

Well Name: SOUTHERN HILLS 32-29 FEDERAL COM	Well Location: T25S / R27E / SEC 32 / SESW / 32.081286 / -104.215835	County or Parish/State: EDDY / NM
Well Number: 3H	Type of Well: CONVENTIONAL GAS WELL	Allottee or Tribe Name:
Lease Number: NMNM114348	Unit or CA Name:	Unit or CA Number:
US Well Number: 3001549514	Operator: CIMAREX ENERGY COMPANY	

Notice of Intent

Sundry ID: 2776762

Type of Submission: Notice of Intent

Type of Action: APD Change

Date Sundry Submitted: 03/13/2024

Time Sundry Submitted: 12:22

Date proposed operation will begin: 05/01/2024

Procedure Description: Cimarex Energy Company respectfully requests the following drilling and directional changes be made to the existing and approved APD for the following well: Southern Hills Federal Com 3H (API 30-015-49514) 1. Casing Design Change from previously approved APD, from Liner to Long String 2. New bottom hole location from previously approved APD from 100 FNL 1650 FWL to 100 FNL 2112 FWL 3. New TVD from previously approved APD from 9,123' to 7903' 4. New MD from previously approved APD from 18,529' to 17,752' 5. New producing zone/pool code from Purple Sage Wolfcamp (Gas)/ 98220 to WC-015 G-03 S252636M; BONE SPRING/97818 6. New Formation from previously approved APD, from Wolfcamp to 3rd Bone Spring Carb See attached.

NOI Attachments

Procedure Description

SOUTHERN_HILLS_32_29_FEDERAL_COM_3H_Sundry_Submittal_03132024_20241111075145.pdf

Received by OCD: 4/3/2025 9:27:09 AM

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Conditions of Approval

Additional

32_25_27_N_Sundry_ID_2776762_Southern_Hills_32_29_Federal_Com_3H_Eddy_NM114348_Cimarex_Energy_Company_13_22h_11_14_2024_LV_20241115083422.pdf

Southern_Hills_32_29_Federal_Com_3H_Dr_COA_20241115083422.pdf

Operator

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

Operator Electronic Signature: SHELLY BOWEN

Signed on: NOV 11, 2024 07:51 AM

Name: CIMAREX ENERGY COMPANY

Title: Regulatory Analyst

Street Address: 6001 DEAUVILLE BLVD STE 300N

City: MIDLANDState: TX

Phone: (432) 620-1644

Email address: DL_PBUREGULATORY@COTERRA.COM

Field

Representative Name:

Street Address:

City:State:Zip:

Phone:

Email address:

BLM Point of Contact

BLM POC Name: CHRISTOPHER WALLS

BLM POC Title: Petroleum Engineer

BLM POC Phone: 5752342234

BLM POC Email Address: cwalls@blm.gov

Disposition: Approved

Disposition Date: 11/26/2024

Signature: Chris Walls

Form 3160-5 (June 2019)	UNITED STATES DEPARTMENT OF THE INTERIOR BUREAU OF LAND MANAGEMENT	FORM APPROVED OMB No. 1004-0137 Expires: October 31, 2021
SUNDRY NOTICES AND REPORTS ON WELLS Do not use this form for proposals to drill or to re-enter an abandoned well. Use Form 3160-3 (APD) for such proposals.		5. Lease Serial No.
		6. If Indian, Allottee or Tribe Name

SUBMIT IN TRIPLICATE - Other instructions on page 2		7. If Unit of CA/Agreement, Name and/or No.
1. Type of Well ☐ Oil Well ☐ Gas Well ☐ Other		8. Well Name and No.
2. Name of Operator		9. API Well No.
3a. Address	3b. Phone No. (include area code)	10. Field and Pool or Exploratory Area
4. Location of Well (Footage, Sec., T.,R.,M., or Survey Description)		11. Country or Parish, State

12. CHECK THE APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT OR OTHER DATA				
TYPE OF SUBMISSION	TYPE OF ACTION			
☐ Notice of Intent	☐ Acidize	☐ Deepen	☐ Production (Start/Resume)	☐ Water Shut-Off
	☐ Alter Casing	☐ Hydraulic Fracturing	☐ Reclamation	☐ Well Integrity
☐ Subsequent Report	☐ Casing Repair	☐ New Construction	☐ Recomplete	☐ Other
	☐ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon	
☐ Final Abandonment Notice	☐ Convert to Injection	☐ Plug Back	☐ Water Disposal	

13. Describe Proposed or Completed Operation: Clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recompleate horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be perfonned or provide the Bond No. on file with BLM/BIA. Required subsequent reports must be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompletion in a new interval, a Form 3160-4 must be filed once testing has been completed. Final Abandonment Notices must be filed only after all requirements, including reclamation, have been completed and the operator has detennined that the site is ready for final inspection.)

14. I hereby certify that the foregoing is true and correct. Name (Printed/Typed)		
	Title	
Signature	Date	

THE SPACE FOR FEDERAL OR STATE OFFICE USE		
Approved by	Title	Date
Conditions of approval, if any, are attached. Approval of this notice does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.	Office	

Title 18 U.S.C Section 1001 and Title 43 U.S.C Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

(Instructions on page 2)

GENERAL INSTRUCTIONS

This form is designed for submitting proposals to perform certain well operations and reports of such operations when completed as indicated on Federal and Indian lands pursuant to applicable Federal law and regulations. Any necessary special instructions concerning the use of this form and the number of copies to be submitted, particularly with regard to local area or regional procedures and practices, are either shown below, will be issued by or may be obtained from the local Federal office.

SPECIFIC INSTRUCTIONS

Item 4 - Locations on Federal or Indian land should be described in accordance with Federal requirements. Consult the local Federal office for specific instructions.

Item 13: Proposals to abandon a well and subsequent reports of abandonment should include such special information as is required by the local Federal office. In addition, such proposals and reports should include reasons for the abandonment; data on any former or present productive zones or other zones with present significant fluid contents not sealed off by cement or otherwise; depths (top and bottom) and method of placement of cement plugs; mud or other material placed below, between and above plugs; amount, size, method of parting of any casing, liner or tubing pulled and the depth to the top of any tubing left in the hole; method of closing top of well and date well site conditioned for final inspection looking for approval of the abandonment. If the proposal will involve **hydraulic fracturing operations**, you must comply with 43 CFR 3162.3-3, including providing information about the protection of usable water. Operators should provide the best available information about all formations containing water and their depths. This information could include data and interpretation of resistivity logs run on nearby wells. Information may also be obtained from state or tribal regulatory agencies and from local BLM offices.

NOTICES

The privacy Act of 1974 and the regulation in 43 CFR 2.48(d) provide that you be furnished the following information in connection with information required by this application.

AUTHORITY: 30 U.S.C. 181 et seq., 351 et seq., 25 U.S.C. 396; 43 CFR 3160.

PRINCIPAL PURPOSE: The information is used to: (1) Evaluate, when appropriate, approve applications, and report completion of subsequent well operations, on a Federal or Indian lease; and (2) document for administrative use, information for the management, disposal and use of National Resource lands and resources, such as: (a) evaluating the equipment and procedures to be used during a proposed subsequent well operation and reviewing the completed well operations for compliance with the approved plan; (b) requesting and granting approval to perform those actions covered by 43 CFR 3162.3-2, 3162.3-3, and 3162.3-4; (c) reporting the beginning or resumption of production, as required by 43 CFR 3162.4-1(c) and (d) analyzing future applications to drill or modify operations in light of data obtained and methods used.

ROUTINE USES: Information from the record and/or the record will be transferred to appropriate Federal, State, local or foreign agencies, when relevant to civil, criminal or regulatory investigations or prosecutions in connection with congressional inquiries or to consumer reporting agencies to facilitate collection of debts owed the Government.

EFFECT OF NOT PROVIDING THE INFORMATION: Filing of this notice and report and disclosure of the information is mandatory for those subsequent well operations specified in 43 CFR 3162.3-2, 3162.3-3, 3162.3-4.

The Paperwork Reduction Act of 1995 requires us to inform you that:

The BLM collects this information to evaluate proposed and/or completed subsequent well operations on Federal or Indian oil and gas leases.

Response to this request is mandatory.

The BLM would like you to know that you do not have to respond to this or any other Federal agency-sponsored information collection unless it displays a currently valid OMB control number.

BURDEN HOURS STATEMENT: Public reporting burden for this form is estimated to average 8 hours per response, including the time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding the burden estimate or any other aspect of this form to U.S. Department of the Interior, Bureau of Land Management (1004-0137), Bureau Information Collection Clearance Officer (WO-630), 1849 C St., N.W., Mail Stop 401 LS, Washington, D.C. 20240

Additional Information

Location of Well

0. SHL: SESW / 827 FSL / 1577 FWL / TWSP: 25S / RANGE: 27E / SECTION: 32 / LAT: 32.081286 / LONG: -104.215835 (TVD: 0 feet, MD: 0 feet)

PPP: SESW / 827 FSL / 1650 FWL / TWSP: 25S / RANGE: 27E / SECTION: 32 / LAT: 32.081285 / LONG: -104.215599 (TVD: 8748 feet, MD: 8753 feet)

BHL: NENW / 100 FNL / 1650 FWL / TWSP: 25S / RANGE: 27E / SECTION: 29 / LAT: 32.107893 / LONG: -104.215241 (TVD: 9123 feet, MD: 18529 feet)

CONFIDENTIAL

32-25-27-N Sundry ID 2776762 Southern Hills 32-29 Federal Com 3H Eddy NM114348 Cimarex Energy Company 13-22h 11-14-2024 LV

Southern Hills 32-29 Federal Com 3H

13 3/8	surface csg in a		17 1/2	inch hole.		Design Factors				Surface		
Segment	#/ft	Grade		Coupling	Joint	Collapse	Burst	Length	B@s	a-B	a-C	Weight
"A"	48.00		j 55	stc	15.03	2.85	2.1	600	10	3.57	5.80	28,800
"B"				stc				0				0
w/8.4#/g mud, 30min Sfc Csg Test psig: 1,397				Tail Cmt	does not	circ to sfc.		Totals:	600			28,800
Comparison of Proposed to Minimum Required Cement Volumes												
Hole	Annular	1 Stage	1 Stage	Min	1 Stage	Drilling	Calc	Req'd				
Size	Volume	Cmt Sx	CuFt Cmt	Cu Ft	% Excess	Mud Wt	MASP	BOPE	Min Dist			
17 1/2	0.6946	377	574	#N/A	#N/A	8.33	664	2M	Hole-Cplg			
1.56												
Site plot (pipe racks 3 or 4) as per D, D 1, D 2, D 4 - not found												

9 5/8		casing inside the		13 3/8		Design Factors				Int 1		
Segment	#/ft	Grade		Coupling	Joint	Collapse	Burst	Length	B@s	a-B	a-C	Weight
"A"	36.00		j 55	ltc	5.97	1.79	0.87	2,109	3	1.54	3.04	75,924
"B"								0				0
w/8.4#/g mud, 30min Sfc Csg Test psig: 1,500								Totals:	2,109			75,924
The cement volume(s) are intended to achieve a top of								0	ft from surface or a		600	overlap.
Hole Size	Annular Volume	1 Stage Cmt Sx	1 Stage CuFt Cmt	Min Cu Ft	1 Stage % Excess	Drilling Mud Wt	Calc MASP	Req'd BOPE				Min Dist Hole-Cplg
12 1/4	0.3132	515	905	699	30	10.30	2285	3M				0.81
r D V Tool(s):							sum of sx	Σ CuFt				Σ%excess
t by stage % :							#VALUE!	#VALUE!				30
Class 'C' tail cmt yld > 1.35												
Burst Frac Gradient(s) for Segment(s): A, B, C, D = 1.67, b, c, d All > 0.70, OK.												

5 1/2		casing inside the		9 5/8		Design Factors				Prod 1		
Segment	#/ft	Grade		Coupling	Joint	Collapse	Burst	Length	B@s	a-B	a-C	Weight
"A"	17.00		p 110	ltc	3.31	1.99	2.64	7,366	3	4.66	3.51	125,222
"B"	17.00		l 80	btc	43.49	1.56	1.92	10,386	2	3.39	2.75	176,562
"C"								0				0
"D"								0				0
w/8.4#/g mud, 30min Sfc Csg Test psig: 1,621								Totals:	17,752	301,784		
The cement volume(s) are intended to achieve a top of 1909 ft from surface or a 200' overlap.												
Hole Size	Annular Volume	1 Stage Cmt Sx	1 Stage CuFt Cmt	Min Cu Ft	1 Stage % Excess	Drilling Mud Wt	Calc MASP	Req'd BOPE	Min Dist Hole-Cplg			
8 1/2	0.2291	3752	5461	3637	50	9.80			1.23			
Class 'C' tail cmt yld > 1.35												

#N/A											
0	5 1/2			Design Factors				<Choose Casing>			
Segment	#/ft	Grade	Coupling	#N/A	Collapse	Burst	Length	B@s	a-B	a-C	Weight
"A"			0.00				0				0
"B"			0.00				0				0
w/8.4#/g mud, 30min Sfc Csg Test psig:							Totals:	0			0
Cmt vol calc below includes this csg, TOC intended				#N/A	ft from surface or a		#N/A				overlap.
Hole Size	Annular Volume	1 Stage Cmt Sx	1 Stage CuFt Cmt	Min Cu Ft	1 Stage % Excess	Drilling Mud Wt	Calc MASP	Req'd BOPE			Min Dist Hole-Cplg
0		#N/A	#N/A	0	#N/A						
#N/A Capitan Reef est top XXXX.											

**PECOS DISTRICT
DRILLING CONDITIONS OF APPROVAL**

OPERATOR'S NAME:	Cimarex Energy Company
LOCATION:	Section 32, T.25 S., R.27 E., NMPM
COUNTY:	Eddy County, New Mexico

WELL NAME & NO.:	Southern Hills 32-29 Federal Com 3H
ATS/API ID:	3001549514
APD ID:	10400068085
Sundry ID:	2776762

COA

H2S	No		
Potash	None	None	
Cave/Karst Potential	High		
Cave/Karst Potential	☐ Critical		
Variance	☒ None	☒ Flex Hose	☒ Other
Wellhead	Conventional and Multibowl		
Other	☐ 4 String ☐ 5 String	Capitan Reef None	☐ WIPP
Other	Pilot Hole None	☐ Open Annulus	
Cementing	Contingency Squeeze None	Echo-Meter None	Primary Cement Squeeze None
Special Requirements	☐ Water Disposal/Injection	☒ COM	☐ Unit
Special Requirements	☐ Batch Sundry	Waste Prevention None	
Special Requirements Variance	☐ Break Testing	☐ Offline Cementing	☐ Casing Clearance

A. HYDROGEN SULFIDE

Hydrogen Sulfide (H₂S) monitors shall be installed prior to drilling out the surface shoe. If H₂S is detected in concentrations greater than 100 ppm, the Hydrogen Sulfide area shall meet **43 CFR part 3170 Subpart 3176**, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, provide measured values and formations to the BLM.

