Form 3160-5
(June 2019)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
OMB No. 1004-0137
Expires: October 31, 2021

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.

SUBMIT IN TRIPLICATE *- Other instructions on page 2*

5. Lease Serial No.: NMNM026394

6. If Indian, Allottee or Tribe Name:

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

1. Type of Well
☐ Oil Well ☐ Gas Well ☐ Other

8. Well Name and No.: Vaca Draw 20-17 Federal 75H

2. Name of Operator: Cimarex Energy Company

9. API Well No.: 30-025-50180

3a. Address: 600 N. Marienfeld St., Suite 600, Midland, TX 79701

3b. Phone No. *(include area code)*: 432-620-1936

10. Field and Pool or Exploratory Area: WC-015 G-08 S233135D;Wolfcamp

4. Location of Well *(Footage, Sec., T.,R.,M., or Survey Description)*: 330 FSL & 270 FEL, Sec 20 / T25S / R33E/ NMP

11. Country or Parish, State: Lea County, NM

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
	☐ Alter Casing	☐ Hydraulic Fracturing	☐ Reclamation	☐ Well Integrity
☐ Subsequent Report	☐ Casing Repair	☐ New Construction	☐ Recomplete	☐ Other
	☐ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon	
☐ Final Abandonment Notice	☐ Convert to Injection	☐ Plug Back	☐ Water Disposal	

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 recomplete 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 perfonned 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 recompletion 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 detennined that the site is ready for final inspection.)

14. I hereby certify that the foregoing is true and correct. Name *(Printed/Typed)*: Title

Signature: Date

THE SPACE FOR FEDERAL OR STATE OFICE USE

Approved by: Title: Date:

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:

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)

GENERAL INSTRUCTIONS

This form is designed for submitting proposals to perform certain well operations and reports of such operations when completed as indicated on Federal and Indian lands pursuant to applicable Federal law and regulations. Any necessary special instructions concerning the use of this form and the number of copies to be submitted, particularly with regard to local area or regional procedures and practices, are either shown below, will be issued by or may be obtained from the local Federal office.

SPECIFIC INSTRUCTIONS

Item 4 - Locations on Federal or Indian land should be described in accordance with Federal requirements. Consult the local Federal office for specific instructions.

Item 13: Proposals to abandon a well and subsequent reports of abandonment should include such special information as is required by the local Federal office. In addition, such proposals and reports should include reasons for the abandonment; data on any former or present productive zones or other zones with present significant fluid contents not sealed off by cement or otherwise; depths (top and bottom) and method of placement of cement plugs; mud or other material placed below, between and above plugs; amount, size, method of parting of any casing, liner or tubing pulled and the depth to the top of any tubing left in the hole; method of closing top of well and date well site conditioned for final inspection looking for approval of the abandonment. If the proposal will involve **hydraulic fracturing operations**, you must comply with 43 CFR 3162.3-3, including providing information about the protection of usable water. Operators should provide the best available information about all formations containing water and their depths. This information could include data and interpretation of resistivity logs run on nearby wells. Information may also be obtained from state or tribal regulatory agencies and from local BLM offices.

NOTICES

The privacy Act of 1974 and the regulation in 43 CFR 2.48(d) provide that you be furnished the following information in connection with information required by this application.
AUTHORITY: 30 U.S.C. 181 et seq., 351 et seq., 25 U.S.C. 396; 43 CFR 3160.
PRINCIPAL PURPOSE: The information is used to: (1) Evaluate, when appropriate, approve applications, and report completion of subsequent well operations, on a Federal or Indian lease; and (2) document for administrative use, information for the management, disposal and use of National Resource lands and resources, such as: (a) evaluating the equipment and procedures to be used during a proposed subsequent well operation and reviewing the completed well operations for compliance with the approved plan; (b) requesting and granting approval to perform those actions covered by 43 CFR 3162.3-2, 3162.3-3, and 3162.3-4; (c) reporting the beginning or resumption of production, as required by 43 CFR 3162.4-1(c)and (d) analyzing future applications to drill or modify operations in light of data obtained and methods used.
ROUTINE USES: Information from the record and/or the record will be transferred to appropriate Federal, State, local or foreign agencies, when relevant to civil, criminal or regulatory investigations or prosecutions in connection with congressional inquiries or to consumer reporting agencies to facilitate collection of debts owed the Government.
EFFECT OF NOT PROVIDING THE INFORMATION: Filing of this notice and report and disclosure of the information is mandatory for those subsequent well operations specified in 43 CFR 3162.3-2, 3162.3-3, 3162.3-4.

The Paperwork Reduction Act of 1995 requires us to inform you that:
The BLM collects this information to evaluate proposed and/or completed subsequent well operations on Federal or Indian oil and gas leases.
Response to this request is mandatory.
The BLM would like you to know that you do not have to respond to this or any other Federal agency-sponsored information collection unless it displays a currently valid OMB control number.

BURDEN HOURS STATEMENT: Public reporting burden for this form is estimated to average 8 hours per response, including the time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding the burden estimate or any other aspect ofthis form to U.S. Department ofthe Interior, Bureau ofLand Management (1004-0137), Bureau Information Collection Clearance Officer (WO-630), 1849 C St., N.W., Mail Stop 401 LS, Washington, D.C. 20240

Additional Information

Location of Well

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.
Santa Fe, NM 87505

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

[X] AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

[1] API Number	[2] Pool Code	[3] Pool Name
30-025-50180	97903	WC-025 G-08 S253235G;LWR Bone Spring

[4] Property Code	[5] Property Name	[6] Well Number
	VACA DRAW 20-17 FEDERAL	75H

[7] OGRID No.	[8] Operator Name	[9] Elevation
215099	CIMAREX ENERGY CO.	3395.6'

[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	20	25S	33E		330	SOUTH	270	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
A	17	25S	33E		100	NORTH	440	EAST	LEA

[12] Dedicated Acres	[13] Joint or Infill	[14] Consolidation Code	[15] Order No.
320			

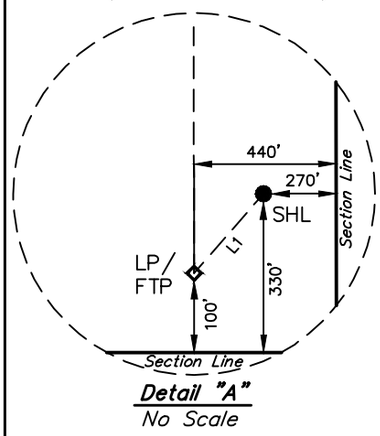
No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.

[16] ● = SURFACE HOLE LOCATION
◇ = LANDING POINT/FIRST TAKE POINT
○ = BOTTOM HOLE LOCATION/ LAST TAKE POINT
▲ = SECTION CORNER LOCATED

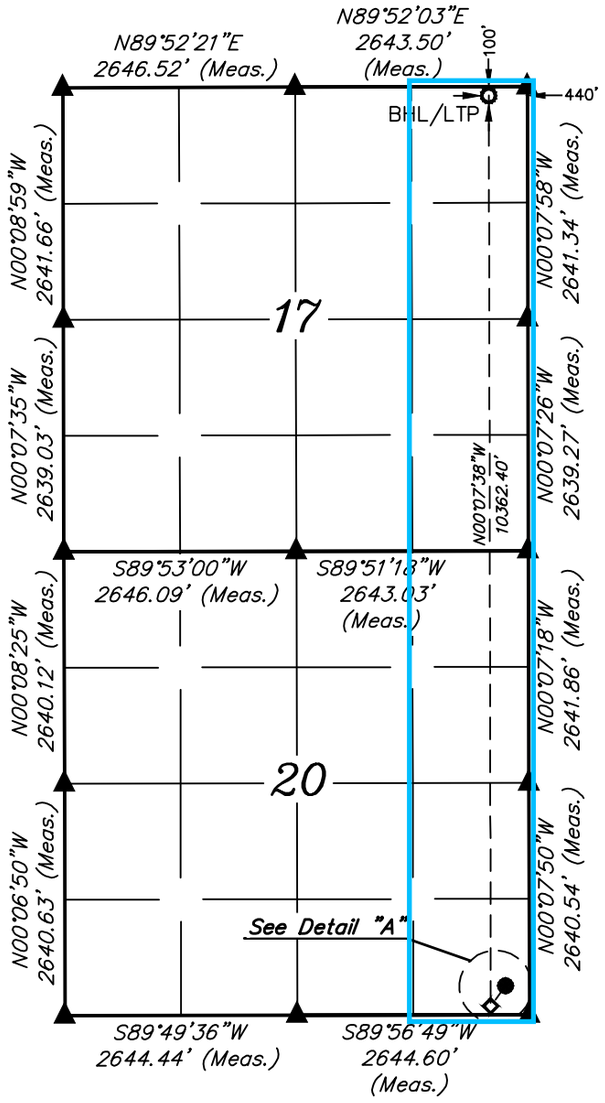
2000' 1000' 0' 2000'

SCALE
DRAWN BY: T.A. 08-08-19
REV: 1 05-04-22 C.D.L.
(WELL BORE CHANGE)

LINE TABLE		
LINE	DIRECTION	LENGTH
L1	S36°21'29"W	285.75'



Detail "A"
No Scale



NAD 83 (SURFACE HOLE LOCATION)
LATITUDE = 32°06'35.03" (32.109729°)
LONGITUDE = 103°35'11.91" (103.586641°)
NAD 27 (SURFACE HOLE LOCATION)
LATITUDE = 32°06'34.58" (32.109605°)
LONGITUDE = 103°35'10.21" (103.586170°)
STATE PLANE NAD 83 (N.M. EAST)
N: 404456.68' E: 772529.85'
STATE PLANE NAD 27 (N.M. EAST)
N: 404398.91' E: 731343.66'

NAD 83 (LP/FTP)
LATITUDE = 32°06'32.75" (32.109098°)
LONGITUDE = 103°35'13.89" (103.587191°)
NAD 27 (LP/FTP)
LATITUDE = 32°06'32.30" (32.108973°)
LONGITUDE = 103°35'12.19" (103.586719°)
STATE PLANE NAD 83 (N.M. EAST)
N: 404225.89' E: 772361.44'
STATE PLANE NAD 27 (N.M. EAST)
N: 404168.12' E: 731175.24'

NAD 83 (BHL/LTP)
LATITUDE = 32°08'15.28" (32.137577°)
LONGITUDE = 103°35'13.82" (103.587173°)
NAD 27 (BHL/LTP)
LATITUDE = 32°08'14.83" (32.137453°)
LONGITUDE = 103°35'12.12" (103.586699°)
STATE PLANE NAD 83 (N.M. EAST)
N: 414586.30' E: 772295.17'
STATE PLANE NAD 27 (N.M. EAST)
N: 414528.27' E: 731109.46'

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"

[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.

Fatima Vasquez 05/18/2022
Signature Date

Fatima Vasquez
Printed Name

fatima,vasquez@coterra.com
E-mail Address

[18] SURVEYOR CERTIFICATION

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

July 27, 2018
Date of Survey
Signature and Seal of Professional Surveyor:

Certificate Number:

1. Geological Formations

TVD of target 10,430
MD at TD 20,540

Pilot Hole TD N/A
Deepest expected fresh water

Formation	Depth (TVD) from KB	Water/Mineral Bearing/Target Zone	Hazards
Rustler	980	Usable Water	
Top of Salt	1340	N/A	
Base of Salt	4920	N/A	
Bell Canyon	4960	N/A	
Cherry Canyon	6030	N/A	
Brushy Canyon	7515	Hydrocarbons	
Bone Spring	9080	Hydrocarbons	
1st Bone Spring	10060	Hydrocarbons	
2nd Bone Spring	10270	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	1020	1020	13-3/8"	48.00	H-40	ST&C	1.68	3.93	6.58
12 1/4	0	4920	4920	9-5/8"	40.00	HCK-55	LT&C	1.45	1.50	2.85
8 3/4	0	9845	9845	7"	26.00	P-110	LT&C	1.35	2.16	2.57
8 3/4	9845	10595	10386	7"	26.00	P-110	BT&C	1.28	2.05	59.01
6	8845	20540	10430	4-1/2"	11.60	P-110	BT&C	1.55	2.19	19.96
					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.	Y
Is premium or uncommon casing planned? If yes attach casing specification sheet.	N
Does the above casing design meet or exceed BLM's minimum standards? If not provide justification (loading assumptions, casing design criteria).	Y
Will the intermediate pipe be kept at a minimum 1/3 fluid filled to avoid approaching the collapse pressure rating of the casing?	Y
Is well located within Capitan Reef?	N
If yes, does production casing cement tie back a minimum of 50' above the Reef?	N
Is well within the designated 4 string boundary.	N
Is well located in SOPA but not in R-111-P?	N
If yes, are the first 2 strings cemented to surface and 3rd string cement tied back 500' into previous casing?	N
Is well located in R-111-P and SOPA?	N
If yes, are the first three strings cemented to surface?	N
Is 2nd string set 100' to 600' below the base of salt?	N
Is well located in high Cave/Karst?	N
If yes, are there two strings cemented to surface?	N
(For 2 string wells) If yes, is there a contingency casing if lost circulation occurs?	N
Is well located in critical Cave/Karst?	N
If yes, are there three strings cemented to surface?	N
Is AC Report included?	Y

3. Cementing Program

Casing	# Sks	Wt. lb/gal	Yld ft3/sack	H2O gal/sk	500# Comp. Strength (hours)	Slurry Description
Surface	495	13.50	1.72	9.15	15.5	Lead: Class C + Bentonite
	133	14.80	1.34	6.32	9.5	Tail: Class C + LCM
Intermediate	933	12.90	1.88	9.65	12	Lead: 35:65 (Poz:C) + Salt + Bentonite
	284	14.80	1.36	6.57	9.5	Tail: Class C + Retarder
Production	315	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	739	14.20	1.30	5.86	14:30	Tail: 50:50 (Poz:H) + Salt + Bentonite + Fluid Loss + Dispersant + SMS

Casing String	TOC	% Excess
Surface	0	45
Intermediate	0	49
Production	4720	25
Completion System	10395	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	100% of working pressure
			Blind Ram		
			Pipe Ram		2M
			Double Ram	X	
			Other		
8 3/4	13 5/8	3M	Annular	X	100% of working pressure
			Blind Ram		
			Pipe Ram		3M
			Double Ram	X	
			Other		
6	13 5/8	5M	Annular	X	100% of working pressure
			Blind Ram		
			Pipe Ram		5M
			Double Ram	X	
			Other		

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

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

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

5. Mud Program

Depth	Type	Weight (ppg)	Viscosity	Water Loss
0' to 1020'	Fresh Water	7.80 - 8.30	28	N/C
1020' to 4920'	Brine Water	9.80 - 10.30	30-32	N/C
4920' to 10595'	Cut Brine or OBM	8.50 - 9.00	27-70	N/C
10595' to 20540'	OBM	8.50 - 9.00	50-70	N/C

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

What will be used to monitor the loss or gain of fluid?	PVT/Pason/Visual Monitoring

6. Logging and Testing Procedures

Logging, Coring and Testing	
	Will run GR/CNL fromTD to surface (horizontal well – vertical portion of hole). Stated logs run will be in the Completion Report and submitted to the BLM.
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	4881 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 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 lockring 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 75H well. Surface cement will be pumped, 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 75H well until at least 8 hours and when both tail and lead slurry reach 500psi. The mandrel hanger is made up on the last joint of 13 3/8" casing and then lowered down with and landing joint. It is then lowered down until the mandrel contacts the landing ring which is prewelded 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 75H 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.

