Form 3160-3 (June 2015)		FORM AP OMB No. 1	PROVED 004-0137
UNITED STATES		Expires: Janua	ary 31, 2018
DEPARTMENT OF THE I	5. Lease Serial No.		
BUREAU OF LAND MANA			
APPLICATION FOR PERMIT TO D	RILL OR REENTER	6. If Indian, Allotee or	Tribe Name
	FENTER	7. If Unit or CA Agreer	nent, Name and No.
		-	
Ib. Type of Well: Oil Well Gas Well Ot	her	8 Lease Name and We	ll No
1c. Type of Completion: Hydraulic Fracturing	ngle Zone Multiple Zone	o. Ecuse r unite une vie	
2. Name of Operator		9. API Well No. 30-0	25-53100
3a. Address	3b. Phone No. (include area code)	10. Field and Pool, or H	Exploratory
4. Location of Well (<i>Report location clearly and in accordance w</i>	vith any State requirements.*)	11. Sec., T. R. M. or Bl	k. and Survey or Area
At surface			
At proposed prod. zone			
14. Distance in miles and direction from nearest town or post offi	ce*	12. County or Parish	13. State
15. Distance from proposed* location to nearest property or lease line, ft.	16. No of acres in lease 17. Spaci	ng Unit dedicated to this	well
(Also to nearest drig. unit line, if any)			
 Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 	19. Proposed Depth 20. BLM	BIA Bond No. in file	
21. Elevations (Show whether DF, KDB, RT, GL, etc.)	22. Approximate date work will start*	23. Estimated duration	
	24. Attachments		
The following, completed in accordance with the requirements of (as applicable)	Onshore Oil and Gas Order No. 1, and the F	Hydraulic Fracturing rule	per 43 CFR 3162.3-3
 Well plat certified by a registered surveyor. A Drilling Plan. 	4. Bond to cover the operation Item 20 above).	is unless covered by an ex	kisting bond on file (see
3. A Surface Use Plan (if the location is on National Forest System	n Lands, the 5. Operator certification.		
SUPO must be filed with the appropriate Forest Service Office	6. Such other site specific infor	rmation and/or plans as ma	ay be requested by the
25. Signature	Name (Printed/Typed)	Da	ate
Title			
Approved by (Signature)	Name (Printed/Typed)	Da	ate
Title	Office		
Application approval does not warrant or certify that the applican	t holds legal or equitable title to those rights	in the subject lease which	h would entitle the
applicant to conduct operations thereon. Conditions of approval, if any, are attached.		,	
Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, m of the United States any false, fictitious or fraudulent statements of	ake it a crime for any person knowingly and or representations as to any matter within its	willfully to make to any iurisdiction.	department or agency
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(Continued on page 2)

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INSTRUCTIONS

GENERAL: This form is designed for submitting proposals to perform certain well operations, as indicated on Federal and Indian lands and leases for action by appropriate Federal agencies, pursuant to applicable Federal laws 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, either are shown below or will be issued by, or may be obtained from local Federal offices.

ITEM I: If the proposal is to redrill to the same reservoir at a different subsurface location or to a new reservoir, use this form with appropriate notations. Consult applicable Federal regulations concerning subsequent work proposals or reports on the well.

ITEM 4: Locations on Federal or Indian land should be described in accordance with Federal requirements. Consult local Federal offices for specific instructions.

ITEM 14: Needed only when location of well cannot readily be found by road from the land or lease description. A plat, or plats, separate or on the reverse side, showing the roads to, and the surveyed location of, the wen, and any other required information, should be furnished when required by Federal agency offices.

ITEMS 15 AND 18: If well is to be, or has been directionany drilled, give distances for subsurface location of hole in any present or objective productive zone.

ITEM 22: Consult applicable Federal regulations, or appropriate officials, concerning approval of the proposal before operations are started.

ITEM 24: 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 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., 25 U.S.C. 396; 43 CFR 3160

PRINCIPAL PURPOSES: The information will be used to: (1) process and evaluate your application for a permit to drill a new oil, gas, or service wen or to reenter a plugged and abandoned well; and (2) document, for administrative use, information for the management, disposal and use of National Resource Lands and resources including (a) analyzing your proposal to discover and extract the Federal or Indian resources encountered; (b) reviewing procedures and equipment and the projected impact on the land involved; and (c) evaluating the effects of the proposed operation on the surface and subsurface water and other environmental impacts.

ROUTINE USE: Information from the record and/or the record win be transferred to appropriate Federal, State, and local or foreign agencies, when relevant to civil, criminal or regulatory investigations or prosecution, in connection with congressional inquiries and for regulatory responsibilities.

EFFECT OF NOT PROVIDING INFORMATION: Filing of this application and disclosure of the information is mandatory only if you elect to initiate a drilling or reentry operation on an oil and gas lease.

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

The BLM conects this information to anow evaluation of the technical, safety, and environmental factors involved with drilling for oil and/or gas on Federal and Indian oil and gas leases. This information will be used to analyze and approve applications. Response to this request is mandatory only if the operator elects to initiate drilling or reentry operations on an oil and gas lease. 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 Conection Clearance Officer (WO-630), 1849 C Street, N.W., Mail Stop 401 LS, Washington, D.C. 20240.

Additional Operator Remarks

Location of Well

0. SHL: SWSE / 270 FSL / 2100 FEL / TWSP: 25S / RANGE: 33E / SECTION: 20 / LAT: 32.109573 / LONG: -103.592551 (TVD: 0 feet, MD: 0 feet) PPP: SESE / 100 FSL / 1173 FEL / TWSP: 25S / RANGE: 33E / SECTION: 20 / LAT: 32.109102 / LONG: -103.589557 (TVD: 10808 feet, MD: 10876 feet) BHL: NENE / 100 FNL / 1173 FEL / TWSP: 25S / RANGE: 33E / SECTION: 17 / LAT: 32.137578 / LONG: -103.58954 (TVD: 11465 feet, MD: 21569 feet)

BLM Point of Contact

Name: JANET D ESTES Title: ADJUDICATOR Phone: (575) 234-6233 Email: JESTES@BLM.GOV

Review and Appeal Rights

A person contesting a decision shall request a State Director review. This request must be filed within 20 working days of receipt of the Notice with the appropriate State Director (see 43 CFR 3165.3). The State Director review decision may be appealed to the Interior Board of Land Appeals, 801 North Quincy Street, Suite 300, Arlington, VA 22203 (see 43 CFR 3165.4). Contact the above listed Bureau of Land Management office for further information.

District I 1625 N. French Dr., Hobbs, NM 88240 Phone: (575) 393-6161 Fax: (575) 393-0720 District II 811 S. First St., Artesia, NM 88210 Phone: (575) 748-1283 Fax: (575) 748-9720 District III 1000 Rio Brazos Road, Aztec, NM 87410 Phone: (505) 334-6178 Fax: (505) 334-6170 District IV 1220 S. St. Francis Dr., Santa Fe, NM 87505 Phone: (505) 476-3460 Fax: (505) 476-3462

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State of New Mexico Energy, Minerals & Natural Resources Department OIL CONSERVATION DIVISION 1220 South St. Francis Dr. Santa Fe, NM 87505

AMENDED REPORT



Rec	eived	bv	OCD:	5/31/2024	1:41:12 PM
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	nt	Subn Via E	nit Electronically E-permitting					
This Natural Gas Manag	N gement Plan m	ATURAL GA ust be submitted wir <u>Section</u>	AS MANA th each Applicar 1 – Plan D	GEMENT PI tion for Permit to D escription	L AN Drill (APD) for a	new or	recompleted well.	
I. Operator: <u>Cimarex Er</u> II. Type: X Original	nergy Company □ Amendmen	<u>Ef</u> t due to □ 19.15.27	fective May 25.	2021 15099 AC □ 19.15.27.9.D	Date: (6)(b) NMAC 🗆	08/24 Other.	4/2023	
If Other, please describe III. Well(s): Provide t to be recompleted from a	:	nformation for each ad or connected to a	new or recomp	leted well or set of y point.	wells proposed	to be d	rilled or proposed	
well Name	API	ULSIR	Footages	Oil BBL/D	Gas MCF/D	MCF/D Produced V BBL/I		
IV. Central Delivery Po V. Anticipated Schedu or proposed to be recom	Vaca Draw 20-17 Federal 303H 0, Sec 20 1258, R33E 270 FSL/2100 FEL 1064 1756 1596 IV. Central Delivery Point Name: Vaca Draw 20-17 5H-6H CTP [See 19.15.27.9(D)(1) NMAC] V. Anticipated Schedule: Provide the following information for each new or recompleted well or set of wells proposed to be drilled or proposed to be recompleted from a single well pad or connected to a central delivery point. Image: Content of the set of							
Well Name	Well Name API Spud Date			Completion In Commencement Date H		Flow Date	First Production Date	
Vaca Draw 20-17 Federal 303H 9/4/2024 10/14/2024 12/1/2024 1/12/2025 1/12/2025 VI. Separation Equipment: I Attach a complete description of how Operator will size separation equipment to optimize gas capture. VII. Operational Practices: I Attach a complete description of the actions Operator will take to comply with the requirements of Subsection A through F of 19.15.27.8 NMAC. VIII. Best Management Practices: I Attach a complete description of Operator's best management practices to minimize venting during active and planned maintenance.								