B. CASING

1. The **13-3/8** inch surface casing shall be set at approximately **600 feet** (a minimum of **70 feet (Eddy County)** into the Rustler Anhydrite and above the salt when present, and below usable fresh water) and cemented to the surface. The surface hole shall be **17 1/2** inch in diameter.
 - a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.
 - b. Wait on cement (WOC) time for a primary cement job will be a minimum of **8 hours** or 500 pounds compressive strength, whichever is greater. (This is to include the lead cement)
 - c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.
 - d. If cement falls back, remedial cementing will be done prior to drilling out that string.
2. The minimum required fill of cement behind the **9-5/8** inch intermediate casing is:
 - Cement to surface. If cement does not circulate see B.1.a, c-d above.
Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst or potash.
 - ❖ In High Cave/Karst Areas if cement does not circulate to surface on the first two casing strings, the cement on the 3rd casing string must come to surface.
3. The minimum required fill of cement behind the **5-1/2** inch production casing is:
 - Cement should tie-back at least **200 feet** into previous casing string. Operator shall provide method of verification.
Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst or potash.

C. PRESSURE CONTROL

1. Variance approved to use flex line from BOP to choke manifold. Manufacturer's specification to be readily available. No external damage to flex line. Flex line to be installed as straight as possible (no hard bends).'
- 2.

Option 1:

- a. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **3000 (3M)** psi.
- b. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the **9-5/8** inch intermediate casing shoe shall be **5000 (5M)** psi.

Option 2:

Operator has proposed a multi-bowl wellhead assembly. This assembly will only be tested when installed on the **13-3/8** inch surface casing. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **5000 (5M)** psi.

- a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
- b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
- c. Manufacturer representative shall install the test plug for the initial BOP test.
- d. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.
- e. Whenever any seal subject to test pressure is broken, all the tests in 43 CFR 3172.6(b)(9) must be followed.

D. SPECIAL REQUIREMENT (S)

Communitization Agreement

- The operator will submit a Communitization Agreement to the Santa Fe Office, 301 Dinosaur Trail Santa Fe, New Mexico 87508, at least 90 days before the anticipated date of first production from a well subject to a spacing order issued by the New Mexico Oil Conservation Division. The Communitization Agreement will include the signatures of all working interest owners in all Federal and Indian leases subject to the Communitization Agreement (i.e., operating rights owners and lessees of record),

or certification that the operator has obtained the written signatures of all such owners and will make those signatures available to the BLM immediately upon request.

- The operator will submit an as-drilled survey well plat of the well completion, but are not limited to, those specified in **43 CFR part 3170 Subpart 3171**
- If the operator does not comply with this condition of approval, the BLM may take enforcement actions that include, but are not limited to, those specified in 43 CFR 3163.1.
- In addition, the well sign shall include the surface and bottom hole lease numbers. When the Communitization Agreement number is known, it shall also be on the sign.

GENERAL REQUIREMENTS

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

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

☒ Eddy County

EMAIL or call the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220,

BLM_NM_CFO_DrillingNotifications@BLM.GOV

(575) 361-2822

1. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval.
 - a. In the event the operator has proposed to drill multiple wells utilizing a skid/walking rig. Operator shall secure the wellbore on the current well, after installing and testing the wellhead, by installing a blind flange of like pressure rating to the wellhead and a pressure gauge that can be monitored while drilling is performed on the other well(s).
 - b. When the operator proposes to set surface casing with Spudder Rig
 - Notify the BLM when moving in and removing the Spudder Rig.
 - Notify the BLM when moving in the 2nd Rig. Rig to be moved in within 90 days of notification that Spudder Rig has left the location.
 - BOP/BOPE test to be conducted per **43 CFR part 3170 Subpart 3172** as soon as 2nd Rig is rigged up on well.
2. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works are located, this does not include the dog house or stairway area.

A. CASING

1. Changes to the approved APD casing program need prior approval if the items substituted are of lesser grade or different casing size or are Non-API. The Operator can exchange the components of the proposal with that of superior strength (i.e. changing from J-55 to N-80, or from 36# to 40#). Changes to the approved cement program need prior approval if the altered cement plan has less volume or strength or

if the changes are substantial (i.e. Multistage tool, ECP, etc.). The initial wellhead installed on the well will remain on the well with spools used as needed.

2. Wait on cement (WOC) for Potash Areas: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi for all cement blends of both lead and tail cement, 2) until cement has been in place at least 8 hours. WOC time will be recorded in the driller's log. The casing integrity test can be done (prior to the cement setting up) immediately after bumping the plug.
3. Wait on cement (WOC) for Water Basin: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi at the shoe, 2) until cement has been in place at least 8 hours. WOC time will be recorded in the driller's log. See individual casing strings for details regarding lead cement slurry requirements. The casing integrity test can be done (prior to the cement setting up) immediately after bumping the plug.
4. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. Have well specific cement details onsite prior to pumping the cement for each casing string.
5. No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.
6. On that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Formation at the shoe shall be tested to a minimum of the mud weight equivalent anticipated to control the formation pressure to the next casing depth or at total depth of the well. This test shall be performed before drilling more than 20 feet of new hole.
7. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.
8. Whenever a casing string is cemented in the R-111-P potash area, the NMOCD requirements shall be followed.

B. PRESSURE CONTROL

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in **43 CFR part 3170 Subpart 3172 and API STD 53 Sec. 5.3.**

2. If a variance is approved for a flexible hose to be installed from the BOP to the choke manifold, the following requirements apply: The flex line must meet the requirements of API 16C. Check condition of flexible line from BOP to choke manifold, replace if exterior is damaged or if line fails test. Line to be as straight as possible with no hard bends and is to be anchored according to Manufacturer's requirements. The flexible hose can be exchanged with a hose of equal size and equal or greater pressure rating. Anchor requirements, specification sheet and hydrostatic pressure test certification matching the hose in service, to be onsite for review. These documents shall be posted in the company man's trailer and on the rig floor.
3. 5M or higher system requires an HCR valve, remote kill line and annular to match. The remote kill line is to be installed prior to testing the system and tested to stack pressure.
4. If the operator has proposed a multi-bowl wellhead assembly in the APD. The following requirements must be met:
 - a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
 - b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
 - c. Manufacturer representative shall install the test plug for the initial BOP test.
 - d. Whenever any seal subject to test pressure is broken, all the tests in 43 CFR 3172.6(b)(9) must be followed.
 - e. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.
5. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.
 - a. In a water basin, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. The casing cut-off and BOP installation can be initiated four hours after installing the slips, which will be approximately six hours after bumping the plug. For those casing strings not using slips, the minimum wait time before cut-off is eight hours after bumping the plug. BOP/BOPE testing can begin after cut-off or once cement reaches 500 psi compressive strength (including lead cement), whichever is greater. However, if the float does not hold, cut-off cannot be initiated until cement reaches 500 psi compressive strength (including lead when specified).
 - b. In potash areas, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been

done. For all casing strings, casing cut-off and BOP installation can be initiated at twelve hours after bumping the cement plug. The BOPE test can be initiated after bumping the cement plug with the casing valve open. (only applies to single stage cement jobs, prior to the cement setting up.)

- c. The tests shall be done by an independent service company utilizing a test plug not a cup or J-packer and can be initiated immediately with the casing valve open. The operator also has the option of utilizing an independent tester to test without a plug (i.e. against the casing) pursuant to **43 CFR part 3170 Subpart 3172** with the pressure not to exceed 70% of the burst rating for the casing. Any test against the casing must meet the WOC time for 8 hours or 500 pounds compressive strength, whichever is greater, prior to initiating the test (see casing segment as lead cement may be critical item).
- d. The test shall be run on a 5000 psi chart for a 2-3M BOP/BOP, on a 10000 psi chart for a 5M BOP/BOPE and on a 15000 psi chart for a 10M BOP/BOPE. If a linear chart is used, it shall be a one hour chart. A circular chart shall have a maximum 2 hour clock. If a twelve hour or twenty-four hour chart is used, tester shall make a notation that it is run with a two hour clock.
- e. The results of the test shall be reported to the appropriate BLM office.
- f. All tests are required to be recorded on a calibrated test chart. A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.
- g. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug. This test shall be performed prior to the test at full stack pressure.
- h. BOP/BOPE must be tested by an independent service company within 500 feet of the top of the Wolfcamp formation if the time between the setting of the intermediate casing and reaching this depth exceeds 20 days. This test does not exclude the test prior to drilling out the casing shoe as per **43 CFR part 3170 Subpart 3172**.

C. DRILLING MUD

Mud system monitoring equipment, with derrick floor indicators and visual and audio alarms, shall be operating before drilling into the Wolfcamp formation, and shall be used until production casing is run and cemented.

D. WASTE MATERIAL AND FLUIDS

All waste (i.e. drilling fluids, trash, salts, chemicals, sewage, gray water, etc.) created as a result of drilling operations and completion operations shall be safely contained and disposed of properly at a waste disposal facility. No waste material or fluid shall be disposed of on the well location or surrounding area.

Porto-johns and trash containers will be on-location during fracturing operations or any other crew-intensive operations.

Long Vo (LVO) 11/15/2024

Sundry ID	Pad	Well Name	API	Lot	S/T/R	SHL Old	SHL New	Lot	S/T/R	BHL Old	BHL New	TVD Old	TVD New	MD Old	MD New	Old Formation	New Formation	Producing Zone	Pool Code	Old Casing Design	New Casing Design
2776758	E2W2	Southern Hills Federal Com 1H	30-015-49513	N	32/25S/27E	813 FSL 1540 FWL	No Change	D	29/25S/27E	100 FNL 330 FWL	No Change	9,123'	7,869'	18,694	17,660	Wolfcamp	3rd BS CARB	WC-015 G-03 S252636M; BONE SPRING	97818	7" x 4 ½" (liner)	5 1/2" x 5" (long string)
2776761	E2W2	Southern Hills Federal Com 2H	30-015-49515	N	32/25S/27E	820 FSL 1558 FWL	No Change	D	29/25S/27E	100 FNL 990 FWL	100 FNL 330 FWL	9,123	8,857	18,591	19,005	Wolfcamp	WOLFCAMP	PURPLE SAGE; WOLFCAMP	98220	7" x 4 ½" (liner)	7" x 4 ½" (liner)
2776762	E2W2	Southern Hills Federal Com 3H	30-015-49514	N	32/25S/27E	827 FSL 1577 FWL	No Change	C	29/25S/27E	100 FNL 1650 FWL	100 FNL 2112 FWL	9,123	7,903	18,529	17,752	Wolfcamp	3rd BS CARB	WC-015 G-03 S252636M; BONE SPRING	97818	7" x 4 ½" (liner)	5 1/2" x 5" (long string)
2776765	E2W2	Southern Hills Federal Com 4H	30-015-51930	N	32/25S/27E	834 FSL 1595 FWL	No Change	C	29/25S/27E	100 FNL 2315 FWL	100 FNL 2310 FWL	9,123	8,884	18,604	18,955	Wolfcamp	WOLFCAMP	PURPLE SAGE; WOLFCAMP	98220	7" x 4 ½" (liner)	7" x 4 ½" (liner)

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: 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.

1. Geological Formations

TVD of target 7,903

Pilot Hole TD N/A

MD at TD 17,752

Deepest expected fresh water

Formation	Depth (TVD) from KB	Water/Mineral Bearing/Target Zone	Hazards
Rustler	842	N/A	
Top of Salt	1253	N/A	
Base of Salt	1878	N/A	
Anhydrite	2068	N/A	
Lamar	2089	N/A	
Bell Canyon	2188	N/A	
Cherry Canyon	3067	N/A	
Brushy Canyon	4034	N/A	
Bone Spring Lime	5621	N/A	
Leonard Shale	5829	N/A	
1st Bone Spring Sand	6606	N/A	
2nd Bone Spring Shale	6780	N/A	
2nd Bone Spring Sand	7152	N/A	
3rd Bone Spring Carb	7577	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	600	600	13-3/8"	48.00	H-40/J-55 Hybrid	ST&C	2.85	6.66	11.18
12 1/4	0	2109	2109	9-5/8"	36.00	J-55	LT&C	1.79	3.12	5.97
8 1/2	0	7366	7366	5-1/2"	17.00	P-110	LT&C	1.99	2.83	3.31
8 1/2	7366	17752	7903	5-1/2"	17.00	L-80	BT&C	1.56	1.92	43.49
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 Onshore Oil and Gas Order #2 III.B.1.h

Cimarex Energy Co., Southern Hills 32-29 Federal Com 3H

	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	# Sk	Wt. lb/gal	Yld ft ³ /sack	H ₂ O gal/sk	500# Comp. Strength (hours)	Slurry Description
Surface	182	13.50	1.72	9.15	15.5	Lead: Class C + Bentonite
	195	14.80	1.34	6.32	9.5	Tail: Class C + LCM
Intermediate	393	12.90	1.88	9.65	12	Lead: 35:65 (Poz:C) + Salt + Bentonite
	122	14.80	1.36	6.57	9.5	Tail: Class C + Retarder
Production	1005	12.90	1.88	9.65	12	Lead: 35:65 (Poz:C) + Salt + Bentonite
	2747	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	38
Intermediate	0	52
Production	1809	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.					
BOP installed and tested before drilling which hole?	Size	Min Required WP	Type		Tested To
12 1/4	13 5/8	2M	Annular	X	50% of working pressure
			Blind Ram		2M
			Pipe Ram	X	
			Double Ram	X	
			Other		
8 1/2	13 5/8	5M	Annular	X	50% of working pressure
			Blind Ram		5M
			Pipe Ram	X	
			Double Ram	X	
			Other		

BOP/BOPE will be tested by an independent service company to 250 psi low and the high pressure indicated above per Onshore Order 2 requirements. The System may be upgraded to a higher pressure but still tested to the working pressure listed in the table above. If the system is upgraded all the components installed will be functional and tested.

Pipe rams will be operationally checked each 24 hour period. Blind rams will be operationally checked on each trip out of the hole. These checks will be noted on the daily tour sheets. Other accessories to the BOP equipment will include a Kelly cock and floor safety valve (inside BOP) and choke lines and choke manifold. See attached schematics.

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 600'	Fresh Water	7.83 - 8.33	28	N/C
600' to 2109'	Brine Water	9.80 - 10.30	30-32	N/C
2109' to 17752'	OBM	9.30 - 9.80	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
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7. Drilling Conditions

Condition	
BH Pressure at deepest TVD	4027 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	H ₂ S is present
X	H ₂ S plan is attached

8. Other Facets of Operation**9. Wellhead**

A multi-bowl wellhead system will be utilized.

After running the 13-3/8" surface casing, a 13 5/8" BOP/BOPE system with a minimum working pressure of 5000 psi will be installed on the wellhead system and will be pressure tested to 250 psi low followed by a 5000 psi test. Annular will be tested to 50% of working pressure. The pressure test will be repeated at least every 30 days, as per Onshore Order No. 2.

The multi-bowl wellhead will be installed by vendor's representative. A copy of the installation instructions has been sent to the BLM field office.

