

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: <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER 1b. Type of Well: <input checked="" type="checkbox"/> Oil Well <input type="checkbox"/> Gas Well <input type="checkbox"/> Other 1c. Type of Completion: <input type="checkbox"/> Hydraulic Fracturing <input type="checkbox"/> Single Zone <input checked="" type="checkbox"/> Multiple Zone		5. Lease Serial No. NMNM104706 6. If Indian, Allottee or Tribe Name 7. If Unit or CA Agreement, Name and No. 8. Lease Name and Well No. LOS VAQUEROS FED COM 434H 9. API Well No. 30-025-52642
2. Name of Operator TITUS OIL AND GAS PRODUCTION LLC 3a. Address 420 Throckmorton St., Suite 1150, Fort Worth, TX 76102 3b. Phone No. (include area code) (817) 852-6358		10. Field and Pool, or Exploratory JABALINA/WOLFCAMP SOUTHWEST 11. Sec., T. R. M. or Blk. and Survey or Area SEC 30/T26S/R35E/NMP
4. Location of Well (Report location clearly and in accordance with any State requirements. *) At surface NENW / 353 FNL / 1559 FEL / LAT 32.0205786 / LONG -103.4029687 At proposed prod. zone LOT 5 / 10 FSL / 330 FEL / LAT 32.000319 / LONG -103.3989714		12. County or Parish LEA 13. State NM
14. Distance in miles and direction from nearest town or post office* 15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 353 feet	16. No of acres in lease 17. Spacing Unit dedicated to this well 240.0	18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 30 feet 19. Proposed Depth 12771 feet / 20792 feet 20. BLM/BIA Bond No. in file FED: NMB001532
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3181 feet	22. Approximate date work will start* 09/30/2022	23. Estimated duration 45 days
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.		

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 (Electronic Submission)	Name (Printed/Typed) RYAN DELONG / Ph: (817) 852-6358	Date 06/14/2022
Title Regulatory Manager		
Approved by (Signature) (Electronic Submission)	Name (Printed/Typed) CODY LAYTON / Ph: (575) 234-5959	Date 10/04/2022
Title Assistant Field Manager Lands & Minerals		
Office Carlsbad Field 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.

(Continued on page 2)

*(Instructions on page 2)



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 30-025-52642	2 Pool Code 96776	3 Pool Name Jabalina; Wolfcamp, Southwest
4 Property Code 331213	5 Property Name LOS VAQUEROS FED COM	
6 Well Number 434H		
7 OGRID No. 373986	8 Operator Name TITUS OIL & GAS PRODUCTION LLC	
9 Elevation 3180.71'		

¹⁰ Surface Location

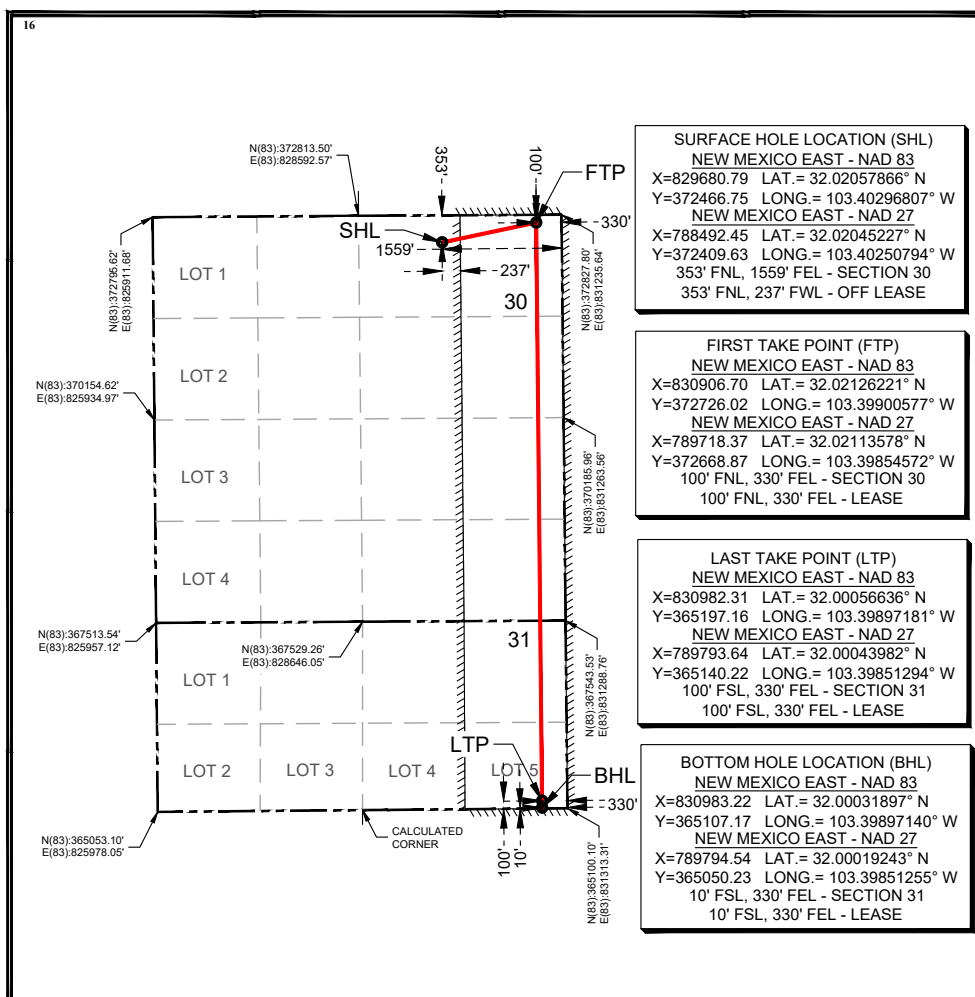
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
B	30	26-S	35-E		353'	NORTH	1559'	EAST	LEA

11 Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
5	31	26-S	35-E		10'	SOUTH	330'	EAST	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.



17 OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

Signature [Signature] Date 6/14/2022

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 06/07/2022

Signature and Seal of Professional Surveyor:


Certificate Number

State of New Mexico
Energy, Minerals and Natural Resources Department

Submit Electronically
Via E-permitting

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

NATURAL GAS MANAGEMENT PLAN

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

Section 1 – Plan Description **Effective May 25, 2021**

I. Operator: Earthstone Operating, LLC **OGRID:** 331165 **Date:** 6 / 14 / 2022

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 434H	New Well	B, Sec 30, 26S-35E	353' FNL &	778	2783	2576
			1559' FEL			

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 434H	New Well	11/27/2022	3/7/2023	5/18/2023	5/22/2023	5/24/2023

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:	Jennifer Elrod
Title:	Sr. Regulatory Tech
E-mail Address:	jennifer.elrod@permres.com
Date:	03/04/2024
Phone:	940-452-6214
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.

