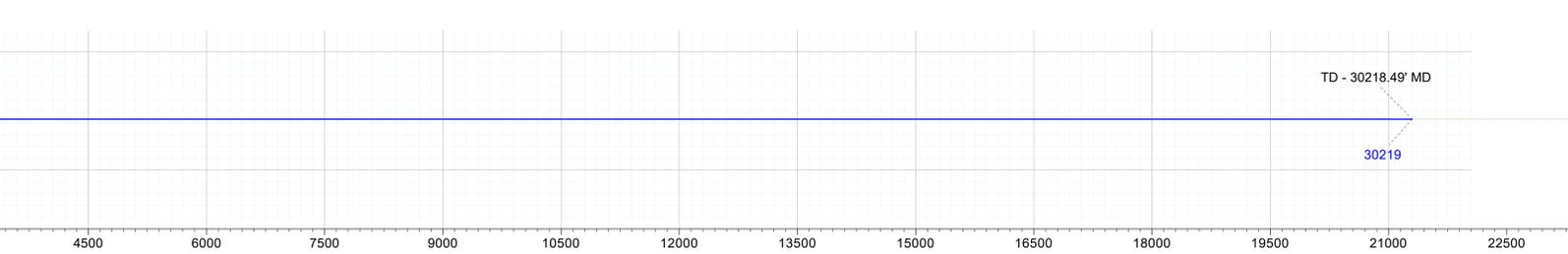
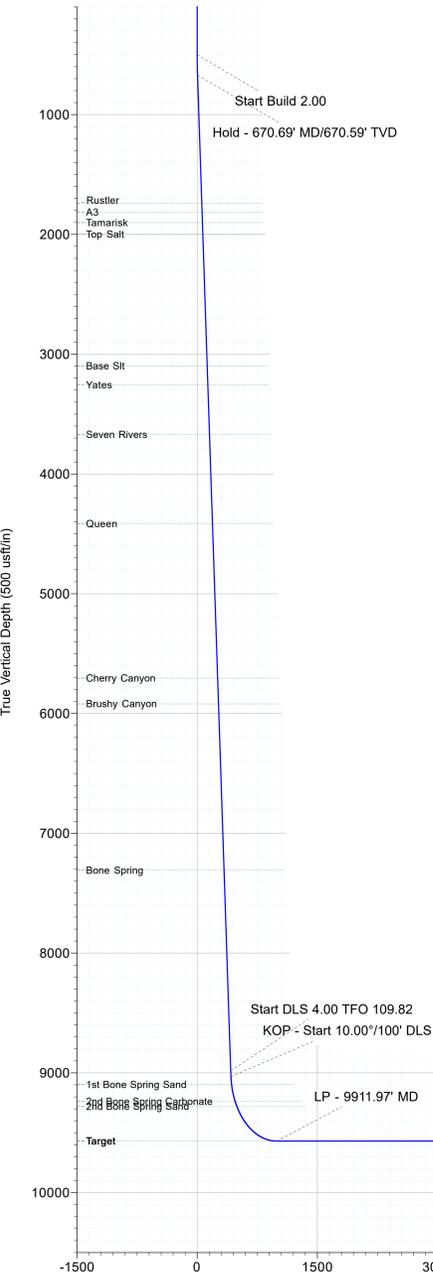
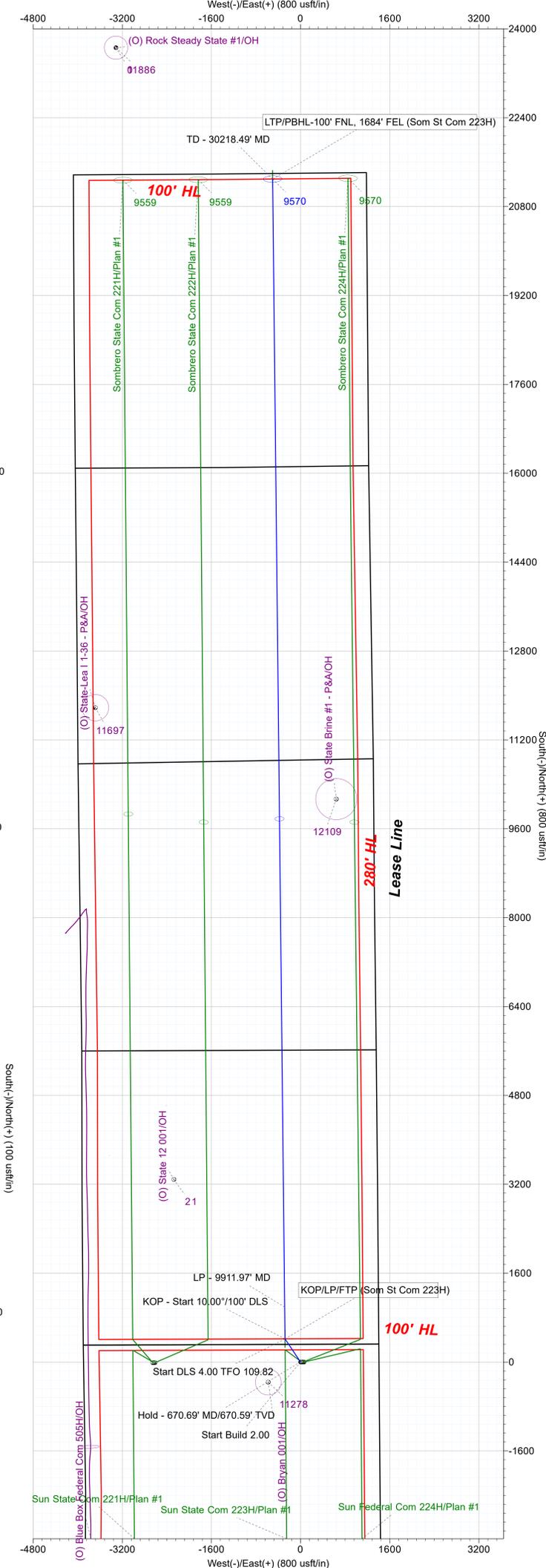
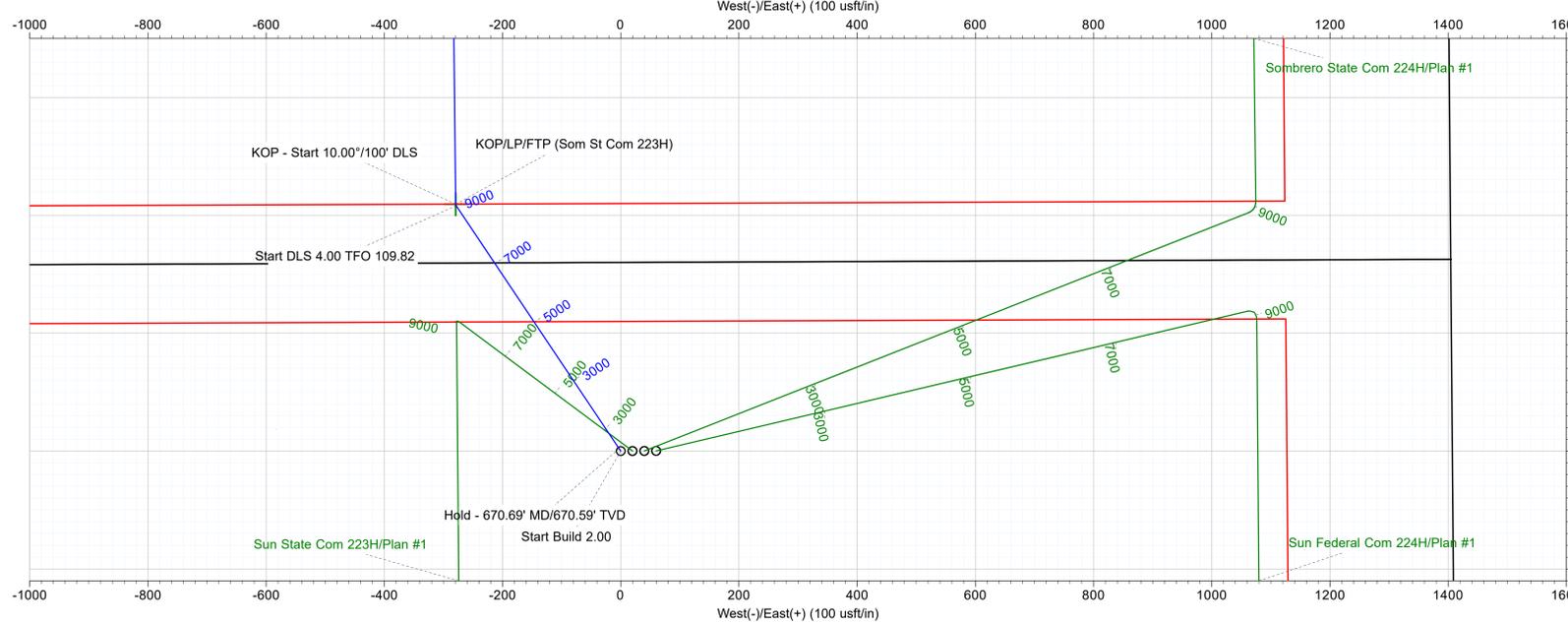
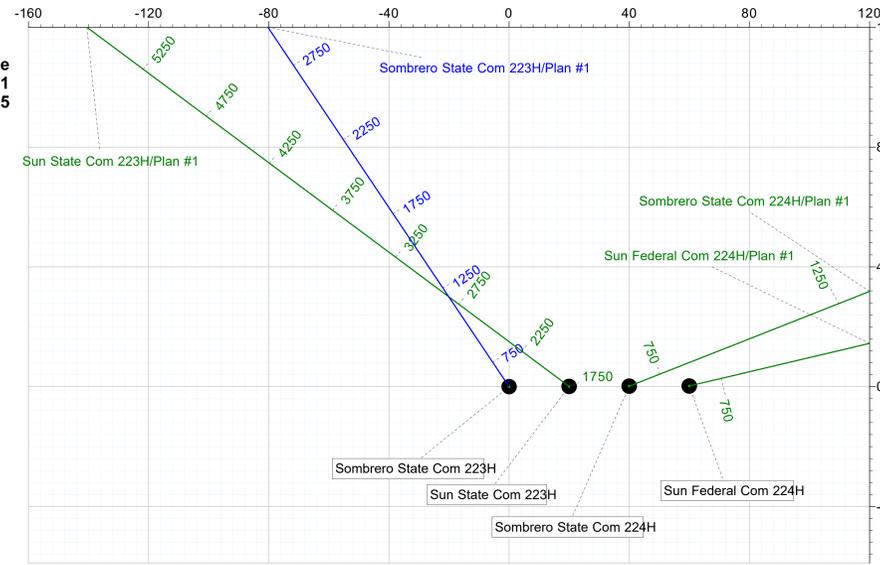
SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Annotation
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	Start Build 2.00
670.69	3.41	326.22	670.59	4.23	-2.83	2.00	326.22	4.26	Hold - 670.69' MD/670.59' TVD
8997.02	3.41	326.22	8982.14	416.35	-278.47	0.00	0.00	419.29	Start DLS 4.00 TFO 109.82
9044.97	3.30	359.39	9030.02	418.92	-279.28	4.00	109.82	421.87	KOP - Start 10.00°/100' DLS
9911.97	90.00	359.39	9570.00	990.90	-285.38	10.00	0.00	993.88	LP - 9911.97' MD
30218.49	90.00	359.39	9570.00	21296.26	-501.93	0.00	0.00	21300.40	TD - 30218.49' MD

WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
KOP/LP/FTP (Som St Com 223H)	9030.02	418.92	-279.28	608020.05	826215.81	32.6680777	-103.4075771
LTP/PBHL-100' FNL, 1684' FEL (Som St Com 223H)	9570.00	21296.26	-501.93	628897.39	825993.16	32.7254611	-103.4077085

TVDPATH	FORMATION
1740.00	Rustler
1814.00	A3
1902.00	Tamarisk
2000.00	Top Salt
3098.00	Base Sit
3256.00	Yates
3670.00	Seven Rivers
4416.00	Queen
5706.00	Cherry Canyon
5920.00	Brushy Canyon
7310.00	Bone Spring
9098.00	1st Bone Spring Sand
9238.00	2nd Bone Spring Carbonate
9282.00	2nd Bone Spring Sand
9570.00	Target



Coterra Energy

Lea County, NM (NAD 83)
Sun-Sombrero Pad
Sombrero State Com 223H

320' FNL, 1408' FEL

OH

Plan: Plan #1



Standard Plan Report

04 March, 2026

Total Report Version 1.80

COMPASS 5000.16 Build 97

ATTENTION

All annotation callouts related to distances are uncertified and are approximated footages using available software and measurement tools. They should not be mistaken as an official record, which can only be obtained via a certified land surveyor.

Total Directional Planned Survey Report



Company: Coterra Energy	Local Co-ordinate Reference: Well Sombrero State Com 223H
Project: Lea County, NM (NAD 83)	TVD Reference: GE 3739.2' + KB 23' @ 3762.20usft (Cactus 148)
Site: Sun-Sombrero Pad	MD Reference: GE 3739.2' + KB 23' @ 3762.20usft (Cactus 148)
Well: Sombrero State Com 223H	North Reference: Grid
Wellbore: OH	Survey Calculation Method: Minimum Curvature
Design: Plan #1	Database: .Total Directional Production DB

Project Lea County, NM (NAD 83)	System Datum: Mean Sea Level
Map System: US State Plane 1983	
Geo Datum: North American Datum 1983	
Map Zone: New Mexico Eastern Zone	

Site Sun-Sombrero Pad			
Site Position:	Northing: 607,591.32 usft	Latitude:	32.6669561
From: Map	Easting: 823,842.28 usft	Longitude:	-103.4153014
Position Uncertainty: 0.00 usft	Slot Radius: 13-3/16 "		

Well Sombrero State Com 223H			
Well Position	+N/-S 0.00 usft	Northing: 607,601.13 usft	Latitude: 32.6669197
	+E/-W 0.00 usft	Easting: 826,495.09 usft	Longitude: -103.4066815
Position Uncertainty 0.00 usft	Wellhead Elevation:	usft	Ground Level: 3,739.20 usft
Grid Convergence:	0.50 °		

Wellbore OH	
Magnetics	
Model Name	Sample Date
HDGM2026	3/29/2026
Declination (°)	Dip Angle (°)
6.02	60.38
Field Strength (nT)	47,261.90000000

Design Plan #1	
Audit Notes:	
Version:	Phase: PLAN Tie On Depth: 0.00
Vertical Section:	
Depth From (TVD) (usft)	+N/-S (usft)
0.00	0.00
+E/-W (usft)	Direction (°)
0.00	359.39

Survey Tool Program		Date 3/4/2026
From (usft)	To (usft)	
0.00	30,218.49	
Survey (Wellbore)	Tool Name	Description
Plan #1 (OH)	MWD+IFR1+MS	OWSG MWD + IFR1 + Multi-Station Correction

Plan Summary										
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	
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00	
670.69	3.41	326.22	670.59	4.23	-2.83	2.00	2.00	0.00	326.22	
8,997.02	3.41	326.22	8,982.14	416.35	-278.47	0.00	0.00	0.00	0.00	
9,044.97	3.30	359.39	9,030.02	418.92	-279.28	4.00	-0.24	69.16	109.82	
9,911.97	90.00	359.39	9,570.00	990.90	-285.38	10.00	10.00	0.00	0.00	
30,218.49	90.00	359.39	9,570.00	21,296.26	-501.93	0.00	0.00	0.00	0.00	LTP/PBHL-100' FNI

Total Directional Planned Survey Report



Company: Coterra Energy	Local Co-ordinate Reference: Well Sombrero State Com 223H	
Project: Lea County, NM (NAD 83)	TVD Reference: GE 3739.2' + KB 23' @ 3762.20usft (Cactus 148)	
Site: Sun-Sombrero Pad	MD Reference: GE 3739.2' + KB 23' @ 3762.20usft (Cactus 148)	
Well: Sombrero State Com 223H	North Reference: Grid	
Wellbore: OH	Survey Calculation Method: Minimum Curvature	
Design: Plan #1	Database: .Total Directional Production DB	

Planned Survey													
Measured Depth (usft)	INC (°)	AZI (°)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	+E/-W (usft)	Map Coordinates Northing (usft)	Easting (usft)	Geo Coordinates Latitude (°)	Longitude (°)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	607,601.13	826,495.09	32.6669197	-103.4066815	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	607,601.13	826,495.09	32.6669197	-103.4066815	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	607,601.13	826,495.09	32.6669197	-103.4066815	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	607,601.13	826,495.09	32.6669197	-103.4066815	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	607,601.13	826,495.09	32.6669197	-103.4066815	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	607,601.13	826,495.09	32.6669197	-103.4066815	0.00	0.00	0.00	0.00
Start Build 2.00													
600.00	2.00	326.22	599.98	1.45	-0.97	607,602.58	826,494.12	32.6669237	-103.4066846	1.46	2.00	2.00	0.00
670.69	3.41	326.22	670.59	4.23	-2.83	607,605.36	826,492.26	32.6669314	-103.4066905	4.26	2.00	2.00	0.00
Hold - 670.69' MD/670.59' TVD													
700.00	3.41	326.22	699.85	5.68	-3.80	607,606.81	826,491.29	32.6669354	-103.4066936	5.72	0.00	0.00	0.00
800.00	3.41	326.22	799.67	10.63	-7.11	607,611.76	826,487.98	32.6669490	-103.4067043	10.70	0.00	0.00	0.00
900.00	3.41	326.22	899.49	15.58	-10.42	607,616.71	826,484.67	32.6669627	-103.4067149	15.69	0.00	0.00	0.00
1,000.00	3.41	326.22	999.31	20.53	-13.73	607,621.66	826,481.36	32.6669764	-103.4067255	20.67	0.00	0.00	0.00
1,100.00	3.41	326.22	1,099.14	25.48	-17.04	607,626.61	826,478.05	32.6669901	-103.4067361	25.65	0.00	0.00	0.00
1,200.00	3.41	326.22	1,198.96	30.42	-20.35	607,631.55	826,474.74	32.6670038	-103.4067467	30.64	0.00	0.00	0.00
1,300.00	3.41	326.22	1,298.78	35.37	-23.66	607,636.50	826,471.43	32.6670175	-103.4067573	35.62	0.00	0.00	0.00
1,400.00	3.41	326.22	1,398.60	40.32	-26.97	607,641.45	826,468.12	32.6670311	-103.4067680	40.61	0.00	0.00	0.00
1,500.00	3.41	326.22	1,498.43	45.27	-30.28	607,646.40	826,464.81	32.6670448	-103.4067786	45.59	0.00	0.00	0.00
1,600.00	3.41	326.22	1,598.25	50.22	-33.59	607,651.35	826,461.50	32.6670585	-103.4067892	50.58	0.00	0.00	0.00
1,700.00	3.41	326.22	1,698.07	55.17	-36.90	607,656.30	826,458.19	32.6670722	-103.4067998	55.56	0.00	0.00	0.00
1,742.00	3.41	326.22	1,740.00	57.25	-38.29	607,658.38	826,456.80	32.6670779	-103.4068043	57.66	0.00	0.00	0.00
Rustler													
1,800.00	3.41	326.22	1,797.90	60.12	-40.21	607,661.25	826,454.88	32.6670859	-103.4068104	60.55	0.00	0.00	0.00
1,816.13	3.41	326.22	1,814.00	60.92	-40.75	607,662.05	826,454.34	32.6670881	-103.4068121	61.35	0.00	0.00	0.00
A3													
1,900.00	3.41	326.22	1,897.72	65.07	-43.52	607,666.20	826,451.57	32.6670996	-103.4068210	65.53	0.00	0.00	0.00
1,904.29	3.41	326.22	1,902.00	65.28	-43.66	607,666.41	826,451.43	32.6671001	-103.4068215	65.75	0.00	0.00	0.00
Tamarisk													
2,000.00	3.41	326.22	1,997.54	70.02	-46.83	607,671.15	826,448.26	32.6671132	-103.4068317	70.52	0.00	0.00	0.00
2,002.46	3.41	326.22	2,000.00	70.14	-46.91	607,671.27	826,448.18	32.6671136	-103.4068319	70.64	0.00	0.00	0.00
Top Salt													
2,100.00	3.41	326.22	2,097.36	74.97	-50.14	607,676.10	826,444.95	32.6671269	-103.4068423	75.50	0.00	0.00	0.00
2,200.00	3.41	326.22	2,197.19	79.92	-53.45	607,681.05	826,441.64	32.6671406	-103.4068529	80.49	0.00	0.00	0.00
2,300.00	3.41	326.22	2,297.01	84.87	-56.76	607,686.00	826,438.33	32.6671543	-103.4068635	85.47	0.00	0.00	0.00
2,400.00	3.41	326.22	2,396.83	89.82	-60.08	607,690.95	826,435.01	32.6671680	-103.4068741	90.46	0.00	0.00	0.00
2,500.00	3.41	326.22	2,496.65	94.77	-63.39	607,695.90	826,431.70	32.6671817	-103.4068847	95.44	0.00	0.00	0.00
2,600.00	3.41	326.22	2,596.48	99.72	-66.70	607,700.85	826,428.39	32.6671953	-103.4068954	100.42	0.00	0.00	0.00

Total Directional Planned Survey Report



Company: Coterra Energy	Local Co-ordinate Reference: Well Sombrero State Com 223H
Project: Lea County, NM (NAD 83)	TVD Reference: GE 3739.2' + KB 23' @ 3762.20usft (Cactus 148)
Site: Sun-Sombrero Pad	MD Reference: GE 3739.2' + KB 23' @ 3762.20usft (Cactus 148)
Well: Sombrero State Com 223H	North Reference: Grid
Wellbore: OH	Survey Calculation Method: Minimum Curvature
Design: Plan #1	Database: .Total Directional Production DB

Planned Survey

Measured Depth (usft)	INC (°)	AZI (°)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	+E/-W (usft)	Map Coordinates Northing (usft)	Easting (usft)	Geo Coordinates Latitude (°)	Longitude (°)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
2,700.00	3.41	326.22	2,696.30	104.67	-70.01	607,705.80	826,425.08	32.6672090	-103.4069060	105.41	0.00	0.00	0.00
2,800.00	3.41	326.22	2,796.12	109.62	-73.32	607,710.75	826,421.77	32.6672227	-103.4069166	110.39	0.00	0.00	0.00
2,900.00	3.41	326.22	2,895.94	114.57	-76.63	607,715.70	826,418.46	32.6672364	-103.4069272	115.38	0.00	0.00	0.00
3,000.00	3.41	326.22	2,995.77	119.52	-79.94	607,720.65	826,415.15	32.6672501	-103.4069378	120.36	0.00	0.00	0.00
3,100.00	3.41	326.22	3,095.59	124.47	-83.25	607,725.60	826,411.84	32.6672638	-103.4069484	125.35	0.00	0.00	0.00
3,102.42	3.41	326.22	3,098.00	124.59	-83.33	607,725.72	826,411.76	32.6672641	-103.4069487	125.47	0.00	0.00	0.00
Base Sit													
3,200.00	3.41	326.22	3,195.41	129.42	-86.56	607,730.55	826,408.53	32.6672774	-103.4069591	130.33	0.00	0.00	0.00
3,260.70	3.41	326.22	3,256.00	132.42	-88.57	607,733.55	826,406.52	32.6672857	-103.4069655	133.36	0.00	0.00	0.00
Yates													
3,300.00	3.41	326.22	3,295.23	134.37	-89.87	607,735.50	826,405.22	32.6672911	-103.4069697	135.32	0.00	0.00	0.00
3,400.00	3.41	326.22	3,395.06	139.32	-93.18	607,740.45	826,401.91	32.6673048	-103.4069803	140.30	0.00	0.00	0.00
3,500.00	3.41	326.22	3,494.88	144.27	-96.49	607,745.40	826,398.60	32.6673185	-103.4069909	145.29	0.00	0.00	0.00
3,600.00	3.41	326.22	3,594.70	149.22	-99.80	607,750.35	826,395.29	32.6673322	-103.4070015	150.27	0.00	0.00	0.00
3,675.43	3.41	326.22	3,670.00	152.95	-102.30	607,754.08	826,392.79	32.6673425	-103.4070095	154.03	0.00	0.00	0.00
Seven Rivers													
3,700.00	3.41	326.22	3,694.52	154.17	-103.11	607,755.30	826,391.98	32.6673458	-103.4070121	155.26	0.00	0.00	0.00
3,800.00	3.41	326.22	3,794.35	159.12	-106.42	607,760.25	826,388.67	32.6673595	-103.4070228	160.24	0.00	0.00	0.00
3,900.00	3.41	326.22	3,894.17	164.07	-109.73	607,765.20	826,385.36	32.6673732	-103.4070334	165.23	0.00	0.00	0.00
4,000.00	3.41	326.22	3,993.99	169.02	-113.04	607,770.15	826,382.05	32.6673869	-103.4070440	170.21	0.00	0.00	0.00
4,100.00	3.41	326.22	4,093.81	173.97	-116.35	607,775.10	826,378.74	32.6674006	-103.4070546	175.19	0.00	0.00	0.00
4,200.00	3.41	326.22	4,193.64	178.92	-119.66	607,780.05	826,375.43	32.6674143	-103.4070652	180.18	0.00	0.00	0.00
4,300.00	3.41	326.22	4,293.46	183.87	-122.98	607,785.00	826,372.11	32.6674279	-103.4070758	185.16	0.00	0.00	0.00
4,400.00	3.41	326.22	4,393.28	188.81	-126.29	607,789.94	826,368.80	32.6674416	-103.4070865	190.15	0.00	0.00	0.00
4,422.76	3.41	326.22	4,416.00	189.94	-127.04	607,791.07	826,368.05	32.6674447	-103.4070889	191.28	0.00	0.00	0.00
Queen													
4,500.00	3.41	326.22	4,493.10	193.76	-129.60	607,794.89	826,365.49	32.6674553	-103.4070971	195.13	0.00	0.00	0.00
4,600.00	3.41	326.22	4,592.93	198.71	-132.91	607,799.84	826,362.18	32.6674690	-103.4071077	200.12	0.00	0.00	0.00
4,700.00	3.41	326.22	4,692.75	203.66	-136.22	607,804.79	826,358.87	32.6674827	-103.4071183	205.10	0.00	0.00	0.00
4,800.00	3.41	326.22	4,792.57	208.61	-139.53	607,809.74	826,355.56	32.6674964	-103.4071289	210.09	0.00	0.00	0.00
4,900.00	3.41	326.22	4,892.39	213.56	-142.84	607,814.69	826,352.25	32.6675100	-103.4071395	215.07	0.00	0.00	0.00
5,000.00	3.41	326.22	4,992.22	218.51	-146.15	607,819.64	826,348.94	32.6675237	-103.4071501	220.06	0.00	0.00	0.00
5,100.00	3.41	326.22	5,092.04	223.46	-149.46	607,824.59	826,345.63	32.6675374	-103.4071608	225.04	0.00	0.00	0.00
5,200.00	3.41	326.22	5,191.86	228.41	-152.77	607,829.54	826,342.32	32.6675511	-103.4071714	230.03	0.00	0.00	0.00
5,300.00	3.41	326.22	5,291.68	233.36	-156.08	607,834.49	826,339.01	32.6675648	-103.4071820	235.01	0.00	0.00	0.00
5,400.00	3.41	326.22	5,391.51	238.31	-159.39	607,839.44	826,335.70	32.6675785	-103.4071926	240.00	0.00	0.00	0.00
5,500.00	3.41	326.22	5,491.33	243.26	-162.70	607,844.39	826,332.39	32.6675921	-103.4072032	244.98	0.00	0.00	0.00
5,600.00	3.41	326.22	5,591.15	248.21	-166.01	607,849.34	826,329.08	32.6676058	-103.4072138	249.96	0.00	0.00	0.00

Total Directional Planned Survey Report



Company:	Coterra Energy	Local Co-ordinate Reference:	Well Sombrero State Com 223H
Project:	Lea County, NM (NAD 83)	TVD Reference:	GE 3739.2' + KB 23' @ 3762.20usft (Cactus 148)
Site:	Sun-Sombrero Pad	MD Reference:	GE 3739.2' + KB 23' @ 3762.20usft (Cactus 148)
Well:	Sombrero State Com 223H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1	Database:	.Total Directional Production DB

Planned Survey

Measured Depth (usft)	INC (°)	AZI (°)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	+E/-W (usft)	Map Coordinates Northing (usft)	Easting (usft)	Geo Coordinates Latitude (°)	Longitude (°)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
5,700.00	3.41	326.22	5,690.97	253.16	-169.32	607,854.29	826,325.77	32.6676195	-103.4072245	254.95	0.00	0.00	0.00
5,715.05	3.41	326.22	5,706.00	253.91	-169.82	607,855.04	826,325.27	32.6676216	-103.4072261	255.70	0.00	0.00	0.00
Cherry Canyon													
5,800.00	3.41	326.22	5,790.80	258.11	-172.63	607,859.24	826,322.46	32.6676332	-103.4072351	259.93	0.00	0.00	0.00
5,900.00	3.41	326.22	5,890.62	263.06	-175.94	607,864.19	826,319.15	32.6676469	-103.4072457	264.92	0.00	0.00	0.00
5,929.43	3.41	326.22	5,920.00	264.52	-176.92	607,865.65	826,318.17	32.6676509	-103.4072488	266.39	0.00	0.00	0.00
Brushy Canyon													
6,000.00	3.41	326.22	5,990.44	268.01	-179.25	607,869.14	826,315.84	32.6676606	-103.4072563	269.90	0.00	0.00	0.00
6,100.00	3.41	326.22	6,090.26	272.96	-182.56	607,874.09	826,312.53	32.6676742	-103.4072669	274.89	0.00	0.00	0.00
6,200.00	3.41	326.22	6,190.09	277.91	-185.88	607,879.04	826,309.21	32.6676879	-103.4072775	279.87	0.00	0.00	0.00
6,300.00	3.41	326.22	6,289.91	282.86	-189.19	607,883.99	826,305.90	32.6677016	-103.4072882	284.86	0.00	0.00	0.00
6,400.00	3.41	326.22	6,389.73	287.81	-192.50	607,888.94	826,302.59	32.6677153	-103.4072988	289.84	0.00	0.00	0.00
6,500.00	3.41	326.22	6,489.55	292.76	-195.81	607,893.89	826,299.28	32.6677290	-103.4073094	294.83	0.00	0.00	0.00
6,600.00	3.41	326.22	6,589.38	297.71	-199.12	607,898.84	826,295.97	32.6677427	-103.4073200	299.81	0.00	0.00	0.00
6,700.00	3.41	326.22	6,689.20	302.66	-202.43	607,903.79	826,292.66	32.6677563	-103.4073306	304.80	0.00	0.00	0.00
6,800.00	3.41	326.22	6,789.02	307.61	-205.74	607,908.74	826,289.35	32.6677700	-103.4073412	309.78	0.00	0.00	0.00
6,900.00	3.41	326.22	6,888.85	312.56	-209.05	607,913.69	826,286.04	32.6677837	-103.4073519	314.76	0.00	0.00	0.00
7,000.00	3.41	326.22	6,988.67	317.51	-212.36	607,918.64	826,282.73	32.6677974	-103.4073625	319.75	0.00	0.00	0.00
7,100.00	3.41	326.22	7,088.49	322.46	-215.67	607,923.59	826,279.42	32.6678111	-103.4073731	324.73	0.00	0.00	0.00
7,200.00	3.41	326.22	7,188.31	327.41	-218.98	607,928.54	826,276.11	32.6678247	-103.4073837	329.72	0.00	0.00	0.00
7,300.00	3.41	326.22	7,288.14	332.36	-222.29	607,933.49	826,272.80	32.6678384	-103.4073943	334.70	0.00	0.00	0.00
7,321.90	3.41	326.22	7,310.00	333.44	-223.02	607,934.57	826,272.07	32.6678414	-103.4073967	335.80	0.00	0.00	0.00
Bone Spring													
7,400.00	3.41	326.22	7,387.96	337.31	-225.60	607,938.44	826,269.49	32.6678521	-103.4074049	339.69	0.00	0.00	0.00
7,500.00	3.41	326.22	7,487.78	342.26	-228.91	607,943.39	826,266.18	32.6678658	-103.4074156	344.67	0.00	0.00	0.00
7,600.00	3.41	326.22	7,587.60	347.20	-232.22	607,948.33	826,262.87	32.6678795	-103.4074262	349.66	0.00	0.00	0.00
7,700.00	3.41	326.22	7,687.43	352.15	-235.53	607,953.28	826,259.56	32.6678932	-103.4074368	354.64	0.00	0.00	0.00
7,800.00	3.41	326.22	7,787.25	357.10	-238.84	607,958.23	826,256.25	32.6679068	-103.4074474	359.63	0.00	0.00	0.00
7,900.00	3.41	326.22	7,887.07	362.05	-242.15	607,963.18	826,252.94	32.6679205	-103.4074580	364.61	0.00	0.00	0.00
8,000.00	3.41	326.22	7,986.89	367.00	-245.46	607,968.13	826,249.63	32.6679342	-103.4074686	369.60	0.00	0.00	0.00
8,100.00	3.41	326.22	8,086.72	371.95	-248.78	607,973.08	826,246.31	32.6679479	-103.4074793	374.58	0.00	0.00	0.00
8,200.00	3.41	326.22	8,186.54	376.90	-252.09	607,978.03	826,243.00	32.6679616	-103.4074899	379.57	0.00	0.00	0.00
8,300.00	3.41	326.22	8,286.36	381.85	-255.40	607,982.98	826,239.69	32.6679753	-103.4075005	384.55	0.00	0.00	0.00
8,400.00	3.41	326.22	8,386.18	386.80	-258.71	607,987.93	826,236.38	32.6679889	-103.4075111	389.53	0.00	0.00	0.00
8,500.00	3.41	326.22	8,486.01	391.75	-262.02	607,992.88	826,233.07	32.6680026	-103.4075217	394.52	0.00	0.00	0.00
8,600.00	3.41	326.22	8,585.83	396.70	-265.33	607,997.83	826,229.76	32.6680163	-103.4075323	399.50	0.00	0.00	0.00
8,700.00	3.41	326.22	8,685.65	401.65	-268.64	608,002.78	826,226.45	32.6680300	-103.4075430	404.49	0.00	0.00	0.00
8,800.00	3.41	326.22	8,785.47	406.60	-271.95	608,007.73	826,223.14	32.6680437	-103.4075536	409.47	0.00	0.00	0.00

Total Directional Planned Survey Report



Company: Coterra Energy	Local Co-ordinate Reference: Well Sombrero State Com 223H
Project: Lea County, NM (NAD 83)	TVD Reference: GE 3739.2' + KB 23' @ 3762.20usft (Cactus 148)
Site: Sun-Sombrero Pad	MD Reference: GE 3739.2' + KB 23' @ 3762.20usft (Cactus 148)
Well: Sombrero State Com 223H	North Reference: Grid
Wellbore: OH	Survey Calculation Method: Minimum Curvature
Design: Plan #1	Database: .Total Directional Production DB

Planned Survey

Measured Depth (usft)	INC (°)	AZI (°)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	+E/-W (usft)	Map Coordinates Northing (usft)	Easting (usft)	Geo Coordinates Latitude (°)	Longitude (°)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
8,900.00	3.41	326.22	8,885.30	411.55	-275.26	608,012.68	826,219.83	32.6680574	-103.4075642	414.46	0.00	0.00	0.00
8,997.02	3.41	326.22	8,982.14	416.35	-278.47	608,017.48	826,216.62	32.6680706	-103.4075745	419.29	0.00	0.00	0.00
Start DLS 4.00 TFO 109.82													
9,000.00	3.38	328.13	8,985.12	416.50	-278.57	608,017.63	826,216.52	32.6680710	-103.4075748	419.44	4.00	-1.29	63.93
9,044.97	3.30	359.39	9,030.02	418.92	-279.28	608,020.05	826,215.81	32.6680777	-103.4075770	421.87	4.00	-0.17	69.51
KOP - Start 10.00°/100' DLS - KOP/LP/FTP (Som St Com 223H)													
9,050.00	3.80	359.39	9,035.04	419.23	-279.28	608,020.36	826,215.81	32.6680786	-103.4075771	422.18	10.00	10.00	0.00
9,100.00	8.80	359.39	9,084.72	424.72	-279.34	608,025.85	826,215.75	32.6680936	-103.4075771	427.67	10.00	10.00	0.00
9,113.47	10.15	359.39	9,098.00	426.93	-279.37	608,028.06	826,215.72	32.6680997	-103.4075771	429.88	10.00	10.00	0.00
1st Bone Spring Sand													
9,150.00	13.80	359.39	9,133.73	434.51	-279.45	608,035.64	826,215.64	32.6681206	-103.4075771	437.46	10.00	10.00	0.00
9,200.00	18.80	359.39	9,181.71	448.54	-279.60	608,049.67	826,215.49	32.6681591	-103.4075772	451.50	10.00	10.00	0.00
9,250.00	23.80	359.39	9,228.28	466.70	-279.79	608,067.83	826,215.30	32.6682090	-103.4075773	469.65	10.00	10.00	0.00
9,260.67	24.87	359.39	9,238.00	471.10	-279.84	608,072.23	826,215.25	32.6682211	-103.4075774	474.05	10.00	10.00	0.00
2nd Bone Spring Carbonate													
9,300.00	28.80	359.39	9,273.09	488.85	-280.03	608,089.98	826,215.06	32.6682699	-103.4075775	491.80	10.00	10.00	0.00
9,310.22	29.82	359.39	9,282.00	493.85	-280.08	608,094.98	826,215.01	32.6682837	-103.4075775	496.81	10.00	10.00	0.00
2nd Bone Spring Sand													
9,350.00	33.80	359.39	9,315.79	514.82	-280.30	608,115.95	826,214.79	32.6683413	-103.4075777	517.77	10.00	10.00	0.00
9,400.00	38.80	359.39	9,356.08	544.41	-280.62	608,145.54	826,214.47	32.6684226	-103.4075778	547.37	10.00	10.00	0.00
9,450.00	43.80	359.39	9,393.63	577.40	-280.97	608,178.53	826,214.12	32.6685133	-103.4075780	580.36	10.00	10.00	0.00
9,500.00	48.80	359.39	9,428.16	613.53	-281.36	608,214.66	826,213.73	32.6686126	-103.4075783	616.50	10.00	10.00	0.00
9,550.00	53.80	359.39	9,459.41	652.54	-281.77	608,253.67	826,213.32	32.6687198	-103.4075785	655.51	10.00	10.00	0.00
9,600.00	58.80	359.39	9,487.14	694.13	-282.21	608,295.26	826,212.88	32.6688341	-103.4075788	697.09	10.00	10.00	0.00
9,650.00	63.80	359.39	9,511.14	737.97	-282.68	608,339.10	826,212.41	32.6689546	-103.4075791	740.94	10.00	10.00	0.00
9,700.00	68.80	359.39	9,531.23	783.74	-283.17	608,384.87	826,211.92	32.6690804	-103.4075793	786.71	10.00	10.00	0.00
9,750.00	73.80	359.39	9,547.25	831.08	-283.68	608,432.21	826,211.41	32.6692106	-103.4075796	834.05	10.00	10.00	0.00
9,800.00	78.80	359.39	9,559.09	879.64	-284.19	608,480.77	826,210.90	32.6693440	-103.4075800	882.61	10.00	10.00	0.00
9,850.00	83.80	359.39	9,566.65	929.05	-284.72	608,530.18	826,210.37	32.6694798	-103.4075803	932.02	10.00	10.00	0.00
9,900.00	88.80	359.39	9,569.87	978.92	-285.25	608,580.05	826,209.84	32.6696169	-103.4075806	981.90	10.00	10.00	0.00
9,911.97	90.00	359.39	9,570.00	990.90	-285.38	608,592.03	826,209.71	32.6696498	-103.4075807	993.88	10.00	10.00	0.00
LP - 9911.97' MD - Target													
10,000.00	90.00	359.39	9,570.00	1,078.92	-286.32	608,680.05	826,208.77	32.6698918	-103.4075812	1,081.90	0.00	0.00	0.00
10,100.00	90.00	359.39	9,570.00	1,178.91	-287.38	608,780.04	826,207.71	32.6701666	-103.4075818	1,181.90	0.00	0.00	0.00
10,200.00	90.00	359.39	9,570.00	1,278.90	-288.45	608,880.03	826,206.64	32.6704415	-103.4075825	1,281.90	0.00	0.00	0.00
10,300.00	90.00	359.39	9,570.00	1,378.90	-289.52	608,980.03	826,205.57	32.6707163	-103.4075831	1,381.90	0.00	0.00	0.00
10,400.00	90.00	359.39	9,570.00	1,478.89	-290.58	609,080.02	826,204.51	32.6709912	-103.4075837	1,481.90	0.00	0.00	0.00
10,500.00	90.00	359.39	9,570.00	1,578.89	-291.65	609,180.02	826,203.44	32.6712660	-103.4075844	1,581.90	0.00	0.00	0.00
10,600.00	90.00	359.39	9,570.00	1,678.88	-292.72	609,280.01	826,202.37	32.6715408	-103.4075850	1,681.90	0.00	0.00	0.00

Total Directional Planned Survey Report



Company:	Coterra Energy	Local Co-ordinate Reference:	Well Sombrero State Com 223H
Project:	Lea County, NM (NAD 83)	TVD Reference:	GE 3739.2' + KB 23' @ 3762.20usft (Cactus 148)
Site:	Sun-Sombrero Pad	MD Reference:	GE 3739.2' + KB 23' @ 3762.20usft (Cactus 148)
Well:	Sombrero State Com 223H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1	Database:	.Total Directional Production DB

Planned Survey													
Measured Depth (usft)	INC (°)	AZI (°)	Vertical Depth (usft)	Local Coordinates (usft)		Map Coordinates (usft)		Geo Coordinates (°)		Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
				+N/-S	+E/-W	Northing	Easting	Latitude	Longitude				
10,700.00	90.00	359.39	9,570.00	1,778.88	-293.78	609,380.01	826,201.31	32.6718157	-103.4075856	1,781.90	0.00	0.00	0.00
10,800.00	90.00	359.39	9,570.00	1,878.87	-294.85	609,480.00	826,200.24	32.6720905	-103.4075863	1,881.90	0.00	0.00	0.00
10,900.00	90.00	359.39	9,570.00	1,978.86	-295.92	609,579.99	826,199.17	32.6723654	-103.4075869	1,981.90	0.00	0.00	0.00
11,000.00	90.00	359.39	9,570.00	2,078.86	-296.98	609,679.99	826,198.11	32.6726402	-103.4075875	2,081.90	0.00	0.00	0.00
11,100.00	90.00	359.39	9,570.00	2,178.85	-298.05	609,779.98	826,197.04	32.6729151	-103.4075882	2,181.90	0.00	0.00	0.00
11,200.00	90.00	359.39	9,570.00	2,278.85	-299.12	609,879.98	826,195.97	32.6731899	-103.4075888	2,281.90	0.00	0.00	0.00
11,300.00	90.00	359.39	9,570.00	2,378.84	-300.18	609,979.97	826,194.91	32.6734648	-103.4075894	2,381.90	0.00	0.00	0.00
11,400.00	90.00	359.39	9,570.00	2,478.84	-301.25	610,079.97	826,193.84	32.6737396	-103.4075900	2,481.90	0.00	0.00	0.00
11,500.00	90.00	359.39	9,570.00	2,578.83	-302.31	610,179.96	826,192.78	32.6740145	-103.4075907	2,581.90	0.00	0.00	0.00
11,600.00	90.00	359.39	9,570.00	2,678.83	-303.38	610,279.96	826,191.71	32.6742893	-103.4075913	2,681.90	0.00	0.00	0.00
11,700.00	90.00	359.39	9,570.00	2,778.82	-304.45	610,379.95	826,190.64	32.6745641	-103.4075919	2,781.90	0.00	0.00	0.00
11,800.00	90.00	359.39	9,570.00	2,878.81	-305.51	610,479.94	826,189.58	32.6748390	-103.4075926	2,881.90	0.00	0.00	0.00
11,900.00	90.00	359.39	9,570.00	2,978.81	-306.58	610,579.94	826,188.51	32.6751138	-103.4075932	2,981.90	0.00	0.00	0.00
12,000.00	90.00	359.39	9,570.00	3,078.80	-307.65	610,679.93	826,187.44	32.6753887	-103.4075938	3,081.90	0.00	0.00	0.00
12,100.00	90.00	359.39	9,570.00	3,178.80	-308.71	610,779.93	826,186.38	32.6756635	-103.4075945	3,181.90	0.00	0.00	0.00
12,200.00	90.00	359.39	9,570.00	3,278.79	-309.78	610,879.92	826,185.31	32.6759384	-103.4075951	3,281.90	0.00	0.00	0.00
12,300.00	90.00	359.39	9,570.00	3,378.79	-310.85	610,979.92	826,184.24	32.6762132	-103.4075957	3,381.90	0.00	0.00	0.00
12,400.00	90.00	359.39	9,570.00	3,478.78	-311.91	611,079.91	826,183.18	32.6764881	-103.4075964	3,481.90	0.00	0.00	0.00
12,500.00	90.00	359.39	9,570.00	3,578.77	-312.98	611,179.90	826,182.11	32.6767629	-103.4075970	3,581.90	0.00	0.00	0.00
12,600.00	90.00	359.39	9,570.00	3,678.77	-314.04	611,279.90	826,181.05	32.6770377	-103.4075976	3,681.90	0.00	0.00	0.00
12,700.00	90.00	359.39	9,570.00	3,778.76	-315.11	611,379.89	826,179.98	32.6773126	-103.4075982	3,781.90	0.00	0.00	0.00
12,800.00	90.00	359.39	9,570.00	3,878.76	-316.18	611,479.89	826,178.91	32.6775874	-103.4075989	3,881.90	0.00	0.00	0.00
12,900.00	90.00	359.39	9,570.00	3,978.75	-317.24	611,579.88	826,177.85	32.6778623	-103.4075995	3,981.90	0.00	0.00	0.00
13,000.00	90.00	359.39	9,570.00	4,078.75	-318.31	611,679.88	826,176.78	32.6781371	-103.4076001	4,081.90	0.00	0.00	0.00
13,100.00	90.00	359.39	9,570.00	4,178.74	-319.38	611,779.87	826,175.71	32.6784120	-103.4076008	4,181.90	0.00	0.00	0.00
13,200.00	90.00	359.39	9,570.00	4,278.73	-320.44	611,879.86	826,174.65	32.6786868	-103.4076014	4,281.90	0.00	0.00	0.00
13,300.00	90.00	359.39	9,570.00	4,378.73	-321.51	611,979.86	826,173.58	32.6789617	-103.4076020	4,381.90	0.00	0.00	0.00
13,400.00	90.00	359.39	9,570.00	4,478.72	-322.58	612,079.85	826,172.51	32.6792365	-103.4076027	4,481.90	0.00	0.00	0.00
13,500.00	90.00	359.39	9,570.00	4,578.72	-323.64	612,179.85	826,171.45	32.6795114	-103.4076033	4,581.90	0.00	0.00	0.00
13,600.00	90.00	359.39	9,570.00	4,678.71	-324.71	612,279.84	826,170.38	32.6797862	-103.4076039	4,681.90	0.00	0.00	0.00
13,700.00	90.00	359.39	9,570.00	4,778.71	-325.78	612,379.84	826,169.31	32.6800610	-103.4076045	4,781.90	0.00	0.00	0.00
13,800.00	90.00	359.39	9,570.00	4,878.70	-326.84	612,479.83	826,168.25	32.6803359	-103.4076052	4,881.90	0.00	0.00	0.00
13,900.00	90.00	359.39	9,570.00	4,978.69	-327.91	612,579.82	826,167.18	32.6806107	-103.4076058	4,981.90	0.00	0.00	0.00
14,000.00	90.00	359.39	9,570.00	5,078.69	-328.97	612,679.82	826,166.12	32.6808856	-103.4076064	5,081.90	0.00	0.00	0.00
14,100.00	90.00	359.39	9,570.00	5,178.68	-330.04	612,779.81	826,165.05	32.6811604	-103.4076071	5,181.90	0.00	0.00	0.00
14,200.00	90.00	359.39	9,570.00	5,278.68	-331.11	612,879.81	826,163.98	32.6814353	-103.4076077	5,281.90	0.00	0.00	0.00
14,300.00	90.00	359.39	9,570.00	5,378.67	-332.17	612,979.80	826,162.92	32.6817101	-103.4076083	5,381.90	0.00	0.00	0.00

