

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENTFORM APPROVED
OMB NO. 1004-0137
Expires: January 31, 2018**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.5. Lease Serial No.
NMNM118722

6. If Indian, Allottee or Tribe Name

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

8. Well Name and No.
SD 14 23 FED P19 17H9. API Well No.
30-025-45706-00-X110. Field and Pool or Exploratory Area
WC025G08S263205N-UP WOLFCAMP11. County or Parish, State
LEA COUNTY, NM**SUBMIT IN TRIPLICATE - Other instructions on page 2**1. Type of Well
☒ Oil Well ☐ Gas Well ☐ Other2. Name of Operator Contact: LAURA BECERRA
CHEVRON USA INCORPORATED E-Mail: LBECCERRA@CHEVRON.COM3a. Address
6301 DEAUVILLE BLVD
MIDLAND, TX 797063b. Phone No. (include area code)
Ph: 432-687-76554. Location of Well (Footage, Sec., T., R., M., or Survey Description)

Sec 14 T26S R32E NWNE 455FNL 1455FEL
32.049053 N Lat, 103.641693 W Lon

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

TYPE OF SUBMISSION	TYPE OF ACTION			
<input checked="" type="checkbox"/> Notice of Intent	<input type="checkbox"/> Acidize	<input type="checkbox"/> Deepen	<input type="checkbox"/> Production (Start/Resume)	<input type="checkbox"/> Water Shut-Off
<input type="checkbox"/> Subsequent Report	<input type="checkbox"/> Alter Casing	<input type="checkbox"/> Hydraulic Fracturing	<input type="checkbox"/> Reclamation	<input type="checkbox"/> Well Integrity
<input type="checkbox"/> Final Abandonment Notice	<input type="checkbox"/> Casing Repair	<input type="checkbox"/> New Construction	<input type="checkbox"/> Recomplete	<input checked="" type="checkbox"/> Other
	<input type="checkbox"/> Change Plans	<input type="checkbox"/> Plug and Abandon	<input type="checkbox"/> Temporarily Abandon	Hydraulic Fracture
	<input type="checkbox"/> Convert to Injection	<input type="checkbox"/> Plug Back	<input type="checkbox"/> 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 recomplate 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 recomplate 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.

Chevron respectfully submits the attached annular mitigation plan with proposed hydraulic fracturing operations.

Accepted - KMS NMOC

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

**Electronic Submission #524527 verified by the BLM Well Information System
For CHEVRON USA INCORPORATED, sent to the Hobbs
Committed to AFMSS for processing by PRISCILLA PEREZ on 08/07/2020 (20PP3283SE)**

Name (Printed/Typed) LAURA BECERRA

Title REGULATORY SPECIALIST

Signature (Electronic Submission)

Date 08/06/2020

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved By NDUNGU KAMAU

Title PETROLEUM ENGINEER

Date 08/14/2020

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 Hobbs

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 ****

Revisions to Operator-Submitted EC Data for Sundry Notice #524527

	Operator Submitted	BLM Revised (AFMSS)
Sundry Type:	OTHER NOI	HF NOI
Lease:	NMNM118722	NMNM118722
Agreement:		
Operator:	CHEVRON USA INC 6301 DEAUVILLE BLVD MIDLAND, TX 79706 Ph: 432-687-7665	CHEVRON USA INCORPORATED 6301 DEAUVILLE BLVD MIDLAND, TX 79706 Ph: 432.687.7100 Fx: 432-687-7221
Admin Contact:	LAURA BECERRA SR REGULATORY AFFAIRS COORD E-Mail: LBECERRA@CHEVRON.COM Ph: 432-687-7665	LAURA BECERRA REGULATORY SPECIALIST E-Mail: LBECERRA@CHEVRON.COM Ph: 432-687-7655
Tech Contact:	LAURA BECERRA SR REGULATORY AFFAIRS COORD E-Mail: LBECERRA@CHEVRON.COM Ph: 432-687-7665	LAURA BECERRA REGULATORY SPECIALIST E-Mail: LBECERRA@CHEVRON.COM Ph: 432-687-7655
Location:		
State:	NM	NM
County:	LEA	LEA
Field/Pool:	WC025G08S263205N;UP WOLFC	WC025G08S263205N-UP WOLFCAMP
Well/Facility:	SD 14 23 FED P19 17H Sec 14 T26S R32E Mer NMP NWNE 455FNL 1455FEL	SD 14 23 FED P19 17H Sec 14 T26S R32E NWNE 455FNL 1455FEL 32.049053 N Lat, 103.641693 W Lon