Operator Name: TITUS OIL AND GAS PRODUCTION LLC**Well Name:** LOS VAQUEROS FED COM**Well Number:** 434H**Requesting Variance?** YES

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

Testing Procedure: 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.

Choke Diagram Attachment:

10M__H_P_614__BOP__CHOKE__FLEX_HOSE_APD_INFORMATION_20220614150135.pdf

BOP Diagram Attachment:

10M__H_P_614__BOP__CHOKE__FLEX_HOSE_APD_INFORMATION_20220614150144.pdf

Pressure Rating (PSI): 3M**Rating Depth:** 12200

Equipment: 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. 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.

Requesting Variance? YES

Variance request: 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.

Testing Procedure: 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.

Choke Diagram Attachment:

3M__H_P_614__BOP__CHOKE__FLEX_HOSE_APD_INFORMATION_20220614150217.pdf

BOP Diagram Attachment:

3M__H_P_614__BOP__CHOKE__FLEX_HOSE_APD_INFORMATION_20220614150224.pdf

Section 3 - Casing

Casing ID	String Type	Hole Size	Csg Size	Condition	Standard	Tapered String	Top Set MD	Bottom Set MD	Top Set TVD	Bottom Set TVD	Top Set MSL	Bottom Set MSL	Calculated casing length MD	Grade	Weight	Joint Type	Collapse SF	Burst SF	Joint SF Type	Joint SF	Body SF Type	Body SF
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Operator Name: TITUS OIL AND GAS PRODUCTION LLC

Well Name: LOS VAQUEROS FED COM

Well Number: 434H

Casing ID	String Type	Hole Size	Csg Size	Condition	Standard	Tapered String	Top Set MD	Bottom Set MD	Top Set TVD	Bottom Set TVD	Top Set MSL	Bottom Set MSL	Calculated casing length MD	Grade	Weight	Joint Type	Collapse SF	Burst SF	Joint SF Type	Joint SF	Body SF Type	Body SF
1	SURFACE	13.5	10.75	NEW	API	N	0	1055	0	1055	3181	2126	1055	J-55	45.5	BUTT	4.33	1	DRY	14.9	DRY	14.9
2	PRODUCTI ON	6.75	5.5	NEW	API	Y	0	12000	0	11901	3183	-8720	12000	P-110	20	BUTT	1.85	1.93	DRY	3.17	DRY	3.17
3	INTERMED IATE	9.87 5	7.625	NEW	API	N	0	12200	0	12120	3183	-8939	12200	HCL-80	29.7	BUTT	1.16	1.05	DRY	2	DRY	2
4	PRODUCTI ON	6.75	5.0	NEW	API	Y	12000	20792	11901	12771	-8720	-9590	8792	P-110	18	BUTT	1.85	1.93	DRY	3.17	DRY	3.17

Casing Attachments

Casing ID: 1StringSURFACE

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Casing_Assumptions___Deep_Wells_20220614150800.docx

Casing ID: 2StringPRODUCTION

Inspection Document:

Spec Document:

Tapered String Spec:

Tapered_String_Spec_Los_Vaqueros_Fed_Com_434H_20220614151232.JPG

Casing Design Assumptions and Worksheet(s):

Casing_Assumptions___Deep_Wells_20220614151311.docx

Operator Name: TITUS OIL AND GAS PRODUCTION LLC

Well Name: LOS VAQUEROS FED COM

Well Number: 434H

Casing Attachments

Casing ID: 3StringINTERMEDIATE

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Casing_Assumptions___Deep_Wells_20220614150951.docx

Casing ID: 4StringPRODUCTION

Inspection Document:

Spec Document:

Tapered String Spec:

Tapered_String_Spec_Los_Vaqueros_Fed_Com_434H_20220614151430.JPG

Casing Design Assumptions and Worksheet(s):

Casing_Assumptions___Deep_Wells_20220614151502.docx

Section 4 - Cement

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
SURFACE	Lead		0	1055	250	1.75	13.5	437.5	50	Class C	4% Gel & 1% CaCl2
SURFACE	Tail		0	1055	250	1.34	14.8	335	50	Class C	2% CaCl2
INTERMEDIATE	Lead		0	12200	900	3.6	10.3	3240	50	TXI Lightweight Blend	N/A
INTERMEDIATE	Tail		0	12200	250	1.5	13.5	375	50	Class H	N/A
PRODUCTION	Lead		0	20792	1250	1.25	14.2	1562.5	35	Class H Blend (50:50:2)	N/A

Operator Name: TITUS OIL AND GAS PRODUCTION LLC

Well Name: LOS VAQUEROS FED COM

Well Number: 434H

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
PRODUCTION	Lead		0	2079 2	1250	1.25	14.2	1562. 5	35	Class H Blend (50:50:2)	N/A

Section 5 - Circulating Medium

Mud System Type: Closed

Will an air or gas system be Used? NO

Description of the equipment for the circulating system in accordance with Onshore Order #2:

Diagram of the equipment for the circulating system in accordance with Onshore Order #2:

Describe what will be on location to control well or mitigate other conditions: Sufficient mud materials to maintain mud properties and meet minimum lost circulation and weight increase requirements will be kept on location at all times.

Describe the mud monitoring system utilized: PVT/Pason/Visual Monitoring

Circulating Medium Table

Top Depth	Bottom Depth	Mud Type	Min Weight (lbs/gal)	Max Weight (lbs/gal)	Density (lbs/cu ft)	Gel Strength (lbs/100 sqft)	PH	Viscosity (CP)	Salinity (ppm)	Filtration (cc)	Additional Characteristics
0	1055	OTHER : FW Gel	8.6	8.8							See Mud Program in attached APD drilling plan.
1055	1220 0	OTHER : Nova N-Gauge	8.4	9							See Mud Program in attached APD drilling plan.
1120 0	2079 2	OIL-BASED MUD	12.5	13.5							See Mud Program in attached APD drilling plan.

Operator Name: TITUS OIL AND GAS PRODUCTION LLC**Well Name:** LOS VAQUEROS FED COM**Well Number:** 434H

Section 6 - Test, Logging, Coring

List of production tests including testing procedures, equipment and safety measures:

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.

