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.
[329881]

2. Name of Operator
[373986]

9. API Well No. **30-025-49393**

3a. Address

3b. Phone No. *(include area code)*

10. Field and Pool, or Exploratory **[96776]**

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 09/14/2021

SL

APPROVED WITH CONDITIONS

KZ
09/17/2021

(Continued on page 2)

*(Instructions on page 2)

Approval Date: 11/23/2020

INSTRUCTIONS

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

ITEM I: If the proposal is to redrill to the same reservoir at a different subsurface location or to a new reservoir, use this form with appropriate notations. Consult applicable Federal regulations concerning subsequent work proposals or reports on the well.

ITEM 4: Locations on Federal or Indian land should be described in accordance with Federal requirements. Consult local Federal offices for specific instructions.

ITEM 14: Needed only when location of well cannot readily be found by road from the land or lease description. A plat, or plats, separate or on the reverse side, showing the roads to, and the surveyed location of, the wen, and any other required information, should be furnished when required by Federal agency offices.

ITEMS 15 AND 18: If well is to be, or has been directionany drilled, give distances for subsurface location of hole in any present or objective productive zone.

ITEM 22: Consult applicable Federal regulations, or appropriate officials, concerning approval of the proposal before operations are started.

ITEM 24: If the proposal will involve hydraulic fracturing operations, you must comply with 43 CFR 3162.3-3, including providing information about the protection of usable water. Operators should provide the best available information about all formations containing water and their depths. This information could include data and interpretation of resistivity logs run on nearby wells. Information may also be obtained from state or tribal regulatory agencies and from local BLM offices.

NOTICES

The Privacy Act of 1974 and regulation in 43 CFR 2.48(d) provide that you be furnished the following information in connection with information required by this application.

AUTHORITY: 30 U.S.C. 181 et seq., 25 U.S.C. 396; 43 CFR 3160

PRINCIPAL PURPOSES: The information will be used to: (1) process and evaluate your application for a permit to drill a new oil, gas, or service wen or to reenter a plugged and abandoned well; and (2) document, for administrative use, information for the management, disposal and use of National Resource Lands and resources including (a) analyzing your proposal to discover and extract the Federal or Indian resources encountered; (b) reviewing procedures and equipment and the projected impact on the land involved; and (c) evaluating the effects of the proposed operation on the surface and subsurface water and other environmental impacts.

ROUTINE USE: Information from the record and/or the record win be transferred to appropriate Federal, State, and local or foreign agencies, when relevant to civil, criminal or regulatory investigations or prosecution, in connection with congressional inquiries and for regulatory responsibilities.

EFFECT OF NOT PROVIDING INFORMATION: Filing of this application and disclosure of the information is mandatory only if you elect to initiate a drilling or reentry operation on an oil and gas lease.

The Paperwork Reduction Act of 1995 requires us to inform you that:
The BLM conects this information to anow evaluation of the technical, safety, and environmental factors involved with drilling for oil and/or gas on Federal and Indian oil and gas leases. This information will be used to analyze and approve applications. Response to this request is mandatory only if the operator elects to initiate drilling or reentry operations on an oil and gas lease. The BLM would like you to know that you do not have to respond to this or any other Federal agency-sponsored information collection unless it displays a currently valid OMB control number.

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

Approval Date: 11/23/2020

Additional Operator Remarks

Location of Well

0. SHL: NESW / 1592 FSL / 2020 FWL / TWSP: 26S / RANGE: 35E / SECTION: 17 / LAT: 32.0404196 / LONG: -103.3914518 (TVD: 0 feet, MD: 0 feet)

PPP: SESW / 0 FSL / 2311 FWL / TWSP: 26S / RANGE: 35E / SECTION: 8 / LAT: 32.0506125 / LONG: -103.3903135 (TVD: 12740 feet, MD: 15700 feet)

BHL: NENW / 10 FNL / 1850 FWL / TWSP: 26S / RANGE: 35W / SECTION: 8 / LAT: 32.0650603 / LONG: -103.3920473 (TVD: 13017 feet, MD: 21314 feet)

BLM Point of Contact

Name: TYLER HILL
Title: LIE
Phone: (575) 234-5972
Email: tjhill@blm.gov

Review and Appeal Rights

A person contesting a decision shall request a State Director review. This request must be filed within 20 working days of receipt of the Notice with the appropriate State Director (see 43 CFR 3165.3). The State Director review decision may be appealed to the Interior Board of Land Appeals, 801 North Quincy Street, Suite 300, Arlington, VA 22203 (see 43 CFR 3165.4). Contact the above listed Bureau of Land Management office for further information.

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
30-025-49393	96776	JABALINA;WOLFCAMP, SOUTHWEST

4 Property Code	5 Property Name	6 Well Number
329881	LONESOME DOVE FED COM	512H

7 OGRID No.	8 Operator Name	9 Elevation
373986	TITUS OIL & GAS PRODUCTION LLC	3216'

[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
K	17	26-S	35-E		1592'	SOUTH	2020'	WEST	LEA

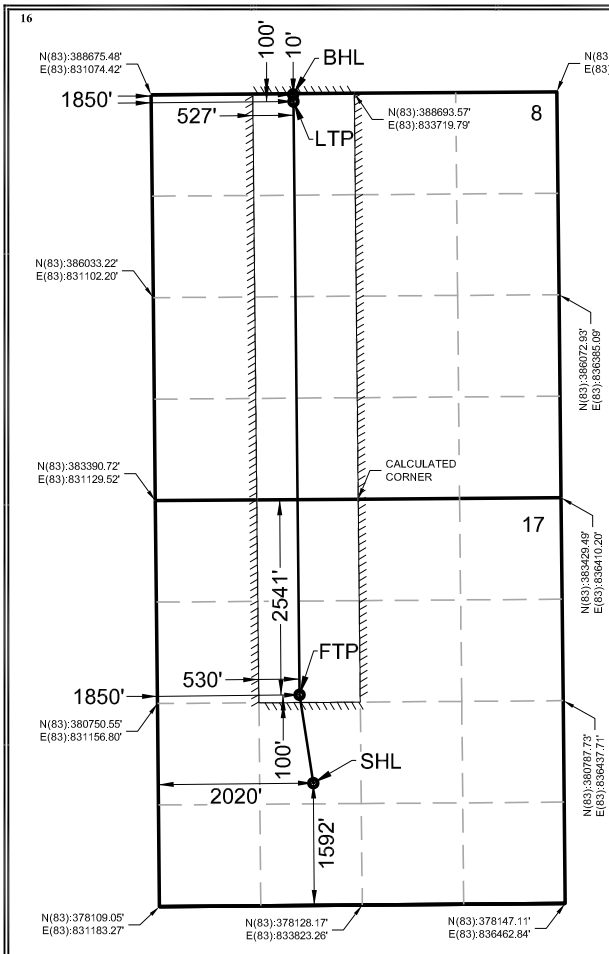
[11] Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
C	8	26-S	35-E		10'	NORTH	1850'	WEST	LEA

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

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

16



BOTTOM HOLE LOCATION (BHL)
NEW MEXICO EAST - NAD 83
X=832924.49 LAT.= 32.06506029° N
Y=388678.13 LONG.= 103.39204726° W
NEW MEXICO EAST - NAD 27
X=791736.85 LAT.= 32.06493400° N
Y=388620.54 LONG.= 103.39158495° W
10' FNL, 1850' FWL - SECTION 8
10' FNL, 527' FWL - LEASE

LAST TAKE POINT (LTP)
NEW MEXICO EAST - NAD 83
X=832925.44 LAT.= 32.06481290° N
Y=388588.14 LONG.= 103.39204673° W
NEW MEXICO EAST - NAD 27
X=791737.79 LAT.= 32.06468661° N
Y=388530.55 LONG.= 103.39158444° W
100' FNL, 1850' FWL - SECTION 8
100' FNL, 527' FWL - LEASE

FIRST TAKE POINT (FTP)
NEW MEXICO EAST - NAD 83
X=833005.74 LAT.= 32.04357916° N
Y=380863.57 LONG.= 103.39200498° W
NEW MEXICO EAST - NAD 27
X=791817.74 LAT.= 32.04345276° N
Y=380806.19 LONG.= 103.39154388° W
2541' FNL, 1850' FWL - SECTION 17
100' FSL, 530' FWL - LEASE

SURFACE HOLE LOCATION (SHL)
NEW MEXICO EAST - NAD 83
X= 833187.17 LAT.= 32.04041964° N
Y= 379715.66 LONG.= 103.39145180° W
NEW MEXICO EAST - NAD 27
X= 791999.12 LAT.= 32.04029322° N
Y= 379658.30 LONG.= 103.39099091° W
1592' FSL, 2020' FWL - SECTION 17

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.

Signature 1/22/2020 Date

Ryan DeLong - Regulatory Manager
Printed Name

rdelong@titusoil.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.

Date of Survey

Signature and Seal of Professional Surveyor

GARRETT J SMELKER
NEW MEXICO
25036
01/15/2020
PROFESSIONAL SURVEYOR

Certificate Number

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: Titus Oil & Gas Production, LLC **OGRID:** 373986 **Date:** 9 / 14 / 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
Lonesome Dove Fed Com 512H	**30-025-49393**	K, Sec 17, T26S, R35E	1592' FSL & 2020' FWL	834	918	3754

IV. Central Delivery Point Name: El Campeon CTB 17S [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
Lonesome Dove Fed Com 512H	**30-025-49393**	12/7/2021	1/28/2022	April, 2022	May, 2022	May, 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:	
Printed Name:	Ryan DeLong
Title:	Regulatory Manager
E-mail Address:	rdelong@titusoil.com
Date:	9/14/2021
Phone:	817-852-6370

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

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

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

Each surface facility design includes the following process equipment: 3-phase vertical separator (one per well), 3-phase heater treater (one per well), one or two sales gas scrubbers, two bulk free water knockouts, two bulk heater treaters, a vapor recover tower (VRT), a vapor recovery unit (VRU) compressor, multiple water and oil tanks, as well as flare liquid scrubbers (HP & LP), flares (HP & LP), and combustors. All process vessels will be sized to separate oil, water, and gas based upon historical & predicted well performance. Each process vessel will be fitted with the appropriately sized PSV as per ASME code requirements to mitigate vessel rupture and loss of containment. Additionally, the process vessels will be fitted with pressure transmitters tied to the facility control system with allow operations to monitor pressures and when necessary, shut-in the facility to avoid vessel over-pressure and potential flaring or venting of natural gas. Natural gas will be preferentially sent to pipeline, and only directed to the HP flare system in upset/emergency situations. Flash gas from the free water knockouts, bulk heater treaters, and VRT will be recompressed using a VRU compressor and will be preferentially redirected to gas sales pipeline. Oil tanks and water tanks will be fitted with 16 oz thief hatches as well as PRVs to protect the tank from rupture/collapse. The tank vapor outlets and tank vapor capture system will be sized to keep the tank pressures below 12 oz. the tank vapor capture system will include a scrubber and combustors. All tank vapors will be combusted to industry standards.

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:

- **During drilling operations -** Gas meters will be installed at the shakers and Volume Totalizers will be installed on the pits. If elevated gas levels, or a pit gain are observed, returns will be diverted to a gas buster. Gas coming off the gas buster will be combusted at the flare stack. A 10’ or taller flare will be located at least 100’ from the SHL.
- **During Completion Operations, including stimulation and frac plug drill out operations:** hydrocarbon production to surface is minimized. If gas production does occur, gas will be combusted at a flare stack. A 10’ or taller flare will be located at least 100’ from SHL
- **During production operations:** All process vessels (separators, heater treaters, tanks) will recompress (where necessary) and route gas outlets into the natural gas gathering line. Gas will preferentially be routed to natural gas gathering pipeline and the flare system will only be used during emergency, malfunction, or if the gas does not meet pipeline specifications. In the event of flaring off-specification gas, operations will pull gas samples twice a week and will also route gas back to pipeline as soon as gas meets specifications. Exceptions to this will include only those qualified exceptions per the regulation 19.15.27.8 Subsection D.
- To comply with state performance standards, separation and storage equipment will be designed to handle the maximum anticipated throughput and pressure to minimize waste and reduce the likelihood of venting gas to atmosphere. Additionally, each storage atmospheric tank (oil & water) will be fitted with a level transmitter to facilitate gauging of the tank without opening the thief hatch. Any gas collected through the tank vent system is expected to be recompressed and routed to sales. However, in the event of an emergency, the tank vapor capture system will be designed to combust the gas using a combustor system with a continuous ignitor. The combustor will be properly anchored and will be

located a minimum of 100 feet from the well and storage tanks. Operators will conduct weekly AVO inspections. These AVO inspection records will be stored for the required 5-year period and will be made available upon Division request

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

- When performing routine or preventive maintenance on a vessel or tank, initially all inlet valves are close, and the vessel or tank is allowed to depressurize through the normal outlet connections to gas sales and/or liquid tanks. Once the vessel or tank is depressurized to lowest acceptable sales outlet pressure, usually around 20 psig, a temporary low-pressure flowline is connected from the vessel or tank to the VRU for further pressure reduction. Once depressurized to less than 1-2 psig, the remaining natural gas in the vessel or tank is vented to atmosphere through a controlled pressure relief valve. Once the vessel or tank is depressurized to atmospheric pressure, the vessel or tank can be safely opened, and maintenance performed.