Schlumberger COTERRA

Cimarex Vaca Draw 20-17 Federal 75H Rev1 kFc 09May22 Proposal
Geodetic Report
(Def Plan)

Report Date:	May 10, 2022 - 12:22 PM	**Survey / DLS Computation:**	Minimum Curvature / Lubinski
Client:	Cimarex Energy	**Vertical Section Azimuth:**	359.630 ° (Grid North)
Field:	NM Lea County (NAD 83)	**Vertical Section Origin:**	0.000 ft, 0.000 ft
Structure / Slot:	Cimarex Vaca Draw 20-17 Federal 75H / 75H	**TVD Reference Datum:**	RKB = 22ft
Well:	Vaca Draw 20-17 Federal 75H	**TVD Reference Elevation:**	3417.600 ft above MSL
Borehole:	Vaca Draw 20-17 Federal 75H	**Seabed / Ground Elevation:**	3395.600 ft above MSL
UWI / API#:	Unknown / Unknown	**Magnetic Declination:**	6.321 °
Survey Name:	Cimarex Vaca Draw 20-17 Federal 75H Rev1 kFc 09May22	**Total Gravity Field Strength:**	998.4336mgn (9.80665 Based)
Survey Date:	September 12, 2019	**Gravity Model:**	GARM
Tort / AHD / DDI / ERD Ratio:	103.956 ° / 10612.722 ft / 6.337 / 1.018	**Total Magnetic Field Strength:**	47476.023 nT
Coordinate Reference System:	NAD83 New Mexico State Plane, Eastern Zone, US Feet	**Magnetic Dip Angle:**	59.680 °
Location Lat / Long:	N 32° 6' 35.02551", W 103° 35' 11.90929"	**Declination Date:**	May 09, 2022
Location Grid N/E Y/X:	N 404456.680 ftUS, E 772529.850 ftUS	**Magnetic Declination Model:**	HDGM 2022
CRS Grid Convergence Angle:	0.3969 °	**North Reference:**	Grid North
Grid Scale Factor:	0.99997031	**Grid Convergence Used:**	0.3969 °
Version / Patch:	2.10.829.1	**Total Corr Mag North->Grid North:**	5.9241 °
		Local Coord Referenced To:	Well Head

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S °)	Longitude (E/W °)
SHL [330' FSL, 270' FEL]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A	404456.68	772529.85	N 32.109729	W 103.586641
	100.00	0.00	200.54	100.00	0.00	0.00	0.00	0.00	404456.68	772529.85	N 32.109729	W 103.586641
	200.00	0.00	200.54	200.00	0.00	0.00	0.00	0.00	404456.68	772529.85	N 32.109729	W 103.586641
	300.00	0.00	200.54	300.00	0.00	0.00	0.00	0.00	404456.68	772529.85	N 32.109729	W 103.586641
	400.00	0.00	200.54	400.00	0.00	0.00	0.00	0.00	404456.68	772529.85	N 32.109729	W 103.586641
	500.00	0.00	200.54	500.00	0.00	0.00	0.00	0.00	404456.68	772529.85	N 32.109729	W 103.586641
	600.00	0.00	200.54	600.00	0.00	0.00	0.00	0.00	404456.68	772529.85	N 32.109729	W 103.586641
	700.00	0.00	200.54	700.00	0.00	0.00	0.00	0.00	404456.68	772529.85	N 32.109729	W 103.586641
	800.00	0.00	200.54	800.00	0.00	0.00	0.00	0.00	404456.68	772529.85	N 32.109729	W 103.586641
	900.00	0.00	200.54	900.00	0.00	0.00	0.00	0.00	404456.68	772529.85	N 32.109729	W 103.586641
Rustler	*931.00*	*0.00*	*200.54*	*931.00*	*0.00*	*0.00*	*0.00*	*0.00*	*404456.68*	*772529.85*	*N 32.109729*	*W 103.586641*
	1000.00	0.00	200.54	1000.00	0.00	0.00	0.00	0.00	404456.68	772529.85	N 32.109729	W 103.586641
	1100.00	0.00	200.54	1100.00	0.00	0.00	0.00	0.00	404456.68	772529.85	N 32.109729	W 103.586641
	1200.00	0.00	200.54	1200.00	0.00	0.00	0.00	0.00	404456.68	772529.85	N 32.109729	W 103.586641
Top of Salt	*1294.00*	*0.00*	*200.54*	*1294.00*	*0.00*	*0.00*	*0.00*	*0.00*	*404456.68*	*772529.85*	*N 32.109729*	*W 103.586641*
	1300.00	0.00	200.54	1300.00	0.00	0.00	0.00	0.00	404456.68	772529.85	N 32.109729	W 103.586641
	1400.00	0.00	200.54	1400.00	0.00	0.00	0.00	0.00	404456.68	772529.85	N 32.109729	W 103.586641
Nudge, Build 2°/100ft	1500.00	0.00	200.54	1500.00	0.00	0.00	0.00	0.00	404456.68	772529.85	N 32.109729	W 103.586641
	1600.00	2.00	200.54	1599.98	-1.63	-1.63	-0.61	2.00	404455.05	772529.24	N 32.109725	W 103.586643
	1700.00	4.00	200.54	1699.84	-6.52	-6.53	-2.45	2.00	404450.15	772527.40	N 32.109711	W 103.586650
Hold	1799.98	6.00	200.54	1799.43	-14.66	-14.69	-5.51	2.00	404441.99	772524.34	N 32.109689	W 103.586660
	1800.00	6.00	200.54	1799.45	-14.66	-14.70	-5.51	0.00	404441.98	772524.34	N 32.109689	W 103.586660
	1900.00	6.00	200.54	1898.90	-24.42	-24.48	-9.17	0.00	404432.20	772520.68	N 32.109662	W 103.586672
	2000.00	6.00	200.54	1998.36	-34.19	-34.27	-12.84	0.00	404422.41	772517.01	N 32.109635	W 103.586684
	2100.00	6.00	200.54	2097.81	-43.95	-44.06	-16.51	0.00	404412.62	772513.34	N 32.109609	W 103.586696
	2200.00	6.00	200.54	2197.26	-53.72	-53.85	-20.18	0.00	404402.83	772509.68	N 32.109582	W 103.586708

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 °)
	2300.00	6.00	200.54	2296.71	-63.48	-63.63	-23.84	0.00	404393.05	772506.01	N 32.109555	W 103.586720
	2400.00	6.00	200.54	2396.17	-73.24	-73.42	-27.51	0.00	404383.26	772502.34	N 32.109528	W 103.586732
	2500.00	6.00	200.54	2495.62	-83.01	-83.21	-31.18	0.00	404373.47	772498.67	N 32.109501	W 103.586744
	2600.00	6.00	200.54	2595.07	-92.77	-93.00	-34.84	0.00	404363.68	772495.01	N 32.109474	W 103.586756
	2700.00	6.00	200.54	2694.52	-102.54	-102.79	-38.51	0.00	404353.90	772491.34	N 32.109448	W 103.586768
	2800.00	6.00	200.54	2793.97	-112.30	-112.57	-42.18	0.00	404344.11	772487.67	N 32.109421	W 103.586780
	2900.00	6.00	200.54	2893.43	-122.06	-122.36	-45.85	0.00	404334.32	772484.01	N 32.109394	W 103.586792
	3000.00	6.00	200.54	2992.88	-131.83	-132.15	-49.51	0.00	404324.53	772480.34	N 32.109367	W 103.586804
	3100.00	6.00	200.54	3092.33	-141.59	-141.94	-53.18	0.00	404314.75	772476.67	N 32.109340	W 103.586816
	3200.00	6.00	200.54	3191.78	-151.35	-151.72	-56.85	0.00	404304.96	772473.00	N 32.109313	W 103.586828
	3300.00	6.00	200.54	3291.24	-161.12	-161.51	-60.51	0.00	404295.17	772469.34	N 32.109287	W 103.586841
	3400.00	6.00	200.54	3390.69	-170.88	-171.30	-64.18	0.00	404285.38	772465.67	N 32.109260	W 103.586853
	3500.00	6.00	200.54	3490.14	-180.65	-181.09	-67.85	0.00	404275.60	772462.00	N 32.109233	W 103.586865
	3600.00	6.00	200.54	3589.59	-190.41	-190.88	-71.52	0.00	404265.81	772458.34	N 32.109206	W 103.586877
	3700.00	6.00	200.54	3689.04	-200.17	-200.66	-75.18	0.00	404256.02	772454.67	N 32.109179	W 103.586889
	3800.00	6.00	200.54	3788.50	-209.94	-210.45	-78.85	0.00	404246.24	772451.00	N 32.109152	W 103.586901
Drop 2°/100ft	3855.72	6.00	200.54	3843.92	-215.38	-215.91	-80.89	0.00	404240.78	772448.96	N 32.109137	W 103.586908
	3900.00	5.11	200.54	3887.98	-219.38	-219.92	-82.40	2.00	404236.77	772447.45	N 32.109126	W 103.586912
	4000.00	3.11	200.54	3987.72	-226.09	-226.64	-84.92	2.00	404230.05	772444.94	N 32.109108	W 103.586921
	4100.00	1.11	200.54	4087.65	-229.53	-230.09	-86.21	2.00	404226.59	772443.64	N 32.109099	W 103.586925
Hold	4155.71	0.00	200.54	4143.35	-230.04	-230.60	-86.40	2.00	404226.09	772443.45	N 32.109097	W 103.586926
	4200.00	0.00	200.54	4187.64	-230.04	-230.60	-86.40	0.00	404226.09	772443.45	N 32.109097	W 103.586926
	4300.00	0.00	200.54	4287.64	-230.04	-230.60	-86.40	0.00	404226.09	772443.45	N 32.109097	W 103.586926
	4400.00	0.00	200.54	4387.64	-230.04	-230.60	-86.40	0.00	404226.09	772443.45	N 32.109097	W 103.586926
	4500.00	0.00	200.54	4487.64	-230.04	-230.60	-86.40	0.00	404226.09	772443.45	N 32.109097	W 103.586926
	4600.00	0.00	200.54	4587.64	-230.04	-230.60	-86.40	0.00	404226.09	772443.45	N 32.109097	W 103.586926
	4700.00	0.00	200.54	4687.64	-230.04	-230.60	-86.40	0.00	404226.09	772443.45	N 32.109097	W 103.586926
Base of Salt	*4722.36*	*0.00*	*200.54*	*4710.00*	*-230.04*	*-230.60*	*-86.40*	*0.00*	*404226.09*	*772443.45*	*N 32.109097*	*W 103.586926*
	4800.00	0.00	200.54	4787.64	-230.04	-230.60	-86.40	0.00	404226.09	772443.45	N 32.109097	W 103.586926
	4900.00	0.00	200.54	4887.64	-230.04	-230.60	-86.40	0.00	404226.09	772443.45	N 32.109097	W 103.586926
Lamar	*4917.36*	*0.00*	*200.54*	*4905.00*	*-230.04*	*-230.60*	*-86.40*	*0.00*	*404226.09*	*772443.45*	*N 32.109097*	*W 103.586926*
Bell Canyon	*4945.36*	*0.00*	*200.54*	*4933.00*	*-230.04*	*-230.60*	*-86.40*	*0.00*	*404226.09*	*772443.45*	*N 32.109097*	*W 103.586926*
	5000.00	0.00	200.54	4987.64	-230.04	-230.60	-86.40	0.00	404226.09	772443.45	N 32.109097	W 103.586926
	5100.00	0.00	200.54	5087.64	-230.04	-230.60	-86.40	0.00	404226.09	772443.45	N 32.109097	W 103.586926
	5200.00	0.00	200.54	5187.64	-230.04	-230.60	-86.40	0.00	404226.09	772443.45	N 32.109097	W 103.586926
	5300.00	0.00	200.54	5287.64	-230.04	-230.60	-86.40	0.00	404226.09	772443.45	N 32.109097	W 103.586926
	5400.00	0.00	200.54	5387.64	-230.04	-230.60	-86.40	0.00	404226.09	772443.45	N 32.109097	W 103.586926
	5500.00	0.00	200.54	5487.64	-230.04	-230.60	-86.40	0.00	404226.09	772443.45	N 32.109097	W 103.586926
	5600.00	0.00	200.54	5587.64	-230.04	-230.60	-86.40	0.00	404226.09	772443.45	N 32.109097	W 103.586926
	5700.00	0.00	200.54	5687.64	-230.04	-230.60	-86.40	0.00	404226.09	772443.45	N 32.109097	W 103.586926
	5800.00	0.00	200.54	5787.64	-230.04	-230.60	-86.40	0.00	404226.09	772443.45	N 32.109097	W 103.586926
	5900.00	0.00	200.54	5887.64	-230.04	-230.60	-86.40	0.00	404226.09	772443.45	N 32.109097	W 103.586926
Cherry Canyon	*5998.36*	*0.00*	*200.54*	*5986.00*	*-230.04*	*-230.60*	*-86.40*	*0.00*	*404226.09*	*772443.45*	*N 32.109097*	*W 103.586926*
	6000.00	0.00	200.54	5987.64	-230.04	-230.60	-86.40	0.00	404226.09	772443.45	N 32.109097	W 103.586926
	6100.00	0.00	200.54	6087.64	-230.04	-230.60	-86.40	0.00	404226.09	772443.45	N 32.109097	W 103.586926
	6200.00	0.00	200.54	6187.64	-230.04	-230.60	-86.40	0.00	404226.09	772443.45	N 32.109097	W 103.586926
	6300.00	0.00	200.54	6287.64	-230.04	-230.60	-86.40	0.00	404226.09	772443.45	N 32.109097	W 103.586926
	6400.00	0.00	200.54	6387.64	-230.04	-230.60	-86.40	0.00	404226.09	772443.45	N 32.109097	W 103.586926
	6500.00	0.00	200.54	6487.64	-230.04	-230.60	-86.40	0.00	404226.09	772443.45	N 32.109097	W 103.586926
	6600.00	0.00	200.54	6587.64	-230.04	-230.60	-86.40	0.00	404226.09	772443.45	N 32.109097	W 103.586926
	6700.00	0.00	200.54	6687.64	-230.04	-230.60	-86.40	0.00	404226.09	772443.45	N 32.109097	W 103.586926
	6800.00	0.00	200.54	6787.64	-230.04	-230.60	-86.40	0.00	404226.09	772443.45	N 32.109097	W 103.586926
	6900.00	0.00	200.54	6887.64	-230.04	-230.60	-86.40	0.00	404226.09	772443.45	N 32.109097	W 103.586926
	7000.00	0.00	200.54	6987.64	-230.04	-230.60	-86.40	0.00	404226.09	772443.45	N 32.109097	W 103.586926
	7100.00	0.00	200.54	7087.64	-230.04	-230.60	-86.40	0.00	404226.09	772443.45	N 32.109097	W 103.586926
	7200.00	0.00	200.54	7187.64	-230.04	-230.60	-86.40	0.00	404226.09	772443.45	N 32.109097	W 103.586926
	7300.00	0.00	200.54	7287.64	-230.04	-230.60	-86.40	0.00	404226.09	772443.45	N 32.109097	W 103.586926
	7400.00	0.00	200.54	7387.64	-230.04	-230.60	-86.40	0.00	404226.09	772443.45	N 32.109097	W 103.586926

