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.

[330423]

2. Name of Operator

330423

9. API Well No. **30-025-48594**

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

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 11/04/2021

KZ
11/10/2021

SL

APPROVED WITH CONDITIONS

(Continued on page 2)

*(Instructions on page 2)

Approval Date: 02/22/2021

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: 02/22/2021

Additional Operator Remarks

Location of Well

0. SHL: SESE / 474 FSL / 687 FEL / TWSP: 26S / RANGE: 35E / SECTION: 7 / LAT: 32.0518808 / LONG: -103.4002086 (TVD: 0 feet, MD: 0 feet)

PPP: NENE / 0 FSL / 991 FEL / TWSP: 26S / RANGE: 35E / SECTION: 19 / LAT: 32.036058 / LONG: -103.401161 (TVD: 12328 feet, MD: 17715 feet)

PPP: NESE / 2640 FSL / 990 FEL / TWSP: 26S / RANGE: 35E / SECTION: 18 / LAT: 32.043315 / LONG: -103.401171 (TVD: 12199 feet, MD: 15128 feet)

PPP: NENE / 0 FSL / 989 FEL / TWSP: 26S / RANGE: 35E / SECTION: 18 / LAT: 32.05058 / LONG: -103.401181 (TVD: 12070 feet, MD: 12541 feet)

BHL: SESE / 10 FSL / 992 FEL / TWSP: 26S / RANGE: 35E / SECTION: 19 / LAT: 32.02157 / LONG: -103.4011408 (TVD: 12587 feet, MD: 23368 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
30-025-48594	96672	WC-025 G-08 S263412K; Bone Spring

4 Property Code	5 Property Name	6 Well Number
330423	RIVER RANCH FED COM	324H

7 OGRID No.	8 Operator Name	9 Elevation
373986	TITUS OIL & GAS PRODUCTION LLC	3270'

[10] Surface Location

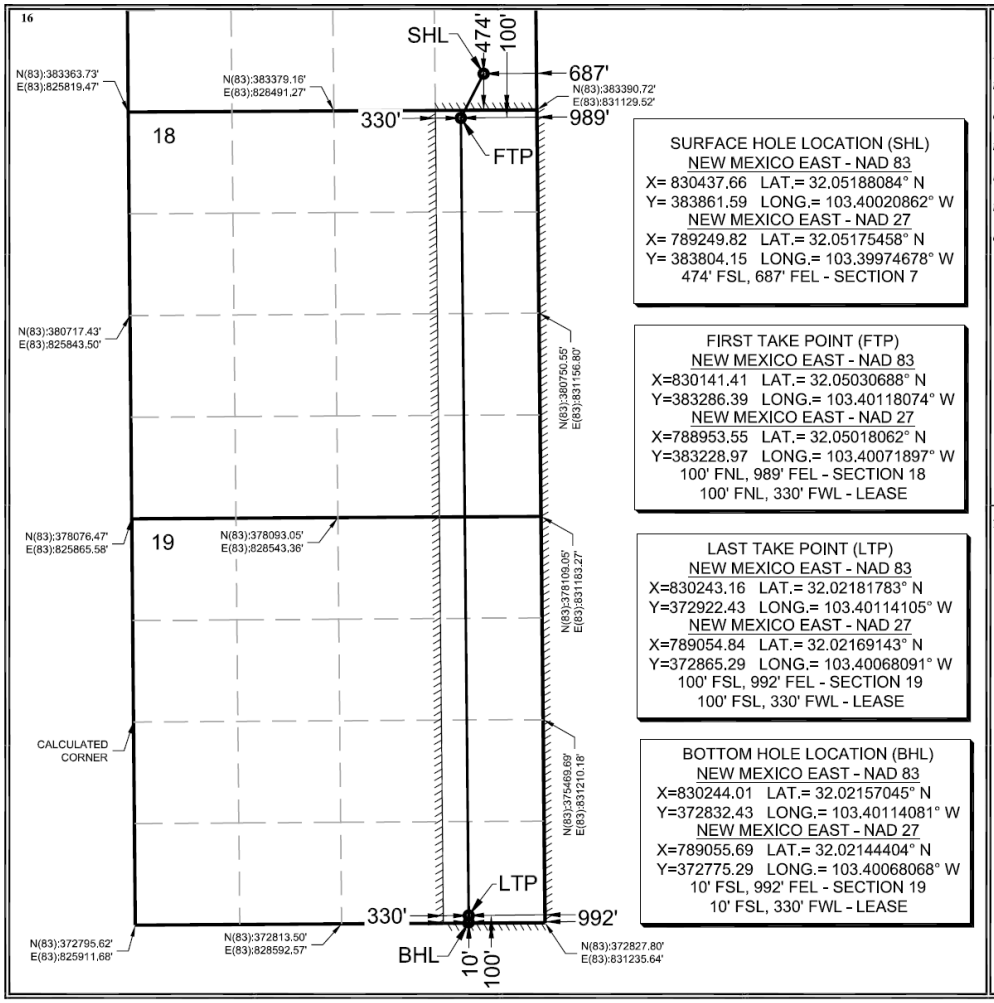
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
O	7	26-S	35-E		474'	SOUTH	687'	EAST	LEA

[11] Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
O	19	26-S	35-E		10'	SOUTH	992'	EAST	LEA

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



SURFACE HOLE LOCATION (SHL)
NEW MEXICO EAST - NAD 83
X= 830437.66 LAT.= 32.05188084° N
Y= 383861.59 LONG.= 103.40020862° W
NEW MEXICO EAST - NAD 27
X= 789249.82 LAT.= 32.05175458° N
Y= 383804.15 LONG.= 103.39974678° W
474' FSL, 687' FEL - SECTION 7

FIRST TAKE POINT (FTP)
NEW MEXICO EAST - NAD 83
X=830141.41 LAT.= 32.05030688° N
Y=383286.39 LONG.= 103.40118074° W
NEW MEXICO EAST - NAD 27
X=788953.55 LAT.= 32.05018062° N
Y=383228.97 LONG.= 103.40071897° W
100' FNL, 989' FEL - SECTION 18
100' FNL, 330' FWL - LEASE

LAST TAKE POINT (LTP)
NEW MEXICO EAST - NAD 83
X=830243.16 LAT.= 32.02181783° N
Y=372922.43 LONG.= 103.40114105° W
NEW MEXICO EAST - NAD 27
X=789054.84 LAT.= 32.02169143° N
Y=372865.29 LONG.= 103.40068091° W
100' FSL, 992' FEL - SECTION 19
100' FSL, 330' FWL - LEASE

BOTTOM HOLE LOCATION (BHL)
NEW MEXICO EAST - NAD 83
X=830244.01 LAT.= 32.02157045° N
Y=372832.43 LONG.= 103.40114081° W
NEW MEXICO EAST - NAD 27
X=789055.69 LAT.= 32.02144404° N
Y=372775.29 LONG.= 103.40068068° W
10' FSL, 992' FEL - SECTION 19
10' FSL, 330' FWL - LEASE

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 5/21/2020 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
05/19/2020
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:** 11 / 3 / 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
River Ranch Fed Com 324H	New Well	O - Sec 7, T26S, R35E	474' FSL	1122	2070	3068
	30-025-48594		687' FEL			