Titus Oil & Gas Production, LLC - Lonesome Dove Fed Com 512H

1. Geologic Formations

TVD of target	13,017' EOL	Pilot hole depth	NA
MD at TD:	21,314'	Deepest expected fresh water:	250'

Formation	Depth (TVD) from KB	Water/Mineral Bearing/ Target Zone?	Hazards*
Quaternary Fill	Surface	Water	
Rustler	1035	Water	
Top of Salt	1518	Salt	
Base of Salt	5009	Salt	
Lamar	5349	Salt Water	
Delaware	5391	Salt Water	
Bone Spring Lime	9277	Oil/Gas	
1st Bone Spring	10475	Oil/Gas	
2nd Bone Spring	11024	Oil/Gas	
3rd Bone spring	12149	Oil/Gas	
Wolfcamp	12533	Oil/Gas	
Wolfcamp X Sand	12561	Oil/Gas	
Wolfcamp Y Sand	12625	Oil/Gas	
Wolfcamp A	12657	Oil/Gas	
Wolfcamp B	12966	Target Oil/Gas	

2. Casing Program

Hole Size	Casing From	Casing To	Csg. Size	Weight (lbs)	Grade	Conn.	SF Collapse	SF Burst	SF Body
13.5"	0	1060	10.75"	45.5	J55	BTC	4.31	0.82	14.82
9.875"	0	11800	7.625"	29.7	L80HP	BTC	1.13	1.13	2.07
6.75"	0	11300	5.5"	23	P110	BTC	1.59	1.61	3.11
6.75"	11300	21,314	5"	18	P110	BTC	1.59	1.61	3.11
			BLM Minimum Safety Factor				1.125	1	1.6 Dry
									1.8 Wet

Intermediate casing will be kept at least 1/3 full while running casing to mitigate collapse.

Variance requested to waive minimum SF for surface casing burst. Surface SF Burst > 0.7 frac gradient at the shoe. Casing burst is stronger than the next intervals formation FG.

All casing strings will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.h

The 5” casing will be run back 500’ into the intermediate casing to ensure the coupling OD clearance is greater than .422” for the cement bond tie in.

Titus Oil & Gas Production, LLC - Lonesome Dove Fed Com 512H

	Y or N
Is casing new? If used, attach certification as required in Onshore Order #1	Y
Does casing meet API specifications? If no, attach casing specification sheet.	Y
Is premium or uncommon casing planned? If yes attach casing specification sheet.	N
Does the above casing design meet or exceed BLM's minimum standards? If not provide justification (loading assumptions, casing design criteria).	Y
Will the intermediate pipe be kept at a minimum 1/3 fluid filled to avoid approaching the collapse pressure rating of the casing?	Y
Is well located within Capitan Reef?	N
If yes, does production casing cement tie back a minimum of 50' above the Reef?	
Is well within the designated 4 string boundary?	
Is well located in SOPA but not in R-111-P?	N
If yes, are the first 2 strings cemented to surface and 3rd string cement tied back 500' into previous casing?	
Is well located in R-111-P and SOPA?	N
If yes, are the first three strings cemented to surface?	
Is 2nd string set 100' to 600' below the base of salt?	
Is well located in high Cave/Karst?	N
If yes, are there two strings cemented to surface?	
(For 2 string wells) If yes, is there a contingency casing if lost circulation occurs?	
Is well located in critical Cave/Karst?	N
If yes, are there three strings cemented to surface?	

Titus Oil & Gas Production, LLC - Lonesome Dove Fed Com 512H

3. Cementing Program

Casing	# Sks	Wt. lb/ gal	Yld ft3/ sack	H_20 gal/sk	500# Comp. Strength (hours)	Slurry Description
Surf.	440	13.5	1.75	9	8	Lead: Class C + 4% Gel + 1% CaCl2
	250	14.8	1.34	6.34	4	Tail: Class C + 2% CaCl2
Inter.	1450	10.3	3.6	21.48	16	TXI Lightwieght Blend
	250	15	1.27	5.7	4	Tail: 85:15 Class H
Prod	460	11.9	2.5	19	72	Lead: 50:50:10 H Blend
	1080	14.4	1.24	5.7	19	Tail: 50:50:2 Class H Blend

Volumes Subject to Observed Hole Conditions and/or Fluid Caliper Results
Lab reports with the 500 psi compressive strength time for the cement will be onsite for review.

Casing String	TOC	% Excess
Surface	0'	50%
1st Intermediate	0'	50%
Production	11,300'	35% OH in Lateral (KOP to EOL)

Titus Oil & Gas Production, LLC - Lonesome Dove Fed Com 512H

4. Pressure Control Equipment

N	A variance is requested for the use of a diverter on the surface casing. See attached for schematic.

BOP installed and tested before drilling which hole?	Size?	Min. Required WP	Type	x	Tested to:
9-7/8"	13-5/8"	3M	Annular	x	3000 psi
			Blind Ram		3M
			Pipe Ram		
			Double Ram		
			Other*		
6-3/4"	13-5/8"	10M	Annular	x	50% testing pressure
			Blind Ram	x	5M
			VBR Ram	x	
			VBR Ram	x	
			Other*		

See attached 5M Annular Variance Well Control plan for TItus Oil & Gas Production, LLC.

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

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

Y	Formation integrity test will be performed per Onshore Order #2.
	On Exploratory wells or on that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.i.
Y	A variance is requested for the use of a flexible choke line from the BOP to Choke Manifold. See attached for specs and hydrostatic test chart.
	N Are anchors required by manufacturer?
N	A multibowl wellhead is being used. The BOP will be tested per Onshore Order #2 after installation on the surface casing which will cover testing requirements for a maximum of 30 days. If any seal subject to test pressure is broken the system must be tested.

Titus Oil & Gas Production, LLC - Lonesome Dove Fed Com 512H

5. Mud Program

Depth		Type	Weight (ppg)	Viscosity	Water Loss
From	To				
0	Surf. Shoe	FW Gel	8.6 - 8.8	28-34	N/C
Surf csg	9-5/8" Int shoe	Nova N-Gauge	8.4 - 9	28-34	N/C
7-5/8" Int shoe	Lateral TD	OBM	10 - 13.5	35-45	<20

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

The highest mud weight needed to balance formation is expected to be 11.5 ppg. In order to maintain hole stability, mud weights up to 13.5 ppg may be utilized.

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

6. Logging and Testing Procedures

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

Additional logs planned		Interval
N	Resistivity	Pilot Hole TD to ICP
N	Density	Pilot Hole TD to ICP
Y	CBL	Production casing (If cement not circulated to surface)
Y	Mud log	Intermediate shoe to TD
N	PEX	

Titus Oil & Gas Production, LLC - Lonesome Dove Fed Com 512H

7. Drilling Conditions

Condition	Specify what type and where?
BH Pressure at deepest TVD	7785 psi at 13017' TVD
Abnormal Temperature	NO 185 Deg. F.

No abnormal pressure or temperature conditions are anticipated. Sufficient mud materials to maintain mud properties and weight increase requirements will be kept on location at all times.

Sufficient supplies of Paper/LCM for periodic sweeps to control seepage and losses will be maintained on location.

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

8. Other Facets of Operation

Y	Is it a walking operation?
N	Is casing pre-set?

x	H2S Plan.
x	BOP & Choke Schematics.
x	Directional Plan

Titus Oil & Gas Production, LLC

Lea County, NM (NAD83-NME)
A03_Lonesome Dove
Lonesome Dove Fed Com #512H - Slot B02

#512H

Plan: Plan #1

Standard Planning Report

16 January, 2020

TITUS OIL GAS LLC

Planning Report

Database:	EDM 5000.14 Single User Db	**Local Co-ordinate Reference:**	Well Lonesome Dove Fed Com #512H - Slot B02
Company:	Titus Oil & Gas Production, LLC	**TVD Reference:**	3216+25 @ 3241.00usft
Project:	Lea County, NM (NAD83-NME)	**MD Reference:**	3216+25 @ 3241.00usft
Site:	A03_Lonesome Dove	**North Reference:**	Grid
Well:	Lonesome Dove Fed Com #512H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	#512H		
Design:	Plan #1		

Project Lea County, NM (NAD83-NME)

Map System:	US State Plane 1983	**System Datum:**	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site A03_Lonesome Dove

Site Position:		**Northing:**	379,941.34 usft	**Latitude:**	32.04104074
From:	Map	**Easting:**	833,154.90 usft	**Longitude:**	-103.39154957
Position Uncertainty:	0.00 usft	**Slot Radius:**	13-3/16 "	**Grid Convergence:**	0.50 °

Well Lonesome Dove Fed Com #512H - Slot B02

Well Position	**+N/-S**	-225.68 usft	**Northing:**	379,715.66 usft	**Latitude:**	32.04041966
	+E/-W	32.27 usft	**Easting:**	833,187.17 usft	**Longitude:**	-103.39145179
Position Uncertainty		0.00 usft	**Wellhead Elevation:**		**Ground Level:**	3,216.00 usft

Wellbore #512H

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2020	1/14/2020	6.61	59.81	47,552.78034942

Design Plan #1

Audit Notes:

Version:		**Phase:**	PLAN	**Tie On Depth:**	0.00

Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	359.40

Plan Survey Tool Program **Date** 1/16/2020

	Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	21,314.30	Plan #1 (#512H)	MWD+IFR1+SAG+MS	
				OWSG MWD + IFR1 + Sag + M	

TITUS OIL GAS LLC

Planning Report

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Site:	A03_Lonesome Dove	**North Reference:**	Grid
Well:	Lonesome Dove Fed Com #512H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	#512H		
Design:	Plan #1		

Plan Sections

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,714.83	3.22	356.67	1,714.72	6.03	-0.35	1.50	1.50	0.00	356.67	
11,300.55	3.22	356.67	11,285.28	543.97	-31.65	0.00	0.00	0.00	0.00	
11,515.38	0.00	0.00	11,500.00	550.00	-32.00	1.50	-1.50	0.00	180.00	
12,562.38	0.00	0.00	12,547.00	550.00	-32.00	0.00	0.00	0.00	0.00	
13,469.88	90.75	352.50	13,119.91	1,125.49	-107.76	10.00	10.00	0.00	352.50	
13,577.38	90.75	348.20	13,118.50	1,231.43	-125.78	4.00	0.00	-4.00	-89.97	
13,727.38	90.75	348.20	13,116.54	1,378.25	-156.45	0.00	0.00	0.00	0.00	
14,007.44	90.75	359.40	13,112.86	1,656.21	-186.64	4.00	0.00	4.00	89.92	
21,314.73	90.75	359.40	13,017.00	8,962.47	-262.68	0.00	0.00	0.00	0.00	A03-PBHL(512H)

TITUS OIL GAS LLC

Planning Report

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Site:	A03_Lonesome Dove	**North Reference:**	Grid
Well:	Lonesome Dove Fed Com #512H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	#512H		
Design:	Plan #1		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
A03-TW(Lat2)									
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	1.50	356.67	1,599.99	1.31	-0.08	1.31	1.50	1.50	0.00
1,700.00	3.00	356.67	1,699.91	5.23	-0.30	5.23	1.50	1.50	0.00
1,714.83	3.22	356.67	1,714.72	6.03	-0.35	6.03	1.50	1.50	0.00
1,800.00	3.22	356.67	1,799.75	10.81	-0.63	10.82	0.00	0.00	0.00
1,900.00	3.22	356.67	1,899.59	16.42	-0.96	16.43	0.00	0.00	0.00
2,000.00	3.22	356.67	1,999.44	22.03	-1.28	22.05	0.00	0.00	0.00
2,100.00	3.22	356.67	2,099.28	27.64	-1.61	27.66	0.00	0.00	0.00
2,200.00	3.22	356.67	2,199.12	33.26	-1.93	33.28	0.00	0.00	0.00
2,300.00	3.22	356.67	2,298.96	38.87	-2.26	38.89	0.00	0.00	0.00
2,400.00	3.22	356.67	2,398.80	44.48	-2.59	44.51	0.00	0.00	0.00
2,500.00	3.22	356.67	2,498.65	50.09	-2.91	50.12	0.00	0.00	0.00
2,600.00	3.22	356.67	2,598.49	55.70	-3.24	55.74	0.00	0.00	0.00
2,700.00	3.22	356.67	2,698.33	61.32	-3.57	61.35	0.00	0.00	0.00
2,800.00	3.22	356.67	2,798.17	66.93	-3.89	66.97	0.00	0.00	0.00
2,900.00	3.22	356.67	2,898.01	72.54	-4.22	72.58	0.00	0.00	0.00
3,000.00	3.22	356.67	2,997.85	78.15	-4.55	78.20	0.00	0.00	0.00
3,100.00	3.22	356.67	3,097.70	83.76	-4.87	83.81	0.00	0.00	0.00
3,200.00	3.22	356.67	3,197.54	89.38	-5.20	89.43	0.00	0.00	0.00
3,300.00	3.22	356.67	3,297.38	94.99	-5.53	95.04	0.00	0.00	0.00
3,400.00	3.22	356.67	3,397.22	100.60	-5.85	100.66	0.00	0.00	0.00
3,500.00	3.22	356.67	3,497.06	106.21	-6.18	106.27	0.00	0.00	0.00
3,600.00	3.22	356.67	3,596.91	111.82	-6.51	111.89	0.00	0.00	0.00
3,700.00	3.22	356.67	3,696.75	117.44	-6.83	117.50	0.00	0.00	0.00
3,800.00	3.22	356.67	3,796.59	123.05	-7.16	123.12	0.00	0.00	0.00
3,900.00	3.22	356.67	3,896.43	128.66	-7.49	128.73	0.00	0.00	0.00
4,000.00	3.22	356.67	3,996.27	134.27	-7.81	134.35	0.00	0.00	0.00
4,100.00	3.22	356.67	4,096.12	139.88	-8.14	139.96	0.00	0.00	0.00
4,200.00	3.22	356.67	4,195.96	145.49	-8.47	145.58	0.00	0.00	0.00
4,300.00	3.22	356.67	4,295.80	151.11	-8.79	151.19	0.00	0.00	0.00
4,400.00	3.22	356.67	4,395.64	156.72	-9.12	156.81	0.00	0.00	0.00
4,500.00	3.22	356.67	4,495.48	162.33	-9.44	162.42	0.00	0.00	0.00
4,600.00	3.22	356.67	4,595.32	167.94	-9.77	168.04	0.00	0.00	0.00
4,700.00	3.22	356.67	4,695.17	173.55	-10.10	173.65	0.00	0.00	0.00
4,800.00	3.22	356.67	4,795.01	179.17	-10.42	179.27	0.00	0.00	0.00
4,900.00	3.22	356.67	4,894.85	184.78	-10.75	184.88	0.00	0.00	0.00
5,000.00	3.22	356.67	4,994.69	190.39	-11.08	190.50	0.00	0.00	0.00

