

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

Form C-101
August 1, 2011

Permit 336890

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

1. Operator Name and Address CIMAREX ENERGY CO. OF COLORADO 600 N. Marienfeld Street Midland, TX 79701		2. OGRID Number 162683
		3. API Number 30-025-51236
4. Property Code 329861	5. Property Name RED HILLS 32 5 STATE COM	6. Well No. 203H

7. Surface Location

UL - Lot A	Section 32	Township 25S	Range 33E	Lot Idn A	Feet From 407	N/S Line N	Feet From 510	E/W Line E	County Lea
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8. Proposed Bottom Hole Location

UL - Lot P	Section 5	Township 26S	Range 33E	Lot Idn P	Feet From 100	N/S Line S	Feet From 1248	E/W Line E	County Lea
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9. Pool Information

WC-025 G-08 S253235G;LWR BONE SPRIN	97903
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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 3391
16. Multiple N	17. Proposed Depth 20965	18. Formation 3rd Bone Spring Carbonate	19. Contractor	20. Spud Date 11/1/2023
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	976	605	0
Int1	12.25	9.625	40	4980	1239	0
Prod	8.75	7	29	10273	0	0
Prod	8.75	7	29	11023	462	4780
Liner1	6	4.5	11.6	20965	738	10823

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	5000	5000	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 Sarah Jordan

Title: Regulatory Analyst

Email Address: sarah.jordan@coterra.com

Date: 3/22/2023

Phone: 432-620-1909

Approved By: Paul F Kautz

Title: Geologist

Approved Date: 3/27/2023

Expiration Date: 3/27/2025

Conditions of Approval Attached

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District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

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 30-025-51236	² Pool Code 97903	³ Pool Name WC-025 G-08 3235G; LWR Bone Spring
⁴ Property Code 329861	⁵ Property Name RED HILLS 32-5 STATE COM	⁶ Well Number 203H
⁷ OGRID No. 162683	⁸ Operator Name CIMAREX ENERGY CO. of Colorado	⁹ Elevation 3391.3'

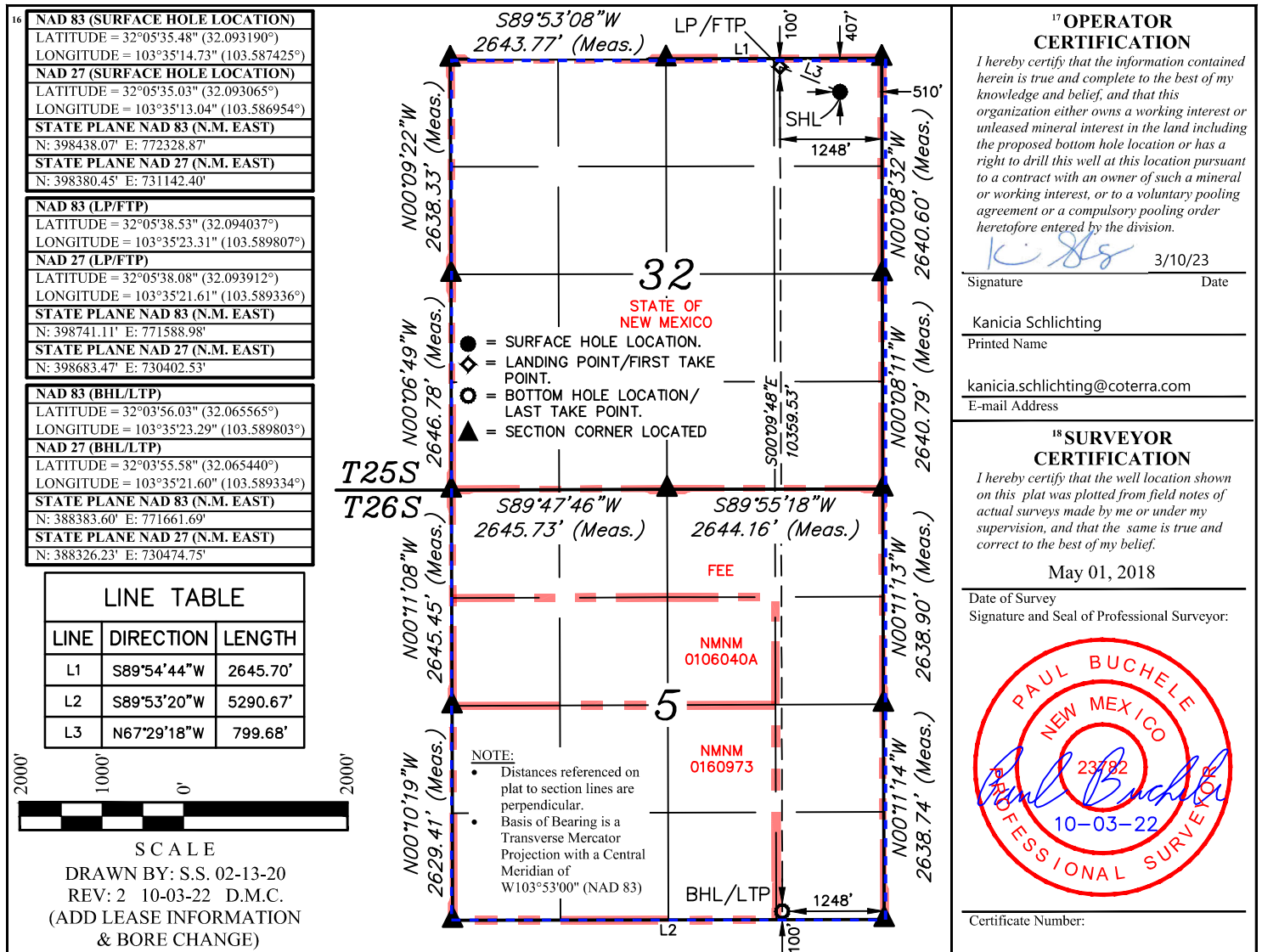
¹⁰ Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
A	32	25S	33E		407	NORTH	510	EAST	LEA

¹¹ Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
P	5	26S	33E		100	SOUTH	1248	EAST	LEA
¹² Dedicated Acres 1280	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.



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

Form APD Conditions

Permit 336890

PERMIT CONDITIONS OF APPROVAL

Operator Name and Address: CIMAREX ENERGY CO. OF COLORADO [162683] 600 N. Marienfeld Street Midland, TX 79701	API Number: 30-025-51236
	Well: RED HILLS 32 5 STATE COM #203H

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



Coterra Red Hills 32-5 State Com 203H Rev1 kFc 28Nov22 Proposal

Geodetic Report

(Def Plan)



Report Date: November 28, 2022 - 02:13 PM
Client: COTERRA
Field: NM Lea County (NAD 83)
Structure / Slot: Coterra Red Hills 32-5 State Com Pad (east) / 203H
Well: Red Hills 32-5 State Com 203H
Borehole: Red Hills 32-5 State Com 203H
UWI / API#: Unknown / Unknown
Survey Name: Coterra Red Hills 32-5 State Com 203H Rev1 kFc 28Nov22
Survey Date: November 28, 2022
Tort / AHD / DDI / ERD Ratio: 112.042 ° / 11246.654 ft / 6.388 / 1.041
Coordinate Reference System: NAD83 New Mexico State Plane, Eastern Zone, US Feet
Location Lat / Long: N 32° 5' 35.48264", W 103° 35' 14.73006"
Location Grid N/E Y/X: N 398438.070 ftUS, E 772328.870 ftUS
CRS Grid Convergence Angle: 0.3963 °
Grid Scale Factor: 0.9999702
Version / Patch: 2.10.834.0

Survey / DLS Computation: Minimum Curvature / Lubinski
Vertical Section Azimuth: 179.600 ° (Grid North)
Vertical Section Origin: 0.000 ft, 0.000 ft
TVD Reference Datum: RKB = 23ft
TVD Reference Elevation: 3414.300 ft above MSL
Seabed / Ground Elevation: 3391.300 ft above MSL
Magnetic Declination: 6.279 °
Total Gravity Field Strength: 998.4315mgn (9.80665 Based)
Gravity Model: GARM
Total Magnetic Field Strength: 47408.162 nT
Magnetic Dip Angle: 59.644 °
Declination Date: November 28, 2022
Magnetic Declination Model: HDGM 2022
North Reference: Grid North
Grid Convergence Used: 0.3963 °
Total Corr Mag North->Grid North: 5.8829 °
Local Coord Referenced To: Well Head

