

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

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		5. Lease Serial No. 6. If Indian, Allottee or Tribe Name 7. If Unit or CA Agreement, Name and No. 8. Lease Name and Well No. [331213] 121H to 201H
2. Name of Operator [373986]		9. API Well No. 30-025-49217
3a. Address	3b. Phone No. (include area code)	10. Field and Pool, or Exploratory [96672]
4. Location of Well (Report location clearly and in accordance with any State requirements. *) At surface At proposed prod. zone		11. Sec., T. R. M. or Blk. and Survey or Area
14. Distance in miles and direction from nearest town or post office*		12. County or Parish 13. State
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any)	16. No of acres in lease	17. Spacing Unit dedicated to this well
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.	19. Proposed Depth	20. BLM/BIA Bond No. in file
21. Elevations (Show whether DF, KDB, RT, GL, etc.)	22. Approximate date work will start*	23. Estimated duration
24. Attachments		

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

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

25. Signature	Name (Printed/Typed)	Date
Title		
Approved by (Signature)	Name (Printed/Typed)	Date
Title	Office	

Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.
 Conditions of approval, if any, are attached.

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

NGMP Rec 07/22/2021

SL

(Continued on page 2)



Approval Date: 06/03/2021

KZ
07/22/2021

*(Instructions on page 2)

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 well, 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 directionally 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 well 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 will 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 connects this information to an 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 Connection Clearance Officer (WO-630), 1849 C Street, N.W., Mail Stop 401 LS, Washington, D.C. 20240.

Additional Operator Remarks

Location of Well

0. SHL: LOT 1 / 547 FNL / 493 FWL / TWSP: 26S / RANGE: 35E / SECTION: 30 / LAT: 32.020065 / LONG: -103.4135285 (TVD: 0 feet, MD: 0 feet)

PPP: LOT 1 / 100 FNL / 330 FWL / TWSP: 26S / RANGE: 35E / SECTION: 31 / LAT: 32.0212946 / LONG: -103.4140542 (TVD: 10597 feet, MD: 10625 feet)

BHL: LOT 2 / 10 FSL / 330 FWL / TWSP: 26S / RANGE: 35E / SECTION: 31 / LAT: 32.0003159 / LONG: -103.4140526 (TVD: 10835 feet, MD: 18352 feet)

BLM Point of Contact

Name: TYLER HILL

Title: LIE

Phone: (575) 234-5972

Email: tjhill@blm.gov

CONFIDENTIAL

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.

CONFIDENTIAL

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 30-025-49217	2 Pool Code 96672	3 Pool Name WC-025 G-08 S263412K; Bone Spring
4 Property Code 331213	5 Property Name LOS VAQUEROS FED	6 Well Number 201H
7 OGRID No. 373986	8 Operator Name TITUS OIL & GAS PRODUCTION LLC	9 Elevation 3188'

" Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
1	30	26-S	35-E		547'	NORTH	493'	WEST	LEA

" 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
2	31	26-S	35-E		10'	SOUTH	330'	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

FTP
N(83)372795.62'
E(83)825911.68'

SHL
N(83)370154.62'
E(83)825934.97'

LTP
N(83)367513.54'
E(83)825957.12'

BHL
N(83)365053.10'
E(83)825978.05'

LOT 1, LOT 2, LOT 3, LOT 4, LOT 5

CALCULATED CORNER

100', 547', 493', 330', 10'

N(83)372813.50'
E(83)828592.57'

N(83)372827.80'
E(83)831235.04'

N(83)370185.98'
E(83)831263.56'

N(83)367528.26'
E(83)828646.05'

N(83)365079.25'
E(83)828969.98'

N(83)365100.10'
E(83)825113.31'

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.

Ryan DeLong 7/13/2021
Signature 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: 7/6/2021
Signature and Seal of Professional Surveyor: *Mark J. Murray*

12177
REGISTERED PROFESSIONAL SURVEYOR

Certificate Number

Well Name: LOS VAQUEROS FED	Well Location: T26S / R35E / SEC 30 / LOT 1 /	County or Parish/State:
Well Number: 121H	Type of Well: OIL WELL	Allottee or Tribe Name:
Lease Number: NMNM062932	Unit or CA Name:	Unit or CA Number:
US Well Number:	Well Status: Approved Application for Permit to Drill	Operator: TITUS OIL AND GAS PRODUCTION LLC

Notice of Intent

Type of Submission: Notice of Intent	Type of Action Other
Date Sundry Submitted: 07/15/2021	Time Sundry Submitted: 08:17
Date proposed operation will begin: 07/20/2021	

Procedure Description: Name change from Los Vaqueros Fed 121H to Los Vaqueros Fed 201H; target change from 1st Bone Spring to 2nd Bone Spring; depth change from 10,835' TVD/18,352' MD to 11,029' TVD/18,904' MD; flex hose spec sheet updated to designated rig; supporting documentation updated to reflect these changes. Attachments: updated C-102, updated drilling plan, updated directional survey, updated AC report, updated flex hose spec sheet

Surface Disturbance

Is any additional surface disturbance proposed?: No

NOI Attachments

Procedure Description

- 5788_Los_Vaqueros_Fed_201H_C102_REV_1_SIGNED_20210713160330.pdf
- 7503_choke_hose_cert_1_29_21_20210713160329.pdf
- Los_Vaqueros_Fed_201H_Plan_1_07_06_21_20210713160329.pdf
- Los_Vaqueros_Fed_201H_Sundry_Drlg_Plan_7.12.21_20210713160329.pdf
- Los_Vaqueros_Fed_201H_Plan_1_07_06_21_AC_Report_20210713160329.pdf

Well Name: LOS VAQUEROS FED	Well Location: T26S / R35E / SEC 30 / LOT 1 /	County or Parish/State:
Well Number: 121H	Type of Well: OIL WELL	Allottee or Tribe Name:
Lease Number: NMNM062932	Unit or CA Name:	Unit or CA Number:
US Well Number:	Well Status: Approved Application for Permit to Drill	Operator: TITUS OIL AND GAS PRODUCTION LLC

Conditions of Approval

Specialist Review

Los_Vaqueros_Fed_201H_COA_20210715091107.pdf

Operator Certification

I certify that the foregoing is true and correct. 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. Electronic submission of Sundry Notices through this system satisfies regulations requiring a submission of Form 3160-5 or a Sundry Notice.

Operator Electronic Signature: RYAN DELONG	Signed on: JUL 15, 2021 08:17 AM
Name: TITUS OIL AND GAS PRODUCTION LLC	
Title: Regulatory Manager	
Street Address: 420 Throckmorton Street, Suite 1150	
City: Fort Worth	State: TX
Phone: (817) 852-6370	
Email address: rdelong@titusoil.com	

Field Representative

Representative Name:		
Street Address:		
City:	State:	Zip:
Phone:		
Email address:		

BLM Point of Contact

BLM POC Name: ZOTA M STEVENS	BLM POC Title: Petroleum Engineer
BLM POC Phone: 5752345998	BLM POC Email Address: ZSTEVENS@BLM.GOV
Disposition: Approved	Disposition Date: 07/15/2021
Signature: Zota Stevens	

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

Submit Electronically
Via E-permitting

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:** 7/ 21 / 21

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
Los Vaqueros Fed Com 201H	New Well	Lot 1, Sec 30, T26S R35E	547' FNL & 493' FWL	834	918	3754
	30-025-49217					

IV. Central Delivery Point Name: El Campeon CTB 30 [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
Los Vaqueros Fed Com 201H	New Well	7/28/2021	10/20/2021	11/11/2021	12/28/2021	1/30/2022
	30-025-49217					

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: 7/21/2021
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 - Los Vaqueros Fed 201H

1. Geologic Formations

TVD of target	11,029' EOL	Pilot hole depth	NA
MD at TD:	18,904'	Deepest expected fresh water:	400'

Formation	Depth (TVD) from KB	Water/Mineral Bearing/ Target Zone?	Hazards*
Quaternary Fill	Surface	Water	
Rustler	1015	Water	
Top of Salt	1497	Salt	
Base of Salt	5004	Salt	
Lamar	5330	Salt Water	
Bell Canyon	5369	Oil/Gas	
Cherry Canyon	6584	Oil/Gas	
Brushy Canyon	7826	Oil/Gas	
Bone Spring Lime	9259	Oil/Gas	
Avalon	9291	Oil/Gas	
1st Bone Spring Sand	10528	Oil/Gas	
2nd Bone Spring Sand	11062	Target Oil/Gas	
3rd Bone Spring Sand	12142	Not Penetrated	
Wolfcamp	12520	Not Penetrated	
X	X	Not Penetrated	

2. Casing Program

Hole Size	Casing Interval		Csg. Size	Weight (lbs)	Grade	Conn.	SF Collapse	SF Burst	SF Tension
	From	To							
17.5"	0	1040	13.375"	54.5	J55	STC	2.37	1.19	9.07
12.25"	0	5355	9.625"	40	J55	LTC	1.13	0.92	2.43
8.75"	0	18,904	5.5"	17	P110	LTC	1.39	2.48	2.37
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.
Intermediate burst based on 0.7 frac gradient at the shoe with Gas Gradient 0.1 psi/ft to surface.
All casing strings will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.h

Titus Oil & Gas Production, LLC - Los Vaqueros Fed 201H

	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 3 rd 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 2 nd 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 - Los Vaqueros Fed 201H

3. Cementing Program

Casing	# Sk	Wt. lb/ gal	Yld ft3/ sack	H ₂ O gal/sk	500# Comp. Strength (hours)	Slurry Description
Surf.	430	13.5	1.75	9	12	Lead: Class C + 4% Gel + 1% CaCl ₂
	250	14.8	1.34	6.34	8	Tail: Class C + 2% CaCl ₂
Inter.	1040	12.7	2.0	9.6	16	Lead: 35:65:6 C Blend
	250	14.8	1.34	6.34	8	Tail: Class C + 2% CaCl
5.5 Prod	790	11.9	2.5	19	72	Lead: 50:50:10 H Blend
	2130	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%
1 st Intermediate	0'	50%
Production	4,855'	25% OH in Lateral (KOP to EOL) – 40% OH in Vertical

Titus Oil & Gas Production, LLC - Los Vaqueros Fed 201H

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:
12-1/4"	13-5/8"	2M	Annular	x	2000 psi
			Blind Ram		2M
			Pipe Ram		
			Double Ram		
			Other*		
8-3/4"	13-5/8"	5M	Annular	x	50% testing pressure
			Blind Ram	x	5M
			Pipe Ram	x	
			Double Ram		
			Other*		

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

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

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?
Y	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 - Los Vaqueros Fed 201H

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	Saturated Brine	10 - 10.2	28-34	N/C
9-5/8" Int shoe	Lateral TD	Cut Brine	8.6 - 9.4	28-34	N/C

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

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

6. Logging and Testing Procedures

Logging, Coring and Testing.	
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.
N	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 - Los Vaqueros Fed 201H

7. Drilling Conditions

Condition	Specify what type and where?
BH Pressure at deepest TVD	5395 psi at 11029' TVD
Abnormal Temperature	NO 165 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	H ₂ S Plan.
x	BOP & Choke Schematics.
x	Directional Plan
x	Multibowl Schematic

RKB @ 3211.00usft (Est KB)
Ground Level: 3188.00

WELL DETAILS						
	Ground Level:	3188.00				
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	
0.00	0.00	372251.88	826409.29	32° 1' 12.234165 N	103° 24' 48.702864 W	

DESIGN TARGET DETAILS						
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude
BHL - Los Vaqueros Fed 201H	11029.00	-7185.90	-101.34	365065.98	826307.95	32° 0' 1.137347 N
LTP - Los Vaqueros Fed 201H	11029.00	-7095.90	-102.10	365155.98	826307.19	32° 0' 2.027974 N
FTP - Los Vaqueros Fed 201H	11084.00	445.95	-166.73	372697.83	826242.56	32° 1' 16.660927 N

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	0.00	
2	5000.00	0.00	0.00	5000.00	0.00	0.00	0.00	0.00	0.00	0.00	
3	5600.00	9.00	355.00	5597.54	46.85	-4.10	1.50	355.00	-46.88		KOP, Begin 1.50°/100' Build
4	9964.19	9.00	355.00	9908.00	726.96	-63.60	0.00	0.00	-727.48		Hold 9.00° Inc at 355.00° Azm
5	10564.19	0.00	0.00	10505.54	773.81	-67.70	1.50	180.00	-774.36		Begin 1.50°/100' Drop
6	10664.19	0.00	0.00	10605.54	773.81	-67.70	0.00	0.00	-774.36		Begin Vertical Hold
7	11417.61	90.41	189.20	11082.99	299.11	-144.58	12.00	189.20	-300.34		KOP2, Begin 12.00°/100' Build
8	11659.79	90.41	179.51	11081.24	57.93	-162.96	4.00	-89.95	-59.32		LP, Hold 90.41° Inc, Begin 4.00°/100' Turn
9	18904.07	90.41	179.51	11029.00	-7185.90	-101.34	0.00	0.00	7184.77	BHL - Los Vaqueros Fed 201H	Hold 179.51° Azm
											TD at 18904.07

Map System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone Name: New Mexico Eastern Zone
Local Origin: Well 201H, Grid North

Latitude: 32° 1' 12.234165 N
Longitude: 103° 24' 48.702864 W

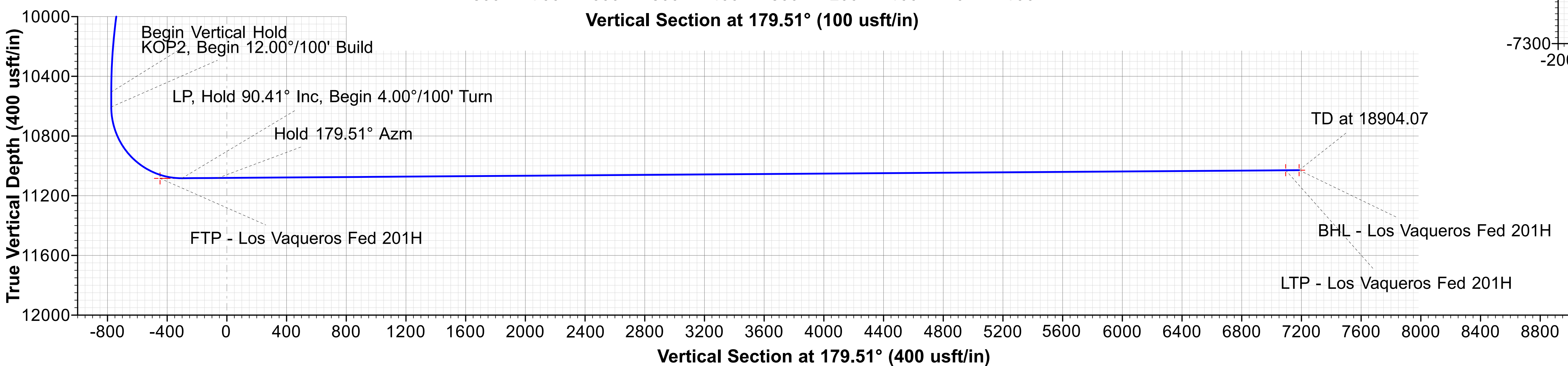
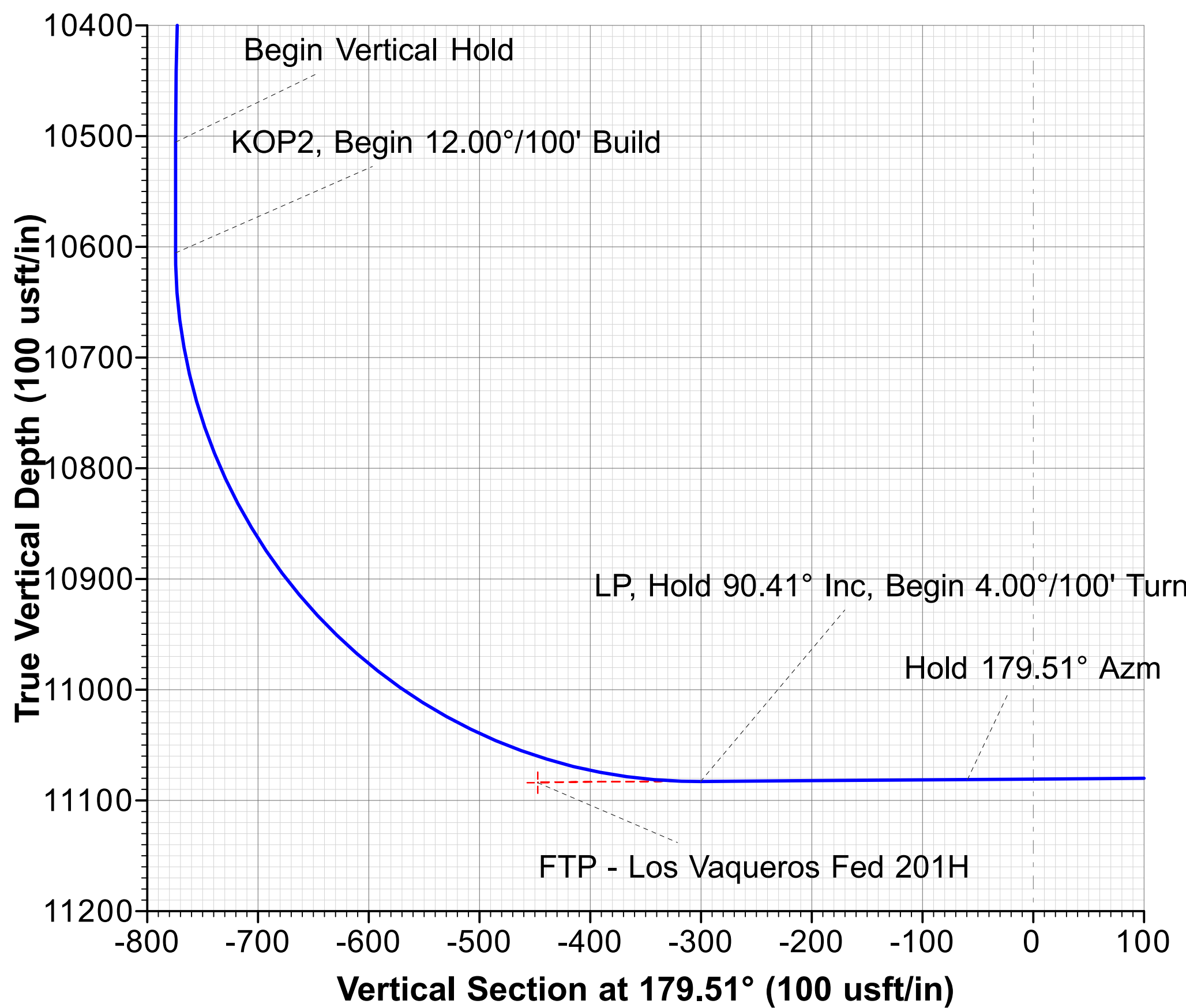
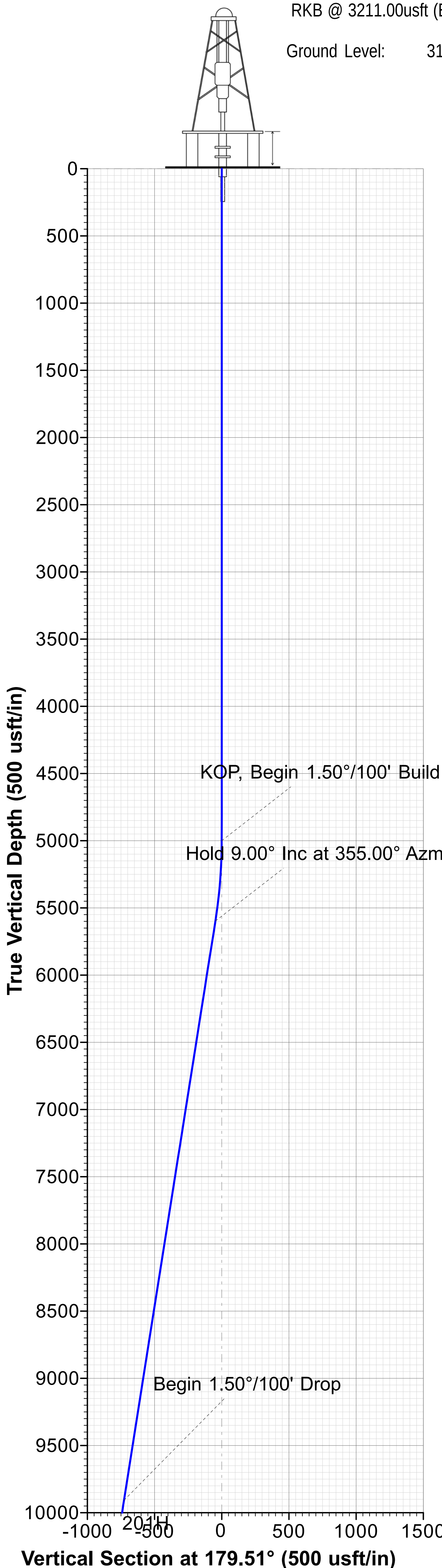
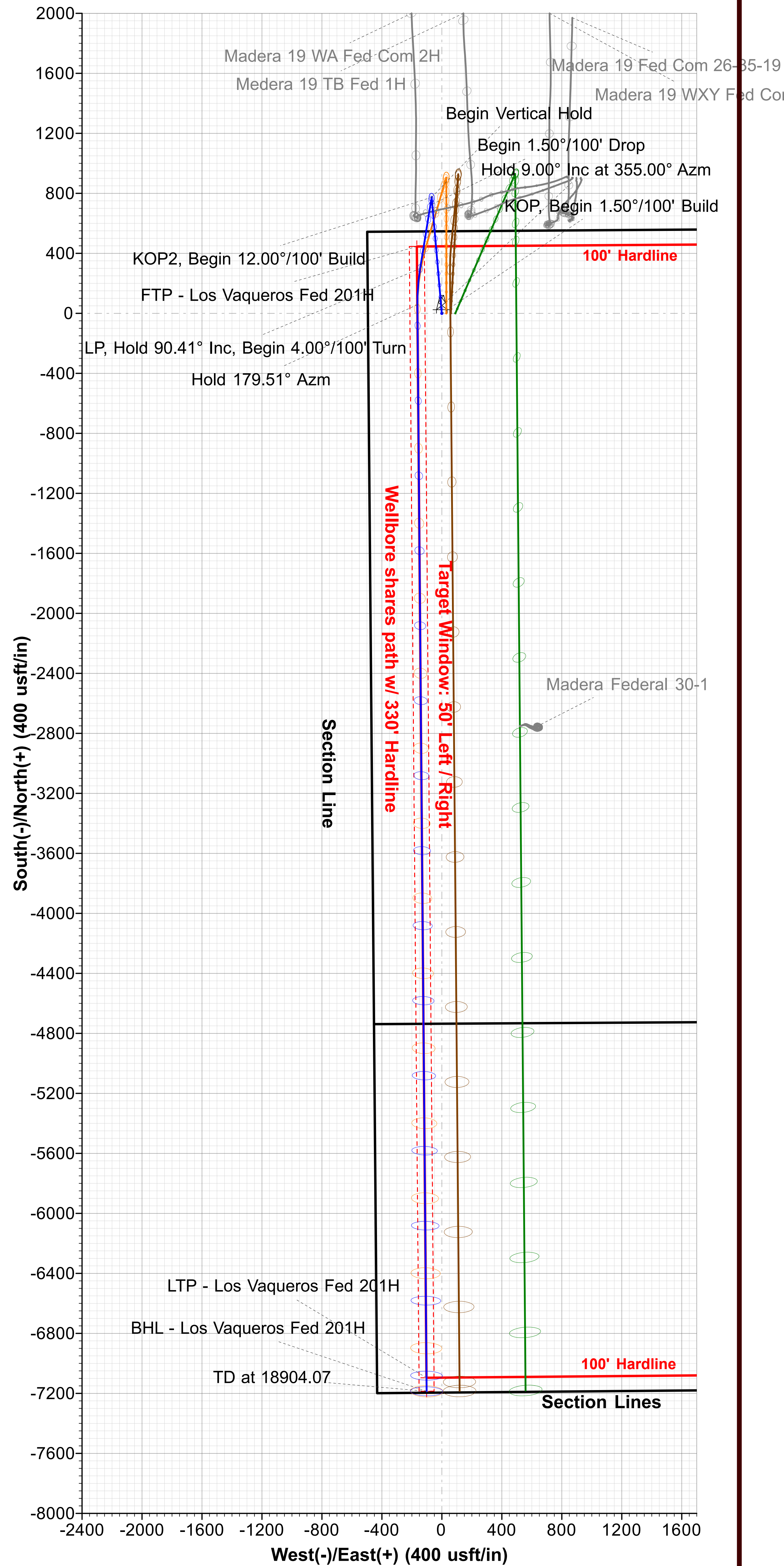
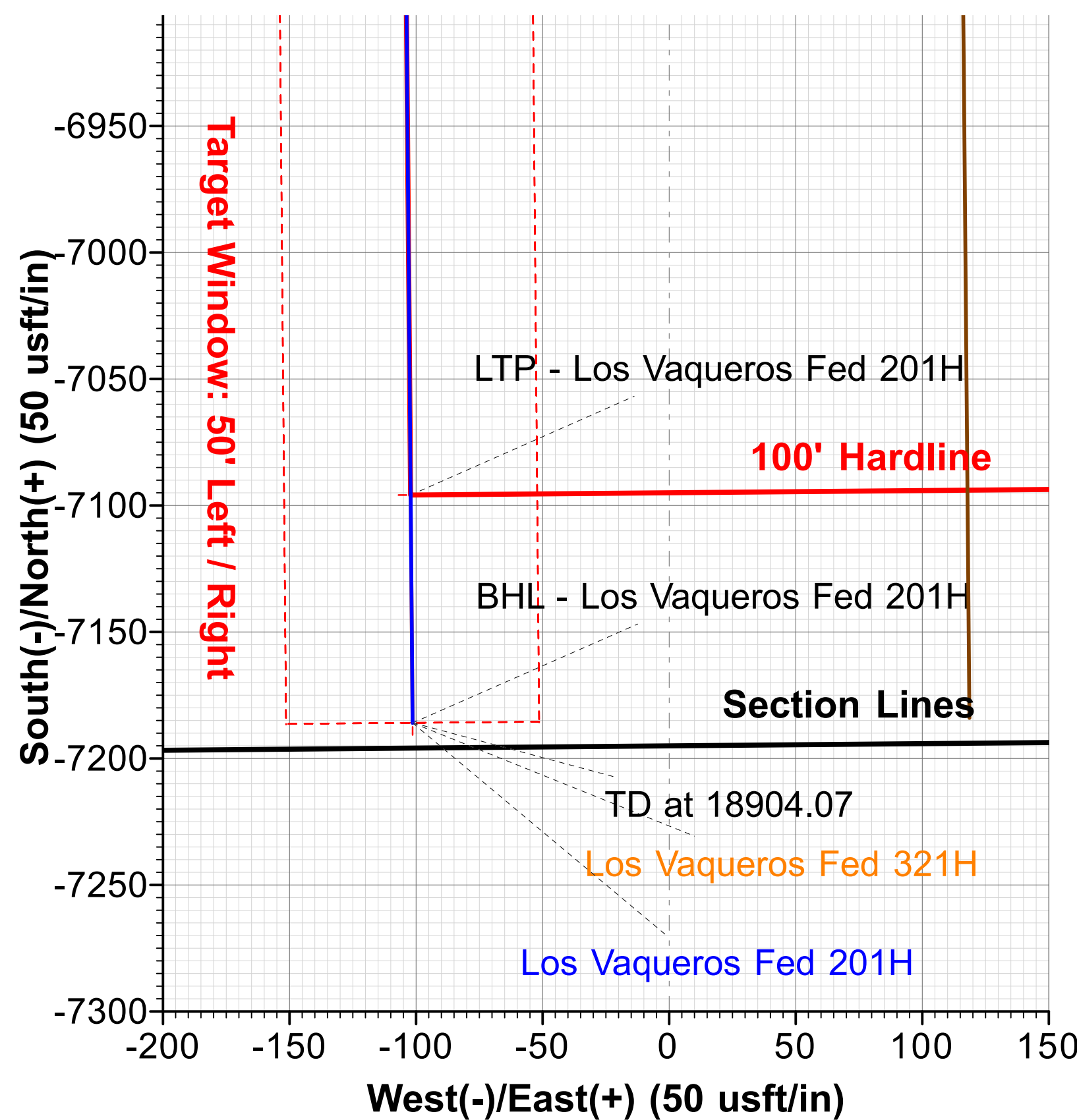
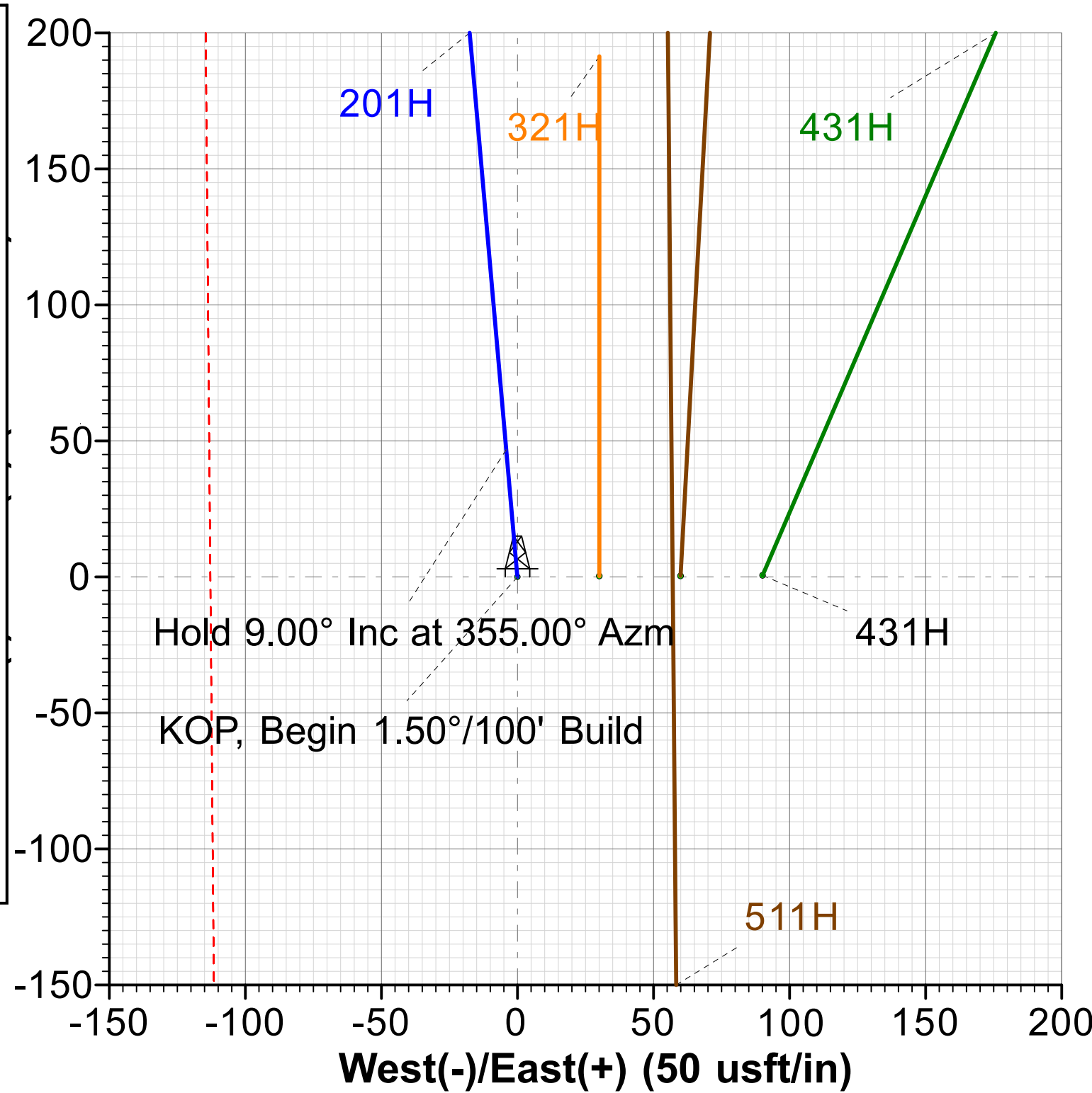
Grid East: 826409.29
Grid North: 372251.88
Scale Factor: 1.000

Geomagnetic Model: MVHD
Sample Date: 15-Aug-21
Magnetic Declination: 6.35°
Dip Angle from Horizontal: 59.60°
Magnetic Field Strength: 47425.43941960nT
To convert a Magnetic Direction to a True Direction, Add 6.35° East
To convert a Magnetic Direction to a Grid Direction, Add 5.86°

To convert a True Direction to a Grid Direction, Subtract 0.49°

LEGEND

- 431H, OH, Plan 1 07-06-21 V0
- 321H, OH, Plan 1 07-06-21 V0
- Madera 19 WXY Fed Com 6H, OH, Surveys V0
- Medera 19 TB Fed 1H, OH, Surveys V0
- Madera 19 Fed Com 26-35-19 WB 5H, OH, Surveys V0
- Madera Federal 30-1, OH, Surveys V0
- Madera 19 WA Fed Com 2H, OH, Surveys V0
- Madera 19 WA Fed Com 2H, ST01, Surveys V0
- 511H, OH, Plan 1 07-06-21 V0
- Plan 1 07-06-21





Titus Oil & Gas Production, LLC

Lea County, NM - (NAD83 NME)

Los Vaqueros Fed

201H

OH

Plan: Plan 1 07-06-21

Standard Planning Report

06 July, 2021





Planning Report



Database:	USA Compass	Local Co-ordinate Reference:	Well 201H
Company:	Titus Oil & Gas Production, LLC	TVD Reference:	RKB @ 3211.00usft (Est KB)
Project:	Lea County, NM - (NAD83 NME)	MD Reference:	RKB @ 3211.00usft (Est KB)
Site:	Los Vaqueros Fed	North Reference:	Grid
Well:	201H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan 1 07-06-21		

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	Los Vaqueros Fed				
Site Position:		Northing:	372,252.47 usft	Latitude:	32° 1' 12.232410 N
From:	Map	Easting:	826,499.41 usft	Longitude:	103° 24' 47.656118 W
Position Uncertainty:	1.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.49

Well	201H					
Well Position	+N/-S	-0.59 usft	Northing:	372,251.88 usft	Latitude:	32° 1' 12.234165 N
	+E/-W	-90.12 usft	Easting:	826,409.29 usft	Longitude:	103° 24' 48.702864 W
Position Uncertainty		1.00 usft	Wellhead Elevation:		Ground Level:	3,188.00 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	MVHD	8/15/2021	6.35	59.60	47,425.43941960

Design	Plan 1 07-06-21			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	179.51

Plan Survey Tool Program	Date	7/6/2021		
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	18,903.08	Plan 1 07-06-21 (OH)	MWD+HRGM OWSG MWD + HRGM

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	
5,000.00	0.00	0.00	5,000.00	0.00	0.00	0.00	0.00	0.00	0.00	
5,600.00	9.00	355.00	5,597.54	46.85	-4.10	1.50	1.50	0.00	355.00	
9,964.20	9.00	355.00	9,908.00	726.96	-63.60	0.00	0.00	0.00	0.00	
10,564.20	0.00	0.00	10,505.54	773.81	-67.70	1.50	-1.50	0.83	180.00	
10,664.20	0.00	0.00	10,605.54	773.81	-67.70	0.00	0.00	0.00	0.00	
11,417.61	90.41	189.20	11,082.99	299.11	-144.58	12.00	12.00	0.00	189.20	
11,659.79	90.41	179.51	11,081.24	57.93	-162.96	4.00	0.00	-4.00	-89.95	
18,904.07	90.41	179.51	11,029.00	-7,185.90	-101.34	0.00	0.00	0.00	0.00	BHL - Los Vaqueros F



Planning Report



Database:	USA Compass	Local Co-ordinate Reference:	Well 201H
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Project:	Lea County, NM - (NAD83 NME)	MD Reference:	RKB @ 3211.00usft (Est KB)
Site:	Los Vaqueros Fed	North Reference:	Grid
Well:	201H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan 1 07-06-21		

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
5,000.00	0.00	0.00	5,000.00	0.00	0.00	0.00	0.00	0.00	0.00
KOP, Begin 1.50°/100' Build									
5,100.00	1.50	355.00	5,099.99	1.30	-0.11	-1.30	1.50	1.50	0.00
5,200.00	3.00	355.00	5,199.91	5.21	-0.46	-5.22	1.50	1.50	0.00
5,300.00	4.50	355.00	5,299.69	11.73	-1.03	-11.74	1.50	1.50	0.00
5,400.00	6.00	355.00	5,399.27	20.85	-1.82	-20.86	1.50	1.50	0.00
5,500.00	7.50	355.00	5,498.57	32.55	-2.85	-32.58	1.50	1.50	0.00
5,600.00	9.00	355.00	5,597.54	46.85	-4.10	-46.88	1.50	1.50	0.00
Hold 9.00° Inc at 355.00° Azm									
5,700.00	9.00	355.00	5,696.30	62.43	-5.46	-62.48	0.00	0.00	0.00
5,800.00	9.00	355.00	5,795.07	78.02	-6.83	-78.07	0.00	0.00	0.00
5,900.00	9.00	355.00	5,893.84	93.60	-8.19	-93.67	0.00	0.00	0.00
6,000.00	9.00	355.00	5,992.61	109.18	-9.55	-109.26	0.00	0.00	0.00
6,100.00	9.00	355.00	6,091.38	124.77	-10.92	-124.86	0.00	0.00	0.00
6,200.00	9.00	355.00	6,190.15	140.35	-12.28	-140.45	0.00	0.00	0.00
6,300.00	9.00	355.00	6,288.92	155.94	-13.64	-156.05	0.00	0.00	0.00
6,400.00	9.00	355.00	6,387.69	171.52	-15.01	-171.64	0.00	0.00	0.00
6,500.00	9.00	355.00	6,486.46	187.10	-16.37	-187.24	0.00	0.00	0.00
6,600.00	9.00	355.00	6,585.22	202.69	-17.73	-202.83	0.00	0.00	0.00
6,700.00	9.00	355.00	6,683.99	218.27	-19.10	-218.43	0.00	0.00	0.00
6,800.00	9.00	355.00	6,782.76	233.86	-20.46	-234.02	0.00	0.00	0.00
6,900.00	9.00	355.00	6,881.53	249.44	-21.82	-249.62	0.00	0.00	0.00
7,000.00	9.00	355.00	6,980.30	265.02	-23.19	-265.21	0.00	0.00	0.00
7,100.00	9.00	355.00	7,079.07	280.61	-24.55	-280.81	0.00	0.00	0.00
7,200.00	9.00	355.00	7,177.84	296.19	-25.91	-296.40	0.00	0.00	0.00
7,300.00	9.00	355.00	7,276.61	311.77	-27.28	-312.00	0.00	0.00	0.00
7,400.00	9.00	355.00	7,375.37	327.36	-28.64	-327.59	0.00	0.00	0.00
7,500.00	9.00	355.00	7,474.14	342.94	-30.00	-343.19	0.00	0.00	0.00
7,600.00	9.00	355.00	7,572.91	358.53	-31.37	-358.78	0.00	0.00	0.00
7,700.00	9.00	355.00	7,671.68	374.11	-32.73	-374.38	0.00	0.00	0.00
7,800.00	9.00	355.00	7,770.45	389.69	-34.09	-389.97	0.00	0.00	0.00
7,900.00	9.00	355.00	7,869.22	405.28	-35.46	-405.57	0.00	0.00	0.00
8,000.00	9.00	355.00	7,967.99	420.86	-36.82	-421.16	0.00	0.00	0.00
8,100.00	9.00	355.00	8,066.76	436.45	-38.18	-436.76	0.00	0.00	0.00
8,200.00	9.00	355.00	8,165.53	452.03	-39.55	-452.35	0.00	0.00	0.00
8,300.00	9.00	355.00	8,264.29	467.61	-40.91	-467.95	0.00	0.00	0.00
8,400.00	9.00	355.00	8,363.06	483.20	-42.27	-483.54	0.00	0.00	0.00
8,500.00	9.00	355.00	8,461.83	498.78	-43.64	-499.14	0.00	0.00	0.00
8,600.00	9.00	355.00	8,560.60	514.37	-45.00	-514.73	0.00	0.00	0.00
8,700.00	9.00	355.00	8,659.37	529.95	-46.36	-530.33	0.00	0.00	0.00
8,800.00	9.00	355.00	8,758.14	545.53	-47.73	-545.92	0.00	0.00	0.00
8,900.00	9.00	355.00	8,856.91	561.12	-49.09	-561.52	0.00	0.00	0.00
9,000.00	9.00	355.00	8,955.68	576.70	-50.45	-577.11	0.00	0.00	0.00
9,100.00	9.00	355.00	9,054.45	592.29	-51.82	-592.71	0.00	0.00	0.00
9,200.00	9.00	355.00	9,153.21	607.87	-53.18	-608.30	0.00	0.00	0.00
9,300.00	9.00	355.00	9,251.98	623.45	-54.55	-623.90	0.00	0.00	0.00
9,400.00	9.00	355.00	9,350.75	639.04	-55.91	-639.49	0.00	0.00	0.00
9,500.00	9.00	355.00	9,449.52	654.62	-57.27	-655.09	0.00	0.00	0.00
9,600.00	9.00	355.00	9,548.29	670.20	-58.64	-670.68	0.00	0.00	0.00
9,700.00	9.00	355.00	9,647.06	685.79	-60.00	-686.28	0.00	0.00	0.00
9,800.00	9.00	355.00	9,745.83	701.37	-61.36	-701.87	0.00	0.00	0.00
9,900.00	9.00	355.00	9,844.60	716.96	-62.73	-717.47	0.00	0.00	0.00



Planning Report



Database:	USA Compass	Local Co-ordinate Reference:	Well 201H
Company:	Titus Oil & Gas Production, LLC	TVD Reference:	RKB @ 3211.00usft (Est KB)
Project:	Lea County, NM - (NAD83 NME)	MD Reference:	RKB @ 3211.00usft (Est KB)
Site:	Los Vaqueros Fed	North Reference:	Grid
Well:	201H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan 1 07-06-21		

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)	
9,964.20	9.00	355.00	9,908.00	726.96	-63.60	-727.48	0.00	0.00	0.00	
Begin 1.50°/100' Drop										
10,000.00	8.46	355.00	9,943.39	732.38	-64.07	-732.90	1.50	-1.50	0.00	
10,100.00	6.96	355.00	10,042.48	745.74	-65.24	-746.28	1.50	-1.50	0.00	
10,200.00	5.46	355.00	10,141.89	756.53	-66.19	-757.06	1.50	-1.50	0.00	
10,300.00	3.96	355.00	10,241.55	764.71	-66.90	-765.25	1.50	-1.50	0.00	
10,400.00	2.46	355.00	10,341.39	770.29	-67.39	-770.84	1.50	-1.50	0.00	
10,500.00	0.96	355.00	10,441.34	773.27	-67.65	-773.82	1.50	-1.50	0.00	
10,564.20	0.00	0.00	10,505.54	773.81	-67.70	-774.36	1.50	-1.50	7.79	
Begin Vertical Hold										
10,600.00	0.00	0.00	10,541.34	773.81	-67.70	-774.36	0.00	0.00	0.00	
10,664.20	0.00	0.00	10,605.54	773.81	-67.70	-774.36	0.00	0.00	0.00	
KOP2, Begin 12.00°/100' Build										
10,700.00	4.30	189.20	10,641.31	772.48	-67.91	-773.04	12.00	12.00	-477.03	
10,800.00	16.30	189.20	10,739.52	754.87	-70.77	-755.45	12.00	12.00	0.00	
10,900.00	28.30	189.20	10,831.87	717.49	-76.82	-718.12	12.00	12.00	0.00	
11,000.00	40.30	189.20	10,914.33	661.97	-85.81	-662.68	12.00	12.00	0.00	
11,100.00	52.30	189.20	10,983.30	590.73	-97.35	-591.55	12.00	12.00	0.00	
11,200.00	64.30	189.20	11,035.76	506.90	-110.93	-507.83	12.00	12.00	0.00	
11,300.00	76.30	189.20	11,069.41	414.14	-125.95	-415.20	12.00	12.00	0.00	
11,400.00	88.30	189.20	11,082.79	316.50	-141.77	-317.70	12.00	12.00	0.00	
11,417.61	90.41	189.20	11,082.99	299.11	-144.58	-300.34	12.00	12.00	0.00	
LP, Hold 90.41° Inc, Begin 4.00°/100' Turn										
11,500.00	90.41	185.90	11,082.40	217.45	-155.41	-218.77	4.00	0.00	-4.00	
11,600.00	90.41	181.90	11,081.68	117.71	-162.22	-119.09	4.00	0.00	-4.00	
11,659.79	90.41	179.51	11,081.24	57.93	-162.96	-59.32	4.00	0.00	-4.00	
Hold 179.51° Azm										
11,700.00	90.41	179.51	11,080.95	17.72	-162.61	-19.11	0.00	0.00	0.00	
11,800.00	90.41	179.51	11,080.23	-82.27	-161.76	80.89	0.00	0.00	0.00	
11,900.00	90.41	179.51	11,079.51	-182.27	-160.91	180.88	0.00	0.00	0.00	
12,000.00	90.41	179.51	11,078.79	-282.26	-160.06	280.88	0.00	0.00	0.00	
12,100.00	90.41	179.51	11,078.07	-382.25	-159.21	380.88	0.00	0.00	0.00	
12,200.00	90.41	179.51	11,077.35	-482.25	-158.36	480.88	0.00	0.00	0.00	
12,300.00	90.41	179.51	11,076.63	-582.24	-157.51	580.87	0.00	0.00	0.00	
12,400.00	90.41	179.51	11,075.91	-682.24	-156.66	680.87	0.00	0.00	0.00	
12,500.00	90.41	179.51	11,075.19	-782.23	-155.81	780.87	0.00	0.00	0.00	
12,600.00	90.41	179.51	11,074.46	-882.22	-154.96	880.87	0.00	0.00	0.00	
12,700.00	90.41	179.51	11,073.74	-982.22	-154.11	980.86	0.00	0.00	0.00	
12,800.00	90.41	179.51	11,073.02	-1,082.21	-153.26	1,080.86	0.00	0.00	0.00	
12,900.00	90.41	179.51	11,072.30	-1,182.20	-152.41	1,180.86	0.00	0.00	0.00	
13,000.00	90.41	179.51	11,071.58	-1,282.20	-151.56	1,280.86	0.00	0.00	0.00	
13,100.00	90.41	179.51	11,070.86	-1,382.19	-150.71	1,380.85	0.00	0.00	0.00	
13,200.00	90.41	179.51	11,070.14	-1,482.19	-149.86	1,480.85	0.00	0.00	0.00	
13,300.00	90.41	179.51	11,069.42	-1,582.18	-149.01	1,580.85	0.00	0.00	0.00	
13,400.00	90.41	179.51	11,068.69	-1,682.17	-148.16	1,680.85	0.00	0.00	0.00	
13,500.00	90.41	179.51	11,067.97	-1,782.17	-147.30	1,780.84	0.00	0.00	0.00	
13,600.00	90.41	179.51	11,067.25	-1,882.16	-146.45	1,880.84	0.00	0.00	0.00	
13,700.00	90.41	179.51	11,066.53	-1,982.16	-145.60	1,980.84	0.00	0.00	0.00	
13,800.00	90.41	179.51	11,065.81	-2,082.15	-144.75	2,080.83	0.00	0.00	0.00	
13,900.00	90.41	179.51	11,065.09	-2,182.14	-143.90	2,180.83	0.00	0.00	0.00	
14,000.00	90.41	179.51	11,064.37	-2,282.14	-143.05	2,280.83	0.00	0.00	0.00	
14,100.00	90.41	179.51	11,063.65	-2,382.13	-142.20	2,380.83	0.00	0.00	0.00	
14,200.00	90.41	179.51	11,062.92	-2,482.12	-141.35	2,480.82	0.00	0.00	0.00	
14,300.00	90.41	179.51	11,062.20	-2,582.12	-140.50	2,580.82	0.00	0.00	0.00	



Planning Report



Database:	USA Compass	Local Co-ordinate Reference:	Well 201H
Company:	Titus Oil & Gas Production, LLC	TVD Reference:	RKB @ 3211.00usft (Est KB)
Project:	Lea County, NM - (NAD83 NME)	MD Reference:	RKB @ 3211.00usft (Est KB)
Site:	Los Vaqueros Fed	North Reference:	Grid
Well:	201H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan 1 07-06-21		