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Section 2 – Enhanced Plan EFFECTIVE APRIL 1, 2022

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

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

IX. Anticipated Natural Gas Production:

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

X. Natural Gas Gathering System (NGGS):

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

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

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

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

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

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

<u>Section 3 - Certifications</u> <u>Effective May 25, 2021</u>

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

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

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

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

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

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

Section 4 - Notices

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

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

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

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

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

Signature: Sarah Jordan
Printed Name: Sarah Jordan
Title: Regulatory Analyst
E-mail Address: sarah.jordan@coterra.com
Date: 8/24/25
Phone: 432/620-1909
OIL CONSERVATION DIVISION (Only applicable when submitted as a standalone form)
Approved By:
Title:
Approval Date:
Approval Date: Conditions of Approval:
Approval Date: Conditions of Approval:
Approval Date: Conditions of Approval:
Approval Date: Conditions of Approval:

From State of New Mexico, Natural Gas Management Plan

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

XEC Standard Response

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

<u>Cimarex</u> <u>VII. Operational Practices</u>

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

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

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

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

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

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

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

• Stock tank servicing:

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

• Pressure vessel/compressor servicing and associated blowdowns:

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

• Flare/combustor maintenance:

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

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

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1. Geological Formations

TVD of target 11,465	Pilot Hole TD N/A
MD at TD 21,569	Deepest expected fresh water

Formation	Depth (TVD) from KB	Water/Mineral Bearing/Target Zone	Hazards
RUSTLER	945	N/A	
TOP SALT	1320	N/A	
BASE SALT	4919	N/A	
TOP DELAWARE SANDS	4953	N/A	
CHERRY CANYON	6000	N/A	
BRUSHY CANYON	7546	Hydrocarbons	
BASAL BRUSHY CANYON	8877	Hydrocarbons	
BONE SPRING LIME	9063	Hydrocarbons	
LEONARD	9103	Hydrocarbons	
AVALON	9325	Hydrocarbons	
1ST BONE SPRING SAND	10045	Hydrocarbons	
2ND BONE SPRING SAND	10597	Hydrocarbons	
3RD BONE SPRING CARB	11079	Hydrocarbons	
HARKEY A SHALE	11400	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	1025	1025	13-3/8"	48.00	H-40	ST&C	1.67	3.90	6.54
12 1/4	0	4908	4908	9-5/8"	40.00	HCK-55	LT&C	1.45	1.50	2.86
8 3/4	0	11626	11361	7"	29.00	P-110	BT&C	1.60	2.11	66.05
6	10676	21569	11465	4-1/2"	11.60	P-110	BT&C	1.34	1.89	40.10
					BLM	Minimum Sa	afety 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., Vaca Draw 20-17 Federal 303H

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	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
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3. Cementing Program

Casing	# Sks	Wt. Ib/gal	Yld ft3/sack	H2O gal/sk	500# Comp. Strength (hours)	Slurry Description
Surface	497	13.50	1.72	9.15	15.5	Lead: Class C + Bentonite
	133	14.80	1.34	6.32	9.5	Tail: Class C + LCM
Intermediate	931	12.90	1.88	9.65	12	Lead: 35:65 (Poz:C) + Salt + Bentonite
	283	14.80	1.36	6.57	9.5	Tail: Class C + Retarder
Production	379	10.30	3.64	22.18		Lead: Tuned Light + LCM
	131	14.20	1.30	5.86	14:30	Tail: 50:50 (Poz:H) + Salt + Bentonite + Fluid Loss + Dispersant + SMS
Completion System	738	14.20	1.30	5.86	14:30	Tail: 50:50 (Poz:H) + Salt + Bentonite + Fluid Loss + Dispersant + SMS

Casing String	тос	% Excess
Surface	0	45
Intermediate	0	50
Production	4708	25
Completion System	11426	10

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

4. Pressure Control Equipment

BOP installed and tested before drilling which hole?	Size	Min Required WP	Туре		Tested To
12 1/4	13 5/8	3 M	Annular	х	50% of working pressure
			Blind Ram		
			Pipe Ram	x	3M
			Double Ram	Х	
			Other		
8 3/4	13 5/8	5 M	Annular	х	50% of working pressure
			Blind Ram		
			Pipe Ram	х	5M
			Double Ram	Х	
			Other		
6	13 5/8	5M	Annular	х	50% of working pressure
			Blind Ram		
			Pipe Ram	Х	5M
			Double Ram	Х	
			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.

Х	Form On E Will b	ation integrity test will be performed per Onshore Order #2. xploratory 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. De tested in accordance with Onshore Oil and Gas Order #2 III.B.1.i.
Х	A var	iance 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?

The multi-bowl wellhead will be installed by vendors 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, monitored by the wellhead vendor representative. All BOP equipment will be tested utilizing a conventional test plug. Not a cup or J-packer type. After running the 13-3/8" surface casing, a 5M 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. After running the Intermediate casing, a 5M 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.

5. Mud Program

Depth	Туре	Weigh	it (ppg)	Viscosity	Water Loss				
0' to 1025'	Fresh Water	7.83 - 8	8.33	28	N/C				
1025' to 4908'	Brine Water	9.80 - 1	10.30	30-32	N/C				
4908' to 11626'	Cut Brine or OBM	8.50 - 9	9.00	27-70	N/C				
11918' to 21569'	ОВМ	9.00 - 9	9.50	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 o	r gain of fluid?		PVT/Pason/Vis	ual Monitoring					

6. Logging and Testing Procedures

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

Additional Logs Planned	Interval

7. Drilling Conditions

Condition	
BH Pressure at deepest TVD	5663 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.

Х	H2S is present
Х	H2S plan is attached

8. Other Facets of Operation

9. Wellhead

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. Slips will be utilized after running and cementing the production casing. After installation of the slips and wellhead on the production casing, a 5M 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 surface casing string will be tested as per Onshore Order No. 2 to at least 0.22 psi/ft or 1500 psi, whichever is greater. The casing string utilizing steel body pack-off will be tested to 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.

Schlumberger

Borehole:

0(ft)

 \square

(ft

 \square

Vaca Draw 20-17 Federal 303H

MagDec:	HDGM 2023 6.245°	Dip: FS:	Date: Gravity F	Date: Gravity FS:			
Critical	Point		MD		INCL		
SHL [270'	' FSL, 2100' FEL]		0.00		0.00		
Rustler			945.00		0.00		
Top Salt	uild 2°/100ft		1320.00		0.00		
Hold			2275.12		0.00 9.50		
Lamar			4957.99		9.50		
Bell Cany	on		4997.53		9.50		
Cherry Ca	anyon		6054.03		9.50		
Drop 271	υυπ		6925.59 7400 71		9.50		
Brushy Ca	anyon		7614.16		0.00		
Basal Bru	shy Canyon		8945.16		0.00		
Bone Spri	ing Lime		9131.16		0.00		
Leonard Avalon			91/1.16		0.00		
1st BS SS	8		10113.16		0.00		
2nd BS S	S		10665.16		0.00		
KOP, Buil	d 10°/100ft		10875.71		0.00		
3rd BS Ca	arb		11158.50		28.28		
Build 5°/1	uutt Point		11625.71 11017 01		15.00 89.61		
Turn 2°/1	00ft		11997.91		89.61		
Hold			12297.86		89.61		
Section 20	0-17 Line Cross w 20-17 Federal 303H - B		16389.00 1173'		89.61		
FEL]			21569.31		89.61		
Ο							
U		SH 0 N 0.0 0 V	IL [270' FSL, 2100' FEL] /ID 0 TVD /0 ° incl 101.28 ° az /sec				
1000	Rustler (945 TVD)						
	Top Salt (1320 TVD)	Nu	idge, Build 2°/100ft				
		18	00 MD 1800 TVD 00 ° incl 101.28 ° az				
2000							
		Но	la				
		22 9.5 -8	75 MD 2273 TVD 50 ° incl 101.28 ° az vsec				
3000							
4000							
4000							
5000	Bell Canyon (4958 TVD)						
6000	Cherry Canyon (6000 TVD)						
			0%/400#				
		6926	2 /100ft MD 6860 TVD ° incl 101.28 ° az				
7000		-163	Vsec				
		N Hold					
	Brushy Canyon (7546 TVD)	7401	MD 7333 TVD ° incl 101.28 ° az				
٥٩٩٩		-171	vsec				
0000							
			COP, Build 10°/100ft				
			0.00 ° incl 101.28 ° az 171 vsec				
9000	Basal Brushy Canyon (8877 TVD) Bone Spring Lime (9063 TVD) Leonard (9103 TVD)		Build 5°/100ft 11626 MD 11361 TVD				
	Avalon (9325 TVD)		75.00 ° incl 5.63 ° az 251 vsec				
			Landing Point 11918 MD 11400 TVD				
0000			/ 89.61 ° incl 5.63 ° az 539 vsec				
			Turn 2°/100ft 11998 MD 11401 TVD				
	2nd BS SS (10597 TVD)		618 vsec				
1000	Vaca Draw 20-17 Federal 303H - F		12298 MD 11403 Tv 89.61 ° incl 359.63 °	/D az			
1000	3rd BS Carb (11079 TVD)		918 vsec				
2000						Se Se	
						89	

COTERRA







COTERRA

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Schlumberger

Coterra Vaca Draw 20-17 Federal 303H Rev0 kFc 25May23 Proposal Geodetic

Report Def Plan

Report Date: Client: Field: Structure / Slot: Well: Borehole: UBHI / API#: Survey Name: Survey Name: Survey Date: Tort / AHD / DDI / ERD Ratio: Coordinate Reference System: Location Lat / Long: Location Grid N/E Y/X: CRS Grid Convergence Angle: Grid Scale Factor: Version / Patch:	May 25, 2023 - 06:16 PM (UTC 0) COTERRA NM Lea County (NAD 83) Coterra Vaca Draw 20-17 Federal Pad / Vaca Draw 20-17 Federal 303H Vaca Draw 20-17 Federal 303H Vaca Draw 20-17 Federal 303H Unknown / Unknown Coterra Vaca Draw 20-17 Federal 303H Rev0 kFc 25May23 May 25, 2023 114.614 ° / 11210.988 ft / 6.383 / 0.978 NAD83 New Mexico State Plane, Eastern Zone, US Feet 32°6'34.46418"N , 103°35'33.18399"W N 404387.330 ftUS , E 770700.440 ftUS 0.3938° 0.99996934 2022.5.0.11	Survey / DLS Computation: Vertical Section Azimuth: Vertical Section Origin: TVD Reference Datum: TVD Reference Elevation: Seabed / Ground Elevation: Magnetic Declination: Total Gravity Field Strength: Gravity Model: Total Magnetic Field Strength: Magnetic Dip Angle: Declination Date: Magnetic Declination Model: North Reference: Grid Convergence Used: Total Corr Mag North->Grid North:	Minimum Curvature / Lubinski 359.630 °(GRID North) 0.000 ft, 0.000 ft RKB 3430.400 ft above MSL 3407.400 ft above MSL 6.245° 998.4317mgn (9.80665 Based) GARM 47358.628 nT 59.635° May 25, 2023 HDGM 2023 Grid North 0.3938° 5.8508°
Version / Patch:	2022.5.0.11	Total Corr Mag North->Grid North: Local Coord Referenced To:	5.8508° Well Head

