

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

Form C-101

August 1, 2011

Permit 333551

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

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

1. Operator Name and Address CIMAREX ENERGY CO. 600 N. Marienfeld Street Midland, TX 79701		2. OGRID Number 215099
		3. API Number 30-025-51059
4. Property Code 333771	5. Property Name CORINADER 1 12 STATE COM	6. Well No. 004H

7. Surface Location

UL - Lot A	Section 1	Township 23S	Range 32E	Lot Idn 1	Feet From 271	N/S Line N	Feet From 591	E/W Line E	County Lea
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8. Proposed Bottom Hole Location

UL - Lot P	Section 12	Township 23S	Range 32E	Lot Idn P	Feet From 100	N/S Line S	Feet From 330	E/W Line E	County Lea
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9. Pool Information

DIAMONDTAIL;BONE SPRING	17644
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Additional Well Information

11. Work Type New Well	12. Well Type OIL	13. Cable/Rotary	14. Lease Type State	15. Ground Level Elevation 3750
16. Multiple N	17. Proposed Depth 22174	18. Formation 3rd Bone Spring Sand	19. Contractor	20. Spud Date 9/1/2023
Depth to Ground water		Distance from nearest fresh water well		Distance to nearest surface water

☒ We will be using a closed-loop system in lieu of lined pits

21. Proposed Casing and Cement Program

Type	Hole Size	Casing Size	Casing Weight/ft	Setting Depth	Sacks of Cement	Estimated TOC
Surf	17.5	13.375	48	1306	802	0
Int1	12.25	9.625	40	4977	1222	0
Prod	8.75	7	29	12156	548	4777
Prod	8.75	7	29	11456	0	0
Liner1	6.75	4.5	11.6	22174	1186	11956

Casing/Cement Program: Additional Comments

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22. Proposed Blowout Prevention Program

Type	Working Pressure	Test Pressure	Manufacturer
Double Ram	2000	2000	Cameron
Double Ram	3000	3000	Cameron
Double Ram	10000	10000	Cameron

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

Signature:

OIL CONSERVATION DIVISION

Printed Name: Electronically filed by Brittany Gordon	Approved By: Paul F Kautz
Title: Regulatory Analyst	Title: Geologist
Email Address: Brittany.Gordon@coterra.com	Approved Date: 2/8/2023
Date: 2/8/2023	Phone:
Conditions of Approval Attached	

Expiration Date: 2/8/2025

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

Form C-102
Revised August 1, 2011
Submit one copy to appropriate
District Office

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-025-51059	² Pool Code 17644	³ Pool Name Diamondtail; Bone Spring
⁴ Property Code 333771	⁵ Property Name CORIANDER 1-12 STATE COM	⁶ Well Number 4H
⁷ OGRID No. 215099	⁸ Operator Name CIMAREX ENERGY CO.	⁹ Elevation 3749.6'

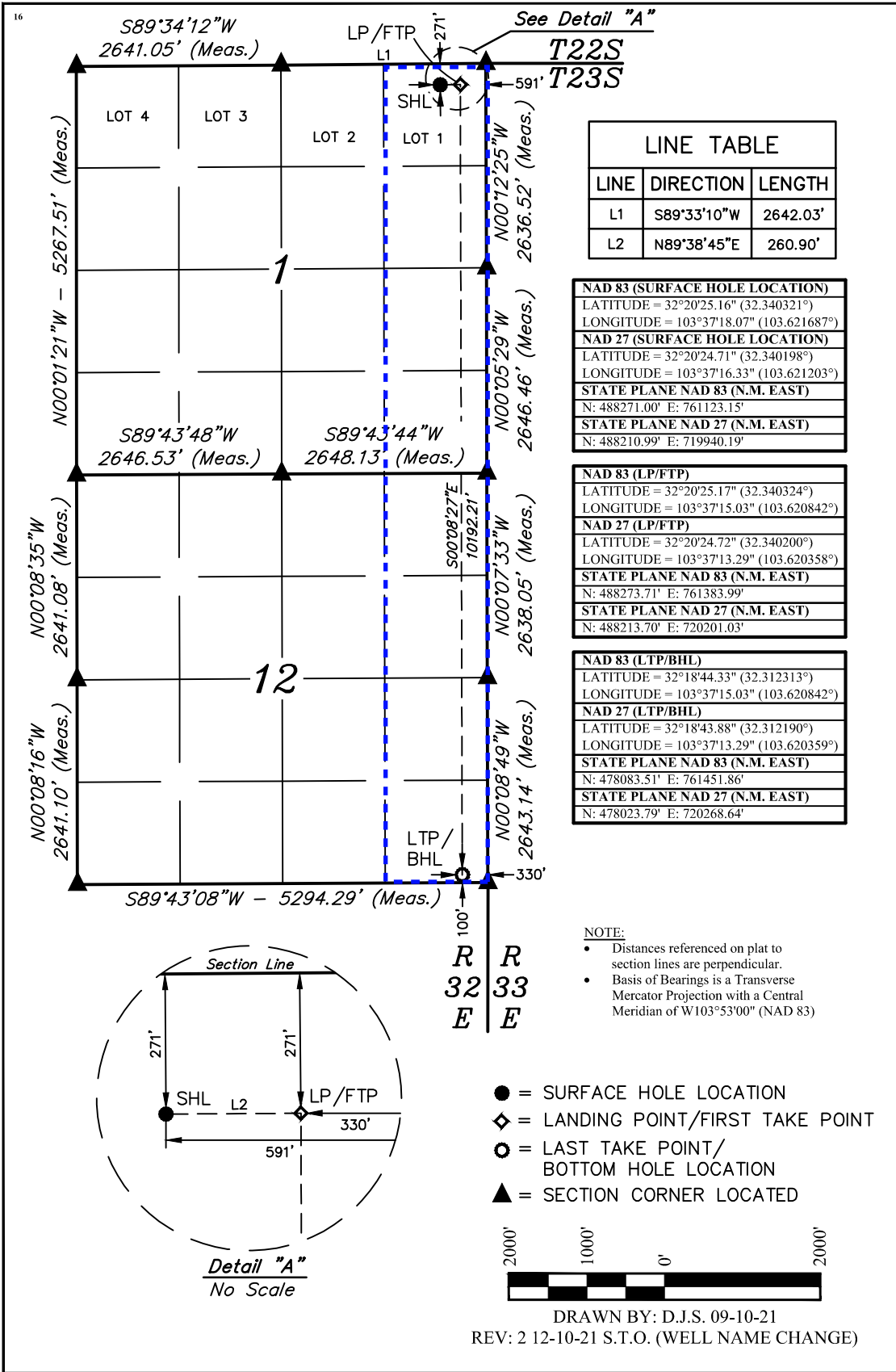
¹⁰ Surface Location

UL or lot no. 1	Section 1	Township 23S	Range 32E	Lot Idn	Feet from the 271	North/South line NORTH	Feet from the 591	East/West line EAST	County LEA
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¹¹ Bottom Hole Location If Different From Surface

UL or lot no. P	Section 12	Township 23S	Range 32E	Lot Idn	Feet from the 100	North/South line SOUTH	Feet from the 330	East/West line EAST	County LEA
¹² Dedicated Acres 319.95	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.						

No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.



¹⁷ OPERATOR
CERTIFICATION

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

K. Schlichting 2/1/23
Signature Date

Kanicia Schlichting
Printed Name

kanicia.schlichting@coterra.com
E-mail Address

¹⁸ SURVEYOR
CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

September 9, 2021
Date of Survey

Signature and Seal of Professional Surveyor:

PAUL BUCHELE
NEW MEXICO
23782
12-10-21
PROFESSIONAL SURVEYOR

Certificate Number:

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

Form APD Conditions

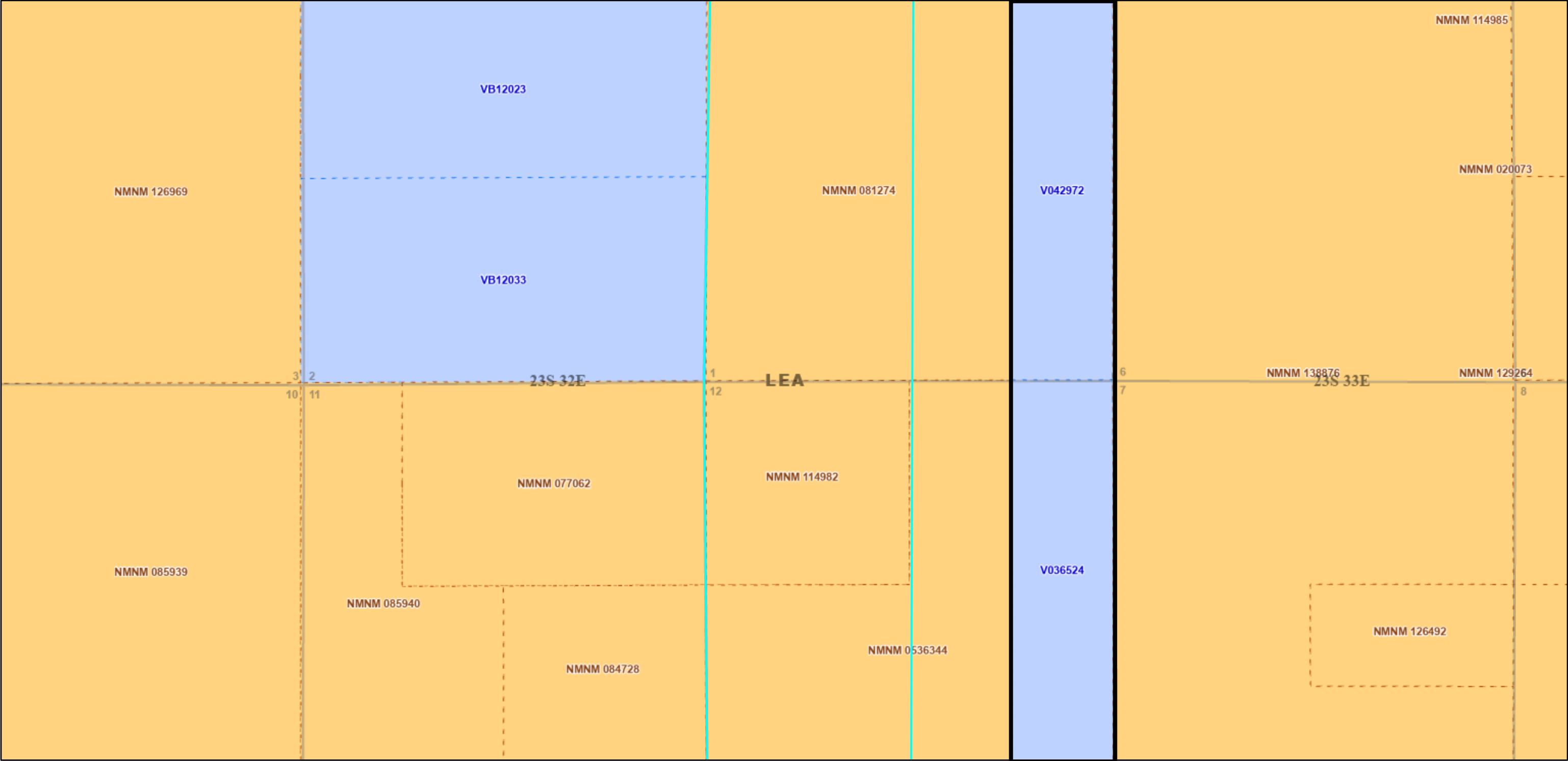
Permit 333551

PERMIT CONDITIONS OF APPROVAL

Operator Name and Address: CIMAREX ENERGY CO. [215099] 600 N. Marienfeld Street Midland, TX 79701	API Number: 30-025-51059
	Well: CORINADER 1 12 STATE COM #004H

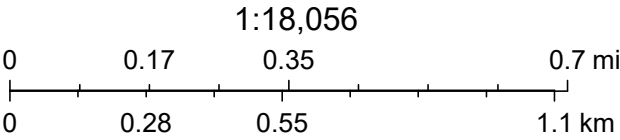
OCD Reviewer	Condition
pkautz	Notify OCD 24 hours prior to casing & cement
pkautz	Will require a File As Drilled C-102 and a Directional Survey with the C-104
pkautz	Once the well is spud, to prevent ground water contamination through whole or partial conduits from the surface, the operator shall drill without interruption through the fresh water zone or zones and shall immediately set in cement the water protection string
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
pkautz	Cement is required to circulate on both surface and intermediate1 strings of casing
pkautz	The Operator is to notify NMOCD by sundry (Form C-103) within ten (10) days of the well being spud

Coriander 1-12 State Com Lease Map



2/7/2023, 4:08:55 PM

- Sections
- Counties
- State OG Leases
- Townships
- States
- Federal OG Leases



Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

1. Geological Formations

TVD of target 11,900

Pilot Hole TD N/A

MD at TD 22,174

Deepest expected fresh water

Formation	Depth (TVD) from KB	Water/Mineral Bearing/Target Zone	Hazards
Rustler	1256	Useable Water	
Top of Salt	1753	N/A	
Base of Salt	4970	N/A	
Lamar	4995	N/A	
Bell Canyon	5017	N/A	
Cherry Canyon	6130	N/A	
Brushy Canyon	7201	Hydrocarbons	
Bone Spring Lime	8825	Hydrocarbons	
Avalon	9360	Hydrocarbons	
1st Bone Spring	9989	Hydrocarbons	
2nd Bone Spring	10630	Hydrocarbons	
3rd Bone Spring	12060	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	1306	1306	13-3/8"	48.00	H-40	ST&C	1.31	3.06	5.14
12 1/4	0	4977	4977	9-5/8"	40.00	HCK-55	LT&C	1.43	1.48	2.82
8 3/4	0	11456	11456	7"	29.00	L-80	LT&C	1.31	1.52	1.69
8 3/4	11456	12156	11987	7"	29.00	P-110	BT&C	1.52	2.00	60.33
6 3/4	10456	22174	11900	4-1/2"	11.60	P-110	BT&C	1.29	1.82	21.91
BLM Minimum Safety Factor								1.125	1	1.6 Dry 1.8 Wet

TVD was used on all calculations.

All casing strings will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.h

Request Variance for 5-1/2" x 7-5/8" annular clearance. The portion that does not meet clearance will not be cemented

Cimarex Energy Co., Coriander 1-12 State Com 4H

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

3. Cementing Program

Casing	# Sk	Wt. lb/gal	Yld ft ³ /sack	H ₂ O gal/sk	500# Comp. Strength (hours)	Slurry Description
Surface	632	13.50	1.72	9.15	15.5	Lead: Class C + Bentonite
	170	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
	291	14.80	1.34	6.32	9.5	Tail: Class C + LCM
Production	423	10.30	3.64	22.18		Lead: Tuned Light + LCM
	125	14.80	1.36	6.57	9.5	Tail: Class C + Retarder
Completion System	1186	14.20	1.30	5.86	14:30	Tail: 50:50 (Poz:H) + Salt + Bentonite + Fluid Loss + Dispersant + SMS

Casing String	TOC	% Excess
Surface	0	45
Intermediate	0	51
Production	4777	25
Completion System	11956	10

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

4. Pressure Control Equipment

A variance is requested for the use of a diverter on the surface casing. See attached for schematic.					
BOP installed and tested before drilling which hole?	Size	Min Required WP	Type		Tested To
12 1/4	13 5/8	2M	Annular	X	2M
			Blind Ram		
			Pipe Ram		
			Double Ram	X	
			Other		
8 3/4	13 5/8	3M	Annular	X	3M
			Blind Ram		
			Pipe Ram		
			Double Ram	X	
			Other		
6 3/4	13 5/8	10M	Annular	X	50% of working pressure
			Blind Ram		10M
			Pipe Ram	X	
			Double Ram	X	
			Other		

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

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

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

Cimarex Energy Co., Coriander 1-12 State Com 4H

5. Mud Program

Depth	Type	Weight (ppg)	Viscosity	Water Loss
0' to 1306'		7.83 - 8.33		N/C
1306' to 4977'	Brine Water	9.80 - 10.30	30-32	N/C
4977' to 12156'	Cut Brine or OBM	8.50 - 9.00	27-70	N/C
12156' - 22174'	OBM	9.00 - 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 or gain of fluid?	PVT/Pason/Visual Monitoring
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6. Logging and Testing Procedures

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

Additional Logs Planned	Interval
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7. Drilling Conditions

Condition	
BH Pressure at deepest TVD	5878 psi
Abnormal Temperature	No

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

X	H ₂ S is present
X	H ₂ S plan is attached

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

A multi-bowl wellhead system will be utilized.

After running the 13-3/8" surface casing, a 13 5/8" BOP/BOPE system with a minimum working pressure of 10000 psi will be installed on the wellhead system and will be pressure tested to 250 psi low followed by a 10000 psi test. Annular will be tested to working pressure, or a maximum test pressure of 5000 psi. The pressure test will be repeated at least every 30 days, as per Onshore Order No. 2.

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

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

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

A solid steel body pack-off will be utilized after running and cementing the intermediate casing. After installation the pack-off and lower flange will be pressure tested to 10000 psi.

A solid steel body pack-off will be utilized after running and cementing the production casing. After installation the pack-off and lower flange will be pressure tested to 10000 psi.

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

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

10. Other Variances

Cimarex requests to perform offline cementing. OLC procedure as follows: 1. Land casing on solid body mandrel hanger. Engage packoff and lock ring 2. Install BPV. 3. Skid rig. 4. Check for pressure and remove BPV. 5. Circulate down casing, taking returns through casing valves. 6. Pump lead and tail cement. 7. Displace cement and bump the plug. 8. Ensure floats are holding pressure. 9. RD cement crew. 10. Install BPV and TA cap.

Cimarex requests permission to skid the rig to the next well on the pad to begin operations instead of waiting 8 hours for surface cement to harden on this 4H well. Surface cement will be pumped and we will ensure floats hold, do a green cement test and then skid to the next well on pad. We will not perform any operations on this 4H well until at least 8 hours and when both tail and lead slurry reach 500 psi. The mandrel hanger is made up on the last joint of 13 3/8" casing and then lowered down with and landing joint. It is then lowered down until the mandrel contacts the landing ring which is pre-welded to the conductor pipe. At this point the 13 3/8" casing is entirely supported by the conductor pipe via the landing ring/mandrel and is independent from the rig. This allows us to walk the rig away from the 3H well and begin work on the next well while the cement is hardening. There is no way for the casing to be moved or knocked off center since it is hanging from the landing ring.