Total Directional Planned Survey Report



Company: Coterra Energy	Local Co-ordinate Reference: Well Sombrero State Com 223H
Project: Lea County, NM (NAD 83)	TVD Reference: GE 3739.2' + KB 23' @ 3762.20usft (Cactus 148)
Site: Sun-Sombrero Pad	MD Reference: GE 3739.2' + KB 23' @ 3762.20usft (Cactus 148)
Well: Sombrero State Com 223H	North Reference: Grid
Wellbore: OH	Survey Calculation Method: Minimum Curvature
Design: Plan #1	Database: .Total Directional Production DB

Planned Survey

Measured Depth (usft)	INC (°)	AZI (°)	Vertical Depth (usft)	Local Coordinates (usft)		Map Coordinates (usft)		Geo Coordinates (°)		Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
				+N/-S	+E/-W	Northing	Easting	Latitude	Longitude				
14,400.00	90.00	359.39	9,570.00	5,478.67	-333.24	613,079.80	826,161.85	32.6819850	-103.4076090	5,481.90	0.00	0.00	0.00
14,500.00	90.00	359.39	9,570.00	5,578.66	-334.31	613,179.79	826,160.78	32.6822598	-103.4076096	5,581.90	0.00	0.00	0.00
14,600.00	90.00	359.39	9,570.00	5,678.65	-335.37	613,279.78	826,159.72	32.6825346	-103.4076102	5,681.90	0.00	0.00	0.00
14,700.00	90.00	359.39	9,570.00	5,778.65	-336.44	613,379.78	826,158.65	32.6828095	-103.4076109	5,781.90	0.00	0.00	0.00
14,800.00	90.00	359.39	9,570.00	5,878.64	-337.51	613,479.77	826,157.58	32.6830843	-103.4076115	5,881.90	0.00	0.00	0.00
14,900.00	90.00	359.39	9,570.00	5,978.64	-338.57	613,579.77	826,156.52	32.6833592	-103.4076121	5,981.90	0.00	0.00	0.00
15,000.00	90.00	359.39	9,570.00	6,078.63	-339.64	613,679.76	826,155.45	32.6836340	-103.4076127	6,081.90	0.00	0.00	0.00
15,100.00	90.00	359.39	9,570.00	6,178.63	-340.70	613,779.76	826,154.39	32.6839089	-103.4076134	6,181.90	0.00	0.00	0.00
15,200.00	90.00	359.39	9,570.00	6,278.62	-341.77	613,879.75	826,153.32	32.6841837	-103.4076140	6,281.90	0.00	0.00	0.00
15,300.00	90.00	359.39	9,570.00	6,378.61	-342.84	613,979.74	826,152.25	32.6844586	-103.4076146	6,381.90	0.00	0.00	0.00
15,400.00	90.00	359.39	9,570.00	6,478.61	-343.90	614,079.74	826,151.19	32.6847334	-103.4076153	6,481.90	0.00	0.00	0.00
15,500.00	90.00	359.39	9,570.00	6,578.60	-344.97	614,179.73	826,150.12	32.6850082	-103.4076159	6,581.90	0.00	0.00	0.00
15,600.00	90.00	359.39	9,570.00	6,678.60	-346.04	614,279.73	826,149.05	32.6852831	-103.4076165	6,681.90	0.00	0.00	0.00
15,700.00	90.00	359.39	9,570.00	6,778.59	-347.10	614,379.72	826,147.99	32.6855579	-103.4076172	6,781.90	0.00	0.00	0.00
15,800.00	90.00	359.39	9,570.00	6,878.59	-348.17	614,479.72	826,146.92	32.6858328	-103.4076178	6,881.90	0.00	0.00	0.00
15,900.00	90.00	359.39	9,570.00	6,978.58	-349.24	614,579.71	826,145.85	32.6861076	-103.4076184	6,981.90	0.00	0.00	0.00
16,000.00	90.00	359.39	9,570.00	7,078.58	-350.30	614,679.70	826,144.79	32.6863825	-103.4076190	7,081.90	0.00	0.00	0.00
16,100.00	90.00	359.39	9,570.00	7,178.57	-351.37	614,779.70	826,143.72	32.6866573	-103.4076197	7,181.90	0.00	0.00	0.00
16,200.00	90.00	359.39	9,570.00	7,278.56	-352.44	614,879.69	826,142.65	32.6869322	-103.4076203	7,281.90	0.00	0.00	0.00
16,300.00	90.00	359.39	9,570.00	7,378.56	-353.50	614,979.69	826,141.59	32.6872070	-103.4076209	7,381.90	0.00	0.00	0.00
16,400.00	90.00	359.39	9,570.00	7,478.55	-354.57	615,079.68	826,140.52	32.6874818	-103.4076216	7,481.90	0.00	0.00	0.00
16,500.00	90.00	359.39	9,570.00	7,578.55	-355.63	615,179.68	826,139.46	32.6877567	-103.4076222	7,581.90	0.00	0.00	0.00
16,600.00	90.00	359.39	9,570.00	7,678.54	-356.70	615,279.67	826,138.39	32.6880315	-103.4076228	7,681.90	0.00	0.00	0.00
16,700.00	90.00	359.39	9,570.00	7,778.54	-357.77	615,379.67	826,137.32	32.6883064	-103.4076235	7,781.90	0.00	0.00	0.00
16,800.00	90.00	359.39	9,570.00	7,878.53	-358.83	615,479.66	826,136.26	32.6885812	-103.4076241	7,881.90	0.00	0.00	0.00
16,900.00	90.00	359.39	9,570.00	7,978.52	-359.90	615,579.65	826,135.19	32.6888561	-103.4076247	7,981.90	0.00	0.00	0.00
17,000.00	90.00	359.39	9,570.00	8,078.52	-360.97	615,679.65	826,134.12	32.6891309	-103.4076253	8,081.90	0.00	0.00	0.00
17,100.00	90.00	359.39	9,570.00	8,178.51	-362.03	615,779.64	826,133.06	32.6894058	-103.4076260	8,181.90	0.00	0.00	0.00
17,200.00	90.00	359.39	9,570.00	8,278.51	-363.10	615,879.64	826,131.99	32.6896806	-103.4076266	8,281.90	0.00	0.00	0.00
17,300.00	90.00	359.39	9,570.00	8,378.50	-364.17	615,979.63	826,130.92	32.6899554	-103.4076272	8,381.90	0.00	0.00	0.00
17,400.00	90.00	359.39	9,570.00	8,478.50	-365.23	616,079.63	826,129.86	32.6902303	-103.4076279	8,481.90	0.00	0.00	0.00
17,500.00	90.00	359.39	9,570.00	8,578.49	-366.30	616,179.62	826,128.79	32.6905051	-103.4076285	8,581.90	0.00	0.00	0.00
17,600.00	90.00	359.39	9,570.00	8,678.48	-367.37	616,279.61	826,127.72	32.6907800	-103.4076291	8,681.90	0.00	0.00	0.00
17,700.00	90.00	359.39	9,570.00	8,778.48	-368.43	616,379.61	826,126.66	32.6910548	-103.4076298	8,781.90	0.00	0.00	0.00
17,800.00	90.00	359.39	9,570.00	8,878.47	-369.50	616,479.60	826,125.59	32.6913297	-103.4076304	8,881.90	0.00	0.00	0.00
17,900.00	90.00	359.39	9,570.00	8,978.47	-370.56	616,579.60	826,124.53	32.6916045	-103.4076310	8,981.90	0.00	0.00	0.00
18,000.00	90.00	359.39	9,570.00	9,078.46	-371.63	616,679.59	826,123.46	32.6918794	-103.4076316	9,081.90	0.00	0.00	0.00
18,100.00	90.00	359.39	9,570.00	9,178.46	-372.70	616,779.59	826,122.39	32.6921542	-103.4076323	9,181.90	0.00	0.00	0.00

Total Directional Planned Survey Report



Company: Coterra Energy	Local Co-ordinate Reference: Well Sombrero State Com 223H
Project: Lea County, NM (NAD 83)	TVD Reference: GE 3739.2' + KB 23' @ 3762.20usft (Cactus 148)
Site: Sun-Sombrero Pad	MD Reference: GE 3739.2' + KB 23' @ 3762.20usft (Cactus 148)
Well: Sombrero State Com 223H	North Reference: Grid
Wellbore: OH	Survey Calculation Method: Minimum Curvature
Design: Plan #1	Database: .Total Directional Production DB

Planned Survey

Measured Depth (usft)	INC (°)	AZI (°)	Vertical Depth (usft)	Local Coordinates (usft)		Map Coordinates (usft)		Geo Coordinates (°)		Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
				+N/-S	+E/-W	Northing	Easting	Latitude	Longitude				
18,200.00	90.00	359.39	9,570.00	9,278.45	-373.76	616,879.58	826,121.33	32.6924290	-103.4076329	9,281.90	0.00	0.00	0.00
18,300.00	90.00	359.39	9,570.00	9,378.44	-374.83	616,979.57	826,120.26	32.6927039	-103.4076335	9,381.90	0.00	0.00	0.00
18,400.00	90.00	359.39	9,570.00	9,478.44	-375.90	617,079.57	826,119.19	32.6929787	-103.4076342	9,481.90	0.00	0.00	0.00
18,500.00	90.00	359.39	9,570.00	9,578.43	-376.96	617,179.56	826,118.13	32.6932536	-103.4076348	9,581.90	0.00	0.00	0.00
18,600.00	90.00	359.39	9,570.00	9,678.43	-378.03	617,279.56	826,117.06	32.6935284	-103.4076354	9,681.90	0.00	0.00	0.00
18,700.00	90.00	359.39	9,570.00	9,778.42	-379.10	617,379.55	826,115.99	32.6938033	-103.4076360	9,781.90	0.00	0.00	0.00
18,800.00	90.00	359.39	9,570.00	9,878.42	-380.16	617,479.55	826,114.93	32.6940781	-103.4076367	9,881.90	0.00	0.00	0.00
18,900.00	90.00	359.39	9,570.00	9,978.41	-381.23	617,579.54	826,113.86	32.6943529	-103.4076373	9,981.90	0.00	0.00	0.00
19,000.00	90.00	359.39	9,570.00	10,078.40	-382.29	617,679.53	826,112.80	32.6946278	-103.4076379	10,081.90	0.00	0.00	0.00
19,100.00	90.00	359.39	9,570.00	10,178.40	-383.36	617,779.53	826,111.73	32.6949026	-103.4076386	10,181.90	0.00	0.00	0.00
19,200.00	90.00	359.39	9,570.00	10,278.39	-384.43	617,879.52	826,110.66	32.6951775	-103.4076392	10,281.90	0.00	0.00	0.00
19,300.00	90.00	359.39	9,570.00	10,378.39	-385.49	617,979.52	826,109.60	32.6954523	-103.4076398	10,381.90	0.00	0.00	0.00
19,400.00	90.00	359.39	9,570.00	10,478.38	-386.56	618,079.51	826,108.53	32.6957272	-103.4076405	10,481.90	0.00	0.00	0.00
19,500.00	90.00	359.39	9,570.00	10,578.38	-387.63	618,179.51	826,107.46	32.6960020	-103.4076411	10,581.90	0.00	0.00	0.00
19,600.00	90.00	359.39	9,570.00	10,678.37	-388.69	618,279.50	826,106.40	32.6962769	-103.4076417	10,681.90	0.00	0.00	0.00
19,700.00	90.00	359.39	9,570.00	10,778.36	-389.76	618,379.49	826,105.33	32.6965517	-103.4076423	10,781.90	0.00	0.00	0.00
19,800.00	90.00	359.39	9,570.00	10,878.36	-390.83	618,479.49	826,104.26	32.6968265	-103.4076430	10,881.90	0.00	0.00	0.00
19,900.00	90.00	359.39	9,570.00	10,978.35	-391.89	618,579.48	826,103.20	32.6971014	-103.4076436	10,981.90	0.00	0.00	0.00
20,000.00	90.00	359.39	9,570.00	11,078.35	-392.96	618,679.48	826,102.13	32.6973762	-103.4076442	11,081.90	0.00	0.00	0.00
20,100.00	90.00	359.39	9,570.00	11,178.34	-394.03	618,779.47	826,101.06	32.6976511	-103.4076449	11,181.90	0.00	0.00	0.00
20,200.00	90.00	359.39	9,570.00	11,278.34	-395.09	618,879.47	826,100.00	32.6979259	-103.4076455	11,281.90	0.00	0.00	0.00
20,300.00	90.00	359.39	9,570.00	11,378.33	-396.16	618,979.46	826,098.93	32.6982008	-103.4076461	11,381.90	0.00	0.00	0.00
20,400.00	90.00	359.39	9,570.00	11,478.32	-397.22	619,079.45	826,097.87	32.6984756	-103.4076467	11,481.90	0.00	0.00	0.00
20,500.00	90.00	359.39	9,570.00	11,578.32	-398.29	619,179.45	826,096.80	32.6987505	-103.4076474	11,581.90	0.00	0.00	0.00
20,600.00	90.00	359.39	9,570.00	11,678.31	-399.36	619,279.44	826,095.73	32.6990253	-103.4076480	11,681.90	0.00	0.00	0.00
20,700.00	90.00	359.39	9,570.00	11,778.31	-400.42	619,379.44	826,094.67	32.6993001	-103.4076486	11,781.90	0.00	0.00	0.00
20,800.00	90.00	359.39	9,570.00	11,878.30	-401.49	619,479.43	826,093.60	32.6995750	-103.4076493	11,881.90	0.00	0.00	0.00
20,900.00	90.00	359.39	9,570.00	11,978.30	-402.56	619,579.43	826,092.53	32.6998498	-103.4076499	11,981.90	0.00	0.00	0.00
21,000.00	90.00	359.39	9,570.00	12,078.29	-403.62	619,679.42	826,091.47	32.7001247	-103.4076505	12,081.90	0.00	0.00	0.00
21,100.00	90.00	359.39	9,570.00	12,178.29	-404.69	619,779.41	826,090.40	32.7003995	-103.4076512	12,181.90	0.00	0.00	0.00
21,200.00	90.00	359.39	9,570.00	12,278.28	-405.76	619,879.41	826,089.33	32.7006744	-103.4076518	12,281.90	0.00	0.00	0.00
21,300.00	90.00	359.39	9,570.00	12,378.27	-406.82	619,979.40	826,088.27	32.7009492	-103.4076524	12,381.90	0.00	0.00	0.00
21,400.00	90.00	359.39	9,570.00	12,478.27	-407.89	620,079.40	826,087.20	32.7012240	-103.4076530	12,481.90	0.00	0.00	0.00
21,500.00	90.00	359.39	9,570.00	12,578.26	-408.96	620,179.39	826,086.13	32.7014989	-103.4076537	12,581.90	0.00	0.00	0.00
21,600.00	90.00	359.39	9,570.00	12,678.26	-410.02	620,279.39	826,085.07	32.7017737	-103.4076543	12,681.90	0.00	0.00	0.00
21,700.00	90.00	359.39	9,570.00	12,778.25	-411.09	620,379.38	826,084.00	32.7020486	-103.4076549	12,781.90	0.00	0.00	0.00
21,800.00	90.00	359.39	9,570.00	12,878.25	-412.15	620,479.38	826,082.94	32.7023234	-103.4076556	12,881.90	0.00	0.00	0.00

Total Directional Planned Survey Report



Company:	Coterra Energy	Local Co-ordinate Reference:	Well Sombrero State Com 223H
Project:	Lea County, NM (NAD 83)	TVD Reference:	GE 3739.2' + KB 23' @ 3762.20usft (Cactus 148)
Site:	Sun-Sombrero Pad	MD Reference:	GE 3739.2' + KB 23' @ 3762.20usft (Cactus 148)
Well:	Sombrero State Com 223H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1	Database:	.Total Directional Production DB

Planned Survey

Measured Depth (usft)	INC (°)	AZI (°)	Vertical Depth (usft)	Local Coordinates (usft)		Map Coordinates (usft)		Geo Coordinates (°)		Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
				+N/-S	+E/-W	Northing	Easting	Latitude	Longitude				
21,900.00	90.00	359.39	9,570.00	12,978.24	-413.22	620,579.37	826,081.87	32.7025983	-103.4076562	12,981.90	0.00	0.00	0.00
22,000.00	90.00	359.39	9,570.00	13,078.23	-414.29	620,679.36	826,080.80	32.7028731	-103.4076568	13,081.90	0.00	0.00	0.00
22,100.00	90.00	359.39	9,570.00	13,178.23	-415.35	620,779.36	826,079.74	32.7031480	-103.4076574	13,181.90	0.00	0.00	0.00
22,200.00	90.00	359.39	9,570.00	13,278.22	-416.42	620,879.35	826,078.67	32.7034228	-103.4076581	13,281.90	0.00	0.00	0.00
22,300.00	90.00	359.39	9,570.00	13,378.22	-417.49	620,979.35	826,077.60	32.7036976	-103.4076587	13,381.90	0.00	0.00	0.00
22,400.00	90.00	359.39	9,570.00	13,478.21	-418.55	621,079.34	826,076.54	32.7039725	-103.4076593	13,481.90	0.00	0.00	0.00
22,500.00	90.00	359.39	9,570.00	13,578.21	-419.62	621,179.34	826,075.47	32.7042473	-103.4076600	13,581.90	0.00	0.00	0.00
22,600.00	90.00	359.39	9,570.00	13,678.20	-420.69	621,279.33	826,074.40	32.7045222	-103.4076606	13,681.90	0.00	0.00	0.00
22,700.00	90.00	359.39	9,570.00	13,778.19	-421.75	621,379.32	826,073.34	32.7047970	-103.4076612	13,781.90	0.00	0.00	0.00
22,800.00	90.00	359.39	9,570.00	13,878.19	-422.82	621,479.32	826,072.27	32.7050719	-103.4076618	13,881.90	0.00	0.00	0.00
22,900.00	90.00	359.39	9,570.00	13,978.18	-423.88	621,579.31	826,071.21	32.7053467	-103.4076625	13,981.90	0.00	0.00	0.00
23,000.00	90.00	359.39	9,570.00	14,078.18	-424.95	621,679.31	826,070.14	32.7056215	-103.4076631	14,081.90	0.00	0.00	0.00
23,100.00	90.00	359.39	9,570.00	14,178.17	-426.02	621,779.30	826,069.07	32.7058964	-103.4076637	14,181.90	0.00	0.00	0.00
23,200.00	90.00	359.39	9,570.00	14,278.17	-427.08	621,879.30	826,068.01	32.7061712	-103.4076644	14,281.90	0.00	0.00	0.00
23,300.00	90.00	359.39	9,570.00	14,378.16	-428.15	621,979.29	826,066.94	32.7064461	-103.4076650	14,381.90	0.00	0.00	0.00
23,400.00	90.00	359.39	9,570.00	14,478.15	-429.22	622,079.28	826,065.87	32.7067209	-103.4076656	14,481.90	0.00	0.00	0.00
23,500.00	90.00	359.39	9,570.00	14,578.15	-430.28	622,179.28	826,064.81	32.7069958	-103.4076662	14,581.90	0.00	0.00	0.00
23,600.00	90.00	359.39	9,570.00	14,678.14	-431.35	622,279.27	826,063.74	32.7072706	-103.4076669	14,681.90	0.00	0.00	0.00
23,700.00	90.00	359.39	9,570.00	14,778.14	-432.42	622,379.27	826,062.67	32.7075455	-103.4076675	14,781.90	0.00	0.00	0.00
23,800.00	90.00	359.39	9,570.00	14,878.13	-433.48	622,479.26	826,061.61	32.7078203	-103.4076681	14,881.90	0.00	0.00	0.00
23,900.00	90.00	359.39	9,570.00	14,978.13	-434.55	622,579.26	826,060.54	32.7080951	-103.4076688	14,981.90	0.00	0.00	0.00
24,000.00	90.00	359.39	9,570.00	15,078.12	-435.62	622,679.25	826,059.47	32.7083700	-103.4076694	15,081.90	0.00	0.00	0.00
24,100.00	90.00	359.39	9,570.00	15,178.11	-436.68	622,779.24	826,058.41	32.7086448	-103.4076700	15,181.90	0.00	0.00	0.00
24,200.00	90.00	359.39	9,570.00	15,278.11	-437.75	622,879.24	826,057.34	32.7089197	-103.4076706	15,281.90	0.00	0.00	0.00
24,300.00	90.00	359.39	9,570.00	15,378.10	-438.81	622,979.23	826,056.28	32.7091945	-103.4076713	15,381.90	0.00	0.00	0.00
24,400.00	90.00	359.39	9,570.00	15,478.10	-439.88	623,079.23	826,055.21	32.7094694	-103.4076719	15,481.90	0.00	0.00	0.00
24,500.00	90.00	359.39	9,570.00	15,578.09	-440.95	623,179.22	826,054.14	32.7097442	-103.4076725	15,581.90	0.00	0.00	0.00
24,600.00	90.00	359.39	9,570.00	15,678.09	-442.01	623,279.22	826,053.08	32.7100190	-103.4076732	15,681.90	0.00	0.00	0.00
24,700.00	90.00	359.39	9,570.00	15,778.08	-443.08	623,379.21	826,052.01	32.7102939	-103.4076738	15,781.90	0.00	0.00	0.00
24,800.00	90.00	359.39	9,570.00	15,878.07	-444.15	623,479.20	826,050.94	32.7105687	-103.4076744	15,881.90	0.00	0.00	0.00
24,900.00	90.00	359.39	9,570.00	15,978.07	-445.21	623,579.20	826,049.88	32.7108436	-103.4076750	15,981.90	0.00	0.00	0.00
25,000.00	90.00	359.39	9,570.00	16,078.06	-446.28	623,679.19	826,048.81	32.7111184	-103.4076757	16,081.90	0.00	0.00	0.00
25,100.00	90.00	359.39	9,570.00	16,178.06	-447.35	623,779.19	826,047.74	32.7113933	-103.4076763	16,181.90	0.00	0.00	0.00
25,200.00	90.00	359.39	9,570.00	16,278.05	-448.41	623,879.18	826,046.68	32.7116681	-103.4076769	16,281.90	0.00	0.00	0.00
25,300.00	90.00	359.39	9,570.00	16,378.05	-449.48	623,979.18	826,045.61	32.7119429	-103.4076776	16,381.90	0.00	0.00	0.00
25,400.00	90.00	359.39	9,570.00	16,478.04	-450.55	624,079.17	826,044.54	32.7122178	-103.4076782	16,481.90	0.00	0.00	0.00
25,500.00	90.00	359.39	9,570.00	16,578.04	-451.61	624,179.16	826,043.48	32.7124926	-103.4076788	16,581.90	0.00	0.00	0.00
25,600.00	90.00	359.39	9,570.00	16,678.03	-452.68	624,279.16	826,042.41	32.7127675	-103.4076794	16,681.90	0.00	0.00	0.00

Total Directional Planned Survey Report



Company: Coterra Energy	Local Co-ordinate Reference: Well Sombrero State Com 223H
Project: Lea County, NM (NAD 83)	TVD Reference: GE 3739.2' + KB 23' @ 3762.20usft (Cactus 148)
Site: Sun-Sombrero Pad	MD Reference: GE 3739.2' + KB 23' @ 3762.20usft (Cactus 148)
Well: Sombrero State Com 223H	North Reference: Grid
Wellbore: OH	Survey Calculation Method: Minimum Curvature
Design: Plan #1	Database: .Total Directional Production DB

Planned Survey

Measured Depth (usft)	INC (°)	AZI (°)	Vertical Depth (usft)	Local Coordinates (usft)		Map Coordinates (usft)		Geo Coordinates (°)		Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
				+N/-S	+E/-W	Northing	Easting	Latitude	Longitude				
25,700.00	90.00	359.39	9,570.00	16,778.02	-453.74	624,379.15	826,041.35	32.7130423	-103.4076801	16,781.90	0.00	0.00	0.00
25,800.00	90.00	359.39	9,570.00	16,878.02	-454.81	624,479.15	826,040.28	32.7133172	-103.4076807	16,881.90	0.00	0.00	0.00
25,900.00	90.00	359.39	9,570.00	16,978.01	-455.88	624,579.14	826,039.21	32.7135920	-103.4076813	16,981.90	0.00	0.00	0.00
26,000.00	90.00	359.39	9,570.00	17,078.01	-456.94	624,679.14	826,038.15	32.7138668	-103.4076820	17,081.90	0.00	0.00	0.00
26,100.00	90.00	359.39	9,570.00	17,178.00	-458.01	624,779.13	826,037.08	32.7141417	-103.4076826	17,181.90	0.00	0.00	0.00
26,200.00	90.00	359.39	9,570.00	17,278.00	-459.08	624,879.12	826,036.01	32.7144165	-103.4076832	17,281.90	0.00	0.00	0.00
26,300.00	90.00	359.39	9,570.00	17,377.99	-460.14	624,979.12	826,034.95	32.7146914	-103.4076838	17,381.90	0.00	0.00	0.00
26,400.00	90.00	359.39	9,570.00	17,477.98	-461.21	625,079.11	826,033.88	32.7149662	-103.4076845	17,481.90	0.00	0.00	0.00
26,500.00	90.00	359.39	9,570.00	17,577.98	-462.28	625,179.11	826,032.81	32.7152411	-103.4076851	17,581.90	0.00	0.00	0.00
26,600.00	90.00	359.39	9,570.00	17,677.97	-463.34	625,279.10	826,031.75	32.7155159	-103.4076857	17,681.90	0.00	0.00	0.00
26,700.00	90.00	359.39	9,570.00	17,777.97	-464.41	625,379.10	826,030.68	32.7157908	-103.4076864	17,781.90	0.00	0.00	0.00
26,800.00	90.00	359.39	9,570.00	17,877.96	-465.47	625,479.09	826,029.62	32.7160656	-103.4076870	17,881.90	0.00	0.00	0.00
26,900.00	90.00	359.39	9,570.00	17,977.96	-466.54	625,579.09	826,028.55	32.7163404	-103.4076876	17,981.90	0.00	0.00	0.00
27,000.00	90.00	359.39	9,570.00	18,077.95	-467.61	625,679.08	826,027.48	32.7166153	-103.4076882	18,081.90	0.00	0.00	0.00
27,100.00	90.00	359.39	9,570.00	18,177.94	-468.67	625,779.07	826,026.42	32.7168901	-103.4076889	18,181.90	0.00	0.00	0.00
27,200.00	90.00	359.39	9,570.00	18,277.94	-469.74	625,879.07	826,025.35	32.7171650	-103.4076895	18,281.90	0.00	0.00	0.00
27,300.00	90.00	359.39	9,570.00	18,377.93	-470.81	625,979.06	826,024.28	32.7174398	-103.4076901	18,381.90	0.00	0.00	0.00
27,400.00	90.00	359.39	9,570.00	18,477.93	-471.87	626,079.06	826,023.22	32.7177147	-103.4076908	18,481.90	0.00	0.00	0.00
27,500.00	90.00	359.39	9,570.00	18,577.92	-472.94	626,179.05	826,022.15	32.7179895	-103.4076914	18,581.90	0.00	0.00	0.00
27,600.00	90.00	359.39	9,570.00	18,677.92	-474.01	626,279.05	826,021.08	32.7182643	-103.4076920	18,681.90	0.00	0.00	0.00
27,700.00	90.00	359.39	9,570.00	18,777.91	-475.07	626,379.04	826,020.02	32.7185392	-103.4076926	18,781.90	0.00	0.00	0.00
27,800.00	90.00	359.39	9,570.00	18,877.90	-476.14	626,479.03	826,018.95	32.7188140	-103.4076933	18,881.90	0.00	0.00	0.00
27,900.00	90.00	359.39	9,570.00	18,977.90	-477.21	626,579.03	826,017.88	32.7190889	-103.4076939	18,981.90	0.00	0.00	0.00
28,000.00	90.00	359.39	9,570.00	19,077.89	-478.27	626,679.02	826,016.82	32.7193637	-103.4076945	19,081.90	0.00	0.00	0.00
28,100.00	90.00	359.39	9,570.00	19,177.89	-479.34	626,779.02	826,015.75	32.7196386	-103.4076951	19,181.90	0.00	0.00	0.00
28,200.00	90.00	359.39	9,570.00	19,277.88	-480.40	626,879.01	826,014.69	32.7199134	-103.4076958	19,281.90	0.00	0.00	0.00
28,300.00	90.00	359.39	9,570.00	19,377.88	-481.47	626,979.01	826,013.62	32.7201882	-103.4076964	19,381.90	0.00	0.00	0.00
28,400.00	90.00	359.39	9,570.00	19,477.87	-482.54	627,079.00	826,012.55	32.7204631	-103.4076970	19,481.90	0.00	0.00	0.00
28,500.00	90.00	359.39	9,570.00	19,577.86	-483.60	627,178.99	826,011.49	32.7207379	-103.4076977	19,581.90	0.00	0.00	0.00
28,600.00	90.00	359.39	9,570.00	19,677.86	-484.67	627,278.99	826,010.42	32.7210128	-103.4076983	19,681.90	0.00	0.00	0.00
28,700.00	90.00	359.39	9,570.00	19,777.85	-485.74	627,378.98	826,009.35	32.7212876	-103.4076989	19,781.90	0.00	0.00	0.00
28,800.00	90.00	359.39	9,570.00	19,877.85	-486.80	627,478.98	826,008.29	32.7215625	-103.4076995	19,881.90	0.00	0.00	0.00
28,900.00	90.00	359.39	9,570.00	19,977.84	-487.87	627,578.97	826,007.22	32.7218373	-103.4077002	19,981.90	0.00	0.00	0.00
29,000.00	90.00	359.39	9,570.00	20,077.84	-488.94	627,678.97	826,006.15	32.7221121	-103.4077008	20,081.90	0.00	0.00	0.00
29,100.00	90.00	359.39	9,570.00	20,177.83	-490.00	627,778.96	826,005.09	32.7223870	-103.4077014	20,181.90	0.00	0.00	0.00
29,200.00	90.00	359.39	9,570.00	20,277.82	-491.07	627,878.95	826,004.02	32.7226618	-103.4077021	20,281.90	0.00	0.00	0.00
29,300.00	90.00	359.39	9,570.00	20,377.82	-492.14	627,978.95	826,002.95	32.7229367	-103.4077027	20,381.90	0.00	0.00	0.00

Total Directional Planned Survey Report



Company: Coterra Energy	Local Co-ordinate Reference: Well Sombrero State Com 223H
Project: Lea County, NM (NAD 83)	TVD Reference: GE 3739.2' + KB 23' @ 3762.20usft (Cactus 148)
Site: Sun-Sombrero Pad	MD Reference: GE 3739.2' + KB 23' @ 3762.20usft (Cactus 148)
Well: Sombrero State Com 223H	North Reference: Grid
Wellbore: OH	Survey Calculation Method: Minimum Curvature
Design: Plan #1	Database: .Total Directional Production DB

Planned Survey

Measured Depth (usft)	INC (°)	AZI (°)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	+E/-W (usft)	Map Coordinates Northing (usft)	Easting (usft)	Geo Coordinates Latitude (°)	Longitude (°)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
29,400.00	90.00	359.39	9,570.00	20,477.81	-493.20	628,078.94	826,001.89	32.7232115	-103.4077033	20,481.90	0.00	0.00	0.00
29,500.00	90.00	359.39	9,570.00	20,577.81	-494.27	628,178.94	826,000.82	32.7234864	-103.4077039	20,581.90	0.00	0.00	0.00
29,600.00	90.00	359.39	9,570.00	20,677.80	-495.33	628,278.93	825,999.76	32.7237612	-103.4077046	20,681.90	0.00	0.00	0.00
29,700.00	90.00	359.39	9,570.00	20,777.80	-496.40	628,378.93	825,998.69	32.7240360	-103.4077052	20,781.90	0.00	0.00	0.00
29,800.00	90.00	359.39	9,570.00	20,877.79	-497.47	628,478.92	825,997.62	32.7243109	-103.4077058	20,881.90	0.00	0.00	0.00
29,900.00	90.00	359.39	9,570.00	20,977.79	-498.53	628,578.91	825,996.56	32.7245857	-103.4077064	20,981.90	0.00	0.00	0.00
30,000.00	90.00	359.39	9,570.00	21,077.78	-499.60	628,678.91	825,995.49	32.7248606	-103.4077071	21,081.90	0.00	0.00	0.00
30,100.00	90.00	359.39	9,570.00	21,177.77	-500.67	628,778.90	825,994.42	32.7251354	-103.4077077	21,181.90	0.00	0.00	0.00
30,200.00	90.00	359.39	9,570.00	21,277.77	-501.73	628,878.90	825,993.36	32.7254103	-103.4077083	21,281.90	0.00	0.00	0.00
30,218.49	90.00	359.39	9,570.00	21,296.26	-501.93	628,897.39	825,993.16	32.7254611	-103.4077084	21,300.40	0.00	0.00	0.00

TD - 30218.49' MD - LTP/PBHL-100' FNL, 1684' FEL (Som St Com 223H)

Design Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
KOP/LP/FTP (Som St - hit/miss target - Shape - plan hits target center - Point	0.00	0.00	9,030.02	418.92	-279.28	608,020.05	826,215.81	32.6680777	-103.4075770
LTP/PBHL-100' FNL, - plan hits target center - Point	0.00	0.00	9,570.00	21,296.26	-501.93	628,897.39	825,993.16	32.7254611	-103.4077084

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,742.00	1,740.00	Rustler			
1,816.13	1,814.00	A3			
1,904.29	1,902.00	Tamarisk			
2,002.46	2,000.00	Top Salt			
3,102.42	3,098.00	Base Slit			
3,260.70	3,256.00	Yates			
3,675.43	3,670.00	Seven Rivers			
4,422.76	4,416.00	Queen			
5,715.05	5,706.00	Cherry Canyon			
5,929.43	5,920.00	Brushy Canyon			
7,321.90	7,310.00	Bone Spring			
9,113.47	9,098.00	1st Bone Spring Sand			
9,260.67	9,238.00	2nd Bone Spring Carbonate			
9,310.22	9,282.00	2nd Bone Spring Sand			
9,911.97	9,570.00	Target			

Total Directional Planned Survey Report



Company: Coterra Energy	Local Co-ordinate Reference: Well Sombrero State Com 223H
Project: Lea County, NM (NAD 83)	TVD Reference: GE 3739.2' + KB 23' @ 3762.20usft (Cactus 148)
Site: Sun-Sombrero Pad	MD Reference: GE 3739.2' + KB 23' @ 3762.20usft (Cactus 148)
Well: Sombrero State Com 223H	North Reference: Grid
Wellbore: OH	Survey Calculation Method: Minimum Curvature
Design: Plan #1	Database: .Total Directional Production DB

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
500	500	0	0	Start Build 2.00
671	671	4	-3	Hold - 670.69' MD/670.59' TVD
8997	8982	416	-278	Start DLS 4.00 TFO 109.82
9045	9030	419	-279	KOP - Start 10.00°/100' DLS
9912	9570	991	-285	LP - 9911.97' MD
30,218	9570	21,296	-502	TD - 30218.49' MD

Checked By: _____ Approved By: _____ Date: _____

Coterra Energy

Lea County, NM (NAD 83)

Sun-Sombrero Pad

Sombrero State Com 223H

320' FNL, 1408' FEL

OH

Plan #1



Anticollision Report

Minimum Magnetic Interference Warning level is 20' center to center

04 March, 2026

Total Report Version 1.70

COMPASS 5000.16 Build 97

[Click here for our anticollision policy](#)

ATTENTION

All offset data provided was gathered using available software and resources. Total Directional Services cannot guarantee the accuracy of all offset data, which should be verified for accuracy by the Operator.

Total Directional Anticollision Report



Company:	Coterra Energy	Local Co-ordinate Reference:	Well Sombrero State Com 223H
Project:	Lea County, NM (NAD 83)	TVD Reference:	GE 3739.2' + KB 23' @ 3762.20usft (Cactus 148)
Reference Site:	Sun-Sombrero Pad	MD Reference:	GE 3739.2' + KB 23' @ 3762.20usft (Cactus 148)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Sombrero State Com 223H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	.Total Directional Production DB
Reference Design:	Plan #1	Offset TVD Reference:	Reference Datum

Reference	Plan #1		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	MD Interval 100.00usft	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum centre distance of 3,312.47usft	Error Surface:	Pedal Curve
Warning Levels Evaluated at:	2.00 Sigma	Casing Method:	Not applied

Well	Sombrero State Com 223H						
Well Position	+N/-S	0.00 usft	Northing:	607,601.13 usft	Latitude:	32.6669197	
	+E/-W	0.00 usft	Easting:	826,495.09 usft	Longitude:	-103.4066815	
Position Uncertainty	0.00 usft		Wellhead Elevation:	usft	Ground Level:	3,739.20 usft	
Grid Convergence:	0.50 °						

Survey Tool Program	Date	3/4/2026					
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description			
0.00	30,218.49	Plan #1 (OH)	MWD+IFR1+MS	OWSG MWD + IFR1 + Multi-Station Correction			

Experimental: Summary Highlights: Sombrero State Com 223H

Offset Listing							
Offset Customer - Project - Site Name Offset Well	Map Coordinates		Geographical Coordinates		Surface Uncertainty		
	Ground Level	KB Height	Northing	Easting	Latitude	Longitude	Site Well
- - Sun-Sombrero Pad							
(O) Aberada Record 002 - P&A -	3,679.00	3,679.00	595,332.90	827,334.12	32.6331820	-103.4043040	0.00 0.00
(O) Blue Box Federal Com 505H -	3,802.90	3,828.90	615,321.84	822,280.64	32.6882393	-103.4201594	0.00 0.00
(O) Bryan 001 -	3,733.10	3,733.10	607,239.26	825,914.87	32.6659390	-103.4085770	0.00 0.00
(O) Coyote State 001 - P&A -	3,676.00	3,676.00	591,627.89	825,926.71	32.6230330	-103.4089800	0.00 0.00
(O) Haumea State 002H -	3,668.00	3,686.50	591,627.89	825,926.71	32.6230330	-103.4089800	0.00 0.00
(O) Northeast Pearl Queen Unit 011 -	3,716.50	3,716.50	607,601.21	826,515.09	32.6669194	-103.4066165	0.00 0.00
(O) Old Boy State 002H -	3,669.00	3,686.00	591,824.69	826,422.58	32.6235620	-103.4073640	0.00 0.00
(O) Record YW State 001 - P&A -	3,676.60	3,676.60	595,317.33	824,877.07	32.6331980	-103.4122850	0.00 0.00
(O) Rock Steady State #1 -	3,875.90	3,875.90	631,260.80	823,181.90	32.7320237	-103.4167824	0.00 0.00
(O) State 12 001 -	3,763.00	3,763.00	610,888.63	824,221.36	32.6760092	-103.4139769	0.00 0.00
(O) State Brine #1 - P&A -	3,853.00	3,853.00	617,735.14	827,135.60	32.6947560	-103.4043120	0.00 0.00
(O) State-Lea I 1-36 - P&A -	3,856.60	3,856.60	619,381.10	822,811.59	32.6993830	-103.4183200	0.00 0.00
(O) Sun State Com 502H -	3,708.20	3,738.20	599,528.98	825,267.52	32.6447639	-103.4108980	0.00 0.00
Sombrero State Com 221H -	3,746.80	3,773.30	607,591.32	823,842.28	32.6669561	-103.4153014	0.00 0.00
Sombrero State Com 222H -	3,746.70	3,773.20	607,591.47	823,882.28	32.6669555	-103.4151714	0.00 0.00
Sombrero State Com 224H -	3,739.00	3,762.00	607,601.29	826,535.08	32.6669191	-103.4065515	0.00 0.00
Sun Federal Com 224H -	3,738.90	3,761.90	607,601.37	826,555.08	32.6669189	-103.4064865	0.00 0.00
Sun State Com 221H -	3,746.80	3,773.30	607,591.39	823,862.28	32.6669558	-103.4152364	0.00 0.00

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

Total Directional Anticollision Report



Company:	Coterra Energy	Local Co-ordinate Reference:	Well Sombrero State Com 223H
Project:	Lea County, NM (NAD 83)	TVD Reference:	GE 3739.2' + KB 23' @ 3762.20usft (Cactus 148)
Reference Site:	Sun-Sombrero Pad	MD Reference:	GE 3739.2' + KB 23' @ 3762.20usft (Cactus 148)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Sombrero State Com 223H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	.Total Directional Production DB
Reference Design:	Plan #1	Offset TVD Reference:	Reference Datum

Offset Listing								
Offset Customer - Project - Site Name	Ground Level KB Height		Map Coordinates		Geographical Coordinates		Surface Uncertainty	
Offset Well			Northing	Easting	Latitude	Longitude	Site	Well
- - Sun-Sombrero Pad								
Sun State Com 223H -	3,739.30	3,762.30	607,601.21	826,515.09	32.6669194	-103.4066165	0.00	0.00

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						
Sun-Sombrero Pad						
(O) Aberada Record 002 - P&A - OH - OH						Out of range
(O) Blue Box Federal Com 505H - OH - OH						Out of range
(O) Bryan 001 - OH - OH	1,054.74	1,024.90	682.93	659.78	29.50	CC
(O) Bryan 001 - OH - OH	6,400.00	6,361.01	755.66	600.79	4.88	ES
(O) Bryan 001 - OH - OH	9,100.00	9,055.92	841.49	623.13	3.85	SF
(O) Coyote State 001 - P&A - OH - OH						Out of range
(O) Haumea State 002H - OH - OH						Out of range
(O) Old Boy State 002H - OH - OH						Out of range
(O) Record YW State 001 - P&A - OH - OH						Out of range
(O) Rock Steady State #1 - OH - OH						Out of range
(O) State 12 001 - OH - OH						Out of range
(O) State Brine #1 - P&A - OH - OH	19,044.69	9,660.80	1,023.34	646.17	2.71	CC, ES, SF
(O) State-Lea I 1-36 - P&A - OH - OH	20,736.67	9,665.10	3,282.87	3,003.55	11.75	CC, ES
(O) State-Lea I 1-36 - P&A - OH - OH	21,000.00	9,665.10	3,293.42	3,012.38	11.72	SF
(O) Sun State Com 502H - OH - OH						Out of range
Sombrero State Com 221H - OH - Plan #1	721.00	644.74	2,652.18	2,647.47	563.37	CC
Sombrero State Com 221H - OH - Plan #1	30,219.49	30,209.86	2,688.17	2,356.11	8.10	ES, SF
Sombrero State Com 222H - OH - Plan #1	30,219.49	30,264.95	1,334.40	1,001.99	4.01	CC, ES, SF
Sombrero State Com 224H - OH - Plan #1	500.00	499.80	39.99	36.57	11.70	CC, ES
Sombrero State Com 224H - OH - Plan #1	30,219.49	30,288.37	1,353.80	1,021.13	4.07	SF
Sun Federal Com 224H - OH - Plan #1	500.00	499.70	59.99	56.57	17.55	CC, ES
Sun Federal Com 224H - OH - Plan #1	700.00	695.10	70.51	65.69	14.63	SF
Sun State Com 221H - OH - Plan #1	1,973.29	1,900.00	2,590.82	2,577.14	189.30	CC
Sun State Com 221H - OH - Plan #1	2,000.00	1,918.26	2,590.85	2,577.00	187.13	ES
Sun State Com 221H - OH - Plan #1	9,400.00	9,237.50	2,760.17	2,693.79	41.58	SF
Sun State Com 223H - OH - Plan #1	500.00	500.10	20.00	16.58	5.85	CC, ES
Sun State Com 223H - OH - Plan #1	8,900.00	8,901.03	191.31	127.49	3.00	SF

Offset Design: Sun-Sombrero Pad - (O) Bryan 001 - OH - OH														
Survey Program: 150-INC-ONLY										Rule Assigned:		Offset Site Error: 0.00 usft		
Reference		Offset		Semi Major Axis		Highside		Offset Wellbore Centre		Distance		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)	Minimum Separation (usft)	Separation Factor		
0.00	0.00	0.00	29.10	0.00	0.00	-121.95	-361.87	-580.22	684.44					
100.00	100.00	70.90	100.00	0.28	1.26	-121.95	-361.87	-580.22	683.82	682.29	1.53	446.280		
200.00	200.00	170.90	200.00	0.63	3.03	-121.95	-361.87	-580.22	683.82	680.16	3.66	186.717		
255.35	255.35	226.23	255.33	0.83	4.01	-121.95	-361.79	-580.22	683.78	678.93	4.84	141.245		

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

Total Directional Anticollision Report



Company:	Coterra Energy	Local Co-ordinate Reference:	Well Sombrero State Com 223H
Project:	Lea County, NM (NAD 83)	TVD Reference:	GE 3739.2' + KB 23' @ 3762.20usft (Cactus 148)
Reference Site:	Sun-Sombrero Pad	MD Reference:	GE 3739.2' + KB 23' @ 3762.20usft (Cactus 148)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Sombrero State Com 223H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	.Total Directional Production DB
Reference Design:	Plan #1	Offset TVD Reference:	Reference Datum