IV. Central Delivery Point Name: El Campeon CTB 18 [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
River Ranch Fed Com 324H	New Well	3/30/2022	5/15/2022	7/22/2022	9/17/2022	9/19/2022
	30-025-48594					

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:	11/3/2021
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 - River Ranch Fed Com 324H

1. Geologic Formations

TVD of target	12,587' EOL	Pilot hole depth	NA
MD at TD:	23,368'	Deepest expected fresh water:	250'

Formation	Depth (TVD) from KB	Water/Mineral Bearing/ Target Zone?	Hazards*
Quaternary Fill	Surface	Water	
Rustler	1100	Water	
Top of Salt	1525	Salt	
Base of Salt	4994	Salt	
Lamar	5384	Salt Water	
Delaware	5404	Oil/Gas	
Bone Spring Lime	9294	Oil/Gas	
1st Bone Spring	10524	Oil/Gas	
2nd Bone Spring	11044	Oil/Gas	
3rd Bone Spring	12184	Target Oil/Gas	
Wolfcamp	12560	Not Penetrated	
Wolfcamp X Sand	12588	Not Penetrated	
Wolfcamp Y Sand	12652	Not Penetrated	
Wolfcamp A	12670	Not Penetrated	
Wolfcamp B	12990	Not Penetrated	

2. Casing Program

Hole Size	Casing From	Casing To	Csg. Size	Weight (lbs)	Grade	Conn.	SF Collapse	SF Burst	SF Body
13.5"	0	1125	10.75"	45.5	J55	BTC	4.06	0.82	13.97
9.875"	0	11800	7.625"	29.7	L80HP	BTC	1.13	1.17	2.07
6.75"	0	11300	5.5"	23	P110	BTC	1.64	1.67	3.22
6.75"	11300	23,368	5"	18	P110	BTC	1.64	1.67	3.22
			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 - River Ranch Fed Com 324H

	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 - River Ranch Fed Com 324H

3. Cementing Program

Casing	# Sks	Wt. lb/ gal	Yld ft3/ sack	H_20 gal/sk	500# Comp. Strength (hours)	Slurry Description
Surf.	480	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.	1000	10.3	3.6	21.48	16	TXI Lightwieght Blend
	250	15	1.27	5.7	4	Tail: 85:15 Class H
Prod	390	11.9	2.5	19	72	Lead: 50:50:10 H Blend
	1380	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 - River Ranch Fed Com 324H

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"	5M	Annular	x	3000 psi
			Blind Ram		5M
			Pipe Ram		
			Double Ram	x	
			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 - River Ranch Fed Com 324H

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 - River Ranch Fed Com 324H

7. Drilling Conditions

Condition	Specify what type and where?
BH Pressure at deepest TVD	7530 psi at 12587’ TVD
Abnormal Temperature	NO 180 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 LLC

PHOENIX TECHNOLOGY SERVICES

Project: Lea County, NM - (NAD83 NME)
Site: River Ranch Fed Com
Well: 324H
Wellbore: OH
Design: Plan 1 06-02-20
Rig: Est. RKB

T G M

Azimuths to Grid North
True North: -0.49°
Magnetic North: 5.95°

Magnetic Field
Strength: 47561.9snT
Dip Angle: 59.67°

RKB @ 3296.50usft (Est. RKB)
Ground Level: 3270.00

WELL DETAILS

Ground Level: 3270.00

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	383861.59	830437.66	32° 3' 6.771024 N	103° 24' 0.751032 W

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
FTP - RR Fed Com 4-324H	12539.00	-575.20	-296.25	383286.39	830141.41	32° 3' 1.104768 N	103° 24' 4.250664 W
LTP - RR Fed Com 4-324H	12586.59	-10939.16	-194.50	372922.43	830243.16	32° 1' 18.544188 N	103° 24' 4.107780 W
BHL - RR Fed Com 4-324H	12587.00	-11029.16	-193.65	372832.43	830244.01	32° 1' 17.653564 N	103° 24' 4.106917 W

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target	Annotation
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
2	1500.00	0.00	0.00	1500.00	0.00	0.00	0.00	0.00	0.00		KOP, Begin 2.00°/100' Build
3	1600.09	2.00	270.00	1600.07	0.00	-1.75	2.00	270.00	-0.02		Hold 2.00° Inc at 270.00° Azm
4	10142.25	2.00	270.00	10137.02	0.00	-300.14	0.00	0.00	-2.93		Begin 2.00°/100' Drop
5	10242.34	0.00	0.00	10237.09	0.00	-301.89	2.00	180.00	-2.95		Begin Vertical Hold
6	12066.33	0.00	0.00	12061.08	0.00	-301.89	0.00	0.00	-2.95		KOP2, Begin 12.00°/100' Build
7	12814.14	89.74	179.44	12538.54	-475.25	-297.23	12.00	179.44	472.32		LP, Hold 89.74° Inc at 179.44° Azm
8	23368.67	89.74	179.44	12587.00	-11029.16	-193.65	0.00	0.00	11026.74	BHL - RR Fed Com 4-324H	TD at 23368.67

Map System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone Name: New Mexico Eastern Zone

Local Origin: Well 324H, Grid North

Latitude: 32° 3' 6.771024 N
Longitude: 103° 24' 0.751032 W

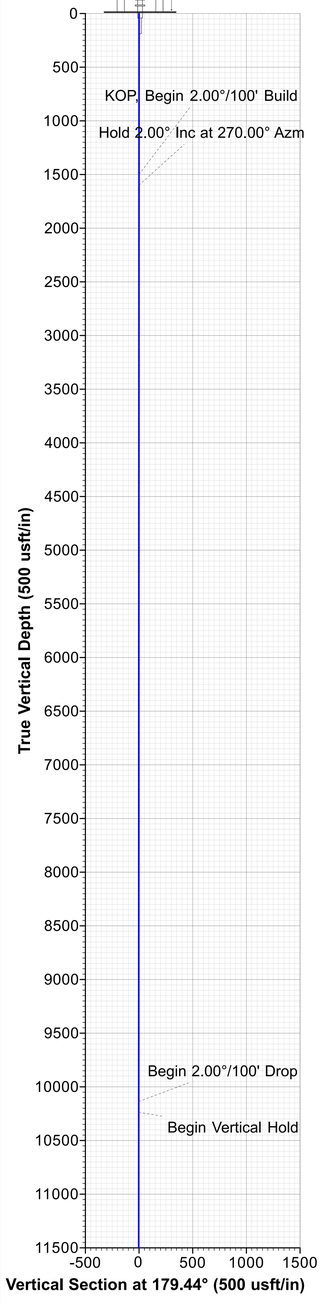
Grid East: 830437.66
Grid North: 383861.59
Scale Factor: 1.000

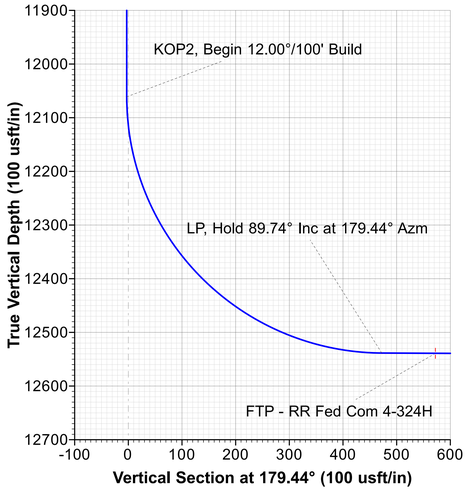
Geomagnetic Model: MVHD
Sample Date: 02-Aug-20
Magnetic Declination: 6.44°
Dip Angle from Horizontal: 59.67°
Magnetic Field Strength: 47561.85244497nT