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)
SHL [270' FSL, 2100' FEL]	0.00	0.00	101.28	0.00	-3,430.40	0.00	0.00	0.00	404,387.33	770,700.44	32.10957338	-103.59255111	0.00	0.00	0.00
	200.00	0.00	101.28	200.00	-3,230.40	0.00	0.00	0.00	404,387.33	770,700.44	32.10957338	-103.59255111	0.00	0.00	0.00
	300.00 400.00	0.00 0.00	101.28 101.28	300.00 400.00	-3,130.40 -3,030.40	0.00 0.00	0.00 0.00	0.00 0.00	404,387.33 404,387.33	770,700.44 770,700.44	32.10957338 32.10957338	-103.59255111 -103.59255111	0.00 0.00	0.00 0.00	0.00 0.00
	500.00	0.00	101.28	500.00	-2,930.40	0.00	0.00	0.00	404,387.33	770,700.44	32.10957338	-103.59255111	0.00	0.00	0.00
	700.00	0.00	101.28	700.00	-2,730.40	0.00	0.00	0.00	404,387.33	770,700.44	32.10957338	-103.59255111	0.00	0.00	0.00
	800.00 900.00	0.00 0.00	101.28 101.28	800.00 900.00	-2,630.40 -2,530.40	0.00 0.00	0.00 0.00	0.00 0.00	404,387.33 404,387.33	770,700.44 770,700.44	32.10957338 32.10957338	-103.59255111 -103.59255111	0.00 0.00	0.00 0.00	0.00 0.00
Rustler	945.00	0.00	101.28	945.00	-2,485.40	0.00	0.00	0.00	404,387.33	770,700.44	32.10957338	-103.59255111	0.00	0.00	0.00
	1,100.00	0.00	101.28	1,100.00	-2,430.40 -2,330.40	0.00	0.00	0.00	404,387.33	770,700.44	32.10957338	-103.59255111	0.00	0.00	0.00
	1,200.00 1,300.00	0.00 0.00	101.28 101.28	1,200.00 1,300.00	-2,230.40 -2,130.40	0.00 0.00	0.00 0.00	0.00 0.00	404,387.33 404,387.33	770,700.44 770,700.44	32.10957338 32.10957338	-103.59255111 -103.59255111	0.00 0.00	0.00 0.00	0.00 0.00
Top Salt	1,320.00	0.00	101.28	1,320.00	-2,110.40	0.00	0.00	0.00	404,387.33	770,700.44	32.10957338	-103.59255111	0.00	0.00	0.00
	1,500.00	0.00	101.28	1,500.00	-1,930.40	0.00	0.00	0.00	404,387.33	770,700.44	32.10957338	-103.59255111	0.00	0.00	0.00
	1,600.00 1,700.00	0.00 0.00	101.28 101.28	1,600.00 1,700.00	-1,830.40 -1,730.40	0.00 0.00	0.00 0.00	0.00 0.00	404,387.33 404,387.33	770,700.44 770,700.44	32.10957338 32.10957338	-103.59255111 -103.59255111	0.00 0.00	0.00 0.00	0.00 0.00
Nudge, Build 2°/100ft	1,800.00	0.00	101.28	1,800.00	-1,630.40	0.00	0.00	0.00	404,387.33	770,700.44	32.10957338	-103.59255111	0.00	0.00	0.00
	2,000.00	4.00	101.28	1,999.84	-1,430.56	-1.41	-0.34 -1.37	6.84	404,385.96	770,702.13	32.10956950	-103.59252904	2.00	2.00	0.00
	2,100.00 2,200.00	6.00 8.00	101.28 101.28	2,099.45 2,198.70	-1,330.95 -1,231.70	-3.17 -5.63	-3.07 -5.46	15.39 27.34	404,384.26 404,381.88	770,715.83 770,727.78	32.10956465 32.10955787	-103.59250147 -103.59246293	2.00 2.00	2.00 2.00	0.00 0.00
Hold	2,275.12	9.50 9.50	101.28 101.28	2,272.95 2 297 48	-1,157.45	-7.94 -8.77	-7.69 -8.49	38.55 42.58	404,379.64 404 378 84	770,738.99 770 743 02	32.10955151	-103.59242679	2.00	2.00	0.00
	2,400.00	9.50	101.28	2,396.11	-1,034.29	-12.10	-11.73	58.77	404,375.61	770,759.20	32.10954005	-103.59236159	0.00	0.00	0.00
	2,500.00 2,600.00	9.50 9.50	101.28 101.28	2,494.74 2,593.37	-935.66 -837.03	-15.44 -18.77	-14.96 -18.19	74.96 91.15	404,372.38 404,369.15	770,775.39 770,791.58	32.10953086 32.10952168	-103.59230937 -103.59225716	0.00	0.00 0.00	0.00 0.00
	2,700.00 2 800 00	9.50 9.50	101.28 101.28	2,691.99 2 790 62	-738.41 -639 78	-22.11 -25.44	-21.42 -24 65	107.34 123.53	404,365.92 404,362,69	770,807.77 770 823 96	32.10951249 32.10950331	-103.59220495 -103 59215274	0.00	0.00	0.00
	2,900.00	9.50	101.28	2,889.25	-541.15	-28.78	-27.88	139.72	404,359.46	770,840.15	32.10949412	-103.59210053	0.00	0.00	0.00
	3,000.00 3,100.00	9.50 9.50	101.28 101.28	2,987.88 3,086.51	-442.52 -343.89	-32.11 -35.45	-31.11 -34.34	155.91 172.10	404,356.23 404,352.99	770,856.34 770,872.53	32.10948494 32.10947575	-103.59204832 -103.59199611	0.00	0.00	0.00 0.00
	3,200.00 3,300.00	9.50 9.50	101.28 101.28	3,185.13 3.283.76	-245.27 -146.64	-38.78 -42.12	-37.57 -40.80	188.29 204.47	404,349.76 404.346.53	770,888.72 770.904.91	32.10946657 32.10945738	-103.59194389 -103.59189168	0.00 0.00	0.00 0.00	0.00 0.00
	3,400.00	9.50	101.28	3,382.39	-48.01	-45.45	-44.03	220.66	404,343.30	770,921.10	32.10944820	-103.59183947	0.00	0.00	0.00
	3,600.00	9.50 9.50	101.28	3,481.02 3,579.65	50.62 149.25	-48.79 -52.12	-47.26 -50.49	236.85	404,340.07 404,336.84	770,937.29 770,953.48	32.10943901 32.10942983	-103.59178726 -103.59173505	0.00	0.00	0.00
	3,700.00 3.800.00	9.50 9.50	101.28 101.28	3,678.27 3.776.90	247.87 346.50	-55.45 -58.79	-53.72 -56.95	269.23 285.42	404,333.61 404.330.38	770,969.67 770.985.85	32.10942065 32.10941146	-103.59168284 -103.59163062	0.00 0.00	0.00 0.00	0.00 0.00
	3,900.00	9.50	101.28	3,875.53	445.13	-62.12	-60.18	301.61	404,327.15	771,002.04	32.10940228	-103.59157841	0.00	0.00	0.00
	4,100.00	9.50 9.50	101.28	3,974.10 4,072.79	642.39	-68.79	-66.64	333.99	404,323.92	771,018.23	32.10939309	-103.59152620 -103.59147399	0.00	0.00	0.00
	4,200.00 4,300.00	9.50 9.50	101.28 101.28	4,171.41 4,270.04	741.01 839.64	-72.13 -75.46	-69.87 -73.10	350.18 366.37	404,317.46 404,314.23	771,050.61 771,066.80	32.10937472 32.10936554	-103.59142178 -103.59136957	0.00 0.00	0.00 0.00	0.00 0.00
	4,400.00	9.50	101.28	4,368.67	938.27	-78.80	-76.33	382.56	404,311.00	771,082.99	32.10935635	-103.59131736	0.00	0.00	0.00
	4,600.00	9.50	101.28	4,565.92	1,135.52	-85.47	-82.79	414.94	404,304.54	771,115.37	32.10933798	-103.59120314	0.00	0.00	0.00
	4,700.00 4,800.00	9.50 9.50	101.28 101.28	4,664.55 4,763.18	1,234.15 1,332.78	-88.80 -92.14	-86.02 -89.25	431.13 447.32	404,301.31 404,298.08	771,131.56 771,147.75	32.10932880 32.10931961	-103.59116072 -103.59110851	0.00 0.00	0.00 0.00	0.00 0.00
lamar	4,900.00 4 957 99	9.50 9.50	101.28 101.28	4,861.81 4 919 00	1,431.41 1 488 60	-95.47 -97.40	-92.48 -94 35	463.51 472 90	404,294.85 404 292 98	771,163.94 771 173 32	32.10931043 32.10930510	-103.59105630	0.00	0.00	0.00
Bell Canyon	4,997.53	9.50	101.28	4,958.00	1,527.60	-98.72	-95.63	479.30	404,291.70	771,179.73	32.10930147	-103.59102002	0.00	0.00	0.00
	5,000.00 5,100.00	9.50 9.50	101.28 101.28	4,960.44 5,059.06	1,530.04 1,628.66	-98.80 -102.14	-95.71 -98.94	479.70 495.89	404,291.62 404,288.39	771,180.13 771,196.32	32.10930124 32.10929206	-103.59100409 -103.59095188	0.00	0.00 0.00	0.00 0.00
	5,200.00 5,300.00	9.50 9.50	101.28 101.28	5,157.69 5,256.32	1,727.29 1 825 92	-105.47 -108.81	-102.17 -105 40	512.08 528.27	404,285.16 404 281 93	771,212.50 771 228 69	32.10928287 32.10927369	-103.59089966 -103 59084745	0.00	0.00	0.00
	5,400.00	9.50	101.28	5,354.95	1,924.55	-112.14	-108.63	544.46	404,278.70	771,244.88	32.10926450	-103.59079524	0.00	0.00	0.00
	5,500.00 5,600.00	9.50 9.50	101.28 101.28	5,453.58 5,552.20	2,023.18 2,121.80	-115.48 -118.81	-111.86 -115.09	560.65 576.84	404,275.47 404,272.24	771,261.07 771,277.26	32.10925532 32.10924613	-103.59074303 -103.59069082	0.00	0.00 0.00	0.00 0.00