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)
14,400.00	90.41	179.51	11,061.48	-2,682.11	-139.65	2,680.82	0.00	0.00	0.00
14,500.00	90.41	179.51	11,060.76	-2,782.11	-138.80	2,780.82	0.00	0.00	0.00
14,600.00	90.41	179.51	11,060.04	-2,882.10	-137.95	2,880.81	0.00	0.00	0.00
14,700.00	90.41	179.51	11,059.32	-2,982.09	-137.10	2,980.81	0.00	0.00	0.00
14,800.00	90.41	179.51	11,058.60	-3,082.09	-136.25	3,080.81	0.00	0.00	0.00
14,900.00	90.41	179.51	11,057.88	-3,182.08	-135.40	3,180.81	0.00	0.00	0.00
15,000.00	90.41	179.51	11,057.16	-3,282.07	-134.55	3,280.80	0.00	0.00	0.00
15,100.00	90.41	179.51	11,056.43	-3,382.07	-133.70	3,380.80	0.00	0.00	0.00
15,200.00	90.41	179.51	11,055.71	-3,482.06	-132.85	3,480.80	0.00	0.00	0.00
15,300.00	90.41	179.51	11,054.99	-3,582.06	-131.99	3,580.80	0.00	0.00	0.00
15,400.00	90.41	179.51	11,054.27	-3,682.05	-131.14	3,680.79	0.00	0.00	0.00
15,500.00	90.41	179.51	11,053.55	-3,782.04	-130.29	3,780.79	0.00	0.00	0.00
15,600.00	90.41	179.51	11,052.83	-3,882.04	-129.44	3,880.79	0.00	0.00	0.00
15,700.00	90.41	179.51	11,052.11	-3,982.03	-128.59	3,980.79	0.00	0.00	0.00
15,800.00	90.41	179.51	11,051.39	-4,082.02	-127.74	4,080.78	0.00	0.00	0.00
15,900.00	90.41	179.51	11,050.66	-4,182.02	-126.89	4,180.78	0.00	0.00	0.00
16,000.00	90.41	179.51	11,049.94	-4,282.01	-126.04	4,280.78	0.00	0.00	0.00
16,100.00	90.41	179.51	11,049.22	-4,382.01	-125.19	4,380.77	0.00	0.00	0.00
16,200.00	90.41	179.51	11,048.50	-4,482.00	-124.34	4,480.77	0.00	0.00	0.00
16,300.00	90.41	179.51	11,047.78	-4,581.99	-123.49	4,580.77	0.00	0.00	0.00
16,400.00	90.41	179.51	11,047.06	-4,681.99	-122.64	4,680.77	0.00	0.00	0.00
16,500.00	90.41	179.51	11,046.34	-4,781.98	-121.79	4,780.76	0.00	0.00	0.00
16,600.00	90.41	179.51	11,045.62	-4,881.97	-120.94	4,880.76	0.00	0.00	0.00
16,700.00	90.41	179.51	11,044.90	-4,981.97	-120.09	4,980.76	0.00	0.00	0.00
16,800.00	90.41	179.51	11,044.17	-5,081.96	-119.24	5,080.76	0.00	0.00	0.00
16,900.00	90.41	179.51	11,043.45	-5,181.96	-118.39	5,180.75	0.00	0.00	0.00
17,000.00	90.41	179.51	11,042.73	-5,281.95	-117.54	5,280.75	0.00	0.00	0.00
17,100.00	90.41	179.51	11,042.01	-5,381.94	-116.68	5,380.75	0.00	0.00	0.00
17,200.00	90.41	179.51	11,041.29	-5,481.94	-115.83	5,480.75	0.00	0.00	0.00
17,300.00	90.41	179.51	11,040.57	-5,581.93	-114.98	5,580.74	0.00	0.00	0.00
17,400.00	90.41	179.51	11,039.85	-5,681.93	-114.13	5,680.74	0.00	0.00	0.00
17,500.00	90.41	179.51	11,039.13	-5,781.92	-113.28	5,780.74	0.00	0.00	0.00
17,600.00	90.41	179.51	11,038.40	-5,881.91	-112.43	5,880.74	0.00	0.00	0.00
17,700.00	90.41	179.51	11,037.68	-5,981.91	-111.58	5,980.73	0.00	0.00	0.00
17,800.00	90.41	179.51	11,036.96	-6,081.90	-110.73	6,080.73	0.00	0.00	0.00
17,900.00	90.41	179.51	11,036.24	-6,181.89	-109.88	6,180.73	0.00	0.00	0.00
18,000.00	90.41	179.51	11,035.52	-6,281.89	-109.03	6,280.73	0.00	0.00	0.00
18,100.00	90.41	179.51	11,034.80	-6,381.88	-108.18	6,380.72	0.00	0.00	0.00
18,200.00	90.41	179.51	11,034.08	-6,481.88	-107.33	6,480.72	0.00	0.00	0.00
18,300.00	90.41	179.51	11,033.36	-6,581.87	-106.48	6,580.72	0.00	0.00	0.00
18,400.00	90.41	179.51	11,032.64	-6,681.86	-105.63	6,680.72	0.00	0.00	0.00
18,500.00	90.41	179.51	11,031.91	-6,781.86	-104.78	6,780.71	0.00	0.00	0.00
18,600.00	90.41	179.51	11,031.19	-6,881.85	-103.93	6,880.71	0.00	0.00	0.00
18,700.00	90.41	179.51	11,030.47	-6,981.84	-103.08	6,980.71	0.00	0.00	0.00
18,800.00	90.41	179.51	11,029.75	-7,081.84	-102.23	7,080.70	0.00	0.00	0.00
18,900.00	90.41	179.51	11,029.03	-7,181.83	-101.37	7,180.70	0.00	0.00	0.00
18,904.07	90.41	179.51	11,029.00	-7,185.90	-101.34	7,184.77	0.00	0.00	0.00
TD at 18904.07									



Planning Report



Database:	USA Compass	Local Co-ordinate Reference:	Well 201H
Company:	Titus Oil & Gas Production, LLC	TVD Reference:	RKB @ 3211.00usft (Est KB)
Project:	Lea County, NM - (NAD83 NME)	MD Reference:	RKB @ 3211.00usft (Est KB)
Site:	Los Vaqueros Fed	North Reference:	Grid
Well:	201H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan 1 07-06-21		

Design Targets									
Target Name									
- hit/miss target	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- Shape	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)		
BHL - Los Vaqueros Fed	-0.41	179.51	11,029.00	-7,185.90	-101.34	365,065.98	826,307.95	32° 0' 1.137347 N 103° 24' 50.589727 W	
- plan hits target center									
- Rectangle (sides W100.00 H7,632.13 D0.00)									
LTP - Los Vaqueros Fed	0.00	0.00	11,029.00	-7,095.90	-102.10	365,155.98	826,307.19	32° 0' 2.027974 N 103° 24' 50.589666 W	
- plan misses target center by 0.65usft at 18814.07usft MD (11029.65 TVD, -7095.90 N, -102.11 E)									
- Point									
FTP - Los Vaqueros Fed	0.00	0.00	11,084.00	445.95	-166.73	372,697.83	826,242.56	32° 1' 16.660927 N 103° 24' 50.595264 W	
- plan misses target center by 49.78usft at 11281.46usft MD (11064.67 TVD, 431.83 N, -123.09 E)									
- Point									

Casing Points					
Measured Depth	Vertical Depth			Casing Diameter	Hole Diameter
(usft)	(usft)	Name		(")	(")
18,904.07	11,029.00	20" Casing		20	24

Plan Annotations					
Measured Depth	Vertical Depth	Local Coordinates			
(usft)	(usft)	+N/-S	+E/-W	Comment	
(usft)	(usft)	(usft)	(usft)		
5,000.00	5,000.00	0.00	0.00	KOP, Begin 1.50°/100' Build	
5,600.00	5,597.54	46.85	-4.10	Hold 9.00° Inc at 355.00° Azm	
9,964.20	9,908.00	726.96	-63.60	Begin 1.50°/100' Drop	
10,564.20	10,505.54	773.81	-67.70	Begin Vertical Hold	
10,664.20	10,605.54	773.81	-67.70	KOP2, Begin 12.00°/100' Build	
11,417.61	11,082.99	299.11	-144.58	LP, Hold 90.41° Inc, Begin 4.00°/100' Turn	
11,659.79	11,081.24	57.93	-162.96	Hold 179.51° Azm	
18,904.07	11,029.00	-7,185.90	-101.34	TD at 18904.07	



Titus Oil & Gas Production, LLC

**Lea County, NM - (NAD83 NME)
Los Vaqueros Fed
201H**

**OH
Plan 1 07-06-21**

Anticollision Report

06 July, 2021





Anticollision Report



Company:	Titus Oil & Gas Production, LLC	Local Co-ordinate Reference:	Well 201H
Project:	Lea County, NM - (NAD83 NME)	TVD Reference:	RKB @ 3211.00usft (Est KB)
Reference Site:	Los Vaqueros Fed	MD Reference:	RKB @ 3211.00usft (Est KB)
Site Error:	1.00 usft	North Reference:	Grid
Reference Well:	201H	Survey Calculation Method:	Minimum Curvature
Well Error:	1.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA Compass
Reference Design:	Plan 1 07-06-21	Offset TVD Reference:	Reference Datum

Reference	Plan 1 07-06-21		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	MD Interval 100.00usft	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum centre distance of 50,000.00usft	Error Surface:	Pedal Curve
Warning Levels Evaluated at:	2.00 Sigma	Casing Method:	Not applied

Survey Tool Program	Date	7/6/2021		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.00	18,903.08	Plan 1 07-06-21 (OH)	MWD+HRGM	OWSG MWD + HRGM

Summary						
Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
Los Vaqueros Fed						
321H - OH - Plan 1	2,500.00	2,500.00	30.14	17.48	2.381 CC	
321H - OH - Plan 1	2,600.00	2,599.97	30.18	17.24	2.333 ES	
321H - OH - Plan 1	2,700.00	2,699.80	30.65	17.42	2.318 SF	
431H - OH - Plan 1	2,500.00	2,499.00	90.12	77.46	7.120 CC, ES	
431H - OH - Plan 1	2,700.00	2,696.96	92.30	79.04	6.963 SF	
511H - OH - Plan 1	2,500.00	2,500.00	59.97	47.31	4.737 CC	
511H - OH - Plan 1	2,600.00	2,599.88	60.06	47.13	4.642 ES	
511H - OH - Plan 1	2,800.00	2,799.10	61.80	48.29	4.574 SF	
Los Vaqueros Fed Offsets						
Madera 19 Fed Com 26-35-19 WB 5H - OH - Surveys	10,800.00	10,787.51	860.91	819.81	20.950 SF	
Madera 19 Fed Com 26-35-19 WB 5H - OH - Surveys	10,813.21	10,797.83	860.87	819.81	20.965 CC, ES	
Madera 19 WA Fed Com 2H - OH - Surveys	11,046.96	11,032.78	86.02	43.22	2.010 CC, ES	
Madera 19 WA Fed Com 2H - OH - Surveys	11,100.00	11,066.94	95.05	46.49	1.957 SF	
Madera 19 WA Fed Com 2H - ST01 - Surveys	11,046.96	11,032.78	86.02	43.22	2.010 CC, ES	
Madera 19 WA Fed Com 2H - ST01 - Surveys	11,100.00	11,066.94	95.05	46.49	1.957 SF	
Madera 19 WXY Fed Com 6H - OH - Surveys	8,396.57	8,378.99	745.02	712.53	22.936 CC	
Madera 19 WXY Fed Com 6H - OH - Surveys	8,400.00	8,382.15	745.02	712.52	22.927 ES	
Madera 19 WXY Fed Com 6H - OH - Surveys	10,700.00	10,671.95	802.68	760.35	18.960 SF	
Madera Federal 30-1 - OH - Surveys	14,479.55	11,045.63	790.08	724.15	11.984 CC, ES	
Madera Federal 30-1 - OH - Surveys	14,500.00	11,045.50	790.35	724.23	11.953 SF	
Madera 19 TB Fed 1H - OH - Surveys	9,422.77	9,434.10	232.46	195.93	6.363 CC	
Madera 19 TB Fed 1H - OH - Surveys	9,500.00	9,510.57	232.79	195.85	6.302 ES	
Madera 19 TB Fed 1H - OH - Surveys	10,100.00	10,102.41	254.46	212.24	6.027 SF	

Offset Design:		Los Vaqueros Fed - 321H - OH - Plan 1											Offset Site Error:		1.00 usft
Survey Program:		0-MWD+HRGM											Offset Well Error:		1.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Rule Assigned:			Separation Factor	Warning		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)				
0.00	0.00	0.00	0.00	1.00	1.00	89.41	0.31	30.14	30.14						
100.00	100.00	100.00	100.00	1.09	1.09	89.41	0.31	30.14	30.14	27.96	2.19	13.785			
200.00	200.00	200.00	200.00	1.61	1.61	89.41	0.31	30.14	30.14	26.92	3.22	9.370			
300.00	300.00	300.00	300.00	2.02	2.02	89.41	0.31	30.14	30.14	26.11	4.03	7.470			
400.00	400.00	400.00	400.00	2.36	2.36	89.41	0.31	30.14	30.14	25.42	4.72	6.388			

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Anticollision Report



Company:	Titus Oil & Gas Production, LLC	Local Co-ordinate Reference:	Well 201H
Project:	Lea County, NM - (NAD83 NME)	TVD Reference:	RKB @ 3211.00usft (Est KB)
Reference Site:	Los Vaqueros Fed	MD Reference:	RKB @ 3211.00usft (Est KB)
Site Error:	1.00 usft	North Reference:	Grid
Reference Well:	201H	Survey Calculation Method:	Minimum Curvature
Well Error:	1.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA Compass
Reference Design:	Plan 1 07-06-21	Offset TVD Reference:	Reference Datum

Offset Design: Los Vaqueros Fed - 321H - OH - Plan 1													Offset Site Error: 1.00 usft
Survey Program: 0-MWD+HRGM													Offset Well Error: 1.00 usft
Reference	Offset	Semi Major Axis		Distance		Rule Assigned:		Warning					
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
500.00	500.00	500.00	500.00	2.66	2.66	89.41	0.31	30.14	30.14	24.82	5.32	5.665	
524.13	524.13	524.13	524.13	2.73	2.73	89.41	0.31	30.14	30.14	24.69	5.45	5.530	
600.00	600.00	600.00	600.00	2.93	2.93	89.41	0.31	30.14	30.14	24.28	5.86	5.139	
633.33	633.33	633.33	633.33	3.02	3.02	89.41	0.31	30.14	30.14	24.11	6.03	4.997	
700.00	700.00	700.00	700.00	3.18	3.18	89.41	0.31	30.14	30.14	23.77	6.37	4.734	
800.00	800.00	800.00	800.00	3.42	3.42	89.41	0.31	30.14	30.14	23.30	6.84	4.409	
900.00	900.00	900.00	900.00	3.64	3.64	89.41	0.31	30.14	30.14	22.86	7.28	4.141	
1,000.00	1,000.00	1,000.00	1,000.00	3.85	3.85	89.41	0.31	30.14	30.14	22.44	7.70	3.914	
1,100.00	1,100.00	1,100.00	1,100.00	4.05	4.05	89.41	0.31	30.14	30.14	22.04	8.10	3.720	
1,200.00	1,200.00	1,200.00	1,200.00	4.24	4.24	89.41	0.31	30.14	30.14	21.65	8.49	3.551	
1,300.00	1,300.00	1,300.00	1,300.00	4.43	4.43	89.41	0.31	30.14	30.14	21.28	8.86	3.401	
1,400.00	1,400.00	1,400.00	1,400.00	4.61	4.61	89.41	0.31	30.14	30.14	20.92	9.22	3.268	
1,500.00	1,500.00	1,500.00	1,500.00	4.79	4.79	89.41	0.31	30.14	30.14	20.57	9.57	3.149	
1,600.00	1,600.00	1,600.00	1,600.00	4.96	4.96	89.41	0.31	30.14	30.14	20.23	9.91	3.041	
1,700.00	1,700.00	1,700.00	1,700.00	5.12	5.12	89.41	0.31	30.14	30.14	19.90	10.24	2.943	
1,800.00	1,800.00	1,800.00	1,800.00	5.28	5.28	89.41	0.31	30.14	30.14	19.57	10.57	2.852	
1,900.00	1,900.00	1,900.00	1,900.00	5.44	5.44	89.41	0.31	30.14	30.14	19.26	10.88	2.770	
2,000.00	2,000.00	2,000.00	2,000.00	5.60	5.60	89.41	0.31	30.14	30.14	18.95	11.19	2.693	
2,100.00	2,100.00	2,100.00	2,100.00	5.75	5.75	89.41	0.31	30.14	30.14	18.65	11.50	2.622	
2,200.00	2,200.00	2,200.00	2,200.00	5.90	5.90	89.41	0.31	30.14	30.14	18.35	11.79	2.556	
2,300.00	2,300.00	2,300.00	2,300.00	6.04	6.04	89.41	0.31	30.14	30.14	18.05	12.09	2.494	
2,400.00	2,400.00	2,400.00	2,400.00	6.19	6.19	89.41	0.31	30.14	30.14	17.77	12.38	2.436	
2,500.00	2,500.00	2,500.00	2,500.00	6.33	6.33	89.41	0.31	30.14	30.14	17.48	12.66	2.381 CC	
2,501.89	2,501.89	2,501.89	2,501.89	6.33	6.33	89.41	0.31	30.14	30.14	17.48	12.66	2.380	
2,600.00	2,600.00	2,599.97	2,599.96	6.47	6.55	86.93	1.62	30.14	30.18	17.24	12.94	2.333 ES	
2,700.00	2,700.00	2,699.80	2,699.71	6.61	6.90	79.60	5.53	30.14	30.65	17.42	13.22	2.318 SF	
2,800.00	2,800.00	2,799.36	2,799.05	6.74	7.24	68.23	12.03	30.14	32.47	18.92	13.55	2.396	
2,900.00	2,900.00	2,898.52	2,897.79	6.88	7.60	55.03	21.08	30.14	36.85	22.86	13.98	2.635	
3,000.00	3,000.00	2,997.39	2,996.00	7.01	7.80	42.82	32.53	30.14	44.53	30.12	14.40	3.092	
3,100.00	3,100.00	3,096.65	3,094.52	7.14	7.99	34.03	44.63	30.14	54.13	39.31	14.82	3.653	
3,200.00	3,200.00	3,195.90	3,193.03	7.27	8.22	27.98	56.73	30.14	64.62	49.39	15.23	4.242	
3,300.00	3,300.00	3,295.15	3,291.54	7.40	8.45	23.65	68.84	30.14	75.62	59.98	15.64	4.835	
3,400.00	3,400.00	3,394.41	3,390.06	7.53	8.70	20.42	80.94	30.14	86.94	70.89	16.05	5.417	
3,500.00	3,500.00	3,493.66	3,488.57	7.65	8.97	17.95	93.04	30.14	98.47	82.01	16.46	5.983	
3,600.00	3,600.00	3,592.92	3,587.08	7.78	9.24	15.99	105.15	30.14	110.14	93.26	16.88	6.527	
3,700.00	3,700.00	3,692.17	3,685.60	7.90	9.53	14.42	117.25	30.14	121.91	104.62	17.30	7.048	
3,800.00	3,800.00	3,791.42	3,784.11	8.02	9.82	13.12	129.35	30.14	133.76	116.04	17.73	7.546	
3,900.00	3,900.00	3,890.68	3,882.62	8.14	10.12	12.03	141.45	30.14	145.67	127.51	18.16	8.021	
4,000.00	4,000.00	3,989.93	3,981.13	8.26	10.43	11.10	153.56	30.14	157.62	139.02	18.60	8.473	
4,100.00	4,100.00	4,089.18	4,079.65	8.38	10.75	10.31	165.66	30.14	169.61	150.56	19.05	8.904	
4,200.00	4,200.00	4,188.44	4,178.16	8.50	11.08	9.62	177.76	30.14	181.62	162.12	19.50	9.314	
4,300.00	4,300.00	4,287.69	4,276.67	8.62	11.41	9.02	189.87	30.14	193.65	173.70	19.95	9.705	
4,400.00	4,400.00	4,386.95	4,375.19	8.74	11.74	8.49	201.97	30.14	205.71	185.29	20.41	10.077	
4,500.00	4,500.00	4,486.20	4,473.70	8.85	12.09	8.01	214.07	30.14	217.78	196.90	20.88	10.431	
4,600.00	4,600.00	4,585.45	4,572.21	8.97	12.43	7.59	226.18	30.14	229.86	208.51	21.35	10.769	
4,700.00	4,700.00	4,684.71	4,670.73	9.08	12.78	7.21	238.28	30.14	241.95	220.14	21.82	11.091	
4,800.00	4,800.00	4,783.96	4,769.24	9.20	13.14	6.86	250.38	30.14	254.06	231.77	22.29	11.398	
4,900.00	4,900.00	4,883.21	4,867.75	9.31	13.49	6.55	262.48	30.14	266.17	243.40	22.77	11.691	
5,000.00	5,000.00	4,982.47	4,966.27	9.42	13.85	6.26	274.59	30.14	278.29	255.04	23.25	11.972	
5,100.00	5,099.99	5,081.87	5,064.93	9.59	14.22	11.02	286.71	30.14	289.14	265.36	23.78	12.160	
5,200.00	5,199.91	5,181.52	5,163.83	9.85	14.59	10.89	298.86	30.14	297.43	273.03	24.40	12.189	
5,300.00	5,299.69	5,281.35	5,262.92	10.11	14.96	10.87	311.03	30.14	303.16	278.13	25.03	12.110	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Anticollision Report



Company:	Titus Oil & Gas Production, LLC	Local Co-ordinate Reference:	Well 201H
Project:	Lea County, NM - (NAD83 NME)	TVD Reference:	RKB @ 3211.00usft (Est KB)
Reference Site:	Los Vaqueros Fed	MD Reference:	RKB @ 3211.00usft (Est KB)
Site Error:	1.00 usft	North Reference:	Grid
Reference Well:	201H	Survey Calculation Method:	Minimum Curvature
Well Error:	1.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA Compass
Reference Design:	Plan 1 07-06-21	Offset TVD Reference:	Reference Datum

Offset Design: Los Vaqueros Fed - 321H - OH - Plan 1													Offset Site Error:	1.00 usft
Survey Program:		0-MWD+HRGM						Rule Assigned:					Offset Well Error:	1.00 usft
Reference	Offset	Semi Major Axis		Offset Wellbore Centre		Distance				Warning				
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
5,400.00	5,399.27	5,381.30	5,362.12	10.38	15.33	10.95	323.22	30.14	306.32	280.64	25.68	11.930		
5,500.00	5,498.57	5,481.29	5,461.37	10.67	15.71	11.13	335.41	30.14	306.91	280.58	26.33	11.656		
5,600.00	5,597.54	5,581.26	5,560.59	10.96	16.09	11.42	347.60	30.14	304.94	277.95	27.00	11.296		
5,700.00	5,696.30	5,681.19	5,659.77	11.19	16.47	11.75	359.79	30.14	301.70	274.10	27.60	10.931		
5,800.00	5,795.07	5,781.12	5,758.96	11.39	16.85	12.08	371.97	30.14	298.47	270.29	28.17	10.594		
5,900.00	5,893.84	5,881.05	5,858.15	11.60	17.24	12.43	384.16	30.14	295.24	266.48	28.76	10.266		
6,000.00	5,992.61	5,980.99	5,957.33	11.83	17.63	12.78	396.35	30.14	292.03	262.67	29.36	9.946		
6,100.00	6,091.38	6,080.92	6,056.52	12.06	18.01	13.14	408.53	30.14	288.83	258.86	29.97	9.637		
6,200.00	6,190.15	6,180.85	6,155.70	12.31	18.40	13.51	420.72	30.14	285.64	255.05	30.59	9.336		
6,300.00	6,288.92	6,280.78	6,254.89	12.57	18.79	13.89	432.90	30.14	282.46	251.24	31.23	9.045		
6,400.00	6,387.69	6,380.71	6,354.08	12.84	19.19	14.27	445.09	30.14	279.30	247.43	31.87	8.764		
6,500.00	6,486.46	6,480.65	6,453.26	13.12	19.58	14.67	457.27	30.14	276.15	243.63	32.52	8.492		
6,600.00	6,585.22	6,580.58	6,552.45	13.41	19.97	15.07	469.46	30.14	273.01	239.83	33.17	8.230		
6,700.00	6,683.99	6,680.51	6,651.64	13.71	20.37	15.48	481.65	30.14	269.88	236.05	33.84	7.976		
6,800.00	6,782.76	6,780.44	6,750.82	14.01	20.76	15.90	493.83	30.14	266.77	232.27	34.50	7.732		
6,900.00	6,881.53	6,880.37	6,850.01	14.33	21.16	16.34	506.02	30.14	263.68	228.50	35.18	7.496		
7,000.00	6,980.30	6,980.31	6,949.19	14.65	21.56	16.78	518.20	30.14	260.60	224.74	35.85	7.269		
7,100.00	7,079.07	7,080.24	7,048.38	14.97	21.96	17.23	530.39	30.14	257.53	221.00	36.53	7.050		
7,200.00	7,177.84	7,180.17	7,147.57	15.30	22.36	17.69	542.57	30.14	254.48	217.27	37.21	6.839		
7,300.00	7,276.61	7,280.10	7,246.75	15.64	22.76	18.17	554.76	30.14	251.45	213.56	37.89	6.636		
7,400.00	7,375.37	7,380.03	7,345.94	15.99	23.16	18.66	566.94	30.14	248.44	209.86	38.58	6.440		
7,500.00	7,474.14	7,479.97	7,445.13	16.33	23.56	19.15	579.13	30.14	245.45	206.19	39.26	6.252		
7,600.00	7,572.91	7,579.90	7,544.31	16.69	23.97	19.67	591.32	30.14	242.47	202.53	39.94	6.070		
7,700.00	7,671.68	7,679.83	7,643.50	17.04	24.37	20.19	603.50	30.14	239.51	198.89	40.62	5.896		
7,800.00	7,770.45	7,779.76	7,742.69	17.41	24.77	20.73	615.69	30.14	236.58	195.28	41.30	5.728		
7,900.00	7,869.22	7,879.70	7,841.87	17.77	25.18	21.27	627.87	30.14	233.66	191.69	41.98	5.566		
8,000.00	7,967.99	7,979.63	7,941.06	18.14	25.58	21.84	640.06	30.14	230.77	188.12	42.65	5.411		
8,100.00	8,066.76	8,079.56	8,040.24	18.51	25.99	22.42	652.24	30.14	227.90	184.59	43.32	5.262		
8,200.00	8,165.53	8,179.49	8,139.43	18.89	26.39	23.01	664.43	30.14	225.06	181.08	43.98	5.118		
8,300.00	8,264.29	8,279.42	8,238.62	19.27	26.80	23.62	676.62	30.14	222.24	177.61	44.63	4.979		
8,400.00	8,363.06	8,379.36	8,337.80	19.65	27.21	24.24	688.80	30.14	219.44	174.16	45.28	4.846		
8,500.00	8,461.83	8,479.29	8,436.99	20.03	27.61	24.88	700.99	30.14	216.67	170.75	45.92	4.719		
8,600.00	8,560.60	8,579.22	8,536.18	20.42	28.02	25.53	713.17	30.14	213.93	167.38	46.55	4.596		
8,700.00	8,659.37	8,679.15	8,635.36	20.81	28.43	26.21	725.36	30.14	211.22	164.05	47.17	4.478		
8,800.00	8,758.14	8,779.08	8,734.55	21.20	28.84	26.90	737.54	30.14	208.54	160.75	47.78	4.364		
8,900.00	8,856.91	8,879.02	8,833.74	21.60	29.25	27.60	749.73	30.14	205.89	157.50	48.38	4.255		
9,000.00	8,955.68	8,978.95	8,932.92	21.99	29.66	28.33	761.91	30.14	203.27	154.30	48.97	4.151		
9,100.00	9,054.45	9,078.88	9,032.11	22.39	30.07	29.08	774.10	30.14	200.68	151.14	49.54	4.051		
9,200.00	9,153.21	9,178.81	9,131.29	22.79	30.48	29.84	786.29	30.14	198.13	148.03	50.10	3.955		
9,300.00	9,251.98	9,278.74	9,230.48	23.19	30.89	30.62	798.47	30.14	195.62	144.97	50.64	3.863		
9,400.00	9,350.75	9,378.68	9,329.67	23.59	31.30	31.43	810.66	30.14	193.14	141.97	51.17	3.774		
9,500.00	9,449.52	9,478.61	9,428.85	24.00	31.71	32.25	822.84	30.14	190.70	139.02	51.68	3.690		
9,600.00	9,548.29	9,578.54	9,528.04	24.41	32.12	33.10	835.03	30.14	188.30	136.13	52.17	3.610		
9,700.00	9,647.06	9,678.47	9,627.23	24.81	32.53	33.97	847.21	30.14	185.95	133.31	52.64	3.533		
9,800.00	9,745.83	9,778.40	9,726.41	25.22	32.94	34.86	859.40	30.14	183.64	130.55	53.08	3.459		
9,900.00	9,844.60	9,878.34	9,825.60	25.63	33.35	35.77	871.59	30.14	181.37	127.86	53.51	3.390		
10,000.00	9,943.39	9,980.31	9,926.85	26.03	33.76	36.74	883.68	30.14	179.01	125.13	53.87	3.323		
10,100.00	10,042.48	10,084.32	10,030.38	26.45	34.19	37.74	893.58	30.14	176.35	122.14	54.21	3.253		
10,200.00	10,141.89	10,188.21	10,134.03	26.88	34.60	38.73	900.64	30.14	173.52	119.02	54.51	3.184		
10,300.00	10,241.55	10,291.99	10,237.72	27.29	34.98	39.71	904.89	30.14	170.53	115.83	54.70	3.117		
10,400.00	10,341.39	10,395.65	10,341.37	27.67	35.20	40.67	906.31	30.14	167.37	112.65	54.72	3.059		
10,500.00	10,441.34	10,495.62	10,441.34	28.00	35.23	41.32	906.31	30.14	165.11	110.38	54.74	3.016		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Anticollision Report



Company:	Titus Oil & Gas Production, LLC	Local Co-ordinate Reference:	Well 201H
Project:	Lea County, NM - (NAD83 NME)	TVD Reference:	RKB @ 3211.00usft (Est KB)
Reference Site:	Los Vaqueros Fed	MD Reference:	RKB @ 3211.00usft (Est KB)
Site Error:	1.00 usft	North Reference:	Grid
Reference Well:	201H	Survey Calculation Method:	Minimum Curvature
Well Error:	1.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA Compass
Reference Design:	Plan 1 07-06-21	Offset TVD Reference:	Reference Datum

Offset Design: Los Vaqueros Fed - 321H - OH - Plan 1													Offset Site Error:	1.00 usft
Survey Program:		0-MWD+HRGM					Rule Assigned:						Offset Well Error:	1.00 usft
Reference	Offset	Reference	Offset	Semi Major Axis		Offset Wellbore Centre		Distance				Warning		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
10,596.94	10,538.28	10,592.56	10,538.28	28.12	35.27	41.51	906.31	30.14	164.48	109.68	54.80	3.002		
10,600.00	10,541.34	10,595.62	10,541.34	28.12	35.27	36.44	906.31	30.14	164.71	109.88	54.83	3.004		
10,602.56	10,543.90	10,598.18	10,543.90	28.12	35.27	-152.76	906.31	30.14	164.71	109.88	54.83	3.004		
10,700.00	10,641.31	10,695.59	10,641.31	28.08	35.31	-152.90	906.31	30.14	165.90	110.97	54.94	3.020		
10,800.00	10,739.52	10,793.80	10,739.52	27.76	35.35	-154.63	906.31	30.14	181.98	126.27	55.71	3.267		
10,900.00	10,831.87	10,886.15	10,831.87	27.39	35.39	-157.18	906.31	30.14	217.01	160.10	56.92	3.813		
11,000.00	10,914.33	10,968.61	10,914.33	27.01	35.42	-159.16	906.31	30.14	270.46	212.51	57.95	4.667		
11,100.00	10,983.30	11,037.58	10,983.30	26.69	35.45	-159.62	906.31	30.14	340.36	281.71	58.64	5.804		
11,200.00	11,035.76	11,090.04	11,035.76	26.43	35.47	-157.36	906.31	30.14	423.59	364.52	59.06	7.172		
11,300.00	11,069.41	11,123.69	11,069.41	26.27	35.49	-148.07	906.31	30.14	516.33	456.99	59.34	8.701		
11,400.00	11,082.79	11,137.07	11,082.79	26.21	35.49	-103.52	906.31	30.14	614.36	554.79	59.57	10.314		
11,500.00	11,082.40	11,136.68	11,082.40	26.24	35.49	-87.45	906.31	30.14	713.41	653.60	59.80	11.929		
11,600.00	11,081.68	11,135.96	11,081.68	26.27	35.49	-88.02	906.31	30.14	811.72	751.65	60.08	13.512		
11,700.00	11,080.95	11,135.24	11,080.95	26.29	35.49	-88.17	906.31	30.14	909.26	848.92	60.34	15.070		
11,800.00	11,080.23	11,134.51	11,080.23	26.31	35.49	-87.96	906.31	30.14	1,007.04	946.50	60.54	16.634		
11,900.00	11,079.51	11,133.79	11,079.51	26.34	35.49	-87.76	906.31	30.14	1,105.22	1,044.52	60.70	18.208		
12,000.00	11,078.79	11,133.07	11,078.79	26.37	35.49	-87.55	906.31	30.14	1,203.69	1,142.87	60.83	19.789		
12,100.00	11,078.07	11,132.35	11,078.07	26.41	35.49	-87.35	906.31	30.14	1,302.40	1,241.47	60.93	21.375		
12,200.00	11,077.35	11,131.63	11,077.35	26.46	35.49	-87.14	906.31	30.14	1,401.29	1,340.28	61.02	22.965		
12,300.00	11,076.63	13,889.63	12,515.23	26.53	33.99	179.97	-588.84	-158.18	1,438.62	1,380.36	58.25	24.697		
12,400.00	11,075.91	13,989.63	12,514.77	26.61	34.02	179.97	-688.83	-157.32	1,438.88	1,379.82	59.06	24.365		
12,500.00	11,075.19	14,089.63	12,514.31	26.73	34.05	179.97	-788.83	-156.45	1,439.14	1,379.25	59.89	24.029		
12,600.00	11,074.46	14,189.63	12,513.85	26.89	34.09	179.97	-888.82	-155.59	1,439.40	1,378.65	60.76	23.692		
12,700.00	11,073.74	14,289.63	12,513.39	27.13	34.14	179.97	-988.82	-154.73	1,439.67	1,378.02	61.65	23.353		
12,800.00	11,073.02	14,389.63	12,512.94	27.50	34.20	179.97	-1,088.81	-153.87	1,439.93	1,377.36	62.57	23.014		
12,900.00	11,072.30	14,489.63	12,512.48	28.06	34.27	179.97	-1,188.81	-153.01	1,440.19	1,376.68	63.51	22.676		
13,000.00	11,071.58	14,589.63	12,512.02	28.80	34.36	179.97	-1,288.80	-152.15	1,440.46	1,375.97	64.48	22.339		
13,100.00	11,070.86	14,689.63	12,511.56	29.70	34.50	179.97	-1,388.80	-151.29	1,440.72	1,375.24	65.47	22.004		
13,200.00	11,070.14	14,789.63	12,511.10	30.72	34.71	179.98	-1,488.79	-150.42	1,440.98	1,374.49	66.49	21.672		
13,300.00	11,069.42	14,889.63	12,510.65	31.80	35.04	179.98	-1,588.79	-149.56	1,441.25	1,373.72	67.53	21.344		
13,400.00	11,068.69	14,989.63	12,510.19	32.94	35.59	179.98	-1,688.78	-148.70	1,441.51	1,372.93	68.58	21.019		
13,500.00	11,067.97	15,089.63	12,509.73	34.11	36.37	179.98	-1,788.78	-147.84	1,441.77	1,372.11	69.66	20.698		
13,600.00	11,067.25	15,189.62	12,509.27	35.31	37.33	179.98	-1,888.77	-146.98	1,442.03	1,371.28	70.75	20.381		
13,700.00	11,066.53	15,289.62	12,508.81	36.54	38.40	179.98	-1,988.77	-146.12	1,442.30	1,370.43	71.86	20.070		
13,800.00	11,065.81	15,389.62	12,508.35	37.79	39.55	179.98	-2,088.76	-145.25	1,442.56	1,369.57	72.99	19.763		
13,900.00	11,065.09	15,489.62	12,507.90	39.05	40.73	179.98	-2,188.76	-144.39	1,442.82	1,368.69	74.14	19.461		
14,000.00	11,064.37	15,589.62	12,507.44	40.32	41.94	179.98	-2,288.75	-143.53	1,443.09	1,367.79	75.30	19.165		
14,100.00	11,063.65	15,689.62	12,506.98	41.61	43.18	179.98	-2,388.75	-142.67	1,443.35	1,366.88	76.47	18.874		
14,200.00	11,062.92	15,789.62	12,506.52	42.91	44.44	179.98	-2,488.74	-141.81	1,443.61	1,365.95	77.66	18.589		
14,300.00	11,062.20	15,889.62	12,506.06	44.22	45.70	179.98	-2,588.74	-140.95	1,443.88	1,365.01	78.86	18.309		
14,400.00	11,061.48	15,989.62	12,505.61	45.53	46.99	179.98	-2,688.73	-140.09	1,444.14	1,364.06	80.08	18.035		
14,500.00	11,060.76	16,089.62	12,505.15	46.86	48.28	179.98	-2,788.73	-139.22	1,444.40	1,363.10	81.30	17.766		
14,600.00	11,060.04	16,189.62	12,504.69	48.19	49.58	179.98	-2,888.72	-138.36	1,444.66	1,362.12	82.54	17.502		
14,700.00	11,059.32	16,289.62	12,504.23	49.52	50.89	179.98	-2,988.72	-137.50	1,444.93	1,361.14	83.79	17.245		
14,800.00	11,058.60	16,389.62	12,503.77	50.87	52.21	179.98	-3,088.71	-136.64	1,445.19	1,360.14	85.05	16.992		
14,900.00	11,057.88	16,489.62	12,503.32	52.21	53.53	179.98	-3,188.71	-135.78	1,445.45	1,359.13	86.32	16.745		
15,000.00	11,057.16	16,589.62	12,502.86	53.57	54.86	179.98	-3,288.70	-134.92	1,445.72	1,358.12	87.60	16.504		
15,100.00	11,056.43	16,689.62	12,502.40	54.92	56.19	179.98	-3,388.70	-134.05	1,445.98	1,357.09	88.89	16.267		
15,200.00	11,055.71	16,789.62	12,501.94	56.29	57.54	179.98	-3,488.69	-133.19	1,446.24	1,356.06	90.19	16.036		
15,300.00	11,054.99	16,889.62	12,501.48	57.65	58.88	179.98	-3,588.69	-132.33	1,446.51	1,355.01	91.49	15.810		
15,400.00	11,054.27	16,989.62	12,501.02	59.02	60.23	179.98	-3,688.68	-131.47	1,446.77	1,353.96	92.81	15.589		
15,500.00	11,053.55	17,089.62	12,500.57	60.39	61.59	179.99	-3,788.68	-130.61	1,447.03	1,352.90	94.13	15.373		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Anticollision Report



Company:	Titus Oil & Gas Production, LLC	Local Co-ordinate Reference:	Well 201H
Project:	Lea County, NM - (NAD83 NME)	TVD Reference:	RKB @ 3211.00usft (Est KB)
Reference Site:	Los Vaqueros Fed	MD Reference:	RKB @ 3211.00usft (Est KB)
Site Error:	1.00 usft	North Reference:	Grid
Reference Well:	201H	Survey Calculation Method:	Minimum Curvature
Well Error:	1.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA Compass
Reference Design:	Plan 1 07-06-21	Offset TVD Reference:	Reference Datum

Offset Design: Los Vaqueros Fed - 321H - OH - Plan 1												Offset Site Error:	1.00 usft
Survey Program: 0-MWD+HRGM												Offset Well Error:	1.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
15,600.00	11,052.83	17,189.62	12,500.11	61.77	62.94	179.99	-3,888.67	-129.75	1,447.29	1,351.84	95.46	15.162	
15,700.00	11,052.11	17,289.62	12,499.65	63.14	64.30	179.99	-3,988.67	-128.89	1,447.56	1,350.76	96.79	14.955	
15,800.00	11,051.39	17,389.62	12,499.19	64.52	65.67	179.99	-4,088.66	-128.02	1,447.82	1,349.68	98.14	14.753	
15,900.00	11,050.66	17,489.62	12,498.73	65.91	67.04	179.99	-4,188.66	-127.16	1,448.08	1,348.60	99.49	14.555	
16,000.00	11,049.94	17,589.62	12,498.28	67.29	68.41	179.99	-4,288.65	-126.30	1,448.35	1,347.50	100.84	14.362	
16,100.00	11,049.22	17,689.62	12,497.82	68.68	69.78	179.99	-4,388.65	-125.44	1,448.61	1,346.40	102.21	14.173	
16,200.00	11,048.50	17,789.62	12,497.36	70.07	71.16	179.99	-4,488.64	-124.58	1,448.87	1,345.30	103.57	13.989	
16,300.00	11,047.78	17,889.62	12,496.90	71.46	72.53	179.99	-4,588.64	-123.72	1,449.14	1,344.19	104.95	13.808	
16,400.00	11,047.06	17,989.62	12,496.44	72.85	73.92	179.99	-4,688.63	-122.86	1,449.40	1,343.07	106.33	13.631	
16,500.00	11,046.34	18,089.61	12,495.98	74.24	75.30	179.99	-4,788.62	-121.99	1,449.66	1,341.95	107.71	13.459	
16,600.00	11,045.62	18,189.61	12,495.53	75.64	76.68	179.99	-4,888.62	-121.13	1,449.92	1,340.82	109.10	13.290	
16,700.00	11,044.90	18,289.61	12,495.07	77.04	78.07	179.99	-4,988.61	-120.27	1,450.19	1,339.69	110.50	13.124	
16,800.00	11,044.17	18,389.61	12,494.61	78.44	79.46	179.99	-5,088.61	-119.41	1,450.45	1,338.56	111.90	12.963	
16,900.00	11,043.45	18,489.61	12,494.15	79.84	80.85	179.99	-5,188.60	-118.55	1,450.71	1,337.41	113.30	12.804	
17,000.00	11,042.73	18,589.61	12,493.69	81.24	82.24	179.99	-5,288.60	-117.69	1,450.98	1,336.27	114.71	12.649	
17,100.00	11,042.01	18,689.61	12,493.24	82.64	83.63	179.99	-5,388.59	-116.82	1,451.24	1,335.12	116.12	12.498	
17,200.00	11,041.29	18,789.61	12,492.78	84.04	85.03	179.99	-5,488.59	-115.96	1,451.50	1,333.97	117.53	12.350	
17,300.00	11,040.57	18,889.61	12,492.32	85.45	86.42	179.99	-5,588.58	-115.10	1,451.77	1,332.81	118.95	12.204	
17,400.00	11,039.85	18,989.61	12,491.86	86.85	87.82	179.99	-5,688.58	-114.24	1,452.03	1,331.65	120.38	12.062	
17,500.00	11,039.13	19,089.61	12,491.40	88.26	89.22	179.99	-5,788.57	-113.38	1,452.29	1,330.49	121.80	11.923	
17,600.00	11,038.40	19,189.61	12,490.94	89.67	90.62	179.99	-5,888.57	-112.52	1,452.55	1,329.32	123.23	11.787	
17,700.00	11,037.68	19,289.61	12,490.49	91.08	92.02	179.99	-5,988.56	-111.66	1,452.82	1,328.15	124.67	11.653	
17,800.00	11,036.96	19,389.61	12,490.03	92.49	93.42	180.00	-6,088.56	-110.79	1,453.08	1,326.98	126.10	11.523	
17,900.00	11,036.24	19,489.61	12,489.57	93.90	94.82	180.00	-6,188.55	-109.93	1,453.34	1,325.80	127.54	11.395	
18,000.00	11,035.52	19,589.61	12,489.11	95.31	96.22	180.00	-6,288.55	-109.07	1,453.61	1,324.62	128.99	11.269	
18,100.00	11,034.80	19,689.61	12,488.65	96.72	97.63	180.00	-6,388.54	-108.21	1,453.87	1,323.44	130.43	11.146	
18,200.00	11,034.08	19,789.61	12,488.20	98.13	99.04	180.00	-6,488.54	-107.35	1,454.13	1,322.25	131.88	11.026	
18,300.00	11,033.36	19,889.61	12,487.74	99.54	100.44	180.00	-6,588.53	-106.49	1,454.40	1,321.06	133.33	10.908	
18,400.00	11,032.64	19,989.61	12,487.28	100.96	101.85	180.00	-6,688.53	-105.63	1,454.66	1,319.87	134.79	10.792	
18,500.00	11,031.91	20,089.61	12,486.82	102.37	103.26	180.00	-6,788.52	-104.76	1,454.92	1,318.68	136.25	10.679	
18,600.00	11,031.19	20,189.61	12,486.36	103.79	104.67	180.00	-6,888.52	-103.90	1,455.19	1,317.48	137.70	10.567	
18,700.00	11,030.47	20,289.61	12,485.90	105.20	106.07	180.00	-6,988.51	-103.04	1,455.45	1,316.28	139.17	10.458	
18,800.00	11,029.75	20,389.61	12,485.45	106.62	107.48	180.00	-7,088.51	-102.18	1,455.71	1,315.08	140.63	10.351	
18,900.00	11,029.03	20,487.00	12,485.00	108.03	108.86	180.00	-7,185.90	-101.34	1,455.98	1,314.00	141.98	10.255	
18,904.07	11,029.00	20,487.00	12,485.00	108.09	108.86	180.00	-7,185.90	-101.34	1,456.00	1,314.14	141.86	10.264	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Anticollision Report



Company:	Titus Oil & Gas Production, LLC	Local Co-ordinate Reference:	Well 201H
Project:	Lea County, NM - (NAD83 NME)	TVD Reference:	RKB @ 3211.00usft (Est KB)
Reference Site:	Los Vaqueros Fed	MD Reference:	RKB @ 3211.00usft (Est KB)
Site Error:	1.00 usft	North Reference:	Grid
Reference Well:	201H	Survey Calculation Method:	Minimum Curvature
Well Error:	1.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA Compass
Reference Design:	Plan 1 07-06-21	Offset TVD Reference:	Reference Datum