The wellhead will be installed by a third-party welder while being monitored by the wellhead vendor representative.

All BOP equipment will be tested utilizing a conventional test plug. Not a cup or J-packer type.

A solid steel body pack-off will be utilized after running and cementing the intermediate casing. After installation the pack-off and lower flange will be pressure tested to 5000 psi.

All casing strings will be tested as per Onshore Order No.2 to atleast 0.22 psi/ft or 1,500 whichever is greater and not to exceed 70% of casing burst.

If well conditions dictate conventional slips will be set and BOPE will be tested to appropriate pressures based on permitted pressure requirements.

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

WELL LOCATION INFORMATION

API Number 30-015-49514	Pool Code 97818	Pool Name WC-015 G-03 S252636M; BONE SPRING
Property Code	Property Name SOUTHERN HILLS 32-29 FEDERAL COM	Well Number 3H
OGRID No. 215099	Operator Name CIMAREX ENERGY CO.	Ground Level Elevation 3,241.5'
Surface Owner: ☐ State ☐ Fee ☐ Tribal ☒ Federal		Mineral Owner: ☐ State ☐ Fee ☐ Tribal ☒ Federal

Surface Location

UL N	Section 32	Township 25S	Range 27E	Lot	Ft. from N/S 827 SOUTH	Ft. from E/W 1,577 WEST	Latitude (NAD 83) 32.081286°	Longitude (NAD 83) -104.215835°	County EDDY
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Bottom Hole Location

UL C	Section 29	Township 25S	Range 27E	Lot	Ft. from N/S 100 NORTH	Ft. from E/W 2,112 WEST	Latitude (NAD 83) 32.107893°	Longitude (NAD 83) -104.213749°	County EDDY
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Dedicated Acres 320	Infill or Defining Well	Defining Well API	Overlapping Spacing Unit (Y/N)	Consolidation Code
Order Numbers.		Well setbacks are under Common Ownership: ☐ Yes ☐ No		

Kick Off Point (KOP)

UL N	Section 32	Township 25S	Range 27E	Lot	Ft. from N/S 450 SOUTH	Ft. from E/W 2,111 WEST	Latitude (NAD 83) 32.080250°	Longitude (NAD 83) -104.214132°	County EDDY
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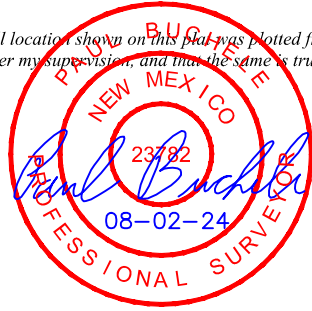
First Take Point (FTP)

UL N	Section 32	Township 25S	Range 27E	Lot	Ft. from N/S 1,170 SOUTH	Ft. from E/W 2,109 WEST	Latitude (NAD 83) 32.082228°	Longitude (NAD 83) -104.214097°	County EDDY
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Last Take Point (LTP)

UL C	Section 29	Township 25S	Range 27E	Lot	Ft. from N/S 100 NORTH	Ft. from E/W 2112 WEST	Latitude (NAD 83) 32.107893°	Longitude (NAD 83) -104.213749°	County EDDY
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Unitized Area or Area of Uniform Interest	Spacing Unit Type ☐ Horizontal ☐ Vertical	Ground Floor Elevation:
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OPERATOR CERTIFICATIONS <i>I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and, if the well is a vertical or directional well, that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of a working interest or unleased mineral interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.</i> <i>If this well is a horizontal well, I further certify that this organization has received the consent of at least one lessee or owner of a working interest or unleased mineral interest in each tract (in the target pool or formation) in which any part of the well's completed interval will be located or obtained a compulsory pooling order from the division.</i> <i>Shelly Bowen</i> 10/1/2024 Signature _____ Date _____ Shelly Bowen Printed Name _____ shelly.bowen@coterra.com Email Address _____	SURVEYOR CERTIFICATIONS <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>  Signature and Seal of Professional Surveyor 23782 August 31, 2020 Certificate Number _____ Date of Survey _____
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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 SOUTHERN HILLS 32-29 FEDERAL COM	Well Number 3H	Drawn By D.J.S. 10-07-20	Revised By REV. 9 Z.L. 08-02-24 (UPDATED PLAT FORMAT)
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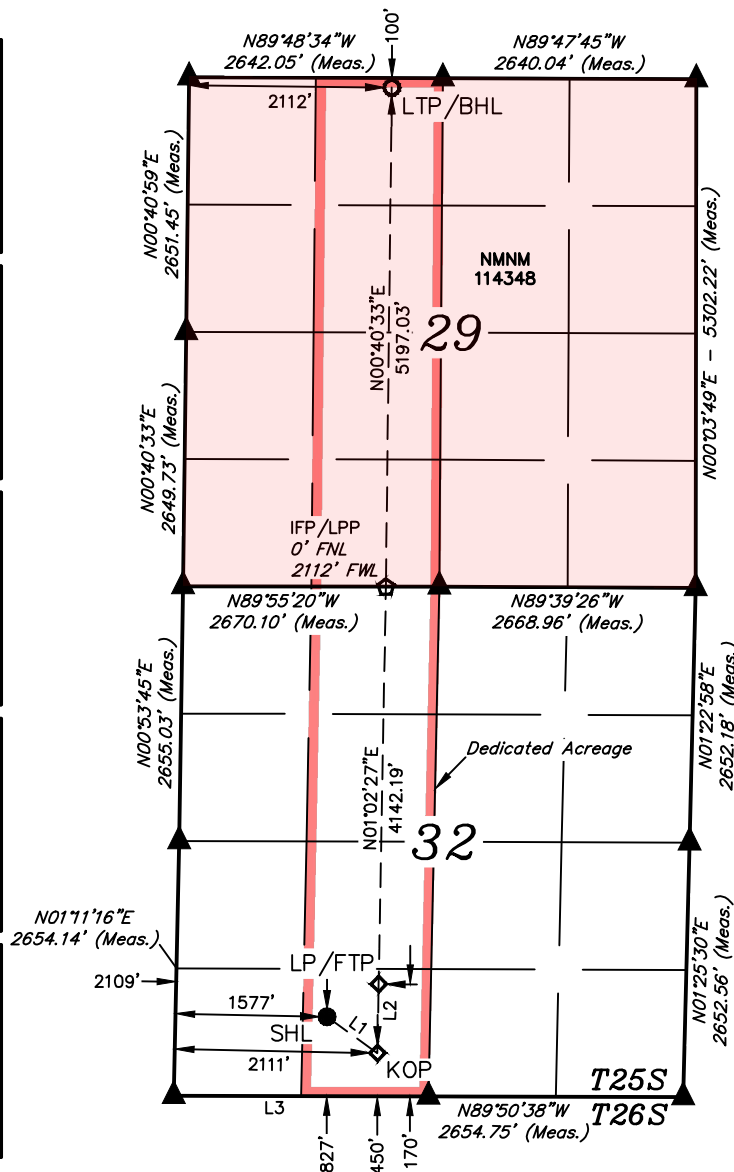
NAD 83 (SURFACE HOLE LOCATION)
LATITUDE = 32°04'52.63" (32.081286°)
LONGITUDE = -104°12'57.01" (-104.215835°)
NAD 27 (SURFACE HOLE LOCATION)
LATITUDE = 32°04'52.19" (32.081164°)
LONGITUDE = -104°12'55.23" (-104.215341°)
STATE PLANE NAD 83 (N.M. EAST)
N: 393328.72' E: 577728.30'
STATE PLANE NAD 27 (N.M. EAST)
N: 393271.63' E: 536544.83'

NAD 83 (KICK OFF POINT)
LATITUDE = 32°04'48.90" (32.080250°)
LONGITUDE = -104°12'50.88" (-104.214132°)
NAD 27 (KICK OFF POINT)
LATITUDE = 32°04'48.46" (32.080128°)
LONGITUDE = -104°12'49.10" (-104.213638°)
STATE PLANE NAD 83 (N.M. EAST)
N: 392952.45' E: 578256.25'
STATE PLANE NAD 27 (N.M. EAST)
N: 392895.36' E: 537072.77'

NAD 83 (LP/FTP)
LATITUDE = 32°04'56.02" (32.082228°)
LONGITUDE = -104°12'50.75" (-104.214097°)
NAD 27 (LP/FTP)
LATITUDE = 32°04'55.58" (32.082106°)
LONGITUDE = -104°12'48.97" (-104.213602°)
STATE PLANE NAD 83 (N.M. EAST)
N: 393671.96' E: 578266.30'
STATE PLANE NAD 27 (N.M. EAST)
N: 393614.86' E: 537082.83'

NAD 83 (IFP/LPP)
LATITUDE = 32°05'37.00" (32.093610°)
LONGITUDE = -104°12'50.02" (-104.213895°)
NAD 27 (IFP/LPP)
LATITUDE = 32°05'36.56" (32.093489°)
LONGITUDE = -104°12'48.24" (-104.213400°)
STATE PLANE NAD 83 (N.M. EAST)
N: 397812.77' E: 578324.25'
STATE PLANE NAD 27 (N.M. EAST)
N: 397755.60' E: 537140.84'

NAD 83 (LTP/BHL)
LATITUDE = 32°06'28.41" (32.107893°)
LONGITUDE = -104°12'49.50" (-104.213749°)
NAD 27 (LTP/BHL)
LATITUDE = 32°06'27.98" (32.107772°)
LONGITUDE = -104°12'47.71" (-104.213253°)
STATE PLANE NAD 83 (N.M. EAST)
N: 403008.43' E: 578363.84'
STATE PLANE NAD 27 (N.M. EAST)
N: 402951.16' E: 537180.52'



LINE TABLE		
LINE	DIRECTION	LENGTH
L1	S54°17'01"E	648.47'
L2	N01°02'22"E	719.75'
L3	N89°50'37"W	2650.85'

- = SURFACE HOLE LOCATION
- ◆ = KICK OFF POINT/LANDING POINT/
FIRST TAKE POINT
- ☆ = INFLECTION POINT/LEASE PENETRATION POINT
- = LAST TAKE POINT/BOTTOM
HOLE LOCATION
- ▲ = SECTION CORNER LOCATED
- = DEDICATED ACREAGE

NOTE:

- Distances referenced on plat to section lines are perpendicular.
- Basis of Bearings is a Transverse Mercator Projection with a Central Meridian of W103°53'00" (NAD 83)
- Colored areas within section lines represent oil & gas leases.



Geologic Prognosis

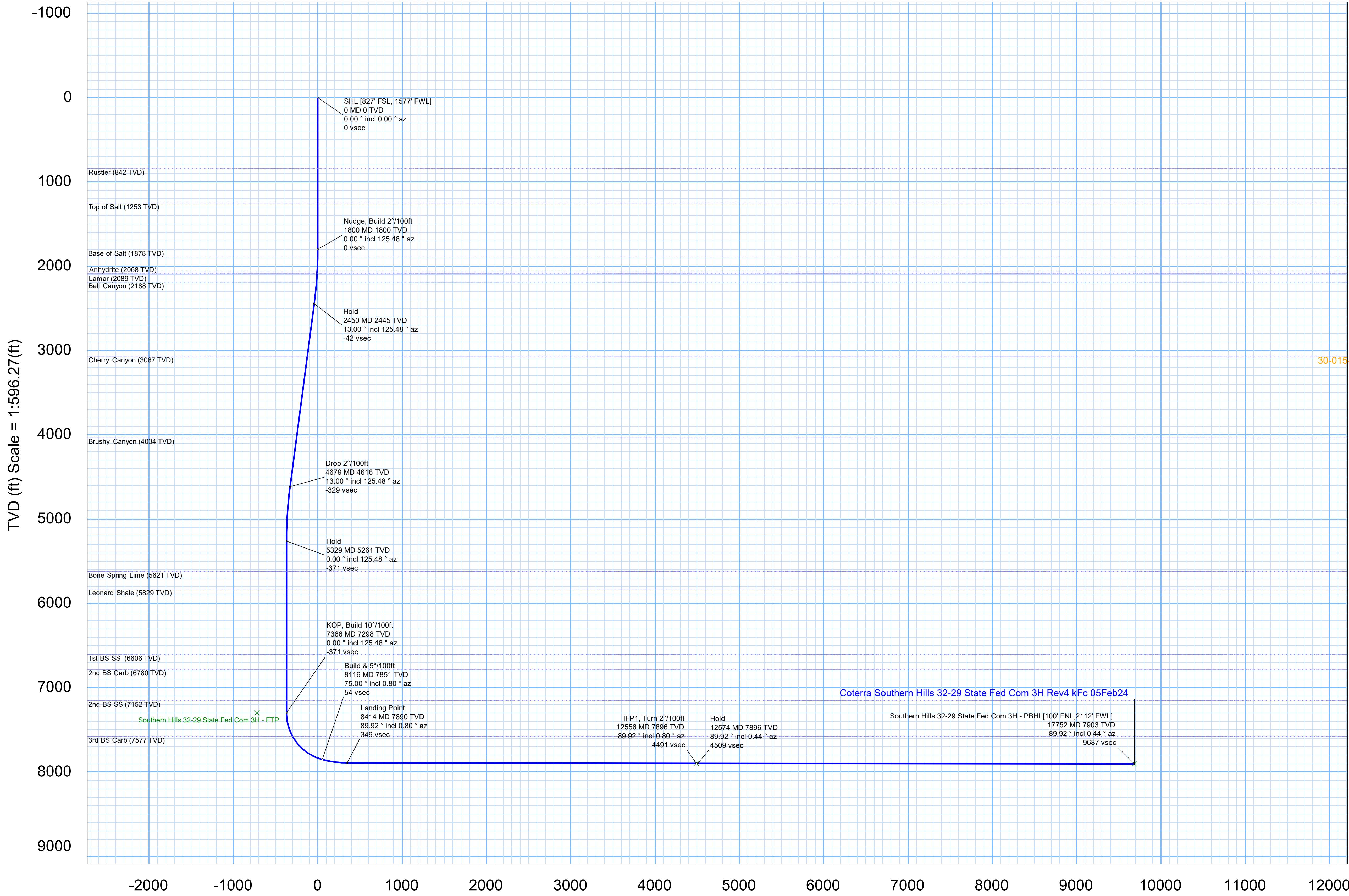


Well Information					Contact Information
Well Name: Southernhills 32-29 State Fed Com 003		County: Eddy			Holden Allen
API #:		State: New Mexico			Office: (432) 620-1924
Dev/Exp: Development		Field:			Cell: (432) 664-7542
Surface Hole Information					Email: Holden.Allen@coterra.com
Footages:	Section:	Township/Block	Range:	Direction	Samir Jreij
820' FSL / 1558' FWL	32	25S	27E	N-S	
Bottom Hole Information					Office: (432) 571-7847
Footages:	Section:	Township:	Range:		Cell: (713) 382-0095
100' FNL /2112FWL	29	25S	27E		Email: Samir.Jreij@coterra.com
Target Information					
Formation: 3rd Bone Spring CARB		Landing TVD:		7890.2 ' TVD @ 0' VS	TD TVD:7903'
Generated By:		Crystal Pate	Date Generated:		3/13/2024
Est. GL Elevation:		3244.2			
Est. KB above GL		23	Rig:		156
Est. KB Elevation:		3267.2			
Horizon	TVD top	TVD base	SSTVD top	Thickness	Comments
Rustler	842.2	2068.2	2425	1226	
Top of Salt	1253.2	1878.2	2014	625	
Base of Salt	1878.2	2068.2	1389	190	
Anhydrite	2068.2	2089.2	1199	21	
Lamar	2089.2	2188.2	1178	99	
Bell Canyon	2188.2	3067.2	1079	879	
Cherry Canyon	3067.2	4034.2	200	967	
Brushy Canyon	4034.2	5621.2	-767	1587	
Bone Spring Lime	5621.2	5829.2	-2354	208	
Leonard Shale	5829.2	6606.2	-2562	777	
1st Bone Spring Sand	6606.2	6780.2	-3339	174	
2nd Bone Spring Shale	6780.2	7152.2	-3513	372	
2nd Bone Spring Sand	7152.2	7577.2	-3885	425	
3rd Bone Spring Carb	7577.2	7890.2	-4310	313	
Target	7890.2	7940.2	-4623	50	
Target Base	7940.2		-4673		