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

Submit Electronically
Via E-permitting

NATURAL GAS MANAGEMENT PLAN

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

Section 1 – Plan Description

Effective May 25, 2021

I. Operator: Cimarex Energy Company **OGRID:** 215099 **Date:** 1/31/2023

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

If Other, please describe: _____

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

Well Name	API	ULSTR	Footages	Anticipated Oil BBL/D	Anticipated Gas MCF/D	Anticipated Produced Water BBL/D
Coriander 1-12 State Com 4H		1, Sec 1 T23S, R32E	271 FNL/591 FEL	2300	4600	4600

IV. Central Delivery Point Name: Coriander CTB [See 19.15.27.9(D)(1) NMAC]

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

Well Name	API	Spud Date	TD Reached Date	Completion Commencement Date	Initial Flow Back Date	First Production Date
Coriander 1-12 State Com 4H		9/9/2023	10/3/2023	1/1/2024	3/1/2024	3/1/2024

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

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

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

Section 2 – Enhanced Plan

EFFECTIVE APRIL 1, 2022

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

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

IX. Anticipated Natural Gas Production:

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

X. Natural Gas Gathering System (NGGS):

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

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

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

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

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

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

Section 3 - Certifications

Effective May 25, 2021

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

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

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

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

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

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

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

Section 4 - Notices

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

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

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

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

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

Signature: 
Printed Name: Sarah Jordan
Title: Regulatory Analyst
E-mail Address: sarah.jordan@coterra.com
Date: 1/31/2023
Phone: 432/620-1909
OIL CONSERVATION DIVISION (Only applicable when submitted as a standalone form)
Approved By:
Title:
Approval Date:
Conditions of Approval:

From State of New Mexico, Natural Gas Management Plan

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

XEC Standard Response

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

Cimarex

VII. Operational Practices

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

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

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

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

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

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

- **Workovers:**
 - Always strive to kill well when performing downhole maintenance.
 - If vapors or trapped pressure is present and must be relieved then:
 - Initial blowdown to production facility:
 - Route vapors to LP flare if possible/applicable
 - Blowdown to portable gas buster tank:
 - Vent to existing or portable flare if applicable.
- **Stock tank servicing:**
 - Minimize time spent with thief hatches open.
 - When cleaning or servicing via manway, suck tank bottoms to ensure minimal volatiles exposed to atmosphere.
 - Connect vacuum truck to low pressure flare while cleaning bottoms to limit venting.
 - Isolate the vent lines and overflows on the tank being serviced from other tanks.
- **Pressure vessel/compressor servicing and associated blowdowns:**
 - Route to flare where possible.
 - Blow vessel down to minimum available pressure via pipeline, prior to venting vessel.
 - Preemptively changing anodes to reduce failures and extended corrosion related servicing.
 - When cleaning or servicing via manway, suck vessel bottoms to ensure minimal volatiles exposed to atmosphere.
- **Flare/combustor maintenance:**
 - Minimize downtime by coordinating with vendor and Cimarex staff travel logistics.
 - Utilizing preventative and predictive maintenance programs to replace high wear components before failure.
 - Because the flare/combustor is the primary equipment used to limit venting practices, ensure flare/combustor is properly maintained and fully operational at all times via routine maintenance, temperature telemetry, onsite visual inspections.

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

Drilling 12 1/4" hole
below 13 3/8"
Casing

Fill Line

Flowline

2000# (2M)
BOP

SRR & A

Annular Preventer

Pipe Rams

Blind Rams

2" Minimum Kill Line

Kill Line

1 Kill Line Valve
(Minimum)

Drilling Spool

2" Minimum Choke Line

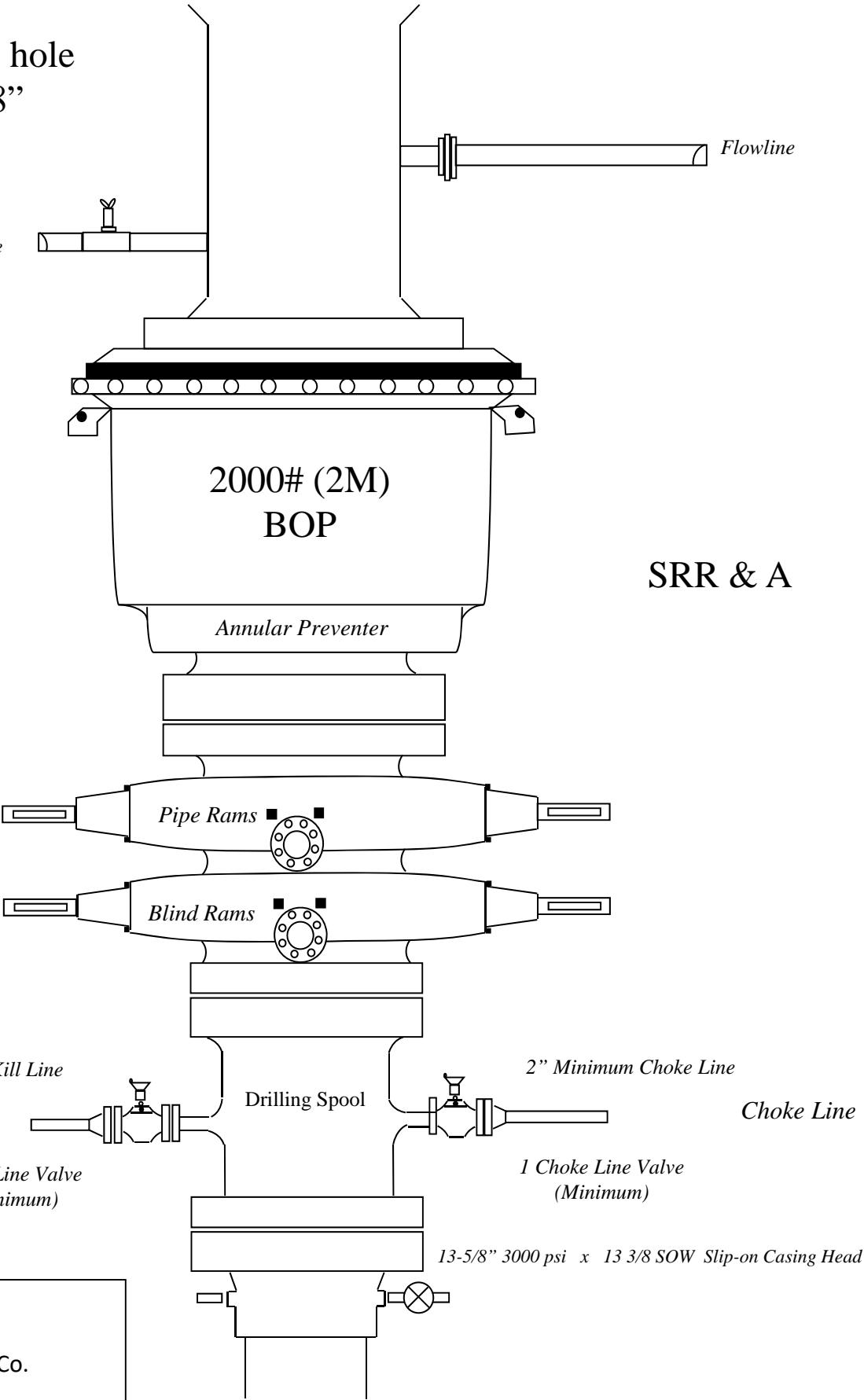
Choke Line

1 Choke Line Valve
(Minimum)

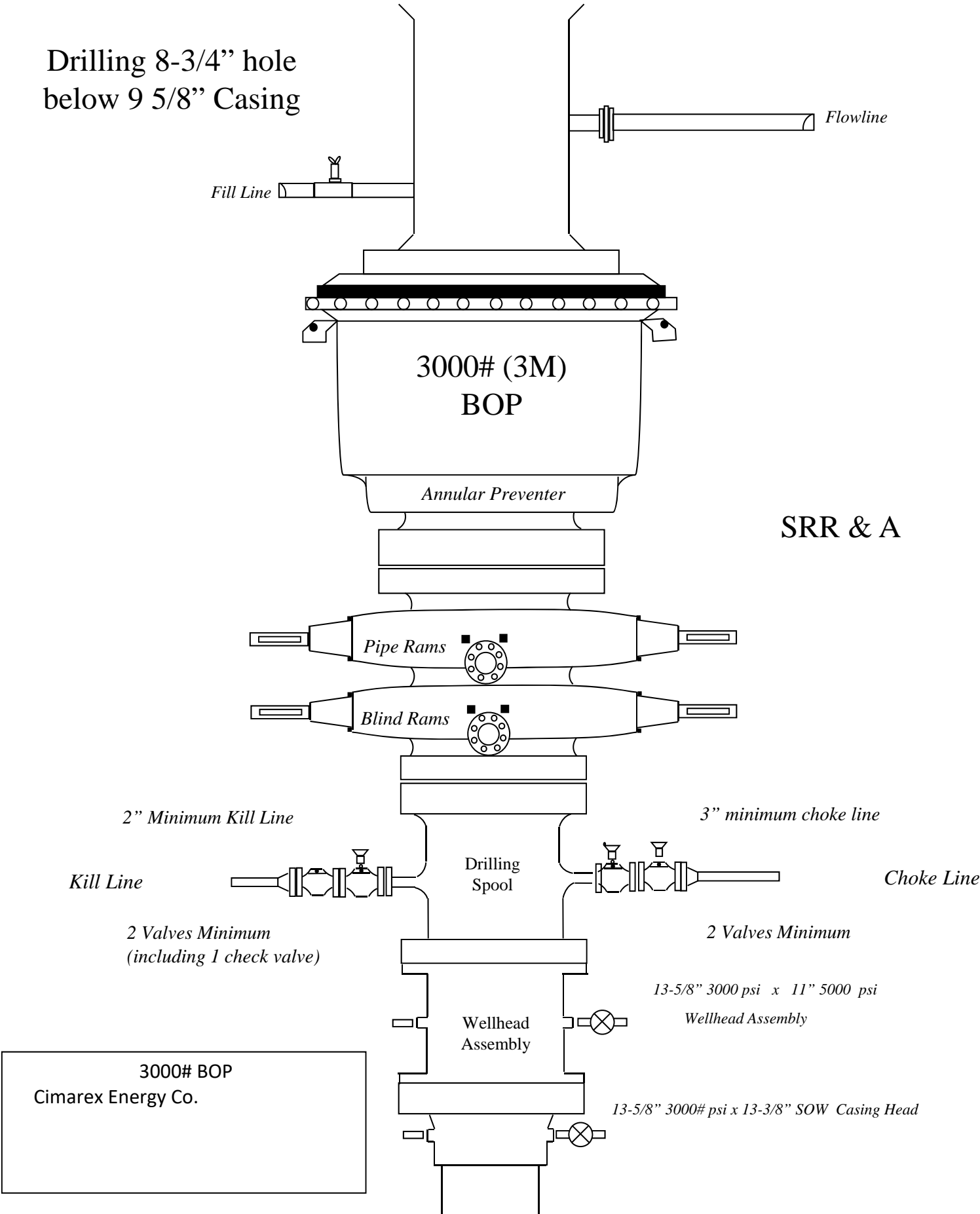
13-5/8" 3000 psi x 13 3/8 SOW Slip-on Casing Head