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 °)
	7500.00	0.00	200.54	7487.64	-230.04	-230.60	-86.40	0.00	404226.09	772443.45	N 32.109097	W 103.586926
Brushy Canyon	*7544.36*	*0.00*	*200.54*	*7532.00*	*-230.04*	*-230.60*	*-86.40*	*0.00*	*404226.09*	*772443.45*	*N 32.109097*	*W 103.586926*
	7600.00	0.00	200.54	7587.64	-230.04	-230.60	-86.40	0.00	404226.09	772443.45	N 32.109097	W 103.586926
	7700.00	0.00	200.54	7687.64	-230.04	-230.60	-86.40	0.00	404226.09	772443.45	N 32.109097	W 103.586926
	7800.00	0.00	200.54	7787.64	-230.04	-230.60	-86.40	0.00	404226.09	772443.45	N 32.109097	W 103.586926
	7900.00	0.00	200.54	7887.64	-230.04	-230.60	-86.40	0.00	404226.09	772443.45	N 32.109097	W 103.586926
	8000.00	0.00	200.54	7987.64	-230.04	-230.60	-86.40	0.00	404226.09	772443.45	N 32.109097	W 103.586926
	8100.00	0.00	200.54	8087.64	-230.04	-230.60	-86.40	0.00	404226.09	772443.45	N 32.109097	W 103.586926
	8200.00	0.00	200.54	8187.64	-230.04	-230.60	-86.40	0.00	404226.09	772443.45	N 32.109097	W 103.586926
	8300.00	0.00	200.54	8287.64	-230.04	-230.60	-86.40	0.00	404226.09	772443.45	N 32.109097	W 103.586926
	8400.00	0.00	200.54	8387.64	-230.04	-230.60	-86.40	0.00	404226.09	772443.45	N 32.109097	W 103.586926
	8500.00	0.00	200.54	8487.64	-230.04	-230.60	-86.40	0.00	404226.09	772443.45	N 32.109097	W 103.586926
	8600.00	0.00	200.54	8587.64	-230.04	-230.60	-86.40	0.00	404226.09	772443.45	N 32.109097	W 103.586926
	8700.00	0.00	200.54	8687.64	-230.04	-230.60	-86.40	0.00	404226.09	772443.45	N 32.109097	W 103.586926
	8800.00	0.00	200.54	8787.64	-230.04	-230.60	-86.40	0.00	404226.09	772443.45	N 32.109097	W 103.586926
	8900.00	0.00	200.54	8887.64	-230.04	-230.60	-86.40	0.00	404226.09	772443.45	N 32.109097	W 103.586926
	9000.00	0.00	200.54	8987.64	-230.04	-230.60	-86.40	0.00	404226.09	772443.45	N 32.109097	W 103.586926
Bone Spring Lime	*9040.36*	*0.00*	*200.54*	*9028.00*	*-230.04*	*-230.60*	*-86.40*	*0.00*	*404226.09*	*772443.45*	*N 32.109097*	*W 103.586926*
Leonard Shale	*9095.36*	*0.00*	*200.54*	*9083.00*	*-230.04*	*-230.60*	*-86.40*	*0.00*	*404226.09*	*772443.45*	*N 32.109097*	*W 103.586926*
	9100.00	0.00	200.54	9087.64	-230.04	-230.60	-86.40	0.00	404226.09	772443.45	N 32.109097	W 103.586926
	9200.00	0.00	200.54	9187.64	-230.04	-230.60	-86.40	0.00	404226.09	772443.45	N 32.109097	W 103.586926
	9300.00	0.00	200.54	9287.64	-230.04	-230.60	-86.40	0.00	404226.09	772443.45	N 32.109097	W 103.586926
Avalon Shale	*9320.36*	*0.00*	*200.54*	*9308.00*	*-230.04*	*-230.60*	*-86.40*	*0.00*	*404226.09*	*772443.45*	*N 32.109097*	*W 103.586926*
	9400.00	0.00	200.54	9387.64	-230.04	-230.60	-86.40	0.00	404226.09	772443.45	N 32.109097	W 103.586926
	9500.00	0.00	200.54	9487.64	-230.04	-230.60	-86.40	0.00	404226.09	772443.45	N 32.109097	W 103.586926
	9600.00	0.00	200.54	9587.64	-230.04	-230.60	-86.40	0.00	404226.09	772443.45	N 32.109097	W 103.586926
	9700.00	0.00	200.54	9687.64	-230.04	-230.60	-86.40	0.00	404226.09	772443.45	N 32.109097	W 103.586926
	9800.00	0.00	200.54	9787.64	-230.04	-230.60	-86.40	0.00	404226.09	772443.45	N 32.109097	W 103.586926
KOP, Build 10°/100ft	9844.71	0.00	200.54	9832.35	-230.04	-230.60	-86.40	0.00	404226.09	772443.45	N 32.109097	W 103.586926
	9900.00	5.53	351.63	9887.56	-227.40	-227.96	-86.79	10.00	404228.72	772443.06	N 32.109104	W 103.586927
	10000.00	15.53	351.63	9985.75	-209.32	-209.91	-89.44	10.00	404246.78	772440.41	N 32.109154	W 103.586935
1st Bone Spring Sand	*10022.18*	*17.75*	*351.63*	*10007.00*	*-203.03*	*-203.62*	*-90.37*	*10.00*	*404253.06*	*772439.49*	*N 32.109171*	*W 103.586938*
	10100.00	25.53	351.63	10079.28	-174.64	-175.25	-94.54	10.00	404281.43	772435.31	N 32.109249	W 103.586951
	10200.00	35.53	351.63	10165.31	-124.40	-125.06	-101.92	10.00	404331.62	772427.93	N 32.109388	W 103.586973
2nd Bone Spring Carb	*10269.12*	*42.44*	*351.63*	*10219.00*	*-81.37*	*-82.07*	*-108.24*	*10.00*	*404374.62*	*772421.61*	*N 32.109506*	*W 103.586993*
	10300.00	45.53	351.63	10241.22	-60.13	-60.85	-111.36	10.00	404395.83	772418.49	N 32.109564	W 103.587002
	10400.00	55.53	351.63	10304.71	16.22	15.43	-122.58	10.00	404472.11	772407.27	N 32.109774	W 103.587037
	10500.00	65.53	351.63	10353.84	102.32	101.45	-135.23	10.00	404558.13	772394.62	N 32.110011	W 103.587076
Build & Turn 5°/100ft	10594.71	75.00	351.63	10385.78	190.50	189.55	-148.19	10.00	404646.22	772381.67	N 32.110253	W 103.587116
	10600.00	75.23	351.76	10387.14	195.57	194.61	-148.93	5.00	404651.28	772380.93	N 32.110267	W 103.587118
	10700.00	79.64	354.19	10408.90	292.48	291.45	-160.84	5.00	404748.12	772369.01	N 32.110533	W 103.587154
	10800.00	84.06	356.54	10423.07	391.17	390.09	-168.83	5.00	404846.76	772361.02	N 32.110805	W 103.587178
	10900.00	88.50	358.85	10429.55	490.87	489.77	-172.84	5.00	404946.43	772357.02	N 32.111079	W 103.587189
Landing Point	10933.84	90.00	359.63	10430.00	524.71	523.60	-173.28	5.00	404980.26	772356.57	N 32.111172	W 103.587189
	11000.00	90.00	359.63	10430.00	590.87	589.76	-173.71	0.00	405046.42	772356.15	N 32.111354	W 103.587189
	11100.00	90.00	359.63	10430.00	690.87	689.75	-174.34	0.00	405146.41	772355.51	N 32.111629	W 103.587189
	11200.00	90.00	359.63	10430.00	790.87	789.75	-174.98	0.00	405246.41	772354.87	N 32.111903	W 103.587189
	11300.00	90.00	359.63	10430.00	890.87	889.75	-175.62	0.00	405346.40	772354.24	N 32.112178	W 103.587189
	11400.00	90.00	359.63	10430.00	990.87	989.75	-176.26	0.00	405446.40	772353.60	N 32.112453	W 103.587189
	11500.00	90.00	359.63	10430.00	1090.87	1089.75	-176.90	0.00	405546.39	772352.96	N 32.112728	W 103.587188
	11600.00	90.00	359.63	10430.00	1190.87	1189.74	-177.53	0.00	405646.39	772352.32	N 32.113003	W 103.587188
	11700.00	90.00	359.63	10430.00	1290.87	1289.74	-178.17	0.00	405746.38	772351.68	N 32.113278	W 103.587188
	11800.00	90.00	359.63	10430.00	1390.87	1389.74	-178.81	0.00	405846.38	772351.04	N 32.113553	W 103.587188

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 °)
	11900.00	90.00	359.63	10430.00	1490.87	1489.74	-179.45	0.00	405946.37	772350.41	N 32.113827	W 103.587188
	12000.00	90.00	359.63	10430.00	1590.87	1589.74	-180.09	0.00	406046.37	772349.77	N 32.114102	W 103.587188
	12100.00	90.00	359.63	10430.00	1690.87	1689.73	-180.73	0.00	406146.36	772349.13	N 32.114377	W 103.587187
	12200.00	90.00	359.63	10430.00	1790.87	1789.73	-181.36	0.00	406246.36	772348.49	N 32.114652	W 103.587187
	12300.00	90.00	359.63	10430.00	1890.87	1889.73	-182.00	0.00	406346.35	772347.85	N 32.114927	W 103.587187
	12400.00	90.00	359.63	10430.00	1990.87	1989.73	-182.64	0.00	406446.35	772347.22	N 32.115202	W 103.587187
	12500.00	90.00	359.63	10430.00	2090.87	2089.73	-183.28	0.00	406546.34	772346.58	N 32.115477	W 103.587187
	12600.00	90.00	359.63	10430.00	2190.87	2189.72	-183.92	0.00	406646.33	772345.94	N 32.115752	W 103.587186
	12700.00	90.00	359.63	10430.00	2290.87	2289.72	-184.55	0.00	406746.33	772345.30	N 32.116026	W 103.587186
	12800.00	90.00	359.63	10430.00	2390.87	2389.72	-185.19	0.00	406846.32	772344.66	N 32.116301	W 103.587186
	12900.00	90.00	359.63	10430.00	2490.87	2489.72	-185.83	0.00	406946.32	772344.03	N 32.116576	W 103.587186
	13000.00	90.00	359.63	10430.00	2590.87	2589.72	-186.47	0.00	407046.31	772343.39	N 32.116851	W 103.587186
	13100.00	90.00	359.63	10430.00	2690.87	2689.71	-187.11	0.00	407146.31	772342.75	N 32.117126	W 103.587186
	13200.00	90.00	359.63	10430.00	2790.87	2789.71	-187.74	0.00	407246.30	772342.11	N 32.117401	W 103.587185
	13300.00	90.00	359.63	10430.00	2890.87	2889.71	-188.38	0.00	407346.30	772341.47	N 32.117676	W 103.587185
	13400.00	90.00	359.63	10430.00	2990.87	2989.71	-189.02	0.00	407446.29	772340.83	N 32.117951	W 103.587185
	13500.00	90.00	359.63	10430.00	3090.87	3089.71	-189.66	0.00	407546.29	772340.20	N 32.118225	W 103.587185
	13600.00	90.00	359.63	10430.00	3190.87	3189.70	-190.30	0.00	407646.28	772339.56	N 32.118500	W 103.587185
	13700.00	90.00	359.63	10430.00	3290.87	3289.70	-190.94	0.00	407746.28	772338.92	N 32.118775	W 103.587185
	13800.00	90.00	359.63	10430.00	3390.87	3389.70	-191.57	0.00	407846.27	772338.28	N 32.119050	W 103.587184
	13900.00	90.00	359.63	10430.00	3490.87	3489.70	-192.21	0.00	407946.27	772337.64	N 32.119325	W 103.587184
	14000.00	90.00	359.63	10430.00	3590.87	3589.70	-192.85	0.00	408046.26	772337.01	N 32.119600	W 103.587184
	14100.00	90.00	359.63	10430.00	3690.87	3689.69	-193.49	0.00	408146.26	772336.37	N 32.119875	W 103.587184
	14200.00	90.00	359.63	10430.00	3790.87	3789.69	-194.13	0.00	408246.25	772335.73	N 32.120149	W 103.587184
	14300.00	90.00	359.63	10430.00	3890.87	3889.69	-194.76	0.00	408346.25	772335.09	N 32.120424	W 103.587183
	14400.00	90.00	359.63	10430.00	3990.87	3989.69	-195.40	0.00	408446.24	772334.45	N 32.120699	W 103.587183
	14500.00	90.00	359.63	10430.00	4090.87	4089.69	-196.04	0.00	408546.24	772333.82	N 32.120974	W 103.587183
	14600.00	90.00	359.63	10430.00	4190.87	4189.68	-196.68	0.00	408646.23	772333.18	N 32.121249	W 103.587183
	14700.00	90.00	359.63	10430.00	4290.87	4289.68	-197.32	0.00	408746.23	772332.54	N 32.121524	W 103.587183
	14800.00	90.00	359.63	10430.00	4390.87	4389.68	-197.96	0.00	408846.22	772331.90	N 32.121799	W 103.587183
	14900.00	90.00	359.63	10430.00	4490.87	4489.68	-198.59	0.00	408946.21	772331.26	N 32.122074	W 103.587182
	15000.00	90.00	359.63	10430.00	4590.87	4589.68	-199.23	0.00	409046.21	772330.62	N 32.122348	W 103.587182
	15100.00	90.00	359.63	10430.00	4690.87	4689.67	-199.87	0.00	409146.20	772329.99	N 32.122623	W 103.587182
	15200.00	90.00	359.63	10430.00	4790.87	4789.67	-200.51	0.00	409246.20	772329.35	N 32.122898	W 103.587182
	15300.00	90.00	359.63	10430.00	4890.87	4889.67	-201.15	0.00	409346.19	772328.71	N 32.123173	W 103.587182
Section 17-20 Line Cross	*15360.83*	*90.00*	*359.63*	*10430.00*	*4951.70*	*4950.50*	*-201.53*	*0.00*	*409407.02*	*772328.32*	*N 32.123340*	*W 103.587182*
	15400.00	90.00	359.63	10430.00	4990.87	4989.67	-201.78	0.00	409446.19	772328.07	N 32.123448	W 103.587182
	15500.00	90.00	359.63	10430.00	5090.87	5089.66	-202.42	0.00	409546.18	772327.43	N 32.123723	W 103.587181
	15600.00	90.00	359.63	10430.00	5190.87	5189.66	-203.06	0.00	409646.18	772326.80	N 32.123998	W 103.587181
	15700.00	90.00	359.63	10430.00	5290.87	5289.66	-203.70	0.00	409746.17	772326.16	N 32.124273	W 103.587181
	15800.00	90.00	359.63	10430.00	5390.87	5389.66	-204.34	0.00	409846.17	772325.52	N 32.124547	W 103.587181
	15900.00	90.00	359.63	10430.00	5490.87	5489.66	-204.97	0.00	409946.16	772324.88	N 32.124822	W 103.587181
	16000.00	90.00	359.63	10430.00	5590.87	5589.65	-205.61	0.00	410046.16	772324.24	N 32.125097	W 103.587180
	16100.00	90.00	359.63	10430.00	5690.87	5689.65	-206.25	0.00	410146.15	772323.61	N 32.125372	W 103.587180
	16200.00	90.00	359.63	10430.00	5790.87	5789.65	-206.89	0.00	410246.15	772322.97	N 32.125647	W 103.587180
	16300.00	90.00	359.63	10430.00	5890.87	5889.65	-207.53	0.00	410346.14	772322.33	N 32.125922	W 103.587180
	16400.00	90.00	359.63	10430.00	5990.87	5989.65	-208.17	0.00	410446.14	772321.69	N 32.126197	W 103.587180
	16500.00	90.00	359.63	10430.00	6090.87	6089.64	-208.80	0.00	410546.13	772321.05	N 32.126471	W 103.587180
	16600.00	90.00	359.63	10430.00	6190.87	6189.64	-209.44	0.00	410646.13	772320.41	N 32.126746	W 103.587179
	16700.00	90.00	359.63	10430.00	6290.87	6289.64	-210.08	0.00	410746.12	772319.78	N 32.127021	W 103.587179
	16800.00	90.00	359.63	10430.00	6390.87	6389.64	-210.72	0.00	410846.12	772319.14	N 32.127296	W 103.587179
	16900.00	90.00	359.63	10430.00	6490.87	6489.64	-211.36	0.00	410946.11	772318.50	N 32.127571	W 103.587179
	17000.00	90.00	359.63	10430.00	6590.87	6589.63	-211.99	0.00	411046.11	772317.86	N 32.127846	W 103.587179
	17100.00	90.00	359.63	10430.00	6690.87	6689.63	-212.63	0.00	411146.10	772317.22	N 32.128121	W 103.587179
	17200.00	90.00	359.63	10430.00	6790.87	6789.63	-213.27	0.00	411246.10	772316.59	N 32.128396	W 103.587178
	17300.00	90.00	359.63	10430.00	6890.87	6889.63	-213.91	0.00	411346.09	772315.95	N 32.128670	W 103.587178
	17400.00	90.00	359.63	10430.00	6990.87	6989.63	-214.55	0.00	411446.08	772315.31	N 32.128945	W 103.587178

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 °)
	17500.00	90.00	359.63	10430.00	7090.87	7089.62	-215.19	0.00	411546.08	772314.67	N 32.129220	W 103.587178
	17600.00	90.00	359.63	10430.00	7190.87	7189.62	-215.82	0.00	411646.07	772314.03	N 32.129495	W 103.587178
	17700.00	90.00	359.63	10430.00	7290.87	7289.62	-216.46	0.00	411746.07	772313.40	N 32.129770	W 103.587177
	17800.00	90.00	359.63	10430.00	7390.87	7389.62	-217.10	0.00	411846.06	772312.76	N 32.130045	W 103.587177
	17900.00	90.00	359.63	10430.00	7490.87	7489.62	-217.74	0.00	411946.06	772312.12	N 32.130320	W 103.587177
	18000.00	90.00	359.63	10430.00	7590.87	7589.61	-218.38	0.00	412046.05	772311.48	N 32.130595	W 103.587177
	18100.00	90.00	359.63	10430.00	7690.87	7689.61	-219.01	0.00	412146.05	772310.84	N 32.130869	W 103.587177
	18200.00	90.00	359.63	10430.00	7790.87	7789.61	-219.65	0.00	412246.04	772310.20	N 32.131144	W 103.587177
	18300.00	90.00	359.63	10430.00	7890.87	7889.61	-220.29	0.00	412346.04	772309.57	N 32.131419	W 103.587176
	18400.00	90.00	359.63	10430.00	7990.87	7989.61	-220.93	0.00	412446.03	772308.93	N 32.131694	W 103.587176
	18500.00	90.00	359.63	10430.00	8090.87	8089.60	-221.57	0.00	412546.03	772308.29	N 32.131969	W 103.587176
	18600.00	90.00	359.63	10430.00	8190.87	8189.60	-222.20	0.00	412646.02	772307.65	N 32.132244	W 103.587176
	18700.00	90.00	359.63	10430.00	8290.87	8289.60	-222.84	0.00	412746.02	772307.01	N 32.132519	W 103.587176
	18800.00	90.00	359.63	10430.00	8390.87	8389.60	-223.48	0.00	412846.01	772306.38	N 32.132793	W 103.587176
	18900.00	90.00	359.63	10430.00	8490.87	8489.60	-224.12	0.00	412946.01	772305.74	N 32.133068	W 103.587175
	19000.00	90.00	359.63	10430.00	8590.87	8589.59	-224.76	0.00	413046.00	772305.10	N 32.133343	W 103.587175
	19100.00	90.00	359.63	10430.00	8690.87	8689.59	-225.40	0.00	413146.00	772304.46	N 32.133618	W 103.587175
	19200.00	90.00	359.63	10430.00	8790.87	8789.59	-226.03	0.00	413245.99	772303.82	N 32.133893	W 103.587175
	19300.00	90.00	359.63	10430.00	8890.87	8889.59	-226.67	0.00	413345.99	772303.19	N 32.134168	W 103.587175
	19400.00	90.00	359.63	10430.00	8990.87	8989.59	-227.31	0.00	413445.98	772302.55	N 32.134443	W 103.587175
	19500.00	90.00	359.63	10430.00	9090.87	9089.58	-227.95	0.00	413545.98	772301.91	N 32.134718	W 103.587174
	19600.00	90.00	359.63	10430.00	9190.87	9189.58	-228.59	0.00	413645.97	772301.27	N 32.134992	W 103.587174
	19700.00	90.00	359.63	10430.00	9290.87	9289.58	-229.22	0.00	413745.97	772300.63	N 32.135267	W 103.587174
	19800.00	90.00	359.63	10430.00	9390.87	9389.58	-229.86	0.00	413845.96	772299.99	N 32.135542	W 103.587174
	19900.00	90.00	359.63	10430.00	9490.87	9489.58	-230.50	0.00	413945.95	772299.36	N 32.135817	W 103.587174
	20000.00	90.00	359.63	10430.00	9590.87	9589.57	-231.14	0.00	414045.95	772298.72	N 32.136092	W 103.587173
	20100.00	90.00	359.63	10430.00	9690.87	9689.57	-231.78	0.00	414145.94	772298.08	N 32.136367	W 103.587173
	20200.00	90.00	359.63	10430.00	9790.87	9789.57	-232.42	0.00	414245.94	772297.44	N 32.136642	W 103.587173
	20300.00	90.00	359.63	10430.00	9890.87	9889.57	-233.05	0.00	414345.93	772296.80	N 32.136917	W 103.587173
	20400.00	90.00	359.63	10430.00	9990.87	9989.57	-233.69	0.00	414445.93	772296.17	N 32.137191	W 103.587173
	20500.00	90.00	359.63	10430.00	10090.87	10089.56	-234.33	0.00	414545.92	772295.53	N 32.137466	W 103.587173
Cimarex Vaca Draw 20-17 Federal 75H - PBHL [100' FNL, 440' FEL]	20540.38	90.00	359.63	10430.00	10131.24	10129.94	-234.59	0.00	414586.30	772295.27	N 32.137577	W 103.587172