Offset Design: Sun-Sombrero Pad - (O) Bryan 001 - OH - OH

Survey Program:		150-INC-ONLY		Offset		Semi Major Axis		Offset Wellbore Centre		Rule Assigned:				Offset Site Error:
Measured Reference	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	+N/-S	+E/-W	Between Centres	Between Ellipses	Minimum Separation	Separation Factor	Warning	Offset Well Error:
(usft)	(usft)	(usft)	(usft)	(usft)	(usft)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)			(usft)
300.00	300.00	270.41	299.51	0.99	4.79	-121.95	-361.82	-580.22	683.79	678.01	5.78	118.224		0.00 usft
400.00	400.00	370.90	400.00	1.35	6.61	-121.95	-361.87	-580.22	683.82	675.86	7.96	85.882		0.00 usft
500.00	500.00	470.90	500.00	1.71	8.54	-121.95	-361.87	-580.22	683.82	673.56	10.25	66.686		
600.00	599.98	570.88	599.98	2.07	10.48	-88.32	-361.87	-580.22	683.77	671.22	12.54	54.509		
700.00	699.85	670.05	699.15	2.43	12.39	-88.72	-361.49	-580.22	683.43	668.61	14.82	46.124		
719.02	718.83	688.90	717.99	2.50	12.76	-88.82	-361.53	-580.22	683.43	668.18	15.25	44.817		
800.00	799.67	769.14	798.23	2.78	14.31	-89.23	-361.78	-580.22	683.48	666.39	17.09	39.994		
900.00	899.49	870.43	899.49	3.14	16.34	-89.75	-361.87	-580.22	683.48	664.00	19.47	35.097		
951.00	950.41	921.35	950.41	3.32	17.37	-90.00	-361.87	-580.22	683.47	662.79	20.69	33.041		
1,000.00	999.31	970.26	999.31	3.50	18.36	-90.24	-361.87	-580.22	683.48	661.63	21.85	31.280		
1,054.74	1,053.96	1,024.90	1,053.95	3.70	19.46	-90.45	-360.86	-580.22	682.93	659.78	23.15	29.499	CC	
1,100.00	1,099.14	1,069.43	1,098.48	3.86	20.36	-90.67	-360.90	-580.22	682.98	658.77	24.21	28.207		
1,200.00	1,198.96	1,167.81	1,196.86	4.22	22.35	-91.19	-361.25	-580.22	683.28	656.72	26.56	25.725		
1,300.00	1,298.78	1,269.78	1,298.78	4.58	24.40	-91.74	-361.87	-580.22	683.79	654.82	28.97	23.607		
1,400.00	1,398.60	1,369.60	1,398.60	4.94	26.30	-92.24	-361.87	-580.22	683.99	652.77	31.22	21.906		
1,500.00	1,498.43	1,469.42	1,498.43	5.30	28.20	-92.73	-361.87	-580.22	684.25	650.77	33.48	20.436		
1,532.97	1,531.34	1,502.33	1,531.33	5.42	28.82	-92.84	-361.07	-580.22	683.87	649.64	34.23	19.980		
1,600.00	1,598.25	1,568.52	1,597.52	5.66	30.08	-93.18	-361.13	-580.22	684.11	648.39	35.73	19.148		
1,700.00	1,698.07	1,667.26	1,696.25	6.02	31.96	-93.69	-361.43	-580.22	684.66	646.69	37.97	18.033		
1,800.00	1,797.90	1,768.92	1,797.90	6.38	33.90	-94.22	-361.87	-580.22	685.34	645.08	40.26	17.022		
1,900.00	1,897.72	1,868.74	1,897.72	6.74	35.80	-94.72	-361.87	-580.22	685.80	643.28	42.52	16.128		
2,000.00	1,997.54	1,968.57	1,997.54	7.10	37.70	-95.21	-361.87	-580.22	686.32	641.54	44.78	15.326		
2,100.00	2,097.36	2,067.83	2,096.80	7.46	39.59	-95.67	-361.38	-580.22	686.58	639.55	47.03	14.599		
2,200.00	2,197.19	2,166.88	2,195.85	7.82	41.48	-96.18	-361.60	-580.22	687.33	638.05	49.27	13.949		
2,300.00	2,297.01	2,268.06	2,297.01	8.18	43.51	-96.69	-361.87	-580.22	688.18	636.51	51.67	13.320		
2,400.00	2,396.83	2,367.89	2,396.83	8.54	45.81	-97.18	-361.87	-580.22	688.90	634.57	54.33	12.680		
2,500.00	2,496.65	2,467.71	2,496.65	8.90	48.12	-97.67	-361.87	-580.22	689.67	632.67	56.99	12.101		
2,600.00	2,596.48	2,566.61	2,595.54	9.26	50.40	-98.11	-361.14	-580.22	690.00	630.36	59.64	11.570		
2,700.00	2,696.30	2,665.22	2,694.15	9.62	52.68	-98.61	-361.47	-580.22	691.09	628.82	62.27	11.098		
2,800.00	2,796.12	2,767.33	2,796.12	9.98	55.15	-99.14	-361.87	-580.22	692.28	627.18	65.11	10.633		
2,900.00	2,895.94	2,867.23	2,895.94	10.34	57.87	-99.62	-361.87	-580.22	693.26	625.07	68.19	10.167		
3,000.00	2,995.77	2,962.05	2,990.75	10.70	60.63	-100.06	-361.53	-580.22	694.05	622.76	71.30	9.734		
3,100.00	3,095.59	3,064.44	3,093.04	11.06	63.70	-100.54	-361.23	-580.22	694.90	620.17	74.73	9.299		
3,200.00	3,195.41	3,166.90	3,195.41	11.42	66.68	-101.07	-361.87	-580.22	696.47	618.39	78.08	8.920		
3,300.00	3,295.23	3,266.80	3,295.23	11.78	69.40	-101.55	-361.87	-580.22	697.64	616.49	81.15	8.597		
3,400.00	3,395.06	3,366.66	3,395.06	12.14	71.85	-102.02	-361.87	-580.22	698.86	614.90	83.96	8.324		
3,500.00	3,494.88	3,466.49	3,494.88	12.50	73.97	-102.50	-361.87	-580.22	700.12	613.68	86.44	8.099		
3,600.00	3,594.70	3,565.16	3,593.54	12.86	76.07	-102.92	-360.99	-580.22	700.80	611.89	88.90	7.883		
3,700.00	3,694.52	3,661.79	3,690.16	13.22	78.13	-103.41	-361.51	-580.22	702.55	611.23	91.32	7.693		
3,800.00	3,794.35	3,766.01	3,794.35	13.58	80.23	-103.92	-361.87	-580.22	704.21	610.43	93.78	7.509		
3,900.00	3,894.17	3,865.83	3,894.17	13.94	82.18	-104.38	-361.87	-580.22	705.67	609.58	96.09	7.344		
4,000.00	3,993.99	3,964.84	3,993.18	14.30	84.12	-104.81	-361.21	-580.22	706.68	608.29	98.39	7.182		
4,100.00	4,093.81	4,063.07	4,091.41	14.67	86.04	-105.29	-361.50	-580.22	708.45	607.78	100.67	7.038		
4,200.00	4,193.64	4,165.33	4,193.64	15.03	88.04	-105.78	-361.87	-580.22	710.33	607.30	103.03	6.894		
4,300.00	4,293.46	4,265.16	4,293.46	15.39	89.99	-106.24	-361.87	-580.22	711.97	606.63	105.34	6.759		
4,400.00	4,393.28	4,364.97	4,393.27	15.75	91.95	-106.66	-361.11	-580.22	713.07	605.41	107.66	6.624		
4,500.00	4,493.10	4,463.28	4,491.58	16.11	93.87	-107.11	-361.24	-580.22	714.91	604.97	109.94	6.503		
4,600.00	4,592.93	4,561.57	4,589.86	16.47	95.79	-107.58	-361.65	-580.22	717.01	604.79	112.22	6.389		
4,700.00	4,692.75	4,664.49	4,692.75	16.83	97.81	-108.06	-361.87	-580.22	719.01	604.41	114.60	6.274		
4,800.00	4,792.57	4,764.31	4,792.57	17.19	99.77	-108.51	-361.87	-580.22	720.88	603.96	116.92	6.166		
4,900.00	4,892.39	4,863.88	4,892.14	17.55	101.72	-108.91	-361.06	-580.22	722.15	602.92	119.23	6.057		

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

Total Directional Anticollision Report



Company:	Coterra Energy	Local Co-ordinate Reference:	Well Sombrero State Com 223H
Project:	Lea County, NM (NAD 83)	TVD Reference:	GE 3739.2' + KB 23' @ 3762.20usft (Cactus 148)
Reference Site:	Sun-Sombrero Pad	MD Reference:	GE 3739.2' + KB 23' @ 3762.20usft (Cactus 148)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Sombrero State Com 223H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	.Total Directional Production DB
Reference Design:	Plan #1	Offset TVD Reference:	Reference Datum

Offset Design: Sun-Sombrero Pad - (O) Bryan 001 - OH - OH

Survey Program: 150-INC-ONLY													Offset Site Error:	0.00 usft
Rule Assigned:													Offset Well Error:	0.00 usft
Measured Reference Depth (usft)	Vertical Depth (usft)	Measured Offset Depth (usft)	Vertical Depth (usft)	Semi Major Axis Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Distance Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
5,000.00	4,992.22	4,962.21	4,990.47	17.91	103.65	-109.36	-361.23	-580.22	724.24	602.73	121.52	5.960		
5,100.00	5,092.04	5,060.52	5,088.77	18.27	105.57	-109.82	-361.66	-580.22	726.59	602.79	123.80	5.869		
5,200.00	5,191.86	5,163.64	5,191.86	18.63	107.59	-110.28	-361.87	-580.22	728.80	602.62	126.19	5.776		
5,300.00	5,291.68	5,263.46	5,291.68	18.99	109.55	-110.72	-361.87	-580.22	730.89	602.39	128.50	5.688		
5,400.00	5,391.51	5,362.96	5,391.18	19.35	111.50	-111.12	-361.07	-580.22	732.37	601.55	130.82	5.598		
5,500.00	5,491.33	5,461.22	5,489.43	19.71	113.43	-111.55	-361.25	-580.22	734.69	601.58	133.10	5.520		
5,600.00	5,591.15	5,559.45	5,587.65	20.07	115.36	-111.99	-361.69	-580.22	737.27	601.88	135.39	5.446		
5,700.00	5,690.97	5,662.80	5,690.97	20.43	117.45	-112.44	-361.87	-580.22	739.66	601.83	137.84	5.366		
5,800.00	5,790.80	5,762.62	5,790.80	20.80	119.49	-112.87	-361.87	-580.22	741.96	601.72	140.24	5.291		
5,900.00	5,890.62	5,862.03	5,890.20	21.16	121.52	-113.25	-361.07	-580.22	743.63	600.99	142.63	5.214		
6,000.00	5,990.44	5,960.23	5,988.40	21.52	123.53	-113.67	-361.26	-580.22	746.16	601.16	145.00	5.146		
6,100.00	6,090.26	6,058.41	6,086.57	21.88	125.53	-114.10	-361.71	-580.22	748.96	601.60	147.37	5.082		
6,200.00	6,190.09	6,161.97	6,190.09	22.24	127.72	-114.54	-361.87	-580.22	751.55	601.64	149.91	5.013		
6,300.00	6,289.91	6,261.79	6,289.91	22.60	129.84	-114.95	-361.87	-580.22	754.05	601.65	152.39	4.948		
6,400.00	6,389.73	6,361.01	6,389.12	22.96	131.95	-115.31	-360.80	-580.22	755.66	600.79	154.86	4.879	ES	
6,500.00	6,489.55	6,458.62	6,486.72	23.32	134.02	-115.72	-361.06	-580.22	758.45	601.16	157.30	4.822		
6,600.00	6,589.38	6,556.20	6,584.29	23.68	136.10	-116.14	-361.65	-580.22	761.58	601.85	159.73	4.768		
6,700.00	6,689.20	6,661.16	6,689.20	24.04	138.21	-116.56	-361.87	-580.22	764.41	602.21	162.20	4.713		
6,800.00	6,789.02	6,760.98	6,789.02	24.40	140.16	-116.96	-361.87	-580.22	767.10	602.58	164.52	4.663		
6,900.00	6,888.85	6,860.10	6,888.13	24.76	142.11	-117.32	-360.81	-580.22	768.89	602.07	166.83	4.609		
7,000.00	6,988.67	6,957.59	6,985.62	25.12	144.02	-117.71	-361.08	-580.22	771.89	602.79	169.10	4.565		
7,100.00	7,088.49	7,055.06	7,083.08	25.48	145.94	-118.11	-361.69	-580.22	775.23	603.86	171.37	4.524		
7,200.00	7,188.31	7,160.31	7,188.31	25.85	147.93	-118.52	-361.87	-580.22	778.20	604.47	173.74	4.479		
7,300.00	7,288.14	7,260.14	7,288.14	26.21	149.81	-118.91	-361.87	-580.22	781.07	605.09	175.98	4.438		
7,400.00	7,387.96	7,359.52	7,387.52	26.57	151.68	-119.27	-361.35	-580.22	783.50	605.29	178.21	4.397		
7,500.00	7,487.78	7,458.12	7,486.12	26.93	153.54	-119.65	-361.49	-580.22	786.56	606.14	180.42	4.360		
7,600.00	7,587.60	7,556.70	7,584.70	27.29	155.40	-120.03	-361.81	-580.22	789.82	607.18	182.64	4.325		
7,700.00	7,687.43	7,659.46	7,687.43	27.65	157.40	-120.41	-361.87	-580.22	792.87	607.86	185.01	4.286		
7,800.00	7,787.25	7,759.28	7,787.25	28.01	159.37	-120.78	-361.87	-580.22	795.91	608.58	187.33	4.249		
7,900.00	7,887.07	7,857.12	7,885.08	28.37	161.29	-121.12	-361.33	-580.22	798.48	608.87	189.61	4.211		
8,000.00	7,986.89	7,954.64	7,982.60	28.73	163.20	-121.49	-361.75	-580.22	801.98	610.09	191.89	4.179		
8,100.00	8,086.72	8,058.78	8,086.72	29.09	165.32	-121.87	-361.87	-580.22	805.21	610.84	194.37	4.143		
8,200.00	8,186.54	8,158.60	8,186.54	29.45	167.36	-122.23	-361.87	-580.22	808.37	611.60	196.77	4.108		
8,300.00	8,286.36	8,256.95	8,284.88	29.81	169.37	-122.56	-361.23	-580.22	810.98	611.84	199.14	4.072		
8,400.00	8,386.18	8,354.58	8,382.50	30.17	171.37	-122.92	-361.57	-580.22	814.52	613.03	201.49	4.042		
8,500.00	8,486.01	8,458.12	8,486.01	30.54	173.48	-123.29	-361.87	-580.22	818.05	614.07	203.98	4.011		
8,600.00	8,585.83	8,557.94	8,585.83	30.90	175.53	-123.63	-361.87	-580.22	821.34	614.96	206.38	3.980		
8,700.00	8,685.65	8,655.62	8,683.49	31.26	177.52	-123.95	-361.14	-580.22	823.98	615.25	208.73	3.948		
8,800.00	8,785.47	8,752.00	8,779.86	31.62	179.49	-124.29	-361.63	-580.22	827.80	616.74	211.06	3.922		
8,900.00	8,885.30	8,857.46	8,885.30	31.98	181.65	-124.66	-361.87	-580.22	831.38	617.79	213.59	3.892		
9,000.00	8,985.12	8,957.28	8,985.12	32.34	183.69	-125.00	-361.87	-580.22	834.78	618.79	215.99	3.865		
9,100.00	9,084.72	9,055.92	9,083.76	32.70	185.71	-158.20	-361.14	-580.22	841.49	623.13	218.36	3.854	SF	
9,200.00	9,181.71	9,150.72	9,178.55	33.06	187.65	-157.93	-361.39	-580.22	863.93	643.27	220.66	3.915		
9,300.00	9,273.09	9,245.30	9,273.09	33.40	189.58	-157.39	-361.87	-580.22	902.13	679.20	222.94	4.047		
9,400.00	9,356.08	9,328.29	9,356.08	33.71	191.35	-156.28	-361.87	-580.22	954.52	729.51	225.01	4.242		
9,500.00	9,428.16	9,400.37	9,428.16	33.97	192.88	-154.22	-361.87	-580.22	1,020.17	793.36	226.80	4.498		
9,600.00	9,487.14	9,459.35	9,487.14	34.19	194.13	-150.44	-361.87	-580.22	1,097.24	868.98	228.26	4.807		
9,700.00	9,531.23	9,503.12	9,530.90	34.39	195.06	-143.13	-360.78	-580.22	1,182.44	953.10	229.34	5.156		
9,800.00	9,559.09	9,529.80	9,557.58	34.58	195.63	-127.67	-360.80	-580.22	1,275.27	1,045.28	230.00	5.545		
9,900.00	9,569.87	9,539.99	9,567.77	34.74	195.85	-94.77	-360.81	-580.22	1,371.83	1,141.57	230.26	5.958		

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

Total Directional Anticollision Report



Company:	Coterra Energy	Local Co-ordinate Reference:	Well Sombrero State Com 223H
Project:	Lea County, NM (NAD 83)	TVD Reference:	GE 3739.2' + KB 23' @ 3762.20usft (Cactus 148)
Reference Site:	Sun-Sombrero Pad	MD Reference:	GE 3739.2' + KB 23' @ 3762.20usft (Cactus 148)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Sombrero State Com 223H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	.Total Directional Production DB
Reference Design:	Plan #1	Offset TVD Reference:	Reference Datum

Offset Design: Sun-Sombrero Pad - (O) Bryan 001 - OH - OH

Survey Program:		150-INC-ONLY		Offset		Semi Major Axis		Offset Wellbore Centre		Rule Assigned:				Offset Site Error:
Measured Reference	Vertical	Measured	Vertical	Reference	Offset	Highside	+N/-S	+E/-W	Between	Between	Minimum	Separation	Warning	
Depth (usft)	Depth (usft)	Depth (usft)	Depth (usft)	(usft)	(usft)	Toolface (°)	(usft)	(usft)	Centres (usft)	Ellipses (usft)	Separation (usft)	Factor		
10,000.00	9,570.00	9,539.96	9,567.74	34.88	195.84	-89.58	-360.81	-580.22	1,469.42	1,239.15	230.28	6.381		
10,100.00	9,570.00	9,539.81	9,567.59	35.04	195.84	-89.55	-360.81	-580.22	1,567.33	1,337.03	230.30	6.806		
10,200.00	9,570.00	9,539.67	9,567.44	35.22	195.84	-89.53	-360.81	-580.22	1,665.48	1,435.16	230.31	7.231		
10,300.00	9,570.00	9,539.52	9,567.30	35.41	195.84	-89.50	-360.81	-580.22	1,763.84	1,533.50	230.33	7.658		
10,400.00	9,570.00	9,539.38	9,567.15	35.61	195.83	-89.47	-360.81	-580.22	1,862.37	1,632.02	230.35	8.085		
10,500.00	9,570.00	9,539.23	9,567.01	35.84	195.83	-89.45	-360.81	-580.22	1,961.05	1,730.68	230.37	8.513		
10,600.00	9,570.00	9,539.09	9,566.86	36.08	195.83	-89.42	-360.81	-580.22	2,059.86	1,829.47	230.39	8.941		
10,700.00	9,570.00	9,538.94	9,566.72	36.33	195.82	-89.39	-360.81	-580.22	2,158.78	1,928.37	230.41	9.369		
10,800.00	9,570.00	9,538.80	9,566.58	36.59	195.82	-89.37	-360.81	-580.22	2,257.79	2,027.36	230.43	9.798		
10,900.00	9,570.00	9,538.66	9,566.44	36.88	195.82	-89.34	-360.81	-580.22	2,356.89	2,126.44	230.45	10.227		
11,000.00	9,570.00	9,538.52	9,566.30	37.17	195.81	-89.31	-360.81	-580.22	2,456.06	2,225.59	230.47	10.657		
11,100.00	9,570.00	9,538.38	9,566.16	37.48	195.81	-89.29	-360.81	-580.22	2,555.30	2,324.80	230.49	11.086		
11,200.00	9,570.00	9,538.24	9,566.02	37.80	195.81	-89.26	-360.81	-580.22	2,654.59	2,424.07	230.52	11.516		
11,300.00	9,570.00	9,538.11	9,565.88	38.13	195.81	-89.24	-360.81	-580.22	2,753.93	2,523.39	230.54	11.945		
11,400.00	9,570.00	9,537.97	9,565.74	38.48	195.80	-89.21	-360.81	-580.22	2,853.32	2,622.76	230.57	12.375		
11,500.00	9,570.00	9,537.83	9,565.61	38.84	195.80	-89.19	-360.81	-580.22	2,952.75	2,722.16	230.59	12.805		
11,600.00	9,570.00	9,537.70	9,565.47	39.21	195.80	-89.16	-360.81	-580.22	3,052.22	2,821.60	230.62	13.235		
11,700.00	9,570.00	9,537.57	9,565.34	39.59	195.79	-89.14	-360.81	-580.22	3,151.72	2,921.08	230.65	13.665		
11,800.00	9,570.00	9,537.43	9,565.21	39.99	195.79	-89.11	-360.81	-580.22	3,251.25	3,020.58	230.67	14.095		

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

Total Directional Anticollision Report



Company:	Coterra Energy	Local Co-ordinate Reference:	Well Sombrero State Com 223H
Project:	Lea County, NM (NAD 83)	TVD Reference:	GE 3739.2' + KB 23' @ 3762.20usft (Cactus 148)
Reference Site:	Sun-Sombrero Pad	MD Reference:	GE 3739.2' + KB 23' @ 3762.20usft (Cactus 148)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Sombrero State Com 223H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	.Total Directional Production DB
Reference Design:	Plan #1	Offset TVD Reference:	Reference Datum

Offset Design: Sun-Sombrero Pad - (O) State Brine #1 - P&A - OH - OH

Offset Site Error: 0.00 usft

Offset Well Error: 0.00 usft

Survey Program:		12200-2 Assumed Vertical		Reference		Offset		Semi Major Axis		Highside		Offset Wellbore Centre		Rule Assigned:				Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Reference (usft)	Offset (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor			
15,900.00	9,570.00	9,660.80	9,570.00	62.47	293.39	90.00	10,134.00	640.51	3,307.00	2,973.30	333.70	9.910							
16,000.00	9,570.00	9,660.80	9,570.00	63.12	293.39	90.00	10,134.00	640.51	3,212.06	2,878.01	334.05	9.615							
16,100.00	9,570.00	9,660.80	9,570.00	63.76	293.39	90.00	10,134.00	640.51	3,117.44	2,783.00	334.43	9.322							
16,200.00	9,570.00	9,660.80	9,570.00	64.42	293.39	90.00	10,134.00	640.51	3,023.16	2,688.31	334.84	9.029							
16,300.00	9,570.00	9,660.80	9,570.00	65.07	293.39	90.00	10,134.00	640.51	2,929.25	2,593.97	335.29	8.737							
16,400.00	9,570.00	9,660.80	9,570.00	65.72	293.39	90.00	10,134.00	640.51	2,835.77	2,500.00	335.77	8.446							
16,500.00	9,570.00	9,660.80	9,570.00	66.38	293.39	90.00	10,134.00	640.51	2,742.75	2,406.46	336.29	8.156							
16,600.00	9,570.00	9,660.80	9,570.00	67.04	293.39	90.00	10,134.00	640.51	2,650.23	2,313.37	336.86	7.867							
16,700.00	9,570.00	9,660.80	9,570.00	67.71	293.39	90.00	10,134.00	640.51	2,558.28	2,220.80	337.48	7.580							
16,800.00	9,570.00	9,660.80	9,570.00	68.37	293.39	90.00	10,134.00	640.51	2,466.95	2,128.79	338.16	7.295							
16,900.00	9,570.00	9,660.80	9,570.00	69.04	293.39	90.00	10,134.00	640.51	2,376.32	2,037.42	338.91	7.012							
17,000.00	9,570.00	9,660.80	9,570.00	69.71	293.39	90.00	10,134.00	640.51	2,286.48	1,946.75	339.72	6.730							
17,100.00	9,570.00	9,660.80	9,570.00	70.38	293.39	90.00	10,134.00	640.51	2,197.51	1,856.89	340.62	6.452							
17,200.00	9,570.00	9,660.80	9,570.00	71.06	293.39	90.00	10,134.00	640.51	2,109.52	1,767.92	341.61	6.175							
17,300.00	9,570.00	9,660.80	9,570.00	71.73	293.39	90.00	10,134.00	640.51	2,022.66	1,679.97	342.69	5.902							
17,400.00	9,570.00	9,660.80	9,570.00	72.41	293.39	90.00	10,134.00	640.51	1,937.06	1,593.17	343.89	5.633							
17,500.00	9,570.00	9,660.80	9,570.00	73.09	293.39	90.00	10,134.00	640.51	1,852.91	1,507.70	345.21	5.367							
17,600.00	9,570.00	9,660.80	9,570.00	73.77	293.39	90.00	10,134.00	640.51	1,770.41	1,423.74	346.67	5.107							
17,700.00	9,570.00	9,660.80	9,570.00	74.45	293.39	90.00	10,134.00	640.51	1,689.79	1,341.52	348.27	4.852							
17,800.00	9,570.00	9,660.80	9,570.00	75.14	293.39	90.00	10,134.00	640.51	1,611.36	1,261.32	350.04	4.603							
17,900.00	9,570.00	9,660.80	9,570.00	75.82	293.39	90.00	10,134.00	640.51	1,535.42	1,183.46	351.97	4.362							
18,000.00	9,570.00	9,660.80	9,570.00	76.51	293.39	90.00	10,134.00	640.51	1,462.39	1,108.33	354.07	4.130							
18,100.00	9,570.00	9,660.80	9,570.00	77.20	293.39	90.00	10,134.00	640.51	1,392.71	1,036.38	356.34	3.908							
18,200.00	9,570.00	9,660.80	9,570.00	77.89	293.39	90.00	10,134.00	640.51	1,326.92	968.15	358.77	3.699							
18,300.00	9,570.00	9,660.80	9,570.00	78.58	293.39	90.00	10,134.00	640.51	1,265.61	904.28	361.34	3.503							
18,400.00	9,570.00	9,660.80	9,570.00	79.28	293.39	90.00	10,134.00	640.51	1,209.48	845.48	364.00	3.323							
18,500.00	9,570.00	9,660.80	9,570.00	79.97	293.39	90.00	10,134.00	640.51	1,159.27	792.58	366.69	3.161							
18,600.00	9,570.00	9,660.80	9,570.00	80.67	293.39	90.00	10,134.00	640.51	1,115.78	746.47	369.31	3.021							
18,700.00	9,570.00	9,660.80	9,570.00	81.37	293.39	90.00	10,134.00	640.51	1,079.83	708.06	371.76	2.905							
18,800.00	9,570.00	9,660.80	9,570.00	82.07	293.39	90.00	10,134.00	640.51	1,052.18	678.27	373.92	2.814							
18,900.00	9,570.00	9,660.80	9,570.00	82.77	293.39	90.00	10,134.00	640.51	1,033.52	657.88	375.64	2.751							
19,000.00	9,570.00	9,660.80	9,570.00	83.47	293.39	90.00	10,134.00	640.51	1,024.31	647.49	376.83	2.718							
19,044.69	9,570.00	9,660.80	9,570.00	83.78	293.39	90.00	10,134.00	640.51	1,023.34	646.17	377.16	2.713	CC, ES, SF						
19,100.00	9,570.00	9,660.80	9,570.00	84.17	293.39	90.00	10,134.00	640.51	1,024.83	647.42	377.41	2.715							
19,200.00	9,570.00	9,660.80	9,570.00	84.88	293.39	90.00	10,134.00	640.51	1,035.06	657.69	377.37	2.743							
19,300.00	9,570.00	9,660.80	9,570.00	85.58	293.39	90.00	10,134.00	640.51	1,054.71	677.96	376.75	2.800							
19,400.00	9,570.00	9,660.80	9,570.00	86.29	293.39	90.00	10,134.00	640.51	1,083.27	707.64	375.63	2.884							
19,500.00	9,570.00	9,660.80	9,570.00	86.99	293.39	90.00	10,134.00	640.51	1,120.06	745.94	374.12	2.994							
19,600.00	9,570.00	9,660.80	9,570.00	87.70	293.39	90.00	10,134.00	640.51	1,164.30	791.96	372.34	3.127							
19,700.00	9,570.00	9,660.80	9,570.00	88.41	293.39	90.00	10,134.00	640.51	1,215.18	844.78	370.40	3.281							
19,800.00	9,570.00	9,660.80	9,570.00	89.12	293.39	90.00	10,134.00	640.51	1,271.89	903.51	368.39	3.453							
19,900.00	9,570.00	9,660.80	9,570.00	89.83	293.39	90.00	10,134.00	640.51	1,333.71	967.33	366.38	3.640							
20,000.00	9,570.00	9,660.80	9,570.00	90.55	293.39	90.00	10,134.00	640.51	1,399.94	1,035.52	364.42	3.842							
20,100.00	9,570.00	9,660.80	9,570.00	91.26	293.39	90.00	10,134.00	640.51	1,470.00	1,107.45	362.55	4.055							
20,200.00	9,570.00	9,660.80	9,570.00	91.97	293.39	90.00	10,134.00	640.51	1,543.36	1,182.57	360.80	4.278							
20,300.00	9,570.00	9,660.80	9,570.00	92.69	293.39	90.00	10,134.00	640.51	1,619.58	1,260.42	359.15	4.509							
20,400.00	9,570.00	9,660.80	9,570.00	93.41	293.39	90.00	10,134.00	640.51	1,698.26	1,340.62	357.64	4.749							
20,500.00	9,570.00	9,660.80	9,570.00	94.12	293.39	90.00	10,134.00	640.51	1,779.09	1,422.85	356.24	4.994							
20,600.00	9,570.00	9,660.80	9,570.00	94.84	293.39	90.00	10,134.00	640.51	1,861.78	1,506.82	354.96	5.245							
20,700.00	9,570.00	9,660.80	9,570.00	95.56	293.39	90.00	10,134.00	640.51	1,946.09	1,592.31	353.78	5.501							
20,800.00	9,570.00	9,660.80	9,570.00	96.28	293.39	90.00	10,134.00	640.51	2,031.83	1,679.12	352.71	5.761							

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

Total Directional Anticollision Report



Company:	Coterra Energy	Local Co-ordinate Reference:	Well Sombrero State Com 223H
Project:	Lea County, NM (NAD 83)	TVD Reference:	GE 3739.2' + KB 23' @ 3762.20usft (Cactus 148)
Reference Site:	Sun-Sombrero Pad	MD Reference:	GE 3739.2' + KB 23' @ 3762.20usft (Cactus 148)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Sombrero State Com 223H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	.Total Directional Production DB
Reference Design:	Plan #1	Offset TVD Reference:	Reference Datum

Offset Design: Sun-Sombrero Pad - (O) State Brine #1 - P&A - OH - OH

Survey Program: 12200-2_Assumed Vertical													Offset Site Error:	0.00 usft
Reference Offset				Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Rule Assigned:				Offset Well Error:	0.00 usft
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	
20,900.00	9,570.00	9,660.80	9,570.00	97.00	293.39	90.00	10,134.00	640.51	2,118.82	1,767.08	351.74	6.024		
21,000.00	9,570.00	9,660.80	9,570.00	97.72	293.39	90.00	10,134.00	640.51	2,206.91	1,856.06	350.85	6.290		
21,100.00	9,570.00	9,660.80	9,570.00	98.44	293.39	90.00	10,134.00	640.51	2,295.98	1,945.94	350.04	6.559		
21,200.00	9,570.00	9,660.80	9,570.00	99.16	293.39	90.00	10,134.00	640.51	2,385.91	2,036.61	349.31	6.830		
21,300.00	9,570.00	9,660.80	9,570.00	99.89	293.39	90.00	10,134.00	640.51	2,476.62	2,127.98	348.64	7.104		
21,400.00	9,570.00	9,660.80	9,570.00	100.61	293.39	90.00	10,134.00	640.51	2,568.02	2,219.99	348.03	7.379		
21,500.00	9,570.00	9,660.80	9,570.00	101.33	293.39	90.00	10,134.00	640.51	2,660.03	2,312.56	347.47	7.655		
21,600.00	9,570.00	9,660.80	9,570.00	102.06	293.39	90.00	10,134.00	640.51	2,752.61	2,405.64	346.97	7.933		
21,700.00	9,570.00	9,660.80	9,570.00	102.78	293.39	90.00	10,134.00	640.51	2,845.68	2,499.17	346.51	8.212		
21,800.00	9,570.00	9,660.80	9,570.00	103.51	293.39	90.00	10,134.00	640.51	2,939.21	2,593.12	346.09	8.493		
21,900.00	9,570.00	9,660.80	9,570.00	104.24	293.39	90.00	10,134.00	640.51	3,033.15	2,687.45	345.71	8.774		
22,000.00	9,570.00	9,660.80	9,570.00	104.96	293.39	90.00	10,134.00	640.51	3,127.47	2,782.11	345.36	9.056		
22,100.00	9,570.00	9,660.80	9,570.00	105.69	293.39	90.00	10,134.00	640.51	3,222.13	2,877.09	345.05	9.338		

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

Total Directional Anticollision Report



Company:	Coterra Energy	Local Co-ordinate Reference:	Well Sombrero State Com 223H
Project:	Lea County, NM (NAD 83)	TVD Reference:	GE 3739.2' + KB 23' @ 3762.20usft (Cactus 148)
Reference Site:	Sun-Sombrero Pad	MD Reference:	GE 3739.2' + KB 23' @ 3762.20usft (Cactus 148)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Sombrero State Com 223H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	.Total Directional Production DB
Reference Design:	Plan #1	Offset TVD Reference:	Reference Datum

Offset Design: Sun-Sombrero Pad - (O) State-Lea I 1-36 - P&A - OH - OH

Survey Program: 103-INC-ONLY		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Rule Assigned:				Offset Site Error:
Reference	Measured	Reference	Offset	Reference	Offset		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
20,300.00	9,570.00	9,665.10	9,570.00	92.69	183.51	-90.00	11,779.97	-3,683.50	3,311.79	3,036.37	275.42	12.025	
20,400.00	9,570.00	9,665.10	9,570.00	93.41	183.51	-90.00	11,779.97	-3,683.50	3,300.09	3,023.67	276.42	11.939	
20,500.00	9,570.00	9,665.10	9,570.00	94.12	183.51	-90.00	11,779.97	-3,683.50	3,291.39	3,014.03	277.36	11.867	
20,600.00	9,570.00	9,665.10	9,570.00	94.84	183.51	-90.00	11,779.97	-3,683.50	3,285.72	3,007.48	278.24	11.809	
20,700.00	9,570.00	9,665.10	9,570.00	95.56	183.51	-90.00	11,779.97	-3,683.50	3,283.08	3,004.03	279.05	11.765	
20,736.67	9,570.00	9,665.10	9,570.00	95.82	183.51	-90.00	11,779.97	-3,683.50	3,282.87	3,003.55	279.32	11.753	CC, ES
20,800.00	9,570.00	9,665.10	9,570.00	96.28	183.51	-90.00	11,779.97	-3,683.50	3,283.48	3,003.70	279.78	11.736	
20,900.00	9,570.00	9,665.10	9,570.00	97.00	183.51	-90.00	11,779.97	-3,683.50	3,286.93	3,006.49	280.45	11.720	
21,000.00	9,570.00	9,665.10	9,570.00	97.72	183.51	-90.00	11,779.97	-3,683.50	3,293.42	3,012.38	281.04	11.719	SF
21,100.00	9,570.00	9,665.10	9,570.00	98.44	183.51	-90.00	11,779.97	-3,683.50	3,302.92	3,021.36	281.55	11.731	

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

Total Directional Anticollision Report



Company:	Coterra Energy	Local Co-ordinate Reference:	Well Sombrero State Com 223H
Project:	Lea County, NM (NAD 83)	TVD Reference:	GE 3739.2' + KB 23' @ 3762.20usft (Cactus 148)
Reference Site:	Sun-Sombrero Pad	MD Reference:	GE 3739.2' + KB 23' @ 3762.20usft (Cactus 148)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Sombrero State Com 223H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	.Total Directional Production DB
Reference Design:	Plan #1	Offset TVD Reference:	Reference Datum

Offset Design: Sun-Sombrero Pad - Sombrero State Com 221H - OH - Plan #1

Survey Program: 0-MWD+IFR1+MS													Offset Site Error:	0.00 usft
Reference Offset													Offset Well Error:	0.00 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Rule Assigned: Distance				Warning	
				Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
0.00	0.00	11.10	0.00	0.00	0.03	-90.21	-9.81	-2,652.81	2,652.83					
100.00	100.00	111.10	100.00	0.28	0.30	-90.21	-9.81	-2,652.81	2,652.83	2,652.25	0.58	4,579.442		
200.00	200.00	211.10	200.00	0.63	0.66	-90.21	-9.81	-2,652.81	2,652.83	2,651.53	1.30	2,046.566		
300.00	300.00	311.10	300.00	0.99	1.02	-90.21	-9.81	-2,652.81	2,652.83	2,650.82	2.01	1,317.732		
400.00	400.00	411.10	400.00	1.35	1.38	-90.21	-9.81	-2,652.81	2,652.83	2,650.10	2.73	971.689		
412.50	412.50	423.60	412.50	1.40	1.42	-90.21	-9.81	-2,652.81	2,652.83	2,650.01	2.82	940.795		
500.00	500.00	500.00	488.90	1.71	1.70	-90.21	-9.81	-2,652.81	2,652.85	2,649.44	3.41	778.579		
600.00	599.98	569.28	558.17	2.07	1.94	-56.44	-9.18	-2,653.36	2,652.74	2,648.73	4.01	661.428		
700.00	699.85	631.64	620.50	2.43	2.17	-56.47	-7.52	-2,654.79	2,652.21	2,647.63	4.59	578.229		
721.00	720.81	644.74	633.58	2.50	2.21	-56.47	-7.05	-2,655.20	2,652.18	2,647.47	4.71	563.369	CC	
800.00	799.67	698.02	686.76	2.78	2.41	-56.48	-4.65	-2,657.28	2,652.62	2,647.44	5.18	512.438		
900.00	899.49	798.01	786.54	3.14	2.76	-56.48	0.29	-2,661.56	2,653.59	2,647.70	5.89	450.642		
1,000.00	999.31	898.01	886.33	3.50	3.12	-56.48	5.23	-2,665.83	2,654.56	2,647.95	6.60	402.088		
1,100.00	1,099.14	998.01	986.11	3.86	3.48	-56.48	10.17	-2,670.11	2,655.53	2,648.21	7.32	362.953		
1,200.00	1,198.96	1,098.00	1,085.89	4.22	3.84	-56.48	15.11	-2,674.39	2,656.50	2,648.46	8.03	330.752		
1,300.00	1,298.78	1,198.00	1,185.67	4.58	4.20	-56.48	20.05	-2,678.67	2,657.47	2,648.72	8.75	303.795		
1,400.00	1,398.60	1,297.99	1,285.45	4.94	4.56	-56.48	24.99	-2,682.95	2,658.44	2,648.97	9.46	280.904		
1,500.00	1,498.43	1,397.99	1,385.23	5.30	4.92	-56.48	29.94	-2,687.23	2,659.41	2,649.23	10.18	261.226		
1,600.00	1,598.25	1,497.98	1,485.01	5.66	5.28	-56.48	34.88	-2,691.51	2,660.38	2,649.48	10.90	244.130		
1,700.00	1,698.07	1,597.98	1,584.80	6.02	5.64	-56.48	39.82	-2,695.79	2,661.35	2,649.73	11.61	229.140		
1,800.00	1,797.90	1,697.97	1,684.58	6.38	6.00	-56.48	44.76	-2,700.07	2,662.32	2,649.98	12.33	215.890		
1,900.00	1,897.72	1,797.97	1,784.36	6.74	6.36	-56.48	49.70	-2,704.35	2,663.29	2,650.24	13.05	204.094		
2,000.00	1,997.54	1,897.96	1,884.14	7.10	6.72	-56.48	54.64	-2,708.63	2,664.26	2,650.49	13.77	193.526		
2,100.00	2,097.36	1,997.96	1,983.92	7.46	7.08	-56.48	59.58	-2,712.91	2,665.23	2,650.74	14.48	184.004		
2,200.00	2,197.19	2,097.95	2,083.70	7.82	7.44	-56.48	64.53	-2,717.19	2,666.20	2,650.99	15.20	175.379		
2,300.00	2,297.01	2,197.95	2,183.48	8.18	7.80	-56.48	69.47	-2,721.47	2,667.17	2,651.25	15.92	167.532		
2,400.00	2,396.83	2,297.94	2,283.27	8.54	8.16	-56.48	74.41	-2,725.75	2,668.14	2,651.50	16.64	160.361		
2,500.00	2,496.65	2,397.94	2,383.05	8.90	8.52	-56.48	79.35	-2,730.03	2,669.11	2,651.75	17.36	153.783		
2,600.00	2,596.48	2,497.93	2,482.83	9.26	8.88	-56.48	84.29	-2,734.31	2,670.08	2,652.00	18.07	147.727		
2,700.00	2,696.30	2,597.93	2,582.61	9.62	9.24	-56.48	89.23	-2,738.59	2,671.05	2,652.25	18.79	142.133		
2,800.00	2,796.12	2,697.93	2,682.39	9.98	9.60	-56.48	94.17	-2,742.87	2,672.02	2,652.50	19.51	136.951		
2,900.00	2,895.94	2,797.92	2,782.17	10.34	9.96	-56.48	99.11	-2,747.15	2,672.98	2,652.76	20.23	132.137		
3,000.00	2,995.77	2,897.92	2,881.95	10.70	10.32	-56.48	104.06	-2,751.43	2,673.95	2,653.01	20.95	127.652		
3,100.00	3,095.59	2,997.91	2,981.74	11.06	10.68	-56.48	109.00	-2,755.71	2,674.92	2,653.26	21.67	123.465		
3,200.00	3,195.41	3,097.91	3,081.52	11.42	11.05	-56.48	113.94	-2,759.98	2,675.89	2,653.51	22.38	119.546		
3,300.00	3,295.23	3,197.90	3,181.30	11.78	11.41	-56.48	118.88	-2,764.26	2,676.86	2,653.76	23.10	115.871		
3,400.00	3,395.06	3,297.90	3,281.08	12.14	11.77	-56.48	123.82	-2,768.54	2,677.83	2,654.01	23.82	112.417		
3,500.00	3,494.88	3,397.89	3,380.86	12.50	12.13	-56.48	128.76	-2,772.82	2,678.80	2,654.27	24.54	109.166		
3,600.00	3,594.70	3,497.89	3,480.64	12.86	12.49	-56.48	133.70	-2,777.10	2,679.77	2,654.52	25.26	106.099		
3,700.00	3,694.52	3,597.88	3,580.42	13.22	12.85	-56.48	138.65	-2,781.38	2,680.74	2,654.77	25.98	103.202		
3,800.00	3,794.35	3,697.88	3,680.21	13.58	13.21	-56.48	143.59	-2,785.66	2,681.71	2,655.02	26.69	100.461		
3,900.00	3,894.17	3,797.87	3,779.99	13.94	13.57	-56.48	148.53	-2,789.94	2,682.68	2,655.27	27.41	97.863		
4,000.00	3,993.99	3,897.87	3,879.77	14.30	13.93	-56.48	153.47	-2,794.22	2,683.65	2,655.52	28.13	95.399		
4,100.00	4,093.81	3,997.86	3,979.55	14.67	14.29	-56.48	158.41	-2,798.50	2,684.62	2,655.77	28.85	93.056		
4,200.00	4,193.64	4,097.86	4,079.33	15.03	14.65	-56.48	163.35	-2,802.78	2,685.59	2,656.03	29.57	90.828		
4,300.00	4,293.46	4,197.85	4,179.11	15.39	15.02	-56.48	168.29	-2,807.06	2,686.56	2,656.28	30.29	88.705		
4,400.00	4,393.28	4,297.85	4,278.89	15.75	15.38	-56.48	173.24	-2,811.34	2,687.53	2,656.53	31.00	86.681		
4,500.00	4,493.10	4,397.85	4,378.67	16.11	15.74	-56.48	178.18	-2,815.62	2,688.50	2,656.78	31.72	84.748		
4,600.00	4,592.93	4,497.84	4,478.46	16.47	16.10	-56.48	183.12	-2,819.90	2,689.47	2,657.03	32.44	82.901		
4,700.00	4,692.75	4,597.84	4,578.24	16.83	16.46	-56.48	188.06	-2,824.18	2,690.44	2,657.28	33.16	81.134		
4,800.00	4,792.57	4,697.83	4,678.02	17.19	16.82	-56.48	193.00	-2,828.46	2,691.41	2,657.53	33.88	79.442		

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

Total Directional Anticollision Report



Company:	Coterra Energy	Local Co-ordinate Reference:	Well Sombrero State Com 223H
Project:	Lea County, NM (NAD 83)	TVD Reference:	GE 3739.2' + KB 23' @ 3762.20usft (Cactus 148)
Reference Site:	Sun-Sombrero Pad	MD Reference:	GE 3739.2' + KB 23' @ 3762.20usft (Cactus 148)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Sombrero State Com 223H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	.Total Directional Production DB
Reference Design:	Plan #1	Offset TVD Reference:	Reference Datum

Offset Design: Sun-Sombrero Pad - Sombrero State Com 221H - OH - Plan #1

Survey Program: 0-MWD+IFR1+MS													Offset Site Error:	0.00 usft
Reference Offset													Offset Well Error:	0.00 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Rule Assigned:				Warning	
				Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
4,900.00	4,892.39	4,797.83	4,777.80	17.55	17.18	-56.48	197.94	-2,832.74	2,692.38	2,657.79	34.60	77.820		
5,000.00	4,992.22	4,897.82	4,877.58	17.91	17.54	-56.48	202.88	-2,837.02	2,693.35	2,658.04	35.32	76.264		
5,100.00	5,092.04	4,997.82	4,977.36	18.27	17.90	-56.48	207.82	-2,841.30	2,694.32	2,658.29	36.03	74.770		
5,200.00	5,191.86	5,097.81	5,077.14	18.63	18.27	-56.48	212.77	-2,845.58	2,695.29	2,658.54	36.75	73.335		
5,300.00	5,291.68	5,197.81	5,176.93	18.99	18.63	-56.48	217.71	-2,849.85	2,696.26	2,658.79	37.47	71.954		
5,400.00	5,391.51	5,297.80	5,276.71	19.35	18.99	-56.48	222.65	-2,854.13	2,697.23	2,659.04	38.19	70.626		
5,500.00	5,491.33	5,397.80	5,376.49	19.71	19.35	-56.48	227.59	-2,858.41	2,698.20	2,659.29	38.91	69.346		
5,600.00	5,591.15	5,497.79	5,476.27	20.07	19.71	-56.48	232.53	-2,862.69	2,699.17	2,659.54	39.63	68.113		
5,700.00	5,690.97	5,597.79	5,576.05	20.43	20.07	-56.48	237.47	-2,866.97	2,700.14	2,659.80	40.35	66.924		
5,800.00	5,790.80	5,697.78	5,675.83	20.80	20.43	-56.48	242.41	-2,871.25	2,701.11	2,660.05	41.06	65.777		
5,900.00	5,890.62	5,797.78	5,775.61	21.16	20.79	-56.48	247.36	-2,875.53	2,702.08	2,660.30	41.78	64.669		
6,000.00	5,990.44	5,897.77	5,875.40	21.52	21.15	-56.48	252.30	-2,879.81	2,703.05	2,660.55	42.50	63.598		
6,100.00	6,090.26	5,997.77	5,975.18	21.88	21.52	-56.48	257.24	-2,884.09	2,704.02	2,660.80	43.22	62.563		
6,200.00	6,190.09	6,097.77	6,074.96	22.24	21.88	-56.48	262.18	-2,888.37	2,704.99	2,661.05	43.94	61.562		
6,300.00	6,289.91	6,197.76	6,174.74	22.60	22.24	-56.48	267.12	-2,892.65	2,705.96	2,661.30	44.66	60.593		
6,400.00	6,389.73	6,297.76	6,274.52	22.96	22.60	-56.48	272.06	-2,896.93	2,706.93	2,661.56	45.38	59.655		
6,500.00	6,489.55	6,397.75	6,374.30	23.32	22.96	-56.48	277.00	-2,901.21	2,707.90	2,661.81	46.10	58.746		
6,600.00	6,589.38	6,497.75	6,474.08	23.68	23.32	-56.48	281.95	-2,905.49	2,708.87	2,662.06	46.81	57.865		
6,700.00	6,689.20	6,597.74	6,573.87	24.04	23.68	-56.48	286.89	-2,909.77	2,709.84	2,662.31	47.53	57.010		
6,800.00	6,789.02	6,697.74	6,673.65	24.40	24.04	-56.48	291.83	-2,914.05	2,710.81	2,662.56	48.25	56.181		
6,900.00	6,888.85	6,797.73	6,773.43	24.76	24.41	-56.48	296.77	-2,918.33	2,711.78	2,662.81	48.97	55.377		
7,000.00	6,988.67	6,897.73	6,873.21	25.12	24.77	-56.48	301.71	-2,922.61	2,712.75	2,663.06	49.69	54.595		
7,100.00	7,088.49	6,997.72	6,972.99	25.48	25.13	-56.48	306.65	-2,926.89	2,713.72	2,663.31	50.41	53.836		
7,200.00	7,188.31	7,097.72	7,072.77	25.85	25.49	-56.48	311.59	-2,931.17	2,714.69	2,663.57	51.13	53.099		
7,300.00	7,288.14	7,197.71	7,172.55	26.21	25.85	-56.48	316.53	-2,935.45	2,715.66	2,663.82	51.84	52.381		
7,400.00	7,387.96	7,297.71	7,272.34	26.57	26.21	-56.48	321.48	-2,939.72	2,716.63	2,664.07	52.56	51.683		
7,500.00	7,487.78	7,397.70	7,372.12	26.93	26.57	-56.48	326.42	-2,944.00	2,717.60	2,664.32	53.28	51.005		
7,600.00	7,587.60	7,497.70	7,471.90	27.29	26.93	-56.48	331.36	-2,948.28	2,718.57	2,664.57	54.00	50.344		
7,700.00	7,687.43	7,597.69	7,571.68	27.65	27.30	-56.48	336.30	-2,952.56	2,719.54	2,664.82	54.72	49.700		
7,800.00	7,787.25	7,697.69	7,671.46	28.01	27.66	-56.48	341.24	-2,956.84	2,720.51	2,665.07	55.44	49.074		
7,900.00	7,887.07	7,797.69	7,771.24	28.37	28.02	-56.48	346.18	-2,961.12	2,721.48	2,665.32	56.16	48.463		
8,000.00	7,986.89	7,897.68	7,871.02	28.73	28.38	-56.48	351.12	-2,965.40	2,722.45	2,665.58	56.87	47.867		
8,100.00	8,086.72	7,997.68	7,970.81	29.09	28.74	-56.48	356.07	-2,969.68	2,723.42	2,665.83	57.59	47.287		
8,200.00	8,186.54	8,097.67	8,070.59	29.45	29.10	-56.48	361.01	-2,973.96	2,724.39	2,666.08	58.31	46.721		
8,300.00	8,286.36	8,197.67	8,170.37	29.81	29.46	-56.48	365.95	-2,978.24	2,725.36	2,666.33	59.03	46.168		
8,400.00	8,386.18	8,297.66	8,270.15	30.17	29.82	-56.48	370.89	-2,982.52	2,726.33	2,666.58	59.75	45.629		
8,500.00	8,486.01	8,397.66	8,369.93	30.54	30.19	-56.48	375.83	-2,986.80	2,727.30	2,666.83	60.47	45.103		
8,600.00	8,585.83	8,497.65	8,469.71	30.90	30.55	-56.48	380.77	-2,991.08	2,728.27	2,667.08	61.19	44.589		
8,700.00	8,685.65	8,597.65	8,569.49	31.26	30.91	-56.48	385.71	-2,995.36	2,729.24	2,667.33	61.91	44.087		
8,800.00	8,785.47	8,697.64	8,669.28	31.62	31.27	-56.48	390.65	-2,999.64	2,730.21	2,667.59	62.62	43.597		
8,900.00	8,885.30	8,797.64	8,769.06	31.98	31.63	-56.48	395.60	-3,003.92	2,731.18	2,667.84	63.34	43.117		
9,000.00	8,985.12	8,897.63	8,868.84	32.34	31.99	-58.39	400.54	-3,008.20	2,732.15	2,668.09	64.06	42.649		
9,100.00	9,084.94	9,111.88	9,082.33	32.70	32.76	-89.58	415.65	-3,013.52	2,734.19	2,669.04	65.16	41.963		
9,200.00	9,184.76	9,209.33	9,176.54	33.06	33.11	-89.55	440.11	-3,013.72	2,734.15	2,668.29	65.85	41.519		
9,300.00	9,273.09	9,306.60	9,265.09	33.40	33.44	-89.55	480.08	-3,014.06	2,734.06	2,667.53	66.53	41.096		
9,400.00	9,356.08	9,403.77	9,345.54	33.71	33.74	-89.55	534.37	-3,014.52	2,733.94	2,666.77	67.17	40.703		
9,500.00	9,428.16	9,500.92	9,415.65	33.97	34.00	-89.57	601.45	-3,015.09	2,733.79	2,666.03	67.76	40.344		
9,600.00	9,487.14	9,598.14	9,473.48	34.19	34.21	-89.60	679.44	-3,015.75	2,733.61	2,665.31	68.30	40.025		
9,700.00	9,531.23	9,695.49	9,517.35	34.39	34.40	-89.64	766.21	-3,016.48	2,733.40	2,664.64	68.77	39.748		
9,800.00	9,559.09	9,793.05	9,545.97	34.58	34.59	-89.69	859.36	-3,017.27	2,733.18	2,664.02	69.17	39.516		