Borehole:	Well:	Field:	Structure:
Southern Hills 32-29 State Fed Com 3H	Southern Hills 32-29 State Fed Com 3H	NM Eddy County (NAD 83)	Coterra Southern Hills 32-29 State Fed Com Pad 1234

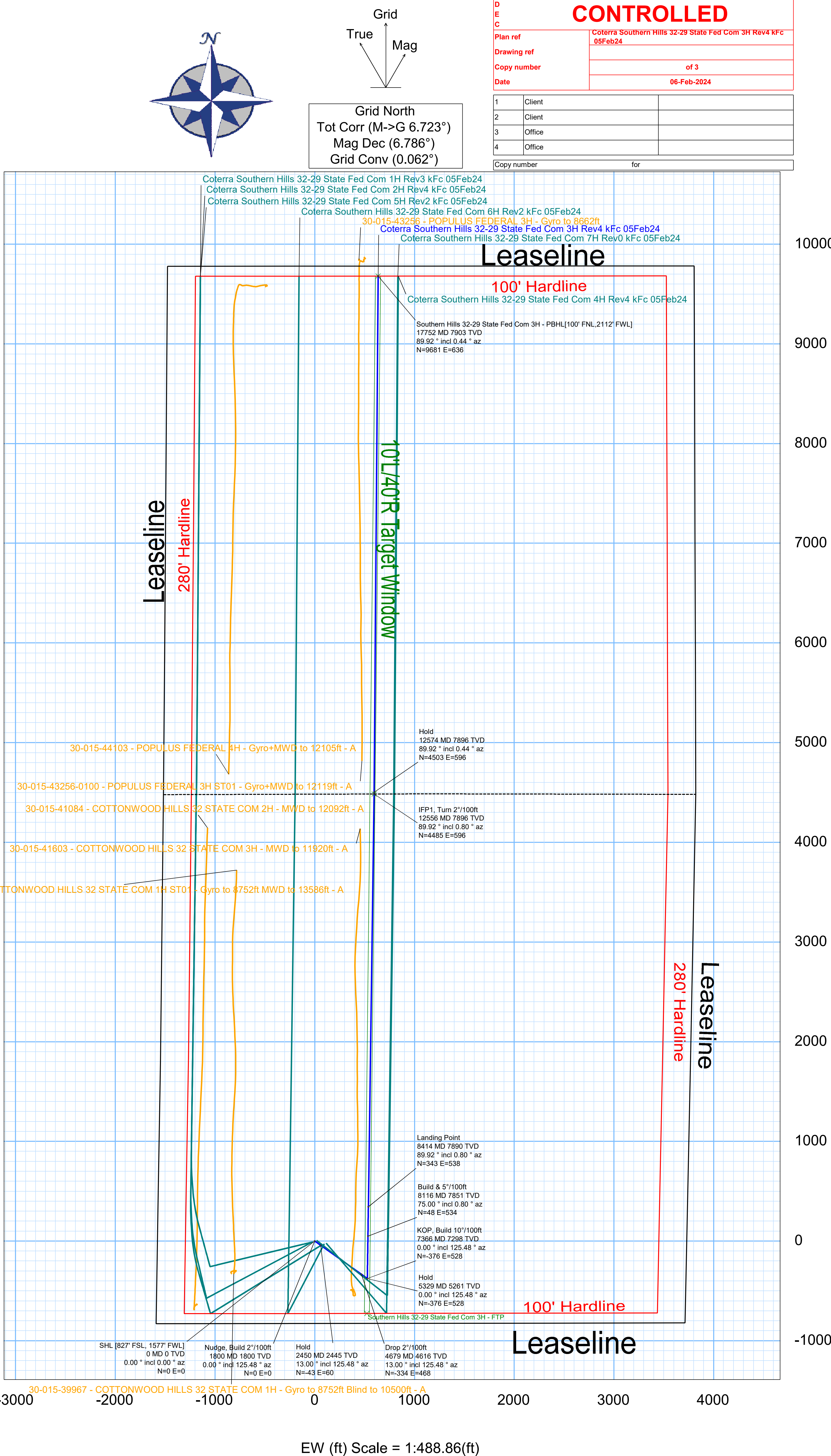
Gravity & Magnetic Parameters				Surface Location				NAD83 New Mexico State Plane, Eastern Zone, US Feet				Miscellaneous			
Model:	HDGM 2024	Dip:	59.579°	Date:	05-Feb-2024	Lat:	N 32 4 52.63	Northing:	393328.72ftUS	Grid Conv:	0.0624°	Slot:	Southern Hills 32-29	TVD Ref:	RKB (3267.500 ft above MSL)
MagDec:	6.786°	FS:	47288.533nT	Gravity FS:	998.434mgn (9.80665 Based)	Lon:	W 104 12 57.01	Easting:	577728.3ftUS	Scale Fact:	0.99991061	Plan:	Coterra Southern Hills 32-29 State Fed Com 3H Rev4 kFc 05Feb24		

Critical Points								
Critical Point	MD	INCL	AZIM	TVD	VSEC	N(+)/S(-)	E(+)/W(-)	DLS
SHL [827° FSL, 1577° FWL]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Rustler	842.20	0.00	125.48	842.20	0.00	0.00	0.00	0.00
Top of Salt	1253.20	0.00	125.48	1253.20	0.00	0.00	0.00	0.00
Nudge, Build 2°/100ft	1800.00	0.00	125.48	1800.00	0.00	0.00	0.00	0.00
Base of Salt	1878.21	1.56	125.48	1878.20	-0.61	-0.62	0.87	2.00
Anhydrite	2068.59	5.37	125.48	2068.20	-7.19	-7.30	10.25	2.00
Lamar	2089.69	5.79	125.48	2089.20	-8.36	-8.49	11.92	2.00
Bell Canyon	2189.40	7.79	125.48	2188.20	-15.10	-15.34	21.52	2.00
Hold	2450.15	13.00	125.48	2444.58	-41.98	-42.63	59.82	2.00
Cherry Canyon	3089.15	13.00	125.48	3067.20	-124.16	-126.08	176.90	0.00
Brushy Canyon	4081.60	13.00	125.48	4034.20	-251.78	-255.68	358.75	0.00
Drop 2°/100ft	4678.85	13.00	125.48	4616.14	-328.59	-333.67	468.18	0.00
Hold	5329.00	0.00	125.48	5260.72	-370.57	-376.31	528.00	2.00
Bone Spring Lime	5689.48	0.00	125.48	5621.20	-370.57	-376.31	528.00	0.00
Leonard Shale	5897.48	0.00	125.48	5829.20	-370.57	-376.31	528.00	0.00
1st BS SS	6674.48	0.00	125.48	6606.20	-370.57	-376.31	528.00	0.00
2nd BS Carb	6848.48	0.00	125.48	6780.20	-370.57	-376.31	528.00	0.00
2nd BS SS	7220.48	0.00	125.48	7152.20	-370.57	-376.31	528.00	0.00
KOP, Build 10°/100ft	7366.00	0.00	125.48	7297.72	-370.57	-376.31	528.00	0.00
3rd BS Carb	7657.95	29.20	0.80	7577.20	-297.79	-303.53	529.02	10.00
Build & 5°/100ft	8116.00	75.00	0.80	7851.15	54.09	48.32	533.93	10.00
Landing Point	8414.40	89.92	0.80	7890.20	349.07	343.27	538.05	5.00
IFP1, Turn 2°/100ft	12556.04	89.92	0.80	7896.00	4490.69	4484.50	596.00	0.00
Hold	12574.16	89.92	0.44	7896.02	4508.81	4502.62	596.20	2.00
Southern Hills 32-29 State Fed Com 3H - PBHL[100° FNL, 2112° FWL]	17752.28	89.92	0.44	7903.00	9686.90	9680.58	635.90	0.00



Vertical Section (ft) Azim = 0.62° Scale = 1:596.27(ft) Origin = 0N/-S, 0E/-W

NS (ft) Scale = 1:488.86(ft)



EW (ft) Scale = 1:488.86(ft)



Coterra Southern Hills 32-29 State Fed Com 3H Rev4 kFc 05Feb24 Anti-Collision Summary Report

Analysis Date-24hr Time: February 06, 2024 - 04:45 PM (UTC 0)
Client: COTERRA
Field: NM Eddy County (NAD 83)
Structure: Coterra Southern Hills 32-29 State Fed Com Pad 1234
Slot: Southern Hills 32-29 State Fed Com 3H
Well: Southern Hills 32-29 State Fed Com 3H
Borehole: Southern Hills 32-29 State Fed Com 3H
Scan MD Range: 0.00ft ~ 17752.28ft

Analysis Method: 3D Least Distance
Reference Trajectory: Coterra Southern Hills 32-29 State Fed Com 3H Rev4 kFc 05Feb24 (Def Plan)
Depth Interval: Every 10.00 Measured Depth (ft)
Rule Set: NAL Procedure: D&M AntiCollision Standard S002
Min Pts: Absolute minima indicated.
Engine Version: 2023.1.0.1
Database 1 Project: Southern Hills 32-29 State Fed Com 3H-COTERRA

Trajectory Error Model: ISCSA0 3 - D 95 % Confidence 2.7955 sigma

Offset Trajectories Summary

Offset Selection Criteria

Bounding box scan: minimum Ct-Ct separation <= 2000ft
Selection filters: Definitive Surveys - Definitive Plans - Definitive surveys exclude definitive plans
- All Non-Def Surveys when no Def-Survey is set in a borehole - All Non-Def Plans when no Def-Plan is set in a borehole

13 out of 30 are selected

Offset Trajectory	Separation			Allow Dev. (ft)	Sep. Fact.	Controlling Rule	Reference Trajectory		Risk Level			Alert	Status
	Ct-Ct (ft)	MAS (ft)	EOU (ft)				MD (ft)	TVD (ft)	Alert	Minor	Major		

Results highlighted in red: Sep-Factor <= 1.5

Result highlighted in boxed, red and bold: all local minima indicated.

