Form 3160-3
(June 2015)

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

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No.

6. If Indian, Allotee or Tribe Name

1a. Type of work: ☐ DRILL ☐ REENTER

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

1c. Type of Completion: ☐ Hydraulic Fracturing ☐ Single Zone ☐ Multiple Zone

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

8. Lease Name and Well No.

[333134]

2. Name of Operator **EARTHSTONE OPERATING, LLC [331165]**

9. API Well No. **30-025-50425**

3a. Address	3b. Phone No. *(include area code)*	10. Field and Pool, or Exploratory **[37570]**

4. Location of Well *(Report location clearly and in accordance with any State requirements.*)*

At surface

At proposed prod. zone

11. Sec., T. R. M. or Blk. and Survey or Area

14. Distance in miles and direction from nearest town or post office*	12. County or Parish	13. State

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any)	16. No of acres in lease	17. Spacing Unit dedicated to this well

18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.	19. Proposed Depth	20. BLM/BIA Bond No. in file

21. Elevations (Show whether DF, KDB, RT, GL, etc.)	22. Approximate date work will start*	23. Estimated duration

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No. 1, and the Hydraulic Fracturing rule per 43 CFR 3162.3-3 (as applicable)

1. Well plat certified by a registered surveyor.
2. A Drilling Plan.
3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO must be filed with the appropriate Forest Service Office).
4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).
5. Operator certification.
6. Such other site specific information and/or plans as may be requested by the BLM.

25. Signature	Name *(Printed/Typed)*	Date

Title

Approved by *(Signature)*	Name *(Printed/Typed)*	Date

Title	Office

Application approval 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.
Conditions of approval, if any, are attached.

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.

NGMP Rec 07/01/2022

SL

APPROVED WITH CONDITIONS

KZ
08/09/2022

(Continued on page 2)

*(Instructions on page 2)

Approval Date: 04/08/2022

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

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

[1] API Number	[2] Pool Code	[3] Pool Name
30-025-50425	37570	LEA; BONE SPRING

[4] Property Code	[5] Property Name	[6] Well Number
333134	THUNDERBALL 23 FED 3BS COM	3H

[7] OGRID No.	[8] Operator Name	[9] Elevation
331165	EARTHSTONE OPERATING, LLC	3767.1

[10] Surface Location

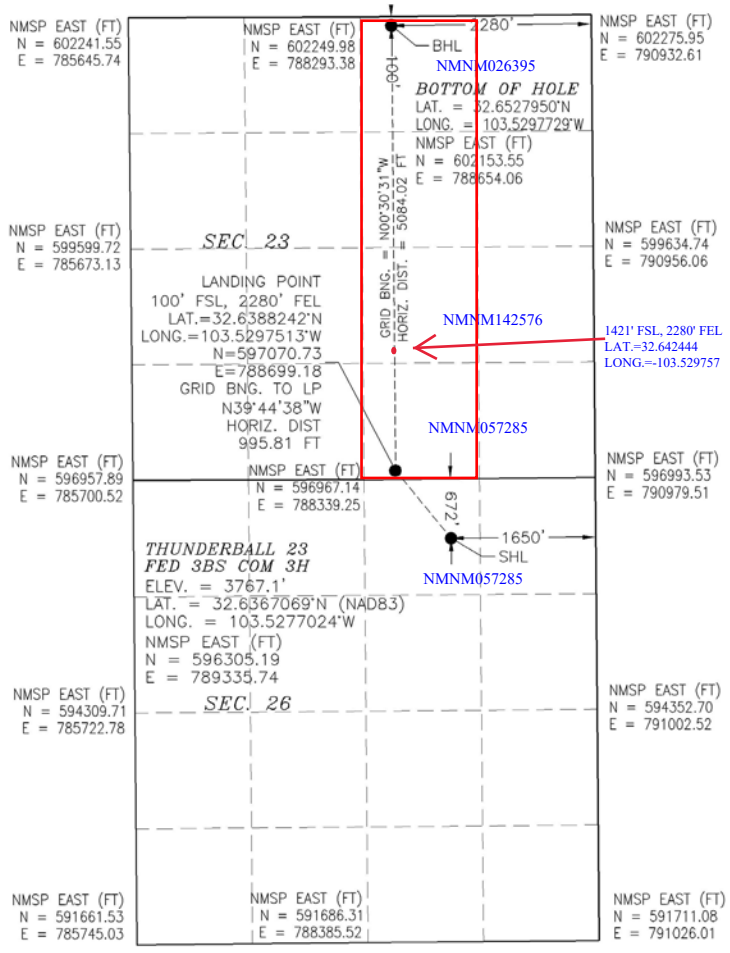
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
B	26	19 S	34 E		672	NORTH	1650	EAST	LEA

[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
B	23	19 S	34 E		100	NORTH	2280	EAST	LEA

[12] Dedicated Acres	[13] Joint or Infill	[14] Consolidation Code	[15] Order No.
160			

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.



[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.

Jennifer Elrod 09/17/2021
Signature Date

Jennifer Elrod
Printed Name

JELROD@CHISHOLMENERGY.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.

SEPTEMBER 1, 2021
Date of Survey

Signature and Seal of Professional Surveyor:

Certificate Number: EDMUND F. JARAMILLO, LS 12797
SURVEY NO. 9046

Intent [X] As Drilled [ ]

API #

Operator Name:	Property Name:	Well Number
EARTHSTONE OPERATING, LLC	THUNDERBALL 23 FED 3BS COM	3H

Kick Off Point (KOP)

UL	Section	Township	Range	Lot	Feet	From N/S	Feet	From E/W	County
B	26	19S	34E		672	NORTH	1650	EAST	LEA

Latitude	Longitude	NAD
32.6367069	103.5277024	83

First Take Point (FTP)

UL	Section	Township	Range	Lot	Feet	From N/S	Feet	From E/W	County
O	23	19S	34E		100	SOUTH	2280	EAST	LEA

Latitude	Longitude	NAD
32.6388242	103.5297513	83

Last Take Point (LTP)

UL	Section	Township	Range	Lot	Feet	From N/S	Feet	From E/W	County
B	23	19S	34E		100	NORTH	2280	EAST	LEA

Latitude	Longitude	NAD
32.6527950	103.5297729	83

Is this well the defining well for the Horizontal Spacing Unit? NO

Is this well an infill well? YES

If infill is yes please provide API if available, Operator Name and well number for Defining well for Horizontal Spacing Unit.

API #
N/A

Operator Name:	Property Name:	Well Number
EARTHSTONE OPERATING, LLC	THUNDERBALL 23 FED 1BS COM	1H

KZ 06/29/2018

State of New Mexico
Energy, Minerals and Natural Resources Department

Submit Electronically
Via E-permitting

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

NATURAL GAS MANAGEMENT PLAN

This Natural Gas Management Plan must be submitted with each Application for Permit to Drill (APD) for a new or recompleted well.

Section 1 – Plan Description

Effective May 25, 2021

I. Operator: EARTHSTONE OPERATING, LLC **OGRID:** 331165 **Date:** 09 / 20 / 2021

II. Type: ☒ Original ☐ Amendment due to ☐ 19.15.27.9.D(6)(a) NMAC ☐ 19.15.27.9.D(6)(b) NMAC ☐ Other.

If Other, please describe: _____

III. Well(s): Provide the following information for each new or recompleted well or set of wells proposed to be drilled or proposed to be recompleted from a single well pad or connected to a central delivery point.

Well Name	API	ULSTR	Footages	Anticipated Oil BBL/D	Anticipated Gas MCF/D	Anticipated Produced Water BBL/D
THUNDERBALL 23 FED 3BS COM 3H	30-025-50425 N/A	B-26-19S-34E	672 FNL, 1650 FEL	1800	1800	6000
THUNDERBALL 23 FED 3BS COM 4H	N/A 30-025-50425	B-26-19S-34E	672FNL, 1620 FEL	1800	1800	6000

IV. Central Delivery Point Name: THUNDERBALL 23 FED EAST BATTERY [See 19.15.27.9(D)(1) NMAC]

V. Anticipated Schedule: Provide the following information for each new or recompleted well or set of wells proposed to be drilled or proposed to be recompleted from a single well pad or connected to a central delivery point.

Well Name	API	Spud Date	TD Reached Date	Completion Commencement Date	Initial Flow Back Date	First Production Date
THUNDERBALL 23 FED 3BS COM 3H		04/27/2022	05/23/2022	11/01/2022	11/28/2022	12/01/2022
THUNDERBALL 23 FED 3BS COM 4H		05/25/2022	06/22/2022	11/01/2022	11/28/2022	12/01/2022

VI. Separation Equipment: ☒ Attach a complete description of how Operator will size separation equipment to optimize gas capture.

VII. Operational Practices: ☒ Attach a complete description of the actions Operator will take to comply with the requirements of Subsection A through F of 19.15.27.8 NMAC.

VIII. Best Management Practices: ☒ Attach a complete description of Operator's best management practices to minimize venting during active and planned maintenance.

Section 2 – Enhanced Plan

EFFECTIVE APRIL 1, 2022

Beginning April 1, 2022, an operator that is not in compliance with its statewide natural gas capture requirement for the applicable reporting area must complete this section.

☒ Operator certifies that it is not required to complete this section because Operator is in compliance with its statewide natural gas capture requirement for the applicable reporting area.

IX. Anticipated Natural Gas Production:

Well	API	Anticipated Average Natural Gas Rate MCF/D	Anticipated Volume of Natural Gas for the First Year MCF

X. Natural Gas Gathering System (NGGS):

Operator	System	ULSTR of Tie-in	Anticipated Gathering Start Date	Available Maximum Daily Capacity of System Segment Tie-in

XI. Map. ☐ Attach an accurate and legible map depicting the location of the well(s), the anticipated pipeline route(s) connecting the production operations to the existing or planned interconnect of the natural gas gathering system(s), and the maximum daily capacity of the segment or portion of the natural gas gathering system(s) to which the well(s) will be connected.

XII. Line Capacity. The natural gas gathering system ☐ will ☐ will not have capacity to gather 100% of the anticipated natural gas production volume from the well prior to the date of first production.

XIII. Line Pressure. Operator ☐ does ☐ does not anticipate that its existing well(s) connected to the same segment, or portion, of the natural gas gathering system(s) described above will continue to meet anticipated increases in line pressure caused by the new well(s).

☐ Attach Operator's plan to manage production in response to the increased line pressure.

XIV. Confidentiality: ☐ Operator asserts confidentiality pursuant to Section 71-2-8 NMSA 1978 for the information provided in Section 2 as provided in Paragraph (2) of Subsection D of 19.15.27.9 NMAC, and attaches a full description of the specific information for which confidentiality is asserted and the basis for such assertion.

Section 3 - Certifications

Effective May 25, 2021

Operator certifies that, after reasonable inquiry and based on the available information at the time of submittal:

☒ Operator will be able to connect the well(s) to a natural gas gathering system in the general area with sufficient capacity to transport one hundred percent of the anticipated volume of natural gas produced from the well(s) commencing on the date of first production, taking into account the current and anticipated volumes of produced natural gas from other wells connected to the pipeline gathering system; or

☐ Operator will not be able to connect to a natural gas gathering system in the general area with sufficient capacity to transport one hundred percent of the anticipated volume of natural gas produced from the well(s) commencing on the date of first production, taking into account the current and anticipated volumes of produced natural gas from other wells connected to the pipeline gathering system. ***If Operator checks this box, Operator will select one of the following:***

Well Shut-In. ☒ Operator will shut-in and not produce the well until it submits the certification required by Paragraph (4) of Subsection D of 19.15.27.9 NMAC; or

Venting and Flaring Plan. ☒ Operator has attached a venting and flaring plan that evaluates and selects one or more of the potential alternative beneficial uses for the natural gas until a natural gas gathering system is available, including:

- **(a)** power generation on lease;
- **(b)** power generation for grid;
- **(c)** compression on lease;
- **(d)** liquids removal on lease;
- **(e)** reinjection for underground storage;
- **(f)** reinjection for temporary storage;
- **(g)** reinjection for enhanced oil recovery;
- **(h)** fuel cell production; and
- **(i)** other alternative beneficial uses approved by the division.

Section 4 - Notices

1. If, at any time after Operator submits this Natural Gas Management Plan and before the well is spud:

(a) Operator becomes aware that the natural gas gathering system it planned to connect the well(s) to has become unavailable or will not have capacity to transport one hundred percent of the production from the well(s), no later than 20 days after becoming aware of such information, Operator shall submit for OCD's approval a new or revised venting and flaring plan containing the information specified in Paragraph (5) of Subsection D of 19.15.27.9 NMAC; or

(b) Operator becomes aware that it has, cumulatively for the year, become out of compliance with its baseline natural gas capture rate or natural gas capture requirement, no later than 20 days after becoming aware of such information, Operator shall submit for OCD's approval a new or revised Natural Gas Management Plan for each well it plans to spud during the next 90 days containing the information specified in Paragraph (2) of Subsection D of 19.15.27.9 NMAC, and shall file an update for each Natural Gas Management Plan until Operator is back in compliance with its baseline natural gas capture rate or natural gas capture requirement.

2. OCD may deny or conditionally approve an APD if Operator does not make a certification, fails to submit an adequate venting and flaring plan which includes alternative beneficial uses for the anticipated volume of natural gas produced, or if OCD determines that Operator will not have adequate natural gas takeaway capacity at the time a well will be spud.

I certify that, after reasonable inquiry, the statements in and attached to this Natural Gas Management Plan are true and correct to the best of my knowledge and acknowledge that a false statement may be subject to civil and criminal penalties under the Oil and Gas Act.

Signature:	Jennifer Elrod
Printed Name:	JENNIFER ELROD
Title:	SR. REGULATORY ANALYST
E-mail Address:	JELROD@EARTHSTONEENERGY.COM
Date:	09/20/2021
Phone:	940-452-6214

OIL CONSERVATION DIVISION
(Only applicable when submitted as a standalone form)

Approved By:	
Title:	
Approval Date:	
Conditions of Approval:	

ESTE Natural Gas Management
Plan Items VI-VIII

VI. Separation Equipment: Attach a complete description of how Operator will size separation equipment to optimize gas capture.

- Separation equipment will be sized to provide adequate separation for anticipated rates.
- Adequate separation relates to retention time for Liquid – Liquid separation and velocity for Gas-Liquid separation.
- Collection systems are appropriately sized to handle facility production rates on all (3) phases.
- Ancillary equipment and metering are selected to be serviced without flow interruptions or the need to release gas from the well.

VII. Operational Practices: Attach a complete description of the actions Operator will take to comply with the requirements of Subsection A through F 19.15.27.8 NMAC.

Drilling Operations

- All flare stacks will be properly sized. The flare stacks will be located at a minimum 100' from the nearest surface hole location on the pad.
- All-natural gas produced during drilling operations will be flared, unless there is an equipment malfunction and/or to avoid risk of an immediate and substantial adverse impact on safety and the environment, at which point the gas will be vented.