Delaware Basin

Variance/Sundry for Federal Well



Well Names:

Well Name		API
SD 14 23 FED P19	17H	30-025-45706
SD 14 23 FED P19	20H	30-025-45826

CVX CONTACT:

Phillipe Salanova
Drilling Engineer
MCBU; New Mexico
psalanova@chevron.com
713-372-1373 (office)

Nick Zerante
Completion Engineer
MCBU; New Mexico
oejy@chevron.com
713-372-3577 (office)

Request:

Chevron is respectfully seeking approval to continue with the proposed hydraulic fracturing operations, specifically on the defect wells 17H and 20H, along with the following annular mitigation plan as seen below.

Well & Pad History:

The permitted primary production cement jobs (on 5" x 5-1/2") for the pad SD 14 23 FED P19 (AKA: Pad 19) were performed during Q4 of 2019. During the cement operation, two wells (17H & 20H) of the four well pad incurred partial & intermittent complete losses observed due to increased ECD downhole surpassing the fracture initiation pressure in the Wolfcamp formations. The other two wells (18H & 19H) observed little to no issues during the cement job and were later confirmed with positive results from the cement bond logs, proving top of cement surpassed the minimum requirements set forth in the BLM COAs for the given pad.

As seen in the table summarized below, the TOC on 17H and 20H do not reach the INT shoe, nor do they meet the COA requirements. At the time these wells were drilled cased and cemented, the volume of fluid lost during the primary cement job did not lead the rig personnel to suspect COA requirements were not met; it was only recently brought to light via cement bond logs.

	17H	18H	19H	20H
INT Casing	7-5/8"	7-5/8"	7-5/8"	7-5/8"
INT Shoe Set Depth	11,362'	11,332'	11,343'	11,460'
PROD Casing	5-1/2 x 5	5-1/2 x 5	5-1/2 x 5	5-1/2 x 5
PROD Set Depth	22,610'	18,147'	22,613'	22,548'
Bumped plug	Yes	Yes	Yes	Yes
Returns?	Partial	Full	Full	Partial
TOC	11,470'	7,895'	8,765'	18,697'
Top verification method	USIT Log	CBL	USIT Log	USIT Log

Completions Proposal for Salado Draw Pad 19

The Chevron completions engineering team has worked and received endorsement internally via the MOC (Management of Change) process, which is needed to perform the hydraulic fracturing operation on 17H & 20H wells, as no cement barrier is in place to isolate the perforation(s) to the wellhead.

Chevron is seeking approval through the Bureau of Land Management to hydraulically frac 17H & 20H wells per the Chevron Approved MOC process which prescribes the following:

The proposed operation is to frac the Salado Draw Pad 19 while monitoring pressure on the annulus while adhering to similar procedures and mitigations previously endorsed by Chevron and BLM. The key safeguard utilized in this hydraulic fracturing operation will be utilizing the mechanical MAWOP as seen in the following table. By effectively managing the surface pressure observed at the wellhead, Chevron can ensure the mechanical strengths of all components subsurface can be monitored and controlled. *Note: This prescriptive process was utilized and executed successfully, with BLM endorsement on SD P18 9H in February of 2020.*

MAWOP (psi)	SD 14 23 FED P19 17H	SD 14 23 FED P19 18H	SD 14 23 FED P19 19H	SD 14 23 FED P19 20H
C Annulus	136	134	141	140
B Annulus	1655 (Shoe) / 3306 (Liner)*	1716	1775	1724 (Shoe) / 4766 (Liner)*
B Annulus Pop-Off Set Value	1600 (Shoe) / 3300 (Liner)	1700	1700	1700 (Shoe) / 4700 (Liner)
C Annulus Pop-Off Set Value	100	100	100	100

As seen above the 17H will have a B annulus (Production x Intermediate) maximum allowable wellhead operating pressure of 3,306 psi, as 20H well have a B annulus MAWOP of 4,766 psi.