Survey Type: Def Plan

Survey Error Model: ISCWSA Rev 3 *** 3-D 95.000% Confidence 2.7955 sigma

Survey Program:

Description	Part	MD From (ft)	MD To (ft)	EOU Freq (ft)	Hole Size (in)	Casing Diameter (in)	Expected Max Inclination (deg)	Survey Tool Type	Borehole / Survey
	1	0.000	22.000	1/100.000	30.000	30.000		A001Mb_MWD-Depth Only	Vaca Draw 20-17 Federal 75H / Cimarex Vaca Draw 20-17
	1	22.000	20540.379	1/100.000	30.000	30.000		A001Mb_MWD	Vaca Draw 20-17 Federal 75H / Cimarex Vaca Draw 20-17

Schlumberger

Cimarex Energy

Rev 1

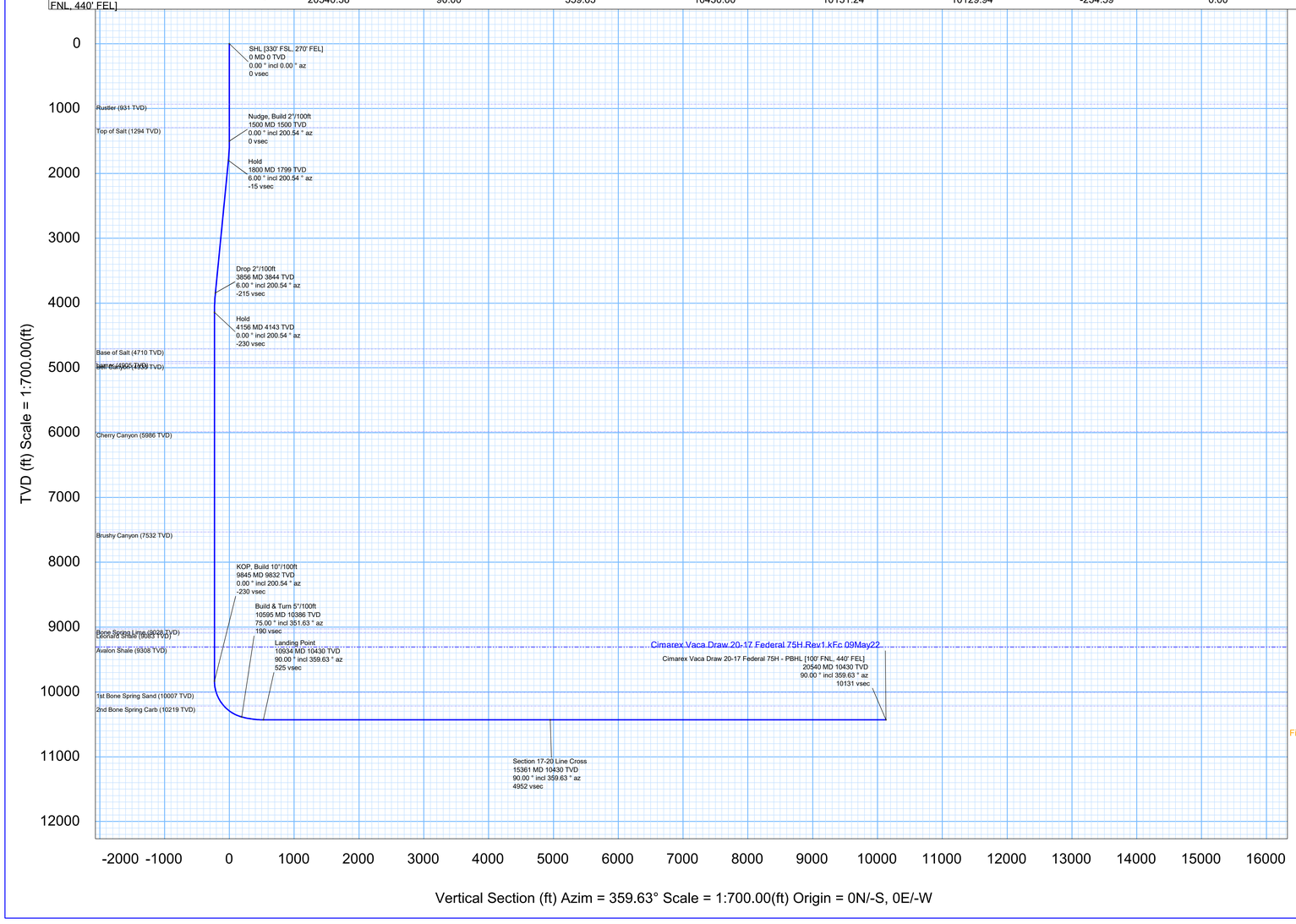
COTERRA

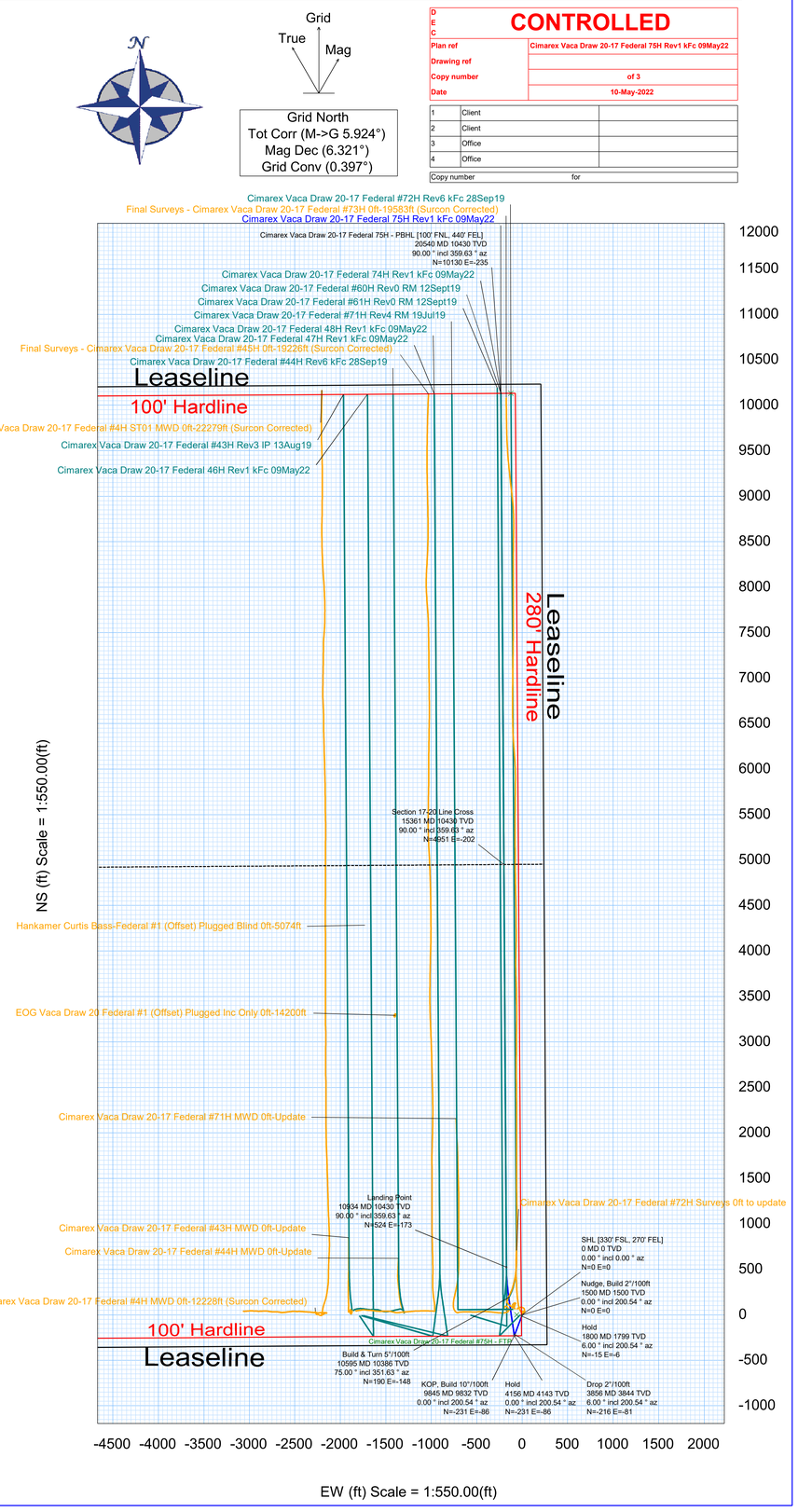
Borehole:	Well:	Field:	Structure:
Vaca Draw 20-17 Federal 75H	Vaca Draw 20-17 Federal 75H	NM Lea County (NAD 83)	Cimarex Vaca Draw 20-17 Federal 75H

Gravity & Magnetic Parameters						Surface Location		NAD83 New Mexico State Plane, Eastern Zone, US Feet				Miscellaneous			
Model:	HDGM 2022	Dip:	59.68°	Date:	09-May-2022	Lat:	N 32 6 35.03	Northing:	404456.68ftUS	Grid Conv:	0.3969°	Slot:	75H	TVD Ref:	RKB = 22ft (3417.6ft above MSL)
MagDec:	6.321°	FS:	47476.023nT	Gravity FS:	998.434mgn (9.80665 Based)	Lon:	W 103 35 11.91	Easting:	772529.85ftUS	Scale Fact:	0.99997031	Plan:	Cimarex Vaca Draw 20-17 Federal 75H Rev1 kFc 09May22		

Critical Points

Critical Point	MD	INCL	AZIM	TVD	VSEC	N(+)/S(-)	E(+)/W(-)	DLS
SHL [330' FSL, 270' FEL]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Rustler	931.00	0.00	200.54	931.00	0.00	0.00	0.00	0.00
Top of Salt	1294.00	0.00	200.54	1294.00	0.00	0.00	0.00	0.00
Nudge, Build 2°/100ft	1500.00	0.00	200.54	1500.00	0.00	0.00	0.00	0.00
Hold	1799.98	6.00	200.54	1799.43	-14.66	-14.69	-5.51	2.00
Drop 2°/100ft	3855.72	6.00	200.54	3843.92	-215.38	-215.91	-80.89	0.00
Hold	4155.71	0.00	200.54	4143.35	-230.04	-230.60	-86.40	2.00
Base of Salt	4722.36	0.00	200.54	4710.00	-230.04	-230.60	-86.40	0.00
Lamar	4917.36	0.00	200.54	4905.00	-230.04	-230.60	-86.40	0.00
Bell Canyon	4945.36	0.00	200.54	4933.00	-230.04	-230.60	-86.40	0.00
Cherry Canyon	5998.36	0.00	200.54	5986.00	-230.04	-230.60	-86.40	0.00
Brushy Canyon	7544.36	0.00	200.54	7532.00	-230.04	-230.60	-86.40	0.00
Bone Spring Lime	9040.36	0.00	200.54	9028.00	-230.04	-230.60	-86.40	0.00
Leonard Shale	9095.36	0.00	200.54	9083.00	-230.04	-230.60	-86.40	0.00
Avalon Shale	9320.36	0.00	200.54	9308.00	-230.04	-230.60	-86.40	0.00
KOP, Build 10°/100ft	9844.71	0.00	200.54	9832.35	-230.04	-230.60	-86.40	0.00
1st Bone Spring Sand	10022.18	17.75	351.63	10007.00	-203.03	-203.62	-90.37	10.00
2nd Bone Spring Carb	10269.12	42.44	351.63	10219.00	-81.37	-82.07	-108.24	10.00
Build & Turn 5°/100ft	10594.71	75.00	351.63	10385.78	190.50	189.55	-148.19	10.00
Landing Point	10933.84	90.00	359.63	10430.00	524.71	523.60	-173.28	5.00
Section 17-20 Line Cross	15360.83	90.00	359.63	10430.00	4951.70	4950.50	-201.53	0.00
Cimarex Vaca Draw 20-17 Federal 75H - PBHL [100' FNL, 440' FEL]	20540.38	90.00	359.63	10430.00	10131.24	10129.94	-234.59	0.00





Schlumberger COTERRA

Cimarex Vaca Draw 20-17 Federal 75H Rev1 kFc 09May22 Proposal
Geodetic Report
(Def Plan)

Report Date:	May 10, 2022 - 12:29 PM	**Survey / DLS Computation:**	Minimum Curvature / Lubinski
Client:	Cimarex Energy	**Vertical Section Azimuth:**	359.630 ° (Grid North)
Field:	NM Lea County (NAD 83)	**Vertical Section Origin:**	0.000 ft, 0.000 ft
Structure / Slot:	Cimarex Vaca Draw 20-17 Federal 75H / 75H	**TVD Reference Datum:**	RKB = 22ft
Well:	Vaca Draw 20-17 Federal 75H	**TVD Reference Elevation:**	3417.600 ft above MSL
Borehole:	Vaca Draw 20-17 Federal 75H	**Seabed / Ground Elevation:**	3395.600 ft above MSL
UWI / API#:	Unknown / Unknown	**Magnetic Declination:**	6.321 °
Survey Name:	Cimarex Vaca Draw 20-17 Federal 75H Rev1 kFc 09May22	**Total Gravity Field Strength:**	998.4336mgn (9.80665 Based)
Survey Date:	September 12, 2019	**Gravity Model:**	GARM
Tort / AHD / DDI / ERD Ratio:	103.956 ° / 10612.722 ft / 6.337 / 1.018	**Total Magnetic Field Strength:**	47476.023 nT
Coordinate Reference System:	NAD83 New Mexico State Plane, Eastern Zone, US Feet	**Magnetic Dip Angle:**	59.680 °
Location Lat / Long:	N 32° 6' 35.02551", W 103° 35' 11.90929"	**Declination Date:**	May 09, 2022
Location Grid N/E Y/X:	N 404456.680 ftUS, E 772529.850 ftUS	**Magnetic Declination Model:**	HDGM 2022
CRS Grid Convergence Angle:	0.3969 °	**North Reference:**	Grid North
Grid Scale Factor:	0.99997031	**Grid Convergence Used:**	0.3969 °
Version / Patch:	2.10.829.1	**Total Corr Mag North->Grid North:**	5.9241 °
		Local Coord Referenced To:	Well Head

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S °)	Longitude (E/W °)
SHL [330' FSL, 270' FEL]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A	404456.68	772529.85	N 32.109729	W 103.586641
Nudge, Build 2°/100ft	1500.00	0.00	200.54	1500.00	0.00	0.00	0.00	0.00	404456.68	772529.85	N 32.109729	W 103.586641
Hold	1799.98	6.00	200.54	1799.43	-14.66	-14.69	-5.51	2.00	404441.99	772524.34	N 32.109689	W 103.586660
Drop 2°/100ft	3855.72	6.00	200.54	3843.92	-215.38	-215.91	-80.89	0.00	404240.78	772448.96	N 32.109137	W 103.586908
Hold	4155.71	0.00	200.54	4143.35	-230.04	-230.60	-86.40	2.00	404226.09	772443.45	N 32.109097	W 103.586926
KOP, Build 10°/100ft	9844.71	0.00	200.54	9832.35	-230.04	-230.60	-86.40	0.00	404226.09	772443.45	N 32.109097	W 103.586926
Build & Turn 5°/100ft	10594.71	75.00	351.63	10385.78	190.50	189.55	-148.19	10.00	404646.22	772381.67	N 32.110253	W 103.587116
Landing Point	10933.84	90.00	359.63	10430.00	524.71	523.60	-173.28	5.00	404980.26	772356.57	N 32.111172	W 103.587189
Cimarex Vaca Draw 20-17 Federal 75H - PBHL [100' FNL, 440' FEL]	20540.38	90.00	359.63	10430.00	10131.24	10129.94	-234.59	0.00	414586.30	772295.27	N 32.137577	W 103.587172

Survey Type: Def Plan

Survey Error Model: ISCWSA Rev 3 *** 3-D 95.000% Confidence 2.7955 sigma
Survey Program:

Description	Part	MD From (ft)	MD To (ft)	EOU Freq (ft)	Hole Size (in)	Casing Diameter (in)	Expected Max Inclination (deg)	Survey Tool Type	Borehole / Survey
	1	0.000	22.000	1/100.000	30.000	30.000		A001Mb_MWD-Depth Only	Vaca Draw 20-17 Federal 75H / Cimarex Vaca Draw 20-17
	1	22.000	20540.379	1/100.000	30.000	30.000		A001Mb_MWD	Vaca Draw 20-17 Federal 75H / Cimarex Vaca Draw 20-17

Schlumberger COTERRA

Cimarex Vaca Draw 20-17 Federal 75H Rev1 kFc 09May22 Anti-Collision Summary Report

Analysis Date-24hr Time:	May 10, 2022 - 12:29	**Analysis Method:**	3D Least Distance
Client:	Cimarex Energy	**Reference Trajectory:**	Cimarex Vaca Draw 20-17 Federal 75H Rev1 kFc 09May22 (Def Plan)
Field:	NM Lea County (NAD 83)	**Depth Interval:**	Every 10.00 Measured Depth (ft)
Structure:	Cimarex Vaca Draw 20-17 Federal 75H	**Rule Set:**	NAL Procedure: D&M AntiCollision Standard S002
Slot:	75H	**Min Pts:**	All local minima indicated.
Well:	Vaca Draw 20-17 Federal 75H	**Version / Patch:**	2.10.829.1
Borehole:	Vaca Draw 20-17 Federal 75H	**Database \ Project:**	Us1455vsm3172\drilling-NM Lea County 2.10
Scan MD Range:	0.00ft ~ 20540.38ft		

Trajectory Error Model: ISCWSA3 3-D 95.000% Confidence 2.7955 sigma, for subject well. For offset wells, error model version is specified with each well respectively.

