



U.S. Department of the Interior
BUREAU OF LAND MANAGEMENT

Sundry Print Report

05/22/2023

Well Name: RIVERBEND 12-13
FEDERAL COM

Well Location: T25S / R28E / SEC 1 /
SESW /

County or Parish/State:

Well Number: 20H

Type of Well: CONVENTIONAL GAS
WELL

Allottee or Tribe Name:

Lease Number: NMNM16104

Unit or CA Name:

Unit or CA Number:

US Well Number: 3001549536

Well Status: Approved Application for
Permit to Drill

Operator: CIMAREX ENERGY
COMPANY

Notice of Intent

Sundry ID: 2704967

Type of Submission: Notice of Intent

Type of Action: APD Change

Date Sundry Submitted: 11/29/2022

Time Sundry Submitted: 03:33

Date proposed operation will begin: 01/06/2023

Procedure Description: Cimarex Energy Company respectfully requests approval to make the following changes to the approved Application for Permit to Drill. These changes are as follows: 1. SHL, BHL & LTP are not changing. 2. The FTP will change as follows: FROM: 330' FNL & 2310' FEL (Unit B, NWNE) Section 12-T25S-R28E Lat 32.151055; Long 104.039743 TO: 330' FNL & 2313' FEL (Unit B, NWNE) Section 12-T25S-R28E Lat 32.151055; Long 104.039753 3. The proposed TD will change as follows: FROM: 20839' MD; 9975' TVD - Purple Sage Wolfcamp (Gas) - Pool Code 98220 TO: 20437' MD; 9975' TVD - Purple Sage Wolfcamp (Gas) - Pool Code 98220 4. The casing and cement detail will change. Please see attached updated casing and cement detail. 5. Request approval for off-line cementing. 6. Request approval to skid rig to the next well on the pad to begin operations prior to waiting 8 hours for the surface casing cement to harden before skidding the rig. Attached are updated documents related to these changes: C-102, drilling plan, directional survey, casing and cement detail.

NOI Attachments

Procedure Description

Sundry_notice_attachments_20221129153248.pdf

Well Name: RIVERBEND 12-13 FEDERAL COM	Well Location: T25S / R28E / SEC 1 / SESW /	County or Parish/State:
Well Number: 20H	Type of Well: CONVENTIONAL GAS WELL	Allottee or Tribe Name:
Lease Number: NMNM16104	Unit or CA Name:	Unit or CA Number:
US Well Number: 3001549536	Well Status: Approved Application for Permit to Drill	Operator: CIMAREX ENERGY COMPANY

Operator

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

Operator Electronic Signature: RUSTY KLEIN

Signed on: NOV 29, 2022 03:32 PM

Name: CIMAREX ENERGY COMPANY

Title: Regulatory Analyst IV

Street Address: 600 N MRIENFIELD SUITE 600

City: MIDLAND

State: TX

Phone: (432) 620-1933

Email address: RUSTY.KLEIN@COTERRA.COM

Field

Representative Name:

Street Address:

City:

State:

Zip:

Phone:

Email address:

BLM Point of Contact

BLM POC Name: CHRISTOPHER WALLS

BLM POC Title: Petroleum Engineer

BLM POC Phone: 5752342234

BLM POC Email Address: cwalls@blm.gov

Disposition: Approved

Disposition Date: 05/18/2023

Signature: CHRIS WALLS

District I
1625 N. French Dr., Hobbs, NM 88240
Phone: (505) 393-6161 Fax: (505) 393-0720
District II
811 S. First St., Artes, NM 88210
Phone: (505) 748-1283 Fax: (505) 748-9720
District III
1600 Rio Brazos Road, Artes, NM 88210
Phone: (505) 334-6178 Fax: (505) 334-6170
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone: (505) 476-3160 Fax: (505) 476-3162

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

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

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-015-49536	² Pool Code 98220	³ Pool Name Purple Sage; Wolfcamp (Gas)
⁴ Property Code 321482	⁵ Property Name RIVERBEND 12-13 FEDERAL COM	⁶ Well Number 20H
⁷ OGRID No. 215099	⁸ Operator Name CIMAREX ENERGY CO.	⁹ Elevation 2935.0'

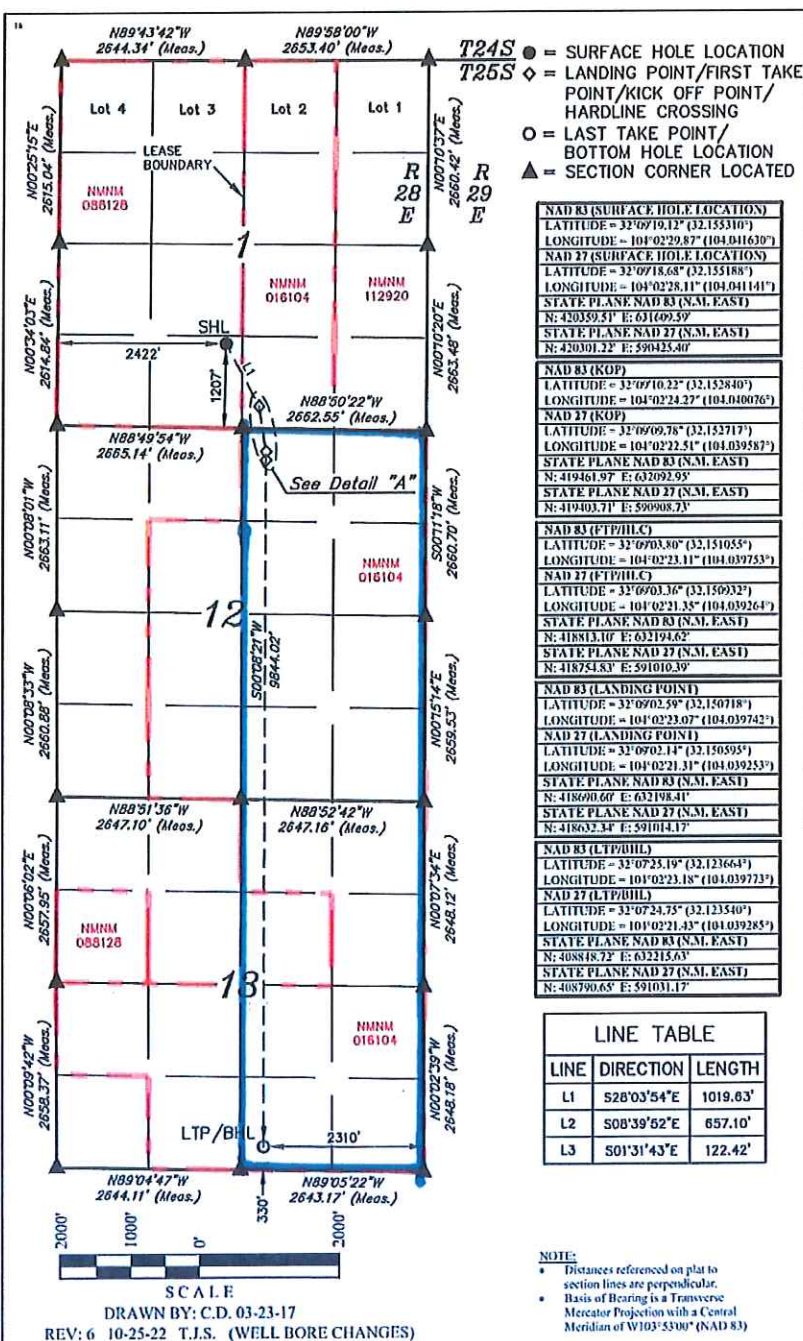
"Surface Location

UL or lot no. N	Section I	Township 25S	Range 28E	Lot Idn	Feet from the 1207	North/South line SOUTH	Feet from the 2422	East/West line WEST	County EDDY
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"Bottom Hole Location If Different From Surface

UL or lot no. O	Section 13	Township 25S	Range 28E	Lot Idn	Feet from the 330	North/South line SOUTH	Feet from the 2310	East/West line EAST	County EDDY
¹¹ Dedicated Acres 640	¹² Joint or Infill Will be communitized	¹³ Consolidation Code Will be communitized	¹⁴ 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.



"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 undivided 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 previously entered by the division.

Rusty Klein 11-1-2022
Signature Date

RUSTY KLEIN

Printed Name

rusty.klein@coterra.com

E-mail Address

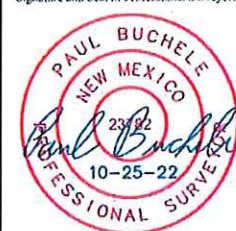
"SURVEYOR CERTIFICATION

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.