Completions/Recompletions Operations

- New wells will not be flowed back until they are connected to a properly sized gathering system.
- The facility will be built/sized for maximum anticipated flowrates and pressures to minimize waste.
- For flowback operations, multiple stages of separation will be used as well as excess VRU and blowers to make sure waste is minimized off the storage tanks and facility.
- During initial flowback, the well stream will be routed to separation equipment.
- At an existing facility, when necessary, post separation natural gas will be flared until it meets pipeline specifications, at which point it will be turned into a collection system.
- At a new facility, post separation natural gas will be vented until storage tanks can safely function, at which point it will be flared until it meets pipeline spec.

Production Operations

- Weekly AVOs will be performed on all facilities.
- All flares will be equipped with auto-ignition systems and continuous pilot operations.
- After a well is stabilized from liquid unloading, the well will be turned back into the collection system.
- All tanks will have sight glasses installed, but no electronic gauging equipment.
- Leaking thief hatches found during AVOs will be cleaned and properly re-sealed.
- There will be no gas re-injection for underground storage, temporary storage, or for enhanced oil recovery; however, gas injection will be used for gas lift applications in which the gas would be circulated through a closed loop system.
- If H2S is encountered, gas will be treated to pipeline spec to avoid shut-in's and/or flaring.

Performance Standards

- Production equipment will be designed to handle maximum anticipated rates and pressure.

- All flared gas will be combusted in a flare stack that is properly sized and designed to ensure proper combustion.
- Weekly AVOs will be performed on all wells and facilities that produce more than 50 MCFPD.

Measurement & Estimation

- All volume that is flared or vented that is not measured will be estimated.
- All measurement equipment for flared volumes will conform to API 14.10.
- No meter bypasses with be installed.
- When metering is not practical due to low pressure/low rate, the vented or flared volume will be estimated.

VIII. Best Management Practices: Attach a complete description of Operator's best management practices to minimize venting during active and planned maintenance.

- During downhole well maintenance, CEH will use best management practices to vent as minimally as possible.
- After downhole well maintenance, natural gas will be flared until it reaches pipeline specification.

State of New Mexico
Energy, Minerals and Natural Resources Department

Submit Electronically
Via E-permitting

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

NATURAL GAS MANAGEMENT PLAN

This Natural Gas Management Plan must be submitted with each Application for Permit to Drill (APD) for a new or recompleted well.

Section 1 – Plan Description

Effective May 25, 2021

I. Operator: EARTHSTONE OPERATING, LLC **OGRID:** 331165 **Date:** 09 / 20 / 2021

II. Type: ☒ Original ☐ Amendment due to ☐ 19.15.27.9.D(6)(a) NMAC ☐ 19.15.27.9.D(6)(b) NMAC ☐ Other.

If Other, please describe: _____

III. Well(s): Provide the following information for each new or recompleted well or set of wells proposed to be drilled or proposed to be recompleted from a single well pad or connected to a central delivery point.

Well Name	API	ULSTR	Footages	Anticipated Oil BBL/D	Anticipated Gas MCF/D	Anticipated Produced Water BBL/D
THUNDERBALL 23 FED 3BS COM 3H	30-025-50425 N/A	B-26-19S-34E	672 FNL, 1650 FEL	1800	1800	6000
THUNDERBALL 23 FED 3BS COM 4H	N/A	B-26-19S-34E	672FNL, 1620 FEL	1800	1800	6000

30-025-50425

IV. Central Delivery Point Name: THUNDERBALL 23 FED EAST BATTERY [See 19.15.27.9(D)(1) NMAC]

V. Anticipated Schedule: Provide the following information for each new or recompleted well or set of wells proposed to be drilled or proposed to be recompleted from a single well pad or connected to a central delivery point.

Well Name	API	Spud Date	TD Reached Date	Completion Commencement Date	Initial Flow Back Date	First Production Date
THUNDERBALL 23 FED 3BS COM 3H		04/27/2022	05/23/2022	11/01/2022	11/28/2022	12/01/2022
THUNDERBALL 23 FED 3BS COM 4H		05/25/2022	06/22/2022	11/01/2022	11/28/2022	12/01/2022

VI. Separation Equipment: ☒ Attach a complete description of how Operator will size separation equipment to optimize gas capture.

VII. Operational Practices: ☒ Attach a complete description of the actions Operator will take to comply with the requirements of Subsection A through F of 19.15.27.8 NMAC.

VIII. Best Management Practices: ☒ Attach a complete description of Operator's best management practices to minimize venting during active and planned maintenance.

Section 2 – Enhanced Plan
EFFECTIVE APRIL 1, 2022

Beginning April 1, 2022, an operator that is not in compliance with its statewide natural gas capture requirement for the applicable reporting area must complete this section.

☒ Operator certifies that it is not required to complete this section because Operator is in compliance with its statewide natural gas capture requirement for the applicable reporting area.

IX. Anticipated Natural Gas Production:

Well	API	Anticipated Average Natural Gas Rate MCF/D	Anticipated Volume of Natural Gas for the First Year MCF

X. Natural Gas Gathering System (NGGS):

Operator	System	ULSTR of Tie-in	Anticipated Gathering Start Date	Available Maximum Daily Capacity of System Segment Tie-in

XI. Map. ☐ Attach an accurate and legible map depicting the location of the well(s), the anticipated pipeline route(s) connecting the production operations to the existing or planned interconnect of the natural gas gathering system(s), and the maximum daily capacity of the segment or portion of the natural gas gathering system(s) to which the well(s) will be connected.

XII. Line Capacity. The natural gas gathering system ☐ will ☐ will not have capacity to gather 100% of the anticipated natural gas production volume from the well prior to the date of first production.

XIII. Line Pressure. Operator ☐ does ☐ does not anticipate that its existing well(s) connected to the same segment, or portion, of the natural gas gathering system(s) described above will continue to meet anticipated increases in line pressure caused by the new well(s).

☐ Attach Operator's plan to manage production in response to the increased line pressure.

XIV. Confidentiality: ☐ Operator asserts confidentiality pursuant to Section 71-2-8 NMSA 1978 for the information provided in Section 2 as provided in Paragraph (2) of Subsection D of 19.15.27.9 NMAC, and attaches a full description of the specific information for which confidentiality is asserted and the basis for such assertion.

Section 3 - Certifications

Effective May 25, 2021

Operator certifies that, after reasonable inquiry and based on the available information at the time of submittal:

☒ Operator will be able to connect the well(s) to a natural gas gathering system in the general area with sufficient capacity to transport one hundred percent of the anticipated volume of natural gas produced from the well(s) commencing on the date of first production, taking into account the current and anticipated volumes of produced natural gas from other wells connected to the pipeline gathering system; or

☐ Operator will not be able to connect to a natural gas gathering system in the general area with sufficient capacity to transport one hundred percent of the anticipated volume of natural gas produced from the well(s) commencing on the date of first production, taking into account the current and anticipated volumes of produced natural gas from other wells connected to the pipeline gathering system. ***If Operator checks this box, Operator will select one of the following:***

Well Shut-In. ☒ Operator will shut-in and not produce the well until it submits the certification required by Paragraph (4) of Subsection D of 19.15.27.9 NMAC; or

Venting and Flaring Plan. ☒ Operator has attached a venting and flaring plan that evaluates and selects one or more of the potential alternative beneficial uses for the natural gas until a natural gas gathering system is available, including:

- **(a)** power generation on lease;
- **(b)** power generation for grid;
- **(c)** compression on lease;
- **(d)** liquids removal on lease;
- **(e)** reinjection for underground storage;
- **(f)** reinjection for temporary storage;
- **(g)** reinjection for enhanced oil recovery;
- **(h)** fuel cell production; and
- **(i)** other alternative beneficial uses approved by the division.

Section 4 - Notices

1. If, at any time after Operator submits this Natural Gas Management Plan and before the well is spud:

(a) Operator becomes aware that the natural gas gathering system it planned to connect the well(s) to has become unavailable or will not have capacity to transport one hundred percent of the production from the well(s), no later than 20 days after becoming aware of such information, Operator shall submit for OCD's approval a new or revised venting and flaring plan containing the information specified in Paragraph (5) of Subsection D of 19.15.27.9 NMAC; or

(b) Operator becomes aware that it has, cumulatively for the year, become out of compliance with its baseline natural gas capture rate or natural gas capture requirement, no later than 20 days after becoming aware of such information, Operator shall submit for OCD's approval a new or revised Natural Gas Management Plan for each well it plans to spud during the next 90 days containing the information specified in Paragraph (2) of Subsection D of 19.15.27.9 NMAC, and shall file an update for each Natural Gas Management Plan until Operator is back in compliance with its baseline natural gas capture rate or natural gas capture requirement.

2. OCD may deny or conditionally approve an APD if Operator does not make a certification, fails to submit an adequate venting and flaring plan which includes alternative beneficial uses for the anticipated volume of natural gas produced, or if OCD determines that Operator will not have adequate natural gas takeaway capacity at the time a well will be spud.

I certify that, after reasonable inquiry, the statements in and attached to this Natural Gas Management Plan are true and correct to the best of my knowledge and acknowledge that a false statement may be subject to civil and criminal penalties under the Oil and Gas Act.

Signature:	Jennifer Elrod
Printed Name:	JENNIFER ELROD
Title:	SR. REGULATORY ANALYST
E-mail Address:	JELROD@EARTHSTONEENERGY.COM
Date:	09/20/2021
Phone:	940-452-6214

OIL CONSERVATION DIVISION
(Only applicable when submitted as a standalone form)

Approved By:	
Title:	
Approval Date:	
Conditions of Approval:	

ESTE Natural Gas Management
Plan Items VI-VIII

VI. Separation Equipment: Attach a complete description of how Operator will size separation equipment to optimize gas capture.

- Separation equipment will be sized to provide adequate separation for anticipated rates.
- Adequate separation relates to retention time for Liquid – Liquid separation and velocity for Gas-Liquid separation.
- Collection systems are appropriately sized to handle facility production rates on all (3) phases.
- Ancillary equipment and metering are selected to be serviced without flow interruptions or the need to release gas from the well.

VII. Operational Practices: Attach a complete description of the actions Operator will take to comply with the requirements of Subsection A through F 19.15.27.8 NMAC.

Drilling Operations

- All flare stacks will be properly sized. The flare stacks will be located at a minimum 100' from the nearest surface hole location on the pad.
- All-natural gas produced during drilling operations will be flared, unless there is an equipment malfunction and/or to avoid risk of an immediate and substantial adverse impact on safety and the environment, at which point the gas will be vented.

Completions/Recompletions Operations

- New wells will not be flowed back until they are connected to a properly sized gathering system.
- The facility will be built/sized for maximum anticipated flowrates and pressures to minimize waste.
- For flowback operations, multiple stages of separation will be used as well as excess VRU and blowers to make sure waste is minimized off the storage tanks and facility.
- During initial flowback, the well stream will be routed to separation equipment.
- At an existing facility, when necessary, post separation natural gas will be flared until it meets pipeline specifications, at which point it will be turned into a collection system.
- At a new facility, post separation natural gas will be vented until storage tanks can safely function, at which point it will be flared until it meets pipeline spec.

Production Operations

- Weekly AVOs will be performed on all facilities.
- All flares will be equipped with auto-ignition systems and continuous pilot operations.
- After a well is stabilized from liquid unloading, the well will be turned back into the collection system.
- All tanks will have sight glasses installed, but no electronic gauging equipment.
- Leaking thief hatches found during AVOs will be cleaned and properly re-sealed.
- There will be no gas re-injection for underground storage, temporary storage, or for enhanced oil recovery; however, gas injection will be used for gas lift applications in which the gas would be circulated through a closed loop system.
- If H2S is encountered, gas will be treated to pipeline spec to avoid shut-in's and/or flaring.

Performance Standards

- Production equipment will be designed to handle maximum anticipated rates and pressure.

- All flared gas will be combusted in a flare stack that is properly sized and designed to ensure proper combustion.
- Weekly AVOs will be performed on all wells and facilities that produce more than 50 MCFPD.

Measurement & Estimation

- All volume that is flared or vented that is not measured will be estimated.
- All measurement equipment for flared volumes will conform to API 14.10.
- No meter bypasses with be installed.
- When metering is not practical due to low pressure/low rate, the vented or flared volume will be estimated.

VIII. Best Management Practices: Attach a complete description of Operator's best management practices to minimize venting during active and planned maintenance.

- During downhole well maintenance, CEH will use best management practices to vent as minimally as possible.
- After downhole well maintenance, natural gas will be flared until it reaches pipeline specification.

Schlumberger

Chisholm Energy Operating, LLC

Prelim

CHISHOLM ENERGY

Borehole:	Well:	Field:	Structure:
Original Borehole	Chisholm Thunderball 23 Fed 3BS Com 3H	NM Lea County (NAD 83)	Chisholm Thunderball 23 Fed Com Pad

Gravity & Magnetic Parameters						Surface Location	NAD83 New Mexico State Plane, Eastern Zone, US Feet					Miscellaneous			
Model:	HDGM 2021	Dip:	60.515°	Date:	10-Sep-2021	Lat:	N 32 38 12.14	Northing:	596305.2ftUS	Grid Conv:	0.4345°	Slot:	Chisholm Thunderball 23 Fed 3BS Com 3H	TVD Ref:	RKB(3793.1ft above MSL)
MagDec:	6.358°	FS:	47868.588nT	Gravity FS:	998.507mgn (9.80665 Based)	Lon:	W 103 31 39.73	Easting:	789335.74ftUS	Scale Fact:	0.99997952	Plan:	Chisholm Thunderball 23 Fed 3BS Com 3H Prelim mcs 10Sep21		

Critical Points

Critical Point	MD	INCL	AZIM	TVD	VSEC	N(+)/S(-)	E(+)/W(-)	DLS
SHL	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Rustler	1806.00	0.00	282.13	1806.00	0.00	0.00	0.00	0.00
Salado	2084.00	0.00	282.13	2084.00	0.00	0.00	0.00	0.00
Yates	3463.00	0.00	282.13	3463.00	0.00	0.00	0.00	0.00
Queen	4673.00	0.00	282.13	4673.00	0.00	0.00	0.00	0.00
Delaware Mtn Gr	6141.00	0.00	282.13	6141.00	0.00	0.00	0.00	0.00
Build 1.5°/100' DLS	6145.00	0.00	282.13	6145.00	0.00	0.00	0.00	0.00
Hold	6811.38	10.00	282.13	6808.01	12.69	12.19	-56.69	1.50
Bone Spring	8238.03	10.00	282.13	8213.00	66.90	64.24	-298.78	0.00
1st Bone Spring SS	9568.22	10.00	282.13	9523.00	117.44	112.77	-524.51	0.00
Drop 3°/100' DLS	10028.71	10.00	282.13	9976.50	134.94	129.58	-602.66	0.00
2nd Bone Spring SS	10083.92	8.34	282.13	10031.00	136.86	131.43	-611.26	3.00
Build 10°/100' DLS	10361.90	0.00	282.13	10308.00	141.28	135.67	-631.00	3.00
3rd Bone Spring SS	10690.64	32.87	359.49	10619.00	233.03	227.42	-631.81	10.00
Wolfcamp	11126.36	76.45	359.49	10865.00	579.96	574.33	-634.89	10.00
Landing Point	11268.92	90.70	359.49	10880.91	721.25	715.62	-636.15	10.00
Wolfcamp	12568.70	90.70	359.49	10865.00	2020.95	2015.26	-647.67	0.00
Chisholm Thunderball 23 Fed 3BS Com 3H - PBHL	16402.36	90.70	359.49	10818.06	5854.32	5848.48	-681.68	0.00
Strawn	NaN			12205.00				