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft/s)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S °)	Longitude (E/W °)
SHL [407° FNL, 510° FEL]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A	398438.07	772328.87	N 32.093190	W 103.587425
	100.00	0.00	290.00	100.00	0.00	0.00	0.00	0.00	398438.07	772328.87	N 32.093190	W 103.587425
	200.00	0.00	290.00	200.00	0.00	0.00	0.00	0.00	398438.07	772328.87	N 32.093190	W 103.587425
	300.00	0.00	290.00	300.00	0.00	0.00	0.00	0.00	398438.07	772328.87	N 32.093190	W 103.587425
	400.00	0.00	290.00	400.00	0.00	0.00	0.00	0.00	398438.07	772328.87	N 32.093190	W 103.587425
	500.00	0.00	290.00	500.00	0.00	0.00	0.00	0.00	398438.07	772328.87	N 32.093190	W 103.587425
	600.00	0.00	290.00	600.00	0.00	0.00	0.00	0.00	398438.07	772328.87	N 32.093190	W 103.587425
	700.00	0.00	290.00	700.00	0.00	0.00	0.00	0.00	398438.07	772328.87	N 32.093190	W 103.587425
	800.00	0.00	290.00	800.00	0.00	0.00	0.00	0.00	398438.07	772328.87	N 32.093190	W 103.587425
	900.00	0.00	290.00	900.00	0.00	0.00	0.00	0.00	398438.07	772328.87	N 32.093190	W 103.587425
Rustler	926.00	0.00	290.00	926.00	0.00	0.00	0.00	0.00	398438.07	772328.87	N 32.093190	W 103.587425
	1000.00	0.00	290.00	1000.00	0.00	0.00	0.00	0.00	398438.07	772328.87	N 32.093190	W 103.587425
	1100.00	0.00	290.00	1100.00	0.00	0.00	0.00	0.00	398438.07	772328.87	N 32.093190	W 103.587425
Nudge, Build 2"/100ft	1200.00	0.00	290.00	1200.00	0.00	0.00	0.00	0.00	398438.07	772328.87	N 32.093190	W 103.587425
Top Salt	1295.02	1.90	290.00	1295.00	-0.55	0.54	-1.48	2.00	398438.61	772327.39	N 32.093191	W 103.587430
	1300.00	2.00	290.00	1299.98	-0.61	0.60	-1.64	2.00	398438.67	772327.23	N 32.093191	W 103.587430
	1400.00	4.00	290.00	1399.84	-2.43	2.39	-6.56	2.00	398440.46	772322.31	N 32.093196	W 103.587446
	1500.00	6.00	290.00	1499.45	-5.47	5.37	-14.75	2.00	398443.44	772314.12	N 32.093205	W 103.587473
	1600.00	8.00	290.00	1598.70	-9.72	9.54	-26.20	2.00	398447.61	772302.67	N 32.093216	W 103.587509
Hold	1637.48	8.75	290.00	1635.79	-11.62	11.40	-31.33	2.00	398449.47	772297.54	N 32.093222	W 103.587526
	1700.00	8.75	290.00	1697.57	-14.94	14.66	-40.26	0.00	398452.73	772288.61	N 32.093231	W 103.587555
	1800.00	8.75	290.00	1796.41	-20.24	19.86	-54.56	0.00	398457.93	772274.31	N 32.093245	W 103.587601
	1900.00	8.75	290.00	1895.25	-25.54	25.06	-68.85	0.00	398463.13	772260.02	N 32.093260	W 103.587647
	2000.00	8.75	290.00	1994.08	-30.85	30.27	-83.15	0.00	398468.34	772245.73	N 32.093274	W 103.587693
	2100.00	8.75	290.00	2092.92	-36.15	35.47	-97.44	0.00	398473.54	772231.43	N 32.093289	W 103.587739
	2200.00	8.75	290.00	2191.76	-41.45	40.67	-111.74	0.00	398478.74	772217.14	N 32.093304	W 103.587785
	2300.00	8.75	290.00	2290.59	-46.76	45.88	-126.03	0.00	398483.95	772202.84	N 32.093318	W 103.587831
	2400.00	8.75	290.00	2389.43	-52.06	51.08	-140.32	0.00	398489.15	772188.55	N 32.093333	W 103.587877
	2500.00	8.75	290.00	2488.26	-57.36	56.28	-154.62	0.00	398494.35	772174.26	N 32.093347	W 103.587923
	2600.00	8.75	290.00	2587.10	-62.67	61.49	-168.91	0.00	398499.56	772159.96	N 32.093362	W 103.587969
	2700.00	8.75	290.00	2685.94	-67.97	66.69	-183.21	0.00	398504.76	772145.67	N 32.093376	W 103.588015
	2800.00	8.75	290.00	2784.77	-73.27	71.89	-197.50	0.00	398509.96	772131.38	N 32.093391	W 103.588061
	2900.00	8.75	290.00	2883.61	-78.57	77.10	-211.79	0.00	398515.16	772117.08	N 32.093406	W 103.588107
	3000.00	8.75	290.00	2982.45	-83.88	82.30	-226.09	0.00	398520.37	772102.79	N 32.093420	W 103.588153
	3100.00	8.75	290.00	3081.28	-89.18	87.50	-240.38	0.00	398525.57	772088.49	N 32.093435	W 103.588199
	3200.00	8.75	290.00	3180.12	-94.48	92.71	-254.68	0.00	398530.77	772074.20	N 32.093449	W 103.588245
	3300.00	8.75	290.00	3278.95	-99.79	97.91	-268.97	0.00	398535.98	772059.91	N 32.093464	W 103.588291
	3400.00	8.75	290.00	3377.79	-105.09	103.11	-283.27	0.00	398541.18	772045.61	N 32.093478	W 103.588337
	3500.00	8.75	290.00	3476.63	-110.39	108.32	-297.56	0.00	398546.38	772031.32	N 32.093493	W 103.588383
	3600.00	8.75	290.00	3575.46	-115.70	113.52	-311.85	0.00	398551.59	772017.03	N 32.093508	W 103.588429
	3700.00	8.75	290.00	3674.30	-121.00	118.72	-326.15	0.00	398556.79	772002.73	N 32.093522	W 103.588475
	3800.00	8.75	290.00	3773.13	-126.30	123.93	-340.44	0.00	398561.99	771988.44	N 32.093537	W 103.588521
	3900.00	8.75	290.00	3871.97	-131.60	129.13	-354.74	0.00	398567.20	771974.14	N 32.093551	W 103.588568
	4000.00	8.75	290.00	3970.81	-136.91	134.33	-369.03	0.00	398572.40	771959.85	N 32.093566	W 103.588614
	4100.00	8.75	290.00	4069.64	-142.21	139.54	-383.33	0.00	398577.60	771945.56	N 32.093580	W 103.588660
	4200.00	8.75	290.00	4168.48	-147.51	144.74	-397.62	0.00	398582.81	771931.26	N 32.093595	W 103.588706
	4300.00	8.75	290.00	4267.32	-152.82	149.94	-411.91	0.00	398588.01	771916.97	N 32.093610	W 103.588752
	4400.00	8.75	290.00	4366.15	-158.12	155.15	-426.21	0.00	398593.21	771902.68	N 32.093624	W 103.588798
	4500.00	8.75	290.00	4464.99	-163.42	160.35	-440.50	0.00	398598.42	771888.38	N 32.093639	W 103.588844
	4600.00	8.75	290.00	4563.82	-168.73	165.55	-454.80	0.00	398603.62	771874.09	N 32.093653	W 103.588890
	4700.00	8.75	290.00	4662.66	-174.03	170.76	-469.09	0.00	398608.82	771859.79	N 32.093668	W 103.588936
	4800.00	8.75	290.00	4761.50	-179.33	175.96	-483.38	0.00	398614.03	771845.50	N 32.093682	W 103.588982
	4900.00	8.75	290.00	4860.33	-184.63	181.16	-497.68	0.00	398619.23	771831.21	N 32.093697	W 103.589028
Lamar Delaware Sands/Bell Canyon	4940.13	8.75	290.00	4900.00	-186.76	183.25	-503.42	0.00	398621.32	771825.47	N 32.093703	W 103.589046
	4970.49	8.75	290.00	4930.00	-188.37	184.83	-507.75	0.00	398622.90	771821.13	N 32.093707	W 103.589060
	5000.00	8.75	290.00	4959.17	-189.94	186.37	-511.97	0.00	398624.43	771816.91	N 32.093712	W 103.589074
	5100.00	8.75	290.00	5058.01	-195.24	191.57	-526.27	0.00	398629.64	771802.62	N 32.093726	W 103.589120
	5200.00	8.75	290.00	5156.84	-200.54	196.77	-540.56	0.00	398634.84	771788.33	N 32.093741	W 103.589166
	5300.00	8.75	290.00	5255.68	-205.85	201.98	-554.86	0.00	398640.04	771774.03	N 32.093755	W 103.589212
	5400.00	8.75	290.00	5354.51	-211.15	207.18	-569.15	0.00	398645.24	771759.74	N 32.093770	W 103.589258
	5500.00	8.75	290.00	5453.35	-216.45	212.38	-583.44	0.00	398650.45	771745.44	N 32.093784	W 103.589304
	5600.00	8.75	290.00	5552.19	-221.76	217.59	-597.74	0.00	398655.65	771731.15	N 32.093799	W 103.589350
	5700.00	8.75	290.00	5651.02	-227.06	222.79	-612.03	0.00	398660.85	771716.86	N 32.093814	W 103.589396
	5800.00	8.75	290.00	5749.86	-232.36	227.99	-626.33	0.00	398666.06	771702.56	N 32.093828	W 103.589442
	5900.00	8.75	290.00	5848.70	-237.66	233.20	-640.62	0.00	398671.26	771688.27	N 32.093843	W 103.589488
	6000.00	8.75	290.00	5947.53	-242.97	238.40	-654.91	0.00	398676.46	771673.98	N 32.093857	W 103.589534
Cherry Canyon	6012.61	8.75	290.00	5960.00	-243.64	239.06	-656.72	0.00	398677.12	771672.17	N 32.093859	W 103.589540
	6100.00	8.75	290.00	6046.37	-248.27	243.60	-669.21	0.00	398681.67	771659.68	N 32.093872	W 103.589580
	6200.00	8.75	290.00	6145.20	-253.57	248.81	-683.50	0.00	398686.87	771645.39	N 32.093886	W 103.589626
	6300.00	8.75	290.00	6244.04	-258.88	254.01	-697.80	0.00	398692.07	771631.09	N 32.093901	W 103.589672
	6400.00	8.75	290.00	6342.88	-264.18	259.22	-712.09	0.00	398697.28	771616.80	N 32.093916	W 103.589718
	6500.00	8.75	290.00	6441.71	-269.48	264.42	-726.39	0.00	398702.48	771602.51	N 32.093930	W 103.589764
	6600.00	8.75	290.00	6540.55	-274.79	269.62	-740.68	0.00	398707.68	771588.21	N 32.093945	W 103.589811
	6700.00	8.75	290.00	6639.39	-280.09	274.83	-754.97	0.00	398712.89	771573.92	N 32.093959	W 103.589857
	6800.00	8.75	290.00	6738.22	-							