Offset Design: Los Vaqueros Fed - 431H - OH - Plan 1												Offset Site Error:	1.00 usft
Survey Program: 0-MWD+HRGM												Offset Well Error:	1.00 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
							+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
0.00	0.00	0.00	1.00	1.00	1.00	89.62	0.59	90.12	90.13				
100.00	100.00	99.00	100.00	1.09	1.09	89.62	0.59	90.12	90.12	87.94	2.18	41.249	
200.00	200.00	199.00	200.00	1.61	1.60	89.62	0.59	90.12	90.12	86.91	3.21	28.073	
300.00	300.00	299.00	300.00	2.02	2.01	89.62	0.59	90.12	90.12	86.09	4.03	22.360	
400.00	400.00	399.00	400.00	2.36	2.36	89.62	0.59	90.12	90.12	85.41	4.72	19.113	
500.00	500.00	499.00	500.00	2.66	2.66	89.62	0.59	90.12	90.12	84.80	5.32	16.949	
600.00	600.00	599.00	600.00	2.93	2.93	89.62	0.59	90.12	90.12	84.26	5.86	15.374	
700.00	700.00	699.00	700.00	3.18	3.18	89.62	0.59	90.12	90.12	83.76	6.36	14.159	
800.00	800.00	799.00	800.00	3.42	3.42	89.62	0.59	90.12	90.12	83.29	6.83	13.186	
900.00	900.00	899.00	900.00	3.64	3.64	89.62	0.59	90.12	90.12	82.84	7.28	12.384	
1,000.00	1,000.00	999.00	1,000.00	3.85	3.85	89.62	0.59	90.12	90.12	82.42	7.70	11.706	
1,100.00	1,100.00	1,099.00	1,100.00	4.05	4.05	89.62	0.59	90.12	90.12	82.02	8.10	11.125	
1,200.00	1,200.00	1,199.00	1,200.00	4.24	4.24	89.62	0.59	90.12	90.12	81.63	8.49	10.618	
1,300.00	1,300.00	1,299.00	1,300.00	4.43	4.43	89.62	0.59	90.12	90.12	81.26	8.86	10.172	
1,400.00	1,400.00	1,399.00	1,400.00	4.61	4.61	89.62	0.59	90.12	90.12	80.90	9.22	9.774	
1,500.00	1,500.00	1,499.00	1,500.00	4.79	4.78	89.62	0.59	90.12	90.12	80.55	9.57	9.417	
1,600.00	1,600.00	1,599.00	1,600.00	4.96	4.95	89.62	0.59	90.12	90.12	80.21	9.91	9.094	
1,700.00	1,700.00	1,699.00	1,700.00	5.12	5.12	89.62	0.59	90.12	90.12	79.88	10.24	8.800	
1,800.00	1,800.00	1,799.00	1,800.00	5.28	5.28	89.62	0.59	90.12	90.12	79.56	10.57	8.530	
1,900.00	1,900.00	1,899.00	1,900.00	5.44	5.44	89.62	0.59	90.12	90.12	79.24	10.88	8.282	
2,000.00	2,000.00	1,999.00	2,000.00	5.60	5.59	89.62	0.59	90.12	90.12	78.93	11.19	8.053	
2,100.00	2,100.00	2,099.00	2,100.00	5.75	5.75	89.62	0.59	90.12	90.12	78.63	11.50	7.840	
2,200.00	2,200.00	2,199.00	2,200.00	5.90	5.90	89.62	0.59	90.12	90.12	78.33	11.79	7.642	
2,300.00	2,300.00	2,299.00	2,300.00	6.04	6.04	89.62	0.59	90.12	90.12	78.04	12.09	7.457	
2,400.00	2,400.00	2,399.00	2,400.00	6.19	6.19	89.62	0.59	90.12	90.12	77.75	12.37	7.283	
2,500.00	2,500.00	2,499.00	2,500.00	6.33	6.33	89.62	0.59	90.12	90.12	77.46	12.66	7.120 CC, ES	
2,600.00	2,600.00	2,598.05	2,599.04	6.47	6.54	88.90	1.75	90.62	90.64	77.70	12.94	7.003	
2,700.00	2,700.00	2,696.96	2,697.88	6.61	6.88	86.74	5.26	92.12	92.30	79.04	13.26	6.963 SF	
2,800.00	2,800.00	2,795.61	2,796.31	6.74	7.22	83.31	11.10	94.63	95.35	81.76	13.59	7.018	
2,900.00	2,900.00	2,893.86	2,894.17	6.88	7.57	78.91	19.23	98.12	100.16	86.21	13.95	7.180	
3,000.00	3,000.00	2,991.60	2,991.24	7.01	7.92	73.90	29.62	102.58	107.13	92.78	14.35	7.463	
3,100.00	3,100.00	3,089.16	3,087.84	7.14	8.15	68.65	42.20	107.98	116.57	101.86	14.72	7.921	
3,200.00	3,200.00	3,188.06	3,185.65	7.27	8.36	63.94	55.63	113.75	127.44	112.34	15.10	8.441	
3,300.00	3,300.00	3,286.96	3,283.47	7.40	8.59	59.98	69.07	119.52	139.03	123.52	15.50	8.968	
3,400.00	3,400.00	3,385.86	3,381.28	7.53	8.84	56.63	82.50	125.29	151.17	135.26	15.92	9.497	
3,500.00	3,500.00	3,484.77	3,479.10	7.65	9.11	53.79	95.94	131.05	163.76	147.42	16.34	10.022	
3,600.00	3,600.00	3,583.67	3,576.91	7.78	9.39	51.36	109.37	136.82	176.68	159.91	16.77	10.536	
3,700.00	3,700.00	3,682.57	3,674.73	7.90	9.68	49.26	122.81	142.59	189.87	172.67	17.21	11.036	
3,800.00	3,800.00	3,781.47	3,772.54	8.02	9.98	47.44	136.24	148.36	203.29	185.64	17.65	11.518	
3,900.00	3,900.00	3,880.37	3,870.35	8.14	10.29	45.84	149.68	154.12	216.88	198.78	18.10	11.982	
4,000.00	4,000.00	3,979.27	3,968.17	8.26	10.60	44.43	163.11	159.89	230.62	212.06	18.56	12.427	
4,100.00	4,100.00	4,078.17	4,065.98	8.38	10.93	43.18	176.54	165.66	244.48	225.46	19.02	12.853	
4,200.00	4,200.00	4,177.07	4,163.80	8.50	11.26	42.06	189.98	171.43	258.44	238.95	19.49	13.261	
4,300.00	4,300.00	4,275.98	4,261.61	8.62	11.60	41.06	203.41	177.20	272.49	252.52	19.96	13.650	
4,400.00	4,400.00	4,374.88	4,359.43	8.74	11.95	40.16	216.85	182.96	286.61	266.17	20.44	14.022	
4,500.00	4,500.00	4,473.78	4,457.24	8.85	12.30	39.34	230.28	188.73	300.80	279.87	20.92	14.377	
4,600.00	4,600.00	4,572.68	4,555.06	8.97	12.66	38.59	243.72	194.50	315.04	293.63	21.41	14.716	
4,700.00	4,700.00	4,671.58	4,652.87	9.08	13.02	37.91	257.15	200.27	329.32	307.43	21.90	15.040	
4,800.00	4,800.00	4,770.48	4,750.69	9.20	13.39	37.29	270.59	206.03	343.66	321.27	22.39	15.349	
4,900.00	4,900.00	4,869.38	4,848.50	9.31	13.76	36.71	284.02	211.80	358.02	335.14	22.89	15.644	
5,000.00	5,000.00	4,968.29	4,946.32	9.42	14.13	36.18	297.46	217.57	372.42	349.04	23.38	15.927	
5,100.00	5,099.99	5,067.35	5,044.29	9.59	14.51	40.69	310.91	223.35	385.87	361.96	23.91	16.137	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Anticollision Report



Company:	Titus Oil & Gas Production, LLC	Local Co-ordinate Reference:	Well 201H
Project:	Lea County, NM - (NAD83 NME)	TVD Reference:	RKB @ 3211.00usft (Est KB)
Reference Site:	Los Vaqueros Fed	MD Reference:	RKB @ 3211.00usft (Est KB)
Site Error:	1.00 usft	North Reference:	Grid
Reference Well:	201H	Survey Calculation Method:	Minimum Curvature
Well Error:	1.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA Compass
Reference Design:	Plan 1 07-06-21	Offset TVD Reference:	Reference Datum

Offset Design: Los Vaqueros Fed - 431H - OH - Plan 1													Offset Site Error: 1.00 usft
Survey Program: 0-MWD+HRGM													Offset Well Error: 1.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
5,200.00	5,199.91	5,166.68	5,142.53	9.85	14.89	40.48	324.41	229.14	397.35	372.86	24.49	16.226	
5,300.00	5,299.69	5,266.22	5,240.98	10.11	15.28	40.54	337.93	234.94	406.86	381.79	25.07	16.231	
5,400.00	5,399.27	5,365.89	5,339.56	10.38	15.67	40.85	351.47	240.76	414.39	388.75	25.64	16.160	
5,500.00	5,498.57	5,465.64	5,438.20	10.67	16.06	41.40	365.02	246.57	419.98	393.77	26.22	16.020	
5,600.00	5,597.54	5,565.38	5,536.85	10.96	16.46	42.19	378.56	252.39	423.68	396.90	26.78	15.819	
5,700.00	5,696.30	5,665.10	5,635.48	11.19	16.85	43.12	392.11	258.21	426.51	399.20	27.30	15.622	
5,800.00	5,795.07	5,764.82	5,734.10	11.39	17.25	44.03	405.66	264.02	429.45	401.64	27.80	15.447	
5,900.00	5,893.84	5,864.54	5,832.73	11.60	17.65	44.94	419.20	269.84	432.49	404.19	28.30	15.280	
6,000.00	5,992.61	5,964.27	5,931.35	11.83	18.06	45.83	432.75	275.65	435.65	406.84	28.81	15.122	
6,100.00	6,091.38	6,063.99	6,029.98	12.06	18.46	46.71	446.29	281.47	438.90	409.59	29.32	14.971	
6,200.00	6,190.15	6,163.71	6,128.60	12.31	18.87	47.57	459.84	287.28	442.26	412.44	29.83	14.828	
6,300.00	6,288.92	6,263.43	6,227.23	12.57	19.27	48.43	473.39	293.10	445.72	415.39	30.34	14.693	
6,400.00	6,387.69	6,363.15	6,325.86	12.84	19.68	49.26	486.93	298.91	449.28	418.44	30.85	14.566	
6,500.00	6,486.46	6,462.87	6,424.48	13.12	20.09	50.09	500.48	304.73	452.93	421.58	31.35	14.446	
6,600.00	6,585.22	6,562.59	6,523.11	13.41	20.50	50.90	514.02	310.54	456.68	424.82	31.86	14.333	
6,700.00	6,683.99	6,662.31	6,621.73	13.71	20.91	51.70	527.57	316.36	460.51	428.15	32.37	14.228	
6,800.00	6,782.76	6,762.03	6,720.36	14.01	21.33	52.49	541.12	322.18	464.44	431.57	32.87	14.129	
6,900.00	6,881.53	6,861.75	6,818.98	14.33	21.74	53.26	554.66	327.99	468.45	435.08	33.37	14.037	
7,000.00	6,980.30	6,961.48	6,917.61	14.65	22.16	54.02	568.21	333.81	472.54	438.67	33.87	13.952	
7,100.00	7,079.07	7,061.20	7,016.23	14.97	22.57	54.77	581.75	339.62	476.72	442.35	34.37	13.872	
7,200.00	7,177.84	7,160.92	7,114.86	15.30	22.99	55.50	595.30	345.44	480.97	446.11	34.86	13.798	
7,300.00	7,276.61	7,260.64	7,213.48	15.64	23.41	56.22	608.85	351.25	485.30	449.96	35.35	13.730	
7,400.00	7,375.37	7,360.36	7,312.11	15.99	23.83	56.93	622.39	357.07	489.71	453.88	35.83	13.667	
7,500.00	7,474.14	7,460.08	7,410.73	16.33	24.25	57.62	635.94	362.88	494.19	457.88	36.31	13.609	
7,600.00	7,572.91	7,559.80	7,509.36	16.69	24.67	58.30	649.48	368.70	498.75	461.95	36.79	13.556	
7,700.00	7,671.68	7,659.52	7,607.99	17.04	25.09	58.97	663.03	374.51	503.37	466.10	37.27	13.507	
7,800.00	7,770.45	7,759.24	7,706.61	17.41	25.51	59.63	676.58	380.33	508.06	470.32	37.74	13.462	
7,900.00	7,869.22	7,858.97	7,805.24	17.77	25.93	60.27	690.12	386.15	512.81	474.61	38.21	13.422	
8,000.00	7,967.99	7,958.69	7,903.86	18.14	26.35	60.91	703.67	391.96	517.63	478.96	38.67	13.385	
8,100.00	8,066.76	8,058.41	8,002.49	18.51	26.78	61.53	717.21	397.78	522.52	483.38	39.13	13.352	
8,200.00	8,165.53	8,158.13	8,101.11	18.89	27.20	62.14	730.76	403.59	527.46	487.87	39.59	13.323	
8,300.00	8,264.29	8,257.85	8,199.74	19.27	27.63	62.74	744.31	409.41	532.46	492.41	40.04	13.297	
8,400.00	8,363.06	8,357.57	8,298.36	19.65	28.05	63.33	757.85	415.22	537.52	497.02	40.50	13.273	
8,500.00	8,461.83	8,457.29	8,396.99	20.03	28.48	63.90	771.40	421.04	542.63	501.69	40.94	13.253	
8,600.00	8,560.60	8,557.01	8,495.61	20.42	28.90	64.47	784.94	426.85	547.80	506.41	41.39	13.236	
8,700.00	8,659.37	8,656.73	8,594.24	20.81	29.33	65.02	798.49	432.67	553.02	511.19	41.83	13.221	
8,800.00	8,758.14	8,756.45	8,692.87	21.20	29.76	65.57	812.03	438.48	558.29	516.02	42.27	13.208	
8,900.00	8,856.91	8,856.18	8,791.49	21.60	30.18	66.10	825.58	444.30	563.61	520.90	42.71	13.198	
9,000.00	8,955.68	8,955.90	8,890.12	21.99	30.61	66.63	839.13	450.12	568.98	525.84	43.14	13.189	
9,100.00	9,054.45	9,055.62	8,988.74	22.39	31.04	67.14	852.67	455.93	574.39	530.82	43.57	13.183	
9,200.00	9,153.21	9,155.34	9,087.37	22.79	31.47	67.65	866.22	461.75	579.85	535.86	44.00	13.179	
9,300.00	9,251.98	9,255.06	9,185.99	23.19	31.89	68.15	879.76	467.56	585.36	540.93	44.43	13.176	
9,400.00	9,350.75	9,356.56	9,286.38	23.59	32.32	68.64	893.52	473.47	590.89	546.04	44.85	13.176	
9,500.00	9,449.52	9,469.50	9,398.37	24.00	32.81	69.32	906.94	479.23	595.07	549.82	45.25	13.151	
9,600.00	9,548.29	9,582.28	9,510.58	24.41	33.29	70.19	917.29	483.67	597.13	551.57	45.56	13.106	
9,700.00	9,647.06	9,694.71	9,622.72	24.81	33.74	71.28	924.57	486.80	597.16	551.40	45.75	13.051	
9,800.00	9,745.83	9,806.58	9,734.50	25.22	34.14	72.57	928.81	488.62	595.26	549.46	45.80	12.996	
9,900.00	9,844.60	9,916.69	9,844.60	25.63	34.36	74.08	930.05	489.15	591.59	545.95	45.64	12.962	
10,000.00	9,943.39	10,015.48	9,943.39	26.03	34.41	75.49	930.05	489.15	587.48	542.10	45.38	12.947	
10,100.00	10,042.48	10,114.58	10,042.48	26.45	34.44	76.71	930.05	489.15	584.23	539.05	45.18	12.932	
10,200.00	10,141.89	10,213.98	10,141.89	26.88	34.48	77.70	930.05	489.15	581.82	536.77	45.05	12.916	
10,300.00	10,241.55	10,313.64	10,241.55	27.29	34.52	78.47	930.05	489.15	580.11	535.13	44.98	12.897	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Anticollision Report



Company:	Titus Oil & Gas Production, LLC	Local Co-ordinate Reference:	Well 201H
Project:	Lea County, NM - (NAD83 NME)	TVD Reference:	RKB @ 3211.00usft (Est KB)
Reference Site:	Los Vaqueros Fed	MD Reference:	RKB @ 3211.00usft (Est KB)
Site Error:	1.00 usft	North Reference:	Grid
Reference Well:	201H	Survey Calculation Method:	Minimum Curvature
Well Error:	1.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA Compass
Reference Design:	Plan 1 07-06-21	Offset TVD Reference:	Reference Datum

Offset Design: Los Vaqueros Fed - 431H - OH - Plan 1													Offset Site Error:	1.00 usft
Survey Program:		0-MWD+HRGM					Rule Assigned:				Offset Well Error:	1.00 usft		
Reference	Offset	Reference	Offset	Semi Major Axis	Highside	Offset Wellbore Centre		Distance			Warning			
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
10,400.00	10,341.39	10,413.48	10,341.39	27.67	34.56	78.99	930.05	489.15	579.02	534.04	44.98	12.873		
10,500.00	10,441.34	10,513.44	10,441.34	28.00	34.60	79.28	930.05	489.15	578.45	533.42	45.04	12.844		
10,596.70	10,538.04	10,610.13	10,538.04	28.12	34.64	79.36	930.05	489.15	578.30	533.18	45.12	12.818		
10,600.00	10,541.34	10,613.43	10,541.34	28.12	34.64	74.33	930.05	489.15	578.35	533.22	45.13	12.815		
10,602.58	10,543.92	10,616.01	10,543.92	28.12	34.64	-114.87	930.05	489.15	578.35	533.22	45.13	12.815		
10,700.00	10,641.31	10,713.40	10,641.31	28.08	34.68	-114.93	930.05	489.15	578.92	533.68	45.24	12.796		
10,800.00	10,739.52	10,811.61	10,739.52	27.76	34.72	-115.64	930.05	489.15	586.68	541.00	45.68	12.843		
10,900.00	10,831.87	10,903.96	10,831.87	27.39	34.76	-116.75	930.05	489.15	604.57	557.98	46.59	12.976		
11,000.00	10,914.33	10,986.43	10,914.33	27.01	34.79	-117.40	930.05	489.15	634.39	586.50	47.89	13.245		
11,100.00	10,983.30	11,055.39	10,983.30	26.69	34.82	-116.55	930.05	489.15	677.58	628.15	49.44	13.706		
11,200.00	11,035.76	11,107.85	11,035.76	26.43	34.84	-113.00	930.05	489.15	734.27	683.25	51.02	14.392		
11,300.00	11,069.41	11,141.50	11,069.41	26.27	34.85	-105.34	930.05	489.15	802.82	750.33	52.48	15.297		
11,400.00	11,082.79	11,154.88	11,082.79	26.21	34.86	-92.29	930.05	489.15	880.06	826.31	53.75	16.372		
11,500.00	11,082.40	11,154.49	11,082.40	26.24	34.86	-89.44	930.05	489.15	960.86	906.00	54.86	17.514		
11,600.00	11,081.68	11,153.77	11,081.68	26.27	34.86	-89.45	930.05	489.15	1,041.24	985.29	55.95	18.611		
11,700.00	11,080.95	11,153.05	11,080.95	26.29	34.86	-89.43	930.05	489.15	1,121.22	1,064.43	56.79	19.743		
11,800.00	11,080.23	11,152.33	11,080.23	26.31	34.86	-89.37	930.05	489.15	1,203.53	1,146.08	57.45	20.948		
11,900.00	11,079.51	11,151.60	11,079.51	26.34	34.86	-89.31	930.05	489.15	1,288.34	1,230.36	57.99	22.217		
12,000.00	11,078.79	11,150.88	11,078.79	26.37	34.86	-89.24	930.05	489.15	1,375.20	1,316.78	58.42	23.539		
12,100.00	11,078.07	11,150.16	11,078.07	26.41	34.86	-89.18	930.05	489.15	1,463.73	1,404.96	58.78	24.903		
12,200.00	11,077.35	11,149.44	11,077.35	26.46	34.86	-89.12	930.05	489.15	1,553.66	1,494.59	59.07	26.302		
12,300.00	11,076.63	11,148.72	11,076.63	26.53	34.86	-89.06	930.05	489.15	1,644.75	1,585.43	59.31	27.729		
12,400.00	11,075.91	11,148.00	11,075.91	26.61	34.86	-88.99	930.05	489.15	1,736.82	1,677.30	59.52	29.181		
12,500.00	11,075.19	11,147.28	11,075.19	26.73	34.86	-88.93	930.05	489.15	1,829.72	1,770.03	59.69	30.653		
12,600.00	11,074.46	14,491.02	12,802.70	26.89	35.48	-159.11	-884.72	504.70	1,849.85	1,790.79	59.06	31.321		
12,700.00	11,073.74	14,591.02	12,802.23	27.13	35.83	-159.11	-984.72	505.56	1,850.09	1,790.08	60.01	30.829		
12,800.00	11,073.02	14,691.02	12,801.76	27.50	36.23	-159.12	-1,084.71	506.41	1,850.32	1,789.33	61.00	30.334		
12,900.00	11,072.30	14,791.02	12,801.29	28.06	36.68	-159.12	-1,184.71	507.27	1,850.56	1,788.54	62.02	29.838		
13,000.00	11,071.58	14,891.02	12,800.81	28.80	37.18	-159.12	-1,284.70	508.13	1,850.80	1,787.72	63.07	29.343		
13,100.00	11,070.86	14,991.02	12,800.34	29.70	37.74	-159.12	-1,384.70	508.98	1,851.03	1,786.87	64.16	28.849		
13,200.00	11,070.14	15,091.02	12,799.87	30.72	38.36	-159.13	-1,484.69	509.84	1,851.27	1,785.99	65.28	28.359		
13,300.00	11,069.42	15,191.02	12,799.40	31.80	39.04	-159.13	-1,584.69	510.70	1,851.50	1,785.07	66.43	27.873		
13,400.00	11,068.69	15,291.02	12,798.93	32.94	39.78	-159.13	-1,684.68	511.55	1,851.74	1,784.13	67.60	27.392		
13,500.00	11,067.97	15,391.02	12,798.46	34.11	40.57	-159.13	-1,784.68	512.41	1,851.97	1,783.17	68.80	26.917		
13,600.00	11,067.25	15,491.02	12,797.98	35.31	41.43	-159.14	-1,884.67	513.27	1,852.21	1,782.18	70.03	26.450		
13,700.00	11,066.53	15,591.02	12,797.51	36.54	42.33	-159.14	-1,984.67	514.12	1,852.44	1,781.17	71.28	25.990		
13,800.00	11,065.81	15,691.02	12,797.04	37.79	43.28	-159.14	-2,084.66	514.98	1,852.68	1,780.13	72.55	25.538		
13,900.00	11,065.09	15,791.02	12,796.57	39.05	44.28	-159.14	-2,184.66	515.84	1,852.91	1,779.07	73.84	25.094		
14,000.00	11,064.37	15,891.02	12,796.10	40.32	45.31	-159.15	-2,284.65	516.69	1,853.15	1,778.00	75.15	24.659		
14,100.00	11,063.65	15,991.02	12,795.62	41.61	46.38	-159.15	-2,384.65	517.55	1,853.38	1,776.90	76.48	24.233		
14,200.00	11,062.92	16,091.02	12,795.15	42.91	47.47	-159.15	-2,484.64	518.41	1,853.62	1,775.79	77.83	23.816		
14,300.00	11,062.20	16,191.02	12,794.68	44.22	48.60	-159.15	-2,584.64	519.26	1,853.85	1,774.66	79.20	23.409		
14,400.00	11,061.48	16,291.02	12,794.21	45.53	49.75	-159.16	-2,684.63	520.12	1,854.09	1,773.51	80.58	23.010		
14,500.00	11,060.76	16,391.02	12,793.74	46.86	50.93	-159.16	-2,784.63	520.98	1,854.32	1,772.35	81.98	22.621		
14,600.00	11,060.04	16,491.02	12,793.27	48.19	52.12	-159.16	-2,884.62	521.83	1,854.56	1,771.17	83.39	22.240		
14,700.00	11,059.32	16,591.02	12,792.79	49.52	53.33	-159.16	-2,984.62	522.69	1,854.80	1,769.98	84.81	21.869		
14,800.00	11,058.60	16,691.02	12,792.32	50.87	54.56	-159.17	-3,084.61	523.55	1,855.03	1,768.78	86.25	21.507		
14,900.00	11,057.88	16,791.02	12,791.85	52.21	55.80	-159.17	-3,184.61	524.41	1,855.27	1,767.56	87.70	21.154		
15,000.00	11,057.16	16,891.02	12,791.38	53.57	57.05	-159.17	-3,284.60	525.26	1,855.50	1,766.33	89.17	20.809		
15,100.00	11,056.43	16,991.02	12,790.91	54.92	58.31	-159.17	-3,384.60	526.12	1,855.74	1,765.09	90.64	20.473		
15,200.00	11,055.71	17,091.02	12,790.44	56.29	59.59	-159.18	-3,484.59	526.98	1,855.97	1,763.84	92.13	20.145		
15,300.00	11,054.99	17,191.02	12,789.96	57.65	60.88	-159.18	-3,584.59	527.83	1,856.21	1,762.58	93.63	19.826		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Anticollision Report



Company:	Titus Oil & Gas Production, LLC	Local Co-ordinate Reference:	Well 201H
Project:	Lea County, NM - (NAD83 NME)	TVD Reference:	RKB @ 3211.00usft (Est KB)
Reference Site:	Los Vaqueros Fed	MD Reference:	RKB @ 3211.00usft (Est KB)
Site Error:	1.00 usft	North Reference:	Grid
Reference Well:	201H	Survey Calculation Method:	Minimum Curvature
Well Error:	1.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA Compass
Reference Design:	Plan 1 07-06-21	Offset TVD Reference:	Reference Datum

Offset Design: Los Vaqueros Fed - 431H - OH - Plan 1													Offset Site Error:	1.00 usft
Survey Program:		0-MWD+HRGM					Rule Assigned:				Offset Well Error:	1.00 usft		
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Separation Factor	Warning		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			Minimum Separation (usft)	
15,400.00	11,054.27	17,291.02	12,789.49	59.02	62.17	-159.18	-3,684.58	528.69	1,856.44	1,761.31	95.13	19.514		
15,500.00	11,053.55	17,391.02	12,789.02	60.39	63.47	-159.18	-3,784.58	529.55	1,856.68	1,760.03	96.65	19.211		
15,600.00	11,052.83	17,491.02	12,788.55	61.77	64.78	-159.19	-3,884.57	530.40	1,856.91	1,758.74	98.17	18.915		
15,700.00	11,052.11	17,591.01	12,788.08	63.14	66.10	-159.19	-3,984.57	531.26	1,857.15	1,757.44	99.70	18.627		
15,800.00	11,051.39	17,691.01	12,787.60	64.52	67.42	-159.19	-4,084.56	532.12	1,857.38	1,756.14	101.25	18.345		
15,900.00	11,050.66	17,791.01	12,787.13	65.91	68.75	-159.19	-4,184.56	532.97	1,857.62	1,754.83	102.79	18.071		
16,000.00	11,049.94	17,891.01	12,786.66	67.29	70.08	-159.20	-4,284.55	533.83	1,857.85	1,753.50	104.35	17.804		
16,100.00	11,049.22	17,991.01	12,786.19	68.68	71.42	-159.20	-4,384.55	534.69	1,858.09	1,752.18	105.91	17.543		
16,200.00	11,048.50	18,091.01	12,785.72	70.07	72.76	-159.20	-4,484.54	535.54	1,858.33	1,750.84	107.48	17.289		
16,300.00	11,047.78	18,191.01	12,785.25	71.46	74.11	-159.20	-4,584.54	536.40	1,858.56	1,749.50	109.06	17.042		
16,400.00	11,047.06	18,291.01	12,784.77	72.85	75.46	-159.21	-4,684.53	537.26	1,858.80	1,748.15	110.64	16.800		
16,500.00	11,046.34	18,391.01	12,784.30	74.24	76.81	-159.21	-4,784.53	538.11	1,859.03	1,746.80	112.23	16.564		
16,600.00	11,045.62	18,491.01	12,783.83	75.64	78.17	-159.21	-4,884.52	538.97	1,859.27	1,745.44	113.83	16.334		
16,700.00	11,044.90	18,591.01	12,783.36	77.04	79.53	-159.21	-4,984.52	539.83	1,859.50	1,744.08	115.43	16.110		
16,800.00	11,044.17	18,691.01	12,782.89	78.44	80.90	-159.22	-5,084.51	540.68	1,859.74	1,742.71	117.03	15.891		
16,900.00	11,043.45	18,791.01	12,782.42	79.84	82.26	-159.22	-5,184.51	541.54	1,859.97	1,741.33	118.64	15.677		
17,000.00	11,042.73	18,891.01	12,781.94	81.24	83.63	-159.22	-5,284.50	542.40	1,860.21	1,739.95	120.26	15.469		
17,100.00	11,042.01	18,991.01	12,781.47	82.64	85.00	-159.23	-5,384.50	543.25	1,860.44	1,738.57	121.88	15.265		
17,200.00	11,041.29	19,091.01	12,781.00	84.04	86.38	-159.23	-5,484.49	544.11	1,860.68	1,737.18	123.50	15.066		
17,300.00	11,040.57	19,191.01	12,780.53	85.45	87.76	-159.23	-5,584.49	544.97	1,860.91	1,735.79	125.13	14.872		
17,400.00	11,039.85	19,291.01	12,780.06	86.85	89.14	-159.23	-5,684.48	545.82	1,861.15	1,734.39	126.76	14.683		
17,500.00	11,039.13	19,391.01	12,779.58	88.26	90.52	-159.24	-5,784.48	546.68	1,861.39	1,732.99	128.40	14.497		
17,600.00	11,038.40	19,491.01	12,779.11	89.67	91.90	-159.24	-5,884.47	547.54	1,861.62	1,731.59	130.04	14.316		
17,700.00	11,037.68	19,591.01	12,778.64	91.08	93.28	-159.24	-5,984.47	548.40	1,861.86	1,730.18	131.68	14.139		
17,800.00	11,036.96	19,691.01	12,778.17	92.49	94.67	-159.24	-6,084.46	549.25	1,862.09	1,728.77	133.33	13.966		
17,900.00	11,036.24	19,791.01	12,777.70	93.90	96.06	-159.25	-6,184.46	550.11	1,862.33	1,727.35	134.98	13.797		
18,000.00	11,035.52	19,891.01	12,777.23	95.31	97.45	-159.25	-6,284.45	550.97	1,862.56	1,725.93	136.63	13.632		
18,100.00	11,034.80	19,991.01	12,776.75	96.72	98.84	-159.25	-6,384.44	551.82	1,862.80	1,724.51	138.29	13.471		
18,200.00	11,034.08	20,091.01	12,776.28	98.13	100.23	-159.25	-6,484.44	552.68	1,863.03	1,723.09	139.95	13.313		
18,300.00	11,033.36	20,191.01	12,775.81	99.54	101.63	-159.26	-6,584.43	553.54	1,863.27	1,721.66	141.61	13.158		
18,400.00	11,032.64	20,291.01	12,775.34	100.96	103.02	-159.26	-6,684.43	554.39	1,863.50	1,720.23	143.27	13.007		
18,500.00	11,031.91	20,391.01	12,774.87	102.37	104.42	-159.26	-6,784.42	555.25	1,863.74	1,718.80	144.94	12.859		
18,600.00	11,031.19	20,491.01	12,774.40	103.79	105.81	-159.26	-6,884.42	556.11	1,863.98	1,717.36	146.61	12.714		
18,700.00	11,030.47	20,591.01	12,773.92	105.20	107.21	-159.27	-6,984.41	556.96	1,864.21	1,715.92	148.29	12.572		
18,800.00	11,029.75	20,691.01	12,773.45	106.62	108.61	-159.27	-7,084.41	557.82	1,864.45	1,714.48	149.96	12.433		
18,900.00	11,029.03	20,787.12	12,773.00	108.03	109.96	-159.27	-7,180.52	558.64	1,864.69	1,713.17	151.52	12.307		
18,904.07	11,029.00	20,787.12	12,773.00	108.09	109.96	-159.27	-7,180.52	558.64	1,864.71	1,713.25	151.45	12.312		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Anticollision Report



Company:	Titus Oil & Gas Production, LLC	Local Co-ordinate Reference:	Well 201H
Project:	Lea County, NM - (NAD83 NME)	TVD Reference:	RKB @ 3211.00usft (Est KB)
Reference Site:	Los Vaqueros Fed	MD Reference:	RKB @ 3211.00usft (Est KB)
Site Error:	1.00 usft	North Reference:	Grid
Reference Well:	201H	Survey Calculation Method:	Minimum Curvature
Well Error:	1.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA Compass
Reference Design:	Plan 1 07-06-21	Offset TVD Reference:	Reference Datum

Offset Design: Los Vaqueros Fed - 511H - OH - Plan 1													Offset Site Error: 1.00 usft	
Survey Program: 0-MWD+HRGM				Offset					Rule Assigned:				Offset Well Error: 1.00 usft	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
0.00	0.00	0.00	0.00	1.00	1.00	89.63	0.39	59.97	59.97					
100.00	100.00	100.00	100.00	1.09	1.09	89.63	0.39	59.97	59.97	57.78	2.19	27.427		
200.00	200.00	200.00	200.00	1.61	1.61	89.63	0.39	59.97	59.97	56.75	3.22	18.644		
300.00	300.00	300.00	300.00	2.02	2.02	89.63	0.39	59.97	59.97	55.94	4.03	14.863		
400.00	400.00	400.00	400.00	2.36	2.36	89.63	0.39	59.97	59.97	55.25	4.72	12.709		
500.00	500.00	500.00	500.00	2.66	2.66	89.63	0.39	59.97	59.97	54.65	5.32	11.272		
524.83	524.83	524.83	524.83	2.73	2.73	89.63	0.39	59.97	59.97	54.52	5.45	10.994		
600.00	600.00	600.00	600.00	2.93	2.93	89.63	0.39	59.97	59.97	54.11	5.86	10.225		
633.33	633.33	633.33	633.33	3.02	3.02	89.63	0.39	59.97	59.97	53.94	6.03	9.942		
700.00	700.00	700.00	700.00	3.18	3.18	89.63	0.39	59.97	59.97	53.60	6.37	9.419		
800.00	800.00	800.00	800.00	3.42	3.42	89.63	0.39	59.97	59.97	53.13	6.84	8.772		
900.00	900.00	900.00	900.00	3.64	3.64	89.63	0.39	59.97	59.97	52.69	7.28	8.238		
1,000.00	1,000.00	1,000.00	1,000.00	3.85	3.85	89.63	0.39	59.97	59.97	52.27	7.70	7.788		
1,100.00	1,100.00	1,100.00	1,100.00	4.05	4.05	89.63	0.39	59.97	59.97	51.87	8.10	7.401		
1,200.00	1,200.00	1,200.00	1,200.00	4.24	4.24	89.63	0.39	59.97	59.97	51.48	8.49	7.064		
1,300.00	1,300.00	1,300.00	1,300.00	4.43	4.43	89.63	0.39	59.97	59.97	51.11	8.86	6.767		
1,400.00	1,400.00	1,400.00	1,400.00	4.61	4.61	89.63	0.39	59.97	59.97	50.75	9.22	6.503		
1,500.00	1,500.00	1,500.00	1,500.00	4.79	4.79	89.63	0.39	59.97	59.97	50.40	9.57	6.265		
1,600.00	1,600.00	1,600.00	1,600.00	4.96	4.96	89.63	0.39	59.97	59.97	50.06	9.91	6.050		
1,700.00	1,700.00	1,700.00	1,700.00	5.12	5.12	89.63	0.39	59.97	59.97	49.73	10.24	5.855		
1,800.00	1,800.00	1,800.00	1,800.00	5.28	5.28	89.63	0.39	59.97	59.97	49.40	10.57	5.675		
1,900.00	1,900.00	1,900.00	1,900.00	5.44	5.44	89.63	0.39	59.97	59.97	49.09	10.88	5.510		
2,000.00	2,000.00	2,000.00	2,000.00	5.60	5.60	89.63	0.39	59.97	59.97	48.78	11.19	5.358		
2,100.00	2,100.00	2,100.00	2,100.00	5.75	5.75	89.63	0.39	59.97	59.97	48.47	11.50	5.216		
2,200.00	2,200.00	2,200.00	2,200.00	5.90	5.90	89.63	0.39	59.97	59.97	48.18	11.79	5.085		
2,300.00	2,300.00	2,300.00	2,300.00	6.04	6.04	89.63	0.39	59.97	59.97	47.88	12.09	4.961		
2,400.00	2,400.00	2,400.00	2,400.00	6.19	6.19	89.63	0.39	59.97	59.97	47.60	12.38	4.846		
2,500.00	2,500.00	2,500.00	2,500.00	6.33	6.33	89.63	0.39	59.97	59.97	47.31	12.66	4.737 CC		
2,600.00	2,600.00	2,599.88	2,599.87	6.47	6.55	88.38	1.69	60.04	60.06	47.13	12.94	4.642 ES		
2,700.00	2,700.00	2,699.63	2,699.54	6.61	6.90	84.69	5.60	60.25	60.51	47.29	13.22	4.578		
2,800.00	2,800.00	2,799.10	2,798.80	6.74	7.24	78.73	12.08	60.60	61.80	48.29	13.51	4.574 SF		
2,900.00	2,900.00	2,898.17	2,897.45	6.88	7.59	70.95	21.09	61.09	64.68	50.83	13.85	4.670		
3,000.00	3,000.00	2,996.99	2,995.61	7.01	7.80	62.22	32.51	61.70	69.88	55.70	14.18	4.928		
3,100.00	3,100.00	3,096.25	3,094.12	7.14	7.99	54.43	44.59	62.35	76.88	62.31	14.56	5.278		
3,200.00	3,200.00	3,195.50	3,192.64	7.27	8.21	48.04	56.66	63.01	85.05	70.08	14.97	5.680		
3,300.00	3,300.00	3,294.76	3,291.15	7.40	8.45	42.80	68.74	63.66	94.10	78.71	15.39	6.115		
3,400.00	3,400.00	3,394.01	3,389.67	7.53	8.70	38.51	80.81	64.31	103.79	87.98	15.81	6.565		
3,500.00	3,500.00	3,493.27	3,488.19	7.65	8.96	34.97	92.89	64.96	113.96	97.73	16.23	7.020		
3,600.00	3,600.00	3,592.52	3,586.70	7.78	9.24	32.01	104.96	65.61	124.49	107.83	16.66	7.471		
3,700.00	3,700.00	3,691.78	3,685.22	7.90	9.52	29.52	117.04	66.26	135.30	118.20	17.10	7.913		
3,800.00	3,800.00	3,791.03	3,783.73	8.02	9.82	27.40	129.11	66.91	146.33	128.79	17.54	8.343		
3,900.00	3,900.00	3,890.29	3,882.25	8.14	10.12	25.57	141.19	67.56	157.52	139.54	17.98	8.759		
4,000.00	4,000.00	3,989.54	3,980.76	8.26	10.43	23.99	153.26	68.22	168.86	150.42	18.43	9.160		
4,100.00	4,100.00	4,088.80	4,079.28	8.38	10.75	22.61	165.34	68.87	180.30	161.41	18.89	9.546		
4,200.00	4,200.00	4,188.05	4,177.79	8.50	11.07	21.40	177.41	69.52	191.84	172.49	19.35	9.916		
4,300.00	4,300.00	4,287.31	4,276.31	8.62	11.40	20.32	189.49	70.17	203.45	183.64	19.81	10.271		
4,400.00	4,400.00	4,386.56	4,374.83	8.74	11.74	19.36	201.56	70.82	215.12	194.85	20.27	10.611		
4,500.00	4,500.00	4,485.82	4,473.34	8.85	12.08	18.50	213.64	71.47	226.85	206.11	20.74	10.936		
4,600.00	4,600.00	4,585.07	4,571.86	8.97	12.43	17.72	225.71	72.12	238.62	217.41	21.22	11.247		
4,700.00	4,700.00	4,684.33	4,670.37	9.08	12.78	17.02	237.79	72.77	250.44	228.74	21.69	11.546		
4,800.00	4,800.00	4,783.58	4,768.89	9.20	13.13	16.38	249.86	73.43	262.28	240.11	22.17	11.831		
4,900.00	4,900.00	4,882.84	4,867.40	9.31	13.49	15.79	261.94	74.08	274.16	251.51	22.65	12.104		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Anticollision Report



Company:	Titus Oil & Gas Production, LLC	Local Co-ordinate Reference:	Well 201H
Project:	Lea County, NM - (NAD83 NME)	TVD Reference:	RKB @ 3211.00usft (Est KB)
Reference Site:	Los Vaqueros Fed	MD Reference:	RKB @ 3211.00usft (Est KB)
Site Error:	1.00 usft	North Reference:	Grid
Reference Well:	201H	Survey Calculation Method:	Minimum Curvature
Well Error:	1.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA Compass
Reference Design:	Plan 1 07-06-21	Offset TVD Reference:	Reference Datum

Offset Design: Los Vaqueros Fed - 511H - OH - Plan 1												Offset Site Error:	1.00 usft
Survey Program: 0-MWD+HRGM												Offset Well Error:	1.00 usft
Rule Assigned:												Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference	Offset	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
5,000.00	5,000.00	4,982.09	4,965.92	9.42	13.85	15.25	274.02	74.73	286.06	262.93	23.13	12.366	
5,100.00	5,099.99	5,081.50	5,064.58	9.59	14.21	19.79	286.11	75.38	296.76	273.10	23.66	12.541	
5,200.00	5,199.91	5,181.14	5,163.49	9.85	14.58	19.53	298.23	76.03	305.02	280.74	24.27	12.565	
5,300.00	5,299.69	5,280.97	5,262.57	10.11	14.96	19.46	310.38	76.69	310.82	285.93	24.89	12.487	
5,400.00	5,399.27	5,380.91	5,361.77	10.38	15.33	19.56	322.54	77.35	314.15	288.64	25.52	12.312	
5,500.00	5,498.57	5,480.89	5,461.00	10.67	15.71	19.83	334.70	78.00	315.02	288.88	26.15	12.049	
5,600.00	5,597.54	5,580.85	5,560.22	10.96	16.09	20.28	346.86	78.66	313.45	286.67	26.78	11.704	
5,700.00	5,696.30	5,680.77	5,659.39	11.19	16.47	20.81	359.02	79.31	310.66	283.31	27.35	11.357	
5,800.00	5,795.07	5,780.69	5,758.57	11.39	16.85	21.34	371.17	79.97	307.91	280.01	27.90	11.037	
5,900.00	5,893.84	5,880.61	5,857.74	11.60	17.23	21.89	383.33	80.62	305.18	276.73	28.45	10.726	
6,000.00	5,992.61	5,980.53	5,956.92	11.83	17.62	22.44	395.48	81.28	302.48	273.46	29.02	10.424	
6,100.00	6,091.38	6,080.45	6,056.09	12.06	18.01	23.01	407.64	81.94	299.81	270.22	29.59	10.133	
6,200.00	6,190.15	6,180.37	6,155.27	12.31	18.40	23.59	419.80	82.59	297.16	267.00	30.17	9.851	
6,300.00	6,288.92	6,280.29	6,254.44	12.57	18.79	24.17	431.95	83.25	294.55	263.80	30.75	9.578	
6,400.00	6,387.69	6,380.21	6,353.62	12.84	19.18	24.77	444.11	83.90	291.97	260.63	31.34	9.316	
6,500.00	6,486.46	6,480.13	6,452.80	13.12	19.57	25.38	456.27	84.56	289.43	257.49	31.93	9.063	
6,600.00	6,585.22	6,580.05	6,551.97	13.41	19.97	26.00	468.42	85.21	286.91	254.38	32.53	8.820	
6,700.00	6,683.99	6,679.97	6,651.15	13.71	20.36	26.62	480.58	85.87	284.43	251.31	33.13	8.586	
6,800.00	6,782.76	6,779.89	6,750.32	14.01	20.76	27.26	492.73	86.53	281.99	248.26	33.72	8.362	
6,900.00	6,881.53	6,879.81	6,849.50	14.33	21.16	27.92	504.89	87.18	279.58	245.26	34.32	8.146	
7,000.00	6,980.30	6,979.73	6,948.67	14.65	21.55	28.58	517.05	87.84	277.20	242.29	34.92	7.939	
7,100.00	7,079.07	7,079.65	7,047.85	14.97	21.95	29.25	529.20	88.49	274.87	239.36	35.51	7.741	
7,200.00	7,177.84	7,179.57	7,147.03	15.30	22.35	29.94	541.36	89.15	272.57	236.47	36.10	7.551	
7,300.00	7,276.61	7,279.49	7,246.20	15.64	22.75	30.63	553.52	89.80	270.32	233.63	36.68	7.369	
7,400.00	7,375.37	7,379.41	7,345.38	15.99	23.15	31.34	565.67	90.46	268.10	230.84	37.26	7.195	
7,500.00	7,474.14	7,479.33	7,444.55	16.33	23.56	32.06	577.83	91.12	265.93	228.09	37.84	7.028	
7,600.00	7,572.91	7,579.25	7,543.73	16.69	23.96	32.79	589.98	91.77	263.79	225.39	38.40	6.869	
7,700.00	7,671.68	7,679.17	7,642.90	17.04	24.36	33.54	602.14	92.43	261.71	222.75	38.96	6.717	
7,800.00	7,770.45	7,779.09	7,742.08	17.41	24.77	34.29	614.30	93.08	259.66	220.15	39.51	6.572	
7,900.00	7,869.22	7,879.01	7,841.26	17.77	25.17	35.06	626.45	93.74	257.67	217.61	40.05	6.434	
8,000.00	7,967.99	7,978.93	7,940.43	18.14	25.57	35.84	638.61	94.39	255.71	215.13	40.58	6.301	
8,100.00	8,066.76	8,078.85	8,039.61	18.51	25.98	36.63	650.76	95.05	253.81	212.71	41.10	6.176	
8,200.00	8,165.53	8,178.77	8,138.78	18.89	26.39	37.43	662.92	95.71	251.96	210.35	41.61	6.056	
8,300.00	8,264.29	8,278.69	8,237.96	19.27	26.79	38.25	675.08	96.36	250.16	208.06	42.10	5.942	
8,400.00	8,363.06	8,378.61	8,337.13	19.65	27.20	39.07	687.23	97.02	248.40	205.82	42.58	5.834	
8,500.00	8,461.83	8,478.53	8,436.31	20.03	27.61	39.91	699.39	97.67	246.70	203.66	43.05	5.731	
8,600.00	8,560.60	8,578.45	8,535.48	20.42	28.01	40.76	711.55	98.33	245.06	201.56	43.50	5.633	
8,700.00	8,659.37	8,678.37	8,634.66	20.81	28.42	41.62	723.70	98.98	243.47	199.53	43.94	5.541	
8,800.00	8,758.14	8,778.29	8,733.84	21.20	28.83	42.49	735.86	99.64	241.93	197.57	44.36	5.454	
8,900.00	8,856.91	8,878.21	8,833.01	21.60	29.24	43.37	748.01	100.29	240.45	195.69	44.76	5.372	
9,000.00	8,955.68	8,978.13	8,932.19	21.99	29.65	44.26	760.17	100.95	239.03	193.88	45.15	5.294	
9,100.00	9,054.45	9,078.05	9,031.36	22.39	30.06	45.17	772.33	101.61	237.67	192.15	45.52	5.221	
9,200.00	9,153.21	9,177.97	9,130.54	22.79	30.47	46.08	784.48	102.26	236.37	190.49	45.87	5.152	
9,300.00	9,251.98	9,277.89	9,229.71	23.19	30.88	47.00	796.64	102.92	235.12	188.92	46.21	5.088	
9,400.00	9,350.75	9,377.81	9,328.89	23.59	31.29	47.94	808.80	103.57	233.94	187.42	46.53	5.028	
9,500.00	9,449.52	9,477.73	9,428.07	24.00	31.70	48.88	820.95	104.23	232.83	186.00	46.82	4.973	
9,600.00	9,548.29	9,577.65	9,527.24	24.41	32.11	49.83	833.11	104.88	231.77	184.67	47.10	4.921	
9,700.00	9,647.06	9,677.57	9,626.42	24.81	32.52	50.79	845.26	105.54	230.78	183.42	47.36	4.873	
9,800.00	9,745.83	9,777.49	9,725.59	25.22	32.93	51.76	857.42	106.20	229.86	182.26	47.60	4.829	
9,900.00	9,844.60	9,877.41	9,824.77	25.63	33.35	52.73	869.58	106.85	229.00	181.18	47.82	4.789	
10,000.00	9,943.39	9,977.34	9,923.95	26.03	33.76	53.68	881.73	107.51	228.31	180.29	48.02	4.754	
10,012.85	9,956.11	9,990.19	9,936.70	26.08	33.81	53.77	883.30	107.59	228.30	180.24	48.06	4.751	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Anticollision Report



Company:	Titus Oil & Gas Production, LLC	Local Co-ordinate Reference:	Well 201H
Project:	Lea County, NM - (NAD83 NME)	TVD Reference:	RKB @ 3211.00usft (Est KB)
Reference Site:	Los Vaqueros Fed	MD Reference:	RKB @ 3211.00usft (Est KB)
Site Error:	1.00 usft	North Reference:	Grid
Reference Well:	201H	Survey Calculation Method:	Minimum Curvature
Well Error:	1.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA Compass
Reference Design:	Plan 1 07-06-21	Offset TVD Reference:	Reference Datum