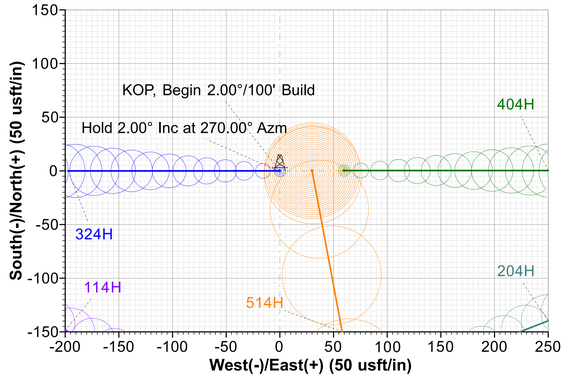
To convert a Magnetic Direction to a Grid Direction, Add 5.94°
To convert a Magnetic Direction to a True Direction, Add 6.44° East
To convert a True Direction to a Grid Direction, Subtract 0.50°

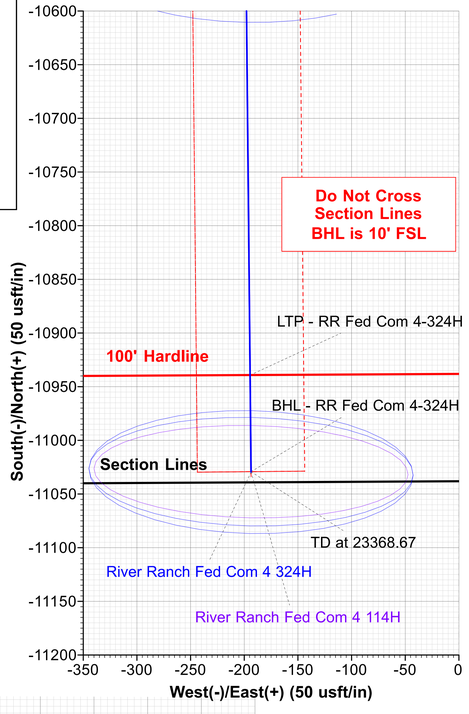
LEGEND

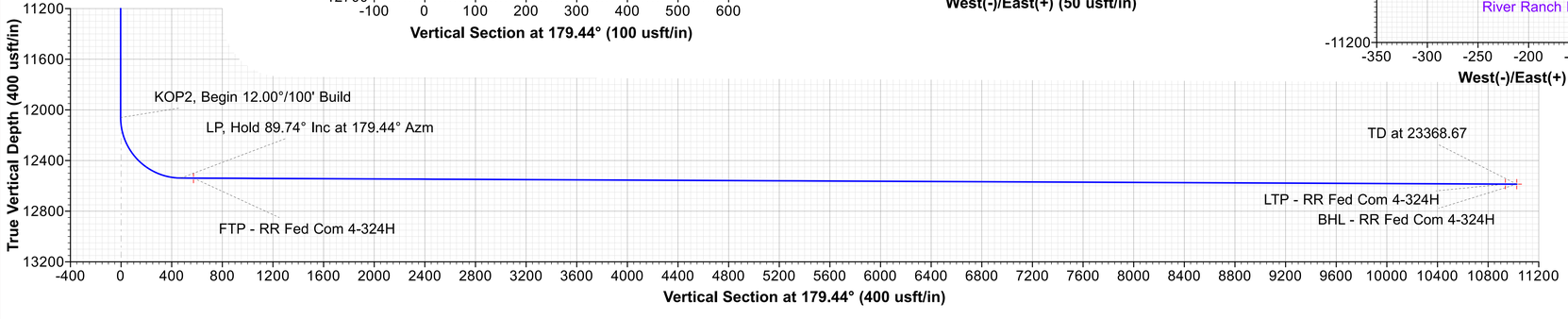
- 403H, OH, Plan 1 03-25-20 V0
- 511H, OH, Plan 1 01-14-20 V0
- 204H, OH, Plan 1 03-25-20 V0
- 114H, OH, Plan 1 03-25-20 V0
- 211H, OH, Surveys V0
- 321H, OH, Plan 1 01-14-20 V0
- 514H, OH, Plan 1 03-25-20 V0
- 404H, OH, Plan 1 03-25-20 V0
- 513H, OH, Plan 1 03-25-20 V0
- 203H, OH, Plan 1 03-25-20 V0
- 431H, OH, Plan 1 01-14-20 V0
- 123H, OH, Plan 1 03-25-20 V0
- 034H, OH, Plan 1 03-25-20 V0
- 323H, OH, Plan 1 03-25-20 V0
- Plan 1 06-02-20

