

Carlsbad Field Office DEPARTMENT OF THE INTERIOR BUREAU OF LAND MANAGEMENT

SUNDRY NOTICES AND REPORTS ON WELLS Do not use this form for proposals to drill or to re-enter an abandoned well. Use form 3160-3 (APD) for such proposals.

FORM APPROVED
OMB NO. 1004-0137
Expires: January 31, 2018

5. Lease Serial No.
NMNM100332

6. If Indian, Allottee or Tribe Name

7. If Unit or CA/Agreement, Name and/or No.

8. Well Name and No.
SCOTER 6-31 FEDERAL COM 43H

9. API Well No.
30-015-45265-00-X1

10. Field and Pool or Exploratory Area
WILDCAT - BONE SPRING

11. County or Parish, State
EDDY COUNTY, NM

SUBMIT IN TRIPLICATE - Other instructions on page 2

1. Type of Well

☒ Oil Well ☐ Gas Well ☐ Other

2. Name of Operator

CIMAREX ENERGY COMPANY OF CO

Contact: ARICKA EASTERLING

Mail: aeasterling@cimarex.com

3a. Address

600 N MARIENFELD STE 600
MIDLAND, TX 79703

3b. Phone No. (include area code)

Ph: 918-560-7060

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)

Sec 6 T25S R27E SESE 365FSL 280FEL
32.152885 N Lat, 104.222015 W Lon

12. CHECK THE APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION			
☒ Notice of Intent	☐ Acidize	☐ Deepen	☐ Production (Start/Resume)	☐ Water Shut-Off
☐ Subsequent Report	☐ Alter Casing	☐ Hydraulic Fracturing	☐ Reclamation	☐ Well Integrity
☐ Final Abandonment Notice	☐ Casing Repair	☐ New Construction	☐ Recomplete	☒ Other
	☐ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon	Change to Original A
	☐ Convert to Injection	☐ Plug Back	☐ Water Disposal	PD

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

Cimarex respectfully requests approval to change the BHL. Cimarex also requests approval to change the completion formation to Purple Sage Wolfcamp.

Approved BHL:
330 FNL & 1242 FEL Sec 6-25S-27E

Proposed BHL:
330 FNL & 1026 FEL, Sec 31-24S-27E

SEE ATTACHED FOR
CONDITIONS OF APPROVAL

Please see attached C-102, Drilling Plan, Directional Plan, & Anti-Collision Report.

TOC
Purple Sage Wfmp. NM OIL CONSERVATION
ARTESIA DISTRICT
Ruf.

NOV 14 2018

14. I hereby certify that the foregoing is true and correct.

Electronic Submission #442625 verified by the BLM Well Information System

For CIMAREX ENERGY COMPANY OF CO, sent to the Carlsbad

Committed to AFMSS for processing by PRISCILLA PÉREZ on 11/05/2018 (19PP0323SE)

RECEIVED

Name (Printed/Typed) ARICKA EASTERLING

Title REGULATORY ANALYST

Signature (Electronic Submission)

Date 11/05/2018

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved By ZQJA STEVENS

Title PETROLEUM ENGINEER

Date 11/08/2018

Conditions of approval, if any, are attached. Approval of this notice does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.

Office Carlsbad

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

(Instructions on page 2)

** BLM REVISED ** BLM REVISED ** BLM REVISED ** BLM REVISED ** BLM REVISED **

RWP 11-20-18

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

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

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

☐ AMENDED REPORT

NOV 14 2018

RECEIVED
WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-015-45265	² Pool Code 98220	³ Pool Name Purple Sage Wolfcamp (Gas)
⁴ Property Code 321000	⁵ Property Name SCOTER 6-31 FEDERAL COM	⁶ Well Number 43H
⁷ OGRID No. 215099	⁸ Operator Name CIMAREX ENERGY CO.	⁹ Elevation 3333.1'

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
P	6	25S	27E		365	SOUTH	280	EAST	EDDY

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
A	31	24S	27E		330	NORTH	1026	EAST	EDDY

¹² Dedicated Acres 638.44	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.
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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.

¹⁶ NOTE:

- Distances referenced on plat to section lines are perpendicular.
- Basis of Bearing is a Transverse Mercator Projection with a Central Meridian of W103°53'00"

NAD 83 (SURFACE LOCATION)	
LATITUDE	= 32°09'10.39" (32.152886)
LONGITUDE	= 104°13'18.80" (104.221889)
NAD 27 (SURFACE LOCATION)	
LATITUDE	= 32°09'09.96" (32.152767)
LONGITUDE	= 104°13'17.01" (104.221392)
STATE PLANE NAD 83 (N.M. EAST)	
N: 419373.29	E: 575826.39
STATE PLANE NAD 27 (N.M. EAST)	
N: 419315.74	E: 534643.39

NAD 83 (BHL/LTP)	
LATITUDE	= 32°10'48.03" (32.180009)
LONGITUDE	= 104°13'28.27" (104.224519)
NAD 27 (BHL/LTP)	
LATITUDE	= 32°10'47.60" (32.179889)
LONGITUDE	= 104°13'26.48" (104.224022)
STATE PLANE NAD 83 (N.M. EAST)	
N: 429239.13	E: 575002.55
STATE PLANE NAD 27 (N.M. EAST)	
N: 429181.40	E: 533819.73

LINE TABLE		
LINE	DIRECTION	LENGTH
L1	S89°35'09"W	745.72'

SCALE
REV: 3 10-23-18 C.M.T. (BHL MOVE)

● = SURFACE HOLE LOCATION
◆ = LANDING POINT/FIRST TAKE POINT
○ = BOTTOM HOLE LOCATION/LAST TAKE POINT
▲ = SECTION CORNER LOCATED

¹⁷ OPERATOR CERTIFICATION
I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.
Amithy Crawford 10/24/2018
Signature Date
Amithy Crawford
Printed Name
acrawford@cimarex.com
E-mail Address

¹⁸ SURVEYOR CERTIFICATION
I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.
May 10, 2017
Date of Survey
Signature and Seal of Professional Surveyor:
PAUL BUCHELE
NEW MEXICO
23782
10-23-18
PROFESSIONAL SURVEYOR
Certificate Number:

RWP 11-20-18

Cimarex Scoter 6-31 Federal Com 43H Rev4 25Oct18 Proposal Geodetic Report

(Non-Def Plan)



Report Date: October 25, 2018 - 04:58 PM
Client: Cimarex
Field: NM Eddy County (NAD 83)
Structure / Slot: Cimarex Scoter 6-31 Federal Com 43H / Cimarex Scoter 6-31 Federal Com 43H
Well: Cimarex Scoter 6-31 Federal Com 43H
Borehole: Original Borehole
UWI / API#: Unknown / Unknown
Survey Name: Cimarex Scoter 6-31 Federal Com 43H Rev4 25Oct18
Survey Date: October 01, 2018
Tort / AHD / DDI / ERD Ratio: 109.539 ° / 10651.134 ft / 6.386 / 1.197
Coordinate Reference System: NAD83 New Mexico State Plane, Eastern Zone, US Feet
Location Lat / Long: N 32° 9' 10.39150", W 104° 13' 18.80140"
Location Grid N/E Y/X: N 419373.290 ftUS, E 575826.390 ftUS
CRS Grid Convergence Angle: 0.0593 °
Grid Scale Factor: 0.99991045
Version / Patch: 2.10.740.0

Survey / DLS Computation: Minimum Curvature / Lubinski
Vertical Section Azimuth: 359.770 ° (Grid North)
Vertical Section Origin: 0.000 ft, 0.000 ft
TVD Reference Datum: RKB
TVD Reference Elevation: 3359.100 ft above MSL
Seabed / Ground Elevation: 3333.100 ft above MSL
Magnetic Declination: 7.334 °
Total Gravity Field Strength: 998.4320mgn (9.80665 Based)
Gravity Model: GARM
Total Magnetic Field Strength: 47874.419 nT
Magnetic Dip Angle: 59.838 °
Declination Date: October 25, 2018
Magnetic Declination Model: HDGM 2018
North Reference: Grid North
Grid Convergence Used: 0.0593 °
Total Corr Mag North->Grid North: 7.2743 °
Local Coord Referenced To: Structure Reference Point