	5,700.00 5,800.00	9.50 9.50	101.28 101.28	5,650.83 5,749.46	2,220.43 2,319.06	-122.15 -125.48	-118.32 -121.55	593.03 609.22	404,269.01 404,265,78	771,293.45 771,309.64	32.10923695 32.10922776	-103.59063861 -103.59058640	0.00	0.00	0.00
	5,900.00	9.50	101.28	5,848.09	2,417.69	-128.82	-124.78	625.41	404,262.55	771,325.83	32.10921858	-103.59053419	0.00	0.00	0.00
Cherry Canyon	6,054.03	9.50 9.50	101.28	5,946.71 6,000.00	2,569.60	-132.15	-128.01	650.35	404,259.52 404,257.58	771,342.02	32.10920939	-103.59046197 -103.59045377	0.00	0.00	0.00
	6,100.00 6,200.00	9.50 9.50	101.28 101.28	6,045.34 6,143.97	2,614.94 2,713.57	-135.49 -138.82	-131.24 -134.47	657.79 673.98	404,256.09 404,252.86	771,358.21 771,374.40	32.10920021 32.10919102	-103.59042976 -103.59037755	0.00 0.00	0.00 0.00	0.00 0.00
	6,300.00 6,400.00	9.50 9.50	101.28 101.28	6,242.60 6 341 23	2,812.20 2 910 83	-142.16 -145.49	-137.70 -140 93	690.17 706.36	404,249.63 404 246 40	771,390.59 771 406 78	32.10918184	-103.59032534	0.00	0.00	0.00
	6,500.00	9.50	101.28	6,439.85	3,009.45	-148.82	-144.16	722.55	404,243.17	771,422.97	32.10916346	-103.59022092	0.00	0.00	0.00
	6,600.00 6,700.00	9.50 9.50	101.28	6,538.48 6,637.11	3,108.08 3,206.71	-152.16 -155.49	-147.39 -150.62	738.74 754.93	404,239.94 404,236.71	771,439.15 771,455.34	32.10915428 32.10914509	-103.59016871 -103.59011650	0.00	0.00	0.00
	6,800.00 6.900.00	9.50 9.50	101.28 101.28	6,735.74 6.834.37	3,305.34 3.403.97	-158.83 -162.16	-153.85 -157.08	771.12 787.31	404,233.48 404.230.25	771,471.53 771.487.72	32.10913591 32.10912672	-103.59006428 -103.59001207	0.00 0.00	0.00 0.00	0.00 0.00
Drop 2°/100ft	6,925.59	9.50	101.28	6,859.60	3,429.20	-163.02	-157.91	791.45	404,229.43	771,491.87	32.10912437	-103.58999871	0.00	0.00	0.00
	7,100.00	6.01	101.28	6,933.14 7,032.39	3,601.99	-165.30	-162.51	802.56 814.54	404,227.21	771,502.98 771,514.95	32.10911807	-103.58996286	2.00	-2.00	0.00
	7,200.00 7,300.00	4.01 2.01	101.28 101.28	7,132.00 7,231.86	3,701.60 3,801.46	-169.54 -170.60	-164.22 -165.25	823.11 828.26	404,223.11 404,222.08	771,523.52 771,528.68	32.10910641 32.10910349	-103.58989662 -103.58987999	2.00 2.00	-2.00 -2.00	0.00 0.00
Hold	7,400.00	0.01	101.28	7,331.84	3,901.44	-170.96 -170.96	-165.60	830.00	404,221.74	771,530.41	32.10910250	-103.58987439	2.00	-2.00	0.00
noid	7,500.00	0.00	101.28	7,431.84	4,001.44	-170.96	-165.60	830.00	404,221.74	771,530.41	32.10910250	-103.58987439	0.00	0.00	0.00
Brushy Canyon	7,600.00 7,614.16	0.00	101.28 101.28	7,531.84 7,546.00	4,101.44 4,115.60	-170.96 -170.96	-165.60 -165.60	830.00 830.00	404,221.74 404,221.74	771,530.41 771,530.41	32.10910250 32.10910250	-103.58987439 -103.58987439	0.00	0.00	0.00
	7,700.00 7,800.00	0.00 0.00	101.28 101.28	7,631.84 7.731.84	4,201.44 4.301.44	-170.96 -170.96	-165.60 -165.60	830.00 830.00	404,221.74 404,221.74	771,530.41 771,530.41	32.10910250 32.10910250	-103.58987439 -103.58987439	0.00 0.00	0.00 0.00	0.00 0.00
	7,900.00	0.00	101.28	7,831.84	4,401.44	-170.96	-165.60	830.00	404,221.74	771,530.41	32.10910250	-103.58987439	0.00	0.00	0.00
	8,100.00	0.00	101.28	8,031.84	4,601.44	-170.96	-165.60	830.00	404,221.74	771,530.41	32.10910250	-103.58987439 -103.58987439	0.00	0.00	0.00
	8,200.00 8,300.00	0.00 0.00	101.28 101.28	8,131.84 8,231.84	4,701.44 4,801.44	-170.96 -170.96	-165.60 -165.60	830.00 830.00	404,221.74 404,221.74	771,530.41 771,530.41	32.10910250 32.10910250	-103.58987439 -103.58987439	0.00 0.00	0.00 0.00	0.00 0.00
	8,400.00	0.00	101.28	8,331.84	4,901.44	-170.96	-165.60	830.00	404,221.74	771,530.41	32.10910250	-103.58987439	0.00	0.00	0.00
	8,600.00	0.00	101.28	8,531.84	5,101.44	-170.96	-165.60	830.00	404,221.74	771,530.41	32.10910250	-103.58987439	0.00	0.00	0.00
	8,700.00 8,800.00	0.00 0.00	101.28 101.28	8,631.84 8,731.84	5,201.44 5,301.44	-170.96 -170.96	-165.60 -165.60	830.00 830.00	404,221.74 404,221.74	771,530.41 771,530.41	32.10910250 32.10910250	-103.58987439 -103.58987439	0.00 0.00	0.00 0.00	0.00 0.00
Basal Brushy Canyon	8,900.00 8 945 16	0.00	101.28 101.28	8,831.84 8 877 00	5,401.44 5 446 60	-170.96 -170.96	-165.60 -165.60	830.00 830.00	404,221.74 404 221 74	771,530.41 771 530 41	32.10910250 32.10910250	-103.58987439 -103 58987439	0.00	0.00	0.00
Dabai Draony Californ	9,000.00	0.00	101.28	8,931.84	5,501.44	-170.96	-165.60	830.00	404,221.74	771,530.41	32.10910250	-103.58987439	0.00	0.00	0.00
Bone Spring Lime	9,100.00 9,131.16	0.00	101.28	9,031.84 9,063.00	5,601.44 5,632.60	-170.96	-165.60	830.00 830.00	404,221.74 404,221.74	771,530.41 771,530.41	32.10910250	-103.58987439 -103.58987439	0.00	0.00	0.00
Leonard	9,171.16 9.200.00	0.00 0.00	101.28 101.28	9,103.00 9.131.84	5,672.60 5.701.44	-170.96 -170.96	-165.60 -165.60	830.00 830.00	404,221.74 404.221.74	771,530.41 771.530.41	32.10910250 32.10910250	-103.58987439 -103.58987439	0.00 0.00	0.00 0.00	0.00 0.00
Avalon	9,300.00	0.00	101.28	9,231.84	5,801.44	-170.96	-165.60	830.00	404,221.74	771,530.41	32.10910250	-103.58987439	0.00	0.00	0.00
	9,400.00	0.00	101.28	9,331.84	5,901.44	-170.96	-165.60	830.00	404,221.74	771,530.41	32.10910250	-103.58987439	0.00	0.00	0.00
	9,500.00 9,600.00	0.00 0.00	101.28 101.28	9,431.84 9,531.84	6,001.44 6,101.44	-170.96 -170.96	-165.60 -165.60	830.00 830.00	404,221.74 404,221.74	771,530.41 771,530.41	32.10910250 32.10910250	-103.58987439 -103.58987439	0.00 0.00	0.00 0.00	0.00 0.00
	9,700.00 9 800 00	0.00	101.28	9,631.84 9,731.84	6,201.44 6 301 44	-170.96	-165.60	830.00	404,221.74	771,530.41	32.10910250	-103.58987439	0.00	0.00	0.00
	9,900.00	0.00	101.28	9,831.84	6,401.44	-170.96	-165.60	830.00	404,221.74	771,530.41	32.10910250	-103.58987439	0.00	0.00	0.00
	10,000.00 10,100.00	0.00 0.00	101.28 101.28	9,931.84 10,031.84	6,501.44 6,601.44	-170.96 -170.96	-165.60 -165.60	830.00 830.00	404,221.74 404,221.74	771,530.41 771,530.41	32.10910250 32.10910250	-103.58987439 -103.58987439	0.00 0.00	0.00 0.00	0.00 0.00
1st BS SS	10,113.16 10,200.00	0.00	101.28 101.28	10,045.00 10,131 84	6,614.60 6,701 44	-170.96 -170.96	-165.60 -165.60	830.00 830.00	404,221.74 404 221 74	771,530.41 771 530 41	32.10910250 32.10910250	-103.58987439 -103.58987439	0.00	0.00	0.00
	10,300.00	0.00	101.28	10,231.84	6,801.44	-170.96	-165.60	830.00	404,221.74	771,530.41	32.10910250	-103.58987439	0.00	0.00	0.00
	10,400.00	0.00	101.28	10,331.84 10,431.84	6,901.44 7,001.44	-170.96	-165.60 -165.60	830.00 830.00	404,221.74 404,221.74	771,530.41 771,530.41	32.10910250 32.10910250	-103.58987439 -103.58987439	0.00	0.00	0.00
2nd BS SS	10,600.00 10.665 16	0.00	101.28 101.28	10,531.84 10.597.00	7,101.44 7.166.60	-170.96 -170.96	-165.60 -165.60	830.00 830.00	404,221.74 404.221 74	771,530.41 771,530.41	32.10910250 32.10910250	-103.58987439 -103.58987439	0.00 0.00	0.00	0.00
	10,700.00	0.00	101.28	10,631.84	7,201.44	-170.96	-165.60	830.00	404,221.74	771,530.41	32.10910250	-103.58987439	0.00	0.00	0.00