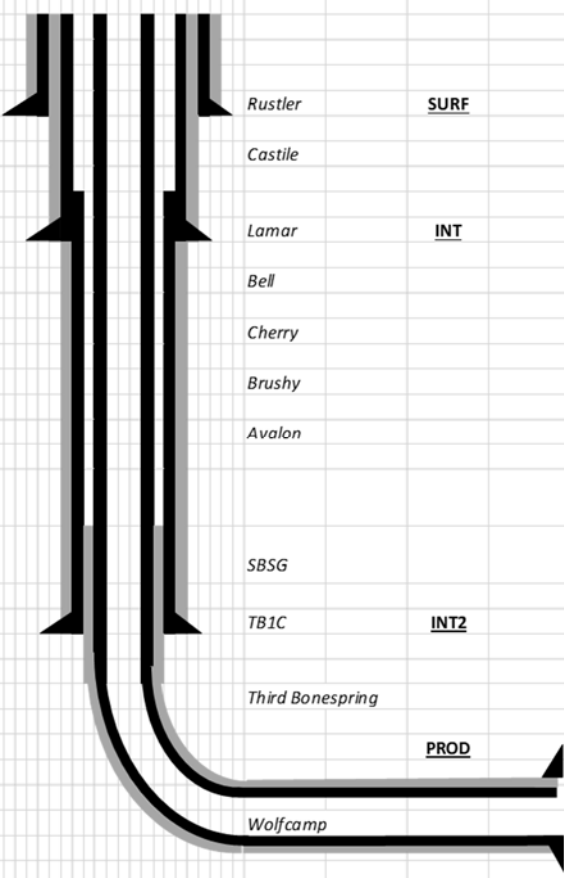
Procedure for the frac operations:

- Annulus pressure management equipment/iron will be installed, restrained and tested per OEM and Chevron Specifications
- Pop-off valves will be installed on all annuli and will be set to the approved MAWOP values (as depicted above)
- Digital transducers will be set on all annuli and will be monitored at all times during hydraulic fracturing operations
 - Alarms automatically trigger between 75 & 95% of MAWOP
- For each stage on Pad 19 17H and 20H wells, the operation will bring pressure up while getting pumps to treating rate
 - As each set of pumps is brought on, the operation will let the pressure stabilize and ensure there is no direct communication with the annulus. In the event direct communication of pressure occurs; operations will be ceased, and a plan will be developed pending BLM approval.
- During frac operations, the annulus can be bled down, up to three times during a stage. If a third bleed off is required, the stage will be terminated, and the operation must move on to the next interval (plug/perf stage).
 - If annulus pressure is rising during a stage and reaches 95% of MAWOP, the frac crew will go to flush and attempt to clear the well of sand to avoid a screen out. If the annular pressure reaches MAWOP, the crew will shut down the pumps immediately and allow pressure to bleed off.

- If two stages in a row cannot be completed due to an inability to keep annulus pressure below the required MAWOP threshold, then the well of concern will cease operations and will not resume hydraulic fracturing operations on that well until a plan is developed and approved by all required personnel within Chevron.
 - If annulus pressure cannot be bled below the required threshold to continue hydraulic operations, operations will be stopped on that well until a plan is developed and approved by Chevron and BLM.
- Post frac injection test
 - After hydraulic fracturing operations (before or after plug drill out) an injection test will be performed on any annuli with pressure to MAWOP of the formation breakdown pressure. If injection is sufficient to bullhead cement, the well will be remediated via bull heading cement down the annulus to an acceptable amount to provide isolation for the life of the well. (A CBL will be performed to validate the cement squeeze operation.)
- If injection is not sufficient for injection, a test of the annulus will be performed, and BLM will be notified of the results. Remediation options will be further discussed with the BLM as well.
 - The annular pressure will be monitored for the life of the well.