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 [365' FSL, 280' FEL]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A	419373.29	575826.39	N 32 9 10.39 W 104 13 18.80	
	100.00	0.00	270.00	100.00	0.00	0.00	0.00	0.00	419373.29	575826.39	N 32 9 10.39 W 104 13 18.80	
	200.00	0.00	270.00	200.00	0.00	0.00	0.00	0.00	419373.29	575826.39	N 32 9 10.39 W 104 13 18.80	
	300.00	0.00	270.00	300.00	0.00	0.00	0.00	0.00	419373.29	575826.39	N 32 9 10.39 W 104 13 18.80	
	400.00	0.00	270.00	400.00	0.00	0.00	0.00	0.00	419373.29	575826.39	N 32 9 10.39 W 104 13 18.80	
	500.00	0.00	270.00	500.00	0.00	0.00	0.00	0.00	419373.29	575826.39	N 32 9 10.39 W 104 13 18.80	
	600.00	0.00	270.00	600.00	0.00	0.00	0.00	0.00	419373.29	575826.39	N 32 9 10.39 W 104 13 18.80	
	700.00	0.00	270.00	700.00	0.00	0.00	0.00	0.00	419373.29	575826.39	N 32 9 10.39 W 104 13 18.80	
	800.00	0.00	270.00	800.00	0.00	0.00	0.00	0.00	419373.29	575826.39	N 32 9 10.39 W 104 13 18.80	
	900.00	0.00	270.00	900.00	0.00	0.00	0.00	0.00	419373.29	575826.39	N 32 9 10.39 W 104 13 18.80	
	1000.00	0.00	270.00	1000.00	0.00	0.00	0.00	0.00	419373.29	575826.39	N 32 9 10.39 W 104 13 18.80	
	1100.00	0.00	270.00	1100.00	0.00	0.00	0.00	0.00	419373.29	575826.39	N 32 9 10.39 W 104 13 18.80	
	1200.00	0.00	270.00	1200.00	0.00	0.00	0.00	0.00	419373.29	575826.39	N 32 9 10.39 W 104 13 18.80	
	1300.00	0.00	270.00	1300.00	0.00	0.00	0.00	0.00	419373.29	575826.39	N 32 9 10.39 W 104 13 18.80	
	1400.00	0.00	270.00	1400.00	0.00	0.00	0.00	0.00	419373.29	575826.39	N 32 9 10.39 W 104 13 18.80	
Salado (Top Salt)	1430.00	0.00	270.00	1430.00	0.00	0.00	0.00	0.00	419373.29	575826.39	N 32 9 10.39 W 104 13 18.80	
	1500.00	0.00	270.00	1500.00	0.00	0.00	0.00	0.00	419373.29	575826.39	N 32 9 10.39 W 104 13 18.80	
	1600.00	0.00	270.00	1600.00	0.00	0.00	0.00	0.00	419373.29	575826.39	N 32 9 10.39 W 104 13 18.80	
	1700.00	0.00	270.00	1700.00	0.00	0.00	0.00	0.00	419373.29	575826.39	N 32 9 10.39 W 104 13 18.80	
	1800.00	0.00	270.00	1800.00	0.00	0.00	0.00	0.00	419373.29	575826.39	N 32 9 10.39 W 104 13 18.80	
	1900.00	0.00	270.00	1900.00	0.00	0.00	0.00	0.00	419373.29	575826.39	N 32 9 10.39 W 104 13 18.80	
	2000.00	0.00	270.00	2000.00	0.00	0.00	0.00	0.00	419373.29	575826.39	N 32 9 10.39 W 104 13 18.80	
Castille (Bottom Salt)	2020.00	0.00	270.00	2020.00	0.00	0.00	0.00	0.00	419373.29	575826.39	N 32 9 10.39 W 104 13 18.80	

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (RUS)	Easting (RUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
Bell Canyon (Top Delaware)	2100.00	0.00	270.00	2100.00	0.00	0.00	0.00	0.00	419373.29	575826.39	N 32 9 10.39 W 104 13 18.80	
	2200.00	0.00	270.00	2200.00	0.00	0.00	0.00	0.00	419373.29	575826.39	N 32 9 10.39 W 104 13 18.80	
	2300.00	0.00	270.00	2300.00	0.00	0.00	0.00	0.00	419373.29	575826.39	N 32 9 10.39 W 104 13 18.80	
	2400.00	0.00	270.00	2400.00	0.00	0.00	0.00	0.00	419373.29	575826.39	N 32 9 10.39 W 104 13 18.80	
Nudge - Build 2°/100' DLS	2500.00	0.00	270.00	2500.00	0.00	0.00	0.00	0.00	419373.29	575826.39	N 32 9 10.39 W 104 13 18.80	
	2600.00	2.00	270.00	2599.98	0.01	0.00	-1.75	2.00	419373.29	575824.65	N 32 9 10.39 W 104 13 18.82	
	2700.00	4.00	270.00	2699.84	0.03	0.00	-6.98	2.00	419373.29	575819.41	N 32 9 10.39 W 104 13 18.88	
	2800.00	6.00	270.00	2799.45	0.06	0.00	-15.69	2.00	419373.29	575810.70	N 32 9 10.39 W 104 13 18.98	
	2900.00	8.00	270.00	2898.70	0.11	0.00	-27.88	2.00	419373.29	575798.51	N 32 9 10.39 W 104 13 19.13	
Hold Nudge	2994.74	9.89	270.00	2992.28	0.17	0.00	-42.61	2.00	419373.29	575783.78	N 32 9 10.39 W 104 13 19.30	
	3000.00	9.89	270.00	2997.47	0.17	0.00	-43.52	0.00	419373.29	575782.88	N 32 9 10.39 W 104 13 19.31	
Cherry Canyon	3053.33	9.89	270.00	3050.00	0.21	0.00	-52.68	0.00	419373.29	575773.71	N 32 9 10.39 W 104 13 19.41	
	3100.00	9.89	270.00	3095.98	0.24	0.00	-60.70	0.00	419373.29	575765.69	N 32 9 10.39 W 104 13 19.51	
	3200.00	9.89	270.00	3194.49	0.31	0.00	-77.89	0.00	419373.29	575748.51	N 32 9 10.39 W 104 13 19.71	
	3300.00	9.89	270.00	3293.00	0.38	0.00	-95.07	0.00	419373.29	575731.33	N 32 9 10.39 W 104 13 19.91	
	3400.00	9.89	270.00	3391.52	0.45	0.00	-112.25	0.00	419373.29	575714.15	N 32 9 10.39 W 104 13 20.11	
	3500.00	9.89	270.00	3490.03	0.52	0.00	-129.44	0.00	419373.29	575696.96	N 32 9 10.39 W 104 13 20.31	
	3600.00	9.89	270.00	3588.54	0.59	0.00	-146.62	0.00	419373.29	575679.78	N 32 9 10.39 W 104 13 20.51	
	3700.00	9.89	270.00	3687.05	0.66	0.00	-163.81	0.00	419373.29	575662.60	N 32 9 10.39 W 104 13 20.71	
	3800.00	9.89	270.00	3785.57	0.73	0.00	-180.99	0.00	419373.29	575645.42	N 32 9 10.39 W 104 13 20.91	
	3900.00	9.89	270.00	3884.08	0.80	0.00	-198.17	0.00	419373.29	575628.23	N 32 9 10.39 W 104 13 21.11	
	4000.00	9.89	270.00	3982.59	0.86	0.00	-215.36	0.00	419373.29	575611.05	N 32 9 10.39 W 104 13 21.31	
Brushy Canyon	4068.43	9.89	270.00	4050.00	0.91	0.00	-227.12	0.00	419373.29	575599.29	N 32 9 10.39 W 104 13 21.44	
	4100.00	9.89	270.00	4081.10	0.93	0.00	-232.54	0.00	419373.29	575593.87	N 32 9 10.39 W 104 13 21.51	
	4200.00	9.89	270.00	4179.62	1.00	0.00	-249.73	0.00	419373.29	575576.69	N 32 9 10.39 W 104 13 21.71	
	4300.00	9.89	270.00	4278.13	1.07	0.00	-266.91	0.00	419373.29	575559.51	N 32 9 10.39 W 104 13 21.91	
	4400.00	9.89	270.00	4376.64	1.14	0.00	-284.09	0.00	419373.29	575542.32	N 32 9 10.39 W 104 13 22.11	
	4500.00	9.89	270.00	4475.15	1.21	0.00	-301.28	0.00	419373.29	575525.14	N 32 9 10.39 W 104 13 22.31	
	4600.00	9.89	270.00	4573.67	1.28	0.00	-318.46	0.00	419373.29	575507.96	N 32 9 10.39 W 104 13 22.51	
	4700.00	9.89	270.00	4672.18	1.35	0.00	-335.65	0.00	419373.29	575490.78	N 32 9 10.39 W 104 13 22.71	
	4800.00	9.89	270.00	4770.69	1.42	0.00	-352.83	0.00	419373.29	575473.59	N 32 9 10.40 W 104 13 22.91	
	4900.00	9.89	270.00	4869.20	1.49	0.00	-370.01	0.00	419373.29	575456.41	N 32 9 10.40 W 104 13 23.11	
	5000.00	9.89	270.00	4967.72	1.55	0.00	-387.20	0.00	419373.29	575439.23	N 32 9 10.40 W 104 13 23.31	
	5100.00	9.89	270.00	5066.23	1.62	0.00	-404.38	0.00	419373.29	575422.05	N 32 9 10.40 W 104 13 23.50	
	5200.00	9.89	270.00	5164.74	1.69	0.00	-421.57	0.00	419373.29	575404.86	N 32 9 10.40 W 104 13 23.70	
	5300.00	9.89	270.00	5263.25	1.76	0.00	-438.75	0.00	419373.29	575387.68	N 32 9 10.40 W 104 13 23.90	
	5400.00	9.89	270.00	5361.77	1.83	0.00	-455.93	0.00	419373.29	575370.50	N 32 9 10.40 W 104 13 24.10	
	5500.00	9.89	270.00	5460.28	1.90	0.00	-473.12	0.00	419373.29	575353.32	N 32 9 10.40 W 104 13 24.30	
	5600.00	9.89	270.00	5558.79	1.97	0.00	-490.30	0.00	419373.29	575336.13	N 32 9 10.40 W 104 13 24.50	
	5700.00	9.89	270.00	5657.30	2.04	0.00	-507.48	0.00	419373.29	575318.95	N 32 9 10.40 W 104 13 24.70	
	5800.00	9.89	270.00	5755.82	2.11	0.00	-524.67	0.00	419373.29	575301.77	N 32 9 10.40 W 104 13 24.90	
	5900.00	9.89	270.00	5854.33	2.18	0.00	-541.85	0.00	419373.29	575284.59	N 32 9 10.40 W 104 13 25.10	
	6000.00	9.89	270.00	5952.84	2.24	0.00	-559.04	0.00	419373.29	575267.40	N 32 9 10.40 W 104 13 25.30	
	6100.00	9.89	270.00	6051.35	2.31	0.00	-576.22	0.00	419373.29	575250.22	N 32 9 10.40 W 104 13 25.50	
	6200.00	9.89	270.00	6149.87	2.38	0.00	-593.40	0.00	419373.29	575233.04	N 32 9 10.40 W 104 13 25.70	
	6300.00	9.89	270.00	6248.38	2.45	0.00	-610.59	0.00	419373.29	575215.86	N 32 9 10.40 W 104 13 25.90	
	6400.00	9.89	270.00	6346.89	2.52	0.00	-627.77	0.00	419373.29	575198.67	N 32 9 10.40 W 104 13 26.10	
	6500.00	9.89	270.00	6445.40	2.59	0.00	-644.96	0.00	419373.29	575181.49	N 32 9 10.40 W 104 13 26.30	
	6600.00	9.89	270.00	6543.92	2.66	0.00	-662.14	0.00	419373.29	575164.31	N 32 9 10.40 W 104 13 26.50	
	6700.00	9.89	270.00	6642.43	2.73	0.00	-679.32	0.00	419373.29	575147.13	N 32 9 10.40 W 104 13 26.70	
Top 1st Bone Spring Ss	6700.58	9.89	270.00	6643.00	2.73	0.00	-679.42	0.00	419373.29	575147.03	N 32 9 10.40 W 104 13 26.70	
	6800.00	9.89	270.00	6740.94	2.80	0.00	-696.51	0.00	419373.29	575129.95	N 32 9 10.40 W 104 13 26.90	
	6900.00	9.89	270.00	6839.45	2.86	0.00	-713.69	0.00	419373.29	575112.76	N 32 9 10.40 W 104 13 27.10	
	7000.00	9.89	270.00	6937.97	2.93	0.00	-730.88	0.00	419373.29	575095.58	N 32 9 10.40 W 104 13 27.30	
Drop to Vertical 2°/100' DLS	7062.97	9.89	270.00	7000.00	2.98	0.00	-741.70	0.00	419373.29	575084.76	N 32 9 10.40 W 104 13 27.43	