Coterra Southern Hills 32-29 State Fed Com 4H Rev4 kFc 05Feb24 (DefinitivePlan)													Fail Minor
19.99	16.25	18.71	3.74	N/A	MAS = 4.95 (m)	0.00	0.00	CtCt<=15m<15.00				Enter Alert	
19.99	16.25	18.71	3.74	26398.35	MAS = 4.95 (m)	23.00	23.00					WRP	
19.99	16.25	16.42	3.74	8.17	MAS = 4.95 (m)	290.00	290.00					MinPt-EOU	
19.99	20.05	6.30	-0.06	1.50	OSF1.50	1330.00	1330.00		OSF<1.50			Enter Minor	
19.99	23.96	3.69	-3.97	1.24	OSF1.50	1590.00	1590.00					MinPt-CtCt	
20.23	24.85	3.33	-4.62	1.21	OSF1.50	1650.00	1650.00					MinPt-EOU	
20.33	24.99	3.34	-4.68	1.21	OSF1.50	1660.00	1660.00					MinPt-SF	
20.60	25.29	3.41	-4.69	1.21	OSF1.50	1680.00	1680.00					MinPt-ADP	
27.48	27.82	8.60	-0.34	1.48	OSF1.50	1860.00	1860.00		OSF>1.50			Exit Minor	
264.16	109.49	190.83	154.66	3.64	OSF1.50	7370.00	7370.172					MinPt-EOU	
264.26	109.64	190.84	154.62	3.63	OSF1.50	7380.00	7311.72					MinPt-ADP	
264.80	109.93	191.18	154.87	3.63	OSF1.50	7400.00	7331.70					MinPt-SF	
383.71	116.61	305.64	267.10	4.96	OSF1.50	7800.00	7691.39	OSF>5.00				Exit Alert	
911.45	128.65	825.35	782.80	10.70	OSF1.50	8414.40	7890.20					MinPt-SF	
1002.92	301.60	801.52	701.31	5.00	OSF1.50	16960.00	7901.93	OSF<5.00				Enter Alert	
1002.27	327.07	783.89	675.20	4.61	OSF1.50	17752.28	7903.00					MinPts	
Coterra Southern Hills 32-29 State Fed Com 2H Rev4 kFc 05Feb24 (DefinitivePlan)													Fail Minor
20.01	16.26	18.72	3.75	N/A	MAS = 4.96 (m)	0.00	0.00	CtCt<=15m<15.00				Enter Alert	
20.00	16.26	18.72	3.74	N/A	MAS = 4.96 (m)	23.00	23.00					WRP	
20.00	16.26	16.43	3.74	8.18	MAS = 4.96 (m)	290.00	290.00					MinPt-EOU	
20.00	20.05	6.31	-0.05	1.50	OSF1.50	1330.00	1330.00		OSF<1.50			Enter Minor	
20.00	24.11	3.60	-4.11	1.23	OSF1.50	1600.00	1600.00					MinPt-CtCt	
20.15	24.56	3.46	-4.40	1.22	OSF1.50	1630.00	1630.00					MinPts	
20.27	24.70	3.46	-4.42	1.22	OSF1.50	1640.00	1640.00					MinPt-ADP	
26.86	26.98	8.55	-0.12	1.49	OSF1.50	1800.00	1800.00		OSF>1.50			Exit Minor	
103.24	32.41	81.31	70.83	4.88	OSF1.50	2220.00	2218.50	OSF>5.00				Exit Alert	
1624.84	114.26	1548.34	1510.59	21.51	OSF1.50	7380.00	7311.72					MinPt-EOU	
1624.88	114.32	1548.34	1510.56	21.49	OSF1.50	7390.00	7321.71					MinPt-ADP	
1630.64	115.27	1553.46	1515.36	21.39	OSF1.50	7580.00	7506.78					MinPt-SF	
1864.09	118.13	1785.01	1745.96	23.86	OSF1.50	8414.40	7890.20					MinPt-SF	
2024.52	184.75	1901.03	1839.77	16.52	OSF1.50	12520.00	7895.95					MinPt-CtCt	
2021.45	334.79	1797.92	1686.65	9.08	OSF1.50	17740.00	7902.98					MinPt-CtCt	
2021.49	334.94	1797.88	1686.56	9.08	OSF1.50	17752.28	7903.00					MinPts	
Coterra Southern Hills 32-29 State Fed Com 1H Rev3 kFc 05Feb24 (DefinitivePlan)													Warning Alert
40.01	32.25	38.73	7.76	N/A	MAS = 9.83 (m)	0.00	0.00	CtCt<=15m<15.00				Enter Alert	
40.00	32.25	38.71	7.74	N/A	MAS = 9.83 (m)	23.00	23.00					WRP	
40.00	32.25	36.43	7.74	16.94	MAS = 9.83 (m)	290.00	290.00					MinPt-EOU	
40.00	32.25	25.60	7.74	2.91	MAS = 9.83 (m)	1400.00	1400.00					MinPts	
40.14	32.25	25.45	7.88	2.86	MAS = 9.83 (m)	1430.00	1430.00					MinPt-EOU	
41.06	32.25	25.89	8.81	2.82	MAS = 9.83 (m)	1480.00	1480.00					MinPt-SF	
91.50	32.25	72.14	59.24	4.93	MAS = 9.83 (m)	1940.00	1939.94	OSF>5.00				Exit Alert	
1582.02	111.78	1507.17	1470.24	21.40	OSF1.50	7330.00	7261.72					MinPt-EOU	
1582.08	111.86	1507.18	1470.22	21.39	OSF1.50	7340.00	7271.72					MinPt-ADP	
1590.14	113.28	1514.30	1476.87	21.23	OSF1.50	7580.00	7506.78					MinPt-SF	
1769.65	118.66	1690.22	1651.00	22.55	OSF1.50	8720.00	7890.63					MinPt-SF	
1782.38	331.10	1561.28	1451.24	8.09	OSF1.50	17730.00	7902.97					MinPt-CtCt	
1782.41	331.52	1561.07	1450.99	8.08	OSF1.50	17752.28	7903.00					MinPts	
Coterra Southern Hills 32-29 State Fed Com 6H Rev2 kFc 05Feb24 (DefinitivePlan)													Warning Alert
99.98	32.81	98.70	67.18	N/A	MAS = 10.00 (m)	0.00	0.00					Surface	
99.98	32.81	98.69	67.17	N/A	MAS = 10.00 (m)	23.00	23.00					WRP	
99.98	32.81	96.41	67.17	43.18	MAS = 10.00 (m)	290.00	290.00					MinPt-EOU	
94.95	32.81	75.03	62.14	4.96	MAS = 10.00 (m)	1960.00	1959.92	OSF<5.00				Enter Alert	
48.34	35.87	24.10	12.47	2.04	OSF1.50	2437.62	2432.36					MinPt-CtCt	
48.34	35.90	24.08	12.45	2.03	OSF1.50	2440.00	2434.69					MinPt-EOU	
48.44	36.02	24.09	12.42	2.03	OSF1.50	2450.00	2444.44					MinPt-ADP	
48.44	36.02	24.10	12.42	2.03	OSF1.50	2450.15	2444.58					MinPt-SF	
141.73	43.43	112.45	98.30	4.97	OSF1.50	2930.00	2912.13	OSF>5.00				Exit Alert	
764.68	86.82	706.47	677.86	13.35	OSF1.50	5520.00	5451.72					MinPt-SF	
870.84	114.58	794.12	756.26	11.49	OSF1.50	7380.00	7311.72					MinPts	
876.41	115.94	798.79	760.47	11.42	OSF1.50	7490.00	7420.75					MinPt-SF	
1340.71	123.02	1258.37	1217.69	16.47	OSF1.50	8414.40	7890.20					MinPt-SF	
1771.87	334.15	1548.77	1437.71	7.97	OSF1.50	17750.00	7903.00					MinPt-CtCt	
1771.87	334.17	1548.76	1437.70	7.97	OSF1.50	17752.28	7903.00					MinPts	
Coterra Southern Hills 32-29 State Fed Com 5H Rev2 kFc 05Feb24 (DefinitivePlan)													Warning Alert
84.84	32.81	83.56	52.04	N/A	MAS = 10.00 (m)	0.00	0.00					Surface	
84.84	32.81	83.55	52.03	N/A	MAS = 10.00 (m)	23.00	23.00					WRP	
84.84	32.81	81.27	52.03	36.56	MAS = 10.00 (m)	290.00	290.00					MinPt-EOU	
83.47	32.81	65.89	50.66	4.97	MAS = 10.00 (m)	1720.00	1720.00	OSF<5.00				Enter Alert	
51.79	32.81	29.78	18.99	2.42	MAS = 10.00 (m)	2187.23	2186.06					MinPts	
51.80	32.81	29.75	18.99	2.41	MAS = 10.00 (m)	2190.00	2188.80					MinPt-EOU	
51.91	32.81	29.80	19.11	2.41	MAS = 10.00 (m)	2200.00	2198.70					MinPt-SF	
116.27	35.95	91.97	80.32	4.95	OSF1.50	2490.00	2483.41	OSF>5.00				Exit Alert	

Offset Trajectory	Separation			Allow Dev. (ft)	Sep. Fact.	Controlling Rule	Reference Trajectory		Risk Level			Alert	Status
	Ct-Ct (ft)	MAS (ft)	EOU (ft)				MD (ft)	TVD (ft)	Alert	Minor	Major		
1611.90	116.15	1534.14	1495.75	20.98		OSF1.50	7390.00	7321.71				MinPt-EOU	
1612.01	116.28	1534.17	1495.74	20.96		OSF1.50	7400.00	7331.70				MinPt-ADP	
1625.53	118.58	1546.15	1506.95	20.72		OSF1.50	7620.00	7543.48				MinPt-SF	
1911.61	123.41	1829.01	1788.20	23.41		OSF1.50	8414.40	7890.20				MinPt-SF	
2384.72	180.27	2264.21	2204.45	19.94		OSF1.50	12540.00	7895.98				MinPt-CtCi	
2365.71	331.65	2144.28	2034.06	10.73		OSF1.50	17740.00	7902.98				MinPt-CtCi	
2365.75	331.78	2144.23	2033.96	10.72		OSF1.50	17752.28	7903.00				MinPts	
Coterra Southern Hills 32-29 State Fed Com 7H Rev0 kFc 05Feb24 (DefinitivePlan)													Warning Alert
116.60	32.81	115.31	83.79	N/A		MAS = 10.00 (m)	0.00	0.00				Surface	
116.60	32.81	115.31	83.79	N/A		MAS = 10.00 (m)	23.00	23.00				WRP	
116.60	32.81	113.02	83.79	50.44		MAS = 10.00 (m)	290.00	290.00				MinPt-EOU	
116.60	32.81	100.20	83.79	7.50		MAS = 10.00 (m)	1600.00	1600.00				MinPts	
116.80	32.81	100.01	83.99	7.33		MAS = 10.00 (m)	1640.00	1640.00				MinPt-EOU	
150.83	40.63	123.42	110.21	5.67		OSF1.50	2800.00	2785.46				MinPt-EOU	
153.85	44.24	124.03	109.62	5.30		OSF1.50	3040.00	3019.31				MinPt-ADP	
158.49	48.25	125.99	110.24	5.00		OSF1.50	3300.00	3272.64	OSF<5.00			Enter Alert	
203.40	72.71	154.60	130.69	4.23		OSF1.50	4720.00	4656.30				MinPt-SF	
266.05	80.60	211.99	185.45	4.99		OSF1.50	5220.00	5151.75	OSF>5.00			Exit Alert	
399.29	110.69	325.16	288.59	5.45		OSF1.50	7370.00	7301.72				MinPt-EOU	
399.42	110.84	325.21	288.59	5.44		OSF1.50	7380.00	7311.72				MinPt-ADP	
400.15	111.13	325.74	289.03	5.44		OSF1.50	7400.00	7331.70				MinPt-SF	
1084.78	127.76	999.28	957.02	12.82		OSF1.50	8414.40	7890.20				MinPt-SF	
1751.99	331.21	1530.85	1420.78	7.95		OSF1.50	17752.28	7903.00				MinPts	
30-015-41603 - COTTONWOOD HILLS 32 STATE COM 3H - MWD to 11920ft - A (DefinitiveSurvey)													Warning Alert
633.63	32.81	631.65	600.82	N/A		MAS = 10.00 (m)	0.00	0.00				Surface	
633.38	32.81	631.37	600.58	19295.76		MAS = 10.00 (m)	10.00	10.00				MinPt-SF	
633.30	32.81	631.32	600.49	202549.82		MAS = 10.00 (m)	20.00	20.00				MinPt-EOU	
633.30	32.81	631.32	600.49	346306.79		MAS = 10.00 (m)	23.00	23.00				WRP	
609.13	32.81	594.76	576.32	48.18		MAS = 10.00 (m)	1330.00	1330.00				MinPts	
609.47	32.81	594.44	576.66	45.81		MAS = 10.00 (m)	1400.00	1400.00				MinPt-EOU	
614.08	32.81	596.56	581.27	38.86		MAS = 10.00 (m)	1660.00	1660.00				MinPt-EOU	
214.73	65.56	170.48	149.17	5.00		OSF1.50	4250.00	4198.28	OSF<5.00			Enter Alert	
190.40	75.68	139.41	114.72	3.82		OSF1.50	4760.00	4695.45				MinPt-CtCi	
190.92	77.22	138.90	113.70	3.76		OSF1.50	4850.00	4783.95				MinPt-EOU	
191.56	78.03	139.00	113.53	3.73		OSF1.50	4900.00	4833.32				MinPt-ADP	
160.64	107.65	88.34	82.99	2.25		OSF1.50	7390.00	7321.71				MinPts	
160.62	107.60	88.35	83.02	2.25		OSF1.50	7394.54	7326.25				MinPt-CtCi	
261.24	80.67	206.92	180.57	4.93		OSF1.50	7750.00	7653.61	OSF>5.00			Exit Alert	
395.07	66.72	350.05	328.34	9.06		OSF1.50	8540.00	7890.38				MinPt-CtCi	
390.94	74.10	341.00	316.83	8.06		OSF1.50	9120.00	7891.19				MinPt-CtCi	
393.96	86.94	335.52	307.05	6.89		OSF1.50	9650.00	7891.93				MinPt-CtCi	
395.67	92.94	333.21	302.73	6.47		OSF1.50	9870.00	7892.24				MinPt-EOU	
397.12	107.41	325.02	289.72	5.60		OSF1.50	10350.00	7892.91				MinPt-CtCi	
396.78	112.97	320.94	283.79	5.32		OSF1.50	10490.00	7893.11				MinPt-CtCi	
397.64	116.20	319.67	281.44	5.18		OSF1.50	10580.00	7893.23				MinPt-EOU	
398.45	117.14	319.85	281.31	5.15		OSF1.50	10610.00	7893.27				MinPt-ADP	
403.98	122.46	321.84	281.52	4.99		OSF1.50	10760.00	7893.48	OSF<5.00			Enter Alert	
405.69	124.51	322.19	281.19	4.93		OSF1.50	10820.00	7893.57				MinPt-ADP	
408.97	130.67	321.35	278.30	4.73		OSF1.50	11050.00	7893.89				MinPt-ADP	
409.69	131.53	321.50	278.16	4.71		OSF1.50	11090.00	7893.95				MinPt-ADP	
414.31	137.08	322.42	277.23	4.57		OSF1.50	11340.00	7894.30				MinPt-EOU	
414.47	137.28	322.45	277.19	4.56		OSF1.50	11350.00	7894.31				MinPt-ADP	
410.87	150.69	309.91	260.18	4.12		OSF1.50	11900.00	7895.08				MinPt-CtCi	
414.78	161.77	306.43	253.01	3.87		OSF1.50	12210.00	7895.52				MinPts	
415.00	161.97	306.52	253.04	3.87		OSF1.50	12220.00	7895.53				MinPt-SF	
502.48	153.85	399.41	348.63	4.93		OSF1.50	12490.00	7895.91	OSF>5.00			Exit Alert	
5560.58	137.78	5468.22	5422.79	61.19		OSF1.50	17752.28	7903.00				TD	
30-015-43256 - POPULUS FEDERAL 3H - Gyro to 8662ft (DefinitiveSurvey)													Warning Alert
9884.91	32.81	9882.94	9852.11	N/A		MAS = 10.00 (m)	0.00	0.00				Surface	
9884.67	32.81	9882.65	9851.87	234391.95		MAS = 10.00 (m)	23.00	23.00				WRP	
9883.58	32.81	9879.56	9850.77	4836.82		MAS = 10.00 (m)	290.00	290.00				MinPt-EOU	
9873.46	32.81	9854.42	9840.65	571.33		MAS = 10.00 (m)	1830.00	1830.00				MinPts	
9873.75	32.81	9854.10	9840.94	551.89		MAS = 10.00 (m)	1890.00	1889.99				MinPt-EOU	
10201.61	92.30	10139.44	10109.21	168.72		OSF1.50	6070.00	6001.72				MinPt-CtCi	
10203.31	97.17	10137.99	10106.14	160.14		OSF1.50	6460.00	6391.72				MinPt-EOU	
10203.58	97.48	10138.05	10106.10	159.63		OSF1.50	6490.00	6421.72				MinPt-ADP	
10209.08	102.77	10140.02	10106.30	151.36		OSF1.50	6860.00	6791.72				MinPt-EOU	
10209.25	103.04	10140.02	10106.21	150.97		OSF1.50	6880.00	6811.72				MinPt-EOU	
10210.62	104.83	10140.19	10105.79	148.36		OSF1.50	7020.00	6951.72				MinPt-ADP	
512.04	156.40	407.27	355.64	4.94		OSF1.50	17440.00	7902.58	OSF<5.00			Enter Alert	
250.03	206.17	112.06	43.86	1.82		OSF1.50	17752.28	7903.00				MinPts	
30-015-43256-0100 - POPULUS FEDERAL 3H ST01 - Gyro+MWD to 12119ft - A (DefinitiveSurvey)													Warning Alert
8952.65	111.16	8877.88	8841.49	122.97		OSF1.50	0.00	0.00				Surface	
8933.31	111.27	8858.47	8822.04	122.58		OSF1.50	23.00	23.00				WRP	
511.95	156.38	407.19	355.57	4.94		OSF1.50	12550.00	7895.99	OSF<5.00			Enter Alert	
382.87	180.42	262.09	202.45	3.20		OSF1.50	13010.00	7896.61				MinPt-SF	
382.77	180.35	262.04	202.42	3.20		OSF1.50	13030.00	7896.64				MinPts	
382.75	180.31	262.05	202.45	3.20		OSF1.50	13041.55	7896.65				MinPt-CtCi	
392.05	179.43	271.93	212.62	3.29		OSF1.50	13750.00	7897.61				MinPt-CtCi	
392.07	179.48	271.91	212.58	3.29		OSF1.50	13770.00	7897.64				MinPt-EOU	
392.09	179.51	271.92	212.58	3.29		OSF1.50	13780.00	7897.65				MinPt-ADP	
392.17	179.55	271.96	212.61	3.29		OSF1.50	13800.00	7897.68				MinPt-SF	
396.10	180.94	274.97	215.16	3.30		OSF1.50	14120.00	7898.11				MinPt-CtCi	
396.14	181.04	274.94	215.09	3.30		OSF1.50	14140.00	7898.13				MinPts	
396.27	181.14	275.01	215.13	3.30		OSF1.50	14160.00	7898.16				MinPt-SF	
394.16	182.32	27											