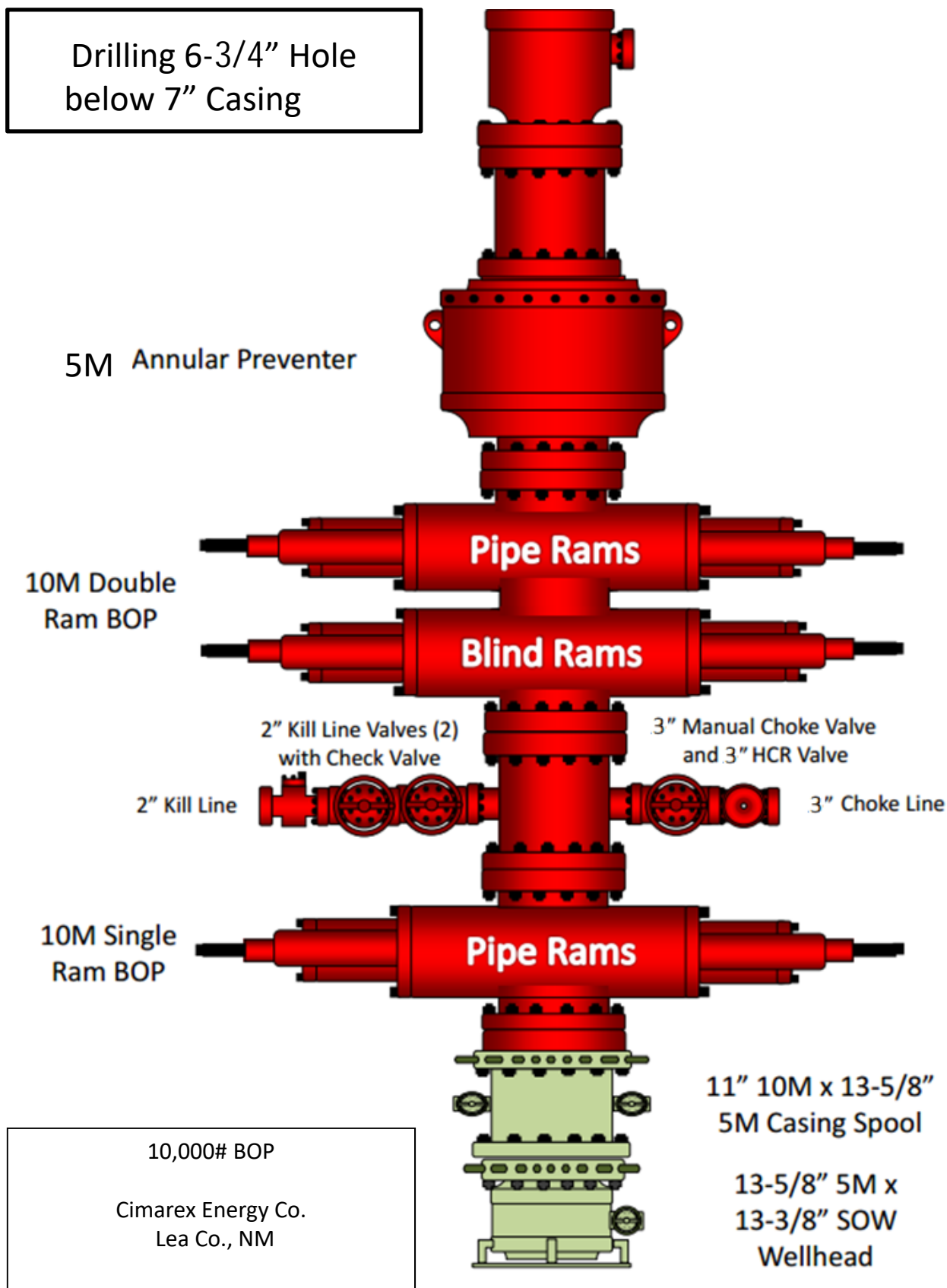
2000# BOP

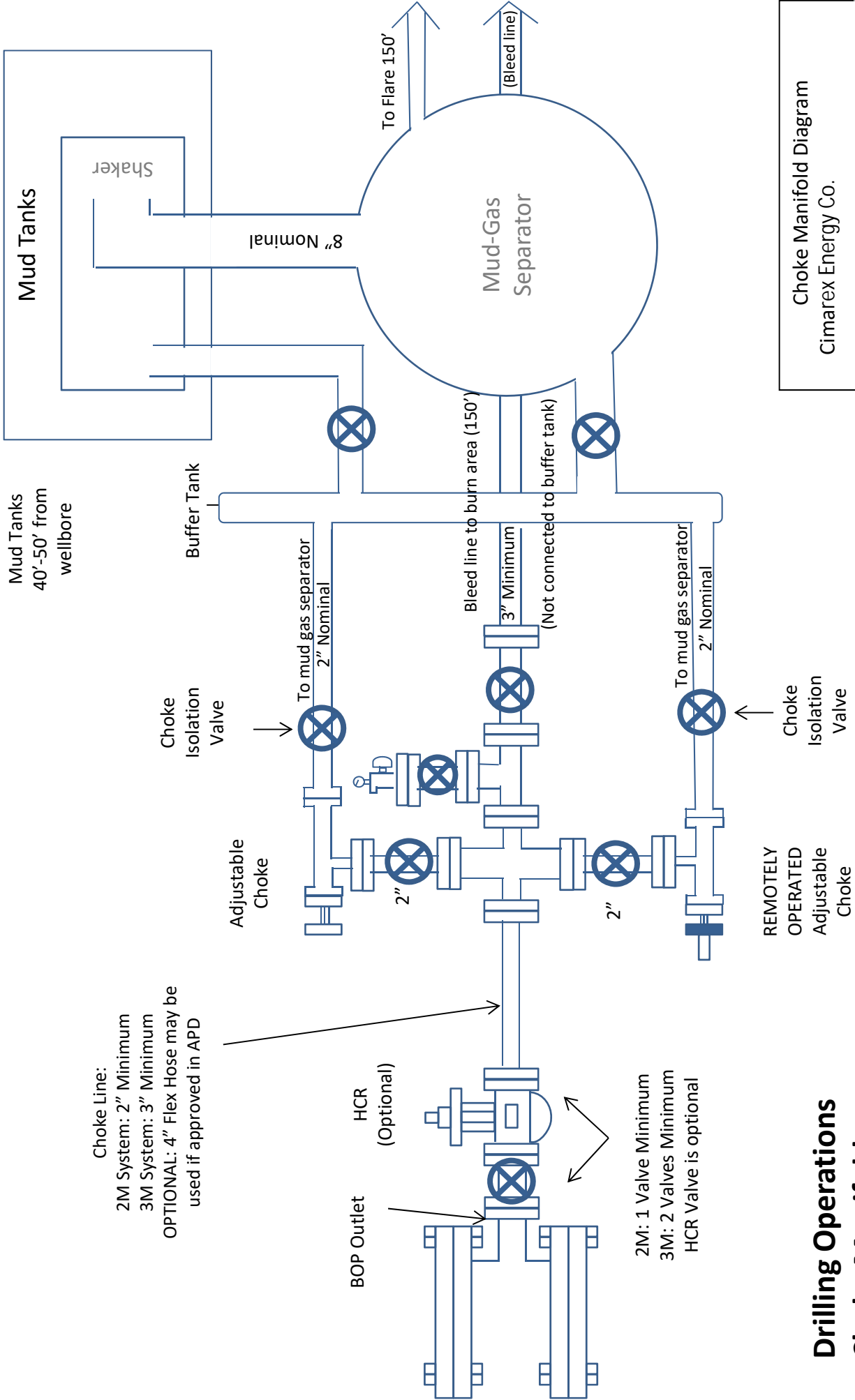
Cimarex Energy Co.



Drilling 8-3/4" hole
below 9 5/8" Casing







Choke Manifold Diagram
Cimarex Energy Co.