DEC	CONTROLLED	
Plan ref	Chisholm Thunderball 23 Fed 3BS Com 3H Prelim mcs 10Sep21	
Drawing ref		
Copy number	of 3	
Date	13-Sep-2021	

1	Originator	Claudia Serrano
2	DE Sign Off Authority	Scott Kingrey
3	D&M Line Manager	
4	Client	Chisholm Energy

Copy number for

Schlumberger

Chisholm Thunderball 23 Fed 3BS Com 3H Prelim mcs 10Sep21 Proposal Geodetic Report

(Def Plan)

Report Date:	September 13, 2021 - 03:09 PM	**Survey / DLS Computation:**	Minimum Curvature / Lubinski
Client:	Chisholm Energy Operating, LLC	**Vertical Section Azimuth:**	359.490 ° (Grid North)
Field:	NM Lea County (NAD 83)	**Vertical Section Origin:**	0.000 ft, 0.000 ft
Structure / Slot:	Chisholm Thunderball 23 Fed Com Pad / Chisholm Thunderball 23 Fed 3BS Com 3H	**TVD Reference Datum:**	RKB
Well:	Chisholm Thunderball 23 Fed 3BS Com 3H	**TVD Reference Elevation:**	3793.100 ft above MSL
Borehole:	Original Borehole	**Seabed / Ground Elevation:**	3767.100 ft above MSL
UWI / API#:	Unknown / Unknown	**Magnetic Declination:**	6.358 °
Survey Name:	Chisholm Thunderball 23 Fed 3BS Com 3H Prelim mcs 10Sep21	**Total Gravity Field Strength:**	998.5075mgn (9.80665 Based)
Survey Date:	September 10, 2021	**Gravity Model:**	GARM
Tort / AHD / DDI / ERD Ratio:	110.693 ° / 6358.457 ft / 6.026 / 0.584	**Total Magnetic Field Strength:**	47868.588 nT
Coordinate Reference System:	NAD83 New Mexico State Plane, Eastern Zone, US Feet	**Magnetic Dip Angle:**	60.515 °
Location Lat / Long:	N 32° 38' 12.14484", W 103° 31' 39.72864"	**Declination Date:**	September 10, 2021
Location Grid N/E Y/X:	N 596305.197 ftUS, E 789335.735 ftUS	**Magnetic Declination Model:**	HDGM 2021
CRS Grid Convergence Angle:	0.4345 °	**North Reference:**	Grid North
Grid Scale Factor:	0.99997952	**Grid Convergence Used:**	0.4345 °
Version / Patch:	2.10.824.0	**Total Corr Mag North->Grid North:**	5.9233 °
		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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A	596305.20	789335.74	N 32 38 12.14	W 103 31 39.73
Rustler	*1806.00*	*0.00*	*282.13*	*1806.00*	*0.00*	*0.00*	*0.00*	*0.00*	*596305.20*	*789335.74*	*N 32 38 12.14*	*W 103 31 39.73*
Salado	*2084.00*	*0.00*	*282.13*	*2084.00*	*0.00*	*0.00*	*0.00*	*0.00*	*596305.20*	*789335.74*	*N 32 38 12.14*	*W 103 31 39.73*
Yates	*3463.00*	*0.00*	*282.13*	*3463.00*	*0.00*	*0.00*	*0.00*	*0.00*	*596305.20*	*789335.74*	*N 32 38 12.14*	*W 103 31 39.73*
Queen	*4673.00*	*0.00*	*282.13*	*4673.00*	*0.00*	*0.00*	*0.00*	*0.00*	*596305.20*	*789335.74*	*N 32 38 12.14*	*W 103 31 39.73*
Delaware Mtn Gr	*6141.00*	*0.00*	*282.13*	*6141.00*	*0.00*	*0.00*	*0.00*	*0.00*	*596305.20*	*789335.74*	*N 32 38 12.14*	*W 103 31 39.73*
Build 1.5°/100' DLS	6145.00	0.00	282.13	6145.00	0.00	0.00	0.00	0.00	596305.20	789335.74	N 32 38 12.14	W 103 31 39.73
Hold	6811.38	10.00	282.13	6808.01	12.69	12.19	-56.69	1.50	596317.38	789279.05	N 32 38 12.27	W 103 31 40.39
Bone Spring	*8238.03*	*10.00*	*282.13*	*8213.00*	*66.90*	*64.24*	*-298.78*	*0.00*	*596369.44*	*789036.96*	*N 32 38 12.80*	*W 103 31 43.22*
1st Bone Spring SS	*9568.22*	*10.00*	*282.13*	*9523.00*	*117.44*	*112.77*	*-524.51*	*0.00*	*596417.97*	*788811.23*	*N 32 38 13.30*	*W 103 31 45.85*
Drop 3°/100' DLS	10028.71	10.00	282.13	9976.50	134.94	129.58	-602.66	0.00	596434.77	788733.09	N 32 38 13.47	W 103 31 46.76
2nd Bone Spring SS	*10083.92*	*8.34*	*282.13*	*10031.00*	*136.86*	*131.43*	*-611.26*	*3.00*	*596436.62*	*788724.49*	*N 32 38 13.49*	*W 103 31 46.86*
Build 10°/100' DLS	10361.90	0.00	282.13	10308.00	141.28	135.67	-631.00	3.00	596440.86	788704.75	N 32 38 13.53	W 103 31 47.10
3rd Bone Spring SS	*10690.64*	*32.87*	*359.49*	*10619.00*	*233.03*	*227.42*	*-631.81*	*10.00*	*596532.61*	*788703.94*	*N 32 38 14.44*	*W 103 31 47.10*
Wolfcamp	*11126.36*	*76.45*	*359.49*	*10865.00*	*579.96*	*574.33*	*-634.89*	*10.00*	*596879.51*	*788700.86*	*N 32 38 17.87*	*W 103 31 47.10*
Landing Point	11268.92	90.70	359.49	10880.91	721.25	715.62	-636.15	10.00	597020.80	788699.60	N 32 38 19.27	W 103 31 47.10
Wolfcamp	*12568.70*	*90.70*	*359.49*	*10865.00*	*2020.95*	*2015.26*	*-647.67*	*0.00*	*598320.41*	*788688.07*	*N 32 38 32.13*	*W 103 31 47.12*
Chisholm Thunderball 23 Fed 3BS Com 3H - PBHL	16402.36	90.70	359.49	10818.06	5854.32	5848.48	-681.68	0.00	602153.55	788654.07	N 32 39 10.06	W 103 31 47.18

Survey Type: Def Plan

Survey Error Model: ISCWSA Rev 0 *** 3-D 95.000% Confidence 2.7955 sigma

Survey Program:

Description	Part	MD From (ft)	MD To (ft)	EOU Freq (ft)	Hole Size (in)	Casing Diameter (in)	Expected Max Inclination (deg)	Survey Tool Type	Borehole / Survey
	1	0.000	26.000	1/100.000	30.000	30.000		NAL_MWD_1.0_DEG-Depth Only	Original Borehole / Chisholm Thunderball 23 Fed 3BS Com 3H Prelim mcs 10Sep21
	1	26.000	16402.364	1/100.000	30.000	30.000		NAL_MWD_1.0_DEG	Original Borehole / Chisholm Thunderball 23 Fed 3BS Com 3H

Schlumberger

Chisholm Thunderball 23 Fed 3BS Com 3H Prelim mcs 10Sep21 Proposal Geodetic Report

(Def Plan)

Report Date:	September 13, 2021 - 03:09 PM	**Survey / DLS Computation:**	Minimum Curvature / Lubinski
Client:	Chisholm Energy Operating, LLC	**Vertical Section Azimuth:**	359.490 ° (Grid North)
Field:	NM Lea County (NAD 83)	**Vertical Section Origin:**	0.000 ft, 0.000 ft
Structure / Slot:	Chisholm Thunderball 23 Fed Com Pad / Chisholm Thunderball 23 Fed 3BS Com 3H	**TVD Reference Datum:**	RKB
Well:	Chisholm Thunderball 23 Fed 3BS Com 3H	**TVD Reference Elevation:**	3793.100 ft above MSL
Borehole:	Original Borehole	**Seabed / Ground Elevation:**	3767.100 ft above MSL
UWI / API#:	Unknown / Unknown	**Magnetic Declination:**	6.358 °
Survey Name:	Chisholm Thunderball 23 Fed 3BS Com 3H Prelim mcs 10Sep21	**Total Gravity Field Strength:**	998.5075mgn (9.80665 Based)
Survey Date:	September 10, 2021	**Gravity Model:**	GARM
Tort / AHD / DDI / ERD Ratio:	110.693 ° / 6358.457 ft / 6.026 / 0.584	**Total Magnetic Field Strength:**	47868.588 nT
Coordinate Reference System:	NAD83 New Mexico State Plane, Eastern Zone, US Feet	**Magnetic Dip Angle:**	60.515 °
Location Lat / Long:	N 32° 38' 12.14484", W 103° 31' 39.72864"	**Declination Date:**	September 10, 2021
Location Grid N/E Y/X:	N 596305.197 ftUS, E 789335.735 ftUS	**Magnetic Declination Model:**	HDGM 2021
CRS Grid Convergence Angle:	0.4345 °	**North Reference:**	Grid North
Grid Scale Factor:	0.99997952	**Grid Convergence Used:**	0.4345 °
Version / Patch:	2.10.824.0	**Total Corr Mag North->Grid North:**	5.9233 °
		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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A	596305.20	789335.74	N 32 38 12.14	W 103 31 39.73
	100.00	0.00	282.13	100.00	0.00	0.00	0.00	0.00	596305.20	789335.74	N 32 38 12.14	W 103 31 39.73
	200.00	0.00	282.13	200.00	0.00	0.00	0.00	0.00	596305.20	789335.74	N 32 38 12.14	W 103 31 39.73
	300.00	0.00	282.13	300.00	0.00	0.00	0.00	0.00	596305.20	789335.74	N 32 38 12.14	W 103 31 39.73
	400.00	0.00	282.13	400.00	0.00	0.00	0.00	0.00	596305.20	789335.74	N 32 38 12.14	W 103 31 39.73
	500.00	0.00	282.13	500.00	0.00	0.00	0.00	0.00	596305.20	789335.74	N 32 38 12.14	W 103 31 39.73
	600.00	0.00	282.13	600.00	0.00	0.00	0.00	0.00	596305.20	789335.74	N 32 38 12.14	W 103 31 39.73
	700.00	0.00	282.13	700.00	0.00	0.00	0.00	0.00	596305.20	789335.74	N 32 38 12.14	W 103 31 39.73
	800.00	0.00	282.13	800.00	0.00	0.00	0.00	0.00	596305.20	789335.74	N 32 38 12.14	W 103 31 39.73
	900.00	0.00	282.13	900.00	0.00	0.00	0.00	0.00	596305.20	789335.74	N 32 38 12.14	W 103 31 39.73
	1000.00	0.00	282.13	1000.00	0.00	0.00	0.00	0.00	596305.20	789335.74	N 32 38 12.14	W 103 31 39.73
	1100.00	0.00	282.13	1100.00	0.00	0.00	0.00	0.00	596305.20	789335.74	N 32 38 12.14	W 103 31 39.73
	1200.00	0.00	282.13	1200.00	0.00	0.00	0.00	0.00	596305.20	789335.74	N 32 38 12.14	W 103 31 39.73
	1300.00	0.00	282.13	1300.00	0.00	0.00	0.00	0.00	596305.20	789335.74	N 32 38 12.14	W 103 31 39.73
	1400.00	0.00	282.13	1400.00	0.00	0.00	0.00	0.00	596305.20	789335.74	N 32 38 12.14	W 103 31 39.73
	1500.00	0.00	282.13	1500.00	0.00	0.00	0.00	0.00	596305.20	789335.74	N 32 38 12.14	W 103 31 39.73
	1600.00	0.00	282.13	1600.00	0.00	0.00	0.00	0.00	596305.20	789335.74	N 32 38 12.14	W 103 31 39.73
	1700.00	0.00	282.13	1700.00	0.00	0.00	0.00	0.00	596305.20	789335.74	N 32 38 12.14	W 103 31 39.73
	1800.00	0.00	282.13	1800.00	0.00	0.00	0.00	0.00	596305.20	789335.74	N 32 38 12.14	W 103 31 39.73
	1900.00	0.00	282.13	1900.00	0.00	0.00	0.00	0.00	596305.20	789335.74	N 32 38 12.14	W 103 31 39.73
	2000.00	0.00	282.13	2000.00	0.00	0.00	0.00	0.00	596305.20	789335.74	N 32 38 12.14	W 103 31 39.73
	2100.00	0.00	282.13	2100.00	0.00	0.00	0.00	0.00	596305.20	789335.74	N 32 38 12.14	W 103 31 39.73
	2200.00	0.00	282.13	2200.00	0.00	0.00	0.00	0.00	596305.20	789335.74	N 32 38 12.14	W 103 31 39.73
	2300.00	0.00	282.13	2300.00	0.00	0.00	0.00	0.00	596305.20	789335.74	N 32 38 12.14	W 103 31 39.73
	2400.00	0.00	282.13	2400.00	0.00	0.00	0.00	0.00	596305.20	789335.74	N 32 38 12.14	W 103 31 39.73
	2500.00	0.00	282.13	2500.00	0.00	0.00	0.00	0.00	596305.20	789335.74	N 32 38 12.14	W 103 31 39.73
	2600.00	0.00	282.13	2600.00	0.00	0.00	0.00	0.00	596305.20	789335.74	N 32 38 12.14	W 103 31 39.73
	2700.00	0.00	282.13	2700.00	0.00	0.00	0.00	0.00	596305.20	789335.74	N 32 38 12.14	W 103 31 39.73
	2800.00	0.00	282.13	2800.00	0.00	0.00	0.00	0.00	596305.20	789335.74	N 32 38 12.14	W 103 31 39.73
	2900.00	0.00	282.13	2900.00	0.00	0.00	0.00	0.00	596305.20	789335.74	N 32 38 12.14	W 103 31 39.73
	3000.00	0.00	282.13	3000.00	0.00	0.00	0.00	0.00	596305.20	789335.74	N 32 38 12.14	W 103 31 39.73
	3100.00	0.00	282.13	3100.00	0.00	0.00	0.00	0.00	596305.20	789335.74	N 32 38 12.14	W 103 31 39.73
	3200.00	0.00	282.13	3200.00	0.00	0.00	0.00	0.00	596305.20	789335.74	N 32 38 12.14	W 103 31 39.73
	3300.00	0.00	282.13	3300.00	0.00	0.00	0.00	0.00	596305.20	789335.74	N 32 38 12.14	W 103 31 39.73
	3400.00	0.00	282.13	3400.00	0.00	0.00	0.00	0.00	596305.20	789335.74	N 32 38 12.14	W 103 31 39.73
	3500.00	0.00	282.13	3500.00	0.00	0.00	0.00	0.00	596305.20	789335.74	N 32 38 12.14	W 103 31 39.73
	3600.00	0.00	282.13	3600.00	0.00	0.00	0.00	0.00	596305.20	789335.74	N 32 38 12.14	W 103 31 39.73
	3700.00	0.00	282.13	3700.00	0.00	0.00	0.00	0.00	596305.20	789335.74	N 32 38 12.14	W 103 31 39.73
	3800.00	0.00	282.13	3800.00	0.00	0.00	0.00	0.00	596305.20	789335.74	N 32 38 12.14	W 103 31 39.73
	3900.00	0.00	282.13	3900.00	0.00	0.00	0.00	0.00	596305.20	789335.74	N 32 38 12.14	W 103 31 39.73
	4000.00	0.00	282.13	4000.00	0.00	0.00	0.00	0.00	596305.20	789335.74	N 32 38 12.14	W 103 31 39.73
	4100.00	0.00	282.13	4100.00	0.00	0.00	0.00	0.00	596305.20	789335.74	N 32 38 12.14	W 103 31 39.73
	4200.00	0.00	282.13	4200.00	0.00	0.00	0.00	0.00	596305.20	789335.74	N 32 38 12.14	W 103 31 39.73
	4300.00	0.00	282.13	4300.00	0.00	0.00	0.00	0.00	596305.20	789335.74	N 32 38 12.14	W 103 31 39.73
	4400.00	0.00	282.13	4400.00	0.00	0.00	0.00	0.00	596305.20	789335.74	N 32 38 12.14	W 103 31 39.73
	4500.00	0.00	282.13	4500.00	0.00	0.00	0.00	0.00	596305.20	789335.74	N 32 38 12.14	W 103 31 39.73
	4600.00	0.00	282.13	4600.00	0.00	0.00	0.00	0.00	596305.20	789335.74	N 32 38 12.14	W 103 31 39.73
	4700.00	0.00	282.13	4700.00	0.00	0.00	0.00	0.00	596305.20	789335.74	N 32 38 12.14	W 103 31 39.73
	4800.00	0.00	282.13	4800.00	0.00	0.00	0.00	0.00	596305.20	789335.74	N 32 38 12.14	W 103 31 39.73
	4900.00	0.00	282.13	4900.00	0.00	0.00	0.00	0.00	596305.20	789335.74	N 32 38 12.14	W 103 31 39.73
	5000.00	0.00	282.13	5000.00	0.00	0.00	0.00	0.00	596305.20	789335.74	N 32 38 12.14	W 103 31 39.73
	5100.00	0.00	282.13	5100.00	0.00	0.00	0.00	0.00	596305.20	789335.74	N 32 38 12.14	W 103 31 39.73
	5200.00	0.00	282.13	5200.00	0.00	0.00	0.00	0.00	596305.20	789335.74	N 32 38 12.14	W 103 31 39.73
	5300.00	0.00	282.13	5300.00	0.00	0.00	0.00	0.00	596305.20	789335.74	N 32 38 12.14	W 103 31 39.73
	5400.00	0.00	282.13	5400.00	0.00	0.00	0.00	0.00	596305.20	789335.74	N 32 38 12.14	W 103 31 39.73
	5500.00	0.00	282.13	5500.00	0.00	0.00	0.00	0.00	596305.20	789335.74	N 32 38 12.14	W 103 31 39.73
	5600.00	0.00	282.13	5600.00	0.00	0.00	0.00	0.00	596305.20	789335.74	N 32 38 12.14	W 103 31 39.73
	5700.00	0.00	282.13	5700.00	0.00	0.00	0.00	0.00	596305.20	789335.74	N 32 38 12.14	W 103 31 39.73
	5800.00	0.00	282.13	5800.00	0.00	0.00	0.00	0.00	596305.20	789335.74	N 32 38 12.14	W 103 31 39.73
	5900.00	0.00	282.13	5900.00	0.00	0.00	0.00	0.00	596305.20	789335.74	N 32 38 12.14	W 103 31 39.73
	6000.00	0.00	282.13	6000.00	0.00	0.00	0.00	0.00	596305.20	789335.74	N 32 38 12.14	W 103 31 39.73
	6100.00	0.00	282.13	6100.00	0.00	0.00	0.00	0.00	596305.20	789335.74	N 32 38 12.14	W 103 31 39.73
Build 1.5°/100' DLS	6145.00	0.00	282.13	6145.00	0.00	0.00	0.00	0.00	596305.20	789335.74	N 32 38 12.14	W 103 31 39.73
	6200.00	0.83	282.13	6200.00	0.09	0.08	-0.39	1.50	596305.28	789335.35	N 32 38 12.15	W 103 31 39.73
	6300.00	2.33	282.13	6299.96	0.69	0.66	-3.07	1.50	596305.86	789332.66	N 32 38 12.15	W 103 31 39.76
	6400.00	3.83	282.13	6399.81	1.86	1.79	-8.32	1.50	596306.99	789327.42	N 32 38 12.16	W 103 31 39.83
	6500.00	5.33	282.13	6499.49	3.61	3.47	-16.12	1.50	596308.66	789319.62	N 32 38 12.18	W 103 31 39.92
	6600.00	6.83	282.13	6598.92	5.93	5.69	-26.46	1.50	596310.89	789309.27	N 32 38 12.20	W 103 31 40.04
	6700.00	8.33	282.13	6698.05	8.81	8.46	-39.35	1.50	596313.66	789296.39	N 32 38 12.23	W 103 31 40.19
	6800.00	9.83	282.13	6796.79	12.26	11.78	-54.77	1.50	596316.97	789280.97	N 32 38 12.27	W 103 31 40.37
Hold	6811.38	10.00	282.13	6808.01	12.69	12.19	-56.69	1.50	596317.38	789279.05	N 32 38 12.27	W 103 31 40.39
	6900.00	10.00	282.13	6895.28	16.06	15.42	-71.72	0.00	596320.62	789264.01	N 32 38 12.30	W 103 31 40.57
	7000.00	10.00	282.13	6993.76	19.86	19.07	-88.69	0.00	596324.27	789247.04	N 32 38 12.34	W 103 31 40.76
	7100.00	10.00	282.13	7092.24	23.66	22.72	-105.66	0.00	596327.91	789230.07	N 32 38 12.38	W 103 31 40.96
	7200.00	10.00	282.13	7190.73	27.46	26.37	-122.63	0.00	596331.56	789213.11	N 32 38 12.41	W 103 31 41.16
	7300.00	10.00	282.13	7289.21	31.26	30.02	-139.60	0.00	596335.21	789196.14	N 32 38 12.45	W 103 31 41.36