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

Total Directional Anticollision Report



Company:	Coterra Energy	Local Co-ordinate Reference:	Well Sombrero State Com 223H
Project:	Lea County, NM (NAD 83)	TVD Reference:	GE 3739.2' + KB 23' @ 3762.20usft (Cactus 148)
Reference Site:	Sun-Sombrero Pad	MD Reference:	GE 3739.2' + KB 23' @ 3762.20usft (Cactus 148)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Sombrero State Com 223H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	.Total Directional Production DB
Reference Design:	Plan #1	Offset TVD Reference:	Reference Datum

Offset Design: Sun-Sombrero Pad - Sombrero State Com 221H - OH - Plan #1

Survey Program: 0-MWD+IFR1+MS													Offset Site Error:	0.00 usft
Reference Offset													Offset Well Error:	0.00 usft
				Semi Major Axis			Offset Wellbore Centre		Rule Assigned:				Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
9,900.00	9,569.87	9,890.89	9,558.40	34.74	34.74	-89.76	956.29	-3,018.09	2,732.96	2,663.47	69.49	39.329		
10,000.00	9,570.00	9,990.42	9,558.90	34.88	34.88	-89.77	1,055.80	-3,018.93	2,732.73	2,662.96	69.77	39.165		
10,100.00	9,570.00	10,090.42	9,558.90	35.04	35.04	-89.77	1,155.79	-3,019.78	2,732.51	2,662.42	70.09	38.985		
10,200.00	9,570.00	10,190.41	9,558.90	35.22	35.22	-89.77	1,255.79	-3,020.62	2,732.29	2,661.85	70.44	38.788		
10,300.00	9,570.00	10,290.41	9,558.90	35.41	35.41	-89.77	1,355.79	-3,021.47	2,732.07	2,661.25	70.82	38.576		
10,400.00	9,570.00	10,390.41	9,558.90	35.61	35.61	-89.77	1,455.78	-3,022.32	2,731.85	2,660.62	71.24	38.349		
10,500.00	9,570.00	10,490.41	9,558.90	35.84	35.84	-89.77	1,555.78	-3,023.16	2,731.63	2,659.95	71.68	38.109		
10,600.00	9,570.00	10,590.41	9,558.90	36.08	36.07	-89.77	1,655.77	-3,024.01	2,731.41	2,659.26	72.15	37.856		
10,700.00	9,570.00	10,690.41	9,558.90	36.33	36.33	-89.77	1,755.77	-3,024.85	2,731.19	2,658.53	72.66	37.590		
10,800.00	9,570.00	10,790.41	9,558.90	36.59	36.59	-89.77	1,855.77	-3,025.70	2,730.97	2,657.78	73.19	37.314		
10,900.00	9,570.00	10,890.41	9,558.90	36.88	36.87	-89.77	1,955.76	-3,026.55	2,730.75	2,657.00	73.75	37.028		
11,000.00	9,570.00	10,990.41	9,558.90	37.17	37.17	-89.77	2,055.76	-3,027.39	2,730.53	2,656.19	74.34	36.732		
11,100.00	9,570.00	11,090.41	9,558.90	37.48	37.47	-89.77	2,155.75	-3,028.24	2,730.31	2,655.36	74.95	36.427		
11,200.00	9,570.00	11,190.41	9,558.90	37.80	37.80	-89.77	2,255.75	-3,029.08	2,730.09	2,654.50	75.59	36.115		
11,300.00	9,570.00	11,290.41	9,558.90	38.13	38.13	-89.77	2,355.75	-3,029.93	2,729.87	2,653.61	76.26	35.796		
11,400.00	9,570.00	11,390.41	9,558.90	38.48	38.48	-89.77	2,455.74	-3,030.78	2,729.65	2,652.70	76.95	35.472		
11,500.00	9,570.00	11,490.41	9,558.90	38.84	38.83	-89.77	2,555.74	-3,031.62	2,729.43	2,651.76	77.67	35.141		
11,600.00	9,570.00	11,590.41	9,558.90	39.21	39.20	-89.77	2,655.74	-3,032.47	2,729.21	2,650.80	78.41	34.807		
11,700.00	9,570.00	11,690.41	9,558.90	39.59	39.59	-89.77	2,755.73	-3,033.31	2,728.99	2,649.81	79.17	34.469		
11,800.00	9,570.00	11,790.41	9,558.90	39.99	39.98	-89.77	2,855.73	-3,034.16	2,728.77	2,648.81	79.96	34.127		
11,900.00	9,570.00	11,890.41	9,558.90	40.39	40.38	-89.77	2,955.72	-3,035.01	2,728.55	2,647.78	80.77	33.783		
12,000.00	9,570.00	11,990.41	9,558.90	40.81	40.80	-89.77	3,055.72	-3,035.85	2,728.33	2,646.73	81.59	33.438		
12,100.00	9,570.00	12,090.41	9,558.90	41.23	41.22	-89.77	3,155.72	-3,036.70	2,728.11	2,645.66	82.44	33.091		
12,200.00	9,570.00	12,190.41	9,558.90	41.66	41.65	-89.77	3,255.71	-3,037.54	2,727.89	2,644.57	83.31	32.743		
12,300.00	9,570.00	12,290.41	9,558.90	42.11	42.10	-89.77	3,355.71	-3,038.39	2,727.66	2,643.47	84.20	32.395		
12,400.00	9,570.00	12,390.41	9,558.90	42.56	42.55	-89.77	3,455.71	-3,039.24	2,727.44	2,642.34	85.11	32.048		
12,500.00	9,570.00	12,490.41	9,558.90	43.03	43.01	-89.77	3,555.70	-3,040.08	2,727.22	2,641.19	86.03	31.701		
12,600.00	9,570.00	12,590.41	9,558.90	43.50	43.48	-89.77	3,655.70	-3,040.93	2,727.00	2,640.03	86.97	31.355		
12,700.00	9,570.00	12,690.41	9,558.90	43.98	43.96	-89.77	3,755.69	-3,041.77	2,726.78	2,638.85	87.93	31.011		
12,800.00	9,570.00	12,790.41	9,558.90	44.46	44.45	-89.77	3,855.69	-3,042.62	2,726.56	2,637.66	88.91	30.668		
12,900.00	9,570.00	12,890.41	9,558.90	44.96	44.94	-89.77	3,955.69	-3,043.47	2,726.34	2,636.45	89.90	30.328		
13,000.00	9,570.00	12,990.41	9,558.90	45.46	45.45	-89.77	4,055.68	-3,044.31	2,726.12	2,635.22	90.90	29.990		
13,100.00	9,570.00	13,090.41	9,558.90	45.97	45.96	-89.77	4,155.68	-3,045.16	2,725.90	2,633.98	91.92	29.654		
13,200.00	9,570.00	13,190.41	9,558.90	46.49	46.47	-89.77	4,255.67	-3,046.00	2,725.68	2,632.72	92.96	29.322		
13,300.00	9,570.00	13,290.41	9,558.90	47.02	47.00	-89.77	4,355.67	-3,046.85	2,725.46	2,631.45	94.01	28.992		
13,400.00	9,570.00	13,390.41	9,558.90	47.55	47.53	-89.77	4,455.67	-3,047.70	2,725.24	2,630.17	95.07	28.666		
13,500.00	9,570.00	13,490.41	9,558.90	48.09	48.07	-89.77	4,555.66	-3,048.54	2,725.02	2,628.88	96.14	28.343		
13,600.00	9,570.00	13,590.41	9,558.90	48.63	48.61	-89.77	4,655.66	-3,049.39	2,724.80	2,627.57	97.23	28.024		
13,700.00	9,570.00	13,690.41	9,558.90	49.18	49.16	-89.77	4,755.66	-3,050.23	2,724.58	2,626.25	98.33	27.708		
13,800.00	9,570.00	13,790.41	9,558.90	49.74	49.71	-89.77	4,855.65	-3,051.08	2,724.36	2,624.92	99.44	27.396		
13,900.00	9,570.00	13,890.41	9,558.90	50.30	50.27	-89.77	4,955.65	-3,051.93	2,724.14	2,623.57	100.57	27.088		
14,000.00	9,570.00	13,990.41	9,558.90	50.87	50.84	-89.77	5,055.64	-3,052.77	2,723.92	2,622.22	101.70	26.784		
14,100.00	9,570.00	14,090.41	9,558.90	51.44	51.41	-89.77	5,155.64	-3,053.62	2,723.70	2,620.85	102.84	26.484		
14,200.00	9,570.00	14,190.41	9,558.90	52.02	51.99	-89.77	5,255.64	-3,054.46	2,723.48	2,619.48	104.00	26.188		
14,300.00	9,570.00	14,290.40	9,558.90	52.60	52.57	-89.77	5,355.63	-3,055.31	2,723.26	2,618.09	105.16	25.896		
14,400.00	9,570.00	14,390.40	9,558.90	53.18	53.16	-89.77	5,455.63	-3,056.16	2,723.04	2,616.70	106.34	25.608		
14,500.00	9,570.00	14,490.40	9,558.90	53.78	53.75	-89.77	5,555.62	-3,057.00	2,722.82	2,615.30	107.52	25.324		
14,600.00	9,570.00	14,590.40	9,558.90	54.37	54.34	-89.77	5,655.62	-3,057.85	2,722.60	2,613.88	108.71	25.044		
14,700.00	9,570.00	14,690.40	9,558.90	54.97	54.94	-89.77	5,755.62	-3,058.69	2,722.38	2,612.46	109.91	24.769		
14,800.00	9,570.00	14,790.40	9,558.90	55.58	55.55	-89.77	5,855.61	-3,059.54	2,722.16	2,611.03	111.12	24.497		
14,900.00	9,570.00	14,890.40	9,558.90	56.19	56.16	-89.77	5,955.61	-3,060.39	2,721.93	2,609.60	112.34	24.230		

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

Total Directional Anticollision Report



Company:	Coterra Energy	Local Co-ordinate Reference:	Well Sombrero State Com 223H
Project:	Lea County, NM (NAD 83)	TVD Reference:	GE 3739.2' + KB 23' @ 3762.20usft (Cactus 148)
Reference Site:	Sun-Sombrero Pad	MD Reference:	GE 3739.2' + KB 23' @ 3762.20usft (Cactus 148)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Sombrero State Com 223H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	.Total Directional Production DB
Reference Design:	Plan #1	Offset TVD Reference:	Reference Datum

Offset Design: Sun-Sombrero Pad - Sombrero State Com 221H - OH - Plan #1

Survey Program: 0-MWD+IFR1+MS													Offset Site Error:	0.00 usft
Reference Offset													Offset Well Error:	0.00 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Rule Assigned: Distance				Warning	
				Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
15,000.00	9,570.00	14,990.40	9,558.90	56.80	56.77	-89.77	6,055.61	-3,061.23	2,721.71	2,608.15	113.56	23.967		
15,100.00	9,570.00	15,090.40	9,558.90	57.42	57.38	-89.77	6,155.60	-3,062.08	2,721.49	2,606.70	114.80	23.707		
15,200.00	9,570.00	15,190.40	9,558.90	58.04	58.00	-89.77	6,255.60	-3,062.92	2,721.27	2,605.24	116.04	23.452		
15,300.00	9,570.00	15,290.40	9,558.90	58.66	58.63	-89.77	6,355.59	-3,063.77	2,721.05	2,603.77	117.28	23.201		
15,400.00	9,570.00	15,390.40	9,558.90	59.29	59.25	-89.77	6,455.59	-3,064.62	2,720.83	2,602.30	118.54	22.954		
15,500.00	9,570.00	15,490.40	9,558.90	59.92	59.88	-89.77	6,555.59	-3,065.46	2,720.61	2,600.82	119.80	22.710		
15,600.00	9,570.00	15,590.40	9,558.90	60.55	60.52	-89.77	6,655.58	-3,066.31	2,720.39	2,599.33	121.06	22.471		
15,700.00	9,570.00	15,690.40	9,558.90	61.19	61.15	-89.77	6,755.58	-3,067.16	2,720.17	2,597.84	122.34	22.235		
15,800.00	9,570.00	15,790.40	9,558.90	61.83	61.79	-89.77	6,855.58	-3,068.00	2,719.95	2,596.34	123.62	22.003		
15,900.00	9,570.00	15,890.40	9,558.90	62.47	62.43	-89.77	6,955.57	-3,068.85	2,719.73	2,594.83	124.90	21.775		
16,000.00	9,570.00	15,990.40	9,558.90	63.12	63.08	-89.77	7,055.57	-3,069.69	2,719.51	2,593.32	126.19	21.551		
16,100.00	9,570.00	16,090.40	9,558.90	63.76	63.73	-89.77	7,155.56	-3,070.54	2,719.29	2,591.80	127.49	21.330		
16,200.00	9,570.00	16,190.40	9,558.90	64.42	64.38	-89.77	7,255.56	-3,071.39	2,719.07	2,590.28	128.79	21.113		
16,300.00	9,570.00	16,290.40	9,558.90	65.07	65.03	-89.77	7,355.56	-3,072.23	2,718.85	2,588.75	130.10	20.899		
16,400.00	9,570.00	16,390.40	9,558.90	65.72	65.69	-89.77	7,455.55	-3,073.08	2,718.63	2,587.22	131.41	20.688		
16,500.00	9,570.00	16,490.40	9,558.90	66.38	66.34	-89.77	7,555.55	-3,073.92	2,718.41	2,585.68	132.72	20.482		
16,600.00	9,570.00	16,590.40	9,558.90	67.04	67.00	-89.77	7,655.54	-3,074.77	2,718.19	2,584.14	134.05	20.278		
16,700.00	9,570.00	16,690.40	9,558.90	67.71	67.67	-89.77	7,755.54	-3,075.62	2,717.97	2,582.60	135.37	20.078		
16,800.00	9,570.00	16,790.40	9,558.90	68.37	68.33	-89.77	7,855.54	-3,076.46	2,717.75	2,581.04	136.70	19.881		
16,900.00	9,570.00	16,890.40	9,558.90	69.04	69.00	-89.77	7,955.53	-3,077.31	2,717.53	2,579.49	138.04	19.687		
17,000.00	9,570.00	16,990.40	9,558.90	69.71	69.67	-89.77	8,055.53	-3,078.15	2,717.31	2,577.93	139.38	19.496		
17,100.00	9,570.00	17,090.40	9,558.90	70.38	70.34	-89.77	8,155.53	-3,079.00	2,717.09	2,576.37	140.72	19.308		
17,200.00	9,570.00	17,190.40	9,558.90	71.06	71.01	-89.77	8,255.52	-3,079.85	2,716.87	2,574.80	142.07	19.124		
17,300.00	9,570.00	17,290.40	9,558.90	71.73	71.69	-89.77	8,355.52	-3,080.69	2,716.65	2,573.23	143.42	18.942		
17,400.00	9,570.00	17,390.40	9,558.90	72.41	72.37	-89.77	8,455.51	-3,081.54	2,716.42	2,571.65	144.77	18.763		
17,500.00	9,570.00	17,490.40	9,558.90	73.09	73.04	-89.77	8,555.51	-3,082.38	2,716.20	2,570.07	146.13	18.587		
17,600.00	9,570.00	17,590.40	9,558.90	73.77	73.73	-89.77	8,655.51	-3,083.23	2,715.98	2,568.49	147.49	18.414		
17,700.00	9,570.00	17,690.40	9,558.90	74.45	74.41	-89.77	8,755.50	-3,084.08	2,715.76	2,566.90	148.86	18.244		
17,800.00	9,570.00	17,790.40	9,558.90	75.14	75.09	-89.77	8,855.50	-3,084.92	2,715.54	2,565.31	150.23	18.076		
17,900.00	9,570.00	17,890.40	9,558.90	75.82	75.78	-89.77	8,955.50	-3,085.77	2,715.32	2,563.72	151.60	17.911		
18,000.00	9,570.00	17,990.40	9,558.90	76.51	76.46	-89.77	9,055.49	-3,086.61	2,715.10	2,562.13	152.98	17.749		
18,100.00	9,570.00	18,090.40	9,558.90	77.20	77.15	-89.77	9,155.49	-3,087.46	2,714.88	2,560.53	154.35	17.589		
18,200.00	9,570.00	18,190.40	9,558.90	77.89	77.84	-89.77	9,255.48	-3,088.31	2,714.66	2,558.93	155.74	17.431		
18,300.00	9,570.00	18,290.40	9,558.90	78.58	78.54	-89.77	9,355.48	-3,089.15	2,714.44	2,557.32	157.12	17.276		
18,400.00	9,570.00	18,390.40	9,558.90	79.28	79.23	-89.77	9,455.48	-3,090.00	2,714.22	2,555.71	158.51	17.124		
18,500.00	9,570.00	18,490.39	9,558.90	79.97	79.92	-89.77	9,555.47	-3,090.84	2,714.00	2,554.10	159.90	16.973		
18,600.00	9,570.00	18,590.39	9,558.90	80.67	80.62	-89.77	9,655.47	-3,091.69	2,713.78	2,552.49	161.29	16.825		
18,700.00	9,570.00	18,690.39	9,558.90	81.37	81.32	-89.77	9,755.46	-3,092.54	2,713.56	2,550.87	162.69	16.680		
18,800.00	9,570.00	18,790.39	9,558.90	82.07	82.02	-89.77	9,855.46	-3,093.38	2,713.34	2,549.26	164.08	16.536		
18,900.00	9,570.00	18,890.39	9,558.90	82.77	82.72	-89.77	9,955.46	-3,094.23	2,713.12	2,547.63	165.48	16.395		
19,000.00	9,570.00	18,990.39	9,558.90	83.47	83.42	-89.77	10,055.45	-3,095.07	2,712.90	2,546.01	166.89	16.256		
19,100.00	9,570.00	19,090.39	9,558.90	84.17	84.12	-89.77	10,155.45	-3,095.92	2,712.68	2,544.39	168.29	16.119		
19,200.00	9,570.00	19,190.39	9,558.90	84.88	84.82	-89.77	10,255.45	-3,096.77	2,712.46	2,542.76	169.70	15.984		
19,300.00	9,570.00	19,290.39	9,558.90	85.58	85.53	-89.77	10,355.44	-3,097.61	2,712.24	2,541.13	171.11	15.851		
19,400.00	9,570.00	19,390.39	9,558.90	86.29	86.23	-89.77	10,455.44	-3,098.46	2,712.02	2,539.49	172.52	15.720		
19,500.00	9,570.00	19,490.39	9,558.90	86.99	86.94	-89.77	10,555.43	-3,099.30	2,711.80	2,537.86	173.94	15.591		
19,600.00	9,570.00	19,590.39	9,558.90	87.70	87.65	-89.77	10,655.43	-3,100.15	2,711.58	2,536.22	175.35	15.464		
19,700.00	9,570.00	19,690.39	9,558.90	88.41	88.36	-89.77	10,755.43	-3,101.00	2,711.36	2,534.58	176.77	15.338		
19,800.00	9,570.00	19,790.39	9,558.90	89.12	89.07	-89.77	10,855.42	-3,101.84	2,711.14	2,532.94	178.19	15.215		
19,900.00	9,570.00	19,890.39	9,558.90	89.83	89.78	-89.77	10,955.42	-3,102.69	2,710.91	2,531.30	179.61	15.093		

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

Total Directional Anticollision Report



Company:	Coterra Energy	Local Co-ordinate Reference:	Well Sombrero State Com 223H
Project:	Lea County, NM (NAD 83)	TVD Reference:	GE 3739.2' + KB 23' @ 3762.20usft (Cactus 148)
Reference Site:	Sun-Sombrero Pad	MD Reference:	GE 3739.2' + KB 23' @ 3762.20usft (Cactus 148)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Sombrero State Com 223H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	.Total Directional Production DB
Reference Design:	Plan #1	Offset TVD Reference:	Reference Datum

Offset Design: Sun-Sombrero Pad - Sombrero State Com 221H - OH - Plan #1

Survey Program: 0-MWD+IFR1+MS													Offset Site Error:	0.00 usft
Reference Offset													Offset Well Error:	0.00 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Rule Assigned: Distance				Warning	
				Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
20,000.00	9,570.00	19,990.39	9,558.90	90.55	90.49	-89.77	11,055.41	-3,103.53	2,710.69	2,529.66	181.04	14.973		
20,100.00	9,570.00	20,090.39	9,558.90	91.26	91.20	-89.77	11,155.41	-3,104.38	2,710.47	2,528.01	182.47	14.855		
20,200.00	9,570.00	20,190.39	9,558.90	91.97	91.92	-89.77	11,255.41	-3,105.23	2,710.25	2,526.36	183.89	14.738		
20,300.00	9,570.00	20,290.39	9,558.90	92.69	92.63	-89.77	11,355.40	-3,106.07	2,710.03	2,524.71	185.32	14.623		
20,400.00	9,570.00	20,390.39	9,558.90	93.41	93.35	-89.77	11,455.40	-3,106.92	2,709.81	2,523.06	186.75	14.510		
20,500.00	9,570.00	20,490.39	9,558.90	94.12	94.06	-89.77	11,555.40	-3,107.76	2,709.59	2,521.40	188.19	14.398		
20,600.00	9,570.00	20,590.39	9,558.90	94.84	94.78	-89.77	11,655.39	-3,108.61	2,709.37	2,519.75	189.62	14.288		
20,700.00	9,570.00	20,690.39	9,558.90	95.56	95.50	-89.77	11,755.39	-3,109.46	2,709.15	2,518.09	191.06	14.180		
20,800.00	9,570.00	20,790.39	9,558.90	96.28	96.22	-89.77	11,855.38	-3,110.30	2,708.93	2,516.43	192.50	14.073		
20,900.00	9,570.00	20,890.39	9,558.90	97.00	96.94	-89.77	11,955.38	-3,111.15	2,708.71	2,514.77	193.94	13.967		
21,000.00	9,570.00	20,990.39	9,558.90	97.72	97.66	-89.77	12,055.38	-3,111.99	2,708.49	2,513.11	195.38	13.863		
21,100.00	9,570.00	21,090.39	9,558.90	98.44	98.38	-89.77	12,155.37	-3,112.84	2,708.27	2,511.45	196.82	13.760		
21,200.00	9,570.00	21,190.39	9,558.90	99.16	99.10	-89.77	12,255.37	-3,113.69	2,708.05	2,509.78	198.27	13.659		
21,300.00	9,570.00	21,290.39	9,558.90	99.89	99.82	-89.77	12,355.37	-3,114.53	2,707.83	2,508.12	199.71	13.559		
21,400.00	9,570.00	21,390.39	9,558.90	100.61	100.55	-89.77	12,455.36	-3,115.38	2,707.61	2,506.45	201.16	13.460		
21,500.00	9,570.00	21,490.39	9,558.90	101.33	101.27	-89.77	12,555.36	-3,116.22	2,707.39	2,504.78	202.61	13.363		
21,600.00	9,570.00	21,590.39	9,558.90	102.06	102.00	-89.77	12,655.35	-3,117.07	2,707.17	2,503.11	204.06	13.267		
21,700.00	9,570.00	21,690.39	9,558.90	102.78	102.72	-89.77	12,755.35	-3,117.92	2,706.95	2,501.44	205.51	13.172		
21,800.00	9,570.00	21,790.39	9,558.90	103.51	103.45	-89.77	12,855.35	-3,118.76	2,706.73	2,499.77	206.96	13.079		
21,900.00	9,570.00	21,890.39	9,558.90	104.24	104.17	-89.77	12,955.34	-3,119.61	2,706.51	2,498.09	208.41	12.986		
22,000.00	9,570.00	21,990.39	9,558.90	104.96	104.90	-89.77	13,055.34	-3,120.45	2,706.29	2,496.42	209.87	12.895		
22,100.00	9,570.00	22,090.39	9,558.90	105.69	105.63	-89.77	13,155.33	-3,121.30	2,706.07	2,494.74	211.32	12.805		
22,200.00	9,570.00	22,190.39	9,558.90	106.42	106.36	-89.77	13,255.33	-3,122.15	2,705.85	2,493.06	212.78	12.717		
22,300.00	9,570.00	22,290.39	9,558.90	107.15	107.09	-89.77	13,355.33	-3,122.99	2,705.63	2,491.39	214.24	12.629		
22,400.00	9,570.00	22,390.39	9,558.90	107.88	107.81	-89.76	13,455.32	-3,123.84	2,705.41	2,489.71	215.70	12.543		
22,500.00	9,570.00	22,490.39	9,558.90	108.61	108.54	-89.76	13,555.32	-3,124.68	2,705.18	2,488.03	217.16	12.457		
22,600.00	9,570.00	22,590.38	9,558.90	109.34	109.28	-89.76	13,655.32	-3,125.53	2,704.96	2,486.34	218.62	12.373		
22,700.00	9,570.00	22,690.38	9,558.90	110.07	110.01	-89.76	13,755.31	-3,126.38	2,704.74	2,484.66	220.08	12.290		
22,800.00	9,570.00	22,790.38	9,558.90	110.81	110.74	-89.76	13,855.31	-3,127.22	2,704.52	2,482.98	221.55	12.207		
22,900.00	9,570.00	22,890.38	9,558.90	111.54	111.47	-89.76	13,955.30	-3,128.07	2,704.30	2,481.29	223.01	12.126		
23,000.00	9,570.00	22,990.38	9,558.90	112.27	112.20	-89.76	14,055.30	-3,128.91	2,704.08	2,479.60	224.48	12.046		
23,100.00	9,570.00	23,090.38	9,558.90	113.01	112.94	-89.76	14,155.30	-3,129.76	2,703.86	2,477.92	225.94	11.967		
23,200.00	9,570.00	23,190.38	9,558.90	113.74	113.67	-89.76	14,255.29	-3,130.61	2,703.64	2,476.23	227.41	11.889		
23,300.00	9,570.00	23,290.38	9,558.90	114.47	114.40	-89.76	14,355.29	-3,131.45	2,703.42	2,474.54	228.88	11.811		
23,400.00	9,570.00	23,390.38	9,558.90	115.21	115.14	-89.76	14,455.28	-3,132.30	2,703.20	2,472.85	230.35	11.735		
23,500.00	9,570.00	23,490.38	9,558.90	115.94	115.87	-89.76	14,555.28	-3,133.14	2,702.98	2,471.16	231.82	11.660		
23,600.00	9,570.00	23,590.38	9,558.90	116.68	116.61	-89.76	14,655.28	-3,133.99	2,702.76	2,469.47	233.29	11.585		
23,700.00	9,570.00	23,690.38	9,558.90	117.42	117.34	-89.76	14,755.27	-3,134.84	2,702.54	2,467.78	234.76	11.512		
23,800.00	9,570.00	23,790.38	9,558.90	118.15	118.08	-89.76	14,855.27	-3,135.68	2,702.32	2,466.08	236.24	11.439		
23,900.00	9,570.00	23,890.38	9,558.90	118.89	118.82	-89.76	14,955.27	-3,136.53	2,702.10	2,464.39	237.71	11.367		
24,000.00	9,570.00	23,990.38	9,558.90	119.63	119.55	-89.76	15,055.26	-3,137.37	2,701.88	2,462.69	239.19	11.296		
24,100.00	9,570.00	24,090.38	9,558.90	120.37	120.29	-89.76	15,155.26	-3,138.22	2,701.66	2,461.00	240.66	11.226		
24,200.00	9,570.00	24,190.38	9,558.90	121.10	121.03	-89.76	15,255.25	-3,139.07	2,701.44	2,459.30	242.14	11.157		
24,300.00	9,570.00	24,290.38	9,558.90	121.84	121.77	-89.76	15,355.25	-3,139.91	2,701.22	2,457.60	243.62	11.088		
24,400.00	9,570.00	24,390.38	9,558.90	122.58	122.51	-89.76	15,455.25	-3,140.76	2,701.00	2,455.90	245.09	11.020		
24,500.00	9,570.00	24,490.38	9,558.90	123.32	123.25	-89.76	15,555.24	-3,141.60	2,700.78	2,454.20	246.57	10.953		
24,600.00	9,570.00	24,590.38	9,558.90	124.06	123.99	-89.76	15,655.24	-3,142.45	2,700.56	2,452.50	248.05	10.887		
24,700.00	9,570.00	24,690.38	9,558.90	124.80	124.73	-89.76	15,755.24	-3,143.30	2,700.34	2,450.80	249.53	10.822		
24,800.00	9,570.00	24,790.38	9,558.90	125.54	125.47	-89.76	15,855.23	-3,144.14	2,700.12	2,449.10	251.01	10.757		
24,900.00	9,570.00	24,890.38	9,558.90	126.28	126.21	-89.76	15,955.23	-3,144.99	2,699.90	2,447.40	252.49	10.693		
25,000.00	9,570.00	24,990.38	9,558.90	127.02	126.95	-89.76	16,055.22	-3,145.83	2,699.67	2,445.70	253.98	10.630		

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

Total Directional Anticollision Report



Company:	Coterra Energy	Local Co-ordinate Reference:	Well Sombrero State Com 223H
Project:	Lea County, NM (NAD 83)	TVD Reference:	GE 3739.2' + KB 23' @ 3762.20usft (Cactus 148)
Reference Site:	Sun-Sombrero Pad	MD Reference:	GE 3739.2' + KB 23' @ 3762.20usft (Cactus 148)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Sombrero State Com 223H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	.Total Directional Production DB
Reference Design:	Plan #1	Offset TVD Reference:	Reference Datum

Offset Design: Sun-Sombrero Pad - Sombrero State Com 221H - OH - Plan #1

Survey Program: 0-MWD+IFR1+MS													Offset Site Error:	0.00 usft
Reference Offset													Offset Well Error:	0.00 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Rule Assigned:				Warning	
				Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
25,100.00	9,570.00	25,090.38	9,558.90	127.77	127.69	-89.76	16,155.22	-3,146.68	2,699.45	2,444.00	255.46	10.567		
25,200.00	9,570.00	25,190.38	9,558.90	128.51	128.43	-89.76	16,255.22	-3,147.53	2,699.23	2,442.29	256.94	10.505		
25,300.00	9,570.00	25,290.38	9,558.90	129.25	129.17	-89.76	16,355.21	-3,148.37	2,699.01	2,440.59	258.43	10.444		
25,400.00	9,570.00	25,390.38	9,558.90	129.99	129.91	-89.76	16,455.21	-3,149.22	2,698.79	2,438.88	259.91	10.383		
25,500.00	9,570.00	25,490.38	9,558.90	130.74	130.66	-89.76	16,555.20	-3,150.07	2,698.57	2,437.18	261.40	10.324		
25,600.00	9,570.00	25,590.38	9,558.90	131.48	131.40	-89.76	16,655.20	-3,150.91	2,698.35	2,435.47	262.88	10.264		
25,700.00	9,570.00	25,690.38	9,558.90	132.22	132.14	-89.76	16,755.20	-3,151.76	2,698.13	2,433.76	264.37	10.206		
25,800.00	9,570.00	25,790.38	9,558.90	132.97	132.89	-89.76	16,855.19	-3,152.60	2,697.91	2,432.05	265.86	10.148		
25,900.00	9,570.00	25,890.38	9,558.90	133.71	133.63	-89.76	16,955.19	-3,153.45	2,697.69	2,430.35	267.35	10.091		
26,000.00	9,570.00	25,990.38	9,558.90	134.45	134.37	-89.76	17,055.19	-3,154.30	2,697.47	2,428.64	268.83	10.034		
26,100.00	9,570.00	26,090.38	9,558.90	135.20	135.12	-89.76	17,155.18	-3,155.14	2,697.25	2,426.93	270.32	9.978		
26,200.00	9,570.00	26,190.38	9,558.90	135.94	135.86	-89.76	17,255.18	-3,155.99	2,697.03	2,425.22	271.81	9.922		
26,300.00	9,570.00	26,290.38	9,558.90	136.69	136.61	-89.76	17,355.17	-3,156.83	2,696.81	2,423.51	273.30	9.867		
26,400.00	9,570.00	26,390.38	9,558.90	137.44	137.35	-89.76	17,455.17	-3,157.68	2,696.59	2,421.80	274.79	9.813		
26,500.00	9,570.00	26,490.38	9,558.90	138.18	138.10	-89.76	17,555.17	-3,158.53	2,696.37	2,420.08	276.29	9.759		
26,600.00	9,570.00	26,590.38	9,558.90	138.93	138.84	-89.76	17,655.16	-3,159.37	2,696.15	2,418.37	277.78	9.706		
26,700.00	9,570.00	26,690.38	9,558.90	139.67	139.59	-89.76	17,755.16	-3,160.22	2,695.93	2,416.66	279.27	9.654		
26,800.00	9,570.00	26,790.37	9,558.90	140.42	140.34	-89.76	17,855.16	-3,161.06	2,695.71	2,414.95	280.76	9.601		
26,900.00	9,570.00	26,890.37	9,558.90	141.17	141.08	-89.76	17,955.15	-3,161.91	2,695.49	2,413.23	282.26	9.550		
27,000.00	9,570.00	26,990.37	9,558.90	141.91	141.83	-89.76	18,055.15	-3,162.76	2,695.27	2,411.52	283.75	9.499		
27,100.00	9,570.00	27,090.37	9,558.90	142.66	142.58	-89.76	18,155.14	-3,163.60	2,695.05	2,409.80	285.24	9.448		
27,200.00	9,570.00	27,190.37	9,558.90	143.41	143.32	-89.76	18,255.14	-3,164.45	2,694.83	2,408.09	286.74	9.398		
27,300.00	9,570.00	27,290.37	9,558.90	144.16	144.07	-89.76	18,355.14	-3,165.29	2,694.61	2,406.37	288.23	9.349		
27,400.00	9,570.00	27,390.37	9,558.90	144.90	144.82	-89.76	18,455.13	-3,166.14	2,694.39	2,404.66	289.73	9.300		
27,500.00	9,570.00	27,490.37	9,558.90	145.65	145.57	-89.76	18,555.13	-3,166.99	2,694.17	2,402.94	291.23	9.251		
27,600.00	9,570.00	27,590.37	9,558.90	146.40	146.32	-89.76	18,655.12	-3,167.83	2,693.94	2,401.22	292.72	9.203		
27,700.00	9,570.00	27,690.37	9,558.90	147.15	147.06	-89.76	18,755.12	-3,168.68	2,693.72	2,399.50	294.22	9.155		
27,800.00	9,570.00	27,790.37	9,558.90	147.90	147.81	-89.76	18,855.12	-3,169.52	2,693.50	2,397.79	295.72	9.108		
27,900.00	9,570.00	27,890.37	9,558.90	148.65	148.56	-89.76	18,955.11	-3,170.37	2,693.28	2,396.07	297.21	9.062		
28,000.00	9,570.00	27,990.37	9,558.90	149.40	149.31	-89.76	19,055.11	-3,171.22	2,693.06	2,394.35	298.71	9.016		
28,100.00	9,570.00	28,090.37	9,558.90	150.15	150.06	-89.76	19,155.11	-3,172.06	2,692.84	2,392.63	300.21	8.970		
28,200.00	9,570.00	28,190.37	9,558.90	150.90	150.81	-89.76	19,255.10	-3,172.91	2,692.62	2,390.91	301.71	8.925		
28,300.00	9,570.00	28,290.37	9,558.90	151.65	151.56	-89.76	19,355.10	-3,173.75	2,692.40	2,389.19	303.21	8.880		
28,400.00	9,570.00	28,390.37	9,558.90	152.40	152.31	-89.76	19,455.09	-3,174.60	2,692.18	2,387.47	304.71	8.835		
28,500.00	9,570.00	28,490.37	9,558.90	153.15	153.06	-89.76	19,555.09	-3,175.45	2,691.96	2,385.75	306.21	8.791		
28,600.00	9,570.00	28,590.37	9,558.90	153.90	153.81	-89.76	19,655.09	-3,176.29	2,691.74	2,384.03	307.71	8.748		
28,700.00	9,570.00	28,690.37	9,558.90	154.65	154.56	-89.76	19,755.08	-3,177.14	2,691.52	2,382.31	309.21	8.704		
28,800.00	9,570.00	28,790.37	9,558.90	155.40	155.31	-89.76	19,855.08	-3,177.98	2,691.30	2,380.59	310.71	8.662		
28,900.00	9,570.00	28,890.37	9,558.90	156.15	156.06	-89.76	19,955.07	-3,178.83	2,691.08	2,378.86	312.22	8.619		
29,000.00	9,570.00	28,990.37	9,558.90	156.90	156.81	-89.76	20,055.07	-3,179.68	2,690.86	2,377.14	313.72	8.577		
29,100.00	9,570.00	29,090.37	9,558.90	157.65	157.56	-89.76	20,155.07	-3,180.52	2,690.64	2,375.42	315.22	8.536		
29,200.00	9,570.00	29,190.37	9,558.90	158.40	158.31	-89.76	20,255.06	-3,181.37	2,690.42	2,373.69	316.72	8.495		
29,300.00	9,570.00	29,290.37	9,558.90	159.16	159.06	-89.76	20,355.06	-3,182.21	2,690.20	2,371.97	318.23	8.454		
29,400.00	9,570.00	29,390.37	9,558.90	159.91	159.82	-89.76	20,455.06	-3,183.06	2,689.98	2,370.25	319.73	8.413		
29,500.00	9,570.00	29,490.37	9,558.90	160.66	160.57	-89.76	20,555.05	-3,183.91	2,689.76	2,368.52	321.24	8.373		
29,600.00	9,570.00	29,590.37	9,558.90	161.41	161.32	-89.76	20,655.05	-3,184.75	2,689.54	2,366.80	322.74	8.333		
29,700.00	9,570.00	29,690.37	9,558.90	162.17	162.07	-89.76	20,755.04	-3,185.60	2,689.32	2,365.07	324.24	8.294		
29,800.00	9,570.00	29,790.37	9,558.90	162.92	162.82	-89.76	20,855.04	-3,186.44	2,689.10	2,363.35	325.75	8.255		
29,900.00	9,570.00	29,890.37	9,558.90	163.67	163.58	-89.76	20,955.04	-3,187.29	2,688.88	2,361.62	327.25	8.216		
30,000.00	9,570.00	29,990.37	9,558.90	164.42	164.33	-89.76	21,055.03	-3,188.14	2,688.66	2,359.89	328.76	8.178		

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

Total Directional Anticollision Report



Company:	Coterra Energy	Local Co-ordinate Reference:	Well Sombrero State Com 223H
Project:	Lea County, NM (NAD 83)	TVD Reference:	GE 3739.2' + KB 23' @ 3762.20usft (Cactus 148)
Reference Site:	Sun-Sombrero Pad	MD Reference:	GE 3739.2' + KB 23' @ 3762.20usft (Cactus 148)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Sombrero State Com 223H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	.Total Directional Production DB
Reference Design:	Plan #1	Offset TVD Reference:	Reference Datum

Offset Design: Sun-Sombrero Pad - Sombrero State Com 221H - OH - Plan #1

Survey Program:		Reference		Offset		Semi Major Axis		Highside		Offset Wellbore Centre		Distance		Rule Assigned:		Offset Site Error:
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Reference (usft)	Offset (usft)	Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	Offset Well Error:
30,100.00	9,570.00	30,090.37	9,558.90	165.18	165.08	-89.76			21,155.03	-3,188.98	2,688.43	2,358.17	330.27	8.140		0.00 usft
30,200.00	9,570.00	30,190.37	9,558.90	165.93	165.84	-89.76			21,255.03	-3,189.83	2,688.21	2,356.44	331.77	8.103		0.00 usft
30,219.49	9,570.00	30,209.86	9,558.90	166.08	165.98	-89.76			21,274.52	-3,189.99	2,688.17	2,356.11	332.06	8.095	ES, SF	

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

Total Directional Anticollision Report



Company:	Coterra Energy	Local Co-ordinate Reference:	Well Sombrero State Com 223H
Project:	Lea County, NM (NAD 83)	TVD Reference:	GE 3739.2' + KB 23' @ 3762.20usft (Cactus 148)
Reference Site:	Sun-Sombrero Pad	MD Reference:	GE 3739.2' + KB 23' @ 3762.20usft (Cactus 148)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Sombrero State Com 223H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	.Total Directional Production DB
Reference Design:	Plan #1	Offset TVD Reference:	Reference Datum

Offset Design: Sun-Sombrero Pad - Sombrero State Com 222H - OH - Plan #1

Survey Program: 0-MWD+IFR1+MS													Offset Site Error:	0.00 usft
Reference Offset													Offset Well Error:	0.00 usft
Measured Reference Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Rule Assigned: Distance				Warning	
				Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
0.00	0.00	11.00	0.00	0.00	0.03	-90.21	-9.66	-2,612.81	2,612.83					
100.00	100.00	111.00	100.00	0.28	0.30	-90.21	-9.66	-2,612.81	2,612.83	2,612.25	0.58	4,513.184		
200.00	200.00	211.00	200.00	0.63	0.66	-90.21	-9.66	-2,612.81	2,612.83	2,611.53	1.30	2,016.265		
300.00	300.00	311.00	300.00	0.99	1.02	-90.21	-9.66	-2,612.81	2,612.83	2,610.82	2.01	1,298.094		
400.00	400.00	411.00	400.00	1.35	1.38	-90.21	-9.66	-2,612.81	2,612.83	2,610.10	2.73	957.163		
500.00	500.00	568.24	557.24	1.71	1.94	-90.20	-9.34	-2,612.06	2,612.71	2,609.06	3.65	716.025		
600.00	599.98	909.52	897.19	2.07	3.16	-56.43	1.72	-2,586.42	2,602.48	2,597.27	5.21	499.888		
700.00	699.85	1,008.50	995.41	2.43	3.51	-56.58	6.59	-2,575.13	2,588.26	2,582.35	5.92	437.474		
800.00	799.67	1,107.42	1,093.56	2.78	3.87	-56.58	11.45	-2,563.84	2,573.57	2,566.95	6.62	388.712		
900.00	899.49	1,206.33	1,191.70	3.14	4.22	-56.58	16.32	-2,552.56	2,558.88	2,551.55	7.33	349.160		
1,000.00	999.31	1,305.25	1,289.85	3.50	4.58	-56.58	21.18	-2,541.28	2,544.19	2,536.16	8.04	316.504		
1,100.00	1,099.14	1,404.16	1,388.00	3.86	4.94	-56.59	26.05	-2,529.99	2,529.50	2,520.75	8.75	289.097		
1,200.00	1,198.96	1,503.08	1,486.15	4.22	5.30	-56.59	30.91	-2,518.71	2,514.81	2,505.35	9.46	265.778		
1,300.00	1,298.78	1,601.99	1,584.30	4.58	5.66	-56.59	35.78	-2,507.43	2,500.12	2,489.95	10.18	245.702		
1,400.00	1,398.60	1,700.91	1,682.45	4.94	6.02	-56.59	40.64	-2,496.14	2,485.44	2,474.55	10.89	228.242		
1,500.00	1,498.43	1,799.83	1,780.60	5.30	6.39	-56.59	45.51	-2,484.86	2,470.75	2,459.14	11.60	212.919		
1,600.00	1,598.25	1,898.74	1,878.75	5.66	6.75	-56.60	50.37	-2,473.58	2,456.06	2,443.74	12.32	199.365		
1,700.00	1,698.07	1,997.66	1,976.90	6.02	7.11	-56.60	55.24	-2,462.29	2,441.37	2,428.33	13.04	187.293		
1,800.00	1,797.90	2,096.57	2,075.05	6.38	7.47	-56.60	60.10	-2,451.01	2,426.68	2,412.93	13.75	176.473		
1,900.00	1,897.72	2,195.49	2,173.20	6.74	7.83	-56.60	64.97	-2,439.73	2,411.99	2,397.52	14.47	166.720		
2,000.00	1,997.54	2,294.40	2,271.34	7.10	8.20	-56.60	69.83	-2,428.44	2,397.30	2,382.11	15.18	157.885		
2,100.00	2,097.36	2,393.32	2,369.49	7.46	8.56	-56.61	74.70	-2,417.16	2,382.61	2,366.71	15.90	149.844		
2,200.00	2,197.19	2,492.23	2,467.64	7.82	8.92	-56.61	79.56	-2,405.88	2,367.92	2,351.30	16.62	142.494		
2,300.00	2,297.01	2,591.15	2,565.79	8.18	9.29	-56.61	84.43	-2,394.59	2,353.23	2,335.89	17.33	135.752		
2,400.00	2,396.83	2,690.06	2,663.94	8.54	9.65	-56.61	89.29	-2,383.31	2,338.54	2,320.49	18.05	129.544		
2,500.00	2,496.65	2,788.98	2,762.09	8.90	10.01	-56.61	94.16	-2,372.03	2,323.85	2,305.08	18.77	123.809		
2,600.00	2,596.48	2,887.89	2,860.24	9.26	10.37	-56.62	99.02	-2,360.74	2,309.16	2,289.67	19.49	118.496		
2,700.00	2,696.30	2,986.81	2,958.39	9.62	10.74	-56.62	103.89	-2,349.46	2,294.47	2,274.27	20.20	113.560		
2,800.00	2,796.12	3,085.72	3,056.54	9.98	11.10	-56.62	108.75	-2,338.18	2,279.78	2,258.86	20.92	108.961		
2,900.00	2,895.94	3,184.64	3,154.69	10.34	11.46	-56.62	113.62	-2,326.89	2,265.09	2,243.45	21.64	104.668		
3,000.00	2,995.77	3,283.55	3,252.83	10.70	11.83	-56.63	118.48	-2,315.61	2,250.40	2,228.04	22.36	100.650		
3,100.00	3,095.59	3,382.47	3,350.98	11.06	12.19	-56.63	123.35	-2,304.33	2,235.71	2,212.64	23.08	96.881		
3,200.00	3,195.41	3,481.38	3,449.13	11.42	12.56	-56.63	128.21	-2,293.04	2,221.02	2,197.23	23.80	93.339		
3,300.00	3,295.23	3,580.30	3,547.28	11.78	12.92	-56.63	133.08	-2,281.76	2,206.33	2,181.82	24.51	90.005		
3,400.00	3,395.06	3,679.21	3,645.43	12.14	13.28	-56.64	137.94	-2,270.48	2,191.64	2,166.41	25.23	86.861		
3,500.00	3,494.88	3,778.13	3,743.58	12.50	13.65	-56.64	142.81	-2,259.19	2,176.95	2,151.00	25.95	83.890		
3,600.00	3,594.70	3,877.04	3,841.73	12.86	14.01	-56.64	147.67	-2,247.91	2,162.27	2,135.60	26.67	81.079		
3,700.00	3,694.52	3,975.96	3,939.88	13.22	14.37	-56.64	152.54	-2,236.63	2,147.58	2,120.19	27.39	78.416		
3,800.00	3,794.35	4,074.87	4,038.03	13.58	14.74	-56.65	157.40	-2,225.34	2,132.89	2,104.78	28.11	75.888		
3,900.00	3,894.17	4,173.79	4,136.18	13.94	15.10	-56.65	162.27	-2,214.06	2,118.20	2,089.37	28.82	73.486		
4,000.00	3,993.99	4,272.70	4,234.32	14.30	15.46	-56.65	167.13	-2,202.78	2,103.51	2,073.96	29.54	71.202		
4,100.00	4,093.81	4,371.62	4,332.47	14.67	15.83	-56.65	172.00	-2,191.49	2,088.82	2,058.56	30.26	69.025		
4,200.00	4,193.64	4,470.53	4,430.62	15.03	16.19	-56.66	176.86	-2,180.21	2,074.13	2,043.15	30.98	66.950		
4,300.00	4,293.46	4,569.45	4,528.77	15.39	16.56	-56.66	181.73	-2,168.93	2,059.44	2,027.74	31.70	64.968		
4,400.00	4,393.28	4,668.36	4,626.92	15.75	16.92	-56.66	186.59	-2,157.64	2,044.75	2,012.33	32.42	63.074		
4,500.00	4,493.10	4,767.28	4,725.07	16.11	17.28	-56.66	191.46	-2,146.36	2,030.06	1,996.92	33.14	61.263		
4,600.00	4,592.93	4,866.20	4,823.22	16.47	17.65	-56.67	196.32	-2,135.08	2,015.37	1,981.51	33.86	59.528		
4,700.00	4,692.75	4,965.11	4,921.37	16.83	18.01	-56.67	201.19	-2,123.79	2,000.68	1,966.11	34.58	57.865		
4,800.00	4,792.57	5,064.03	5,019.52	17.19	18.38	-56.67	206.05	-2,112.51	1,985.99	1,950.70	35.29	56.270		
4,900.00	4,892.39	5,162.94	5,117.67	17.55	18.74	-56.68	210.92	-2,101.23	1,971.30	1,935.29	36.01	54.738		
5,000.00	4,992.22	5,261.86	5,215.81	17.91	19.10	-56.68	215.78	-2,089.94	1,956.61	1,919.88	36.73	53.267		