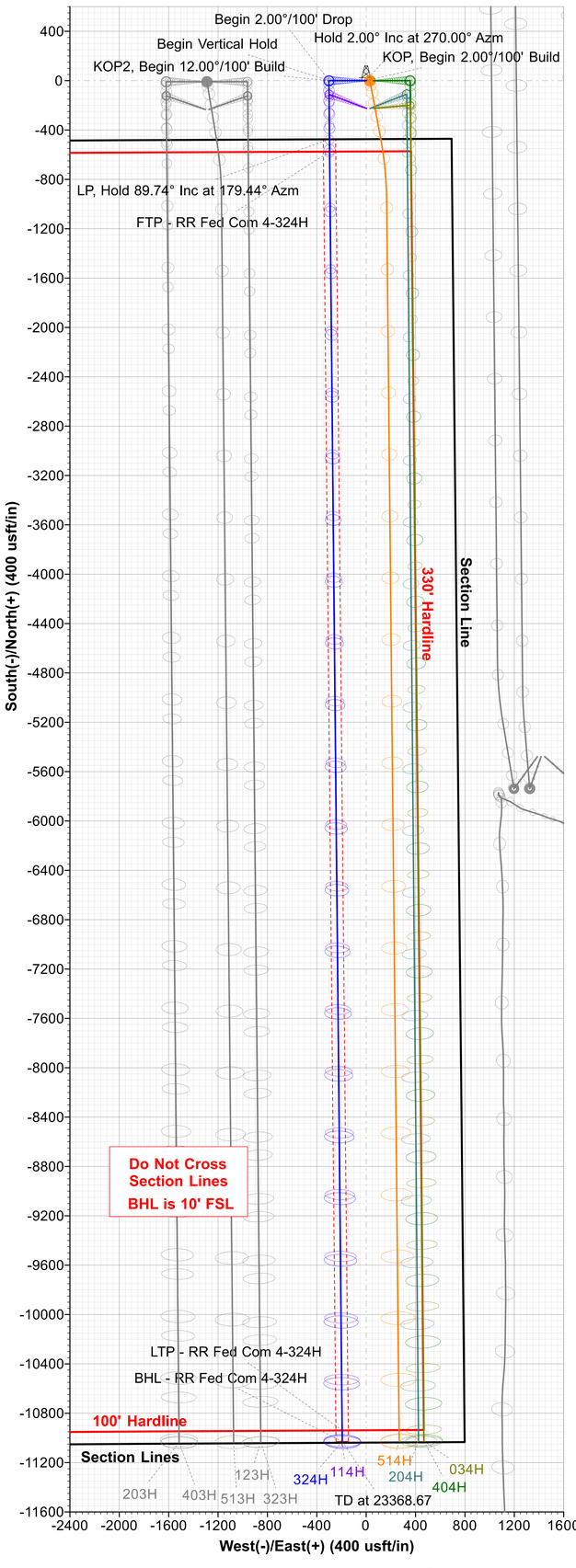












Date: 14:44, June 02 2020

PHOENIX
TECHNOLOGY SERVICES

Titus Oil & Gas Production, LLC

Lea County, NM - (NAD83 NME)
River Ranch Fed Com
324H

OH

Plan: Plan 1 06-02-20

Standard Planning Report

02 June, 2020

TITUS
OIL GAS LLC

PHOENIX TECHNOLOGY SERVICES

Planning Report

TITUS OIL GAS LLC

Database:	USA Compass	**Local Co-ordinate Reference:**	Well 324H
Company:	Titus Oil & Gas Production, LLC	**TVD Reference:**	RKB @ 3296.50usft (Est. RKB)
Project:	Lea County, NM - (NAD83 NME)	**MD Reference:**	RKB @ 3296.50usft (Est. RKB)
Site:	River Ranch Fed Com	**North Reference:**	Grid
Well:	324H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan 1 06-02-20		

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 River Ranch Fed Com 4

Site Position:		**Northing:**	383,636.97 usft	**Latitude:**	32° 3' 4.543128 N
From:	Map	**Easting:**	830,500.02 usft	**Longitude:**	103° 24' 0.048996 W
Position Uncertainty:	0.00 usft	**Slot Radius:**	13-3/16 "	**Grid Convergence:**	0.50 °

Well 324H

Well Position	**+N/-S**	224.61 usft	**Northing:**	383,861.59 usft	**Latitude:**	32° 3' 6.771024 N
	+E/-W	-62.37 usft	**Easting:**	830,437.65 usft	**Longitude:**	103° 24' 0.751032 W
Position Uncertainty		1.00 usft	**Wellhead Elevation:**		**Ground Level:**	3,270.00 usft

Wellbore OH

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	MVHD	8/2/2020	6.44	59.67	47,561.85244497

Design Plan 1 06-02-20

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	179.44

Plan Survey Tool Program **Date** 6/2/2020

	Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	23,368.67	Plan 1 06-02-20 (OH)	MWD+HDGM+MS	
				OWSG Rev.2 MWD + HDGM +	

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	
1,600.09	2.00	270.00	1,600.07	0.00	-1.75	2.00	2.00	0.00	270.00	
10,142.25	2.00	270.00	10,137.02	0.00	-300.14	0.00	0.00	0.00	0.00	
10,242.34	0.00	0.00	10,237.09	0.00	-301.89	2.00	-2.00	0.00	180.00	
12,066.33	0.00	0.00	12,061.08	0.00	-301.89	0.00	0.00	0.00	0.00	
12,814.14	89.74	179.44	12,538.54	-475.25	-297.23	12.00	12.00	24.00	179.44	
23,368.67	89.74	179.44	12,587.00	-11,029.16	-193.65	0.00	0.00	0.00	0.00	BHL - RR Fed Com 4

PHOENIX TECHNOLOGY SERVICES

Planning Report

TITUS OIL GAS LLC

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Site:	River Ranch Fed Com	**North Reference:**	Grid
Well:	324H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan 1 06-02-20		

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
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
KOP, Begin 2.00°/100' Build									
1,600.00	2.00	270.00	1,599.98	0.00	-1.75	-0.02	2.00	2.00	0.00
1,600.09	2.00	270.00	1,600.07	0.00	-1.75	-0.02	2.00	2.00	0.00
Hold 2.00° Inc at 270.00° Azm									
1,700.00	2.00	270.00	1,699.92	0.00	-5.24	-0.05	0.00	0.00	0.00
1,800.00	2.00	270.00	1,799.86	0.00	-8.73	-0.09	0.00	0.00	0.00
1,900.00	2.00	270.00	1,899.80	0.00	-12.22	-0.12	0.00	0.00	0.00
2,000.00	2.00	270.00	1,999.74	0.00	-15.72	-0.15	0.00	0.00	0.00
2,100.00	2.00	270.00	2,099.67	0.00	-19.21	-0.19	0.00	0.00	0.00
2,200.00	2.00	270.00	2,199.61	0.00	-22.70	-0.22	0.00	0.00	0.00
2,300.00	2.00	270.00	2,299.55	0.00	-26.20	-0.26	0.00	0.00	0.00
2,400.00	2.00	270.00	2,399.49	0.00	-29.69	-0.29	0.00	0.00	0.00
2,500.00	2.00	270.00	2,499.43	0.00	-33.18	-0.32	0.00	0.00	0.00
2,600.00	2.00	270.00	2,599.37	0.00	-36.68	-0.36	0.00	0.00	0.00
2,700.00	2.00	270.00	2,699.31	0.00	-40.17	-0.39	0.00	0.00	0.00
2,800.00	2.00	270.00	2,799.25	0.00	-43.66	-0.43	0.00	0.00	0.00
2,900.00	2.00	270.00	2,899.19	0.00	-47.16	-0.46	0.00	0.00	0.00
3,000.00	2.00	270.00	2,999.13	0.00	-50.65	-0.50	0.00	0.00	0.00
3,100.00	2.00	270.00	3,099.06	0.00	-54.14	-0.53	0.00	0.00	0.00
3,200.00	2.00	270.00	3,199.00	0.00	-57.64	-0.56	0.00	0.00	0.00
3,300.00	2.00	270.00	3,298.94	0.00	-61.13	-0.60	0.00	0.00	0.00
3,400.00	2.00	270.00	3,398.88	0.00	-64.62	-0.63	0.00	0.00	0.00
3,500.00	2.00	270.00	3,498.82	0.00	-68.12	-0.67	0.00	0.00	0.00
3,600.00	2.00	270.00	3,598.76	0.00	-71.61	-0.70	0.00	0.00	0.00
3,700.00	2.00	270.00	3,698.70	0.00	-75.10	-0.73	0.00	0.00	0.00
3,800.00	2.00	270.00	3,798.64	0.00	-78.60	-0.77	0.00	0.00	0.00
3,900.00	2.00	270.00	3,898.58	0.00	-82.09	-0.80	0.00	0.00	0.00
4,000.00	2.00	270.00	3,998.52	0.00	-85.58	-0.84	0.00	0.00	0.00
4,100.00	2.00	270.00	4,098.45	0.00	-89.07	-0.87	0.00	0.00	0.00
4,200.00	2.00	270.00	4,198.39	0.00	-92.57	-0.90	0.00	0.00	0.00
4,300.00	2.00	270.00	4,298.33	0.00	-96.06	-0.94	0.00	0.00	0.00
4,400.00	2.00	270.00	4,398.27	0.00	-99.55	-0.97	0.00	0.00	0.00
4,500.00	2.00	270.00	4,498.21	0.00	-103.05	-1.01	0.00	0.00	0.00
4,600.00	2.00	270.00	4,598.15	0.00	-106.54	-1.04	0.00	0.00	0.00
4,700.00	2.00	270.00	4,698.09	0.00	-110.03	-1.08	0.00	0.00	0.00
4,800.00	2.00	270.00	4,798.03	0.00	-113.53	-1.11	0.00	0.00	0.00
4,900.00	2.00	270.00	4,897.97	0.00	-117.02	-1.14	0.00	0.00	0.00
5,000.00	2.00	270.00	4,997.90	0.00	-120.51	-1.18	0.00	0.00	0.00
5,100.00	2.00	270.00	5,097.84	0.00	-124.01	-1.21	0.00	0.00	0.00
5,200.00	2.00	270.00	5,197.78	0.00	-127.50	-1.25	0.00	0.00	0.00
5,300.00	2.00	270.00	5,297.72	0.00	-130.99	-1.28	0.00	0.00	0.00
5,400.00	2.00	270.00	5,397.66	0.00	-134.49	-1.31	0.00	0.00	0.00
5,500.00	2.00	270.00	5,497.60	0.00	-137.98	-1.35	0.00	0.00	0.00
5,600.00	2.00	270.00	5,597.54	0.00	-141.47	-1.38	0.00	0.00	0.00
5,700.00	2.00	270.00	5,697.48	0.00	-144.97	-1.42	0.00	0.00	0.00
5,800.00	2.00	270.00	5,797.42	0.00	-148.46	-1.45	0.00	0.00	0.00
5,900.00	2.00	270.00	5,897.36	0.00	-151.95	-1.49	0.00	0.00	0.00
6,000.00	2.00	270.00	5,997.29	0.00	-155.45	-1.52	0.00	0.00	0.00
6,100.00	2.00	270.00	6,097.23	0.00	-158.94	-1.55	0.00	0.00	0.00
6,200.00	2.00	270.00	6,197.17	0.00	-162.43	-1.59	0.00	0.00	0.00
6,300.00	2.00	270.00	6,297.11	0.00	-165.92	-1.62	0.00	0.00	0.00