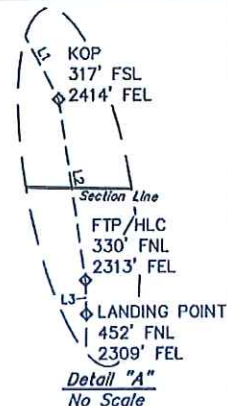
December 12, 2017

Date of Survey

Signature and Seal of Professional Surveyor:



Certificate Number:



SCALE
DRAWN BY: C.D. 03-23-17
REV: 6 10-25-22 T.J.S. (WELL BORE CHANGES)

Cimarex Energy Co., Riverbend 12-13 Federal Com 20H

1. Geological Formations

TVD of target 9,975
MD at TD 20,437

Pilot Hole TD N/A
Deepest expected fresh water

Formation	Depth (TVD) from KB	Water/Mineral Bearing/Target Zone	Hazards
Rustler	217	Useable Water	
Salado	408	N/A	
Castille	2463	N/A	
Bell Canyon	2757	N/A	
Cherry Canyon	3695	N/A	
Brushy Canyon	5294	Hydrocarbons	
Bone Spring	6427	Hydrocarbons	
1st Bone Spring	7367	Hydrocarbons	
2nd Bone Spring	8173	Hydrocarbons	
3rd Bone Spring	9291	Hydrocarbons	
Wolfcamp	9669	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	267	267	13-3/8"	48.00	J-55	ST&C	6.40	20.54	33.79
12 1/4	0	2717	2717	9-5/8"	36.00	J-55	ST&C	1.39	2.42	4.03
8 3/4	0	9485	9485	7"	26.00	L-80	LT&C	1.22	1.63	1.98
8 3/4	9485	10235	9928	7"	26.00	L-80	BT&C	1.16	1.56	52.44
6	8485	20437	9975	4-1/2"	11.60	P-110	BT&C	1.22	1.72	21.23
BLM Minimum Safety Factor								1.125	1	1.6 Dry 1.8 Wet

TVD was used on all calculations.

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

Cimarex Energy Co., Riverbend 12-13 Federal Com 20H

	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

Cimarex Energy Co., Riverbend 12-13 Federal Com 20H

3. Cementing Program

Casing	# Sk	Wt. lb/gal	Yld ft ³ /sack	H ₂ O gal/sk	500# Comp. Strength (hours)	Slurry Description
Surface	173	14.80	1.34	6.32	9.5	Tail: Class C + LCM
Intermediate	530	12.90	1.88	9.65	12	Lead: 35:65 (Poz:C) + Salt + Bentonite
	159	14.80	1.34	6.32	9.5	Tail: Class C + LCM
Production	438	10.30	3.64	22.18		Lead: Tuned Light + LCM
	120	14.20	1.30	5.86	14:30	Tail: 50:50 (Poz:H) + Salt + Bentonite + Fluid Loss + Dispersant + SMS
Completion System	757	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	25
Intermediate	0	47
Production	2410	25
Completion System	10035	10

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

Cimarex Energy Co., Riverbend 12-13 Federal Com 20H

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	3M	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	13 5/8	10M	Annular	X	10M
			Blind Ram		
			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.

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

Cimarex Energy Co., Riverbend 12-13 Federal Com 20H

5. Mud Program

Depth	Type	Weight (ppg)	Viscosity	Water Loss
0' to 267'	Fresh Water	7.83 - 8.33	28	N/C
267' to 2717'	Brine Water	9.80 - 10.30	30-32	N/C
2717' to 10235'	Brine Water	8.50 - 9.00	30-32	N/C
10235' to 20437'	OBM	11.50 - 12.00	50-70	N/C

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

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

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

Additional Logs Planned	Interval
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7. Drilling Conditions

Condition	
BH Pressure at deepest TVD	6224 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.	
	H2S is present
	H2S 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 50% of working pressure. The pressure test will be repeated at least every 30 days, as per Onshore Order No. 2.

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

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

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

A solid steel body pack-off will be utilized after running and cementing the intermediate casing. After installation the pack-off and lower flange will be pressure tested to 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 atleast 0.22 psi/ft or 1,500 whichever is greater and not to exceed 70% of casing burst.

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

Cimarex Energy Co., Riverbend 12-13 Federal Com 20H

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 20H 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 20H 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 a 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 20H 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.

CIMAREX ENERGY COMPANY
 RIVERBEND 12 13 FEDERAL COM #20H
 30-015-49536
 Section 1-T25S-R28E
 Eddy Co., NM

THE CASING PROGRAM WILL BE CHANGED AS FOLLOWS:

FROM: AS APPROVED ON APPROVED APPLICATION FOR PERMIT TO DRILL:

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	514'	514'	13-3/8"	48#	J-55	ST&C	3.32	10.67	17.55
12-1/4"	0	2610'	2610'	9-5/8"	36#	J-55	ST&C	1.45	2.52	4.19
8-3/4"	0	9545'	9545'	7"	26#	L-80	LT&C	1.21	1.62	1.97
8-3/4"	9545'	10461'	9975'	7"	26#	L-80	BT&C	1.16	1.55	54.03
6"	9545'	20839'	9975'	4-1/2"	11.6#	P-110	BT&C	1.22	1.72	73.58
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 & Gas Order #2 III.B.1.H

TO:

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	267'	267'	13-3/8"	48#	J-55	ST&C	6.40	20.54	33.79
12-1/4"	0	2717'	2717'	9-5/8"	36#	J-55	ST&C	1.39	2.42	4.03
8-3/4"	0	9485'	9485'	7"	26#	L-80	LT&C	1.22	1.63	1.98
8-3/4"	9485'	10235'	9928'	7"	26#	L-80	BT&C	1.16	1.56	52.44
6"	8485'	20437'	9975'	4-1/2"	11.6#	P-110	BT&C	1.22	1.72	21.23
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 & Gas Order #2 III.B.1.h.

Cimarex is also requesting approval for off line cementing and request approval to skid the rig to the next well on the pad to begin operations instead of waiting 8 hours for the surface casing cement to harden before skidding the rig.

An updated drilling plan and directional survey is attached.

CIMAREX ENERGY COMPANY
 RIVERBEND 12 13 FEDERAL COM #20H
 30-015-49536
 Section 1-T25S-R28E
 Eddy Co., NM

THE CEMENTING PROGRAM WILL BE CHANGED AS FOLLOWS:

FROM:

CASING	#SACKS	WEIGHT LB/GAL	YIELD FT3/SACK	H2O GAL/SACK	500# COMP STRENGTH (HOURS)	SLURRY DESCRIPTION
SURFACE	130	13.50	1.72	9.15	15.5	Lead: Class C + Bentonite
	195	14.80	1.34	6.32	9.5	Tail: Class C + LCM

INTERMEDIATE	497	12.90	1.88	9.65	12	Lead: 35:65 Poz C, Salt & bentonite
	153	14.80	1.34	6.32	9.5	Tail: Class C + LCM

Production	367	10.30	3.64	22.18		Lead: Tuned Light + LCM
	134	14.20	1.30	5.86	14.30	Tail: 50:50 Poz + salt + bentonite + fluid loss + dispersant + SMS
Completion	790	14.20	1.30	5.86	14.30	Tail: 50:50 Poz + salt + bentonite + fluid loss + dispersant + SMS

CASING STRING	TOC	% EXCESS
SURFACE	0	35
INTERMEDIATE	0	49
PRODUCTION	2430	25
COMPLETION	10012	10

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

TO:

CASING	#SACKS	WEIGHT LB/GAL	YIELD FT3/SACK	H2O GAL/SACK	500# COMP STRENGTH (HOURS)	SLURRY DESCRIPTION
SURFACE						
	173	14.80	1.34	6.32	9.5	Tail: Class C + LCM

INTERMEDIATE	530	12.90	1.88	9.65	12	Lead: 35:65 Poz C, Salt & bentonite
	159	14.80	1.34	6.32	9.5	Tail: Class C + LCM

Production	438	10.30	3.64	22.18		Lead: Tuned Light + LCM
	120	14.20	1.30	5.86	14.30	Tail: 50:50 Poz H, Salt, Bentonite, fluid loss, dispersant & SMS
Completion System	757	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	25
INTERMEDIATE	0	47
PRODUCTION	2410	25
COMPLETION	10035	10

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



Cimarex Riverbend 12-13 Federal Com 20H Rev3 kFc 03Oct22 Proposal
Geodetic Report
(Def Plan)

30-015-49536



Report Date: October 03, 2022 - 11:12 AM
Client: Cimarex
Field: NM Eddy County (NAD 83)
Structure / Slot: Cimarex Riverbend 12-13 Federal Com 20H / 20H
Well: Cimarex Riverbend 12-13 Federal Com 20H
Borehole: Cimarex Riverbend 12-13 Federal Com 20H
UWI / API#: Unknown / Unknown
Survey Name: Cimarex Riverbend 12-13 Federal Com 20H Rev3 kFc 03Oct22
Survey Date: October 03, 2022
Tort / AHD / DDI / ERD Ratio: 118.984 * / 11642.043 ft / 8.453 / 1.167
Coordinate Reference System: NAD83 New Mexico State Plane, Eastern Zone, US Feet
Location Lat / Long: N 32° 9' 10.11763", W 104° 2' 29.86050"
Location Grid N/E Y/X: N 420359.510 IUS, E 631609.590 IUS
CRS Grid Convergence Angle: 0.1553 *
Grid Scale Factor: 0.99991842
Version / Patch: 2.10.833.1