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 °)
Drop 2°/100ft	6900.00	8.75	290.00	6837.06	-290.70	285.23	-783.56	0.00	398723.29	771545.33	N 32.093988	W 103.589949
	7000.00	8.75	290.00	6935.89	-296.00	290.44	-797.86	0.00	398728.50	771531.04	N 32.094003	W 103.589995
	7012.70	8.75	290.00	6948.44	-296.67	291.10	-799.67	0.00	398729.16	771529.22	N 32.094005	W 103.590001
	7100.00	7.00	290.00	7034.92	-300.84	295.19	-810.91	2.00	398733.25	771517.98	N 32.094016	W 103.590037
	7200.00	5.00	290.00	7134.37	-304.49	298.77	-820.74	2.00	398736.83	771508.15	N 32.094026	W 103.590068
	7300.00	3.00	290.00	7234.12	-306.92	301.15	-827.30	2.00	398739.21	771501.59	N 32.094033	W 103.590090
	7400.00	1.00	290.00	7334.05	-308.14	302.35	-830.59	2.00	398740.41	771498.31	N 32.094036	W 103.590100
Hold	7450.18	0.00	290.00	7384.23	-308.29	302.50	-831.00	2.00	398740.56	771497.90	N 32.094037	W 103.590101
	7500.00	0.00	290.00	7434.05	-308.29	302.50	-831.00	0.00	398740.56	771497.90	N 32.094037	W 103.590101
Brushy Canyon	7545.95	0.00	290.00	7480.00	-308.29	302.50	-831.00	0.00	398740.56	771497.90	N 32.094037	W 103.590101
	7600.00	0.00	290.00	7534.05	-308.29	302.50	-831.00	0.00	398740.56	771497.90	N 32.094037	W 103.590101
	7700.00	0.00	290.00	7634.05	-308.29	302.50	-831.00	0.00	398740.56	771497.90	N 32.094037	W 103.590101
	7800.00	0.00	290.00	7734.05	-308.29	302.50	-831.00	0.00	398740.56	771497.90	N 32.094037	W 103.590101
	7900.00	0.00	290.00	7834.05	-308.29	302.50	-831.00	0.00	398740.56	771497.90	N 32.094037	W 103.590101
	8000.00	0.00	290.00	7934.05	-308.29	302.50	-831.00	0.00	398740.56	771497.90	N 32.094037	W 103.590101
	8100.00	0.00	290.00	8034.05	-308.29	302.50	-831.00	0.00	398740.56	771497.90	N 32.094037	W 103.590101
	8200.00	0.00	290.00	8134.05	-308.29	302.50	-831.00	0.00	398740.56	771497.90	N 32.094037	W 103.590101
	8300.00	0.00	290.00	8234.05	-308.29	302.50	-831.00	0.00	398740.56	771497.90	N 32.094037	W 103.590101
	8400.00	0.00	290.00	8334.05	-308.29	302.50	-831.00	0.00	398740.56	771497.90	N 32.094037	W 103.590101
	8500.00	0.00	290.00	8434.05	-308.29	302.50	-831.00	0.00	398740.56	771497.90	N 32.094037	W 103.590101
	8600.00	0.00	290.00	8534.05	-308.29	302.50	-831.00	0.00	398740.56	771497.90	N 32.094037	W 103.590101
	8700.00	0.00	290.00	8634.05	-308.29	302.50	-831.00	0.00	398740.56	771497.90	N 32.094037	W 103.590101
	8800.00	0.00	290.00	8734.05	-308.29	302.50	-831.00	0.00	398740.56	771497.90	N 32.094037	W 103.590101
	8900.00	0.00	290.00	8834.05	-308.29	302.50	-831.00	0.00	398740.56	771497.90	N 32.094037	W 103.590101
Basal Brushy Canyon	8920.95	0.00	290.00	8855.00	-308.29	302.50	-831.00	0.00	398740.56	771497.90	N 32.094037	W 103.590101
	9000.00	0.00	290.00	8934.05	-308.29	302.50	-831.00	0.00	398740.56	771497.90	N 32.094037	W 103.590101
	9100.00	0.00	290.00	9034.05	-308.29	302.50	-831.00	0.00	398740.56	771497.90	N 32.094037	W 103.590101
Bone Spring Lime Leonard	9105.95	0.00	290.00	9040.00	-308.29	302.50	-831.00	0.00	398740.56	771497.90	N 32.094037	W 103.590101
	9130.95	0.00	290.00	9065.00	-308.29	302.50	-831.00	0.00	398740.56	771497.90	N 32.094037	W 103.590101
	9200.00	0.00	290.00	9134.05	-308.29	302.50	-831.00	0.00	398740.56	771497.90	N 32.094037	W 103.590101
	9300.00	0.00	290.00	9234.05	-308.29	302.50	-831.00	0.00	398740.56	771497.90	N 32.094037	W 103.590101
Avalon	9395.95	0.00	290.00	9330.00	-308.29	302.50	-831.00	0.00	398740.56	771497.90	N 32.094037	W 103.590101
	9400.00	0.00	290.00	9334.05	-308.29	302.50	-831.00	0.00	398740.56	771497.90	N 32.094037	W 103.590101
	9500.00	0.00	290.00	9434.05	-308.29	302.50	-831.00	0.00	398740.56	771497.90	N 32.094037	W 103.590101
	9600.00	0.00	290.00	9534.05	-308.29	302.50	-831.00	0.00	398740.56	771497.90	N 32.094037	W 103.590101
	9700.00	0.00	290.00	9634.05	-308.29	302.50	-831.00	0.00	398740.56	771497.90	N 32.094037	W 103.590101
	9800.00	0.00	290.00	9734.05	-308.29	302.50	-831.00	0.00	398740.56	771497.90	N 32.094037	W 103.590101
	9900.00	0.00	290.00	9834.05	-308.29	302.50	-831.00	0.00	398740.56	771497.90	N 32.094037	W 103.590101
	10000.00	0.00	290.00	9934.05	-308.29	302.50	-831.00	0.00	398740.56	771497.90	N 32.094037	W 103.590101
1st BS Sand	10085.95	0.00	290.00	10020.00	-308.29	302.50	-831.00	0.00	398740.56	771497.90	N 32.094037	W 103.590101
	10100.00	0.00	290.00	10034.05	-308.29	302.50	-831.00	0.00	398740.56	771497.90	N 32.094037	W 103.590101
	10200.00	0.00	290.00	10134.05	-308.29	302.50	-831.00	0.00	398740.56	771497.90	N 32.094037	W 103.590101
KOP, Build 10°/100ft	10273.18	0.00	290.00	10207.23	-308.29	302.50	-831.00	0.00	398740.56	771497.90	N 32.094037	W 103.590101
2nd BS Shale	10285.95	1.28	173.60	10220.00	-308.15	302.36	-830.98	10.00	398740.42	771497.91	N 32.094036	W 103.590101
	10300.00	2.68	173.60	10234.04	-307.67	301.88	-830.93	10.00	398739.94	771497.97	N 32.094035	W 103.590101
	10400.00	12.68	173.60	10333.02	-294.39	288.61	-829.44	10.00	398726.67	771499.45	N 32.093999	W 103.590097
	10500.00	22.68	173.60	10428.17	-264.22	258.46	-826.06	10.00	398696.53	771502.84	N 32.093916	W 103.590086
	10600.00	32.68	173.60	10516.61	-218.08	212.36	-820.89	10.00	398650.42	771508.01	N 32.093789	W 103.590071
2nd BS Sand	10672.50	39.93	173.60	10575.00	-175.42	169.72	-816.10	10.00	398607.79	771512.79	N 32.093672	W 103.590056
	10700.00	42.68	173.60	10595.65	-157.37	151.69	-814.08	10.00	398589.75	771514.82	N 32.093622	W 103.590050
	10800.00	52.68	173.60	10662.89	-83.92	78.30	-805.84	10.00	398516.37	771523.05	N 32.093420	W 103.590025
	10900.00	62.68	173.60	10716.29	0.02	-5.58	-796.43	10.00	398432.49	771532.46	N 32.093189	W 103.589997
	11000.00	72.68	173.60	10754.21	91.90	-97.39	-786.13	10.00	398340.68	771542.76	N 32.092937	W 103.589965
Build & Turn 5°/100ft	11023.18	75.00	173.60	10760.66	114.04	-119.52	-783.65	10.00	398318.56	771545.25	N 32.092876	W 103.589958
	11100.00	78.81	174.11	10778.07	188.47	-193.89	-775.64	5.00	398244.18	771553.25	N 32.092671	W 103.589934
	11200.00	83.77	174.75	10793.21	286.89	-292.24	-766.05	5.00	398145.84	771562.84	N 32.092401	W 103.589905
	11300.00	88.73	175.38	10799.75	386.33	-391.63	-757.48	5.00	398046.46	771571.42	N 32.092128	W 103.589879
Landing Point	11334.04	90.42	175.60	10800.00	420.28	-425.56	-754.80	5.00	398012.53	771574.09	N 32.092034	W 103.589872
	11400.00	90.42	175.60	10799.52	486.08	-491.32	-749.74	0.00	397946.76	771579.16	N 32.091853	W 103.589857
	11500.00	90.42	175.60	10798.80	585.83	-591.03	-742.06	0.00	397847.06	771586.83	N 32.091579	W 103.589834
Turn 2°/100ft	11522.04	90.42	175.60	10798.64	607.81	-613.00	-740.37	0.00	397825.09	771588.52	N 32.091519	W 103.589829
	11600.00	90.42	177.16	10798.07	685.65	-690.80	-735.45	2.00	397747.29	771593.45	N 32.091305	W 103.589815
	11700.00	90.42	179.16	10797.34	785.61	-790.74	-732.23	2.00	397647.35	771596.66	N 32.091030	W 103.589807
Hold	11722.05	90.42	179.60	10797.18	807.66	-812.79	-731.99	2.00	397625.31	771596.90	N 32.090969	W 103.589807
	11800.00	90.42	179.60	10796.62	885.61	-890.73	-731.45	0.00	397547.36	771597.45	N 32.090755	W 103.589807
	11900.00	90.42	179.60	10795.89	985.60	-990.73	-730.74	0.00	397447.37	771598.15	N 32.090480	W 103.589807
	12000.00	90.42	179.60	10795.16	1085.60	-1090.72	-730.04	0.00	397347.38	771598.85	N 32.090205	W 103.589806
	12100.00	90.42	179.60	10794.44	1185.60	-1190.72	-729.34	0.00	397247.39	771599.55	N 32.089931	W 103.589806
	12200.00	90.42	179.60	10793.71	1285.60	-1290.71	-728.64	0.00	397147.40	771600.25	N 32.089656	W 103.589806
	12300.00	90.42	179.60	10792.98	1385.59	-1390.71	-727.94	0.00	397047.41	771600.95	N 32.089381	W 103.589806
	12400.00	90.42	179.60	10792.26	1485.59	-1490.70	-727.24	0.00	396947.41	771601.65	N 32.089106	W 103.589806
	12500.00	90.42	179.60	10791.53	1585.59	-1590.70	-726.54	0.00	396847.42	771602.35	N 32.088831	W 103.589806
	12600.00	90.42	179.60	10790.80	1685.59	-1690.69	-725.84	0.00	396747.43	771603.06	N 32.088556	W 103.589806
	12700.00	90.42	179.60	10790.07	1785.58	-1790.69	-725.14	0.00	396647.44	771603.76	N 32.088281	W 103.589806
	12800.00	90.42	179.60	10789.35	1885.58	-1890.68	-724.44	0.00	396547.45	771604.46	N 32.088007	W 103.589806
	12900.00	90.42	179.60	10788.62	1985.58	-1990.68	-723.73	0.00	396447.45	771605.16	N 32.087732	W 103