TITUS OIL GAS LLC

Planning Report

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Well:	Lonesome Dove Fed Com #512H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	#512H		
Design:	Plan #1		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
5,100.00	3.22	356.67	5,094.53	196.00	-11.40	196.11	0.00	0.00	0.00
5,200.00	3.22	356.67	5,194.38	201.61	-11.73	201.73	0.00	0.00	0.00
5,300.00	3.22	356.67	5,294.22	207.23	-12.06	207.34	0.00	0.00	0.00
5,400.00	3.22	356.67	5,394.06	212.84	-12.38	212.96	0.00	0.00	0.00
5,500.00	3.22	356.67	5,493.90	218.45	-12.71	218.57	0.00	0.00	0.00
5,600.00	3.22	356.67	5,593.74	224.06	-13.04	224.19	0.00	0.00	0.00
5,700.00	3.22	356.67	5,693.59	229.67	-13.36	229.80	0.00	0.00	0.00
5,800.00	3.22	356.67	5,793.43	235.29	-13.69	235.42	0.00	0.00	0.00
5,900.00	3.22	356.67	5,893.27	240.90	-14.02	241.03	0.00	0.00	0.00
6,000.00	3.22	356.67	5,993.11	246.51	-14.34	246.65	0.00	0.00	0.00
6,100.00	3.22	356.67	6,092.95	252.12	-14.67	252.26	0.00	0.00	0.00
6,200.00	3.22	356.67	6,192.79	257.73	-15.00	257.88	0.00	0.00	0.00
6,300.00	3.22	356.67	6,292.64	263.34	-15.32	263.49	0.00	0.00	0.00
6,400.00	3.22	356.67	6,392.48	268.96	-15.65	269.11	0.00	0.00	0.00
6,500.00	3.22	356.67	6,492.32	274.57	-15.97	274.72	0.00	0.00	0.00
6,600.00	3.22	356.67	6,592.16	280.18	-16.30	280.34	0.00	0.00	0.00
6,700.00	3.22	356.67	6,692.00	285.79	-16.63	285.95	0.00	0.00	0.00
6,800.00	3.22	356.67	6,791.85	291.40	-16.95	291.57	0.00	0.00	0.00
6,900.00	3.22	356.67	6,891.69	297.02	-17.28	297.18	0.00	0.00	0.00
7,000.00	3.22	356.67	6,991.53	302.63	-17.61	302.80	0.00	0.00	0.00
7,100.00	3.22	356.67	7,091.37	308.24	-17.93	308.41	0.00	0.00	0.00
7,200.00	3.22	356.67	7,191.21	313.85	-18.26	314.03	0.00	0.00	0.00
7,300.00	3.22	356.67	7,291.06	319.46	-18.59	319.64	0.00	0.00	0.00
7,400.00	3.22	356.67	7,390.90	325.08	-18.91	325.26	0.00	0.00	0.00
7,500.00	3.22	356.67	7,490.74	330.69	-19.24	330.87	0.00	0.00	0.00
7,600.00	3.22	356.67	7,590.58	336.30	-19.57	336.49	0.00	0.00	0.00
7,700.00	3.22	356.67	7,690.42	341.91	-19.89	342.10	0.00	0.00	0.00
7,800.00	3.22	356.67	7,790.26	347.52	-20.22	347.72	0.00	0.00	0.00
7,900.00	3.22	356.67	7,890.11	353.13	-20.55	353.33	0.00	0.00	0.00
8,000.00	3.22	356.67	7,989.95	358.75	-20.87	358.95	0.00	0.00	0.00
8,100.00	3.22	356.67	8,089.79	364.36	-21.20	364.56	0.00	0.00	0.00
8,200.00	3.22	356.67	8,189.63	369.97	-21.53	370.18	0.00	0.00	0.00
8,300.00	3.22	356.67	8,289.47	375.58	-21.85	375.79	0.00	0.00	0.00
8,400.00	3.22	356.67	8,389.32	381.19	-22.18	381.41	0.00	0.00	0.00
8,500.00	3.22	356.67	8,489.16	386.81	-22.51	387.02	0.00	0.00	0.00
8,600.00	3.22	356.67	8,589.00	392.42	-22.83	392.64	0.00	0.00	0.00
8,700.00	3.22	356.67	8,688.84	398.03	-23.16	398.25	0.00	0.00	0.00
8,800.00	3.22	356.67	8,788.68	403.64	-23.48	403.87	0.00	0.00	0.00
8,820.59	3.22	356.67	8,809.24	404.80	-23.55	405.02	0.00	0.00	0.00
A03-EON(512H)									
8,900.00	3.22	356.67	8,888.53	409.25	-23.81	409.48	0.00	0.00	0.00
9,000.00	3.22	356.67	8,988.37	414.87	-24.14	415.10	0.00	0.00	0.00
9,100.00	3.22	356.67	9,088.21	420.48	-24.46	420.71	0.00	0.00	0.00
9,200.00	3.22	356.67	9,188.05	426.09	-24.79	426.33	0.00	0.00	0.00
9,300.00	3.22	356.67	9,287.89	431.70	-25.12	431.94	0.00	0.00	0.00
9,400.00	3.22	356.67	9,387.73	437.31	-25.44	437.56	0.00	0.00	0.00
9,500.00	3.22	356.67	9,487.58	442.93	-25.77	443.17	0.00	0.00	0.00
9,600.00	3.22	356.67	9,587.42	448.54	-26.10	448.79	0.00	0.00	0.00
9,700.00	3.22	356.67	9,687.26	454.15	-26.42	454.40	0.00	0.00	0.00
9,800.00	3.22	356.67	9,787.10	459.76	-26.75	460.02	0.00	0.00	0.00
9,900.00	3.22	356.67	9,886.94	465.37	-27.08	465.63	0.00	0.00	0.00
10,000.00	3.22	356.67	9,986.79	470.98	-27.40	471.25	0.00	0.00	0.00
10,040.50	3.22	356.67	10,027.22	473.26	-27.53	473.52	0.00	0.00	0.00

TITUS OIL GAS LLC

Planning Report

Database:	EDM 5000.14 Single User Db	**Local Co-ordinate Reference:**	Well Lonesome Dove Fed Com #512H - Slot B02
Company:	Titus Oil & Gas Production, LLC	**TVD Reference:**	3216+25 @ 3241.00usft
Project:	Lea County, NM (NAD83-NME)	**MD Reference:**	3216+25 @ 3241.00usft
Site:	A03_Lonesome Dove	**North Reference:**	Grid
Well:	Lonesome Dove Fed Com #512H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	#512H		
Design:	Plan #1		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
LD112H-LD512H-SF1.5+10									
10,100.00	3.22	356.67	10,086.63	476.60	-27.73	476.86	0.00	0.00	0.00
10,200.00	3.22	356.67	10,186.47	482.21	-28.06	482.48	0.00	0.00	0.00
10,300.00	3.22	356.67	10,286.31	487.82	-28.38	488.09	0.00	0.00	0.00
10,400.00	3.22	356.67	10,386.15	493.43	-28.71	493.71	0.00	0.00	0.00
10,500.00	3.22	356.67	10,486.00	499.04	-29.04	499.32	0.00	0.00	0.00
10,600.00	3.22	356.67	10,585.84	504.66	-29.36	504.94	0.00	0.00	0.00
10,700.00	3.22	356.67	10,685.68	510.27	-29.69	510.55	0.00	0.00	0.00
10,800.00	3.22	356.67	10,785.52	515.88	-30.01	516.17	0.00	0.00	0.00
10,900.00	3.22	356.67	10,885.36	521.49	-30.34	521.78	0.00	0.00	0.00
11,000.00	3.22	356.67	10,985.20	527.10	-30.67	527.40	0.00	0.00	0.00
11,100.00	3.22	356.67	11,085.05	532.72	-30.99	533.01	0.00	0.00	0.00
11,200.00	3.22	356.67	11,184.89	538.33	-31.32	538.63	0.00	0.00	0.00
11,300.55	3.22	356.67	11,285.28	543.97	-31.65	544.27	0.00	0.00	0.00
11,400.00	1.73	356.67	11,384.63	548.26	-31.90	548.56	1.50	-1.50	0.00
11,500.00	0.23	356.67	11,484.62	549.97	-32.00	550.27	1.50	-1.50	0.00
11,515.38	0.00	0.00	11,500.00	550.00	-32.00	550.30	1.50	-1.50	0.00
11,600.00	0.00	0.00	11,584.62	550.00	-32.00	550.30	0.00	0.00	0.00
11,700.00	0.00	0.00	11,684.62	550.00	-32.00	550.30	0.00	0.00	0.00
11,800.00	0.00	0.00	11,784.62	550.00	-32.00	550.30	0.00	0.00	0.00
11,900.00	0.00	0.00	11,884.62	550.00	-32.00	550.30	0.00	0.00	0.00
12,000.00	0.00	0.00	11,984.62	550.00	-32.00	550.30	0.00	0.00	0.00
12,100.00	0.00	0.00	12,084.62	550.00	-32.00	550.30	0.00	0.00	0.00
12,200.00	0.00	0.00	12,184.62	550.00	-32.00	550.30	0.00	0.00	0.00
12,300.00	0.00	0.00	12,284.62	550.00	-32.00	550.30	0.00	0.00	0.00
12,400.00	0.00	0.00	12,384.62	550.00	-32.00	550.30	0.00	0.00	0.00
12,500.00	0.00	0.00	12,484.62	550.00	-32.00	550.30	0.00	0.00	0.00
12,562.38	0.00	0.00	12,547.00	550.00	-32.00	550.30	0.00	0.00	0.00
KOP: 12562.38' MD, 550.30 VS, 12547.00' TVD									
12,600.00	3.76	352.50	12,584.59	551.22	-32.16	551.53	10.00	10.00	0.00
12,650.00	8.76	352.50	12,634.28	556.63	-32.87	556.94	10.00	10.00	0.00
12,700.00	13.76	352.50	12,683.30	566.31	-34.15	566.63	10.00	10.00	0.00
12,750.00	18.76	352.50	12,731.28	580.18	-35.97	580.53	10.00	10.00	0.00
12,800.00	23.76	352.50	12,777.86	598.15	-38.34	598.52	10.00	10.00	0.00
12,850.00	28.76	352.50	12,822.69	620.08	-41.23	620.48	10.00	10.00	0.00
12,900.00	33.76	352.50	12,865.42	645.80	-44.61	646.23	10.00	10.00	0.00
12,950.00	38.76	352.50	12,905.72	675.11	-48.47	675.58	10.00	10.00	0.00
13,000.00	43.76	352.50	12,943.29	707.79	-52.77	708.31	10.00	10.00	0.00
13,050.00	48.76	352.50	12,977.85	743.60	-57.49	744.16	10.00	10.00	0.00
13,100.00	53.76	352.50	13,009.13	782.25	-62.58	782.86	10.00	10.00	0.00
13,150.00	58.76	352.50	13,036.89	823.46	-68.00	824.13	10.00	10.00	0.00
13,200.00	63.76	352.50	13,060.92	866.91	-73.72	867.64	10.00	10.00	0.00
13,250.00	68.76	352.50	13,081.04	912.28	-79.69	913.06	10.00	10.00	0.00
13,300.00	73.76	352.50	13,097.10	959.21	-85.87	960.05	10.00	10.00	0.00
13,350.00	78.76	352.50	13,108.97	1,007.35	-92.21	1,008.26	10.00	10.00	0.00
13,400.00	83.76	352.50	13,116.57	1,056.33	-98.66	1,057.30	10.00	10.00	0.00
13,450.00	88.76	352.50	13,119.82	1,105.78	-105.17	1,106.82	10.00	10.00	0.00
13,469.88	90.75	352.50	13,119.91	1,125.49	-107.76	1,126.55	10.00	10.00	0.00
EOC: 13469.88' MD, 1126.55 VS, 13119.91' TVD									
13,495.71	90.75	351.47	13,119.57	1,151.06	-111.37	1,152.16	4.00	0.00	-4.00
A03-FTP*(512H)									
13,500.00	90.75	351.30	13,119.51	1,155.30	-112.01	1,156.41	4.00	0.00	-4.00