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 ° ' ")
	7100.00	9.15	270.00	7036.52	3.00	0.00	-747.82	2.00	419373.29	575078.63	N 32 9 10.40 W 104 13 27.50	
Top 2nd Bone Spring Ss	7187.40	7.41	270.00	7123.00	3.05	0.00	-760.41	2.00	419373.29	575066.05	N 32 9 10.40 W 104 13 27.65	
	7200.00	7.15	270.00	7135.50	3.06	0.00	-762.01	2.00	419373.29	575064.45	N 32 9 10.40 W 104 13 27.66	
	7300.00	5.15	270.00	7234.92	3.10	0.00	-772.73	2.00	419373.29	575053.73	N 32 9 10.40 W 104 13 27.79	
	7400.00	3.15	270.00	7334.65	3.13	0.00	-779.97	2.00	419373.29	575046.49	N 32 9 10.40 W 104 13 27.87	
	7500.00	1.15	270.00	7434.58	3.15	0.00	-783.73	2.00	419373.29	575042.73	N 32 9 10.40 W 104 13 27.92	
Top 3rd Bone Spring Carb Hold Vertical	7551.43	0.13	270.00	7486.00	3.15	0.00	-784.30	2.00	419373.29	575042.16	N 32 9 10.40 W 104 13 27.92	
	7557.71	0.00	270.00	7492.28	3.15	0.00	-784.31	2.00	419373.29	575042.15	N 32 9 10.40 W 104 13 27.92	
	7600.00	0.00	270.00	7534.57	3.15	0.00	-784.31	0.00	419373.29	575042.15	N 32 9 10.40 W 104 13 27.92	
	7700.00	0.00	270.00	7634.57	3.15	0.00	-784.31	0.00	419373.29	575042.15	N 32 9 10.40 W 104 13 27.92	
Top Harkey SS	7740.43	0.00	270.00	7675.00	3.15	0.00	-784.31	0.00	419373.29	575042.15	N 32 9 10.40 W 104 13 27.92	
	7800.00	0.00	270.00	7734.57	3.15	0.00	-784.31	0.00	419373.29	575042.15	N 32 9 10.40 W 104 13 27.92	
	7900.00	0.00	270.00	7834.57	3.15	0.00	-784.31	0.00	419373.29	575042.15	N 32 9 10.40 W 104 13 27.92	
	8000.00	0.00	270.00	7934.57	3.15	0.00	-784.31	0.00	419373.29	575042.15	N 32 9 10.40 W 104 13 27.92	
	8100.00	0.00	270.00	8034.57	3.15	0.00	-784.31	0.00	419373.29	575042.15	N 32 9 10.40 W 104 13 27.92	
	8200.00	0.00	270.00	8134.57	3.15	0.00	-784.31	0.00	419373.29	575042.15	N 32 9 10.40 W 104 13 27.92	
	8300.00	0.00	270.00	8234.57	3.15	0.00	-784.31	0.00	419373.29	575042.15	N 32 9 10.40 W 104 13 27.92	
	8400.00	0.00	270.00	8334.57	3.15	0.00	-784.31	0.00	419373.29	575042.15	N 32 9 10.40 W 104 13 27.92	
KOP - Build 12"/100' DLS Top 3rd Bone Spring SS	8411.44	0.00	270.00	8346.01	3.15	0.00	-784.31	0.00	419373.29	575042.15	N 32 9 10.40 W 104 13 27.92	
	8499.93	10.62	359.77	8434.00	11.33	8.18	-784.34	12.00	419381.47	575042.12	N 32 9 10.48 W 104 13 27.92	
	8500.00	10.63	359.77	8434.07	11.34	8.19	-784.34	12.00	419381.48	575042.12	N 32 9 10.48 W 104 13 27.92	
	8600.00	22.63	359.77	8529.71	39.90	36.75	-784.46	12.00	419410.04	575042.00	N 32 9 10.76 W 104 13 27.93	
	8700.00	34.63	359.77	8617.33	87.73	84.58	-784.65	12.00	419457.86	575041.81	N 32 9 11.24 W 104 13 27.93	
	8800.00	46.63	359.77	8693.08	152.72	149.57	-784.91	12.00	419522.85	575041.55	N 32 9 11.88 W 104 13 27.93	
	8900.00	58.63	359.77	8753.67	232.05	228.90	-785.23	12.00	419602.16	575041.23	N 32 9 12.66 W 104 13 27.93	
Top Wolfcamp	8910.42	59.88	359.77	8759.00	241.00	237.85	-785.27	12.00	419611.12	575041.20	N 32 9 12.75 W 104 13 27.93	
	9000.00	70.63	359.77	8796.44	322.23	319.08	-785.59	12.00	419692.34	575040.87	N 32 9 13.56 W 104 13 27.94	
Build 4"/100' DLS	9036.44	75.00	359.77	8807.21	357.04	353.88	-785.73	12.00	419727.14	575040.73	N 32 9 13.90 W 104 13 27.94	
	9100.00	77.54	359.77	8822.29	418.78	415.63	-785.98	4.00	419788.88	575040.48	N 32 9 14.51 W 104 13 27.94	
Wolfcamp 'Y' SS	9148.78	79.49	359.77	8832.00	466.58	463.43	-786.17	4.00	419836.68	575040.29	N 32 9 14.99 W 104 13 27.94	
	9200.00	81.54	359.77	8840.44	517.10	513.94	-786.37	4.00	419887.19	575040.09	N 32 9 15.49 W 104 13 27.94	
	9300.00	85.54	359.77	8851.68	616.44	613.29	-786.77	4.00	419986.52	575039.69	N 32 9 16.47 W 104 13 27.95	
	9400.00	89.54	359.77	8855.97	716.33	713.18	-787.17	4.00	420086.40	575039.29	N 32 9 17.46 W 104 13 27.95	
Landing Point	9405.17	89.75	359.77	8856.00	721.50	718.35	-787.20	4.00	420091.57	575039.27	N 32 9 17.51 W 104 13 27.95	
	9500.00	89.75	359.77	8856.41	816.33	813.17	-787.58	0.00	420186.39	575038.89	N 32 9 18.45 W 104 13 27.95	
	9600.00	89.75	359.77	8856.85	916.33	913.17	-787.98	0.00	420286.38	575038.49	N 32 9 19.44 W 104 13 27.96	
	9700.00	89.75	359.77	8857.29	1016.33	1013.17	-788.38	0.00	420386.37	575038.08	N 32 9 20.43 W 104 13 27.96	
	9800.00	89.75	359.77	8857.73	1116.33	1113.17	-788.78	0.00	420486.36	575037.68	N 32 9 21.41 W 104 13 27.96	
	9900.00	89.75	359.77	8858.16	1216.33	1213.17	-789.18	0.00	420586.35	575037.28	N 32 9 22.40 W 104 13 27.97	
	10000.00	89.75	359.77	8858.60	1316.32	1313.17	-789.58	0.00	420686.34	575036.88	N 32 9 23.39 W 104 13 27.97	
	10100.00	89.75	359.77	8859.04	1416.32	1413.16	-789.98	0.00	420786.32	575036.48	N 32 9 24.38 W 104 13 27.97	
	10200.00	89.75	359.77	8859.48	1516.32	1513.16	-790.39	0.00	420886.31	575036.08	N 32 9 25.37 W 104 13 27.98	
	10300.00	89.75	359.77	8859.91	1616.32	1613.16	-790.79	0.00	420986.30	575035.68	N 32 9 26.36 W 104 13 27.98	
	10400.00	89.75	359.77	8860.35	1716.32	1713.16	-791.19	0.00	421086.29	575035.27	N 32 9 27.35 W 104 13 27.98	
	10500.00	89.75	359.77	8860.79	1816.32	1813.16	-791.59	0.00	421186.28	575034.87	N 32 9 28.34 W 104 13 27.99	
	10600.00	89.75	359.77	8861.22	1916.32	1913.16	-791.99	0.00	421286.27	575034.47	N 32 9 29.33 W 104 13 27.99	
	10700.00	89.75	359.77	8861.66	2016.32	2013.15	-792.39	0.00	421386.26	575034.07	N 32 9 30.32 W 104 13 27.99	
	10800.00	89.75	359.77	8862.10	2116.32	2113.15	-792.79	0.00	421486.25	575033.67	N 32 9 31.31 W 104 13 28.00	
	10900.00	89.75	359.77	8862.54	2216.32	2213.15	-793.19	0.00	421586.24	575033.27	N 32 9 32.30 W 104 13 28.00	
	11000.00	89.75	359.77	8862.97	2316.32	2313.15	-793.60	0.00	421686.23	575032.87	N 32 9 33.29 W 104 13 28.00	
	11100.00	89.75	359.77	8863.41	2416.31	2413.15	-794.00	0.00	421786.22	575032.46	N 32 9 34.28 W 104 13 28.01	
	11200.00	89.75	359.77	8863.85	2516.31	2513.14	-794.40	0.00	421886.20	575032.06	N 32 9 35.27 W 104 13 28.01	
	11300.00	89.75	359.77	8864.28	2616.31	2613.14	-794.80	0.00	421986.19	575031.66	N 32 9 36.26 W 104 13 28.02	