Offset Design: Los Vaqueros Fed - 511H - OH - Plan 1													Offset Site Error:	1.00 usft
Survey Program:		0-MWD+HRGM						Rule Assigned:					Offset Well Error:	1.00 usft
Reference	Offset	Semi Major Axis		Offset Wellbore Centre		Distance				Warning				
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
10,100.00	10,042.48	10,077.31	10,023.18	26.45	34.17	54.21	893.90	108.16	228.89	180.50	48.39	4.730		
10,200.00	10,141.89	10,179.82	10,124.98	26.88	34.58	54.32	905.89	108.81	230.69	181.76	48.93	4.715		
10,300.00	10,241.55	10,284.18	10,228.89	27.29	35.01	54.33	915.52	109.33	232.30	182.82	49.48	4.695		
10,400.00	10,341.39	10,388.58	10,333.06	27.67	35.42	54.31	922.32	109.70	233.54	183.56	49.98	4.673		
10,500.00	10,441.34	10,493.00	10,437.41	28.00	35.79	54.24	926.27	109.91	234.42	184.00	50.42	4.650		
10,600.00	10,541.34	10,596.94	10,541.34	28.12	35.98	49.16	927.39	109.97	234.85	184.23	50.62	4.640		
10,602.57	10,543.91	10,599.52	10,543.91	28.12	35.98	-140.04	927.39	109.97	234.85	184.23	50.62	4.640		
10,700.00	10,641.31	10,696.91	10,641.31	28.08	36.01	-140.17	927.39	109.97	235.88	185.13	50.74	4.648		
10,800.00	10,739.52	10,795.12	10,739.52	27.76	36.05	-141.73	927.39	109.97	249.86	198.13	51.73	4.830		
10,900.00	10,831.87	10,887.47	10,831.87	27.39	36.09	-144.15	927.39	109.97	280.98	227.50	53.48	5.254		
11,000.00	10,914.33	10,969.94	10,914.33	27.01	36.12	-146.01	927.39	109.97	329.82	274.52	55.30	5.964		
11,100.00	10,983.30	11,038.90	10,983.30	26.69	36.15	-145.99	927.39	109.97	395.37	338.60	56.77	6.965		
11,200.00	11,035.76	11,091.36	11,035.76	26.43	36.17	-142.33	927.39	109.97	474.98	417.15	57.82	8.214		
11,300.00	11,069.41	11,125.01	11,069.41	26.27	36.18	-130.53	927.39	109.97	564.88	506.31	58.57	9.645		
11,400.00	11,082.79	11,138.39	11,082.79	26.21	36.19	-97.23	927.39	109.97	660.73	601.61	59.12	11.177		
11,500.00	11,082.40	11,138.00	11,082.40	26.24	36.19	-88.42	927.39	109.97	757.92	698.33	59.59	12.719		
11,600.00	11,081.68	11,137.28	11,081.68	26.27	36.19	-88.62	927.39	109.97	854.21	794.16	60.05	14.225		
11,700.00	11,080.95	11,136.56	11,080.95	26.29	36.19	-88.66	927.39	109.97	949.63	889.18	60.45	15.708		
11,800.00	11,080.23	11,135.84	11,080.23	26.31	36.19	-88.52	927.39	109.97	1,045.59	984.82	60.77	17.207		
11,900.00	11,079.51	11,135.11	11,079.51	26.34	36.19	-88.37	927.39	109.97	1,142.24	1,081.23	61.01	18.723		
12,000.00	11,078.79	11,134.39	11,078.79	26.37	36.19	-88.22	927.39	109.97	1,239.42	1,178.22	61.20	20.252		
12,100.00	11,078.07	11,133.67	11,078.07	26.41	36.19	-88.07	927.39	109.97	1,337.02	1,275.67	61.36	21.791		
12,200.00	11,077.35	11,132.95	11,077.35	26.46	36.19	-87.93	927.39	109.97	1,434.95	1,373.47	61.48	23.338		
12,300.00	11,076.63	11,132.23	11,076.63	26.53	36.19	-87.78	927.39	109.97	1,533.15	1,471.55	61.59	24.891		
12,400.00	11,075.91	11,131.51	11,075.91	26.61	36.19	-87.63	927.39	109.97	1,631.56	1,569.87	61.69	26.448		
12,500.00	11,075.19	11,130.79	11,075.19	26.73	36.19	-87.48	927.39	109.97	1,730.16	1,668.38	61.77	28.009		
12,600.00	11,074.46	11,130.07	11,074.46	26.89	36.19	-87.34	927.39	109.97	1,828.90	1,767.06	61.85	29.572		
12,700.00	11,073.74	11,129.35	11,073.74	27.13	36.19	-87.19	927.39	109.97	1,927.78	1,865.87	61.91	31.137		
12,800.00	11,073.02	11,128.62	11,073.02	27.50	36.18	-87.04	927.39	109.97	2,026.77	1,964.79	61.98	32.703		
12,900.00	11,072.30	15,175.53	13,179.88	28.06	34.85	-174.05	-1,199.65	67.33	2,119.08	2,053.26	65.82	32.194		
13,000.00	11,071.58	15,275.53	13,178.97	28.80	34.89	-174.05	-1,299.64	68.19	2,118.89	2,052.10	66.78	31.728		
13,100.00	11,070.86	15,375.53	13,178.05	29.70	34.93	-174.05	-1,399.63	69.05	2,118.69	2,050.92	67.77	31.264		
13,200.00	11,070.14	15,475.53	13,177.13	30.72	34.99	-174.05	-1,499.63	69.91	2,118.50	2,049.72	68.78	30.803		
13,300.00	11,069.42	15,575.53	13,176.22	31.80	35.09	-174.05	-1,599.62	70.76	2,118.30	2,048.50	69.80	30.346		
13,400.00	11,068.69	15,675.53	13,175.30	32.94	35.30	-174.05	-1,699.61	71.62	2,118.11	2,047.26	70.85	29.894		
13,500.00	11,067.97	15,775.53	13,174.38	34.11	35.91	-174.05	-1,799.60	72.48	2,117.92	2,045.99	71.92	29.447		
13,600.00	11,067.25	15,875.53	13,173.47	35.31	36.95	-174.05	-1,899.59	73.34	2,117.72	2,044.71	73.01	29.006		
13,700.00	11,066.53	15,975.53	13,172.55	36.54	38.12	-174.05	-1,999.58	74.19	2,117.53	2,043.41	74.12	28.570		
13,800.00	11,065.81	16,075.53	13,171.63	37.79	39.35	-174.05	-2,099.58	75.05	2,117.33	2,042.09	75.24	28.141		
13,900.00	11,065.09	16,175.53	13,170.71	39.05	40.59	-174.04	-2,199.57	75.91	2,117.14	2,040.76	76.38	27.719		
14,000.00	11,064.37	16,275.53	13,169.80	40.32	41.86	-174.04	-2,299.56	76.77	2,116.95	2,039.41	77.53	27.303		
14,100.00	11,063.65	16,375.53	13,168.88	41.61	43.14	-174.04	-2,399.55	77.62	2,116.75	2,038.05	78.70	26.895		
14,200.00	11,062.92	16,475.53	13,167.96	42.91	44.43	-174.04	-2,499.54	78.48	2,116.56	2,036.67	79.89	26.494		
14,300.00	11,062.20	16,575.53	13,167.05	44.22	45.73	-174.04	-2,599.54	79.34	2,116.36	2,035.28	81.09	26.100		
14,400.00	11,061.48	16,675.53	13,166.13	45.53	47.04	-174.04	-2,699.53	80.20	2,116.17	2,033.87	82.30	25.713		
14,500.00	11,060.76	16,775.52	13,165.21	46.86	48.35	-174.04	-2,799.52	81.05	2,115.97	2,032.45	83.52	25.334		
14,600.00	11,060.04	16,875.52	13,164.29	48.19	49.67	-174.04	-2,899.51	81.91	2,115.78	2,031.02	84.76	24.962		
14,700.00	11,059.32	16,975.52	13,163.38	49.52	51.00	-174.04	-2,999.50	82.77	2,115.59	2,029.58	86.01	24.598		
14,800.00	11,058.60	17,075.52	13,162.46	50.87	52.34	-174.04	-3,099.50	83.63	2,115.39	2,028.13	87.26	24.241		
14,900.00	11,057.88	17,175.52	13,161.54	52.21	53.68	-174.04	-3,199.49	84.49	2,115.20	2,026.66	88.53	23.891		
15,000.00	11,057.16	17,275.52	13,160.63	53.57	55.02	-174.04	-3,299.48	85.34	2,115.00	2,025.19	89.81	23.549		
15,100.00	11,056.43	17,375.52	13,159.71	54.92	56.37	-174.04	-3,399.47	86.20	2,114.81	2,023.71	91.10	23.214		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Anticollision Report



Company:	Titus Oil & Gas Production, LLC	Local Co-ordinate Reference:	Well 201H
Project:	Lea County, NM - (NAD83 NME)	TVD Reference:	RKB @ 3211.00usft (Est KB)
Reference Site:	Los Vaqueros Fed	MD Reference:	RKB @ 3211.00usft (Est KB)
Site Error:	1.00 usft	North Reference:	Grid
Reference Well:	201H	Survey Calculation Method:	Minimum Curvature
Well Error:	1.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA Compass
Reference Design:	Plan 1 07-06-21	Offset TVD Reference:	Reference Datum

Offset Design: Los Vaqueros Fed - 511H - OH - Plan 1													Offset Site Error:	1.00 usft
Survey Program: 0-MWD+HRGM													Offset Well Error:	1.00 usft
Reference				Offset		Semi Major Axis		Offset Wellbore Centre		Rule Assigned: Distance				Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
15,200.00	11,055.71	17,475.52	13,158.79	56.29	57.73	-174.04	-3,499.46	87.06	2,114.62	2,022.22	92.40	22.886		
15,300.00	11,054.99	17,575.52	13,157.88	57.65	59.09	-174.03	-3,599.46	87.92	2,114.42	2,020.72	93.71	22.564		
15,400.00	11,054.27	17,675.52	13,156.96	59.02	60.45	-174.03	-3,699.45	88.77	2,114.23	2,019.21	95.02	22.250		
15,500.00	11,053.55	17,775.52	13,156.04	60.39	61.81	-174.03	-3,799.44	89.63	2,114.03	2,017.69	96.35	21.942		
15,600.00	11,052.83	17,875.52	13,155.12	61.77	63.18	-174.03	-3,899.43	90.49	2,113.84	2,016.16	97.68	21.641		
15,700.00	11,052.11	17,975.52	13,154.21	63.14	64.55	-174.03	-3,999.42	91.35	2,113.65	2,014.63	99.02	21.347		
15,800.00	11,051.39	18,075.52	13,153.29	64.52	65.92	-174.03	-4,099.42	92.20	2,113.45	2,013.09	100.36	21.058		
15,900.00	11,050.66	18,175.52	13,152.37	65.91	67.30	-174.03	-4,199.41	93.06	2,113.26	2,011.54	101.72	20.776		
16,000.00	11,049.94	18,275.52	13,151.46	67.29	68.68	-174.03	-4,299.40	93.92	2,113.06	2,009.99	103.08	20.500		
16,100.00	11,049.22	18,375.52	13,150.54	68.68	70.06	-174.03	-4,399.39	94.78	2,112.87	2,008.43	104.44	20.230		
16,200.00	11,048.50	18,475.52	13,149.62	70.07	71.44	-174.03	-4,499.38	95.63	2,112.68	2,006.86	105.81	19.966		
16,300.00	11,047.78	18,575.52	13,148.70	71.46	72.83	-174.03	-4,599.37	96.49	2,112.48	2,005.29	107.19	19.707		
16,400.00	11,047.06	18,675.52	13,147.79	72.85	74.22	-174.03	-4,699.37	97.35	2,112.29	2,003.71	108.58	19.454		
16,500.00	11,046.34	18,775.52	13,146.87	74.24	75.61	-174.03	-4,799.36	98.21	2,112.09	2,002.13	109.97	19.207		
16,600.00	11,045.62	18,875.52	13,145.95	75.64	77.00	-174.02	-4,899.35	99.06	2,111.90	2,000.54	111.36	18.965		
16,700.00	11,044.90	18,975.52	13,145.04	77.04	78.39	-174.02	-4,999.34	99.92	2,111.70	1,998.94	112.76	18.727		
16,800.00	11,044.17	19,075.52	13,144.12	78.44	79.78	-174.02	-5,099.33	100.78	2,111.51	1,997.35	114.17	18.495		
16,900.00	11,043.45	19,175.52	13,143.20	79.84	81.18	-174.02	-5,199.33	101.64	2,111.32	1,995.74	115.57	18.268		
17,000.00	11,042.73	19,275.52	13,142.29	81.24	82.57	-174.02	-5,299.32	102.50	2,111.12	1,994.13	116.99	18.045		
17,100.00	11,042.01	19,375.52	13,141.37	82.64	83.97	-174.02	-5,399.31	103.35	2,110.93	1,992.52	118.41	17.828		
17,200.00	11,041.29	19,475.52	13,140.45	84.04	85.37	-174.02	-5,499.30	104.21	2,110.73	1,990.90	119.83	17.614		
17,300.00	11,040.57	19,575.52	13,139.53	85.45	86.77	-174.02	-5,599.29	105.07	2,110.54	1,989.28	121.26	17.405		
17,400.00	11,039.85	19,675.52	13,138.62	86.85	88.17	-174.02	-5,699.29	105.93	2,110.35	1,987.66	122.69	17.201		
17,500.00	11,039.13	19,775.52	13,137.70	88.26	89.57	-174.02	-5,799.28	106.78	2,110.15	1,986.03	124.12	17.000		
17,600.00	11,038.40	19,875.52	13,136.78	89.67	90.98	-174.02	-5,899.27	107.64	2,109.96	1,984.40	125.56	16.804		
17,700.00	11,037.68	19,975.52	13,135.87	91.08	92.38	-174.02	-5,999.26	108.50	2,109.76	1,982.76	127.00	16.612		
17,800.00	11,036.96	20,075.52	13,134.95	92.49	93.79	-174.02	-6,099.25	109.36	2,109.57	1,981.12	128.45	16.423		
17,900.00	11,036.24	20,175.52	13,134.03	93.90	95.19	-174.02	-6,199.25	110.21	2,109.38	1,979.48	129.90	16.239		
18,000.00	11,035.52	20,275.52	13,133.11	95.31	96.60	-174.01	-6,299.24	111.07	2,109.18	1,977.83	131.35	16.058		
18,100.00	11,034.80	20,375.52	13,132.20	96.72	98.01	-174.01	-6,399.23	111.93	2,108.99	1,976.18	132.80	15.880		
18,200.00	11,034.08	20,475.52	13,131.28	98.13	99.42	-174.01	-6,499.22	112.79	2,108.79	1,974.53	134.26	15.706		
18,300.00	11,033.36	20,575.52	13,130.36	99.54	100.83	-174.01	-6,599.21	113.64	2,108.60	1,972.88	135.72	15.536		
18,400.00	11,032.64	20,675.52	13,129.45	100.96	102.24	-174.01	-6,699.21	114.50	2,108.41	1,971.22	137.19	15.369		
18,500.00	11,031.91	20,775.52	13,128.53	102.37	103.65	-174.01	-6,799.20	115.36	2,108.21	1,969.56	138.65	15.205		
18,600.00	11,031.19	20,875.52	13,127.61	103.79	105.06	-174.01	-6,899.19	116.22	2,108.02	1,967.89	140.12	15.044		
18,700.00	11,030.47	20,975.52	13,126.70	105.20	106.47	-174.01	-6,999.18	117.08	2,107.82	1,966.23	141.60	14.886		
18,800.00	11,029.75	21,075.52	13,125.78	106.62	107.89	-174.01	-7,099.17	117.93	2,107.63	1,964.56	143.07	14.731		
18,888.83	11,029.11	21,160.32	13,125.00	107.87	109.08	-174.01	-7,183.97	118.66	2,107.46	1,963.21	144.25	14.610		
18,900.00	11,029.03	21,160.32	13,125.00	108.03	109.08	-174.01	-7,183.97	118.66	2,107.49	1,963.45	144.04	14.631		
18,904.07	11,029.00	21,160.32	13,125.00	108.09	109.08	-174.01	-7,183.97	118.66	2,107.52	1,963.55	143.97	14.639		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Anticollision Report



Company:	Titus Oil & Gas Production, LLC	Local Co-ordinate Reference:	Well 201H
Project:	Lea County, NM - (NAD83 NME)	TVD Reference:	RKB @ 3211.00usft (Est KB)
Reference Site:	Los Vaqueros Fed	MD Reference:	RKB @ 3211.00usft (Est KB)
Site Error:	1.00 usft	North Reference:	Grid
Reference Well:	201H	Survey Calculation Method:	Minimum Curvature
Well Error:	1.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA Compass
Reference Design:	Plan 1 07-06-21	Offset TVD Reference:	Reference Datum

Offset Design: Los Vaqueros Fed Offsets - Madera 19 Fed Com 26-35-19 WB 5H - OH - Surveys												Offset Site Error:	1.00 usft
Survey Program: 178-MWD												Offset Well Error:	1.00 usft
Rule Assigned:												Warning	
Measured Depth (usft)	Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
0.00	0.00	0.00	0.50	1.41	1.41	44.80	904.14	897.74	1,274.14				
100.00	100.00	103.67	104.17	1.48	1.42	44.81	903.89	897.76	1,273.97	1,271.07	2.90	439.397	
200.00	200.00	210.31	210.81	1.89	1.44	44.83	903.06	897.81	1,273.45	1,270.12	3.33	382.548	
300.00	300.00	311.27	311.76	2.25	1.49	44.87	901.71	897.72	1,272.45	1,268.71	3.74	340.529	
400.00	400.00	408.29	408.77	2.56	1.56	44.91	900.62	897.71	1,271.64	1,267.52	4.12	308.793	
500.00	500.00	507.39	507.87	2.84	1.65	44.95	899.53	897.90	1,271.00	1,266.51	4.49	282.835	
600.00	600.00	607.09	607.56	3.10	1.77	44.99	898.47	898.11	1,270.39	1,265.52	4.87	260.926	
700.00	700.00	707.00	707.47	3.34	1.91	45.03	897.44	898.32	1,269.81	1,264.57	5.24	242.196	
800.00	800.00	809.04	809.49	3.56	2.06	45.07	896.26	898.52	1,269.14	1,263.52	5.62	226.003	
900.00	900.00	909.66	910.11	3.77	2.21	45.11	895.11	898.53	1,268.34	1,262.36	5.98	211.932	
1,000.00	1,000.00	1,010.13	1,010.58	3.98	2.38	45.15	893.98	898.57	1,267.57	1,261.22	6.35	199.499	
1,100.00	1,100.00	1,111.01	1,111.45	4.17	2.55	45.18	892.86	898.39	1,266.66	1,259.93	6.72	188.447	
1,200.00	1,200.00	1,212.49	1,212.92	4.36	2.73	45.21	891.73	898.15	1,265.71	1,258.62	7.09	178.552	
1,300.00	1,300.00	1,312.59	1,313.02	4.54	2.91	45.22	890.75	897.64	1,264.66	1,257.21	7.45	169.720	
1,400.00	1,400.00	1,413.87	1,414.28	4.72	3.10	45.24	889.66	897.21	1,263.60	1,255.79	7.81	161.703	
1,500.00	1,500.00	1,516.41	1,516.82	4.89	3.29	45.26	888.46	896.63	1,262.38	1,254.20	8.18	154.376	
1,600.00	1,600.00	1,616.17	1,616.57	5.06	3.49	45.29	887.14	896.07	1,261.04	1,252.51	8.54	147.748	
1,700.00	1,700.00	1,714.00	1,714.39	5.22	3.68	45.32	885.79	895.75	1,259.84	1,250.95	8.89	141.741	
1,800.00	1,800.00	1,809.00	1,809.38	5.38	3.86	45.36	884.57	895.69	1,258.90	1,249.66	9.23	136.333	
1,900.00	1,900.00	1,903.00	1,903.38	5.53	4.05	45.39	883.71	895.84	1,258.37	1,248.79	9.57	131.426	
2,000.00	2,000.00	2,002.10	2,002.47	5.69	4.25	45.43	882.92	896.29	1,258.13	1,248.21	9.93	126.762	
2,088.80	2,088.80	2,088.44	2,088.80	5.82	4.42	45.48	882.11	896.97	1,258.05	1,247.81	10.23	122.932	
2,100.00	2,100.00	2,099.29	2,099.65	5.83	4.45	45.49	882.01	897.08	1,258.05	1,247.78	10.27	122.466	
2,200.00	2,200.00	2,196.70	2,197.05	5.98	4.64	45.54	881.18	898.10	1,258.20	1,247.58	10.62	118.488	
2,300.00	2,300.00	2,303.82	2,304.16	6.13	4.86	45.62	880.07	899.27	1,258.27	1,247.29	10.98	114.597	
2,400.00	2,400.00	2,429.76	2,430.06	6.27	5.12	45.75	876.92	900.07	1,256.99	1,245.61	11.38	110.502	
2,500.00	2,500.00	2,558.97	2,559.08	6.41	5.39	45.98	870.03	900.33	1,253.42	1,241.64	11.78	106.420	
2,600.00	2,600.00	2,691.36	2,690.90	6.55	5.69	46.41	857.95	901.13	1,247.55	1,235.36	12.19	102.309	
2,700.00	2,700.00	2,860.59	2,858.39	6.68	6.10	47.21	833.92	900.99	1,237.86	1,225.19	12.67	97.687	
2,800.00	2,800.00	2,972.29	2,968.37	6.82	6.40	47.81	814.52	898.68	1,224.51	1,211.45	13.06	93.740	
2,900.00	2,900.00	3,068.35	3,062.89	6.95	6.67	48.34	797.55	896.51	1,210.92	1,197.49	13.44	90.130	
3,000.00	3,000.00	3,173.94	3,166.77	7.08	6.97	48.95	778.78	894.20	1,197.46	1,183.63	13.83	86.589	
3,100.00	3,100.00	3,287.44	3,278.28	7.21	7.30	49.59	757.96	890.40	1,182.84	1,168.60	14.23	83.102	
3,200.00	3,200.00	3,383.43	3,372.53	7.34	7.59	50.15	740.14	886.62	1,167.76	1,153.15	14.62	79.893	
3,300.00	3,300.00	3,473.06	3,460.56	7.47	7.87	50.69	723.54	883.76	1,153.39	1,138.40	15.00	76.909	
3,400.00	3,400.00	3,568.43	3,554.29	7.59	8.16	51.30	706.06	881.34	1,139.77	1,124.38	15.39	74.078	
3,500.00	3,500.00	3,666.96	3,651.14	7.72	8.46	51.93	688.17	878.68	1,126.28	1,110.50	15.78	71.387	
3,600.00	3,600.00	3,767.85	3,750.32	7.84	8.78	52.59	669.91	875.82	1,112.85	1,096.68	16.18	68.794	
3,700.00	3,700.00	3,861.58	3,842.54	7.96	9.07	53.17	653.47	872.71	1,099.53	1,082.97	16.57	66.376	
3,800.00	3,800.00	3,950.61	3,930.44	8.08	9.34	53.63	639.88	869.00	1,087.02	1,070.09	16.93	64.198	
3,900.00	3,900.00	4,034.25	4,013.33	8.21	9.57	53.96	629.39	864.93	1,075.68	1,058.41	17.27	62.271	
4,000.00	4,000.00	4,113.55	4,092.17	8.32	9.77	54.15	621.93	860.90	1,066.04	1,048.44	17.59	60.598	
4,100.00	4,100.00	4,190.49	4,168.86	8.44	9.96	54.26	616.95	857.29	1,058.45	1,040.56	17.89	59.172	
4,200.00	4,200.00	4,264.00	4,242.26	8.56	10.11	54.28	614.36	854.23	1,053.06	1,034.90	18.16	57.990	
4,300.00	4,300.00	4,340.77	4,318.98	8.68	10.26	54.21	613.94	851.62	1,050.02	1,031.60	18.41	57.022	
4,400.00	4,400.00	4,426.10	4,404.27	8.79	10.40	54.08	615.47	849.50	1,049.04	1,030.36	18.67	56.177	
4,458.00	4,458.00	4,479.86	4,458.00	8.86	10.49	53.99	616.73	848.49	1,048.95	1,030.12	18.83	55.700	
4,500.00	4,500.00	4,520.48	4,498.61	8.91	10.56	53.93	617.60	847.90	1,048.98	1,030.03	18.95	55.351	
4,600.00	4,600.00	4,606.50	4,584.61	9.02	10.71	53.84	619.31	847.32	1,049.64	1,030.42	19.21	54.627	
4,700.00	4,700.00	4,694.24	4,672.32	9.14	10.85	53.78	621.35	848.20	1,051.80	1,032.32	19.48	53.984	
4,800.00	4,800.00	4,791.30	4,769.34	9.25	11.02	53.75	623.34	850.21	1,054.68	1,034.90	19.78	53.320	
4,900.00	4,900.00	4,887.51	4,865.50	9.36	11.19	53.78	624.64	852.83	1,057.67	1,037.59	20.08	52.671	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Anticollision Report



Company:	Titus Oil & Gas Production, LLC	Local Co-ordinate Reference:	Well 201H
Project:	Lea County, NM - (NAD83 NME)	TVD Reference:	RKB @ 3211.00usft (Est KB)
Reference Site:	Los Vaqueros Fed	MD Reference:	RKB @ 3211.00usft (Est KB)
Site Error:	1.00 usft	North Reference:	Grid
Reference Well:	201H	Survey Calculation Method:	Minimum Curvature
Well Error:	1.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA Compass
Reference Design:	Plan 1 07-06-21	Offset TVD Reference:	Reference Datum

Offset Design: Los Vaqueros Fed Offsets - Madera 19 Fed Com 26-35-19 WB 5H - OH - Surveys													Offset Site Error: 1.00 usft
Survey Program: 178-MWD													Offset Well Error: 1.00 usft
Rule Assigned:													
Measured Depth (usft)	Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,000.00	5,000.00	4,979.09	4,957.01	9.48	11.36	53.87	625.28	856.47	1,061.30	1,040.93	20.38	52.088	
5,100.00	5,099.99	5,085.92	5,063.70	9.64	11.55	59.06	625.34	861.76	1,064.70	1,043.96	20.73	51.357	
5,200.00	5,199.91	5,203.45	5,181.17	9.90	11.77	59.41	624.91	865.79	1,065.25	1,044.12	21.13	50.410	
5,300.00	5,299.69	5,302.00	5,279.69	10.16	11.96	59.81	624.66	868.13	1,063.73	1,042.25	21.48	49.518	
5,400.00	5,399.27	5,400.41	5,378.06	10.43	12.14	60.35	624.63	870.63	1,061.22	1,039.39	21.83	48.606	
5,500.00	5,498.57	5,501.51	5,479.14	10.71	12.33	61.03	624.60	872.91	1,057.29	1,035.10	22.19	47.648	
5,600.00	5,597.54	5,595.35	5,572.95	11.01	12.50	61.70	626.30	874.17	1,052.48	1,029.96	22.52	46.734	
5,700.00	5,696.30	5,692.14	5,669.68	11.23	12.66	62.30	629.48	874.92	1,047.53	1,024.69	22.84	45.870	
5,800.00	5,795.07	5,790.03	5,767.52	11.43	12.83	62.92	632.84	875.81	1,042.90	1,019.75	23.15	45.048	
5,900.00	5,893.84	5,894.96	5,872.38	11.64	13.01	63.59	636.37	876.72	1,038.33	1,014.84	23.48	44.213	
6,000.00	5,992.61	6,014.63	5,991.99	11.87	13.22	64.33	640.18	875.99	1,032.54	1,008.69	23.85	43.296	
6,100.00	6,091.38	6,116.89	6,094.17	12.10	13.40	64.91	643.42	873.61	1,025.37	1,001.20	24.18	42.409	
6,200.00	6,190.15	6,214.80	6,192.00	12.35	13.57	65.47	646.80	871.46	1,018.57	994.07	24.50	41.569	
6,300.00	6,288.92	6,314.19	6,291.31	12.61	13.75	66.06	650.01	869.40	1,011.87	987.03	24.84	40.742	
6,400.00	6,387.69	6,413.93	6,391.01	12.88	13.94	66.72	652.19	867.87	1,005.25	980.07	25.18	39.926	
6,500.00	6,486.46	6,512.36	6,489.43	13.16	14.13	67.44	653.46	866.83	998.77	973.25	25.52	39.131	
6,600.00	6,585.22	6,613.66	6,590.72	13.45	14.33	68.21	654.51	865.82	992.39	966.51	25.88	38.349	
6,700.00	6,683.99	6,707.56	6,684.61	13.75	14.51	68.94	655.34	865.06	986.29	960.07	26.22	37.619	
6,800.00	6,782.76	6,805.51	6,782.56	14.05	14.71	69.71	656.34	864.56	980.69	954.12	26.57	36.912	
6,900.00	6,881.53	6,903.73	6,880.77	14.36	14.90	70.51	657.19	864.22	975.37	948.44	26.92	36.231	
7,000.00	6,980.30	7,005.86	6,982.90	14.68	15.10	71.35	657.89	863.79	970.09	942.81	27.28	35.562	
7,100.00	7,079.07	7,105.47	7,082.50	15.01	15.30	72.18	658.56	863.12	964.79	937.16	27.63	34.918	
7,200.00	7,177.84	7,202.19	7,179.22	15.34	15.49	73.00	659.10	862.69	959.86	931.88	27.98	34.308	
7,300.00	7,276.61	7,304.19	7,281.22	15.67	15.69	73.87	659.59	862.12	955.00	926.66	28.34	33.703	
7,400.00	7,375.37	7,403.31	7,380.34	16.02	15.89	74.75	659.83	861.47	950.19	921.50	28.69	33.121	
7,500.00	7,474.14	7,501.04	7,478.07	16.36	16.08	75.61	660.13	860.86	945.66	916.62	29.04	32.566	
7,600.00	7,572.91	7,600.83	7,577.85	16.72	16.28	76.49	660.62	860.28	941.45	912.05	29.39	32.031	
7,700.00	7,671.68	7,703.15	7,680.17	17.07	16.49	77.43	660.66	859.46	937.12	907.37	29.75	31.500	
7,800.00	7,770.45	7,803.84	7,780.86	17.44	16.69	78.35	660.70	858.38	932.77	902.66	30.10	30.984	
7,900.00	7,869.22	7,901.56	7,878.56	17.80	16.89	79.23	661.04	857.13	928.56	898.10	30.46	30.489	
8,000.00	7,967.99	7,998.13	7,975.13	18.17	17.08	80.13	661.08	856.25	924.84	894.03	30.81	30.019	
8,100.00	8,066.76	8,102.68	8,079.67	18.54	17.30	81.13	660.92	855.26	921.30	890.12	31.18	29.551	
8,200.00	8,165.53	8,204.12	8,181.10	18.92	17.50	82.11	660.54	853.65	917.34	885.80	31.54	29.087	
8,300.00	8,264.29	8,301.82	8,278.78	19.29	17.71	83.07	660.08	852.09	913.62	881.72	31.90	28.642	
8,400.00	8,363.06	8,399.56	8,376.51	19.68	17.91	84.04	659.43	850.70	910.29	878.03	32.26	28.216	
8,500.00	8,461.83	8,500.42	8,477.36	20.06	18.12	85.07	658.63	849.23	907.19	874.56	32.63	27.800	
8,600.00	8,560.60	8,594.02	8,570.95	20.45	18.31	86.02	657.85	847.98	904.50	871.51	32.99	27.414	
8,700.00	8,659.37	8,693.46	8,670.39	20.83	18.52	87.05	657.10	846.93	902.36	869.00	33.37	27.042	
8,800.00	8,758.14	8,792.78	8,769.69	21.23	18.72	88.07	656.41	845.75	900.41	866.66	33.75	26.681	
8,900.00	8,856.91	8,887.56	8,864.46	21.62	18.92	89.05	655.74	844.83	898.95	864.83	34.12	26.344	
9,000.00	8,955.68	8,988.16	8,965.06	22.01	19.13	90.07	655.34	843.92	897.87	863.36	34.51	26.015	
9,100.00	9,054.45	9,088.17	9,065.07	22.41	19.33	91.07	655.21	842.80	896.89	861.98	34.91	25.694	
9,200.00	9,153.21	9,185.92	9,162.80	22.81	19.53	92.06	654.91	841.68	896.15	860.84	35.30	25.384	
9,270.50	9,222.84	9,252.80	9,229.68	23.09	19.67	92.73	654.87	841.07	895.96	860.38	35.58	25.179	
9,300.00	9,251.98	9,277.91	9,254.79	23.21	19.72	92.98	654.94	840.92	896.02	860.32	35.69	25.102	
9,400.00	9,350.75	9,360.98	9,337.85	23.62	19.88	93.75	655.80	841.43	897.58	861.52	36.07	24.888	
9,500.00	9,449.52	9,461.28	9,438.11	24.02	20.08	94.60	658.26	842.80	900.15	863.68	36.47	24.680	
9,600.00	9,548.29	9,565.89	9,542.67	24.43	20.28	95.42	661.63	843.70	902.40	865.50	36.89	24.460	
9,700.00	9,647.06	9,674.84	9,651.56	24.83	20.49	96.28	665.05	844.30	904.55	867.22	37.33	24.232	
9,800.00	9,745.83	9,796.37	9,773.04	25.24	20.73	97.33	667.53	841.81	904.22	866.41	37.81	23.916	
9,900.00	9,844.60	9,903.03	9,879.63	25.65	20.95	98.38	667.63	838.12	902.87	864.60	38.27	23.590	
10,000.00	9,943.39	10,012.69	9,989.18	26.05	21.18	99.44	667.77	833.23	900.79	862.06	38.73	23.256	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Anticollision Report



Company:	Titus Oil & Gas Production, LLC	Local Co-ordinate Reference:	Well 201H
Project:	Lea County, NM - (NAD83 NME)	TVD Reference:	RKB @ 3211.00usft (Est KB)
Reference Site:	Los Vaqueros Fed	MD Reference:	RKB @ 3211.00usft (Est KB)
Site Error:	1.00 usft	North Reference:	Grid
Reference Well:	201H	Survey Calculation Method:	Minimum Curvature
Well Error:	1.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA Compass
Reference Design:	Plan 1 07-06-21	Offset TVD Reference:	Reference Datum

Offset Design: Los Vaqueros Fed Offsets - Madera 19 Fed Com 26-35-19 WB 5H - OH - Surveys													Offset Site Error: 1.00 usft
Survey Program: 178-MWD													Offset Well Error: 1.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
10,100.00	10,042.48	10,119.55	10,095.87	26.47	21.40	100.32	667.89	827.30	897.52	858.33	39.19	22.900	
10,200.00	10,141.89	10,222.66	10,198.79	26.90	21.62	101.01	667.78	820.92	893.35	853.72	39.63	22.541	
10,300.00	10,241.55	10,326.43	10,302.33	27.31	21.83	101.51	667.86	814.00	888.29	848.25	40.04	22.182	
10,400.00	10,341.39	10,427.55	10,403.21	27.69	22.04	101.79	668.56	807.03	882.49	842.07	40.42	21.835	
10,500.00	10,441.34	10,526.54	10,501.94	28.02	22.25	101.84	670.17	800.21	876.07	835.33	40.74	21.503	
10,600.00	10,541.34	10,621.90	10,597.09	28.14	22.44	96.72	672.24	794.03	869.49	828.50	40.99	21.213	
10,700.00	10,641.31	10,709.61	10,684.62	28.10	22.62	-92.88	674.37	789.02	863.62	822.44	41.18	20.974	
10,800.00	10,739.52	10,787.51	10,762.44	27.78	22.78	-94.25	676.55	786.27	860.91	819.81	41.09	20.950 SF	
10,813.21	10,752.14	10,797.83	10,772.75	27.73	22.80	-94.47	676.87	786.03	860.87	819.81	41.06	20.965 CC, ES	
10,900.00	10,831.87	10,865.00	10,839.88	27.40	22.93	-96.11	679.07	785.17	862.88	822.05	40.83	21.133	
11,000.00	10,914.33	10,933.20	10,908.05	27.03	23.07	-97.76	681.27	785.24	871.30	830.82	40.48	21.524	
11,100.00	10,983.30	10,993.96	10,968.78	26.70	23.19	-98.66	682.87	785.90	888.16	847.98	40.19	22.101	
11,200.00	11,035.76	11,041.52	11,016.32	26.45	23.28	-97.99	683.72	786.69	915.07	875.01	40.06	22.840	
11,300.00	11,069.41	11,071.41	11,046.21	26.28	23.34	-95.01	684.08	787.30	952.59	912.42	40.17	23.712	
11,400.00	11,082.79	11,082.39	11,057.18	26.23	23.36	-89.31	684.20	787.55	999.75	959.24	40.51	24.681	
11,500.00	11,082.40	11,080.78	11,055.57	26.25	23.36	-88.01	684.18	787.51	1,052.45	1,011.39	41.06	25.632	
11,600.00	11,081.68	11,078.99	11,053.78	26.29	23.36	-88.02	684.16	787.47	1,106.14	1,064.14	42.01	26.332	
11,700.00	11,080.95	11,077.32	11,052.12	26.31	23.35	-87.99	684.14	787.43	1,160.84	1,118.09	42.75	27.156	
11,800.00	11,080.23	11,075.67	11,050.46	26.33	23.35	-87.89	684.13	787.39	1,220.31	1,176.89	43.42	28.104	
11,900.00	11,079.51	11,074.00	11,048.79	26.36	23.35	-87.79	684.11	787.36	1,284.82	1,240.74	44.08	29.147	
12,000.00	11,078.79	11,072.31	11,047.10	26.39	23.34	-87.69	684.09	787.32	1,353.65	1,308.95	44.70	30.281	
12,100.00	11,078.07	11,070.60	11,045.40	26.43	23.34	-87.58	684.07	787.28	1,426.17	1,380.89	45.28	31.497	
12,200.00	11,077.35	11,068.88	11,043.68	26.48	23.34	-87.48	684.05	787.24	1,501.85	1,456.05	45.81	32.787	
12,300.00	11,076.63	11,067.15	11,041.94	26.55	23.33	-87.38	684.03	787.21	1,580.24	1,533.95	46.29	34.141	
12,400.00	11,075.91	11,065.39	11,040.19	26.63	23.33	-87.27	684.01	787.17	1,660.94	1,614.22	46.72	35.551	
12,500.00	11,075.19	11,063.62	11,038.42	26.74	23.33	-87.17	683.99	787.13	1,743.64	1,696.53	47.11	37.009	
12,600.00	11,074.46	11,061.84	11,036.63	26.91	23.32	-87.06	683.97	787.09	1,828.08	1,780.61	47.47	38.510	
12,700.00	11,073.74	11,061.55	11,036.34	27.15	23.32	-87.04	683.97	787.09	1,914.00	1,866.22	47.79	40.053	
12,800.00	11,073.02	11,059.35	11,034.15	27.52	23.32	-86.91	683.94	787.04	2,001.24	1,953.16	48.08	41.620	
12,900.00	11,072.30	11,057.05	11,031.85	28.07	23.31	-86.77	683.92	786.99	2,089.62	2,041.27	48.35	43.214	
13,000.00	11,071.58	11,054.66	11,029.46	28.82	23.31	-86.63	683.89	786.94	2,179.00	2,130.40	48.60	44.831	
13,100.00	11,070.86	11,052.17	11,026.97	29.72	23.30	-86.48	683.86	786.89	2,269.27	2,220.44	48.83	46.468	
13,200.00	11,070.14	11,049.56	11,024.37	30.73	23.30	-86.33	683.83	786.84	2,360.32	2,311.27	49.05	48.122	
13,300.00	11,069.42	11,046.84	11,021.64	31.82	23.29	-86.16	683.79	786.79	2,452.06	2,402.82	49.25	49.790	
13,400.00	11,068.69	11,043.98	11,018.79	32.95	23.29	-85.99	683.75	786.73	2,544.43	2,494.99	49.44	51.470	
13,500.00	11,067.97	11,040.99	11,015.80	34.13	23.28	-85.81	683.71	786.68	2,637.35	2,587.74	49.61	53.160	
13,600.00	11,067.25	11,037.85	11,012.66	35.33	23.27	-85.63	683.67	786.62	2,730.77	2,680.99	49.78	54.859	
13,700.00	11,066.53	11,034.56	11,009.36	36.55	23.27	-85.43	683.62	786.56	2,824.63	2,774.69	49.94	56.564	
13,800.00	11,065.81	11,031.09	11,005.90	37.80	23.26	-85.22	683.57	786.50	2,918.90	2,868.81	50.09	58.275	
13,900.00	11,065.09	11,027.44	11,002.25	39.06	23.25	-85.00	683.51	786.43	3,013.54	2,963.31	50.23	59.990	
14,000.00	11,064.37	11,023.59	10,998.40	40.33	23.25	-84.77	683.44	786.36	3,108.51	3,058.14	50.37	61.709	
14,100.00	11,063.65	11,019.52	10,994.33	41.62	23.24	-84.53	683.37	786.30	3,203.78	3,153.27	50.51	63.429	
14,200.00	11,062.92	11,015.22	10,990.03	42.92	23.23	-84.28	683.30	786.22	3,299.33	3,248.69	50.64	65.150	
14,300.00	11,062.20	11,010.66	10,985.47	44.23	23.22	-84.01	683.21	786.15	3,395.14	3,344.36	50.77	66.871	
14,400.00	11,061.48	11,005.82	10,980.64	45.54	23.21	-83.72	683.12	786.08	3,491.17	3,440.27	50.90	68.590	
14,500.00	11,060.76	11,000.68	10,975.49	46.87	23.20	-83.41	683.01	786.00	3,587.42	3,536.39	51.02	70.308	
14,600.00	11,060.04	10,995.20	10,970.02	48.20	23.19	-83.09	682.90	785.92	3,683.86	3,632.71	51.15	72.024	
14,700.00	11,059.32	10,989.35	10,964.17	49.53	23.18	-82.74	682.77	785.84	3,780.49	3,729.22	51.27	73.735	
14,800.00	11,058.60	10,983.09	10,957.91	50.88	23.17	-82.37	682.63	785.75	3,877.28	3,825.88	51.39	75.442	
14,900.00	11,057.88	10,976.38	10,951.20	52.22	23.15	-81.98	682.46	785.67	3,974.22	3,922.70	51.52	77.144	
15,000.00	11,057.16	10,969.17	10,943.99	53.58	23.14	-81.55	682.28	785.58	4,071.31	4,019.67	51.64	78.839	
15,100.00	11,056.43	10,961.39	10,936.22	54.93	23.12	-81.09	682.08	785.49	4,168.53	4,116.76	51.77	80.527	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Anticollision Report



Company:	Titus Oil & Gas Production, LLC	Local Co-ordinate Reference:	Well 201H
Project:	Lea County, NM - (NAD83 NME)	TVD Reference:	RKB @ 3211.00usft (Est KB)
Reference Site:	Los Vaqueros Fed	MD Reference:	RKB @ 3211.00usft (Est KB)
Site Error:	1.00 usft	North Reference:	Grid
Reference Well:	201H	Survey Calculation Method:	Minimum Curvature
Well Error:	1.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA Compass
Reference Design:	Plan 1 07-06-21	Offset TVD Reference:	Reference Datum

Offset Design: Los Vaqueros Fed Offsets - Madera 19 Fed Com 26-35-19 WB 5H - OH - Surveys												Offset Site Error:	1.00 usft
Survey Program: 178-MWD												Offset Well Error:	1.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
15,200.00	11,055.71	10,955.99	10,930.83	56.29	23.11	-80.78	681.93	785.44	4,265.87	4,213.99	51.88	82.229	
15,300.00	11,054.99	10,951.67	10,926.51	57.66	23.10	-80.52	681.81	785.39	4,363.33	4,311.34	51.98	83.936	
15,400.00	11,054.27	10,947.26	10,922.10	59.03	23.09	-80.27	681.68	785.35	4,460.90	4,408.81	52.09	85.639	
15,500.00	11,053.55	10,942.76	10,917.60	60.40	23.09	-80.00	681.55	785.31	4,558.57	4,506.37	52.19	87.338	
15,600.00	11,052.83	10,938.17	10,913.01	61.77	23.08	-79.74	681.42	785.28	4,656.33	4,604.03	52.30	89.032	
15,700.00	11,052.11	10,933.48	10,908.32	63.15	23.07	-79.46	681.28	785.25	4,754.18	4,701.78	52.40	90.721	
15,800.00	11,051.39	10,928.69	10,903.54	64.53	23.06	-79.18	681.14	785.22	4,852.12	4,799.61	52.51	92.405	
15,900.00	11,050.66	10,923.80	10,898.65	65.91	23.05	-78.90	680.99	785.19	4,950.14	4,897.53	52.61	94.083	
16,000.00	11,049.94	10,918.80	10,893.65	67.30	23.04	-78.61	680.84	785.17	5,048.23	4,995.51	52.72	95.756	
16,100.00	11,049.22	10,913.70	10,888.55	68.69	23.03	-78.32	680.68	785.15	5,146.39	5,093.57	52.83	97.423	
16,200.00	11,048.50	10,908.48	10,883.34	70.07	23.02	-78.02	680.52	785.13	5,244.62	5,191.69	52.93	99.084	
16,300.00	11,047.78	10,903.15	10,878.00	71.46	23.01	-77.71	680.35	785.12	5,342.91	5,289.87	53.04	100.738	
16,400.00	11,047.06	10,897.69	10,872.55	72.86	23.00	-77.40	680.18	785.11	5,441.25	5,388.11	53.14	102.386	
16,500.00	11,046.34	10,892.11	10,866.97	74.25	22.99	-77.08	679.99	785.11	5,539.66	5,486.40	53.25	104.027	
16,600.00	11,045.62	10,886.40	10,861.27	75.65	22.98	-76.75	679.80	785.11	5,638.11	5,584.75	53.36	105.661	
16,700.00	11,044.90	10,880.56	10,855.43	77.04	22.96	-76.42	679.61	785.12	5,736.62	5,683.15	53.47	107.287	
16,800.00	11,044.17	10,874.58	10,849.45	78.44	22.95	-76.08	679.41	785.13	5,835.17	5,781.59	53.58	108.907	
16,900.00	11,043.45	10,868.45	10,843.33	79.84	22.94	-75.74	679.19	785.15	5,933.76	5,880.07	53.69	110.518	
17,000.00	11,042.73	10,865.00	10,839.88	81.24	22.93	-75.54	679.07	785.17	6,032.40	5,978.61	53.79	112.149	
17,100.00	11,042.01	10,865.00	10,839.88	82.65	22.93	-75.54	679.07	785.17	6,131.08	6,077.21	53.87	113.807	
17,200.00	11,041.29	10,865.00	10,839.88	84.05	22.93	-75.54	679.07	785.17	6,229.80	6,175.85	53.96	115.460	
17,300.00	11,040.57	10,865.00	10,839.88	85.45	22.93	-75.54	679.07	785.17	6,328.57	6,274.52	54.04	117.107	
17,400.00	11,039.85	10,865.00	10,839.88	86.86	22.93	-75.54	679.07	785.17	6,427.37	6,373.24	54.13	118.749	
17,500.00	11,039.13	10,865.00	10,839.88	88.27	22.93	-75.54	679.07	785.17	6,526.20	6,471.99	54.21	120.385	
17,600.00	11,038.40	10,865.00	10,839.88	89.67	22.93	-75.54	679.07	785.17	6,625.08	6,570.78	54.30	122.015	
17,700.00	11,037.68	10,845.88	10,820.77	91.08	22.90	-74.47	678.42	785.30	6,723.94	6,669.47	54.47	123.445	
17,800.00	11,036.96	10,843.39	10,818.28	92.49	22.89	-74.34	678.33	785.32	6,822.86	6,768.30	54.57	125.037	
17,900.00	11,036.24	10,840.92	10,815.81	93.90	22.89	-74.20	678.25	785.35	6,921.82	6,867.16	54.67	126.622	
18,000.00	11,035.52	10,838.47	10,813.36	95.31	22.88	-74.06	678.17	785.37	7,020.80	6,966.04	54.76	128.201	
18,100.00	11,034.80	10,836.03	10,810.93	96.72	22.88	-73.93	678.09	785.40	7,119.81	7,064.95	54.86	129.774	
18,200.00	11,034.08	10,833.62	10,808.51	98.14	22.87	-73.80	678.01	785.43	7,218.85	7,163.89	54.96	131.340	
18,300.00	11,033.36	10,831.22	10,806.11	99.55	22.87	-73.66	677.93	785.46	7,317.91	7,262.85	55.06	132.900	
18,400.00	11,032.64	10,828.83	10,803.73	100.96	22.86	-73.53	677.85	785.49	7,417.00	7,361.83	55.16	134.454	
18,500.00	11,031.91	10,826.47	10,801.37	102.38	22.86	-73.40	677.77	785.52	7,516.11	7,460.84	55.27	136.001	
18,600.00	11,031.19	10,824.12	10,799.02	103.79	22.85	-73.27	677.70	785.56	7,615.24	7,559.87	55.37	137.541	
18,700.00	11,030.47	10,821.79	10,796.69	105.21	22.85	-73.15	677.62	785.59	7,714.39	7,658.92	55.47	139.075	
18,800.00	11,029.75	10,819.47	10,794.38	106.62	22.84	-73.02	677.55	785.63	7,813.56	7,757.99	55.57	140.602	
18,900.00	11,029.03	10,817.17	10,792.08	108.04	22.84	-72.89	677.47	785.67	7,912.75	7,857.08	55.68	142.122	
18,904.07	11,029.00	10,817.08	10,791.99	108.10	22.84	-72.89	677.47	785.67	7,916.79	7,861.11	55.68	142.184	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Anticollision Report



Company:	Titus Oil & Gas Production, LLC	Local Co-ordinate Reference:	Well 201H
Project:	Lea County, NM - (NAD83 NME)	TVD Reference:	RKB @ 3211.00usft (Est KB)
Reference Site:	Los Vaqueros Fed	MD Reference:	RKB @ 3211.00usft (Est KB)
Site Error:	1.00 usft	North Reference:	Grid
Reference Well:	201H	Survey Calculation Method:	Minimum Curvature
Well Error:	1.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA Compass
Reference Design:	Plan 1 07-06-21	Offset TVD Reference:	Reference Datum