Survey / DLS Computation: Minimum Curvature / Lubinski
Vertical Section Azimuth: 179.900 * (Grid North)
Vertical Section Origin: 0.000 ft, 0.000 ft
TVD Reference Datum: RKB = 23ft
TVD Reference Elevation: 2958.000 ft above MSL
Seabed / Ground Elevation: 2935.000 ft above MSL
Magnetic Declination: 6.852 *
Total Gravity Field Strength: 998.4601mgN (0.80665 Based)
Gravity Model: GARM
Total Magnetic Field Strength: 47528.521 nT
Magnetic Dip Angle: 59.757 *
Declination Date: October 03, 2022
Magnetic Declination Model: HDGM 2022
North Reference: Grid North
Grid Convergence Used: 0.1553 *
Total Corr Mag North->Grid: 6.4885 *
North: 0.1553 *
Local Coord Referenced To: Well Head

Comments	MD (ft)	Incl (°)	Azlm Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S °)	Longitude (E/W °)
SHL [1207' FSL 2422' FWL]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A	420359.51	631609.59	N 32.155310	W 104.041630
Rustler	100.00	0.00	151.70	100.00	0.00	0.00	0.00	0.00	420359.51	631609.59	N 32.155310	W 104.041630
	200.00	0.00	151.70	200.00	0.00	0.00	0.00	0.00	420359.51	631609.59	N 32.155310	W 104.041630
	217.00	0.00	151.70	217.00	0.00	0.00	0.00	0.00	420359.51	631609.59	N 32.155310	W 104.041630
	300.00	0.00	151.70	300.00	0.00	0.00	0.00	0.00	420359.51	631609.59	N 32.155310	W 104.041630
	400.00	0.00	151.70	400.00	0.00	0.00	0.00	0.00	420359.51	631609.59	N 32.155310	W 104.041630
Salado	408.00	0.00	151.70	408.00	0.00	0.00	0.00	0.00	420359.51	631609.59	N 32.155310	W 104.041630
	500.00	0.00	151.70	500.00	0.00	0.00	0.00	0.00	420359.51	631609.59	N 32.155310	W 104.041630
	600.00	0.00	151.70	600.00	0.00	0.00	0.00	0.00	420359.51	631609.59	N 32.155310	W 104.041630
	700.00	0.00	151.70	700.00	0.00	0.00	0.00	0.00	420359.51	631609.59	N 32.155310	W 104.041630
	800.00	0.00	151.70	800.00	0.00	0.00	0.00	0.00	420359.51	631609.59	N 32.155310	W 104.041630
	900.00	0.00	151.70	900.00	0.00	0.00	0.00	0.00	420359.51	631609.59	N 32.155310	W 104.041630
	1000.00	0.00	151.70	1000.00	0.00	0.00	0.00	0.00	420359.51	631609.59	N 32.155310	W 104.041630
	1100.00	0.00	151.70	1100.00	0.00	0.00	0.00	0.00	420359.51	631609.59	N 32.155310	W 104.041630
	1200.00	0.00	151.70	1200.00	0.00	0.00	0.00	0.00	420359.51	631609.59	N 32.155310	W 104.041630
	1300.00	0.00	151.70	1300.00	0.00	0.00	0.00	0.00	420359.51	631609.59	N 32.155310	W 104.041630
	1400.00	0.00	151.70	1400.00	0.00	0.00	0.00	0.00	420359.51	631609.59	N 32.155310	W 104.041630
	1500.00	0.00	151.70	1500.00	0.00	0.00	0.00	0.00	420359.51	631609.59	N 32.155310	W 104.041630
	1600.00	0.00	151.70	1600.00	0.00	0.00	0.00	0.00	420359.51	631609.59	N 32.155310	W 104.041630
	1700.00	0.00	151.70	1700.00	0.00	0.00	0.00	0.00	420359.51	631609.59	N 32.155310	W 104.041630
	1800.00	0.00	151.70	1800.00	0.00	0.00	0.00	0.00	420359.51	631609.59	N 32.155310	W 104.041630
	1900.00	0.00	151.70	1900.00	0.00	0.00	0.00	0.00	420359.51	631609.59	N 32.155310	W 104.041630
	2000.00	0.00	151.70	2000.00	0.00	0.00	0.00	0.00	420359.51	631609.59	N 32.155310	W 104.041630
	2100.00	0.00	151.70	2100.00	0.00	0.00	0.00	0.00	420359.51	631609.59	N 32.155310	W 104.041630
	2200.00	0.00	151.70	2200.00	0.00	0.00	0.00	0.00	420359.51	631609.59	N 32.155310	W 104.041630
	2300.00	0.00	151.70	2300.00	0.00	0.00	0.00	0.00	420359.51	631609.59	N 32.155310	W 104.041630
2400.00	0.00	151.70	2400.00	0.00	0.00	0.00	0.00	420359.51	631609.59	N 32.155310	W 104.041630	
2500.00	0.00	151.70	2500.00	0.00	0.00	0.00	0.00	420359.51	631609.59	N 32.155310	W 104.041630	
Castile	2514.21	0.00	151.70	2514.21	0.00	0.00	0.00	0.00	420359.51	631609.59	N 32.155310	W 104.041630
	2600.00	0.00	151.70	2600.00	0.00	0.00	0.00	0.00	420359.51	631609.59	N 32.155310	W 104.041630
	2700.00	0.00	151.70	2700.00	0.00	0.00	0.00	0.00	420359.51	631609.59	N 32.155310	W 104.041630
Bell Canyon	2707.15	0.00	151.70	2707.15	0.00	0.00	0.00	0.00	420359.51	631609.59	N 32.155310	W 104.041630
	2800.00	0.00	151.70	2800.00	0.00	0.00	0.00	0.00	420359.51	631609.59	N 32.155310	W 104.041630
Nudge, Build 271100ft	2900.00	0.00	151.70	2900.00	0.00	0.00	0.00	0.00	420359.51	631609.59	N 32.155310	W 104.041630
	3000.00	2.00	151.70	2989.98	1.54	-1.54	0.83	2.00	420357.97	631610.42	N 32.155306	W 104.041627
	3100.00	4.00	151.70	3098.84	6.15	-6.14	3.31	2.00	420353.37	631612.90	N 32.155294	W 104.041619
	3200.00	6.00	151.70	3199.45	13.83	-13.82	7.44	2.00	420345.69	631617.03	N 32.155272	W 104.041606
	3300.00	8.00	151.70	3298.70	24.57	-24.55	13.22	2.00	420334.97	631622.81	N 32.155243	W 104.041597
	3400.00	10.00	151.70	3397.47	38.35	-38.32	20.64	2.00	420321.19	631630.22	N 32.155205	W 104.041583
	3500.00	12.00	151.70	3495.62	55.17	-55.12	28.68	2.00	420304.40	631639.27	N 32.155159	W 104.041564
Hold	3550.00	13.00	151.70	3544.44	64.71	-64.65	34.81	2.00	420294.87	631644.40	N 32.155133	W 104.041510
	3600.00	13.00	151.70	3593.16	74.62	-74.55	40.15	0.00	420284.97	631649.73	N 32.155105	W 104.041501
	3700.00	13.00	151.70	3690.59	94.44	-94.35	50.81	0.00	420265.16	631660.40	N 32.155051	W 104.041466
Cherry Canyon	3704.91	13.00	151.70	3695.38	95.42	-95.33	51.34	0.00	420264.19	631660.92	N 32.155048	W 104.041465
	3800.00	13.00	151.70	3788.03	114.27	-114.16	61.48	0.00	420245.38	631671.07	N 32.154996	W 104.041432
	3900.00	13.00	151.70	3885.47	134.09	-133.97	72.15	0.00	420225.58	631681.73	N 32.154942	W 104.041398
	4000.00	13.00	151.70	3982.90	153.92	-153.77	82.81	0.00	420205.75	631692.40	N 32.154887	W 104.041363
	4100.00	13.00	151.70	4080.34	173.74	-173.58	93.48	0.00	420185.95	631703.06	N 32.154833	W 104.041329
	4200.00	13.00	151.70	4177.78	193.56	-193.38	104.15	0.00	420166.14	631713.73	N 32.154778	W 104.041295
	4300.00	13.00	151.70	4275.21	213.39	-213.19	114.81	0.00	420146.34	631724.39	N 32.154724	W 104.041261
	4400.00	13.00	151.70	4372.65	233.21	-232.99	125.48	0.00	420126.54	631735.06	N 32.154669	W 104.041226
	4500.00	13.00	151.70	4470.09	253.04	-252.80	136.14	0.00	420106.73	631745.72	N 32.154615	W 104.041192
	4600.00	13.00	151.70	4567.53	272.86	-272.60	146.81	0.00	420086.93	631756.39	N 32.154560	W 104.041158
	4700.00	13.00	151.70	4664.96	292.69	-292.41	157.48	0.00	420067.12	631767.05	N 32.154506	W 104.041123
	4800.00	13.00	151.70	4762.40	312.51	-312.22	168.14	0.00	420047.32	631777.72	N 32.154451	W 104.041089
	4900.00	13.00	151.70	4859.84	332.33	-332.02	178.81	0.00	420027.52	631788.38	N 32.154397	W 104.041055
	5000.00	13.00	151.70	4957.27	352.16	-351.83	189.48	0.00	420007.71	631799.05	N 32.154342	W 104.041020
	5100.00	13.00	151.70	5054.71	371.98	-371.63	200.14	0.00	419987.91	631809.72	N 32.154287	W 104.040986
	5200.00	13.00	151.70	5152.15	391.81	-391.44	210.81	0.00	419968.10	631820.38	N 32.154233	W 104.040952
	5300.00	13.00	151.70	5249.59	411.63	-411.24	221.47	0.00	419948.30	631831.05	N 32.154178	W 104.040918
Brushy Canyon	5345.39	13.00	151.70	5293.81	431.45	-431.05	232.14	0.00	419939.31	631835.89	N 32.154154	W 104.040902
	5400.00	13.00	151.70	5347.02	451.28	-451.05	242.81	0.00	419928.50	631841.71	N 32.154124	W 104.040883
	5500.00	13.00	151.70	5444.46	471.10	-470.66	253.47	0.00	419908.69	631852.38	N 32.154069	W 104.040849
	5600.00	13.00	151.70	5541.90	490.93	-490.47	264.14	0.00	419888.89	631863.04	N 32.154015	W 104.040815
	5700.00	13.00	151.70	5639.33	510.75	-510.27	274.81	0.00	419869.08	631873.71	N 32.153960	W 104.040780
	5800.00	13.00	151.70	5736.77	530.58	-530.08	285.47	0.00	419849.28	631884.37	N 32.153906	W 104.040746
	5900.00	13.00	151.70	5834.21	550.40	-549.88	296.14	0.00	419829.48	631895.04	N 32.153851	W 104.040712
	6000.00	13.00	151.70	5931.64	570.22	-569.69	306.80	0.00	419809.67	631905.70	N 32.153797	W 104.040678
	6100.00	13.00	151.70	6029.08	590.05	-589.59	317.47	0.00	419789.87	631916.37	N 32.153742	W 104.040643
	6200.00	13.00	151.70	6126.52	609.88	-609.50	328.14	0.00	419770.06	631927.03	N 32.153688	W 104.040609
Brushy Canyon Lower	6262.23	13.00	151.70	6187.15	629.71	-629.33	338.80	0.00	419757.74	631937.67	N 32.153634	W 104.040588
	6300.00	13.00	151.70	6223.95	649.52	-649.14	349.47	0.00	419750.26	631937.70	N 32.153583	W 104.040575
	6400.00	13.00	151.70	6321.39	669.33	-668.91	360.14	0.00	419730.46	631948.37	N 32.153579	W 104.040540
	6500.00	13.00	151.70	6418.83	689.14	-688.70	370.81	0.00	419710.65	631959.03	N 32.153524	W 104.040506
Bona Spring	6508.54	13.00	151.70	6427.15	708.95	-708.50	381.48	0.00	419700.85	631969.68	N 32.153520	W 104.040503