**Drilling Operations
Choke Manifold
2M/3M Service**



- 1 All Company and Contract personnel admitted on location must be trained by a qualified H2S safety instructor to the following:
 - A. Characteristics of H₂S
 - B. Physical effects and hazards
 - C. Principal and operation of H₂S detectors, warning system and briefing areas.
 - D. Evacuation procedure, routes and first aid.
 - E. Proper use of safety equipment & life support systems
 - F. 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:

 - A. 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.
 - B. An audio alarm system will be installed on the derrick floor and in the top doghouse.
- 3 Windsock and/or wind streamers:
 - A. Windsock at mudpit area should be high enough to be visible.
 - B. Windsock on the rig floor and / or top doghouse should be high enough to be visible.
- 4 Condition Flags and Signs
 - A. Warning sign on access road to location.
 - B. Flags to be displayed on sign at 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.
- 5 Well control equipment:
 - A. See exhibit "E-1"
- 6 Communication:
 - A. While working under masks chalkboards will be used for communication.
 - B. Hand signals will be used where chalk board is inappropriate.
 - C. Two way radio will be used to communicate off location in case of emergency help is required. In most cases cellular telephones will be available at most drilling foreman's trailer or living quarters.
- 7 Drillstem Testing:

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

H₂S Contingency Plan
Coridander 1-12 State Com 4H & 5H
Cimarex Energy Co.
Lea Co., NM

Emergency Procedures

In the event of a release of gas containing H₂S, the first responder(s) must:

- « Isolate the area and prevent entry by other persons into the 100 ppm ROE.
- « Evacuate any public places encompassed by the 100 ppm ROE.
- « Be equipped with H₂S monitors and air packs in order to control the release.
- « Use the "buddy system" to ensure no injuries occur during the 432-620-1975
- « Take precautions to avoid personal injury during this operation.
- « Contact operator and/or local officials to aid in operation. See list of phone numbers attached.
- « Have received training in the:
 - Detection of H₂S, and
 - Measures for protection against the gas,
 - Equipment used for protection and emergency response.

Ignition of 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.

Characteristics of H₂S and SO₂

Please see attached International Chemical Safety Cards.

Contacting Authorities

Cimarex Energy Co. of Colorado's 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. 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. Cimarex Energy Co. of Colorado's response must be in coordination with the State of New Mexico's "Hazardous Materials Emergency Response Plan" (HMER).

H₂S Contingency Plan Emergency Contacts
Coridander 1-12 State Com 4H & 5H
 Cimarex Energy Co.
 Lea Co., NM

Company Office

Cimarex Energy Co. of Colorado	800-969-4789
Co. Office and After-Hours Menu	

Key Personnel

Name	Title	Office	Mobile
Larry Seigrist	Drilling Manager	432-620-1934	580-243-8485
Charlie Pritchard	Drilling Superintendent	432-620-1975	432-238-7084
Roy Shirley	Construction Superintendent		432-634-2136

Artesia

Ambulance	911
State Police	575-746-2703
City Police	575-746-2703
Sheriff's Office	575-746-9888
Fire Department	575-746-2701
Local Emergency Planning Committee	575-746-2122
New Mexico Oil Conservation Division	575-748-1283

Carlsbad

Ambulance	911
State Police	575-885-3137
City Police	575-885-2111
Sheriff's Office	575-887-7551
Fire Department	575-887-3798
Local Emergency Planning Committee	575-887-6544
US Bureau of Land Management	575-887-6544

Santa Fe

New Mexico Emergency Response Commission (Santa Fe)	505-476-9600
New Mexico Emergency Response Commission (Santa Fe) 24 Hrs	505-827-9126
New Mexico State Emergency Operations Center	505-476-9635

National

National Emergency Response Center (Washington, D.C.)	800-424-8802
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Medical

Flight for Life - 4000 24th St.; Lubbock, TX	806-743-9911
Aerocare - R3, Box 49F; Lubbock, TX	806-747-8923
Med Flight Air Amb - 2301 Yale Blvd S.E., #D3; Albuquerque, NM	505-842-4433
SB Air Med Service - 2505 Clark Carr Loop S.E.; Albuquerque, NM	505-842-4949

Other

Boots & Coots IWC	800-256-9688	or	281-931-8884
Cudd Pressure Control	432-699-0139	or	432-563-3356
Halliburton	575-746-2757		
B.J. Services	575-746-3569		

Intent ☐ As Drilled ☐

API #		
Operator Name:	Property Name:	Well Number

Kick Off Point (KOP)

UL	Section	Township	Range	Lot	Feet	From N/S	Feet	From E/W	County
Latitude					Longitude				NAD

First Take Point (FTP)

UL	Section	Township	Range	Lot	Feet	From N/S	Feet	From E/W	County
Latitude					Longitude				NAD

Last Take Point (LTP)

UL	Section	Township	Range	Lot	Feet	From N/S	Feet	From E/W	County
Latitude					Longitude				NAD

Is this well the defining well for the Horizontal Spacing Unit? ☐Is this well an infill well? ☐

If infill is yes please provide API if available, Operator Name and well number for Defining well for Horizontal Spacing Unit.

API #		
Operator Name:	Property Name:	Well Number

KZ 06/29/2018



Cimarex Coriander 1-12 State Com 4H Rev1 kFc 16Jan23 Proposal Geodetic Report (Def Plan)



Report Date: January 17, 2023 - 09:21 AM
Client: Cimarex
Field: NM Lea County (NAD 83)
Structure / Slot: Cimarex Coriander 1-12 Federal Com Lot 1 Pad / 4H
Well: Coriander 1-12 State Com 4H
Borehole: Coriander 1-12 State Com 4H
UWI / API#: Unknown / Unknown
Survey Name: Cimarex Coriander 1-12 State Com 4H Rev1 kFc 16Jan23
Survey Date: November 22, 2022
Tort / AHD / DDI / ERD Ratio: 110.051 ° / 10558.835 ft / 6.330 / 0.876
Coordinate Reference System: NAD83 New Mexico State Plane, Eastern Zone, US Feet
Location Lat / Long: N 32° 20' 25.15595", W 103° 37' 18.07251"
Location Grid N/E Y/X: N 488271.000 ftUS, E 761123.150 ftUS
CRS Grid Convergence Angle: 0.3807 °
Grid Scale Factor: 0.99996441
Version / Patch: 2.10.834.0

Survey / DLS Computation: Minimum Curvature / Lubinski
Vertical Section Azimuth: 179.620 ° (Grid North)
Vertical Section Origin: 0.000 ft, 0.000 ft
TVD Reference Datum: Unit 411, RKB = 22ft
TVD Reference Elevation: 3771.600 ft above MSL
Seabed / Ground Elevation: 3749.600 ft above MSL
Magnetic Declination: 6.318 °
Total Gravity Field Strength: 998.4400mgn (9.80665 Based)
Gravity Model: GARM
Total Magnetic Field Strength: 47621.425 nT
Magnetic Dip Angle: 59.947 °
Declination Date: January 16, 2023
Magnetic Declination Model: HDGM 2022
North Reference: Grid North
Grid Convergence Used: 0.3807 °
Total Corr Mag North->Grid North: 5.9378 °
Local Coord Referenced To: Well Head