Offset Design: Los Vaqueros Fed Offsets - Madera 19 WA Fed Com 2H - OH - Surveys													Offset Site Error: 1.00 usft
Survey Program: 178-MWD													Offset Well Error: 1.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
0.00	0.00	0.50	0.00	1.41	1.41	42.82	904.14	837.74	1,232.59				
100.00	100.00	100.44	99.94	1.48	1.42	42.81	904.28	837.60	1,232.60	1,229.70	2.90	425.161	
100.12	100.12	100.56	100.06	1.48	1.42	42.81	904.28	837.60	1,232.60	1,229.70	2.90	425.118	
200.00	200.00	199.84	199.34	1.89	1.43	42.78	904.68	837.18	1,232.61	1,229.28	3.32	370.714	
300.00	300.00	297.55	297.04	2.25	1.48	42.74	905.37	836.66	1,232.76	1,229.03	3.73	330.357	
400.00	400.00	395.82	395.31	2.56	1.55	42.70	906.22	836.19	1,233.07	1,228.96	4.12	299.579	
500.00	500.00	495.77	495.26	2.84	1.65	42.66	907.00	835.93	1,233.47	1,228.99	4.49	274.899	
600.00	600.00	595.86	595.34	3.10	1.76	42.64	907.68	835.75	1,233.85	1,228.99	4.86	253.992	
700.00	700.00	695.00	694.48	3.34	1.89	42.61	908.36	835.61	1,234.26	1,229.03	5.23	235.952	
800.00	800.00	795.21	794.69	3.56	2.04	42.59	909.05	835.51	1,234.70	1,229.10	5.60	220.490	
900.00	900.00	895.42	894.90	3.77	2.19	42.56	909.74	835.39	1,235.12	1,229.16	5.97	207.027	
1,000.00	1,000.00	996.35	995.83	3.98	2.36	42.53	910.42	835.22	1,235.51	1,229.17	6.33	195.030	
1,100.00	1,100.00	1,096.57	1,096.04	4.17	2.53	42.50	911.08	834.93	1,235.80	1,229.09	6.70	184.355	
1,200.00	1,200.00	1,196.51	1,195.98	4.36	2.71	42.47	911.84	834.62	1,236.14	1,229.08	7.07	174.913	
1,300.00	1,300.00	1,299.78	1,299.25	4.54	2.89	42.44	912.48	834.29	1,236.39	1,228.95	7.43	166.328	
1,400.00	1,400.00	1,430.43	1,429.88	4.72	3.13	42.39	912.32	832.70	1,235.56	1,227.71	7.85	157.378	
1,500.00	1,500.00	1,616.43	1,615.43	4.89	3.51	42.18	906.94	821.72	1,229.26	1,220.90	8.36	146.992	
1,600.00	1,600.00	1,732.74	1,731.00	5.06	3.76	41.92	901.84	809.66	1,219.03	1,210.27	8.76	139.171	
1,700.00	1,700.00	1,831.53	1,829.09	5.22	3.97	41.67	897.44	798.77	1,208.34	1,199.22	9.12	132.479	
1,800.00	1,800.00	1,939.29	1,936.08	5.38	4.22	41.41	892.27	786.97	1,197.49	1,187.99	9.50	126.113	
1,900.00	1,900.00	2,074.30	2,069.72	5.53	4.57	40.99	885.12	769.26	1,184.91	1,174.99	9.92	119.408	
2,000.00	2,000.00	2,191.31	2,184.89	5.69	4.90	40.47	878.67	749.63	1,169.69	1,159.36	10.34	113.158	
2,100.00	2,100.00	2,294.05	2,285.74	5.83	5.23	39.93	873.24	730.80	1,153.74	1,143.00	10.74	107.410	
2,200.00	2,200.00	2,391.15	2,380.94	5.98	5.55	39.36	868.41	712.26	1,137.63	1,126.48	11.14	102.089	
2,300.00	2,300.00	2,475.15	2,463.41	6.13	5.81	38.86	864.66	696.76	1,122.41	1,110.89	11.52	97.437	
2,400.00	2,400.00	2,565.26	2,552.06	6.27	6.08	38.34	861.04	681.01	1,108.27	1,096.38	11.90	93.156	
2,500.00	2,500.00	2,663.53	2,648.78	6.41	6.39	37.76	857.34	664.08	1,094.61	1,082.31	12.30	88.991	
2,600.00	2,600.00	2,759.25	2,743.01	6.55	6.71	37.17	853.93	647.57	1,081.20	1,068.50	12.71	85.098	
2,700.00	2,700.00	2,855.53	2,837.80	6.68	7.02	36.56	850.74	630.99	1,068.13	1,055.02	13.11	81.448	
2,800.00	2,800.00	2,950.11	2,930.94	6.82	7.33	35.95	847.82	614.86	1,055.46	1,041.94	13.52	78.055	
2,900.00	2,900.00	3,041.50	3,021.02	6.95	7.63	35.35	845.36	599.62	1,043.46	1,029.54	13.92	74.940	
3,000.00	3,000.00	3,133.35	3,111.62	7.08	7.93	34.73	843.34	584.70	1,032.26	1,017.93	14.33	72.034	
3,100.00	3,100.00	3,225.71	3,202.83	7.21	8.22	34.12	841.68	570.20	1,021.82	1,007.09	14.74	69.338	
3,200.00	3,200.00	3,329.91	3,305.71	7.34	8.56	33.40	839.92	553.77	1,011.58	996.41	15.18	66.657	
3,300.00	3,300.00	3,432.66	3,407.04	7.47	8.91	32.65	837.83	536.87	1,000.83	985.21	15.62	64.078	
3,400.00	3,400.00	3,520.40	3,493.69	7.59	9.20	32.03	836.22	523.18	990.83	974.81	16.02	61.837	
3,500.00	3,500.00	3,627.46	3,599.49	7.72	9.54	31.28	834.29	506.93	981.28	964.81	16.47	59.582	
3,600.00	3,600.00	3,757.24	3,727.43	7.84	9.98	30.36	829.34	485.77	969.54	952.58	16.97	57.142	
3,700.00	3,700.00	3,862.89	3,831.27	7.96	10.37	29.57	823.48	467.20	955.84	938.41	17.43	54.853	
3,800.00	3,800.00	3,958.91	3,925.56	8.08	10.72	28.79	818.43	449.77	942.28	924.40	17.88	52.709	
3,900.00	3,900.00	4,048.96	4,014.03	8.21	11.05	28.04	814.15	433.56	929.42	911.10	18.32	50.738	
4,000.00	4,000.00	4,129.37	4,093.22	8.32	11.34	27.37	811.08	419.90	918.07	899.34	18.73	49.016	
4,100.00	4,100.00	4,219.45	4,182.20	8.44	11.63	26.66	808.89	406.08	908.83	889.67	19.15	47.450	
4,200.00	4,200.00	4,329.68	4,291.09	8.56	12.00	25.79	805.65	389.30	899.40	879.78	19.62	45.838	
4,300.00	4,300.00	4,429.97	4,390.07	8.68	12.33	24.98	801.73	373.59	889.07	869.00	20.07	44.299	
4,400.00	4,400.00	4,524.45	4,483.40	8.79	12.64	24.24	798.13	359.32	879.25	858.75	20.50	42.887	
4,500.00	4,500.00	4,619.04	4,576.95	8.91	12.95	23.52	794.70	345.82	870.09	849.16	20.93	41.578	
4,600.00	4,600.00	4,723.01	4,679.87	9.02	13.27	22.75	790.71	331.64	861.15	839.79	21.37	40.306	
4,700.00	4,700.00	4,833.08	4,788.76	9.14	13.62	21.95	785.33	316.44	851.32	829.51	21.82	39.022	
4,800.00	4,800.00	4,935.82	4,890.32	9.25	13.96	21.18	779.48	302.03	840.82	818.56	22.26	37.781	
4,900.00	4,900.00	5,045.04	4,998.13	9.36	14.32	20.33	772.18	286.15	829.32	806.61	22.71	36.519	
5,000.00	5,000.00	5,140.42	5,092.30	9.48	14.64	19.60	765.40	272.61	817.73	794.59	23.14	35.338	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Anticollision Report



Company:	Titus Oil & Gas Production, LLC	Local Co-ordinate Reference:	Well 201H
Project:	Lea County, NM - (NAD83 NME)	TVD Reference:	RKB @ 3211.00usft (Est KB)
Reference Site:	Los Vaqueros Fed	MD Reference:	RKB @ 3211.00usft (Est KB)
Site Error:	1.00 usft	North Reference:	Grid
Reference Well:	201H	Survey Calculation Method:	Minimum Curvature
Well Error:	1.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA Compass
Reference Design:	Plan 1 07-06-21	Offset TVD Reference:	Reference Datum

Offset Design: Los Vaqueros Fed Offsets - Madera 19 WA Fed Com 2H - OH - Surveys													Offset Site Error:	1.00 usft	
Survey Program:		178-MWD		Offset		Semi Maior Axis		Offset Wellbore Centre		Rule Assigned:				Offset Well Error:	1.00 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning		
5,100.00	5,099.99	5,235.30	5,185.98	9.64	14.96	23.94	759.29	258.91	805.62	782.00	23.62	34.106			
5,200.00	5,199.91	5,330.77	5,280.11	9.90	15.29	23.23	753.77	243.97	791.52	767.32	24.20	32.712			
5,300.00	5,299.69	5,421.00	5,369.16	10.16	15.60	22.61	749.42	230.08	776.16	751.39	24.77	31.338			
5,400.00	5,399.27	5,517.37	5,464.40	10.43	15.92	22.04	745.15	216.03	759.15	733.81	25.35	29.948			
5,500.00	5,498.57	5,617.66	5,563.39	10.71	16.27	21.42	740.85	200.47	739.74	713.78	25.96	28.490			
5,600.00	5,597.54	5,718.38	5,662.54	11.01	16.63	20.73	736.30	183.36	717.43	690.82	26.61	26.957			
5,700.00	5,696.30	5,814.45	5,757.09	11.23	16.98	19.94	731.86	166.97	693.95	666.75	27.20	25.511			
5,800.00	5,795.07	5,910.85	5,852.06	11.43	17.32	19.13	727.42	151.01	670.73	642.97	27.76	24.161			
5,900.00	5,893.84	6,005.58	5,945.42	11.64	17.65	18.30	723.03	135.60	647.70	619.36	28.34	22.858			
6,000.00	5,992.61	6,101.18	6,039.45	11.87	18.01	17.27	719.40	118.70	625.30	596.35	28.96	21.595			
6,100.00	6,091.38	6,198.46	6,134.94	12.10	18.38	16.04	715.80	100.45	603.01	573.39	29.62	20.360			
6,200.00	6,190.15	6,294.06	6,228.91	12.35	18.74	14.81	712.19	83.26	581.06	550.77	30.28	19.188			
6,300.00	6,288.92	6,390.01	6,323.34	12.61	19.09	13.55	708.67	66.63	559.59	528.64	30.96	18.077			
6,400.00	6,387.69	6,486.88	6,418.74	12.88	19.44	12.22	705.14	50.19	538.48	506.84	31.64	17.018			
6,500.00	6,486.46	6,584.26	6,514.65	13.16	19.79	10.79	701.53	33.76	517.63	485.29	32.34	16.004			
6,600.00	6,585.22	6,680.98	6,609.88	13.45	20.14	9.22	697.91	17.24	497.07	464.01	33.06	15.034			
6,700.00	6,683.99	6,777.58	6,705.02	13.75	20.49	7.55	694.37	0.88	476.98	443.19	33.79	14.114			
6,800.00	6,782.76	6,875.65	6,801.63	14.05	20.84	5.72	690.72	-15.59	457.28	422.74	34.54	13.241			
6,900.00	6,881.53	6,973.45	6,897.98	14.36	21.19	3.75	686.79	-31.89	437.78	402.50	35.28	12.409			
7,000.00	6,980.30	7,069.87	6,993.03	14.68	21.54	1.68	682.89	-47.62	418.78	382.76	36.02	11.627			
7,100.00	7,079.07	7,166.07	7,087.97	15.01	21.87	-0.48	679.22	-62.75	400.54	363.79	36.75	10.900			
7,200.00	7,177.84	7,263.06	7,183.75	15.34	22.21	-2.79	675.71	-77.57	383.06	345.60	37.46	10.226			
7,300.00	7,276.61	7,360.28	7,279.85	15.67	22.54	-5.23	672.27	-91.90	366.26	328.11	38.15	9.600			
7,400.00	7,375.37	7,458.66	7,377.19	16.02	22.86	-7.82	668.80	-105.72	350.04	311.23	38.81	9.020			
7,500.00	7,474.14	7,556.91	7,474.47	16.36	23.17	-10.57	665.16	-119.02	334.29	294.86	39.42	8.479			
7,600.00	7,572.91	7,656.93	7,573.73	16.72	23.47	-13.30	661.52	-130.63	318.84	278.87	39.98	7.975			
7,700.00	7,671.68	7,754.50	7,670.80	17.07	23.74	-15.86	658.25	-140.01	303.72	263.24	40.48	7.503			
7,800.00	7,770.45	7,852.54	7,768.35	17.44	24.00	-18.64	655.05	-149.20	289.25	248.33	40.92	7.069			
7,900.00	7,869.22	7,950.39	7,865.75	17.80	24.26	-21.62	652.09	-158.10	275.62	234.33	41.29	6.675			
8,000.00	7,967.99	8,053.31	7,968.48	18.17	24.48	-24.31	649.69	-163.84	261.72	220.12	41.60	6.291			
8,100.00	8,066.76	8,154.32	8,069.46	18.54	24.65	-26.32	648.01	-165.27	246.82	204.93	41.89	5.892			
8,200.00	8,165.53	8,252.85	8,167.97	18.92	24.80	-28.24	646.61	-165.44	231.77	189.61	42.16	5.497			
8,300.00	8,264.29	8,351.05	8,266.16	19.29	24.95	-30.44	645.31	-165.75	217.18	174.81	42.37	5.126			
8,400.00	8,363.06	8,449.52	8,364.63	19.68	25.09	-32.84	644.26	-165.78	202.97	160.45	42.51	4.774			
8,500.00	8,461.83	8,548.11	8,463.22	20.06	25.24	-35.51	643.49	-165.65	189.28	146.70	42.58	4.445			
8,600.00	8,560.60	8,646.92	8,562.02	20.45	25.39	-38.63	642.54	-165.51	175.93	133.40	42.53	4.136			
8,700.00	8,659.37	8,745.29	8,660.39	20.83	25.53	-42.15	641.76	-165.27	163.22	120.86	42.36	3.853			
8,800.00	8,758.14	8,843.83	8,758.93	21.23	25.67	-46.10	641.39	-164.88	151.37	109.32	42.05	3.600			
8,900.00	8,856.91	8,942.75	8,857.84	21.62	25.82	-50.71	640.97	-164.49	140.33	98.80	41.54	3.378			
9,000.00	8,955.68	9,041.11	8,956.20	22.01	25.96	-56.16	640.28	-164.20	130.31	89.50	40.81	3.193			
9,100.00	9,054.45	9,139.56	9,054.65	22.41	26.11	-62.36	639.85	-164.16	121.99	82.10	39.90	3.058			
9,200.00	9,153.21	9,238.57	9,153.66	22.81	26.26	-69.27	639.64	-163.97	115.26	76.35	38.91	2.962			
9,300.00	9,251.98	9,337.29	9,252.38	23.21	26.40	-76.88	639.38	-163.62	110.23	72.23	38.00	2.900			
9,400.00	9,350.75	9,435.74	9,350.83	23.62	26.55	-84.82	639.51	-163.39	107.48	70.03	37.45	2.870			
9,462.37	9,412.35	9,497.20	9,412.29	23.87	26.64	-89.79	639.82	-163.40	107.02	69.64	37.38	2.863			
9,500.00	9,449.52	9,534.29	9,449.38	24.02	26.70	-92.80	640.00	-163.46	107.19	69.74	37.45	2.862			
9,600.00	9,548.29	9,633.79	9,548.88	24.43	26.85	-100.93	640.16	-163.30	108.89	70.82	38.07	2.861			
9,700.00	9,647.06	9,733.12	9,648.20	24.83	26.99	-109.27	639.44	-162.15	112.18	72.83	39.35	2.851			
9,800.00	9,745.83	9,831.78	9,746.83	25.24	27.13	-117.40	638.06	-160.27	117.44	76.28	41.17	2.853			
9,900.00	9,844.60	9,928.53	9,843.57	25.65	27.28	-124.16	636.97	-159.58	125.61	82.54	43.07	2.916			
10,000.00	9,943.39	10,026.63	9,941.66	26.05	27.44	-129.42	636.48	-160.61	136.08	91.33	44.75	3.041			
10,100.00	10,042.48	10,126.16	10,041.18	26.47	27.62	-133.17	636.48	-162.15	146.05	99.92	46.13	3.166			

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Anticollision Report



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Reference Well:	201H	Survey Calculation Method:	Minimum Curvature
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Reference Wellbore	OH	Database:	USA Compass
Reference Design:	Plan 1 07-06-21	Offset TVD Reference:	Reference Datum

Offset Design: Los Vaqueros Fed Offsets - Madera 19 WA Fed Com 2H - OH - Surveys													Offset Site Error: 1.00 usft
Survey Program: 178-MWD													Offset Well Error: 1.00 usft
Rule Assigned:													Warning
Measured Depth (usft)	Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
10,200.00	10,141.89	10,225.78	10,140.78	26.90	27.79	-135.70	636.70	-163.70	154.49	107.25	47.24	3.270	
10,300.00	10,241.55	10,325.75	10,240.74	27.31	27.96	-137.25	637.28	-165.26	160.98	112.87	48.11	3.346	
10,400.00	10,341.39	10,425.10	10,340.08	27.69	28.14	-138.18	637.47	-166.68	165.84	117.04	48.80	3.398	
10,500.00	10,441.34	10,524.72	10,439.69	28.02	28.31	-138.54	637.44	-167.97	168.87	119.55	49.32	3.424	
10,600.00	10,541.34	10,624.24	10,539.20	28.14	28.49	-143.30	637.12	-169.59	170.50	120.96	49.54	3.441	
10,700.00	10,641.31	10,725.50	10,640.44	28.10	28.67	28.33	637.31	-171.55	170.33	120.81	49.52	3.440	
10,800.00	10,739.52	10,825.41	10,740.31	27.78	28.85	33.53	639.05	-173.63	154.91	106.52	48.39	3.201	
10,900.00	10,831.87	10,917.44	10,832.32	27.40	29.00	46.57	641.09	-174.79	124.24	78.60	45.64	2.722	
11,000.00	10,914.33	10,998.91	10,913.76	27.03	29.14	73.15	642.57	-175.67	91.93	50.45	41.48	2.216	
11,046.96	10,948.60	11,032.78	10,947.62	26.88	29.20	89.10	643.12	-175.99	86.02	43.22	42.79	2.010 CC, ES	
11,100.00	10,983.30	11,066.94	10,981.78	26.70	29.26	104.92	643.65	-176.29	95.05	46.49	48.56	1.957 SF	
11,200.00	11,035.76	11,118.15	11,032.99	26.45	29.34	120.77	644.41	-176.81	152.50	97.78	54.72	2.787	
11,300.00	11,069.41	11,150.58	11,065.41	26.28	29.40	118.82	644.89	-177.20	236.40	180.77	55.63	4.250	
11,400.00	11,082.79	11,162.72	11,077.54	26.23	29.42	92.76	645.06	-177.37	330.53	274.91	55.62	5.942	
11,500.00	11,082.40	11,161.10	11,075.92	26.25	29.42	81.77	645.04	-177.35	428.20	372.66	55.53	7.711	
11,600.00	11,081.68	11,159.03	11,073.86	26.29	29.41	70.39	645.01	-177.32	527.57	472.09	55.48	9.509	
11,700.00	11,080.95	11,156.87	11,071.70	26.31	29.41	34.12	644.98	-177.29	627.50	572.02	55.48	11.311	
11,800.00	11,080.23	11,154.69	11,069.52	26.33	29.41	30.25	644.95	-177.26	727.46	671.98	55.48	13.112	
11,900.00	11,079.51	11,152.50	11,067.33	26.36	29.40	27.08	644.91	-177.23	827.43	771.94	55.49	14.912	
12,000.00	11,078.79	11,150.32	11,065.15	26.39	29.40	24.47	644.88	-177.20	927.40	871.90	55.50	16.710	
12,100.00	11,078.07	11,148.13	11,062.96	26.43	29.39	22.27	644.85	-177.17	1,027.37	971.86	55.51	18.508	
12,200.00	11,077.35	11,145.93	11,060.76	26.48	29.39	20.41	644.82	-177.14	1,127.35	1,071.82	55.53	20.303	
12,300.00	11,076.63	11,143.73	11,058.56	26.55	29.39	18.81	644.79	-177.12	1,227.32	1,171.78	55.54	22.097	
12,400.00	11,075.91	11,141.53	11,056.36	26.63	29.38	17.43	644.75	-177.09	1,327.29	1,271.73	55.56	23.889	
12,500.00	11,075.19	11,139.32	11,054.15	26.74	29.38	16.22	644.72	-177.06	1,427.27	1,371.69	55.58	25.680	
12,600.00	11,074.46	11,137.10	11,051.93	26.91	29.38	15.16	644.69	-177.04	1,527.24	1,471.64	55.60	27.468	
12,700.00	11,073.74	11,134.89	11,049.72	27.15	29.37	14.22	644.66	-177.01	1,627.21	1,571.59	55.62	29.253	
12,800.00	11,073.02	11,132.67	11,047.50	27.52	29.37	13.38	644.63	-176.98	1,727.19	1,671.54	55.65	31.037	
12,900.00	11,072.30	11,130.45	11,045.28	28.07	29.36	12.63	644.59	-176.96	1,827.16	1,771.49	55.68	32.817	
13,000.00	11,071.58	11,128.22	11,043.05	28.82	29.36	11.96	644.56	-176.93	1,927.14	1,871.43	55.70	34.595	
13,100.00	11,070.86	11,125.99	11,040.82	29.72	29.36	11.34	644.53	-176.90	2,027.11	1,971.38	55.73	36.371	
13,200.00	11,070.14	11,123.76	11,038.59	30.73	29.35	10.79	644.49	-176.88	2,127.09	2,071.32	55.77	38.143	
13,300.00	11,069.42	11,121.52	11,036.35	31.82	29.35	10.28	644.46	-176.85	2,227.06	2,171.26	55.80	39.912	
13,400.00	11,068.69	11,119.28	11,034.11	32.95	29.35	9.81	644.43	-176.83	2,327.04	2,271.20	55.83	41.678	
13,500.00	11,067.97	11,117.04	11,031.87	34.13	29.34	9.38	644.40	-176.80	2,427.01	2,371.14	55.87	43.440	
13,600.00	11,067.25	11,114.79	11,029.62	35.33	29.34	8.99	644.36	-176.78	2,526.99	2,471.08	55.91	45.199	
13,700.00	11,066.53	11,112.54	11,027.37	36.55	29.33	8.62	644.33	-176.75	2,626.96	2,571.01	55.95	46.954	
13,800.00	11,065.81	11,110.28	11,025.12	37.80	29.33	8.28	644.30	-176.73	2,726.94	2,670.95	55.99	48.706	
13,900.00	11,065.09	11,108.02	11,022.86	39.06	29.33	7.96	644.26	-176.70	2,826.91	2,770.88	56.03	50.453	
14,000.00	11,064.37	11,105.76	11,020.60	40.33	29.32	7.67	644.23	-176.68	2,926.89	2,870.81	56.07	52.197	
14,100.00	11,063.65	11,103.50	11,018.33	41.62	29.32	7.39	644.20	-176.65	3,026.86	2,970.74	56.12	53.937	
14,200.00	11,062.92	11,101.23	11,016.07	42.92	29.32	7.13	644.16	-176.63	3,126.84	3,070.67	56.17	55.672	
14,300.00	11,062.20	11,098.96	11,013.79	44.23	29.31	6.89	644.13	-176.61	3,226.81	3,170.60	56.21	57.403	
14,400.00	11,061.48	11,096.68	11,011.52	45.54	29.31	6.66	644.09	-176.58	3,326.79	3,270.52	56.26	59.129	
14,500.00	11,060.76	11,094.40	11,009.24	46.87	29.30	6.45	644.06	-176.56	3,426.76	3,370.45	56.31	60.851	
14,600.00	11,060.04	11,092.12	11,006.96	48.20	29.30	6.25	644.03	-176.53	3,526.74	3,470.37	56.37	62.568	
14,700.00	11,059.32	11,089.83	11,004.67	49.53	29.30	6.05	643.99	-176.51	3,626.71	3,570.29	56.42	64.281	
14,800.00	11,058.60	11,087.54	11,002.38	50.88	29.29	5.87	643.96	-176.49	3,726.69	3,670.21	56.47	65.988	
14,900.00	11,057.88	11,085.25	11,000.09	52.22	29.29	5.70	643.92	-176.47	3,826.66	3,770.13	56.53	67.691	
15,000.00	11,057.16	11,082.95	10,997.79	53.58	29.28	5.54	643.89	-176.44	3,926.64	3,870.05	56.59	69.388	
15,100.00	11,056.43	11,080.65	10,995.49	54.93	29.28	5.38	643.85	-176.42	4,026.61	3,969.96	56.65	71.081	
15,200.00	11,055.71	11,078.34	10,993.18	56.29	29.28	5.24	643.82	-176.40	4,126.58	4,069.88	56.71	72.768	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Anticollision Report



Company:	Titus Oil & Gas Production, LLC	Local Co-ordinate Reference:	Well 201H
Project:	Lea County, NM - (NAD83 NME)	TVD Reference:	RKB @ 3211.00usft (Est KB)
Reference Site:	Los Vaqueros Fed	MD Reference:	RKB @ 3211.00usft (Est KB)
Site Error:	1.00 usft	North Reference:	Grid
Reference Well:	201H	Survey Calculation Method:	Minimum Curvature
Well Error:	1.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA Compass
Reference Design:	Plan 1 07-06-21	Offset TVD Reference:	Reference Datum

Offset Design: Los Vaqueros Fed Offsets - Madera 19 WA Fed Com 2H - OH - Surveys													Offset Site Error: 1.00 usft
Survey Program: 178-MWD													Offset Well Error: 1.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
15,300.00	11,054.99	11,076.03	10,990.87	57.66	29.27	5.10	643.78	-176.38	4,226.56	4,169.79	56.77	74.450	
15,400.00	11,054.27	11,073.72	10,988.56	59.03	29.27	4.96	643.75	-176.36	4,326.53	4,269.70	56.83	76.126	
15,500.00	11,053.55	11,071.40	10,986.25	60.40	29.26	4.84	643.71	-176.33	4,426.51	4,369.61	56.90	77.797	
15,600.00	11,052.83	11,069.08	10,983.93	61.77	29.26	4.71	643.68	-176.31	4,526.48	4,469.52	56.96	79.462	
15,700.00	11,052.11	11,066.76	10,981.60	63.15	29.26	4.60	643.64	-176.29	4,626.46	4,569.43	57.03	81.121	
15,800.00	11,051.39	11,064.43	10,979.28	64.53	29.25	4.49	643.61	-176.27	4,726.43	4,669.33	57.10	82.775	
15,900.00	11,050.66	11,062.10	10,976.95	65.91	29.25	4.38	643.57	-176.25	4,826.41	4,769.24	57.17	84.423	
16,000.00	11,049.94	11,060.41	10,975.25	67.30	29.25	4.30	643.55	-176.23	4,926.38	4,869.15	57.24	86.070	
16,100.00	11,049.22	11,057.82	10,972.66	68.69	29.24	4.20	643.51	-176.21	5,026.36	4,969.05	57.31	87.704	
16,200.00	11,048.50	11,055.21	10,970.06	70.07	29.24	4.09	643.47	-176.19	5,126.33	5,068.95	57.39	89.332	
16,300.00	11,047.78	11,052.59	10,967.44	71.46	29.23	3.99	643.43	-176.17	5,226.31	5,168.84	57.46	90.953	
16,400.00	11,047.06	11,049.95	10,964.80	72.86	29.23	3.89	643.39	-176.15	5,326.28	5,268.74	57.54	92.568	
16,500.00	11,046.34	11,047.30	10,962.14	74.25	29.22	3.80	643.35	-176.12	5,426.25	5,368.64	57.62	94.177	
16,600.00	11,045.62	11,044.63	10,959.47	75.65	29.22	3.71	643.31	-176.10	5,526.23	5,468.53	57.70	95.779	
16,700.00	11,044.90	11,041.94	10,956.79	77.04	29.22	3.62	643.26	-176.08	5,626.20	5,568.42	57.78	97.374	
16,800.00	11,044.17	11,039.23	10,954.08	78.44	29.21	3.53	643.22	-176.05	5,726.18	5,668.31	57.86	98.963	
16,900.00	11,043.45	11,036.51	10,951.36	79.84	29.21	3.45	643.18	-176.03	5,826.15	5,768.20	57.95	100.546	
17,000.00	11,042.73	11,033.77	10,948.62	81.24	29.20	3.37	643.14	-176.00	5,926.12	5,868.09	58.03	102.121	
17,100.00	11,042.01	11,031.01	10,945.86	82.65	29.20	3.30	643.09	-175.98	6,026.10	5,967.98	58.12	103.690	
17,200.00	11,041.29	11,028.23	10,943.08	84.05	29.19	3.22	643.05	-175.95	6,126.07	6,067.86	58.20	105.252	
17,300.00	11,040.57	11,025.44	10,940.29	85.45	29.19	3.15	643.00	-175.93	6,226.04	6,167.75	58.29	106.807	
17,400.00	11,039.85	11,022.63	10,937.48	86.86	29.18	3.08	642.96	-175.90	6,326.01	6,267.63	58.38	108.355	
17,500.00	11,039.13	11,019.80	10,934.65	88.27	29.18	3.01	642.91	-175.87	6,425.99	6,367.51	58.47	109.897	
17,600.00	11,038.40	11,016.95	10,931.80	89.67	29.17	2.95	642.87	-175.85	6,525.96	6,467.39	58.57	111.431	
17,700.00	11,037.68	11,014.08	10,928.93	91.08	29.17	2.88	642.82	-175.82	6,625.93	6,567.27	58.66	112.958	
17,800.00	11,036.96	11,011.19	10,926.04	92.49	29.16	2.82	642.77	-175.79	6,725.90	6,667.15	58.75	114.479	
17,900.00	11,036.24	11,008.28	10,923.14	93.90	29.16	2.76	642.73	-175.76	6,825.87	6,767.03	58.85	115.992	
18,000.00	11,035.52	11,005.36	10,920.21	95.31	29.15	2.70	642.68	-175.74	6,925.85	6,866.90	58.94	117.498	
18,100.00	11,034.80	11,002.41	10,917.27	96.72	29.15	2.65	642.63	-175.71	7,025.82	6,966.78	59.04	118.997	
18,200.00	11,034.08	10,999.45	10,914.30	98.14	29.14	2.59	642.58	-175.68	7,125.79	7,066.65	59.14	120.489	
18,300.00	11,033.36	10,996.46	10,911.32	99.55	29.14	2.54	642.53	-175.65	7,225.76	7,166.52	59.24	121.973	
18,400.00	11,032.64	10,993.46	10,908.31	100.96	29.13	2.48	642.48	-175.62	7,325.73	7,266.39	59.34	123.451	
18,500.00	11,031.91	10,990.43	10,905.29	102.38	29.13	2.43	642.43	-175.59	7,425.70	7,366.26	59.44	124.921	
18,600.00	11,031.19	10,987.38	10,902.24	103.79	29.12	2.38	642.38	-175.55	7,525.67	7,466.13	59.55	126.384	
18,700.00	11,030.47	10,984.32	10,899.17	105.21	29.12	2.33	642.32	-175.52	7,625.64	7,565.99	59.65	127.839	
18,800.00	11,029.75	10,981.23	10,896.09	106.62	29.11	2.29	642.27	-175.49	7,725.61	7,665.86	59.76	129.288	
18,900.00	11,029.03	10,978.12	10,892.98	108.04	29.11	2.24	642.22	-175.46	7,825.58	7,765.72	59.86	130.729	
18,904.07	11,029.00	10,977.99	10,892.85	108.10	29.11	2.24	642.21	-175.46	7,829.65	7,769.78	59.87	130.787	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Anticollision Report



Company:	Titus Oil & Gas Production, LLC	Local Co-ordinate Reference:	Well 201H
Project:	Lea County, NM - (NAD83 NME)	TVD Reference:	RKB @ 3211.00usft (Est KB)
Reference Site:	Los Vaqueros Fed	MD Reference:	RKB @ 3211.00usft (Est KB)
Site Error:	1.00 usft	North Reference:	Grid
Reference Well:	201H	Survey Calculation Method:	Minimum Curvature
Well Error:	1.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA Compass
Reference Design:	Plan 1 07-06-21	Offset TVD Reference:	Reference Datum

Offset Design: Los Vaqueros Fed Offsets - Madera 19 WA Fed Com 2H - ST01 - Surveys													Offset Site Error: 1.00 usft
Survey Program: 178-MWD, 12287-MWD							Rule Assigned:						Offset Well Error: 1.00 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.00	0.00	0.50	0.00	1.41	1.41	42.82	904.14	837.74	1,232.59				
100.00	100.00	100.44	99.94	1.48	1.42	42.81	904.28	837.60	1,232.60	1,229.70	2.90	425.161	
100.12	100.12	100.56	100.06	1.48	1.42	42.81	904.28	837.60	1,232.60	1,229.70	2.90	425.118	
200.00	200.00	199.84	199.34	1.89	1.43	42.78	904.68	837.18	1,232.61	1,229.28	3.32	370.714	
300.00	300.00	297.55	297.04	2.25	1.48	42.74	905.37	836.66	1,232.76	1,229.03	3.73	330.357	
400.00	400.00	395.82	395.31	2.56	1.55	42.70	906.22	836.19	1,233.07	1,228.96	4.12	299.579	
500.00	500.00	495.77	495.26	2.84	1.65	42.66	907.00	835.93	1,233.47	1,228.99	4.49	274.899	
600.00	600.00	595.86	595.34	3.10	1.76	42.64	907.68	835.75	1,233.85	1,228.99	4.86	253.992	
700.00	700.00	695.00	694.48	3.34	1.89	42.61	908.36	835.61	1,234.26	1,229.03	5.23	235.952	
800.00	800.00	795.21	794.69	3.56	2.04	42.59	909.05	835.51	1,234.70	1,229.10	5.60	220.490	
900.00	900.00	895.42	894.90	3.77	2.19	42.56	909.74	835.39	1,235.12	1,229.16	5.97	207.027	
1,000.00	1,000.00	996.35	995.83	3.98	2.36	42.53	910.42	835.22	1,235.51	1,229.17	6.33	195.030	
1,100.00	1,100.00	1,096.57	1,096.04	4.17	2.53	42.50	911.08	834.93	1,235.80	1,229.09	6.70	184.355	
1,200.00	1,200.00	1,196.51	1,195.98	4.36	2.71	42.47	911.84	834.62	1,236.14	1,229.08	7.07	174.913	
1,300.00	1,300.00	1,299.78	1,299.25	4.54	2.89	42.44	912.48	834.29	1,236.39	1,228.95	7.43	166.328	
1,400.00	1,400.00	1,430.43	1,429.88	4.72	3.13	42.39	912.32	832.70	1,235.56	1,227.71	7.85	157.378	
1,500.00	1,500.00	1,616.43	1,615.43	4.89	3.51	42.18	906.94	821.72	1,229.26	1,220.90	8.36	146.992	
1,600.00	1,600.00	1,732.74	1,731.00	5.06	3.76	41.92	901.84	809.66	1,219.03	1,210.27	8.76	139.171	
1,700.00	1,700.00	1,831.53	1,829.09	5.22	3.97	41.67	897.44	798.77	1,208.34	1,199.22	9.12	132.479	
1,800.00	1,800.00	1,939.29	1,936.08	5.38	4.22	41.41	892.27	786.97	1,197.49	1,187.99	9.50	126.113	
1,900.00	1,900.00	2,074.30	2,069.72	5.53	4.57	40.99	885.12	769.26	1,184.91	1,174.99	9.92	119.408	
2,000.00	2,000.00	2,191.31	2,184.89	5.69	4.90	40.47	878.67	749.63	1,169.69	1,159.36	10.34	113.158	
2,100.00	2,100.00	2,294.05	2,285.74	5.83	5.23	39.93	873.24	730.80	1,153.74	1,143.00	10.74	107.410	
2,200.00	2,200.00	2,391.15	2,380.94	5.98	5.55	39.36	868.41	712.26	1,137.63	1,126.48	11.14	102.089	
2,300.00	2,300.00	2,475.15	2,463.41	6.13	5.81	38.86	864.66	696.76	1,122.41	1,110.89	11.52	97.437	
2,400.00	2,400.00	2,565.26	2,552.06	6.27	6.08	38.34	861.04	681.01	1,108.27	1,096.38	11.90	93.156	
2,500.00	2,500.00	2,663.53	2,648.78	6.41	6.39	37.76	857.34	664.08	1,094.61	1,082.31	12.30	88.991	
2,600.00	2,600.00	2,759.25	2,743.01	6.55	6.71	37.17	853.93	647.57	1,081.20	1,068.50	12.71	85.098	
2,700.00	2,700.00	2,855.53	2,837.80	6.68	7.02	36.56	850.74	630.99	1,068.13	1,055.02	13.11	81.448	
2,800.00	2,800.00	2,950.11	2,930.94	6.82	7.33	35.95	847.82	614.86	1,055.46	1,041.94	13.52	78.055	
2,900.00	2,900.00	3,041.50	3,021.02	6.95	7.63	35.35	845.36	599.62	1,043.46	1,029.54	13.92	74.940	
3,000.00	3,000.00	3,133.35	3,111.62	7.08	7.93	34.73	843.34	584.70	1,032.26	1,017.93	14.33	72.034	
3,100.00	3,100.00	3,225.71	3,202.83	7.21	8.22	34.12	841.68	570.20	1,021.82	1,007.09	14.74	69.338	
3,200.00	3,200.00	3,329.91	3,305.71	7.34	8.56	33.40	839.92	553.77	1,011.58	996.41	15.18	66.657	
3,300.00	3,300.00	3,432.66	3,407.04	7.47	8.91	32.65	837.83	536.87	1,000.83	985.21	15.62	64.078	
3,400.00	3,400.00	3,520.40	3,493.69	7.59	9.20	32.03	836.22	523.18	990.83	974.81	16.02	61.837	
3,500.00	3,500.00	3,627.46	3,599.49	7.72	9.54	31.28	834.29	506.93	981.28	964.81	16.47	59.582	
3,600.00	3,600.00	3,757.24	3,727.43	7.84	9.98	30.36	829.34	485.77	969.54	952.58	16.97	57.142	
3,700.00	3,700.00	3,862.89	3,831.27	7.96	10.37	29.57	823.48	467.20	955.84	938.41	17.43	54.853	
3,800.00	3,800.00	3,958.91	3,925.56	8.08	10.72	28.79	818.43	449.77	942.28	924.40	17.88	52.709	
3,900.00	3,900.00	4,048.96	4,014.03	8.21	11.05	28.04	814.15	433.56	929.42	911.10	18.32	50.738	
4,000.00	4,000.00	4,129.37	4,093.22	8.32	11.34	27.37	811.08	419.90	918.07	899.34	18.73	49.016	
4,100.00	4,100.00	4,219.45	4,182.20	8.44	11.63	26.66	808.89	406.08	908.83	889.67	19.15	47.450	
4,200.00	4,200.00	4,329.68	4,291.09	8.56	12.00	25.79	805.65	389.30	899.40	879.78	19.62	45.838	
4,300.00	4,300.00	4,429.97	4,390.07	8.68	12.33	24.98	801.73	373.59	889.07	869.00	20.07	44.299	
4,400.00	4,400.00	4,524.45	4,483.40	8.79	12.64	24.24	798.13	359.32	879.25	858.75	20.50	42.887	
4,500.00	4,500.00	4,619.04	4,576.95	8.91	12.95	23.52	794.70	345.82	870.09	849.16	20.93	41.578	
4,600.00	4,600.00	4,723.01	4,679.87	9.02	13.27	22.75	790.71	331.64	861.15	839.79	21.37	40.306	
4,700.00	4,700.00	4,833.08	4,788.76	9.14	13.62	21.95	785.33	316.44	851.32	829.51	21.82	39.022	
4,800.00	4,800.00	4,935.82	4,890.32	9.25	13.96	21.18	779.48	302.03	840.82	818.56	22.26	37.781	
4,900.00	4,900.00	5,045.04	4,998.13	9.36	14.32	20.33	772.18	286.15	829.32	806.61	22.71	36.519	
5,000.00	5,000.00	5,140.42	5,092.30	9.48	14.64	19.60	765.40	272.61	817.73	794.59	23.14	35.338	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Anticollision Report



Company:	Titus Oil & Gas Production, LLC	Local Co-ordinate Reference:	Well 201H
Project:	Lea County, NM - (NAD83 NME)	TVD Reference:	RKB @ 3211.00usft (Est KB)
Reference Site:	Los Vaqueros Fed	MD Reference:	RKB @ 3211.00usft (Est KB)
Site Error:	1.00 usft	North Reference:	Grid
Reference Well:	201H	Survey Calculation Method:	Minimum Curvature
Well Error:	1.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA Compass
Reference Design:	Plan 1 07-06-21	Offset TVD Reference:	Reference Datum

Offset Design: Los Vaqueros Fed Offsets - Madera 19 WA Fed Com 2H - ST01 - Surveys													Offset Site Error:	1.00 usft
Survey Program:		178-MWD, 12287-MWD					Rule Assigned:				Offset Well Error:	1.00 usft		
Reference	Offset	Semi Major Axis		Offset Wellbore Centre		Distance			Warning					
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
5,100.00	5,099.99	5,235.30	5,185.98	9.64	14.96	23.94	759.29	258.91	805.62	782.00	23.62	34.106		
5,200.00	5,199.91	5,330.77	5,280.11	9.90	15.29	23.23	753.77	243.97	791.52	767.32	24.20	32.712		
5,300.00	5,299.69	5,421.00	5,369.16	10.16	15.60	22.61	749.42	230.08	776.16	751.39	24.77	31.338		
5,400.00	5,399.27	5,517.37	5,464.40	10.43	15.92	22.04	745.15	216.03	759.15	733.81	25.35	29.948		
5,500.00	5,498.57	5,617.66	5,563.39	10.71	16.27	21.42	740.85	200.47	739.74	713.78	25.96	28.490		
5,600.00	5,597.54	5,718.38	5,662.54	11.01	16.63	20.73	736.30	183.36	717.43	690.82	26.61	26.957		
5,700.00	5,696.30	5,814.45	5,757.09	11.23	16.98	19.94	731.86	166.97	693.95	666.75	27.20	25.511		
5,800.00	5,795.07	5,910.85	5,852.06	11.43	17.32	19.13	727.42	151.01	670.73	642.97	27.76	24.161		
5,900.00	5,893.84	6,005.58	5,945.42	11.64	17.65	18.30	723.03	135.60	647.70	619.36	28.34	22.858		
6,000.00	5,992.61	6,101.18	6,039.45	11.87	18.01	17.27	719.40	118.70	625.30	596.35	28.96	21.595		
6,100.00	6,091.38	6,198.46	6,134.94	12.10	18.38	16.04	715.80	100.45	603.01	573.39	29.62	20.360		
6,200.00	6,190.15	6,294.06	6,228.91	12.35	18.74	14.81	712.19	83.26	581.06	550.77	30.28	19.188		
6,300.00	6,288.92	6,390.01	6,323.34	12.61	19.09	13.55	708.67	66.63	559.59	528.64	30.96	18.077		
6,400.00	6,387.69	6,486.88	6,418.74	12.88	19.44	12.22	705.14	50.19	538.48	506.84	31.64	17.018		
6,500.00	6,486.46	6,584.26	6,514.65	13.16	19.79	10.79	701.53	33.76	517.63	485.29	32.34	16.004		
6,600.00	6,585.22	6,680.98	6,609.88	13.45	20.14	9.22	697.91	17.24	497.07	464.01	33.06	15.034		
6,700.00	6,683.99	6,777.58	6,705.02	13.75	20.49	7.55	694.37	0.88	476.98	443.19	33.79	14.114		
6,800.00	6,782.76	6,875.65	6,801.63	14.05	20.84	5.72	690.72	-15.59	457.28	422.74	34.54	13.241		
6,900.00	6,881.53	6,973.45	6,897.98	14.36	21.19	3.75	686.79	-31.89	437.78	402.50	35.28	12.409		
7,000.00	6,980.30	7,069.87	6,993.03	14.68	21.54	1.68	682.89	-47.62	418.78	382.76	36.02	11.627		
7,100.00	7,079.07	7,166.07	7,087.97	15.01	21.87	-0.48	679.22	-62.75	400.54	363.79	36.75	10.900		
7,200.00	7,177.84	7,263.06	7,183.75	15.34	22.21	-2.79	675.71	-77.57	383.06	345.60	37.46	10.226		
7,300.00	7,276.61	7,360.28	7,279.85	15.67	22.54	-5.23	672.27	-91.90	366.26	328.11	38.15	9.600		
7,400.00	7,375.37	7,458.66	7,377.19	16.02	22.86	-7.82	668.80	-105.72	350.04	311.23	38.81	9.020		
7,500.00	7,474.14	7,556.91	7,474.47	16.36	23.17	-10.57	665.16	-119.02	334.29	294.86	39.42	8.479		
7,600.00	7,572.91	7,656.93	7,573.73	16.72	23.47	-13.30	661.52	-130.63	318.84	278.87	39.98	7.975		
7,700.00	7,671.68	7,754.50	7,670.80	17.07	23.74	-15.86	658.25	-140.01	303.72	263.24	40.48	7.503		
7,800.00	7,770.45	7,852.54	7,768.35	17.44	24.00	-18.64	655.05	-149.20	289.25	248.33	40.92	7.069		
7,900.00	7,869.22	7,950.39	7,865.75	17.80	24.26	-21.62	652.09	-158.10	275.62	234.33	41.29	6.675		
8,000.00	7,967.99	8,053.31	7,968.48	18.17	24.48	-24.31	649.69	-163.84	261.72	220.12	41.60	6.291		
8,100.00	8,066.76	8,154.32	8,069.46	18.54	24.65	-26.32	648.01	-165.27	246.82	204.93	41.89	5.892		
8,200.00	8,165.53	8,252.85	8,167.97	18.92	24.80	-28.24	646.61	-165.44	231.77	189.61	42.16	5.497		
8,300.00	8,264.29	8,351.05	8,266.16	19.29	24.95	-30.44	645.31	-165.75	217.18	174.81	42.37	5.126		
8,400.00	8,363.06	8,449.52	8,364.63	19.68	25.09	-32.84	644.26	-165.78	202.97	160.45	42.51	4.774		
8,500.00	8,461.83	8,548.11	8,463.22	20.06	25.24	-35.51	643.49	-165.65	189.28	146.70	42.58	4.445		
8,600.00	8,560.60	8,646.92	8,562.02	20.45	25.39	-38.63	642.54	-165.51	175.93	133.40	42.53	4.136		
8,700.00	8,659.37	8,745.29	8,660.39	20.83	25.53	-42.15	641.76	-165.27	163.22	120.86	42.36	3.853		
8,800.00	8,758.14	8,843.83	8,758.93	21.23	25.67	-46.10	641.39	-164.88	151.37	109.32	42.05	3.600		
8,900.00	8,856.91	8,942.75	8,857.84	21.62	25.82	-50.71	640.97	-164.49	140.33	98.80	41.54	3.378		
9,000.00	8,955.68	9,041.11	8,956.20	22.01	25.96	-56.16	640.28	-164.20	130.31	89.50	40.81	3.193		
9,100.00	9,054.45	9,139.56	9,054.65	22.41	26.11	-62.36	639.85	-164.16	121.99	82.10	39.90	3.058		
9,200.00	9,153.21	9,238.57	9,153.66	22.81	26.26	-69.27	639.64	-163.97	115.26	76.35	38.91	2.962		
9,300.00	9,251.98	9,337.29	9,252.38	23.21	26.40	-76.88	639.38	-163.62	110.23	72.23	38.00	2.900		
9,400.00	9,350.75	9,435.74	9,350.83	23.62	26.55	-84.82	639.51	-163.39	107.48	70.03	37.45	2.870		
9,462.37	9,412.35	9,497.20	9,412.29	23.87	26.64	-89.79	639.82	-163.40	107.02	69.64	37.38	2.863		
9,500.00	9,449.52	9,534.29	9,449.38	24.02	26.70	-92.80	640.00	-163.46	107.19	69.74	37.45	2.862		
9,600.00	9,548.29	9,633.79	9,548.88	24.43	26.85	-100.93	640.16	-163.30	108.89	70.82	38.07	2.861		
9,700.00	9,647.06	9,733.12	9,648.20	24.83	26.99	-109.27	639.44	-162.15	112.18	72.83	39.35	2.851		
9,800.00	9,745.83	9,831.78	9,746.83	25.24	27.13	-117.40	638.06	-160.27	117.44	76.28	41.17	2.853		
9,900.00	9,844.60	9,928.53	9,843.57	25.65	27.28	-124.16	636.97	-159.58	125.61	82.54	43.07	2.916		
10,000.00	9,943.39	10,026.63	9,941.66	26.05	27.44	-129.42	636.48	-160.61	136.08	91.33	44.75	3.041		
10,100.00	10,042.48	10,126.16	10,041.18	26.47	27.62	-133.17	636.48	-162.15	146.05	99.92	46.13	3.166		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Anticollision Report



Company:	Titus Oil & Gas Production, LLC	Local Co-ordinate Reference:	Well 201H
Project:	Lea County, NM - (NAD83 NME)	TVD Reference:	RKB @ 3211.00usft (Est KB)
Reference Site:	Los Vaqueros Fed	MD Reference:	RKB @ 3211.00usft (Est KB)
Site Error:	1.00 usft	North Reference:	Grid
Reference Well:	201H	Survey Calculation Method:	Minimum Curvature
Well Error:	1.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA Compass
Reference Design:	Plan 1 07-06-21	Offset TVD Reference:	Reference Datum