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 °)
Section 32-5 Line Cross	15786.77	90.42	179.60	10767.64	4872.27	-4877.30	-703.50	0.00	393560.93	771625.39	N 32.079797	W 103.589805
	15800.00	90.42	179.60	10767.54	4885.50	-4890.53	-703.41	0.00	393547.69	771625.49	N 32.079761	W 103.589805
	15900.00	90.42	179.60	10766.81	4985.50	-4990.53	-702.70	0.00	393447.70	771626.19	N 32.079486	W 103.589805
	16000.00	90.42	179.60	10766.09	5085.50	-5090.52	-702.00	0.00	393347.71	771626.89	N 32.079211	W 103.589805
	16100.00	90.42	179.60	10765.36	5185.49	-5190.52	-701.30	0.00	393247.72	771627.59	N 32.078936	W 103.589805
	16200.00	90.42	179.60	10764.63	5285.49	-5290.51	-700.60	0.00	393147.73	771628.29	N 32.078661	W 103.589805
	16300.00	90.42	179.60	10763.91	5385.49	-5390.51	-699.90	0.00	393047.74	771628.99	N 32.078386	W 103.589805
	16400.00	90.42	179.60	10763.18	5485.48	-5490.50	-699.20	0.00	392947.74	771629.69	N 32.078111	W 103.589805
	16500.00	90.42	179.60	10762.45	5585.48	-5590.49	-698.50	0.00	392847.75	771630.39	N 32.077837	W 103.589805
	16600.00	90.42	179.60	10761.73	5685.48	-5690.49	-697.80	0.00	392747.76	771631.10	N 32.077562	W 103.589805
	16700.00	90.42	179.60	10761.00	5785.48	-5790.48	-697.10	0.00	392647.77	771631.80	N 32.077287	W 103.589805
	16800.00	90.42	179.60	10760.27	5885.47	-5890.48	-696.40	0.00	392547.78	771632.50	N 32.077012	W 103.589805
	16900.00	90.42	179.60	10759.55	5985.47	-5990.47	-695.69	0.00	392447.79	771633.20	N 32.076737	W 103.589805
	17000.00	90.42	179.60	10758.82	6085.47	-6090.47	-694.99	0.00	392347.79	771633.90	N 32.076462	W 103.589805
	17100.00	90.42	179.60	10758.09	6185.47	-6190.46	-694.29	0.00	392247.80	771634.60	N 32.076187	W 103.589805
	17200.00	90.42	179.60	10757.36	6285.46	-6290.46	-693.59	0.00	392147.81	771635.30	N 32.075913	W 103.589805
	17300.00	90.42	179.60	10756.64	6385.46	-6390.45	-692.89	0.00	392047.82	771636.00	N 32.075638	W 103.589804
	17400.00	90.42	179.60	10755.91	6485.46	-6490.45	-692.19	0.00	391947.83	771636.70	N 32.075363	W 103.589804
	17500.00	90.42	179.60	10755.18	6585.46	-6590.44	-691.49	0.00	391847.84	771637.40	N 32.075088	W 103.589804
	17600.00	90.42	179.60	10754.46	6685.45	-6690.44	-690.79	0.00	391747.84	771638.10	N 32.074813	W 103.589804
	17700.00	90.42	179.60	10753.73	6785.45	-6790.43	-690.09	0.00	391647.85	771638.81	N 32.074538	W 103.589804
	17800.00	90.42	179.60	10753.00	6885.45	-6890.43	-689.38	0.00	391547.86	771639.51	N 32.074263	W 103.589804
	17900.00	90.42	179.60	10752.28	6985.45	-6990.42	-688.68	0.00	391447.87	771640.21	N 32.073988	W 103.589804
	18000.00	90.42	179.60	10751.55	7085.44	-7090.42	-687.98	0.00	391347.88	771640.91	N 32.073714	W 103.589804
	18100.00	90.42	179.60	10750.82	7185.44	-7190.41	-687.28	0.00	391247.89	771641.61	N 32.073439	W 103.589804
	18200.00	90.42	179.60	10750.10	7285.44	-7290.41	-686.58	0.00	391147.89	771642.31	N 32.073164	W 103.589804
	18300.00	90.42	179.60	10749.37	7385.43	-7390.40	-685.88	0.00	391047.90	771643.01	N 32.072889	W 103.589804
	18400.00	90.42	179.60	10748.64	7485.43	-7490.40	-685.18	0.00	390947.91	771643.71	N 32.072614	W 103.589804
	18500.00	90.42	179.60	10747.91	7585.43	-7590.39	-684.48	0.00	390847.92	771644.41	N 32.072339	W 103.589804
	18600.00	90.42	179.60	10747.19	7685.43	-7690.39	-683.78	0.00	390747.93	771645.11	N 32.072064	W 103.589804
	18700.00	90.42	179.60	10746.46	7785.42	-7790.38	-683.08	0.00	390647.94	771645.82	N 32.071790	W 103.589804
	18800.00	90.42	179.60	10745.73	7885.42	-7890.38	-682.37	0.00	390547.94	771646.52	N 32.071515	W 103.589804
	18900.00	90.42	179.60	10745.01	7985.42	-7990.37	-681.67	0.00	390447.95	771647.22	N 32.071240	W 103.589804
	19000.00	90.42	179.60	10744.28	8085.42	-8090.37	-680.97	0.00	390347.96	771647.92	N 32.070965	W 103.589804
	19100.00	90.42	179.60	10743.55	8185.41	-8190.36	-680.27	0.00	390247.97	771648.62	N 32.070690	W 103.589804
	19200.00	90.42	179.60	10742.83	8285.41	-8290.36	-679.57	0.00	390147.98	771649.32	N 32.070415	W 103.589804
	19300.00	90.42	179.60	10742.10	8385.41	-8390.35	-678.87	0.00	390047.98	771650.02	N 32.070140	W 103.589804
	19400.00	90.42	179.60	10741.37	8485.41	-8490.35	-678.17	0.00	389947.99	771650.72	N 32.069866	W 103.589804
	19500.00	90.42	179.60	10740.65	8585.40	-8590.34	-677.47	0.00	389848.00	771651.42	N 32.069591	W 103.589804
	19600.00	90.42	179.60	10739.92	8685.40	-8690.34	-676.77	0.00	389748.01	771652.12	N 32.069316	W 103.589804
	19700.00	90.42	179.60	10739.19	8785.40	-8790.33	-676.07	0.00	389648.02	771652.83	N 32.069041	W 103.589804
	19800.00	90.42	179.60	10738.46	8885.40	-8890.33	-675.36	0.00	389548.03	771653.53	N 32.068766	W 103.589804
	19900.00	90.42	179.60	10737.74	8985.39	-8990.32	-674.66	0.00	389448.03	771654.23	N 32.068491	W 103.589803
	20000.00	90.42	179.60	10737.01	9085.39	-9090.32	-673.96	0.00	389348.04	771654.93	N 32.068216	W 103.589803
	20100.00	90.42	179.60	10736.28	9185.39	-9190.31	-673.26	0.00	389248.05	771655.63	N 32.067941	W 103.589803
	20200.00	90.42	179.60	10735.56	9285.38	-9290.31	-672.56	0.00	389148.06	771656.33	N 32.067667	W 103.589803
	20300.00	90.42	179.60	10734.83	9385.38	-9390.30	-671.86	0.00	389048.07	771657.03	N 32.067392	W 103.589803
	20400.00	90.42	179.60	10734.10	9485.38	-9490.30	-671.16	0.00	388948.08	771657.73	N 32.067117	W 103.589803
	20500.00	90.42	179.60	10733.38	9585.38	-9590.29	-670.46	0.00	388848.08	771658.43	N 32.066842	W 103.589803
	20600.00	90.42	179.60	10732.65	9685.37	-9690.29	-669.76	0.00	388748.09	771659.13	N 32.066567	W 103.589803
	20700.00	90.42	179.60	10731.92	9785.37	-9790.28	-669.06	0.00	388648.10	771659.84	N 32.066292	W 103.589803
	20800.00	90.42	179.60	10731.20	9885.37	-9890.28	-668.35	0.00	388548.11	771660.54	N 32.066017	W 103.589803
	20900.00	90.42	179.60	10730.47	9985.37	-9990.27	-667.65	0.00	388448.12	771661.24	N 32.065743	W 103.589803
Red Hills 32-5 State Com 203H - BHL [100' FSL, 1248' FEL]	20964.52	90.42	179.60	10730.00	10049.89	-10054.79	-667.20	0.00	388383.60	771661.69	N 32.065565	W 103.589803