Supporting Engineering Justification: The burst and collapse pressures for each string of casing used in the well are listed below. Chevron will utilize an annulus pressure mitigation plan to ensure that pressure never exceeds any of the mechanical limits of the well.

Selection Dropdown	Description	Size	Weight (lb/ft)	Grade	ID	Drift	Collapse Resistance (psi)	Internal Yield Pressure (psi)	Joint Yield Strength Lb.	Capacity (bbl/ft)
Surface Casing - 13 3/8"-54.5#	Surface Casing	13 3/8	54.5	J-55	12.615	12.459	1130	2730	853000	0.1546
Intermediate Casing - 9 5/8"-43.5#	Intermediate Casing	9 5/8	43.5	L80 IC	8.755	8.599	4830	6330	1005000	0.0745
Intermediate Casing - 7 5/8"-29.7#	Intermediate Casing	7 5/8	29.7	L-80	6.875	6.75	4790	6890	409000	0.0459
Production Casing - 5 1/2"-20#	Production Casing	5 1/2	20	P-110 ICY	4.778	4.653	12100	14360	729000	0.0222
Production Casing - 5"-18#	Production Casing	5	18	P-110 IC	4.276	4.151	14840	13940	428000	0.0178

			Hole	Casing	Target MW	Cement Req.	SA&O	Shoe tests
	Rustler	<u>SURF</u>	16"	13-3/8 54.5 ppf J55 STC +/- 1,000 ft	8.4-8.7 Spud mud	Cement to Surface	Mud logging	17.7 target, 15.0 min FIT
	Castile		12.25"	9-5/8 40/43.5 ppf L80-IC LTC +/- 5,000 ft	10.0 ppg	Cement to Surface	Mud logging, Gamma Ray	LOT 11.4 min
	Lamar	<u>INT</u>	8.5"	7 5/8" 29.7 ppf L80 Wedge 513 +/- 11,500 ft	9.2 ppg	Cement to Liner top (@ ~300 ft inside previous shoe of INT)	Mud logging, Gamma Ray	INT2 shoe test Extended LOT Min LOT expected at 14.8
	Bell							
	Cherry							
	Brushy							
	Avalon							
	SBSG							
	TB1C	<u>INT2</u>						
	Third Bonespring							
	Wolfcamp	<u>PROD</u>	6.75"	5" 18 ppf P110IC X 5-1/2" 20 ppf P110 ICY TD: +/- 23,000 ftMD / ~12,500 ftTVD	12.5- 14.8 ppg	Cement to within previous shoe (@ ~300-500 ft inside of previous shoe of INT2)	Mud logging, Gamma Ray	N/A

Note: Well diagram as shown has approximate values and depths to illustrate the typical 4 string design in South Lea County

As previously indicated, the maximum allowable wellhead operating pressure (MAWOP) was calculated for the all exposed mechanical components, including the intermediate casing, the intermediate liner and liner shoe.

Chevron's casing design process was utilized to determine MAWOP for the 17H and 20H wells: A design factor of 1.2 (20% safety factor, standard for Chevron Casing Design Standards) for burst on the weakest exposed casing string along with a high (conservative) hydrostatic column utilized for the engineering calculation. Upon usage of the calculations, the finalized MAWOP, including all safety factors to remain below the burst rating of the limiting mechanical component, which equates to 3,306 with 13 ppg hydrostatic column and 4,766 psi with a 10.5 ppg hydrostatic column on the 17H and 20H respectively.