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 °)
BS "A" Shale	6500.00	13.00	151.70	6516.27	689.35	-669.72	360.14	0.00	410660.85	631966.70	N 32.153470	W 104.040472
	6625.23	13.00	151.70	6540.85	674.35	-673.72	362.03	0.00	410665.85	631972.39	N 32.153456	W 104.040463
	6700.00	13.00	151.70	6613.70	689.17	-680.52	370.80	0.00	410671.04	631980.36	N 32.153415	W 104.040438
	6800.00	13.00	151.70	6711.14	708.99	-708.33	381.47	0.00	410651.24	631991.03	N 32.153381	W 104.040403
	6900.00	13.00	151.70	6808.58	728.82	-728.13	392.13	0.00	410631.44	632001.69	N 32.153306	W 104.040369
	7000.00	13.00	151.70	6906.01	748.84	-747.84	402.80	0.00	410611.63	632012.36	N 32.153252	W 104.040335
	7100.00	13.00	151.70	7003.45	769.47	-767.75	413.47	0.00	410591.83	632023.02	N 32.153197	W 104.040300
	7180.51	13.00	151.70	7091.90	784.43	-783.69	422.06	0.00	410575.88	632031.61	N 32.153153	W 104.040273
	7200.00	13.00	151.70	7100.89	788.29	-787.55	424.13	0.00	410572.02	632033.69	N 32.153143	W 104.040268
	7300.00	13.00	151.70	7198.32	808.11	-807.36	434.80	0.00	410552.22	632044.35	N 32.153088	W 104.040232
Drop 2"/100ft 1st BS SS	7400.00	13.00	151.70	7295.76	827.94	-827.16	445.47	0.00	410532.42	632055.02	N 32.153034	W 104.040198
	7429.24	13.00	151.70	7324.25	833.74	-832.95	448.59	0.00	410526.63	632058.14	N 32.153018	W 104.040188
	7473.44	12.12	151.70	7367.39	842.20	-841.41	453.14	2.00	410518.17	632062.69	N 32.152994	W 104.040173
	7500.00	11.58	151.70	7393.39	847.01	-846.22	455.73	2.00	410513.36	632065.28	N 32.152981	W 104.040165
	7600.00	9.58	151.70	7491.68	863.20	-862.39	464.44	2.00	410497.10	632073.99	N 32.152937	W 104.040137
	7700.00	7.58	151.70	7590.56	876.35	-875.53	471.52	2.00	410484.05	632081.07	N 32.152900	W 104.040114
	7800.00	5.58	151.70	7689.89	886.46	-885.63	476.95	2.00	410473.96	632088.50	N 32.152873	W 104.040096
	7900.00	3.58	151.70	7789.57	893.50	-892.66	480.74	2.00	410460.92	632090.29	N 32.152853	W 104.040084
	8000.00	1.58	151.70	7889.46	897.48	-896.64	482.68	2.00	410449.95	632092.43	N 32.152842	W 104.040077
	8079.24	0.00	151.70	7968.69	898.44	-897.60	483.40	2.00	410461.99	632092.95	N 32.152840	W 104.040076
Hold 2nd BS SS	8100.00	0.00	151.70	7889.45	898.44	-897.60	483.40	0.00	410461.99	632092.95	N 32.152840	W 104.040076
	8200.00	0.00	151.70	8089.45	898.44	-897.60	483.40	0.00	410461.99	632092.95	N 32.152840	W 104.040076
	8263.43	0.00	151.70	8172.88	898.44	-897.60	483.40	0.00	410461.99	632092.95	N 32.152840	W 104.040076
	8300.00	0.00	151.70	8189.45	898.44	-897.60	483.40	0.00	410461.99	632092.95	N 32.152840	W 104.040076
	8400.00	0.00	151.70	8289.45	898.44	-897.60	483.40	0.00	410461.99	632092.95	N 32.152840	W 104.040076
	8500.00	0.00	151.70	8389.45	898.44	-897.60	483.40	0.00	410461.99	632092.95	N 32.152840	W 104.040076
	8600.00	0.00	151.70	8489.45	898.44	-897.60	483.40	0.00	410461.99	632092.95	N 32.152840	W 104.040076
	8700.00	0.00	151.70	8589.45	898.44	-897.60	483.40	0.00	410461.99	632092.95	N 32.152840	W 104.040076
	8800.00	0.00	151.70	8689.45	898.44	-897.60	483.40	0.00	410461.99	632092.95	N 32.152840	W 104.040076
	8900.00	0.00	151.70	8789.45	898.44	-897.60	483.40	0.00	410461.99	632092.95	N 32.152840	W 104.040076
2nd BS SS Lower	8939.90	0.00	151.70	8829.35	898.44	-897.60	483.40	0.00	410461.99	632092.95	N 32.152840	W 104.040076
	9000.00	0.00	151.70	8889.45	898.44	-897.60	483.40	0.00	410461.99	632092.95	N 32.152840	W 104.040076
	9100.00	0.00	151.70	8889.45	898.44	-897.60	483.40	0.00	410461.99	632092.95	N 32.152840	W 104.040076
	9200.00	0.00	151.70	8889.45	898.44	-897.60	483.40	0.00	410461.99	632092.95	N 32.152840	W 104.040076
	9300.00	0.00	151.70	8889.45	898.44	-897.60	483.40	0.00	410461.99	632092.95	N 32.152840	W 104.040076
	9400.00	0.00	151.70	8889.45	898.44	-897.60	483.40	0.00	410461.99	632092.95	N 32.152840	W 104.040076
	9401.09	0.00	151.70	9290.53	898.44	-897.60	483.40	0.00	410461.99	632092.95	N 32.152840	W 104.040076
	9485.24	0.00	151.70	9374.69	898.44	-897.60	483.40	0.00	410461.99	632092.95	N 32.152840	W 104.040076
	9500.00	1.48	169.80	9389.45	898.63	-897.79	483.43	10.00	410461.80	632092.98	N 32.152839	W 104.040075
	9600.00	11.48	169.80	9488.68	909.72	-908.88	485.41	10.00	410450.71	632094.96	N 32.152809	W 104.040069
Wolfcamp A	9700.00	21.40	169.80	9584.46	937.62	-936.76	490.38	10.00	410422.83	632099.93	N 32.152732	W 104.040053
	9794.73	30.95	169.90	9609.35	978.76	-977.91	497.71	10.00	410381.68	632107.25	N 32.152619	W 104.040030
	9800.00	31.48	169.80	9673.85	981.47	-980.60	498.18	10.00	410378.69	632107.73	N 32.152619	W 104.040029
	9821.53	33.63	169.90	9692.00	992.87	-992.00	500.22	10.00	410367.59	632109.76	N 32.152580	W 104.039995
	9900.00	41.48	169.90	9754.16	1039.94	-1039.05	508.60	10.00	410320.55	632118.14	N 32.152451	W 104.039988
	9918.89	43.37	169.90	9768.11	1052.49	-1051.60	510.83	10.00	410308.00	632120.38	N 32.152416	W 104.039988
	10000.00	51.48	169.80	9822.94	1111.25	-1110.35	521.30	10.00	410249.26	632130.84	N 32.152255	W 104.039955
	10100.00	61.48	169.80	9878.10	1193.25	-1192.32	535.90	10.00	410167.29	632145.44	N 32.152029	W 104.039909
	10126.82	64.16	169.90	9890.35	1218.74	-1215.80	540.08	10.00	410143.81	632149.62	N 32.151965	W 104.039895
	10200.00	71.48	169.90	9917.96	1283.43	-1282.47	551.96	10.00	410077.15	632161.50	N 32.151781	W 104.039857
Build & Turn 5"/100ft	10235.24	75.00	169.80	9928.12	1316.66	-1315.08	557.87	10.00	410043.94	632167.42	N 32.151690	W 104.039839
	10300.00	77.68	171.77	9943.42	1378.79	-1377.80	567.89	5.00	410081.82	632177.43	N 32.151519	W 104.039807
	10400.00	81.05	174.57	9981.10	1476.49	-1475.48	579.57	5.00	410084.15	632188.12	N 32.151251	W 104.039770
	10471.93	84.86	176.56	9969.51	1547.72	-1546.70	585.09	5.00	410012.94	632194.63	N 32.151055	W 104.039753
	10500.00	86.04	177.33	9971.73	1575.67	-1574.64	586.59	5.00	410075.00	632196.13	N 32.150978	W 104.039748
	10594.52	90.00	179.90	9975.00	1670.07	-1669.05	588.87	5.00	410060.60	632198.41	N 32.150918	W 104.039742
	10600.00	90.00	179.90	9975.00	1675.56	-1674.53	588.88	0.00	410085.12	632198.42	N 32.150703	W 104.039742
	10700.00	90.00	179.90	9975.00	1775.56	-1774.53	595.05	0.00	410055.13	632198.60	N 32.150428	W 104.039742
	10800.00	90.00	179.90	9975.00	1875.56	-1874.53	598.23	0.00	410045.13	632198.77	N 32.150154	W 104.039743
	10900.00	90.00	179.90	9975.00	1975.56	-1974.53	599.40	0.00	410035.14	632199.95	N 32.149879	W 104.039743
330ft Hardline Cross	11000.00	90.00	179.90	9975.00	2075.56	-2074.53	598.58	0.00	410025.15	632199.12	N 32.149604	W 104.039743
	11100.00	90.00	179.90	9975.00	2175.56	-2174.53	598.75	0.00	410015.16	632199.28	N 32.149329	W 104.039743
	11200.00	90.00	179.90	9975.00	2275.56	-2274.53	598.93	0.00	410005.17	632199.47	N 32.149054	W 104.039744
	11300.00	90.00	179.90	9975.00	2375.56	-2374.53	599.10	0.00	410005.18	632199.64	N 32.148779	W 104.039744
	11400.00	90.00	179.90	9975.00	2475.56	-2474.53	599.28	0.00	410005.19	632199.82	N 32.148504	W 104.039744
	11500.00	90.00	179.90	9975.00	2575.56	-2574.53	599.45	0.00	410005.20	632199.99	N 32.148229	W 104.039744
	11600.00	90.00	179.90	9975.00	2675.56	-2674.53	599.63	0.00	410005.21	632200.17	N 32.147955	W 104.039745
	11700.00	90.00	179.90	9975.00	2775							