Offset Trajectory	Separation			Allow Dev. (ft)	Sep. Fact.	Controlling Rule	Reference Trajectory		Risk Level			Alert	Status
	Ct-Ct (ft)	MAS (ft)	EOU (ft)				MD (ft)	TVD (ft)	Alert	Minor	Major		
	409.97	193.15	280.70	216.82	3.20	OSF1.50	15710.00	7900.25				MinPt-EOU	
	410.18	193.41	280.74	216.77	3.19	OSF1.50	15730.00	7900.28				MinPt-ADP	
	411.97	195.15	281.37	216.82	3.18	OSF1.50	15860.00	7900.45				MinPt-ADP	
	413.29	196.01	282.12	217.28	3.18	OSF1.50	15920.00	7900.53				MinPt-SF	
	417.76	198.42	284.97	219.33	3.17	OSF1.50	16100.00	7900.77				MinPt-SF	
	420.26	200.77	285.91	219.49	3.15	OSF1.50	16280.00	7901.02				MinPt-CtCi	
	420.46	201.35	285.73	219.11	3.14	OSF1.50	16320.00	7901.07				MinPt-EOU	
	420.69	201.63	285.77	219.06	3.14	OSF1.50	16340.00	7901.10				MinPt-ADP	
	421.49	203.04	285.63	218.45	3.13	OSF1.50	16440.00	7901.23				MinPt-CtCi	
	421.68	203.68	285.39	218.00	3.12	OSF1.50	16480.00	7901.29				MinPt-EOU	
	421.92	203.99	285.42	217.93	3.11	OSF1.50	16500.00	7901.31				MinPt-ADP	
	424.48	208.39	285.05	216.08	3.07	OSF1.50	16770.00	7901.68				MinPt-CtCi	
	424.79	209.25	284.78	215.53	3.06	OSF1.50	16820.00	7901.74				MinPt-EOU	
	425.84	212.79	283.47	213.05	3.01	OSF1.50	17020.00	7902.01				MinPt-CtCi	
	425.94	213.38	283.19	212.56	3.00	OSF1.50	17050.00	7902.05				MinPt-EOU	
	426.08	213.57	283.20	212.51	3.00	OSF1.50	17060.00	7902.07				MinPt-ADP	
	426.57	213.93	283.44	212.64	3.00	OSF1.50	17080.00	7902.09				MinPt-SF	
	557.18	216.82	412.13	340.36	3.87	OSF1.50	17752.28	7903.00				TD	
30-015-39967 - COTTONWOOD HILLS 32 STATE COM 1H - Gyro to 8752ft Blind to 10500ft - A (DefinitiveSurvey)													Pass
	901.36	32.81	899.38	868.55	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	
	901.11	32.81	899.09	868.30	23454.97	MAS = 10.00 (m)	10.00	10.00				MinPt-SF	
	900.95	32.81	898.95	868.14	39644.18	MAS = 10.00 (m)	23.00	23.00				WRP	
	898.12	32.81	893.98	865.31	414.39	MAS = 10.00 (m)	290.00	290.00				MinPt-EOU	
	896.37	32.81	888.72	863.56	151.82	MAS = 10.00 (m)	670.00	670.00				MinPts	
	856.51	32.81	836.18	823.70	46.02	MAS = 10.00 (m)	1940.37	1940.31				MinPts	
	856.59	32.81	836.09	823.78	45.61	MAS = 10.00 (m)	1960.00	1959.92				MinPt-EOU	
	1313.88	80.99	1259.35	1232.89	24.80	OSF1.50	5360.00	5291.72				MinPt-CtCi	
	1316.50	87.46	1257.65	1229.03	22.97	OSF1.50	5830.00	5761.72				MinPt-EOU	
	1319.04	91.28	1257.65	1227.76	22.04	OSF1.50	6100.00	6031.72				MinPt-EOU	
	1322.37	95.98	1257.85	1226.40	20.99	OSF1.50	6430.00	6361.72				MinPt-EOU	
	1322.93	96.63	1257.97	1226.30	20.86	OSF1.50	6480.00	6411.72				MinPt-ADP	
	1334.60	112.73	1258.91	1221.87	18.00	OSF1.50	7600.00	7525.27				MinPt-CtCi	
	1334.74	113.17	1258.75	1221.56	17.92	OSF1.50	7640.00	7561.39				MinPt-EOU	
	1334.83	113.29	1258.77	1221.54	17.91	OSF1.50	7650.00	7570.23				MinPt-ADP	
	1345.94	115.46	1268.43	1230.48	17.71	OSF1.50	7870.00	7739.19				MinPt-SF	
	1501.46	119.52	1421.24	1381.94	19.08	OSF1.50	8414.40	7890.20				MinPt-SF	
	10105.51	141.94	10010.38	9963.57	107.92	OSF1.50	17752.28	7903.00				TD	
30-015-39967-0100 - COTTONWOOD HILLS 32 STATE COM 1H ST01 - Gyro to 8752ft MWD to 13586ft - A (DefinitiveSurvey)													Pass
	901.36	32.81	899.38	868.55	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	
	901.11	32.81	899.09	868.30	23454.97	MAS = 10.00 (m)	10.00	10.00				MinPt-SF	
	900.95	32.81	898.95	868.14	39644.18	MAS = 10.00 (m)	23.00	23.00				WRP	
	898.12	32.81	893.98	865.31	414.39	MAS = 10.00 (m)	290.00	290.00				MinPt-EOU	
	896.37	32.81	888.72	863.56	151.82	MAS = 10.00 (m)	670.00	670.00				MinPts	
	856.51	32.81	836.18	823.70	46.02	MAS = 10.00 (m)	1940.37	1940.31				MinPts	
	856.59	32.81	836.09	823.78	45.61	MAS = 10.00 (m)	1960.00	1959.92				MinPt-EOU	
	1313.88	80.99	1259.35	1232.89	24.80	OSF1.50	5360.00	5291.72				MinPt-CtCi	
	1316.50	87.46	1257.65	1229.03	22.97	OSF1.50	5830.00	5761.72				MinPt-EOU	
	1319.04	91.28	1257.65	1227.76	22.04	OSF1.50	6100.00	6031.72				MinPt-EOU	
	1322.37	95.98	1257.85	1226.40	20.99	OSF1.50	6430.00	6361.72				MinPt-EOU	
	1322.93	96.63	1257.97	1226.30	20.86	OSF1.50	6480.00	6411.72				MinPt-ADP	
	1334.60	112.73	1258.91	1221.87	18.00	OSF1.50	7600.00	7525.27				MinPt-CtCi	
	1334.74	113.17	1258.75	1221.56	17.92	OSF1.50	7640.00	7561.39				MinPt-EOU	
	1334.83	113.29	1258.77	1221.54	17.91	OSF1.50	7650.00	7570.23				MinPt-ADP	
	1345.94	115.46	1268.43	1230.48	17.71	OSF1.50	7870.00	7739.19				MinPt-SF	
	1501.46	119.52	1421.24	1381.94	19.08	OSF1.50	8414.40	7890.20				MinPt-SF	
	2326.24	122.71	2243.94	2203.53	28.77	OSF1.50	9790.00	7892.13				MinPt-CtCi	
	2326.97	125.26	2242.96	2201.71	28.19	OSF1.50	9910.00	7892.29				MinPt-EOU	
	2327.63	126.05	2243.09	2201.58	28.01	OSF1.50	9950.00	7892.35				MinPt-ADP	
	2329.06	128.22	2243.08	2200.84	27.55	OSF1.50	10020.00	7892.45				MinPt-EOU	
	2329.60	128.84	2243.20	2200.76	27.42	OSF1.50	10050.00	7892.49				MinPt-ADP	
	2334.09	135.07	2243.54	2199.02	26.20	OSF1.50	10250.00	7892.77				MinPt-EOU	
	2334.85	136.04	2243.66	2198.81	26.02	OSF1.50	10290.00	7892.83				MinPt-ADP	
	2346.41	144.21	2249.76	2202.20	24.65	OSF1.50	10540.00	7893.18				MinPt-EOU	
	2347.05	144.93	2249.93	2202.13	24.53	OSF1.50	10570.00	7893.22				MinPt-ADP	
	2347.70	158.13	2241.77	2189.57	22.47	OSF1.50	10930.00	7893.72				MinPt-CtCi	
	2348.46	160.58	2240.90	2187.88	22.13	OSF1.50	11030.00	7893.86				MinPt-EOU	
	2348.80	160.99	2240.97	2187.81	22.08	OSF1.50	11050.00	7893.89				MinPt-ADP	
	2325.74	181.76	2204.07	2143.99	19.34	OSF1.50	11650.00	7894.73				MinPt-CtCi	
	2326.00	182.41	2203.89	2143.58	19.27	OSF1.50	11690.00	7894.79				MinPt-EOU	
	2326.14	182.57	2203.92	2143.56	19.26	OSF1.50	11700.00	7894.80				MinPt-ADP	
	2338.92	187.47	2213.43	2151.45	18.85	OSF1.50	11970.00	7895.18				MinPt-SF	
	6407.71	168.66	6294.77	6239.05	57.49	OSF1.50	17752.28	7903.00				TD	
30-015-41084 - COTTONWOOD HILLS 32 STATE COM 2H - MWD to 12092ft - A (DefinitiveSurvey)													Pass
	1343.37	32.81	1341.39	1310.56	#####	MAS = 10.00 (m)	0.00	0.00				Surface	
	1343.36	32.81	1341.36	1310.55	75210.27	MAS = 10.00 (m)	23.00	23.00				WRP	
	1342.60	32.81	1338.54	1309.79	646.06	MAS = 10.00 (m)	270.00	270.00				MinPts	
	1342.61	32.81	1338.37	1309.80	591.56	MAS = 10.00 (m)	290.00	290.00				MinPt-EOU	
	1341.15	32.81	1321.03	1308.37	72.82	MAS = 10.00 (m)	1910.82	1910.80				MinPts	
	1341.27	32.81	1320.89	1308.47	71.93	MAS = 10.00 (m)	1940.00	1939.94				MinPt-EOU	
	1749.47	76.00	1698.26	1673.47	35.25	OSF1.50	5560.00	5491.72				MinPt-ADP	
	1764.46	93.33	1701.70	1671.13	28.83	OSF1.50	6850.00	6781.72				MinPt-EOU	
	1765.91	95.39	1701.78	1670.52	28.22	OSF1.50	7000.00	6931.72				MinPt-EOU	
	1766.34	95.91	1701.86	1670.42	28.07	OSF1.50	7050.00	6981.72				MinPt-SF	

Offset Trajectory	Separation			Allow Dev. (ft)	Sep. Fact.	Controlling Rule	Reference Trajectory		Risk Level			Alert	Status
	Ct-Ct (ft)	MAS (ft)	EOU (ft)				MD (ft)	TVD (ft)	Alert	Minor	Major		
1500.14	261.89	1325.05	1238.25	8.63		OSF1.50	13210.00	7896.88				MinPt-EOU	
1499.20	259.02	1326.02	1240.18	8.72		OSF1.50	13340.00	7897.06				MinPt-CtCt	
1500.01	252.48	1331.18	1247.52	8.96		OSF1.50	13580.00	7897.38				MinPt-CtCt	
1502.78	240.74	1341.79	1262.05	9.41		OSF1.50	14040.00	7898.00				MinPt-EOU	
1499.95	235.24	1342.62	1264.71	9.62		OSF1.50	14300.00	7898.35				MinPt-EOU	
1495.96	231.52	1341.10	1264.43	9.75		OSF1.50	14490.00	7898.61				MinPt-ADP	
1488.79	224.97	1338.31	1263.82	9.98		OSF1.50	14930.00	7899.20				MinPt-ADP	
1488.35	224.49	1338.19	1263.86	10.00		OSF1.50	14980.00	7899.27				MinPt-ADP	
1488.24	224.37	1338.16	1263.87	10.01		OSF1.50	15000.00	7899.29				MinPt-EOU	
1488.20	224.25	1338.20	1263.95	10.01		OSF1.50	15020.00	7899.32				MinPt-CtCt	
1485.31	220.78	1337.62	1264.53	10.15		OSF1.50	15340.00	7899.75				MinPt-ADP	
1467.76	219.15	1321.15	1248.60	10.11		OSF1.50	16124.05	7900.81				MinPt-CtCt	
1467.93	219.59	1321.04	1248.34	10.09		OSF1.50	16230.00	7900.95				MinPt-EOU	
1468.00	219.67	1321.05	1248.33	10.08		OSF1.50	16240.00	7900.96				MinPt-ADP	
1470.69	220.64	1323.10	1250.06	10.06		OSF1.50	16360.00	7901.12				MinPt-SF	
1503.06	228.70	1350.10	1274.37	9.91		OSF1.50	17200.00	7902.26				MinPt-CtCt	
1503.29	229.36	1349.88	1273.92	9.89		OSF1.50	17240.00	7902.31				MinPt-EOU	
1503.57	229.69	1349.94	1273.88	9.87		OSF1.50	17260.00	7902.34				MinPt-ADP	
1513.54	232.59	1357.98	1280.95	9.81		OSF1.50	17460.00	7902.61				MinPt-SF	
1551.17	235.69	1393.54	1315.48	9.93		OSF1.50	17752.28	7903.00				TD	



Coterra Southern Hills 32-29 State Fed Com 3H Rev4 kFc 05Feb24 Proposal
Geodetic Report