List of open and cased hole logs run in the well:

DIRECTIONAL SURVEY,

Coring operation description for the well:

N/A

Section 7 - Pressure

Anticipated Bottom Hole Pressure: 7840**Anticipated Surface Pressure:** 5026**Anticipated Bottom Hole Temperature(F):** 180**Anticipated abnormal pressures, temperatures, or potential geologic hazards?** NO**Describe:****Contingency Plans geohazards description:****Contingency Plans geohazards****Hydrogen Sulfide drilling operations plan required?** YES**Hydrogen sulfide drilling operations**

H2S_Los_Vaqueros_Fed_Com_434H_20220614155825.pdf

Section 8 - Other Information

Proposed horizontal/directional/multi-lateral plan submission:

Los_Vaqueros_Fed_Com_434H_Plan_1_04_25_22_20220614155614.pdf

Los_Vaqueros_Fed_Com_434H_Plan_1_04_25_22_AC_Report_20220614155614.pdf

Other proposed operations facets description:

APD Drilling Plan

Natural Gas Management Plan

Multi-Bowl Wellhead Schematic

Closed Loop Schematic

5M Variance Well Plan

Other proposed operations facets attachment:

AFS_Multi_Bowl_Schematic_20220609145424.pdf

Closed_Loop_Schematic_20220609145525.pdf

1_Slim_Hole_5M_Variance_Well_Plan_7.8.2019_20220614152251.pdf

NGMP_Los_Vaqueros_Fed_Com_434H_20220614155627.pdf

Los_Vaqueros_Fed_Com_434H_APD_Temp_WC_3S_10M_20220716140334.pdf

Other Variance attachment:

3M_H_P_614_BOP_CHOKE_FLEX_HOSE_APD_INFORMATION_20220609145316.pdf

Operator Name: TITUS OIL AND GAS PRODUCTION LLC

Well Name: LOS VAQUEROS FED COM

Well Number: 434H

10M__H_P_614__BOP__CHOKE__FLEX_HOSE_APD_INFORMATION_20220614152320.pdf

CONFIDENTIAL

Well Name: LOS VAQUEROS FED COM	Well Location: T26S / R35E / SEC 30 / NENW /	County or Parish/State:
Well Number: 834H	Type of Well: OIL WELL	Allottee or Tribe Name:
Lease Number: NMNM104706	Unit or CA Name:	Unit or CA Number:
US Well Number:	Well Status: Approved Application for Permit to Drill	Operator: EARTHSTONE OPERATING LLC

Notice of Intent

Sundry ID: 2778001

Type of Submission: Notice of Intent	Type of Action: APD Change
Date Sundry Submitted: 03/05/2024	Time Sundry Submitted: 02:30
Date proposed operation will begin: 03/05/2024	

Procedure Description: SUNDRY TO REVISE WELL NUMBER DUPLICATE WELL NUMBERS AND REVISION NEEDS TO BE MADE IN ORDER TO FILE APD WITH NMOC D AND RECEIVE API NUMBER WELL NUMBER REVISION FROM: LOS VAQUEROS FED COM 434H (APD ID 10400086111) TO: LOS VAQUEROS FED COM 834H

NOI Attachments

Procedure Description

C_102_LOS_VAQUEROS_FED_COM_434H__2__20240305142943.pdf

Well Name: LOS VAQUEROS FED COM	Well Location: T26S / R35E / SEC 30 / NENW /	County or Parish/State:
Well Number: 834H	Type of Well: OIL WELL	Allottee or Tribe Name:
Lease Number: NMNM104706	Unit or CA Name:	Unit or CA Number:
US Well Number:	Well Status: Approved Application for Permit to Drill	Operator: EARTHSTONE OPERATING LLC

Operator

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

Operator Electronic Signature: JENNIFER ELROD

Signed on: MAR 05, 2024 02:55 PM

Name: EARTHSTONE OPERATING LLC

Title: Senior Regulatory Analyst

Street Address: 300 N MARIENFIELD STREET SUITE 1000

City: MIDLAND**State:** TX

Phone: (940) 452-6214

Email address: JENNIFER.ELROD@PERMIANRES.COM

Field

Representative Name:

Street Address:

City:**State:****Zip:**

Phone:

Email address:

BLM Point of Contact

BLM POC Name: Candy Vigil**BLM POC Title:** LIE

BLM POC Phone: 5752345982**BLM POC Email Address:** cvigil@blm.gov

Disposition: Approved**Disposition Date:** 03/06/2024

Signature: Cody Layton Assistant Field Manager

Form 3160-5
(June 2019)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
OMB No. 1004-0137
Expires: October 31, 2021

SUNDRY NOTICES AND REPORTS ON WELLS
Do not use this form for proposals to drill or to re-enter an abandoned well. Use Form 3160-3 (APD) for such proposals.

5. Lease Serial No.	NMNM104706
6. If Indian, Allottee or Tribe Name	

SUBMIT IN TRIPLICATE - Other instructions on page 2	
1. Type of Well <input checked="" type="checkbox"/> Oil Well <input type="checkbox"/> Gas Well <input type="checkbox"/> Other	
2. Name of Operator EARTHSTONE OPERATING LLC	
3a. Address 300 N MARIENFIELD STREET SUITE 1000, MID	3b. Phone No. (include area code) (432) 695-4222
4. Location of Well (Footage, Sec., T.,R.,M., or Survey Description) SEC 30/T26S/R35E/NMP	

7. If Unit of CA/Agreement, Name and/or No.
8. Well Name and No. LOS VAQUEROS FED COM/434H
9. API Well No.
10. Field and Pool or Exploratory Area JABALINA/WOLFCAMP SOUTHWEST
11. Country or Parish, State LEA/NM

12. CHECK THE APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT OR OTHER DATA				
TYPE OF SUBMISSION	TYPE OF ACTION			
<input checked="" type="checkbox"/> Notice of Intent	<input type="checkbox"/> Acidize	<input type="checkbox"/> Deepen	<input type="checkbox"/> Production (Start/Resume)	<input type="checkbox"/> Water Shut-Off
<input type="checkbox"/> Subsequent Report	<input type="checkbox"/> Alter Casing	<input type="checkbox"/> Hydraulic Fracturing	<input type="checkbox"/> Reclamation	<input type="checkbox"/> Well Integrity
<input type="checkbox"/> Final Abandonment Notice	<input type="checkbox"/> Casing Repair	<input type="checkbox"/> New Construction	<input type="checkbox"/> Recomplete	<input type="checkbox"/> Other
	<input checked="" type="checkbox"/> Change Plans	<input type="checkbox"/> Plug and Abandon	<input type="checkbox"/> Temporarily Abandon	
	<input type="checkbox"/> Convert to Injection	<input type="checkbox"/> Plug Back	<input type="checkbox"/> Water Disposal	

13. Describe Proposed or Completed Operation: Clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recompleate horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be perfonned or provide the Bond No. on file with BLM/BIA. Required subsequent reports must be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompletion in a new interval, a Form 3160-4 must be filed once testing has been completed. Final Abandonment Notices must be filed only after all requirements, including reclamation, have been completed and the operator has detennined that the site is ready for final inspection.)