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 ° ' ")
	7400.00	10.00	282.13	7387.69	35.06	33.66	-156.57	0.00	596338.86	789179.17	N 32 38 12.49	W 103 31 41.56
	7500.00	10.00	282.13	7486.17	38.86	37.31	-173.54	0.00	596342.51	789162.20	N 32 38 12.53	W 103 31 41.75
	7600.00	10.00	282.13	7584.65	42.66	40.96	-190.51	0.00	596346.16	789145.23	N 32 38 12.56	W 103 31 41.95
	7700.00	10.00	282.13	7683.14	46.46	44.61	-207.48	0.00	596349.81	789128.26	N 32 38 12.60	W 103 31 42.15
	7800.00	10.00	282.13	7781.62	50.25	48.26	-224.45	0.00	596353.45	789111.29	N 32 38 12.64	W 103 31 42.35
	7900.00	10.00	282.13	7880.10	54.05	51.91	-241.42	0.00	596357.10	789094.32	N 32 38 12.68	W 103 31 42.55
	8000.00	10.00	282.13	7978.58	57.85	55.56	-258.39	0.00	596360.75	789077.35	N 32 38 12.71	W 103 31 42.75
	8100.00	10.00	282.13	8077.06	61.65	59.20	-275.36	0.00	596364.40	789060.38	N 32 38 12.75	W 103 31 42.94
	8200.00	10.00	282.13	8175.55	65.45	62.85	-292.33	0.00	596368.05	789043.41	N 32 38 12.79	W 103 31 43.14
	8300.00	10.00	282.13	8274.03	69.25	66.50	-309.30	0.00	596371.70	789026.44	N 32 38 12.83	W 103 31 43.34
	8400.00	10.00	282.13	8372.51	73.05	70.15	-326.27	0.00	596375.35	789009.47	N 32 38 12.86	W 103 31 43.54
	8500.00	10.00	282.13	8470.99	76.85	73.80	-343.24	0.00	596378.99	788992.50	N 32 38 12.90	W 103 31 43.74
	8600.00	10.00	282.13	8569.47	80.65	77.45	-360.21	0.00	596382.64	788975.53	N 32 38 12.94	W 103 31 43.93
	8700.00	10.00	282.13	8667.96	84.45	81.10	-377.18	0.00	596386.29	788958.56	N 32 38 12.98	W 103 31 44.13
	8800.00	10.00	282.13	8766.44	88.25	84.75	-394.15	0.00	596389.94	788941.60	N 32 38 13.01	W 103 31 44.33
	8900.00	10.00	282.13	8864.92	92.05	88.39	-411.12	0.00	596393.59	788924.63	N 32 38 13.05	W 103 31 44.53
	9000.00	10.00	282.13	8963.40	95.85	92.04	-428.09	0.00	596397.24	788907.66	N 32 38 13.09	W 103 31 44.73
	9100.00	10.00	282.13	9061.88	99.65	95.69	-445.06	0.00	596400.89	788890.69	N 32 38 13.12	W 103 31 44.92
	9200.00	10.00	282.13	9160.37	103.45	99.34	-462.03	0.00	596404.53	788873.72	N 32 38 13.16	W 103 31 45.12
	9300.00	10.00	282.13	9258.85	107.25	102.99	-479.00	0.00	596408.18	788856.75	N 32 38 13.20	W 103 31 45.32
	9400.00	10.00	282.13	9357.33	111.05	106.64	-495.97	0.00	596411.83	788839.78	N 32 38 13.24	W 103 31 45.52
	9500.00	10.00	282.13	9455.81	114.85	110.29	-512.94	0.00	596415.48	788822.81	N 32 38 13.27	W 103 31 45.72
	9600.00	10.00	282.13	9554.30	118.65	113.93	-529.91	0.00	596419.13	788805.84	N 32 38 13.31	W 103 31 45.92
	9700.00	10.00	282.13	9652.78	122.45	117.58	-546.88	0.00	596422.78	788788.87	N 32 38 13.35	W 103 31 46.11
	9800.00	10.00	282.13	9751.26	126.25	121.23	-563.85	0.00	596426.43	788771.90	N 32 38 13.39	W 103 31 46.31
	9900.00	10.00	282.13	9849.74	130.04	124.88	-580.82	0.00	596430.07	788754.93	N 32 38 13.42	W 103 31 46.51
	10000.00	10.00	282.13	9948.22	133.84	128.53	-597.79	0.00	596433.72	788737.96	N 32 38 13.46	W 103 31 46.71
Drop 3°/100' DLS	10028.71	10.00	282.13	9976.50	134.94	129.58	-602.66	0.00	596434.77	788733.09	N 32 38 13.47	W 103 31 46.76
	10100.00	7.86	282.13	10046.92	137.36	131.90	-613.47	3.00	596437.10	788722.28	N 32 38 13.50	W 103 31 46.89
	10200.00	4.86	282.13	10146.29	139.78	134.23	-624.30	3.00	596439.42	788711.45	N 32 38 13.52	W 103 31 47.02
	10300.00	1.86	282.13	10246.11	141.06	135.46	-630.02	3.00	596440.65	788705.73	N 32 38 13.53	W 103 31 47.08
Build 10°/100' DLS	10361.90	0.00	282.13	10308.00	141.28	135.67	-631.00	3.00	596440.86	788704.75	N 32 38 13.53	W 103 31 47.10
	10400.00	3.81	359.49	10346.07	142.55	136.94	-631.01	10.00	596442.13	788704.74	N 32 38 13.55	W 103 31 47.10
	10500.00	13.81	359.49	10444.77	157.84	152.23	-631.15	10.00	596457.43	788704.60	N 32 38 13.70	W 103 31 47.10
	10600.00	23.81	359.49	10539.31	190.05	184.43	-631.43	10.00	596489.63	788704.32	N 32 38 14.02	W 103 31 47.10
	10700.00	33.81	359.49	10626.82	238.18	232.56	-631.86	10.00	596537.75	788703.89	N 32 38 14.49	W 103 31 47.10
	10800.00	43.81	359.49	10704.64	300.77	295.15	-632.41	10.00	596600.34	788703.33	N 32 38 15.11	W 103 31 47.10
	10900.00	53.81	359.49	10770.41	375.93	370.31	-633.08	10.00	596675.50	788702.67	N 32 38 15.86	W 103 31 47.10
	11000.00	63.81	359.49	10822.14	461.36	455.74	-633.84	10.00	596760.93	788701.91	N 32 38 16.70	W 103 31 47.10
	11100.00	73.81	359.49	10858.24	554.48	548.86	-634.67	10.00	596854.04	788701.08	N 32 38 17.62	W 103 31 47.10
	11200.00	83.81	359.49	10877.62	652.46	646.83	-635.53	10.00	596952.01	788700.21	N 32 38 18.59	W 103 31 47.10
Landing Point	11268.92	90.70	359.49	10880.91	721.25	715.62	-636.15	10.00	597020.80	788699.60	N 32 38 19.27	W 103 31 47.10
	11300.00	90.70	359.49	10880.53	752.34	746.70	-636.42	0.00	597051.88	788699.33	N 32 38 19.58	W 103 31 47.10
	11400.00	90.70	359.49	10879.31	852.33	846.69	-637.31	0.00	597151.87	788698.44	N 32 38 20.57	W 103 31 47.11
	11500.00	90.70	359.49	10878.09	952.32	946.68	-638.19	0.00	597251.85	788697.55	N 32 38 21.56	W 103 31 47.11
	11600.00	90.70	359.49	10876.86	1052.31	1046.67	-639.08	0.00	597351.84	788696.67	N 32 38 22.55	W 103 31 47.11
	11700.00	90.70	359.49	10875.64	1152.31	1146.66	-639.97	0.00	597451.83	788695.78	N 32 38 23.54	W 103 31 47.11
	11800.00	90.70	359.49	10874.41	1252.30	1246.64	-640.86	0.00	597551.81	788694.89	N 32 38 24.53	W 103 31 47.11
	11900.00	90.70	359.49	10873.19	1352.29	1346.63	-641.74	0.00	597651.80	788694.01	N 32 38 25.52	W 103 31 47.11
	12000.00	90.70	359.49	10871.96	1452.28	1446.62	-642.63	0.00	597751.79	788693.12	N 32 38 26.51	W 103 31 47.12
	12100.00	90.70	359.49	10870.74	1552.28	1546.61	-643.52	0.00	597851.77	788692.23	N 32 38 27.50	W 103 31 47.12
	12200.00	90.70	359.49	10869.51	1652.27	1646.60	-644.40	0.00	597951.76	788691.35	N 32 38 28.48	W 103 31 47.12
	12300.00	90.70	359.49	10868.29	1752.26	1746.59	-645.29	0.00	598051.74	788690.46	N 32 38 29.47	W 103 31 47.12
	12400.00	90.70	359.49	10867.07	1852.25	1846.58	-646.18	0.00	598151.73	788689.57	N 32 38 30.46	W 103 31 47.12
	12500.00	90.70	359.49	10865.84	1952.25	1946.56	-647.07	0.00	598251.72	788688.68	N 32 38 31.45	W 103 31 47.12
	12600.00	90.70	359.49	10864.62	2052.24	2046.55	-647.95	0.00	598351.70	788687.80	N 32 38 32.44	W 103 31 47.12
	12700.00	90.70	359.49	10863.39	2152.23	2146.54	-648.84	0.00	598451.69	788686.91	N 32 38 33.43	W 103 31 47.13
	12800.00	90.70	359.49	10862.17	2252.22	2246.53	-649.73	0.00	598551.68	788686.02	N 32 38 34.42	W 103 31 47.13
	12900.00	90.70	359.49	10860.94	2352.22	2346.52	-650.61	0.00	598651.66	788685.14	N 32 38 35.41	W 103 31 47.13
	13000.00	90.70	359.49	10859.72	2452.21	2446.51	-651.50	0.00	598751.65	788684.25	N 32 38 36.40	W 103 31 47.13
	13100.00	90.70	359.49	10858.49	2552.20	2546.50	-652.39	0.00	598851.64	788683.36	N 32 38 37.39	W 103 31 47.13
	13200.00	90.70	359.49	10857.27	2652.19	2646.48	-653.27	0.00	598951.62	788682.47	N 32 38 38.38	W 103 31 47.13
	13300.00	90.70	359.49	10856.05	2752.19	2746.47	-654.16	0.00	599051.61	788681.59	N 32 38 39.37	W 103 31 47.14
	13400.00	90.70	359.49	10854.82	2852.18	2846.46	-655.05	0.00	599151.59	788680.70	N 32 38 40.36	W 103 31 47.14
	13500.00	90.70	359.49	10853.60	2952.17	2946.45	-655.94	0.00	599251.58	788679.81	N 32 38 41.35	W 103 31 47.14
	13600.00	90.70	359.49	10852.37	3052.16	3046.44	-656.82	0.00	599351.57	788678.93	N 32 38 42.34	W 103 31 47.14
	13700.00	90.70	359.49	10851.15	3152.16	3146.43	-657.71	0.00	599451.55	788678.04	N 32 38 43.33	W 103 31 47.14
	13800.00	90.70	359.49	10849.92	3252.15	3246.42	-658.60	0.00	599551.54	788677.15	N 32 38 44.31	W 103 31 47.14
	13900.00	90.70	359.49	10848.70	3352.14	3346.40	-659.48	0.00	599651.53	788676.27	N 32 38 45.30	W 103 31 47.14
	14000.00	90.70	359.49	10847.47	3452.13	3446.39	-660.37	0.00	599751.51	788675.38	N 32 38 46.29	W 103 31 47.15
	14100.00	90.70	359.49	10846.25	3552.13	3546.38	-661.26	0.00	599851.50	788674.49	N 32 38 47.28	W 103 31 47.15
	14200.00	90.70	359.49	10845.03	3652.12	3646.37	-662.15	0.00	599951.48	788673.60	N 32 38 48.27	W 103 31 47.15
	14300.00	90.70	359.49	10843.80	3752.11	3746.36	-663.03	0.00	600051.47	788672.72	N 32 38 49.26	W 103 31 47.15
	14400.00	90.70	359.49	10842.58	3852.10	3846.35	-663.92	0.00	600151.46	788671.83	N 32 38 50.25	W 103 31 47.15
	14500.00	90.70	359.49	10841.35	3952.10	3946.34	-664.81	0.00	600251.44	788670.94	N 32 38 51.24	W 103 31 47.15
	14600.00	90.70	359.49	10840.13	4052.09	4046.32	-665.69	0.00	600351.43	788670.06	N 32 38 52.23	W 103 31 47.15
	14700.00	90.70	359.49	10838.90	4152.08	4146.31	-666.58	0.00	600451.42	788669.17	N 32 38 53.22	W 103 31 47.16
	14800.00	90.70	359.49	10837.68	4252.07	4246.30	-667.47	0.00	600551.40	788668.28	N 32 38 54.21	W 103 31 47.16
	14900.00	90.70	359.49	10836.46	4352.07	4346.29	-668.35	0.00	600651.39	788667.40	N 32 38 55.20	W 103 31 47.16
	15000.00	90.70	359.49	10835.23	4452.06	4446.28	-669.24	0.00	600751.38	788666.51	N 32 38 56.19	W 103 31 47.16
	15100.00	90.70	359.49	10834.01	4552.05	4546.27	-670.13	0.00	600851.36	788665.62	N 32 38 57.18	W 103 31 47.16
	15200.00	90.70	359.49	10832.78	4652.04	4646.26	-671.02	0.00	600951.35	788664.73	N 32 38 58.17	W 103 31 47.16
	15300.00	90.70	359.49	10831.56	4752.04	4746.24	-671.90	0.00	601051.33	788663.85	N 32 38 59.16	W 103 31 47.17
	15400.00	90.70	359.49	10830.33	4852.03	4846.23	-672.79	0.00	601151.32	788662.96	N 32 39 0.14	W 103 31 47.17
	15500.00	90.70	359.49	10829.11	4952.02	4946.22	-673.68	0.00	601251.31	788662.07	N 32 39 1.13	W 103 31 47.17
	15600.00	90.70	359.49	10827.88	5052.01	5046.21	-674.56	0.00	601351.29	788661.19	N 32 39 2.12	W 103 31 47.17
	15700.00	90.70	359.49	10826.66	5152.01	5146.20	-675.45	0.00	601451.28	788660.30	N 32 39 3.11	W 103 31 47.17
	15800.00	90.70	359.49	10825.44	5252.00	5246.19	-676.34	0.00	601551.27	788659.41	N 32 39 4.10	W 103 31 47.17
	15900.00	90.70	359.49	10824.21	5351.99	5346.18	-677.23	0.00	601651.25	788658.53	N 32 39 5.09	W 103 31 47.17
	16000.00	90.70	359.49	10822.99	5451.98	5446.16	-678.11	0.00	601751.24	788657.64	N 32 39 6.08	W 103 31 47.18
	16100.00	90.70	359.49	10821.76	5551.98	5546.15	-679.00	0.00	601851.22	788656.75	N 32 39 7.07	W 103 31 47.18
	16200.00	90.70	359.49	10820.54	5651.97	5646.14	-679.89	0.00	601951.21	788655.86	N 32 39 8.06	W 103 31 47.18
	16300.00	90.70	359.49	10819.31	5751.96	5746.13	-680.77	0.00	602051.20	788654.98	N 32 39 9.05	W 103 31 47.18
	16400.00	90.70	359.49	10818.09	5851.95	5846.12	-681.66	0.00	602151.18	788654.09	N 32 39 10.04	W 103 31 47.18
Chisholm Thunderball 23 Fed 3BS Com 3H - PBHL	16402.36	90.70	359.49	10818.06	5854.32	5848.48	-681.68	0.00	602153.55	788654.07	N 32 39 10.06	W 103 31 47.18