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

Total Directional Anticollision Report



Company:	Coterra Energy	Local Co-ordinate Reference:	Well Sombrero State Com 223H
Project:	Lea County, NM (NAD 83)	TVD Reference:	GE 3739.2' + KB 23' @ 3762.20usft (Cactus 148)
Reference Site:	Sun-Sombrero Pad	MD Reference:	GE 3739.2' + KB 23' @ 3762.20usft (Cactus 148)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Sombrero State Com 223H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	.Total Directional Production DB
Reference Design:	Plan #1	Offset TVD Reference:	Reference Datum

Offset Design: Sun-Sombrero Pad - Sombrero State Com 222H - OH - Plan #1

Survey Program: 0-MWD+IFR1+MS													Offset Site Error:	0.00 usft
Reference Offset													Offset Well Error:	0.00 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Rule Assigned: Distance				Warning	
				Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
5,100.00	5,092.04	5,360.77	5,313.96	18.27	19.47	-56.68	220.65	-2,078.66	1,941.92	1,904.47	37.45	51.852		
5,200.00	5,191.86	5,459.69	5,412.11	18.63	19.83	-56.69	225.51	-2,067.38	1,927.23	1,889.06	38.17	50.490		
5,300.00	5,291.68	5,558.60	5,510.26	18.99	20.20	-56.69	230.38	-2,056.09	1,912.54	1,873.65	38.89	49.179		
5,400.00	5,391.51	5,657.52	5,608.41	19.35	20.56	-56.69	235.24	-2,044.81	1,897.86	1,858.25	39.61	47.915		
5,500.00	5,491.33	5,756.43	5,706.56	19.71	20.92	-56.70	240.11	-2,033.53	1,883.17	1,842.84	40.33	46.696		
5,600.00	5,591.15	5,855.35	5,804.71	20.07	21.29	-56.70	244.97	-2,022.24	1,868.48	1,827.43	41.05	45.520		
5,700.00	5,690.97	5,954.26	5,902.86	20.43	21.65	-56.70	249.84	-2,010.96	1,853.79	1,812.02	41.77	44.384		
5,800.00	5,790.80	6,053.18	6,001.01	20.80	22.02	-56.71	254.70	-1,999.67	1,839.10	1,796.61	42.49	43.287		
5,900.00	5,890.62	6,152.09	6,099.16	21.16	22.38	-56.71	259.57	-1,988.39	1,824.41	1,781.20	43.21	42.226		
6,000.00	5,990.44	6,251.01	6,197.30	21.52	22.74	-56.71	264.43	-1,977.11	1,809.72	1,765.79	43.93	41.200		
6,100.00	6,090.26	6,349.92	6,295.45	21.88	23.11	-56.72	269.30	-1,965.82	1,795.03	1,750.38	44.64	40.207		
6,200.00	6,190.09	6,448.84	6,393.60	22.24	23.47	-56.72	274.16	-1,954.54	1,780.34	1,734.98	45.36	39.245		
6,300.00	6,289.91	6,547.75	6,491.75	22.60	23.84	-56.72	279.03	-1,943.26	1,765.65	1,719.57	46.08	38.314		
6,400.00	6,389.73	6,646.67	6,589.90	22.96	24.20	-56.73	283.89	-1,931.97	1,750.96	1,704.16	46.80	37.411		
6,500.00	6,489.55	6,745.58	6,688.05	23.32	24.57	-56.73	288.76	-1,920.69	1,736.27	1,688.75	47.52	36.535		
6,600.00	6,589.38	6,844.50	6,786.20	23.68	24.93	-56.74	293.62	-1,909.41	1,721.58	1,673.34	48.24	35.686		
6,700.00	6,689.20	6,943.41	6,884.35	24.04	25.29	-56.74	298.49	-1,898.12	1,706.89	1,657.93	48.96	34.861		
6,800.00	6,789.02	7,042.33	6,982.50	24.40	25.66	-56.74	303.35	-1,886.84	1,692.20	1,642.52	49.68	34.060		
6,900.00	6,888.85	7,141.24	7,080.65	24.76	26.02	-56.75	308.22	-1,875.56	1,677.51	1,627.11	50.40	33.283		
7,000.00	6,988.67	7,240.16	7,178.79	25.12	26.39	-56.75	313.08	-1,864.27	1,662.83	1,611.70	51.12	32.527		
7,100.00	7,088.49	7,339.07	7,276.94	25.48	26.75	-56.76	317.95	-1,852.99	1,648.14	1,596.29	51.84	31.792		
7,200.00	7,188.31	7,437.99	7,375.09	25.85	27.12	-56.76	322.81	-1,841.71	1,633.45	1,580.89	52.56	31.077		
7,300.00	7,288.14	7,536.90	7,473.24	26.21	27.48	-56.77	327.68	-1,830.42	1,618.76	1,565.48	53.28	30.381		
7,400.00	7,387.96	7,635.82	7,571.39	26.57	27.85	-56.77	332.54	-1,819.14	1,604.07	1,550.07	54.00	29.704		
7,500.00	7,487.78	7,734.74	7,669.54	26.93	28.21	-56.78	337.41	-1,807.86	1,589.38	1,534.66	54.72	29.045		
7,600.00	7,587.60	7,833.65	7,767.69	27.29	28.57	-56.78	342.27	-1,796.57	1,574.69	1,519.25	55.44	28.403		
7,700.00	7,687.43	7,932.57	7,865.84	27.65	28.94	-56.79	347.14	-1,785.29	1,560.00	1,503.84	56.16	27.777		
7,800.00	7,787.25	8,031.48	7,963.99	28.01	29.30	-56.79	352.00	-1,774.01	1,545.31	1,488.43	56.88	27.167		
7,900.00	7,887.07	8,130.40	8,062.14	28.37	29.67	-56.80	356.87	-1,762.72	1,530.62	1,473.02	57.60	26.572		
8,000.00	7,986.89	8,229.31	8,160.28	28.73	30.03	-56.80	361.73	-1,751.44	1,515.93	1,457.61	58.32	25.992		
8,100.00	8,086.72	8,328.23	8,258.43	29.09	30.40	-56.81	366.60	-1,740.16	1,501.24	1,442.20	59.04	25.427		
8,200.00	8,186.54	8,427.14	8,356.58	29.45	30.76	-56.81	371.46	-1,728.87	1,486.55	1,426.79	59.76	24.874		
8,300.00	8,286.36	8,526.06	8,454.73	29.81	31.13	-56.82	376.33	-1,717.59	1,471.87	1,411.38	60.48	24.335		
8,400.00	8,386.18	8,624.97	8,552.88	30.17	31.49	-56.82	381.19	-1,706.31	1,457.18	1,395.97	61.20	23.809		
8,500.00	8,486.01	8,723.89	8,651.03	30.54	31.86	-56.83	386.06	-1,695.02	1,442.49	1,380.56	61.92	23.295		
8,600.00	8,585.83	8,822.80	8,749.18	30.90	32.22	-56.83	390.92	-1,683.74	1,427.80	1,365.15	62.64	22.792		
8,700.00	8,685.65	8,921.72	8,847.33	31.26	32.58	-56.84	395.79	-1,672.46	1,413.11	1,349.74	63.36	22.301		
8,800.00	8,785.47	9,020.64	8,945.48	31.62	32.94	-56.84	400.66	-1,661.18	1,398.42	1,334.33	64.08	21.819		
8,900.00	8,885.30	9,119.56	9,043.63	31.98	33.30	-56.85	405.53	-1,649.91	1,383.11	1,318.92	64.80	21.346		
9,000.00	8,985.12	9,218.48	9,141.78	32.34	33.66	-56.85	410.40	-1,638.63	1,367.80	1,303.51	65.52	20.882		
9,096.29	9,080.87	9,156.42	9,080.44	32.69	33.43	-89.33	417.08	-1,659.69	1,379.52	1,313.81	65.72	20.992		
9,100.00	9,084.72	9,159.95	9,083.93	32.70	33.44	-89.68	417.68	-1,659.69	1,380.37	1,314.63	65.74	20.997		
9,200.00	9,181.71	9,258.97	9,179.55	33.06	33.79	-89.61	422.92	-1,659.91	1,380.32	1,313.90	66.43	20.779		
9,300.00	9,273.09	9,357.72	9,269.17	33.40	34.12	-89.56	428.09	-1,660.25	1,380.24	1,313.15	67.09	20.572		
9,400.00	9,356.08	9,456.23	9,350.21	33.71	34.42	-89.52	433.27	-1,660.72	1,380.13	1,312.40	67.73	20.378		
9,500.00	9,428.16	9,554.55	9,420.39	33.97	34.68	-89.49	438.45	-1,661.30	1,379.98	1,311.67	68.31	20.202		
9,600.00	9,487.14	9,652.72	9,477.75	34.19	34.90	-89.48	443.63	-1,661.98	1,379.81	1,310.97	68.84	20.044		
9,700.00	9,531.23	9,750.81	9,520.66	34.39	35.07	-89.48	448.81	-1,662.72	1,379.61	1,310.31	69.31	19.906		
9,800.00	9,559.09	9,848.86	9,547.94	34.58	35.21	-89.50	454.00	-1,663.52	1,379.40	1,309.70	69.70	19.789		
9,900.00	9,569.87	9,946.93	9,558.81	34.74	35.33	-89.54	459.19	-1,664.34	1,379.18	1,309.15	70.03	19.696		

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

Total Directional Anticollision Report



Company:	Coterra Energy	Local Co-ordinate Reference:	Well Sombrero State Com 223H
Project:	Lea County, NM (NAD 83)	TVD Reference:	GE 3739.2' + KB 23' @ 3762.20usft (Cactus 148)
Reference Site:	Sun-Sombrero Pad	MD Reference:	GE 3739.2' + KB 23' @ 3762.20usft (Cactus 148)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Sombrero State Com 223H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	.Total Directional Production DB
Reference Design:	Plan #1	Offset TVD Reference:	Reference Datum

Offset Design: Sun-Sombrero Pad - Sombrero State Com 222H - OH - Plan #1

Survey Program: 0-MWD+IFR1+MS													Offset Site Error:	0.00 usft
Reference Offset													Offset Well Error:	0.00 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Rule Assigned: Distance				Warning	
				Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
10,000.00	9,570.00	10,046.65	9,559.00	34.88	35.46	-89.54	1,067.25	-1,665.18	1,378.96	1,308.64	70.31	19.611		
10,100.00	9,570.00	10,146.65	9,559.00	35.04	35.62	-89.54	1,167.25	-1,666.03	1,378.74	1,308.10	70.64	19.519		
10,200.00	9,570.00	10,246.65	9,559.00	35.22	35.80	-89.54	1,267.24	-1,666.88	1,378.52	1,307.53	70.99	19.419		
10,300.00	9,570.00	10,346.64	9,559.00	35.41	36.00	-89.54	1,367.24	-1,667.72	1,378.30	1,306.92	71.37	19.311		
10,400.00	9,570.00	10,446.64	9,559.00	35.61	36.22	-89.54	1,467.23	-1,668.57	1,378.08	1,306.29	71.79	19.196		
10,500.00	9,570.00	10,546.64	9,559.00	35.84	36.46	-89.54	1,567.23	-1,669.41	1,377.86	1,305.62	72.23	19.075		
10,600.00	9,570.00	10,646.64	9,559.00	36.08	36.70	-89.54	1,667.23	-1,670.26	1,377.64	1,304.93	72.71	18.947		
10,700.00	9,570.00	10,746.64	9,559.00	36.33	36.97	-89.54	1,767.22	-1,671.11	1,377.42	1,304.20	73.21	18.813		
10,800.00	9,570.00	10,846.64	9,559.00	36.59	37.24	-89.54	1,867.22	-1,671.95	1,377.20	1,303.45	73.75	18.674		
10,900.00	9,570.00	10,946.64	9,559.00	36.88	37.53	-89.54	1,967.22	-1,672.80	1,376.98	1,302.67	74.31	18.530		
11,000.00	9,570.00	11,046.64	9,559.00	37.17	37.83	-89.54	2,067.21	-1,673.64	1,376.76	1,301.86	74.90	18.381		
11,100.00	9,570.00	11,146.64	9,559.00	37.48	38.15	-89.54	2,167.21	-1,674.49	1,376.53	1,301.02	75.52	18.228		
11,200.00	9,570.00	11,246.64	9,559.00	37.80	38.48	-89.54	2,267.20	-1,675.34	1,376.31	1,300.16	76.16	18.072		
11,300.00	9,570.00	11,346.64	9,559.00	38.13	38.82	-89.54	2,367.20	-1,676.18	1,376.09	1,299.27	76.83	17.912		
11,400.00	9,570.00	11,446.64	9,559.00	38.48	39.17	-89.54	2,467.20	-1,677.03	1,375.87	1,298.36	77.52	17.749		
11,500.00	9,570.00	11,546.64	9,559.00	38.84	39.53	-89.54	2,567.19	-1,677.87	1,375.65	1,297.42	78.23	17.584		
11,600.00	9,570.00	11,646.64	9,559.00	39.21	39.91	-89.54	2,667.19	-1,678.72	1,375.43	1,296.46	78.97	17.416		
11,700.00	9,570.00	11,746.64	9,559.00	39.59	40.29	-89.54	2,767.18	-1,679.57	1,375.21	1,295.48	79.74	17.247		
11,800.00	9,570.00	11,846.64	9,559.00	39.99	40.69	-89.54	2,867.18	-1,680.41	1,374.99	1,294.47	80.52	17.076		
11,900.00	9,570.00	11,946.64	9,559.00	40.39	41.09	-89.54	2,967.18	-1,681.26	1,374.77	1,293.44	81.33	16.904		
12,000.00	9,570.00	12,046.64	9,559.00	40.81	41.51	-89.54	3,067.17	-1,682.10	1,374.55	1,292.39	82.16	16.731		
12,100.00	9,570.00	12,146.64	9,559.00	41.23	41.94	-89.54	3,167.17	-1,682.95	1,374.33	1,291.33	83.01	16.557		
12,200.00	9,570.00	12,246.64	9,559.00	41.66	42.37	-89.54	3,267.17	-1,683.80	1,374.11	1,290.24	83.87	16.383		
12,300.00	9,570.00	12,346.64	9,559.00	42.11	42.82	-89.54	3,367.16	-1,684.64	1,373.89	1,289.13	84.76	16.209		
12,400.00	9,570.00	12,446.64	9,559.00	42.56	43.27	-89.54	3,467.16	-1,685.49	1,373.67	1,288.01	85.66	16.035		
12,500.00	9,570.00	12,546.64	9,559.00	43.03	43.73	-89.54	3,567.15	-1,686.33	1,373.45	1,286.86	86.59	15.862		
12,600.00	9,570.00	12,646.64	9,559.00	43.50	44.21	-89.54	3,667.15	-1,687.18	1,373.23	1,285.70	87.53	15.689		
12,700.00	9,570.00	12,746.64	9,559.00	43.98	44.69	-89.54	3,767.15	-1,688.03	1,373.01	1,284.52	88.49	15.517		
12,800.00	9,570.00	12,846.64	9,559.00	44.46	45.17	-89.54	3,867.14	-1,688.87	1,372.79	1,283.33	89.46	15.345		
12,900.00	9,570.00	12,946.64	9,559.00	44.96	45.67	-89.54	3,967.14	-1,689.72	1,372.57	1,282.12	90.45	15.175		
13,000.00	9,570.00	13,046.64	9,559.00	45.46	46.17	-89.54	4,067.14	-1,690.57	1,372.35	1,280.89	91.45	15.006		
13,100.00	9,570.00	13,146.64	9,559.00	45.97	46.68	-89.54	4,167.13	-1,691.41	1,372.13	1,279.66	92.47	14.838		
13,200.00	9,570.00	13,246.64	9,559.00	46.49	47.20	-89.54	4,267.13	-1,692.26	1,371.91	1,278.40	93.51	14.672		
13,300.00	9,570.00	13,346.64	9,559.00	47.02	47.72	-89.54	4,367.12	-1,693.10	1,371.69	1,277.13	94.55	14.507		
13,400.00	9,570.00	13,446.64	9,559.00	47.55	48.25	-89.54	4,467.12	-1,693.95	1,371.47	1,275.85	95.61	14.344		
13,500.00	9,570.00	13,546.64	9,559.00	48.09	48.78	-89.54	4,567.12	-1,694.80	1,371.25	1,274.56	96.69	14.182		
13,600.00	9,570.00	13,646.64	9,559.00	48.63	49.33	-89.54	4,667.11	-1,695.64	1,371.03	1,273.25	97.77	14.023		
13,700.00	9,570.00	13,746.64	9,559.00	49.18	49.88	-89.54	4,767.11	-1,696.49	1,370.81	1,271.93	98.87	13.865		
13,800.00	9,570.00	13,846.64	9,559.00	49.74	50.43	-89.54	4,867.10	-1,697.33	1,370.58	1,270.60	99.98	13.709		
13,900.00	9,570.00	13,946.64	9,559.00	50.30	50.99	-89.54	4,967.10	-1,698.18	1,370.36	1,269.26	101.10	13.554		
14,000.00	9,570.00	14,046.64	9,559.00	50.87	51.55	-89.54	5,067.10	-1,699.03	1,370.14	1,267.91	102.23	13.402		
14,100.00	9,570.00	14,146.64	9,559.00	51.44	52.12	-89.54	5,167.09	-1,699.87	1,369.92	1,266.55	103.38	13.252		
14,200.00	9,570.00	14,246.64	9,559.00	52.02	52.70	-89.54	5,267.09	-1,700.72	1,369.70	1,265.18	104.53	13.104		
14,300.00	9,570.00	14,346.64	9,559.00	52.60	53.28	-89.54	5,367.09	-1,701.56	1,369.48	1,263.79	105.69	12.958		
14,400.00	9,570.00	14,446.63	9,559.00	53.18	53.86	-89.54	5,467.08	-1,702.41	1,369.26	1,262.40	106.86	12.813		
14,500.00	9,570.00	14,546.63	9,559.00	53.78	54.45	-89.54	5,567.08	-1,703.26	1,369.04	1,261.00	108.04	12.671		
14,600.00	9,570.00	14,646.63	9,559.00	54.37	55.05	-89.54	5,667.07	-1,704.10	1,368.82	1,259.59	109.23	12.531		
14,700.00	9,570.00	14,746.63	9,559.00	54.97	55.64	-89.54	5,767.07	-1,704.95	1,368.60	1,258.17	110.43	12.393		
14,800.00	9,570.00	14,846.63	9,559.00	55.58	56.25	-89.54	5,867.07	-1,705.79	1,368.38	1,256.74	111.64	12.257		
14,900.00	9,570.00	14,946.63	9,559.00	56.19	56.85	-89.54	5,967.06	-1,706.64	1,368.16	1,255.31	112.85	12.123		
15,000.00	9,570.00	15,046.63	9,559.00	56.80	57.46	-89.54	6,067.06	-1,707.49	1,367.94	1,253.86	114.08	11.991		

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

Total Directional Anticollision Report



Company:	Coterra Energy	Local Co-ordinate Reference:	Well Sombrero State Com 223H
Project:	Lea County, NM (NAD 83)	TVD Reference:	GE 3739.2' + KB 23' @ 3762.20usft (Cactus 148)
Reference Site:	Sun-Sombrero Pad	MD Reference:	GE 3739.2' + KB 23' @ 3762.20usft (Cactus 148)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Sombrero State Com 223H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	.Total Directional Production DB
Reference Design:	Plan #1	Offset TVD Reference:	Reference Datum

Offset Design: Sun-Sombrero Pad - Sombrero State Com 222H - OH - Plan #1

Survey Program: 0-MWD+IFR1+MS													Offset Site Error:	0.00 usft
Reference Offset													Offset Well Error:	0.00 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Rule Assigned: Distance				Warning	
				Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
15,100.00	9,570.00	15,146.63	9,559.00	57.42	58.07	-89.54	6,167.06	-1,708.33	1,367.72	1,252.41	115.31	11.862		
15,200.00	9,570.00	15,246.63	9,559.00	58.04	58.69	-89.54	6,267.05	-1,709.18	1,367.50	1,250.95	116.55	11.734		
15,300.00	9,570.00	15,346.63	9,559.00	58.66	59.31	-89.54	6,367.05	-1,710.02	1,367.28	1,249.49	117.79	11.608		
15,400.00	9,570.00	15,446.63	9,559.00	59.29	59.94	-89.54	6,467.04	-1,710.87	1,367.06	1,248.02	119.04	11.484		
15,500.00	9,570.00	15,546.63	9,559.00	59.92	60.56	-89.54	6,567.04	-1,711.72	1,366.84	1,246.54	120.30	11.362		
15,600.00	9,570.00	15,646.63	9,559.00	60.55	61.20	-89.54	6,667.04	-1,712.56	1,366.62	1,245.05	121.57	11.242		
15,700.00	9,570.00	15,746.63	9,559.00	61.19	61.83	-89.54	6,767.03	-1,713.41	1,366.40	1,243.56	122.84	11.124		
15,800.00	9,570.00	15,846.63	9,559.00	61.83	62.47	-89.54	6,867.03	-1,714.25	1,366.18	1,242.06	124.11	11.007		
15,900.00	9,570.00	15,946.63	9,559.00	62.47	63.11	-89.54	6,967.02	-1,715.10	1,365.96	1,240.56	125.40	10.893		
16,000.00	9,570.00	16,046.63	9,559.00	63.12	63.75	-89.54	7,067.02	-1,715.95	1,365.74	1,239.05	126.69	10.780		
16,100.00	9,570.00	16,146.63	9,559.00	63.76	64.39	-89.54	7,167.02	-1,716.79	1,365.52	1,237.54	127.98	10.670		
16,200.00	9,570.00	16,246.63	9,559.00	64.42	65.04	-89.54	7,267.01	-1,717.64	1,365.30	1,236.02	129.28	10.561		
16,300.00	9,570.00	16,346.63	9,559.00	65.07	65.69	-89.54	7,367.01	-1,718.48	1,365.08	1,234.49	130.59	10.453		
16,400.00	9,570.00	16,446.63	9,559.00	65.72	66.35	-89.54	7,467.01	-1,719.33	1,364.86	1,232.96	131.90	10.348		
16,500.00	9,570.00	16,546.63	9,559.00	66.38	67.00	-89.54	7,567.00	-1,720.18	1,364.64	1,231.42	133.21	10.244		
16,600.00	9,570.00	16,646.63	9,559.00	67.04	67.66	-89.54	7,667.00	-1,721.02	1,364.41	1,229.88	134.53	10.142		
16,700.00	9,570.00	16,746.63	9,559.00	67.71	68.32	-89.54	7,766.99	-1,721.87	1,364.19	1,228.34	135.85	10.042		
16,800.00	9,570.00	16,846.63	9,559.00	68.37	68.98	-89.54	7,866.99	-1,722.71	1,363.97	1,226.79	137.18	9.943		
16,900.00	9,570.00	16,946.63	9,559.00	69.04	69.65	-89.54	7,966.99	-1,723.56	1,363.75	1,225.24	138.52	9.845		
17,000.00	9,570.00	17,046.63	9,559.00	69.71	70.32	-89.54	8,066.98	-1,724.41	1,363.53	1,223.68	139.85	9.750		
17,100.00	9,570.00	17,146.63	9,559.00	70.38	70.99	-89.54	8,166.98	-1,725.25	1,363.31	1,222.12	141.20	9.655		
17,200.00	9,570.00	17,246.63	9,559.00	71.06	71.66	-89.54	8,266.97	-1,726.10	1,363.09	1,220.55	142.54	9.563		
17,300.00	9,570.00	17,346.63	9,559.00	71.73	72.33	-89.54	8,366.97	-1,726.94	1,362.87	1,218.98	143.89	9.472		
17,400.00	9,570.00	17,446.63	9,559.00	72.41	73.01	-89.54	8,466.97	-1,727.79	1,362.65	1,217.41	145.24	9.382		
17,500.00	9,570.00	17,546.63	9,559.00	73.09	73.68	-89.54	8,566.96	-1,728.64	1,362.43	1,215.83	146.60	9.293		
17,600.00	9,570.00	17,646.63	9,559.00	73.77	74.36	-89.54	8,666.96	-1,729.48	1,362.21	1,214.25	147.96	9.206		
17,700.00	9,570.00	17,746.63	9,559.00	74.45	75.04	-89.54	8,766.96	-1,730.33	1,361.99	1,212.66	149.33	9.121		
17,800.00	9,570.00	17,846.63	9,559.00	75.14	75.72	-89.54	8,866.95	-1,731.18	1,361.77	1,211.08	150.69	9.037		
17,900.00	9,570.00	17,946.63	9,559.00	75.82	76.41	-89.54	8,966.95	-1,732.02	1,361.55	1,209.49	152.06	8.954		
18,000.00	9,570.00	18,046.63	9,559.00	76.51	77.09	-89.54	9,066.94	-1,732.87	1,361.33	1,207.89	153.44	8.872		
18,100.00	9,570.00	18,146.63	9,559.00	77.20	77.78	-89.54	9,166.94	-1,733.71	1,361.11	1,206.29	154.81	8.792		
18,200.00	9,570.00	18,246.63	9,559.00	77.89	78.47	-89.54	9,266.94	-1,734.56	1,360.89	1,204.69	156.19	8.713		
18,300.00	9,570.00	18,346.63	9,559.00	78.58	79.16	-89.54	9,366.93	-1,735.41	1,360.67	1,203.09	157.58	8.635		
18,400.00	9,570.00	18,446.63	9,559.00	79.28	79.85	-89.54	9,466.93	-1,736.25	1,360.45	1,201.48	158.96	8.558		
18,500.00	9,570.00	18,546.63	9,559.00	79.97	80.54	-89.54	9,566.93	-1,737.10	1,360.23	1,199.88	160.35	8.483		
18,600.00	9,570.00	18,646.62	9,559.00	80.67	81.24	-89.54	9,666.92	-1,737.94	1,360.01	1,198.26	161.74	8.408		
18,700.00	9,570.00	18,746.62	9,559.00	81.37	81.93	-89.54	9,766.92	-1,738.79	1,359.79	1,196.65	163.14	8.335		
18,800.00	9,570.00	18,846.62	9,559.00	82.07	82.63	-89.54	9,866.91	-1,739.64	1,359.57	1,195.03	164.53	8.263		
18,900.00	9,570.00	18,946.62	9,559.00	82.77	83.33	-89.54	9,966.91	-1,740.48	1,359.35	1,193.41	165.93	8.192		
19,000.00	9,570.00	19,046.62	9,559.00	83.47	84.03	-89.54	10,066.91	-1,741.33	1,359.13	1,191.79	167.34	8.122		
19,100.00	9,570.00	19,146.62	9,559.00	84.17	84.73	-89.54	10,166.90	-1,742.17	1,358.91	1,190.17	168.74	8.053		
19,200.00	9,570.00	19,246.62	9,559.00	84.88	85.43	-89.54	10,266.90	-1,743.02	1,358.69	1,188.54	170.15	7.985		
19,300.00	9,570.00	19,346.62	9,559.00	85.58	86.13	-89.54	10,366.89	-1,743.87	1,358.46	1,186.91	171.55	7.919		
19,400.00	9,570.00	19,446.62	9,559.00	86.29	86.84	-89.54	10,466.89	-1,744.71	1,358.24	1,185.28	172.97	7.853		
19,500.00	9,570.00	19,546.62	9,559.00	86.99	87.54	-89.54	10,566.89	-1,745.56	1,358.02	1,183.65	174.38	7.788		
19,600.00	9,570.00	19,646.62	9,559.00	87.70	88.25	-89.54	10,666.88	-1,746.40	1,357.80	1,182.01	175.79	7.724		
19,700.00	9,570.00	19,746.62	9,559.00	88.41	88.95	-89.54	10,766.88	-1,747.25	1,357.58	1,180.37	177.21	7.661		
19,800.00	9,570.00	19,846.62	9,559.00	89.12	89.66	-89.54	10,866.88	-1,748.10	1,357.36	1,178.73	178.63	7.599		
19,900.00	9,570.00	19,946.62	9,559.00	89.83	90.37	-89.54	10,966.87	-1,748.94	1,357.14	1,177.09	180.05	7.538		
20,000.00	9,570.00	20,046.62	9,559.00	90.55	91.08	-89.54	11,066.87	-1,749.79	1,356.92	1,175.45	181.47	7.477		

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

Total Directional Anticollision Report



Company:	Coterra Energy	Local Co-ordinate Reference:	Well Sombrero State Com 223H
Project:	Lea County, NM (NAD 83)	TVD Reference:	GE 3739.2' + KB 23' @ 3762.20usft (Cactus 148)
Reference Site:	Sun-Sombrero Pad	MD Reference:	GE 3739.2' + KB 23' @ 3762.20usft (Cactus 148)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Sombrero State Com 223H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	.Total Directional Production DB
Reference Design:	Plan #1	Offset TVD Reference:	Reference Datum

Offset Design: Sun-Sombrero Pad - Sombrero State Com 222H - OH - Plan #1

Survey Program: 0-MWD+IFR1+MS													Offset Site Error:	0.00 usft
Reference Offset													Offset Well Error:	0.00 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Rule Assigned:				Warning	
				Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
20,100.00	9,570.00	20,146.62	9,559.00	91.26	91.79	-89.54	11,166.86	-1,750.63	1,356.70	1,173.80	182.90	7.418		
20,200.00	9,570.00	20,246.62	9,559.00	91.97	92.50	-89.54	11,266.86	-1,751.48	1,356.48	1,172.15	184.33	7.359		
20,300.00	9,570.00	20,346.62	9,559.00	92.69	93.22	-89.54	11,366.86	-1,752.33	1,356.26	1,170.51	185.76	7.301		
20,400.00	9,570.00	20,446.62	9,559.00	93.41	93.93	-89.54	11,466.85	-1,753.17	1,356.04	1,168.86	187.19	7.244		
20,500.00	9,570.00	20,546.62	9,559.00	94.12	94.65	-89.54	11,566.85	-1,754.02	1,355.82	1,167.20	188.62	7.188		
20,600.00	9,570.00	20,646.62	9,559.00	94.84	95.36	-89.54	11,666.84	-1,754.86	1,355.60	1,165.55	190.05	7.133		
20,700.00	9,570.00	20,746.62	9,559.00	95.56	96.08	-89.54	11,766.84	-1,755.71	1,355.38	1,163.89	191.49	7.078		
20,800.00	9,570.00	20,846.62	9,559.00	96.28	96.80	-89.53	11,866.84	-1,756.56	1,355.16	1,162.23	192.92	7.024		
20,900.00	9,570.00	20,946.62	9,559.00	97.00	97.51	-89.53	11,966.83	-1,757.40	1,354.94	1,160.58	194.36	6.971		
21,000.00	9,570.00	21,046.62	9,559.00	97.72	98.23	-89.53	12,066.83	-1,758.25	1,354.72	1,158.92	195.80	6.919		
21,100.00	9,570.00	21,146.62	9,559.00	98.44	98.95	-89.53	12,166.83	-1,759.09	1,354.50	1,157.25	197.25	6.867		
21,200.00	9,570.00	21,246.62	9,559.00	99.16	99.67	-89.53	12,266.82	-1,759.94	1,354.28	1,155.59	198.69	6.816		
21,300.00	9,570.00	21,346.62	9,559.00	99.89	100.39	-89.53	12,366.82	-1,760.79	1,354.06	1,153.92	200.13	6.766		
21,400.00	9,570.00	21,446.62	9,559.00	100.61	101.12	-89.53	12,466.81	-1,761.63	1,353.84	1,152.26	201.58	6.716		
21,500.00	9,570.00	21,546.62	9,559.00	101.33	101.84	-89.53	12,566.81	-1,762.48	1,353.62	1,150.59	203.03	6.667		
21,600.00	9,570.00	21,646.62	9,559.00	102.06	102.56	-89.53	12,666.81	-1,763.32	1,353.40	1,148.92	204.47	6.619		
21,700.00	9,570.00	21,746.62	9,559.00	102.78	103.29	-89.53	12,766.80	-1,764.17	1,353.18	1,147.25	205.93	6.571		
21,800.00	9,570.00	21,846.62	9,559.00	103.51	104.01	-89.53	12,866.80	-1,765.02	1,352.96	1,145.58	207.38	6.524		
21,900.00	9,570.00	21,946.62	9,559.00	104.24	104.74	-89.53	12,966.80	-1,765.86	1,352.74	1,143.91	208.83	6.478		
22,000.00	9,570.00	22,046.62	9,559.00	104.96	105.46	-89.53	13,066.79	-1,766.71	1,352.52	1,142.23	210.28	6.432		
22,100.00	9,570.00	22,146.62	9,559.00	105.69	106.19	-89.53	13,166.79	-1,767.56	1,352.29	1,140.56	211.74	6.387		
22,200.00	9,570.00	22,246.62	9,559.00	106.42	106.91	-89.53	13,266.78	-1,768.40	1,352.07	1,138.88	213.19	6.342		
22,300.00	9,570.00	22,346.62	9,559.00	107.15	107.64	-89.53	13,366.78	-1,769.25	1,351.85	1,137.20	214.65	6.298		
22,400.00	9,570.00	22,446.62	9,559.00	107.88	108.37	-89.53	13,466.78	-1,770.09	1,351.63	1,135.52	216.11	6.254		
22,500.00	9,570.00	22,546.62	9,559.00	108.61	109.10	-89.53	13,566.77	-1,770.94	1,351.41	1,133.84	217.57	6.211		
22,600.00	9,570.00	22,646.62	9,559.00	109.34	109.83	-89.53	13,666.77	-1,771.79	1,351.19	1,132.16	219.03	6.169		
22,700.00	9,570.00	22,746.61	9,559.00	110.07	110.56	-89.53	13,766.76	-1,772.63	1,350.97	1,130.48	220.49	6.127		
22,800.00	9,570.00	22,846.61	9,559.00	110.81	111.29	-89.53	13,866.76	-1,773.48	1,350.75	1,128.80	221.96	6.086		
22,900.00	9,570.00	22,946.61	9,559.00	111.54	112.02	-89.53	13,966.76	-1,774.32	1,350.53	1,127.11	223.42	6.045		
23,000.00	9,570.00	23,046.61	9,559.00	112.27	112.75	-89.53	14,066.75	-1,775.17	1,350.31	1,125.43	224.88	6.004		
23,100.00	9,570.00	23,146.61	9,559.00	113.01	113.48	-89.53	14,166.75	-1,776.02	1,350.09	1,123.74	226.35	5.965		
23,200.00	9,570.00	23,246.61	9,559.00	113.74	114.22	-89.53	14,266.75	-1,776.86	1,349.87	1,122.05	227.82	5.925		
23,300.00	9,570.00	23,346.61	9,559.00	114.47	114.95	-89.53	14,366.74	-1,777.71	1,349.65	1,120.37	229.28	5.886		
23,400.00	9,570.00	23,446.61	9,559.00	115.21	115.68	-89.53	14,466.74	-1,778.55	1,349.43	1,118.68	230.75	5.848		
23,500.00	9,570.00	23,546.61	9,559.00	115.94	116.42	-89.53	14,566.73	-1,779.40	1,349.21	1,116.99	232.22	5.810		
23,600.00	9,570.00	23,646.61	9,559.00	116.68	117.15	-89.53	14,666.73	-1,780.25	1,348.99	1,115.30	233.69	5.772		
23,700.00	9,570.00	23,746.61	9,559.00	117.42	117.88	-89.53	14,766.73	-1,781.09	1,348.77	1,113.60	235.16	5.735		
23,800.00	9,570.00	23,846.61	9,559.00	118.15	118.62	-89.53	14,866.72	-1,781.94	1,348.55	1,111.91	236.64	5.699		
23,900.00	9,570.00	23,946.61	9,559.00	118.89	119.36	-89.53	14,966.72	-1,782.78	1,348.33	1,110.22	238.11	5.663		
24,000.00	9,570.00	24,046.61	9,559.00	119.63	120.09	-89.53	15,066.72	-1,783.63	1,348.11	1,108.52	239.58	5.627		
24,100.00	9,570.00	24,146.61	9,559.00	120.37	120.83	-89.53	15,166.71	-1,784.48	1,347.89	1,106.83	241.06	5.592		
24,200.00	9,570.00	24,246.61	9,559.00	121.10	121.57	-89.53	15,266.71	-1,785.32	1,347.67	1,105.13	242.53	5.557		
24,300.00	9,570.00	24,346.61	9,559.00	121.84	122.30	-89.53	15,366.70	-1,786.17	1,347.45	1,103.44	244.01	5.522		
24,400.00	9,570.00	24,446.61	9,559.00	122.58	123.04	-89.53	15,466.70	-1,787.01	1,347.23	1,101.74	245.49	5.488		
24,500.00	9,570.00	24,546.61	9,559.00	123.32	123.78	-89.53	15,566.70	-1,787.86	1,347.01	1,100.04	246.97	5.454		
24,600.00	9,570.00	24,646.61	9,559.00	124.06	124.52	-89.53	15,666.69	-1,788.71	1,346.79	1,098.34	248.45	5.421		
24,700.00	9,570.00	24,746.61	9,559.00	124.80	125.26	-89.53	15,766.69	-1,789.55	1,346.57	1,096.64	249.92	5.388		
24,800.00	9,570.00	24,846.61	9,559.00	125.54	125.99	-89.53	15,866.68	-1,790.40	1,346.34	1,094.94	251.40	5.355		
24,900.00	9,570.00	24,946.61	9,559.00	126.28	126.73	-89.53	15,966.68	-1,791.24	1,346.12	1,093.24	252.89	5.323		
25,000.00	9,570.00	25,046.61	9,559.00	127.02	127.47	-89.53	16,066.68	-1,792.09	1,345.90	1,091.54	254.37	5.291		
25,100.00	9,570.00	25,146.61	9,559.00	127.77	128.21	-89.53	16,166.67	-1,792.94	1,345.68	1,089.83	255.85	5.260		

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

Total Directional Anticollision Report



Company:	Coterra Energy	Local Co-ordinate Reference:	Well Sombrero State Com 223H
Project:	Lea County, NM (NAD 83)	TVD Reference:	GE 3739.2' + KB 23' @ 3762.20usft (Cactus 148)
Reference Site:	Sun-Sombrero Pad	MD Reference:	GE 3739.2' + KB 23' @ 3762.20usft (Cactus 148)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Sombrero State Com 223H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	.Total Directional Production DB
Reference Design:	Plan #1	Offset TVD Reference:	Reference Datum

Offset Design: Sun-Sombrero Pad - Sombrero State Com 222H - OH - Plan #1

Survey Program: 0-MWD+IFR1+MS													Offset Site Error:	0.00 usft
Reference Offset													Offset Well Error:	0.00 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Rule Assigned: Distance				Warning	
				Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
25,200.00	9,570.00	25,246.61	9,559.00	128.51	128.96	-89.53	16,266.67	-1,793.78	1,345.46	1,088.13	257.33	5.229		
25,300.00	9,570.00	25,346.61	9,559.00	129.25	129.70	-89.53	16,366.67	-1,794.63	1,345.24	1,086.43	258.82	5.198		
25,400.00	9,570.00	25,446.61	9,559.00	129.99	130.44	-89.53	16,466.66	-1,795.47	1,345.02	1,084.72	260.30	5.167		
25,500.00	9,570.00	25,546.61	9,559.00	130.74	131.18	-89.53	16,566.66	-1,796.32	1,344.80	1,083.02	261.78	5.137		
25,600.00	9,570.00	25,646.61	9,559.00	131.48	131.92	-89.53	16,666.65	-1,797.17	1,344.58	1,081.31	263.27	5.107		
25,700.00	9,570.00	25,746.61	9,559.00	132.22	132.66	-89.53	16,766.65	-1,798.01	1,344.36	1,079.60	264.76	5.078		
25,800.00	9,570.00	25,846.61	9,559.00	132.97	133.41	-89.53	16,866.65	-1,798.86	1,344.14	1,077.90	266.24	5.049		
25,900.00	9,570.00	25,946.61	9,559.00	133.71	134.15	-89.53	16,966.64	-1,799.70	1,343.92	1,076.19	267.73	5.020		
26,000.00	9,570.00	26,046.61	9,559.00	134.45	134.89	-89.53	17,066.64	-1,800.55	1,343.70	1,074.48	269.22	4.991		
26,100.00	9,570.00	26,146.61	9,559.00	135.20	135.63	-89.53	17,166.63	-1,801.40	1,343.48	1,072.77	270.71	4.963		
26,200.00	9,570.00	26,246.61	9,559.00	135.94	136.38	-89.53	17,266.63	-1,802.24	1,343.26	1,071.06	272.20	4.935		
26,300.00	9,570.00	26,346.61	9,559.00	136.69	137.12	-89.53	17,366.63	-1,803.09	1,343.04	1,069.35	273.69	4.907		
26,400.00	9,570.00	26,446.61	9,559.00	137.44	137.87	-89.53	17,466.62	-1,803.94	1,342.82	1,067.64	275.18	4.880		
26,500.00	9,570.00	26,546.61	9,559.00	138.18	138.61	-89.53	17,566.62	-1,804.78	1,342.60	1,065.93	276.67	4.853		
26,600.00	9,570.00	26,646.61	9,559.00	138.93	139.36	-89.53	17,666.62	-1,805.63	1,342.38	1,064.22	278.16	4.826		
26,700.00	9,570.00	26,746.61	9,559.00	139.67	140.10	-89.53	17,766.61	-1,806.47	1,342.16	1,062.51	279.65	4.799		
26,800.00	9,570.00	26,846.61	9,559.00	140.42	140.85	-89.53	17,866.61	-1,807.32	1,341.94	1,060.80	281.14	4.773		
26,900.00	9,570.00	26,946.60	9,559.00	141.17	141.59	-89.53	17,966.60	-1,808.17	1,341.72	1,059.08	282.63	4.747		
27,000.00	9,570.00	27,046.60	9,559.00	141.91	142.34	-89.53	18,066.60	-1,809.01	1,341.50	1,057.37	284.13	4.721		
27,100.00	9,570.00	27,146.60	9,559.00	142.66	143.08	-89.53	18,166.60	-1,809.86	1,341.28	1,055.66	285.62	4.696		
27,200.00	9,570.00	27,246.60	9,559.00	143.41	143.83	-89.53	18,266.59	-1,810.70	1,341.06	1,053.94	287.12	4.671		
27,300.00	9,570.00	27,346.60	9,559.00	144.16	144.58	-89.53	18,366.59	-1,811.55	1,340.84	1,052.23	288.61	4.646		
27,400.00	9,570.00	27,446.60	9,559.00	144.90	145.32	-89.53	18,466.59	-1,812.40	1,340.62	1,050.51	290.11	4.621		
27,500.00	9,570.00	27,546.60	9,559.00	145.65	146.07	-89.53	18,566.58	-1,813.24	1,340.39	1,048.79	291.60	4.597		
27,600.00	9,570.00	27,646.60	9,559.00	146.40	146.82	-89.53	18,666.58	-1,814.09	1,340.17	1,047.08	293.10	4.572		
27,700.00	9,570.00	27,746.60	9,559.00	147.15	147.57	-89.53	18,766.57	-1,814.93	1,339.95	1,045.36	294.59	4.548		
27,800.00	9,570.00	27,846.60	9,559.00	147.90	148.31	-89.53	18,866.57	-1,815.78	1,339.73	1,043.64	296.09	4.525		
27,900.00	9,570.00	27,946.60	9,559.00	148.65	149.06	-89.53	18,966.57	-1,816.63	1,339.51	1,041.93	297.59	4.501		
28,000.00	9,570.00	28,046.60	9,559.00	149.40	149.81	-89.53	19,066.56	-1,817.47	1,339.29	1,040.21	299.09	4.478		
28,100.00	9,570.00	28,146.60	9,559.00	150.15	150.56	-89.53	19,166.56	-1,818.32	1,339.07	1,038.49	300.58	4.455		
28,200.00	9,570.00	28,246.60	9,559.00	150.90	151.31	-89.53	19,266.55	-1,819.16	1,338.85	1,036.77	302.08	4.432		
28,300.00	9,570.00	28,346.60	9,559.00	151.65	152.06	-89.53	19,366.55	-1,820.01	1,338.63	1,035.05	303.58	4.409		
28,400.00	9,570.00	28,446.60	9,559.00	152.40	152.81	-89.53	19,466.55	-1,820.86	1,338.41	1,033.33	305.08	4.387		
28,500.00	9,570.00	28,546.60	9,559.00	153.15	153.55	-89.53	19,566.54	-1,821.70	1,338.19	1,031.61	306.58	4.365		
28,600.00	9,570.00	28,646.60	9,559.00	153.90	154.30	-89.53	19,666.54	-1,822.55	1,337.97	1,029.89	308.08	4.343		
28,700.00	9,570.00	28,746.60	9,559.00	154.65	155.05	-89.53	19,766.54	-1,823.39	1,337.75	1,028.17	309.58	4.321		
28,800.00	9,570.00	28,846.60	9,559.00	155.40	155.80	-89.53	19,866.53	-1,824.24	1,337.53	1,026.45	311.08	4.300		
28,900.00	9,570.00	28,946.60	9,559.00	156.15	156.55	-89.53	19,966.53	-1,825.09	1,337.31	1,024.73	312.58	4.278		
29,000.00	9,570.00	29,046.60	9,559.00	156.90	157.30	-89.53	20,066.52	-1,825.93	1,337.09	1,023.00	314.09	4.257		
29,100.00	9,570.00	29,146.60	9,559.00	157.65	158.05	-89.53	20,166.52	-1,826.78	1,336.87	1,021.28	315.59	4.236		
29,200.00	9,570.00	29,246.60	9,559.00	158.40	158.81	-89.53	20,266.52	-1,827.62	1,336.65	1,019.56	317.09	4.215		
29,300.00	9,570.00	29,346.60	9,559.00	159.16	159.56	-89.53	20,366.51	-1,828.47	1,336.43	1,017.83	318.59	4.195		
29,400.00	9,570.00	29,446.60	9,559.00	159.91	160.31	-89.53	20,466.51	-1,829.32	1,336.21	1,016.11	320.10	4.174		
29,500.00	9,570.00	29,546.60	9,559.00	160.66	161.06	-89.53	20,566.51	-1,830.16	1,335.99	1,014.39	321.60	4.154		
29,600.00	9,570.00	29,646.60	9,559.00	161.41	161.81	-89.53	20,666.50	-1,831.01	1,335.77	1,012.66	323.10	4.134		
29,700.00	9,570.00	29,746.60	9,559.00	162.17	162.56	-89.53	20,766.50	-1,831.85	1,335.55	1,010.94	324.61	4.114		
29,800.00	9,570.00	29,846.60	9,559.00	162.92	163.31	-89.53	20,866.49	-1,832.70	1,335.33	1,009.21	326.11	4.095		
29,900.00	9,570.00	29,946.60	9,559.00	163.67	164.06	-89.53	20,966.49	-1,833.55	1,335.11	1,007.49	327.62	4.075		
30,000.00	9,570.00	30,046.60	9,559.00	164.42	164.82	-89.53	21,066.49	-1,834.39	1,334.89	1,005.76	329.12	4.056		
30,100.00	9,570.00	30,146.60	9,559.00	165.18	165.57	-89.53	21,166.48	-1,835.24	1,334.67	1,004.04	330.63	4.037		