TITUS OIL GAS LLC

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Site:	A03_Lonesome Dove	**North Reference:**	Grid
Well:	Lonesome Dove Fed Com #512H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	#512H		
Design:	Plan #1		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
13,505.09	90.75	351.09	13,119.45	1,160.33	-112.79	1,161.45	4.00	0.00	-4.00
A03-FTP(512H)									
13,577.38	90.75	348.20	13,118.50	1,231.43	-125.78	1,232.68	4.00	0.00	-4.00
13,600.00	90.75	348.20	13,118.21	1,253.57	-130.40	1,254.87	0.00	0.00	0.00
13,700.00	90.75	348.20	13,116.90	1,351.45	-150.85	1,352.96	0.00	0.00	0.00
13,727.38	90.75	348.20	13,116.54	1,378.25	-156.45	1,379.81	0.00	0.00	0.00
13,800.00	90.75	351.11	13,115.59	1,449.68	-169.49	1,451.37	4.00	0.00	4.00
13,900.00	90.75	355.11	13,114.27	1,548.92	-181.49	1,550.74	4.00	0.00	4.00
14,007.44	90.75	359.40	13,112.86	1,656.21	-186.64	1,658.07	4.00	0.00	4.00
14,100.00	90.75	359.40	13,111.64	1,748.75	-187.60	1,750.62	0.00	0.00	0.00
14,200.00	90.75	359.40	13,110.33	1,848.74	-188.64	1,850.61	0.00	0.00	0.00
14,300.00	90.75	359.40	13,109.02	1,948.72	-189.68	1,950.60	0.00	0.00	0.00
14,400.00	90.75	359.40	13,107.71	2,048.71	-190.72	2,050.60	0.00	0.00	0.00
14,500.00	90.75	359.40	13,106.39	2,148.70	-191.76	2,150.59	0.00	0.00	0.00
14,600.00	90.75	359.40	13,105.08	2,248.68	-192.80	2,250.58	0.00	0.00	0.00
14,700.00	90.75	359.40	13,103.77	2,348.67	-193.84	2,350.57	0.00	0.00	0.00
14,800.00	90.75	359.40	13,102.46	2,448.65	-194.88	2,450.56	0.00	0.00	0.00
14,900.00	90.75	359.40	13,101.15	2,548.64	-195.93	2,550.55	0.00	0.00	0.00
15,000.00	90.75	359.40	13,099.84	2,648.63	-196.97	2,650.54	0.00	0.00	0.00
15,100.00	90.75	359.40	13,098.52	2,748.61	-198.01	2,750.54	0.00	0.00	0.00
15,200.00	90.75	359.40	13,097.21	2,848.60	-199.05	2,850.53	0.00	0.00	0.00
15,300.00	90.75	359.40	13,095.90	2,948.58	-200.09	2,950.52	0.00	0.00	0.00
15,400.00	90.75	359.40	13,094.59	3,048.57	-201.13	3,050.51	0.00	0.00	0.00
15,500.00	90.75	359.40	13,093.28	3,148.56	-202.17	3,150.50	0.00	0.00	0.00
15,600.00	90.75	359.40	13,091.97	3,248.54	-203.21	3,250.49	0.00	0.00	0.00
15,700.00	90.75	359.40	13,090.65	3,348.53	-204.25	3,350.48	0.00	0.00	0.00
15,800.00	90.75	359.40	13,089.34	3,448.51	-205.29	3,450.48	0.00	0.00	0.00
15,900.00	90.75	359.40	13,088.03	3,548.50	-206.33	3,550.47	0.00	0.00	0.00
16,000.00	90.75	359.40	13,086.72	3,648.49	-207.37	3,650.46	0.00	0.00	0.00
16,100.00	90.75	359.40	13,085.41	3,748.47	-208.41	3,750.45	0.00	0.00	0.00
16,200.00	90.75	359.40	13,084.09	3,848.46	-209.45	3,850.44	0.00	0.00	0.00
16,300.00	90.75	359.40	13,082.78	3,948.44	-210.49	3,950.43	0.00	0.00	0.00
16,400.00	90.75	359.40	13,081.47	4,048.43	-211.54	4,050.42	0.00	0.00	0.00
16,500.00	90.75	359.40	13,080.16	4,148.42	-212.58	4,150.41	0.00	0.00	0.00
16,600.00	90.75	359.40	13,078.85	4,248.40	-213.62	4,250.41	0.00	0.00	0.00
16,700.00	90.75	359.40	13,077.54	4,348.39	-214.66	4,350.40	0.00	0.00	0.00
16,800.00	90.75	359.40	13,076.22	4,448.37	-215.70	4,450.39	0.00	0.00	0.00
16,900.00	90.75	359.40	13,074.91	4,548.36	-216.74	4,550.38	0.00	0.00	0.00
17,000.00	90.75	359.40	13,073.60	4,648.35	-217.78	4,650.37	0.00	0.00	0.00
17,100.00	90.75	359.40	13,072.29	4,748.33	-218.82	4,750.36	0.00	0.00	0.00
17,200.00	90.75	359.40	13,070.98	4,848.32	-219.86	4,850.35	0.00	0.00	0.00
17,300.00	90.75	359.40	13,069.66	4,948.30	-220.90	4,950.35	0.00	0.00	0.00
17,400.00	90.75	359.40	13,068.35	5,048.29	-221.94	5,050.34	0.00	0.00	0.00
17,500.00	90.75	359.40	13,067.04	5,148.28	-222.98	5,150.33	0.00	0.00	0.00
17,600.00	90.75	359.40	13,065.73	5,248.26	-224.02	5,250.32	0.00	0.00	0.00
17,700.00	90.75	359.40	13,064.42	5,348.25	-225.06	5,350.31	0.00	0.00	0.00
17,800.00	90.75	359.40	13,063.11	5,448.23	-226.10	5,450.30	0.00	0.00	0.00
17,900.00	90.75	359.40	13,061.79	5,548.22	-227.14	5,550.29	0.00	0.00	0.00
18,000.00	90.75	359.40	13,060.48	5,648.21	-228.19	5,650.29	0.00	0.00	0.00
18,100.00	90.75	359.40	13,059.17	5,748.19	-229.23	5,750.28	0.00	0.00	0.00
18,200.00	90.75	359.40	13,057.86	5,848.18	-230.27	5,850.27	0.00	0.00	0.00
18,300.00	90.75	359.40	13,056.55	5,948.16	-231.31	5,950.26	0.00	0.00	0.00
18,400.00	90.75	359.40	13,055.24	6,048.15	-232.35	6,050.25	0.00	0.00	0.00

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Project:	Lea County, NM (NAD83-NME)	**MD Reference:**	3216+25 @ 3241.00usft
Site:	A03_Lonesome Dove	**North Reference:**	Grid
Well:	Lonesome Dove Fed Com #512H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	#512H		
Design:	Plan #1		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
18,500.00	90.75	359.40	13,053.92	6,148.14	-233.39	6,150.24	0.00	0.00	0.00
18,600.00	90.75	359.40	13,052.61	6,248.12	-234.43	6,250.23	0.00	0.00	0.00
18,700.00	90.75	359.40	13,051.30	6,348.11	-235.47	6,350.23	0.00	0.00	0.00
18,800.00	90.75	359.40	13,049.99	6,448.09	-236.51	6,450.22	0.00	0.00	0.00
18,900.00	90.75	359.40	13,048.68	6,548.08	-237.55	6,550.21	0.00	0.00	0.00
19,000.00	90.75	359.40	13,047.36	6,648.07	-238.59	6,650.20	0.00	0.00	0.00
19,100.00	90.75	359.40	13,046.05	6,748.05	-239.63	6,750.19	0.00	0.00	0.00
19,200.00	90.75	359.40	13,044.74	6,848.04	-240.67	6,850.18	0.00	0.00	0.00
19,300.00	90.75	359.40	13,043.43	6,948.02	-241.71	6,950.17	0.00	0.00	0.00
19,400.00	90.75	359.40	13,042.12	7,048.01	-242.75	7,050.17	0.00	0.00	0.00
19,500.00	90.75	359.40	13,040.81	7,148.00	-243.80	7,150.16	0.00	0.00	0.00
19,600.00	90.75	359.40	13,039.49	7,247.98	-244.84	7,250.15	0.00	0.00	0.00
19,700.00	90.75	359.40	13,038.18	7,347.97	-245.88	7,350.14	0.00	0.00	0.00
19,800.00	90.75	359.40	13,036.87	7,447.95	-246.92	7,450.13	0.00	0.00	0.00
19,900.00	90.75	359.40	13,035.56	7,547.94	-247.96	7,550.12	0.00	0.00	0.00
20,000.00	90.75	359.40	13,034.25	7,647.93	-249.00	7,650.11	0.00	0.00	0.00
20,100.00	90.75	359.40	13,032.93	7,747.91	-250.04	7,750.11	0.00	0.00	0.00
20,200.00	90.75	359.40	13,031.62	7,847.90	-251.08	7,850.10	0.00	0.00	0.00
20,300.00	90.75	359.40	13,030.31	7,947.88	-252.12	7,950.09	0.00	0.00	0.00
20,400.00	90.75	359.40	13,029.00	8,047.87	-253.16	8,050.08	0.00	0.00	0.00
20,500.00	90.75	359.40	13,027.69	8,147.86	-254.20	8,150.07	0.00	0.00	0.00
20,600.00	90.75	359.40	13,026.38	8,247.84	-255.24	8,250.06	0.00	0.00	0.00
20,700.00	90.75	359.40	13,025.06	8,347.83	-256.28	8,350.05	0.00	0.00	0.00
20,800.00	90.75	359.40	13,023.75	8,447.81	-257.32	8,450.05	0.00	0.00	0.00
20,900.00	90.75	359.40	13,022.44	8,547.80	-258.36	8,550.04	0.00	0.00	0.00
21,000.00	90.75	359.40	13,021.13	8,647.79	-259.40	8,650.03	0.00	0.00	0.00
21,100.00	90.75	359.40	13,019.82	8,747.77	-260.45	8,750.02	0.00	0.00	0.00
21,200.00	90.75	359.40	13,018.51	8,847.76	-261.49	8,850.01	0.00	0.00	0.00
21,224.74	90.75	359.40	13,018.18	8,872.50	-261.74	8,874.75	0.00	0.00	0.00
A03-LTP(512H)									
21,300.00	90.75	359.40	13,017.19	8,947.74	-262.53	8,950.00	0.00	0.00	0.00
21,314.73	90.75	359.40	13,017.00	8,962.47	-262.68	8,964.73	0.00	0.00	0.00
TD: 21314.73' MD, 8964.73 VS, 13017.00' TVD - A03-PBHL(512H)									

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Well:	Lonesome Dove Fed Com #512H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	#512H		
Design:	Plan #1		

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
A03-TW(Lat2)	0.00	0.00	0.00	8,962.47	-262.68	388,678.13	832,924.49	32.06506028	-103.39204726
- plan misses target center by 8966.32usft at 0.00usft MD (0.00 TVD, 0.00 N, 0.00 E)									
- Rectangle (sides W100.00 H7,815.00 D0.00)									
A03-EON(512H)	0.00	0.00	8,800.00	563.21	-127.57	380,278.87	833,059.60	32.04197077	-103.39184761
- plan misses target center by 189.74usft at 8820.59usft MD (8809.24 TVD, 404.80 N, -23.55 E)									
- Point									
LD112H-LD512H-SF1.5	0.00	0.00	10,021.79	562.71	-149.59	380,278.36	833,037.58	32.04196991	-103.39191869
- plan misses target center by 151.42usft at 10040.50usft MD (10027.22 TVD, 473.26 N, -27.53 E)									
- Circle (radius 117.58)									
A03-PBHL(512H)	0.00	0.00	13,017.00	8,962.47	-262.68	388,678.13	832,924.49	32.06506028	-103.39204726
- plan hits target center									
- Point									
A03-LTP(512H)	0.00	0.00	13,017.00	8,872.48	-261.73	388,588.14	832,925.44	32.06481291	-103.39204673
- plan misses target center by 1.18usft at 21224.74usft MD (13018.18 TVD, 8872.50 N, -261.74 E)									
- Point									
A03-FTP*(512H)	0.00	0.00	13,119.00	1,147.91	-133.43	380,863.57	833,053.74	32.04357802	-103.39185006
- plan misses target center by 22.29usft at 13495.91usft MD (13119.57 TVD, 1151.26 N, -111.40 E)									
- Point									
A03-FTP(512H)	0.00	0.00	13,119.00	1,147.91	-181.43	380,863.57	833,005.74	32.04357917	-103.39200496
- plan misses target center by 69.74usft at 13503.33usft MD (13119.47 TVD, 1158.59 N, -112.52 E)									
- Point									

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Comment
12,562.38	12,547.00	550.00	-32.00	KOP: 12562.38' MD, 550.30 VS, 12547.00' TVD
13,469.88	13,119.91	1,125.49	-107.76	EOC: 13469.88' MD, 1126.55 VS, 13119.91' TVD
21,314.73	13,017.00	8,962.47	-262.68	TD: 21314.73' MD, 8964.73 VS, 13017.00' TVD

PECOS DISTRICT
SURFACE USE
CONDITIONS OF APPROVAL

OPERATOR'S NAME:	Titus Oil and Gas Production LLC
LEASE NO.:	NMNM104706, NMNM110841
COUNTY:	Lea

Wells:

Cattlemen Well Pad 2

Cattlemen Fed Com 032H
Surface Hole Location: 2310' FNL & 1994' FWL, Section 17, T. 26 S., R. 35 E.
Bottom Hole Location: 10' FSL & 1651' FWL, Section 20, T. 26 S, R 35 E.

Cattlemen Fed Com 112H
Surface Hole Location: 2310' FNL & 2024' FWL, Section 17, T. 26 S., R. 35 E.
Bottom Hole Location: 10' FSL & 1651' FWL, Section 20, T. 26 S, R 35 E.

Cattlemen Fed Com 122H
Surface Hole Location: 2310' FNL & 2054' FWL, Section 17, T. 26 S., R. 35 E.
Bottom Hole Location: 10' FSL & 2310' FWL, Section 20, T. 26 S, R 35 E.

Cattlemen Fed Com 322H
Surface Hole Location: 2084' FNL & 1994' FWL, Section 17, T. 26 S., R. 35 E.
Bottom Hole Location: 10' FSL & 1651' FWL, Section 20, T. 26 S, R 35 E.

Cattlemen Fed Com 432H
Surface Hole Location: 2084' FNL & 2054' FWL, Section 17, T. 26 S., R. 35 E.
Bottom Hole Location: 10' FSL & 2310' FWL, Section 20, T. 26 S, R 35 E.