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	Casing Diameter (in)	Expected Max Inclination (deg)	Survey Tool Type	Borehole / Survey
	1	0.000	23.000	1/100.000	30.000	30.000		A001Mb_MWD-Depth Only	Red Hills 32-5 State Com 203H / Coterra Red Hills 32-5 State Com
	1	23.000	10300.000	1/100.000	30.000	30.000		A001Mb_MWD	Red Hills 32-5 State Com 203H / Coterra Red Hills 32-5 State Com
	1	10300.000	20964.522	1/100.000	30.000	30.000		A008Mb_MWD+IFR1+MS	Red Hills 32-5 State Com 203H / Coterra Red Hills 32-5 State Com

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

1. Geological Formations

TVD of target 10,730

Pilot Hole TD N/A

MD at TD 20,964

Deepest expected fresh water

Formation	Depth (TVD) from KB	Water/Mineral Bearing/Target Zone	Hazards
Rustler	959	Useable Water	
Top of Salt	1374	N/A	
Base of Salt	4892	N/A	
Bell Canyon	4954	N/A	
Cherry Canyon	6026	N/A	
Brushy Canyon	7562	N/A	
Bone Spring	9064	Hydrocarbons	
Avalon Shale	9381	Hydrocarbons	
Lower Avalon Shale	9756	Hydrocarbons	
1st Bone Spring Sand	10061	Hydrocarbons	
2nd Bone Spring Sand	10589	Hydrocarbons	
3rd Bone Spring Sand	11707	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	976	976	13-3/8"	48.00	H-40	ST&C	1.75	4.09	6.87
12 1/4	0	4980	4980	9-5/8"	40.00	HCK-55	LT&C	1.42	1.48	2.82
8 3/4	0	10273	10273	7"	29.00	L-80	LT&C	1.46	1.70	1.88
8 3/4	10273	11023	10761	7"	29.00	P-110	BT&C	1.69	2.23	65.64
6	9273	20965	10730	4-1/2"	11.60	P-110	BT&C	1.43	2.02	21.71
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., Red Hills 32-5 State Com 203H

	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., Red Hills 32-5 State Com 203H

3. Cementing Program

Casing	# Sk	Wt. lb/gal	Yld ft ³ /sack	H ₂ O gal/sk	500# Comp. Strength (hours)	Slurry Description
Surface	410	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	948	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	337	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	738	14.50	1.30	5.79	20	Tail: 50:50 (Poz:H) + Salt + Bentonite + Fluid Loss + Dispersant + Expanding Agent + Retarder + Antifoam

Casing String	TOC	% Excess
Surface	0	42
Intermediate	0	49
Production	4780	25
Completion System	10823	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	13 5/8	5M	Annular	X	5M
			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.

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

5. Mud Program

Depth	Type	Weight (ppg)	Viscosity	Water Loss
0' to 976'	Fresh Water	7.83 - 8.33	28	N/C
976' to 4980'	Brine Water	9.83 - 10.33	30-32	N/C
4980' to 11023'	Cut Brine or OBM	8.50 - 9.00	27-70	N/C
11023' to 20965'	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
---------------------------------------------------------	-----------------------------

6. Logging and Testing Procedures

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

Additional Logs Planned	Interval
-------------------------	----------

7. Drilling Conditions

Condition	
BH Pressure at deepest TVD	5300 psi
Abnormal Temperature	No

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

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

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

A multi-bowl wellhead system will be utilized.

After running the 13-3/8" surface casing, a 13 5/8" BOP/BOPE system with a minimum working pressure of 5000 psi will be installed on the wellhead system and will be pressure tested to 250 psi low followed by a 5000 psi test. Annular will be tested to 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 5000 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 5000 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 203H 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 203H 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 203H 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 of Colorado **OGRID:** 162683 **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
Red Hills 32-5 State Com 203H		A, Sec 32 T25S, R33E	407 FNL/510 FEL	1834	3300	3700

IV. Central Delivery Point Name: Red Hills 32-5 CTB Sales [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
Red Hills 32-5 State Com 203H		2/1/2025	4/1/2025	7/1/2025	8/1/2025	8/1/2025