SUNDRY TO REVISE WELL NUMBER
DUPLICATE WELL NUMBERS AND REVISION NEEDS TO BE MADE IN ORDER TO FILE APD WITH NMOC D AND RECEIVE API NUMBER

WELL NUMBER REVISION
FROM: LOS VAQUEROS FED COM 434H (APD ID 10400086111)
TO: LOS VAQUEROS FED COM 834H

14. I hereby certify that the foregoing is true and correct. Name (Printed/Typed) JENNIFER ELROD / Ph: (940) 452-6214	Title Senior Regulatory Analyst
Signature (Electronic Submission)	Date 03/05/2024

THE SPACE FOR FEDERAL OR STATE OFFICE USE		
Approved by Candy Vigil / Ph: (575) 234-5982 / Approved	Title LIE	Date 03/06/2024
Conditions of approval, if any, are attached. Approval of this notice does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.	Office CARLSBAD	

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

(Instructions on page 2)

GENERAL INSTRUCTIONS

This form is designed for submitting proposals to perform certain well operations and reports of such operations when completed as indicated on Federal and Indian lands pursuant to applicable Federal law 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, are either shown below, will be issued by or may be obtained from the local Federal office.

SPECIFIC INSTRUCTIONS

Item 4 - Locations on Federal or Indian land should be described in accordance with Federal requirements. Consult the local Federal office for specific instructions.

Item 13: Proposals to abandon a well and subsequent reports of abandonment should include such special information as is required by the local Federal office. In addition, such proposals and reports should include reasons for the abandonment; data on any former or present productive zones or other zones with present significant fluid contents not sealed off by cement or otherwise; depths (top and bottom) and method of placement of cement plugs; mud or other material placed below, between and above plugs; amount, size, method of parting of any casing, liner or tubing pulled and the depth to the top of any tubing left in the hole; method of closing top of well and date well site conditioned for final inspection looking for approval of the abandonment. 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 the 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., 351 et seq., 25 U.S.C. 396; 43 CFR 3160.

PRINCIPAL PURPOSE: The information is used to: (1) Evaluate, when appropriate, approve applications, and report completion of subsequent well operations, on a Federal or Indian lease; and (2) document for administrative use, information for the management, disposal and use of National Resource lands and resources, such as: (a) evaluating the equipment and procedures to be used during a proposed subsequent well operation and reviewing the completed well operations for compliance with the approved plan; (b) requesting and granting approval to perform those actions covered by 43 CFR 3162.3-2, 3162.3-3, and 3162.3-4; (c) reporting the beginning or resumption of production, as required by 43 CFR 3162.4-1(c) and (d) analyzing future applications to drill or modify operations in light of data obtained and methods used.

ROUTINE USES: Information from the record and/or the record will be transferred to appropriate Federal, State, local or foreign agencies, when relevant to civil, criminal or regulatory investigations or prosecutions in connection with congressional inquiries or to consumer reporting agencies to facilitate collection of debts owed the Government.

EFFECT OF NOT PROVIDING THE INFORMATION: Filing of this notice and report and disclosure of the information is mandatory for those subsequent well operations specified in 43 CFR 3162.3-2, 3162.3-3, 3162.3-4.

The Paperwork Reduction Act of 1995 requires us to inform you that:

The BLM collects this information to evaluate proposed and/or completed subsequent well operations on Federal or Indian oil and gas leases.

Response to this request is mandatory.

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 Collection Clearance Officer (WO-630), 1849 C St., N.W., Mail Stop 401 LS, Washington, D.C. 20240

Additional Information

Location of Well

0. SHL: NENW / 353 FNL / 1559 FEL / TWSP: 26S / RANGE: 35E / SECTION: 30 / LAT: 32.0205786 / LONG: -103.4029687 (TVD: 0 feet, MD: 0 feet)
PPP: NESE / 2641 FNL / 330 FEL / TWSP: 26S / RANGE: 35E / SECTION: 30 / LAT: 32.014276 / LONG: -103.398994 (TVD: 12781 feet, MD: 17200 feet)
PPP: SENE / 1320 FNL / 330 FEL / TWSP: 26S / RANGE: 35E / SECTION: 30 / LAT: 32.017908 / LONG: -103.399 (TVD: 12789 feet, MD: 14600 feet)
BHL: LOT 5 / 10 FSL / 330 FEL / TWSP: 26S / RANGE: 35E / SECTION: 31 / LAT: 32.000319 / LONG: -103.3989714 (TVD: 12771 feet, MD: 20792 feet)

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	2 Pool Code 96776	3 Pool Name Jabalina; Wolfcamp, Southwest
4 Property Code 331213	5 Property Name LOS VAQUEROS FED COM	6 Well Number 834H
7 OGRID No. 373986	8 Operator Name EARTHSTONE OPERATING, LLC	9 Elevation 3180.71'