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 ° ' ")
	11400.00	89.75	359.77	8864.72	2716.31	2713.14	-795.20	0.00	422086.18	575031.26	N 32 9 37.25 W	104 13 28.02
	11500.00	89.75	359.77	8865.16	2816.31	2813.14	-795.60	0.00	422186.17	575030.86	N 32 9 38.24 W	104 13 28.02
	11600.00	89.75	359.77	8865.60	2916.31	2913.14	-796.00	0.00	422286.16	575030.46	N 32 9 39.23 W	104 13 28.03
	11700.00	89.75	359.77	8866.03	3016.31	3013.14	-796.41	0.00	422386.15	575030.06	N 32 9 40.22 W	104 13 28.03
	11800.00	89.75	359.77	8866.47	3116.31	3113.13	-796.81	0.00	422486.14	575029.66	N 32 9 41.20 W	104 13 28.03
	11900.00	89.75	359.77	8866.91	3216.31	3213.13	-797.21	0.00	422586.13	575029.25	N 32 9 42.19 W	104 13 28.04
	12000.00	89.75	359.77	8867.35	3316.31	3313.13	-797.61	0.00	422686.12	575028.85	N 32 9 43.18 W	104 13 28.04
	12100.00	89.75	359.77	8867.78	3416.30	3413.13	-798.01	0.00	422786.11	575028.45	N 32 9 44.17 W	104 13 28.04
	12200.00	89.75	359.77	8868.22	3516.30	3513.13	-798.41	0.00	422886.10	575028.05	N 32 9 45.16 W	104 13 28.05
	12300.00	89.75	359.77	8868.66	3616.30	3613.13	-798.81	0.00	422986.08	575027.65	N 32 9 46.15 W	104 13 28.05
	12400.00	89.75	359.77	8869.09	3716.30	3713.12	-799.22	0.00	423086.07	575027.25	N 32 9 47.14 W	104 13 28.05
	12500.00	89.75	359.77	8869.53	3816.30	3813.12	-799.62	0.00	423186.06	575026.85	N 32 9 48.13 W	104 13 28.06
	12600.00	89.75	359.77	8869.97	3916.30	3913.12	-800.02	0.00	423286.05	575026.44	N 32 9 49.12 W	104 13 28.06
	12700.00	89.75	359.77	8870.41	4016.30	4013.12	-800.42	0.00	423386.04	575026.04	N 32 9 50.11 W	104 13 28.06
	12800.00	89.75	359.77	8870.84	4116.30	4113.12	-800.82	0.00	423486.03	575025.64	N 32 9 51.10 W	104 13 28.07
	12900.00	89.75	359.77	8871.28	4216.30	4213.11	-801.22	0.00	423586.02	575025.24	N 32 9 52.09 W	104 13 28.07
	13000.00	89.75	359.77	8871.72	4316.30	4313.11	-801.62	0.00	423686.01	575024.84	N 32 9 53.08 W	104 13 28.07
	13100.00	89.75	359.77	8872.15	4416.30	4413.11	-802.03	0.00	423786.00	575024.44	N 32 9 54.07 W	104 13 28.08
	13200.00	89.75	359.77	8872.59	4516.29	4513.11	-802.43	0.00	423885.99	575024.04	N 32 9 55.06 W	104 13 28.08
	13300.00	89.75	359.77	8873.03	4616.29	4613.11	-802.83	0.00	423985.98	575023.64	N 32 9 56.05 W	104 13 28.09
	13400.00	89.75	359.77	8873.47	4716.29	4713.11	-803.23	0.00	424085.96	575023.23	N 32 9 57.04 W	104 13 28.09
	13500.00	89.75	359.77	8873.90	4816.29	4813.10	-803.63	0.00	424185.95	575022.83	N 32 9 58.03 W	104 13 28.09
	13600.00	89.75	359.77	8874.34	4916.29	4913.10	-804.03	0.00	424285.94	575022.43	N 32 9 59.02 W	104 13 28.10
	13700.00	89.75	359.77	8874.78	5016.29	5013.10	-804.43	0.00	424385.93	575022.03	N 32 10 0.01 W	104 13 28.10
	13800.00	89.75	359.77	8875.22	5116.29	5113.10	-804.83	0.00	424485.92	575021.63	N 32 10 0.99 W	104 13 28.10
	13900.00	89.75	359.77	8875.65	5216.29	5213.10	-805.24	0.00	424585.91	575021.23	N 32 10 1.98 W	104 13 28.11
	14000.00	89.75	359.77	8876.09	5316.29	5313.10	-805.64	0.00	424685.90	575020.83	N 32 10 2.97 W	104 13 28.11
	14100.00	89.75	359.77	8876.53	5416.29	5413.09	-806.04	0.00	424785.89	575020.42	N 32 10 3.96 W	104 13 28.11
	14200.00	89.75	359.77	8876.96	5516.28	5513.09	-806.44	0.00	424885.88	575020.02	N 32 10 4.95 W	104 13 28.12
	14300.00	89.75	359.77	8877.40	5616.28	5613.09	-806.84	0.00	424985.87	575019.62	N 32 10 5.94 W	104 13 28.12
	14400.00	89.75	359.77	8877.84	5716.28	5713.09	-807.24	0.00	425085.86	575019.22	N 32 10 6.93 W	104 13 28.12
	14500.00	89.75	359.77	8878.28	5816.28	5813.09	-807.64	0.00	425185.84	575018.82	N 32 10 7.92 W	104 13 28.13
	14600.00	89.75	359.77	8878.71	5916.28	5913.08	-808.05	0.00	425285.83	575018.42	N 32 10 8.91 W	104 13 28.13
	14700.00	89.75	359.77	8879.15	6016.28	6013.08	-808.45	0.00	425385.82	575018.02	N 32 10 9.90 W	104 13 28.13
	14800.00	89.75	359.77	8879.59	6116.28	6113.08	-808.85	0.00	425485.81	575017.62	N 32 10 10.89 W	104 13 28.14
Base "Y" SS	14894.31	89.75	359.77	8880.00	6210.59	6207.39	-809.23	0.00	425580.11	575017.24	N 32 10 11.82 W	104 13 28.14
	14900.00	89.75	359.77	8880.02	6216.28	6213.08	-809.25	0.00	425585.80	575017.21	N 32 10 11.88 W	104 13 28.14
	15000.00	89.75	359.77	8880.46	6316.28	6313.08	-809.65	0.00	425685.79	575016.81	N 32 10 12.87 W	104 13 28.14
	15100.00	89.75	359.77	8880.90	6416.28	6413.08	-810.05	0.00	425785.78	575016.41	N 32 10 13.86 W	104 13 28.15
	15200.00	89.75	359.77	8881.34	6516.28	6513.07	-810.45	0.00	425885.77	575016.01	N 32 10 14.85 W	104 13 28.15
	15300.00	89.75	359.77	8881.77	6616.27	6613.07	-810.86	0.00	425985.76	575015.61	N 32 10 15.84 W	104 13 28.16
	15400.00	89.75	359.77	8882.21	6716.27	6713.07	-811.26	0.00	426085.75	575015.21	N 32 10 16.83 W	104 13 28.16
	15500.00	89.75	359.77	8882.65	6816.27	6813.07	-811.66	0.00	426185.74	575014.81	N 32 10 17.82 W	104 13 28.16
	15600.00	89.75	359.77	8883.09	6916.27	6913.07	-812.06	0.00	426285.72	575014.40	N 32 10 18.81 W	104 13 28.17
	15700.00	89.75	359.77	8883.52	7016.27	7013.07	-812.46	0.00	426385.71	575014.00	N 32 10 19.80 W	104 13 28.17
	15800.00	89.75	359.77	8883.96	7116.27	7113.06	-812.86	0.00	426485.70	575013.60	N 32 10 20.79 W	104 13 28.17
	15900.00	89.75	359.77	8884.40	7216.27	7213.06	-813.26	0.00	426585.69	575013.20	N 32 10 21.77 W	104 13 28.18
	16000.00	89.75	359.77	8884.83	7316.27	7313.06	-813.67	0.00	426685.68	575012.80	N 32 10 22.76 W	104 13 28.18
	16100.00	89.75	359.77	8885.27	7416.27	7413.06	-814.07	0.00	426785.67	575012.40	N 32 10 23.75 W	104 13 28.18
	16200.00	89.75	359.77	8885.71	7516.27	7513.06	-814.47	0.00	426885.66	575012.00	N 32 10 24.74 W	104 13 28.19
	16300.00	89.75	359.77	8886.15	7616.26	7613.05	-814.87	0.00	426985.65	575011.60	N 32 10 25.73 W	104 13 28.19
	16400.00	89.75	359.77	8886.58	7716.26	7713.05	-815.27	0.00	427085.64	575011.19	N 32 10 26.72 W	104 13 28.19
	16500.00	89.75	359.77	8887.02	7816.26	7813.05	-815.67	0.00	427185.63	575010.79	N 32 10 27.71 W	104 13 28.20
	16600.00	89.75	359.77	8887.46	7916.26	7913.05	-816.07	0.00	427285.62	575010.39	N 32 10 28.70 W	104 13 28.20
	16700.00	89.75	359.77	8887.89	8016.26	8013.05	-816.47	0.00	427385.60	575009.99	N 32 10 29.69 W	104 13 28.20
	16800.00	89.75	359.77	8888.33	8116.26	8113.05	-816.88	0.00	427485.59	575009.59	N 32 10 30.68 W	104 13 28.21
	16900.00	89.75	359.77	8888.77	8216.26	8213.04	-817.28	0.00	427585.58	575009.19	N 32 10 31.67 W	104 13 28.21
	17000.00	89.75	359.77	8889.21	8316.26	8313.04	-817.68	0.00	427685.57	575008.79	N 32 10 32.66 W	104 13 28.21
	17100.00	89.75	359.77	8889.64	8416.26	8413.04	-818.08	0.00	427785.56	575008.38	N 32 10 33.65 W	104 13 28.22