Cattlemen Fed Com 512H
Surface Hole Location: 2084' FNL & 2024' FWL, Section 17, T. 26 S., R. 35 E.
Bottom Hole Location: 10' FSL & 1850' FWL, Section 20, T. 26 S, R 35 E.

Cattlemen Well Pad 3

Cattlemen Fed Com 123H
Surface Hole Location: 2303' FNL & 1927' FEL, Section 17, T. 26 S., R. 35 E.
Bottom Hole Location: 10' FSL & 1651' FEL, Section 20, T. 26 S, R 35 E.

Cattlemen Fed Com 203H
Surface Hole Location: 2303' FNL & 1957' FEL, Section 17, T. 26 S., R. 35 E.
Bottom Hole Location: 10' FSL & 2308' FEL, Section 20, T. 26 S, R 35 E.

Cattlemen Fed Com 323H
Surface Hole Location: 2077' FNL & 1912' FEL, Section 17, T. 26 S., R. 35 E.
Bottom Hole Location: 10' FSL & 1650' FEL, Section 20, T. 26 S, R 35 E.

Cattlemen Fed Com 403H
Surface Hole Location: 2077' FNL & 1972' FEL, Section 17, T. 26 S., R. 35 E.
Bottom Hole Location: 10' FSL & 2310' FEL, Section 20, T. 26 S, R 35 E.

Cattlemen Fed Com 513H
Surface Hole Location: 2077' FNL & 1942' FEL, Section 17, T. 26 S., R. 35 E.
Bottom Hole Location: 10' FSL & 1870' FEL, Section 20, T. 26 S, R 35 E.

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Cattlemen Well Pad 4
Cattlemen Fed Com 034H
Surface Hole Location: 2174' FNL & 892' FEL, Section 17, T. 26 S., R. 35 E.
Bottom Hole Location: 10' FSL & 330' FEL, Section 20, T. 26 S, R 35 E.

Cattlemen Fed Com 114H
Surface Hole Location: 2174' FNL & 952' FEL, Section 17, T. 26 S., R. 35 E.
Bottom Hole Location: 10' FSL & 989' FEL, Section 20, T. 26 S, R 35 E.

Cattlemen Fed Com 204H
Surface Hole Location: 2174' FNL & 922' FEL, Section 17, T. 26 S., R. 35 E.
Bottom Hole Location: 10' FSL & 330' FEL, Section 20, T. 26 S, R 35 E.

Cattlemen Fed Com 404H
Surface Hole Location: 1948' FNL & 892' FEL, Section 17, T. 26 S., R. 35 E.
Bottom Hole Location: 10' FSL & 330' FEL, Section 20, T. 26 S, R 35 E.

Cattlemen Fed Com 434H
Surface Hole Location: 1948' FNL & 952' FEL, Section 17, T. 26 S., R. 35 E.
Bottom Hole Location: 10' FSL & 989 FEL, Section 20, T. 26 S, R 35 E.

Cattlemen Fed Com 514H
Surface Hole Location: 1948' FNL & 922' FEL, Section 17, T. 26 S., R. 35 E.
Bottom Hole Location: 10' FSL & 530' FEL, Section 20, T. 26 S, R 35 E.

Lonesome Dove Pad 2
Lonesome Dove Fed Com 032H
Surface Hole Location: 1818' FSL & 1990' FWL, Section 17, T. 26 S., R. 35 E.
Bottom Hole Location: 10' FNL & 1653' FWL, Section 8, T. 26 S, R 35 E.

Lonesome Dove Fed Com 112H
Surface Hole Location: 1818' FSL & 2020' FWL, Section 17, T. 26 S., R. 35 E.
Bottom Hole Location: 10' FNL & 1653' FWL, Section 8, T. 26 S, R 35 E.

Lonesome Dove Fed Com 122H
Surface Hole Location: 1818' FSL & 2050' FWL, Section 17, T. 26 S., R. 35 E.
Bottom Hole Location: 10' FNL & 2310' FWL, Section 8, T. 26 S, R 35 E.

Lonesome Dove Fed Com 322H
Surface Hole Location: 1592' FSL & 1990' FWL, Section 17, T. 26 S., R. 35 E.
Bottom Hole Location: 10' FNL & 1653' FWL, Section 8, T. 26 S, R 35 E.

Lonesome Dove Fed Com 432H
Surface Hole Location: 1592' FSL & 2050' FWL, Section 17, T. 26 S., R. 35 E.
Bottom Hole Location: 10' FNL & 2310' FWL, Section 8, T. 26 S, R 35 E.

Lonesome Dove Fed Com 512H
Surface Hole Location: 1592' FSL & 2020' FWL, Section 17, T. 26 S., R. 35 E.
Bottom Hole Location: 10' FNL & 1850' FWL, Section 8, T. 26 S, R 35 E.

Lonesome Dove Pad 3
Lonesome Dove Fed Com 123H
Surface Hole Location: 2530' FSL & 1927' FEL, Section 17, T. 26 S., R. 35 E.
Bottom Hole Location: 10' FNL & 1650' FEL, Section 8, T. 26 S, R 35 E.

Approval Date: 11/23/2020

Lonesome Dove Fed Com 203H
Surface Hole Location: 2530' FSL & 1957' FEL, Section 17, T. 26 S., R. 35 E.
Bottom Hole Location: 10' FNL & 2307' FEL, Section 8, T. 26 S, R 35 E.

Lonesome Dove Fed Com 323H
Surface Hole Location: 2304' FSL & 1912' FEL, Section 17, T. 26 S., R. 35 E.
Bottom Hole Location: 10' FNL & 1650' FEL, Section 8, T. 26 S, R 35 E.

Lonesome Dove Fed Com 403H
Surface Hole Location: 2304' FSL & 1972' FEL, Section 17, T. 26 S., R. 35 E.
Bottom Hole Location: 10' FNL & 2307' FEL, Section 8, T. 26 S, R 35 E.

Lonesome Dove Fed Com 513H
Surface Hole Location: 2304' FSL & 1942' FEL, Section 17, T. 26 S., R. 35 E.
Bottom Hole Location: 10' FNL & 1870' FEL, Section 8, T. 26 S, R 35 E.

Lonesome Dove Pad 4
Lonesome Dove Fed Com 034H
Surface Hole Location: 2515' FSL & 1079' FEL, Section 17, T. 26 S., R. 35 E.
Bottom Hole Location: 10' FNL & 330' FEL, Section 8, T. 26 S, R 35 E.

Lonesome Dove Fed Com 114H
Surface Hole Location: 2515' FSL & 1139' FEL, Section 17, T. 26 S., R. 35 E.
Bottom Hole Location: 10' FNL & 988' FEL, Section 8, T. 26 S, R 35 E.

Lonesome Dove Fed Com 204H
Surface Hole Location: 2515' FSL & 1109' FEL, Section 17, T. 26 S., R. 35 E.
Bottom Hole Location: 10' FNL & 330' FEL, Section 8, T. 26 S, R 35 E.

Lonesome Dove Fed Com 404H
Surface Hole Location: 2289' FSL & 1079' FEL, Section 17, T. 26 S., R. 35 E.
Bottom Hole Location: 10' FNL & 330' FEL, Section 8, T. 26 S, R 35 E.

Lonesome Dove Fed Com 434H
Surface Hole Location: 2289' FSL & 1139' FEL, Section 17, T. 26 S., R. 35 E.
Bottom Hole Location: 10' FNL & 988' FEL, Section 8, T. 26 S, R 35 E.

Lonesome Dove Fed Com 514H
Surface Hole Location: 2289' FSL & 1109' FEL, Section 17, T. 26 S., R. 35 E.
Bottom Hole Location: 10' FNL & 530' FEL, Section 8, T. 26 S, R 35 E.

Approval Date: 11/23/2020

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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.

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.

TANK BATTERY:
Tank battery locations will be lined and bermed. A 20 mil permanent liner will be installed with a 4 oz. felt backing to prevent tears or punctures. Tank battery berms must be large enough to contain 1 ½ times the content of the largest tank or 24 hour production, whichever is greater. Automatic shut off, check valves, or similar systems will be installed for tanks to minimize the effects of catastrophic line failures used in production or drilling.

BURIED/SURFACE LINE(S):
When crossing ephemeral drainages the pipeline(s) will be buried to a minimum depth of 48 inches from the top of pipe to ground level. Erosion control methods such as gabions and/or rock aprons should be placed on both up and downstream sides of the pipeline crossing. In addition, curled (weed free) wood/straw fiber wattles/logs and/or silt fences should be placed on the downstream side for sediment control during construction and maintained until soils and vegetation have stabilized. Water bars should be placed within the ROW to divert and dissipate surface runoff. A pipeline access road is not permitted to cross these ephemeral drainages. Traffic should be diverted to a preexisting route. Additional seeding may be required in floodplains and drainages to restore energy dissipating vegetation.

Prior to pipeline installation/construction a leak detection plan will be developed. The method(s) could incorporate gauges to detect pressure drops, situating valves and lines so they can be visually inspected periodically or installing electronic sensors to alarm when a leak is present.

The leak detection plan will incorporate an automatic shut off system that will be installed for proposed pipelines to minimize the effects of an undesirable event.

ELECTRIC LINE(S):
Any water erosion that may occur due to the construction of overhead electric line and during the life of the power line will be quickly corrected and proper measures will be taken to prevent future erosion. A power pole should not be placed in drainages, playas, wetlands, riparian areas, or floodplains and must span across the features at a distance away that would not promote further erosion.

TEMPORARY USE FRESH WATER FRAC LINE(S):

Once the temporary use exceeds the timeline of 180 days and/or with a 90 day extension status; further analysis will be required if the applicant pursues to turn the temporary ROW into a permanent ROW.

LOW WATER CROSSING:
A low water crossing shall be constructed on the access road where drainages/arroyos cross the road. The low water crossing shall be accomplished by constructing the road down to the bed of the drainage. Material moved from the banks of the crossing shall be stockpiled near the road edge. Gravel, cobble, or concrete bottoms shall be used as the primary material for the roadbed in the low water crossing. Constructed rock gabions will be installed up-stream of the low water crossing to slow the flow of water prior to it reaching the crossing. It is the responsibility of the permit holder (operator) to maintain the low water crossings surface and to keep it free of debris.

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).

If a readjustment to the existing fence line is deemed necessary by the proponent and project lead, the reroute shall proceed following consultation with the grazing allotment holder and BLM range staff. Project lead shall be responsible for making sure such reroute will not result in any impact greater than the proposed action. Operator shall be responsible for submitting new shapefiles of re-route to the BLM, as well as constructing fence to BLM Specification. No allotment boundary fences shall be moved unless explicitly discussed with the CFO Range staff.

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.

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:

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

V. 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.

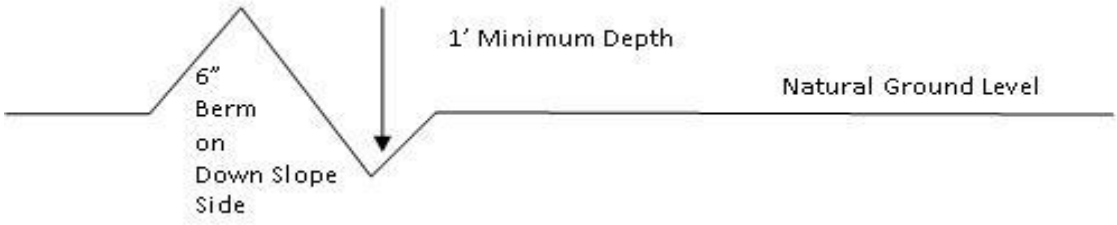
Ditching
Ditching shall be required on both sides of the road.

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: 11/23/2020

Construction Steps

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

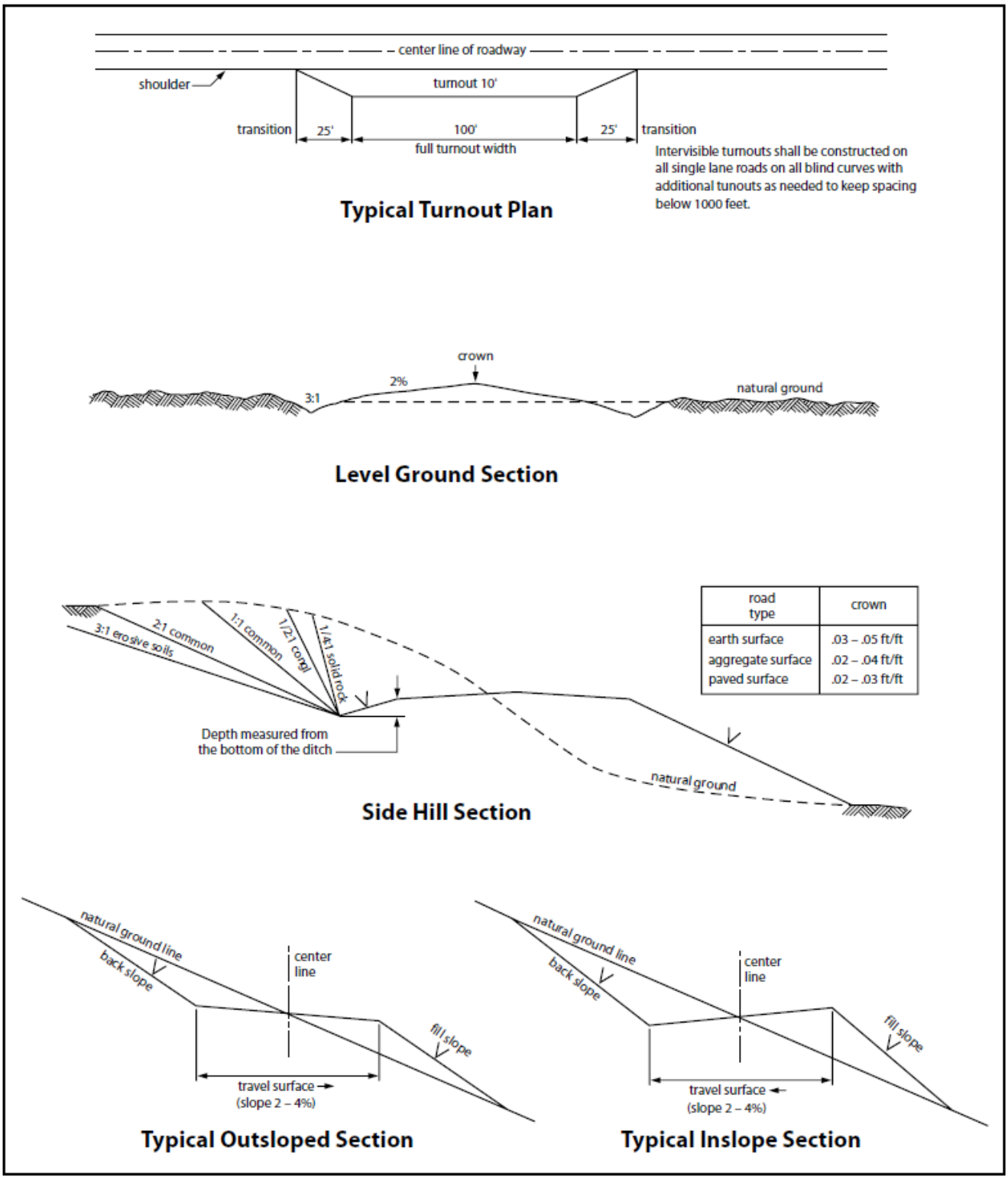


Figure 1. Cross-sections and plans for typical road sections representative of BLM resource or FS local and higher-class roads.