Survey Type: Def Plan

Survey Error Model: ISCWSA Rev 0 *** 3-D 95.000% Confidence 2.7955 sigma
Survey Program:

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 ° ' ")

Description	Part	MD From (ft)	MD To (ft)	EOU Freq (ft)	Hole Size (in)	Casing Diameter (in)	Expected Max Inclination (deg)	Survey Tool Type	Borehole / Survey
	1	0.000	26.000	1/100.000	30.000	30.000		NAL_MWD_1.0_DEG-Depth Only	Original Borehole / Chisholm Thunderball 23 Fed 3BS Com 3H Prelim mcs 10Sep21
	1	26.000	16402.364	1/100.000	30.000	30.000		NAL_MWD_1.0_DEG	Original Borehole / Chisholm Thunderball 23 Fed 3BS Com 3H

PECOS DISTRICT
DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	**CHISHOLM ENERGY OPERATING LLC**
LEASE NO.:	**NMNM57285**
WELL NAME & NO.:	THUNDERBALL 23 FED 1BS COM 3H
SURFACE HOLE FOOTAGE:	672'/N & 1650'/E
BOTTOM HOLE FOOTAGE	100'/N & 2280'/E
LOCATION:	Section 26, T.19 S., R.34 E., NMPM
COUNTY:	Lea County, New Mexico

COA

H2S	○ Yes	◉ No	
Potash	◉ None	○ Secretary	○ R-111-P
Cave/Karst Potential	◉ Low	○ Medium	○ High
Cave/Karst Potential	○ Critical		
Variance	○ None	◉ Flex Hose	○ Other
Wellhead	○ Conventional	◉ Multibowl	○ Both
Other	☐ 4 String Area	☐ Capitan Reef	☐ WIPP
Other	☑ Fluid Filled	☐ Cement Squeeze	☐ Pilot Hole
Special Requirements	☐ Water Disposal	☑ COM	☐ Unit

A. HYDROGEN SULFIDE

Hydrogen Sulfide (H2S) monitors shall be installed prior to drilling out the surface shoe. If H2S is detected in concentrations greater than 100 ppm, the Hydrogen Sulfide area shall meet Onshore Order 6 requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, provide measured values and formations to the BLM.

B. CASING

1. The **13-3/8** inch surface casing shall be set at approximately **1890** feet (a minimum of 25 feet (Lea County) into the Rustler Anhydrite and above the salt) and cemented to the surface.

    a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.
    b. Wait on cement (WOC) time for a primary cement job will be a minimum of **8**

Approval Date: 04/08/2022

hours or 500 pounds compressive strength, whichever is greater. (This is to include the lead cement)

c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.
d. If cement falls back, remedial cementing will be done prior to drilling out that string.

Intermediate casing must be kept fluid filled to meet BLM minimum collapse requirement.

2. The **9-5/8** inch intermediate casing shall be set at **5600** feet. The minimum required fill of cement behind the **9-5/8** inch intermediate casing is:

Option 1 (Single Stage):

- Cement to surface. If cement does not circulate see B.1.a, c-d above. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst or potash.**

Option 2:

Operator has proposed a DV tool, the depth may be adjusted as long as the cement is changed proportionally. The DV tool may be cancelled if cement circulates to surface on the first stage.

a. First stage to DV tool: Cement to circulate. If cement does not circulate off the DV tool, contact the appropriate BLM office before proceeding with second stage cement job.

b. Second stage above DV tool:

- Cement to surface. If cement does not circulate, contact the appropriate BLM office.
  Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst or potash.

3. The minimum required fill of cement behind the **5-1/2** inch production casing is:

Option 1 (Single Stage):

- Cement should tie-back at least **200 feet** into previous casing string. Operator shall provide method of verification.

Approval Date: 04/08/2022

C. PRESSURE CONTROL

1. Variance approved to use flex line from BOP to choke manifold. Manufacturer's specification to be readily available. No external damage to flex line. Flex line to be installed as straight as possible (no hard bends).'

2. **BOP REQUIREMENTS.**

Option 1

a. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **2000 (2M)** psi.

b. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the intermediate casing shoe shall be **5000 (5M)** psi.

Option 2

Operator has proposed a multi-bowl wellhead assembly. This assembly will only be tested when installed on the surface casing. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **5000 (5M)** psi.

a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
c. Manufacturer representative shall install the test plug for the initial BOP test.
d. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.
e. Whenever any seal subject to test pressure is broken, all the tests in OOGO2.III.A.2.i must be followed.

D. SPECIAL REQUIREMENT (S)

Communitization Agreement

- The operator will submit a Communitization Agreement to the Santa Fe Office, 301 Dinosaur Trail Santa Fe, New Mexico 87508, at least 90 days before the anticipated

Approval Date: 04/08/2022

date of first production from a well subject to a spacing order issued by the New Mexico Oil Conservation Division. The Communitization Agreement will include the signatures of all working interest owners in all Federal and Indian leases subject to the Communitization Agreement (i.e., operating rights owners and lessees of record), or certification that the operator has obtained the written signatures of all such owners and will make those signatures available to the BLM immediately upon request.

- If the operator does not comply with this condition of approval, the BLM may take enforcement actions that include, but are not limited to, those specified in 43 CFR 3163.1.
- In addition, the well sign shall include the surface and bottom hole lease numbers. When the Communitization Agreement number is known, it shall also be on the sign.

GENERAL REQUIREMENTS

The BLM is to be notified in advance for a representative to witness:

a. Spudding well (minimum of 24 hours)
b. Setting and/or Cementing of all casing strings (minimum of 4 hours)
c. BOPE tests (minimum of 4 hours)

☒ Eddy County
Call the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220, (575) 361-2822

☒ Lea County
Call the Hobbs Field Station, 414 West Taylor, Hobbs NM 88240, (575) 393-3612

1. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval.

   a. In the event the operator has proposed to drill multiple wells utilizing a skid/walking rig. Operator shall secure the wellbore on the current well, after installing and testing the wellhead, by installing a blind flange of like pressure rating to the wellhead and a pressure gauge that can be monitored while drilling is performed on the other well(s).
   b. When the operator proposes to set surface casing with Spudder Rig
      - Notify the BLM when moving in and removing the Spudder Rig.
      - Notify the BLM when moving in the 2nd Rig. Rig to be moved in within 90 days of notification that Spudder Rig has left the location.

Approval Date: 04/08/2022

- BOP/BOPE test to be conducted per Onshore Oil and Gas Order No. 2 as soon as 2nd Rig is rigged up on well.

2. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works are located, this does not include the dog house or stairway area.

3. The record of the drilling rate along with the GR/N well log run from TD to surface (horizontal well – vertical portion of hole) shall be submitted to the BLM office as well as all other logs run on the borehole 30 days from completion. If available, a digital copy of the logs is to be submitted in addition to the paper copies. The Rustler top and top and bottom of Salt are to be recorded on the Completion Report.

A. CASING

1. Changes to the approved APD casing program need prior approval if the items substituted are of lesser grade or different casing size or are Non-API. The Operator can exchange the components of the proposal with that of superior strength (i.e. changing from J-55 to N-80, or from 36# to 40#). Changes to the approved cement program need prior approval if the altered cement plan has less volume or strength or if the changes are substantial (i.e. Multistage tool, ECP, etc.). The initial wellhead installed on the well will remain on the well with spools used as needed.

2. Wait on cement (WOC) for Potash Areas: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi for all cement blends, 2) until cement has been in place at least 24 hours. WOC time will be recorded in the driller's log. The casing intergrity test can be done (prior to the cement setting up) immediately after bumping the plug.

3. Wait on cement (WOC) for Water Basin: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi at the shoe, 2) until cement has been in place at least 8 hours. WOC time will be recorded in the driller's log. See individual casing strings for details regarding lead cement slurry requirements. The casing intergrity test can be done (prior to the cement setting up) immediately after bumping the plug.

4. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. Have well specific cement details onsite prior to pumping the cement for each casing string.

5. No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.

6. 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. Formation at the shoe shall be tested to a minimum of the mud weight equivalent anticipated to control the formation pressure to the next casing depth or at total depth of the well. This test shall be performed before drilling more than 20 feet of new hole.

7. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.
8. Whenever a casing string is cemented in the R-111-P potash area, the NMOCD requirements shall be followed.

B. PRESSURE CONTROL

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API RP 53 Sec. 17.

2. If a variance is approved for a flexible hose to be installed from the BOP to the choke manifold, the following requirements apply: The flex line must meet the requirements of API 16C. Check condition of flexible line from BOP to choke manifold, replace if exterior is damaged or if line fails test. Line to be as straight as possible with no hard bends and is to be anchored according to Manufacturer's requirements. The flexible hose can be exchanged with a hose of equal size and equal or greater pressure rating. Anchor requirements, specification sheet and hydrostatic pressure test certification matching the hose in service, to be onsite for review. These documents shall be posted in the company man's trailer and on the rig floor.

3. 5M or higher system requires an HCR valve, remote kill line and annular to match. The remote kill line is to be installed prior to testing the system and tested to stack pressure.

4. If the operator has proposed a multi-bowl wellhead assembly in the APD. The following requirements must be met:

    a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
    b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
    c. Manufacturer representative shall install the test plug for the initial BOP test.

d. Whenever any seal subject to test pressure is broken, all the tests in OOGO2.III.A.2.i must be followed.
e. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.

5. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.

a. In a water basin, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. The casing cut-off and BOP installation can be initiated four hours after installing the slips, which will be approximately six hours after bumping the plug. For those casing strings not using slips, the minimum wait time before cut-off is eight hours after bumping the plug. BOP/BOPE testing can begin after cut-off or once cement reaches 500 psi compressive strength (including lead when specified), whichever is greater. However, if the float does not hold, cut-off cannot be initiated until cement reaches 500 psi compressive strength (including lead when specified).

b. In potash areas, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. For all casing strings, casing cut-off and BOP installation can be initiated at twelve hours after bumping the plug. However, **no tests** shall commence until the cement has had a minimum of 24 hours setup time, except the casing pressure test can be initiated immediately after bumping the plug (only applies to single stage cement jobs).

c. The tests shall be done by an independent service company utilizing a test plug not a cup or J-packer. The operator also has the option of utilizing an independent tester to test without a plug (i.e. against the casing) pursuant to Onshore Order 2 with the pressure not to exceed 70% of the burst rating for the casing. Any test against the casing must meet the WOC time for water basin (8 hours) or potash (24 hours) or 500 pounds compressive strength, whichever is greater, prior to initiating the test (see casing segment as lead cement may be critical item).

d. The test shall be run on a 5000 psi chart for a 2-3M BOP/BOP, on a 10000 psi chart for a 5M BOP/BOPE and on a 15000 psi chart for a 10M BOP/BOPE. If a linear chart is used, it shall be a one hour chart. A circular chart shall have a maximum 2 hour clock. If a twelve hour or twenty-four hour chart is used, tester shall make a notation that it is run with a two hour clock.

e. The results of the test shall be reported to the appropriate BLM office.

f. All tests are required to be recorded on a calibrated test chart. A copy of the

BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.

g. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug. This test shall be performed prior to the test at full stack pressure.

h. BOP/BOPE must be tested by an independent service company within 500 feet of the top of the Wolfcamp formation if the time between the setting of the intermediate casing and reaching this depth exceeds 20 days. This test does not exclude the test prior to drilling out the casing shoe as per Onshore Order No. 2.

C. DRILLING MUD

Mud system monitoring equipment, with derrick floor indicators and visual and audio alarms, shall be operating before drilling into the Wolfcamp formation, and shall be used until production casing is run and cemented.

D. WASTE MATERIAL AND FLUIDS

All waste (i.e. drilling fluids, trash, salts, chemicals, sewage, gray water, etc.) created as a result of drilling operations and completion operations shall be safely contained and disposed of properly at a waste disposal facility. No waste material or fluid shall be disposed of on the well location or surrounding area.

Porto-johns and trash containers will be on-location during fracturing operations or any other crew-intensive operations.

RI02022022

Approval Date: 04/08/2022

PECOS DISTRICT
SURFACE USE
CONDITIONS OF APPROVAL

OPERATOR'S NAME:	Chisholm Energy Operating LLC
LEASE NO.:	NMNM 057285
COUNTY:	Lea

Wells:

Thunderball 23 Fed 1BS Com 1H
Surface Hole Location: 561' FNL & 1720' FEL, Section 26, T. 19 S., R. 34 E.
Bottom Hole Location: 100' FNL & 1640' FEL, Section 23, T. 19 S, R 34 E.

Thunderball 23 Fed 1BS Com 2H
Surface Hole Location: 561' FNL & 1690' FEL, Section 26, T. 19 S., R. 34 E.
Bottom Hole Location: 100' FNL & 360' FEL, Section 23, T. 19 S, R 34 E.

Thunderball 23 Fed 3BS Com 3H
Surface Hole Location: 672' FNL & 1650' FEL, Section 26, T. 19 S., R. 34 E.
Bottom Hole Location: 100' FNL & 2280' FEL, Section 23, T. 19 S, R 34 E.

Thunderball 23 Fed 3BS Com 4H
Surface Hole Location: 672' FNL & 1620' FEL, Section 26, T. 19 S., R. 34 E.
Bottom Hole Location: 100' FNL & 1000' FEL, Section 23, T. 19 S, R 34 E.

Thunderball 23 Fed WCA Com 5H
Surface Hole Location: 561' FNL & 1660' FEL, Section 26, T. 19 S., R. 34 E.
Bottom Hole Location: 100' FNL & 1640' FEL, Section 23, T. 19 S, R 34 E.

Thunderball 23 Fed WCA Com 6H
Surface Hole Location: 672' FNL & 1590' FEL, Section 26, T. 19 S., R. 34 E.
Bottom Hole Location: 100' FNL & 1640' FEL, Section 23, T. 19 S, R 34 E.

Thunderball 23 Fed WCA Com 7H
Surface Hole Location: 672' FNL & 1560' FEL, Section 26, T. 19 S., R. 34 E.
Bottom Hole Location: 100' FNL & 360' FEL, Section 23, T. 19 S, R 34 E.

TABLE OF CONTENTS

Standard Conditions of Approval (COA) apply to this APD. If any deviations to these standards exist or special COAs are required, the section with the deviation or requirement will be checked below.

Approval Date: 04/08/2022

I. GENERAL PROVISIONS

The approval of the Application For Permit To Drill (APD) is in compliance with all applicable laws and regulations: 43 Code of Federal Regulations 3160, the lease terms, Onshore Oil and Gas Orders, Notices To Lessees, New Mexico Oil Conservation Division (NMOCD) Rules, National Historical Preservation Act As Amended, and instructions and orders of the Authorized Officer. Any request for a variance shall be submitted to the Authorized Officer on Form 3160-5, Sundry Notices and Report on Wells.

II. PERMIT EXPIRATION

If the permit terminates prior to drilling and drilling cannot be commenced within 60 days after expiration, an operator is required to submit Form 3160-5, Sundry Notices and Reports on Wells, requesting surface reclamation requirements for any surface disturbance. However, if the operator will be able to initiate drilling within 60 days after the expiration of the permit, the operator must have set the conductor pipe in order to allow for an extension of 60 days beyond the expiration date of the APD. (Filing of a Sundry Notice is required for this 60 day extension.)

III. ARCHAEOLOGICAL, PALEONTOLOGY & HISTORICAL SITES

Any cultural resource (historic or prehistoric site or object) discovered by the holder, or any person working on the holder's behalf, on public or Federal land shall be immediately reported to the Authorized Officer. The holder shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery will be made by the Authorized Officer to determine appropriate actions to prevent the loss of significant cultural or scientific values. The holder will be responsible for the cost of evaluation and any decision as to the proper mitigation measures will be made by the Authorized Officer after consulting with the holder.

OR

If the entire project is covered under the Permian Basin Programmatic Agreement (cultural resources only):

The proponent has contributed funds commensurate to the undertaking into an account for offsite mitigation. Participation in the PA serves as mitigation for the effects of this project on cultural resources. If any human skeletal remains, funerary objects, sacred objects, or objects of cultural patrimony are discovered at any time during construction, all construction activities shall halt and the BLM will be notified as soon as possible within 24 hours. Work shall not resume until a Notice to Proceed is issued by the BLM. See information below discussing NAGPRA.

If the proposed project is split between a Class III inventory and a Permian Basin Programmatic Agreement contribution, the portion of the project covered under Class III inventory should default to the first paragraph stipulations.

The holder is hereby obligated to comply with procedures established in the Native American Graves Protection and Repatriation Act (NAGPRA) to protect such cultural items as human remains, associated funerary objects, sacred objects, and objects of cultural patrimony discovered inadvertently during the course of project implementation. In the event that any of the cultural items listed above are discovered during the course of project work, the proponent shall immediately halt the disturbance and contact the BLM within 24 hours for instructions. The proponent or initiator of any project shall be held responsible for protecting, evaluating, reporting, excavating, treating, and disposing of these cultural items according to the procedures established by the BLM in consultation with Indian Tribes."

Any paleontological resource (historic or prehistoric site or object) discovered by the holder, or any person working on the holder's behalf, on public or Federal land shall be immediately reported to the Authorized Officer. The holder shall suspend all operations in the immediate area

of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery will be made by the Authorized Officer to determine appropriate actions to prevent the loss of significant cultural or scientific values. The holder will be responsible for the cost of evaluation and any decision as to the proper mitigation measures will be made by the Authorized Officer after consulting with the holder.

IV. NOXIOUS WEEDS

The operator shall be held responsible if noxious weeds become established within the areas of operations. Weed control shall be required on the disturbed land where noxious weeds exist, which includes the roads, pads, associated pipeline corridor, and adjacent land affected by the establishment of weeds due to this action. The operator shall consult with the Authorized Officer for acceptable weed control methods, which include following EPA and BLM requirements and policies.

V. SPECIAL REQUIREMENT(S)

Watershed:

The entire well pad(s) will be bermed to prevent oil, salt, and other chemical contaminants from leaving the well pad. The compacted berm shall be constructed at a minimum of 12 inches with impermeable mineral material (e.g. caliche). Topsoil shall not be used to construct the berm. No water flow from the uphill side(s) of the pad shall be allowed to enter the well pad. The integrity of the berm shall be maintained around the surfaced pad throughout the life of the well and around the downsized pad after interim reclamation has been completed. Any water erosion that may occur due to the construction of the well pad during the life of the well will be quickly corrected and proper measures will be taken to prevent future erosion. Stockpiling of topsoil is required. The topsoil shall be stockpiled in an appropriate location to prevent loss of soil due to water or wind erosion and not used for berming or erosion control. If fluid collects within the bermed area, the fluid must be vacuumed into a safe container and disposed of properly at a state approved facility.

Range:

Cattleguards

Where a permanent cattlegaurd is approved, an appropriately sized cattleguard(s) sufficient to carry out the project shall be installed and maintained at fence crossing(s). Any existing cattleguard(s) on the access road shall be repaired or replaced if they are damaged or have deteriorated beyond practical use. The operator shall be responsible for the condition of the existing cattleguard(s) that are in place and are utilized during lease operations. A gate shall be constructed on one side of the cattleguard and fastened securely to H-braces.

Fence Requirement

Where entry granted across a fence line, the fence must be braced and tied off on both sides of the passageway prior to cutting. Once the work is completed, the fence will be restored to its prior condition, or better. The operator shall notify the private surface landowner or the grazing allotment holder prior to crossing any fence(s).

Figure 1. Pipe H-brace specifications

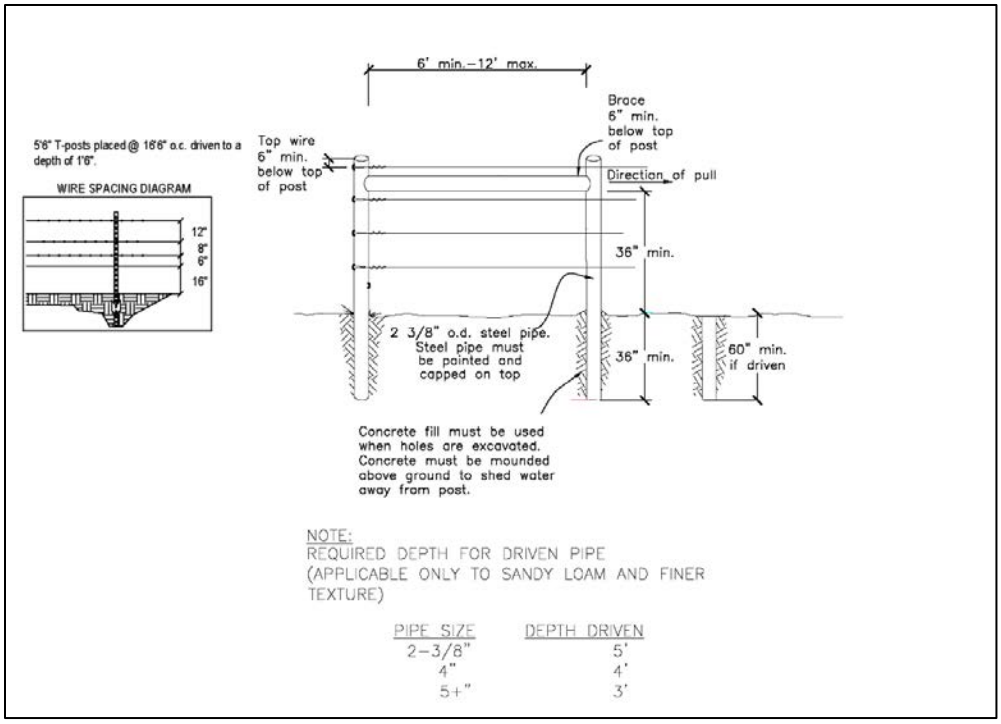
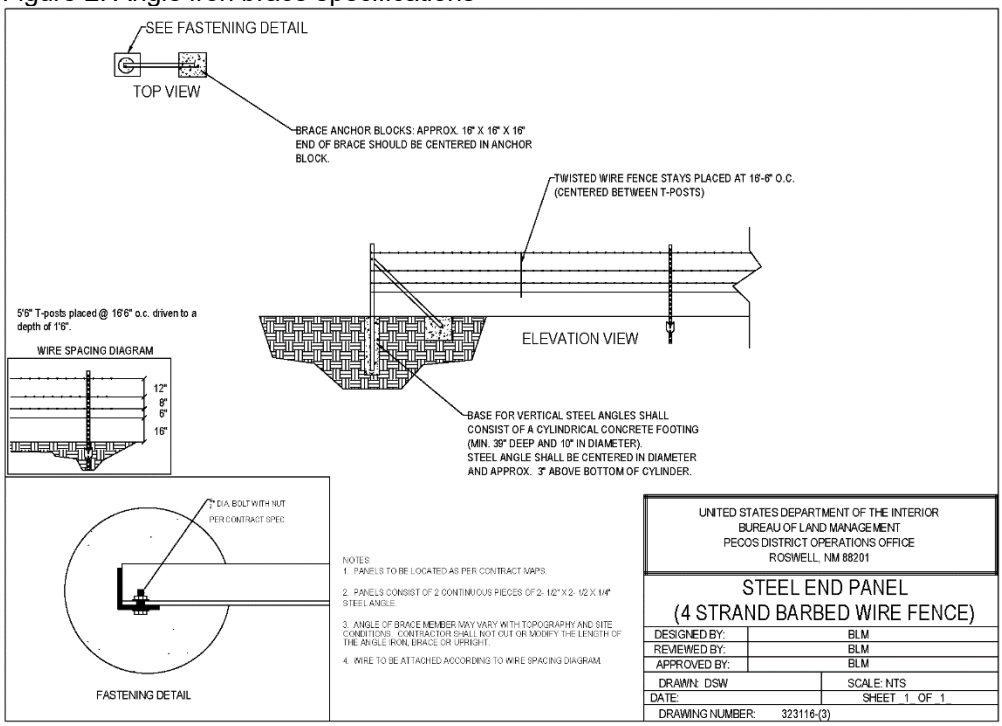


Figure 2. Angle iron brace specifications



Livestock Watering Requirement

Any damage to structures that provide water to livestock throughout the life of the well, caused by operations from the well site, must be immediately corrected by the operator. The operator must notify the BLM office (575-234-5972) and the private surface landowner or the grazing allotment holder if any damage occurs to structures that provide water to livestock.