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

Total Directional Anticollision Report



Company:	Coterra Energy	Local Co-ordinate Reference:	Well Sombrero State Com 223H
Project:	Lea County, NM (NAD 83)	TVD Reference:	GE 3739.2' + KB 23' @ 3762.20usft (Cactus 148)
Reference Site:	Sun-Sombrero Pad	MD Reference:	GE 3739.2' + KB 23' @ 3762.20usft (Cactus 148)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Sombrero State Com 223H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	.Total Directional Production DB
Reference Design:	Plan #1	Offset TVD Reference:	Reference Datum

Offset Design: Sun-Sombrero Pad - Sombrero State Com 222H - OH - Plan #1

Survey Program:		Reference		Offset		Semi Major Axis		Highside		Offset Wellbore Centre		Distance		Rule Assigned:		Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Reference (usft)	Offset (usft)	Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor			
30,200.00	9,570.00	30,246.60	9,559.00	165.93	166.32	165.93	166.32	-89.53	21,266.48	-1,836.08	1,334.45	1,002.31	332.13	4.018			
30,219.49	9,570.00	30,264.95	9,559.00	166.08	166.46	166.08	166.46	-89.53	21,284.83	-1,836.24	1,334.40	1,001.99	332.42	4.014	CC, ES, SF		

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

Total Directional Anticollision Report



Company:	Coterra Energy	Local Co-ordinate Reference:	Well Sombrero State Com 223H
Project:	Lea County, NM (NAD 83)	TVD Reference:	GE 3739.2' + KB 23' @ 3762.20usft (Cactus 148)
Reference Site:	Sun-Sombrero Pad	MD Reference:	GE 3739.2' + KB 23' @ 3762.20usft (Cactus 148)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Sombrero State Com 223H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	.Total Directional Production DB
Reference Design:	Plan #1	Offset TVD Reference:	Reference Datum

Offset Design: Sun-Sombrero Pad - Sombrero State Com 224H - OH - Plan #1

Survey Program: 0-MWD+IFR1+MS													Offset Site Error:	0.00 usft
Reference													Offset Well Error:	0.00 usft
Measured Reference Depth (usft)	Vertical Depth (usft)	Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Rule Assigned: Distance				Warning	
		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		
0.00	0.00	0.00	0.20	0.00	0.00	89.77	0.16	39.99	39.99					
100.00	100.00	99.80	100.00	0.28	0.28	89.77	0.16	39.99	39.99	39.44	0.55	72.513		
200.00	200.00	199.80	200.00	0.63	0.63	89.77	0.16	39.99	39.99	38.72	1.27	31.531		
300.00	300.00	299.80	300.00	0.99	0.99	89.77	0.16	39.99	39.99	38.01	1.99	20.144		
400.00	400.00	399.80	400.00	1.35	1.35	89.77	0.16	39.99	39.99	37.29	2.70	14.799		
500.00	500.00	499.80	500.00	1.71	1.71	89.77	0.16	39.99	39.99	36.57	3.42	11.696	CC, ES	
600.00	599.98	598.45	598.63	2.07	2.06	124.61	0.78	41.56	42.56	38.43	4.12	10.318		
700.00	699.85	696.68	696.72	2.43	2.41	127.03	2.64	46.27	50.25	45.42	4.83	10.411		
800.00	799.67	794.31	793.99	2.78	2.75	128.07	5.72	54.04	61.60	56.08	5.52	11.160		
900.00	899.49	891.38	890.36	3.14	3.10	127.66	9.97	64.80	75.98	69.77	6.21	12.239		
1,000.00	999.31	990.14	988.25	3.50	3.46	127.00	14.81	77.04	91.62	84.71	6.91	13.256		
1,100.00	1,099.14	1,088.91	1,086.13	3.86	3.81	126.53	19.65	89.28	107.27	99.65	7.62	14.081		
1,200.00	1,198.96	1,187.67	1,184.01	4.22	4.17	126.17	24.50	101.52	122.93	114.60	8.33	14.765		
1,300.00	1,298.78	1,286.44	1,281.90	4.58	4.53	125.90	29.34	113.76	138.59	129.55	9.04	15.335		
1,400.00	1,398.60	1,385.20	1,379.78	4.94	4.89	125.69	34.18	126.00	154.25	144.50	9.75	15.822		
1,500.00	1,498.43	1,483.96	1,477.66	5.30	5.25	125.51	39.02	138.24	169.91	159.45	10.46	16.241		
1,600.00	1,598.25	1,582.73	1,575.55	5.66	5.61	125.36	43.86	150.48	185.58	174.40	11.18	16.606		
1,700.00	1,698.07	1,681.49	1,673.43	6.02	5.97	125.24	48.70	162.72	201.25	189.36	11.89	16.925		
1,800.00	1,797.90	1,780.26	1,771.31	6.38	6.33	125.13	53.54	174.96	216.91	204.31	12.61	17.208		
1,900.00	1,897.72	1,879.02	1,869.20	6.74	6.70	125.04	58.38	187.21	232.58	219.26	13.32	17.460		
2,000.00	1,997.54	1,977.79	1,967.08	7.10	7.06	124.96	63.23	199.45	248.25	234.21	14.04	17.685		
2,100.00	2,097.36	2,076.55	2,064.96	7.46	7.42	124.89	68.07	211.69	263.92	249.16	14.75	17.889		
2,200.00	2,197.19	2,175.31	2,162.85	7.82	7.78	124.83	72.91	223.93	279.59	264.12	15.47	18.073		
2,300.00	2,297.01	2,274.08	2,260.73	8.18	8.15	124.77	77.75	236.17	295.26	279.07	16.19	18.240		
2,400.00	2,396.83	2,372.84	2,358.61	8.54	8.51	124.72	82.59	248.41	310.93	294.02	16.90	18.393		
2,500.00	2,496.65	2,471.61	2,456.49	8.90	8.87	124.68	87.43	260.65	326.60	308.97	17.62	18.534		
2,600.00	2,596.48	2,570.37	2,554.38	9.26	9.24	124.64	92.27	272.89	342.27	323.93	18.34	18.663		
2,700.00	2,696.30	2,669.14	2,652.26	9.62	9.60	124.60	97.11	285.13	357.94	338.88	19.06	18.782		
2,800.00	2,796.12	2,767.90	2,750.14	9.98	9.97	124.56	101.95	297.37	373.61	353.83	19.77	18.893		
2,900.00	2,895.94	2,866.66	2,848.03	10.34	10.33	124.53	106.80	309.61	389.28	368.78	20.49	18.996		
3,000.00	2,995.77	2,965.43	2,945.91	10.70	10.69	124.50	111.64	321.85	404.95	383.74	21.21	19.091		
3,100.00	3,095.59	3,064.19	3,043.79	11.06	11.06	124.48	116.48	334.09	420.62	398.69	21.93	19.180		
3,200.00	3,195.41	3,162.96	3,141.68	11.42	11.42	124.45	121.32	346.33	436.29	413.64	22.65	19.264		
3,300.00	3,295.23	3,261.72	3,239.56	11.78	11.79	124.43	126.16	358.57	451.96	428.59	23.37	19.342		
3,400.00	3,395.06	3,360.49	3,337.44	12.14	12.15	124.41	131.00	370.81	467.63	443.55	24.09	19.416		
3,500.00	3,494.88	3,459.25	3,435.33	12.50	12.51	124.39	135.84	383.05	483.30	458.50	24.80	19.485		
3,600.00	3,594.70	3,558.01	3,533.21	12.86	12.88	124.37	140.68	395.29	498.97	473.45	25.52	19.550		
3,700.00	3,694.52	3,656.78	3,631.09	13.22	13.24	124.35	145.52	407.53	514.64	488.40	26.24	19.612		
3,800.00	3,794.35	3,755.54	3,728.98	13.58	13.61	124.33	150.37	419.77	530.31	503.35	26.96	19.670		
3,900.00	3,894.17	3,854.31	3,826.86	13.94	13.97	124.32	155.21	432.01	545.99	518.31	27.68	19.725		
4,000.00	3,993.99	3,953.07	3,924.74	14.30	14.34	124.30	160.05	444.26	561.66	533.26	28.40	19.778		
4,100.00	4,093.81	4,051.84	4,022.63	14.67	14.70	124.29	164.89	456.50	577.33	548.21	29.12	19.828		
4,200.00	4,193.64	4,150.60	4,120.51	15.03	15.07	124.27	169.73	468.74	593.00	563.16	29.84	19.875		
4,300.00	4,293.46	4,249.37	4,218.39	15.39	15.43	124.26	174.57	480.98	608.67	578.11	30.56	19.920		
4,400.00	4,393.28	4,348.13	4,316.28	15.75	15.79	124.25	179.41	493.22	624.34	593.07	31.28	19.963		
4,500.00	4,493.10	4,446.89	4,414.16	16.11	16.16	124.24	184.25	505.46	640.01	608.02	31.99	20.004		
4,600.00	4,592.93	4,545.66	4,512.04	16.47	16.52	124.22	189.09	517.70	655.68	622.97	32.71	20.043		
4,700.00	4,692.75	4,644.42	4,609.93	16.83	16.89	124.21	193.94	529.94	671.36	637.92	33.43	20.081		
4,800.00	4,792.57	4,743.19	4,707.81	17.19	17.25	124.20	198.78	542.18	687.03	652.87	34.15	20.116		
4,900.00	4,892.39	4,841.95	4,805.69	17.55	17.62	124.19	203.62	554.42	702.70	667.83	34.87	20.151		
5,000.00	4,992.22	4,940.72	4,903.58	17.91	17.98	124.19	208.46	566.66	718.37	682.78	35.59	20.184		

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

Total Directional Anticollision Report



Company:	Coterra Energy	Local Co-ordinate Reference:	Well Sombrero State Com 223H
Project:	Lea County, NM (NAD 83)	TVD Reference:	GE 3739.2' + KB 23' @ 3762.20usft (Cactus 148)
Reference Site:	Sun-Sombrero Pad	MD Reference:	GE 3739.2' + KB 23' @ 3762.20usft (Cactus 148)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Sombrero State Com 223H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	.Total Directional Production DB
Reference Design:	Plan #1	Offset TVD Reference:	Reference Datum

Offset Design: Sun-Sombrero Pad - Sombrero State Com 224H - OH - Plan #1

Survey Program: 0-MWD+IFR1+MS													Offset Site Error:	0.00 usft
Reference Offset													Offset Well Error:	0.00 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Rule Assigned: Distance				Warning	
				Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
5,100.00	5,092.04	5,039.48	5,001.46	18.27	18.35	124.18	213.30	578.90	734.04	697.73	36.31	20.215		
5,200.00	5,191.86	5,138.24	5,099.34	18.63	18.71	124.17	218.14	591.14	749.71	712.68	37.03	20.246		
5,300.00	5,291.68	5,237.01	5,197.23	18.99	19.08	124.16	222.98	603.38	765.38	727.63	37.75	20.275		
5,400.00	5,391.51	5,335.77	5,295.11	19.35	19.44	124.15	227.82	615.62	781.06	742.59	38.47	20.303		
5,500.00	5,491.33	5,434.54	5,392.99	19.71	19.81	124.15	232.66	627.86	796.73	757.54	39.19	20.330		
5,600.00	5,591.15	5,533.30	5,490.88	20.07	20.17	124.14	237.51	640.10	812.40	772.49	39.91	20.356		
5,700.00	5,690.97	5,632.07	5,588.76	20.43	20.54	124.13	242.35	652.34	828.07	787.44	40.63	20.381		
5,800.00	5,790.80	5,730.83	5,686.64	20.80	20.90	124.12	247.19	664.58	843.74	802.39	41.35	20.405		
5,900.00	5,890.62	5,829.59	5,784.52	21.16	21.27	124.12	252.03	676.82	859.41	817.34	42.07	20.428		
6,000.00	5,990.44	5,928.36	5,882.41	21.52	21.63	124.11	256.87	689.06	875.09	832.30	42.79	20.451		
6,100.00	6,090.26	6,027.12	5,980.29	21.88	22.00	124.11	261.71	701.31	890.76	847.25	43.51	20.473		
6,200.00	6,190.09	6,125.89	6,078.17	22.24	22.36	124.10	266.55	713.55	906.43	862.20	44.23	20.494		
6,300.00	6,289.91	6,224.65	6,176.06	22.60	22.73	124.09	271.39	725.79	922.10	877.15	44.95	20.514		
6,400.00	6,389.73	6,323.42	6,273.94	22.96	23.09	124.09	276.23	738.03	937.77	892.10	45.67	20.534		
6,500.00	6,489.55	6,422.18	6,371.82	23.32	23.46	124.08	281.08	750.27	953.44	907.05	46.39	20.553		
6,600.00	6,589.38	6,520.94	6,469.71	23.68	23.82	124.08	285.92	762.51	969.11	922.00	47.11	20.571		
6,700.00	6,689.20	6,619.71	6,567.59	24.04	24.19	124.07	290.76	774.75	984.79	936.96	47.83	20.589		
6,800.00	6,789.02	6,718.47	6,665.47	24.40	24.55	124.07	295.60	786.99	1,000.46	951.91	48.55	20.606		
6,900.00	6,888.85	6,817.24	6,763.36	24.76	24.92	124.07	300.44	799.23	1,016.13	966.86	49.27	20.623		
7,000.00	6,988.67	6,916.00	6,861.24	25.12	25.28	124.06	305.28	811.47	1,031.80	981.81	49.99	20.639		
7,100.00	7,088.49	7,014.77	6,959.12	25.48	25.65	124.06	310.12	823.71	1,047.47	996.76	50.71	20.655		
7,200.00	7,188.31	7,113.53	7,057.01	25.85	26.01	124.05	314.96	835.95	1,063.14	1,011.71	51.43	20.670		
7,300.00	7,288.14	7,212.30	7,154.89	26.21	26.38	124.05	319.80	848.19	1,078.82	1,026.66	52.15	20.685		
7,400.00	7,387.96	7,311.06	7,252.77	26.57	26.74	124.04	324.65	860.43	1,094.49	1,041.61	52.87	20.700		
7,500.00	7,487.78	7,409.82	7,350.66	26.93	27.11	124.04	329.49	872.67	1,110.16	1,056.56	53.59	20.714		
7,600.00	7,587.60	7,508.59	7,448.54	27.29	27.48	124.04	334.33	884.91	1,125.83	1,071.52	54.32	20.728		
7,700.00	7,687.43	7,607.35	7,546.42	27.65	27.84	124.03	339.17	897.15	1,141.50	1,086.47	55.04	20.741		
7,800.00	7,787.25	7,706.12	7,644.31	28.01	28.21	124.03	344.01	909.39	1,157.17	1,101.42	55.76	20.754		
7,900.00	7,887.07	7,804.88	7,742.19	28.37	28.57	124.03	348.85	921.63	1,172.85	1,116.37	56.48	20.767		
8,000.00	7,986.89	7,903.65	7,840.07	28.73	28.94	124.02	353.69	933.87	1,188.52	1,131.32	57.20	20.779		
8,100.00	8,086.72	8,002.41	7,937.96	29.09	29.30	124.02	358.53	946.11	1,204.19	1,146.27	57.92	20.791		
8,200.00	8,186.54	8,101.17	8,035.84	29.45	29.67	124.02	363.37	958.36	1,219.86	1,161.22	58.64	20.802		
8,300.00	8,286.36	8,199.94	8,133.72	29.81	30.03	124.01	368.22	970.60	1,235.53	1,176.17	59.36	20.814		
8,400.00	8,386.18	8,298.70	8,231.61	30.17	30.40	124.01	373.06	982.84	1,251.20	1,191.12	60.08	20.825		
8,500.00	8,486.01	8,397.47	8,329.49	30.54	30.76	124.01	377.90	995.08	1,266.88	1,206.07	60.80	20.836		
8,600.00	8,585.83	8,496.23	8,427.37	30.90	31.13	124.00	382.74	1,007.32	1,282.55	1,221.02	61.52	20.846		
8,700.00	8,685.65	8,595.00	8,525.26	31.26	31.50	124.00	387.58	1,019.56	1,298.22	1,235.97	62.25	20.856		
8,800.00	8,785.47	8,693.76	8,623.14	31.62	31.86	124.00	392.42	1,031.80	1,313.89	1,250.92	62.97	20.866		
8,900.00	8,885.30	8,792.52	8,721.02	31.98	32.23	124.00	397.26	1,044.04	1,329.56	1,265.88	63.69	20.876		
9,000.00	8,985.12	8,891.29	8,818.91	32.34	32.59	122.09	402.10	1,056.28	1,345.23	1,280.82	64.41	20.886		
9,100.00	9,084.72	9,161.46	9,087.04	32.70	33.57	90.57	425.88	1,074.50	1,353.84	1,288.00	65.84	20.562		
9,200.00	9,181.71	9,264.06	9,186.40	33.06	33.92	90.55	450.93	1,074.21	1,353.81	1,287.27	66.54	20.346		
9,300.00	9,273.09	9,366.50	9,279.57	33.40	34.27	90.51	493.19	1,073.71	1,353.76	1,286.55	67.21	20.141		
9,400.00	9,356.08	9,468.71	9,363.56	33.71	34.58	90.45	551.19	1,073.04	1,353.69	1,285.83	67.86	19.949		
9,500.00	9,428.16	9,570.62	9,435.72	33.97	34.85	90.38	622.95	1,072.20	1,353.61	1,285.16	68.45	19.774		
9,600.00	9,487.14	9,672.16	9,493.88	34.19	35.06	90.30	706.02	1,071.23	1,353.52	1,284.52	68.99	19.618		
9,700.00	9,531.23	9,773.30	9,536.33	34.39	35.23	90.21	797.67	1,070.16	1,353.41	1,283.95	69.47	19.483		
9,800.00	9,559.09	9,874.00	9,561.96	34.58	35.36	90.11	894.91	1,069.03	1,353.31	1,283.44	69.87	19.369		
9,900.00	9,569.87	9,974.25	9,570.20	34.74	35.47	90.01	994.69	1,067.87	1,353.21	1,283.02	70.19	19.278		
10,000.00	9,570.00	10,074.25	9,570.20	34.88	35.61	90.01	1,094.68	1,066.70	1,353.11	1,282.63	70.49	19.197		

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

Total Directional Anticollision Report



Company:	Coterra Energy	Local Co-ordinate Reference:	Well Sombrero State Com 223H
Project:	Lea County, NM (NAD 83)	TVD Reference:	GE 3739.2' + KB 23' @ 3762.20usft (Cactus 148)
Reference Site:	Sun-Sombrero Pad	MD Reference:	GE 3739.2' + KB 23' @ 3762.20usft (Cactus 148)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Sombrero State Com 223H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	.Total Directional Production DB
Reference Design:	Plan #1	Offset TVD Reference:	Reference Datum

Offset Design: Sun-Sombrero Pad - Sombrero State Com 224H - OH - Plan #1

Offset Site Error: 0.00 usft

Offset Well Error: 0.00 usft

Survey Program:		0-MWD+IFR1+MS		Semi Major Axis		Offset Wellbore Centre		Rule Assigned:				Warning	
Measured Reference	Vertical Offset	Measured Reference	Vertical Offset	Reference	Offset	Highside Toolface	+N/-S	+E/-W	Between Centres	Between Ellipses	Minimum Separation	Separation Factor	
Depth (usft)	Depth (usft)	Depth (usft)	Depth (usft)	(usft)	(usft)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)		
10,100.00	9,570.00	10,174.25	9,570.20	35.04	35.77	90.01	1,194.67	1,065.54	1,353.01	1,282.20	70.81	19.108	
10,200.00	9,570.00	10,274.25	9,570.20	35.22	35.96	90.01	1,294.67	1,064.37	1,352.92	1,281.75	71.17	19.011	
10,300.00	9,570.00	10,374.25	9,570.20	35.41	36.17	90.01	1,394.66	1,063.21	1,352.82	1,281.26	71.55	18.906	
10,400.00	9,570.00	10,474.25	9,570.20	35.61	36.39	90.01	1,494.65	1,062.04	1,352.72	1,280.75	71.97	18.795	
10,500.00	9,570.00	10,574.25	9,570.20	35.84	36.63	90.01	1,594.65	1,060.88	1,352.62	1,280.20	72.42	18.677	
10,600.00	9,570.00	10,674.25	9,570.20	36.08	36.88	90.01	1,694.64	1,059.71	1,352.52	1,279.62	72.90	18.553	
10,700.00	9,570.00	10,774.25	9,570.20	36.33	37.14	90.01	1,794.63	1,058.55	1,352.42	1,279.02	73.41	18.424	
10,800.00	9,570.00	10,874.25	9,570.20	36.59	37.42	90.01	1,894.63	1,057.38	1,352.32	1,278.38	73.94	18.289	
10,900.00	9,570.00	10,974.25	9,570.20	36.88	37.72	90.01	1,994.62	1,056.22	1,352.23	1,277.72	74.51	18.149	
11,000.00	9,570.00	11,074.25	9,570.20	37.17	38.02	90.01	2,094.61	1,055.05	1,352.13	1,277.03	75.10	18.005	
11,100.00	9,570.00	11,174.25	9,570.20	37.48	38.34	90.01	2,194.60	1,053.89	1,352.03	1,276.31	75.72	17.856	
11,200.00	9,570.00	11,274.25	9,570.20	37.80	38.67	90.01	2,294.60	1,052.72	1,351.93	1,275.57	76.36	17.704	
11,300.00	9,570.00	11,374.25	9,570.20	38.13	39.01	90.01	2,394.59	1,051.56	1,351.83	1,274.80	77.03	17.549	
11,400.00	9,570.00	11,474.25	9,570.20	38.48	39.36	90.01	2,494.58	1,050.39	1,351.73	1,274.01	77.73	17.391	
11,500.00	9,570.00	11,574.25	9,570.20	38.84	39.73	90.01	2,594.58	1,049.23	1,351.63	1,273.19	78.44	17.230	
11,600.00	9,570.00	11,674.25	9,570.20	39.21	40.11	90.01	2,694.57	1,048.06	1,351.54	1,272.35	79.19	17.068	
11,700.00	9,570.00	11,774.25	9,570.20	39.59	40.49	90.01	2,794.56	1,046.90	1,351.44	1,271.49	79.95	16.903	
11,800.00	9,570.00	11,874.25	9,570.20	39.99	40.89	90.01	2,894.56	1,045.73	1,351.34	1,270.60	80.74	16.737	
11,900.00	9,570.00	11,974.25	9,570.20	40.39	41.30	90.01	2,994.55	1,044.57	1,351.24	1,269.69	81.55	16.570	
12,000.00	9,570.00	12,074.25	9,570.20	40.81	41.72	90.01	3,094.54	1,043.40	1,351.14	1,268.77	82.38	16.402	
12,100.00	9,570.00	12,174.25	9,570.20	41.23	42.15	90.01	3,194.54	1,042.24	1,351.04	1,267.82	83.23	16.234	
12,200.00	9,570.00	12,274.25	9,570.20	41.66	42.58	90.01	3,294.53	1,041.07	1,350.94	1,266.85	84.09	16.065	
12,300.00	9,570.00	12,374.25	9,570.20	42.11	43.03	90.01	3,394.52	1,039.91	1,350.85	1,265.86	84.98	15.895	
12,400.00	9,570.00	12,474.25	9,570.20	42.56	43.48	90.01	3,494.52	1,038.74	1,350.75	1,264.86	85.89	15.727	
12,500.00	9,570.00	12,574.25	9,570.20	43.03	43.95	90.01	3,594.51	1,037.58	1,350.65	1,263.83	86.81	15.558	
12,600.00	9,570.00	12,674.25	9,570.20	43.50	44.42	90.01	3,694.50	1,036.41	1,350.55	1,262.79	87.76	15.390	
12,700.00	9,570.00	12,774.25	9,570.20	43.98	44.90	90.01	3,794.50	1,035.25	1,350.45	1,261.74	88.71	15.223	
12,800.00	9,570.00	12,874.25	9,570.20	44.46	45.39	90.01	3,894.49	1,034.08	1,350.35	1,260.66	89.69	15.056	
12,900.00	9,570.00	12,974.25	9,570.20	44.96	45.88	90.01	3,994.48	1,032.92	1,350.25	1,259.57	90.68	14.890	
13,000.00	9,570.00	13,074.25	9,570.20	45.46	46.39	90.01	4,094.47	1,031.75	1,350.16	1,258.47	91.68	14.726	
13,100.00	9,570.00	13,174.25	9,570.20	45.97	46.90	90.01	4,194.47	1,030.59	1,350.06	1,257.35	92.70	14.563	
13,200.00	9,570.00	13,274.25	9,570.20	46.49	47.42	90.01	4,294.46	1,029.42	1,349.96	1,256.22	93.74	14.401	
13,300.00	9,570.00	13,374.25	9,570.20	47.02	47.94	90.01	4,394.45	1,028.26	1,349.86	1,255.07	94.79	14.241	
13,400.00	9,570.00	13,474.25	9,570.20	47.55	48.47	90.01	4,494.45	1,027.09	1,349.76	1,253.91	95.85	14.082	
13,500.00	9,570.00	13,574.25	9,570.20	48.09	49.01	90.01	4,594.44	1,025.93	1,349.66	1,252.74	96.92	13.925	
13,600.00	9,570.00	13,674.24	9,570.20	48.63	49.55	90.01	4,694.43	1,024.76	1,349.56	1,251.55	98.01	13.770	
13,700.00	9,570.00	13,774.24	9,570.20	49.18	50.10	90.01	4,794.43	1,023.60	1,349.47	1,250.36	99.11	13.616	
13,800.00	9,570.00	13,874.24	9,570.20	49.74	50.65	90.01	4,894.42	1,022.43	1,349.37	1,249.15	100.22	13.464	
13,900.00	9,570.00	13,974.24	9,570.20	50.30	51.21	90.01	4,994.41	1,021.27	1,349.27	1,247.93	101.34	13.314	
14,000.00	9,570.00	14,074.24	9,570.20	50.87	51.78	90.01	5,094.41	1,020.10	1,349.17	1,246.70	102.47	13.166	
14,100.00	9,570.00	14,174.24	9,570.20	51.44	52.35	90.01	5,194.40	1,018.94	1,349.07	1,245.46	103.62	13.020	
14,200.00	9,570.00	14,274.24	9,570.20	52.02	52.92	90.01	5,294.39	1,017.77	1,348.97	1,244.20	104.77	12.876	
14,300.00	9,570.00	14,374.24	9,570.20	52.60	53.50	90.01	5,394.39	1,016.61	1,348.87	1,242.94	105.93	12.733	
14,400.00	9,570.00	14,474.24	9,570.20	53.18	54.09	90.01	5,494.38	1,015.44	1,348.78	1,241.67	107.10	12.593	
14,500.00	9,570.00	14,574.24	9,570.20	53.78	54.68	90.01	5,594.37	1,014.28	1,348.68	1,240.39	108.29	12.455	
14,600.00	9,570.00	14,674.24	9,570.20	54.37	55.27	90.01	5,694.37	1,013.11	1,348.58	1,239.10	109.48	12.318	
14,700.00	9,570.00	14,774.24	9,570.20	54.97	55.87	90.01	5,794.36	1,011.95	1,348.48	1,237.80	110.68	12.184	
14,800.00	9,570.00	14,874.24	9,570.20	55.58	56.47	90.01	5,894.35	1,010.78	1,348.38	1,236.50	111.88	12.052	
14,900.00	9,570.00	14,974.24	9,570.20	56.19	57.08	90.01	5,994.34	1,009.62	1,348.28	1,235.18	113.10	11.921	
15,000.00	9,570.00	15,074.24	9,570.20	56.80	57.69	90.01	6,094.34	1,008.45	1,348.18	1,233.86	114.32	11.793	
15,100.00	9,570.00	15,174.24	9,570.20	57.42	58.30	90.01	6,194.33	1,007.29	1,348.09	1,232.53	115.55	11.666	

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

Total Directional Anticollision Report



Company:	Coterra Energy	Local Co-ordinate Reference:	Well Sombrero State Com 223H
Project:	Lea County, NM (NAD 83)	TVD Reference:	GE 3739.2' + KB 23' @ 3762.20usft (Cactus 148)
Reference Site:	Sun-Sombrero Pad	MD Reference:	GE 3739.2' + KB 23' @ 3762.20usft (Cactus 148)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Sombrero State Com 223H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	.Total Directional Production DB
Reference Design:	Plan #1	Offset TVD Reference:	Reference Datum

Offset Design: Sun-Sombrero Pad - Sombrero State Com 224H - OH - Plan #1

Survey Program: 0-MWD+IFR1+MS													Offset Site Error:	0.00 usft
Reference Offset													Offset Well Error:	0.00 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Rule Assigned: Distance				Warning	
				Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
15,200.00	9,570.00	15,274.24	9,570.20	58.04	58.92	90.01	6,294.32	1,006.12	1,347.99	1,231.20	116.79	11.542		
15,300.00	9,570.00	15,374.24	9,570.20	58.66	59.54	90.01	6,394.32	1,004.96	1,347.89	1,229.85	118.04	11.419		
15,400.00	9,570.00	15,474.24	9,570.20	59.29	60.16	90.01	6,494.31	1,003.79	1,347.79	1,228.50	119.29	11.299		
15,500.00	9,570.00	15,574.24	9,570.20	59.92	60.79	90.01	6,594.30	1,002.63	1,347.69	1,227.14	120.55	11.180		
15,600.00	9,570.00	15,674.24	9,570.20	60.55	61.42	90.01	6,694.30	1,001.46	1,347.59	1,225.78	121.81	11.063		
15,700.00	9,570.00	15,774.24	9,570.20	61.19	62.06	90.01	6,794.29	1,000.30	1,347.49	1,224.41	123.08	10.948		
15,800.00	9,570.00	15,874.24	9,570.20	61.83	62.69	90.01	6,894.28	999.13	1,347.40	1,223.03	124.36	10.834		
15,900.00	9,570.00	15,974.24	9,570.20	62.47	63.33	90.01	6,994.28	997.97	1,347.30	1,221.65	125.65	10.723		
16,000.00	9,570.00	16,074.24	9,570.20	63.12	63.98	90.01	7,094.27	996.80	1,347.20	1,220.26	126.94	10.613		
16,100.00	9,570.00	16,174.24	9,570.20	63.76	64.62	90.01	7,194.26	995.64	1,347.10	1,218.87	128.23	10.505		
16,200.00	9,570.00	16,274.24	9,570.20	64.42	65.27	90.01	7,294.26	994.47	1,347.00	1,217.47	129.53	10.399		
16,300.00	9,570.00	16,374.24	9,570.20	65.07	65.92	90.01	7,394.25	993.31	1,346.90	1,216.07	130.84	10.295		
16,400.00	9,570.00	16,474.24	9,570.20	65.72	66.57	90.01	7,494.24	992.14	1,346.80	1,214.66	132.15	10.192		
16,500.00	9,570.00	16,574.24	9,570.20	66.38	67.23	90.01	7,594.24	990.98	1,346.71	1,213.24	133.46	10.091		
16,600.00	9,570.00	16,674.24	9,570.20	67.04	67.89	90.01	7,694.23	989.81	1,346.61	1,211.82	134.78	9.991		
16,700.00	9,570.00	16,774.24	9,570.20	67.71	68.55	90.01	7,794.22	988.65	1,346.51	1,210.40	136.11	9.893		
16,800.00	9,570.00	16,874.24	9,570.20	68.37	69.21	90.01	7,894.22	987.48	1,346.41	1,208.97	137.44	9.797		
16,900.00	9,570.00	16,974.24	9,570.20	69.04	69.88	90.01	7,994.21	986.32	1,346.31	1,207.54	138.77	9.702		
17,000.00	9,570.00	17,074.24	9,570.20	69.71	70.54	90.01	8,094.20	985.15	1,346.21	1,206.10	140.11	9.608		
17,100.00	9,570.00	17,174.24	9,570.20	70.38	71.21	90.01	8,194.19	983.99	1,346.11	1,204.66	141.45	9.517		
17,200.00	9,570.00	17,274.24	9,570.20	71.06	71.88	90.01	8,294.19	982.82	1,346.01	1,203.22	142.80	9.426		
17,300.00	9,570.00	17,374.24	9,570.20	71.73	72.56	90.01	8,394.18	981.66	1,345.92	1,201.77	144.14	9.337		
17,400.00	9,570.00	17,474.24	9,570.20	72.41	73.23	90.01	8,494.17	980.49	1,345.82	1,200.32	145.50	9.250		
17,500.00	9,570.00	17,574.24	9,570.20	73.09	73.91	90.01	8,594.17	979.33	1,345.72	1,198.86	146.86	9.164		
17,600.00	9,570.00	17,674.24	9,570.20	73.77	74.59	90.01	8,694.16	978.16	1,345.62	1,197.40	148.22	9.079		
17,700.00	9,570.00	17,774.24	9,570.20	74.45	75.27	90.01	8,794.15	977.00	1,345.52	1,195.94	149.58	8.995		
17,800.00	9,570.00	17,874.24	9,570.20	75.14	75.95	90.01	8,894.15	975.83	1,345.42	1,194.48	150.95	8.913		
17,900.00	9,570.00	17,974.24	9,570.20	75.82	76.64	90.01	8,994.14	974.67	1,345.32	1,193.01	152.32	8.832		
18,000.00	9,570.00	18,074.24	9,570.20	76.51	77.32	90.01	9,094.13	973.50	1,345.23	1,191.53	153.69	8.753		
18,100.00	9,570.00	18,174.24	9,570.20	77.20	78.01	90.01	9,194.13	972.34	1,345.13	1,190.06	155.07	8.674		
18,200.00	9,570.00	18,274.24	9,570.20	77.89	78.70	90.01	9,294.12	971.17	1,345.03	1,188.58	156.45	8.597		
18,300.00	9,570.00	18,374.24	9,570.20	78.58	79.39	90.01	9,394.11	970.01	1,344.93	1,187.10	157.83	8.521		
18,400.00	9,570.00	18,474.24	9,570.20	79.28	80.08	90.01	9,494.11	968.84	1,344.83	1,185.61	159.22	8.446		
18,500.00	9,570.00	18,574.24	9,570.20	79.97	80.77	90.01	9,594.10	967.68	1,344.73	1,184.12	160.61	8.373		
18,600.00	9,570.00	18,674.24	9,570.20	80.67	81.46	90.01	9,694.09	966.51	1,344.63	1,182.63	162.00	8.300		
18,700.00	9,570.00	18,774.24	9,570.20	81.37	82.16	90.01	9,794.09	965.35	1,344.54	1,181.14	163.40	8.229		
18,800.00	9,570.00	18,874.24	9,570.20	82.07	82.86	90.01	9,894.08	964.18	1,344.44	1,179.65	164.79	8.158		
18,900.00	9,570.00	18,974.24	9,570.20	82.77	83.56	90.01	9,994.07	963.02	1,344.34	1,178.15	166.19	8.089		
19,000.00	9,570.00	19,074.24	9,570.20	83.47	84.26	90.01	10,094.06	961.85	1,344.24	1,176.65	167.59	8.021		
19,100.00	9,570.00	19,174.24	9,570.20	84.17	84.96	90.01	10,194.05	960.69	1,344.14	1,175.14	169.00	7.954		
19,200.00	9,570.00	19,274.24	9,570.20	84.88	85.66	90.01	10,294.05	959.52	1,344.04	1,173.64	170.40	7.887		
19,300.00	9,570.00	19,374.24	9,570.20	85.58	86.36	90.01	10,394.04	958.36	1,343.94	1,172.13	171.81	7.822		
19,400.00	9,570.00	19,474.24	9,570.20	86.29	87.06	90.01	10,494.04	957.19	1,343.85	1,170.62	173.22	7.758		
19,500.00	9,570.00	19,574.24	9,570.20	86.99	87.77	90.01	10,594.03	956.03	1,343.75	1,169.11	174.64	7.694		
19,600.00	9,570.00	19,674.24	9,570.20	87.70	88.48	90.01	10,694.02	954.86	1,343.65	1,167.60	176.05	7.632		
19,700.00	9,570.00	19,774.24	9,570.20	88.41	89.18	90.01	10,794.02	953.70	1,343.55	1,166.08	177.47	7.571		
19,800.00	9,570.00	19,874.24	9,570.20	89.12	89.89	90.01	10,894.01	952.53	1,343.45	1,164.56	178.89	7.510		
19,900.00	9,570.00	19,974.24	9,570.20	89.83	90.60	90.01	10,994.00	951.37	1,343.35	1,163.04	180.31	7.450		
20,000.00	9,570.00	20,074.24	9,570.20	90.55	91.31	90.01	11,094.00	950.20	1,343.25	1,161.52	181.74	7.391		
20,100.00	9,570.00	20,174.24	9,570.20	91.26	92.02	90.01	11,193.99	949.04	1,343.16	1,159.99	183.16	7.333		

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

Total Directional Anticollision Report



Company:	Coterra Energy	Local Co-ordinate Reference:	Well Sombrero State Com 223H
Project:	Lea County, NM (NAD 83)	TVD Reference:	GE 3739.2' + KB 23' @ 3762.20usft (Cactus 148)
Reference Site:	Sun-Sombrero Pad	MD Reference:	GE 3739.2' + KB 23' @ 3762.20usft (Cactus 148)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Sombrero State Com 223H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	.Total Directional Production DB
Reference Design:	Plan #1	Offset TVD Reference:	Reference Datum

Offset Design: Sun-Sombrero Pad - Sombrero State Com 224H - OH - Plan #1

Survey Program: 0-MWD+IFR1+MS													Offset Site Error:	0.00 usft
Reference Offset													Offset Well Error:	0.00 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Rule Assigned: Distance				Warning	
				Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
20,200.00	9,570.00	20,274.24	9,570.20	91.97	92.74	90.01	11,293.98	947.87	1,343.06	1,158.47	184.59	7.276		
20,300.00	9,570.00	20,374.24	9,570.20	92.69	93.45	90.01	11,393.98	946.71	1,342.96	1,156.94	186.02	7.220		
20,400.00	9,570.00	20,474.24	9,570.20	93.41	94.16	90.01	11,493.97	945.54	1,342.86	1,155.41	187.45	7.164		
20,500.00	9,570.00	20,574.24	9,570.20	94.12	94.88	90.01	11,593.96	944.38	1,342.76	1,153.88	188.88	7.109		
20,600.00	9,570.00	20,674.24	9,570.20	94.84	95.59	90.01	11,693.96	943.21	1,342.66	1,152.35	190.31	7.055		
20,700.00	9,570.00	20,774.24	9,570.20	95.56	96.31	90.01	11,793.95	942.05	1,342.56	1,150.81	191.75	7.002		
20,800.00	9,570.00	20,874.24	9,570.20	96.28	97.03	90.01	11,893.94	940.88	1,342.47	1,149.28	193.19	6.949		
20,900.00	9,570.00	20,974.24	9,570.20	97.00	97.75	90.01	11,993.93	939.72	1,342.37	1,147.74	194.63	6.897		
21,000.00	9,570.00	21,074.24	9,570.20	97.72	98.46	90.01	12,093.93	938.55	1,342.27	1,146.20	196.07	6.846		
21,100.00	9,570.00	21,174.24	9,570.20	98.44	99.18	90.01	12,193.92	937.39	1,342.17	1,144.66	197.51	6.795		
21,200.00	9,570.00	21,274.24	9,570.20	99.16	99.91	90.01	12,293.91	936.22	1,342.07	1,143.12	198.95	6.746		
21,300.00	9,570.00	21,374.24	9,570.20	99.89	100.63	90.01	12,393.91	935.06	1,341.97	1,141.58	200.40	6.697		
21,400.00	9,570.00	21,474.24	9,570.20	100.61	101.35	90.01	12,493.90	933.89	1,341.87	1,140.03	201.84	6.648		
21,500.00	9,570.00	21,574.24	9,570.20	101.33	102.07	90.01	12,593.89	932.73	1,341.78	1,138.48	203.29	6.600		
21,600.00	9,570.00	21,674.24	9,570.20	102.06	102.79	90.01	12,693.89	931.56	1,341.68	1,136.94	204.74	6.553		
21,700.00	9,570.00	21,774.24	9,570.20	102.78	103.52	90.01	12,793.88	930.40	1,341.58	1,135.39	206.19	6.506		
21,800.00	9,570.00	21,874.24	9,570.20	103.51	104.24	90.01	12,893.87	929.23	1,341.48	1,133.84	207.64	6.461		
21,900.00	9,570.00	21,974.24	9,570.20	104.24	104.97	90.01	12,993.87	928.07	1,341.38	1,132.29	209.10	6.415		
22,000.00	9,570.00	22,074.24	9,570.20	104.96	105.69	90.01	13,093.86	926.90	1,341.28	1,130.73	210.55	6.370		
22,100.00	9,570.00	22,174.24	9,570.20	105.69	106.42	90.01	13,193.85	925.74	1,341.18	1,129.18	212.01	6.326		
22,200.00	9,570.00	22,274.24	9,570.20	106.42	107.15	90.01	13,293.85	924.57	1,341.09	1,127.62	213.46	6.283		
22,300.00	9,570.00	22,374.24	9,570.20	107.15	107.88	90.01	13,393.84	923.41	1,340.99	1,126.07	214.92	6.239		
22,400.00	9,570.00	22,474.24	9,570.20	107.88	108.60	90.01	13,493.83	922.24	1,340.89	1,124.51	216.38	6.197		
22,500.00	9,570.00	22,574.24	9,570.20	108.61	109.33	90.01	13,593.83	921.08	1,340.79	1,122.95	217.84	6.155		
22,600.00	9,570.00	22,674.24	9,570.20	109.34	110.06	90.01	13,693.82	919.91	1,340.69	1,121.39	219.30	6.114		
22,700.00	9,570.00	22,774.24	9,570.20	110.07	110.79	90.01	13,793.81	918.75	1,340.59	1,119.83	220.76	6.073		
22,800.00	9,570.00	22,874.24	9,570.20	110.81	111.52	90.01	13,893.81	917.58	1,340.49	1,118.27	222.22	6.032		
22,900.00	9,570.00	22,974.24	9,570.20	111.54	112.25	90.01	13,993.80	916.42	1,340.40	1,116.71	223.69	5.992		
23,000.00	9,570.00	23,074.24	9,570.20	112.27	112.99	90.01	14,093.79	915.25	1,340.30	1,115.14	225.15	5.953		
23,100.00	9,570.00	23,174.24	9,570.20	113.01	113.72	90.01	14,193.78	914.09	1,340.20	1,113.58	226.62	5.914		
23,200.00	9,570.00	23,274.24	9,570.20	113.74	114.45	90.01	14,293.78	912.92	1,340.10	1,112.01	228.09	5.875		
23,300.00	9,570.00	23,374.24	9,570.20	114.47	115.18	90.01	14,393.77	911.76	1,340.00	1,110.45	229.56	5.837		
23,400.00	9,570.00	23,474.24	9,570.20	115.21	115.92	90.01	14,493.76	910.60	1,339.90	1,108.88	231.02	5.800		
23,500.00	9,570.00	23,574.24	9,570.20	115.94	116.65	90.01	14,593.76	909.43	1,339.80	1,107.31	232.49	5.763		
23,600.00	9,570.00	23,674.24	9,570.20	116.68	117.39	90.01	14,693.75	908.27	1,339.71	1,105.74	233.97	5.726		
23,700.00	9,570.00	23,774.24	9,570.20	117.42	118.12	90.01	14,793.74	907.10	1,339.61	1,104.17	235.44	5.690		
23,800.00	9,570.00	23,874.24	9,570.20	118.15	118.86	90.01	14,893.74	905.94	1,339.51	1,102.60	236.91	5.654		
23,900.00	9,570.00	23,974.24	9,570.20	118.89	119.59	90.01	14,993.73	904.77	1,339.41	1,101.03	238.38	5.619		
24,000.00	9,570.00	24,074.24	9,570.20	119.63	120.33	90.01	15,093.72	903.61	1,339.31	1,099.45	239.86	5.584		
24,100.00	9,570.00	24,174.24	9,570.20	120.37	121.07	90.01	15,193.72	902.44	1,339.21	1,097.88	241.33	5.549		
24,200.00	9,570.00	24,274.24	9,570.20	121.10	121.80	90.01	15,293.71	901.28	1,339.11	1,096.31	242.81	5.515		
24,300.00	9,570.00	24,374.24	9,570.20	121.84	122.54	90.01	15,393.70	900.11	1,339.02	1,094.73	244.29	5.481		
24,400.00	9,570.00	24,474.24	9,570.20	122.58	123.28	90.01	15,493.70	898.95	1,338.92	1,093.15	245.76	5.448		
24,500.00	9,570.00	24,574.24	9,570.20	123.32	124.02	90.01	15,593.69	897.78	1,338.82	1,091.58	247.24	5.415		
24,600.00	9,570.00	24,674.24	9,570.20	124.06	124.75	90.01	15,693.68	896.62	1,338.72	1,090.00	248.72	5.382		
24,700.00	9,570.00	24,774.24	9,570.20	124.80	125.49	90.01	15,793.68	895.45	1,338.62	1,088.42	250.20	5.350		
24,800.00	9,570.00	24,874.24	9,570.20	125.54	126.23	90.01	15,893.67	894.29	1,338.52	1,086.84	251.68	5.318		
24,900.00	9,570.00	24,974.24	9,570.20	126.28	126.97	90.01	15,993.66	893.12	1,338.42	1,085.26	253.16	5.287		
25,000.00	9,570.00	25,074.24	9,570.20	127.02	127.71	90.01	16,093.65	891.96	1,338.33	1,083.68	254.64	5.256		
25,042.36	9,570.00	25,115.28	9,570.20	127.34	128.02	90.01	16,134.70	891.48	1,338.29	1,083.02	255.26	5.243		
25,100.00	9,570.00	25,168.90	9,570.20	127.77	128.41	90.01	16,188.31	891.05	1,338.44	1,082.34	256.10	5.226		

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

Total Directional Anticollision Report



Company:	Coterra Energy	Local Co-ordinate Reference:	Well Sombrero State Com 223H
Project:	Lea County, NM (NAD 83)	TVD Reference:	GE 3739.2' + KB 23' @ 3762.20usft (Cactus 148)
Reference Site:	Sun-Sombrero Pad	MD Reference:	GE 3739.2' + KB 23' @ 3762.20usft (Cactus 148)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Sombrero State Com 223H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	.Total Directional Production DB
Reference Design:	Plan #1	Offset TVD Reference:	Reference Datum