Offset Trajectories Summary

Offset Selection Criteria
Wellhead distance scan: Not performed!
Selection filters: Definitive Surveys - Definitive Plans - Definitive surveys exclude definitive plans
- All Non-Def Surveys when no Def-Survey is set in a borehole - All Non-Def Plans when no Def-Plan is set in a borehole

Offset Trajectory	Separation			Allow	Sep.	Controlling	Reference Trajectory		Risk Level			Alert	Status
	Ct-Ct (ft)	MAS (ft)	EOU (ft)	Dev. (ft)	Fact.	Rule	MD (ft)	TVD (ft)	Alert	Minor	Major		
Cimarex Vaca Draw 20-17 Federal #60H Rev0 RM 12Sept19 (Non-Def Plan)													Fail Major
	569.94	32.81	567.44	537.13	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	
	569.94	32.81	567.43	537.13	134416.21	MAS = 10.00 (m)	22.00	22.00				WRP	
	532.69	47.00	500.52	485.69	17.87	OSF1.50	3590.00	3579.65				MinPt-CtCt	
	264.95	81.51	209.78	183.44	4.98	OSF1.50	7070.00	7057.64	OSF<5.00			Enter Alert	
	113.93	114.38	36.63	-0.45	1.49	OSF1.50	10010.00	9995.36		OSF<1.50		Enter Minor	
	76.03	115.77	-2.22	-39.74	0.97	OSF1.50	10150.00	10123.40			OSF<1.00	Enter Major	
	66.64	116.22	-11.89	-49.59	0.84	OSF1.50	10220.00	10181.38				MinPts	
	78.43	116.43	-0.16	-38.00	1.00	OSF1.50	10280.00	10226.96			OSF>1.00	Exit Major	
	114.07	116.66	35.42	-2.59	1.47	OSF1.50	10350.00	10274.65		OSF>1.50		Exit Minor	
	378.07	117.53	298.89	260.55	4.90	OSF1.50	10660.00	10401.10	OSF>5.00			Exit Alert	
	649.10	196.72	517.12	452.38	4.99	OSF1.50	16070.00	10430.00	OSF<5.00			Enter Alert	
	649.10	334.79	425.07	314.31	2.92	OSF1.50	20540.38	10430.00				MinPts	
Cimarex Vaca Draw 20-17 Federal #61H Rev0 RM 12Sept19 (Non-Def Plan)													Fail Major
	592.97	32.81	590.47	560.16	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	
	592.97	32.81	590.46	560.16	98428.28	MAS = 10.00 (m)	22.00	22.00				WRP	
	315.11	96.50	249.89	218.60	4.99	OSF1.50	8300.00	8287.64	OSF<5.00			Enter Alert	
	119.31	119.84	38.48	-0.53	1.49	OSF1.50	10360.00	10280.93		OSF<1.50		Enter Minor	
	80.51	120.81	-0.99	-40.30	0.99	OSF1.50	10460.00	10336.02			OSF<1.00	Enter Major	
	80.39	120.81	-1.07	-40.42	0.99	OSF1.50	10470.00	10340.71				MinPts	
	81.20	120.76	-0.19	-39.56	1.00	OSF1.50	10480.00	10345.24			OSF>1.00	Exit Major	
	114.93	120.24	33.93	-5.31	1.43	OSF1.50	10560.00	10375.79		OSF>1.50		Exit Minor	
	322.39	100.85	254.32	221.54	4.88	OSF1.50	10830.00	10425.82	OSF>5.00			Exit Alert	
	369.47	112.76	293.46	256.71	4.99	OSF1.50	13170.00	10430.00	OSF<5.00			Enter Alert	
	369.47	336.50	144.30	32.97	1.65	OSF1.50	20540.38	10430.00				MinPts	
Cimarex Vaca Draw 20-17 Federal 74H Rev1 kFc 09May22 (Def Plan)													Fail Minor
	20.00	16.50	17.50	3.50	N/A	MAS = 5.03 (m)	0.00	0.00	CtCt<=15m<15.00			Enter Alert	
	20.00	16.50	17.50	3.50	12348.28	MAS = 5.03 (m)	22.00	22.00				WRP	
	20.00	20.08	5.78	-0.08	1.49	OSF1.50	1230.00	1230.00		OSF<1.50		Enter Minor	
	20.00	21.73	4.68	-1.73	1.37	OSF1.50	1340.00	1340.00				MinPt-CtCt	
	20.20	22.47	4.39	-2.26	1.33	OSF1.50	1390.00	1390.00				MINPT-O-EOU	
	20.32	22.61	4.41	-2.30	1.33	OSF1.50	1400.00	1400.00				MinPt-O-SF	
	20.46	22.76	4.45	-2.30	1.33	OSF1.50	1410.00	1410.00				MinPt-O-ADP	
	24.25	24.45	7.12	-0.20	1.49	OSF1.50	1530.00	1530.00		OSF>1.50		Exit Minor	
	162.43	149.45	61.96	12.98	1.63	OSF1.50	10010.00	9995.36				MinPt-CtCt	
	162.47	149.57	61.93	12.91	1.63	OSF1.50	10020.00	10004.92				MINPT-O-EOU	
	162.57	149.68	61.95	12.89	1.63	OSF1.50	10030.00	10014.43				MinPts	
	502.30	154.93	398.18	347.37	4.92	OSF1.50	10670.00	10403.16	OSF>5.00			Exit Alert	
	609.60	184.84	485.54	424.76	4.99	OSF1.50	15110.00	10430.00	OSF<5.00			Enter Alert	
	609.60	351.94	374.14	257.66	2.61	OSF1.50	20540.38	10430.00				MinPts	
Final Surveys - Cimarex Vaca Draw 20-17 Federal #73H 0ft-19583ft (Surcon Corrected) (Def Survey)													Warning Alert
	84.84	32.81	83.03	52.03	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	
	84.83	32.81	83.02	52.02	55235.90	MAS = 10.00 (m)	22.00	22.00				WRP	
	84.56	32.81	81.36	51.75	59.52	MAS = 10.00 (m)	250.00	250.00				MinPts	
	85.32	32.81	76.43	52.51	11.79	MAS = 10.00 (m)	1060.00	1060.00				MINPT-O-EOU	
	84.42	32.81	72.49	51.61	8.05	MAS = 10.00 (m)	1500.00	1500.00				MinPts	
	84.54	32.81	72.34	51.73	7.86	MAS = 10.00 (m)	1540.00	1540.00				MINPT-O-EOU	
	90.05	32.81	76.47	57.24	7.41	MAS = 10.00 (m)	1750.00	1749.68				MinPt-O-SF	
	92.90	32.81	78.98	60.09	7.44	MAS = 10.00 (m)	1800.00	1799.45				MinPts	
	282.71	58.87	242.94	223.84	7.36	OSF1.50	5550.00	5537.64				MinPt-CtCt	
	283.09	59.94	242.60	223.16	7.24	OSF1.50	5650.00	5637.64				MINPT-O-EOU	
	285.38	66.49	240.53	218.88	6.56	OSF1.50	6290.00	6277.64				MinPt-CtCt	
	285.12	69.50	238.27	215.62	6.26	OSF1.50	6580.00	6567.64				MinPt-CtCt	
	280.81	81.69	225.83	199.12	5.23	OSF1.50	7750.00	7737.64				MinPt-CtCt	
	281.01	84.00	224.49	197.01	5.09	OSF1.50	7970.00	7957.64				MinPt-CtCt	
	281.04	85.44	223.56	195.60	5.00	OSF1.50	8110.00	8097.64	OSF<5.00			Enter Alert	
	258.12	97.12	192.84	161.00	4.03	OSF1.50	9220.00	9207.64				MinPt-CtCt	
	258.20	97.44	192.66	160.76	4.02	OSF1.50	9240.00	9227.64				MINPT-O-EOU	
	258.33	97.60	192.67	160.73	4.02	OSF1.50	9250.00	9237.64				MinPt-O-ADP	
	258.78	97.92	192.84	160.85	4.01	OSF1.50	9270.00	9257.64				MinPt-O-SF	
	312.65	99.08	244.56	213.57	4.95	OSF1.50	9540.00	9527.64	OSF>5.00			Exit Alert	
	601.15	144.27	500.32	456.88	6.76	OSF1.50	13880.00	10430.00				MinPt-CtCt	
	601.61	145.66	499.82	455.95	6.70	OSF1.50	13930.00	10430.00				MINPT-O-EOU	
	600.36	152.77	493.86	447.59	6.34	OSF1.50	14190.00	10430.00				MinPt-CtCt	
	591.98	184.83	464.11	407.15	5.07	OSF1.50	15270.00	10430.00				MinPt-CtCt	
	592.71	187.84	462.79	404.87	4.99	OSF1.50	15370.00	10430.00	OSF<5.00			Enter Alert	
	593.07	188.45	462.74	404.62	4.98	OSF1.50	15390.00	10430.00				MINPT-O-EOU	
	594.31	189.96	462.95	404.35	4.95	OSF1.50	15440.00	10430.00				MinPt-O-ADP	
	594.71	200.40	456.46	394.31	4.67	OSF1.50	15780.00	10430.00				MinPt-CtCt	