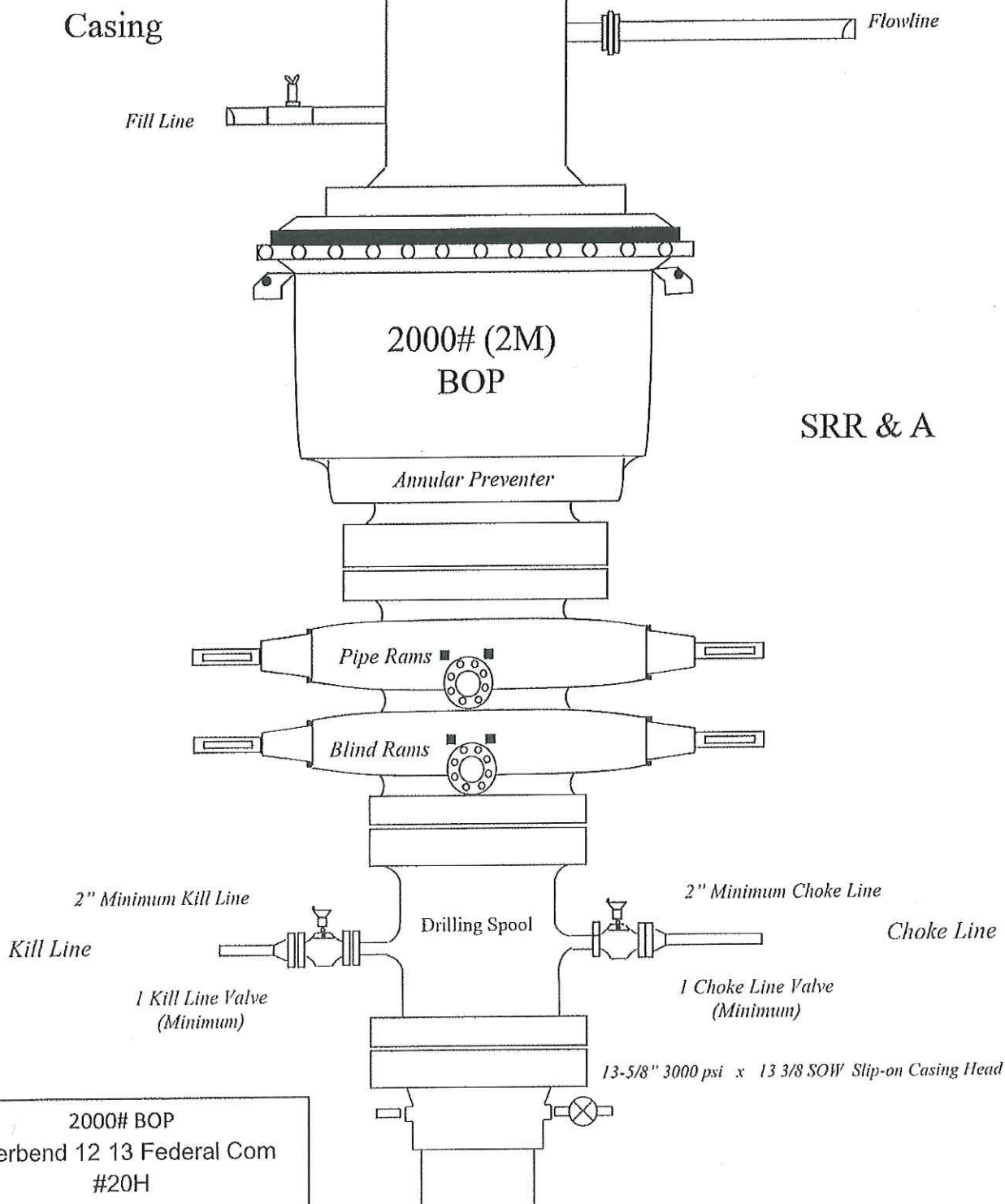
Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (%/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S °)	Longitude (E/W °)
	15400.00	90.00	179.90	9975.00	6475.56	-6474.53	597.28	0.00	413885.53	632206.82	N 32.137510	W 104.039757
Section 12-13 Line Cross	15463.27	90.00	179.90	9975.00	6538.83	-6537.80	597.39	0.00	413822.26	632206.93	N 32.137336	W 104.039757
	15500.00	90.00	179.90	9975.00	6575.58	-6574.53	597.45	0.00	413785.53	632208.99	N 32.137235	W 104.039757
	15600.00	90.00	179.90	9975.00	6675.58	-6674.53	597.63	0.00	413685.54	632207.17	N 32.136960	W 104.039757
	15700.00	90.00	179.90	9975.00	6775.59	-6774.53	597.80	0.00	413585.55	632207.34	N 32.136805	W 104.039758
	15800.00	90.00	179.90	9975.00	6875.59	-6874.52	597.98	0.00	413485.56	632207.52	N 32.136410	W 104.039758
	15900.00	90.00	179.90	9975.00	6975.59	-6974.52	598.15	0.00	413385.57	632207.69	N 32.136135	W 104.039758
	16000.00	90.00	179.90	9975.00	7075.59	-7074.52	598.33	0.00	413285.58	632207.87	N 32.135860	W 104.039759
	16100.00	90.00	179.90	9975.00	7175.59	-7174.52	598.50	0.00	413185.59	632208.04	N 32.135586	W 104.039759
	16200.00	90.00	179.90	9975.00	7275.59	-7274.52	598.68	0.00	413085.59	632208.22	N 32.135311	W 104.039759
	16300.00	90.00	179.90	9975.00	7375.59	-7374.52	598.85	0.00	412985.60	632208.39	N 32.135036	W 104.039760
	16400.00	90.00	179.90	9975.00	7475.59	-7474.52	599.03	0.00	412885.61	632208.57	N 32.134761	W 104.039760
	16500.00	90.00	179.90	9975.00	7575.59	-7574.52	599.20	0.00	412785.62	632208.74	N 32.134486	W 104.039760
	16600.00	90.00	179.90	9975.00	7675.59	-7674.52	599.38	0.00	412685.63	632208.92	N 32.134211	W 104.039761
	16700.00	90.00	179.90	9975.00	7775.59	-7774.52	599.55	0.00	412585.64	632209.09	N 32.133936	W 104.039761
NMNM016104 Lease exit	16789.11	90.00	179.90	9975.00	7864.66	-7863.63	599.71	0.00	412496.54	632209.25	N 32.133691	W 104.039761
	16800.00	90.00	179.90	9975.00	7875.58	-7874.52	599.73	0.00	412485.64	632209.27	N 32.133681	W 104.039761
	16900.00	90.00	179.90	9975.00	7975.58	-7974.52	599.90	0.00	412385.65	632209.44	N 32.133387	W 104.039762
	17000.00	90.00	179.90	9975.00	8075.58	-8074.52	600.08	0.00	412285.66	632209.62	N 32.133112	W 104.039762
	17100.00	90.00	179.90	9975.00	8175.58	-8174.52	600.25	0.00	412185.67	632209.79	N 32.132837	W 104.039762
	17200.00	90.00	179.90	9975.00	8275.58	-8274.52	600.43	0.00	412085.68	632209.97	N 32.132562	W 104.039762
	17300.00	90.00	179.90	9975.00	8375.58	-8374.52	600.60	0.00	411985.69	632210.14	N 32.132287	W 104.039763
	17400.00	90.00	179.90	9975.00	8475.58	-8474.52	600.78	0.00	411885.70	632210.32	N 32.132012	W 104.039763
	17500.00	90.00	179.90	9975.00	8575.58	-8574.52	600.95	0.00	411785.70	632210.49	N 32.131737	W 104.039763
	17600.00	90.00	179.90	9975.00	8675.58	-8674.52	601.13	0.00	411685.71	632210.67	N 32.131463	W 104.039764
	17700.00	90.00	179.90	9975.00	8775.58	-8774.52	601.30	0.00	411585.72	632210.84	N 32.131188	W 104.039764
	17800.00	90.00	179.90	9975.00	8875.58	-8874.52	601.48	0.00	411485.73	632211.02	N 32.130913	W 104.039764