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)
KOP. Build 10°/100ft	10,800.00 10.875.71	0.00 0.00	101.28 101.28	10,731.84 10.807.55	7,301.44 7.377.15	-170.96 -170.96	-165.60 -165.60	830.00 830.00	404,221.74 404,221.74	771,530.41 771.530.41	32.10910250 32.10910250	-103.58987439 -103.58987439	0.00	0.00	0.00
	10,900.00	2.43 12.43	5.63 5.63	10,831.83 10,930.87	7,401.43 7,500.47	-170.44 -157.60	-165.09 -152.24	830.05 831.32	404,222.25	771,530.46 771,531,73	32.10910391 32.10913921	-103.58987422 -103.58986984	10.00 10.00	10.00 10.00	0.00 0.00
3rd BS Carb	11,100.00	22.43	5.63 5.63	11,026.15	7,595.75	-127.85	-122.47	834.25 836.71	404,264.87	771,534.67	32.10922098	-103.58985969	10.00	10.00	0.00
	11,200.00	32.43	5.63 5.63	11,114.80	7,684.40	-82.10	-76.68	838.77	404,310.65	771,539.18	32.10934674	-103.58984409	10.00	10.00	0.00
	11,400.00	52.43	5.63	11,261.67	7,831.27	51.42	56.92	851.95	404,444.25	771,552.36	32.10971371	-103.58979855	10.00	10.00	0.00
	11,600.00	62.43 72.43	5.63	11,315.44	7,885.04 7,923.38	226.84	232.46	869.26	404,528.00 404,619.78	771,569.68	32.11019587	-103.58977001	10.00	10.00	0.00
Build 5°/100ft	11,625.71 11,700.00	75.00 78.71	5.63 5.63	11,360.98 11,377.87	7,930.58 7,947.47	251.38 323.31	257.01 329.00	871.69 878.79	404,644.34 404,716.31	771,572.10 771,579.20	32.11026332 32.11046104	-103.58973036 -103.58970582	10.00 5.00	10.00 5.00	0.00
	11,800.00 11,900.00	83.71 88.71	5.63 5.63	11,393.14 11,399.74	7,962.74 7,969.34	421.57 520.77	427.31 526.58	888.48 898.27	404,814.63 404,913.90	771,588.89 771,598.68	32.11073110 32.11100377	-103.58967232 -103.58963850	5.00 5.00	5.00 5.00	0.00 0.00
Landing Point Turn 2°/100ft	11,917.91 11,997.91	89.61 89.61	5.63 5.63	11,400.00 11,400.55	7,969.60 7,970.15	538.58 618.14	544.41 624.02	900.03 907.87	404,931.72 405,011.33	771,600.44 771,608.29	32.11105272 32.11127139	-103.58963243 -103.58960531	5.00 0.00	5.00 0.00	0.00 0.00
	12,000.00 12,100.00	89.61 89.61	5.59 3.59	11,400.56 11,401.24	7,970.16 7,970.84	620.22 719.84	626.10 725.77	908.08 916.08	405,013.41 405,113.08	771,608.49 771,616.49	32.11127711 32.11155092	-103.58960461 -103.58957655	2.00 2.00	0.00 0.00	-2.00 -2.00
Hold	12,200.00 12,297.86	89.61 89.61	1.59 359.63	11,401.92 11,402.58	7,971.52 7,972.18	819.70 917.54	825.66 923.51	920.59 921.63	405,212.96 405,310.81	771,621.00 771,622.04	32.11182539 32.11209433	-103.58955974 -103.58955420	2.00 2.00	0.00 0.00	-2.00 -2.00
	12,300.00 12,400.00	89.61 89.61	359.63 359.63	11,402.60 11,403.27	7,972.20 7,972.87	919.68 1,019.67	925.65 1,025.64	921.62 920.98	405,312.95 405,412.94	771,622.03 771,621.39	32.11210020 32.11237507	-103.58955420 -103.58955405	0.00 0.00	0.00 0.00	0.00 0.00
	12,500.00	89.61 89.61	359.63 359.63	11,403.94 11,404.62	7,973.54 7.974.22	1,119.67 1.219.67	1,125.64 1,225.63	920.33 919.69	405,512.93 405.612.92	771,620.74 771.620.10	32.11264993 32.11292479	-103.58955390 -103.58955376	0.00 0.00	0.00 0.00	0.00 0.00
	12,700.00	89.61 89.61	359.63	11,405.29	7,974.89	1,319.67	1,325.63	919.04 918.40	405,712.92	771,619.45	32.11319966	-103.58955361	0.00	0.00	0.00
	12,900.00	89.61	359.63	11,406.64	7,976.24	1,519.66	1,525.62	917.75	405,912.90	771,618.16	32.11374938	-103.58955331	0.00	0.00	0.00
	13,100.00	89.61	359.63	11,407.98	7,977.58	1,719.66	1,725.61	916.47	406,012.89	771,616.88	32.11402425	-103.58955302	0.00	0.00	0.00
	13,300.00	89.61	359.63	11,409.33	7,978.93	1,919.65	1,925.60	915.02 915.18	406,312.87	771,615.59	32.11457396	-103.58955287	0.00	0.00	0.00
	13,400.00 13,500.00	89.61 89.61	359.63	11,410.00 11,410.67	7,979.60 7,980.27	2,019.65	2,025.60 2,125.59	914.53 913.89	406,412.86 406,512.86	771,614.94 771,614.30	32.11512370 32.11539857	-103.58955257 -103.58955242	0.00	0.00	0.00
	13,600.00 13,700.00	89.61 89.61	359.63 359.63	11,411.35 11,412.02	7,980.95 7,981.62	2,219.65 2,319.64	2,225.59 2,325.59	913.24 912.60	406,612.85 406,712.84	771,613.65 771,613.01	32.11567343 32.11594829	-103.58955228 -103.58955213	0.00 0.00	0.00 0.00	0.00 0.00
	13,800.00 13,900.00	89.61 89.61	359.63 359.63	11,412.69 11,413.37	7,982.29 7,982.97	2,419.64 2,519.64	2,425.58 2,525.58	911.96 911.31	406,812.83 406,912.82	771,612.37 771,611.72	32.11622316 32.11649802	-103.58955198 -103.58955183	0.00 0.00	0.00 0.00	0.00 0.00
	14,000.00 14,100.00	89.61 89.61	359.63 359.63	11,414.04 11,414.71	7,983.64 7,984.31	2,619.64 2,719.64	2,625.57 2,725.57	910.67 910.02	407,012.82 407,112.81	771,611.08 771,610.43	32.11677288 32.11704775	-103.58955168 -103.58955154	0.00 0.00	0.00 0.00	0.00 0.00
	14,200.00 14,300.00	89.61 89.61	359.63 359.63	11,415.39 11,416.06	7,984.99 7,985.66	2,819.63 2,919.63	2,825.56 2,925.56	909.38 908.73	407,212.80 407,312.79	771,609.79 771,609.14	32.11732261 32.11759747	-103.58955139 -103.58955124	0.00 0.00	0.00 0.00	0.00 0.00
	14,400.00 14,500.00	89.61 89.61	359.63 359.63	11,416.73 11,417,41	7,986.33 7.987.01	3,019.63 3,119.63	3,025.56 3,125.55	908.09 907.45	407,412.79	771,608.50 771,607,86	32.11787234 32.11814720	-103.58955109 -103.58955094	0.00	0.00	0.00 0.00
	14,600.00	89.61 89.61	359.63	11,418.08 11,418,75	7,987.68	3,219.62	3,225.55	906.80 906.16	407,612.77	771,607.21	32.11842206	-103.58955079	0.00	0.00	0.00
	14,800.00	89.61 89.61	359.63	11,419.43	7,989.03	3,419.62	3,425.54	905.51	407,812.76	771,605.92	32.11897179	-103.58955050	0.00	0.00	0.00
	15,000.00	89.61	359.63	11,420.77	7,990.37	3,619.61	3,625.53	904.22	407,912.73	771,604.63	32.11952152	-103.58955035	0.00	0.00	0.00
	15,200.00	89.61 89.61	359.63	11,421.45	7,991.05	3,719.61	3,725.53 3,825.52	903.58 902.94	408,112.73 408,212.73	771,603.35	32.11979638	-103.58955005	0.00	0.00	0.00
	15,300.00 15,400.00	89.61 89.61	359.63	11,422.79 11,423.47	7,992.39	3,919.61 4,019.61	3,925.52 4,025.51	902.29 901.65	408,312.72 408,412.71	771,602.70	32.12034611 32.12062097	-103.58954976 -103.58954961	0.00	0.00	0.00
	15,500.00 15,600.00	89.61 89.61	359.63 359.63	11,424.14 11,424.81	7,993.74 7,994.41	4,119.60 4,219.60	4,125.51 4,225.50	901.00 900.36	408,512.70 408,612.70	771,601.41 771,600.77	32.12089583 32.12117070	-103.58954946 -103.58954931	0.00 0.00	0.00 0.00	0.00 0.00
	15,700.00 15,800.00	89.61 89.61	359.63 359.63	11,425.49 11,426.16	7,995.09 7,995.76	4,319.60 4,419.60	4,325.50 4,425.49	899.71 899.07	408,712.69 408,812.68	771,600.12 771,599.48	32.12144556 32.12172042	-103.58954916 -103.58954901	0.00 0.00	0.00 0.00	0.00 0.00
	15,900.00 16,000.00	89.61 89.61	359.63 359.63	11,426.83 11,427.51	7,996.43 7,997.11	4,519.59 4,619.59	4,525.49 4,625.49	898.43 897.78	408,912.67 409,012.67	771,598.84 771,598.19	32.12199529 32.12227015	-103.58954887 -103.58954872	0.00 0.00	0.00 0.00	0.00 0.00
	16,100.00 16,200.00	89.61 89.61	359.63 359.63	11,428.18 11.428.85	7,997.78 7.998.45	4,719.59 4.819.59	4,725.48 4.825.48	897.14 896.49	409,112.66 409.212.65	771,597.55 771,596.90	32.12254501 32.12281988	-103.58954857 -103.58954842	0.00 0.00	0.00 0.00	0.00 0.00
Section 20-17 Line Cross	16,300.00 16,389.00	89.61 89.61	359.63 359.63	11,429.53 11,430,12	7,999.13 7,999.72	4,919.59 5,008.58	4,925.47 5,014 47	895.85 895.27	409,312.64 409 401 64	771,596.26 771,595,69	32.12309474	-103.58954827 -103.58954814	0.00	0.00	0.00
	16,400.00 16,500.00	89.61 89.61	359.63	11,430.20 11,430.87	7,999.80	5,019.58 5 119 58	5,025.47 5 125 46	895.20 894.56	409,412.63	771,595.61	32.12336960	-103.58954812	0.00	0.00	0.00
	16,600.00	89.61 89.61	359.63	11,431.54	8,001.14	5,219.58	5,225.46	893.92	409,612.62	771,594.33	32.12391933	-103.58954783	0.00	0.00	0.00
	16,800.00	89.61	359.63	11,432.89	8,002.49	5,419.57	5,425.45	892.63	409,812.60	771,593.04	32.12446905	-103.58954753	0.00	0.00	0.00
	17,000.00	89.61 89.61	359.63	11,433.56	8,003.16	5,519.57	5,525.45 5,625.44	891.98 891.34	409,912.60 410,012.59	771,592.39	32.12474392	-103.58954738	0.00	0.00	0.00
	17,100.00 17,200.00	89.61 89.61	359.63	11,434.91 11,435.58	8,004.51 8,005.18	5,719.57 5,819.57	5,725.44 5,825.43	890.69 890.05	410,112.58 410,212.57	771,591.10 771,590.46	32.12529364 32.12556851	-103.58954708 -103.58954693	0.00	0.00	0.00
	17,300.00 17,400.00	89.61 89.61	359.63 359.63	11,436.26 11,436.93	8,005.86 8,006.53	5,919.56 6,019.56	5,925.43 6,025.43	889.41 888.76	410,312.57 410,412.56	771,589.82 771,589.17	32.12584337 32.12611823	-103.58954679 -103.58954664	0.00 0.00	0.00 0.00	0.00 0.00
	17,500.00 17,600.00	89.61 89.61	359.63 359.63	11,437.60 11,438.28	8,007.20 8,007.88	6,119.56 6,219.56	6,125.42 6,225.42	888.12 887.47	410,512.55 410,612.54	771,588.53 771,587.88	32.12639310 32.12666796	-103.58954649 -103.58954634	0.00 0.00	0.00 0.00	0.00 0.00
	17,700.00 17,800.00	89.61 89.61	359.63 359.63	11,438.95 11,439.62	8,008.55 8,009.22	6,319.55 6,419.55	6,325.41 6,425.41	886.83 886.18	410,712.54 410,812.53	771,587.24 771,586.59	32.12694282 32.12721768	-103.58954619 -103.58954604	0.00 0.00	0.00 0.00	0.00 0.00
	17,900.00 18,000.00	89.61 89.61	359.63 359.63	11,440.30 11,440.97	8,009.90 8,010.57	6,519.55 6,619.55	6,525.40 6,625.40	885.54 884.90	410,912.52 411,012.51	771,585.95 771,585.31	32.12749255 32.12776741	-103.58954589 -103.58954574	0.00 0.00	0.00 0.00	0.00 0.00
	18,100.00 18,200.00	89.61 89.61	359.63 359.63	11,441.64 11,442.32	8,011.24 8,011.92	6,719.54 6,819.54	6,725.40 6,825.39	884.25 883.61	411,112.51 411,212.50	771,584.66 771,584.02	32.12804227 32.12831714	-103.58954560 -103.58954545	0.00 0.00	0.00 0.00	0.00 0.00
	18,300.00 18,400.00	89.61 89.61	359.63 359.63	11,442.99 11,443.66	8,012.59 8,013.26	6,919.54 7,019.54	6,925.39 7,025.38	882.96 882.32	411,312.49 411,412.48	771,583.37 771,582.73	32.12859200 32.12886686	-103.58954530 -103.58954515	0.00 0.00	0.00 0.00	0.00 0.00
	18,500.00 18,600.00	89.61 89.61	359.63 359.63	11,444.34 11,445.01	8,013.94 8.014.61	7,119.54 7,219.53	7,125.38	881.67 881.03	411,512.48 411,612.47	771,582.08 771,581,44	32.12914173 32.12941659	-103.58954500 -103.58954485	0.00	0.00	0.00
	18,700.00	89.61 89.61	359.63	11,445.68	8,015.28 8,015.96	7,319.53	7,325.37	880.39 879 74	411,712.46	771,580.80	32.12969145	-103.58954470	0.00	0.00	0.00
	18,900.00	89.61 89.61	359.63	11,447.03	8,016.63 8 017 30	7,519.53	7,525.36	879.10 878.45	411,912.44	771,579.51	32.13024118	-103.58954440	0.00	0.00	0.00
	19,100.00	89.61	359.63	11,448.38	8,017.98	7,719.52	7,725.35	877.81	412,012.44	771,578.22	32.13079090	-103.58954411	0.00	0.00	0.00
	19,300.00	89.61	359.63	11,449.05	8,019.32	7,819.52	7,925.35	876.52	412,212.42 412,312.41	771,576.93	32.13106577	-103.58954396	0.00	0.00	0.00
	19,400.00	89.61 89.61	359.63	11,450.40 11,451.07	8,020.00 8,020.67	8,019.52 8,119.51	8,025.34 8,125.33	875.87 875.23	412,412.41 412,512.40	771,576.29	32.13161549	-103.58954366 -103.58954351	0.00	0.00	0.00
	19,600.00 19,700.00	89.61 89.61	359.63 359.63	11,451.74 11,452.42	8,021.34 8,022.02	8,219.51 8,319.51	8,225.33 8,325.33	874.59 873.94	412,612.39 412,712.38	771,575.00 771,574.35	32.13216522 32.13244008	-103.58954336 -103.58954321	0.00	0.00	0.00
	19,800.00 19,900.00	89.61 89.61	359.63 359.63	11,453.09 11,453.76	8,022.69 8,023.36	8,419.51 8,519.50	8,425.32 8,525.32	873.30 872.65	412,812.38 412,912.37	771,573.71 771,573.06	32.13271494 32.13298980	-103.58954306 -103.58954291	0.00	0.00	0.00 0.00
	20,000.00 20,100.00	89.61 89.61	359.63 359.63	11,454.43 11,455.11	8,024.03 8,024.71	8,619.50 8,719.50	8,625.31 8,725.31	872.01 871.36	413,012.36 413,112.35	771,572.42 771,571.78	32.13326467 32.13353953	-103.58954276 -103.58954261	0.00 0.00	0.00 0.00	0.00 0.00
	20,200.00 20,300.00	89.61 89.61	359.63 359.63	11,455.78 11,456.45	8,025.38 8,026.05	8,819.50 8,919.49	8,825.30 8,925.30	870.72 870.08	413,212.35 413,312.34	771,571.13 771,570.49	32.13381439 32.13408926	-103.58954247 -103.58954232	0.00 0.00	0.00 0.00	0.00 0.00
	20,400.00 20,500.00	89.61 89.61	359.63 359.63	11,457.13 11,457.80	8,026.73 8,027.40	9,019.49 9,119.49	9,025.30 9,125.29	869.43 868.79	413,412.33 413,512.32	771,569.84 771,569.20	32.13436412 32.13463898	-103.58954217 -103.58954202	0.00 0.00	0.00 0.00	0.00 0.00
	20,600.00 20.700.00	89.61 89.61	359.63 359.63	11,458.47 11.459.15	8,028.07 8.028.75	9,219.49 9.319.49	9,225.29 9.325.28	868.14 867.50	413,612.32 413.712.31	771,568.56 771.567.91	32.13491384 32.13518871	-103.58954187 -103.58954172	0.00	0.00	0.00
	20,800.00	89.61 89.61	359.63 359.63	11,459.82 11,460 49	8,029.42 8.030.09	9,419.48 9.519.48	9,425.28 9.525 27	866.85 866 21	413,812.30 413.912 29	771,567.27 771,566,62	32.13546357 32.13573843	-103.58954157 -103.58954142	0.00	0.00	0.00
	21,000.00	89.61 89.61	359.63	11,461.17 11 461 84	8,030.77 8,031 44	9,619.48 9 719 48	9,625.27	865.57 864 92	414,012.28	771,565.98	32.13601329 32.13628816	-103.58954127	0.00	0.00	0.00
	21,200.00	89.61	359.63	11,462.51	8,032.11 8 022 70	9,819.47 0.010.47	9,825.26	864.28 862.62	414,212.27 414,212.27	771,564.69	32.13656302	-103.58954097	0.00	0.00	0.00
	21,400.00	89.61	359.63	11,463.86	8,033.46	10,019.47	10,025.25	862.99	414,412.25	771,563.40	32.13711274	-103.58954067	0.00	0.00	0.00
Vaca Draw 20-17 Federal 303H -	≥1,500.00 21,569.31	89.61	359.63	11,465.00	0,034.13 8,034.60	10,119.47	10,125.25	002.34 861.90	414,512.25 414,581.55	771,562.31	32.13738761	-103.56954052 -103.58954042	0.00	0.00	0.00