Offset Design: Los Vaqueros Fed Offsets - Madera 19 WA Fed Com 2H - ST01 - Surveys													Offset Site Error: 1.00 usft
Survey Program: 178-MWD, 12287-MWD													Offset Well Error: 1.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
10,200.00	10,141.89	10,225.78	10,140.78	26.90	27.79	-135.70	636.70	-163.70	154.49	107.25	47.24	3.270	
10,300.00	10,241.55	10,325.75	10,240.74	27.31	27.96	-137.25	637.28	-165.26	160.98	112.87	48.11	3.346	
10,400.00	10,341.39	10,425.10	10,340.08	27.69	28.14	-138.18	637.47	-166.68	165.84	117.04	48.80	3.398	
10,500.00	10,441.34	10,524.72	10,439.69	28.02	28.31	-138.54	637.44	-167.97	168.87	119.55	49.32	3.424	
10,600.00	10,541.34	10,624.24	10,539.20	28.14	28.49	-143.30	637.12	-169.59	170.50	120.96	49.54	3.441	
10,700.00	10,641.31	10,725.50	10,640.44	28.10	28.67	28.33	637.31	-171.55	170.33	120.81	49.52	3.440	
10,800.00	10,739.52	10,825.41	10,740.31	27.78	28.85	33.53	639.05	-173.63	154.91	106.52	48.39	3.201	
10,900.00	10,831.87	10,917.44	10,832.32	27.40	29.00	46.57	641.09	-174.79	124.24	78.60	45.64	2.722	
11,000.00	10,914.33	10,998.91	10,913.76	27.03	29.14	73.15	642.57	-175.67	91.93	50.45	41.48	2.216	
11,046.96	10,948.60	11,032.78	10,947.62	26.88	29.20	89.10	643.12	-175.99	86.02	43.22	42.79	2.010 CC, ES	
11,100.00	10,983.30	11,066.94	10,981.78	26.70	29.26	104.92	643.65	-176.29	95.05	46.49	48.56	1.957 SF	
11,200.00	11,035.76	11,118.15	11,032.99	26.45	29.34	120.77	644.41	-176.81	152.50	97.78	54.72	2.787	
11,300.00	11,069.41	11,150.58	11,065.41	26.28	29.40	118.82	644.89	-177.20	236.40	180.77	55.63	4.250	
11,400.00	11,082.79	11,162.72	11,077.54	26.23	29.42	92.76	645.06	-177.37	330.53	274.91	55.62	5.942	
11,500.00	11,082.40	11,161.10	11,075.92	26.25	29.42	81.77	645.04	-177.35	428.20	372.66	55.53	7.711	
11,600.00	11,081.68	11,159.03	11,073.86	26.29	29.41	70.39	645.01	-177.32	527.57	472.09	55.48	9.509	
11,700.00	11,080.95	11,156.87	11,071.70	26.31	29.41	34.12	644.98	-177.29	627.50	572.02	55.48	11.311	
11,800.00	11,080.23	11,154.69	11,069.52	26.33	29.41	30.25	644.95	-177.26	727.46	671.98	55.48	13.112	
11,900.00	11,079.51	11,152.50	11,067.33	26.36	29.40	27.08	644.91	-177.23	827.43	771.94	55.49	14.912	
12,000.00	11,078.79	11,150.32	11,065.15	26.39	29.40	24.47	644.88	-177.20	927.40	871.90	55.50	16.710	
12,100.00	11,078.07	11,148.13	11,062.96	26.43	29.39	22.27	644.85	-177.17	1,027.37	971.86	55.51	18.508	
12,200.00	11,077.35	11,145.93	11,060.76	26.48	29.39	20.41	644.82	-177.14	1,127.35	1,071.82	55.53	20.303	
12,300.00	11,076.63	11,143.73	11,058.56	26.55	29.39	18.81	644.79	-177.12	1,227.32	1,171.78	55.54	22.097	
12,400.00	11,075.91	11,141.53	11,056.36	26.63	29.38	17.43	644.75	-177.09	1,327.29	1,271.73	55.56	23.889	
12,500.00	11,075.19	11,139.32	11,054.15	26.74	29.38	16.22	644.72	-177.06	1,427.27	1,371.69	55.58	25.680	
12,600.00	11,074.46	11,137.10	11,051.93	26.91	29.38	15.16	644.69	-177.04	1,527.24	1,471.64	55.60	27.468	
12,700.00	11,073.74	11,134.89	11,049.72	27.15	29.37	14.22	644.66	-177.01	1,627.21	1,571.59	55.62	29.253	
12,800.00	11,073.02	11,132.67	11,047.50	27.52	29.37	13.38	644.63	-176.98	1,727.19	1,671.54	55.65	31.037	
12,900.00	11,072.30	11,130.45	11,045.28	28.07	29.36	12.63	644.59	-176.96	1,827.16	1,771.49	55.68	32.817	
13,000.00	11,071.58	11,128.22	11,043.05	28.82	29.36	11.96	644.56	-176.93	1,927.14	1,871.43	55.70	34.595	
13,100.00	11,070.86	11,125.99	11,040.82	29.72	29.36	11.34	644.53	-176.90	2,027.11	1,971.38	55.73	36.371	
13,200.00	11,070.14	11,123.76	11,038.59	30.73	29.35	10.79	644.49	-176.88	2,127.09	2,071.32	55.77	38.143	
13,300.00	11,069.42	11,121.52	11,036.35	31.82	29.35	10.28	644.46	-176.85	2,227.06	2,171.26	55.80	39.912	
13,400.00	11,068.69	11,119.28	11,034.11	32.95	29.35	9.81	644.43	-176.83	2,327.04	2,271.20	55.83	41.678	
13,500.00	11,067.97	11,117.04	11,031.87	34.13	29.34	9.38	644.40	-176.80	2,427.01	2,371.14	55.87	43.440	
13,600.00	11,067.25	11,114.79	11,029.62	35.33	29.34	8.99	644.36	-176.78	2,526.99	2,471.08	55.91	45.199	
13,700.00	11,066.53	11,112.54	11,027.37	36.55	29.33	8.62	644.33	-176.75	2,626.96	2,571.01	55.95	46.954	
13,800.00	11,065.81	11,110.28	11,025.12	37.80	29.33	8.28	644.30	-176.73	2,726.94	2,670.95	55.99	48.706	
13,900.00	11,065.09	11,108.02	11,022.86	39.06	29.33	7.96	644.26	-176.70	2,826.91	2,770.88	56.03	50.453	
14,000.00	11,064.37	11,105.76	11,020.60	40.33	29.32	7.67	644.23	-176.68	2,926.89	2,870.81	56.07	52.197	
14,100.00	11,063.65	11,103.50	11,018.33	41.62	29.32	7.39	644.20	-176.65	3,026.86	2,970.74	56.12	53.937	
14,200.00	11,062.92	11,101.23	11,016.07	42.92	29.32	7.13	644.16	-176.63	3,126.84	3,070.67	56.17	55.672	
14,300.00	11,062.20	11,098.96	11,013.79	44.23	29.31	6.89	644.13	-176.61	3,226.81	3,170.60	56.21	57.403	
14,400.00	11,061.48	11,096.68	11,011.52	45.54	29.31	6.66	644.09	-176.58	3,326.79	3,270.52	56.26	59.129	
14,500.00	11,060.76	11,094.40	11,009.24	46.87	29.30	6.45	644.06	-176.56	3,426.76	3,370.45	56.31	60.851	
14,600.00	11,060.04	11,092.12	11,006.96	48.20	29.30	6.25	644.03	-176.53	3,526.74	3,470.37	56.37	62.568	
14,700.00	11,059.32	11,089.83	11,004.67	49.53	29.30	6.05	643.99	-176.51	3,626.71	3,570.29	56.42	64.281	
14,800.00	11,058.60	11,087.54	11,002.38	50.88	29.29	5.87	643.96	-176.49	3,726.69	3,670.21	56.47	65.988	
14,900.00	11,057.88	11,085.25	11,000.09	52.22	29.29	5.70	643.92	-176.47	3,826.66	3,770.13	56.53	67.691	
15,000.00	11,057.16	11,082.95	10,997.79	53.58	29.28	5.54	643.89	-176.44	3,926.64	3,870.05	56.59	69.388	
15,100.00	11,056.43	11,080.65	10,995.49	54.93	29.28	5.38	643.85	-176.42	4,026.61	3,969.96	56.65	71.081	
15,200.00	11,055.71	11,078.34	10,993.18	56.29	29.28	5.24	643.82	-176.40	4,126.58	4,069.88	56.71	72.768	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Anticollision Report



Company:	Titus Oil & Gas Production, LLC	Local Co-ordinate Reference:	Well 201H
Project:	Lea County, NM - (NAD83 NME)	TVD Reference:	RKB @ 3211.00usft (Est KB)
Reference Site:	Los Vaqueros Fed	MD Reference:	RKB @ 3211.00usft (Est KB)
Site Error:	1.00 usft	North Reference:	Grid
Reference Well:	201H	Survey Calculation Method:	Minimum Curvature
Well Error:	1.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA Compass
Reference Design:	Plan 1 07-06-21	Offset TVD Reference:	Reference Datum

Offset Design: Los Vaqueros Fed Offsets - Madera 19 WA Fed Com 2H - ST01 - Surveys													Offset Site Error: 1.00 usft
Survey Program: 178-MWD, 12287-MWD													Offset Well Error: 1.00 usft
Reference	Offset	Rule Assigned:											
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
				Reference	Offset		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
15,300.00	11,054.99	11,076.03	10,990.87	57.66	29.27	5.10	643.78	-176.38	4,226.56	4,169.79	56.77	74.450	
15,400.00	11,054.27	11,073.72	10,988.56	59.03	29.27	4.96	643.75	-176.36	4,326.53	4,269.70	56.83	76.126	
15,500.00	11,053.55	11,071.40	10,986.25	60.40	29.26	4.84	643.71	-176.33	4,426.51	4,369.61	56.90	77.797	
15,600.00	11,052.83	11,069.08	10,983.93	61.77	29.26	4.71	643.68	-176.31	4,526.48	4,469.52	56.96	79.462	
15,700.00	11,052.11	11,066.76	10,981.60	63.15	29.26	4.60	643.64	-176.29	4,626.46	4,569.43	57.03	81.121	
15,800.00	11,051.39	11,064.43	10,979.28	64.53	29.25	4.49	643.61	-176.27	4,726.43	4,669.33	57.10	82.775	
15,900.00	11,050.66	11,062.10	10,976.95	65.91	29.25	4.38	643.57	-176.25	4,826.41	4,769.24	57.17	84.423	
16,000.00	11,049.94	11,060.41	10,975.25	67.30	29.25	4.30	643.55	-176.23	4,926.38	4,869.15	57.24	86.070	
16,100.00	11,049.22	11,057.82	10,972.66	68.69	29.24	4.20	643.51	-176.21	5,026.36	4,969.05	57.31	87.704	
16,200.00	11,048.50	11,055.21	10,970.06	70.07	29.24	4.09	643.47	-176.19	5,126.33	5,068.95	57.39	89.332	
16,300.00	11,047.78	11,052.59	10,967.44	71.46	29.23	3.99	643.43	-176.17	5,226.31	5,168.84	57.46	90.953	
16,400.00	11,047.06	11,049.95	10,964.80	72.86	29.23	3.89	643.39	-176.15	5,326.28	5,268.74	57.54	92.568	
16,500.00	11,046.34	11,047.30	10,962.14	74.25	29.22	3.80	643.35	-176.12	5,426.25	5,368.64	57.62	94.177	
16,600.00	11,045.62	11,044.63	10,959.47	75.65	29.22	3.71	643.31	-176.10	5,526.23	5,468.53	57.70	95.779	
16,700.00	11,044.90	11,041.94	10,956.79	77.04	29.22	3.62	643.26	-176.08	5,626.20	5,568.42	57.78	97.374	
16,800.00	11,044.17	11,039.23	10,954.08	78.44	29.21	3.53	643.22	-176.05	5,726.18	5,668.31	57.86	98.963	
16,900.00	11,043.45	11,036.51	10,951.36	79.84	29.21	3.45	643.18	-176.03	5,826.15	5,768.20	57.95	100.546	
17,000.00	11,042.73	11,033.77	10,948.62	81.24	29.20	3.37	643.14	-176.00	5,926.12	5,868.09	58.03	102.121	
17,100.00	11,042.01	11,031.01	10,945.86	82.65	29.20	3.30	643.09	-175.98	6,026.10	5,967.98	58.12	103.690	
17,200.00	11,041.29	11,028.23	10,943.08	84.05	29.19	3.22	643.05	-175.95	6,126.07	6,067.86	58.20	105.252	
17,300.00	11,040.57	11,025.44	10,940.29	85.45	29.19	3.15	643.00	-175.93	6,226.04	6,167.75	58.29	106.807	
17,400.00	11,039.85	11,022.63	10,937.48	86.86	29.18	3.08	642.96	-175.90	6,326.01	6,267.63	58.38	108.355	
17,500.00	11,039.13	11,019.80	10,934.65	88.27	29.18	3.01	642.91	-175.87	6,425.99	6,367.51	58.47	109.897	
17,600.00	11,038.40	11,016.95	10,931.80	89.67	29.17	2.95	642.87	-175.85	6,525.96	6,467.39	58.57	111.431	
17,700.00	11,037.68	11,014.08	10,928.93	91.08	29.17	2.88	642.82	-175.82	6,625.93	6,567.27	58.66	112.958	
17,800.00	11,036.96	11,011.19	10,926.04	92.49	29.16	2.82	642.77	-175.79	6,725.90	6,667.15	58.75	114.479	
17,900.00	11,036.24	11,008.28	10,923.14	93.90	29.16	2.76	642.73	-175.76	6,825.87	6,767.03	58.85	115.992	
18,000.00	11,035.52	11,005.36	10,920.21	95.31	29.15	2.70	642.68	-175.74	6,925.85	6,866.90	58.94	117.498	
18,100.00	11,034.80	11,002.41	10,917.27	96.72	29.15	2.65	642.63	-175.71	7,025.82	6,966.78	59.04	118.997	
18,200.00	11,034.08	10,999.45	10,914.30	98.14	29.14	2.59	642.58	-175.68	7,125.79	7,066.65	59.14	120.489	
18,300.00	11,033.36	10,996.46	10,911.32	99.55	29.14	2.54	642.53	-175.65	7,225.76	7,166.52	59.24	121.973	
18,400.00	11,032.64	10,993.46	10,908.31	100.96	29.13	2.48	642.48	-175.62	7,325.73	7,266.39	59.34	123.451	
18,500.00	11,031.91	10,990.43	10,905.29	102.38	29.13	2.43	642.43	-175.59	7,425.70	7,366.26	59.44	124.921	
18,600.00	11,031.19	10,987.38	10,902.24	103.79	29.12	2.38	642.38	-175.55	7,525.67	7,466.13	59.55	126.384	
18,700.00	11,030.47	10,984.32	10,899.17	105.21	29.12	2.33	642.32	-175.52	7,625.64	7,565.99	59.65	127.839	
18,800.00	11,029.75	10,981.23	10,896.09	106.62	29.11	2.29	642.27	-175.49	7,725.61	7,665.86	59.76	129.288	
18,900.00	11,029.03	10,978.12	10,892.98	108.04	29.11	2.24	642.22	-175.46	7,825.58	7,765.72	59.86	130.729	
18,904.07	11,029.00	10,977.99	10,892.85	108.10	29.11	2.24	642.21	-175.46	7,829.65	7,769.78	59.87	130.787	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Anticollision Report



Company:	Titus Oil & Gas Production, LLC	Local Co-ordinate Reference:	Well 201H
Project:	Lea County, NM - (NAD83 NME)	TVD Reference:	RKB @ 3211.00usft (Est KB)
Reference Site:	Los Vaqueros Fed	MD Reference:	RKB @ 3211.00usft (Est KB)
Site Error:	1.00 usft	North Reference:	Grid
Reference Well:	201H	Survey Calculation Method:	Minimum Curvature
Well Error:	1.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA Compass
Reference Design:	Plan 1 07-06-21	Offset TVD Reference:	Reference Datum

Offset Design: Los Vaqueros Fed Offsets - Madera 19 WXY Fed Com 6H - OH - Surveys													Offset Site Error: 1.00 usft
Survey Program: 180-MWD													Offset Well Error: 1.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
0.00	0.00	0.54	0.04	1.41	1.41	45.74	904.14	927.75	1,295.45				
100.00	100.00	107.66	107.16	1.48	1.42	45.74	903.94	927.53	1,295.17	1,292.27	2.90	446.664	
200.00	200.00	212.53	212.02	1.89	1.43	45.74	903.37	926.92	1,294.37	1,291.04	3.33	388.859	
300.00	300.00	312.27	311.77	2.25	1.48	45.74	902.64	926.34	1,293.45	1,289.71	3.73	346.361	
400.00	400.00	407.89	407.38	2.56	1.55	45.75	902.02	925.91	1,292.67	1,288.56	4.11	314.166	
500.00	500.00	504.51	504.00	2.84	1.65	45.76	901.49	925.85	1,292.25	1,287.76	4.49	287.900	
600.00	600.00	604.34	603.83	3.10	1.76	45.78	900.97	925.95	1,291.96	1,287.09	4.86	265.766	
700.00	700.00	704.74	704.22	3.34	1.90	45.80	900.42	926.04	1,291.64	1,286.41	5.23	246.882	
800.00	800.00	803.83	803.32	3.56	2.04	45.82	899.90	926.13	1,291.34	1,285.74	5.60	230.571	
900.00	900.00	901.43	900.91	3.77	2.19	45.84	899.52	926.30	1,291.19	1,285.22	5.97	216.380	
1,000.00	1,000.00	1,000.86	1,000.34	3.98	2.36	45.86	899.19	926.57	1,291.15	1,284.82	6.34	203.776	
1,100.00	1,100.00	1,102.54	1,102.02	4.17	2.53	45.88	898.84	926.80	1,291.08	1,284.37	6.70	192.601	
1,200.00	1,200.00	1,202.32	1,201.80	4.36	2.71	45.88	898.64	926.80	1,290.94	1,283.87	7.07	182.703	
1,300.00	1,300.00	1,302.47	1,301.95	4.54	2.89	45.89	898.39	926.82	1,290.78	1,283.35	7.43	173.787	
1,400.00	1,400.00	1,403.50	1,402.98	4.72	3.07	45.91	897.96	927.00	1,290.61	1,282.82	7.79	165.697	
1,500.00	1,500.00	1,503.44	1,502.92	4.89	3.26	45.93	897.54	927.06	1,290.36	1,282.21	8.15	158.394	
1,600.00	1,600.00	1,605.80	1,605.28	5.06	3.45	45.94	897.15	927.03	1,290.07	1,281.56	8.51	151.644	
1,700.00	1,700.00	1,706.63	1,706.10	5.22	3.65	45.95	896.61	926.90	1,289.61	1,280.75	8.86	145.497	
1,800.00	1,800.00	1,808.12	1,807.59	5.38	3.84	45.97	895.95	926.80	1,289.09	1,279.87	9.22	139.806	
1,900.00	1,900.00	1,905.61	1,905.08	5.53	4.04	45.99	895.26	926.80	1,288.59	1,279.03	9.57	134.688	
2,000.00	2,000.00	2,003.40	2,002.87	5.69	4.23	46.02	894.59	927.02	1,288.28	1,278.37	9.91	129.960	
2,081.64	2,081.64	2,082.18	2,081.64	5.81	4.39	46.05	894.09	927.39	1,288.19	1,278.00	10.19	126.387	
2,100.00	2,100.00	2,099.91	2,099.38	5.83	4.42	46.05	893.98	927.49	1,288.20	1,277.94	10.26	125.611	
2,200.00	2,200.00	2,196.55	2,196.01	5.98	4.62	46.09	893.53	928.16	1,288.37	1,277.77	10.60	121.583	
2,300.00	2,300.00	2,291.78	2,291.23	6.13	4.81	46.12	893.31	929.03	1,288.87	1,277.94	10.93	117.880	
2,400.00	2,400.00	2,388.72	2,388.17	6.27	5.01	46.16	893.31	930.12	1,289.67	1,278.40	11.27	114.395	
2,500.00	2,500.00	2,488.61	2,488.05	6.41	5.21	46.19	893.45	931.35	1,290.66	1,279.05	11.62	111.088	
2,600.00	2,600.00	2,605.58	2,605.02	6.55	5.44	46.23	893.15	932.31	1,291.11	1,279.12	11.99	107.675	
2,700.00	2,700.00	2,759.50	2,758.86	6.68	5.75	46.35	888.84	931.68	1,289.00	1,276.58	12.43	103.731	
2,800.00	2,800.00	2,979.97	2,978.09	6.82	6.23	46.80	867.70	924.04	1,280.03	1,267.09	12.94	98.938	
2,900.00	2,900.00	3,130.90	3,126.73	6.95	6.59	47.16	844.89	911.28	1,263.20	1,249.87	13.33	94.784	
3,000.00	3,000.00	3,217.12	3,211.53	7.08	6.80	47.36	831.57	903.11	1,245.74	1,232.07	13.66	91.194	
3,100.00	3,100.00	3,306.89	3,299.93	7.21	7.03	47.57	818.19	895.18	1,229.12	1,215.13	14.00	87.812	
3,200.00	3,200.00	3,425.86	3,417.07	7.34	7.35	47.79	801.21	883.21	1,212.07	1,197.72	14.36	84.428	
3,300.00	3,300.00	3,518.54	3,508.27	7.47	7.60	47.88	788.72	872.40	1,194.37	1,179.68	14.69	81.293	
3,400.00	3,400.00	3,603.00	3,591.49	7.59	7.83	47.96	778.01	862.79	1,177.44	1,162.42	15.02	78.381	
3,500.00	3,500.00	3,698.00	3,685.25	7.72	8.10	48.03	766.80	852.38	1,161.39	1,146.03	15.36	75.610	
3,600.00	3,600.00	3,790.50	3,776.63	7.84	8.36	48.08	756.45	842.36	1,145.86	1,130.16	15.70	73.006	
3,700.00	3,700.00	3,887.00	3,871.98	7.96	8.63	48.17	745.31	832.61	1,130.62	1,114.59	16.04	70.509	
3,800.00	3,800.00	3,981.00	3,964.85	8.08	8.90	48.31	733.70	823.91	1,115.49	1,099.12	16.37	68.122	
3,900.00	3,900.00	4,066.64	4,049.57	8.21	9.15	48.44	723.70	816.30	1,101.11	1,084.41	16.70	65.917	
4,000.00	4,000.00	4,150.35	4,132.56	8.32	9.38	48.55	715.01	809.60	1,088.24	1,071.21	17.03	63.904	
4,100.00	4,100.00	4,250.10	4,231.53	8.44	9.66	48.72	704.70	802.70	1,076.21	1,058.83	17.37	61.946	
4,200.00	4,200.00	4,338.55	4,319.29	8.56	9.90	48.90	695.35	796.99	1,064.39	1,046.69	17.70	60.128	
4,300.00	4,300.00	4,427.45	4,407.64	8.68	10.14	49.05	686.94	791.73	1,053.71	1,035.68	18.03	58.444	
4,400.00	4,400.00	4,518.11	4,497.83	8.79	10.38	49.20	679.14	786.75	1,043.93	1,025.57	18.36	56.870	
4,500.00	4,500.00	4,604.27	4,583.62	8.91	10.61	49.33	672.40	782.54	1,035.13	1,016.45	18.67	55.432	
4,600.00	4,600.00	4,688.85	4,667.93	9.02	10.82	49.47	666.50	779.44	1,027.79	1,008.81	18.99	54.137	
4,700.00	4,700.00	4,777.46	4,756.34	9.14	11.04	49.62	660.93	777.26	1,021.83	1,002.53	19.30	52.942	
4,800.00	4,800.00	4,867.75	4,846.47	9.25	11.25	49.78	655.78	775.56	1,016.71	997.09	19.62	51.828	
4,900.00	4,900.00	4,956.11	4,934.70	9.36	11.45	49.95	651.23	774.85	1,012.76	992.83	19.93	50.823	
5,000.00	5,000.00	5,049.47	5,027.96	9.48	11.66	50.15	646.80	774.86	1,009.72	989.48	20.25	49.871	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Anticollision Report



Company:	Titus Oil & Gas Production, LLC	Local Co-ordinate Reference:	Well 201H
Project:	Lea County, NM - (NAD83 NME)	TVD Reference:	RKB @ 3211.00usft (Est KB)
Reference Site:	Los Vaqueros Fed	MD Reference:	RKB @ 3211.00usft (Est KB)
Site Error:	1.00 usft	North Reference:	Grid
Reference Well:	201H	Survey Calculation Method:	Minimum Curvature
Well Error:	1.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA Compass
Reference Design:	Plan 1 07-06-21	Offset TVD Reference:	Reference Datum

Offset Design: Los Vaqueros Fed Offsets - Madera 19 WXY Fed Com 6H - OH - Surveys													Offset Site Error:	1.00 usft	
Survey Program:		180-MWD		Offset		Semi Major Axis		Offset Wellbore Centre		Rule Assigned:				Offset Well Error:	1.00 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning		
5,100.00	5,099.99	5,147.24	5,125.64	9.64	11.87	55.44	642.56	775.03	1,006.33	985.74	20.59	48.873			
5,200.00	5,199.91	5,246.47	5,224.80	9.90	12.08	55.86	638.65	775.04	1,001.63	980.66	20.96	47.783			
5,300.00	5,299.69	5,345.31	5,323.56	10.16	12.29	56.40	634.90	774.92	995.49	974.16	21.33	46.670			
5,400.00	5,399.27	5,446.62	5,424.80	10.43	12.50	57.11	631.16	774.73	988.01	966.30	21.71	45.516			
5,500.00	5,498.57	5,560.35	5,538.43	10.71	12.74	58.08	626.46	773.86	978.56	956.46	22.11	44.264			
5,600.00	5,597.54	5,678.96	5,656.87	11.01	13.00	59.20	621.48	770.02	965.91	943.40	22.51	42.906			
5,700.00	5,696.30	5,793.60	5,771.24	11.23	13.27	60.13	617.03	763.63	951.15	928.27	22.88	41.564			
5,800.00	5,795.07	5,913.32	5,890.42	11.43	13.56	61.02	612.13	753.30	933.90	910.65	23.25	40.172			
5,900.00	5,893.84	6,013.16	5,989.68	11.64	13.80	61.74	608.16	743.42	915.90	892.31	23.59	38.823			
6,000.00	5,992.61	6,110.87	6,086.83	11.87	14.05	62.47	604.30	733.68	898.00	874.06	23.94	37.512			
6,100.00	6,091.38	6,194.51	6,170.02	12.10	14.25	63.10	601.35	725.58	880.76	856.48	24.28	36.280			
6,200.00	6,190.15	6,269.93	6,245.19	12.35	14.43	63.68	599.89	719.63	865.97	841.36	24.60	35.200			
6,300.00	6,288.92	6,346.33	6,321.43	12.61	14.60	64.20	600.40	714.87	854.01	829.09	24.92	34.273			
6,400.00	6,387.69	6,435.13	6,410.12	12.88	14.77	64.81	601.98	710.60	843.98	818.73	25.25	33.423			
6,500.00	6,486.46	6,531.24	6,506.17	13.16	14.96	65.57	603.01	707.24	834.86	809.26	25.60	32.612			
6,600.00	6,585.22	6,633.48	6,608.36	13.45	15.17	66.49	602.92	704.18	825.76	799.80	25.96	31.807			
6,700.00	6,683.99	6,727.17	6,702.01	13.75	15.36	67.35	602.76	701.50	816.95	790.64	26.31	31.050			
6,800.00	6,782.76	6,813.44	6,788.27	14.05	15.53	68.22	602.41	700.33	809.56	782.92	26.65	30.382			
6,900.00	6,881.53	6,911.14	6,885.97	14.36	15.72	69.26	601.82	699.96	803.22	776.21	27.01	29.740			
7,000.00	6,980.30	7,010.18	6,985.00	14.68	15.92	70.35	601.01	699.70	797.16	769.79	27.37	29.125			
7,100.00	7,079.07	7,107.89	7,082.71	15.01	16.11	71.45	600.04	699.62	791.50	763.77	27.73	28.544			
7,200.00	7,177.84	7,208.37	7,183.18	15.34	16.31	72.59	599.19	699.30	785.99	757.89	28.09	27.977			
7,300.00	7,276.61	7,305.32	7,280.13	15.67	16.50	73.70	598.37	699.04	780.83	752.37	28.45	27.444			
7,400.00	7,375.37	7,402.34	7,377.15	16.02	16.69	74.84	597.45	699.05	776.20	747.39	28.81	26.942			
7,500.00	7,474.14	7,500.68	7,475.47	16.36	16.88	76.04	596.16	699.35	772.06	742.89	29.17	26.467			
7,600.00	7,572.91	7,602.11	7,576.90	16.72	17.08	77.28	594.79	699.48	768.10	738.56	29.54	26.005			
7,700.00	7,671.68	7,702.73	7,677.50	17.07	17.28	78.52	593.43	699.14	764.05	734.15	29.90	25.552			
7,800.00	7,770.45	7,804.16	7,778.92	17.44	17.48	79.82	591.66	698.78	760.24	729.97	30.27	25.114			
7,900.00	7,869.22	7,904.15	7,878.89	17.80	17.69	81.10	589.79	697.91	756.29	725.64	30.64	24.682			
8,000.00	7,967.99	8,002.09	7,976.81	18.17	17.89	82.38	587.93	697.14	752.79	721.77	31.01	24.273			
8,100.00	8,066.76	8,098.98	8,073.67	18.54	18.09	83.66	585.92	696.51	749.78	718.39	31.39	23.889			
8,200.00	8,165.53	8,196.76	8,171.45	18.92	18.29	84.89	584.96	695.87	747.36	715.59	31.76	23.530			
8,300.00	8,264.29	8,290.16	8,264.84	19.29	18.48	86.02	584.68	695.42	745.58	713.45	32.13	23.205			
8,396.57	8,359.67	8,378.99	8,353.67	19.66	18.65	87.05	585.24	695.67	745.02	712.53	32.48	22.936 CC			
8,400.00	8,363.06	8,382.15	8,356.83	19.68	18.65	87.09	585.26	695.69	745.02	712.52	32.50	22.927 ES			
8,500.00	8,461.83	8,476.50	8,451.17	20.06	18.83	88.20	585.69	696.76	745.56	712.69	32.87	22.682			
8,600.00	8,560.60	8,572.52	8,547.18	20.45	19.02	89.34	586.04	698.30	746.87	713.61	33.25	22.459			
8,700.00	8,659.37	8,672.03	8,646.68	20.83	19.20	90.50	586.64	700.05	748.67	715.02	33.65	22.248			
8,800.00	8,758.14	8,771.55	8,746.19	21.23	19.39	91.66	587.11	701.64	750.61	716.56	34.05	22,044			
8,900.00	8,856.91	8,870.50	8,845.12	21.62	19.57	92.82	587.44	703.19	752.83	718.37	34.46	21.847			
9,000.00	8,955.68	8,970.78	8,945.38	22.01	19.76	93.96	588.10	704.65	755.26	720.38	34.88	21.653			
9,100.00	9,054.45	9,071.08	9,045.67	22.41	19.95	95.09	588.90	705.91	757.79	722.48	35.30	21.465			
9,200.00	9,153.21	9,172.92	9,147.51	22.81	20.14	96.23	589.64	706.87	760.29	724.55	35.74	21.273			
9,300.00	9,251.98	9,270.28	9,244.86	23.21	20.33	97.31	590.33	707.73	763.03	726.86	36.18	21.093			
9,400.00	9,350.75	9,370.16	9,344.73	23.62	20.52	98.40	591.34	708.60	766.02	729.39	36.63	20.914			
9,500.00	9,449.52	9,467.84	9,442.39	24.02	20.70	99.39	593.06	709.67	769.44	732.37	37.07	20.754			
9,600.00	9,548.29	9,573.69	9,548.19	24.43	20.90	100.39	595.92	710.37	772.58	735.04	37.54	20.578			
9,700.00	9,647.06	9,669.14	9,643.61	24.83	21.08	101.28	598.61	710.57	775.50	737.51	37.99	20.413			
9,800.00	9,745.83	9,755.66	9,730.11	25.24	21.24	102.17	599.68	711.92	780.10	741.67	38.43	20.299			
9,900.00	9,844.60	9,854.25	9,828.67	25.65	21.43	103.32	598.71	713.94	785.78	746.85	38.94	20.181			
10,000.00	9,943.39	9,959.83	9,934.22	26.05	21.64	104.68	596.01	715.13	791.10	751.62	39.47	20.041			
10,100.00	10,042.48	10,061.25	10,035.59	26.47	21.85	105.90	593.03	715.57	795.64	755.63	40.00	19.889			

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Anticollision Report



Company:	Titus Oil & Gas Production, LLC	Local Co-ordinate Reference:	Well 201H
Project:	Lea County, NM - (NAD83 NME)	TVD Reference:	RKB @ 3211.00usft (Est KB)
Reference Site:	Los Vaqueros Fed	MD Reference:	RKB @ 3211.00usft (Est KB)
Site Error:	1.00 usft	North Reference:	Grid
Reference Well:	201H	Survey Calculation Method:	Minimum Curvature
Well Error:	1.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA Compass
Reference Design:	Plan 1 07-06-21	Offset TVD Reference:	Reference Datum

Offset Design: Los Vaqueros Fed Offsets - Madera 19 WXY Fed Com 6H - OH - Surveys													Offset Site Error: 1.00 usft
Survey Program: 180-MWD													Offset Well Error: 1.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
10,200.00	10,141.89	10,162.51	10,136.80	26.90	22.07	106.90	590.20	715.80	799.50	758.98	40.52	19.732	
10,300.00	10,241.55	10,266.87	10,241.13	27.31	22.29	107.71	587.56	715.64	802.34	761.34	41.01	19.566	
10,400.00	10,341.39	10,370.66	10,344.90	27.69	22.50	108.27	585.71	714.96	803.84	762.39	41.45	19.394	
10,500.00	10,441.34	10,470.37	10,444.61	28.02	22.71	108.57	584.54	714.21	804.32	762.50	41.83	19.230	
10,600.00	10,541.34	10,577.15	10,551.38	28.14	22.93	103.65	584.12	713.28	803.75	761.62	42.13	19.077	
10,700.00	10,641.31	10,671.95	10,646.17	28.10	23.13	-85.67	584.14	712.34	802.68	760.35	42.34	18.960 SF	
10,800.00	10,739.52	10,763.79	10,738.01	27.78	23.31	-86.99	584.09	712.13	801.31	759.09	42.22	18.979	
10,886.34	10,819.75	10,839.67	10,813.90	27.46	23.47	-89.07	584.21	712.51	800.60	758.69	41.90	19.107	
10,900.00	10,831.87	10,851.12	10,825.34	27.40	23.49	-89.44	584.24	712.61	800.62	758.78	41.84	19.135	
11,000.00	10,914.33	10,931.33	10,905.54	27.03	23.65	-92.40	584.71	713.46	803.05	761.75	41.30	19.444	
11,100.00	10,983.30	10,997.86	10,972.07	26.70	23.78	-94.79	585.40	714.31	811.76	771.02	40.74	19.927	
11,200.00	11,035.76	11,047.41	11,021.61	26.45	23.88	-95.58	586.10	715.04	829.88	789.56	40.32	20.582	
11,300.00	11,069.41	11,079.05	11,053.24	26.28	23.94	-94.02	586.61	715.55	859.14	818.95	40.19	21.377	
11,400.00	11,082.79	11,090.50	11,064.69	26.23	23.96	-89.57	586.80	715.73	899.27	858.90	40.37	22.276	
11,500.00	11,082.40	11,088.24	11,062.43	26.25	23.96	-88.39	586.76	715.69	946.36	905.50	40.86	23.159	
11,600.00	11,081.68	11,085.76	11,059.94	26.29	23.95	-88.32	586.72	715.65	995.54	953.70	41.84	23.796	
11,700.00	11,080.95	11,083.38	11,057.57	26.31	23.95	-88.22	586.68	715.61	1,046.68	1,004.07	42.61	24.563	
11,800.00	11,080.23	11,081.04	11,055.23	26.33	23.94	-88.07	586.64	715.58	1,103.54	1,060.21	43.33	25.466	
11,900.00	11,079.51	11,078.71	11,052.90	26.36	23.94	-87.92	586.60	715.54	1,166.21	1,122.16	44.05	26.477	
12,000.00	11,078.79	11,076.39	11,050.58	26.39	23.93	-87.77	586.56	715.50	1,233.80	1,189.08	44.72	27.590	
12,100.00	11,078.07	11,074.08	11,048.27	26.43	23.93	-87.62	586.53	715.47	1,305.56	1,260.22	45.34	28.795	
12,200.00	11,077.35	11,071.78	11,045.97	26.48	23.92	-87.47	586.49	715.43	1,380.83	1,334.93	45.90	30.082	
12,300.00	11,076.63	11,069.49	11,043.68	26.55	23.92	-87.32	586.45	715.39	1,459.07	1,412.66	46.41	31.438	
12,400.00	11,075.91	11,067.22	11,041.41	26.63	23.92	-87.17	586.41	715.36	1,539.83	1,492.96	46.87	32.856	
12,500.00	11,075.19	11,064.95	11,039.14	26.74	23.91	-87.03	586.38	715.32	1,622.73	1,575.46	47.28	34.325	
12,600.00	11,074.46	11,062.70	11,036.89	26.91	23.91	-86.88	586.34	715.29	1,707.46	1,659.82	47.64	35.839	
12,700.00	11,073.74	11,060.45	11,034.65	27.15	23.90	-86.74	586.30	715.25	1,793.76	1,745.79	47.97	37.390	
12,800.00	11,073.02	11,058.22	11,032.42	27.52	23.90	-86.59	586.27	715.22	1,881.41	1,833.14	48.27	38.974	
12,900.00	11,072.30	11,056.00	11,030.19	28.07	23.89	-86.45	586.23	715.18	1,970.24	1,921.70	48.54	40.586	
13,000.00	11,071.58	11,054.00	11,028.19	28.82	23.89	-86.32	586.20	715.15	2,060.09	2,011.30	48.79	42.223	
13,100.00	11,070.86	11,054.00	11,028.19	29.72	23.89	-86.32	586.20	715.15	2,150.84	2,101.83	49.01	43.888	
13,200.00	11,070.14	11,054.00	11,028.19	30.73	23.89	-86.32	586.20	715.15	2,242.37	2,193.16	49.20	45.572	
13,300.00	11,069.42	11,054.00	11,028.19	31.82	23.89	-86.32	586.20	715.15	2,334.60	2,285.21	49.39	47.271	
13,400.00	11,068.69	11,045.95	11,020.15	32.95	23.87	-85.80	586.07	715.02	2,427.42	2,377.83	49.60	48.944	
13,500.00	11,067.97	11,044.04	11,018.23	34.13	23.87	-85.67	586.04	714.99	2,520.81	2,471.04	49.76	50.657	
13,600.00	11,067.25	11,042.15	11,016.34	35.33	23.87	-85.55	586.02	714.96	2,614.68	2,564.76	49.92	52.380	
13,700.00	11,066.53	11,040.27	11,014.47	36.55	23.86	-85.43	585.99	714.93	2,708.98	2,658.92	50.06	54.110	
13,800.00	11,065.81	11,038.42	11,012.62	37.80	23.86	-85.31	585.96	714.91	2,803.68	2,753.48	50.20	55.846	
13,900.00	11,065.09	11,036.59	11,010.79	39.06	23.86	-85.19	585.93	714.88	2,898.74	2,848.40	50.34	57.588	
14,000.00	11,064.37	11,034.77	11,008.97	40.33	23.85	-85.08	585.91	714.85	2,994.12	2,943.65	50.46	59.335	
14,100.00	11,063.65	11,032.98	11,007.18	41.62	23.85	-84.96	585.88	714.82	3,089.78	3,039.20	50.58	61.085	
14,200.00	11,062.92	11,031.20	11,005.40	42.92	23.85	-84.84	585.85	714.80	3,185.71	3,135.02	50.70	62.838	
14,300.00	11,062.20	11,029.44	11,003.64	44.23	23.84	-84.73	585.83	714.77	3,281.89	3,231.08	50.81	64.592	
14,400.00	11,061.48	11,027.70	11,001.90	45.54	23.84	-84.62	585.80	714.74	3,378.28	3,327.37	50.92	66.348	
14,500.00	11,060.76	11,025.98	11,000.18	46.87	23.83	-84.51	585.78	714.72	3,474.88	3,423.86	51.02	68.105	
14,600.00	11,060.04	11,024.27	10,998.47	48.20	23.83	-84.40	585.75	714.69	3,571.66	3,520.54	51.12	69.862	
14,700.00	11,059.32	11,022.58	10,996.78	49.53	23.83	-84.29	585.73	714.67	3,668.62	3,617.40	51.22	71.618	
14,800.00	11,058.60	11,020.91	10,995.11	50.88	23.82	-84.18	585.71	714.64	3,765.73	3,714.41	51.32	73.374	
14,900.00	11,057.88	11,019.25	10,993.45	52.22	23.82	-84.07	585.68	714.62	3,862.99	3,811.58	51.42	75.128	
15,000.00	11,057.16	11,017.61	10,991.81	53.58	23.82	-83.97	585.66	714.59	3,960.39	3,908.88	51.51	76.882	
15,100.00	11,056.43	11,015.99	10,990.19	54.93	23.82	-83.86	585.64	714.57	4,057.91	4,006.31	51.61	78.633	
15,200.00	11,055.71	11,014.38	10,988.58	56.29	23.81	-83.76	585.62	714.55	4,155.55	4,103.85	51.70	80.381	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Anticollision Report



Company:	Titus Oil & Gas Production, LLC	Local Co-ordinate Reference:	Well 201H
Project:	Lea County, NM - (NAD83 NME)	TVD Reference:	RKB @ 3211.00usft (Est KB)
Reference Site:	Los Vaqueros Fed	MD Reference:	RKB @ 3211.00usft (Est KB)
Site Error:	1.00 usft	North Reference:	Grid
Reference Well:	201H	Survey Calculation Method:	Minimum Curvature
Well Error:	1.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA Compass
Reference Design:	Plan 1 07-06-21	Offset TVD Reference:	Reference Datum

Offset Design: Los Vaqueros Fed Offsets - Madera 19 WXY Fed Com 6H - OH - Surveys												Offset Site Error:	1.00 usft
Survey Program: 180-MWD												Offset Well Error:	1.00 usft
Rule Assigned:												Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
15,300.00	11,054.99	11,012.79	10,986.99	57.66	23.81	-83.66	585.60	714.52	4,253.30	4,201.51	51.79	82.128	
15,400.00	11,054.27	11,011.21	10,985.42	59.03	23.81	-83.56	585.57	714.50	4,351.15	4,299.27	51.88	83.871	
15,500.00	11,053.55	11,009.65	10,983.85	60.40	23.80	-83.46	585.55	714.48	4,449.09	4,397.12	51.97	85.612	
15,600.00	11,052.83	11,008.10	10,982.31	61.77	23.80	-83.36	585.53	714.46	4,547.12	4,495.07	52.06	87.349	
15,700.00	11,052.11	11,006.57	10,980.78	63.15	23.80	-83.26	585.51	714.44	4,645.24	4,593.09	52.15	89.082	
15,800.00	11,051.39	11,005.05	10,979.26	64.53	23.79	-83.16	585.49	714.41	4,743.43	4,691.20	52.23	90.811	
15,900.00	11,050.66	11,003.55	10,977.75	65.91	23.79	-83.07	585.47	714.39	4,841.70	4,789.38	52.32	92.537	
16,000.00	11,049.94	11,002.06	10,976.27	67.30	23.79	-82.97	585.46	714.37	4,940.04	4,887.63	52.41	94.258	
16,100.00	11,049.22	11,000.58	10,974.79	68.69	23.78	-82.88	585.44	714.35	5,038.44	4,985.94	52.50	95.975	
16,200.00	11,048.50	10,999.12	10,973.33	70.07	23.78	-82.78	585.42	714.33	5,136.90	5,084.32	52.59	97.688	
16,300.00	11,047.78	10,997.67	10,971.88	71.46	23.78	-82.69	585.40	714.31	5,235.42	5,182.75	52.67	99.395	
16,400.00	11,047.06	10,996.24	10,970.45	72.86	23.78	-82.60	585.38	714.29	5,334.00	5,281.23	52.76	101.098	
16,500.00	11,046.34	10,994.82	10,969.02	74.25	23.77	-82.51	585.37	714.27	5,432.62	5,379.77	52.85	102.795	
16,600.00	11,045.62	10,993.41	10,967.62	75.65	23.77	-82.42	585.35	714.25	5,531.30	5,478.36	52.94	104.488	
16,700.00	11,044.90	10,992.01	10,966.22	77.04	23.77	-82.33	585.33	714.23	5,630.02	5,576.99	53.03	106.175	
16,800.00	11,044.17	10,990.63	10,964.84	78.44	23.77	-82.24	585.31	714.21	5,728.78	5,675.67	53.11	107.857	
16,900.00	11,043.45	10,989.26	10,963.47	79.84	23.76	-82.15	585.30	714.19	5,827.59	5,774.39	53.20	109.533	
17,000.00	11,042.73	10,987.90	10,962.11	81.24	23.76	-82.06	585.28	714.18	5,926.44	5,873.14	53.29	111.203	
17,100.00	11,042.01	10,986.55	10,960.76	82.65	23.76	-81.98	585.27	714.16	6,025.32	5,971.94	53.38	112.868	
17,200.00	11,041.29	10,985.22	10,959.43	84.05	23.75	-81.89	585.25	714.14	6,124.24	6,070.77	53.47	114.527	
17,300.00	11,040.57	10,983.90	10,958.11	85.45	23.75	-81.81	585.24	714.12	6,223.20	6,169.63	53.57	116.179	
17,400.00	11,039.85	10,982.59	10,956.79	86.86	23.75	-81.73	585.22	714.10	6,322.18	6,268.53	53.66	117.826	
17,500.00	11,039.13	10,981.29	10,955.49	88.27	23.75	-81.64	585.21	714.09	6,421.20	6,367.45	53.75	119.466	
17,600.00	11,038.40	10,980.00	10,954.21	89.67	23.74	-81.56	585.19	714.07	6,520.25	6,466.41	53.84	121.101	
17,700.00	11,037.68	10,978.72	10,952.93	91.08	23.74	-81.48	585.18	714.05	6,619.32	6,565.39	53.93	122.729	
17,800.00	11,036.96	10,977.45	10,951.66	92.49	23.74	-81.40	585.16	714.04	6,718.43	6,664.40	54.03	124.350	
17,900.00	11,036.24	10,976.20	10,950.41	93.90	23.74	-81.32	585.15	714.02	6,817.55	6,763.43	54.12	125.965	
18,000.00	11,035.52	10,974.95	10,949.16	95.31	23.73	-81.24	585.13	714.00	6,916.71	6,862.49	54.22	127.574	
18,100.00	11,034.80	10,959.00	10,933.21	96.72	23.70	-80.23	584.97	713.80	7,015.91	6,961.53	54.38	129.020	
18,200.00	11,034.08	10,959.00	10,933.21	98.14	23.70	-80.23	584.97	713.80	7,115.10	7,060.63	54.47	130.627	
18,300.00	11,033.36	10,959.00	10,933.21	99.55	23.70	-80.23	584.97	713.80	7,214.32	7,159.76	54.56	132.227	
18,400.00	11,032.64	10,959.00	10,933.21	100.96	23.70	-80.23	584.97	713.80	7,313.56	7,258.91	54.65	133.821	
18,500.00	11,031.91	10,959.00	10,933.21	102.38	23.70	-80.23	584.97	713.80	7,412.82	7,358.08	54.74	135.408	
18,600.00	11,031.19	10,959.00	10,933.21	103.79	23.70	-80.23	584.97	713.80	7,512.10	7,457.26	54.84	136.988	
18,700.00	11,030.47	10,959.00	10,933.21	105.21	23.70	-80.23	584.97	713.80	7,611.40	7,556.47	54.93	138.562	
18,800.00	11,029.75	10,959.00	10,933.21	106.62	23.70	-80.23	584.97	713.80	7,710.71	7,655.69	55.03	140.128	
18,900.00	11,029.03	10,959.00	10,933.21	108.04	23.70	-80.23	584.97	713.80	7,810.05	7,754.93	55.12	141.687	
18,904.07	11,029.00	10,959.00	10,933.21	108.10	23.70	-80.23	584.97	713.80	7,814.09	7,758.96	55.13	141.751	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Anticollision Report



Company:	Titus Oil & Gas Production, LLC	Local Co-ordinate Reference:	Well 201H
Project:	Lea County, NM - (NAD83 NME)	TVD Reference:	RKB @ 3211.00usft (Est KB)
Reference Site:	Los Vaqueros Fed	MD Reference:	RKB @ 3211.00usft (Est KB)
Site Error:	1.00 usft	North Reference:	Grid
Reference Well:	201H	Survey Calculation Method:	Minimum Curvature
Well Error:	1.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA Compass
Reference Design:	Plan 1 07-06-21	Offset TVD Reference:	Reference Datum