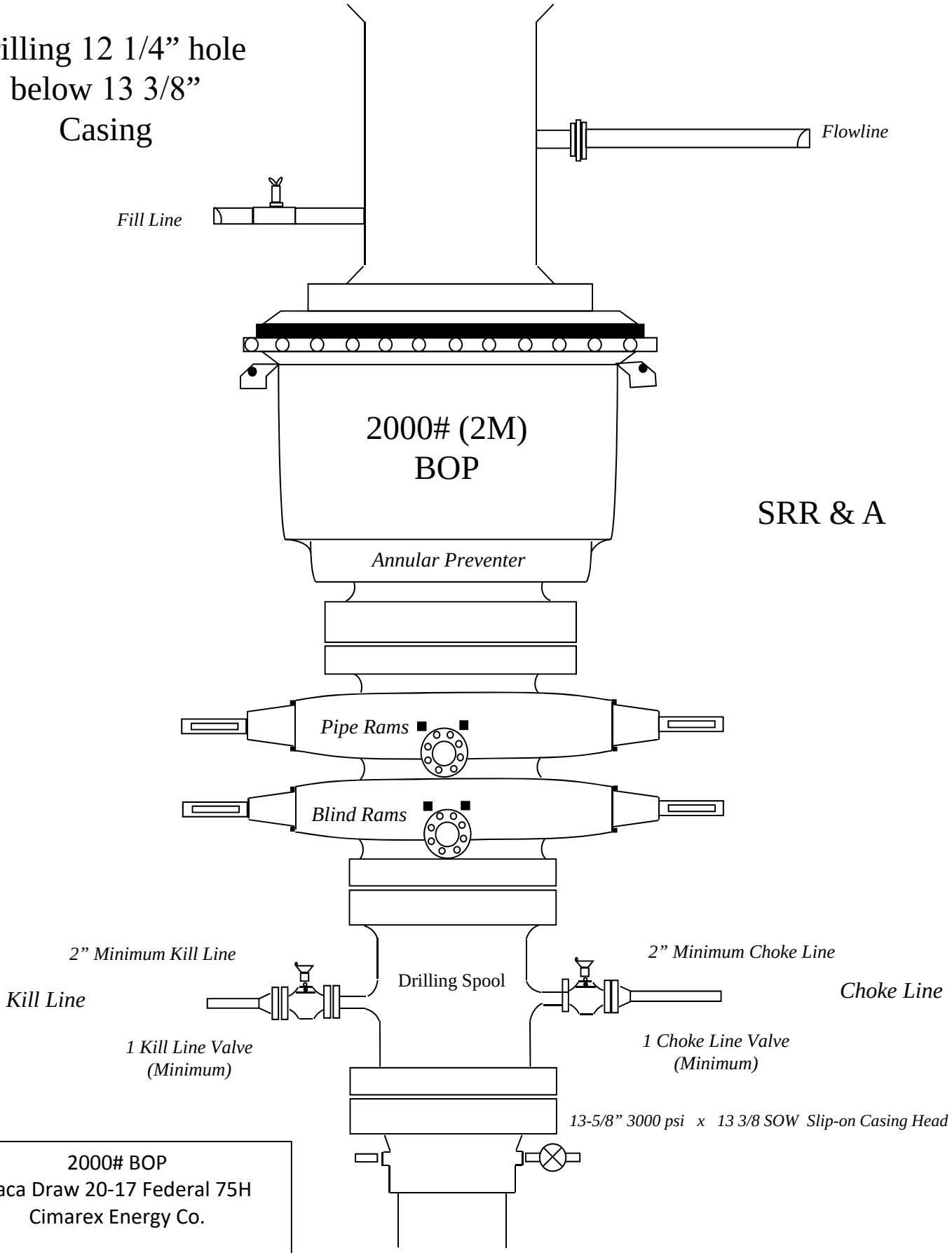
Offset Trajectory	Separation			Allow	Sep.	Controlling	Reference Trajectory		Risk Level			Alert	Status
	Ct-Ct (ft)	MAS (ft)	EOU (ft)	Dev. (ft)	Fact.	Rule	MD (ft)	TVD (ft)	Alert	Minor	Major		
	582.11	224.05	428.08	358.06	4.06	OSF1.50	16540.00	10430.00				MinPt-CtCt	
	582.44	227.99	425.78	354.46	3.98	OSF1.50	16710.00	10430.00				MinPt-CtCt	
	583.13	230.01	425.06	353.11	3.95	OSF1.50	16790.00	10430.00				MINPT-O-EOU	
	584.03	231.07	425.22	352.96	3.94	OSF1.50	16830.00	10430.00				MinPt-O-ADP	
	581.09	270.87	395.84	310.22	3.31	OSF1.50	18060.00	10430.00				MinPt-CtCt	
	581.25	282.82	388.04	298.43	3.17	OSF1.50	18430.00	10430.00				MinPt-CtCt	
	582.00	295.15	380.58	286.86	3.03	OSF1.50	18800.00	10430.00				MinPt-CtCt	
	546.33	317.13	330.20	229.20	2.63	OSF1.50	19640.00	10430.00				MinPt-CtCt	
	546.84	318.71	329.59	228.13	2.62	OSF1.50	19720.00	10430.00				MINPT-O-EOU	
	547.52	319.50	329.71	228.02	2.62	OSF1.50	19760.00	10430.00				MinPt-O-ADP	
	548.85	320.54	330.30	228.32	2.62	OSF1.50	19810.00	10430.00				MinPt-O-SF	
	570.79	329.08	346.44	241.71	2.65	OSF1.50	20160.00	10430.00				MinPt-O-SF	
	601.19	339.81	369.51	261.38	2.71	OSF1.50	20540.38	10430.00				TD	
Cimarex Vaca Draw 20-17 Federal #72H Rev6 kFc 28Sep19 (Non-Def Plan)													Warning Alert
	99.98	32.81	98.18	67.18	392142.75	MAS = 10.00 (m)	0.00	0.00				MinPts	
	100.00	32.81	98.19	67.19	18202.71	MAS = 10.00 (m)	22.00	22.00				WRP	
	100.61	32.81	97.97	67.81	117.70	MAS = 10.00 (m)	170.00	170.00				MINPT-O-EOU	
	127.08	32.81	113.08	94.28	10.15	MAS = 10.00 (m)	1770.00	1769.60				MinPt-O-SF	
	129.20	32.81	114.99	96.39	10.16	MAS = 10.00 (m)	1800.00	1799.45				MinPt-O-SF	
	312.47	55.49	274.96	256.98	8.65	OSF1.50	5220.00	5207.64				MinPt-CtCt	
	312.65	56.14	274.70	256.52	8.55	OSF1.50	5280.00	5267.64				MINPT-O-EOU	
	312.82	56.35	274.72	256.47	8.53	OSF1.50	5300.00	5287.64				MinPt-O-ADP	
	321.35	59.14	281.33	262.21	8.36	OSF1.50	5560.00	5547.64				MinPt-O-SF	
	344.78	63.62	301.78	281.16	8.32	OSF1.50	5990.00	5977.64				MinPt-O-SF	
	394.77	78.37	342.01	316.40	7.68	OSF1.50	7420.00	7407.64				MinPt-O-ADP	
	386.67	94.14	323.08	292.53	6.29	OSF1.50	8810.00	8797.64				MinPt-CtCt	
	386.70	94.23	323.05	292.47	6.28	OSF1.50	8820.00	8807.64				MINPT-O-EOU	
	386.82	94.37	323.05	292.45	6.28	OSF1.50	8830.00	8817.64				MinPt-O-ADP	
	387.37	94.72	323.30	292.65	6.27	OSF1.50	8850.00	8837.64				MinPt-O-SF	
	1008.58	248.35	838.33	760.23	6.37	OSF1.50	17460.00	10430.00				MinPt-CtCt	
	1025.80	317.74	809.26	708.06	5.00	OSF1.50	19680.00	10430.00	OSF<5.00			Enter Alert	
	1032.53	344.86	797.92	687.68	4.62	OSF1.50	20540.38	10430.00				MinPts	
Cimarex Vaca Draw 20-17 Federal #71H Rev4 RM 19Jul19 (Non-Def Plan)													Warning Alert
	116.61	32.81	114.80	83.80	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	
	116.61	32.81	114.80	83.80	258341.14	MAS = 10.00 (m)	22.00	22.00				WRP	
	116.61	32.81	102.76	83.80	9.53	MAS = 10.00 (m)	1500.00	1500.00				MinPts	
	117.00	32.81	102.26	84.19	8.91	MAS = 10.00 (m)	1610.00	1609.97				MINPT-O-EOU	
	144.92	32.81	124.62	112.11	7.74	MAS = 10.00 (m)	2300.00	2296.71				MinPt-O-SF	
	290.96	66.42	246.08	224.55	6.72	OSF1.50	5340.00	5327.64				MINPT-O-EOU	
	291.42	66.97	246.16	224.45	6.67	OSF1.50	5400.00	5387.64				MinPt-O-ADP	
	301.81	70.77	253.97	231.03	6.54	OSF1.50	5790.00	5777.64				MinPt-O-SF	
	683.97	110.49	609.71	573.48	9.41	OSF1.50	9570.00	9557.64				MINPT-O-EOU	
	684.05	110.60	609.71	573.45	9.41	OSF1.50	9580.00	9567.64				MinPt-O-ADP	
	686.69	111.41	611.81	575.28	9.37	OSF1.50	9660.00	9647.64				MinPt-O-SF	
	649.44	201.05	512.64	448.39	4.99	OSF1.50	13620.00	10430.00	OSF<5.00			Enter Alert	
	649.00	204.42	509.94	444.58	4.90	OSF1.50	13700.00	10430.00				MinPt-CtCt	
	665.46	508.64	323.45	156.82	1.97	OSF1.50	20540.38	10430.00				MinPts	
Cimarex Vaca Draw 20-17 Federal 48H Rev1 kFc 09May22 (Def Plan)													Warning Alert
	1749.78	32.81	1747.28	1716.97	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	
	1749.78	32.81	1747.25	1716.97	53601.97	MAS = 10.00 (m)	22.00	22.00				WRP	
	725.62	153.77	622.28	571.86	7.17	OSF1.50	10190.00	10157.12				MinPt-CtCt	
	725.69	154.07	622.14	571.62	7.16	OSF1.50	10210.00	10173.39				MINPT-O-EOU	
	725.79	154.21	622.15	571.58	7.15	OSF1.50	10220.00	10181.38				MinPt-O-ADP	
	729.59	155.59	625.03	573.99	7.12	OSF1.50	10310.00	10248.16				MinPt-O-SF	
	1268.86	382.68	1012.91	886.18	5.00	OSF1.50	17700.00	10430.00	OSF<5.00			Enter Alert	
	1268.87	513.90	925.44	754.97	3.71	OSF1.50	20540.38	10430.00				MinPts	
Cimarex Vaca Draw 20-17 Federal 47H Rev1 kFc 09May22 (Def Plan)													Warning Alert
	1769.78	32.81	1767.28	1736.97	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	
	1769.78	32.81	1767.24	1736.97	47055.00	MAS = 10.00 (m)	22.00	22.00				WRP	
	787.91	158.00	681.75	629.91	7.58	OSF1.50	10940.00	10430.00				MinPt-CtCt	
	787.93	238.55	628.06	549.38	4.99	OSF1.50	13120.00	10430.00	OSF<5.00			Enter Alert	
	787.97	686.50	329.46	101.46	1.72	OSF1.50	20540.38	10430.00				MinPts	
Final Surveys - Cimarex Vaca Draw 20-17 Federal #45H 0ft-19226ft (Surcon Corrected) (Def Survey)													Warning Alert
	1830.73	32.81	1828.92	1797.92	N/A	MAS = 10.00 (m)	0.00	0.00				MinPts	
	1830.75	32.81	1828.92	1797.94	80816.46	MAS = 10.00 (m)	22.00	22.00				WRP	
	1826.33	32.81	1817.58	1793.53	262.66	MAS = 10.00 (m)	1040.00	1040.00				MINPT-O-EOU	
	914.64	94.95	850.47	819.70	14.82	OSF1.50	8750.00	8737.64				MinPt-CtCt	
	914.86	95.66	850.17	819.20	14.72	OSF1.50	8810.00	8797.64				MINPT-O-EOU	
	914.98	95.81	850.18	819.17	14.71	OSF1.50	8820.00	8807.64				MinPt-O-ADP	
	923.13	97.98	856.63	825.15	14.61	OSF1.50	8980.00	8967.64				MinPt-O-SF	
	1350.87	151.44	1246.09	1199.43	14.35	OSF1.50	13210.00	10430.00				MinPt-CtCt	
	1350.85	156.26	1242.87	1194.59	13.87	OSF1.50	13350.00	10430.00				MinPt-CtCt	
	1318.82	211.92	1173.74	1106.89	9.78	OSF1.50	14890.00	10430.00				MinPt-CtCt	
	1320.74	217.41	1171.96	1103.33	9.54	OSF1.50	15040.00	10430.00				MINPT-O-EOU	
	1327.05	224.71	1173.38	1102.34	9.26	OSF1.50	15240.00	10430.00				MinPt-O-ADP	
	1339.39	236.64	1177.77	1102.75	8.85	OSF1.50	15550.00	10430.00				MinPt-O-ADP	
	1350.38	262.54	1171.57	1087.84	8.00	OSF1.50	16250.00	10430.00				MinPt-CtCt	
	1349.77	284.87	1156.05	1064.90	7.34	OSF1.50	16860.00	10430.00				MinPt-CtCt	
	1350.06	290.48	1152.60	1059.59	7.20	OSF1.50	17020.00	10430.00				MinPt-CtCt	
	1350.45	299.36	1147.06	1051.09	6.98	OSF1.50	17250.00	10430.00				MinPt-CtCt	
	1349.65	306.92	1141.23	1042.74	6.79	OSF1.50	17440.00	10430.00				MinPt-CtCt	
	1358.04	327.84	1135.58	1030.20	6.39	OSF1.50	17990.00	10430.00				MINPT-O-EOU	
	1359.60	329.69	1135.87	1029.90	6.36	OSF1.50	18040.00	10430.00				MinPt-O-ADP	
	1329.38	375.09	1075.53	954.29	5.44	OSF1.50	19130.00	10430.00				MinPt-CtCt	
	1333.25	384.90	1072.75	948.35	5.31	OSF1.50	19380.00	10430.00				MINPT-O-EOU	
	1341.66	410.44	1064.28	931.22	5.00	OSF1.50	20050.00	10430.00	OSF<5.00			Enter Alert	
	1332.84	427.58	1043.96	905.26	4.76	OSF1.50	20540.00	10430.00				MinPt-CtCt	
	1332.84	427.60	1043.95	905.25	4.76	OSF1.50	20540.38	10430.00				MinPts	

Offset Trajectory	Separation			Allow	Sep.	Controlling	Reference Trajectory		Risk Level			Alert	Status
	Ct-Ct (ft)	MAS (ft)	EOU (ft)	Dev. (ft)	Fact.	Rule	MD (ft)	TVD (ft)	Alert	Minor	Major		
EOG Vaca Draw 20 Federal #1 (Offset) Plugged Inc Only 0ft-14200ft (Def Survey)													Warning Alert
	3577.12	32.81	3574.59	3544.31	114542.36	MAS = 10.00 (m)	0.00	0.00				Surface	
	3577.11	32.81	3574.09	3544.30	6852.73	MAS = 10.00 (m)	22.00	22.00				WRP	
	3574.75	32.81	3556.97	3541.95	233.73	MAS = 10.00 (m)	490.00	490.00				MinPts	
	3587.64	81.26	3532.64	3506.38	68.28	OSF1.50	1500.00	1500.00				MinPt-CtCt	
	3590.36	91.10	3528.79	3499.26	60.74	OSF1.50	1670.00	1669.90				MINPT-O-EOU	
	3593.36	94.81	3529.32	3498.55	58.35	OSF1.50	1740.00	1739.72				MinPt-O-ADP	
	3596.85	97.94	3530.72	3498.90	56.49	OSF1.50	1800.00	1799.45				MinPt-O-ADP	
	3761.18	225.88	3609.75	3535.29	25.24	OSF1.50	4310.00	4297.64				MinPt-CtCt	
	3760.35	374.05	3510.14	3386.30	15.17	OSF1.50	7120.00	7107.64				MinPt-CtCt	
	3758.99	437.87	3466.24	3321.12	12.94	OSF1.50	8330.00	8317.64				MinPt-CtCt	
	1835.69	552.86	1466.28	1282.83	5.00	OSF1.50	12320.00	10430.00	OSF<5.00			Enter Alert	
	1206.31	572.85	823.49	633.46	3.17	OSF1.50	13700.00	10430.00				MinPt-CtCt	
	1206.41	573.14	823.40	633.26	3.17	OSF1.50	13720.00	10430.00				MinPts	
	1206.84	573.43	823.64	633.41	3.16	OSF1.50	13740.00	10430.00				MinPt-O-SF	
	1890.71	569.47	1510.12	1321.24	5.00	OSF1.50	15160.00	10430.00	OSF>5.00			Exit Alert	
	6940.32	549.34	6573.11	6390.98	19.04	OSF1.50	20540.38	10430.00				TD	
Cimarex Vaca Draw 20-17 Federal #44H Rev6 kFc 28Sep19 (Non-Def Plan)													Warning Alert
	1850.72	32.81	1848.91	1817.91	N/A	MAS = 10.00 (m)	0.00	0.00				MinPts	
	1850.72	32.81	1848.89	1817.91	75499.18	MAS = 10.00 (m)	22.00	22.00				WRP	
	1849.90	32.81	1843.02	1817.09	364.48	MAS = 10.00 (m)	770.00	770.00				MinPts	
	1850.03	32.81	1841.49	1817.23	274.26	MAS = 10.00 (m)	1010.00	1010.00				MinPts	
	1850.05	32.81	1841.22	1817.24	263.22	MAS = 10.00 (m)	1050.00	1050.00				MINPT-O-EOU	
	1234.95	102.38	1165.62	1132.57	18.63	OSF1.50	9480.00	9467.64				MinPt-CtCt	
	1235.13	102.85	1165.44	1132.28	18.57	OSF1.50	9510.00	9497.64				MINPT-O-EOU	
	1235.27	103.00	1165.47	1132.27	18.55	OSF1.50	9520.00	9507.64				MinPt-O-ADP	
	1246.18	105.67	1174.26	1140.51	18.40	OSF1.50	9710.00	9697.64				MinPt-O-SF	
	1252.60	295.31	1053.28	957.29	6.49	OSF1.50	15510.00	10430.00				MinPt-CtCt	
	1255.08	381.81	998.07	873.27	5.00	OSF1.50	17270.00	10430.00	OSF<5.00			Enter Alert	
	1259.82	546.23	893.15	713.59	3.49	OSF1.50	20540.38	10430.00				MinPts	
Cimarex Vaca Draw 20-17 Federal 46H Rev1 kFc 09May22 (Def Plan)													Warning Alert
	1789.78	32.81	1787.28	1756.97	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	
	1789.78	32.81	1787.24	1756.97	48040.75	MAS = 10.00 (m)	22.00	22.00				WRP	
	1548.81	146.96	1450.00	1401.85	16.06	OSF1.50	9820.00	9807.64				MinPt-CtCt	
	1466.89	160.50	1359.05	1306.39	13.90	OSF1.50	10933.84	10430.00				MinPt-CtCt	
	1466.92	442.24	1171.26	1024.67	5.00	OSF1.50	16330.00	10430.00	OSF<5.00			Enter Alert	
	1466.94	722.14	984.68	744.80	3.05	OSF1.50	20540.38	10430.00				MinPts	
Hankamer Curtis Bass-Federal #1 (Offset) Plugged Blind 0ft-5074ft (Def Survey)													Warning Alert
	4619.72	32.81	4615.82	4586.92	3288.96	MAS = 10.00 (m)	0.00	0.00				Surface	
	4619.72	32.81	4613.52	4586.92	1244.97	MAS = 10.00 (m)	22.00	22.00				WRP	
	4619.72	462.94	4310.26	4156.78	15.04	OSF1.50	1500.00	1500.00				MinPt-CtCt	
	4804.08	1443.35	3841.01	3360.73	5.00	OSF1.50	4630.00	4617.64	OSF<5.00			Enter Alert	
	4804.09	1582.65	3748.15	3221.44	4.56	OSF1.50	5080.00	5067.64				MinPts	
	5031.93	1512.69	4022.30	3519.24	5.00	OSF1.50	6570.00	6557.64	OSF>5.00			Exit Alert	
	5583.82	459.18	5275.76	5124.64	18.46	OSF1.50	14700.00	10430.00				MinPt-CtCt	
	5584.21	460.05	5275.57	5124.16	18.42	OSF1.50	14770.00	10430.00				MINPT-O-EOU	
	5595.17	472.00	5278.56	5123.16	17.98	OSF1.50	15060.00	10430.00				MinPt-O-ADP	
	7546.35	1135.26	6787.86	6411.10	10.01	OSF1.50	19780.00	10430.00				MinPt-O-SF	
	8077.46	1204.81	7272.65	6872.65	10.09	OSF1.50	20540.38	10430.00				TD	
Cimarex Vaca Draw 20-17 Federal #72H Surveys 0ft to update (Non-Def Survey)													Pass
	99.98	32.81	98.18	67.18	392142.75	MAS = 10.00 (m)	0.00	0.00				MinPts	
	100.00	32.81	98.19	67.19	18202.71	MAS = 10.00 (m)	22.00	22.00				WRP	
	100.61	32.81	97.97	67.81	117.70	MAS = 10.00 (m)	170.00	170.00				MINPT-O-EOU	
	127.08	32.81	113.08	94.28	10.15	MAS = 10.00 (m)	1770.00	1769.60				MinPt-O-SF	
	129.20	32.81	114.99	96.39	10.16	MAS = 10.00 (m)	1800.00	1799.45				MinPt-O-SF	
	312.47	55.49	274.96	256.98	8.65	OSF1.50	5220.00	5207.64				MinPt-CtCt	
	312.65	56.14	274.70	256.52	8.55	OSF1.50	5280.00	5267.64				MINPT-O-EOU	
	312.82	56.35	274.72	256.47	8.53	OSF1.50	5300.00	5287.64				MinPt-O-ADP	
	321.35	59.14	281.33	262.21	8.36	OSF1.50	5560.00	5547.64				MinPt-O-SF	
	344.78	63.62	301.78	281.16	8.32	OSF1.50	5990.00	5977.64				MinPt-O-SF	
	394.77	78.37	342.01	316.40	7.68	OSF1.50	7420.00	7407.64				MinPt-O-ADP	
	388.08	92.43	325.95	295.65	6.38	OSF1.50	8740.00	8727.64				MinPt-CtCt	
	388.11	92.53	325.91	295.58	6.37	OSF1.50	8750.00	8737.64				MINPT-O-EOU	
	388.31	92.75	325.95	295.56	6.36	OSF1.50	8770.00	8757.64				MinPt-O-ADP	
	389.37	93.32	326.56	296.05	6.35	OSF1.50	8810.00	8797.64				MinPt-O-SF	
	1141.76	78.47	1085.15	1063.30	25.83	OSF1.50	11120.00	10430.00				MinPt-CtCt	
	1141.83	78.57	1085.14	1063.25	25.79	OSF1.50	11130.00	10430.00				MinPts	
	1319.94	95.96	1251.98	1223.97	23.35	OSF1.50	11780.00	10430.00				MinPt-O-SF	
	9491.58	132.54	9401.88	9359.04	110.72	OSF1.50	20540.38	10430.00				TD	
Cimarex Vaca Draw 20-17 Federal #71H MWD 0ft-Update (Non-Def Survey)													Pass
	116.61	32.81	114.80	83.80	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	
	116.60	32.81	114.79	83.79	44945.50	MAS = 10.00 (m)	22.00	22.00				WRP	
	116.10	32.81	112.45	83.29	62.22	MAS = 10.00 (m)	310.00	310.00				MinPts	
	117.94	32.81	111.80	85.13	26.79	MAS = 10.00 (m)	650.00	650.00				MINPT-O-EOU	
	179.62	32.81	160.50	146.81	10.19	MAS = 10.00 (m)	2440.00	2435.95				MinPt-O-SF	
	270.96	59.09	231.04	211.87	7.03	OSF1.50	5500.00	5487.64				MinPt-CtCt	
	271.11	59.55	230.87	211.56	6.98	OSF1.50	5540.00	5527.64				MINPT-O-EOU	
	271.31	59.77	230.92	211.53	6.96	OSF1.50	5560.00	5547.64				MinPt-O-ADP	
	277.47	62.03	235.52	215.44	6.86	OSF1.50	5760.00	5747.64				MinPt-O-SF	
	672.33	102.00	603.82	570.33	10.02	OSF1.50	9560.00	9547.64				MinPt-O-SF	
	668.93	112.98	590.61	555.94	9.52	OSF1.50	11270.00	10430.00				MinPt-CtCt	
	660.88	129.08	571.89	531.80	8.13	OSF1.50	11910.00	10430.00				MinPt-CtCt	
	663.25	147.30	562.25	515.95	7.07	OSF1.50	12450.00	10430.00				MinPt-CtCt	
	664.02	152.57	559.51	511.45	6.82	OSF1.50	12590.00	10430.00				MINPT-O-EOU	
	664.37	152.98	559.57	511.39	6.81	OSF1.50	12600.00	10430.00				MinPt-O-ADP	
	669.62	155.17	563.29	514.46	6.77	OSF1.50	12660.00	10430.00				MinPt-O-SF	
	7996.34	137.12	7903.18	7859.22	90.90	OSF1.50	20540.38	10430.00				TD	