¹⁰ Surface Location

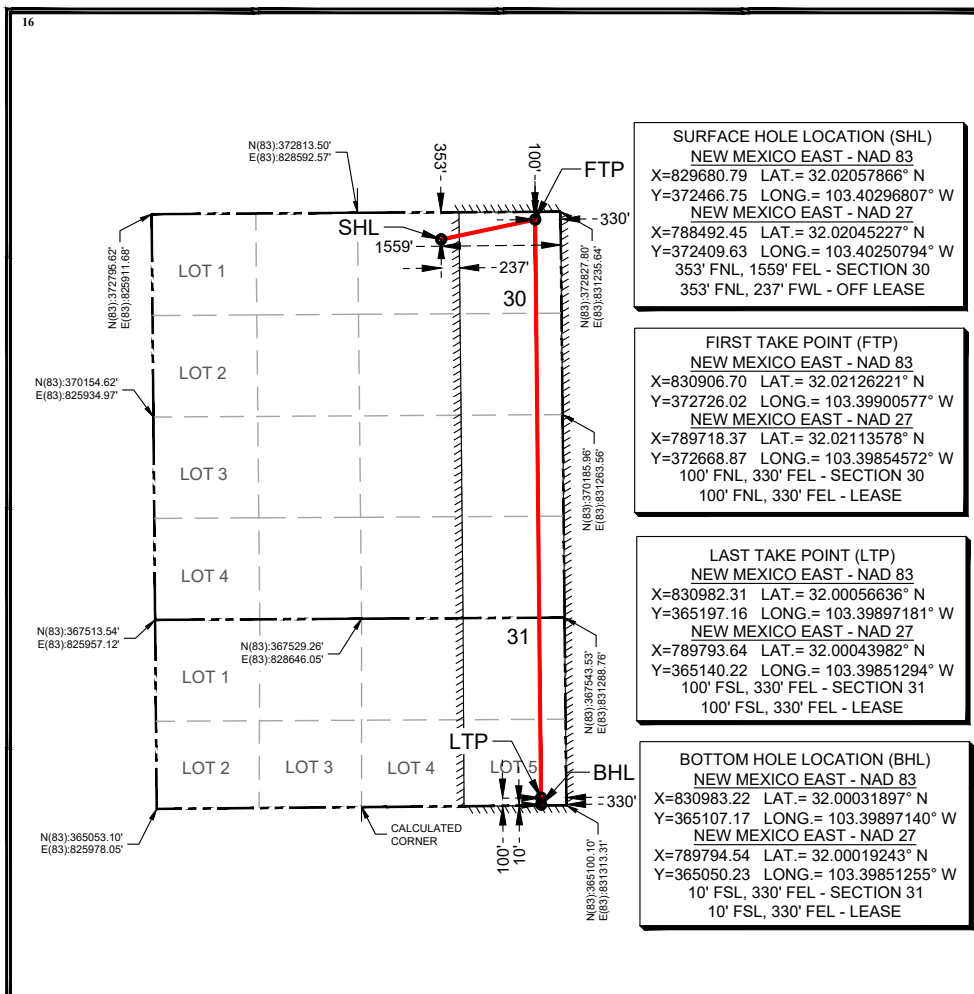
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
B	30	26-S	35-E		353'	NORTH	1559'	EAST	LEA

¹¹ Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
5	31	26-S	35-E		10'	SOUTH	330'	EAST	LEA

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

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



17 OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling

order heretofore entered by the division

Jennifer Elrod
Signature

03/05/2024

Date

JENNIFER ELROD

Printed Name

jennifer.elrod@permres.com

E-mail Address

18 SURVEYOR CERTIFICATION

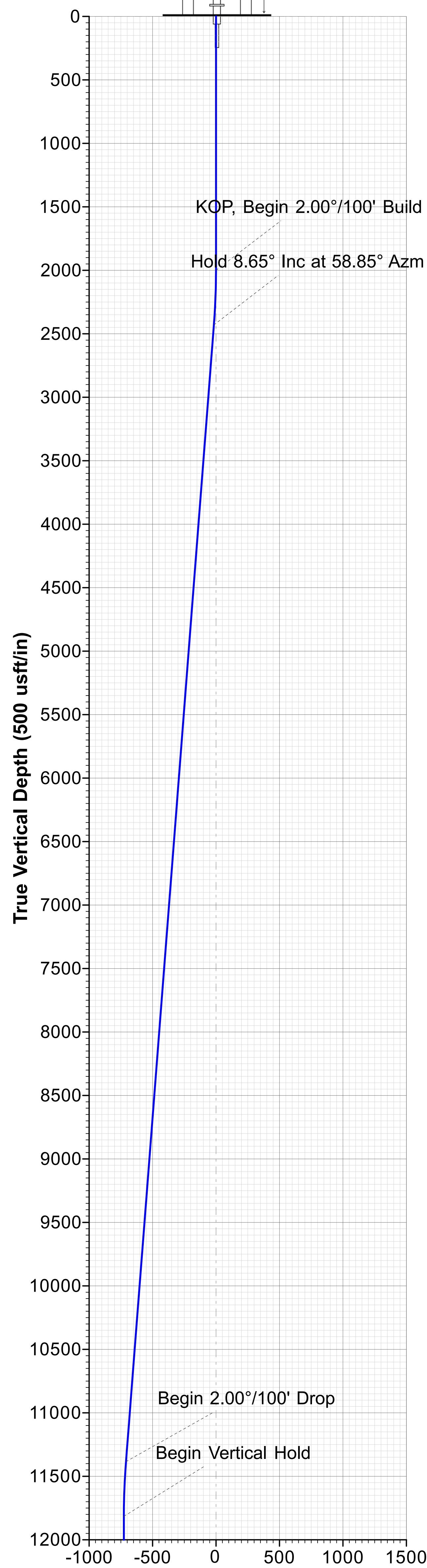
I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