Offset Design: Los Vaqueros Fed Offsets - Madera Federal 30-1 - OH - Surveys													Offset Site Error: 1.00 usft
Survey Program: 25-VESSI_GYRO_DROP													Offset Well Error: 1.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
0.00	0.00	0.00	22.00	1.41	1.41	169.28	-2,752.58	521.19	2,801.58				
100.00	100.00	75.94	97.94	1.48	1.42	169.28	-2,752.57	521.28	2,801.50	2,798.60	2.90	965.967	
200.00	200.00	178.22	200.22	1.89	1.44	169.27	-2,752.57	521.45	2,801.52	2,798.19	3.34	839.438	
300.00	300.00	279.13	301.13	2.25	1.49	169.27	-2,752.51	521.60	2,801.50	2,797.76	3.74	748.969	
400.00	400.00	381.20	403.20	2.56	1.56	169.27	-2,752.39	521.69	2,801.40	2,797.28	4.12	680.541	
500.00	500.00	481.22	503.22	2.84	1.64	169.27	-2,752.26	521.77	2,801.28	2,796.81	4.48	625.786	
600.00	600.00	580.78	602.78	3.10	1.74	169.26	-2,752.13	521.86	2,801.17	2,796.34	4.83	580.281	
700.00	700.00	680.91	702.91	3.34	1.85	169.26	-2,752.02	521.93	2,801.07	2,795.90	5.17	541.474	
800.00	800.00	780.05	802.05	3.56	1.96	169.26	-2,751.92	522.04	2,801.00	2,795.48	5.51	508.050	
900.00	900.00	879.77	901.77	3.77	2.09	169.26	-2,751.82	522.17	2,800.93	2,795.08	5.85	478.749	
1,000.00	1,000.00	982.03	1,004.03	3.98	2.23	169.25	-2,751.67	522.35	2,800.82	2,794.63	6.19	452.590	
1,100.00	1,100.00	1,082.74	1,104.74	4.17	2.37	169.25	-2,751.48	522.55	2,800.66	2,794.14	6.52	429.414	
1,200.00	1,200.00	1,182.84	1,204.84	4.36	2.51	169.24	-2,751.27	522.72	2,800.49	2,793.64	6.85	408.672	
1,300.00	1,300.00	1,283.37	1,305.36	4.54	2.66	169.24	-2,751.05	522.84	2,800.29	2,793.11	7.18	389.900	
1,400.00	1,400.00	1,383.85	1,405.84	4.72	2.82	169.24	-2,750.85	522.88	2,800.11	2,792.60	7.51	372.865	
1,500.00	1,500.00	1,482.82	1,504.82	4.89	2.97	169.24	-2,750.67	522.85	2,799.93	2,792.09	7.83	357.440	
1,600.00	1,600.00	1,583.48	1,605.48	5.06	3.12	169.24	-2,750.51	522.68	2,799.74	2,791.58	8.16	343.237	
1,700.00	1,700.00	1,683.38	1,705.38	5.22	3.28	169.24	-2,750.36	522.48	2,799.55	2,791.07	8.48	330.245	
1,778.16	1,778.16	1,756.17	1,778.16	5.34	3.39	169.25	-2,750.27	522.30	2,799.43	2,790.71	8.72	321.151	
1,800.00	1,800.00	1,775.00	1,797.00	5.38	3.42	169.25	-2,750.30	522.25	2,799.45	2,790.67	8.78	318.803	
1,900.00	1,900.00	1,869.49	1,891.48	5.53	3.56	169.25	-2,750.58	522.05	2,799.70	2,790.61	9.08	308.197	
2,000.00	2,000.00	1,969.17	1,991.16	5.69	3.72	169.26	-2,750.93	521.88	2,800.01	2,790.61	9.39	298.076	
2,100.00	2,100.00	2,067.35	2,089.34	5.83	3.87	169.26	-2,751.30	521.76	2,800.35	2,790.65	9.70	288.718	
2,200.00	2,200.00	2,178.80	2,200.79	5.98	4.05	169.26	-2,751.55	521.82	2,800.59	2,790.57	10.03	279.339	
2,300.00	2,300.00	2,280.68	2,302.67	6.13	4.22	169.25	-2,751.39	522.28	2,800.53	2,790.19	10.34	270.916	
2,400.00	2,400.00	2,380.62	2,402.61	6.27	4.39	169.24	-2,751.16	523.02	2,800.43	2,789.79	10.64	263.097	
2,500.00	2,500.00	2,480.11	2,502.10	6.41	4.55	169.22	-2,750.92	523.89	2,800.36	2,789.41	10.95	255.770	
2,600.00	2,600.00	2,580.34	2,602.32	6.55	4.72	169.19	-2,750.63	524.97	2,800.28	2,789.03	11.25	248.841	
2,700.00	2,700.00	2,681.59	2,703.56	6.68	4.89	169.16	-2,750.25	526.42	2,800.18	2,788.63	11.56	242.267	
2,800.00	2,800.00	2,783.71	2,805.66	6.82	5.07	169.13	-2,749.78	528.06	2,800.03	2,788.17	11.86	236.020	
2,900.00	2,900.00	2,885.80	2,907.73	6.95	5.24	169.09	-2,749.17	529.85	2,799.78	2,787.61	12.17	230.099	
3,000.00	3,000.00	2,985.74	3,007.66	7.08	5.41	169.05	-2,748.55	531.66	2,799.51	2,787.04	12.47	224.550	
3,100.00	3,100.00	3,086.82	3,108.72	7.21	5.58	169.01	-2,747.89	533.51	2,799.22	2,786.45	12.77	219.245	
3,200.00	3,200.00	3,188.27	3,210.15	7.34	5.76	168.97	-2,747.16	535.47	2,798.88	2,785.81	13.07	214.186	
3,300.00	3,300.00	3,289.07	3,310.92	7.47	5.93	168.92	-2,746.35	537.63	2,798.50	2,785.14	13.37	209.384	
3,400.00	3,400.00	3,390.12	3,411.93	7.59	6.11	168.87	-2,745.44	540.14	2,798.10	2,784.43	13.66	204.797	
3,500.00	3,500.00	3,491.07	3,512.84	7.72	6.28	168.81	-2,744.41	543.08	2,797.66	2,783.70	13.96	200.418	
3,600.00	3,600.00	3,590.90	3,612.62	7.84	6.45	168.74	-2,743.36	546.07	2,797.21	2,782.95	14.25	196.259	
3,700.00	3,700.00	3,689.59	3,711.26	7.96	6.62	168.68	-2,742.34	548.98	2,796.78	2,782.23	14.54	192.305	
3,800.00	3,800.00	3,786.59	3,808.23	8.08	6.79	168.63	-2,741.54	551.24	2,796.42	2,781.59	14.83	188.560	
3,900.00	3,900.00	3,880.20	3,901.82	8.21	6.96	168.60	-2,741.02	552.81	2,796.21	2,781.10	15.11	185.048	
3,913.01	3,913.01	3,891.38	3,913.03	8.22	6.97	168.59	-2,740.98	552.95	2,796.20	2,781.06	15.15	184.624	
4,000.00	4,000.00	3,961.41	3,983.03	8.32	7.10	168.58	-2,741.03	553.64	2,796.44	2,781.07	15.37	181.960	
4,100.00	4,100.00	4,050.49	4,072.11	8.44	7.25	168.57	-2,741.74	554.12	2,797.31	2,781.67	15.64	178.882	
4,200.00	4,200.00	4,175.19	4,196.80	8.56	7.46	168.56	-2,742.45	554.84	2,798.02	2,782.05	15.97	175.225	
4,300.00	4,300.00	4,282.01	4,303.62	8.68	7.65	168.55	-2,742.33	555.51	2,798.03	2,781.76	16.27	171.995	
4,400.00	4,400.00	4,384.07	4,405.68	8.79	7.82	168.54	-2,742.09	555.87	2,797.87	2,781.31	16.56	168.958	
4,500.00	4,500.00	4,485.07	4,506.68	8.91	8.00	168.54	-2,741.83	555.98	2,797.64	2,780.79	16.85	166.040	
4,600.00	4,600.00	4,582.84	4,604.45	9.02	8.17	168.53	-2,741.56	556.16	2,797.41	2,780.28	17.13	163.281	
4,700.00	4,700.00	4,678.93	4,700.53	9.14	8.34	168.52	-2,741.38	556.81	2,797.35	2,779.94	17.41	160.661	
4,786.48	4,786.48	4,764.88	4,786.48	9.24	8.49	168.50	-2,741.22	557.49	2,797.33	2,779.67	17.66	158.424	
4,800.00	4,800.00	4,777.62	4,799.22	9.25	8.51	168.50	-2,741.20	557.60	2,797.33	2,779.64	17.69	158.091	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Anticollision Report



Company:	Titus Oil & Gas Production, LLC	Local Co-ordinate Reference:	Well 201H
Project:	Lea County, NM - (NAD83 NME)	TVD Reference:	RKB @ 3211.00usft (Est KB)
Reference Site:	Los Vaqueros Fed	MD Reference:	RKB @ 3211.00usft (Est KB)
Site Error:	1.00 usft	North Reference:	Grid
Reference Well:	201H	Survey Calculation Method:	Minimum Curvature
Well Error:	1.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA Compass
Reference Design:	Plan 1 07-06-21	Offset TVD Reference:	Reference Datum

Offset Design: Los Vaqueros Fed Offsets - Madera Federal 30-1 - OH - Surveys												Offset Site Error:	1.00 usft
Survey Program: 25-VESSI_GYRO_DROP												Offset Well Error:	1.00 usft
Rule Assigned:												Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference	Offset	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
4,900.00	4,900.00	4,863.84	4,885.43	9.36	8.66	168.48	-2,741.22	558.52	2,797.58	2,779.63	17.95	155.812	
5,000.00	5,000.00	4,951.32	4,972.90	9.48	8.81	168.46	-2,741.60	560.00	2,798.34	2,780.12	18.22	153.614	
5,100.00	5,099.99	5,048.81	5,070.37	9.64	8.98	173.42	-2,742.20	562.04	2,800.67	2,782.12	18.55	150.994	
5,200.00	5,199.91	5,148.70	5,170.24	9.90	9.16	173.38	-2,742.84	564.15	2,805.62	2,786.64	18.97	147.864	
5,300.00	5,299.69	5,246.86	5,268.37	10.16	9.33	173.34	-2,743.55	566.03	2,813.20	2,793.80	19.40	144.983	
5,400.00	5,399.27	5,342.10	5,363.59	10.43	9.49	173.32	-2,744.40	567.70	2,823.50	2,803.67	19.84	142.341	
5,500.00	5,498.57	5,441.28	5,462.75	10.71	9.67	173.29	-2,745.32	569.41	2,836.43	2,816.15	20.29	139.826	
5,600.00	5,597.54	5,539.77	5,561.22	11.01	9.84	173.27	-2,746.24	571.12	2,851.94	2,831.20	20.74	137.481	
5,700.00	5,696.30	5,638.19	5,659.63	11.23	10.01	173.27	-2,747.17	572.84	2,868.74	2,847.60	21.14	135.696	
5,800.00	5,795.07	5,735.58	5,757.00	11.43	10.18	173.28	-2,748.11	574.54	2,885.56	2,864.05	21.50	134.181	
5,900.00	5,893.84	5,832.35	5,853.74	11.64	10.35	173.29	-2,749.08	576.25	2,902.41	2,880.53	21.88	132.643	
6,000.00	5,992.61	5,929.11	5,950.48	11.87	10.52	173.29	-2,750.11	578.02	2,919.35	2,897.07	22.27	131.084	
6,100.00	6,091.38	6,027.35	6,048.70	12.10	10.69	173.29	-2,751.18	579.86	2,936.31	2,913.64	22.68	129.495	
6,200.00	6,190.15	6,125.03	6,146.36	12.35	10.86	173.30	-2,752.27	581.72	2,953.31	2,930.22	23.09	127.904	
6,300.00	6,288.92	6,225.35	6,246.66	12.61	11.04	173.30	-2,753.39	583.66	2,970.30	2,946.78	23.52	126.285	
6,400.00	6,387.69	6,325.45	6,346.73	12.88	11.21	173.30	-2,754.39	585.65	2,987.21	2,963.25	23.96	124.668	
6,500.00	6,486.46	6,429.24	6,450.49	13.16	11.39	173.30	-2,755.32	587.74	3,004.01	2,979.59	24.42	123.022	
6,600.00	6,585.22	6,528.12	6,549.35	13.45	11.57	173.30	-2,756.11	589.74	3,020.73	2,995.85	24.88	121.433	
6,700.00	6,683.99	6,627.07	6,648.28	13.75	11.74	173.30	-2,756.89	591.75	3,037.44	3,012.09	25.34	119.861	
6,800.00	6,782.76	6,725.00	6,746.18	14.05	11.91	173.30	-2,757.66	593.76	3,054.14	3,028.33	25.81	118.318	
6,900.00	6,881.53	6,822.39	6,843.55	14.36	12.09	173.30	-2,758.46	595.80	3,070.89	3,044.60	26.29	116.804	
7,000.00	6,980.30	6,920.27	6,941.40	14.68	12.26	173.30	-2,759.28	597.91	3,087.66	3,060.89	26.78	115.311	
7,100.00	7,079.07	7,019.81	7,040.92	15.01	12.43	173.30	-2,760.10	600.10	3,104.44	3,077.17	27.27	113.831	
7,200.00	7,177.84	7,117.19	7,138.27	15.34	12.60	173.29	-2,760.89	602.26	3,121.20	3,093.43	27.77	112.395	
7,300.00	7,276.61	7,214.30	7,235.35	15.67	12.78	173.29	-2,761.71	604.47	3,138.02	3,109.74	28.27	110.991	
7,400.00	7,375.37	7,312.70	7,333.72	16.02	12.95	173.28	-2,762.56	606.78	3,154.85	3,126.06	28.78	109.607	
7,500.00	7,474.14	7,410.57	7,431.56	16.36	13.12	173.28	-2,763.40	609.13	3,171.70	3,142.40	29.30	108.257	
7,600.00	7,572.91	7,506.47	7,527.43	16.72	13.29	173.27	-2,764.27	611.43	3,188.59	3,158.78	29.81	106.952	
7,700.00	7,671.68	7,594.82	7,615.74	17.07	13.45	173.27	-2,765.26	613.61	3,205.70	3,175.39	30.32	105.739	
7,800.00	7,770.45	7,692.33	7,713.22	17.44	13.62	173.26	-2,766.52	616.09	3,222.99	3,192.15	30.84	104.492	
7,900.00	7,869.22	7,789.77	7,810.62	17.80	13.79	173.25	-2,767.78	618.56	3,240.28	3,208.91	31.38	103.276	
8,000.00	7,967.99	7,886.95	7,907.76	18.17	13.96	173.25	-2,769.09	621.06	3,257.64	3,225.73	31.91	102.091	
8,100.00	8,066.76	7,991.76	8,012.52	18.54	14.15	173.24	-2,770.43	623.82	3,274.94	3,242.48	32.46	100.883	
8,200.00	8,165.53	8,090.58	8,111.30	18.92	14.32	173.23	-2,771.53	626.41	3,292.08	3,259.08	33.01	99.739	
8,300.00	8,264.29	8,210.09	8,230.76	19.29	14.53	173.21	-2,772.40	629.64	3,308.85	3,275.25	33.60	98.482	
8,400.00	8,363.06	8,306.39	8,327.02	19.68	14.70	173.20	-2,772.91	632.15	3,325.42	3,291.27	34.14	97.396	
8,500.00	8,461.83	8,406.07	8,426.67	20.06	14.88	173.19	-2,773.49	634.75	3,342.03	3,307.33	34.70	96.317	
8,600.00	8,560.60	8,542.96	8,563.51	20.45	15.12	173.17	-2,773.15	638.46	3,357.81	3,322.47	35.34	95.027	
8,700.00	8,659.37	8,644.41	8,664.92	20.83	15.30	173.16	-2,772.46	641.22	3,373.24	3,337.34	35.90	93.965	
8,800.00	8,758.14	8,752.73	8,773.20	21.23	15.49	173.14	-2,771.56	644.03	3,388.49	3,352.01	36.48	92.887	
8,900.00	8,856.91	8,852.26	8,872.70	21.62	15.67	173.13	-2,770.61	646.36	3,403.58	3,366.53	37.04	91.880	
9,000.00	8,955.68	8,955.68	8,976.09	22.01	15.85	173.12	-2,769.56	648.65	3,418.57	3,380.96	37.62	90.876	
9,100.00	9,054.45	9,053.02	9,073.40	22.41	16.02	173.12	-2,768.61	650.54	3,433.55	3,395.37	38.18	89.927	
9,200.00	9,153.21	9,156.79	9,177.16	22.81	16.21	173.12	-2,767.59	652.32	3,448.48	3,409.72	38.76	88.968	
9,300.00	9,251.98	9,255.43	9,275.78	23.21	16.38	173.12	-2,766.63	653.62	3,463.34	3,424.00	39.33	88.056	
9,400.00	9,350.75	9,357.19	9,377.53	23.62	16.56	173.14	-2,765.66	654.63	3,478.15	3,438.24	39.91	87.150	
9,500.00	9,449.52	9,457.29	9,477.63	24.02	16.73	173.16	-2,764.74	655.15	3,492.90	3,452.41	40.49	86.273	
9,600.00	9,548.29	9,559.13	9,579.46	24.43	16.91	173.18	-2,763.79	655.34	3,507.57	3,466.50	41.07	85.407	
9,700.00	9,647.06	9,658.20	9,678.52	24.83	17.08	173.21	-2,762.92	655.28	3,522.24	3,480.59	41.65	84.574	
9,800.00	9,745.83	9,755.78	9,776.10	25.24	17.25	173.24	-2,762.05	655.14	3,536.89	3,494.67	42.22	83.767	
9,900.00	9,844.60	9,851.38	9,871.70	25.65	17.41	173.27	-2,761.31	655.05	3,551.66	3,508.86	42.80	82.990	
10,000.00	9,943.39	9,945.44	9,965.76	26.05	17.58	173.30	-2,760.65	654.97	3,566.33	3,522.98	43.35	82.264	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Anticollision Report



Company:	Titus Oil & Gas Production, LLC	Local Co-ordinate Reference:	Well 201H
Project:	Lea County, NM - (NAD83 NME)	TVD Reference:	RKB @ 3211.00usft (Est KB)
Reference Site:	Los Vaqueros Fed	MD Reference:	RKB @ 3211.00usft (Est KB)
Site Error:	1.00 usft	North Reference:	Grid
Reference Well:	201H	Survey Calculation Method:	Minimum Curvature
Well Error:	1.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA Compass
Reference Design:	Plan 1 07-06-21	Offset TVD Reference:	Reference Datum

Offset Design: Los Vaqueros Fed Offsets - Madera Federal 30-1 - OH - Surveys													Offset Site Error:	1.00 usft
Survey Program:		25-VESSI_GYRO_DROP					Rule Assigned:			Offset Well Error:		1.00 usft		
Reference	Offset	Semi Major Axis		Offset Wellbore Centre		Distance				Warning				
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
10,100.00	10,042.48	10,046.42	10,066.74	26.47	17.75	173.35	-2,760.00	654.93	3,579.03	3,535.09	43.95	81.443		
10,200.00	10,141.89	10,144.99	10,165.30	26.90	17.92	173.38	-2,759.35	654.87	3,589.13	3,544.59	44.55	80.573		
10,300.00	10,241.55	10,253.14	10,273.45	27.31	18.11	173.41	-2,758.49	654.70	3,596.48	3,551.34	45.14	79.667		
10,400.00	10,341.39	10,355.40	10,375.70	27.69	18.28	173.43	-2,757.60	654.45	3,601.14	3,555.44	45.70	78.801		
10,500.00	10,441.34	10,450.00	10,470.30	28.02	18.44	173.44	-2,756.80	654.16	3,603.23	3,557.04	46.19	78.005		
10,600.00	10,541.34	10,550.00	10,570.30	28.14	18.62	168.45	-2,756.04	653.79	3,602.95	3,556.46	46.49	77.505		
10,700.00	10,641.31	10,645.06	10,665.36	28.10	18.78	-20.82	-2,755.39	653.43	3,600.94	3,554.34	46.61	77.259		
10,800.00	10,739.52	10,732.24	10,752.53	27.78	18.93	-21.67	-2,754.99	653.02	3,583.74	3,537.30	46.44	77.170		
10,900.00	10,831.87	10,821.08	10,841.37	27.40	19.08	-23.66	-2,754.82	652.48	3,548.09	3,501.87	46.22	76.767		
11,000.00	10,914.33	10,896.02	10,916.30	27.03	19.20	-27.19	-2,754.81	651.99	3,495.53	3,449.56	45.97	76.043		
11,100.00	10,983.30	10,964.24	10,984.52	26.70	19.32	-33.22	-2,754.89	651.57	3,428.42	3,382.68	45.75	74.944		
11,200.00	11,035.76	11,017.24	11,037.52	26.45	19.41	-43.51	-2,754.94	651.24	3,349.71	3,304.14	45.57	73.511		
11,300.00	11,069.41	11,050.00	11,070.29	26.28	19.46	-60.84	-2,754.98	651.04	3,262.98	3,217.54	45.44	71.805		
11,400.00	11,082.79	11,063.61	11,083.89	26.23	19.48	-86.17	-2,755.00	650.95	3,172.14	3,126.75	45.39	69.884		
11,500.00	11,082.40	11,063.42	11,083.70	26.25	19.48	-91.14	-2,755.00	650.95	3,079.88	3,034.48	45.40	67.836		
11,600.00	11,081.68	11,062.85	11,083.13	26.29	19.48	-91.39	-2,754.99	650.96	2,985.58	2,940.12	45.46	65.680		
11,700.00	11,080.95	11,062.24	11,082.53	26.31	19.48	-91.57	-2,754.99	650.96	2,889.61	2,844.12	45.49	63.524		
11,800.00	11,080.23	11,061.63	11,081.91	26.33	19.48	-91.52	-2,754.99	650.96	2,793.56	2,748.04	45.52	61.376		
11,900.00	11,079.51	11,061.01	11,081.30	26.36	19.48	-91.48	-2,754.99	650.97	2,697.79	2,652.24	45.55	59.224		
12,000.00	11,078.79	11,060.40	11,080.69	26.39	19.48	-91.43	-2,754.99	650.97	2,602.34	2,556.74	45.60	57.069		
12,100.00	11,078.07	11,059.79	11,080.08	26.43	19.48	-91.39	-2,754.99	650.98	2,507.25	2,461.59	45.66	54.911		
12,200.00	11,077.35	11,059.18	11,079.47	26.48	19.48	-91.35	-2,754.99	650.98	2,412.55	2,366.81	45.74	52.749		
12,300.00	11,076.63	11,058.58	11,078.86	26.55	19.48	-91.30	-2,754.99	650.98	2,318.30	2,272.47	45.83	50.585		
12,400.00	11,075.91	11,057.97	11,078.25	26.63	19.47	-91.26	-2,754.99	650.99	2,224.55	2,178.60	45.94	48.418		
12,500.00	11,075.19	11,057.36	11,077.65	26.74	19.47	-91.21	-2,754.99	650.99	2,131.36	2,085.28	46.08	46.250		
12,600.00	11,074.46	11,056.76	11,077.04	26.91	19.47	-91.17	-2,754.99	650.99	2,038.83	1,992.57	46.25	44.080		
12,700.00	11,073.74	11,056.16	11,076.44	27.15	19.47	-91.13	-2,754.99	651.00	1,947.03	1,900.57	46.46	41.910		
12,800.00	11,073.02	11,055.55	11,075.84	27.52	19.47	-91.08	-2,754.99	651.00	1,856.08	1,809.37	46.70	39.741		
12,900.00	11,072.30	11,054.95	11,075.24	28.07	19.47	-91.04	-2,754.98	651.01	1,766.10	1,719.10	47.00	37.575		
13,000.00	11,071.58	11,054.36	11,074.64	28.82	19.47	-91.00	-2,754.98	651.01	1,677.27	1,629.91	47.36	35.415		
13,100.00	11,070.86	11,053.76	11,074.04	29.72	19.47	-90.95	-2,754.98	651.01	1,589.75	1,541.96	47.79	33.264		
13,200.00	11,070.14	11,053.16	11,073.45	30.73	19.47	-90.91	-2,754.98	651.02	1,503.80	1,455.49	48.31	31.127		
13,300.00	11,069.42	11,052.57	11,072.85	31.82	19.47	-90.87	-2,754.98	651.02	1,419.69	1,370.75	48.94	29.011		
13,400.00	11,068.69	11,051.97	11,072.26	32.95	19.46	-90.82	-2,754.98	651.02	1,337.76	1,288.08	49.68	26.925		
13,500.00	11,067.97	11,051.38	11,071.66	34.13	19.46	-90.78	-2,754.98	651.03	1,258.46	1,207.88	50.58	24.881		
13,600.00	11,067.25	11,050.79	11,071.07	35.33	19.46	-90.74	-2,754.98	651.03	1,182.29	1,130.65	51.64	22.896		
13,700.00	11,066.53	11,050.20	11,070.48	36.55	19.46	-90.69	-2,754.98	651.04	1,109.91	1,057.03	52.88	20.988		
13,800.00	11,065.81	11,049.61	11,069.90	37.80	19.46	-90.65	-2,754.98	651.04	1,042.11	987.79	54.33	19.182		
13,900.00	11,065.09	11,049.03	11,069.32	39.06	19.46	-90.61	-2,754.98	651.04	979.84	923.88	55.97	17.508		
14,000.00	11,064.37	11,048.45	11,068.74	40.33	19.46	-90.57	-2,754.98	651.05	924.22	866.45	57.78	15.996		
14,100.00	11,063.65	11,047.87	11,068.15	41.62	19.46	-90.53	-2,754.97	651.05	876.52	816.81	59.70	14.682		
14,200.00	11,062.92	11,047.28	11,067.56	42.92	19.46	-90.48	-2,754.97	651.05	838.08	776.44	61.64	13.596		
14,300.00	11,062.20	11,046.69	11,066.98	44.23	19.46	-90.44	-2,754.97	651.06	810.23	746.77	63.46	12.768		
14,400.00	11,061.48	11,046.10	11,066.38	45.54	19.45	-90.40	-2,754.97	651.06	794.08	729.08	65.00	12.217		
14,479.55	11,060.91	11,045.63	11,065.91	46.60	19.45	-90.36	-2,754.97	651.06	790.08	724.15	65.93	11.984 CC, ES		
14,500.00	11,060.76	11,045.50	11,065.79	46.87	19.45	-90.35	-2,754.97	651.06	790.35	724.23	66.12	11.953 SF		
14,600.00	11,060.04	11,044.91	11,065.19	48.20	19.45	-90.31	-2,754.97	651.07	799.21	732.46	66.75	11.973		
14,700.00	11,059.32	11,044.31	11,064.60	49.53	19.45	-90.27	-2,754.97	651.07	820.26	753.38	66.88	12.266		
14,800.00	11,058.60	11,043.71	11,064.00	50.88	19.45	-90.22	-2,754.97	651.08	852.59	786.03	66.57	12.808		
14,900.00	11,057.88	11,043.11	11,063.39	52.22	19.45	-90.18	-2,754.97	651.08	894.99	829.06	65.93	13.575		
15,000.00	11,057.16	11,042.50	11,062.79	53.58	19.45	-90.14	-2,754.97	651.08	946.09	881.01	65.08	14.537		
15,100.00	11,056.43	11,041.89	11,062.18	54.93	19.45	-90.09	-2,754.97	651.09	1,004.58	940.46	64.12	15.667		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Anticollision Report



Company:	Titus Oil & Gas Production, LLC	Local Co-ordinate Reference:	Well 201H
Project:	Lea County, NM - (NAD83 NME)	TVD Reference:	RKB @ 3211.00usft (Est KB)
Reference Site:	Los Vaqueros Fed	MD Reference:	RKB @ 3211.00usft (Est KB)
Site Error:	1.00 usft	North Reference:	Grid
Reference Well:	201H	Survey Calculation Method:	Minimum Curvature
Well Error:	1.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA Compass
Reference Design:	Plan 1 07-06-21	Offset TVD Reference:	Reference Datum

Offset Design: Los Vaqueros Fed Offsets - Madera Federal 30-1 - OH - Surveys													Offset Site Error:	1.00 usft				
Survey Program:		25-VESSI_GYRO_DROP					Offset		Semi Major Axis		Offset Wellbore Centre		Rule Assigned:		Distance	Warning	Offset Well Error:	1.00 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor						
15,200.00	11,055.71	11,041.28	11,061.57	56.29	19.45	-90.05	-2,754.97	651.09	1,069.23	1,006.11	63.12	16.939						
15,300.00	11,054.99	11,040.67	11,060.96	57.66	19.45	-90.00	-2,754.97	651.10	1,139.01	1,076.87	62.14	18.329						
15,400.00	11,054.27	11,040.06	11,060.34	59.03	19.44	-89.96	-2,754.96	651.10	1,213.02	1,151.81	61.21	19.817						
15,500.00	11,053.55	11,039.44	11,059.73	60.40	19.44	-89.91	-2,754.96	651.10	1,290.55	1,230.20	60.34	21.387						
15,600.00	11,052.83	11,038.82	11,059.11	61.77	19.44	-89.87	-2,754.96	651.11	1,370.98	1,311.44	59.55	23.024						
15,700.00	11,052.11	11,038.20	11,058.48	63.15	19.44	-89.82	-2,754.96	651.11	1,453.85	1,395.03	58.82	24.716						
15,800.00	11,051.39	11,037.57	11,057.86	64.53	19.44	-89.78	-2,754.96	651.12	1,538.75	1,480.58	58.17	26.453						
15,900.00	11,050.66	11,036.95	11,057.23	65.91	19.44	-89.73	-2,754.96	651.12	1,625.37	1,567.79	57.58	28.227						
16,000.00	11,049.94	11,036.32	11,056.60	67.30	19.44	-89.69	-2,754.96	651.12	1,713.45	1,656.39	57.06	30.031						
16,100.00	11,049.22	11,035.69	11,055.97	68.69	19.44	-89.64	-2,754.96	651.13	1,802.77	1,746.19	56.58	31.860						
16,200.00	11,048.50	11,035.05	11,055.34	70.07	19.44	-89.60	-2,754.96	651.13	1,893.16	1,837.00	56.16	33.708						
16,300.00	11,047.78	11,034.42	11,054.70	71.46	19.44	-89.55	-2,754.96	651.14	1,984.48	1,928.69	55.79	35.573						
16,400.00	11,047.06	11,033.78	11,054.06	72.86	19.43	-89.50	-2,754.96	651.14	2,076.59	2,021.14	55.45	37.450						
16,500.00	11,046.34	11,033.13	11,053.42	74.25	19.43	-89.46	-2,754.96	651.14	2,169.40	2,114.25	55.15	39.337						
16,600.00	11,045.62	11,032.49	11,052.78	75.65	19.43	-89.41	-2,754.96	651.15	2,262.82	2,207.94	54.88	41.232						
16,700.00	11,044.90	11,031.84	11,052.13	77.04	19.43	-89.36	-2,754.96	651.15	2,356.79	2,302.15	54.64	43.132						
16,800.00	11,044.17	11,031.19	11,051.48	78.44	19.43	-89.32	-2,754.96	651.16	2,451.23	2,396.80	54.43	45.036						
16,900.00	11,043.45	11,030.54	11,050.83	79.84	19.43	-89.27	-2,754.95	651.16	2,546.09	2,491.86	54.24	46.943						
17,000.00	11,042.73	11,029.89	11,050.17	81.24	19.43	-89.22	-2,754.95	651.16	2,641.34	2,587.27	54.07	48.851						
17,100.00	11,042.01	11,029.23	11,049.51	82.65	19.43	-89.17	-2,754.95	651.17	2,736.92	2,683.00	53.92	50.760						
17,200.00	11,041.29	11,028.57	11,048.85	84.05	19.43	-89.13	-2,754.95	651.17	2,832.81	2,779.02	53.79	52.668						
17,300.00	11,040.57	11,027.91	11,048.19	85.45	19.42	-89.08	-2,754.95	651.18	2,928.97	2,875.30	53.67	54.574						
17,400.00	11,039.85	11,027.24	11,047.53	86.86	19.42	-89.03	-2,754.95	651.18	3,025.38	2,971.81	53.57	56.478						
17,500.00	11,039.13	11,026.57	11,046.86	88.27	19.42	-88.98	-2,754.95	651.19	3,122.02	3,068.54	53.48	58.378						
17,600.00	11,038.40	11,025.90	11,046.19	89.67	19.42	-88.93	-2,754.95	651.19	3,218.86	3,165.46	53.40	60.276						
17,700.00	11,037.68	11,025.23	11,045.51	91.08	19.42	-88.88	-2,754.95	651.19	3,315.89	3,262.56	53.34	62.170						
17,800.00	11,036.96	11,024.58	11,044.87	92.49	19.42	-88.84	-2,754.95	651.20	3,413.09	3,359.81	53.28	64.059						
17,900.00	11,036.24	11,023.95	11,044.24	93.90	19.42	-88.79	-2,754.95	651.20	3,510.45	3,457.22	53.23	65.944						
18,000.00	11,035.52	11,023.32	11,043.61	95.31	19.42	-88.75	-2,754.95	651.21	3,607.95	3,554.76	53.20	67.824						
18,100.00	11,034.80	11,022.69	11,042.97	96.72	19.42	-88.70	-2,754.95	651.21	3,705.59	3,652.42	53.17	69.698						
18,200.00	11,034.08	11,022.06	11,042.34	98.14	19.41	-88.65	-2,754.95	651.21	3,803.35	3,750.20	53.14	71.567						
18,300.00	11,033.36	11,021.43	11,041.72	99.55	19.41	-88.61	-2,754.95	651.22	3,901.22	3,848.09	53.13	73.430						
18,400.00	11,032.64	11,020.80	11,041.09	100.96	19.41	-88.56	-2,754.95	651.22	3,999.20	3,946.08	53.12	75.286						
18,500.00	11,031.91	11,020.17	11,040.46	102.38	19.41	-88.52	-2,754.94	651.23	4,097.27	4,044.15	53.12	77.137						
18,600.00	11,031.19	11,019.54	11,039.83	103.79	19.41	-88.47	-2,754.94	651.23	4,195.44	4,142.32	53.12	78.980						
18,700.00	11,030.47	11,018.92	11,039.20	105.21	19.41	-88.43	-2,754.94	651.23	4,293.69	4,240.56	53.13	80.817						
18,800.00	11,029.75	11,018.29	11,038.57	106.62	19.41	-88.38	-2,754.94	651.24	4,392.02	4,338.87	53.14	82.646						
18,900.00	11,029.03	11,017.66	11,037.95	108.04	19.41	-88.34	-2,754.94	651.24	4,490.42	4,437.26	53.16	84.469						
18,904.07	11,029.00	11,017.64	11,037.92	108.10	19.41	-88.33	-2,754.94	651.24	4,494.42	4,441.26	53.16	84.543						

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Anticollision Report



Company:	Titus Oil & Gas Production, LLC	Local Co-ordinate Reference:	Well 201H
Project:	Lea County, NM - (NAD83 NME)	TVD Reference:	RKB @ 3211.00usft (Est KB)
Reference Site:	Los Vaqueros Fed	MD Reference:	RKB @ 3211.00usft (Est KB)
Site Error:	1.00 usft	North Reference:	Grid
Reference Well:	201H	Survey Calculation Method:	Minimum Curvature
Well Error:	1.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA Compass
Reference Design:	Plan 1 07-06-21	Offset TVD Reference:	Reference Datum

Offset Design: Los Vaqueros Fed Offsets - Medera 19 TB Fed 1H - OH - Surveys													Offset Site Error: 1.00 usft
Survey Program: 178-MWD													Offset Well Error: 1.00 usft
Rule Assigned:													
Measured Depth (usft)	Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.00	0.00	0.00	-0.50	1.41	1.41	43.82	904.11	867.76	1,253.17				
100.00	100.00	92.99	92.49	1.48	1.42	43.83	904.18	868.10	1,253.47	1,250.57	2.90	432.424	
200.00	200.00	186.04	185.54	1.89	1.43	43.86	904.38	869.09	1,254.37	1,251.05	3.32	377.751	
300.00	300.00	284.48	283.96	2.25	1.47	43.90	904.56	870.61	1,255.57	1,251.84	3.72	337.215	
400.00	400.00	389.80	389.27	2.56	1.55	43.96	904.69	872.30	1,256.78	1,252.67	4.11	305.719	
500.00	500.00	506.65	506.11	2.84	1.66	44.00	904.19	873.21	1,257.01	1,252.52	4.50	279.511	
600.00	600.00	608.80	608.26	3.10	1.77	44.02	903.51	873.02	1,256.41	1,251.54	4.87	258.043	
700.00	700.00	710.56	710.01	3.34	1.91	44.03	902.74	872.76	1,255.68	1,250.44	5.24	239.449	
800.00	800.00	811.88	811.33	3.56	2.06	44.05	901.78	872.46	1,254.80	1,249.18	5.62	223.283	
900.00	900.00	910.74	910.19	3.77	2.21	44.07	900.93	872.16	1,253.97	1,247.98	5.99	209.476	
1,000.00	1,000.00	1,011.31	1,010.75	3.98	2.38	44.08	900.17	871.73	1,253.13	1,246.77	6.35	197.235	
1,100.00	1,100.00	1,111.48	1,110.92	4.17	2.55	44.08	899.49	871.18	1,252.26	1,245.54	6.72	186.315	
1,200.00	1,200.00	1,204.94	1,204.38	4.36	2.71	44.08	899.09	870.73	1,251.63	1,244.55	7.07	176.920	
1,300.00	1,300.00	1,301.05	1,300.49	4.54	2.89	44.08	899.07	870.57	1,251.49	1,244.06	7.43	168.424	
1,335.45	1,335.45	1,336.02	1,335.46	4.60	2.95	44.08	899.08	870.56	1,251.48	1,243.92	7.56	165.598	
1,400.00	1,400.00	1,399.20	1,398.63	4.72	3.07	44.08	899.09	870.59	1,251.52	1,243.73	7.79	160.685	
1,500.00	1,500.00	1,499.94	1,499.38	4.89	3.26	44.08	899.12	870.73	1,251.63	1,243.49	8.15	153.631	
1,600.00	1,600.00	1,602.10	1,601.54	5.06	3.45	44.09	898.90	870.90	1,251.60	1,243.09	8.50	147.169	
1,700.00	1,700.00	1,701.64	1,701.08	5.22	3.64	44.11	898.55	871.08	1,251.47	1,242.62	8.86	141.288	
1,800.00	1,800.00	1,854.44	1,853.83	5.38	3.94	44.09	896.78	868.70	1,249.70	1,240.39	9.31	134.233	
1,900.00	1,900.00	2,017.80	2,016.76	5.53	4.28	43.98	890.15	859.09	1,242.59	1,232.82	9.77	127.227	
2,000.00	2,000.00	2,162.10	2,160.05	5.69	4.60	43.72	882.69	843.99	1,231.70	1,221.52	10.19	120.931	
2,100.00	2,100.00	2,277.39	2,273.96	5.83	4.88	43.34	876.54	827.29	1,217.78	1,207.21	10.57	115.264	
2,200.00	2,200.00	2,371.90	2,367.29	5.98	5.11	43.03	871.40	813.31	1,203.66	1,192.75	10.91	110.277	
2,300.00	2,300.00	2,468.94	2,463.17	6.13	5.35	42.70	866.15	799.33	1,189.86	1,178.60	11.26	105.645	
2,400.00	2,400.00	2,562.14	2,555.31	6.27	5.58	42.39	861.21	786.20	1,176.40	1,164.79	11.61	101.336	
2,500.00	2,500.00	2,654.94	2,647.13	6.41	5.82	42.09	856.44	773.66	1,163.48	1,151.52	11.96	97.310	
2,600.00	2,600.00	2,761.91	2,752.96	6.55	6.11	41.74	850.92	759.12	1,150.53	1,138.20	12.33	93.320	
2,700.00	2,700.00	2,866.23	2,856.04	6.68	6.41	41.36	845.31	744.10	1,136.92	1,124.21	12.70	89.494	
2,800.00	2,800.00	2,960.27	2,949.00	6.82	6.68	41.01	840.29	730.73	1,123.50	1,110.43	13.06	86.007	
2,900.00	2,900.00	3,070.69	3,058.09	6.95	7.01	40.58	834.41	714.70	1,109.97	1,096.52	13.45	82.534	
3,000.00	3,000.00	3,183.46	3,169.13	7.08	7.37	40.06	827.82	696.17	1,094.78	1,080.93	13.85	79.073	
3,100.00	3,100.00	3,276.33	3,260.55	7.21	7.66	39.62	822.24	680.80	1,079.51	1,065.30	14.21	75.948	
3,200.00	3,200.00	3,362.44	3,345.45	7.34	7.92	39.22	817.53	667.16	1,065.18	1,050.61	14.57	73.100	
3,300.00	3,300.00	3,451.68	3,433.63	7.47	8.19	38.82	813.18	654.17	1,052.17	1,037.23	14.93	70.467	
3,400.00	3,400.00	3,561.31	3,542.01	7.59	8.53	38.35	807.44	638.75	1,039.29	1,023.97	15.32	67.829	
3,500.00	3,500.00	3,660.43	3,639.75	7.72	8.85	37.85	801.99	623.21	1,025.24	1,009.53	15.71	65.278	
3,600.00	3,600.00	3,759.39	3,737.40	7.84	9.17	37.33	797.21	607.87	1,011.89	995.80	16.09	62.874	
3,700.00	3,700.00	3,871.68	3,848.00	7.96	9.55	36.68	791.33	589.39	997.74	981.23	16.51	60.428	
3,800.00	3,800.00	3,981.63	3,955.95	8.08	9.94	35.96	785.11	569.48	982.36	965.42	16.94	57.997	
3,900.00	3,900.00	4,076.00	4,048.49	8.21	10.28	35.28	779.77	551.78	966.72	949.38	17.35	55.725	
4,000.00	4,000.00	4,153.32	4,124.50	8.32	10.55	34.74	776.00	538.10	952.49	934.76	17.73	53.735	
4,100.00	4,100.00	4,250.62	4,220.36	8.44	10.88	34.05	772.23	521.86	939.77	921.63	18.14	51.810	
4,200.00	4,200.00	4,373.24	4,340.80	8.56	11.33	33.10	766.53	499.61	925.74	907.13	18.61	49.739	
4,300.00	4,300.00	4,471.43	4,437.05	8.68	11.69	32.31	760.76	481.05	910.46	891.42	19.05	47.801	
4,400.00	4,400.00	4,558.74	4,522.79	8.79	12.01	31.61	756.02	465.27	896.17	876.71	19.46	46.051	
4,500.00	4,500.00	4,660.72	4,623.09	8.91	12.37	30.83	750.32	447.76	882.40	862.50	19.89	44.354	
4,600.00	4,600.00	4,762.11	4,722.84	9.02	12.72	30.09	743.56	430.88	868.12	847.79	20.32	42.716	
4,700.00	4,700.00	4,851.09	4,810.53	9.14	13.03	29.48	737.75	417.00	854.63	833.90	20.73	41.233	
4,800.00	4,800.00	4,945.56	4,903.86	9.25	13.34	28.89	731.65	403.65	842.04	820.91	21.13	39.855	
4,900.00	4,900.00	5,047.53	5,004.68	9.36	13.67	28.28	724.83	390.01	829.73	808.19	21.54	38.529	
5,000.00	5,000.00	5,156.06	5,111.75	9.48	14.04	27.55	717.03	374.09	816.43	794.46	21.97	37.166	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Anticollision Report



Company:	Titus Oil & Gas Production, LLC	Local Co-ordinate Reference:	Well 201H
Project:	Lea County, NM - (NAD83 NME)	TVD Reference:	RKB @ 3211.00usft (Est KB)
Reference Site:	Los Vaqueros Fed	MD Reference:	RKB @ 3211.00usft (Est KB)
Site Error:	1.00 usft	North Reference:	Grid
Reference Well:	201H	Survey Calculation Method:	Minimum Curvature
Well Error:	1.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA Compass
Reference Design:	Plan 1 07-06-21	Offset TVD Reference:	Reference Datum

Offset Design: Los Vaqueros Fed Offsets - Medera 19 TB Fed 1H - OH - Surveys													Offset Site Error: 1.00 usft
Survey Program: 178-MWD													Offset Well Error: 1.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
5,100.00	5,099.99	5,251.76	5,206.02	9.64	14.38	31.99	710.10	359.09	801.66	779.23	22.43	35.742	
5,200.00	5,199.91	5,340.51	5,293.59	9.90	14.68	31.58	704.31	345.90	785.79	762.85	22.94	34.256	
5,300.00	5,299.69	5,434.07	5,386.08	10.16	14.98	31.27	698.68	332.96	768.71	745.26	23.45	32.784	
5,400.00	5,399.27	5,534.51	5,485.40	10.43	15.31	31.03	692.94	319.20	749.80	725.82	23.98	31.272	
5,500.00	5,498.57	5,639.64	5,589.03	10.71	15.68	30.71	687.00	302.48	727.81	703.26	24.54	29.653	
5,600.00	5,597.54	5,740.13	5,687.85	11.01	16.05	30.43	680.98	285.31	702.88	677.76	25.12	27.977	
5,700.00	5,696.30	5,835.14	5,781.33	11.23	16.39	30.04	674.97	269.38	676.74	651.09	25.64	26.390	
5,800.00	5,795.07	5,928.66	5,873.41	11.43	16.72	29.66	669.27	254.11	651.00	624.86	26.14	24.905	
5,900.00	5,893.84	6,022.48	5,965.87	11.64	17.05	29.26	663.85	239.15	625.74	599.10	26.65	23.482	
6,000.00	5,992.61	6,120.29	6,062.30	11.87	17.40	28.82	658.36	223.73	600.73	573.55	27.18	22.104	
6,100.00	6,091.38	6,205.19	6,146.11	12.10	17.68	28.46	653.79	210.93	576.26	548.57	27.69	20.812	
6,200.00	6,190.15	6,295.91	6,236.04	12.35	17.96	28.21	650.21	199.57	554.03	525.83	28.19	19.652	
6,300.00	6,288.92	6,386.19	6,325.76	12.61	18.21	28.17	646.36	190.34	532.43	503.76	28.66	18.575	
6,400.00	6,387.69	6,472.00	6,411.28	12.88	18.43	28.34	643.67	183.92	512.89	483.79	29.09	17.629	
6,500.00	6,486.46	6,557.88	6,497.06	13.16	18.61	28.74	642.15	180.07	495.75	466.28	29.48	16.819	
6,600.00	6,585.22	6,647.27	6,586.44	13.45	18.76	29.39	641.89	178.56	481.07	451.25	29.83	16.130	
6,700.00	6,683.99	6,745.39	6,684.55	13.75	18.92	30.20	642.23	177.62	467.38	437.20	30.18	15.485	
6,800.00	6,782.76	6,845.31	6,784.46	14.05	19.08	31.10	642.29	176.76	453.56	423.02	30.54	14.852	
6,900.00	6,881.53	6,943.85	6,883.00	14.36	19.25	32.07	642.28	176.02	439.85	408.96	30.89	14.240	
7,000.00	6,980.30	7,042.84	6,981.99	14.68	19.41	33.08	642.31	175.18	426.26	395.03	31.23	13.648	
7,100.00	7,079.07	7,137.64	7,076.78	15.01	19.56	34.11	642.50	174.50	413.03	381.47	31.56	13.086	
7,200.00	7,177.84	7,231.48	7,170.62	15.34	19.70	35.21	643.87	174.60	401.42	369.55	31.87	12.594	
7,300.00	7,276.61	7,329.73	7,268.84	15.67	19.85	36.42	645.93	174.99	390.68	358.49	32.19	12.136	
7,400.00	7,375.37	7,428.79	7,367.88	16.02	19.99	37.76	647.77	175.66	380.08	347.58	32.50	11.696	
7,500.00	7,474.14	7,528.23	7,467.31	16.36	20.14	39.16	649.72	176.24	369.72	336.93	32.79	11.275	
7,600.00	7,572.91	7,628.70	7,567.76	16.72	20.29	40.64	651.49	176.62	359.32	326.24	33.08	10.862	
7,700.00	7,671.68	7,728.08	7,667.13	17.07	20.44	42.23	652.84	177.00	348.85	315.50	33.35	10.461	
7,800.00	7,770.45	7,827.97	7,767.01	17.44	20.59	43.92	654.14	177.27	338.55	304.95	33.60	10.075	
7,900.00	7,869.22	7,927.62	7,866.64	17.80	20.75	45.67	655.40	177.13	328.27	294.43	33.85	9.699	
8,000.00	7,967.99	8,027.26	7,966.28	18.17	20.92	47.50	656.59	176.77	318.11	284.04	34.07	9.336	
8,100.00	8,066.76	8,126.33	8,065.35	18.54	21.08	49.50	657.44	176.58	308.16	273.89	34.27	8.992	
8,200.00	8,165.53	8,224.89	8,163.90	18.92	21.24	51.67	658.12	176.59	298.65	264.21	34.44	8.673	
8,300.00	8,264.29	8,323.22	8,262.23	19.29	21.40	53.95	659.00	176.64	289.76	255.18	34.58	8.379	
8,400.00	8,363.06	8,421.96	8,360.96	19.68	21.57	56.38	659.92	176.77	281.45	246.74	34.71	8.109	
8,500.00	8,461.83	8,519.85	8,458.85	20.06	21.72	58.91	661.05	177.08	273.96	239.15	34.82	7.869	
8,600.00	8,560.60	8,619.01	8,558.00	20.45	21.88	61.60	662.27	177.45	267.14	232.23	34.92	7.651	
8,700.00	8,659.37	8,717.85	8,656.83	20.83	22.05	64.41	663.53	177.84	260.99	225.99	35.01	7.455	
8,800.00	8,758.14	8,817.33	8,756.30	21.23	22.21	67.40	664.62	178.16	255.36	220.26	35.10	7.274	
8,900.00	8,856.91	8,917.27	8,856.24	21.62	22.38	70.54	665.57	178.39	250.31	215.10	35.21	7.109	
9,000.00	8,955.68	9,018.46	8,957.43	22.01	22.55	73.96	665.74	177.98	245.18	209.84	35.34	6.937	
9,100.00	9,054.45	9,117.94	9,056.90	22.41	22.73	77.55	665.30	177.14	240.33	204.83	35.50	6.769	
9,200.00	9,153.21	9,216.42	9,155.38	22.81	22.91	81.25	664.80	176.26	236.41	200.69	35.72	6.618	
9,300.00	9,251.98	9,314.45	9,253.41	23.21	23.09	85.03	664.38	175.56	233.72	197.70	36.03	6.488	
9,400.00	9,350.75	9,411.96	9,350.91	23.62	23.26	88.85	664.05	175.25	232.50	196.08	36.43	6.383	
9,422.77	9,373.24	9,434.10	9,373.06	23.71	23.30	89.72	663.98	175.25	232.46	195.93	36.53	6.363 CC	
9,500.00	9,449.52	9,510.57	9,449.53	24.02	23.44	92.71	663.79	175.34	232.79	195.85	36.94	6.302 ES	
9,600.00	9,548.29	9,610.90	9,549.86	24.43	23.62	96.61	663.55	175.06	233.80	196.22	37.58	6.222	
9,700.00	9,647.06	9,709.94	9,646.89	24.83	23.80	100.54	662.85	174.19	235.32	196.99	38.33	6.139	
9,800.00	9,745.83	9,807.05	9,745.98	25.24	23.98	104.51	661.32	173.51	238.26	199.05	39.21	6.076	
9,900.00	9,844.60	9,905.17	9,844.08	25.65	24.16	108.48	659.36	173.25	242.90	202.69	40.21	6.041	
10,000.00	9,943.39	10,003.69	9,942.59	26.05	24.34	112.21	657.81	173.08	248.61	207.38	41.23	6.030	
10,100.00	10,042.48	10,102.41	10,041.30	26.47	24.53	115.38	656.34	172.99	254.46	212.24	42.22	6.027 SF	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Anticollision Report