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S °)	Longitude (E/W °)
SHL [271' FNL, 591' FEL]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A	488271.00	761123.15	N 32.340321	W 103.621687
	100.00	0.00	11.57	100.00	0.00	0.00	0.00	0.00	488271.00	761123.15	N 32.340321	W 103.621687
	200.00	0.00	11.57	200.00	0.00	0.00	0.00	0.00	488271.00	761123.15	N 32.340321	W 103.621687
	300.00	0.00	11.57	300.00	0.00	0.00	0.00	0.00	488271.00	761123.15	N 32.340321	W 103.621687
	400.00	0.00	11.57	400.00	0.00	0.00	0.00	0.00	488271.00	761123.15	N 32.340321	W 103.621687
	500.00	0.00	11.57	500.00	0.00	0.00	0.00	0.00	488271.00	761123.15	N 32.340321	W 103.621687
	600.00	0.00	11.57	600.00	0.00	0.00	0.00	0.00	488271.00	761123.15	N 32.340321	W 103.621687
	700.00	0.00	11.57	700.00	0.00	0.00	0.00	0.00	488271.00	761123.15	N 32.340321	W 103.621687
	800.00	0.00	11.57	800.00	0.00	0.00	0.00	0.00	488271.00	761123.15	N 32.340321	W 103.621687
	900.00	0.00	11.57	900.00	0.00	0.00	0.00	0.00	488271.00	761123.15	N 32.340321	W 103.621687
	1000.00	0.00	11.57	1000.00	0.00	0.00	0.00	0.00	488271.00	761123.15	N 32.340321	W 103.621687
	1100.00	0.00	11.57	1100.00	0.00	0.00	0.00	0.00	488271.00	761123.15	N 32.340321	W 103.621687
	1200.00	0.00	11.57	1200.00	0.00	0.00	0.00	0.00	488271.00	761123.15	N 32.340321	W 103.621687
Rustler	1256.00	0.00	11.57	1256.00	0.00	0.00	0.00	0.00	488271.00	761123.15	N 32.340321	W 103.621687
	1300.00	0.00	11.57	1300.00	0.00	0.00	0.00	0.00	488271.00	761123.15	N 32.340321	W 103.621687
	1400.00	0.00	11.57	1400.00	0.00	0.00	0.00	0.00	488271.00	761123.15	N 32.340321	W 103.621687
	1500.00	0.00	11.57	1500.00	0.00	0.00	0.00	0.00	488271.00	761123.15	N 32.340321	W 103.621687
	1600.00	0.00	11.57	1600.00	0.00	0.00	0.00	0.00	488271.00	761123.15	N 32.340321	W 103.621687
Top of Salt	1700.00	0.00	11.57	1700.00	0.00	0.00	0.00	0.00	488271.00	761123.15	N 32.340321	W 103.621687
	1753.00	0.00	11.57	1753.00	0.00	0.00	0.00	0.00	488271.00	761123.15	N 32.340321	W 103.621687
	1800.00	0.00	11.57	1800.00	0.00	0.00	0.00	0.00	488271.00	761123.15	N 32.340321	W 103.621687
	1900.00	0.00	11.57	1900.00	0.00	0.00	0.00	0.00	488271.00	761123.15	N 32.340321	W 103.621687
	2000.00	0.00	11.57	2000.00	0.00	0.00	0.00	0.00	488271.00	761123.15	N 32.340321	W 103.621687
	2100.00	0.00	11.57	2100.00	0.00	0.00	0.00	0.00	488271.00	761123.15	N 32.340321	W 103.621687
	2200.00	0.00	11.57	2200.00	0.00	0.00	0.00	0.00	488271.00	761123.15	N 32.340321	W 103.621687
	2300.00	0.00	11.57	2300.00	0.00	0.00	0.00	0.00	488271.00	761123.15	N 32.340321	W 103.621687
	2400.00	0.00	11.57	2400.00	0.00	0.00	0.00	0.00	488271.00	761123.15	N 32.340321	W 103.621687
Nudge, Build 2"/100ft	2500.00	0.00	11.57	2500.00	0.00	0.00	0.00	0.00	488271.00	761123.15	N 32.340321	W 103.621687
	2600.00	2.00	11.57	2599.98	-1.71	1.71	0.35	2.00	488272.71	761123.50	N 32.340326	W 103.621686
	2700.00	4.00	11.57	2699.84	-6.83	6.84	1.40	2.00	488277.84	761124.55	N 32.340340	W 103.621682
Hold	2750.02	5.00	11.57	2749.70	-10.67	10.68	2.19	2.00	488281.68	761125.34	N 32.340350	W 103.621679
	2800.00	5.00	11.57	2799.49	-14.93	14.95	3.06	0.00	488285.95	761126.21	N 32.340362	W 103.621677
	2900.00	5.00	11.57	2899.11	-23.46	23.49	4.81	0.00	488294.49	761127.96	N 32.340386	W 103.621671
	3000.00	5.00	11.57	2998.73	-31.98	32.03	6.56	0.00	488303.03	761129.71	N 32.340409	W 103.621665
	3100.00	5.00	11.57	3098.35	-40.51	40.57	8.31	0.00	488311.56	761131.46	N 32.340432	W 103.621659
	3200.00	5.00	11.57	3197.97	-49.04	49.11	10.06	0.00	488320.10	761133.21	N 32.340456	W 103.621653
	3300.00	5.00	11.57	3297.59	-57.56	57.64	11.81	0.00	488328.64	761134.96	N 32.340479	W 103.621647
	3400.00	5.00	11.57	3397.21	-66.09	66.18	13.55	0.00	488337.18	761136.70	N 32.340503	W 103.621642
	3500.00	5.00	11.57	3496.83	-74.62	74.72	15.30	0.00	488345.72	761138.45	N 32.340526	W 103.621636
	3600.00	5.00	11.57	3596.45	-83.15	83.26	17.05	0.00	488354.26	761140.20	N 32.340550	W 103.621630
	3700.00	5.00	11.57	3696.07	-91.67	91.80	18.80	0.00	488362.80	761141.95	N 32.340573	W 103.621624
	3800.00	5.00	11.57	3795.69	-100.20	100.34	20.55	0.00	488371.34	761143.70	N 32.340597	W 103.621618
	3900.00	5.00	11.57	3895.31	-108.73	108.88	22.30	0.00	488379.87	761145.45	N 32.340620	W 103.621612
	4000.00	5.00	11.57	3994.93	-117.26	117.42	24.05	0.00	488388.41	761147.20	N 32.340643	W 103.621606
	4100.00	5.00	11.57	4094.54	-125.78	125.96	25.80	0.00	488396.95	761148.94	N 32.340667	W 103.621601
	4200.00	5.00	11.57	4194.16	-134.31	134.50	27.54	0.00	488405.49	761150.69	N 32.340690	W 103.621595
	4300.00	5.00	11.57	4293.78	-142.84	143.03	29.29	0.00	488414.03	761152.44	N 32.340714	W 103.621589
	4400.00	5.00	11.57	4393.40	-151.36	151.57	31.04	0.00	488422.57	761154.19	N 32.340737	W 103.621583
	4500.00	5.00	11.57	4493.02	-159.89	160.11	32.79	0.00	488431.11	761155.94	N 32.340761	W 103.621577
Drop 2"/100ft	4501.24	5.00	11.57	4494.26	-160.00	160.22	32.81	0.00	488431.21	761155.96	N 32.340761	W 103.621577
	4600.00	3.03	11.57	4592.77	-166.76	166.99	34.20	2.00	488437.98	761157.35	N 32.340779	W 103.621572
	4700.00	1.03	11.57	4692.70	-170.22	170.45	34.91	2.00	488441.44	761158.06	N 32.340789	W 103.621570
Hold	4751.26	0.00	11.57	4743.96	-170.66	170.90	35.00	2.00	488441.89	761158.15	N 32.340790	W 103.621570
	4800.00	0.00	11.57	4792.70	-170.66	170.90	35.00	0.00	488441.89	761158.15	N 32.340790	W 103.621570
	4900.00	0.00	11.57	4892.70	-170.66	170.90	35.00	0.00	488441.89	761158.15	N 32.340790	W 103.621570
Base of Salt	4977.30	0.00	11.57	4970.00	-170.66	170.90	35.00	0.00	488441.89	761158.15	N 32.340790	W 103.621570
	5000.00	0.00	11.57	4992.70	-170.66	170.90	35.00	0.00	488441.89	761158.15	N 32.340790	W 103.621570
Lamar	5002.30	0.00	11.57	4995.00	-170.66	170.90	35.00	0.00	488441.89	761158.15	N 32.340790	W 103.621570
Bell Canyon	5024.30	0.00	11.57	5017.00	-170.66	170.90	35.00	0.00	488441.89	761158.15	N 32.340790	W 103.621570
	5100.00	0.00	11.57	5092.70	-170.66	170.90	35.00	0.00	488441.89	761158.15	N 32.340790	W 103.621570
	5200.00	0.00	11.57	5192.70	-170.66	170.90	35.00	0.00	488441.89	761158.15	N 32.340790	W 103.621570
	5300.00	0.00	11.57	5292.70	-170.66	170.90	35.00	0.00	488441.89	761158.15	N 32.340790	W 103.621570
	5400.00	0.00	11.57	5392.70	-170.66	170.90	35.00	0.00	488441.89	761158.15	N 32.340790	W 103.621570
	5500.00	0.00	11.57	5492.70	-170.66	170.90	35.00	0.00	488441.89	761158.15	N 32.340790	W 103.621570
	5600.00	0.00	11.57	5592.70	-170.66	170.90	35.00	0.00	488441.89	761158.15	N 32.340790	W 103.621570
	5700.00	0.00	11.57	5692.70	-170.66	170.90	35.00	0.00	488441.89	761158.15	N 32.340790	W 103.621570
	5800.00	0.00	11.57	5792.70	-170.66	170.90	35.00	0.00	488441.89	761158.15	N 32.340790	W 103.621570
	5900.00	0.00	11.57	5892.70	-170.66	170.90	35.00	0.00	488441.89	761158.15	N 32.340790	W 103.621570
	6000.00	0.00	11.57	5992.70	-170.66	170.90	35.00	0.00	488441.89	761158.15	N 32.340790	W 103.621570
	6100.00	0.00	11.57	6092.70	-170.66	170.90	35.00	0.00	488441.89	761158.15	N 32.340790	W 103.621570
Cherry Canyon	6137.30	0.00	11.57	6130.00	-170.66	170.90	35.00	0.00	488441.89	761158.15	N 32.340790	W 103.621570
	6200.00	0.00	11.57	6192.70	-170.66	170.90	35.00	0.00	488441.89	761158.15	N 32.340790	W 103.621570
	6300.00	0.00	11.57	6292.70	-170.66	170.90	35.00	0.00	488441.89	761158.15	N 32.340790	W 103.621570
	6400.00	0.00	11.57	6392.70	-170.66	170.90	35.00	0.00	488441.89	761158.15	N 32.340790	W 103.621570
	6500.00	0.00	11.57	6492.70	-170.66	170.90	35.00	0.00	488441.89	761158.15	N 32.340790	W 103.621570
	6600.00	0.00	11.57	6592.70								