PHOENIX TECHNOLOGY SERVICES

Planning Report

TITUS OIL GAS LLC

Database:	USA Compass	**Local Co-ordinate Reference:**	Well 324H
Company:	Titus Oil & Gas Production, LLC	**TVD Reference:**	RKB @ 3296.50usft (Est. RKB)
Project:	Lea County, NM - (NAD83 NME)	**MD Reference:**	RKB @ 3296.50usft (Est. RKB)
Site:	River Ranch Fed Com	**North Reference:**	Grid
Well:	324H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan 1 06-02-20		

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)
6,400.00	2.00	270.00	6,397.05	0.00	-169.42	-1.66	0.00	0.00	0.00
6,500.00	2.00	270.00	6,496.99	0.00	-172.91	-1.69	0.00	0.00	0.00
6,600.00	2.00	270.00	6,596.93	0.00	-176.40	-1.72	0.00	0.00	0.00
6,700.00	2.00	270.00	6,696.87	0.00	-179.90	-1.76	0.00	0.00	0.00
6,800.00	2.00	270.00	6,796.81	0.00	-183.39	-1.79	0.00	0.00	0.00
6,900.00	2.00	270.00	6,896.75	0.00	-186.88	-1.83	0.00	0.00	0.00
7,000.00	2.00	270.00	6,996.68	0.00	-190.38	-1.86	0.00	0.00	0.00
7,100.00	2.00	270.00	7,096.62	0.00	-193.87	-1.89	0.00	0.00	0.00
7,200.00	2.00	270.00	7,196.56	0.00	-197.36	-1.93	0.00	0.00	0.00
7,300.00	2.00	270.00	7,296.50	0.00	-200.86	-1.96	0.00	0.00	0.00
7,400.00	2.00	270.00	7,396.44	0.00	-204.35	-2.00	0.00	0.00	0.00
7,500.00	2.00	270.00	7,496.38	0.00	-207.84	-2.03	0.00	0.00	0.00
7,600.00	2.00	270.00	7,596.32	0.00	-211.34	-2.07	0.00	0.00	0.00
7,700.00	2.00	270.00	7,696.26	0.00	-214.83	-2.10	0.00	0.00	0.00
7,800.00	2.00	270.00	7,796.20	0.00	-218.32	-2.13	0.00	0.00	0.00
7,900.00	2.00	270.00	7,896.13	0.00	-221.82	-2.17	0.00	0.00	0.00
8,000.00	2.00	270.00	7,996.07	0.00	-225.31	-2.20	0.00	0.00	0.00
8,100.00	2.00	270.00	8,096.01	0.00	-228.80	-2.24	0.00	0.00	0.00
8,200.00	2.00	270.00	8,195.95	0.00	-232.30	-2.27	0.00	0.00	0.00
8,300.00	2.00	270.00	8,295.89	0.00	-235.79	-2.30	0.00	0.00	0.00
8,400.00	2.00	270.00	8,395.83	0.00	-239.28	-2.34	0.00	0.00	0.00
8,500.00	2.00	270.00	8,495.77	0.00	-242.77	-2.37	0.00	0.00	0.00
8,600.00	2.00	270.00	8,595.71	0.00	-246.27	-2.41	0.00	0.00	0.00
8,700.00	2.00	270.00	8,695.65	0.00	-249.76	-2.44	0.00	0.00	0.00
8,800.00	2.00	270.00	8,795.59	0.00	-253.25	-2.48	0.00	0.00	0.00
8,900.00	2.00	270.00	8,895.52	0.00	-256.75	-2.51	0.00	0.00	0.00
9,000.00	2.00	270.00	8,995.46	0.00	-260.24	-2.54	0.00	0.00	0.00
9,100.00	2.00	270.00	9,095.40	0.00	-263.73	-2.58	0.00	0.00	0.00
9,200.00	2.00	270.00	9,195.34	0.00	-267.23	-2.61	0.00	0.00	0.00
9,300.00	2.00	270.00	9,295.28	0.00	-270.72	-2.65	0.00	0.00	0.00
9,400.00	2.00	270.00	9,395.22	0.00	-274.21	-2.68	0.00	0.00	0.00
9,500.00	2.00	270.00	9,495.16	0.00	-277.71	-2.71	0.00	0.00	0.00
9,600.00	2.00	270.00	9,595.10	0.00	-281.20	-2.75	0.00	0.00	0.00
9,700.00	2.00	270.00	9,695.04	0.00	-284.69	-2.78	0.00	0.00	0.00
9,800.00	2.00	270.00	9,794.98	0.00	-288.19	-2.82	0.00	0.00	0.00
9,900.00	2.00	270.00	9,894.91	0.00	-291.68	-2.85	0.00	0.00	0.00
10,000.00	2.00	270.00	9,994.85	0.00	-295.17	-2.88	0.00	0.00	0.00
10,100.00	2.00	270.00	10,094.79	0.00	-298.67	-2.92	0.00	0.00	0.00
10,142.25	2.00	270.00	10,137.02	0.00	-300.14	-2.93	0.00	0.00	0.00
Begin 2.00°/100' Drop									
10,200.00	0.85	270.00	10,194.75	0.00	-301.58	-2.95	2.00	-2.00	0.00
10,242.34	0.00	0.00	10,237.09	0.00	-301.89	-2.95	2.00	-2.00	0.00
Begin Vertical Hold									
12,066.33	0.00	0.00	12,061.08	0.00	-301.89	-2.95	0.00	0.00	0.00
KOP2, Begin 12.00°/100' Build									
12,100.00	4.04	179.44	12,094.72	-1.19	-301.88	-1.76	12.00	12.00	0.00
12,200.00	16.04	179.44	12,193.01	-18.59	-301.71	15.64	12.00	12.00	0.00
12,300.00	28.04	179.44	12,285.53	-56.04	-301.34	53.09	12.00	12.00	0.00
12,400.00	40.04	179.44	12,368.24	-111.91	-300.79	108.97	12.00	12.00	0.00
12,500.00	52.04	179.44	12,437.53	-183.76	-300.09	180.82	12.00	12.00	0.00
12,600.00	64.04	179.44	12,490.37	-268.44	-299.26	265.51	12.00	12.00	0.00
12,700.00	76.04	179.44	12,524.44	-362.26	-298.33	359.33	12.00	12.00	0.00
12,800.00	88.04	179.44	12,538.27	-461.11	-297.36	458.18	12.00	12.00	0.00