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

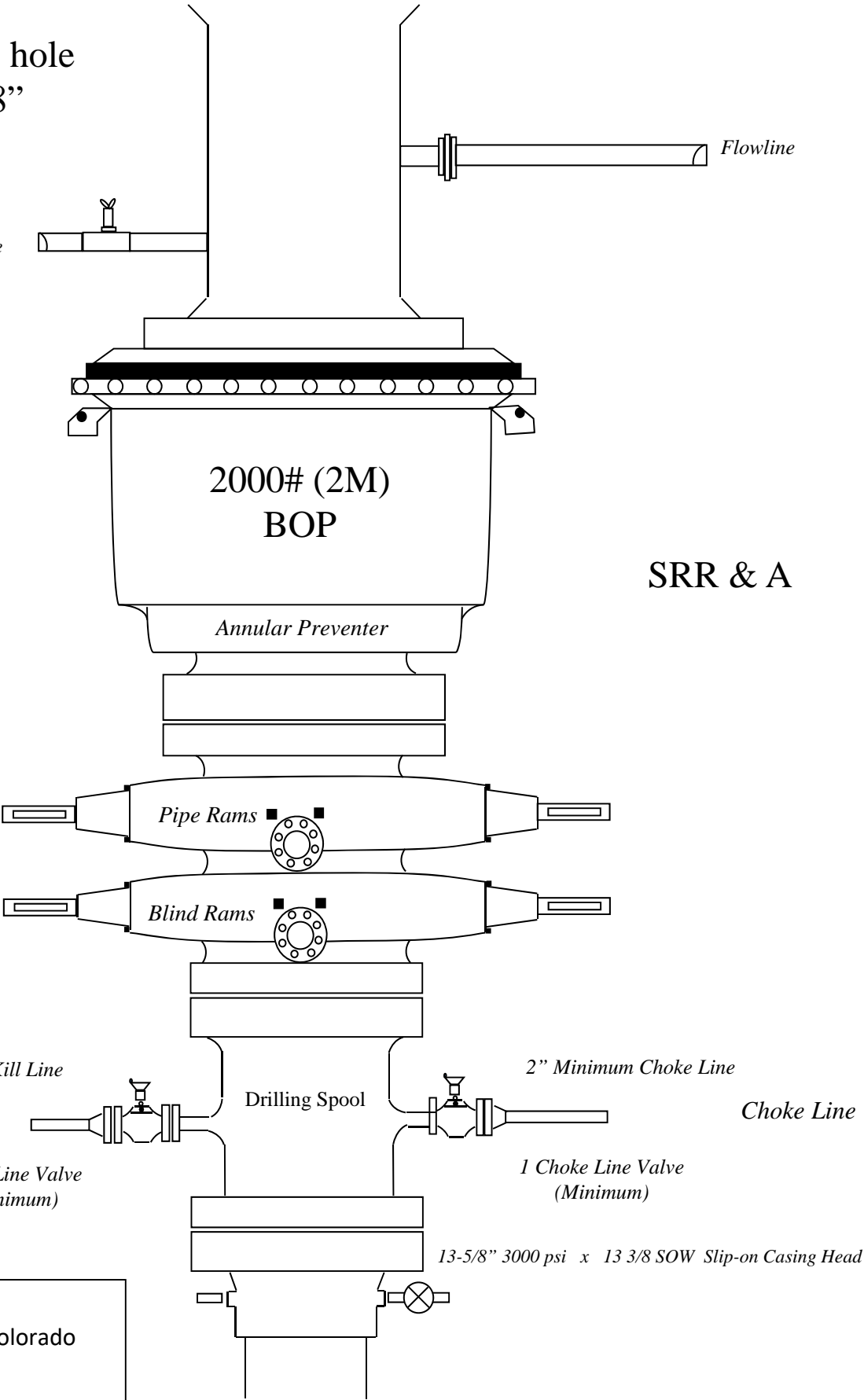
2" Minimum Choke Line

Choke Line

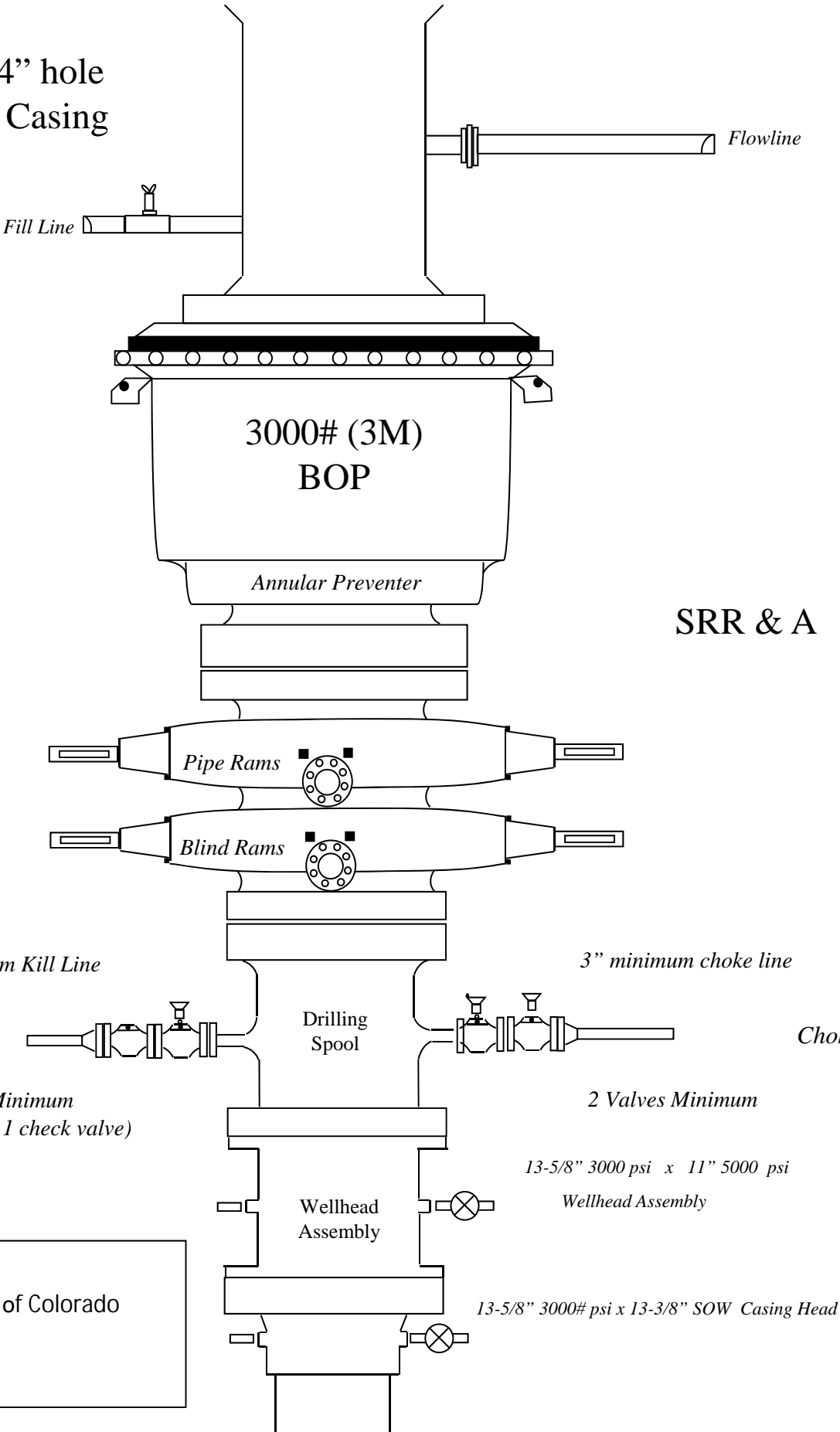
1 Choke Line Valve
(Minimum)

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

2000# BOP
Cimarex Energy Co. of Colorado



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



SRR & A

3000# BOP
Cimarex Energy Co. of Colorado