Def Plan

Report Date:	February 06, 2024 - 04:46 PM (UTC 0)	Survey / DLS Computation:	Minimum Curvature / Lubinski
Client:	COTERRA	Vertical Section Azimuth:	0.620 °(GRID North)
Field:	NM Eddy County (NAD 83)	Vertical Section Origin:	0.000 ft, 0.000 ft
Structure / Slot:	Coterra Southern Hills 32-29 State Fed Com Pad 1234 / Southern Hills	TVD Reference Datum:	RWD
Well:	Southern Hills 32-29 State Fed Com 3H	TVD Reference Elevation:	3267.500 ft above MSL
Borehole:	Southern Hills 32-29 State Fed Com 3H	Seabed / Ground Elevation:	3244.500 ft above MSL
UBHI / API#:	Unknown / Unknown	Magnetic Declination:	6.750°
Survey Name:	Coterra Southern Hills 32-29 State Fed Com 3H Rev4 kFc 05Feb24	Total Gravity Field Strength:	986.4345mgN (9.80665 Based)
Survey Date:	February 06, 2024	Gravity Model:	GARM
Tort / AHD / DDI / ERD Ratio:	116.286 ° / 10705.895 ft / 6.447 / 1.355	Total Magnetic Field Strength:	47288.533 nT
Coordinate Reference System:	NAD83 New Mexico State Plane, Eastern Zone, US Feet	Magnetic Dip Angle:	59.579°
Location Lat / Long:	32°45'2.62890"N, 104°12'57.00742"W	Declination Date:	February 05, 2024
Location Grid N/E Y/X:	N 393328.720 RUS, E 577728.300 RUS	Magnetic Declination Model:	HDGM 2024
CRS Grid Convergence Angle:	0.062°	North Reference:	Grid North
Grid Scale Factor:	0.99991051	Grid Convergence Used:	0.062°
Version / Patch:	2023.1.0.1	Total Corr Mag North->Grid North:	6.723°
		Local Coord Referenced To:	Well Head

Comments	MD (ft)	Incl (°)	Azim (°)	TVD (ft)	TVDSS (ft)	VSEC (ft)	NS (ft)	EW (ft)	Northing (RUS)	Easting (RUS)	Latitude (°)	Longitude (°)	DLS (°/100ft)	BR (°/100ft)	TR (°/100ft)
SHL [827 FSL, 1577 FWL]	0.00	0.00	0.00	0.00	-3.267.50	0.00	0.00	0.00	393.328.72	577.728.30	32.08128581	-104.21583539			
Nudge, Build 2"/100ft	1,800.00	0.00	125.48	1,800.00	-1,467.50	0.00	0.00	0.00	393.328.72	577.728.30	32.08128581	-104.21583539	0.00	0.00	0.00
Hold	2,450.15	13.00	125.48	2,444.58	-822.92	-41.98	-42.63	59.82	393.286.09	577.788.11	32.08116844	-104.21564242	2.00	2.00	0.00
Drop 2"/100ft	4,678.85	13.00	125.48	4,616.14	1,348.64	-328.59	-333.67	468.18	392.965.08	578.196.44	32.08036722	-104.21432507	0.00	0.00	0.00
Hold	5,329.00	0.00	125.48	5,260.72	1,983.22	-370.57	-376.31	528.00	392.952.45	578.256.25	32.08024986	-104.21413210	2.00	-2.00	0.00
KOP, Build 10"/100ft	7,366.00	0.00	125.48	7,297.72	4,030.22	-370.57	-376.31	528.00	392.952.45	578.256.25	32.08024986	-104.21413210	0.00	0.00	0.00
Build & 5"/100ft	8,116.00	75.00	0.80	7,851.15	4,583.65	54.09	48.32	533.93	393.377.03	578.262.18	32.08141701	-104.21411144	10.00	10.00	0.00
Landing Point	8,414.40	89.92	0.80	7,890.20	4,622.70	349.07	343.27	538.05	393.871.96	578.266.30	32.08222773	-104.21409708	5.00	5.00	0.00
IFP1, Turn 2"/100ft	12,556.04	89.92	0.80	7,896.00	4,628.50	4,490.69	4,484.50	596.00	397.812.81	578.324.25	32.09361059	-104.21389519	0.00	0.00	0.00
Hold	12,574.16	89.92	0.44	7,896.02	4,628.52	4,508.81	4,502.62	596.20	397.830.93	578.324.44	32.09366039	-104.21389449	2.00	0.02	-2.00
Southern Hills 32-29 State Fed Com 3H - PBHL[100' FNL,2112' FWL]	17,752.28	89.92	0.44	7,903.00	4,635.50	9,686.90	9,680.58	635.90	403,008.42	578,364.14	32.10789207	-104.21374775	0.00	0.00	0.00

Survey Type: Def Plan

Survey Error Model: ISCSA0 3 - D 95 % Confidence 2.7955 sigma
Survey Program:

Description	Part	MD From (ft)	MD To (ft)	EOU Freq (ft)	Hole Size (in)	Casing Diameter (in)	Expected Max Inclination (deg)	Survey Tool Code	Vendor / Tool	Borehole / Survey
	1	0.000	8,400.000	1/100.000	7.5 – 12.25	8.75	3.375 – 9.625	7	A001Mb_MWD	Southern Hills 32-29 State Fed Com 3H / Coterra S
	1	8,400.000	19,222.884	1/100.000	8.75 – 6.125	7	4.5	A008Mb_MWD+IFR1+MS	Southern Hills 32-29 State Fed Com 3H / Coterra S	

EOU Geometry:			
End MD (ft)	Hole Size (in)	Casing Size (in)	Name
313.030	17.500	13.375	
2,763.030	12.250	9.625	
9,264.030	8.750	7.000	
19,868.100	6.125	4.500	

Schlumberger

Coterra Southern Hills 32-29 State Fed Com 3H Rev4 kFc 05Feb24 Proposal

Geodetic Report

Def Plan

Report Date: February 06, 2024 - 04:41 PM (UTC 0)
Client: COTERRA
Field: NM Eddy County (NAD 83)
Structure / Slot: Coterra Southern Hills 32-29 State Fed Com Pad 1234 / Southern Hills 32-29 State Fed Com 3H
Well: Southern Hills 32-29 State Fed Com 3H
Borehole: Unknown / Unknown
UBH / API#:
Survey Name: Coterra Southern Hills 32-29 State Fed Com 3H Rev4 kFc 05Feb24
Survey Date: February 06, 2024
Tort / AHD / DDI / ERD Ratio: 116.288' / 10705.895 ft / 6.447' / 1.355
Coordinate Reference System: NAD83 New Mexico State Plane, Eastern Zone, US Feet
Location Lat / Long: 32°43'2.62890"N, 104°12'57.00742"W
Location Grid N/E Y/X: N 393328.720 RUS , E 577728.300 RUS
CRS Grid Convergence Angle: 0.062'
Grid Scale Factor: 0.99991061
Version / Patch: 2023.1.0.1

Survey / DLS Computation: Minimum Curvature / Lubinski
Vertical Section Azimuth: 0.620 °(GRID North)
Vertical Section Origin: 0.000 ft, 0.000 ft
TVD Reference Datum: RKB
TVD Reference Elevation: 3267.500 ft above MSL
Sealed / Ground Elevation: 3244.500 ft above MSL
Magnetic Declination: 6.786°
Total Gravity Field Strength: 998.4345mgm (9.80665 Based)
Gravity Model: GARM
Total Magnetic Field Strength: 47288.533 nT
Magnetic Dip Angle: 59.579°
Declination Date: February 05, 2024
Magnetic Declination Model: HDGM 2024
North Reference: Grid North
Grid Convergence Used: 0.062'
Total Corr Mag North->Grid North: 6.723°
Local Coord Referenced To: Well Head

Comments	MD (ft)	Incl (°)	Azim (°)	TVD (ft)	TVDSS (ft)	VSEC (ft)	NS (ft)	EW (ft)	Northing (RUS)	Easting (RUS)	Latitude (°)	Longitude (°)	DLS (°/100ft)	BR (°/100ft)	TR (°/100ft)
SHL [827' FSL, 1577' FWL]	0.00	0.00	0.00	0.00	-3.267.50	0.00	0.00	0.00	393,328.72	577,728.30	32.08128581	-104.21583539			
	100.00	0.00	125.48	100.00	-3.167.50	0.00	0.00	0.00	393,328.72	577,728.30	32.08128581	-104.21583539	0.00	0.00	0.00
	200.00	0.00	125.48	200.00	-3.067.50	0.00	0.00	0.00	393,328.72	577,728.30	32.08128581	-104.21583539	0.00	0.00	0.00
	300.00	0.00	125.48	300.00	-2.967.50	0.00	0.00	0.00	393,328.72	577,728.30	32.08128581	-104.21583539	0.00	0.00	0.00
	400.00	0.00	125.48	400.00	-2.867.50	0.00	0.00	0.00	393,328.72	577,728.30	32.08128581	-104.21583539	0.00	0.00	0.00
	500.00	0.00	125.48	500.00	-2.767.50	0.00	0.00	0.00	393,328.72	577,728.30	32.08128581	-104.21583539	0.00	0.00	0.00
	600.00	0.00	125.48	600.00	-2.667.50	0.00	0.00	0.00	393,328.72	577,728.30	32.08128581	-104.21583539	0.00	0.00	0.00
	700.00	0.00	125.48	700.00	-2.567.50	0.00	0.00	0.00	393,328.72	577,728.30	32.08128581	-104.21583539	0.00	0.00	0.00
	800.00	0.00	125.48	800.00	-2.467.50	0.00	0.00	0.00	393,328.72	577,728.30	32.08128581	-104.21583539	0.00	0.00	0.00
Rustler□	842.20	0.00	125.48	842.20	-2.425.30	0.00	0.00	0.00	393,328.72	577,728.30	32.08128581	-104.21583539	0.00	0.00	0.00
	900.00	0.00	125.48	900.00	-2.367.50	0.00	0.00	0.00	393,328.72	577,728.30	32.08128581	-104.21583539	0.00	0.00	0.00
	1,000.00	0.00	125.48	1,000.00	-2.267.50	0.00	0.00	0.00	393,328.72	577,728.30	32.08128581	-104.21583539	0.00	0.00	0.00
	1,100.00	0.00	125.48	1,100.00	-2.167.50	0.00	0.00	0.00	393,328.72	577,728.30	32.08128581	-104.21583539	0.00	0.00	0.00
	1,200.00	0.00	125.48	1,200.00	-2.067.50	0.00	0.00	0.00	393,328.72	577,728.30	32.08128581	-104.21583539	0.00	0.00	0.00
Top of Salt□	1,253.20	0.00	125.48	1,253.20	-2.014.30	0.00	0.00	0.00	393,328.72	577,728.30	32.08128581	-104.21583539	0.00	0.00	0.00
	1,300.00	0.00	125.48	1,300.00	-1.967.50	0.00	0.00	0.00	393,328.72	577,728.30	32.08128581	-104.21583539	0.00	0.00	0.00
	1,400.00	0.00	125.48	1,400.00	-1.867.50	0.00	0.00	0.00	393,328.72	577,728.30	32.08128581	-104.21583539	0.00	0.00	0.00
	1,500.00	0.00	125.48	1,500.00	-1.767.50	0.00	0.00	0.00	393,328.72	577,728.30	32.08128581	-104.21583539	0.00	0.00	0.00
	1,600.00	0.00	125.48	1,600.00	-1.667.50	0.00	0.00	0.00	393,328.72	577,728.30	32.08128581	-104.21583539	0.00	0.00	0.00
	1,700.00	0.00	125.48	1,700.00	-1.567.50	0.00	0.00	0.00	393,328.72	577,728.30	32.08128581	-104.21583539	0.00	0.00	0.00
Nudge, Build 2°/100ft	1,800.00	0.00	125.48	1,800.00	-1.467.50	0.00	0.00	0.00	393,328.72	577,728.30	32.08128581	-104.21583539	0.00	0.00	0.00
Base of Salt□	1,878.21	1.56	125.48	1,878.20	-1.389.30	-0.61	-0.62	0.87	393,328.10	577,729.17	32.08128410	-104.21583259	2.00	2.00	0.00
	1,900.00	2.00	125.48	1,899.98	-1.367.52	-1.00	-1.01	1.42	393,327.71	577,729.72	32.08128302	-104.21583081	2.00	2.00	0.00
	2,000.00	4.00	125.48	1,999.84	-1.267.66	-3.99	-4.05	5.68	393,324.67	577,733.98	32.08127466	-104.21581706	2.00	2.00	0.00
Anhydrite□	2,068.59	5.37	125.48	2,068.20	-1.199.30	-7.19	-7.30	10.25	393,321.42	577,738.55	32.08126570	-104.21580234	2.00	2.00	0.00
Lamar□	2,089.69	5.79	125.48	2,089.20	-1.178.30	-8.36	-8.49	11.92	393,320.23	577,740.22	32.08126242	-104.21579695	2.00	2.00	0.00
	2,100.00	6.00	125.48	2,099.45	-1.168.05	-8.97	-9.11	12.78	393,319.61	577,741.08	32.08126073	-104.21579417	2.00	2.00	0.00
Bel Canyon□	2,189.40	7.79	125.48	2,188.20	-1.079.30	-15.10	-15.34	21.52	393,313.39	577,749.82	32.08124359	-104.21576598	2.00	2.00	0.00
	2,200.00	8.00	125.48	2,198.70	-1.068.80	-15.93	-16.18	22.70	393,312.54	577,751.00	32.08124126	-104.21576215	2.00	2.00	0.00
	2,300.00	10.00	125.48	2,297.47	-970.03	-24.87	-25.26	35.44	393,303.46	577,763.74	32.08121627	-104.21572106	2.00	2.00	0.00
	2,400.00	12.00	125.48	2,395.62	-871.88	-35.78	-36.33	50.98	393,292.39	577,779.28	32.08118578	-104.21567709	2.00	2.00	0.00
	2,450.15	13.00	125.48	2,444.58	-822.92	-41.98	-42.63	59.82	393,286.09	577,788.11	32.08116844	-104.21564242	2.00	2.00	0.00
	2,500.00	13.00	125.48	2,493.16	-774.34	-48.39	-49.14	68.95	393,279.58	577,797.25	32.08115052	-104.21561295	0.00	0.00	0.00
	2,600.00	13.00	125.48	2,590.59	-676.91	-61.25	-62.20	87.28	393,266.52	577,815.57	32.08111457	-104.21555384	0.00	0.00	0.00
	2,700.00	13.00	125.48	2,688.03	-579.47	-74.11	-75.26	105.60	393,253.47	577,833.89	32.08107862	-104.21549473	0.00	0.00	0.00
	2,800.00	13.00	125.48	2,785.46	-482.04	-86.97	-88.32	123.92	393,240.41	577,852.21	32.08104267	-104.21543563	0.00	0.00	0.00
	2,900.00	13.00	125.48	2,882.90	-384.60	-99.83	-101.38	142.25	393,227.35	577,870.53	32.08100672	-104.21537652	0.00	0.00	0.00
	3,000.00	13.00	125.48	2,980.33	-287.17	-112.69	-114.44	160.57	393,214.29	577,888.85	32.08097077	-104.21531741	0.00	0.00	0.00
Cherry Canyon□	3,089.15	12.00	125.48	3,067.20	-209.30	-124.16	-126.39	176.90	393,202.65	577,905.19	32.08093872	-104.21526471	0.00	0.00	0.00
	3,100.00	13.00	125.48	3,077.77	-189.73	-125.55	-127.50	178.89	393,201.24	577,907.17	32.08093482	-104.21525830	0.00	0.00	0.00
	3,200.00	13.00	125.48	3,175.21	-92.29	-138.41	-140.55	197.21	393,188.18	577,925.50	32.08089887	-104.21519919	0.00	0.00	0.00
	3,300.00	13.00	125.48	3,272.64	5.14	-151.27	-153.61	215.54	393,175.12	577,943.82	32.08086292	-104.21514008	0.00	0.00	0.00
	3,400.00	13.00	125.48	3,370.08	102.58	-164.13	-166.67	233.86	393,162.06	577,962.14	32.08082697	-104.21508097	0.00	0.00	0.00
	3,500.00	13.00	125.48	3,467.51	200.01	-176.99	-179.73	252.18	393,149.01	577,980.46	32.08079102	-104.21502187	0.00	0.00	0.00
	3,600.00	13.00	125.48	3,564.95	297.45	-189.85	-192.79	270.50	393,135.95	577,998.78	32.08075507	-104.21496276	0.00	0.00	0.00
	3,700.00	13.00	125.48	3,662.38	394.89	-202.71	-205.65	289.83	393,122.85	578,017.10	32.08071912	-104.21480365	0.00	0.00	0.00
	3,800.00	13.00	125.48	3,759.82	492.32	-215.57	-219.81	307.15	393,109.83	578,035.42	32.08068317	-104.21464454	0.00	0.00	0.00
	3,900.00	13.00	125.48	3,857.26	589.76	-228.43	-231.97	325.47	393,096.78	578,053.74	32.08064722	-104.21478543	0.00	0.00	0.00
	4,000.00	13.00	125.48	3,954.69	687.19	-241.29	-245.02	343.80	393,083.72	578,072.06	32.08061127	-104.21472633	0.00	0.00	0.00
Brushy Canyon□	4,081.60	13.00	125.48	4,034.20	786.70	-251.78	-255.68	358.75	393,073.06	578,087.01	32.08058194	-104.21467809	0.00	0.00	0.00
	4,100.00	13.00	125.48	4,052.13	784.63	-254.15	-258.08	362.12	393,070.66	578,090.39	32.08057532	-104.21466722	0.00	0.00	0.00
	4,200.00	13.00	125.48	4,149.56	882.06	-267.01	-271.14	380.44	393,057.60	578,108.71	32.08053937	-104.21460811	0.00	0.00	0.00
	4,300.00	13.00	125.48	4,247.00	979.50	-279.87	-284.20	398.76	393,044.55	578,127.03	32.08050342	-104.21454900	0.00	0.00	0.00
	4,400.00	13.00	125.48	4,344.44	1,076.94	-292.73	-297.29	417.89	393,031.49	578,145.38	32.08046747	-104.21448990	0.00	0.00	0.00
	4,500.00	13.00	125.48	4,441.87	1,174.37	-305.59	-310.32	435.41	393,018.43	578,163.67	32.08043152	-104.21443079	0.00	0.00	0.00
	4,600.00	13.00	125.48	4,539.31	1,271.81	-318.45	-323.38	453.73	393,005.37	578,181.99	32.08039557	-104.21437168	0.00	0.00	0.00
	4,678.85	13.00	125.48	4,616.14	1,348.64	-328.59	-333.67	468.18	392,995.08	578,196.44	32.08036722	-104.21432507	0.00	0.00	0.00
	4,700.00	12.58	125.48	4,636.76	1,369.26	-331.26	-336.39	471.99	392,992.36	578,200.25	32.08035974	-104.21431277	2.00	-2.00	0.00
	4,800.00	10.58	125.48	4,734.72	1,467.22	-342.74	-348.04	488.34	392,980.71	578,216.5					