Approval Date: 11/23/2020

VI. 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).

B. PIPELINES

- The BLM, Carlsbad Field Office, will be informed immediately if any subsurface drainage channels, passages, or voids are intersected by trenching, and no pipe will be laid in the trench at that point until clearance has been issued by the Authorized Officer.
- If a void is encountered alignments may be rerouted to avoid the karst feature and lessen; the potential of subsidence or collapse of karst features, buildup of toxic or combustible gas, or other possible impacts to cave and karst resources from the buried pipeline.
- Special restoration stipulations or realignment may be required at such intersections, if any.
- A leak detection plan **will be submitted to the BLM Carlsbad Field Office for approval** prior to pipeline installation. The method could incorporate gauges to detect pressure drops, situating values and lines so they can be visually inspected periodically or installing electronic sensors to alarm when a leak is present. The leak detection plan will incorporate an automatic shut off system that will be installed for proposed pipelines to minimize the effects of an undesirable event.
- Regular monitoring is required to quickly identify leaks for their immediate and proper treatment.
- All spills or leaks will be reported to the BLM immediately for their immediate and proper treatment.

BURIED PIPELINE STIPULATIONS

A copy of the application (Grant, APD, or Sundry Notice) and attachments, including conditions of approval, survey plat and/or map, will be on location during construction. BLM personnel may request to you a copy of your permit during construction to ensure compliance with all stipulations.

Holder agrees to comply with the following stipulations to the satisfaction of the Authorized Officer:

1. The Holder shall indemnify the United States against any liability for damage to life or property arising from the occupancy or use of public lands under this grant.

2. The Holder shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, the holder shall comply with the Toxic Substances Control Act of 1976 as amended, 15 USC 2601 et seq. (1982) with regards to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized under this right-of-way grant. (See 40 CFR Part 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.) Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation, and Liability Act, section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the authorized officer concurrent with the filing of the reports to the involved Federal agency or State government.

3. The holder agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. 9601, et seq. or the Resource Conservation and Recovery Act, 42 U.S.C.6901, et seq.) on the

Right-of-Way (unless the release or threatened release is wholly unrelated to the Right-of-Way holder's activity on the Right-of-Way), or resulting from the activity of the Right-of-Way holder on the Right-of-Way. This agreement applies without regard to whether a release is caused by the holder, its agent, or unrelated third parties.

4. If, during any phase of the construction, operation, maintenance, or termination of the pipeline, any oil or other pollutant should be discharged from the pipeline system, impacting Federal lands, the control and total removal, disposal, and cleaning up of such oil or other pollutant, wherever found, shall be the responsibility of holder, regardless of fault. Upon failure of holder to control, dispose of, or clean up such discharge on or affecting Federal lands, or to repair all damages resulting therefrom, on the Federal lands, the Authorized Officer may take such measures as he deems necessary to control and clean up the discharge and restore the area, including where appropriate, the aquatic environment and fish and wildlife habitats, at the full expense of the holder. Such action by the Authorized Officer shall not relieve holder of any responsibility as provided herein.

5. All construction and maintenance activity will be confined to the authorized right-of-way.

6. The pipeline will be buried with a minimum cover of **36** inches between the top of the pipe and ground level.

7. The maximum allowable disturbance for construction in this right-of-way will be **30** feet:

- Blading of vegetation within the right-of-way will be allowed: maximum width of blading operations will not exceed **20** feet. The trench is included in this area. (*Blading is defined as the complete removal of brush and ground vegetation*.)

- Clearing of brush species within the right-of-way will be allowed: maximum width of clearing operations will not exceed **30** feet. The trench and bladed area are included in this area. (*Clearing is defined as the removal of brush while leaving ground vegetation (grasses, weeds, etc.) intact. Clearing is best accomplished by holding the blade 4 to 6 inches above the ground surface.*)

- The remaining area of the right-of-way (if any) shall only be disturbed by compressing the vegetation. (*Compressing can be caused by vehicle tires, placement of equipment, etc.*)

8. The holder shall stockpile an adequate amount of topsoil where blading is allowed. The topsoil to be stripped is approximately ___6___ inches in depth. The topsoil will be segregated from other spoil piles from trench construction. The topsoil will be evenly distributed over the bladed area for the preparation of seeding.

9. The holder shall minimize disturbance to existing fences and other improvements on public lands. The holder is required to promptly repair improvements to at least their former state. Functional use of these improvements will be maintained at all times. The holder will contact the owner of any improvements prior to disturbing them. When necessary to pass through a fence line, the fence shall be braced on both sides of the passageway prior to cutting of the fence. No permanent gates will be allowed unless approved by the Authorized Officer.

10. Vegetation, soil, and rocks left as a result of construction or maintenance activity will be randomly scattered on this right-of-way and will not be left in rows, piles, or berms, unless otherwise approved by the Authorized Officer. The entire right-of-way shall be recontoured to match the surrounding landscape. The backfilled soil shall be compacted and a 6 inch berm will be left over the ditch line to allow for settling back to grade.

11. In those areas where erosion control structures are required to stabilize soil conditions, the holder will install such structures as are suitable for the specific soil conditions being encountered and which are in accordance with sound resource management practices.

12. The holder will reseed all disturbed areas. Seeding will be done according to the attached seeding requirements, using the following seed mix.

( ) seed mixture 1	( ) seed mixture 3
(X) seed mixture 2	( ) seed mixture 4
( ) seed mixture 2/LPC	( ) Aplomado Falcon Mixture

13. All above-ground structures not subject to safety requirements shall be painted by the holder to blend with the natural color of the landscape. The paint used shall be color which simulates “Standard Environmental Colors” – **Shale Green**, Munsell Soil Color No. 5Y 4/2.

14. The pipeline will be identified by signs at the point of origin and completion of the right-of-way and at all road crossings. At a minimum, signs will state the holder’s name, BLM serial number, and the product being transported. All signs and information thereon will be posted in a permanent, conspicuous manner, and will be maintained in a legible condition for the life of the pipeline.

15. The holder shall not use the pipeline route as a road for purposes other than routine maintenance as determined necessary by the Authorized Officer in consultation with the holder before maintenance begins. The holder will take whatever steps are necessary to ensure that the pipeline route is not used as a roadway. As determined necessary during the life of the pipeline, the Authorized Officer may ask the holder to construct temporary deterrence structures.

16. 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 Stipulation 17 for more information.

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.

17. 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."

18. 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.

19. 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 associated roads, 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.

20. Escape Ramps - The operator will construct and maintain pipeline/utility trenches [that are not otherwise fenced, screened, or netted] to prevent livestock, wildlife, and humans from becoming entrapped. At a minimum, the operator will construct and maintain escape ramps, ladders, or other methods of avian and terrestrial wildlife escape in the trenches according to the following criteria:

a. Any trench left open for eight (8) hours or less is not required to have escape ramps; however, before the trench is backfilled, the contractor/operator shall inspect the trench for wildlife, remove all trapped wildlife, and release them at least 100 yards from the trench.

Approval Date: 11/23/2020

b. For trenches left open for eight (8) hours or more, earthen escape ramps (built at no more than a 30 degree slope and spaced no more than 500 feet apart) shall be placed in the trench.

21. Special Stipulations:

Karst:

- The BLM, Carlsbad Field Office, will be informed immediately if any subsurface drainage channels, passages, or voids are intersected by trenching, and no pipe will be laid in the trench at that point until clearance has been issued by the Authorized Officer.
- If a void is encountered alignments may be rerouted to avoid the karst feature and lessen; the potential of subsidence or collapse of karst features, buildup of toxic or combustible gas, or other possible impacts to cave and karst resources from the buried pipeline.
- Special restoration stipulations or realignment may be required at such intersections, if any.
- A leak detection plan **will be submitted to the BLM Carlsbad Field Office for approval** prior to pipeline installation. The method could incorporate gauges to detect pressure drops, situating values and lines so they can be visually inspected periodically or installing electronic sensors to alarm when a leak is present. The leak detection plan will incorporate an automatic shut off system that will be installed for proposed pipelines to minimize the effects of an undesirable event.
- Regular monitoring is required to quickly identify leaks for their immediate and proper treatment.
- All spills or leaks will be reported to the BLM immediately for their immediate and proper treatment.

STANDARD STIPULATIONS FOR SURFACE INSTALLED PIPELINES

A copy of the Grant and attachments, including stipulations, survey plat(s) and/or map(s), shall be on location during construction. BLM personnel may request to review a copy of your permit during construction to ensure compliance with all stipulations.

Holder agrees to comply with the following stipulations to the satisfaction of the Authorized Officer:

1. Holder shall indemnify the United States against any liability for damage to life or property arising from the occupancy or use of public lands under this grant.

2. Holder shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, Holder shall comply with the Toxic Substances Control Act of 1976 as amended, 15 USC § 2601 *et seq*. (1982) with regard to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized under this right-of-way grant (*see* 40 CFR, Part 702-799 and in particular, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193). Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR, Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation, and Liability Act, section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the Authorized Officer concurrent with the filing of the reports to the involved Federal agency or State government.

3. Holder agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. § 9601, *et seq*. or the

Resource Conservation and Recovery Act, 42 U.S.C. 6901, *et seq*.) on the Right-of-Way (unless the release or threatened release is wholly unrelated to activity of the Right-of-Way Holder's activity on the Right-of-Way), or resulting from the activity of the Right-of-Way Holder on the Right-of-Way. This provision applies without regard to whether a release is caused by Holder, its agent, or unrelated third parties.

4. Holder shall be liable for damage or injury to the United States to the extent provided by 43 CFR Sec. 2883.1-4. Holder shall be held to a standard of strict liability for damage or injury to the United States resulting from pipe rupture, fire, or spills caused or substantially aggravated by any of the following within the right-of-way or permit area:

a. Activities of Holder including, but not limited to: construction, operation, maintenance, and termination of the facility;

b. Activities of other parties including, but not limited to:
   (1) Land clearing
   (2) Earth-disturbing and earth-moving work
   (3) Blasting
   (4) Vandalism and sabotage;

c. Acts of God.

The maximum limitation for such strict liability damages shall not exceed one million dollars ($1,000,000) for any one event, and any liability in excess of such amount shall be determined by the ordinary rules of negligence of the jurisdiction in which the damage or injury occurred.

This section shall not impose strict liability for damage or injury resulting primarily from an act of war or from the negligent acts or omissions of the United States.

5. If, during any phase of the construction, operation, maintenance, or termination of the pipeline, any oil, salt water, or other pollutant should be discharged from the pipeline system, impacting Federal lands, the control and total removal, disposal, and cleaning up of such oil, salt water, or other pollutant, wherever found, shall be the responsibility of Holder, regardless of fault. Upon failure of Holder to control, dispose of, or clean up such discharge on or affecting Federal lands, or to repair all damages resulting therefrom, on the Federal lands, the Authorized Officer may take such measures as he/she deems necessary to control and clean up the discharge and restore the area, including, where appropriate, the aquatic environment and fish and wildlife habitats, at the full expense of Holder. Such action by the Authorized Officer shall not relieve Holder of any responsibility as provided herein.

6. All construction and maintenance activity shall be confined to the authorized right-of-way width of **30** feet. If the pipeline route follows an existing road or buried pipeline right-of-way, the surface pipeline shall be installed no farther than 10 feet from the edge of the road or buried pipeline right-of-way. If existing surface pipelines prevent this distance, the proposed surface pipeline shall be installed immediately adjacent to the outer surface pipeline. All construction and maintenance activity shall be confined to existing roads or right-of-ways.

7. No blading or clearing of any vegetation shall be allowed unless approved in writing by the Authorized Officer.

8. Holder shall install the pipeline on the surface in such a manner that will minimize suspension of the pipeline across low areas in the terrain. In hummocky of duney areas, the pipeline shall be "snaked" around hummocks and dunes rather than suspended across these features.

9. The pipeline shall be buried with a minimum of 6 inches under all roads, "two-tracks," and trails. Burial of the pipe will continue for 20 feet on each side of each crossing. The

condition of the road, upon completion of construction, shall be returned to at least its former state with no bumps or dips remaining in the road surface.