Company:	Titus Oil & Gas Production, LLC	Local Co-ordinate Reference:	Well 201H
Project:	Lea County, NM - (NAD83 NME)	TVD Reference:	RKB @ 3211.00usft (Est KB)
Reference Site:	Los Vaqueros Fed	MD Reference:	RKB @ 3211.00usft (Est KB)
Site Error:	1.00 usft	North Reference:	Grid
Reference Well:	201H	Survey Calculation Method:	Minimum Curvature
Well Error:	1.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA Compass
Reference Design:	Plan 1 07-06-21	Offset TVD Reference:	Reference Datum

Offset Design: Los Vaqueros Fed Offsets - Medera 19 TB Fed 1H - OH - Surveys													Offset Site Error:	1.00 usft	
Survey Program:		178-MWD		Offset			Semi Maior Axis		Offset Wellbore Centre		Rule Assigned:			Offset Well Error:	1.00 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning		
10,200.00	10,141.89	10,200.78	10,139.66	26.90	24.71	117.88	654.82	173.07	259.99	216.87	43.12	6.029			
10,300.00	10,241.55	10,300.30	10,239.17	27.31	24.89	119.79	653.28	173.35	264.85	220.93	43.92	6.031			
10,400.00	10,341.39	10,398.81	10,337.67	27.69	25.06	121.02	652.15	174.05	268.82	224.26	44.55	6.034			
10,500.00	10,441.34	10,496.17	10,435.01	28.02	25.23	121.64	651.14	175.57	272.24	227.21	45.03	6.046			
10,600.00	10,541.34	10,593.99	10,532.79	28.14	25.39	116.76	649.95	177.93	275.22	229.93	45.29	6.077			
10,700.00	10,641.31	10,692.48	10,631.21	28.10	25.55	-72.80	649.20	181.56	278.46	233.08	45.37	6.137			
10,800.00	10,739.52	10,797.53	10,736.21	27.78	25.71	-77.22	650.19	184.51	275.92	231.32	44.61	6.186			
10,900.00	10,831.87	10,890.26	10,828.89	27.40	25.86	-85.58	652.45	186.31	271.07	228.13	42.94	6.312			
10,931.76	10,859.32	10,917.39	10,856.00	27.29	25.90	-88.68	653.26	186.81	270.58	228.25	42.33	6.392			
11,000.00	10,914.33	10,971.00	10,909.58	27.03	25.99	-95.28	655.03	187.76	273.71	232.53	41.18	6.647			
11,100.00	10,983.30	11,035.93	10,974.46	26.70	26.09	-102.67	657.25	189.10	294.20	253.51	40.69	7.231			
11,200.00	11,035.76	11,085.92	11,024.40	26.45	26.17	-105.50	658.90	190.26	337.56	295.71	41.85	8.065			
11,300.00	11,069.41	11,117.90	11,056.37	26.28	26.22	-101.73	659.81	190.95	401.19	357.57	43.61	9.199			
11,400.00	11,082.79	11,129.00	11,067.46	26.23	26.24	-89.23	660.11	191.17	478.70	433.52	45.18	10.596			
11,500.00	11,082.40	11,125.56	11,064.03	26.25	26.23	-85.83	660.02	191.10	562.38	515.94	46.44	12.110			
11,600.00	11,081.68	11,121.81	11,060.27	26.29	26.23	-85.66	659.92	191.03	647.48	599.93	47.55	13.616			
11,700.00	11,080.95	11,118.09	11,056.55	26.31	26.22	-85.38	659.82	190.95	733.41	685.01	48.41	15.151			
11,800.00	11,080.23	11,114.30	11,052.77	26.33	26.21	-84.78	659.72	190.87	821.98	772.93	49.06	16.756			
11,900.00	11,079.51	11,110.41	11,048.89	26.36	26.21	-84.16	659.61	190.79	912.90	863.34	49.57	18.418			
12,000.00	11,078.79	11,106.43	11,044.90	26.39	26.20	-83.53	659.50	190.71	1,005.54	955.56	49.97	20.122			
12,100.00	11,078.07	11,102.33	11,040.81	26.43	26.19	-82.89	659.38	190.62	1,099.45	1,049.14	50.30	21.856			
12,200.00	11,077.35	11,098.12	11,036.61	26.48	26.19	-82.23	659.26	190.53	1,194.33	1,143.75	50.58	23.613			
12,300.00	11,076.63	11,093.80	11,032.29	26.55	26.18	-81.55	659.14	190.44	1,289.98	1,239.17	50.81	25.387			
12,400.00	11,075.91	11,089.36	11,027.85	26.63	26.17	-80.85	659.00	190.34	1,386.23	1,335.22	51.02	27.173			
12,500.00	11,075.19	11,084.79	11,023.28	26.74	26.17	-80.14	658.86	190.24	1,482.97	1,431.77	51.19	28.967			
12,600.00	11,074.46	11,080.10	11,018.59	26.91	26.16	-79.41	658.72	190.13	1,580.10	1,528.75	51.35	30.769			
12,700.00	11,073.74	11,075.26	11,013.76	27.15	26.15	-78.66	658.57	190.02	1,677.56	1,626.06	51.50	32.575			
12,800.00	11,073.02	11,070.28	11,008.79	27.52	26.14	-77.90	658.41	189.91	1,775.29	1,723.65	51.63	34.383			
12,900.00	11,072.30	11,065.16	11,003.66	28.07	26.14	-77.11	658.24	189.79	1,873.25	1,821.49	51.76	36.193			
13,000.00	11,071.58	11,059.88	10,998.39	28.82	26.13	-76.31	658.07	189.66	1,971.40	1,919.52	51.87	38.003			
13,100.00	11,070.86	11,054.43	10,992.94	29.72	26.12	-75.48	657.88	189.53	2,069.72	2,017.73	51.99	39.813			
13,200.00	11,070.14	11,050.29	10,988.81	30.73	26.11	-74.86	657.74	189.43	2,168.18	2,116.10	52.08	41.628			
13,300.00	11,069.42	11,046.27	10,984.79	31.82	26.11	-74.26	657.60	189.34	2,266.77	2,214.60	52.18	43.443			
13,400.00	11,068.69	11,042.25	10,980.77	32.95	26.10	-73.66	657.46	189.24	2,365.48	2,313.21	52.27	45.256			
13,500.00	11,067.97	11,038.22	10,976.75	34.13	26.09	-73.06	657.33	189.15	2,464.28	2,411.92	52.36	47.068			
13,600.00	11,067.25	11,034.20	10,972.73	35.33	26.09	-72.47	657.19	189.06	2,563.16	2,510.72	52.44	48.878			
13,700.00	11,066.53	11,030.18	10,968.71	36.55	26.08	-71.88	657.05	188.97	2,662.13	2,609.60	52.52	50.684			
13,800.00	11,065.81	11,026.15	10,964.69	37.80	26.07	-71.29	656.91	188.88	2,761.16	2,708.55	52.61	52.488			
13,900.00	11,065.09	11,022.12	10,960.67	39.06	26.07	-70.71	656.78	188.79	2,860.25	2,807.57	52.69	54.289			
14,000.00	11,064.37	11,018.10	10,956.64	40.33	26.06	-70.13	656.64	188.70	2,959.40	2,906.64	52.77	56.086			
14,100.00	11,063.65	11,014.07	10,952.62	41.62	26.05	-69.56	656.50	188.61	3,058.60	3,005.76	52.84	57.879			
14,200.00	11,062.92	11,010.04	10,948.59	42.92	26.05	-68.99	656.36	188.53	3,157.85	3,104.92	52.92	59.668			
14,300.00	11,062.20	11,006.01	10,944.57	44.23	26.04	-68.42	656.23	188.44	3,257.13	3,204.13	53.00	61.453			
14,400.00	11,061.48	11,001.98	10,940.54	45.54	26.04	-67.86	656.09	188.36	3,356.46	3,303.38	53.08	63.233			
14,500.00	11,060.76	10,997.95	10,936.51	46.87	26.03	-67.30	655.95	188.28	3,455.81	3,402.65	53.16	65.009			
14,600.00	11,060.04	10,993.92	10,932.48	48.20	26.02	-66.75	655.81	188.20	3,555.20	3,501.96	53.24	66.780			
14,700.00	11,059.32	10,989.89	10,928.46	49.53	26.02	-66.20	655.67	188.12	3,654.62	3,601.30	53.32	68.546			
14,800.00	11,058.60	10,985.86	10,924.43	50.88	26.01	-65.66	655.54	188.04	3,754.06	3,700.67	53.40	70.307			
14,900.00	11,057.88	10,981.82	10,920.40	52.22	26.00	-65.12	655.40	187.96	3,853.53	3,800.06	53.47	72.062			
15,000.00	11,057.16	10,977.79	10,916.36	53.58	26.00	-64.58	655.26	187.89	3,953.02	3,899.47	53.55	73.813			
15,100.00	11,056.43	10,973.75	10,912.33	54.93	25.99	-64.05	655.12	187.81	4,052.54	3,998.90	53.64	75.557			
15,200.00	11,055.71	10,969.72	10,908.30	56.29	25.98	-63.52	654.98	187.74	4,152.07	4,098.35	53.72	77.296			

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Anticollision Report



Company:	Titus Oil & Gas Production, LLC	Local Co-ordinate Reference:	Well 201H
Project:	Lea County, NM - (NAD83 NME)	TVD Reference:	RKB @ 3211.00usft (Est KB)
Reference Site:	Los Vaqueros Fed	MD Reference:	RKB @ 3211.00usft (Est KB)
Site Error:	1.00 usft	North Reference:	Grid
Reference Well:	201H	Survey Calculation Method:	Minimum Curvature
Well Error:	1.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA Compass
Reference Design:	Plan 1 07-06-21	Offset TVD Reference:	Reference Datum

Offset Design: Los Vaqueros Fed Offsets - Medera 19 TB Fed 1H - OH - Surveys													Offset Site Error:	1.00 usft
Survey Program: 178-MWD		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Rule Assigned:				Offset Well Error:	1.00 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
15,300.00	11,054.99	10,965.68	10,904.27	57.66	25.98	-63.00	654.85	187.67	4,251.62	4,197.82	53.80	79.029		
15,400.00	11,054.27	10,961.64	10,900.23	59.03	25.97	-62.48	654.71	187.60	4,351.18	4,297.30	53.88	80.756		
15,500.00	11,053.55	10,960.00	10,898.59	60.40	25.97	-62.27	654.65	187.57	4,450.77	4,396.82	53.95	82.498		
15,600.00	11,052.83	10,960.00	10,898.59	61.77	25.97	-62.27	654.65	187.57	4,550.37	4,496.36	54.01	84.249		
15,700.00	11,052.11	10,960.00	10,898.59	63.15	25.97	-62.27	654.65	187.57	4,649.98	4,595.91	54.07	85.995		
15,800.00	11,051.39	10,960.00	10,898.59	64.53	25.97	-62.27	654.65	187.57	4,749.62	4,695.48	54.14	87.736		
15,900.00	11,050.66	10,945.99	10,884.59	65.91	25.95	-60.51	654.18	187.32	4,849.24	4,794.96	54.28	89.341		
16,000.00	11,049.94	10,943.04	10,881.64	67.30	25.94	-60.15	654.08	187.27	4,948.89	4,894.53	54.36	91.042		
16,100.00	11,049.22	10,940.11	10,878.71	68.69	25.94	-59.79	653.99	187.22	5,048.55	4,994.11	54.44	92.736		
16,200.00	11,048.50	10,937.22	10,875.82	70.07	25.93	-59.44	653.89	187.17	5,148.23	5,093.70	54.52	94.425		
16,300.00	11,047.78	10,934.35	10,872.96	71.46	25.93	-59.10	653.80	187.11	5,247.91	5,193.31	54.61	96.107		
16,400.00	11,047.06	10,931.52	10,870.13	72.86	25.92	-58.76	653.71	187.06	5,347.60	5,292.92	54.69	97.783		
16,500.00	11,046.34	10,928.72	10,867.33	74.25	25.92	-58.43	653.62	187.01	5,447.31	5,392.53	54.77	99.453		
16,600.00	11,045.62	10,925.95	10,864.56	75.65	25.91	-58.10	653.53	186.96	5,547.02	5,492.16	54.86	101.116		
16,700.00	11,044.90	10,923.20	10,861.82	77.04	25.91	-57.78	653.44	186.92	5,646.74	5,591.79	54.94	102.773		
16,800.00	11,044.17	10,920.49	10,859.11	78.44	25.91	-57.46	653.36	186.87	5,746.46	5,691.43	55.03	104.424		
16,900.00	11,043.45	10,917.80	10,856.42	79.84	25.90	-57.15	653.28	186.82	5,846.20	5,791.08	55.12	106.068		
17,000.00	11,042.73	10,915.14	10,853.76	81.24	25.90	-56.85	653.19	186.77	5,945.94	5,890.74	55.21	107.706		
17,100.00	11,042.01	10,912.51	10,851.13	82.65	25.89	-56.55	653.11	186.72	6,045.69	5,990.40	55.29	109.337		
17,200.00	11,041.29	10,909.91	10,848.53	84.05	25.89	-56.25	653.03	186.67	6,145.45	6,090.06	55.38	110.961		
17,300.00	11,040.57	10,907.33	10,845.95	85.45	25.88	-55.96	652.95	186.63	6,245.21	6,189.73	55.47	112.579		
17,400.00	11,039.85	10,904.78	10,843.40	86.86	25.88	-55.68	652.88	186.58	6,344.98	6,289.41	55.56	114.190		
17,500.00	11,039.13	10,902.25	10,840.88	88.27	25.88	-55.39	652.80	186.53	6,444.75	6,389.09	55.66	115.794		
17,600.00	11,038.40	10,899.75	10,838.38	89.67	25.87	-55.12	652.73	186.49	6,544.53	6,488.78	55.75	117.392		
17,700.00	11,037.68	10,897.27	10,835.90	91.08	25.87	-54.85	652.65	186.44	6,644.31	6,588.47	55.84	118.982		
17,800.00	11,036.96	10,894.82	10,833.45	92.49	25.86	-54.58	652.58	186.40	6,744.10	6,688.17	55.94	120.566		
17,900.00	11,036.24	10,892.39	10,831.03	93.90	25.86	-54.32	652.51	186.35	6,843.90	6,787.87	56.03	122.143		
18,000.00	11,035.52	10,889.99	10,828.62	95.31	25.86	-54.06	652.44	186.31	6,943.70	6,887.57	56.13	123.713		
18,100.00	11,034.80	10,887.61	10,826.24	96.72	25.85	-53.80	652.37	186.26	7,043.50	6,987.28	56.22	125.276		
18,200.00	11,034.08	10,885.25	10,823.89	98.14	25.85	-53.55	652.30	186.22	7,143.31	7,086.99	56.32	126.832		
18,300.00	11,033.36	10,882.92	10,821.56	99.55	25.85	-53.31	652.24	186.18	7,243.12	7,186.70	56.42	128.380		
18,400.00	11,032.64	10,866.00	10,804.65	100.96	25.82	-51.56	651.76	185.86	7,342.96	7,286.36	56.59	129.749		
18,500.00	11,031.91	10,866.00	10,804.65	102.38	25.82	-51.56	651.76	185.86	7,442.77	7,386.09	56.68	131.310		
18,600.00	11,031.19	10,866.00	10,804.65	103.79	25.82	-51.56	651.76	185.86	7,542.59	7,485.82	56.77	132.864		
18,700.00	11,030.47	10,866.00	10,804.65	105.21	25.82	-51.56	651.76	185.86	7,642.41	7,585.55	56.86	134.411		
18,800.00	11,029.75	10,866.00	10,804.65	106.62	25.82	-51.56	651.76	185.86	7,742.24	7,685.29	56.95	135.951		
18,900.00	11,029.03	10,866.00	10,804.65	108.04	25.82	-51.56	651.76	185.86	7,842.07	7,785.03	57.04	137.483		
18,904.07	11,029.00	10,866.00	10,804.65	108.10	25.82	-51.56	651.76	185.86	7,846.13	7,789.09	57.04	137.545		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Anticollision Report

TITUS

OIL GAS LLC

Company:	Titus Oil & Gas Production, LLC	Local Co-ordinate Reference:	Well 201H
Project:	Lea County, NM - (NAD83 NME)	TVD Reference:	RKB @ 3211.00usft (Est KB)
Reference Site:	Los Vaqueros Fed	MD Reference:	RKB @ 3211.00usft (Est KB)
Site Error:	1.00 usft	North Reference:	Grid
Reference Well:	201H	Survey Calculation Method:	Minimum Curvature
Well Error:	1.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA Compass
Reference Design:	Plan 1 07-06-21	Offset TVD Reference:	Reference Datum

Reference Depths are relative to RKB @ 3211.00usft (Est KB)

Coordinates are relative to: 201H

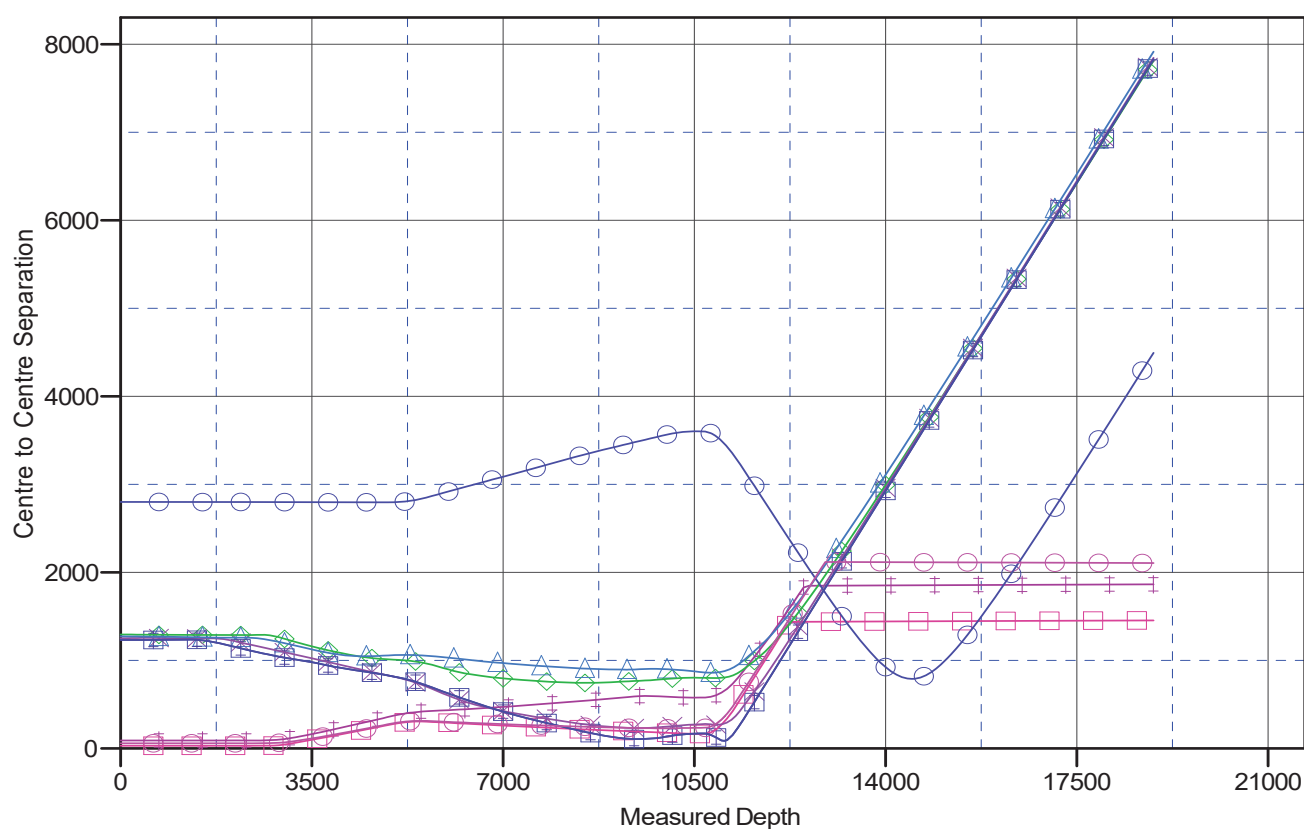
Offset Depths are relative to Offset Datum

Coordinate System is US State Plane 1983, New Mexico Eastern Zone

Central Meridian is 104° 19' 60.000000 W

Grid Convergence at Surface is: 0.49°

Ladder Plot



LEGEND

431H, OH, Plan 1 V0	Madera 19 WB Fed 1H, OH, Surveys V0	Madera 19 WA Fed Com 2H, OH, Surveys V0
321H, OH, Plan 1 V0	Madera 19 Red Com 26-35-19 WB 5H, OH, Surveys V0	Madera 19 WA Fed Com 2H, ST01, Surveys V0
Madera 19 WXY Fed Com 6H, OH, Surveys V0	Madera Fedest 30-1, OH, Surveys V0	511H, OH, Plan 1 V0

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Anticollision Report

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OIL GAS LLC

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Well Error:	1.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA Compass
Reference Design:	Plan 1 07-06-21	Offset TVD Reference:	Reference Datum

Reference Depths are relative to RKB @ 3211.00usft (Est KB)

Coordinates are relative to: 201H

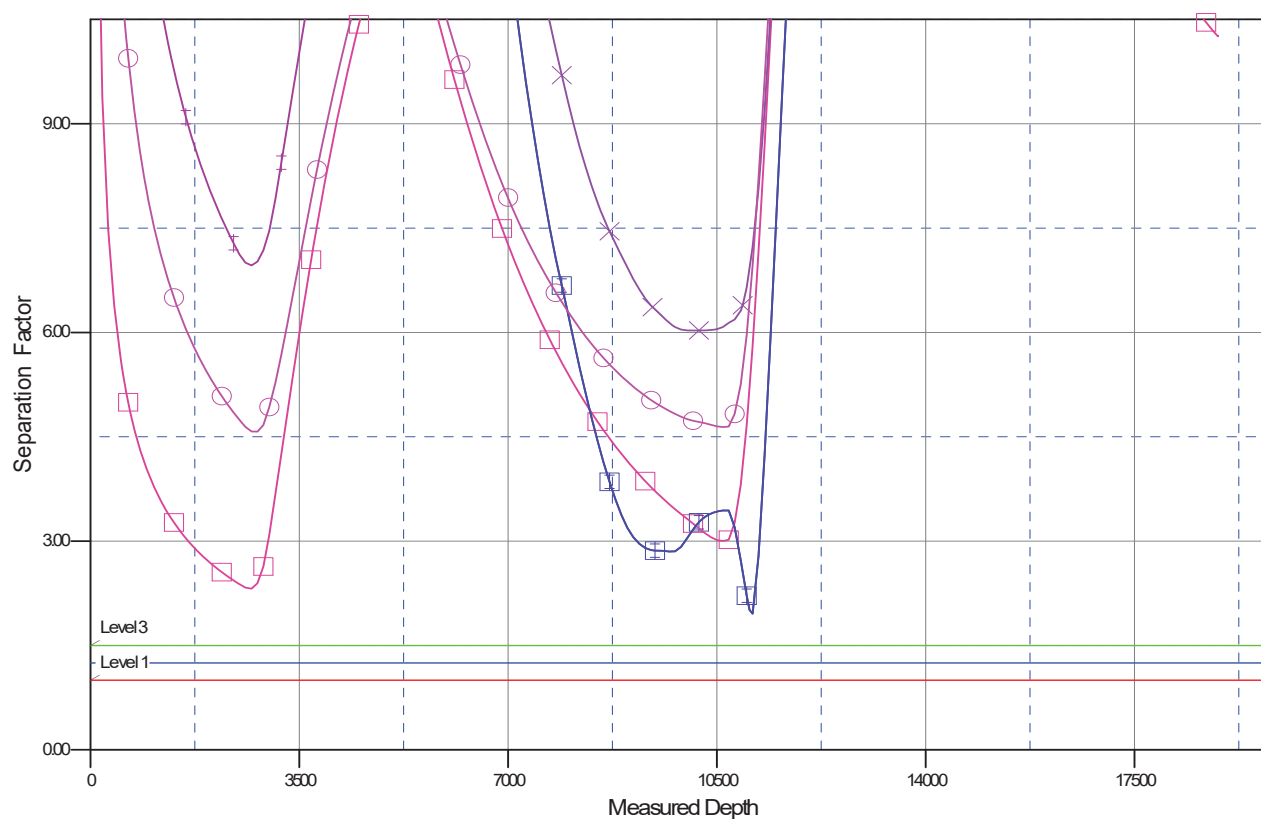
Offset Depths are relative to Offset Datum

Coordinate System is US State Plane 1983, New Mexico Eastern Zone

Central Meridian is 104° 19' 60.000000 W

Grid Convergence at Surface is: 0.49°

Separation Factor Plot



LEGEND

431H, OH, Plan 1 V0
321H, OH, Plan 1 V0
Madera 19 WKY Fed Com 6H, OH, Surveys V0

Madera 19 TB Fed 1H, OH, Surveys V0
Madera 19 Red Com 26-35-19 WB 5H, OH, Surveys V0
Madera Federal 30-1, OH, Surveys V0

Madera 19 WA Fed Com 2H, OH, Surveys V0
Madera 19 WA Fed Com 2H, ST01, Surveys V0
511H, OH, Plan 1 V0

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

**PECOS DISTRICT
SURFACE USE
CONDITIONS OF APPROVAL**

Los Vaqueros Fed 121H
Surface Hole Location: 547' FNL & 493' FWL, Section 30, T. 26 S., R. 35 E.
Bottom Hole Location: 10' FSL & 330' FWL, Section 31, T. 26 S, R 35 E.
Los Vaqueros Fed 201H
Surface Hole Location: 547' FNL & 583' FWL, Section 30, T. 26 S., R. 35 E.
Bottom Hole Location: 10' FSL & 1122' FWL, Section 31, T. 26 S, R 35 E.
Los Vaqueros Fed 321H
Surface Hole Location: 547' FNL & 523' FWL, Section 30, T. 26 S., R. 35 E.
Bottom Hole Location: 10' FSL & 330' FWL, Section 31, T. 26 S, R 35 E.
Los Vaqueros Fed 431H
Surface Hole Location: 547' FNL & 553' FWL, Section 30, T. 26 S., R. 35 E.
Bottom Hole Location: 10' FSL & 1100' FWL, Section 31, T. 26 S, R 35 E.
Los Vaqueros Fed 122H
Surface Hole Location: 211' FNL & 2021' FWL, Section 30, T. 26 S., R. 35 E.
Bottom Hole Location: 10' FSL & 1914' FWL, Section 31, T. 26 S, R 35 E.
Los Vaqueros Fed 322H
Surface Hole Location: 211' FNL & 1991' FWL, Section 30, T. 26 S., R. 35 E.
Bottom Hole Location: 10' FSL & 1870' FWL, Section 31, T. 26 S, R 35 E.
Los Vaqueros Fed 432H
Surface Hole Location: 211' FNL & 2051' FWL, Section 30, T. 26 S., R. 35 E.
Bottom Hole Location: 10' FSL & 2640' FWL, Section 31, T. 26 S, R 35 E.
Los Vaqueros Fed 512H
Surface Hole Location: 211' FNL & 1961' FWL, Section 30, T. 26 S., R. 35 E.
Bottom Hole Location: 10' FSL & 1486' FWL, Section 31, T. 26 S, R 35 E.
Los Vaqueros Fed 123H
Surface Hole Location: 210' FNL & 2588' FEL, Section 30, T. 26 S., R. 35 E.
Bottom Hole Location: 10' FSL & 1837' FEL, Section 31, T. 26 S, R 35 E.
Los Vaqueros Fed 203H
Surface Hole Location: 210' FNL & 2676' FWL, Section 30, T. 26 S., R. 35 E.
Bottom Hole Location: 10' FSL & 2629' FEL, Section 31, T. 26 S, R 35 E.

Los Vaqueros Fed 403H
Surface Hole Location: 210' FNL & 2619' FEL, Section 30, T. 26 S., R. 35 E.
Bottom Hole Location: 10' FSL & 1925' FEL, Section 31, T. 26 S, R 35 E.

Los Vaqueros Fed 513H
Surface Hole Location: 210' FNL & 2558' FEL, Section 30, T. 26 S., R. 35 E.
Bottom Hole Location: 10' FSL & 1537' FEL, Section 31, T. 26 S, R 35 E.

Los Vaqueros Fed Com 114H
Surface Hole Location: 353' FNL & 1604' FEL, Section 30, T. 26 S., R. 35 E.
Bottom Hole Location: 10' FSL & 1045' FEL, Section 31, T. 26 S, R 35 E.

Los Vaqueros Fed Com 204H
Surface Hole Location: 353' FNL & 1544' FWL, Section 30, T. 26 S., R. 35 E.
Bottom Hole Location: 10' FSL & 330' FEL, Section 31, T. 26 S, R 35 E.

Los Vaqueros Fed Com 404H
Surface Hole Location: 353' FNL & 1574' FEL, Section 30, T. 26 S., R. 35 E.
Bottom Hole Location: 10' FSL & 330' FEL, Section 31, T. 26 S, R 35 E.

Los Vaqueros Fed Com 434H
Surface Hole Location: 353' FNL & 1634' FEL, Section 30, T. 26 S., R. 35 E.
Bottom Hole Location: 10' FSL & 1155' FEL, Section 31, T. 26 S, R 35 E.

TABLE OF CONTENTS

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

- ☐ **General Provisions**
- ☐ **Permit Expiration**
- ☐ **Archaeology, Paleontology, and Historical Sites**
- ☐ **Noxious Weeds**
- ☒ **Special Requirements**
 - Lesser Prairie-Chicken Timing Stipulations
 - Ground-level Abandoned Well Marker
- ☐ **Construction**
 - Notification
 - Topsoil
 - Closed Loop System
 - Federal Mineral Material Pits
 - Well Pads
 - Roads
- ☐ **Road Section Diagram**
- ☐ **Production (Post Drilling)**
 - Well Structures & Facilities
 - Pipelines
 - Electric Lines
- ☐ **Interim Reclamation**
- ☐ **Final Abandonment & Reclamation**

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 and/or paleontological resource discovered by the operator or by any person working on the operator's behalf shall immediately report such findings to the Authorized Officer. The operator is fully accountable for the actions of their contractors and subcontractors. The operator 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 shall be made by the Authorized Officer to determine the appropriate actions that shall be required to prevent the loss of significant cultural or scientific values of the discovery. The operator shall be held responsible for the cost of the proper mitigation measures that the Authorized Officer assesses after consultation with the operator on the evaluation and decisions of the discovery. Any unauthorized collection or disturbance of cultural or paleontological resources may result in a shutdown order by the Authorized Officer.

IV. NOXIOUS WEEDS

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

V. SPECIAL REQUIREMENT(S)

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, 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 feet from the source of the noise.

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.

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.

VI. CONSTRUCTION

A. NOTIFICATION

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

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

B. TOPSOIL

The operator shall strip the top portion of the soil (root zone) from the entire well pad area and stockpile the topsoil along the edge of the well pad as depicted in the APD. The root zone is typically six (6) inches in depth. All the stockpiled topsoil will be redistributed over the interim reclamation areas. Topsoil shall not be used for berming the pad or facilities. For final reclamation, the topsoil shall be spread over the entire pad area for seeding preparation.

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

C. CLOSED LOOP SYSTEM

Tanks are required for drilling operations: No Pits.

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

D. FEDERAL MINERAL MATERIALS PIT

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

E. WELL PAD SURFACING

Surfacing of the well pad is not required.

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

F. EXCLOSURE FENCING (CELLARS & PITS)

Exclosure Fencing

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

G. ON LEASE ACCESS ROADS**Road Width**

The access road shall have a driving surface that creates the smallest possible surface disturbance and does not exceed fourteen (14) feet in width. The maximum width of surface disturbance, when constructing the access road, shall not exceed thirty (30) 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

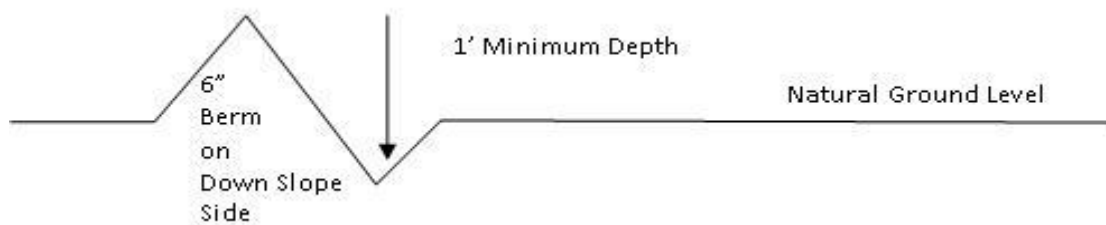
Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall conform to Figure 1; cross section and plans for typical road construction.

Drainage

Drainage control systems shall be constructed on the entire length of road (e.g. ditches, sidehill outslowing and inslaping, 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:

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

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.

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.

Public Access

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

Construction Steps

1. Salvage topsoil
2. Construct road

3. Redistribute topsoil
4. Revegetate slopes

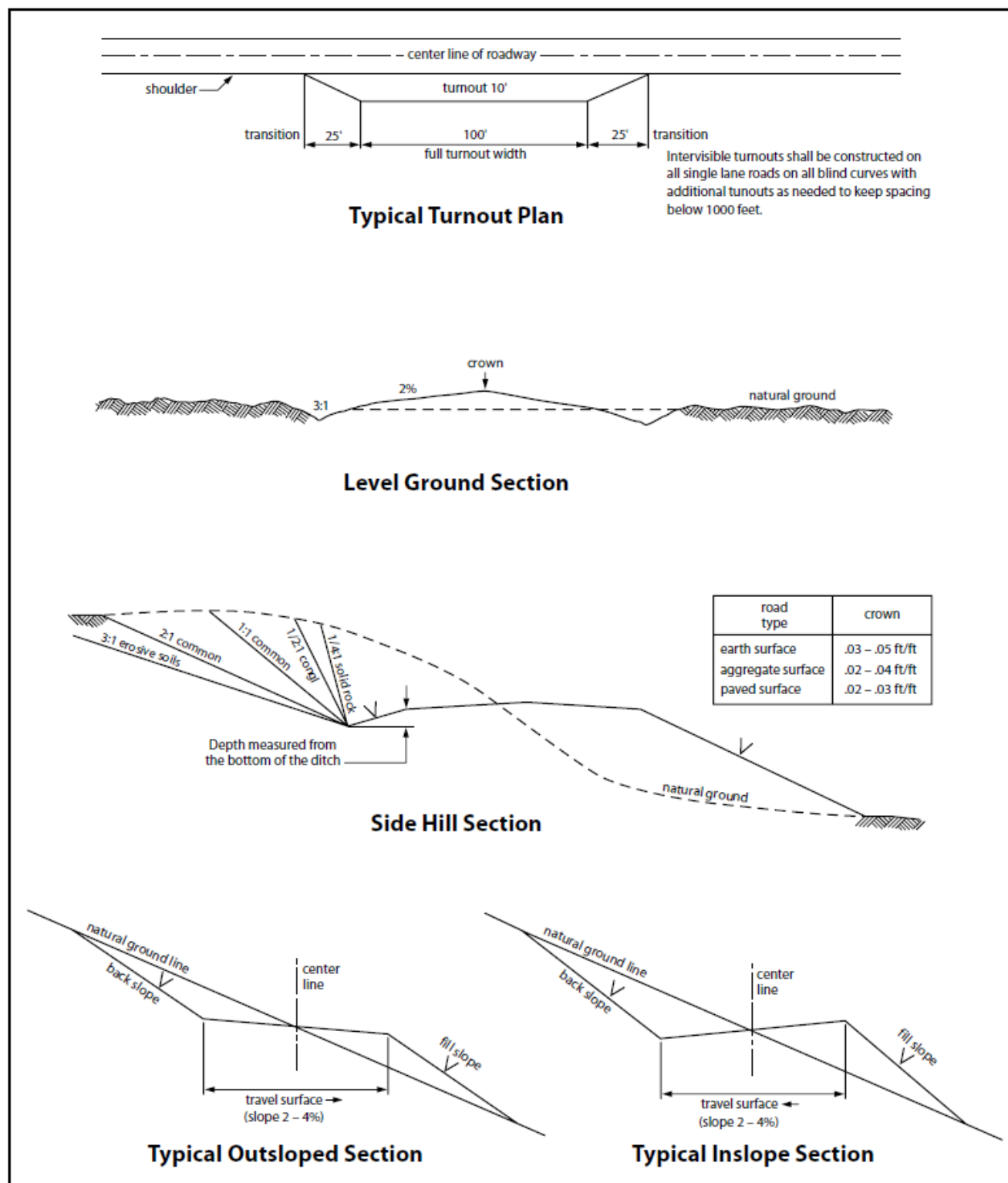


Figure 1. Cross-sections and plans for typical road sections representative of BLM resource or FS local and higher-class roads.

VII. PRODUCTION (POST DRILLING)

A. WELL STRUCTURES & FACILITIES

Placement of Production Facilities

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

Exclosure Netting (Open-top Tanks)

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

Chemical and Fuel Secondary Containment and Exclosure Screening

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

Open-Vent Exhaust Stack Exclosures

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

Containment Structures

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

Painting Requirement

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

B. BURIED PIPELINES 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
☒ 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 and/or paleontological resources (historic or prehistoric site or object) discovered by the holder, or any person working on his behalf, on public or Federal land shall be immediately reported to the Authorized Officer. 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 proper mitigation measures will be made by the Authorized Officer after consulting with the holder.

17. 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.

18. 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.
- 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.

19. Special Stipulations:

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).

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.

Wildlife:

Lesser Prairie-Chicken

Oil and gas activities 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. 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.

This authorization is subject to your Certificate of Participation and/or Certificate of Inclusion under the New Mexico Candidate Conservation Agreement. Because it involves surface disturbing activities covered under your Certificate, your Habitat Conservation Fund Account with the Center of Excellence for Hazardous Materials Management (CEHMM) will be debited according to Exhibit B Part 2 of the Certificate of Participation.

C. ELECTRIC LINES STIPULATIONS

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 and/or paleontological resource (historic or prehistoric site or object) discovered by the holder, or any person working on his behalf, on public or Federal land shall be immediately reported to the Authorized Officer. 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 proper mitigation measures will be made by the Authorized Officer after consulting with the holder.

11. Special Stipulations:

Hydrology:

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

Wildlife:

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.

This authorization is subject to your Certificate of Participation and/or Certificate of Inclusion under the New Mexico Candidate Conservation Agreement. Because it involves surface disturbing activities covered under your Certificate, your Habitat Conservation Fund Account with the Center of Excellence for Hazardous Materials Management (CEHMM) will be debited according to Exhibit B Part 2 of the Certificate of Participation.

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).

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.

D. OIL AND GAS RELATED SITES STIPULATIONS

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

The holder agrees to comply with the following stipulations to the satisfaction of the Authorized Officer, BLM.

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 and for all response costs, penalties, damages, claims, and other costs arising from the provisions of the Resource Conservation and Recovery Act (RCRA), 42 U.S.C. Chap. 82, Section 6901 et. seq., from the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), 42 U.S.C. Chap. 109, Section 9601 et. seq., and from other applicable environmental statutes.
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 U.S.C. 2601, et. seq.) with regard to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized by this 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). 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 site or related pipeline(s), any oil or other pollutant should be discharged from site facilities, the pipeline(s) or from containers or vehicles impacting Federal lands, the control and total removal, disposal, and cleanup of such oil or other pollutant, wherever found, shall be the responsibility of the holder, regardless of fault. Upon failure of the holder to control, dispose of, or clean up such discharge on or affecting Federal lands, or to repair all damages to Federal lands resulting therefrom, the Authorized Officer may take such measures as deemed necessary to control and cleanup 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 the holder of any liability or responsibility.

5. Sites shall be maintained in an orderly, sanitary condition at all times. Waste materials, both liquid and solid, shall be disposed of promptly at an appropriate, authorized waste disposal facility in accordance with all applicable State and Federal laws. "Waste" means all discarded matter including, but not limited to, human waste, trash, garbage, refuse, petroleum products, brines, chemicals, oil drums, ashes, and equipment.
6. The operator will notify the Bureau of Land Management (BLM) authorized officer and nearest Fish and Wildlife Service (FWS) Law Enforcement office within 24 hours, if the operator discovers a dead or injured federally protected species (i.e., migratory bird species, bald or golden eagle, or species listed by the FWS as threatened or endangered) in or adjacent to a pit, trench, tank, exhaust stack, or fence. (If the operator is unable to contact the FWS Law Enforcement office, the operator must contact the nearest FWS Ecological Services office.)
7. 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 a color which simulates "Standard Environmental Colors" designated by the Rocky Mountain Five-State Interagency Committee. The color selected for this project is **Shale Green**, Munsell Soil Color Chart Number 5Y 4/2.
8. Any cultural and/or 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.
9. A sales contract for removal of mineral material (caliche, sand, gravel, fill dirt) from an authorized pit, site, or on location must be obtained from the BLM prior to commencing construction. There are several options available for purchasing mineral material: contact the BLM office (575-234-5972).
10. 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.

11. Once the site is no longer in service or use, the site must undergo final abandonment. At final abandonment, the site 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 the abandonment of the site. All pads and 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. 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).

12. The holder shall stockpile an adequate amount of topsoil where blading occurs. The topsoil to be stripped is approximately ___6___ inches in depth. The topsoil will be segregated from other spoil piles. The topsoil will be used for final reclamation.

13. 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 |
| ☒ seed mixture 2 | ☐ seed mixture 4 |
| ☐ seed mixture 2/LPC | ☐ Aplomado Falcon Mixture |

14. In those areas where erosion control structures are required to stabilize soil conditions, the holder shall install such structures as are suitable for the specific soil conditions being encountered and which are in accordance with sound management practices. Any earth work will require prior approval by the Authorized Officer.

15. Open-topped Tanks - 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

16. 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 enclosure systems such as fencing, netting, expanded metal mesh, lids, and grate covers. Use a maximum netting mesh size of 1 ½ inches.

17. Open-Vent Exhaust Stack Enclosures – 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 enclosure 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.

18. 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.

19. Special Stipulations:

Hydrology:

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 top soil 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.

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.

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.

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.

Wildlife:

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.

This authorization is subject to your Certificate of Participation and/or Certificate of Inclusion under the New Mexico Candidate Conservation Agreement. Because it involves surface disturbing activities covered under your Certificate, your Habitat Conservation Fund Account with the Center of Excellence for Hazardous Materials Management (CEHMM) will be debited according to Exhibit B Part 2 of the Certificate of Participation.

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).

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.

VIII. INTERIM RECLAMATION

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

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

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

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

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

IX. FINAL ABANDONMENT & RECLAMATION

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

Earthwork for final reclamation must be completed within six (6) months of well plugging. All pads, pits, facility locations and roads must be reclaimed to a satisfactory

revegetated, safe, and stable condition, unless an agreement is made with the landowner or BLM to keep the road and/or pad intact.

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

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

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:

<u>Species</u>	<u>lb/acre</u>
Sand dropseed (<i>Sporobolus cryptandrus</i>)	1.0
Sand love grass (<i>Eragrostis trichodes</i>)	1.0
Plains bristlegrass (<i>Setaria macrostachya</i>)	2.0

*Pounds of pure live seed:

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

PECOS DISTRICT DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	Titus Oil and Gas
LEASE NO.:	NMNM062932
LOCATION:	Section 30, T.26 S., R.35 E., NMPM
COUNTY:	Lea County, New Mexico

WELL NAME & NO.:	Los Vaqueros Fed 121H
SURFACE HOLE FOOTAGE:	547'/N & 493'/W
BOTTOM HOLE FOOTAGE:	10'/S & 330'/W

COA

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

A. HYDROGEN SULFIDE

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

B. CASING

1. The 13-3/8 inch surface casing shall be set at approximately 1065_ feet (a minimum of 25 feet (Lea County) into the Rustler Anhydrite and above the salt) and cemented to the surface.
 - a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.
 - b. Wait on cement (WOC) time for a primary cement job will be a minimum of 8

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

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

Intermediate casing must be kept 1/3rd fluid filled to meet BLM minimum collapse requirement.

- 2. The minimum required fill of cement behind the 9-5/8 inch intermediate casing 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. Operator has proposed a multi-bowl wellhead assembly. This assembly will only be tested when installed on the surface casing. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **5000 (5M) psi**.
 - a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
 - b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
 - c. Manufacturer representative shall install the test plug for the initial BOP test.
 - d. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.
 - e. Whenever any seal subject to test pressure is broken, all the tests in OOGO2.III.A.2.i must be followed.

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 integrity 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 integrity 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.

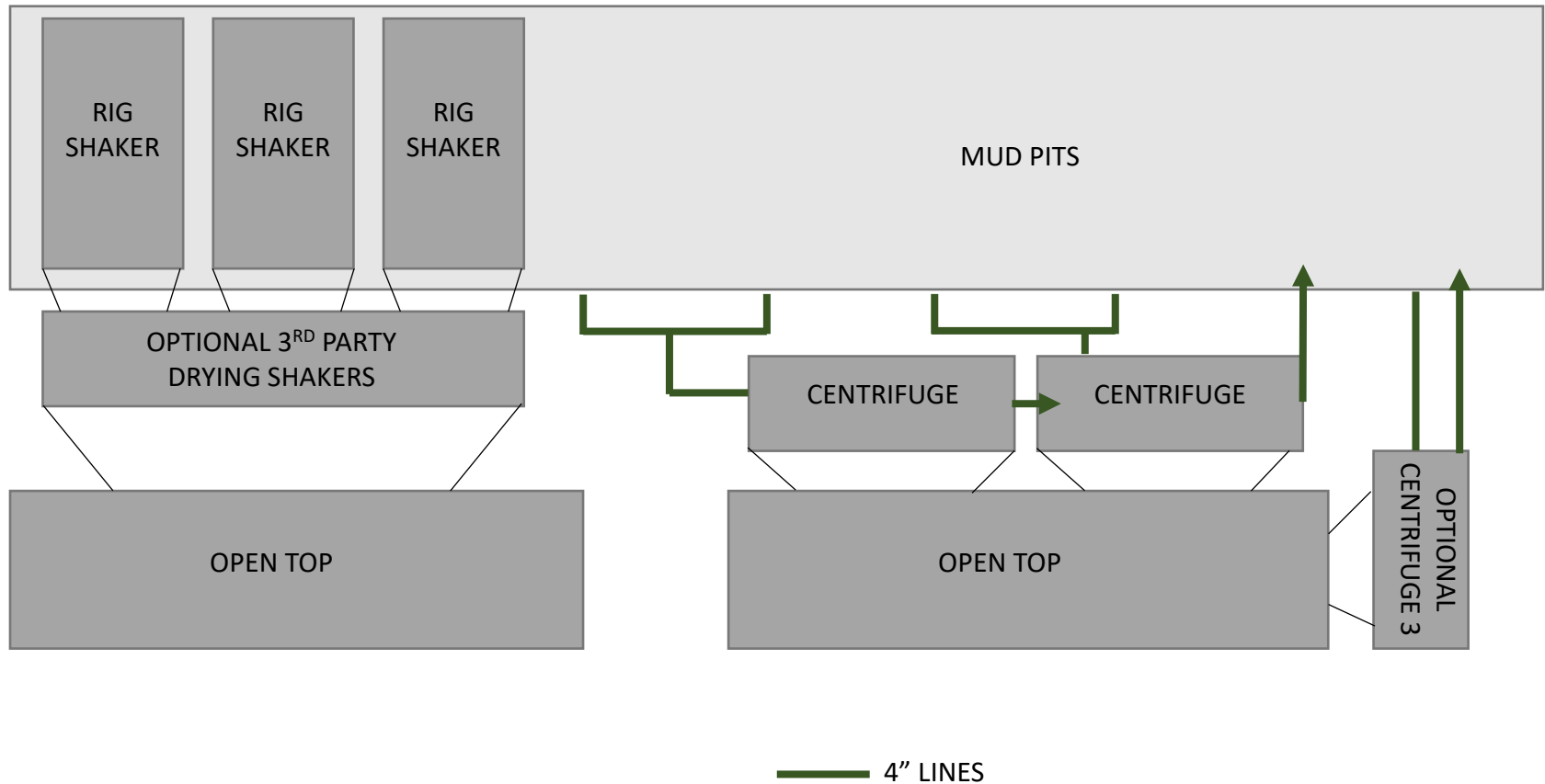
D. WASTE MATERIAL AND FLUIDS

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.

ZS 060121

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 37481

CONDITIONS

Operator: Titus Oil & Gas Production, LLC 420 Throckmorton St, Ste 1150 Fort Worth, TX 76012	OGRID: 373986
	Action Number: 37481
	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	7/22/2021
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	7/22/2021