PHOENIX TECHNOLOGY SERVICES

Planning Report

TITUS OIL GAS LLC

Database:	USA Compass	**Local Co-ordinate Reference:**	Well 324H
Company:	Titus Oil & Gas Production, LLC	**TVD Reference:**	RKB @ 3296.50usft (Est. RKB)
Project:	Lea County, NM - (NAD83 NME)	**MD Reference:**	RKB @ 3296.50usft (Est. RKB)
Site:	River Ranch Fed Com	**North Reference:**	Grid
Well:	324H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan 1 06-02-20		

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)
12,814.14	89.74	179.44	12,538.54	-475.25	-297.23	472.32	12.00	12.00	0.00
LP, Hold 89.74° Inc at 179.44° Azm									
12,900.00	89.74	179.44	12,538.93	-561.10	-296.38	558.18	0.00	0.00	0.00
13,000.00	89.74	179.44	12,539.39	-661.10	-295.40	658.18	0.00	0.00	0.00
13,100.00	89.74	179.44	12,539.85	-761.09	-294.42	758.18	0.00	0.00	0.00
13,200.00	89.74	179.44	12,540.31	-861.09	-293.44	858.18	0.00	0.00	0.00
13,300.00	89.74	179.44	12,540.77	-961.08	-292.46	958.18	0.00	0.00	0.00
13,400.00	89.74	179.44	12,541.23	-1,061.07	-291.48	1,058.17	0.00	0.00	0.00
13,500.00	89.74	179.44	12,541.69	-1,161.07	-290.49	1,158.17	0.00	0.00	0.00
13,600.00	89.74	179.44	12,542.15	-1,261.06	-289.51	1,258.17	0.00	0.00	0.00
13,700.00	89.74	179.44	12,542.61	-1,361.06	-288.53	1,358.17	0.00	0.00	0.00
13,800.00	89.74	179.44	12,543.07	-1,461.05	-287.55	1,458.17	0.00	0.00	0.00
13,900.00	89.74	179.44	12,543.53	-1,561.04	-286.57	1,558.17	0.00	0.00	0.00
14,000.00	89.74	179.44	12,543.98	-1,661.04	-285.59	1,658.17	0.00	0.00	0.00
14,100.00	89.74	179.44	12,544.44	-1,761.03	-284.61	1,758.17	0.00	0.00	0.00
14,200.00	89.74	179.44	12,544.90	-1,861.03	-283.63	1,858.17	0.00	0.00	0.00
14,300.00	89.74	179.44	12,545.36	-1,961.02	-282.64	1,958.16	0.00	0.00	0.00
14,400.00	89.74	179.44	12,545.82	-2,061.01	-281.66	2,058.16	0.00	0.00	0.00
14,500.00	89.74	179.44	12,546.28	-2,161.01	-280.68	2,158.16	0.00	0.00	0.00
14,600.00	89.74	179.44	12,546.74	-2,261.00	-279.70	2,258.16	0.00	0.00	0.00
14,700.00	89.74	179.44	12,547.20	-2,361.00	-278.72	2,358.16	0.00	0.00	0.00
14,800.00	89.74	179.44	12,547.66	-2,460.99	-277.74	2,458.16	0.00	0.00	0.00
14,900.00	89.74	179.44	12,548.12	-2,560.99	-276.76	2,558.16	0.00	0.00	0.00
15,000.00	89.74	179.44	12,548.58	-2,660.98	-275.77	2,658.16	0.00	0.00	0.00
15,100.00	89.74	179.44	12,549.04	-2,760.97	-274.79	2,758.16	0.00	0.00	0.00
15,200.00	89.74	179.44	12,549.49	-2,860.97	-273.81	2,858.16	0.00	0.00	0.00
15,300.00	89.74	179.44	12,549.95	-2,960.96	-272.83	2,958.15	0.00	0.00	0.00
15,400.00	89.74	179.44	12,550.41	-3,060.96	-271.85	3,058.15	0.00	0.00	0.00
15,500.00	89.74	179.44	12,550.87	-3,160.95	-270.87	3,158.15	0.00	0.00	0.00
15,600.00	89.74	179.44	12,551.33	-3,260.94	-269.89	3,258.15	0.00	0.00	0.00
15,700.00	89.74	179.44	12,551.79	-3,360.94	-268.90	3,358.15	0.00	0.00	0.00
15,800.00	89.74	179.44	12,552.25	-3,460.93	-267.92	3,458.15	0.00	0.00	0.00
15,900.00	89.74	179.44	12,552.71	-3,560.93	-266.94	3,558.15	0.00	0.00	0.00
16,000.00	89.74	179.44	12,553.17	-3,660.92	-265.96	3,658.15	0.00	0.00	0.00
16,100.00	89.74	179.44	12,553.63	-3,760.92	-264.98	3,758.15	0.00	0.00	0.00
16,200.00	89.74	179.44	12,554.09	-3,860.91	-264.00	3,858.14	0.00	0.00	0.00
16,300.00	89.74	179.44	12,554.55	-3,960.90	-263.02	3,958.14	0.00	0.00	0.00
16,400.00	89.74	179.44	12,555.00	-4,060.90	-262.04	4,058.14	0.00	0.00	0.00
16,500.00	89.74	179.44	12,555.46	-4,160.89	-261.05	4,158.14	0.00	0.00	0.00
16,600.00	89.74	179.44	12,555.92	-4,260.89	-260.07	4,258.14	0.00	0.00	0.00
16,700.00	89.74	179.44	12,556.38	-4,360.88	-259.09	4,358.14	0.00	0.00	0.00
16,800.00	89.74	179.44	12,556.84	-4,460.87	-258.11	4,458.14	0.00	0.00	0.00
16,900.00	89.74	179.44	12,557.30	-4,560.87	-257.13	4,558.14	0.00	0.00	0.00
17,000.00	89.74	179.44	12,557.76	-4,660.86	-256.15	4,658.14	0.00	0.00	0.00
17,100.00	89.74	179.44	12,558.22	-4,760.86	-255.17	4,758.14	0.00	0.00	0.00
17,200.00	89.74	179.44	12,558.68	-4,860.85	-254.18	4,858.13	0.00	0.00	0.00
17,300.00	89.74	179.44	12,559.14	-4,960.84	-253.20	4,958.13	0.00	0.00	0.00
17,400.00	89.74	179.44	12,559.60	-5,060.84	-252.22	5,058.13	0.00	0.00	0.00
17,500.00	89.74	179.44	12,560.05	-5,160.83	-251.24	5,158.13	0.00	0.00	0.00
17,600.00	89.74	179.44	12,560.51	-5,260.83	-250.26	5,258.13	0.00	0.00	0.00
17,700.00	89.74	179.44	12,560.97	-5,360.82	-249.28	5,358.13	0.00	0.00	0.00
17,800.00	89.74	179.44	12,561.43	-5,460.82	-248.30	5,458.13	0.00	0.00	0.00
17,900.00	89.74	179.44	12,561.89	-5,560.81	-247.31	5,558.13	0.00	0.00	0.00
18,000.00	89.74	179.44	12,562.35	-5,660.80	-246.33	5,658.13	0.00	0.00	0.00