Offset Trajectory	Separation			Allow	Sep.	Controlling	Reference Trajectory		Risk Level			Alert	Status
	Ct-Ct (ft)	MAS (ft)	EOU (ft)	Dev. (ft)	Fact.	Rule	MD (ft)	TVD (ft)	Alert	Minor	Major		
Cimarex Vaca Draw 20-17 Federal #44H MWD 0ft-Update (Non-Def Survey)													Pass
	1850.72	32.81	1848.91	1817.91	N/A	MAS = 10.00 (m)	0.00	0.00				MinPts	
	1850.72	32.81	1848.89	1817.91	75499.18	MAS = 10.00 (m)	22.00	22.00				WRP	
	1849.90	32.81	1843.02	1817.09	364.48	MAS = 10.00 (m)	770.00	770.00				MinPts	
	1850.03	32.81	1841.49	1817.23	274.26	MAS = 10.00 (m)	1010.00	1010.00				MinPts	
	1850.05	32.81	1841.22	1817.24	263.22	MAS = 10.00 (m)	1050.00	1050.00				MINPT-O-EOU	
	1235.41	100.80	1167.46	1134.60	18.77	OSF1.50	9420.00	9407.64				MinPt-CtCt	
	1235.58	101.29	1167.25	1134.29	18.71	OSF1.50	9450.00	9437.64				MINPT-O-EOU	
	1235.73	101.44	1167.28	1134.29	18.69	OSF1.50	9460.00	9447.64				MinPt-O-ADP	
	1245.01	103.77	1174.68	1141.24	18.56	OSF1.50	9620.00	9607.64				MinPt-O-SF	
	1277.15	116.36	1197.27	1160.80	17.41	OSF1.50	11040.00	10430.00				MinPt-CtCt	
	1277.20	116.52	1197.20	1160.68	17.39	OSF1.50	11050.00	10430.00				MINPT-O-EOU	
	1277.32	116.68	1197.21	1160.64	17.37	OSF1.50	11060.00	10430.00				MinPt-O-ADP	
	1307.60	121.27	1224.41	1186.33	17.08	OSF1.50	11320.00	10430.00				MinPt-O-SF	
	9586.39	145.49	9488.28	9440.89	101.11	OSF1.50	20540.38	10430.00				TD	
Cimarex Vaca Draw 20-17 Federal #43H MWD 0ft-Update (Non-Def Survey)													Pass
	1870.70	32.81	1868.89	1837.89	N/A	MAS = 10.00 (m)	0.00	0.00				MinPts	
	1870.71	32.81	1868.87	1837.90	70177.43	MAS = 10.00 (m)	22.00	22.00				WRP	
	1871.21	32.81	1864.83	1838.40	408.52	MAS = 10.00 (m)	700.00	700.00				MinPts	
	1871.44	32.81	1862.70	1838.64	269.42	MAS = 10.00 (m)	1040.00	1040.00				MINPT-O-EOU	
	1871.11	32.81	1860.88	1838.30	218.04	MAS = 10.00 (m)	1270.00	1270.00				MinPts	
	1809.86	44.93	1779.35	1764.93	62.69	OSF1.50	4080.00	4067.65				MinPt-CtCt	
	1809.98	45.35	1779.19	1764.63	62.10	OSF1.50	4120.00	4107.64				MINPT-O-EOU	
	1810.24	45.66	1779.24	1764.58	61.69	OSF1.50	4150.00	4137.64				MinPt-O-ADP	
	1803.40	51.94	1768.22	1751.46	53.76	OSF1.50	4790.00	4777.64				MinPt-CtCt	
	1803.50	52.26	1768.10	1751.25	53.44	OSF1.50	4820.00	4807.64				MINPT-O-EOU	
	1803.67	52.47	1768.13	1751.21	53.23	OSF1.50	4840.00	4827.64				MinPt-O-ADP	
	1821.28	61.89	1779.46	1759.39	45.32	OSF1.50	5770.00	5757.64				MINPT-O-EOU	
	1824.38	65.78	1779.97	1758.60	42.66	OSF1.50	6150.00	6137.64				MinPt-O-ADP	
	1826.31	67.64	1780.66	1758.67	41.50	OSF1.50	6330.00	6317.64				MinPt-O-ADP	
	1834.32	80.08	1780.37	1754.24	35.06	OSF1.50	7540.00	7527.64				MINPT-O-EOU	
	1840.15	93.41	1777.32	1746.74	30.07	OSF1.50	8810.00	8797.64				MINPT-O-EOU	
	1840.37	93.66	1777.35	1746.71	30.00	OSF1.50	8830.00	8817.64				MinPt-O-ADP	
	1872.59	99.38	1805.31	1773.21	29.12	OSF1.50	9310.00	9297.64				MinPt-O-SF	
	2076.59	109.88	2000.70	1966.71	30.43	OSF1.50	11010.00	10430.00				MinPt-CtCt	
	2076.77	110.33	2000.57	1966.44	30.30	OSF1.50	11040.00	10430.00				MINPT-O-EOU	
	2076.89	110.48	2000.60	1966.41	30.26	OSF1.50	11050.00	10430.00				MinPt-O-ADP	
	2077.52	114.17	1998.77	1963.36	29.22	OSF1.50	11270.00	10430.00				MinPt-CtCt	
	2077.63	114.53	1998.63	1963.10	29.13	OSF1.50	11290.00	10430.00				MINPT-O-EOU	
	2077.93	114.91	1998.68	1963.03	29.03	OSF1.50	11310.00	10430.00				MinPt-O-ADP	
	2245.15	132.38	2154.25	2112.78	26.97	OSF1.50	12120.00	10430.00				MinPt-O-SF	
	9501.53	165.13	9390.00	9336.39	88.58	OSF1.50	20540.38	10430.00				TD	
Cimarex Vaca Draw 20-17 Federal #43H Rev3 IP 13Aug19 (Non-Def Plan)													Pass
	1870.70	32.81	1868.20	1837.89	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	
	1870.70	32.81	1868.17	1837.89	68360.78	MAS = 10.00 (m)	22.00	22.00				WRP	
	1805.63	111.19	1730.66	1694.43	24.88	OSF1.50	8820.00	8807.64				MinPt-CtCt	
	1805.78	111.73	1730.43	1694.05	24.79	OSF1.50	8860.00	8847.64				MINPT-O-EOU	
	1805.89	111.86	1730.44	1694.03	24.76	OSF1.50	8870.00	8857.64				MinPt-O-ADP	
	1827.27	115.94	1748.73	1711.33	24.38	OSF1.50	9210.00	9197.64				MinPt-O-SF	
	2036.44	249.61	1867.18	1786.83	12.62	OSF1.50	14680.00	10430.00				MinPt-CtCt	
	2042.65	520.13	1693.03	1522.52	5.96	OSF1.50	20540.38	10430.00				MinPts	
Final Surveys - Cimarex Vaca Draw 20-17 Federal #4H ST01 MWD 0ft-22279ft (Surcon Corrected) (Def Survey)													Pass
	3069.09	32.81	3067.39	3036.28	N/A	MAS = 10.00 (m)	0.00	0.00				MinPts	
	3069.12	32.81	3067.38	3036.31	76171.52	MAS = 10.00 (m)	22.00	22.00				WRP	
	3069.28	32.81	3067.33	3036.48	11951.89	MAS = 10.00 (m)	80.00	80.00				MINPT-O-EOU	
	3069.73	32.81	3067.26	3036.92	3999.64	MAS = 10.00 (m)	160.00	160.00				MINPT-O-EOU	
	2072.39	100.23	2004.62	1972.16	31.87	OSF1.50	9180.00	9167.64				MinPt-CtCt	
	2072.60	100.83	2004.41	1971.77	31.71	OSF1.50	9230.00	9217.64				MINPT-O-EOU	
	2072.90	101.18	2004.46	1971.72	31.61	OSF1.50	9260.00	9247.64				MinPt-O-ADP	
	2011.04	113.61	1934.35	1897.43	27.20	OSF1.50	10660.00	10401.10				MinPt-CtCt	
	2011.07	113.70	1934.32	1897.37	27.18	OSF1.50	10670.00	10403.16				MinPts	
	2034.16	116.01	1955.88	1918.15	26.92	OSF1.50	10890.00	10429.25				MinPt-O-SF	
	2756.79	136.64	2665.22	2620.15	30.57	OSF1.50	12750.00	10430.00				MinPt-CtCt	
	2758.45	144.48	2661.64	2613.96	28.91	OSF1.50	13000.00	10430.00				MINPT-O-EOU	
	2759.65	145.97	2661.86	2613.68	28.63	OSF1.50	13050.00	10430.00				MinPt-O-ADP	
	2760.82	161.97	2652.36	2598.85	25.78	OSF1.50	13490.00	10430.00				MinPt-CtCt	
	2762.29	166.55	2650.78	2595.74	25.08	OSF1.50	13630.00	10430.00				MINPT-O-EOU	
	2762.11	173.69	2645.83	2588.42	24.04	OSF1.50	13810.00	10430.00				MinPt-CtCt	
	2761.99	198.99	2628.85	2563.00	20.96	OSF1.50	14480.00	10430.00				MinPt-CtCt	
	2744.31	253.39	2574.90	2490.92	16.33	OSF1.50	15840.00	10430.00				MinPt-CtCt	
	2728.10	304.04	2524.92	2424.06	13.52	OSF1.50	17020.00	10430.00				MinPt-CtCt	
	2729.59	308.41	2523.50	2421.18	13.33	OSF1.50	17140.00	10430.00				MINPT-O-EOU	
	2734.60	325.06	2517.41	2409.54	12.67	OSF1.50	17530.00	10430.00				MinPt-CtCt	
	2735.23	331.09	2514.02	2404.14	12.44	OSF1.50	17680.00	10430.00				MinPt-CtCt	
	2726.77	344.84	2496.39	2381.92	11.90	OSF1.50	18030.00	10430.00				MinPt-CtCt	
	2729.07	354.31	2492.38	2374.75	11.59	OSF1.50	18280.00	10430.00				MINPT-O-EOU	
	2731.52	357.23	2492.89	2374.29	11.51	OSF1.50	18360.00	10430.00				MinPt-O-ADP	
	2753.05	397.57	2487.52	2355.48	10.42	OSF1.50	19270.00	10430.00				MinPt-CtCt	
	2748.31	413.15	2472.40	2335.16	10.01	OSF1.50	19640.00	10430.00				MinPt-CtCt	
	2750.14	451.63	2448.58	2298.51	9.16	OSF1.50	20540.38	10430.00				MinPts	
Final Surveys - Cimarex Vaca Draw 20-17 Federal #4H MWD 0ft-12228ft (Surcon Corrected) (Def Survey)													Pass
	3069.09	32.81	3066.59	3036.28	N/A	MAS = 10.00 (m)	0.00	0.00				MinPts	
	3069.12	32.81	3066.58	3036.31	76151.61	MAS = 10.00 (m)	22.00	22.00				WRP	
	3069.28	32.81	3066.53	3036.48	11948.77	MAS = 10.00 (m)	80.00	80.00				MINPT-O-EOU	
	3069.73	32.81	3066.46	3036.92	3998.59	MAS = 10.00 (m)	160.00	160.00				MINPT-O-EOU	
	2072.39	101.17	2003.69	1971.22	31.86	OSF1.50	9180.00	9167.64				MinPt-CtCt	

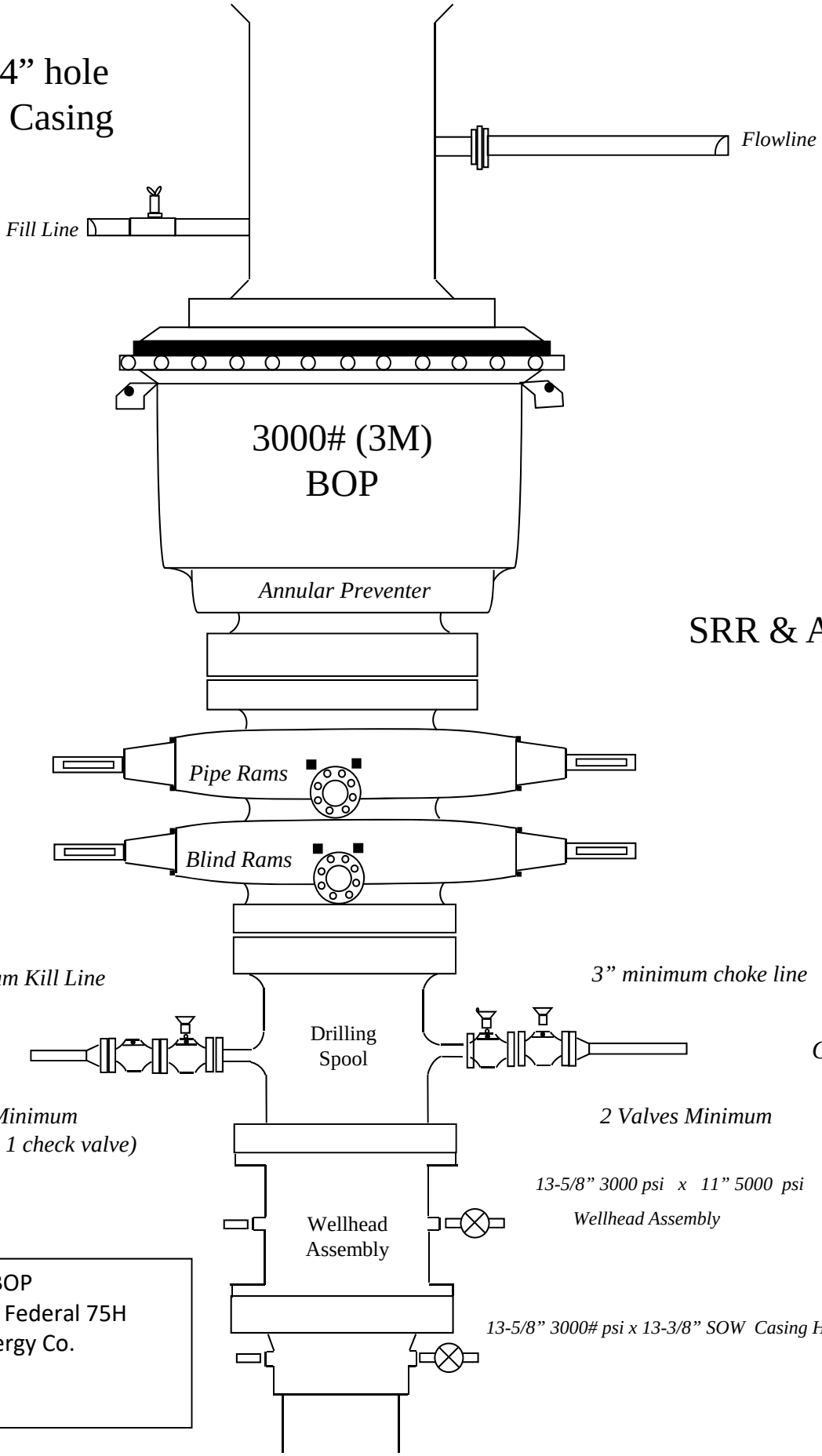
Offset Trajectory	Separation			Allow	Sep.	Controlling	Reference Trajectory		Risk Level			Alert	Status
	Ct-Ct (ft)	MAS (ft)	EOU (ft)	Dev. (ft)	Fact.	Rule	MD (ft)	TVD (ft)	Alert	Minor	Major		
	2072.60	101.76	2003.47	1970.84	31.69	OSF1.50	9230.00	9217.64				MINPT-O-EOU	
	2072.90	102.11	2003.53	1970.79	31.60	OSF1.50	9260.00	9247.64				MinPt-O-ADP	
	2011.04	114.53	1933.43	1896.51	27.19	OSF1.50	10660.00	10401.10				MinPt-CtCt	
	2011.07	114.62	1933.39	1896.45	27.17	OSF1.50	10670.00	10403.16				MinPts	
	2034.16	116.92	1954.95	1917.23	26.91	OSF1.50	10890.00	10429.25				MinPt-O-SF	
	10289.22	162.86	10179.79	10126.36	96.27	OSF1.50	20540.38	10430.00				TD	

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



2000# BOP
Vaca Draw 20-17 Federal 75H
Cimarex Energy Co.