	17900.00	90.00	179.90	9975.00	8975.58	-8974.52	601.65	0.00	411385.74	632211.19	N 32.130638	W 104.039765
	18000.00	90.00	179.90	9975.00	9075.58	-9074.52	601.83	0.00	411285.75	632211.37	N 32.130363	W 104.039765
	18100.00	90.00	179.90	9975.00	9175.58	-9174.52	602.00	0.00	411185.76	632211.54	N 32.130088	W 104.039765
NMNM016104 Lease re-enter	18114.93	90.00	179.90	9975.00	9190.49	-9189.45	602.03	0.00	411170.83	632211.57	N 32.130047	W 104.039765
	18200.00	90.00	179.90	9975.00	9275.58	-9274.52	602.18	0.00	411085.76	632211.72	N 32.129813	W 104.039766
	18300.00	90.00	179.90	9975.00	9375.58	-9374.52	602.35	0.00	410985.77	632211.89	N 32.129538	W 104.039766
	18400.00	90.00	179.90	9975.00	9475.58	-9474.52	602.53	0.00	410885.78	632212.07	N 32.129264	W 104.039766
	18500.00	90.00	179.90	9975.00	9575.58	-9574.52	602.70	0.00	410785.79	632212.24	N 32.128989	W 104.039767
	18600.00	90.00	179.90	9975.00	9675.58	-9674.52	602.88	0.00	410685.80	632212.42	N 32.128714	W 104.039767
	18700.00	90.00	179.90	9975.00	9775.58	-9774.52	603.05	0.00	410585.81	632212.59	N 32.128439	W 104.039767
	18800.00	90.00	179.90	9975.00	9875.58	-9874.52	603.23	0.00	410485.81	632212.77	N 32.128164	W 104.039768
	18900.00	90.00	179.90	9975.00	9975.58	-9974.52	603.40	0.00	410385.82	632212.94	N 32.127889	W 104.039768
	19000.00	90.00	179.90	9975.00	10075.58	-10074.52	603.58	0.00	410285.83	632213.12	N 32.127614	W 104.039768
	19100.00	90.00	179.90	9975.00	10175.58	-10174.52	603.75	0.00	410185.84	632213.29	N 32.127339	W 104.039768
	19200.00	90.00	179.90	9975.00	10275.58	-10274.52	603.93	0.00	410085.85	632213.47	N 32.127065	W 104.039769
	19300.00	90.00	179.90	9975.00	10375.58	-10374.52	604.10	0.00	409985.86	632213.64	N 32.126790	W 104.039769
	19400.00	90.00	179.90	9975.00	10475.58	-10474.52	604.28	0.00	409885.87	632213.82	N 32.126515	W 104.039769
	19500.00	90.00	179.90	9975.00	10575.58	-10574.52	604.45	0.00	409785.87	632214.00	N 32.126240	W 104.039770
	19600.00	90.00	179.90	9975.00	10675.58	-10674.52	604.63	0.00	409685.88	632214.17	N 32.125965	W 104.039770
	19700.00	90.00	179.90	9975.00	10775.58	-10774.52	604.80	0.00	409585.89	632214.34	N 32.125690	W 104.039770
	19800.00	90.00	179.90	9975.00	10875.58	-10874.52	604.98	0.00	409485.90	632214.52	N 32.125415	W 104.039771
	19900.00	90.00	179.90	9975.00	10975.58	-10974.52	605.15	0.00	409385.91	632214.69	N 32.125141	W 104.039771
	20000.00	90.00	179.90	9975.00	11075.58	-11074.52	605.33	0.00	409285.92	632214.87	N 32.124866	W 104.039771
	20100.00	90.00	179.90	9975.00	11175.58	-11174.52	605.50	0.00	409185.93	632215.04	N 32.124591	W 104.039772
	20200.00	90.00	179.90	9975.00	11275.58	-11274.52	605.68	0.00	409085.93	632215.21	N 32.124316	W 104.039772
	20300.00	90.00	179.90	9975.00	11375.58	-11374.52	605.85	0.00	408985.94	632215.39	N 32.124041	W 104.039772
	20400.00	90.00	179.90	9975.00	11475.58	-11474.52	606.03	0.00	408885.95	632215.56	N 32.123766	W 104.039773
Cimarex Riverbend 12-13 Federal Com 20H - BHL [330' FSL, 2310' FEL]	20437.23	90.00	179.90	9975.00	11512.79	-11511.75	606.09	0.00	408848.72	632215.63	N 32.123664	W 104.039773