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S °)	Longitude (E/W °)
Brushy Canyon	6700.00	0.00	11.57	6692.70	-170.66	170.90	35.00	0.00	488441.89	761158.15	N 32.340790	W 103.621570
	6800.00	0.00	11.57	6792.70	-170.66	170.90	35.00	0.00	488441.89	761158.15	N 32.340790	W 103.621570
	6900.00	0.00	11.57	6892.70	-170.66	170.90	35.00	0.00	488441.89	761158.15	N 32.340790	W 103.621570
	7000.00	0.00	11.57	6992.70	-170.66	170.90	35.00	0.00	488441.89	761158.15	N 32.340790	W 103.621570
	7100.00	0.00	11.57	7092.70	-170.66	170.90	35.00	0.00	488441.89	761158.15	N 32.340790	W 103.621570
	7200.00	0.00	11.57	7192.70	-170.66	170.90	35.00	0.00	488441.89	761158.15	N 32.340790	W 103.621570
	7208.30	0.00	11.57	7201.00	-170.66	170.90	35.00	0.00	488441.89	761158.15	N 32.340790	W 103.621570
	7300.00	0.00	11.57	7292.70	-170.66	170.90	35.00	0.00	488441.89	761158.15	N 32.340790	W 103.621570
	7400.00	0.00	11.57	7392.70	-170.66	170.90	35.00	0.00	488441.89	761158.15	N 32.340790	W 103.621570
	7500.00	0.00	11.57	7492.70	-170.66	170.90	35.00	0.00	488441.89	761158.15	N 32.340790	W 103.621570
	7600.00	0.00	11.57	7592.70	-170.66	170.90	35.00	0.00	488441.89	761158.15	N 32.340790	W 103.621570
	7700.00	0.00	11.57	7692.70	-170.66	170.90	35.00	0.00	488441.89	761158.15	N 32.340790	W 103.621570
	7800.00	0.00	11.57	7792.70	-170.66	170.90	35.00	0.00	488441.89	761158.15	N 32.340790	W 103.621570
	7900.00	0.00	11.57	7892.70	-170.66	170.90	35.00	0.00	488441.89	761158.15	N 32.340790	W 103.621570
	8000.00	0.00	11.57	7992.70	-170.66	170.90	35.00	0.00	488441.89	761158.15	N 32.340790	W 103.621570
	8100.00	0.00	11.57	8092.70	-170.66	170.90	35.00	0.00	488441.89	761158.15	N 32.340790	W 103.621570
	8200.00	0.00	11.57	8192.70	-170.66	170.90	35.00	0.00	488441.89	761158.15	N 32.340790	W 103.621570
	8300.00	0.00	11.57	8292.70	-170.66	170.90	35.00	0.00	488441.89	761158.15	N 32.340790	W 103.621570
	8400.00	0.00	11.57	8392.70	-170.66	170.90	35.00	0.00	488441.89	761158.15	N 32.340790	W 103.621570
	8500.00	0.00	11.57	8492.70	-170.66	170.90	35.00	0.00	488441.89	761158.15	N 32.340790	W 103.621570
	8600.00	0.00	11.57	8592.70	-170.66	170.90	35.00	0.00	488441.89	761158.15	N 32.340790	W 103.621570
8700.00	0.00	11.57	8692.70	-170.66	170.90	35.00	0.00	488441.89	761158.15	N 32.340790	W 103.621570	
8800.00	0.00	11.57	8792.70	-170.66	170.90	35.00	0.00	488441.89	761158.15	N 32.340790	W 103.621570	
Bone Spring Lime	8832.30	0.00	11.57	8825.00	-170.66	170.90	35.00	0.00	488441.89	761158.15	N 32.340790	W 103.621570
Leonard	8900.00	0.00	11.57	8892.70	-170.66	170.90	35.00	0.00	488441.89	761158.15	N 32.340790	W 103.621570
	8947.30	0.00	11.57	8940.00	-170.66	170.90	35.00	0.00	488441.89	761158.15	N 32.340790	W 103.621570
	9000.00	0.00	11.57	8992.70	-170.66	170.90	35.00	0.00	488441.89	761158.15	N 32.340790	W 103.621570
	9100.00	0.00	11.57	9092.70	-170.66	170.90	35.00	0.00	488441.89	761158.15	N 32.340790	W 103.621570
	9200.00	0.00	11.57	9192.70	-170.66	170.90	35.00	0.00	488441.89	761158.15	N 32.340790	W 103.621570
	9300.00	0.00	11.57	9292.70	-170.66	170.90	35.00	0.00	488441.89	761158.15	N 32.340790	W 103.621570
Avalon	9367.30	0.00	11.57	9360.00	-170.66	170.90	35.00	0.00	488441.89	761158.15	N 32.340790	W 103.621570
	9400.00	0.00	11.57	9392.70	-170.66	170.90	35.00	0.00	488441.89	761158.15	N 32.340790	W 103.621570
	9500.00	0.00	11.57	9492.70	-170.66	170.90	35.00	0.00	488441.89	761158.15	N 32.340790	W 103.621570
	9600.00	0.00	11.57	9592.70	-170.66	170.90	35.00	0.00	488441.89	761158.15	N 32.340790	W 103.621570
	9700.00	0.00	11.57	9692.70	-170.66	170.90	35.00	0.00	488441.89	761158.15	N 32.340790	W 103.621570
	9800.00	0.00	11.57	9792.70	-170.66	170.90	35.00	0.00	488441.89	761158.15	N 32.340790	W 103.621570
	9900.00	0.00	11.57	9892.70	-170.66	170.90	35.00	0.00	488441.89	761158.15	N 32.340790	W 103.621570
1st BS SS	9996.30	0.00	11.57	9989.00	-170.66	170.90	35.00	0.00	488441.89	761158.15	N 32.340790	W 103.621570
	10000.00	0.00	11.57	9992.70	-170.66	170.90	35.00	0.00	488441.89	761158.15	N 32.340790	W 103.621570
	10100.00	0.00	11.57	10092.70	-170.66	170.90	35.00	0.00	488441.89	761158.15	N 32.340790	W 103.621570
	10200.00	0.00	11.57	10192.70	-170.66	170.90	35.00	0.00	488441.89	761158.15	N 32.340790	W 103.621570
	10300.00	0.00	11.57	10292.70	-170.66	170.90	35.00	0.00	488441.89	761158.15	N 32.340790	W 103.621570
	10400.00	0.00	11.57	10392.70	-170.66	170.90	35.00	0.00	488441.89	761158.15	N 32.340790	W 103.621570
	10500.00	0.00	11.57	10492.70	-170.66	170.90	35.00	0.00	488441.89	761158.15	N 32.340790	W 103.621570
2nd BS SS	10600.00	0.00	11.57	10592.70	-170.66	170.90	35.00	0.00	488441.89	761158.15	N 32.340790	W 103.621570
	10637.30	0.00	11.57	10630.00	-170.66	170.90	35.00	0.00	488441.89	761158.15	N 32.340790	W 103.621570
	10700.00	0.00	11.57	10692.70	-170.66	170.90	35.00	0.00	488441.89	761158.15	N 32.340790	W 103.621570
	10800.00	0.00	11.57	10792.70	-170.66	170.90	35.00	0.00	488441.89	761158.15	N 32.340790	W 103.621570
	10900.00	0.00	11.57	10892.70	-170.66	170.90	35.00	0.00	488441.89	761158.15	N 32.340790	W 103.621570
	11000.00	0.00	11.57	10992.70	-170.66	170.90	35.00	0.00	488441.89	761158.15	N 32.340790	W 103.621570
	11100.00	0.00	11.57	11092.70	-170.66	170.90	35.00	0.00	488441.89	761158.15	N 32.340790	W 103.621570
	11200.00	0.00	11.57	11192.70	-170.66	170.90	35.00	0.00	488441.89	761158.15	N 32.340790	W 103.621570
	11300.00	0.00	11.57	11292.70	-170.66	170.90	35.00	0.00	488441.89	761158.15	N 32.340790	W 103.621570
KOP, Build 10"/100ft	11400.00	0.00	11.57	11392.70	-170.66	170.90	35.00	0.00	488441.89	761158.15	N 32.340790	W 103.621570
	11456.26	0.00	11.57	11448.96	-170.66	170.90	35.00	0.00	488441.89	761158.15	N 32.340790	W 103.621570
	11500.00	4.37	164.62	11492.66	-169.05	169.29	35.44	10.00	488440.28	761158.59	N 32.340786	W 103.621568
	11600.00	14.37	164.62	11591.20	-153.34	153.61	39.76	10.00	488424.60	761162.91	N 32.340743	W 103.621555
	11700.00	24.37	164.62	11685.42	-121.34	121.66	48.55	10.00	488392.66	761171.69	N 32.340655	W 103.621527
	11800.00	34.37	164.62	11772.45	-74.02	74.43	61.54	10.00	488345.43	761184.69	N 32.340525	W 103.621486
3rd BS SS	11809.20	35.29	164.62	11780.00	-68.94	69.36	62.93	10.00	488340.36	761186.08	N 32.340511	W 103.621482
	11900.00	44.37	164.62	11849.65	-12.82	13.34	78.35	10.00	488284.34	761201.49	N 32.340356	W 103.621433
	12000.00	54.37	164.62	11914.68	60.40	-59.75	98.45	10.00	488211.26	761221.60	N 32.340155	W 103.621369
	12100.00	64.37	164.62	11965.56	143.41	-142.61	121.25	10.00	488128.40	761244.39	N 32.339927	W 103.621297
	12156.26	70.00	164.62	11987.36	193.48	-192.59	135.00	10.00	488078.42	761258.14	N 32.339789	W 103.621254
	12200.00	72.07	165.36	12001.58	233.50	-232.54	145.71	5.00	488038.47	761268.85	N 32.339679	W 103.621220
	12300.00	76.81	167.01	12028.40	327.18	-326.07	168.69	5.00	487944.95	761291.83	N 32.339422	W 103.621148