PHOENIX TECHNOLOGY SERVICES

Planning Report

TITUS OIL GAS LLC

Database:	USA Compass	**Local Co-ordinate Reference:**	Well 324H
Company:	Titus Oil & Gas Production, LLC	**TVD Reference:**	RKB @ 3296.50usft (Est. RKB)
Project:	Lea County, NM - (NAD83 NME)	**MD Reference:**	RKB @ 3296.50usft (Est. RKB)
Site:	River Ranch Fed Com	**North Reference:**	Grid
Well:	324H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan 1 06-02-20		

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)
18,100.00	89.74	179.44	12,562.81	-5,760.80	-245.35	5,758.12	0.00	0.00	0.00
18,200.00	89.74	179.44	12,563.27	-5,860.79	-244.37	5,858.12	0.00	0.00	0.00
18,300.00	89.74	179.44	12,563.73	-5,960.79	-243.39	5,958.12	0.00	0.00	0.00
18,400.00	89.74	179.44	12,564.19	-6,060.78	-242.41	6,058.12	0.00	0.00	0.00
18,500.00	89.74	179.44	12,564.65	-6,160.77	-241.43	6,158.12	0.00	0.00	0.00
18,600.00	89.74	179.44	12,565.11	-6,260.77	-240.45	6,258.12	0.00	0.00	0.00
18,700.00	89.74	179.44	12,565.56	-6,360.76	-239.46	6,358.12	0.00	0.00	0.00
18,800.00	89.74	179.44	12,566.02	-6,460.76	-238.48	6,458.12	0.00	0.00	0.00
18,900.00	89.74	179.44	12,566.48	-6,560.75	-237.50	6,558.12	0.00	0.00	0.00
19,000.00	89.74	179.44	12,566.94	-6,660.74	-236.52	6,658.12	0.00	0.00	0.00
19,100.00	89.74	179.44	12,567.40	-6,760.74	-235.54	6,758.11	0.00	0.00	0.00
19,200.00	89.74	179.44	12,567.86	-6,860.73	-234.56	6,858.11	0.00	0.00	0.00
19,300.00	89.74	179.44	12,568.32	-6,960.73	-233.58	6,958.11	0.00	0.00	0.00
19,400.00	89.74	179.44	12,568.78	-7,060.72	-232.59	7,058.11	0.00	0.00	0.00
19,500.00	89.74	179.44	12,569.24	-7,160.72	-231.61	7,158.11	0.00	0.00	0.00
19,600.00	89.74	179.44	12,569.70	-7,260.71	-230.63	7,258.11	0.00	0.00	0.00
19,700.00	89.74	179.44	12,570.16	-7,360.70	-229.65	7,358.11	0.00	0.00	0.00
19,800.00	89.74	179.44	12,570.62	-7,460.70	-228.67	7,458.11	0.00	0.00	0.00
19,900.00	89.74	179.44	12,571.07	-7,560.69	-227.69	7,558.11	0.00	0.00	0.00
20,000.00	89.74	179.44	12,571.53	-7,660.69	-226.71	7,658.10	0.00	0.00	0.00
20,100.00	89.74	179.44	12,571.99	-7,760.68	-225.72	7,758.10	0.00	0.00	0.00
20,200.00	89.74	179.44	12,572.45	-7,860.67	-224.74	7,858.10	0.00	0.00	0.00
20,300.00	89.74	179.44	12,572.91	-7,960.67	-223.76	7,958.10	0.00	0.00	0.00
20,400.00	89.74	179.44	12,573.37	-8,060.66	-222.78	8,058.10	0.00	0.00	0.00
20,500.00	89.74	179.44	12,573.83	-8,160.66	-221.80	8,158.10	0.00	0.00	0.00
20,600.00	89.74	179.44	12,574.29	-8,260.65	-220.82	8,258.10	0.00	0.00	0.00
20,700.00	89.74	179.44	12,574.75	-8,360.65	-219.84	8,358.10	0.00	0.00	0.00
20,800.00	89.74	179.44	12,575.21	-8,460.64	-218.86	8,458.10	0.00	0.00	0.00
20,900.00	89.74	179.44	12,575.67	-8,560.63	-217.87	8,558.10	0.00	0.00	0.00
21,000.00	89.74	179.44	12,576.12	-8,660.63	-216.89	8,658.09	0.00	0.00	0.00
21,100.00	89.74	179.44	12,576.58	-8,760.62	-215.91	8,758.09	0.00	0.00	0.00
21,200.00	89.74	179.44	12,577.04	-8,860.62	-214.93	8,858.09	0.00	0.00	0.00
21,300.00	89.74	179.44	12,577.50	-8,960.61	-213.95	8,958.09	0.00	0.00	0.00
21,400.00	89.74	179.44	12,577.96	-9,060.60	-212.97	9,058.09	0.00	0.00	0.00
21,500.00	89.74	179.44	12,578.42	-9,160.60	-211.99	9,158.09	0.00	0.00	0.00
21,600.00	89.74	179.44	12,578.88	-9,260.59	-211.00	9,258.09	0.00	0.00	0.00
21,700.00	89.74	179.44	12,579.34	-9,360.59	-210.02	9,358.09	0.00	0.00	0.00
21,800.00	89.74	179.44	12,579.80	-9,460.58	-209.04	9,458.09	0.00	0.00	0.00
21,900.00	89.74	179.44	12,580.26	-9,560.57	-208.06	9,558.08	0.00	0.00	0.00
22,000.00	89.74	179.44	12,580.72	-9,660.57	-207.08	9,658.08	0.00	0.00	0.00
22,100.00	89.74	179.44	12,581.18	-9,760.56	-206.10	9,758.08	0.00	0.00	0.00
22,200.00	89.74	179.44	12,581.63	-9,860.56	-205.12	9,858.08	0.00	0.00	0.00
22,300.00	89.74	179.44	12,582.09	-9,960.55	-204.13	9,958.08	0.00	0.00	0.00
22,400.00	89.74	179.44	12,582.55	-10,060.55	-203.15	10,058.08	0.00	0.00	0.00
22,500.00	89.74	179.44	12,583.01	-10,160.54	-202.17	10,158.08	0.00	0.00	0.00
22,600.00	89.74	179.44	12,583.47	-10,260.53	-201.19	10,258.08	0.00	0.00	0.00
22,700.00	89.74	179.44	12,583.93	-10,360.53	-200.21	10,358.08	0.00	0.00	0.00
22,800.00	89.74	179.44	12,584.39	-10,460.52	-199.23	10,458.08	0.00	0.00	0.00
22,900.00	89.74	179.44	12,584.85	-10,560.52	-198.25	10,558.07	0.00	0.00	0.00
23,000.00	89.74	179.44	12,585.31	-10,660.51	-197.27	10,658.07	0.00	0.00	0.00
23,100.00	89.74	179.44	12,585.77	-10,760.50	-196.28	10,758.07	0.00	0.00	0.00
23,200.00	89.74	179.44	12,586.23	-10,860.50	-195.30	10,858.07	0.00	0.00	0.00
23,300.00	89.74	179.44	12,586.68	-10,960.49	-194.32	10,958.07	0.00	0.00	0.00
23,368.67	89.74	179.44	12,587.00	-11,029.16	-193.65	11,026.74	0.00	0.00	0.00