Charles L. Jurica
Date of Survey 06/07/2022

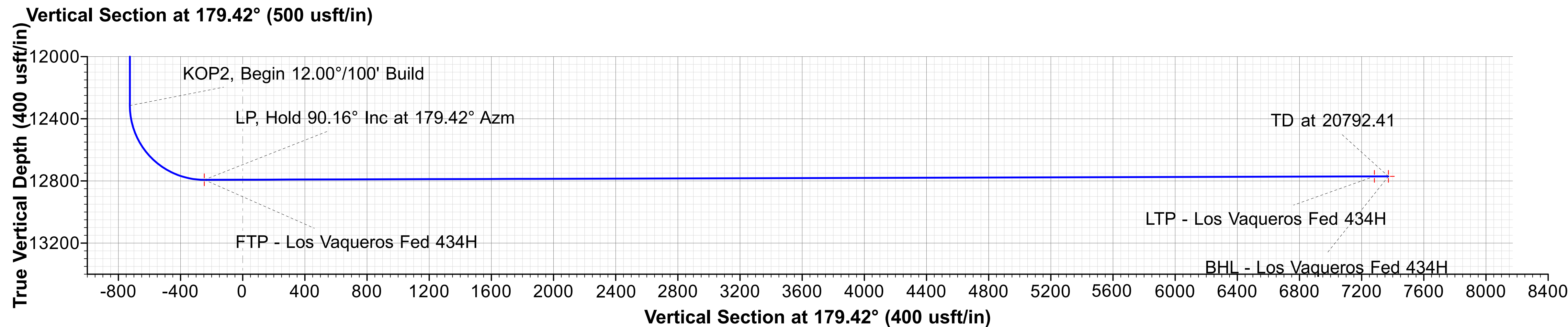
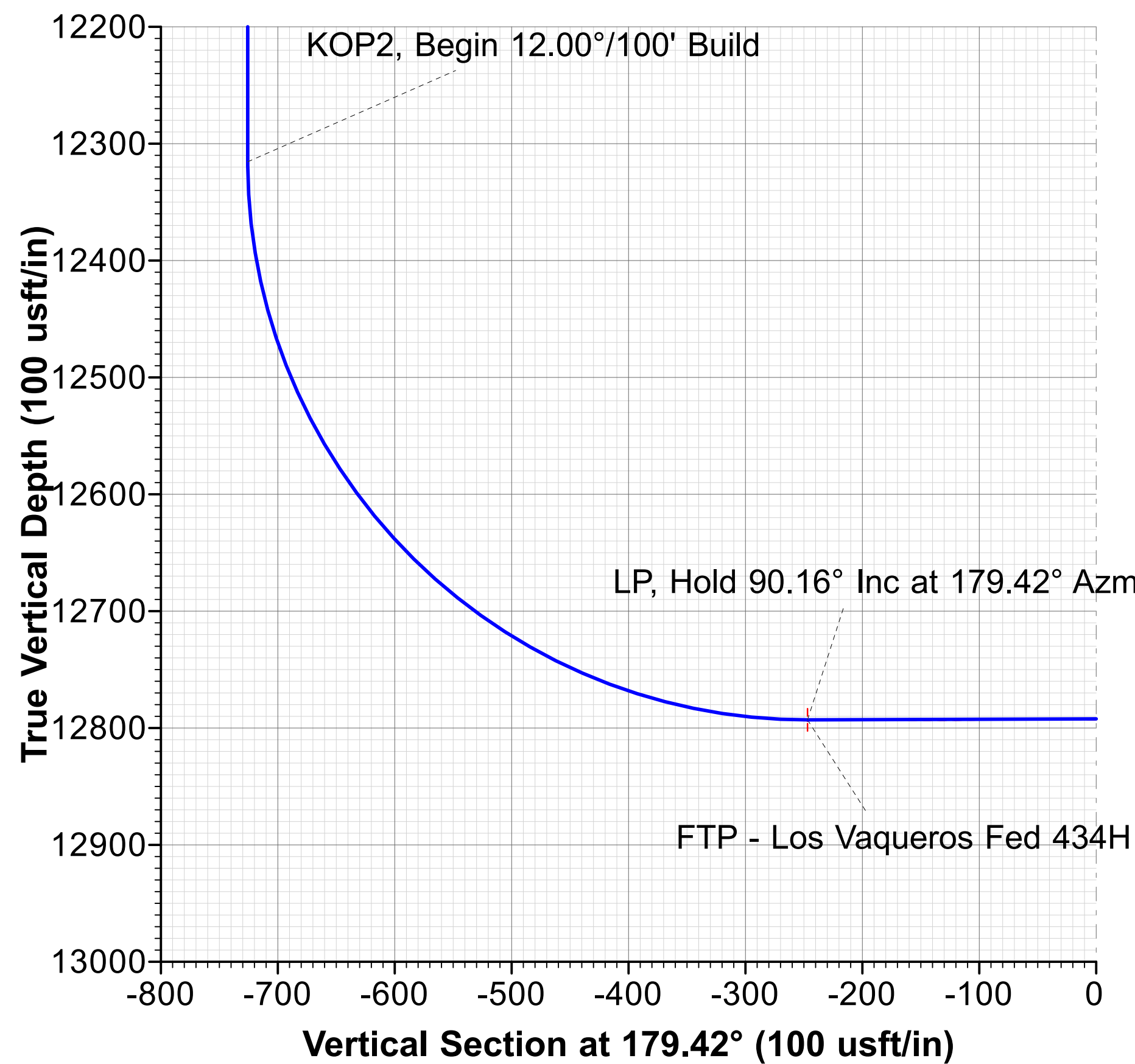
Signature and Seal of Professional Surveyor:

Charles L. Jurica
Certificate Number 25490

RKB @ 3207.21usft (H&P 616)
Ground Level: 3180.71



Map System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone Name: New Mexico Eastern Zone
Local Origin: Well Los Vaqueros Fed 434H, Grid North
Latitude: 32° 1' 14.083169 N
Longitude: 103° 24' 10.685009 W
Grid East: 829680.79
Grid North: 372466.75
Scale Factor: 1.000
Geomagnetic Model: MVHD
Sample Date: 21-Apr-22
Magnetic Declination: 6.289°
Dip Angle from Horizontal: 59.589°
Magnetic Field Strength: 47360.62461531nT
To convert a Magnetic Direction to a Grid Direction, Add 5.795°
To convert a Magnetic Direction to a True Direction, Add 6.289° East
To convert a True Direction to a Grid Direction, Subtract 0.493°