Approval Date: 04/08/2022

Lesser Prairie Chicken:

Timing Limitation Stipulation/Condition of Approval for Lesser Prairie-Chicken:
Oil and gas activities including 3-D geophysical exploration, and drilling will not be allowed in lesser prairie-chicken habitat during the period from March 1st through June 15th annually. During that period, other activities that produce noise or involve human activity, such as the maintenance of oil and gas facilities, geophysical exploration other than 3-D operations, and pipeline, road, and well pad construction, will be allowed except between 3:00 am and 9:00 am. The 3:00 am to 9:00 am restriction will not apply to normal, around-the-clock operations, such as venting, flaring, or pumping, which do not require a human presence during this period. Additionally, no new drilling will be allowed within up to 200 meters of leks known at the time of permitting. Normal vehicle use on existing roads will not be restricted. Exhaust noise from pump jack engines must be muffled or otherwise controlled so as not to exceed 75 db measured at 30 ft. from the source of the noise.

Timing Limitation Exceptions:
The Carlsbad Field Office will publish an annual map of where the LPC timing and noise stipulations and conditions of approval (Limitations) will apply for the identified year (between March 1 and June 15) based on the latest survey information. The LPC Timing Area map will identify areas which are Habitat Areas (HA), Isolated Population Area (IPA), and Primary Population Area (PPA). The LPC Timing Area map will also have an area in red crosshatch. The red crosshatch area is the only area where an operator is required to submit a request for exception to the LPC Limitations. If an operator is operating outside the red crosshatch area, the LPC Limitations do not apply for that year and an exception to LPC Limitations is not required.

Ground-level Abandoned Well Marker to avoid raptor perching:
Upon the plugging and subsequent abandonment of the well, the well marker will be installed at ground level on a plate containing the pertinent information for the plugged well. For more installation details, contact the Carlsbad Field Office at 575-234-5972.

VRM IV:

Short-term mitigation measures include painting all above-ground structures that are not subject to safety requirements (including meter housing) Shale Green, which is a flat non-reflective paint color listed in the BLM Standard Environmental Color Chart (CC-001: June 2013). Long-term mitigation measures include the removal of wells and associated infrastructure following abandonment (end of cost-effective production). Previously impacted areas will be reclaimed by removing structures and caliche pads, returning disturbed areas to natural grade, and revegetating with an approved BLM seed mixture; thereby eliminating visual impacts.

VI. CONSTRUCTION

A. NOTIFICATION

The BLM shall administer compliance and monitor construction of the access road and well pad. Notify the Carlsbad Field Office at (575) 234-5909 at least 3 working days prior to commencing construction of the access road and/or well pad.

When construction operations are being conducted on this well, the operator shall have the approved APD and Conditions of Approval (COA) on the well site and they shall be made available upon request by the Authorized Officer.

B. TOPSOIL

The operator shall strip the top portion of the soil (root zone) from the entire well pad area and stockpile the topsoil along the edge of the well pad as depicted in the APD. The root zone is typically six (6) inches in depth. All the stockpiled topsoil will be redistributed over the interim

reclamation areas. Topsoil shall not be used for berming the pad or facilities. For final reclamation, the topsoil shall be spread over the entire pad area for seeding preparation.

Other subsoil (below six inches) stockpiles must be completely segregated from the topsoil stockpile. Large rocks or subsoil clods (not evident in the surrounding terrain) must be buried within the approved area for interim and final reclamation.

C. CLOSED LOOP SYSTEM

Tanks are required for drilling operations: No Pits.

The operator shall properly dispose of drilling contents at an authorized disposal site.

D. FEDERAL MINERAL MATERIALS PIT

Payment shall be made to the BLM prior to removal of any federal mineral materials. Call the Carlsbad Field Office at (575) 234-5972 .

E. WELL PAD SURFACING

Surfacing of the well pad is not required.

If the operator elects to surface the well pad, the surfacing material may be required to be removed at the time of reclamation. The well pad shall be constructed in a manner which creates the smallest possible surface disturbance, consistent with safety and operational needs.

F. EXCLOSURE FENCING (CELLARS & PITS)

Exclosure Fencing
The operator will install and maintain exclosure fencing for all open well cellars to prevent access to public, livestock, and large forms of wildlife before and after drilling operations until the pit is free of fluids and the operator initiates backfilling. (For examples of exclosure fencing design, refer to BLM's Oil and Gas Gold Book, Exclosure Fence Illustrations, Figure 1, Page 18.)

G. ON LEASE ACCESS ROADS

Road Width
The access road shall have a driving surface that creates the smallest possible surface disturbance and does not exceed fourteen (14) feet in width. The maximum width of surface disturbance, when constructing the access road, shall not exceed twenty-five (25) feet.

Surfacing
Surfacing material is not required on the new access road driving surface. If the operator elects to surface the new access road or pad, the surfacing material may be required to be removed at the time of reclamation.

Where possible, no improvements should be made on the unsurfaced access road other than to remove vegetation as necessary, road irregularities, safety issues, or to fill low areas that may sustain standing water.

The Authorized Officer reserves the right to require surfacing of any portion of the access road at any time deemed necessary. Surfacing may be required in the event the road deteriorates, erodes, road traffic increases, or it is determined to be beneficial for future field development. The surfacing depth and type of material will be determined at the time of notification.

Crowning

Crowning shall be done on the access road driving surface. The road crown shall have a grade of approximately 2% (i.e., a 1" crown on a 14' wide road). The road shall conform to Figure 1; cross section and plans for typical road construction.

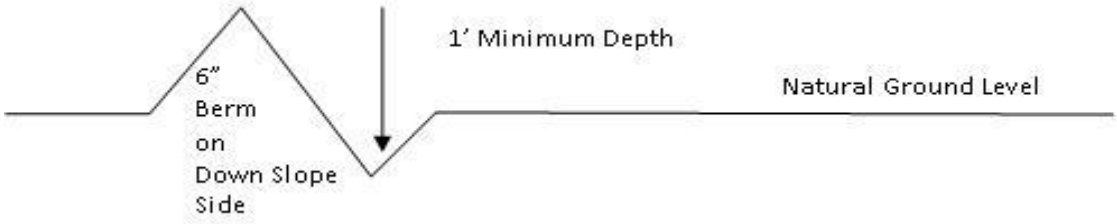
Ditching
Ditching shall be required on both sides of the road.

Turnouts
Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall conform to Figure 1; cross section and plans for typical road construction.

Drainage
Drainage control systems shall be constructed on the entire length of road (e.g. ditches, sidehill outsloping and insloping, lead-off ditches, culvert installation, and low water crossings).

A typical lead-off ditch has a minimum depth of 1 foot below and a berm of 6 inches above natural ground level. The berm shall be on the down-slope side of the lead-off ditch.

Cross Section of a Typical Lead-off Ditch



All lead-off ditches shall be graded to drain water with a 1 percent minimum to 3 percent maximum ditch slope. The spacing interval are variable for lead-off ditches and shall be determined according to the formula for spacing intervals of lead-off ditches, but may be amended depending upon existing soil types and centerline road slope (in %);

Formula for Spacing Interval of Lead-off Ditches

Example - On a 4% road slope that is 400 feet long, the water flow shall drain water into a lead-off ditch. Spacing interval shall be determined by the following formula:

$$\text{400 foot road with 4\% road slope: } \frac{400'}{4\%} + 100' = 200' \text{ lead-off ditch interval}$$

Cattle guards
An appropriately sized cattle guard sufficient to carry out the project shall be installed and maintained at fence/road crossings. Any existing cattle guards on the access road route shall be repaired or replaced if they are damaged or have deteriorated beyond practical use. The operator shall be responsible for the condition of the existing cattle guards that are in place and are utilized during lease operations.

Fence Requirement

Where entry is granted across a fence line, the fence shall be braced and tied off on both sides of the passageway prior to cutting. The operator shall notify the private surface landowner or the grazing allotment holder prior to crossing any fences.

Public Access
Public access on this road shall not be restricted by the operator without specific written approval granted by the Authorized Officer.

Approval Date: 04/08/2022

Construction Steps

1. Salvage topsoil
2. Construct road
3. Redistribute topsoil
4. Revegetate slopes

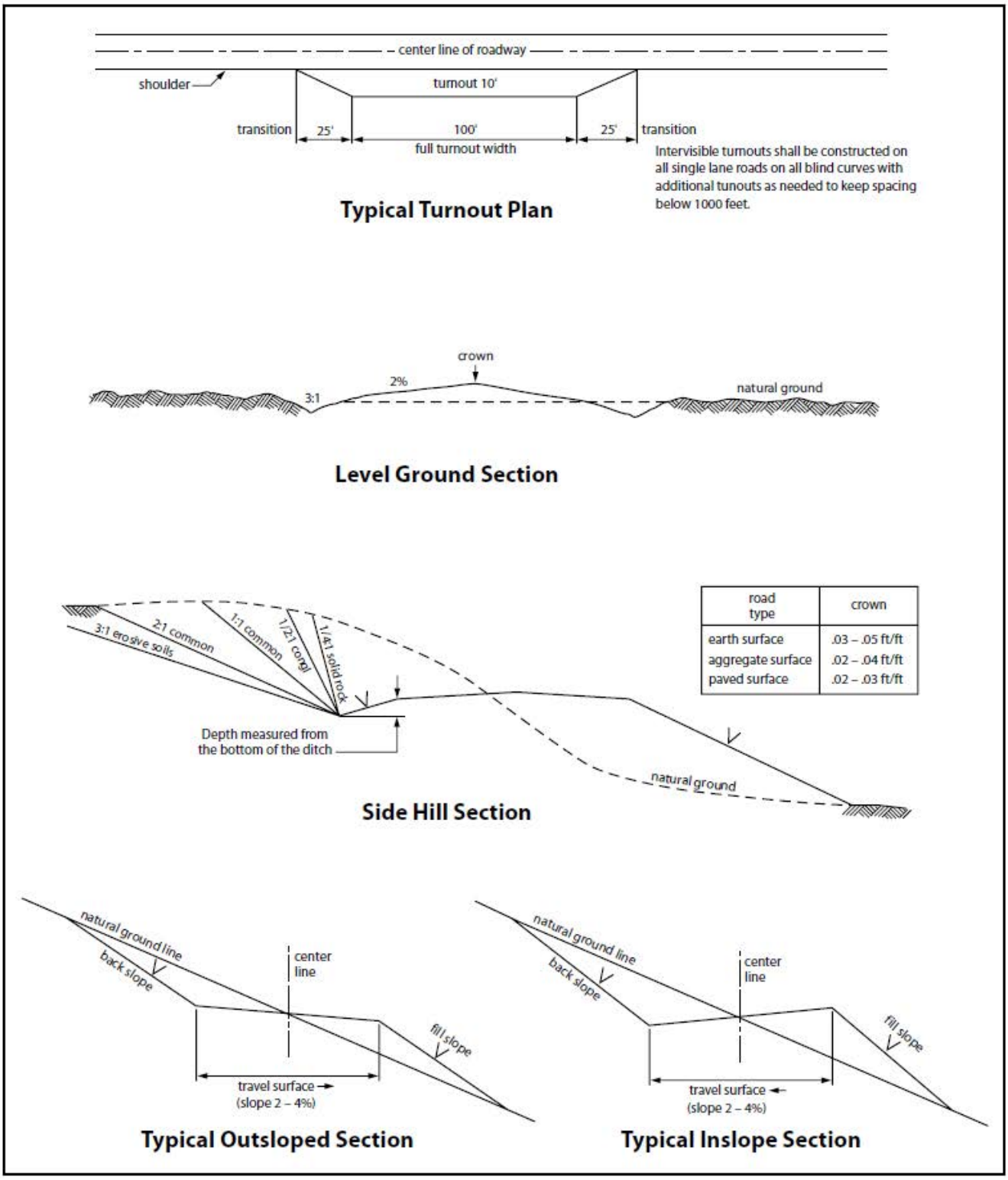


Figure 1. Cross-sections and plans for typical road sections representative of BLM resource or FS local and higher-class roads.

Approval Date: 04/08/2022

VII. PRODUCTION (POST DRILLING)

A. WELL STRUCTURES & FACILITIES

Placement of Production Facilities
Production facilities should be placed on the well pad to allow for maximum interim recontouring and revegetation of the well location.

Exclosure Netting (Open-top Tanks)
Immediately following active drilling or completion operations, the operator will take actions necessary to prevent wildlife and livestock access, including avian wildlife, to all open-topped tanks that contain or have the potential to contain salinity sufficient to cause harm to wildlife or livestock, hydrocarbons, or Resource Conservation and Recovery Act of 1976-exempt hazardous substances. At a minimum, the operator will net, screen, or cover open-topped tanks to exclude wildlife and livestock and prevent mortality. If the operator uses netting, the operator will cover and secure the open portion of the tank to prevent wildlife entry. The operator will net, screen, or cover the tanks until the operator removes the tanks from the location or the tanks no longer contain substances that could be harmful to wildlife or livestock. Use a maximum netting mesh size of 1 ½ inches. The netting must not be in contact with fluids and must not have holes or gaps.

Chemical and Fuel Secondary Containment and Exclosure Screening
The operator will prevent all hazardous, poisonous, flammable, and toxic substances from coming into contact with soil and water. At a minimum, the operator will install and maintain an impervious secondary containment system for any tank or barrel containing hazardous, poisonous, flammable, or toxic substances sufficient to contain the contents of the tank or barrel and any drips, leaks, and anticipated precipitation. The operator will dispose of fluids within the containment system that do not meet applicable state or U. S. Environmental Protection Agency livestock water standards in accordance with state law; the operator must not drain the fluids to the soil or ground. The operator will design, construct, and maintain all secondary containment systems to prevent wildlife and livestock exposure to harmful substances. At a minimum, the operator will install effective wildlife and livestock exclosure systems such as fencing, netting, expanded metal mesh, lids, and grate covers. Use a maximum netting mesh size of 1 ½ inches.