10. The holder shall minimize disturbance to existing fences and other improvements on public lands. The holder is required to promptly repair improvements to at least their former state. Functional use of these improvements will be maintained at all times. The holder will contact the owner of any improvements prior to disturbing them. When necessary to pass through a fence line, the fence shall be braced on both sides of the passageway prior to cutting of the fence. No permanent gates will be allowed unless approved by the Authorized Officer.

11. In those areas where erosion control structures are required to stabilize soil conditions, the holder will install such structures as are suitable for the specific soil conditions being encountered and which are in accordance with sound resource management practices.

12. Excluding the pipe, all above-ground structures not subject to safety requirement shall be painted by the holder to blend with the natural color of the landscape. The paint used shall be a color which simulates "Standard Environmental Colors" – **Shale Green**, Munsell Soil Color No. 5Y 4/2; designated by the Rocky Mountain Five State Interagency Committee.

13. The pipeline will be identified by signs at the point of origin and completion of the right-of-way and at all road crossings. At a minimum, signs will state the holder's name, BLM serial number, and the product being transported. Signs will be maintained in a legible condition for the life of the pipeline.

14. The holder shall not use the pipeline route as a road for purposes other than routine maintenance as determined necessary by the Authorized Officer in consultation with the holder. The holder will take whatever steps are necessary to ensure that the pipeline route is not used as a roadway.

15. 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 Stipulation 16 for more information.

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.

16. 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."

17. 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.

18. 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, powerline 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.

19. Surface pipelines shall be less than or equal to 4 inches and a working pressure below 125 psi.

C. ELECTRIC LINES

- Smaller powerlines will be routed around sinkholes and other karst features to avoid or lessen the possibility of encountering near surface voids and to minimize changes to runoff or possible leaks and spills from entering karst systems. Larger powerlines will adjust their pole spacing to avoid cave and karst features.
- The BLM, Carlsbad Field Office, will be informed immediately if any subsurface drainage channels, cave passages, or voids are penetrated during construction.
- No further construction will be done until clearance has been issued by the Authorized Officer.
- Special restoration stipulations or realignment may be required.

STANDARD STIPULATIONS FOR OVERHEAD ELECTRIC DISTRIBUTION LINES

A copy of the grant and attachments, including stipulations, survey plat and/or map, will be on location during construction. BLM personnel may request to you a copy of your permit during construction to ensure compliance with all stipulations.

Holder agrees to comply with the following stipulations to the satisfaction of the Authorized Officer:

1. The holder shall indemnify the United States against any liability for damage to life or property arising from the occupancy or use of public lands under this grant.

2. The holder shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, the holder shall comply with the Toxic Substances Control Act of 1976 as amended, 15 USC 2601 et seq. (1982) with regards to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized under this right-of-way grant. (See 40 CFR, Part 702-799 and especially, provisions on polychlorinated biphenyls,

40 CFR 761.1-761.193.) Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR, Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation, and Liability Act, section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the authorized officer concurrent with the filing of the reports to the involved Federal agency or State government.

3. The holder agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. 9601, et seq. or the Resource Conservation and Recovery Act, 42 U.S.C. 6901, et seq.) on the Right-of-Way (unless the release or threatened release is wholly unrelated to the Right-of-Way holder's activity on the Right-of-Way), or resulting from the activity of the Right-of-Way holder on the Right-of-Way. This agreement applies without regard to whether a release is caused by the holder, its agent, or unrelated third parties.

4. There will be no clearing or blading of the right-of-way unless otherwise agreed to in writing by the Authorized Officer.

5. Power lines shall be constructed and designed in accordance to standards outlined in "Suggested Practices for Avian Protection on Power lines: The State of the Art in 2006" Edison Electric Institute, APLIC, and the California Energy Commission 2006 . The holder shall assume the burden and expense of proving that pole designs not shown in the above publication deter raptor perching, roosting, and nesting. Such proof shall be provided by a raptor expert approved by the Authorized Officer. The BLM reserves the right to require modification or additions to all powerline structures placed on this right-of-way, should they be necessary to ensure the safety of large perching birds. Such modifications and/or additions shall be made by the holder without liability or expense to the United States.

Raptor deterrence will consist of but not limited to the following: triangle perch discouragers shall be placed on each side of the cross arms and a nonconductive perching deterrence shall be placed on all vertical poles that extend past the cross arms.

6. The holder shall minimize disturbance to existing fences and other improvements on public lands. The holder is required to promptly repair improvements to at least their former state. Functional use of these improvements will be maintained at all times. The holder will contact the owner of any improvements prior to disturbing them. When necessary to pass through a fence line, the fence shall be braced on both sides of the passageway prior to cutting the fence. No permanent gates will be allowed unless approved by the Authorized Officer.

7. The BLM serial number assigned to this authorization shall be posted in a permanent, conspicuous manner where the power line crosses roads and at all serviced facilities. Numbers will be at least two inches high and will be affixed to the pole nearest the road crossing and at the facilities served.

8. Upon cancellation, relinquishment, or expiration of this grant, the holder shall comply with those abandonment procedures as prescribed by the Authorized Officer.

9. All surface structures (poles, lines, transformers, etc.) shall be removed within 180 days of abandonment, relinquishment, or termination of use of the serviced facility or facilities or within 180 days of abandonment, relinquishment, cancellation, or expiration of this grant, whichever comes first. This will not apply where the power line extends service to an active, adjoining facility or facilities.

10. 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 Stipulation 11 for more information.

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.

11. 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."

12. 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.

13. Special Stipulations:
For reclamation remove poles, lines, transformer, etc. and dispose of properly.
Fill in any holes from the poles removed.

VII. 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).

VIII. 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.

Seed Mixture 2, for Sandy Sites

The 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 will be done in accordance with State law (s) and within nine (9) months prior to purchase. Commercial seed will be either certified or registered seed. The seed container will 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). The 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. The seeding will be repeated until a satisfactory stand is established as determined by the authorized officer. Evaluation of growth will 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
Sand dropseed (Sporobolus cryptandrus)	1.0
Sand love grass (Eragrostis trichodes)	1.0
Plains bristlegrass (Setaria macrostachya)	2.0

*Pounds of pure live seed:

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

Approval Date: 11/23/2020

PECOS DISTRICT
DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	**Titus Oil and Gas Production LLC**
LEASE NO.:	**NMNM104706**
WELL NAME & NO.:	Lonesome Dove Federal Com 512H
SURFACE HOLE FOOTAGE:	1592'/S & 2020'/W
BOTTOM HOLE FOOTAGE	10'/N & 1850'/W
LOCATION:	Section 17, T.26 S., R.35 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 **10-3/4 inch** surface casing shall be set at approximately **1,135 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.

 Approval Date: 11/23/2020

b. Wait on cement (WOC) time for a primary cement job will be a minimum of **8 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.

2. The minimum required fill of cement behind the **7-5/8 inch** intermediate casing and shall be set at approximately **11,800 feet** is:

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

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

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

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. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **3000 (3M)** psi.

3. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the intermediate casing shoe shall be **10,000 (10M)** psi. **Variance is approved to use a 10,000 (10M) Annular which shall be tested to 10,000 (10M) psi.**

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 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.
      - 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.

YJ (06/20/2020)

TITUS
Oil & Gas LLC

TITUS Oil & Gas Production, LLC

100 Throckmorton Street
Suite 1630
Fort Worth, TX 76102

Hydrogen Sulfide (H_2S) Contingency Plan

For

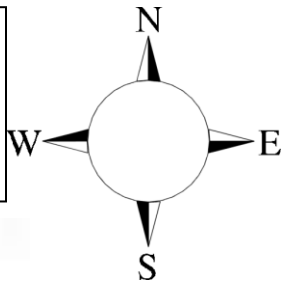
Lonesome Dove Fed Com 512H

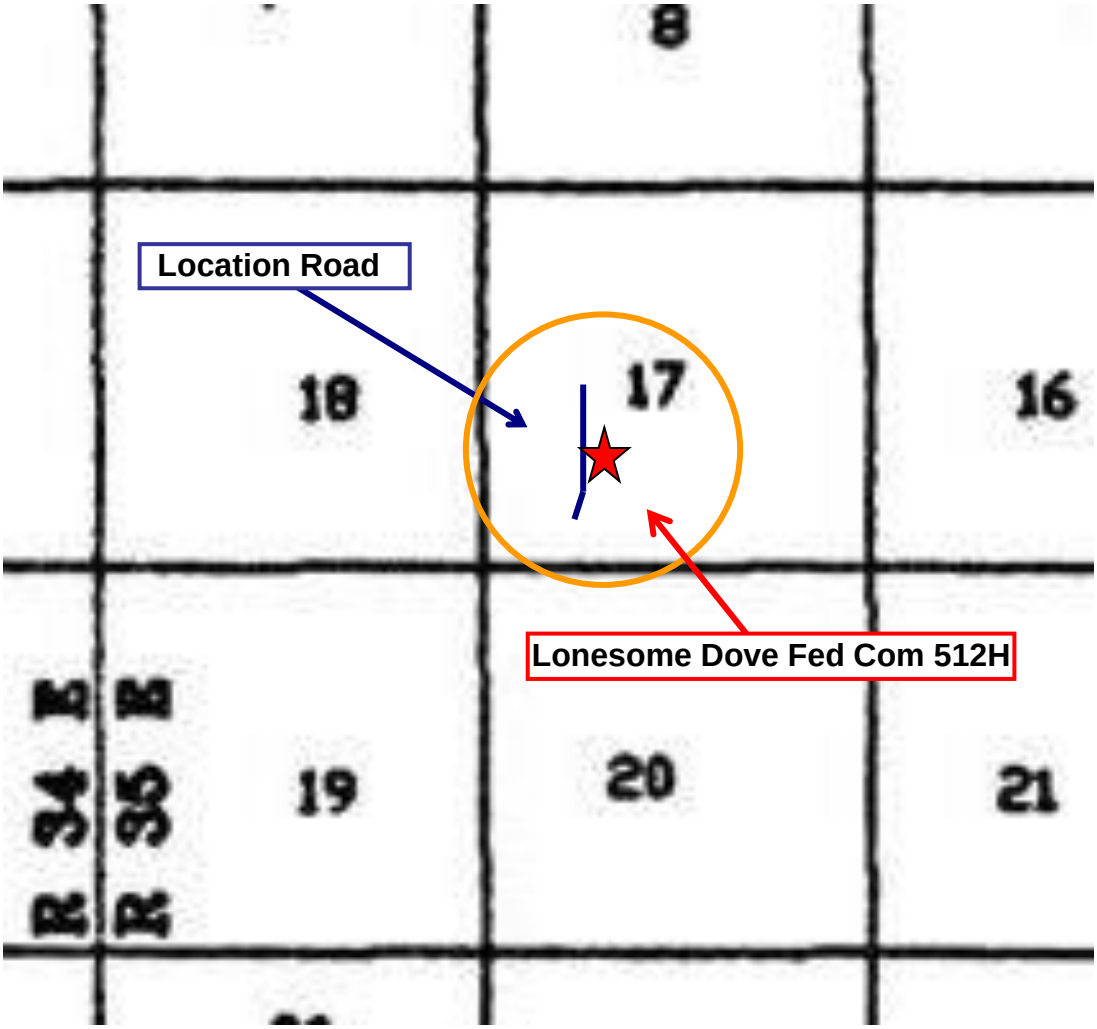
Sec-17 T-26S R-35E
1592 FSL & 2020' FWL
LAT. = 32.04041964' N (NAD83)
LONG = 103.39145180' W

Lea County NM

Lonesome Dove Fed Com 512H

This is an open drilling site. H_2S monitoring equipment and emergency response equipment will be used within 500' of zones known to contain H_2S, including warning signs, wind indicators and H_2S monitor.





Assumed 100 ppm ROE = 3000' (Radius of Exposure)
100 ppm H2S concentration shall trigger activation of this plan.

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. Crews should then block the 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 H_2S concentration shall trigger activation of this plan.

Emergency Procedures

In the event of a release of gas containing H_2S, 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 H_2S 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 H_2S, 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 (SO_2). 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 H_2S and SO_2

Common Name	Chemical Formula	Specific Gravity	Threshold Limit	Hazardous Limit	Lethal Concentration
Hydrogen Sulfide	H_2S	1.189 Air = 1	10 ppm	100 ppm/hr	600 ppm
Sulfur Dioxide	SO_2	2.21 Air = 1	2 ppm	N/A	1000 ppm

Contacting Authorities

Titus Oil & Gas personnel must liaison 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. The following call list of essential and potential responders has been prepared for use during a release. Titus Oil & Gas Company response must be in coordination with the State of New Mexico's 'Hazardous Materials Emergency Response Plan' (HMER)

Hydrogen Sulfide Drilling Operation Plan

I. HYDROGEN SULFIDE (H_2S) TRAINING

All personnel, whether regularly assigned, contracted, or employed on an unscheduled basis, will receive training from a qualified instructor in the following areas prior to commencing drilling operations on this well:

1. The hazards and characteristics of hydrogen sulfide (H_2S)
2. The proper use and maintenance of personal protective equipment and life support systems.
3. The proper use of H_2S detectors, alarms, warning systems, briefing areas, evacuation procedures, and prevailing winds.
4. The proper techniques for first aid and rescue procedures.

In addition, supervisory personnel will be trained in the following areas:

1. The effects of H_2S metal components. If high tensile tubulars are to be used, personnel will be trained in their special maintenance requirements.
2. Corrective action and shut-in procedures when drilling or reworking a well and blowout prevention and well control procedures.
3. The contents and requirements of the H_2S Drilling Operations Plan and Public Protection Plan.