Offset Design: Sun-Sombrero Pad - Sombrero State Com 224H - OH - Plan #1

Survey Program: 0-MWD+IFR1+MS													Offset Site Error:	0.00 usft
Reference Offset													Offset Well Error:	0.00 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Rule Assigned:				Warning	
				Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
25,200.00	9,570.00	25,268.90	9,570.20	128.51	129.15	90.01	16,288.31	890.29	1,338.74	1,081.16	257.58	5.197		
25,300.00	9,570.00	25,368.90	9,570.20	129.25	129.89	90.01	16,388.31	889.52	1,339.04	1,079.98	259.06	5.169		
25,400.00	9,570.00	25,468.90	9,570.20	129.99	130.64	90.01	16,488.30	888.76	1,339.34	1,078.79	260.55	5.140		
25,500.00	9,570.00	25,568.90	9,570.20	130.74	131.38	90.01	16,588.30	887.99	1,339.64	1,077.61	262.03	5.112		
25,600.00	9,570.00	25,668.90	9,570.20	131.48	132.12	90.01	16,688.30	887.22	1,339.94	1,076.42	263.52	5.085		
25,700.00	9,570.00	25,768.90	9,570.20	132.22	132.86	90.01	16,788.29	886.46	1,340.24	1,075.24	265.01	5.057		
25,800.00	9,570.00	25,868.90	9,570.20	132.97	133.60	90.01	16,888.29	885.69	1,340.54	1,074.05	266.49	5.030		
25,900.00	9,570.00	25,968.90	9,570.20	133.71	134.35	90.01	16,988.29	884.92	1,340.84	1,072.86	267.98	5.004		
26,000.00	9,570.00	26,068.90	9,570.20	134.45	135.09	90.01	17,088.28	884.16	1,341.14	1,071.67	269.47	4.977		
26,100.00	9,570.00	26,168.90	9,570.20	135.20	135.83	90.01	17,188.28	883.39	1,341.44	1,070.49	270.96	4.951		
26,200.00	9,570.00	26,268.90	9,570.20	135.94	136.58	90.01	17,288.28	882.62	1,341.74	1,069.30	272.44	4.925		
26,300.00	9,570.00	26,368.90	9,570.20	136.69	137.32	90.01	17,388.27	881.86	1,342.04	1,068.11	273.93	4.899		
26,400.00	9,570.00	26,468.90	9,570.20	137.44	138.07	90.01	17,488.27	881.09	1,342.34	1,066.92	275.42	4.874		
26,500.00	9,570.00	26,568.90	9,570.20	138.18	138.81	90.01	17,588.27	880.33	1,342.64	1,065.73	276.91	4.849		
26,600.00	9,570.00	26,668.90	9,570.20	138.93	139.55	90.01	17,688.26	879.56	1,342.94	1,064.54	278.41	4.824		
26,700.00	9,570.00	26,768.90	9,570.20	139.67	140.30	90.01	17,788.26	878.79	1,343.24	1,063.34	279.90	4.799		
26,800.00	9,570.00	26,868.90	9,570.20	140.42	141.04	90.01	17,888.26	878.03	1,343.54	1,062.15	281.39	4.775		
26,900.00	9,570.00	26,968.90	9,570.20	141.17	141.79	90.01	17,988.25	877.26	1,343.84	1,060.96	282.88	4.751		
27,000.00	9,570.00	27,068.90	9,570.20	141.91	142.54	90.01	18,088.25	876.49	1,344.14	1,059.77	284.38	4.727		
27,100.00	9,570.00	27,168.90	9,570.20	142.66	143.28	90.01	18,188.25	875.73	1,344.44	1,058.57	285.87	4.703		
27,200.00	9,570.00	27,268.89	9,570.20	143.41	144.03	90.01	18,288.24	874.96	1,344.74	1,057.38	287.36	4.680		
27,300.00	9,570.00	27,368.89	9,570.20	144.16	144.78	90.01	18,388.24	874.20	1,345.04	1,056.18	288.86	4.656		
27,400.00	9,570.00	27,468.89	9,570.20	144.90	145.52	90.01	18,488.24	873.43	1,345.34	1,054.99	290.35	4.633		
27,500.00	9,570.00	27,568.89	9,570.20	145.65	146.27	90.01	18,588.23	872.66	1,345.64	1,053.79	291.85	4.611		
27,600.00	9,570.00	27,668.89	9,570.20	146.40	147.02	90.01	18,688.23	871.90	1,345.94	1,052.60	293.34	4.588		
27,700.00	9,570.00	27,768.89	9,570.20	147.15	147.76	90.01	18,788.23	871.13	1,346.24	1,051.40	294.84	4.566		
27,800.00	9,570.00	27,868.89	9,570.20	147.90	148.51	90.01	18,888.22	870.36	1,346.54	1,050.20	296.34	4.544		
27,900.00	9,570.00	27,968.89	9,570.20	148.65	149.26	90.01	18,988.22	869.60	1,346.84	1,049.01	297.84	4.522		
28,000.00	9,570.00	28,068.89	9,570.20	149.40	150.01	90.01	19,088.22	868.83	1,347.14	1,047.81	299.33	4.500		
28,100.00	9,570.00	28,168.89	9,570.20	150.15	150.76	90.01	19,188.21	868.06	1,347.44	1,046.61	300.83	4.479		
28,200.00	9,570.00	28,268.89	9,570.20	150.90	151.50	90.01	19,288.21	867.30	1,347.74	1,045.41	302.33	4.458		
28,300.00	9,570.00	28,368.89	9,570.20	151.65	152.25	90.01	19,388.21	866.53	1,348.04	1,044.21	303.83	4.437		
28,400.00	9,570.00	28,468.89	9,570.20	152.40	153.00	90.01	19,488.20	865.77	1,348.34	1,043.01	305.33	4.416		
28,500.00	9,570.00	28,568.89	9,570.20	153.15	153.75	90.01	19,588.20	865.00	1,348.64	1,041.81	306.83	4.395		
28,600.00	9,570.00	28,668.89	9,570.20	153.90	154.50	90.01	19,688.20	864.23	1,348.94	1,040.61	308.33	4.375		
28,700.00	9,570.00	28,768.89	9,570.20	154.65	155.25	90.01	19,788.19	863.47	1,349.24	1,039.41	309.83	4.355		
28,800.00	9,570.00	28,868.89	9,570.20	155.40	156.00	90.01	19,888.19	862.70	1,349.54	1,038.21	311.33	4.335		
28,900.00	9,570.00	28,968.89	9,570.20	156.15	156.75	90.01	19,988.19	861.93	1,349.84	1,037.01	312.83	4.315		
29,000.00	9,570.00	29,068.89	9,570.20	156.90	157.50	90.01	20,088.18	861.17	1,350.14	1,035.81	314.33	4.295		
29,100.00	9,570.00	29,168.89	9,570.20	157.65	158.25	90.01	20,188.18	860.40	1,350.44	1,034.61	315.84	4.276		
29,200.00	9,570.00	29,268.89	9,570.20	158.40	159.00	90.01	20,288.18	859.63	1,350.74	1,033.40	317.34	4.256		
29,300.00	9,570.00	29,368.89	9,570.20	159.15	159.75	90.01	20,388.17	858.87	1,351.04	1,032.20	318.84	4.237		
29,400.00	9,570.00	29,468.89	9,570.20	159.90	160.50	90.01	20,488.17	858.10	1,351.34	1,031.00	320.34	4.218		
29,500.00	9,570.00	29,568.88	9,570.20	160.66	161.25	90.01	20,588.17	857.34	1,351.64	1,029.80	321.85	4.200		
29,600.00	9,570.00	29,668.88	9,570.20	161.41	162.01	90.01	20,688.16	856.57	1,351.94	1,028.59	323.35	4.181		
29,700.00	9,570.00	29,768.88	9,570.20	162.17	162.76	90.01	20,788.16	855.80	1,352.24	1,027.39	324.86	4.163		
29,800.00	9,570.00	29,868.88	9,570.20	162.92	163.51	90.01	20,888.16	855.04	1,352.54	1,026.18	326.36	4.144		
29,900.00	9,570.00	29,968.88	9,570.20	163.67	164.26	90.01	20,988.15	854.27	1,352.84	1,024.98	327.87	4.126		
30,000.00	9,570.00	30,068.88	9,570.20	164.42	165.01	90.01	21,088.15	853.50	1,353.14	1,023.77	329.37	4.108		
30,100.00	9,570.00	30,168.88	9,570.20	165.18	165.76	90.01	21,188.15	852.74	1,353.44	1,022.57	330.88	4.090		

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

Total Directional Anticollision Report



Company:	Coterra Energy	Local Co-ordinate Reference:	Well Sombrero State Com 223H
Project:	Lea County, NM (NAD 83)	TVD Reference:	GE 3739.2' + KB 23' @ 3762.20usft (Cactus 148)
Reference Site:	Sun-Sombrero Pad	MD Reference:	GE 3739.2' + KB 23' @ 3762.20usft (Cactus 148)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Sombrero State Com 223H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	.Total Directional Production DB
Reference Design:	Plan #1	Offset TVD Reference:	Reference Datum

Offset Design: Sun-Sombrero Pad - Sombrero State Com 224H - OH - Plan #1

Survey Program:		Reference		Offset		Semi Major Axis		Highside		Offset Wellbore Centre		Distance		Rule Assigned:		Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Reference (usft)	Offset (usft)	Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor			
30,200.00	9,570.00	30,268.88	9,570.20	165.93	166.52	90.01	21,288.14	851.97	1,353.74	1,021.36	332.38	4.073					
30,219.49	9,570.00	30,288.37	9,570.20	166.08	166.66	90.01	21,307.63	851.82	1,353.80	1,021.13	332.67	4.069	SF				

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

Total Directional Anticollision Report



Company:	Coterra Energy	Local Co-ordinate Reference:	Well Sombrero State Com 223H
Project:	Lea County, NM (NAD 83)	TVD Reference:	GE 3739.2' + KB 23' @ 3762.20usft (Cactus 148)
Reference Site:	Sun-Sombrero Pad	MD Reference:	GE 3739.2' + KB 23' @ 3762.20usft (Cactus 148)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Sombrero State Com 223H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	.Total Directional Production DB
Reference Design:	Plan #1	Offset TVD Reference:	Reference Datum

Offset Design: Sun-Sombrero Pad - Sun Federal Com 224H - OH - Plan #1

Survey Program: 0-MWD+IFR1+MS													Offset Site Error:	0.00 usft
Reference Offset													Offset Well Error:	0.00 usft
Measured Reference Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Rule Assigned: Distance				Warning	
				Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
0.00	0.00	0.00	0.30	0.00	0.00	89.77	0.24	59.99	59.99					
100.00	100.00	99.70	100.00	0.28	0.28	89.77	0.24	59.99	59.99	59.44	0.55	108.832		
200.00	200.00	199.70	200.00	0.63	0.63	89.77	0.24	59.99	59.99	58.72	1.27	47.314		
300.00	300.00	299.70	300.00	0.99	0.99	89.77	0.24	59.99	59.99	58.01	1.98	30.224		
400.00	400.00	399.70	400.00	1.35	1.35	89.77	0.24	59.99	59.99	57.29	2.70	22.204		
500.00	500.00	499.70	500.00	1.71	1.71	89.77	0.24	59.99	59.99	56.57	3.42	17.548	CC, ES	
600.00	599.98	597.63	597.91	2.07	2.05	124.46	0.62	61.61	62.62	58.50	4.12	15.195		
700.00	699.85	695.10	695.25	2.43	2.40	126.73	1.77	66.45	70.51	65.69	4.82	14.632	SF	
800.00	799.67	791.92	791.72	2.78	2.74	128.34	3.67	74.45	82.24	76.73	5.51	14.933		
900.00	899.49	888.82	887.95	3.14	3.09	128.94	6.28	85.49	97.05	90.85	6.20	15.665		
1,000.00	999.31	987.59	985.94	3.50	3.44	129.25	9.14	97.56	112.67	105.77	6.90	16.332		
1,100.00	1,099.14	1,086.37	1,083.93	3.86	3.80	129.48	12.00	109.63	128.29	120.69	7.61	16.869		
1,200.00	1,198.96	1,185.14	1,181.92	4.22	4.15	129.66	14.86	121.70	143.92	135.60	8.31	17.314		
1,300.00	1,298.78	1,283.91	1,279.90	4.58	4.51	129.81	17.72	133.77	159.54	150.52	9.02	17.682		
1,400.00	1,398.60	1,382.68	1,377.89	4.94	4.87	129.93	20.58	145.85	175.17	165.43	9.73	17.995		
1,500.00	1,498.43	1,481.45	1,475.88	5.30	5.23	130.03	23.44	157.92	190.79	180.35	10.45	18.264		
1,600.00	1,598.25	1,580.22	1,573.87	5.66	5.59	130.12	26.30	169.99	206.42	195.26	11.16	18.497		
1,700.00	1,698.07	1,678.99	1,671.86	6.02	5.95	130.19	29.16	182.06	222.05	210.18	11.87	18.702		
1,800.00	1,797.90	1,777.76	1,769.85	6.38	6.31	130.25	32.02	194.13	237.68	225.09	12.59	18.882		
1,900.00	1,897.72	1,876.53	1,867.84	6.74	6.67	130.31	34.88	206.20	253.31	240.00	13.30	19.042		
2,000.00	1,997.54	1,975.30	1,965.83	7.10	7.04	130.36	37.74	218.27	268.94	254.92	14.02	19.185		
2,100.00	2,097.36	2,074.08	2,063.82	7.46	7.40	130.40	40.60	230.34	284.56	269.83	14.73	19.314		
2,200.00	2,197.19	2,172.85	2,161.80	7.82	7.76	130.44	43.46	242.41	300.19	284.74	15.45	19.431		
2,300.00	2,297.01	2,271.62	2,259.79	8.18	8.12	130.48	46.32	254.48	315.82	299.66	16.17	19.537		
2,400.00	2,396.83	2,370.39	2,357.78	8.54	8.49	130.51	49.18	266.55	331.45	314.57	16.88	19.634		
2,500.00	2,496.65	2,469.16	2,455.77	8.90	8.85	130.54	52.04	278.62	347.08	329.48	17.60	19.722		
2,600.00	2,596.48	2,567.93	2,553.76	9.26	9.21	130.57	54.90	290.69	362.71	344.39	18.32	19.804		
2,700.00	2,696.30	2,666.70	2,651.75	9.62	9.57	130.59	57.76	302.76	378.34	359.31	19.03	19.879		
2,800.00	2,796.12	2,765.47	2,749.74	9.98	9.94	130.61	60.62	314.83	393.97	374.22	19.75	19.949		
2,900.00	2,895.94	2,864.24	2,847.73	10.34	10.30	130.63	63.48	326.90	409.60	389.13	20.47	20.013		
3,000.00	2,995.77	2,963.01	2,945.72	10.70	10.66	130.65	66.34	338.97	425.23	404.04	21.18	20.073		
3,100.00	3,095.59	3,061.78	3,043.70	11.06	11.03	130.67	69.20	351.04	440.86	418.96	21.90	20.130		
3,200.00	3,195.41	3,160.56	3,141.69	11.42	11.39	130.69	72.06	363.11	456.49	433.87	22.62	20.182		
3,300.00	3,295.23	3,259.33	3,239.68	11.78	11.75	130.70	74.92	375.18	472.12	448.78	23.34	20.231		
3,400.00	3,395.06	3,358.10	3,337.67	12.14	12.12	130.72	77.78	387.25	487.75	463.69	24.05	20.277		
3,500.00	3,494.88	3,456.87	3,435.66	12.50	12.48	130.73	80.64	399.32	503.38	478.60	24.77	20.321		
3,600.00	3,594.70	3,555.64	3,533.65	12.86	12.84	130.74	83.50	411.39	519.00	493.52	25.49	20.361		
3,700.00	3,694.52	3,654.41	3,631.64	13.22	13.21	130.76	86.36	423.46	534.63	508.43	26.21	20.400		
3,800.00	3,794.35	3,753.18	3,729.63	13.58	13.57	130.77	89.22	435.53	550.26	523.34	26.93	20.437		
3,900.00	3,894.17	3,851.95	3,827.62	13.94	13.94	130.78	92.08	447.60	565.89	538.25	27.64	20.471		
4,000.00	3,993.99	3,950.72	3,925.61	14.30	14.30	130.79	94.94	459.67	581.52	553.16	28.36	20.504		
4,100.00	4,093.81	4,049.49	4,023.59	14.67	14.66	130.80	97.80	471.75	597.15	568.07	29.08	20.535		
4,200.00	4,193.64	4,148.27	4,121.58	15.03	15.03	130.81	100.66	483.82	612.78	582.99	29.80	20.564		
4,300.00	4,293.46	4,247.04	4,219.57	15.39	15.39	130.82	103.52	495.89	628.41	597.90	30.52	20.593		
4,400.00	4,393.28	4,345.81	4,317.56	15.75	15.75	130.82	106.38	507.96	644.04	612.81	31.23	20.619		
4,500.00	4,493.10	4,444.58	4,415.55	16.11	16.12	130.83	109.24	520.03	659.67	627.72	31.95	20.645		
4,600.00	4,592.93	4,543.35	4,513.54	16.47	16.48	130.84	112.10	532.10	675.30	642.63	32.67	20.669		
4,700.00	4,692.75	4,642.12	4,611.53	16.83	16.85	130.85	114.96	544.17	690.93	657.54	33.39	20.693		
4,800.00	4,792.57	4,740.89	4,709.52	17.19	17.21	130.85	117.82	556.24	706.56	672.45	34.11	20.715		
4,900.00	4,892.39	4,839.66	4,807.51	17.55	17.57	130.86	120.68	568.31	722.19	687.37	34.83	20.736		
5,000.00	4,992.22	4,938.43	4,905.49	17.91	17.94	130.87	123.54	580.38	737.82	702.28	35.55	20.757		

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

Total Directional Anticollision Report



Company:	Coterra Energy	Local Co-ordinate Reference:	Well Sombrero State Com 223H
Project:	Lea County, NM (NAD 83)	TVD Reference:	GE 3739.2' + KB 23' @ 3762.20usft (Cactus 148)
Reference Site:	Sun-Sombrero Pad	MD Reference:	GE 3739.2' + KB 23' @ 3762.20usft (Cactus 148)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Sombrero State Com 223H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	.Total Directional Production DB
Reference Design:	Plan #1	Offset TVD Reference:	Reference Datum

Offset Design: Sun-Sombrero Pad - Sun Federal Com 224H - OH - Plan #1

Survey Program: 0-MWD+IFR1+MS													Offset Site Error:	0.00 usft
Reference Offset													Offset Well Error:	0.00 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Rule Assigned: Distance				Warning	
				Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
5,100.00	5,092.04	5,037.20	5,003.48	18.27	18.30	130.87	126.40	592.45	753.45	717.19	36.26	20.776		
5,200.00	5,191.86	5,135.97	5,101.47	18.63	18.67	130.88	129.26	604.52	769.08	732.10	36.98	20.795		
5,300.00	5,291.68	5,234.75	5,199.46	18.99	19.03	130.88	132.12	616.59	784.71	747.01	37.70	20.813		
5,400.00	5,391.51	5,333.52	5,297.45	19.35	19.39	130.89	134.98	628.66	800.34	761.92	38.42	20.831		
5,500.00	5,491.33	5,432.29	5,395.44	19.71	19.76	130.90	137.84	640.73	815.97	776.83	39.14	20.847		
5,600.00	5,591.15	5,531.06	5,493.43	20.07	20.12	130.90	140.70	652.80	831.60	791.74	39.86	20.864		
5,700.00	5,690.97	5,629.83	5,591.42	20.43	20.49	130.90	143.56	664.87	847.23	806.65	40.58	20.879		
5,800.00	5,790.80	5,728.60	5,689.41	20.80	20.85	130.91	146.42	676.94	862.86	821.57	41.30	20.894		
5,900.00	5,890.62	5,827.37	5,787.39	21.16	21.22	130.91	149.28	689.01	878.49	836.48	42.02	20.909		
6,000.00	5,990.44	5,926.14	5,885.38	21.52	21.58	130.92	152.14	701.08	894.12	851.39	42.74	20.922		
6,100.00	6,090.26	6,024.91	5,983.37	21.88	21.94	130.92	155.00	713.15	909.75	866.30	43.45	20.936		
6,200.00	6,190.09	6,123.68	6,081.36	22.24	22.31	130.93	157.86	725.22	925.38	881.21	44.17	20.949		
6,300.00	6,289.91	6,222.45	6,179.35	22.60	22.67	130.93	160.72	737.29	941.01	896.12	44.89	20.961		
6,400.00	6,389.73	6,321.23	6,277.34	22.96	23.04	130.93	163.58	749.36	956.64	911.03	45.61	20.974		
6,500.00	6,489.55	6,420.00	6,375.33	23.32	23.40	130.94	166.44	761.43	972.27	925.94	46.33	20.985		
6,600.00	6,589.38	6,518.77	6,473.32	23.68	23.77	130.94	169.30	773.50	987.90	940.85	47.05	20.997		
6,700.00	6,689.20	6,617.54	6,571.31	24.04	24.13	130.94	172.16	785.57	1,003.53	955.76	47.77	21.008		
6,800.00	6,789.02	6,716.31	6,669.29	24.40	24.49	130.95	175.02	797.65	1,019.16	970.67	48.49	21.018		
6,900.00	6,888.85	6,815.08	6,767.28	24.76	24.86	130.95	177.88	809.72	1,034.79	985.58	49.21	21.029		
7,000.00	6,988.67	6,913.85	6,865.27	25.12	25.22	130.95	180.74	821.79	1,050.42	1,000.49	49.93	21.039		
7,100.00	7,088.49	7,012.62	6,963.26	25.48	25.59	130.96	183.60	833.86	1,066.05	1,015.40	50.65	21.048		
7,200.00	7,188.31	7,111.39	7,061.25	25.85	25.95	130.96	186.46	845.93	1,081.68	1,030.32	51.37	21.058		
7,300.00	7,288.14	7,210.16	7,159.24	26.21	26.32	130.96	189.32	858.00	1,097.31	1,045.23	52.09	21.067		
7,400.00	7,387.96	7,308.94	7,257.23	26.57	26.68	130.97	192.18	870.07	1,112.94	1,060.14	52.81	21.076		
7,500.00	7,487.78	7,407.71	7,355.22	26.93	27.04	130.97	195.04	882.14	1,128.57	1,075.05	53.53	21.085		
7,600.00	7,587.60	7,506.48	7,453.21	27.29	27.41	130.97	197.90	894.21	1,144.20	1,089.96	54.25	21.093		
7,700.00	7,687.43	7,605.25	7,551.19	27.65	27.77	130.97	200.77	906.28	1,159.83	1,104.87	54.97	21.101		
7,800.00	7,787.25	7,704.02	7,649.18	28.01	28.14	130.98	203.63	918.35	1,175.46	1,119.78	55.69	21.109		
7,900.00	7,887.07	7,802.79	7,747.17	28.37	28.50	130.98	206.49	930.42	1,191.09	1,134.69	56.41	21.117		
8,000.00	7,986.89	7,901.56	7,845.16	28.73	28.87	130.98	209.35	942.49	1,206.72	1,149.60	57.13	21.124		
8,100.00	8,086.72	8,000.33	7,943.15	29.09	29.23	130.98	212.21	954.56	1,222.35	1,164.51	57.85	21.131		
8,200.00	8,186.54	8,099.10	8,041.14	29.45	29.60	130.98	215.07	966.63	1,237.98	1,179.42	58.57	21.139		
8,300.00	8,286.36	8,197.87	8,139.13	29.81	29.96	130.99	217.93	978.70	1,253.61	1,194.33	59.29	21.145		
8,400.00	8,386.18	8,296.64	8,237.12	30.17	30.33	130.99	220.79	990.77	1,269.24	1,209.24	60.01	21.152		
8,500.00	8,486.01	8,395.42	8,335.11	30.54	30.69	130.99	223.65	1,002.84	1,284.87	1,224.15	60.73	21.159		
8,600.00	8,585.83	8,494.19	8,433.09	30.90	31.05	130.99	226.51	1,014.91	1,300.50	1,239.06	61.45	21.165		
8,700.00	8,685.65	8,592.96	8,531.08	31.26	31.42	131.00	229.37	1,026.98	1,316.13	1,253.97	62.17	21.171		
8,800.00	8,785.47	8,691.73	8,629.07	31.62	31.78	131.00	232.23	1,039.05	1,331.76	1,268.88	62.89	21.177		
8,900.00	8,885.30	8,790.50	8,727.06	31.98	32.15	131.00	235.09	1,051.12	1,347.39	1,283.79	63.61	21.183		
9,000.00	8,985.12	8,922.66	8,858.31	32.34	32.63	129.15	237.66	1,066.28	1,362.60	1,298.07	64.53	21.117		
9,100.00	9,084.72	9,116.09	9,050.99	32.70	33.29	98.64	225.92	1,076.06	1,370.31	1,304.69	65.62	20.883		
9,200.00	9,181.71	9,191.52	9,125.39	33.06	33.52	99.14	213.79	1,076.21	1,377.13	1,310.92	66.21	20.799		
9,300.00	9,273.09	9,250.00	9,181.62	33.40	33.69	99.38	197.84	1,076.34	1,390.25	1,323.54	66.70	20.842		
9,400.00	9,356.08	9,279.71	9,209.49	33.71	33.78	98.30	187.56	1,076.42	1,410.81	1,343.81	67.00	21.056		
9,500.00	9,428.16	9,300.00	9,228.21	33.97	33.83	96.11	179.71	1,076.49	1,439.41	1,372.24	67.17	21.429		
9,600.00	9,487.14	9,300.00	9,228.21	34.19	33.83	92.22	179.71	1,076.49	1,475.72	1,408.57	67.15	21.977		
9,700.00	9,531.23	9,300.00	9,228.21	34.39	33.83	87.51	179.71	1,076.49	1,518.33	1,451.23	67.11	22.626		
9,800.00	9,559.09	9,300.00	9,228.21	34.58	33.83	82.18	179.71	1,076.49	1,565.51	1,498.41	67.10	23.332		
9,900.00	9,569.87	9,300.00	9,228.21	34.74	33.83	76.51	179.71	1,076.49	1,615.49	1,548.34	67.15	24.057		
10,000.00	9,570.00	9,280.00	9,209.76	34.88	33.78	75.09	187.45	1,076.42	1,667.80	1,600.72	67.08	24.864		

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

Total Directional Anticollision Report



Company:	Coterra Energy	Local Co-ordinate Reference:	Well Sombrero State Com 223H
Project:	Lea County, NM (NAD 83)	TVD Reference:	GE 3739.2' + KB 23' @ 3762.20usft (Cactus 148)
Reference Site:	Sun-Sombrero Pad	MD Reference:	GE 3739.2' + KB 23' @ 3762.20usft (Cactus 148)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Sombrero State Com 223H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	.Total Directional Production DB
Reference Design:	Plan #1	Offset TVD Reference:	Reference Datum

Offset Design: Sun-Sombrero Pad - Sun Federal Com 224H - OH - Plan #1

Survey Program:		0-MWD+IFR1+MS		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Rule Assigned:				Offset Site Error:
Reference	Offset	Reference	Offset	Reference	Offset		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	(usft)	(usft)								
10,100.00	9,570.00	9,267.03	9,197.67	35.04	33.74	74.62	192.12	1,076.39	1,724.02	1,656.95	67.07	25.704	
10,200.00	9,570.00	9,250.00	9,181.62	35.22	33.69	73.99	197.84	1,076.34	1,783.87	1,716.83	67.04	26.609	
10,300.00	9,570.00	9,250.00	9,181.62	35.41	33.69	73.99	197.84	1,076.34	1,846.97	1,779.81	67.16	27.500	
10,400.00	9,570.00	9,250.00	9,181.62	35.61	33.69	73.99	197.84	1,076.34	1,913.22	1,845.94	67.28	28.436	
10,500.00	9,570.00	9,227.28	9,159.97	35.84	33.63	73.14	204.72	1,076.29	1,981.85	1,914.63	67.21	29.486	
10,600.00	9,570.00	9,219.59	9,152.58	36.08	33.61	72.86	206.85	1,076.27	2,053.10	1,985.83	67.27	30.520	
10,700.00	9,570.00	9,200.00	9,133.64	36.33	33.55	72.13	211.83	1,076.23	2,126.72	2,059.49	67.23	31.633	
10,800.00	9,570.00	9,200.00	9,133.64	36.59	33.55	72.13	211.83	1,076.23	2,202.11	2,134.76	67.35	32.696	
10,900.00	9,570.00	9,200.00	9,133.64	36.88	33.55	72.13	211.83	1,076.23	2,279.38	2,211.92	67.46	33.786	
11,000.00	9,570.00	9,200.00	9,133.64	37.17	33.55	72.13	211.83	1,076.23	2,358.37	2,290.79	67.57	34.901	
11,100.00	9,570.00	9,200.00	9,133.64	37.48	33.55	72.13	211.83	1,076.23	2,438.90	2,371.22	67.68	36.037	
11,200.00	9,570.00	9,200.00	9,133.64	37.80	33.55	72.13	211.83	1,076.23	2,520.82	2,453.04	67.78	37.193	
11,300.00	9,570.00	9,200.00	9,133.64	38.13	33.55	72.13	211.83	1,076.23	2,604.00	2,536.13	67.87	38.366	
11,400.00	9,570.00	9,176.60	9,110.81	38.48	33.48	71.26	216.93	1,076.19	2,687.82	2,620.01	67.81	39.636	
11,500.00	9,570.00	9,172.81	9,107.08	38.84	33.47	71.12	217.67	1,076.18	2,773.01	2,705.13	67.88	40.851	
11,600.00	9,570.00	9,150.00	9,084.62	39.21	33.40	70.27	221.59	1,076.15	2,859.49	2,791.66	67.83	42.159	
11,700.00	9,570.00	9,150.00	9,084.62	39.59	33.40	70.27	221.59	1,076.15	2,946.36	2,878.44	67.92	43.382	
11,800.00	9,570.00	9,150.00	9,084.62	39.99	33.40	70.27	221.59	1,076.15	3,034.04	2,966.04	68.00	44.615	
11,900.00	9,570.00	9,150.00	9,084.62	40.39	33.40	70.27	221.59	1,076.15	3,122.46	3,054.37	68.09	45.859	
12,000.00	9,570.00	9,150.00	9,084.62	40.81	33.40	70.27	221.59	1,076.15	3,211.56	3,143.39	68.17	47.111	
12,100.00	9,570.00	9,150.00	9,084.62	41.23	33.40	70.27	221.59	1,076.15	3,301.28	3,233.03	68.25	48.371	

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

Total Directional Anticollision Report



Company:	Coterra Energy	Local Co-ordinate Reference:	Well Sombrero State Com 223H
Project:	Lea County, NM (NAD 83)	TVD Reference:	GE 3739.2' + KB 23' @ 3762.20usft (Cactus 148)
Reference Site:	Sun-Sombrero Pad	MD Reference:	GE 3739.2' + KB 23' @ 3762.20usft (Cactus 148)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Sombrero State Com 223H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	.Total Directional Production DB
Reference Design:	Plan #1	Offset TVD Reference:	Reference Datum

Offset Design: Sun-Sombrero Pad - Sun State Com 221H - OH - Plan #1

Survey Program:		0-MWD+IFR1+MS		Offset		Semi Major Axis		Offset Wellbore Centre		Rule Assigned:				Offset Site Error:
Reference	Vertical	Measured	Vertical	Reference	Offset	Highside		+N/-S	+E/-W	Between	Between	Minimum	Separation	Warning
Depth	Depth	Depth	Depth	(usft)	(usft)	Toolface	(°)	(usft)	(usft)	Centres	Ellipses	Separation	Factor	
(usft)	(usft)	(usft)	(usft)							(usft)	(usft)	(usft)		
0.00	0.00	11.10	0.00	0.00	0.03	-90.21		-9.74	-2,632.81	2,632.83				
100.00	100.00	111.10	100.00	0.28	0.30	-90.21		-9.74	-2,632.81	2,632.83	2,632.25	0.58	4,544.917	
200.00	200.00	211.10	200.00	0.63	0.66	-90.21		-9.74	-2,632.81	2,632.83	2,631.53	1.30	2,031.137	
300.00	300.00	311.10	300.00	0.99	1.02	-90.21		-9.74	-2,632.81	2,632.83	2,630.81	2.01	1,307.798	
400.00	400.00	411.10	400.00	1.35	1.38	-90.21		-9.74	-2,632.81	2,632.83	2,630.10	2.73	964.364	
500.00	500.00	511.10	500.00	1.71	1.74	-90.21		-9.74	-2,632.81	2,632.83	2,629.38	3.45	763.789	
600.00	599.98	611.08	599.98	2.07	2.10	-56.48		-9.74	-2,632.81	2,631.86	2,627.70	4.16	632.313	
700.00	699.85	710.95	699.85	2.43	2.45	-56.61		-9.74	-2,632.81	2,629.06	2,624.18	4.88	539.106	
800.00	799.67	810.77	799.67	2.78	2.81	-56.72		-9.74	-2,632.81	2,625.78	2,620.19	5.59	469.711	
900.00	899.49	910.59	899.49	3.14	3.17	-56.82		-9.74	-2,632.81	2,622.51	2,616.21	6.30	415.978	
1,000.00	999.31	1,010.41	999.31	3.50	3.53	-56.93		-9.74	-2,632.81	2,619.26	2,612.24	7.02	373.155	
1,100.00	1,099.14	1,110.24	1,099.14	3.86	3.88	-57.04		-9.74	-2,632.81	2,616.01	2,608.27	7.73	338.232	
1,200.00	1,198.96	1,210.06	1,198.96	4.22	4.24	-57.15		-9.74	-2,632.81	2,612.77	2,604.32	8.45	309.212	
1,300.00	1,298.78	1,309.88	1,298.78	4.58	4.60	-57.26		-9.74	-2,632.81	2,609.54	2,600.38	9.17	284.716	
1,400.00	1,398.60	1,409.70	1,398.60	4.94	4.96	-57.37		-9.74	-2,632.81	2,606.32	2,596.44	9.88	263.766	
1,500.00	1,498.43	1,509.53	1,498.43	5.30	5.32	-57.48		-9.74	-2,632.81	2,603.11	2,592.51	10.60	245.643	
1,600.00	1,598.25	1,609.35	1,598.25	5.66	5.67	-57.59		-9.74	-2,632.81	2,599.91	2,588.60	11.31	229.813	
1,700.00	1,698.07	1,709.17	1,698.07	6.02	6.03	-57.70		-9.74	-2,632.81	2,596.72	2,584.69	12.03	215.867	
1,800.00	1,797.90	1,800.00	1,788.90	6.38	6.36	-57.80		-9.74	-2,632.81	2,593.55	2,580.84	12.71	204.000	
1,900.00	1,897.72	1,861.64	1,850.53	6.74	6.58	-57.86		-9.40	-2,633.38	2,591.36	2,578.07	13.29	194.986	
1,973.29	1,970.88	1,900.00	1,888.88	7.00	6.71	-57.89		-8.85	-2,634.31	2,590.82	2,577.14	13.69	189.300	CC
2,000.00	1,997.54	1,918.26	1,907.13	7.10	6.78	-57.91		-8.50	-2,634.91	2,590.85	2,577.00	13.85	187.130	ES
2,100.00	2,097.36	1,977.79	1,966.58	7.46	6.99	-57.94		-6.94	-2,637.56	2,592.01	2,577.61	14.41	179.924	
2,200.00	2,197.19	2,072.67	2,061.27	7.82	7.32	-57.97		-3.95	-2,642.63	2,594.09	2,579.00	15.10	171.838	
2,300.00	2,297.01	2,172.63	2,161.04	8.18	7.67	-58.01		-0.80	-2,647.97	2,596.18	2,580.38	15.81	164.260	
2,400.00	2,396.83	2,272.59	2,260.81	8.54	8.02	-58.05		2.36	-2,653.31	2,598.27	2,581.75	16.52	157.320	
2,500.00	2,496.65	2,372.56	2,360.58	8.90	8.38	-58.09		5.51	-2,658.65	2,600.36	2,583.13	17.23	150.948	
2,600.00	2,596.48	2,472.52	2,460.35	9.26	8.73	-58.13		8.66	-2,663.98	2,602.45	2,584.51	17.94	145.076	
2,700.00	2,696.30	2,572.48	2,560.12	9.62	9.09	-58.16		11.81	-2,669.32	2,604.54	2,585.89	18.65	139.648	
2,800.00	2,796.12	2,672.45	2,659.90	9.98	9.44	-58.20		14.96	-2,674.66	2,606.63	2,587.27	19.36	134.616	
2,900.00	2,895.94	2,772.41	2,759.67	10.34	9.80	-58.24		18.11	-2,680.00	2,608.72	2,588.65	20.08	129.938	
3,000.00	2,995.77	2,872.37	2,859.44	10.70	10.16	-58.28		21.26	-2,685.34	2,610.82	2,590.03	20.79	125.579	
3,100.00	3,095.59	2,972.34	2,959.21	11.06	10.51	-58.32		24.41	-2,690.68	2,612.91	2,591.41	21.50	121.507	
3,200.00	3,195.41	3,072.30	3,058.98	11.42	10.87	-58.35		27.56	-2,696.02	2,615.01	2,592.79	22.22	117.695	
3,300.00	3,295.23	3,172.26	3,158.75	11.78	11.23	-58.39		30.72	-2,701.36	2,617.11	2,594.17	22.93	114.120	
3,400.00	3,395.06	3,272.23	3,258.52	12.14	11.58	-58.43		33.87	-2,706.70	2,619.21	2,595.56	23.65	110.759	
3,500.00	3,494.88	3,372.19	3,358.29	12.50	11.94	-58.47		37.02	-2,712.04	2,621.31	2,596.94	24.36	107.594	
3,600.00	3,594.70	3,472.15	3,458.06	12.86	12.30	-58.50		40.17	-2,717.38	2,623.41	2,598.33	25.08	104.609	
3,700.00	3,694.52	3,572.12	3,557.83	13.22	12.66	-58.54		43.32	-2,722.72	2,625.51	2,599.72	25.79	101.789	
3,800.00	3,794.35	3,672.08	3,657.60	13.58	13.01	-58.58		46.47	-2,728.06	2,627.61	2,601.10	26.51	99.121	
3,900.00	3,894.17	3,772.04	3,757.37	13.94	13.37	-58.61		49.62	-2,733.40	2,629.72	2,602.49	27.23	96.592	
4,000.00	3,993.99	3,872.01	3,857.14	14.30	13.73	-58.65		52.77	-2,738.74	2,631.82	2,603.88	27.94	94.192	
4,100.00	4,093.81	3,971.97	3,956.92	14.67	14.09	-58.69		55.92	-2,744.08	2,633.93	2,605.27	28.66	91.912	
4,200.00	4,193.64	4,071.93	4,056.69	15.03	14.45	-58.73		59.08	-2,749.41	2,636.04	2,606.67	29.37	89.742	
4,300.00	4,293.46	4,171.90	4,156.46	15.39	14.81	-58.76		62.23	-2,754.75	2,638.15	2,608.06	30.09	87.676	
4,400.00	4,393.28	4,271.86	4,256.23	15.75	15.17	-58.80		65.38	-2,760.09	2,640.26	2,609.45	30.81	85.705	
4,500.00	4,493.10	4,371.82	4,356.00	16.11	15.52	-58.84		68.53	-2,765.43	2,642.37	2,610.85	31.52	83.824	
4,600.00	4,592.93	4,471.79	4,455.77	16.47	15.88	-58.87		71.68	-2,770.77	2,644.48	2,612.24	32.24	82.026	
4,700.00	4,692.75	4,571.75	4,555.54	16.83	16.24	-58.91		74.83	-2,776.11	2,646.60	2,613.64	32.96	80.306	
4,800.00	4,792.57	4,671.71	4,655.31	17.19	16.60	-58.95		77.98	-2,781.45	2,648.71	2,615.04	33.67	78.659	
4,900.00	4,892.39	4,771.67	4,755.08	17.55	16.96	-58.98		81.13	-2,786.79	2,650.83	2,616.43	34.39	77.081	

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

Total Directional Anticollision Report



Company:	Coterra Energy	Local Co-ordinate Reference:	Well Sombrero State Com 223H
Project:	Lea County, NM (NAD 83)	TVD Reference:	GE 3739.2' + KB 23' @ 3762.20usft (Cactus 148)
Reference Site:	Sun-Sombrero Pad	MD Reference:	GE 3739.2' + KB 23' @ 3762.20usft (Cactus 148)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Sombrero State Com 223H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	.Total Directional Production DB
Reference Design:	Plan #1	Offset TVD Reference:	Reference Datum

Offset Design: Sun-Sombrero Pad - Sun State Com 221H - OH - Plan #1

Survey Program: 0-MWD+IFR1+MS													Offset Site Error:	0.00 usft
Reference Offset													Offset Well Error:	0.00 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Rule Assigned:				Warning	
				Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
5,000.00	4,992.22	4,871.64	4,854.85	17.91	17.32	-59.02	84.28	-2,792.13	2,652.94	2,617.83	35.11	75.567		
5,100.00	5,092.04	4,971.60	4,954.62	18.27	17.68	-59.06	87.44	-2,797.47	2,655.06	2,619.24	35.82	74.113		
5,200.00	5,191.86	5,071.56	5,054.39	18.63	18.04	-59.09	90.59	-2,802.81	2,657.18	2,620.64	36.54	72.717		
5,300.00	5,291.68	5,171.53	5,154.17	18.99	18.40	-59.13	93.74	-2,808.15	2,659.30	2,622.04	37.26	71.374		
5,400.00	5,391.51	5,271.49	5,253.94	19.35	18.76	-59.17	96.89	-2,813.49	2,661.42	2,623.44	37.98	70.082		
5,500.00	5,491.33	5,371.45	5,353.71	19.71	19.12	-59.20	100.04	-2,818.83	2,663.54	2,624.85	38.69	68.837		
5,600.00	5,591.15	5,471.42	5,453.48	20.07	19.48	-59.24	103.19	-2,824.17	2,665.66	2,626.25	39.41	67.638		
5,700.00	5,690.97	5,571.38	5,553.25	20.43	19.84	-59.28	106.34	-2,829.51	2,667.79	2,627.66	40.13	66.482		
5,800.00	5,790.80	5,671.34	5,653.02	20.80	20.20	-59.31	109.49	-2,834.84	2,669.91	2,629.07	40.85	65.366		
5,900.00	5,890.62	5,771.31	5,752.79	21.16	20.56	-59.35	112.64	-2,840.18	2,672.04	2,630.48	41.56	64.289		
6,000.00	5,990.44	5,871.27	5,852.56	21.52	20.92	-59.38	115.80	-2,845.52	2,674.17	2,631.89	42.28	63.248		
6,100.00	6,090.26	5,971.23	5,952.33	21.88	21.28	-59.42	118.95	-2,850.86	2,676.30	2,633.30	43.00	62.242		
6,200.00	6,190.09	6,071.20	6,052.10	22.24	21.64	-59.46	122.10	-2,856.20	2,678.43	2,634.71	43.72	61.269		
6,300.00	6,289.91	6,171.16	6,151.87	22.60	22.00	-59.49	125.25	-2,861.54	2,680.56	2,636.12	44.43	60.327		
6,400.00	6,389.73	6,271.12	6,251.64	22.96	22.36	-59.53	128.40	-2,866.88	2,682.69	2,637.54	45.15	59.416		
6,500.00	6,489.55	6,371.09	6,351.41	23.32	22.72	-59.56	131.55	-2,872.22	2,684.82	2,638.95	45.87	58.532		
6,600.00	6,589.38	6,471.05	6,451.19	23.68	23.08	-59.60	134.70	-2,877.56	2,686.95	2,640.37	46.59	57.676		
6,700.00	6,689.20	6,571.01	6,550.96	24.04	23.44	-59.63	137.85	-2,882.90	2,689.09	2,641.78	47.30	56.846		
6,800.00	6,789.02	6,670.98	6,650.73	24.40	23.80	-59.67	141.00	-2,888.24	2,691.22	2,643.20	48.02	56.041		
6,900.00	6,888.85	6,770.94	6,750.50	24.76	24.16	-59.71	144.16	-2,893.58	2,693.36	2,644.62	48.74	55.260		
7,000.00	6,988.67	6,870.90	6,850.27	25.12	24.52	-59.74	147.31	-2,898.92	2,695.50	2,646.04	49.46	54.501		
7,100.00	7,088.49	6,970.87	6,950.04	25.48	24.88	-59.78	150.46	-2,904.26	2,697.64	2,647.46	50.18	53.764		
7,200.00	7,188.31	7,070.83	7,049.81	25.85	25.24	-59.81	153.61	-2,909.60	2,699.78	2,648.88	50.89	53.047		
7,300.00	7,288.14	7,170.79	7,149.58	26.21	25.60	-59.85	156.76	-2,914.94	2,701.92	2,650.31	51.61	52.351		
7,400.00	7,387.96	7,270.76	7,249.35	26.57	25.96	-59.88	159.91	-2,920.27	2,704.06	2,651.73	52.33	51.674		
7,500.00	7,487.78	7,370.72	7,349.12	26.93	26.32	-59.92	163.06	-2,925.61	2,706.20	2,653.16	53.05	51.015		
7,600.00	7,587.60	7,470.68	7,448.89	27.29	26.68	-59.95	166.21	-2,930.95	2,708.35	2,654.58	53.77	50.373		
7,700.00	7,687.43	7,570.65	7,548.66	27.65	27.04	-59.99	169.36	-2,936.29	2,710.49	2,656.01	54.48	49.749		
7,800.00	7,787.25	7,670.61	7,648.43	28.01	27.40	-60.02	172.51	-2,941.63	2,712.64	2,657.44	55.20	49.141		
7,900.00	7,887.07	7,770.57	7,748.21	28.37	27.76	-60.06	175.67	-2,946.97	2,714.79	2,658.87	55.92	48.548		
8,000.00	7,986.89	7,870.53	7,847.98	28.73	28.12	-60.09	178.82	-2,952.31	2,716.93	2,660.30	56.64	47.970		
8,100.00	8,086.72	7,970.50	7,947.75	29.09	28.48	-60.13	181.97	-2,957.65	2,719.08	2,661.73	57.36	47.407		
8,200.00	8,186.54	8,070.46	8,047.52	29.45	28.84	-60.16	185.12	-2,962.99	2,721.23	2,663.16	58.07	46.858		
8,300.00	8,286.36	8,170.42	8,147.29	29.81	29.21	-60.20	188.27	-2,968.33	2,723.38	2,664.59	58.79	46.322		
8,400.00	8,386.18	8,270.39	8,247.06	30.17	29.57	-60.23	191.42	-2,973.67	2,725.54	2,666.03	59.51	45.800		
8,500.00	8,486.01	8,370.35	8,346.83	30.54	29.93	-60.27	194.57	-2,979.01	2,727.69	2,667.46	60.23	45.289		
8,600.00	8,585.83	8,470.31	8,446.60	30.90	30.29	-60.30	197.72	-2,984.35	2,729.84	2,668.90	60.95	44.791		
8,700.00	8,685.65	8,570.28	8,546.37	31.26	30.65	-60.34	200.87	-2,989.69	2,732.00	2,670.33	61.66	44.304		
8,800.00	8,785.47	8,670.24	8,646.14	31.62	31.01	-60.37	204.03	-2,995.03	2,734.15	2,671.77	62.38	43.829		
8,900.00	8,885.30	8,770.20	8,745.91	31.98	31.37	-60.41	207.18	-3,000.37	2,736.31	2,673.21	63.10	43.364		
9,000.00	8,985.12	8,870.17	8,845.68	32.34	31.73	-62.34	210.33	-3,005.70	2,738.47	2,674.65	63.82	42.910		
9,100.00	9,084.72	8,984.12	8,959.27	32.70	32.46	-93.86	205.11	-3,010.91	2,740.50	2,675.60	64.90	42.228		
9,200.00	9,181.71	9,150.00	9,123.98	33.06	32.66	-94.10	192.94	-3,010.81	2,743.76	2,678.29	65.47	41.910		
9,300.00	9,273.09	9,200.00	9,171.92	33.40	32.81	-94.13	178.80	-3,010.70	2,750.08	2,684.12	65.96	41.692		
9,400.00	9,356.08	9,237.50	9,206.97	33.71	32.92	-93.75	165.47	-3,010.59	2,760.17	2,693.79	66.38	41.582	SF	
9,500.00	9,428.16	9,250.00	9,218.45	33.97	32.95	-92.54	160.52	-3,010.55	2,774.47	2,707.80	66.67	41.614		
9,600.00	9,487.14	9,268.98	9,235.67	34.19	33.00	-91.06	152.54	-3,010.48	2,792.85	2,725.90	66.95	41.718		
9,700.00	9,531.23	9,269.27	9,235.92	34.39	33.00	-88.79	152.41	-3,010.48	2,814.96	2,747.84	67.12	41.940		
9,800.00	9,559.09	9,250.00	9,218.45	34.58	32.95	-85.81	160.52	-3,010.55	2,840.10	2,772.92	67.18	42.274		
9,900.00	9,569.87	9,250.00	9,218.45	34.74	32.95	-83.02	160.52	-3,010.55	2,867.14	2,799.83	67.31	42.595		

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

Total Directional Anticollision Report



Company:	Coterra Energy	Local Co-ordinate Reference:	Well Sombrero State Com 223H
Project:	Lea County, NM (NAD 83)	TVD Reference:	GE 3739.2' + KB 23' @ 3762.20usft (Cactus 148)
Reference Site:	Sun-Sombrero Pad	MD Reference:	GE 3739.2' + KB 23' @ 3762.20usft (Cactus 148)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Sombrero State Com 223H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	.Total Directional Production DB
Reference Design:	Plan #1	Offset TVD Reference:	Reference Datum

Offset Design: Sun-Sombrero Pad - Sun State Com 221H - OH - Plan #1

Survey Program:		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Rule Assigned:				Offset Site Error:
Measured Reference 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
10,000.00	9,570.00	9,234.20	9,203.92	34.88	32.91	-82.37	166.74	-3,010.60	2,896.17	2,828.80	67.37	42.990	0.00 usft
10,100.00	9,570.00	9,220.81	9,191.48	35.04	32.87	-82.12	171.69	-3,010.64	2,928.12	2,860.67	67.45	43.414	0.00 usft
10,200.00	9,570.00	9,200.00	9,171.92	35.22	32.81	-81.72	178.80	-3,010.70	2,962.99	2,895.49	67.50	43.896	
10,300.00	9,570.00	9,200.00	9,171.92	35.41	32.81	-81.72	178.80	-3,010.70	3,000.59	2,932.93	67.66	44.349	
10,400.00	9,570.00	9,200.00	9,171.92	35.61	32.81	-81.72	178.80	-3,010.70	3,041.01	2,973.18	67.82	44.837	
10,500.00	9,570.00	9,179.80	9,152.71	35.84	32.75	-81.32	185.01	-3,010.75	3,083.91	3,016.01	67.90	45.420	
10,600.00	9,570.00	9,171.87	9,145.10	36.08	32.73	-81.17	187.27	-3,010.76	3,129.41	3,061.38	68.03	45.998	
10,700.00	9,570.00	9,150.00	9,123.98	36.33	32.66	-80.73	192.94	-3,010.81	3,177.48	3,109.37	68.11	46.654	
10,800.00	9,570.00	9,150.00	9,123.98	36.59	32.66	-80.73	192.94	-3,010.81	3,227.65	3,159.36	68.29	47.267	
10,900.00	9,570.00	9,150.00	9,123.98	36.88	32.66	-80.73	192.94	-3,010.81	3,280.11	3,211.64	68.47	47.909	