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 ° ' ")
	17200.00	89.75	359.77	8890.08	8516.26	8513.04	-818.48	0.00	427885.55	575007.98	N 32 10 34.64	W 104 13 28.22
	17300.00	89.75	359.77	8890.52	8616.26	8613.04	-818.88	0.00	427985.54	575007.58	N 32 10 35.63	W 104 13 28.23
	17400.00	89.75	359.77	8890.96	8716.25	8713.04	-819.28	0.00	428085.53	575007.18	N 32 10 36.62	W 104 13 28.23
	17500.00	89.75	359.77	8891.39	8816.25	8813.03	-819.69	0.00	428185.52	575006.78	N 32 10 37.61	W 104 13 28.23
	17600.00	89.75	359.77	8891.83	8916.25	8913.03	-820.09	0.00	428285.51	575006.38	N 32 10 38.60	W 104 13 28.24
	17700.00	89.75	359.77	8892.27	9016.25	9013.03	-820.49	0.00	428385.50	575005.98	N 32 10 39.59	W 104 13 28.24
	17800.00	89.75	359.77	8892.70	9116.25	9113.03	-820.89	0.00	428485.48	575005.58	N 32 10 40.58	W 104 13 28.24
	17900.00	89.75	359.77	8893.14	9216.25	9213.03	-821.29	0.00	428585.47	575005.17	N 32 10 41.56	W 104 13 28.25
	18000.00	89.75	359.77	8893.58	9316.25	9313.02	-821.69	0.00	428685.46	575004.77	N 32 10 42.55	W 104 13 28.25
	18100.00	89.75	359.77	8894.02	9416.25	9413.02	-822.09	0.00	428785.45	575004.37	N 32 10 43.54	W 104 13 28.25
	18200.00	89.75	359.77	8894.45	9516.25	9513.02	-822.50	0.00	428885.44	575003.97	N 32 10 44.53	W 104 13 28.26
	18300.00	89.75	359.77	8894.89	9616.25	9613.02	-822.90	0.00	428985.43	575003.57	N 32 10 45.52	W 104 13 28.26
	18400.00	89.75	359.77	8895.33	9716.24	9713.02	-823.30	0.00	429085.42	575003.17	N 32 10 46.51	W 104 13 28.26
	18500.00	89.75	359.77	8895.77	9816.24	9813.02	-823.70	0.00	429185.41	575002.77	N 32 10 47.50	W 104 13 28.27

Cimarex Scoter
6-31 Federal
Com 43H -
PBHL [330'
FNL, 1026' FEL]