Survey Error Model:

ISCWSA0 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	Borehole / Survey	
	1	0.000	10,900.000	1/100.000	14.75 – 9.875	10.75 – 7.625	AOC	01Mb_MWD	Vaca Draw 20-17 Federal 303H / Coterra 25May23	Vaca Draw 20-17 Federal 303H Rev0 kFc
	1	10,900.000	21,569.310	1/100.000	9.875 – 6.75	7.625 – 5	AOC	08Mb_MWD+IFR1+MS	Vaca Draw 20-17 Federal 303H / Coterra 25May23	Vaca Draw 20-17 Federal 303H Rev0 kFc
EOU Geometry:										
End MD (ft)	Hole Size	(in)	Casing Siz	e (in)		Name				
1,007.000	14.750)	10.75	0						
11,507.000	9.875		7.625	i						
21,569.308	6.750		5.000)						

PECOS DISTRICT DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	Cimarex Energy Company of Colorado
LEASE NO.:	NMNM26394
LOCATION:	Section 20, T.25 S., R.33 E., NMPM
COUNTY:	Lea County, New Mexico 💌
WELL NAME & NO.:	Vaca Draw 20-17 Federal 302H
SURFACE HOLE FOOTAGE:	270'/S & 2140'/E
BOTTOM HOLE FOOTAGE	100'/N & 2590'/W
ATS/API ID:	ATS-20-1229
APD ID:	10400094387
Sundry ID:	N/a

WELL NAME & NO.:	Vaca Draw 20-17 Federal 303H
SURFACE HOLE FOOTAGE:	270'/S & 2100'/E
BOTTOM HOLE FOOTAGE	100'/N & 1173'/E
ATS/API ID:	ATS-20-1228
APD ID:	10400094388
Sundry ID:	N/a

COA

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H2S	No		
Potash	None		
Cave/Karst Potential	Low		
Cave/Karst Potential	Critical		
Variance	C None	• Flex Hose	© Other
Wellhead	Conventional and Multibov	vl 🔽	
Other	□4 String	Capitan Reef	WIPP
		None 💌	
Other	Pilot Hole	🖾 Open Annulus	
	None 🔻		
Cementing	Contingency Squeeze	Echo-Meter	Primary Cement
	None 🔻	None 🔻	Squeeze
			None 🚽
Special	🖾 Water	🗖 СОМ	Unit
Requirements	Disposal/Injection		
Special	Batch Sundry		
Requirements			
Special	Break Testing	🗖 Offline	Casing
Requirements		Cementing	Clearance
Variance			

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

- The 13-3/8 inch surface casing shall be set at approximately 1040 feet (a minimum of 25 feet (Lea 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

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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 <u>8</u> <u>hours</u> 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.
- 3. The minimum required fill of cement behind the 7 inch production casing is:
 - Cement should tie-back at least **200 feet** into previous casing string. Operator shall provide method of verification.
- 4. The minimum required fill of cement behind the 4-1/2 inch production liner is:
 - Cement should tie-back 100 feet into the previous casing. Operator shall provide method of verification.
 Cement excess is less than 25%, more cement is required if washout occurs. Adjust cement volume and excess based on a fluid caliper or similar method that reflects the as-drilled size of the wellbore.

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 **2000 (2M)** 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.