Open-Vent Exhaust Stack Exclosures
The operator will construct, modify, equip, and maintain all open-vent exhaust stacks on production equipment to prevent birds and bats from entering, and to discourage perching, roosting, and nesting. (*Recommended exclosure structures on open-vent exhaust stacks are in the shape of a cone*.) Production equipment includes, but may not be limited to, tanks, heater-treaters, separators, dehydrators, flare stacks, in-line units, and compressor mufflers.

Containment Structures
Proposed production facilities such as storage tanks and other vessels will have a secondary containment structure that is constructed to hold the capacity of 1.5 times the largest tank, plus freeboard to account for precipitation, unless more stringent protective requirements are deemed necessary.

Painting Requirement
All above-ground structures including meter housing that are not subject to safety requirements shall be painted a flat non-reflective paint color, **Shale Green** from the BLM Standard Environmental Color Chart (CC-001: June 2008).

VIII. INTERIM RECLAMATION

During the life of the development, all disturbed areas not needed for active support of production operations should undergo interim reclamation in order to minimize the environmental impacts of development on other resources and uses.

Within six (6) months of well completion, operators should work with BLM surface management specialists (Jim Amos: 575-234-5909) to devise the best strategies to reduce the size of the location. Interim reclamation should allow for remedial well operations, as well as safe and efficient removal of oil and gas.

During reclamation, the removal of caliche is important to increasing the success of revegetating the site. Removed caliche that is free of contaminants may be used for road repairs, fire walls or for building other roads and locations. In order to operate the well or complete workover operations, it may be necessary to drive, park and operate on restored interim vegetation within the previously disturbed area. Disturbing revegetated areas for production or workover operations will be allowed. If there is significant disturbance and loss of vegetation, the area will need to be revegetated. Communicate with the appropriate BLM office for any exceptions/exemptions if needed.

All disturbed areas after they have been satisfactorily prepared need to be reseeded with the seed mixture provided below.

Upon completion of interim reclamation, the operator shall submit a Sundry Notices and Reports on Wells, Subsequent Report of Reclamation (Form 3160-5).

IX. FINAL ABANDONMENT & RECLAMATION

At final abandonment, well locations, production facilities, and access roads must undergo "final" reclamation so that the character and productivity of the land are restored.

Earthwork for final reclamation must be completed within six (6) months of well plugging. All pads, pits, facility locations and roads must be reclaimed to a satisfactory revegetated, safe, and stable condition, unless an agreement is made with the landowner or BLM to keep the road and/or pad intact.

After all disturbed areas have been satisfactorily prepared, these areas need to be revegetated with the seed mixture provided below. Seeding should be accomplished by drilling on the contour whenever practical or by other approved methods. Seeding may need to be repeated until revegetation is successful, as determined by the BLM.

Operators shall contact a BLM surface protection specialist prior to surface abandonment operations for site specific objectives (Jim Amos: 575-234-5909).

Ground-level Abandoned Well Marker to avoid raptor perching: Upon the plugging and subsequent abandonment of the well, the well marker will be installed at ground level on a plate containing the pertinent information for the plugged well.

Approval Date: 04/08/2022

Seed Mixture for LPC Sand/Shinnery Sites

Holder shall seed all disturbed areas with the seed mixture listed below. The seed mixture shall be planted in the amounts specified in pounds of pure live seed (PLS)* per acre. There shall be no primary or secondary noxious weeds in the seed mixture. Seed will be tested and the viability testing of seed shall be done in accordance with State law(s) and within nine (9) months prior to purchase. Commercial seed shall be either certified or registered seed. The seed container shall be tagged in accordance with State law(s) and available for inspection by the Authorized Officer.

Seed will be planted using a drill equipped with a depth regulator to ensure proper depth of planting where drilling is possible. The seed mixture will be evenly and uniformly planted over the disturbed area (smaller/heavier seeds have a tendency to drop the bottom of the drill and are planted first). Holder shall take appropriate measures to ensure this does not occur. Where drilling is not possible, seed will be broadcast and the area shall be raked or chained to cover the seed. When broadcasting the seed, the pounds per acre are to be doubled. Seeding shall be repeated until a satisfactory stand is established as determined by the Authorized Officer. Evaluation of growth may not be made before completion of at least one full growing season after seeding.

Species to be planted in pounds of pure live seed* per acre:

Species	lb/acre
Plains Bristlegrass	5lbs/A
Sand Bluestem	5lbs/A
Little Bluestem	3lbs/A
Big Bluestem	6lbs/A
Plains Coreopsis	2lbs/A
Sand Dropseed	1lbs/A

*Pounds of pure live seed:

Pounds of seed **x** percent purity **x** percent germination = pounds pure live seed

Approval Date: 04/08/2022

Earthstone Operating, LLC

1400 Woodloch Forest Drive, Suite 300
The Woodlands, TX 77380
Phone: (281) 298-4246
Fax: (832) 823-0478

H2S Contingency Plan

Lea County, NM

Escape

Crews shall escape upwind of escaping gas in the event of an emergency release of gas. Escape can be facilitated from the location entrance road. Crew should then block entrance to the location from the lease road so as not to allow anyone traversing into a hazardous area. The blockade should be at a safe distance outside of the ROE. There are NO homes or buildings in or near the ROE.

Assumed 100 ppm ROE = 3000'
100 ppm H2S concentration shall trigger activation of this plan

Emergency Procedures

In the event of a release of gas containing H2S, the first responder(s) must:

« Isolate the area and prevent entry by other persons into the 100 ppm ROE.
« Evacuate any public places encompassed by the 100 ppm ROE.
« Be equipped with H2S monitors and air packs in order to control the release.
« Use the "buddy system" to ensure no injuries occur during the response.
« Take precautions to avoid personal injury during this operation.
« Contact operator and/or local officials to aid in operation. See list of phone numbers attached.
« Have received training
in the: Detection of
H2S, and
Measures for protection against the gas,
Equipment used for protection and emergency response.

Ignition of Gas Source

Should control of the well be considered lost and ignition considered, take care to protect against exposure to Sulfur Dioxide (S02). Intentional ignition must be coordinated with the NMOCD and local officials. Additionally, the NM State Police may become involved. NM State Police shall be the Incident Command on scene of any major release. Take care to protect downwind whenever there is an ignition of the gas.

Characteristics of H2S and SO,

Common Name	Chemical Formula	Specific Gravity	Threshold Limit	Hazardous Limit	Lethal Concentration
Hydrogen Sulfide	H2S	1.189 Air=1	10 ppm	100 ppm/hr	600 ppm
Sulfur Dioxide	SO2	2.21 Air=1	2 ppm	N/A	1000 ppm

Contacting Authorities

Earthstone Operating, LLC personnel must liaise with local and state agencies to ensure **a** proper response to a major release. Additionally, the OCD must be notified of the release as soon **as** possible but no later than 4 hours. Agencies will ask for information such as type and volume of release, wind direction, location of release, etc. Be prepared with all information available including directions to sit e. The following call list of essential and potential responders has been prepared for use during a release Earthstone Operating, LLC response must be in coordination with the State of New Mexico's "Hazardous Materials Emergency Response Plan" (HMERP).

Hydrogen Sulfide Drilling Operations Plan

1. All Company and Contract personnel admitted on location must be trained by a qualified H2S safety instructor to the following:
   A. Characteristics of H2S
   B. Physical effects and hazards
   C. Principal and operation of H2S detectors, warning system and briefing areas.
   D. Evacuation procedure, routes and first aid.
   E. Proper use of safety equipment & life support systems
   F. Essential personnel meeting Medical Evaluation criteria will receive additional training on the proper use of 30-minute pressure demand air packs.
2. H2S Detection and Alarm Systems:
   a. H2S sensors/detectors to be located on the drilling rig floor, in the base of the sub structure/cellar area, on the mud pits in the shale shaker area. Additional H2S detectors may play placed as deemed necessary.
   b. An audio alarm system will be installed on the derrick floor and in the top doghouse.
3. Windsock and/or wind streamers:
   a. Windsock at mudpit area should be high enough to be visible.
   b. Windsock on the rig floor and/ or top doghouse should be high enough to be visible.
4. Condition Flags and Signs
   a. Warning sign on access road to location.
   b. Flags to be displayed on sign at entrance to location. Green flag indicates normal safe condition. Yellow flag indicates potential

pressure and danger. Red flag indicates danger (H2S present in dangerous concentration). Only H2S trained and certified personnel admitted to location.

5. Well control equipment:
   a. See exhibit BOP and Choke Diagrams

6. Communication:
   a. While working under masks chalkboards will be used for communication.
   b. Hand signals will be used where chalk board is inappropriate.
   c. Two-way radio will be used to communicate off location in case of emergency help is required. In most cases, cellular telephones will be available at most drilling foreman's trailer or living quarters.

7. Drill stem Testing:
   No DSTs are planned at this time.

8. Drilling contractor supervisor will be required to be familiar with the effects H2S has on tubular goods and other mechanical equipment.
9. If H25 is encountered, mud system will be altered if necessary to maintain control of formation. A mud gas separator will be brought into service along with H2S scavengers if necessary.

Emergency Assistance Telephone List

Earthstone Operating, LLC

The Woodlands Office (Headquarters): 281-298-4246

Midland Office: 432-686-1100

Vice President of Drilling-Nick Goree	Office: 281-771-3201
	Cell: 405-488-7164
Sr. Drilling Engineer/Superintendent- Ben Taylor	Cell: 432-978-3029
Production Superintendent-Paul Martinez	Cell: 325-206-1722

Public Safety:			**911 or**
Lea County Sheriff's Department		Number:	(575)396-3611
Lea County Emergency Management-Lorenzo Velasquez		Number:	(575)391-2983
Lea County Fire Marshal			
Lorenzo Velasquez, Director		Number:	(575)391-2983
Jeff Broom, Deputy Fire Marshal		Number:	(575)391-2988
Fire Department:			
Knowles Fire Department		Number:	(505)392-2810
City of Hobbs Fire Department		Number:	(505)397-9308
Jal Volunteer Fire Department		Number:	(505)395-2221
Lovington Fire Department		Number:	(575)396-2359
Maljamar Fire Department		Number:	(505)676-4100
Tatum Volunteer Fire Department		Number:	(505)398-3473
Eunice Fire Department		Number:	(575)394-3258
Hospital: Lea Regional Medical Center		Number:	(575)492-5000
AirMed: Medevac		Number:	(888)303-9112
Dept. of Public Safety		Number:	(505)827-9000
New Mexico OCD-Dist. 1-Hobbs-	Office	Number:	(575)393-6161
	Emergency	Number:	(575)370-3186
Lea County Road Department		Number:	(575)391-2940
NMDOT		Number:	(505)827-5100
Bureau of Land Management			
Pecos District Office		Number:	(575)627-0272
Carlsbad Field Office		Number:	(575)234-5972

Earthstone Operating, LLC plans to operate a Closed Loop System.

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

Drilling Plan Data Report
04/14/2022

APD ID: 10400080482
Submission Date: 09/22/2021
Operator Name: CHISHOLM ENERGY OPERATING LLC
Well Name: THUNDERBALL 23 FED 3BS COM
Well Number: 3H
Well Type: OIL WELL
Well Work Type: Drill

Highlighted data reflects the most recent changes

Show Final Text

Section 1 - Geologic Formations

Formation ID	Formation Name	Elevation	True Vertical Depth	Measured Depth	Lithologies	Mineral Resources	Producing Formation
7006004	RUSTLER	3684	1806	1806	ANHYDRITE	USEABLE WATER	N
7006005	SALADO	1600	2084	2084	SALT	NONE	N
7006007	YATES	221	3463	3463	SANDSTONE, SHALE	NATURAL GAS, OIL	N
7006008	QUEEN	-989	4673	4673	DOLOMITE, SANDSTONE	NATURAL GAS, OIL	N
7006009	DELAWARE	-2457	6141	6141	SANDSTONE, SHALE	NATURAL GAS, OIL	N
7006010	BONE SPRING	-4529	8213	8213	LIMESTONE, SHALE	NATURAL GAS, OIL	N
7006015	BONE SPRING 1ST	-5839	9523	9523	LIMESTONE, SANDSTONE, SHALE	NATURAL GAS, OIL	N
7006268	BONE SPRING 2ND	-6347	10031	10031	SANDSTONE, SHALE, SILTSTONE	NATURAL GAS, OIL	N
7006269	BONE SPRING 3RD	-6935	10619	10619	SANDSTONE, SHALE, SILTSTONE	NATURAL GAS, OIL	Y

Section 2 - Blowout Prevention

Pressure Rating (PSI): 5M
Rating Depth: 12000

Equipment: Rotating Head, remote kill line, mud-gas sperator

Requesting Variance? YES

Variance request: We propose utilizing a cactus speed head for this well. Please see attached diagram and pressure testing statement. Also we request to use a co flex hose. Please find attached information regarding co flex hose.
Testing Procedure: BOP will be tested by an independent service company to 250 psi low and 5000 psi high, per onshore order 2. Pipe rams will be operationally checked each 24 hour period. Blind rams will be operationally checked each trip out of the hole.
Choke Diagram Attachment:

5M_Choke_Manifold_Diagram_20210921094455.pdf

BOP Diagram Attachment:

5m_BOP_Diagram_2_20210921094505.pdf

BOP SHEET

Annular Preventer
13-3/8 2,500 PSI WP

Ram Preventers
13-3/8" 5,000 PSI WP Double Ram
13-3/8" 5,000 PSI WP Single Ram

Test the pipe rams, blind rams, floor valves (IBOP and/or upper Kelly valve), choke lines and manifold to 250 psi/5,000 psi with a test plug and a test pump.

Test the annular to 250 psi/2,500 psi with same as above.

District I
1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone:(575) 748-1283 Fax:(575) 748-9720
District III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170
District IV
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

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

CONDITIONS

Action 122103

CONDITIONS

Operator: Earthstone Operating, LLC 1400 Woodloch Forest The Woodlands, TX 77380	OGRID: 331165
	Action Number: 122103
	Action Type: [C-101] BLM - Federal/Indian Land Lease (Form 3160-3)

CONDITIONS

Created By	Condition	Condition Date
pkautz	Will require a File As Drilled C-102 and a Directional Survey with the C-104	8/9/2022
pkautz	Once the well is spud, to prevent ground water contamination through whole or partial conduits from the surface, the operator shall drill without interruption through the fresh water zone or zones and shall immediately set in cement the water protection string	8/9/2022
pkautz	Oil base muds are not to be used until fresh water zones are cased and cemented providing isolation from the oil or diesel. This includes synthetic oils. Oil based mud, drilling fluids and solids must be contained in a steel closed loop system	8/9/2022
pkautz	Cement is required to circulate on both surface and intermediate1 strings of casing	8/9/2022