Comments	MD (ft)	Incl (°)	Azim (°)	TVD (ft)	TVDSS (ft)	VSEC (ft)	NS (ft)	EW (ft)	Northing (ftUS)	Easting (ftUS)	Latitude (°)	Longitude (°)	DLS (°/100ft)	BR (°/100ft)	TR (°/100ft)
Landing Point	8,400.00	89.20	0.80	7,890.09	4,622.59	334.68	328.88	537.85	393,657.57	578,266.10	32.08218817	-104.21409778	5.00	5.00	0.00
	8,414.40	89.92	0.80	7,890.20	4,622.70	349.07	343.27	538.05	393,671.96	578,266.30	32.08222773	-104.21409708	5.00	5.00	0.00
	8,500.00	89.92	0.80	7,890.32	4,622.82	434.68	428.87	539.25	393,757.55	578,267.50	32.08246301	-104.21409291	0.00	0.00	0.00
	8,600.00	89.92	0.80	7,890.46	4,622.96	534.67	528.86	540.65	393,857.53	578,268.90	32.08273785	-104.21408803	0.00	0.00	0.00
	8,700.00	89.92	0.80	7,890.60	4,623.10	634.67	628.85	542.05	393,957.51	578,270.30	32.08301269	-104.21408316	0.00	0.00	0.00
	8,800.00	89.92	0.80	7,890.74	4,623.24	734.67	728.84	543.45	394,057.49	578,271.70	32.08328753	-104.21407828	0.00	0.00	0.00
	8,900.00	89.92	0.80	7,890.88	4,623.38	834.67	828.83	544.85	394,157.47	578,273.10	32.08356236	-104.21407341	0.00	0.00	0.00
	9,000.00	89.92	0.80	7,891.02	4,623.52	934.67	928.82	546.25	394,257.45	578,274.50	32.08383720	-104.21406854	0.00	0.00	0.00
	9,100.00	89.92	0.80	7,891.16	4,623.66	1,034.67	1,028.81	547.64	394,357.43	578,275.89	32.08411204	-104.21406366	0.00	0.00	0.00
	9,200.00	89.92	0.80	7,891.30	4,623.80	1,134.67	1,128.80	549.04	394,457.41	578,277.29	32.08438688	-104.21405879	0.00	0.00	0.00
	9,300.00	89.92	0.80	7,891.44	4,623.94	1,234.67	1,228.79	550.44	394,557.39	578,278.69	32.08466172	-104.21405391	0.00	0.00	0.00
	9,400.00	89.92	0.80	7,891.58	4,624.08	1,334.67	1,328.78	551.84	394,657.37	578,280.09	32.08493656	-104.21404904	0.00	0.00	0.00
	9,500.00	89.92	0.80	7,891.72	4,624.22	1,434.67	1,428.77	553.24	394,757.36	578,281.49	32.08521140	-104.21404416	0.00	0.00	0.00
	9,600.00	89.92	0.80	7,891.86	4,624.36	1,534.67	1,528.76	554.64	394,857.34	578,282.89	32.08548624	-104.21403929	0.00	0.00	0.00
	9,700.00	89.92	0.80	7,892.00	4,624.50	1,634.67	1,628.75	556.04	394,957.32	578,284.29	32.08576108	-104.21403442	0.00	0.00	0.00
	9,800.00	89.92	0.80	7,892.14	4,624.64	1,734.67	1,728.74	557.44	395,057.30	578,285.69	32.08603592	-104.21402954	0.00	0.00	0.00
	9,900.00	89.92	0.80	7,892.28	4,624.78	1,834.67	1,828.73	558.84	395,157.28	578,287.09	32.08631076	-104.21402467	0.00	0.00	0.00
	10,000.00	89.92	0.80	7,892.42	4,624.92	1,934.67	1,928.72	560.24	395,257.26	578,288.49	32.08658560	-104.21401979	0.00	0.00	0.00
	10,100.00	89.92	0.80	7,892.56	4,625.06	2,034.67	2,028.71	561.64	395,357.24	578,289.89	32.08686044	-104.21401492	0.00	0.00	0.00
	10,200.00	89.92	0.80	7,892.70	4,625.20	2,134.66	2,128.70	563.04	395,457.22	578,291.28	32.08713528	-104.21401004	0.00	0.00	0.00
	10,300.00	89.92	0.80	7,892.84	4,625.34	2,234.66	2,228.69	564.43	395,557.20	578,292.68	32.08741012	-104.21400517	0.00	0.00	0.00
	10,400.00	89.92	0.80	7,892.98	4,625.48	2,334.66	2,328.68	565.83	395,657.18	578,294.08	32.08768496	-104.21400029	0.00	0.00	0.00
	10,500.00	89.92	0.80	7,893.12	4,625.62	2,434.66	2,428.67	567.23	395,757.17	578,295.48	32.08795980	-104.21399542	0.00	0.00	0.00
	10,600.00	89.92	0.80	7,893.26	4,625.76	2,534.66	2,528.66	568.63	395,857.15	578,296.88	32.08823464	-104.21399054	0.00	0.00	0.00
	10,700.00	89.92	0.80	7,893.40	4,625.90	2,634.66	2,628.65	570.03	395,957.13	578,298.28	32.08850948	-104.21398567	0.00	0.00	0.00
	10,800.00	89.92	0.80	7,893.54	4,626.04	2,734.66	2,728.64	571.43	396,057.11	578,299.68	32.08878432	-104.21398080	0.00	0.00	0.00
	10,900.00	89.92	0.80	7,893.68	4,626.18	2,834.66	2,828.63	572.83	396,157.09	578,301.08	32.08905916	-104.21397592	0.00	0.00	0.00
	11,000.00	89.92	0.80	7,893.82	4,626.32	2,934.66	2,928.62	574.23	396,257.07	578,302.48	32.08933399	-104.21397105	0.00	0.00	0.00
	11,100.00	89.92	0.80	7,893.96	4,626.46	3,034.66	3,028.61	575.63	396,357.05	578,303.88	32.08960883	-104.21396617	0.00	0.00	0.00
	11,200.00	89.92	0.80	7,894.10	4,626.60	3,134.66	3,128.60	577.03	396,457.03	578,305.27	32.08988367	-104.21396130	0.00	0.00	0.00
	11,300.00	89.92	0.80	7,894.24	4,626.74	3,234.66	3,228.59	578.43	396,557.01	578,306.67	32.09015851	-104.21395642	0.00	0.00	0.00
	11,400.00	89.92	0.80	7,894.38	4,626.88	3,334.66	3,328.58	579.83	396,656.99	578,308.07	32.09043335	-104.21395155	0.00	0.00	0.00
	11,500.00	89.92	0.80	7,894.52	4,627.02	3,434.66	3,428.57	581.22	396,756.98	578,309.47	32.09070819	-104.21394667	0.00	0.00	0.00
11,600.00	89.92	0.80	7,894.66	4,627.16	3,534.66	3,528.56	582.62	396,856.96	578,310.87	32.09098303	-104.21394180	0.00	0.00	0.00	
11,700.00	89.92	0.80	7,894.80	4,627.30	3,634.66	3,628.55	584.02	396,956.94	578,312.27	32.09125787	-104.21393692	0.00	0.00	0.00	
11,800.00	89.92	0.80	7,894.94	4,627.44	3,734.66	3,728.54	585.42	397,056.92	578,313.67	32.09153271	-104.21393205	0.00	0.00	0.00	
11,900.00	89.92	0.80	7,895.08	4,627.58	3,834.65	3,828.53	586.82	397,156.90	578,315.07	32.09180755	-104.21392717	0.00	0.00	0.00	
12,000.00	89.92	0.80	7,895.22	4,627.72	3,934.65	3,928.52	588.22	397,256.88	578,316.47	32.09208239	-104.21392230	0.00	0.00	0.00	
12,100.00	89.92	0.80	7,895.36	4,627.86	4,034.65	4,028.51	589.62	397,356.86	578,317.87	32.09235723	-104.21391742	0.00	0.00	0.00	
12,200.00	89.92	0.80	7,895.50	4,628.00	4,134.65	4,128.50	591.02	397,456.84	578,319.26	32.09263207	-104.21391255	0.00	0.00	0.00	
12,300.00	89.92	0.80	7,895.64	4,628.14	4,234.65	4,228.49	592.42	397,556.82	578,320.66	32.09290691	-104.21390767	0.00	0.00	0.00	
12,400.00	89.92	0.80	7,895.78	4,628.28	4,334.65	4,328.48	593.82	397,656.80	578,322.06	32.09318175	-104.21390279	0.00	0.00	0.00	
12,500.00	89.92	0.80	7,895.92	4,628.42	4,434.65	4,428.47	595.22	397,756.78	578,323.46	32.09345658	-104.21389792	0.00	0.00	0.00	
12,556.04	89.92	0.80	7,896.00	4,628.50	4,490.69	4,484.50	596.00	397,812.81	578,324.25	32.09361059	-104.21389519	0.00	0.00	0.00	
12,574.16	89.92	0.44	7,896.02	4,628.52	4,508.81	4,502.62	596.20	397,830.93	578,324.44	32.09366039	-104.21389449	2.00	0.02	-2.00	
12,600.00	89.92	0.44	7,896.06	4,628.56	4,534.65	4,528.46	596.39	397,856.77	578,324.64	32.09373143	-104.21389376	0.00	0.00	0.00	
12,700.00	89.92	0.44	7,896.19	4,628.69	4,634.65	4,628.46	597.16	397,956.76	578,325.41	32.09400629	-104.21389092	0.00	0.00	0.00	
12,800.00	89.92	0.44	7,896.33	4,628.83	4,734.65	4,728.46	597.93	398,056.74	578,326.17	32.09428115	-104.21388809	0.00	0.00	0.00	
12,900.00	89.92	0.44	7,896.46	4,628.96	4,834.65	4,828.45	598.69	398,156.73	578,326.94	32.09455601	-104.21388526	0.00	0.00	0.00	
13,000.00	89.92	0.44	7,896.60	4,629.10	4,934.65	4,928.45	599.46	398,256.72	578,327.71	32.09483087	-104.21388242	0.00	0.00	0.00	
13,100.00	89.92	0.44	7,896.73	4,629.23	5,034.65	5,028.45	600.23	398,356.71	578,328.47	32.09510573	-104.21387959	0.00	0.00	0.00	
13,200.00	89.92	0.44	7,896.87	4,629.37	5,134.65	5,128.44	600.99	398,456.70	578,329.24	32.09538059	-104.21387676	0.00	0.00	0.00	
13,300.00	89.92	0.44	7,897.00	4,629.50	5,234.65	5,228.44	601.76	398,556.68	578,330.01	32.09565545	-104.21387392	0.00	0.00	0.00	
13,400.00	89.92	0.44	7,897.14	4,629.64	5,334.65	5,328.44	602.53	398,656.67	578,330.77	32.09593031	-104.21387109	0.00	0.00	0.00	
13,500.00	89.92	0.44	7,897.27	4,629.77	5,434.65	5,428.43	603.29	398,756.66	578,331.54	32.09620517	-104.21386826	0.00	0.00	0.00	
13,600.00	89.92	0.44	7,897.41	4,629.91	5,534.64	5,528.43	604.06	398,856.65	578,332.31	32.09648003	-104.21386542	0.00	0.00		

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<https://www.emnrd.nm.gov/oed/contact-us>

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

CONDITIONS

Action 448357

CONDITIONS

Operator: Coterra Energy Operating Co. 6001 Deauville Blvd Midland, TX 79706	OGRID: 215099
	Action Number: 448357
	Action Type: [C-103] NOI Change of Plans (C-103A)

CONDITIONS

Created By	Condition	Condition Date
ward.rikala	Work was performed without OCD approval.	12/15/2025