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)
 - Lea County Call the Hobbs Field Station, 414 West Taylor, Hobbs NM 88240, (575) 689-5981
- 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.
- 3. The record of the drilling rate along with the GR/N well log run from TD to surface (horizontal well vertical portion of hole) shall be submitted to the BLM office as well as all other logs run on the borehole 30 days from completion. If available, a digital copy of the logs is to be submitted in addition to the paper copies. The Rustler top and top and bottom of Salt are to be recorded on the Completion Report when present.
- 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.
- <u>Wait on cement (WOC) for Potash Areas:</u> After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi for all cement blends, 2) until cement has been in place at least <u>24 hours</u>. 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. <u>Wait on cement (WOC) for Water Basin:</u> 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 <u>8 hours</u>. 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

- 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 water basin (8 hours) or potash (24 hours) or 500 pounds compressive strength, whichever is greater, prior to initiating the test (see casing segment as lead cement may be critical item).
- d. The test shall be run on a 5000 psi chart for a 2-3M BOP/BOP, on a 10000 psi chart for a 5M BOP/BOPE and on a 15000 psi chart for a 10M BOP/BOPE. If a linear chart is used, it shall be a one hour chart. A circular chart shall have a maximum 2 hour clock. If a twelve hour or twenty-four hour chart is used, tester shall make a notation that it is run with a two hour clock.
- e. The results of the test shall be reported to the appropriate BLM office.
- f. All tests are required to be recorded on a calibrated test chart. A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.
- g. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug. This test shall be performed prior to the test at full stack pressure.
- h. BOP/BOPE must be tested by an independent service company within 500 feet of the top of the Wolfcamp formation if the time between the setting of the intermediate casing and reaching this depth exceeds 20 days. This test does not exclude the test prior to drilling out the casing shoe as per 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) 5/14/2024

O COTERRA

H2S Drilling Operations Plan

Training

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

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

H2S Detection and Alarm Systems

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

Windsock and/or wind streamers

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

Condition Flags & Signs

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

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

Well Control Equipment

1. See the pressure control section of this submission.

Communication

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

Drillstem Testing

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

H2S Contingency Plan

Emergency Procedures

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

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

Ignition of the Gas Source

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

Contacting Authorities

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

Emergency Contacts

Coterra Energy

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

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

Third Party

	PERMIAN	REGION CO	ONTACT NUM	VIBERS	
		CALL	911		
lance Services				_	
Reeves County Me	dical - Pecos, TX	(432-447-3551		
Aero Care - Midlan	d, TX		800-627-2376		
Tri State Care Flight - Artesia, NM		800-800-0900			
Air Methods - Hobb	s, NM		800-242-6199		
<u>ce / Medical Care</u>					
Sheriff's Office		Fire Depart	<u>ments</u>	Hospital / Medical Care F	acilities
Andrews County	432-523-5545	Andrews	432-523-3111	Permian Regional Med.	432-523-220
Reagan County	325-884-2929	Big Lake	325-884-3650	Reagan Memorial Hosp.	325-884-256
Howard County	432-264-2244	Big Springs	432-264-2303	Scenic Mountain Med Ctr	432-263-121
Terry County	806-637-2212	Brownfield	806-637-6633		
Crane County	432-558-3571	Crane	432-558-2361	Crane Memorial Hosp.	432-558-355
Val Verde County	830-774-7513	Del Rio	830-774-8648	Val Verde Regional Med.	830-775-856
		Denver City	806-592-3516	Yoakum County Hospital	806-592-212
Pecos County	432-336-3521	Ft Stockton	432-336-8525		
Glasscock County	432-354-2361	Garden Citv			
Winkler County	432-586-3461	Kermit	432-586-2577	Winkler County Memorial	432-586-586
		McCamev	432-652-8232	McCamev Hospital	432-652-862
Loving County	432-377-2411	Mentone			
Irion County	325-835-2551	Mertzon			
Ward County	432-943-6703	Monahans	432-943-2211	Ward Memorial Hospital	432-943-251
Ector County	432-335-3050	Odessa	432-335-4650	Odessa Regional Hosp	432-582-834
Crocket County	325-302-2661	07002	325-302-2626	odessa regionarrosp.	402 002 00-
Reeves County	432-445-4901	Peros	505-757-6511	Reeves County Hospital	432-447-355
Voakum County	806-456-2377	Plaine	806-456-2288	Reeves County Hospital	452-447-555
Garza County	806-495-3595	Post	000-400-2200		
Unton County	432-603-2422	Post			
Coke County	915 452 2717	Robert Loo			
CORECOUNT	915-455-2717	RobertLee	225 766 2024		
	906 904 2126	NUSCOE	323-700-3931	Covenant Lealth	906 904 404
Tom Croon County	205 655 0444		000-094-3155		205 040 054
Coince County	320-000-0111	San Angelo	320-007-4300	San Angelo Comm. Med.	320-949-90
Gaines County	432-758-9871	Seminole	432-708-3021	Iviemoriai Hospitai	432-758-58
Terrell County	432-345-2525	Sanderson			0.05 550 00
Scurry County	325-5/3-3551	Snyder	325-5/3-3546	DIVI Cogdell Iviemorial	325-5/3-63/
Sterling County	325-3/8-4//1	Sterling City			0.05.005.454
Nolan County	325-235-5471	Sweetwater	325-235-8130	Rolling Plains Memorial	325-235-1/0
Culberson County	432-283-2060	Van Horn		Culberson Hospital	432-283-276
0					
Lea County	505-396-3611	Knowles	505-392-7469	Lea Reg Med Ctr	575-492-500
Eddy County	575-887-7551	Carlsbad	575-885-3125	Carlsbad Medical	575-887-410
		Artesia	575-746-5050	Artesia Hospital	575-748-333
Roosevelt County	575-356-4408				
Chaves County	575-624-7590				
mbulance Services					
Reeves County Me	dical			Pecos, TX	432-447-355
Lea County Eddy County Roosevelt County Chaves County mbulance Services Reeves County Me	505-396-3611 575-887-7551 575-356-4408 575-624-7590 dical	Knowles Carlsbad Artesia	505-392-7469 575-885-3125 575-746-5050	Lea Reg Med Ctr Carlsbad Medical Artesia Hospital Pecos, TX	575-492-50 575-887-41 575-748-33

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Released to Imaging: 6/26/2024 10:02:24 AM

Surface Use Plan of Operations

Cimarex Energy Co. Vaca Draw 20-17 Federal W2E2 Pad SW ¼ SE ¼, Section 20, T25S, R33E Lea County, New Mexico

Vaca Draw 20-17 Federal 302H 270' FSL / 2140' FEL	
Vaca Draw 20-17 Federal 303H 270' FSL / 2100' FEL	
Vaca Draw 20-17 Federal 504H 270' FSL / 2120' FEL	

This surface use plan of operations provides site specific information for the above referenced wells located within the existing "Vaca Draw 20-17 Federal Project". No additional surface disturbance will be associated with the addition of these wells.

- 1. Existing Roads, directions to location: See Exhibit C
 - a. Existing Road Purpose: Existing roads providing access to the well site are shown. Existing roads will be maintained and kept in good repair during all drilling and completion operations associated with these wells.
- **b. BLM ROW:** Existing off- lease ROW. 281001 ROW ROADS, 288100 ROW O&G Pipeline, 288101 ROW O&G Facility Sites, 289001 ROW O&G Well Pad, Other.
- 2. Location of Wells: See Exhibit E 1 Mile Radius Map

3. Location of Production Facilities: See Exhibit J Location Layout

- a. Production Facilities:
 - Existing battery pad is built North-West of the well pad.
 - All permanent (on site six months or longer) above the ground structures constructed or installed will be painted Carlsbad Tan as approved by the BLM.

4. Location and Types of Water Supply: See Water Haul Map

- a. Source & Volume:
 - **Source Type:** Commercial Water Double M Water Sales or Cuatro Transportation Water Station –Fresh Water
 - Use: Surface Casing and Intermediate/Production Casing
 - Location: NE/SE, Section 20, T24S, R33E or NW/SW Section 19, T25S, R37E
 - Source Land Ownership: State or Federal
 - Source Transportation Land Ownership: State or Federal
 - **Permit Type:** Water Right
 - Transportation Method: Trucking
 - Volume: 150,000 BBLS
- 5. Construction Materials
 - **a.** Intended Use of Construction Materials: The use of materials under BLM jurisdiction will conform with 43 CFR 3610.2-3.

b. Proposed Source of Materials: There will be no additional surface disturbance with the addition of these wells.

6. Methods of Handling Waste

- a. Reserve Pits (if necessary): No Reserve Pit Planned
- **b.** Cuttings stored on location: Contents (drill cuttings, mud, salts, and other chemicals) of the mud tanks will be hauled to state approved disposal.
- **c. Garbage:** All trash will be placed in a portable trash cage. It will be hauled to the Lea County landfill. There will be no trash burning.
 - Waste content description: Onsite Refuse/trash
 - Amount: 32,500 pounds
 - **Disposal frequency:** Weekly
 - Safe Containment description: Garbage, trash, and other waste materials will be collected in a portable, self-contained, fully enclosed trash cage during operations. Trash will not be burned on location. All debris and other waste material not contained in the trash cage will be cleaned up and removed from the location immediately after removal of the drilling rig.
 - Waste disposal type: Haul to commercial facility
 - Disposal location ownership: Commercial
 - **Disposal location description:** All trash and waste material will be hauled to the Lea County Landfill.
- **d.** Sewage: Human waste will be disposed of in chemical toilets and hauled to the Hobbs wastewater treatment plant.
 - Waste content description: Onsite human waste
 - Amount: 300 gallons
 - Disposal frequency: Weekly
 - Safe Containment description: A chemical porta-toilet will be furnished with the drilling rig.
 - Waste disposal type: Haul to commercial facility
 - Disposal location ownership: Commercial
 - **Disposal location description:** The chemical porta-toilet wastes will be hauled to state approved disposal facility for treatment.

- e. Produced Water:
 - Waste content description: After first production, produced water will be confined to storage tanks on location and then disposed of in an approved location or recycled on location for future use.
 - Amount: 400 BBLS
 - Disposal frequency: Daily
 - Safe Containment description: Flowline to an approved disposal location
 - Waste disposal type: Off-lease injection
 - Disposal location ownership: Federal
 - Disposal location description: Federal

7. Ancillary Facilities

No camps, airstrips or other facilities will be necessary during drilling of this well.

8. Well Site Layout: See Exhibits J, K, L, Archeological Survey Boundary Plat

a. The location showing access roads onto the pad and orientation of the rig with respect to the pad and other facilities are shown on Typical Rig Layout, Exhibit K for each well.