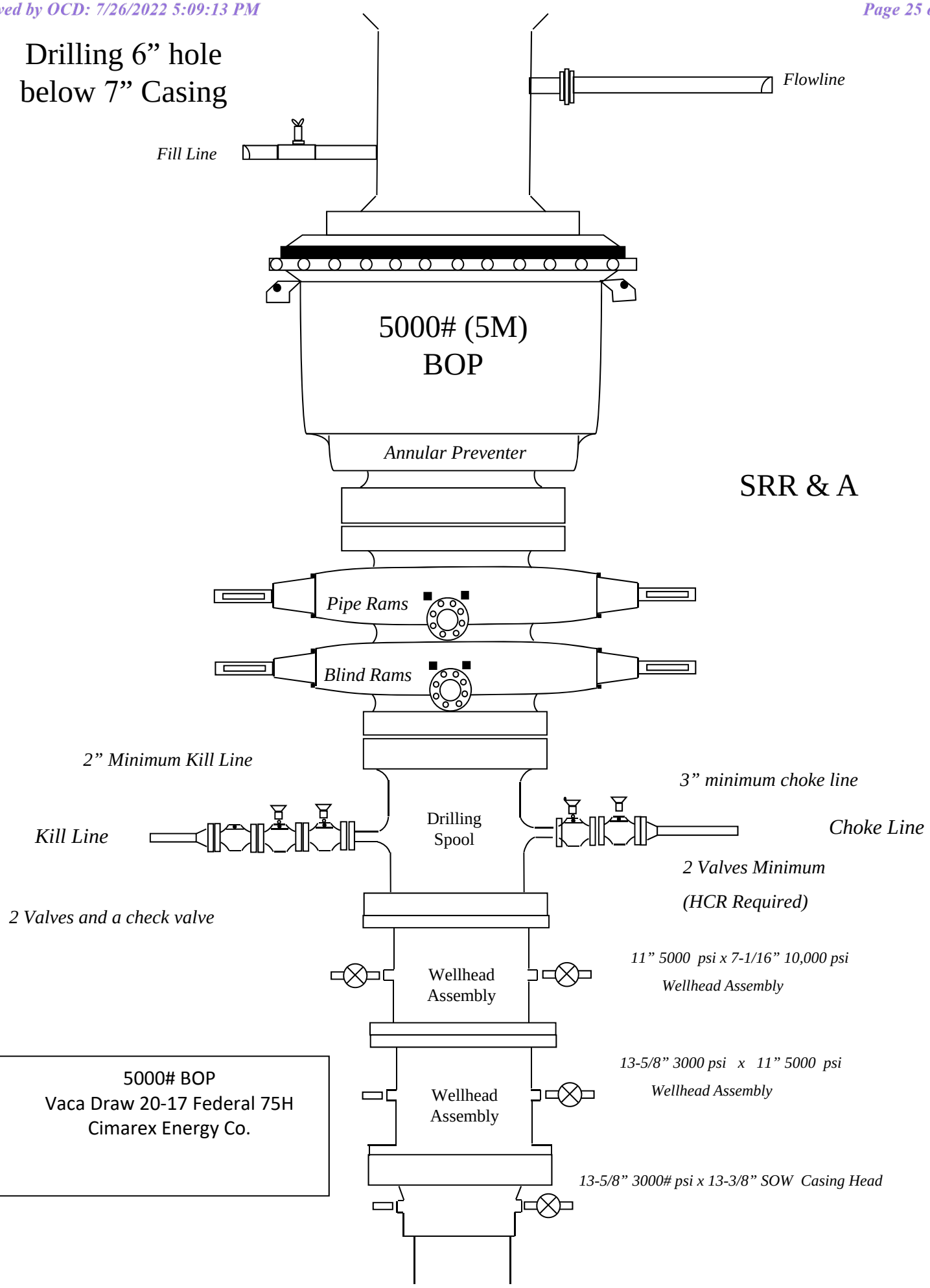
Drilling 8-3/4" hole
below 9 5/8" Casing



SRR & A

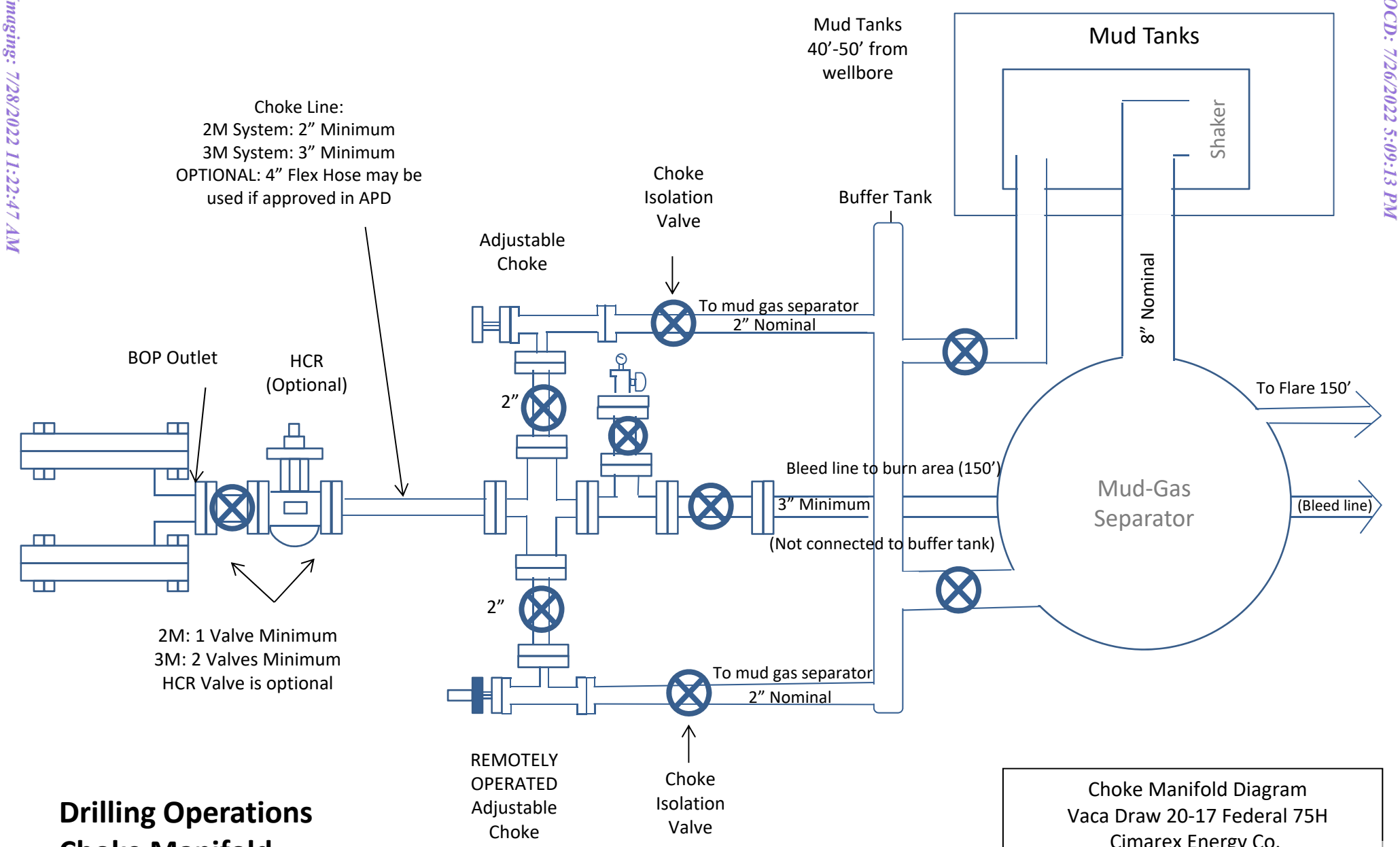
3000# BOP
Vaca Draw 20-17 Federal 75H
Cimarex Energy Co.

Drilling 6” hole below 7” Casing



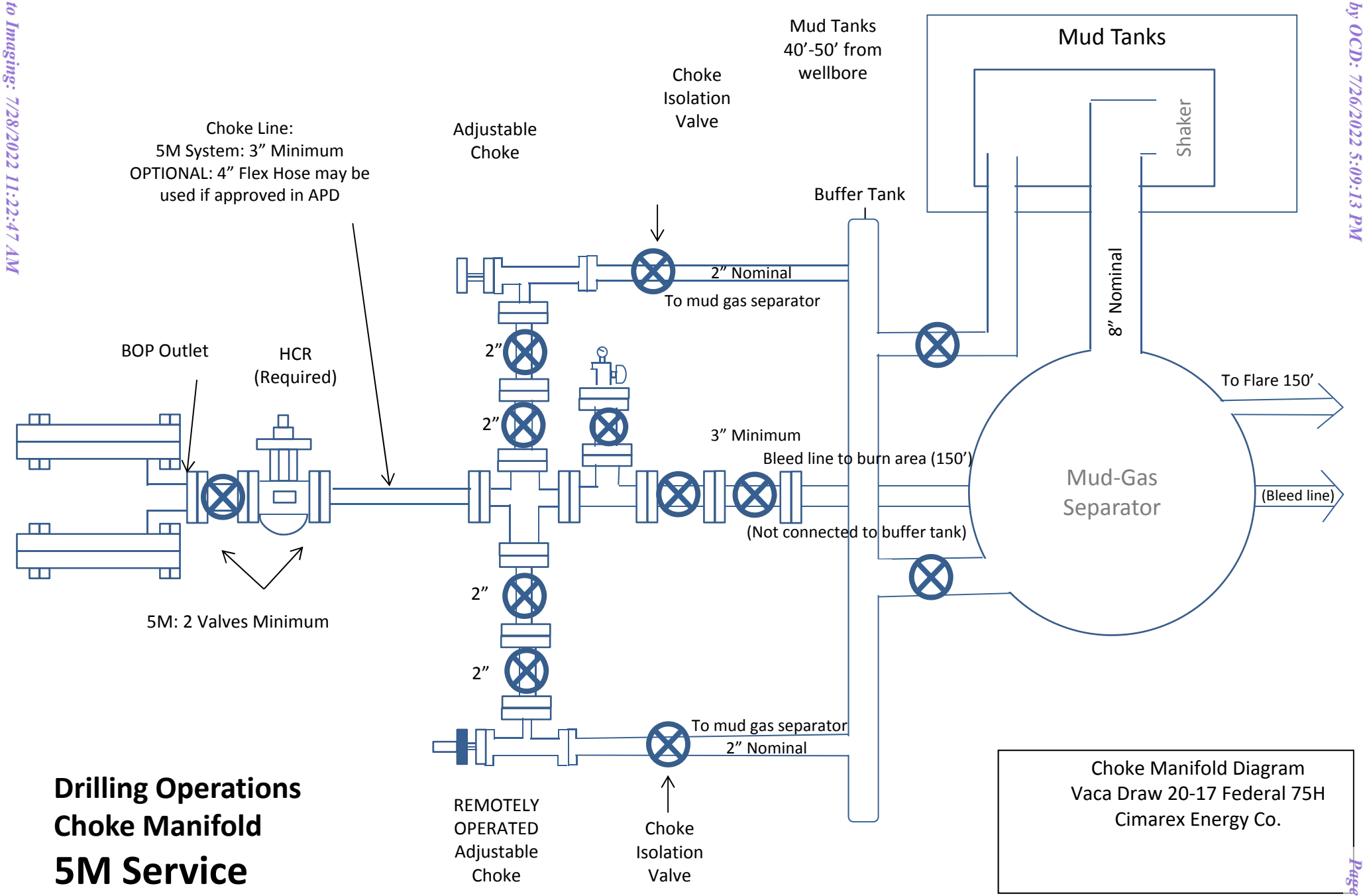
SRR & A

5000# BOP
Vaca Draw 20-17 Federal 75H
Cimarex Energy Co.



Drilling Operations
Choke Manifold
2M/3M Service

Choke Manifold Diagram
Vaca Draw 20-17 Federal 75H
Cimarex Energy Co.



Drilling Operations
Choke Manifold
5M Service

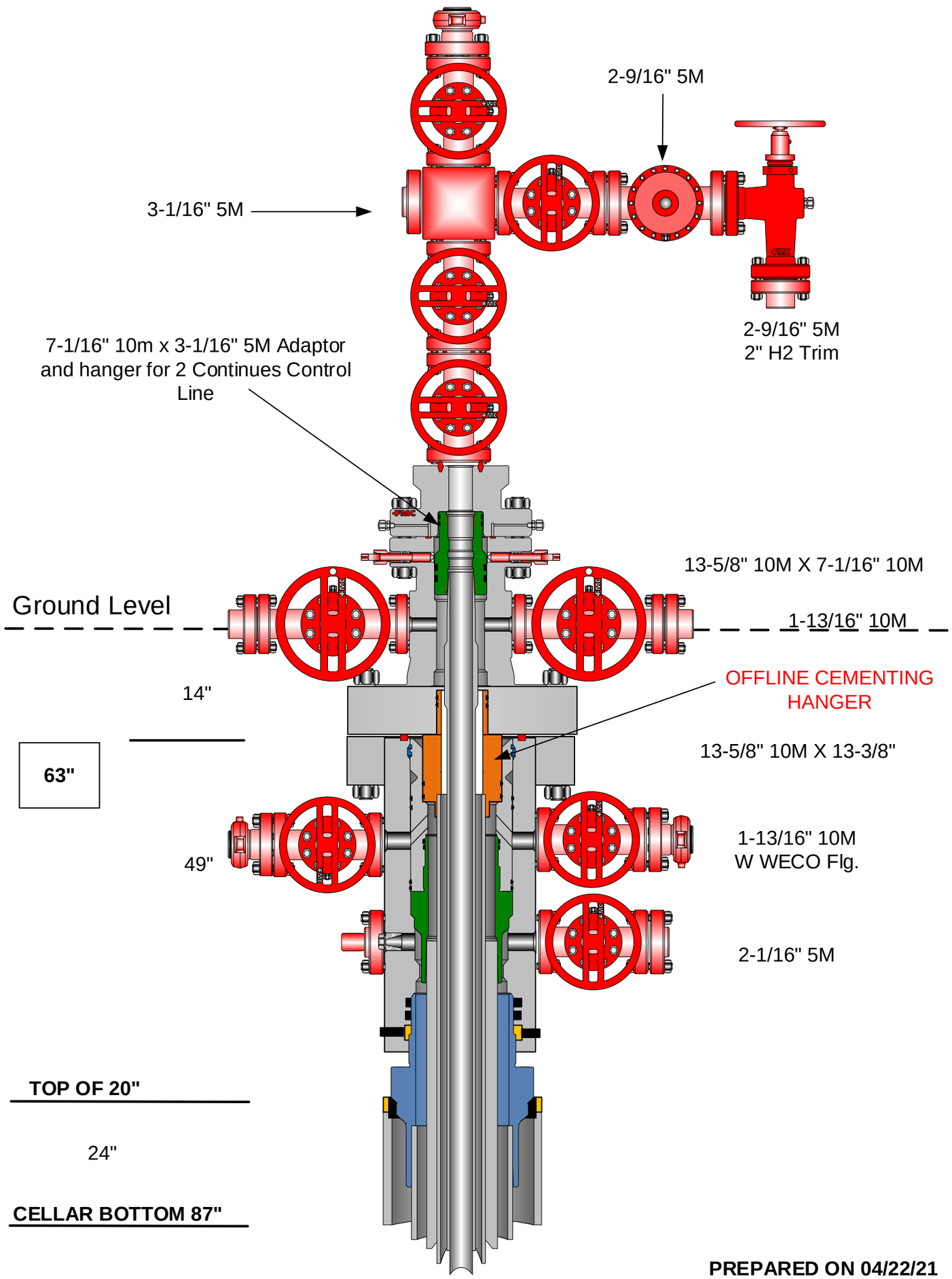
Choke Manifold Diagram
Vaca Draw 20-17 Federal 75H
Cimarex Energy Co.

CACTUS FOR SERVICE
WEARBUSHING
IN CASING HEAD &
CASING SPOOL

LEA CO., NM

Vaca Draw 20-17 Federal 75H

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	1020	1020	13-3/8"	48.00	H-40	ST&C	1.68	3.93	6.58
12 1/4	0	4920	4920	9-5/8"	40.00	HCK-55	LT&C	1.45	1.50	2.85
8 3/4	0	9845	9845	7"	26.00	P-110	LT&C	1.35	2.16	2.57
8 3/4	9845	10595	10386	7"	26.00	P-110	BT&C	1.28	2.05	59.01
6	8845	20540	10430	4-1/2"	11.60	P-110	BT&C	1.55	2.19	19.96
						BLM Minimum Safety Factor		1.125	1	1.6 Dry 1.8 Wet



PREPARED ON 04/22/21

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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

CONDITIONS

Action 128931

CONDITIONS

Operator: CIMAREX ENERGY CO. 600 N. Marienfeld Street Midland, TX 79701	OGRID: 215099
	Action Number: 128931
	Action Type: [C-103] NOI Change of Plans (C-103A)

CONDITIONS

Created By	Condition	Condition Date
pkautz	PREVIOUS COA's APPLY	7/28/2022