Drilling 6" hole
below 7" Casing

Fill Line

Flowline

5000# (5M)
BOP

Annular Preventer

SRR & A

Pipe Rams

Blind Rams

2" Minimum Kill Line

Kill Line

Drilling
Spool

3" minimum choke line

Choke Line

2 Valves Minimum
(HCR Required)

2 Valves and a check valve

Wellhead
Assembly

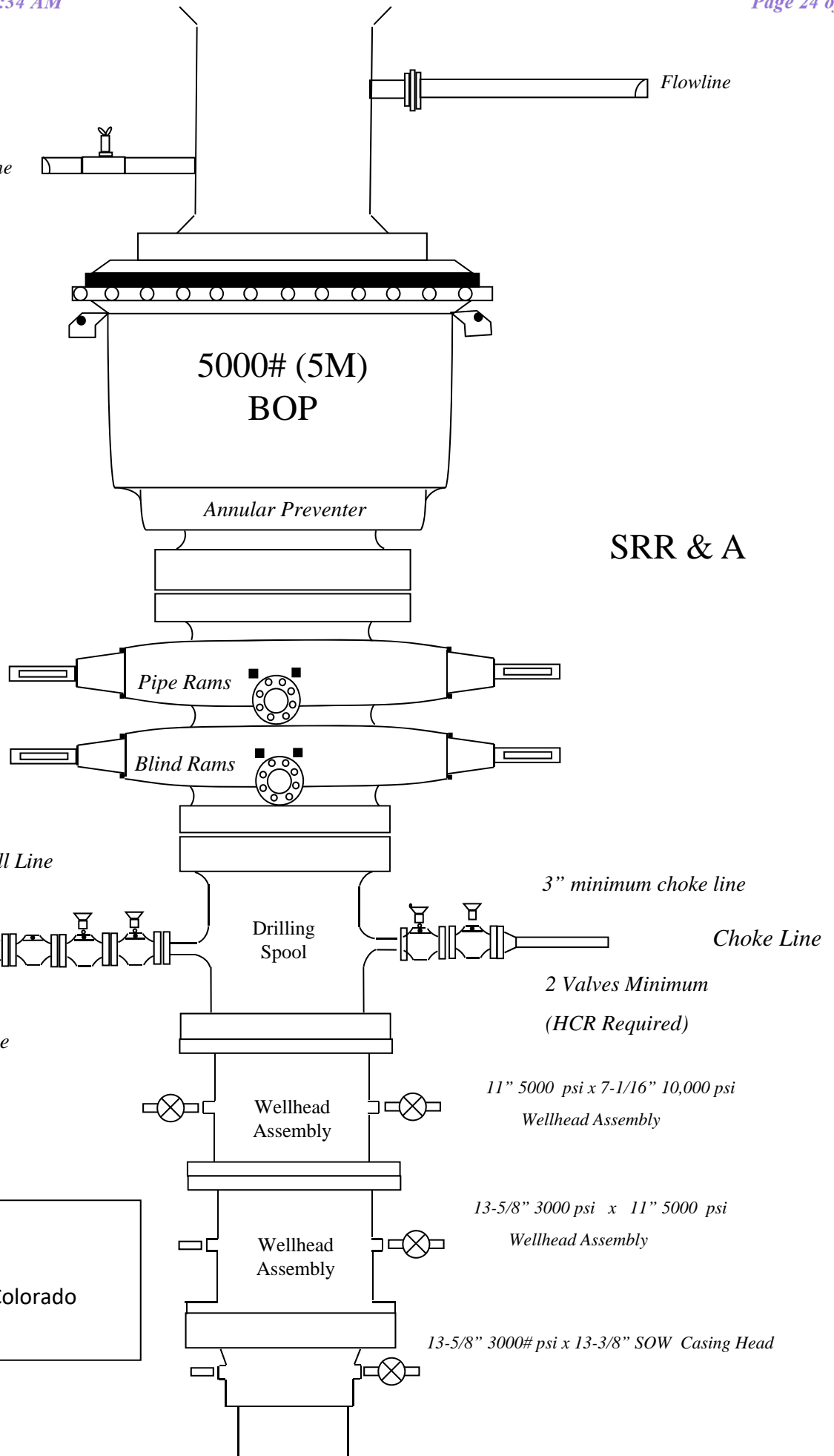
11" 5000 psi x 7-1/16" 10,000 psi
Wellhead Assembly