9. Plans for Final Surface Reclamation

- No New Surface Disturbance.
 - a. Interim Reclamation: Once the last well has been drilled, then the pad will be interim reclaimed to a reduced working surface area. The reclaimed area will be recontoured and reseeded to match preconstruction grades.
 - **b.** Final Reclamation: Once the last well is plugged, then the pad, CTB, and new road will be reclaimed within 6 months of plugging. Disturbed areas will be recontoured to match pre- construction grades. Soil and brush will be evenly spread over disturbed areas and harrowed on the contour. Disturbed areas will be seeded in accordance with BLM requirements. Road will be blocked. Noxious weeds will be controlled.
 - c. Drainage Systems:
 - **Drainage/Erosion control construction:** Pad construction will include drainage control by rerouting drainages around the pad an installing culverts or low water crossings where needed. Erosion control techniques will be used where needed to minimize wind and water erosion and sedimentation prior to vegetation establishment.
 - **Drainage/Erosion control reclamation:** Area-wide drainage will be stabilized and restored so that surface runoff flows and gradients are returned to the condition present prior to development. Drainage basins will have similar features found in nearby, properly functioning basins.
 - d. Existing Vegetation:
 - e. Well/Road/Pipeline/Other (Powerline): General area vegetation.
 - **f. Reconstruction method**: Areas to be reclaimed will be graded to approximate original contours and to blend in with adjacent topography. Graded surfaces will be suitable for

the replacement of a uniform depth of topsoil, will promote cohesion between subsoil and topsoil layers, will reduce wind erosion, and will facilitate moisture capture. Specialized grading techniques may be applied, if warranted, and could include slope rounding, stair-step grading/terracing, and/or contour furrowing.

- **g. Topsoil redistribution:** After compaction relief (ripping and discing) all topsoil will be redistributed on the reclaimed area to a pre-disturbance depth. Topsoil is typically redistributed with a scraper or front-end loader which leaves a friable surface to work with. Waterbars and erosion control devices will be installed on reclaimed areas, as necessary, to control topsoil erosion.
- h. Soil Treatments: As needed.
- i. Seed Management (for each seed type, or Seed Reclamation Attachment):
 - Seed type: The seed mixture and seeding rates will be submitted to the BLM in a subsequent report sundry notice following reclamation operations. Seed mixtures will be certified weed-free.
 - Seed use location: Well pad, access road, pipeline right-of-way, powerline right-of-way
 - **Proposed seeding season:** Once the topsoil is replaced, seeding will occur generally between August 15 and ground freeze-up. If fall seeding is not feasible and erosion control is needed, seeding may occur between spring thaw and May 15. Spring seeding will be an exception, not the rule. The site will be monitored as outlined in this plan. Seeding will not be applied to wet or frozen ground. In this circumstance, seeding will take place when the ground dries or thaws to the point where soils are friable.

j. Revegetation Operator Contact:

- Name: Laci Luig
- Phone #: 432-425-0434
- Email: laci.luig@coterra.com
- Seed method: Broadcast over rough surface.
- k. Existing invasive species: Yes
 - Existing invasive species treatment description: African Rue is present in proximity to well pad, access road, pipeline right-of-way, powerline right-of-way.
 - Weed treatment plan: Operator will be responsible for noxious and invasive weed control from all project activities for the life of the project. If use of herbicides is deemed necessary, a Pesticide Use Proposal will be submitted for approval to the BLM. Herbicides will be used only in the season or growth stage during which they are most effective. Herbicides will be applied only by certified personnel using approved precautionary and application procedures in compliance with all applicable federal, state, and local regulations. Herbicides will not be used within 100 feet of open water or during extremely windy conditions. Mowing may be considered as an alternative to herbicide applications. Mowing would be implemented prior to seed head establishment or bloom. A weed control program will be applied to all existing and proposed

access roads, pipeline ROWs, and well pads. Weed control involves annual treatments that are monitored and continued until desirable vegetation out-competes invasive or noxious weeds.

- **Monitoring:** Monitoring will be done in accordance with the BLM Reclamation Guidelines.
- **Success standard:** Success Standards will be in accordance with the BLM Reclamation Guidelines.
- I. Pit Closure Description: No pit closure will be necessary. The referenced wells will be drilled utilizing a closed loop system. The closed loop system will be installed in a manner that will prevent leaks, breaks, or discharge. Drill cuttings will be contained in designated cuttings area. Upon completion of drilling operations, the cuttings will be mixed on location and dried; then spread on location.

10. Surface Ownership

- Well site
 - a. Surface owner: Bureau of Land Management
 - b. Contact/Office location: Bureau of Land Management
- Roads
 - a. Surface owner: Bureau of Land Management
 - b. Contact/Office location: Bureau of Land Management
- Pipeline
 - a. Surface owner: Bureau of Land Management
 - **b.** Contact/Office location: Bureau of Land Management.

11. Additional Information

- **a.** Location Construction: OPERATOR shall notify the BLM AO 48 hours prior to construction of the location and access roads.
- **b.** Location Completion: OPERATOR shall notify the BLM AO prior to moving the drilling rig on location
- **c. Approved APD:** A true and complete copy of the approved Application for Permit to Drill will be located on site during all drilling & completion operations.

12. Additional Information

Onsite Information: An onsite inspection was conducted for the Pad on 7/24/2018. In attendance at the inspection were the following individuals:

	Attendee	Organization/Affiliate
	Barry Hunt	Coterra previously Cimarex
	Jeff Robertson	BLM
<u>Permitt</u>	ing Matters	Drilling, Completions Operational Matters
Operato	or: Cimarex Energy Co.	Operator: Cimarex Energy Co.

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Address: 6001 Deauville Blvd., Suite 300N City, State, Zip: Midland, TX 79706 Name: Phillip Levasseur Title: Regulatory Manager Phone: 432-620-1974 Email: phillip.levasseur@coterra.com Address: 6001 Deauville Blvd., Suite 300N City, State, Zip: Midland, TX 79706 Name: Grant Muncrief Title: Drilling and Completions Manager Phone: 432-570-3607 Email: grant.muncrief@coterra.com

Schlumberger

Borehole:

0(ft)

 \square

(ft

 \square

Vaca Draw 20-17 Federal 303H

MagDec:	HDGM 2023 6.245°	Dip: FS:	59.635° 47358.628nT	Gravity F	S:	998.432n
Critical	Point		MD		INCL	
SHL [270'	' FSL, 2100' FEL]		0.00		0.00	
Rustler			945.00		0.00	
Top Salt	uild 2°/100ft		1320.00		0.00	
Hold			2275.12		0.00 9.50	
Lamar			4957.99		9.50	
Bell Cany	on		4997.53		9.50	
Cherry Ca	anyon		6054.03		9.50	
Drop 271	υυπ		6925.59 7400 71		9.50	
Brushy Ca	anyon		7614.16		0.00	
Basal Bru	shy Canyon		8945.16		0.00	
Bone Spri	ing Lime		9131.16		0.00	
Leonard Avalon			91/1.16		0.00	
1st BS SS	8		10113.16		0.00	
2nd BS S	S		10665.16		0.00	
KOP, Buil	d 10°/100ft		10875.71		0.00	
3rd BS Ca	arb		11158.50		28.28	
Build 5°/1	uutt Point		11625.71 11017 01		75.00 89.61	
Turn 2°/1	00ft		11997.91		89.61	
Hold			12297.86		89.61	
Section 2	0-17 Line Cross w 20-17 Federal 303H - B		16389.00		89.61	
FEL]			21569.31		89.61	
Ο						
U		SH 0 N 0.0 0 V	IL [270' FSL, 2100' FEL] /ID 0 TVD /0 ° incl 101.28 ° az /sec			
1000	Rustler (945 TVD)					
	Top Salt (1320 TVD)	Nu	idge, Build 2°/100ft			
		18	00 MD 1800 TVD 00 ° incl 101.28 ° az			
2000						
		Но	la			
		22 9.5 -8	75 MD 2273 TVD 50 ° incl 101.28 ° az vsec			
3000						
4000						
4000						
5000	Bell Canyon (4958 TVD)					
6000	Cherry Canyon (6000 TVD)					
			00/4000			
		6926	27100ft MD 6860 TVD ° incl 101.28 ° az			
7000		-163	Vsec			
		N Hold				
	Brushy Canyon (7546 TVD)	7401	MD 7333 TVD ° incl 101.28 ° az			
٥٩٩٩		-171	vsec			
0000						
		H	COP, Build 10°/100ft			
			0.00 ° incl 101.28 ° az 171 vsec			
9000	Basal Brushy Canyon (8877 TVD) Bone Spring Lime (9063 TVD) Leonard (9103 TVD)		Build 5°/100ft 11626 MD 11361 TVD			
	Avalon (9325 TVD)		75.00 ° incl 5.63 ° az 251 vsec			
			Landing Point 11918 MD 11400 TVD			
0000			/ 89.61 ° incl 5.63 ° az 539 vsec			
			Turn 2°/100ft 11998 MD 11401 TVD			
	2nd BS SS (10597 TVD)		618 vsec			
1000	Vaca Draw 20-17 Federal 303H - F	ТР Х	12298 MD 11403 TV 89.61 ° incl 359.63 °	/D az		
1000	3rd BS Carb (11079 TVD)		918 vsec			
2000						Se Se
					++++++++++++++++++++++++++++++++++++	89
						50

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District I 1625 N. French Dr., Hobbs, NM 88240 Phone:(575) 393-6161 Fax:(575) 393-0720 District II

811 S. First St., Artesia, NM 88210 Phone:(575) 748-1283 Fax:(575) 748-9720

District III

1000 Rio Brazos Rd., Aztec, NM 87410 Phone:(505) 334-6178 Fax:(505) 334-6170

District IV

1220 S. St Francis Dr., Santa Fe, NM 87505 Phone:(505) 476-3470 Fax:(505) 476-3462

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

CONDITIONS

Operator:	OGRID:
CIMAREX ENERGY CO.	215099
6001 Deauville Blvd	Action Number:
Midland, TX 79706	349851
	Action Type:
	[C-101] BLM - Federal/Indian Land Lease (Form 3160-3)

CONDITIONS

Created By	Condition	Condition Date			
pkautz	Will require a File As Drilled C-102 and a Directional Survey with the C-104	6/26/2024			
pkautz	Once the well is spud, to prevent ground water contamination through whole or partial conduits from the surface, the operator shall drill without interruption through the fresh water zone or zones and shall immediately set in cement the water protection string	6/26/2024			
pkautz	Oil base muds are not to be used until fresh water zones are cased and cemented providing isolation from the oil or diesel. This includes synthetic oils. Oil based mud, drilling fluids and solids must be contained in a steel closed loop system	6/26/2024			
pkautz	Cement is required to circulate on both surface and intermediate1 strings of casing	6/26/2024			
pkautz	If cement does not circulate on any string, a CBL is required for that string of casing	6/26/2024			

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Action 349851