18553.73 89.75 359.77 8896.00 9869.97 9866.74 -823.92 0.00 429239.13 575002.55 N 32 10 48.03 W 104 13 28.27

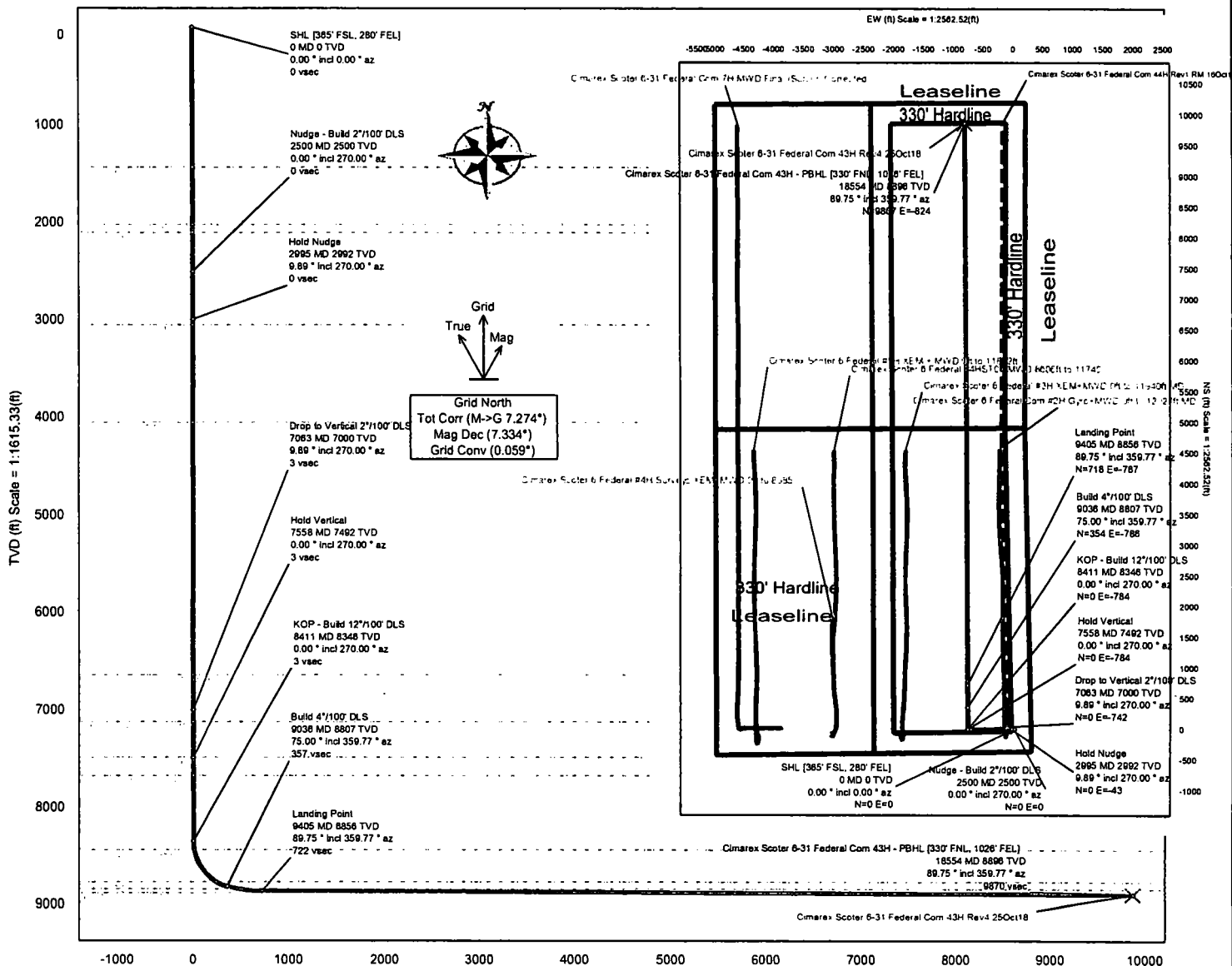
Survey Type: Non-Def Plan

Survey Error Model: ISCWSA Rev 0 *** 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	26.000	1/100.000	30.000	30.000		NAL_MWD_IFR1+MS-Depth Only	Original Borehole / Cimarex Scoter 6-31 Federal Com 43H Rev4 25Oct18
	1	26.000	18553.728	1/100.000	30.000	30.000		NAL_MWD_IFR1+MS	Original Borehole / Cimarex Scoter 6-31 Federal Com 43H

Borehole:	Well:	Field:	Structure:
Original Borehole	Cimarex Scoter 6-31 Federal Com 43H	NM Eddy County (NAD 83)	Cimarex Scoter 6-31 Federal Com 43H

Gravity & Magnetic Parameters	Surface Location	NADE3 New Mexico State Plane, Eastern Zone, US Feet	Miscellaneous
Model: HDGM 2018 Dip: 59.833° Date: 26-Oct-2018	Lat: N 32 9 10.39 Northing: 419373.291US Grid Conv: 0.0593°		Cimarex Scoter 6-31 Federal Com 43H
Magnet: 7 TGA ES: 2787.6 dT/GT Gravity CR: 988.437mm (18.8684 Pound)	Long: W 104 11 18.86 Easting: 674828.3881US Scale Fact: 0.99991625		Slot: 6-31 Federal Com 43H
			TVD Ref: RKB(3358.1ft above MSL)
			Plan: Cimarex Scoter 6-31 Federal Com 43H Revd 25Oct18



Vertical Section (ft) Azim = 359.77° Scale = 1:1615.33(ft) Origin = 0N°S, 0E°W

Critical Points								
Critical Point	MD	INCL	AZIM	TVD	VSEC	N(+)/S(-)	E(+)/W(-)	DLS
SHL [365° FSL, 280° FEL]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Salado (Top Sall)	1430.00	0.00	270.00	1430.00	0.00	0.00	0.00	0.00
Cesille (Bottom Sall)	2020.00	0.00	270.00	2020.00	0.00	0.00	0.00	0.00
Bell Canyon (Top Delaware)	2100.00	0.00	270.00	2100.00	0.00	0.00	0.00	0.00
Nudge - Build 2°/100' DLS	2500.00	0.00	270.00	2500.00	0.00	0.00	0.00	0.00
Hold Nudge	2994.74	9.89	270.00	2992.28	0.17	0.00	-42.81	2.00
Cherry Canyon	3053.33	9.89	270.00	3050.00	0.21	0.00	-52.68	0.00
Brushy Canyon	4068.43	9.89	270.00	4050.00	0.91	0.00	-227.12	0.00
Top 1st Bone Spring Sa	6700.58	9.89	270.00	6643.00	2.73	0.00	-679.42	0.00
Drop to Vertical 2°/100' DLS	7062.97	9.89	270.00	7000.00	2.98	0.00	-741.70	0.00
Top 2nd Bone Spring Sa	7187.40	7.41	270.00	7123.00	3.05	0.00	-780.41	2.00
Top 3rd Bone Spring Carb	7551.43	0.13	270.00	7488.00	3.15	0.00	-784.30	2.00
Hold Vertical	7557.71	0.00	270.00	7492.28	3.15	0.00	-784.31	2.00
Top Harkney SS	7740.43	0.00	270.00	7675.00	3.15	0.00	-784.31	0.00
KOP - Build 12°/100' DLS	8411.44	0.00	270.00	8348.01	3.15	0.00	-784.31	0.00
Top 3rd Bone Spring SS	8499.93	10.82	359.77	8434.00	11.33	8.18	-784.34	12.00
Top Wolfcamp	8910.42	59.88	359.77	8759.00	241.00	237.85	-785.27	12.00
Build 4°/100' DLS	9038.44	75.00	359.77	8807.21	357.04	353.88	-785.73	12.00
Wolfcamp "Y" SS	9148.78	79.49	359.77	8832.00	486.58	483.43	-786.17	4.00
Landing Point	9405.17	89.75	359.77	8856.00	721.50	718.35	-787.20	4.00
Base "Y" SS	14894.31	89.75	359.77	8880.00	6210.59	6207.39	-800.23	0.00
Cimarex Scoter 6-31 Federal Com 43H - PBHL [330° ENL 1026° FEL]	18553.73	89.75	359.77	8896.00	9889.97	9886.74	-823.92	0.00

4. Pressure Control Equipment

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

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

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

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

5. Mud Program

Depth	Type	Weight (ppg)	Viscosity	Water Loss
0' to 400'	FW Spud Mud	8.30 - 8.80	30-32	N/C
400' to 2080'	Brine Water	9.70 - 10.20	30-32	N/C
2080' to 9405'	FW/Cut Brine	8.50 - 9.00	30-32	N/C
9405' to 18554'	Oil Based Mud	10.10 - 10.60	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.