17H

17H							Exposed Casing Strings	Burst Rtg (psi)	w/ SF (1.2)	Set TVD	Exp PP
Well TVD	12235	ft					7-5/8"	6890	5741.666667	11275	8.8
Shoe TVD	11275	ft					9-5/8"	6330	5275	4512	8.8
MW in Annulus (Ran 5.5x5)	13	ppg	HP at Shoe	7621.9							
Fluid weight in Prod Csg	8.6	ppg					Load Case				
Max Anticipated SP	9000	psi					Exposed Casing Strings	External P (mid PP)	Internal 1 (HP)	MAWOP	
Min Anticipated Friction psi	1160	psi					7-5/8"	5186.5	7621.9	3306.27	
Induced BHP during Injection	13311.492	psi	SP as Result	5040.632	Frac P @Shoe	12662.532	9-5/8"	2075.52	3050.112	4300.41	
Max anticipated BHP in area	10000	psi	SP as Result	1729.14	Frac P @Shoe	9351.04					

20H

20H												
Well TVD	12207	ft	HP at Shoe	6192.732				Exposed Casing Strings	Burst Rtg (psi)	w/ SF (1.2)	Set TVD	Exp PP
Shoe TVD	11342	ft						7-5/8"	6890	5741.666667	11342	8.8
								9-5/8"	6330	5275	4629	8.8
MW in Annulus (Ran 5.5x5)	10.5	ppg										
Fluid weight in Prod Csg	8.6	ppg										
Max Anticipated SP	9000	psi										
Min Anticipated Friction psi	1160	psi						Exposed Casing Strings	External P (mid PP)	Internal 1 (HP)	MAWOP	
								7-5/8"	5217.32	6192.732	4766.25	
Induced BHP during Injection	13298.9704	psi	SP as Result	6633.948	Frac P @Shoe	12826.68		9-5/8"	2129.34	2527.434	4876.91	
Max anticipated BHP in area	10000	psi	SP as Result	3334.978	Frac P @Shoe	9527.71						

Casing design and engineering well planning software has been used to validate this simulation (Landmark StressCheck). This can be observed in the following images with design factors only reaching 1.24 and 1.23 SF, which further validate the usage of the selected wells' MAWOP values. The weakest point in each burst load case were the 7-5/8 string.

17H Load Case via *StressCheck*

Well Summary							
	String	OD/Weight/Grade	MD Interval (usft)	Minimum Safety Factor (Abs)			
				Burst	Collapse	Axial	Triaxial
1	Surface Casing	13 3/8", 54.50	32.5-854.0	1.79	2.83	6.14	2.22
2							
3							
4	Intermediate Casin	9 5/8", 43.500	32.5-4561.0	1.51	2.05	3.80	1.85
5							
6							
7	Intermediate Liner	7 5/8", 29.700	4200.0-11364.0	1.24	2.21	2.28	1.49
8							
9							
10	Production Casing	5 1/2", 20.000	32.5-10853.0	1.13	1.47	2.31	1.37
11		5", 18.000 ppf,	10853.0-22610.0	1.10	1.32	1.64 C	1.32
12							
13							
14							
15	C Conn Critical						
16	A Alternate Drift						
17							

20H Load Case via *StressCheck*

Well Summary							
	String	OD/Weight/Grade	MD Interval (usft)	Minimum Safety Factor (Abs)			
				Burst	Collapse	Axial	Triaxial
1	Surface Casing	13 3/8", 54.50	32.5-848.0	1.79	2.85	6.15	2.23
2							
3							
4	Intermediate Casin	9 5/8", 43.500	32.5-4696.0	1.24	2.05	3.69	1.52
5							
6							
7	Intermediate Liner	7 5/8", 29.700	4360.0-11460.0	1.23	2.17	2.29	1.48
8							
9							
10	Production Casing	5 1/2", 20.000	32.5-10853.0	1.13	1.47	2.31	1.37
11		5", 18.000 ppf,	10853.0-22548.0	1.10	1.32	1.64 C	1.32
12							
13							
14							
15	C Conn Critical						
16	A Alternate Drift						
17							