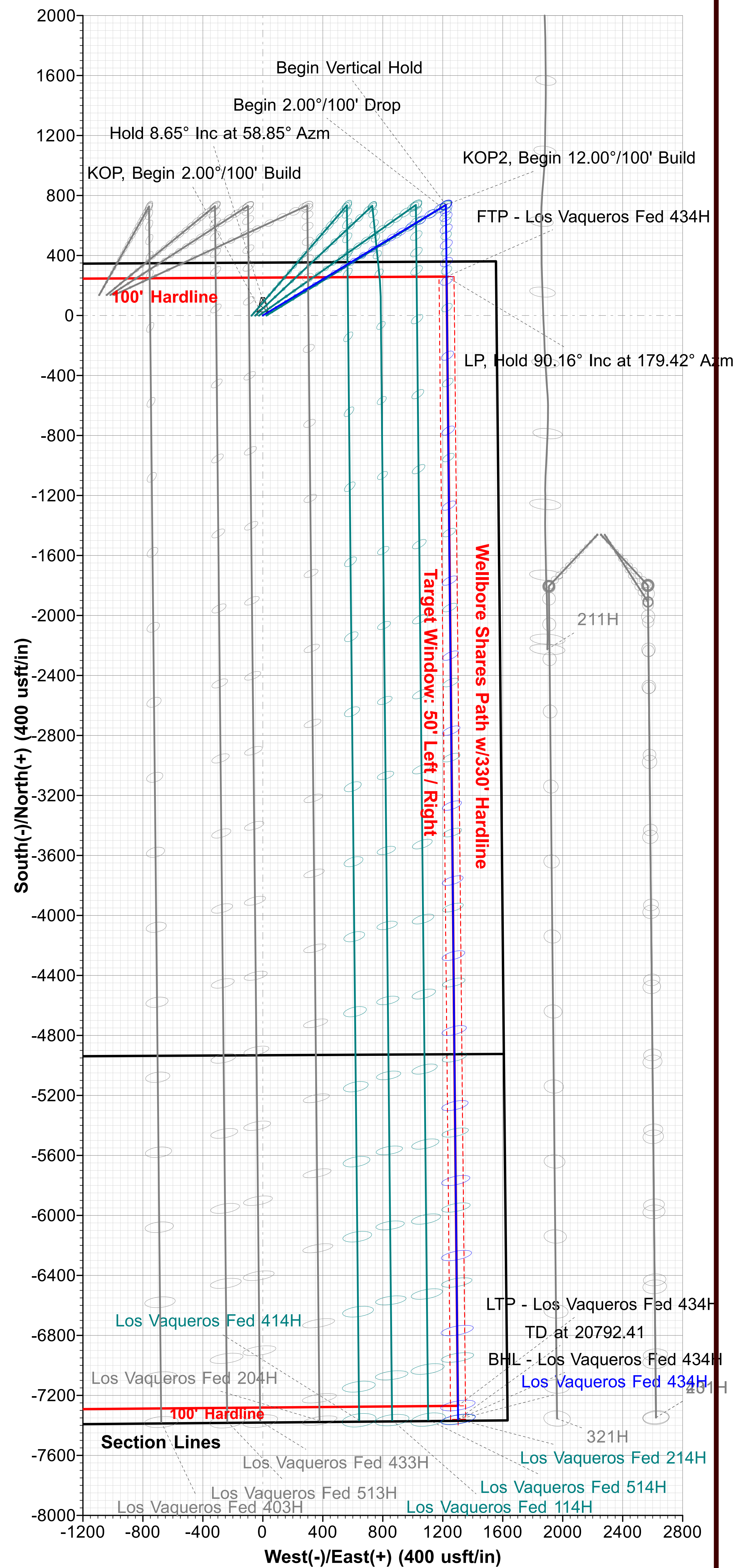
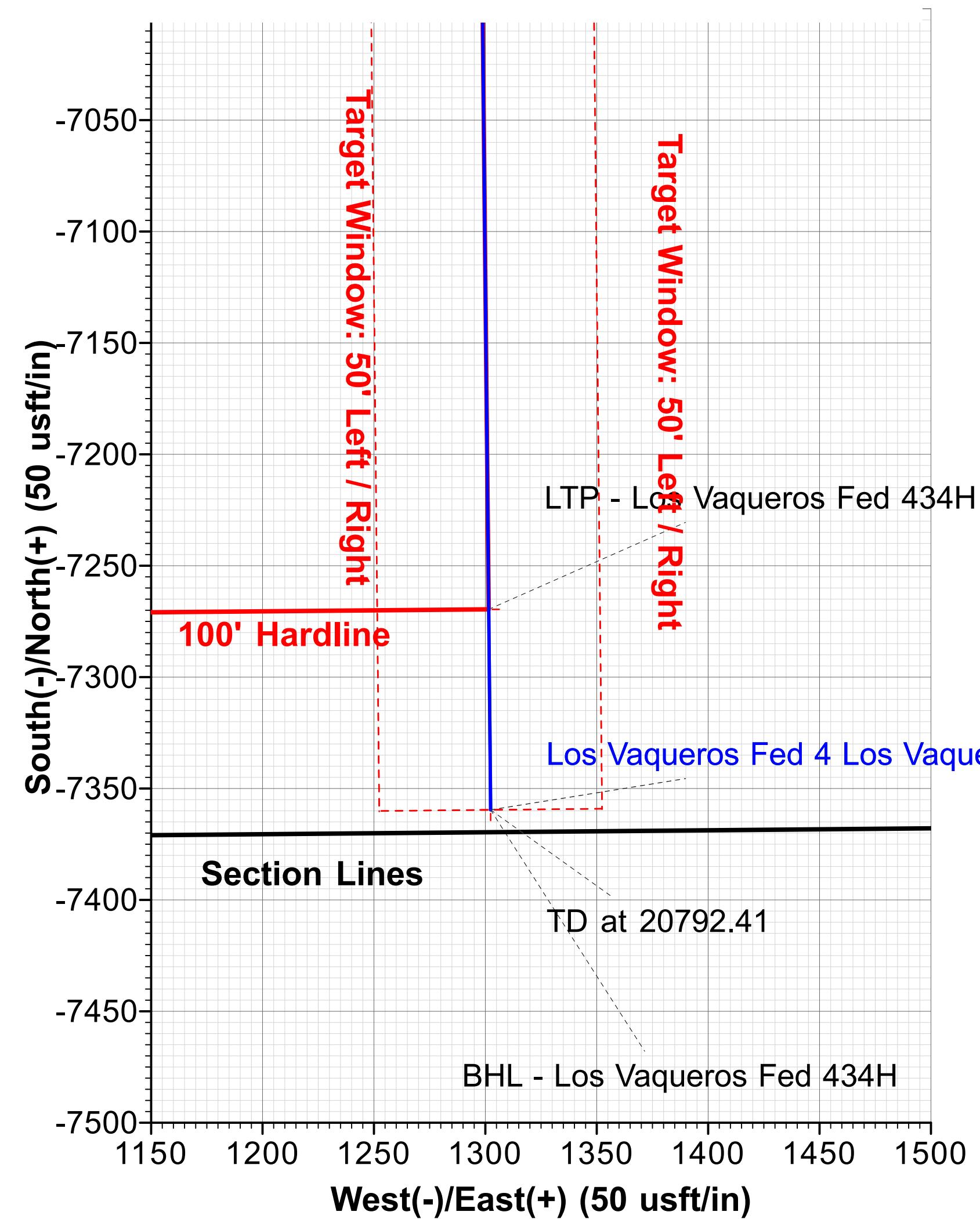
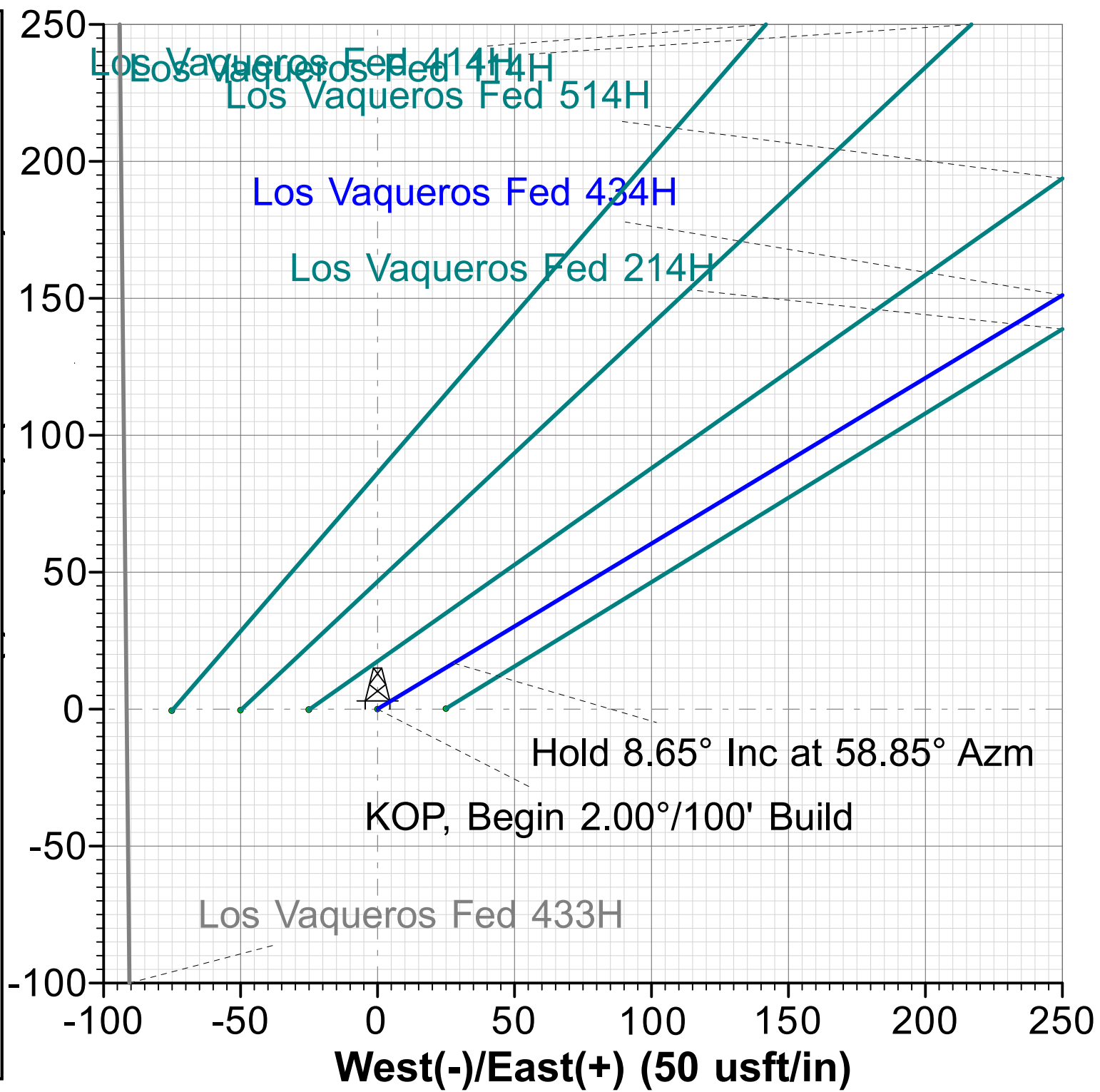