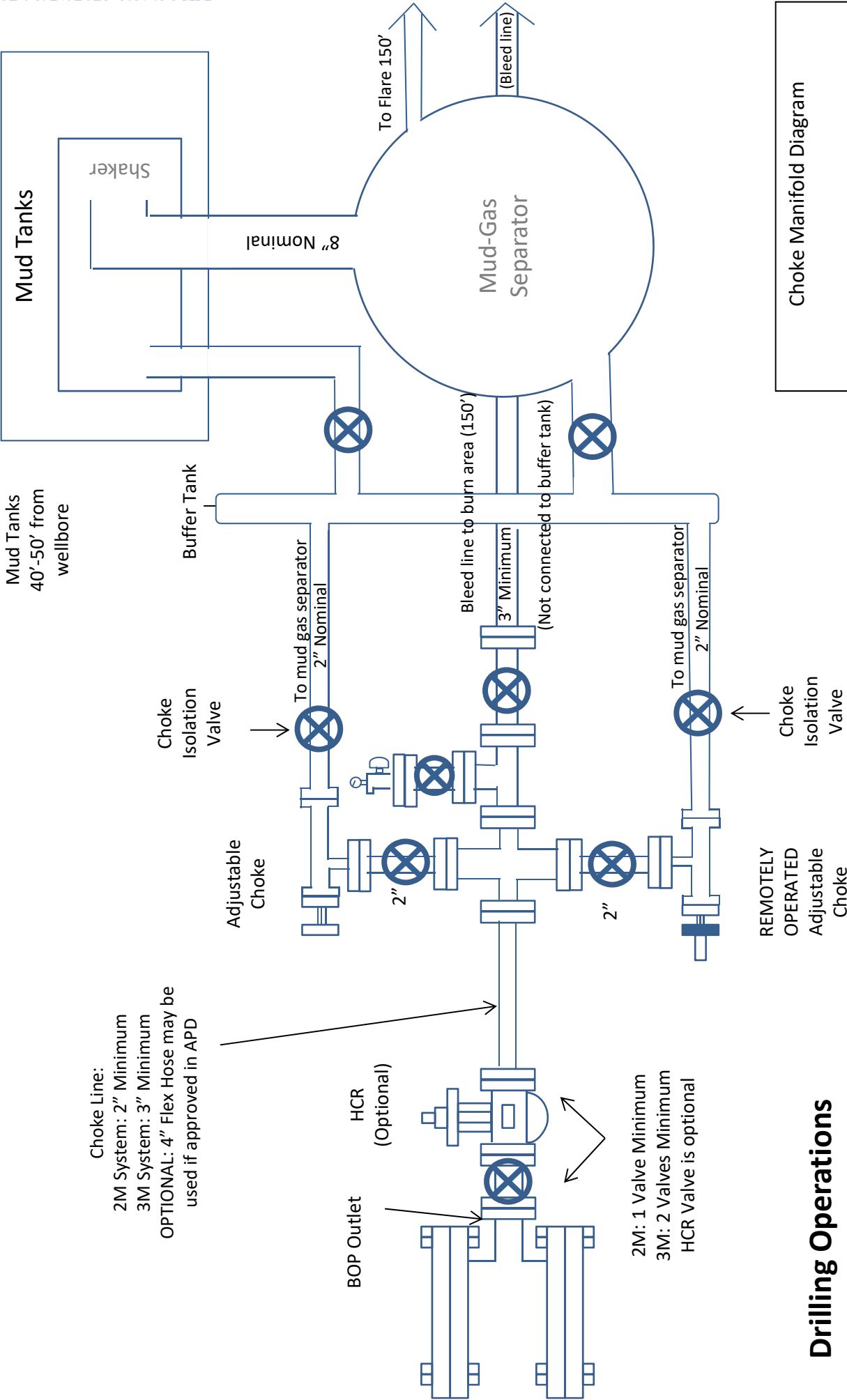
Wellhead
Assembly

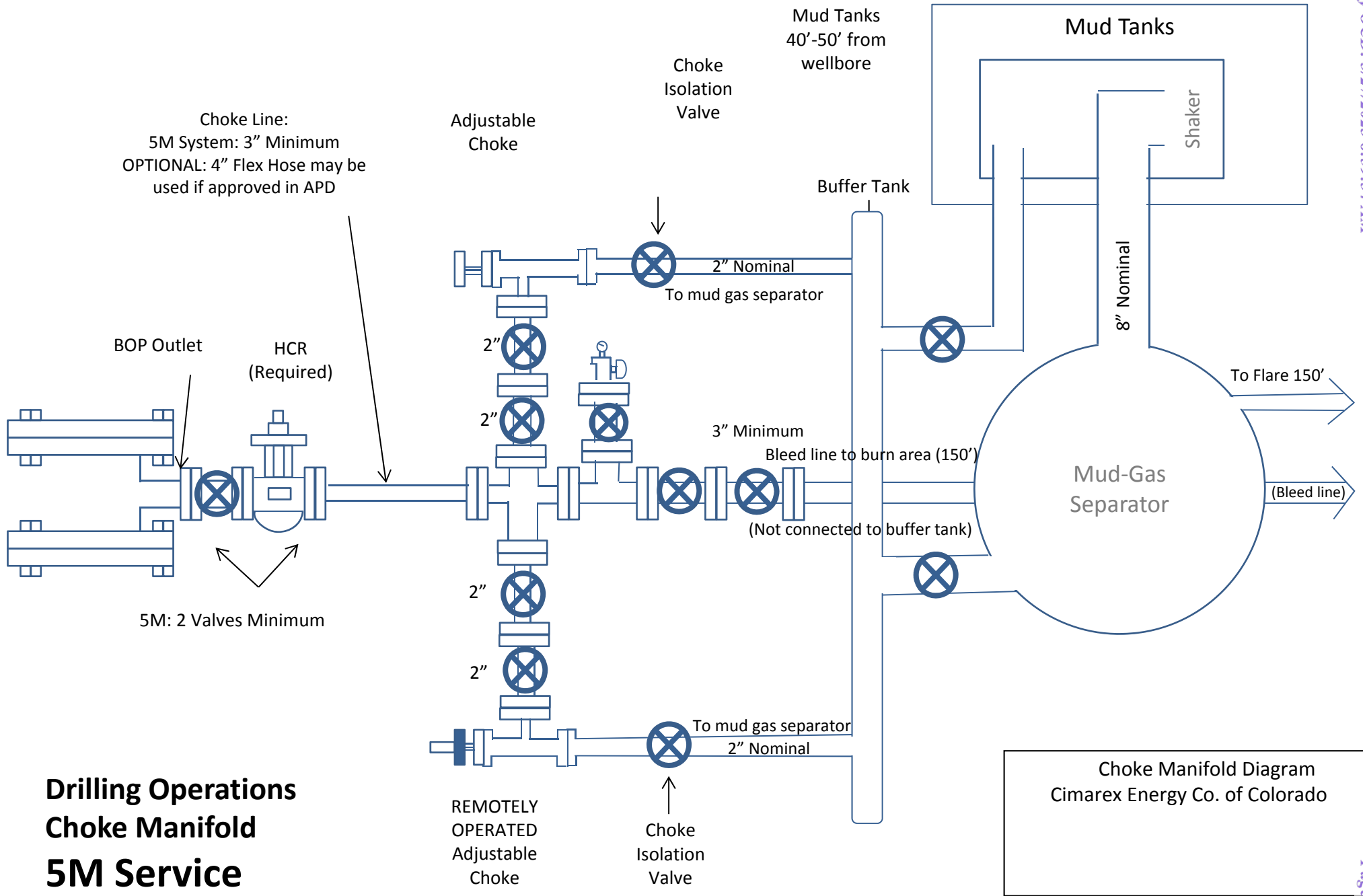
13-5/8" 3000 psi x 11" 5000 psi
Wellhead Assembly

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

5000# BOP
Cimarex Energy Co. of Colorado







Drilling Operations Choke Manifold 5M Service

Hydrogen Sulfide Drilling Operations Plan
Red Hills 32-5 State Com 200H, 201H, 202H, 203H
Cimarex Energy Co. of Colorado
Lea Co., NM

- 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

Cimarex Energy Co. of Colorado

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 ContactsCimarex Energy Co. of Colorado
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		