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

Total Directional Anticollision Report



Company:	Coterra Energy	Local Co-ordinate Reference:	Well Sombrero State Com 223H
Project:	Lea County, NM (NAD 83)	TVD Reference:	GE 3739.2' + KB 23' @ 3762.20usft (Cactus 148)
Reference Site:	Sun-Sombrero Pad	MD Reference:	GE 3739.2' + KB 23' @ 3762.20usft (Cactus 148)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Sombrero State Com 223H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	.Total Directional Production DB
Reference Design:	Plan #1	Offset TVD Reference:	Reference Datum

Offset Design: Sun-Sombrero Pad - Sun State Com 223H - OH - Plan #1

Survey Program:		Offset		Semi Major Axis		Offset Wellbore Centre		Rule Assigned:				Warning	
Measured Reference Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
0.00	0.00	0.10	0.00	0.00	0.00	89.77	0.08	20.00	20.00				
100.00	100.00	100.10	100.00	0.28	0.28	89.77	0.08	20.00	20.00	19.45	0.55	36.206	
200.00	200.00	200.10	200.00	0.63	0.63	89.77	0.08	20.00	20.00	18.73	1.27	15.756	
300.00	300.00	300.10	300.00	0.99	0.99	89.77	0.08	20.00	20.00	18.01	1.99	10.069	
400.00	400.00	400.10	400.00	1.35	1.35	89.77	0.08	20.00	20.00	17.30	2.70	7.399	
500.00	500.00	500.10	500.00	1.71	1.71	89.77	0.08	20.00	20.00	16.58	3.42	5.848	CC, ES
600.00	599.98	600.08	599.98	2.07	2.07	127.50	0.08	20.00	21.01	16.88	4.14	5.082	
700.00	699.85	699.95	699.85	2.43	2.43	136.96	0.08	20.00	24.45	19.59	4.85	5.039	
800.00	799.67	799.77	799.67	2.78	2.78	144.99	0.08	20.00	29.09	23.52	5.57	5.226	
900.00	899.49	899.59	899.49	3.14	3.14	150.73	0.08	20.00	34.14	27.86	6.28	5.436	
1,000.00	999.31	999.41	999.31	3.50	3.50	154.96	0.08	20.00	39.44	32.45	7.00	5.638	
1,100.00	1,099.14	1,099.24	1,099.14	3.86	3.86	158.18	0.08	20.00	44.91	37.20	7.71	5.823	
1,200.00	1,198.96	1,199.06	1,198.96	4.22	4.22	160.69	0.08	20.00	50.49	42.06	8.43	5.990	
1,300.00	1,298.78	1,298.88	1,298.78	4.58	4.57	162.70	0.08	20.00	56.14	47.00	9.14	6.139	
1,400.00	1,398.60	1,398.70	1,398.60	4.94	4.93	164.34	0.08	20.00	61.85	51.99	9.86	6.272	
1,500.00	1,498.43	1,498.53	1,498.43	5.30	5.29	165.70	0.08	20.00	67.61	57.03	10.58	6.391	
1,600.00	1,598.25	1,598.35	1,598.25	5.66	5.65	166.85	0.08	20.00	73.39	62.10	11.30	6.497	
1,700.00	1,698.07	1,698.17	1,698.07	6.02	6.01	167.83	0.08	20.00	79.20	67.19	12.01	6.593	
1,800.00	1,797.90	1,798.00	1,797.90	6.38	6.36	168.68	0.08	20.00	85.03	72.30	12.73	6.679	
1,900.00	1,897.72	1,900.94	1,900.82	6.74	6.73	169.61	1.14	18.58	89.18	75.72	13.46	6.627	
2,000.00	1,997.54	2,002.43	2,002.19	7.10	7.09	170.79	4.07	14.65	90.29	76.12	14.17	6.372	
2,100.00	2,097.36	2,102.41	2,102.04	7.46	7.44	171.98	7.21	10.46	91.03	76.15	14.88	6.116	
2,200.00	2,197.19	2,202.39	2,201.88	7.82	7.79	173.15	10.34	6.26	91.81	76.22	15.60	5.886	
2,300.00	2,297.01	2,302.37	2,301.72	8.18	8.15	174.29	13.48	2.07	92.63	76.32	16.31	5.679	
2,400.00	2,396.83	2,402.35	2,401.56	8.54	8.50	175.42	16.61	-2.13	93.49	76.46	17.03	5.490	
2,500.00	2,496.65	2,502.33	2,501.41	8.90	8.86	176.52	19.74	-6.32	94.38	76.64	17.74	5.319	
2,600.00	2,596.48	2,602.31	2,601.25	9.26	9.21	177.61	22.88	-10.52	95.31	76.85	18.46	5.162	
2,700.00	2,696.30	2,702.29	2,701.09	9.62	9.57	178.67	26.01	-14.71	96.27	77.09	19.18	5.019	
2,800.00	2,796.12	2,802.27	2,800.93	9.98	9.93	179.71	29.15	-18.91	97.26	77.36	19.90	4.888	
2,900.00	2,895.94	2,902.25	2,900.78	10.34	10.28	-179.27	32.28	-23.10	98.28	77.67	20.62	4.768	
3,000.00	2,995.77	3,002.23	3,000.62	10.70	10.64	-178.27	35.42	-27.30	99.34	78.00	21.33	4.656	
3,100.00	3,095.59	3,102.21	3,100.46	11.06	11.00	-177.29	38.55	-31.49	100.42	78.37	22.05	4.554	
3,200.00	3,195.41	3,202.19	3,200.30	11.42	11.35	-176.33	41.68	-35.69	101.53	78.76	22.77	4.459	
3,300.00	3,295.23	3,302.17	3,300.14	11.78	11.71	-175.40	44.82	-39.88	102.68	79.18	23.49	4.371	
3,400.00	3,395.06	3,402.15	3,399.99	12.14	12.07	-174.48	47.95	-44.08	103.84	79.63	24.21	4.289	
3,500.00	3,494.88	3,502.13	3,499.83	12.50	12.43	-173.59	51.09	-48.27	105.03	80.11	24.93	4.213	
3,600.00	3,594.70	3,602.11	3,599.67	12.86	12.78	-172.72	54.22	-52.47	106.25	80.60	25.65	4.143	
3,700.00	3,694.52	3,702.09	3,699.51	13.22	13.14	-171.86	57.35	-56.66	107.49	81.13	26.37	4.077	
3,800.00	3,794.35	3,802.07	3,799.36	13.58	13.50	-171.03	60.49	-60.86	108.76	81.67	27.09	4.015	
3,900.00	3,894.17	3,902.05	3,899.20	13.94	13.86	-170.21	63.62	-65.05	110.05	82.24	27.81	3.957	
4,000.00	3,993.99	4,002.03	3,999.04	14.30	14.22	-169.42	66.76	-69.25	111.36	82.83	28.53	3.903	
4,100.00	4,093.81	4,102.01	4,098.88	14.67	14.57	-168.64	69.89	-73.44	112.69	83.44	29.25	3.853	
4,200.00	4,193.64	4,201.99	4,198.73	15.03	14.93	-167.88	73.03	-77.64	114.04	84.07	29.97	3.805	
4,300.00	4,293.46	4,301.97	4,298.57	15.39	15.29	-167.14	76.16	-81.83	115.41	84.72	30.69	3.760	
4,400.00	4,393.28	4,401.94	4,398.41	15.75	15.65	-166.42	79.29	-86.03	116.80	85.39	31.41	3.718	
4,500.00	4,493.10	4,501.92	4,498.25	16.11	16.01	-165.71	82.43	-90.22	118.21	86.07	32.13	3.679	
4,600.00	4,592.93	4,601.90	4,598.10	16.47	16.37	-165.02	85.56	-94.42	119.63	86.78	32.85	3.642	
4,700.00	4,692.75	4,701.88	4,697.94	16.83	16.73	-164.35	88.70	-98.62	121.07	87.50	33.57	3.606	
4,800.00	4,792.57	4,801.86	4,797.78	17.19	17.09	-163.69	91.83	-102.81	122.53	88.24	34.29	3.573	
4,900.00	4,892.39	4,901.84	4,897.62	17.55	17.44	-163.05	94.96	-107.01	124.00	88.99	35.01	3.542	
5,000.00	4,992.22	5,001.82	4,997.47	17.91	17.80	-162.42	98.10	-111.20	125.49	89.76	35.73	3.512	

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

Total Directional Anticollision Report



Company:	Coterra Energy	Local Co-ordinate Reference:	Well Sombrero State Com 223H
Project:	Lea County, NM (NAD 83)	TVD Reference:	GE 3739.2' + KB 23' @ 3762.20usft (Cactus 148)
Reference Site:	Sun-Sombrero Pad	MD Reference:	GE 3739.2' + KB 23' @ 3762.20usft (Cactus 148)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Sombrero State Com 223H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	.Total Directional Production DB
Reference Design:	Plan #1	Offset TVD Reference:	Reference Datum

Offset Design: Sun-Sombrero Pad - Sun State Com 223H - OH - Plan #1

Survey Program: 0-MWD+IFR1+MS													Offset Site Error:	0.00 usft
Reference Offset													Offset Well Error:	0.00 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Semi Major Axis			Offset Wellbore Centre		Rule Assigned:				Warning	
				Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
5,100.00	5,092.04	5,101.80	5,097.31	18.27	18.16	-161.81	101.23	-115.40	127.00	90.54	36.45	3.484		
5,200.00	5,191.86	5,201.78	5,197.15	18.63	18.52	-161.21	104.37	-119.59	128.51	91.34	37.17	3.457		
5,300.00	5,291.68	5,301.76	5,296.99	18.99	18.88	-160.63	107.50	-123.79	130.05	92.15	37.90	3.432		
5,400.00	5,391.51	5,401.74	5,396.83	19.35	19.24	-160.06	110.64	-127.98	131.59	92.98	38.62	3.408		
5,500.00	5,491.33	5,501.72	5,496.68	19.71	19.60	-159.50	113.77	-132.18	133.15	93.81	39.34	3.385		
5,600.00	5,591.15	5,601.70	5,596.52	20.07	19.96	-158.96	116.90	-136.37	134.72	94.66	40.06	3.363		
5,700.00	5,690.97	5,701.68	5,696.36	20.43	20.32	-158.43	120.04	-140.57	136.30	95.52	40.78	3.343		
5,800.00	5,790.80	5,801.66	5,796.20	20.80	20.68	-157.91	123.17	-144.76	137.89	96.39	41.50	3.323		
5,900.00	5,890.62	5,901.64	5,896.05	21.16	21.04	-157.40	126.31	-148.96	139.50	97.28	42.22	3.304		
6,000.00	5,990.44	6,001.62	5,995.89	21.52	21.40	-156.91	129.44	-153.15	141.11	98.17	42.94	3.286		
6,100.00	6,090.26	6,101.60	6,095.73	21.88	21.76	-156.42	132.57	-157.35	142.74	99.08	43.66	3.269		
6,200.00	6,190.09	6,201.58	6,195.57	22.24	22.12	-155.95	135.71	-161.54	144.37	99.99	44.38	3.253		
6,300.00	6,289.91	6,301.56	6,295.42	22.60	22.48	-155.49	138.84	-165.74	146.02	100.92	45.10	3.238		
6,400.00	6,389.73	6,401.54	6,395.26	22.96	22.84	-155.03	141.98	-169.93	147.67	101.85	45.82	3.223		
6,500.00	6,489.55	6,501.52	6,495.10	23.32	23.19	-154.59	145.11	-174.13	149.33	102.79	46.54	3.209		
6,600.00	6,589.38	6,601.50	6,594.94	23.68	23.55	-154.16	148.25	-178.32	151.00	103.74	47.26	3.195		
6,700.00	6,689.20	6,701.48	6,694.79	24.04	23.91	-153.74	151.38	-182.52	152.68	104.70	47.98	3.182		
6,800.00	6,789.02	6,801.46	6,794.63	24.40	24.27	-153.32	154.51	-186.71	154.37	105.67	48.70	3.170		
6,900.00	6,888.85	6,901.44	6,894.47	24.76	24.63	-152.92	157.65	-190.91	156.07	106.65	49.42	3.158		
7,000.00	6,988.67	7,001.41	6,994.31	25.12	24.99	-152.52	160.78	-195.10	157.77	107.63	50.14	3.146		
7,100.00	7,088.49	7,101.39	7,094.15	25.48	25.35	-152.13	163.92	-199.30	159.48	108.62	50.86	3.136		
7,200.00	7,188.31	7,201.37	7,194.00	25.85	25.71	-151.75	167.05	-203.49	161.20	109.62	51.58	3.125		
7,300.00	7,288.14	7,301.35	7,293.84	26.21	26.07	-151.38	170.18	-207.69	162.93	110.62	52.30	3.115		
7,400.00	7,387.96	7,401.33	7,393.68	26.57	26.43	-151.02	173.32	-211.88	164.66	111.63	53.02	3.105		
7,500.00	7,487.78	7,501.31	7,493.52	26.93	26.79	-150.66	176.45	-216.08	166.40	112.65	53.75	3.096		
7,600.00	7,587.60	7,601.29	7,593.37	27.29	27.15	-150.32	179.59	-220.27	168.14	113.68	54.47	3.087		
7,700.00	7,687.43	7,701.27	7,693.21	27.65	27.51	-149.97	182.72	-224.47	169.89	114.71	55.19	3.079		
7,800.00	7,787.25	7,801.25	7,793.05	28.01	27.87	-149.64	185.86	-228.67	171.65	115.74	55.91	3.070		
7,900.00	7,887.07	7,901.23	7,892.89	28.37	28.23	-149.31	188.99	-232.86	173.41	116.79	56.63	3.062		
8,000.00	7,986.89	8,001.21	7,992.74	28.73	28.59	-148.99	192.12	-237.06	175.18	117.83	57.35	3.055		
8,100.00	8,086.72	8,101.19	8,092.58	29.09	28.95	-148.68	195.26	-241.25	176.95	118.89	58.07	3.047		
8,200.00	8,186.54	8,201.17	8,192.42	29.45	29.31	-148.37	198.39	-245.45	178.73	119.94	58.79	3.040		
8,300.00	8,286.36	8,301.15	8,292.26	29.81	29.67	-148.07	201.53	-249.64	180.51	121.01	59.51	3.034		
8,400.00	8,386.18	8,401.13	8,392.11	30.17	30.03	-147.77	204.66	-253.84	182.30	122.08	60.23	3.027		
8,500.00	8,486.01	8,501.11	8,491.95	30.54	30.39	-147.48	207.79	-258.03	184.10	123.15	60.95	3.021		
8,600.00	8,585.83	8,601.09	8,591.79	30.90	30.75	-147.19	210.93	-262.23	185.89	124.23	61.67	3.014		
8,700.00	8,685.65	8,701.07	8,691.63	31.26	31.11	-146.91	214.06	-266.42	187.70	125.31	62.39	3.009		
8,800.00	8,785.47	8,801.05	8,791.48	31.62	31.47	-146.64	217.20	-270.62	189.50	126.40	63.11	3.003		
8,900.00	8,885.30	8,901.03	8,891.32	31.98	31.83	-146.37	220.33	-274.81	191.31	127.49	63.83	2.997	SF	
9,000.00	8,985.12	8,990.30	8,980.54	32.34	32.14	-148.40	220.72	-277.34	195.84	131.43	64.41	3.040		
9,100.00	9,084.72	9,071.10	9,061.18	32.70	32.40	-179.85	216.13	-277.64	209.92	145.33	64.59	3.250		
9,200.00	9,181.71	9,136.50	9,125.61	33.06	32.61	-179.85	205.11	-277.55	249.82	185.80	64.02	3.902		
9,300.00	9,273.09	9,188.29	9,175.48	33.40	32.76	-179.84	191.22	-277.44	313.24	250.07	63.16	4.959		
9,400.00	9,356.08	9,224.78	9,209.78	33.71	32.87	-179.82	178.75	-277.34	393.85	331.48	62.37	6.315		
9,500.00	9,428.16	9,250.00	9,232.97	33.97	32.94	-179.75	168.87	-277.26	485.63	423.67	61.96	7.837		
9,600.00	9,487.14	9,250.00	9,232.97	34.19	32.94	-179.33	168.87	-277.26	583.54	522.26	61.28	9.522		
9,700.00	9,531.23	9,250.00	9,232.97	34.39	32.94	-0.66	168.87	-277.26	683.41	622.08	61.33	11.143		
9,800.00	9,559.09	9,250.00	9,232.97	34.58	32.94	-0.20	168.87	-277.26	782.04	720.20	61.85	12.645		
9,900.00	9,569.87	9,250.00	9,232.97	34.74	32.94	-0.12	168.87	-277.26	877.35	814.72	62.63	14.009		
10,000.00	9,570.00	9,224.81	9,209.79	34.88	32.87	-0.10	178.74	-277.34	969.61	906.77	62.84	15.430		

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

Total Directional Anticollision Report



Company:	Coterra Energy	Local Co-ordinate Reference:	Well Sombrero State Com 223H
Project:	Lea County, NM (NAD 83)	TVD Reference:	GE 3739.2' + KB 23' @ 3762.20usft (Cactus 148)
Reference Site:	Sun-Sombrero Pad	MD Reference:	GE 3739.2' + KB 23' @ 3762.20usft (Cactus 148)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Sombrero State Com 223H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	.Total Directional Production DB
Reference Design:	Plan #1	Offset TVD Reference:	Reference Datum

Offset Design: Sun-Sombrero Pad - Sun State Com 223H - OH - Plan #1

Survey Program: 0-MWD+IFR1+MS													Offset Site Error:	0.00 usft
Reference		Offset		Semi Major Axis			Offset Wellbore Centre		Rule Assigned:				Offset Well Error:	0.00 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
10,100.00	9,570.00	9,200.00	9,186.57	35.04	32.80	-0.09	187.46	-277.41	1,063.06	1,000.04	63.02	16.869		
10,200.00	9,570.00	9,200.00	9,186.57	35.22	32.80	-0.09	187.46	-277.41	1,156.89	1,093.26	63.63	18.182		
10,300.00	9,570.00	9,200.00	9,186.57	35.41	32.80	-0.09	187.46	-277.41	1,251.68	1,187.56	64.11	19.522		
10,400.00	9,570.00	9,180.41	9,167.98	35.61	32.74	-0.08	193.62	-277.46	1,346.74	1,282.53	64.22	20.972		
10,500.00	9,570.00	9,171.92	9,159.86	35.84	32.71	-0.08	196.10	-277.48	1,442.40	1,377.95	64.46	22.378		
10,600.00	9,570.00	9,150.00	9,138.73	36.08	32.65	-0.07	201.93	-277.52	1,538.71	1,474.23	64.48	23.863		
10,700.00	9,570.00	9,150.00	9,138.73	36.33	32.65	-0.07	201.93	-277.52	1,634.94	1,570.17	64.77	25.242		
10,800.00	9,570.00	9,150.00	9,138.73	36.59	32.65	-0.07	201.93	-277.52	1,731.60	1,666.58	65.02	26.632		
10,900.00	9,570.00	9,150.00	9,138.73	36.88	32.65	-0.07	201.93	-277.52	1,828.62	1,763.38	65.23	28.031		
11,000.00	9,570.00	9,150.00	9,138.73	37.17	32.65	-0.07	201.93	-277.52	1,925.94	1,860.52	65.42	29.438		
11,100.00	9,570.00	9,150.00	9,138.73	37.48	32.65	-0.07	201.93	-277.52	2,023.53	1,957.93	65.59	30.849		
11,200.00	9,570.00	9,129.55	9,118.83	37.80	32.59	-0.07	206.63	-277.56	2,120.87	2,055.31	65.57	32.347		
11,300.00	9,570.00	9,125.18	9,114.56	38.13	32.57	-0.07	207.54	-277.57	2,218.66	2,152.99	65.68	33.782		
11,400.00	9,570.00	9,121.11	9,110.57	38.48	32.56	-0.07	208.37	-277.57	2,316.61	2,250.83	65.78	35.218		
11,500.00	9,570.00	9,100.00	9,089.81	38.84	32.50	-0.06	212.17	-277.61	2,415.01	2,349.27	65.74	36.735		
11,600.00	9,570.00	9,100.00	9,089.81	39.21	32.50	-0.06	212.17	-277.61	2,513.09	2,447.23	65.86	38.156		
11,700.00	9,570.00	9,100.00	9,089.81	39.59	32.50	-0.06	212.17	-277.61	2,611.32	2,545.34	65.98	39.578		
11,800.00	9,570.00	9,100.00	9,089.81	39.99	32.50	-0.06	212.17	-277.61	2,709.68	2,643.59	66.09	41.002		
11,900.00	9,570.00	9,100.00	9,089.81	40.39	32.50	-0.06	212.17	-277.61	2,808.15	2,741.96	66.19	42.428		
12,000.00	9,570.00	9,100.00	9,089.81	40.81	32.50	-0.06	212.17	-277.61	2,906.73	2,840.45	66.28	43.854		
12,100.00	9,570.00	9,100.00	9,089.81	41.23	32.50	-0.06	212.17	-277.61	3,005.40	2,939.03	66.37	45.281		
12,200.00	9,570.00	9,100.00	9,089.81	41.66	32.50	-0.06	212.17	-277.61	3,104.16	3,037.70	66.46	46.709		
12,300.00	9,570.00	9,100.00	9,089.81	42.11	32.50	-0.06	212.17	-277.61	3,202.99	3,136.45	66.54	48.136		
12,400.00	9,570.00	9,100.00	9,089.81	42.56	32.50	-0.06	212.17	-277.61	3,301.89	3,235.27	66.62	49.563		

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

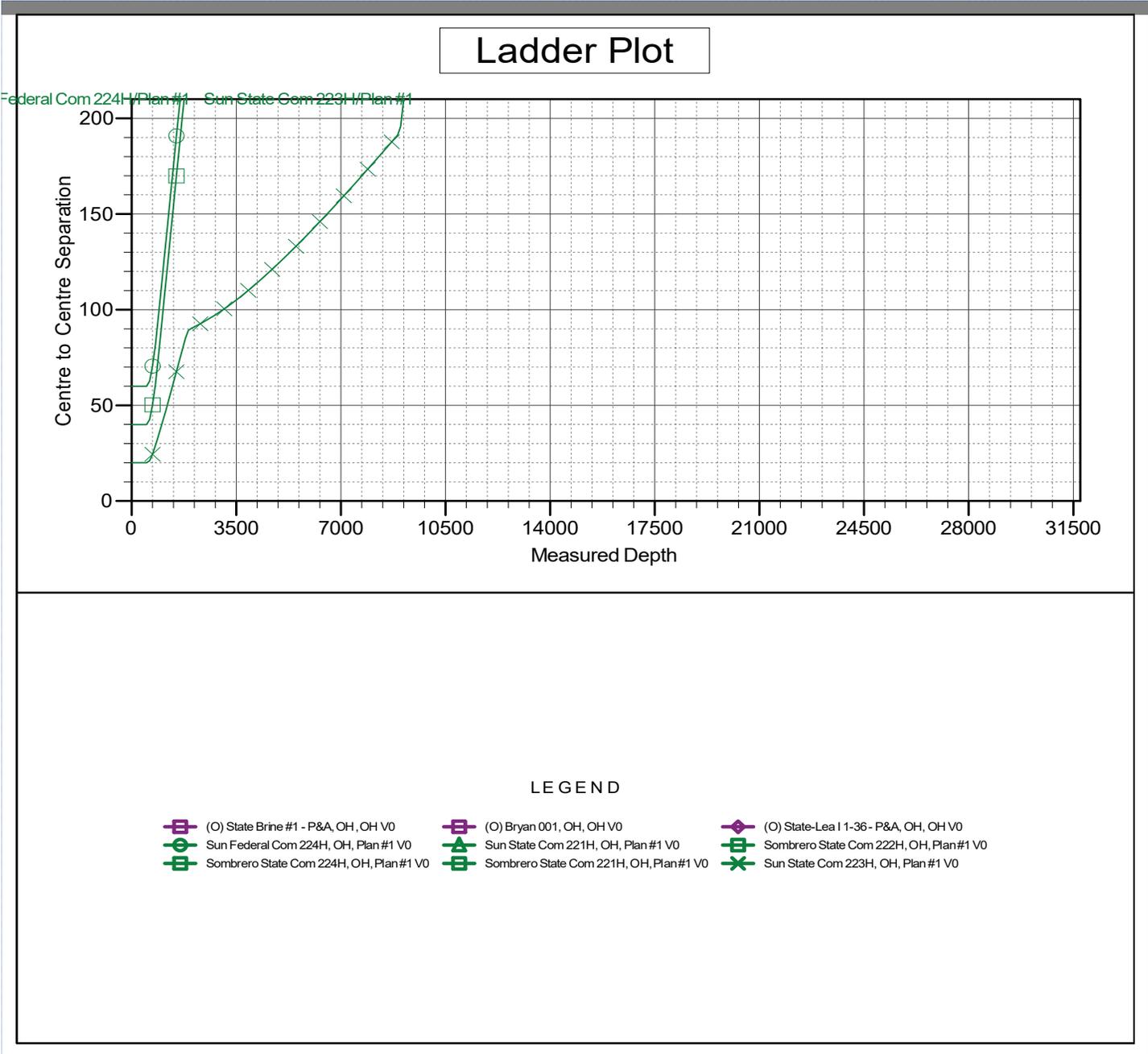
Total Directional Anticollision Report



Company:	Coterra Energy	Local Co-ordinate Reference:	Well Sombrero State Com 223H
Project:	Lea County, NM (NAD 83)	TVD Reference:	GE 3739.2' + KB 23' @ 3762.20usft (Cactus 148)
Reference Site:	Sun-Sombrero Pad	MD Reference:	GE 3739.2' + KB 23' @ 3762.20usft (Cactus 148)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Sombrero State Com 223H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	.Total Directional Production DB
Reference Design:	Plan #1	Offset TVD Reference:	Reference Datum

Reference Depths are relative to GE 3739.2' + KB 23' @ 3762.20usft (Cac
Offset Depths are relative to Offset Datum
Central Meridian is -104.3333333

Coordinates are relative to: Sombrero State Com 223H
Coordinate System is US State Plane 1983, New Mexico Eastern Zone
Grid Convergence at Surface is: 0.50°



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

Total Directional Anticollision Report

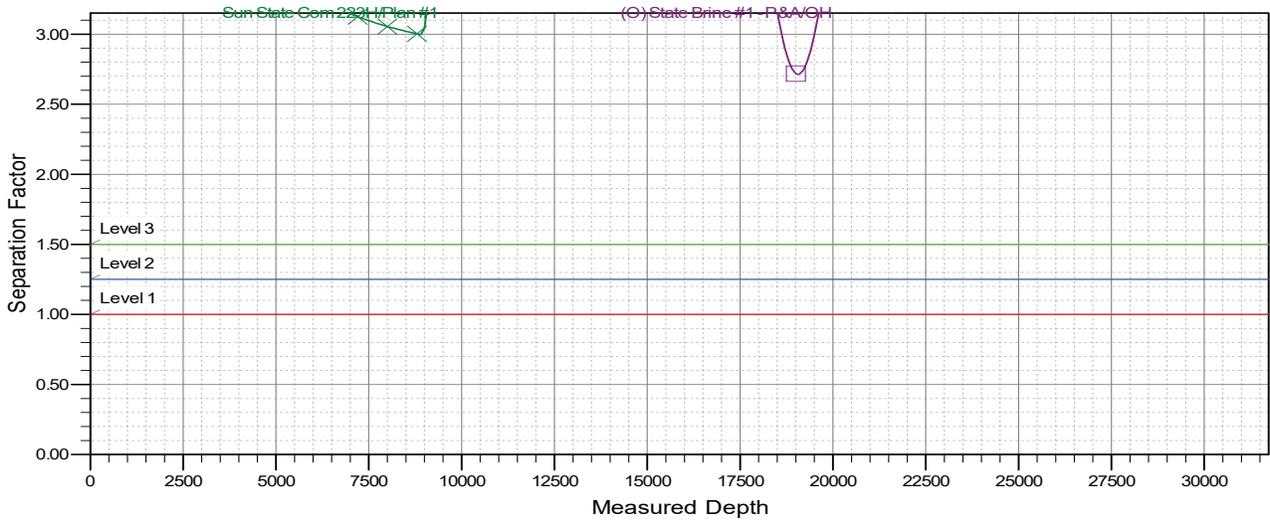


Company:	Coterra Energy	Local Co-ordinate Reference:	Well Sombrero State Com 223H
Project:	Lea County, NM (NAD 83)	TVD Reference:	GE 3739.2' + KB 23' @ 3762.20usft (Cactus 148)
Reference Site:	Sun-Sombrero Pad	MD Reference:	GE 3739.2' + KB 23' @ 3762.20usft (Cactus 148)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Sombrero State Com 223H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	.Total Directional Production DB
Reference Design:	Plan #1	Offset TVD Reference:	Reference Datum

Reference Depths are relative to GE 3739.2' + KB 23' @ 3762.20usft (Cac
Offset Depths are relative to Offset Datum
Central Meridian is -104.333333

Coordinates are relative to: Sombrero State Com 223H
Coordinate System is US State Plane 1983, New Mexico Eastern Zone
Grid Convergence at Surface is: 0.50°

Separation Factor Plot



LEGEND

- (O) State Brine #1 - P&A, OH, OH V0
- (O) Bryan 001, OH, OH V0
- (O) State-Lea 1 1-36- P&A, OH, OH V0
- Sun Federal Com 224H, OH, Plan #1 V0
- Sun State Com 221H, OH, Plan #1 V0
- Sombrero State Com 222H, OH, Plan #1 V0
- Sombrero State Com 224H, OH, Plan #1 V0
- Sombrero State Com 221H, OH, Plan #1 V0
- Sun State Com 223H, OH, Plan #1 V0

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

Coterra: H2S Plan



H2S Drilling Operations Plan

Training

All company and contract personnel admitted on location must be trained by a qualified H2S safety instructor to do the following:

1. Characteristics of H2S
2. Physical effects and hazards
3. Principle and operation of H2S detectors, warning system, and briefing areas
4. Evacuation procedure, routes and first aid
5. Proper use of safety equipment & life support systems
6. Essential personnel meeting Medical Evaluation criteria will receive additional training on the proper use of 30 minute pressure demand air packs.

H2S Detection and Alarm Systems

1. H2S sensors/detectors to be located on the drilling rig floor, in the base of the sub structure/cellar area, on the mud pits in the shale shaker area. Additional H2S detectors may be placed as deemed necessary
2. An audio alarm system will be installed on the derrick floor and in the top doghouse

Windsock and/or wind streamers

1. Windsock at mudpit area should be high enough to be visible
2. Windsock on the rig floor and / or top of doghouse should be high enough to be visible

Condition Flags & Signs

1. Warning signs on access road to location
2. Flags are to be displayed on sign at the entrance to location. Green flag indicates normal safe condition. Yellow flag indicates potential pressure and danger. Red flag indicates

Coterra: H2S Plan

danger (H2S present in dangerous concentration). Only H2S trained and certified personnel admitted to location.

Well Control Equipment

1. See the pressure control section of this submission.

Communication

1. While working under masks, chalkboards will be used for communication
2. Hand signals will be used where chalk board is inappropriate.
3. Two way radio will be used to communicate off location in case emergency help is required. In most cases, cellular telephones will be available at most drilling foreman's trailer or living quarters.

Drillstem Testing

1. No DSTs or cores are planned at this time
2. Drilling contractor supervisor will be required to be familiar with the effects that H2S has on tubular goods and other mechanical equipment.
3. If H2S is encountered, mud system will be altered if necessary to maintain control of the well. A mud gas separator will be brought into service along with H2S scavenger if necessary.

Coterra: H2S Plan

H2S Contingency Plan

Emergency Procedures

In the event of an H2S release, the first responder(s) must:

1. Isolate the area and prevent entry by other persons into the 100 PPM ROE.
2. Evacuate any public places encompassed by the 100 PPM ROE.
3. Be equipped with H2S monitors and air packs in order to control the release.
4. Use the buddy system
5. Take precautions to avoid personal injury during this operation
6. Contact operator and/or local officials to aid in operation. See list of emergency contacts attached.
7. Have received training the detection of H2S, measures for protection against the gas, and equipment used for protection and emergency response

Ignition of the Gas Source

1. Should control of the well be considered lost and ignition considered, take care to protect against exposure to Sulfur Dioxide (SO₂). Intentional ignition must be coordinated with the NMOCD and local officials. Additionally, the NM State Police may become involved. NM State Police shall be the Incident Command on scene of any major release. Take care to protect downwind whenever there is an ignition of the gas

Contacting Authorities

1. Coterra personnel must liaise with local and state agencies to ensure a proper response to a major release. Additionally, the OCD must be notified of the release as soon as possible but no later than 4 hours.
2. Agencies will ask for information such as type and volume of release, wind direction, location of release, etc. Be prepared with all information available including directions to site. The following call list of essential and potential responders has been prepared for use during a release. Coterra's response must be in coordination with the State of New Mexico's "Hazardous Materials Emergency Response Plan" (HMER).

Coterra: H2S Plan

Emergency Contacts

Coterra Energy

Charlie Pritchard: Drilling Operations Manager: 432 – 238 – 7084

Darrell Kelly: Vice President EHS: 281 – 589 – 5795

Third Party

PERMIAN REGION CONTACT NUMBERS					
CALL 911					
Air Ambulance Services					
Reeves County Medical - Pecos, TX		432-447-3551			
Aero Care - Midland, TX		800-627-2376			
Tri State Care Flight- Artesia, NM		800-800-0900			
Air Methods - Hobbs, NM		800-242-6199			
Fire / Police / Medical Care					
Sheriff's Office		Fire Departments		Hospital / Medical Care Facilities	
Andrews County	432-523-5545	Andrews	432-523-3111	Permian Regional Med.	432-523-2200
Reagan County	325-884-2929	Big Lake	325-884-3650	Reagan Memorial Hosp.	325-884-2561
Howard County	432-264-2244	Big Springs	432-264-2303	Scenic Mountain Med Ctr	432-263-1211
Terry County	806-637-2212	Brownfield	806-637-6633		
Crane County	432-558-3571	Crane	432-558-2361	Crane Memorial Hosp.	432-558-3555
Val Verde County	830-774-7513	Del Rio	830-774-8648	Val Verde Regional Med.	830-775-8566
		Denver City	806-592-3516	Yoakum County Hospital	806-592-2121
Pecos County	432-336-3521	Ft Stockton	432-336-8525		
Glasscock County	432-354-2361	Garden City			
Winkler County	432-586-3461	Kernit	432-586-2577	Winkler County Memorial	432-586-5864
		McCamey	432-652-8232	McCamey Hospital	432-652-8626
Loving County	432-377-2411	Mentone			
Irion County	325-835-2551	Mertzton			
Ward County	432-943-6703	Monahans	432-943-2211	Ward Memorial Hospital	432-943-2511
Ector County	432-335-3050	Odessa	432-335-4650	Odessa Regional Hosp.	432-582-8340
Crocket County	325-392-2661	Ozona	325-392-2626		
Reeves County	432-445-4901	Pecos	505-757-6511	Reeves County Hospital	432-447-3551
Yoakum County	806-456-2377	Plains	806-456-2288		
Garza County	806-495-3595	Post			
Upton County	432-693-2422	Rankin			
Coke County	915-453-2717	Robert Lee			
		Roscoe	325-766-3931		
Hockley County	806-894-3126	Levelland	806-894-3155	Covenant Health	806-894-4963
Tom Green County	325-655-8111	San Angelo	325-657-4355	San Angelo Comm. Med.	325-949-9511
Gaines County	432-758-9871	Seminole	432-758-3621	Memorial Hospital	432-758-5811
Terrell County	432-345-2525	Sanderson			
Scurry County	325-573-3551	Snyder	325-573-3546	DM Cogdell Memorial	325-573-6374
Sterling County	325-378-4771	Sterling City			
Nolan County	325-235-5471	Sweetwater	325-235-8130	Rolling Plains Memorial	325-235-1701
Culberson County	432-283-2060	Van Horn		Culberson Hospital	432-283-2760
New Mexico					
Lea County	505-396-3611	Knowles	505-392-7469	Lea Reg Med Ctr	575-492-5000
Eddy County	575-887-7551	Carlsbad	575-885-3125	Carlsbad Medical	575-887-4100
		Artesia	575-746-5050	Artesia Hospital	575-748-3333
Roosevelt County	575-356-4408				
Chaves County	575-624-7590				
Ground Ambulance Services					
Reeves County Medical		Pecos, TX		432-447-3551	

State of New Mexico
 Energy, Minerals and Natural Resources Department

Submit Electronically
 Via E-permitting

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

NATURAL GAS MANAGEMENT PLAN

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

Section 1 – Plan Description Effective May 25, 2021

I. Operator: Coterra Energy Operating Co **OGRID:** 215099 **Date:** 02/10/2026

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

If Other, please describe: _____

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

Well Name	API	ULSTR	Footages	Anticipated Oil BBL/D	Anticipated Gas MCF/D	Anticipated Produced Water BBL/D
Sombrero State Com 223H	NWNE Sec 13 T19S, R35E	380 FNL/1368 FWL	1233	740	4920	

IV. Central Delivery Point Name Chile/ Yeti CTB (New) _____ [See 19.15.27.9(D)(1) NMAC]

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

Well Name	API	Spud Date	TD Reached Date	Completion Commencement Date	Initial Flow Back Date	First Production Date
Sombrero State Com 223H		8/22/26	11/13/26	12/6/26	4/8/27	4/8/27

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

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

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

Section 2 – Enhanced Plan

EFFECTIVE APRIL 1, 2022

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

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

IX. Anticipated Natural Gas Production:

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

X. Natural Gas Gathering System (NGGS):

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

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

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

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

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

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

Section 3 - Certifications

Effective May 25, 2021

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

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

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

If Operator checks this box, Operator will select one of the following:

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

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

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

Section 4 - Notices

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

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

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

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

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

Signature:	<i>Shelly Bowen</i>
Printed Name:	<input type="text" value="Shelly Bowen"/>
Title:	<input type="text" value="Sr. Regulatory Analyst"/>
E-mail Address:	<input type="text" value="shelly.bowen@coterra.com"/>
Date:	2/10/2026
Phone:	<input type="text" value="432/620-1644"/>

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

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

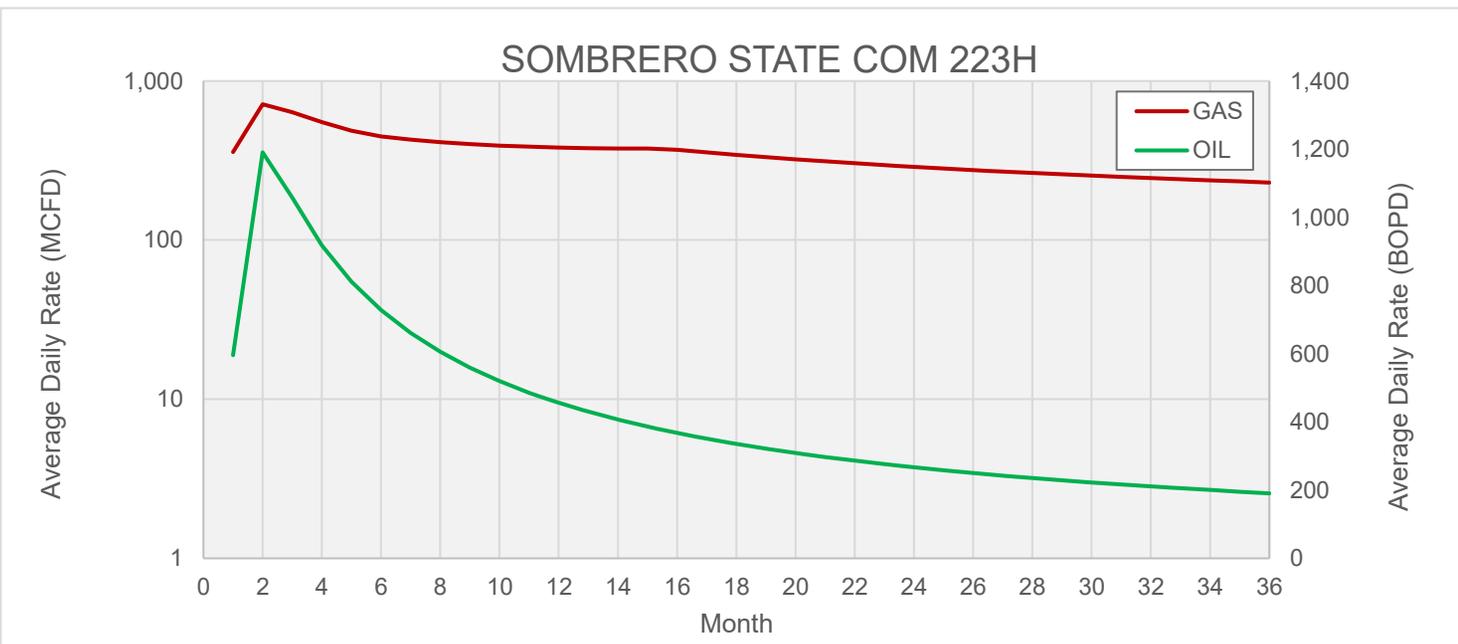
From State of New Mexico, Natural Gas Management Plan

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

XEC Standard Response

Standard facility gas process flow begins at the inlet separator. These vessels are designed based off of forecasted rates and residence times in accordance with, and often greater than, API 12J. The separated gas is then routed to an additional separation vessel (ie sales scrubber) in order to extract liquids that may have carried over or developed due to the decrease in pressure. The sales scrubber is sized based on API 521. From the sales scrubber, the gas leaves the facility and enters the gas midstream gathering network.

	SOMBRERO STATE COM 223H	SOMBRERO STATE COM 223H
Labels	GAS MCFD	OIL BOPD
1	357	596
2	715	1,191
3	635	1,058
4	550	917
5	487	811
6	448	728
7	428	661
8	413	606
9	401	559
10	392	520
11	386	486
12	381	456
13	378	430
14	377	407
15	376	386
16	369	367
17	355	350
18	343	335
19	332	321
20	322	309
21	312	297
22	304	286
23	296	276
24	288	267
25	282	258
26	275	250
27	269	242
28	264	235
29	259	228
30	254	222
31	250	216
32	245	210
33	241	205
34	238	200
35	234	195
36	231	191



Cimarex

VII. Operational Practices

Cimarex values the sustainable development of New Mexico's natural resources. Venting and flaring of natural gas is a source of waste in the industry, and Cimarex will ensure that its values are aligned with those of NMOCD. As such, Cimarex plans to take pointed steps to ensure compliance with Subsection A through F of 19.15.27.8 NMAC.

Specifically, below are the steps Cimarex will plan to follow under routine well commissioning and operations.

1. Capture or combust natural gas during drilling operations where technically feasible, using the best industry practices and control technologies.
 - a. All flares during these operations will be a minimum of 100ft away from the nearest surface-hole location.
2. All gas present during post-completion drill-out and flow back will be routed through separation equipment, and, if technically feasible, flare unsellable vapors rather than vent. Lastly, formal sales separator commissioning to process well-stream fluids and send gas to a gas flow line/collection system or use the gas for on-site fuel or beneficial usage, gas as soon as is safe and technically feasible.
3. Cimarex will ensure the flare or combustion equipment is properly sized to handle expected flow rates, ensure this equipment is equipped with an automatic or continuous ignition source, and ensure this equipment is designed for proper combustion efficiency.
4. If Cimarex must flare because gas is not meeting pipeline specifications, Cimarex will limit flaring to <60 days, analyze gas composition at least twice per week, and route gas into a gathering pipeline as soon as pipeline specifications are met.
5. Under routine production operations, Cimarex will not flare/vent unless:
 - a. Venting or flaring occurs due to an emergency or equipment malfunction.
 - b. Venting or flaring occurs as a result of unloading practices, and an operator is onsite (or within 30 minutes of drive time and posts contact information at the wellsite) until the end of unloading practice.
 - c. The venting or flaring occurs during automated plungerlift operations, in which case the Cimarex operator will work to optimize the plungerlift system to minimize venting/flaring.
 - d. The venting or flaring occurs during downhole well maintenance, in which case Cimarex will work to minimize venting or flaring operations to the extent that it does not pose a risk to safe operations.
 - e. The well is an exploratory well, the division has approved the well as an exploratory well, venting or flaring is limited to 12 months, as approved by the division, and venting/flaring does not cause Cimarex to breach its State-wide 98% gas capture requirement.
 - f. Venting or flaring occurs because the stock tanks or other low-pressure vessels are being gauged, sampled, or liquids are being loaded out.
 - g. The venting or flaring occurs because pressurized vessels are being maintained and are being blown-down or depressurized.
 - h. Venting or flaring occurs as a result of normal dehydration unit operations.

- i. Venting or flaring occurs as a result of bradenhead testing.
 - j. Venting or flaring occurs as a result of normal compressor operations, including general compressor operations, compressor engines and turbines.
 - k. Venting or flaring occurs as a result of a packer leakage test.
 - l. Venting or flaring occurs as a result of a production test lasting less than 24 hours unless otherwise approved by the division.
 - m. Venting or flaring occurs as a result of new equipment commissioning and is necessary to purge impurities from the pipeline or production equipment.
6. Cimarex will maintain its equipment in accordance with its Operations and Maintenance Program, to ensure venting or flaring events are minimized and that equipment is properly functioning.
7. Cimarex will install automatic tank gauging equipment on all production facilities constructed after May 25, 2021, to ensure minimal emissions from tank gauging practices.
8. By November 25, 2022, all Cimarex facilities equipped with flares or combustors will be equipped with continuous pilots or automatic igniters, and technology to ensure proper function, i.e. thermocouple, fire-eye, etc...
9. Cimarex will perform AVO (audio, visual, olfactory) facility inspections in accordance with NMOCD requirements. Specifically, Cimarex will:
 - a. Perform weekly inspections during the first year of production, and so long as production is greater than 60 MCFD.
 - b. If production is less than 60 MCFD, Cimarex will perform weekly AVO inspections when an operator is present on location, and inspections at least once per calendar month with at least 20 calendar days between inspections.
10. Cimarex will measure or estimate the volume of vented, flared or beneficially used natural gas, regardless of the reason or authorization for such venting or flaring.
11. On all facilities constructed after May 25, 2021, Cimarex will install metering where feasible and in accordance with available technology and best engineering practices, in an effort to measure how much gas could have been vented or flared.
 - a. In areas where metering is not technically feasible, such as low-pressure/low volume venting or flaring applications, engineering estimates will be used such that the methodology could be independently verified.
12. Cimarex will fulfill the division's requirements for reporting and filing of venting or flaring that exceeds 50 MCF in volume or last eight hours or more cumulatively within any 24-hour period.

VIII. Best Management Practices to minimize venting during active and planned maintenance

Cimarex strives to ensure minimal venting occurs during active and planned maintenance activities. Below is a description of common maintenance practices, and the steps Cimarex takes to limit venting exposure.

- **Workovers:**
 - Always strive to kill well when performing downhole maintenance.
 - If vapors or trapped pressure is present and must be relieved then:
 - Initial blowdown to production facility:
 - Route vapors to LP flare if possible/applicable
 - Blowdown to portable gas buster tank:
 - Vent to existing or portable flare if applicable.

- **Stock tank servicing:**
 - Minimize time spent with thief hatches open.
 - When cleaning or servicing via manway, suck tank bottoms to ensure minimal volatiles exposed to atmosphere.
 - Connect vacuum truck to low pressure flare while cleaning bottoms to limit venting.
 - Isolate the vent lines and overflows on the tank being serviced from other tanks.

- **Pressure vessel/compressor servicing and associated blowdowns:**
 - Route to flare where possible.
 - Blow vessel down to minimum available pressure via pipeline, prior to venting vessel.
 - Preemptively changing anodes to reduce failures and extended corrosion related servicing.
 - When cleaning or servicing via manway, suck vessel bottoms to ensure minimal volatiles exposed to atmosphere.

- **Flare/combustor maintenance:**
 - Minimize downtime by coordinating with vendor and Cimarex staff travel logistics.
 - Utilizing preventative and predictive maintenance programs to replace high wear components before failure.
 - Because the flare/combustor is the primary equipment used to limit venting practices, ensure flare/combustor is properly maintained and fully operational at all times via routine maintenance, temperature telemetry, onsite visual inspections.

The Cimarex expectation is to limit all venting exposure. Equipment that may not be listed on this document is still expected to be maintained and associated venting during such maintenance minimized.