There will be an initial training session just prior to encountering a known or probable H_2S zone (within 3 days or 500 feet) and weekly H_2S and well control drills for all personnel in each crew. The initial training session shall include a review of the site specific H_2S Drilling Operations Plan and the Public Protection Plan.

II. HYDROGEN SULFIDE TRAINING

Note: All H_2S safety equipment and systems will be installed, tested, and operational when drilling reaches a depth of 500 feet above, or three days prior to penetrating the first zone containing or reasonably expected to contain H_2S.

1. **Well Control Equipment**

   A. Flare line

   B. Choke manifold – Remotely Operated

   C. Blind rams and pipe rams to accommodate all pipe sizes with properly sized closing unit

   D. Auxiliary equipment may include if applicable: annular preventer and rotating head.

   E. Mud/Gas Separator

2. **Protective equipment for essential personnel:**

   30-minute SCBA units located at briefing areas, as indicated on well site diagram, with escape units available in the top doghouse. As it may be difficult to communicate audibly while wearing these units, hand signals shall be utilized.

3. **H_2S detection and monitoring equipment:**

   Portable H_2S monitors positioned on location for best coverage and response. These units have warning lights which activate when H_2S levels reach 10 ppm and audible sirens which activate at 15 ppm. Sensor locations:

   - **Bell nipple**
   - **Rig floor**
   - **Cellar**
   - **Possum Belly/Shale shaker**
   - **Choke manifold**

   Visual warning systems:

   A. Wind direction indicators as shown on well site diagram

   B. Caution/ Danger signs shall be posted on roads providing direct access to locations. Signs will be painted a high visibility yellow with black lettering of sufficient size to be reasonable distance from the immediate location. Bilingual signs will be used when appropriate.

4. **Mud program:**

   The mud program has been designed to minimize the volume of H_2S circulated to surface. Proper mud weight, safe drilling practices and the use of H_2S scavengers will minimize hazards when penetrating H_2S bearing zones.

5. **Metallurgy:**

   A. All drill strings, casings, tubing, wellhead, blowout preventer, drilling spool, kill lines, choke manifold lines, and valves shall be H_2S trim.

   B. All elastomers used for packing and seals shall be H_2S trim.

6. **Communication:**

   A. Company personnel have/use cellular telephones in the field.

   B. Land line (telephone) communications at Office

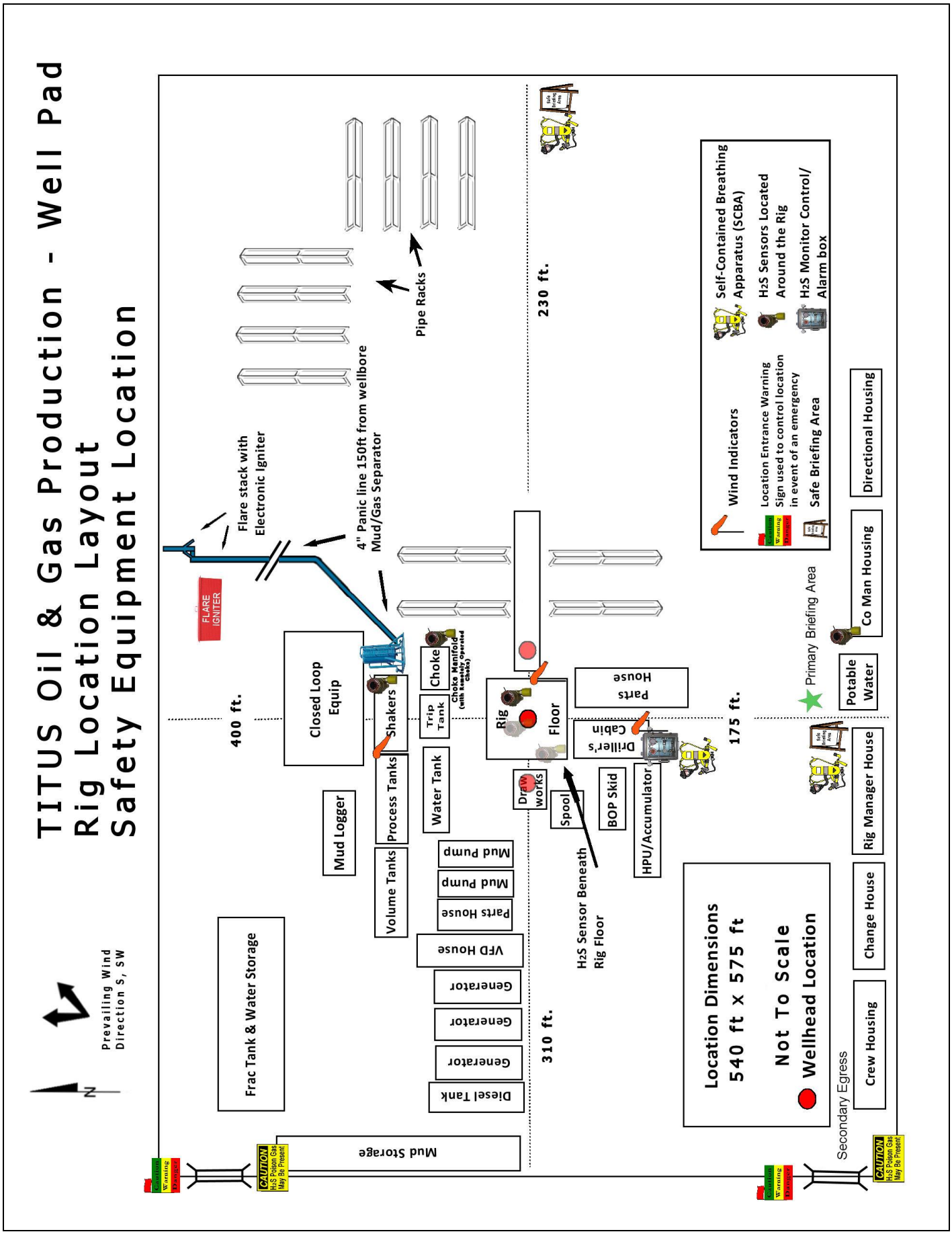
7. **Well testing:**

   A. Drill stem testing will be performed with a minimum number of personnel in the immediate vicinity, which are necessary to safety and adequately conduct the test. The drill stem testing will be conducted during daylight hours and formation fluids will not be flowed to the surface. All drill-stem-testing operations conducted in an H_2S environment will use the closed chamber method of testing.

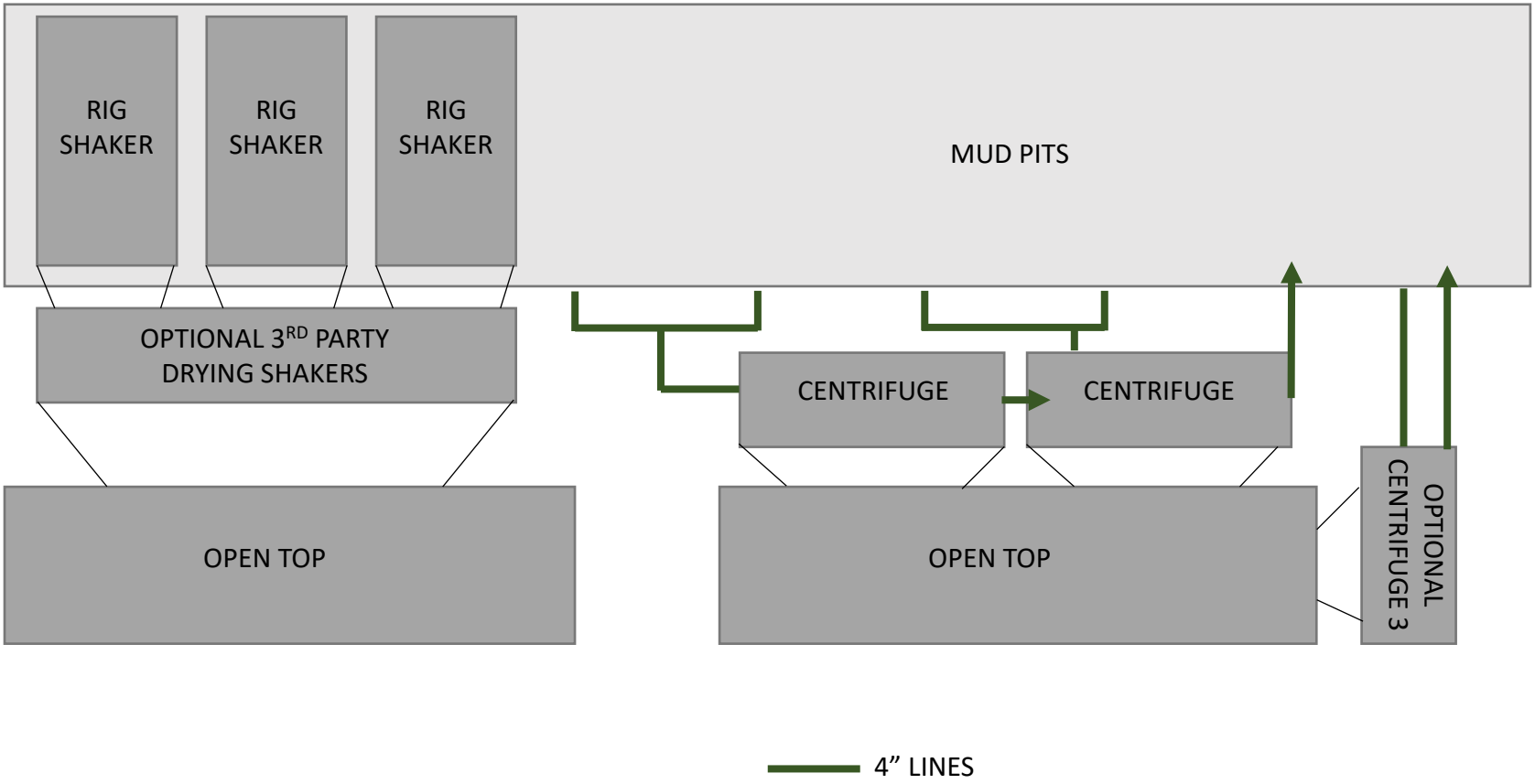
   B. There will be no drill stem testing.

Titus Oil & Gas Company Call List		
Drilling Supervisor –		
Ryan DeLong - **Office** (817) 852-6370 **Mobile** (405) 664-5188		
Agency Call List		
Lea County (575)	**Hobbs**	
	Lea County Communication Authority	393-3981
	State Police	392-5588
	City Police	397-9265
	Sheriff's Office	393-2515
	Ambulance	**911**
	Fire Department	397-9308
	LEPC (Local Emergency Planning Committee)	393-2870
	NMOCD	393-6161
	US Bureau of Land Management	393-3612
Eddy County (575)	**Carlsbad**	
	State Police	885-3137
	City Police	885-2111
	Sheriff's Office	887-7551
	Ambulance	**911**
	Fire Department	885-3125
	LEPC (Local Emergency Planning Committee)	887-3798
	US Bureau of Land Management	887-6544
	NM Emergency Response Commission (Santa Fe)	(505) 476-9600
	24 HR	(505) 827-9126
	National Emergency Response Center	(800) 424-8802
	National Pollution Control Center: Direct	(703) 872-6000
	For Oil Spills	(800) 280-7118
	Emergency Services	
	Wild Well Control	(281) 784-4700
	Cudd Pressure Control 915-699-0139	(915) 563-3356
	Halliburton	(575) 746-2757
	B. J. Services	(575) 746-3569
Give GPS position:	Native Air – Emergency Helicopter – Hobbs	(575) 392-6429
	Flight For Life - Lubbock, TX	(806) 743-9911
	Aerocare - Lubbock, TX	(806) 747-8923
	Med Flight Air Amb - Albuquerque, NM	(575) 842-4433
	Lifeguard Air Med Svc. Albuquerque, NM	(800) 222-1222
	Poison Control (24/7)	(575) 272-3115
	Oil & Gas Pipeline 24 Hour Service	(800) 364-4366
	NOAA – Website - www.nhc.noaa.gov	

Prepared in conjunction with
Dave Small SHARP communications and consulting


TITUS Oil & Gas Production - Well Pad
Rig Location Layout
Safety Equipment Location
Prevailing Wind Direction S, SW
N
Flare stack with Electronic Igniter
FLARE IGNITER
4" Panic line 150ft from wellbore Mud/Gas Separator
Pipe Racks
230 ft.
400 ft.
175 ft.
310 ft.
Closed Loop Equip
Shakers
Choke
Choke Manifold (with remotely Operated Choke)
Trip Tank
Rig Floor
Parts House
Driller's Cabin
Mud Logger
Process Tanks
Water Tank
Volume Tanks
Mud Pump
Mud Pump
Parts House
VFD House
Generator
Generator
Generator
Diesel Tank
Draw works
Spool
BOP Skid
HPU/Accumulator
H2S Sensor Beneath Rig Floor
Frac Tank & Water Storage
Mud Storage
CAUTION H2S Poison Gas May Be Present
Self-Contained Breathing Apparatus (SCBA)
H2S Sensors Located Around the Rig
H2S Monitor Control/ Alarm box
Wind Indicators
Location Entrance Warning Sign used to control location in event of an emergency
Safe Briefing Area
Primary Briefing Area
Directional Housing
Co Man Housing
Potable Water
Rig Manager House
Change House
Crew Housing
Secondary Egress
Location Dimensions
540 ft x 575 ft
Not To Scale
Wellhead Location

CLOSED LOOP SCHEMATIC



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 37628

CONDITIONS

Operator: Titus Oil & Gas Production, LLC 420 Throckmorton St, Ste 1150 Fort Worth, TX 76012	OGRID: 373986
	Action Number: 37628
	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	9/17/2021
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	9/17/2021
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	9/17/2021
pkautz	Cement is required to circulate on both surface and intermediate1 strings of casing	9/17/2021