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	23.000	1/100.000	17.500	13.375		AC01Mb_MWD-Depth Only	Cimarex Riverbend 12-13 Federal
	1	23.000	9500.000	1/100.000	17.500	13.375		A001Mb_MWD	Com 20H / Cimarex Riverbend 12-13 Federal
	1	9500.000	20437.234	1/100.000	17.500	13.375		A008Mb_MWD+IFRI+MS	Com 20H / Cimarex Riverbend 12-13 Federal

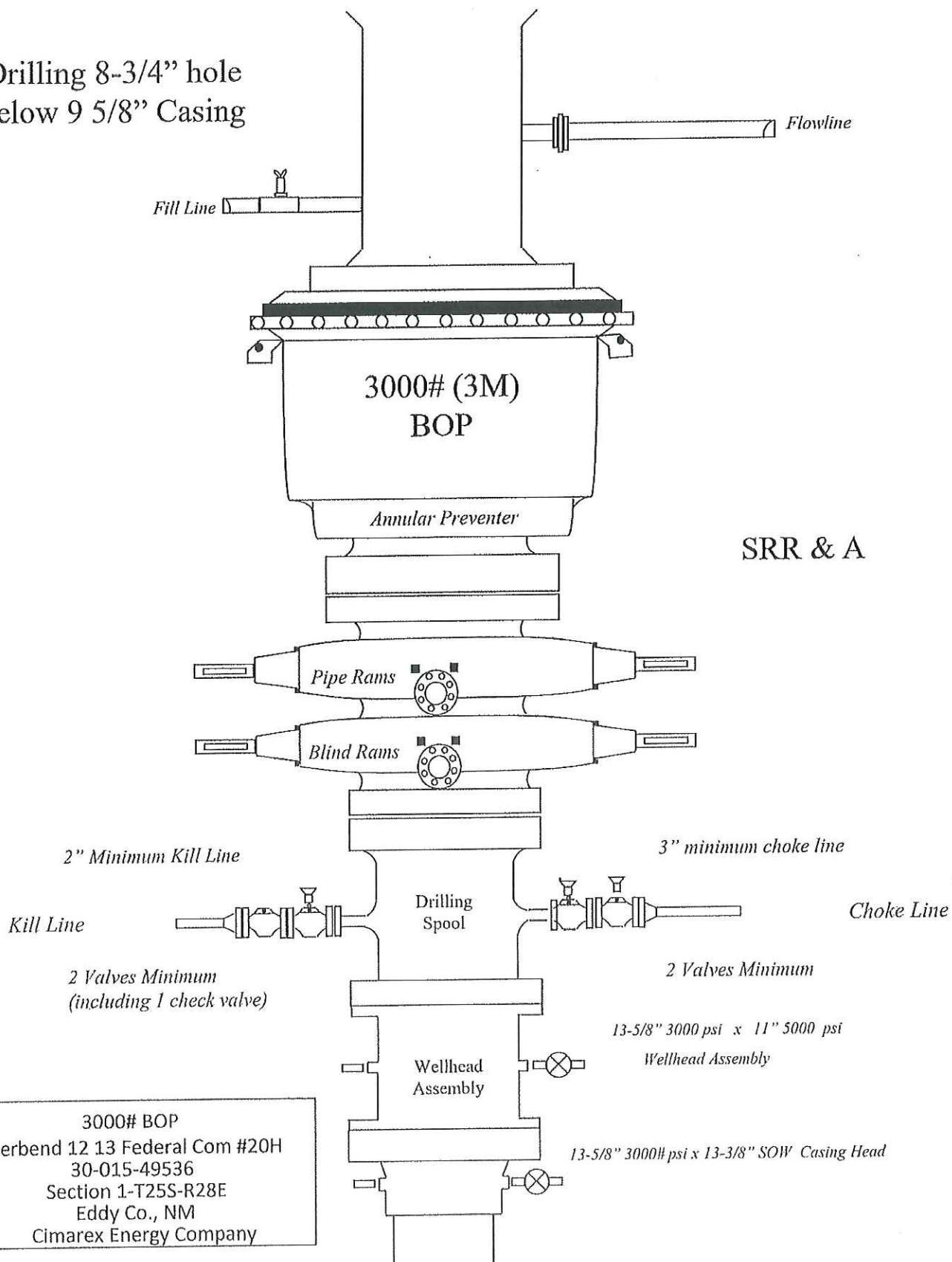
Drilling 12 1/4" hole
below 13 3/8"
Casing



SRR & A

2000# BOP
Riverbend 12 13 Federal Com
#20H
30-015-49536
Section 1-T25S-R28E
Eddy Co., NM
Cimarex Energy Co.

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



SRR & A

3000# BOP
Riverbend 12 13 Federal Com #20H
30-015-49536
Section 1-T25S-R28E
Eddy Co., NM
Cimarex Energy Company

Drilling 6" Hole
below 7" Casing

5M Annular Preventer

10M Double
Ram BOP

Pipe Rams

Blind Rams

2" Kill Line Valves (2)
with Check Valve

3" Manual Choke Valve
and 3" HCR Valve

2" Kill Line

3" Choke Line

10M Single
Ram BOP

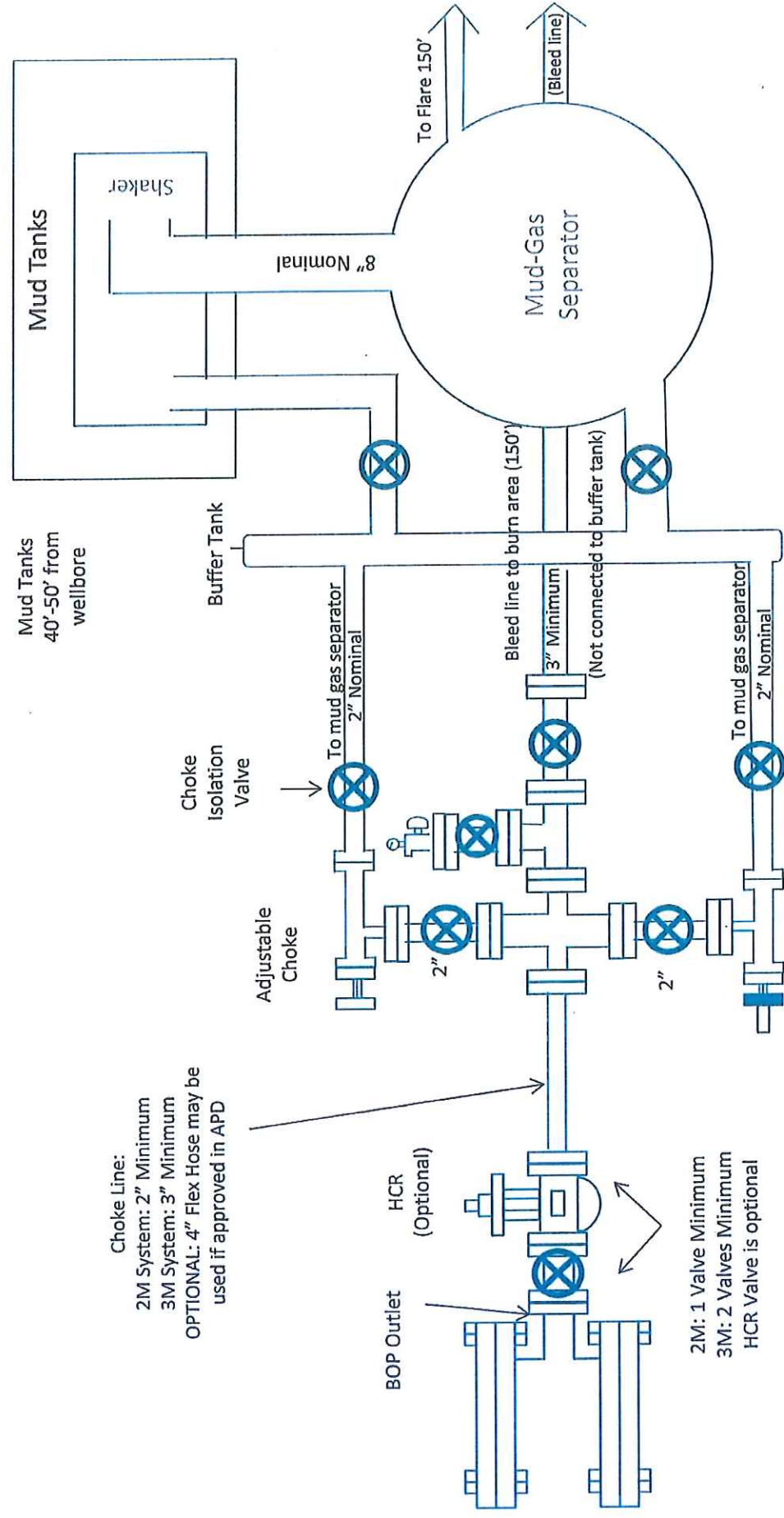
Pipe Rams

11" 10M x 13-5/8"
5M Casing Spool

10,000# BOP
Riverbend 12 13 Federal Com #20H
30-015-49536
Section 1-T25S-R28E
Eddy Co., NM
Cimarex Energy Company

13-5/8" 5M x
13-3/8" SOW
Wellhead

CIMAREX ENERGY COMPANY



Choke Line:
2M System: 2" Minimum
3M System: 3" Minimum
OPTIONAL: 4" Flex Hose may be
used if approved in APD

BOP Outlet
HCR
(Optional)