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	4903 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 H₂S is present

X 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 5000 psi will be installed on the wellhead system and will be pressure tested to 250 psi low followed by a 5000 psi test. Annular will be tested to 50% of working pressure. The pressure test will be repeated at least every 30 days, as per Onshore Order No. 2.

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

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

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

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

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.

The surface casing string will be tested as per Onshore Order No. 2 to at least 0.22 psi/ft or 1500 psi, whichever is greater.

The casing string utilizing steel body pack-off will be tested to 70% of casing burst.

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

1. Geological Formations

TVD of target 8,896

Pilot Hole TD N/A

MD at TD 18,554

Deepest expected fresh water

Formation	Depth (TVD) from KB	Water/Mineral Bearing/Target Zone	Hazards
Salado	1430	N/A	
Castille	2020	N/A	
Bell Canyon	2100	N/A	
Cherry Canyon	3050	N/A	
Brushy Canyon	4050	Hydrocarbons	
Bone Spring	5690	Hydrocarbons	
1st Bone Spring Ss	6643	Hydrocarbons	
2nd Bone Spring Ss	7123	Hydrocarbons	
3rd Bone Spring Ss	7486	Hydrocarbons	
Wolfcamp	8759	Hydrocarbons	
Wolfcamp Target	8856	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	400	400	13-3/8"	48.00	H-40/J-55 Hybrid	ST&C	4.04	9.45	16.77
12 1/4	0	2080	2080	9-5/8"	36.00	J-55	LT&C	1.83	3.19	6.05
8 3/4	0	8411	8411	7"	26.00	L-80	LT&C	1.37	1.84	2.21
8 3/4	8411	9405	8896	7"	26.00	N-80	BT&C	1.30	1.74	47.90
6	8411	18554	18554	4-1/2"	11.60	P-110	BT&C	1.55	2.18	65.23
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

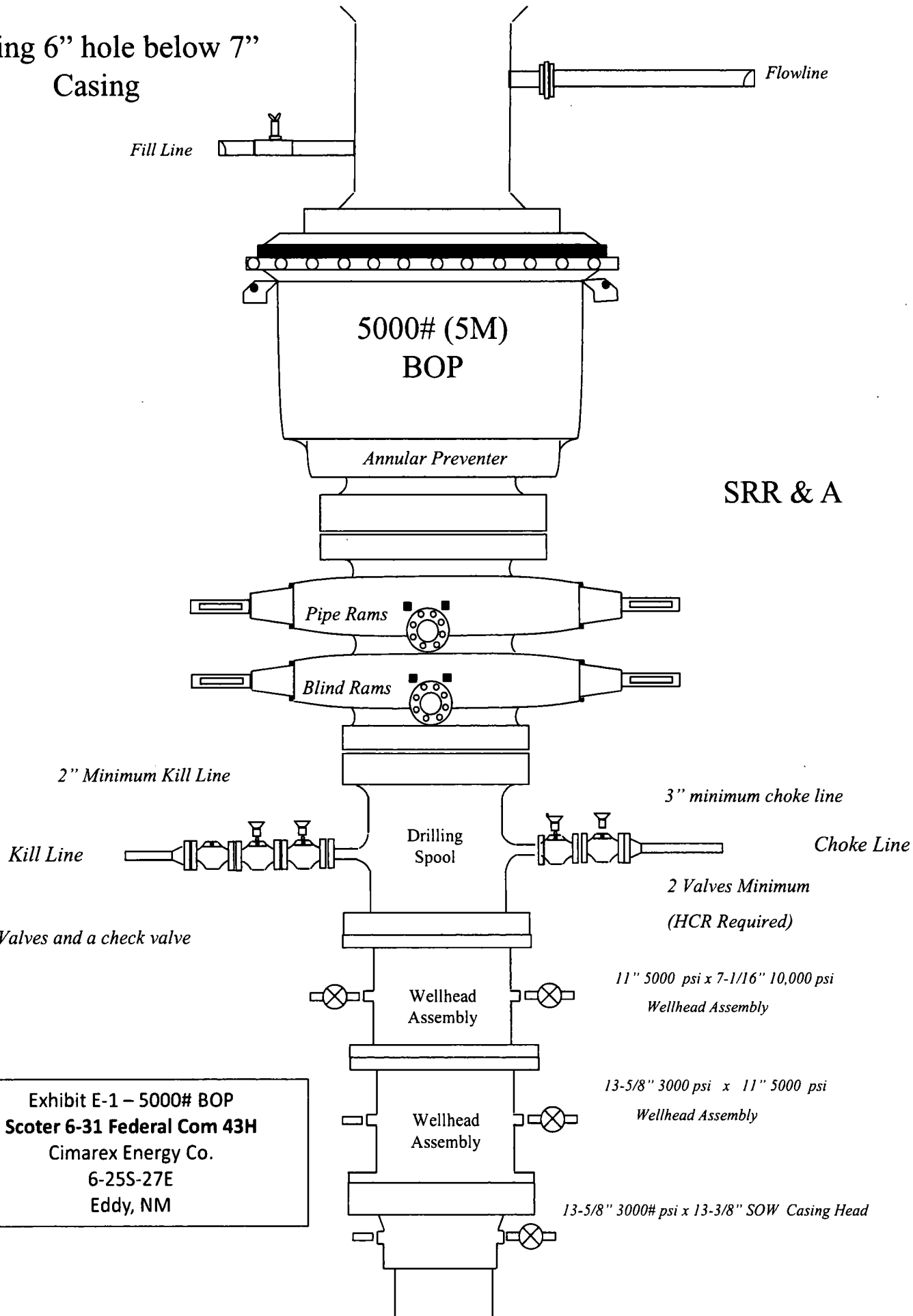
	Y or N
Is casing new? If used, attach certification as required in Onshore Order #1	Y
Does casing meet API specifications? If no, attach casing specification sheet.	N
Is premium or uncommon casing planned? If yes attach casing specification sheet.	Y
Does the above casing design meet or exceed BLM's minimum 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?	N
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?	N

3. Cementing Program

Casing	# Sk	Wt. lb/gal	Yld ft ³ /sack	H ₂ O gal/sk	500# Comp. Strength (hours)	Slurry Description
Surface	61	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	397	12.90	1.88	9.65	12	Lead: 35:65 (Poz:C) + Salt + Bentonite
	121	14.80	1.34	6.32	9.5	Tail: Class C + LCM
Production	336	10.30	3.64	22.18		Lead: Tuned Light + LCM
	127	14.20	1.30	5.86	14:30	Tail: 50:50 (Poz:H) + Salt + Bentonite + Fluid Loss + Dispersant + SMS
Completion System	665	14.20	1.30	5.86	14:30	Tail: 50:50 (Poz:H) + Salt + Bentonite + Fluid Loss + Dispersant + SMS