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S °)	Longitude (E/W °)
	16100.00	90.96	179.62	12001.47	4117.17	-4115.35	288.20	0.00	484155.80	761411.34	N 32.329005	W 103.620842
	16200.00	90.96	179.62	11999.80	4217.16	-4215.34	288.86	0.00	484055.82	761412.00	N 32.328730	W 103.620842
	16300.00	90.96	179.62	11998.13	4317.15	-4315.32	289.53	0.00	483955.84	761412.67	N 32.328455	W 103.620842
	16400.00	90.96	179.62	11996.46	4417.13	-4415.31	290.20	0.00	483855.86	761413.34	N 32.328180	W 103.620842
	16500.00	90.96	179.62	11994.79	4517.12	-4515.29	290.87	0.00	483755.88	761414.01	N 32.327905	W 103.620842
	16600.00	90.96	179.62	11993.12	4617.10	-4615.27	291.53	0.00	483655.90	761414.67	N 32.327630	W 103.620842
	16700.00	90.96	179.62	11991.45	4717.09	-4715.26	292.20	0.00	483555.92	761415.34	N 32.327356	W 103.620842
	16800.00	90.96	179.62	11989.78	4817.08	-4815.24	292.87	0.00	483455.94	761416.01	N 32.327081	W 103.620842
	16900.00	90.96	179.62	11988.11	4917.06	-4915.22	293.54	0.00	483355.96	761416.67	N 32.326806	W 103.620842
Section 1-12 Line Cross	16992.24	90.96	179.62	11986.56	5009.29	-5007.45	294.15	0.00	483263.74	761417.29	N 32.326553	W 103.620842
	17000.00	90.96	179.62	11986.43	5017.05	-5015.21	294.20	0.00	483255.98	761417.34	N 32.326531	W 103.620842
	17100.00	90.96	179.62	11984.76	5117.03	-5115.19	294.87	0.00	483156.00	761418.01	N 32.326256	W 103.620842
	17200.00	90.96	179.62	11983.09	5217.02	-5215.18	295.54	0.00	483056.02	761418.68	N 32.325982	W 103.620842
	17300.00	90.96	179.62	11981.42	5317.01	-5315.16	296.20	0.00	482956.04	761419.34	N 32.325707	W 103.620842
	17400.00	90.96	179.62	11979.75	5416.99	-5415.14	296.87	0.00	482856.06	761420.01	N 32.325432	W 103.620842
	17500.00	90.96	179.62	11978.08	5516.98	-5515.13	297.54	0.00	482756.08	761420.68	N 32.325157	W 103.620842
	17600.00	90.96	179.62	11976.41	5616.97	-5615.11	298.21	0.00	482656.10	761421.34	N 32.324882	W 103.620842
	17700.00	90.96	179.62	11974.74	5716.95	-5715.09	298.87	0.00	482556.12	761422.01	N 32.324607	W 103.620842
	17800.00	90.96	179.62	11973.07	5816.94	-5815.08	299.54	0.00	482456.14	761422.68	N 32.324333	W 103.620842
	17900.00	90.96	179.62	11971.40	5916.92	-5915.06	300.21	0.00	482356.16	761423.35	N 32.324058	W 103.620842
	18000.00	90.96	179.62	11969.73	6016.91	-6015.05	300.87	0.00	482256.18	761424.01	N 32.323783	W 103.620842
	18100.00	90.96	179.62	11968.06	6116.90	-6115.03	301.54	0.00	482156.20	761424.68	N 32.323508	W 103.620842
	18200.00	90.96	179.62	11966.39	6216.88	-6215.01	302.21	0.00	482056.22	761425.35	N 32.323233	W 103.620842
	18300.00	90.96	179.62	11964.72	6316.87	-6315.00	302.88	0.00	481956.24	761426.02	N 32.322959	W 103.620842
	18400.00	90.96	179.62	11963.04	6416.85	-6414.98	303.54	0.00	481856.26	761426.68	N 32.322684	W 103.620842
	18500.00	90.96	179.62	11961.37	6516.84	-6514.97	304.21	0.00	481756.28	761427.35	N 32.322409	W 103.620842
	18600.00	90.96	179.62	11959.70	6616.83	-6614.95	304.88	0.00	481656.30	761428.02	N 32.322134	W 103.620842
	18700.00	90.96	179.62	11958.03	6716.81	-6714.93	305.55	0.00	481556.32	761428.68	N 32.321859	W 103.620842
	18800.00	90.96	179.62	11956.36	6816.80	-6814.92	306.21	0.00	481456.34	761429.35	N 32.321584	W 103.620842
	18900.00	90.96	179.62	11954.69	6916.78	-6914.90	306.88	0.00	481356.36	761430.02	N 32.321310	W 103.620842
	19000.00	90.96	179.62	11953.02	7016.77	-7014.88	307.55	0.00	481256.38	761430.69	N 32.321035	W 103.620842
	19100.00	90.96	179.62	11951.35	7116.76	-7114.87	308.21	0.00	481156.40	761431.35	N 32.320760	W 103.620842
	19200.00	90.96	179.62	11949.68	7216.74	-7214.85	308.88	0.00	481056.42	761432.02	N 32.320485	W 103.620842
	19300.00	90.96	179.62	11948.01	7316.73	-7314.84	309.55	0.00	480956.44	761432.68	N 32.320210	W 103.620842
	19400.00	90.96	179.62	11946.34	7416.71	-7414.82	310.22	0.00	480856.46	761433.35	N 32.319935	W 103.620842
	19500.00	90.96	179.62	11944.67	7516.70	-7514.80	310.88	0.00	480756.48	761434.02	N 32.319661	W 103.620842
	19600.00	90.96	179.62	11943.00	7616.69	-7614.79	311.55	0.00	480656.50	761434.69	N 32.319386	W 103.620842
	19700.00	90.96	179.62	11941.33	7716.67	-7714.77	312.22	0.00	480556.52	761435.36	N 32.319111	W 103.620842
	19800.00	90.96	179.62	11939.65	7816.66	-7814.75	312.89	0.00	480456.54	761436.02	N 32.318836	W 103.620842
	19900.00	90.96	179.62	11937.98	7916.64	-7914.74	313.55	0.00	480356.56	761436.69	N 32.318561	W 103.620842
	20000.00	90.96	179.62	11936.31	8016.63	-8014.72	314.22	0.00	480256.58	761437.36	N 32.318287	W 103.620842
	20100.00	90.96	179.62	11934.64	8116.62	-8114.71	314.89	0.00	480156.60	761438.03	N 32.318012	W 103.620842
	20200.00	90.96	179.62	11932.97	8216.60	-8214.69	315.55	0.00	480056.62	761438.69	N 32.317737	W 103.620842
	20300.00	90.96	179.62	11931.30	8316.59	-8314.67	316.22	0.00	479956.64	761439.36	N 32.317462	W 103.620842
	20400.00	90.96	179.62	11929.63	8416.57	-8414.66	316.89	0.00	479856.66	761440.03	N 32.317187	W 103.620842
	20500.00	90.96	179.62	11927.96	8516.56	-8514.64	317.56	0.00	479756.68	761440.69	N 32.316912	W 103.620842
	20600.00	90.96	179.62	11926.29	8616.55	-8614.63	318.22	0.00	479656.70	761441.36	N 32.316638	W 103.620842
	20700.00	90.96	179.62	11924.62	8716.53	-8714.61	318.89	0.00	479556.72	761442.03	N 32.316363	W 103.620842
	20800.00	90.96	179.62	11922.95	8816.52	-8814.59	319.56	0.00	479456.74	761442.70	N 32.316088	W 103.620842
	20900.00	90.96	179.62	11921.28	8916.50	-8914.58	320.22	0.00	479356.76	761443.36	N 32.315813	W 103.620842
	21000.00	90.96	179.62	11919.61	9016.49	-9014.56	320.89	0.00	479256.78	761444.03	N 32.315538	W 103.620842
	21100.00	90.96	179.62	11917.94	9116.48	-9114.54	321.56	0.00	479156.80	761444.70	N 32.315263	W 103.620842
	21200.00	90.96	179.62	11916.26	9216.46	-9214.53	322.23	0.00	479056.82	761445.36	N 32.314989	W 103.620842
	21300.00	90.96	179.62	11914.59	9316.45	-9314.51	322.89	0.00	478956.84	761446.03	N 32.314714	W 103.620842
	21400.00	90.96	179.62	11912.92	9416.43	-9414.50	323.56	0.00	478856.86	761446.70	N 32.314439	W 103.620842
	21500.00	90.96	179.62	11911.25	9516.42	-9514.48	324.23	0.00	478756.88	761447.37	N 32.314164	W 103.620842
	21600.00	90.96	179.62	11909.58	9616.41	-9614.46	324.90	0.00	478656.90	761448.03	N 32.313889	W 103.620842
	21700.00	90.96	179.62	11907.91	9716.39	-9714.45	325.56	0.00	478556.92	761448.70	N 32.313615	W 103.620842
	21800.00	90.96	179.62	11906.24	9816.38	-9814.43	326.23	0.00	478456.94	761449.37	N 32.313340	W 103.620842
	21900.00	90.96	179.62	11904.57	9916.37	-9914.42	326.90	0.00	478356.96	761450.04	N 32.313065	W 103.620842
	22000.00	90.96	179.62	11902.90	10016.35	-10014.40	327.56	0.00	478256.98	761450.70	N 32.312790	W 103.620842
	22100.00	90.96	179.62	11901.23	10116.34	-10114.38	328.23	0.00	478157.00	761451.37	N 32.312515	W 103.620842
Coriander 1-12 State Com 4H - BHL [100' FSL, 330' FEL]	22173.50	90.96	179.62	11900.00	10189.83	-10187.87	328.72	0.00	478083.51	761451.86	N 32.312313	W 103.620842

Survey Type: Def Plan

Survey Error Model: ISCWSA Rev 3 *** 3-D 95.000% 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 Type	Borehole / Survey
	1	0.000	22.000	1/100.000	30.000	30.000		A001Mb_MWD-Depth Only	Coriander 1-12 State Com 4H / Cimarex Coriander 1-12 State
	1	22.000	11500.000	1/100.000	30.000	30.000		A001Mb_MWD	Coriander 1-12 State Com 4H / Cimarex Coriander 1-12 State
	1	11500.000	22173.502	1/100.000	30.000	30.000		A008Mb_MWD+IFR1+MS	Coriander 1-12 State Com 4H / Cimarex Coriander 1-12 State