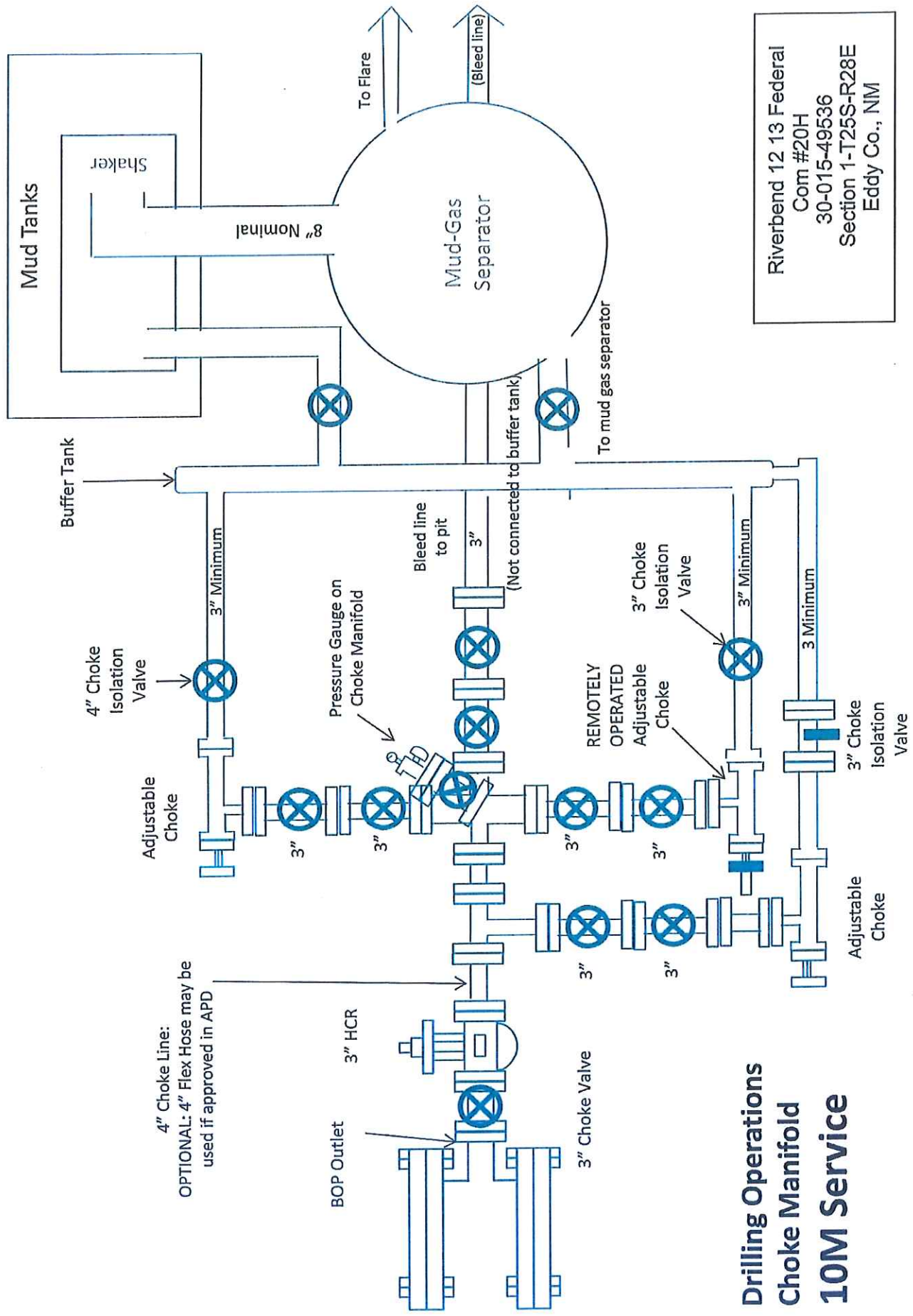
2M: 1 Valve Minimum
3M: 2 Valves Minimum
HCR Valve is optional

REMOTELY
OPERATED
Adjustable
Choke

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

Choke Manifold Diagram
Riverbend 12 13 Federal Com
#20H
30-015-49536
Section 1-T25S-R28E
Eddy Co., NIM

CIMAREX ENERGY COMPANY



Drilling Operations Choke Manifold 10M Service

Riverbend 12 13 Federal
Com #20H
30-015-49536
Section 1-T25S-R28E
Eddy Co., NM



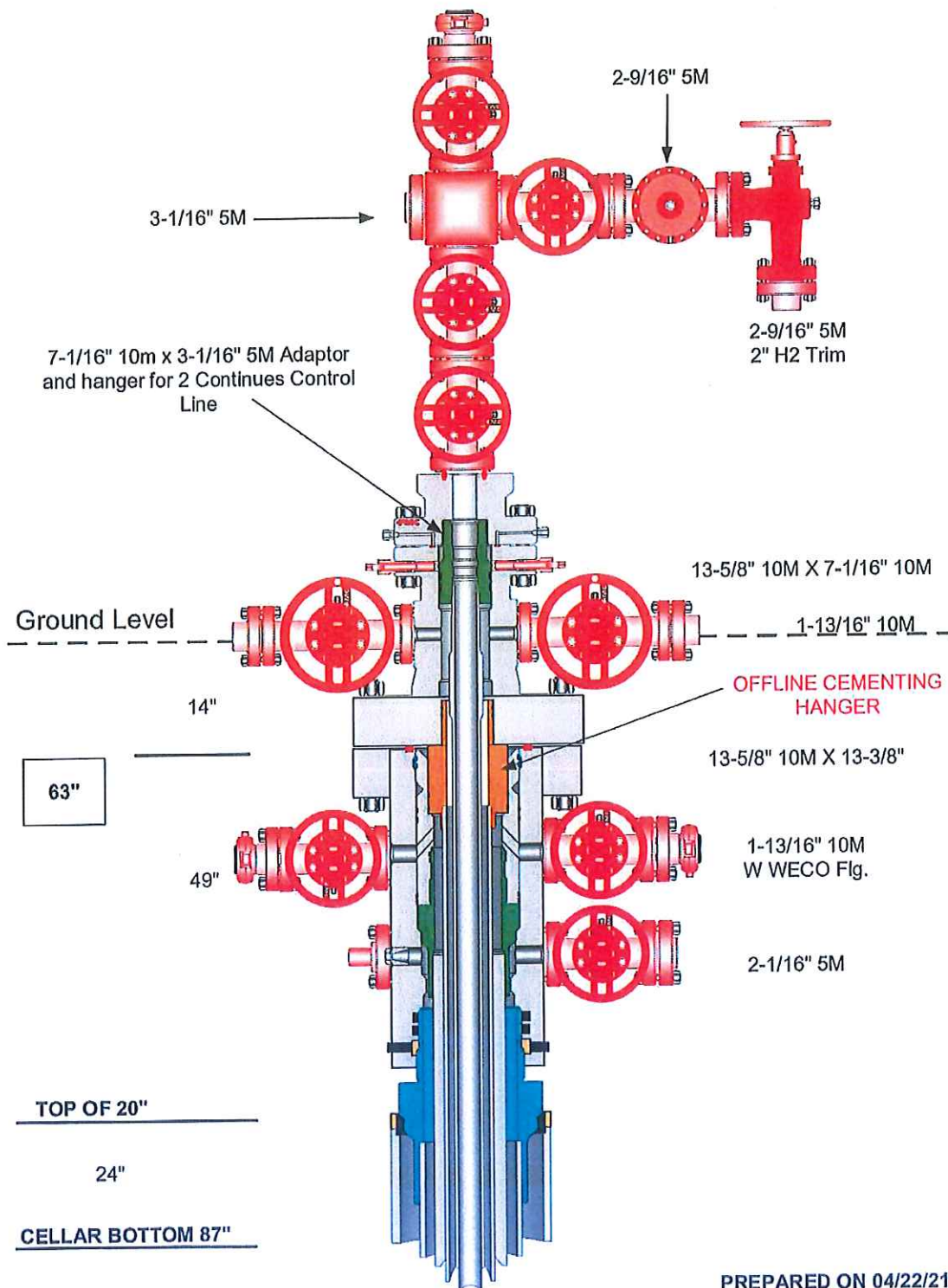
Riverbend 12 13 Federal Com #20H - 30-015-49536

CACTUS FOR SERVICE
WEARBUSHING
IN CASING HEAD &
CASING SPOOL

EDDY CO., NM

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	267	267	13-3/8"	40.00	J-55	ST&C	6.40	20.54	33.79
12 1/4	0	2717	2717	9 5/8"	36.00	J-55	ST&C	1.39	2.42	4.03
8 3/4	0	9405	9405	7"	26.00	L-80	LT&C	1.22	1.64	1.98
8 3/4	8405	10235	9928	7"	26.00	L-80	BT&C	1.16	1.58	52.41
6	8405	20437	9975	4-1/2"	11.60	P-110	BT&C	1.22	1.72	21.23
BLF 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 (10 B 1.1)



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

Action 222859

CONDITIONS

Operator: CIMAREX ENERGY CO. 6001 Deauville Blvd Midland, TX 79706	OGRID: 215099
	Action Number: 222859
	Action Type: [C-103] NOI Change of Plans (C-103A)

CONDITIONS

Created By	Condition	Condition Date
ward.rikala	Original COA's still apply.	10/19/2023