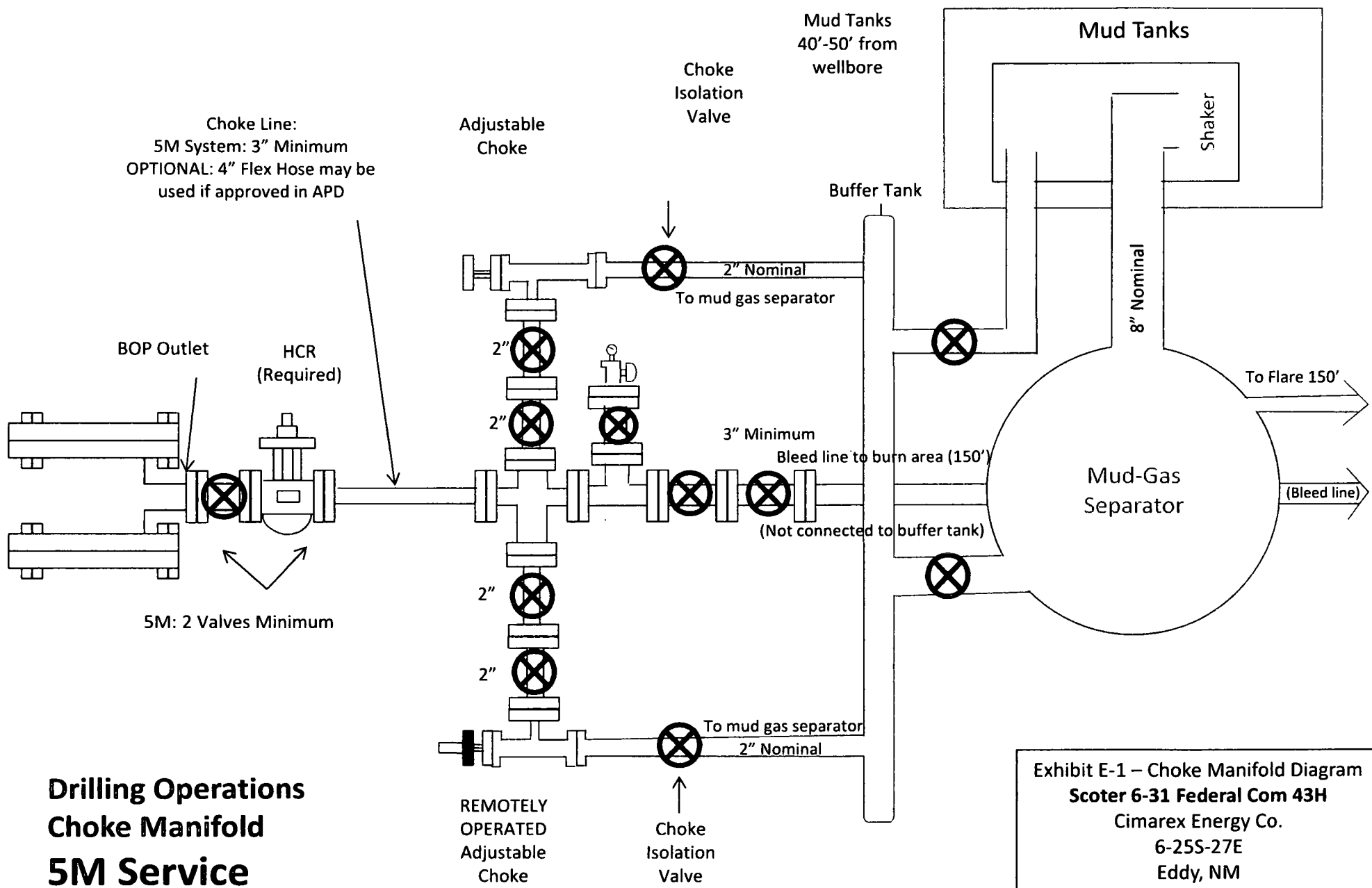
Casing String	TOC	% Excess
Surface	0	31
Intermediate	0	49
Production	1880	23
Completion System	9405	10

Drilling 6" hole below 7"
Casing



SRR & A

Exhibit E-1 – 5000# BOP
Scoter 6-31 Federal Com 43H
Cimarex Energy Co.
6-25S-27E
Eddy, NM



PECOS DISTRICT DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	CIMAREX ENERGY CO.
LEASE NO.:	NMNM100332
WELL NAME & NO.:	43H –SCOTER 6-31 FEDERAL COM
SURFACE HOLE FOOTAGE:	365'/S & 320'/E
BOTTOM HOLE FOOTAGE:	330'/N & 1026'/E
LOCATION:	Section 6 T.25 S., R.27E., NMP
COUNTY:	EDDY County, New Mexico

COA

H2S	☐ Yes	☒ No	
Potash	☒ None	☐ Secretary	☐ R-111-P
Cave/Karst Potential	☐ Low	☐ Medium	☒ High
Variance	☐ None	☒ Flex Hose	☐ Other
Wellhead	☐ Conventional	☒ Multibowl	☐ Both
Other	☐ 4 String Area	☐ Capitan Reef	☐ WIPP

All precious COAs still apply except the following.

A. CASING

- The minimum required fill of cement behind the **9-5/8** inch intermediate casing is:
 - Cement to surface. If cement does not circulate see B.1.a, c-d above.
Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst.
 - ❖ In High Cave/Karst Areas if cement does not circulate to surface on the first two casing strings , the cement on the 3rd casing string must come to surface.
- The minimum required fill of cement behind the **7** inch production casing is:
 - Cement should tie-back 200' into the previous casing. Operator shall provide method of verification. **Additional cement maybe required. Excess calculates to 22%.**
- The minimum required fill of cement behind the **4-1/2** inch production liner is:
 - Cement should tie-back 200' into the previous casing. Operator shall provide method of verification.

B. PRESSURE CONTROL

1. Variance approved to use flex line from BOP to choke manifold. Manufacturer's specification to be readily available. No external damage to flex line. Flex line to be installed as straight as possible (no hard bends).
2. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **2000 (2M)** psi.
3. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the intermediate casing shoe shall be **3000 (3M)** psi.
4. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the production casing shoe shall be **5000 (5M)** psi.

NMK 1182018

Medium

13 3/8	surface csg in a	17 1/2	inch hole.	<u>Design Factors</u>			<u>SURFACE</u>		
Segment	#/ft	Grade	Coupling	Joint	Collapse	Burst	Length	Weight	
"A"	48.00	H 40	ST&C	16.77	4.21	1.57	400	19,200	
"B"							0	0	
w/8.4#/g mud, 30min Sfc Csg Test psig: 1,036			Tail Cmt	does	circ to sfc.	Totals:	400	19,200	
<u>Comparison of Proposed to Minimum Required Cement Volumes</u>									
Hole	Annular	1 Stage	1 Stage	Min	1 Stage	Drilling	Calc	Req'd	Min Dist
Size	Volume	Cmt Sx	CuFt Cmt	Cu Ft	% Excess	Mud Wt	MASP	BOPE	Hole-Cplg
17 1/2	0.6946	256	366	333	10	8.80	645	2M	1.56

9 5/8	casing inside the	13 3/8	<u>Design Factors</u>				<u>INTERMEDIATE</u>		
Segment	#/ft	Grade	Coupling	Joint	Collapse	Burst	Length	Weight	
"A"	36.00	J 55	LT&C	6.05	1.83	0.85	2,080	74,880	
"B"							0	0	
w/8.4#/g mud, 30min Sfc Csg Test psig:						Totals:	2,080	74,880	
The cement volume(s) are intended to achieve a top of				0	ft from surface or a		400	overlap.	
Hole	Annular	1 Stage	1 Stage	Min	1 Stage	Drilling	Calc	Req'd	Min Dist
Size	Volume	Cmt Sx	CuFt Cmt	Cu Ft	% Excess	Mud Wt	MASP	BOPE	Hole-Cplg
12 1/4	0.3132	524	917	696	32	10.20	2202	3M	0.81
Burst Frac Gradient(s) for Segment(s): A, B, C, D = 1.69, b, c, d									
All > 0.70, OK.									

7	casing inside the 9 5/8			Design Factors			PRODUCTION		
Segment	#/ft	Grade	Coupling	Joint	Collapse	Burst	Length	Weight	
"A"	26.00	L 80	LT&C	2.21	1.38	1.74	8,411	218,686	
"B"	26.00	N 80	BUTT	22.83	1.28	1.74	994	25,844	
w/8.4#/g mud, 30min Sfc Csg Test psig: 1,186						Totals:	9,405	244,530	
B	would be:			47.89	1.30	if it were a vertical wellbore.			
No Pilot Hole Planned			MTD	Max VTD	Csg VD	Curve KOP	Dogleg°	Severity°	MEOC
			9405	8896	8896	8411	12	1	9405
The cement volume(s) are intended to achieve a top of				1900	ft from surface or a		180	overlap.	
Hole	Annular	1 Stage	1 Stage	Min	1 Stage	Drilling	Calc	Req'd	Min Dist
Size	Volume	Cmt Sx	CuFt Cmt	Cu Ft	% Excess	Mud Wt	MASP	BOPE	Hole-Cplg
8 3/4	0.1503	463	1388	1141	22	9.00	2202	3M	0.55
Class 'H' tail cmt yld > 1.20									

Tail cmt		4 1/2		Liner w/top @		8411		Design Factors			LINER	
Segment	#/ft	Grade	Coupling	Body	Collapse	Burst	Length	Weight				
"A"	11.60	P 110	BUTT	3.17	1.79	2.57	994	11,530				
"B"	11.60	P 110	BUTT	4.01	1.82	2.57	9,149	106,128				
w/8.4#/g mud, 30min Sfc Csg Test psig: 1,957							Totals:	10,143	117,659			
A segment Design Factors would be:				3.73	1.82	if it were a vertical wellbore.						
No Pilot Hole Planned		MTD	Max VTD	Csg VD	Curve KOP	Dogleg°	Severity°	MEOC				
		18554	8896	8896	8411	12	1	9405				
The cement volume(s) are intended to achieve a top of				8411	ft from surface or a		994	overlap.				
Hole	Annular	1 Stage	1 Stage	Min	1 Stage	Drilling	Calc	Req'd	Min Dist			
Size	Volume	Cmt Sx	CuFt Cmt	Cu Ft	% Excess	Mud Wt	MASP	BOPE	Hole-Cplg			
6	0.0859	664	863	558	55	9.00			0.50			
Class 'H' tail cmt yld > 1.20												
Capitan Reef est top XXXX.												