PHOENIX TECHNOLOGY SERVICES

Planning Report

TITUS OIL GAS LLC

Database:	USA Compass	**Local Co-ordinate Reference:**	Well 324H
Company:	Titus Oil & Gas Production, LLC	**TVD Reference:**	RKB @ 3296.50usft (Est. RKB)
Project:	Lea County, NM - (NAD83 NME)	**MD Reference:**	RKB @ 3296.50usft (Est. RKB)
Site:	River Ranch Fed Com	**North Reference:**	Grid
Well:	324H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan 1 06-02-20		

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)
TD at 23368.67									

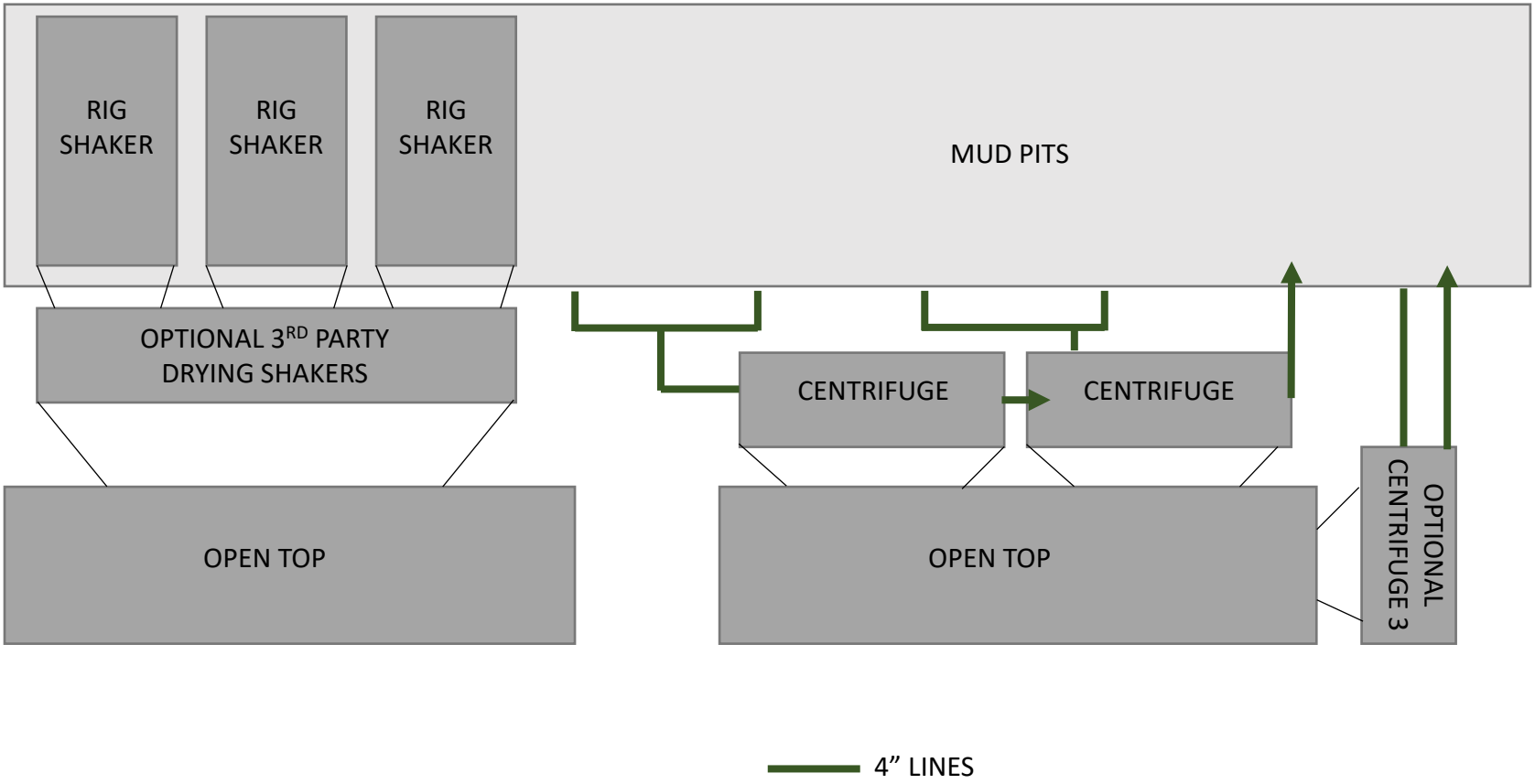
Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
FTP - RR Fed Com 4-32 - plan hits target center - Point	0.00	0.00	12,539.00	-575.20	-296.25	383,286.39	830,141.41	32° 3' 1.104768 N	103° 24' 4.250664 W
LTP - RR Fed Com 4-32 - plan misses target center by 0.03usft at 23278.67usft MD (12586.59 TVD, -10939.16 N, -194.53 E) - Point	0.00	0.00	12,586.59	-10,939.16	-194.50	372,922.43	830,243.16	32° 1' 18.544188 N	103° 24' 4.107780 W
BHL - RR Fed Com 4-32 - plan hits target center - Rectangle (sides W100.00 H10,554.53 D0.00)	0.26	179.44	12,587.00	-11,029.16	-193.65	372,832.43	830,244.01	32° 1' 17.653564 N	103° 24' 4.106917 W

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Comment
1,500.00	1,500.00	0.00	0.00	KOP, Begin 2.00°/100' Build
1,600.09	1,600.07	0.00	-1.75	Hold 2.00° Inc at 270.00° Azm
10,142.25	10,137.02	0.00	-300.14	Begin 2.00°/100' Drop
10,242.34	10,237.09	0.00	-301.89	Begin Vertical Hold
12,066.33	12,061.08	0.00	-301.89	KOP2, Begin 12.00°/100' Build
12,814.14	12,538.54	-475.25	-297.23	LP, Hold 89.74° Inc at 179.44° Azm
23,368.67	12,587.00	-11,029.16	-193.65	TD at 23368.67

CLOSED LOOP SCHEMATIC



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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 60180

CONDITIONS

Operator: Titus Oil & Gas Production, LLC 420 Throckmorton St, Ste 1150 Fort Worth, TX 76012	OGRID: 373986
	Action Number: 60180
	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	11/10/2021
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	11/10/2021
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	11/10/2021
pkautz	Cement is required to circulate on both surface and intermediate1 strings of casing	11/10/2021