WELL DETAILS						
+N/-S	+E/-W	Northing	Ground Level:	3180.71	Latitude	Longitude
0.00	0.00	372466.75	Easting	829680.79	32° 1' 14.083169 N	103° 24' 10.685009 W

DESIGN TARGET DETAILS						
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude
BHL - Los Vaqueros Fed 434H	12771.00	-7359.58	1302.43	365107.17	830983.22	32° 0' 1.148327 N
LTP - Los Vaqueros Fed 434H	12771.00	-7269.59	1301.52	365197.16	830982.31	32° 0' 2.038865 N
FTP - Los Vaqueros Fed 434H	12793.00	259.27	1225.91	372726.02	830906.70	32° 1' 16.543991 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	0.000	0.00		
2	2000.00	0.00	0.00	2000.00	0.00	0.00	0.00	0.000	0.00		
3	2432.35	8.65	58.85	2430.72	16.84	27.87	2.00	58.849	-16.56		
4	11489.41	8.65	58.85	11384.82	721.24	1193.23	0.00	0.000	-709.13		
5	11921.77	0.00	0.00	11815.54	738.09	1221.10	2.00	180.000	-725.69		
6	12421.77	0.00	0.00	12315.54	738.09	1221.10	0.00	0.000	-725.69		
7	13173.14	90.17	179.42	12793.00	259.27	1225.91	12.00	179.425	-246.85		
8	20792.41	90.17	179.42	12771.00	-7359.58	1302.43	0.00	0.000	7372.39	BHL - Los Vaqueros Fed 434H	

LEGEND	
—	211H, OH, Surveys V0
—	431H, OH, Plan 1 01-14-20 V0
—	321H, OH, Plan 1 01-14-20 V0
—	Los Vaqueros Fed 114H, OH, Plan 1 04-25-22 V0
—	Los Vaqueros Fed 433H, OH, Plan 1 04-21-22 V0
—	201H, OH, Plan 1 01-14-20 V0
—	512H, OH, Plan 2 01-31-20 V0
—	Los Vaqueros Fed 514H, OH, Plan 1 04-25-22 V0
—	Los Vaqueros Fed 414H, OH, Plan 1 04-25-22 V0
—	322H, OH, Plan 2 01-31-20 V0
—	Los Vaqueros Fed 214H, OH, Plan 1 04-25-22 V0
—	Los Vaqueros Fed 403H, OH, Plan 1 04-21-22 V0
—	Los Vaqueros Fed 513H, OH, Plan 1 04-21-22 V0
—	Los Vaqueros Fed 204H, OH, Plan 1 04-21-22 V0
—	Plan 1 04-25-22





Titus Oil & Gas Production, LLC

Lea County, NM - (NAD83 NME)

Los Vaqueros Fed 4

Los Vaqueros Fed Com 434H

OH

Plan: Plan 1 04-25-22

Standard Planning Report

25 April, 2022





Planning Report



Database:	USA Compass	Local Co-ordinate Reference:	Well Los Vaqueros Fed 434H
Company:	Titus Oil & Gas Production, LLC	TVD Reference:	RKB @ 3207.21usft (H&P 616)
Project:	Lea County, NM - (NAD83 NME)	MD Reference:	RKB @ 3207.21usft (H&P 616)
Site:	Los Vaqueros Fed 4	North Reference:	Grid
Well:	Los Vaqueros Fed 434H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan 1 04-25-22		

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 4				
Site Position:		Northing:	372,466.38 usft	Latitude:	32° 1' 14.083768 N
From:	Map	Easting:	829,630.79 usft	Longitude:	103° 24' 11.265767 W
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.493

Well	Los Vaqueros Fed 434H					
Well Position	+N/-S	0.37 usft	Northing:	372,466.75 usft	Latitude:	32° 1' 14.083169 N
	+E/-W	50.00 usft	Easting:	829,680.79 usft	Longitude:	103° 24' 10.685009 W
Position Uncertainty		1.00 usft	Wellhead Elevation:		Ground Level:	3,180.71 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	MVHD	4/21/2022	6.289	59.589	47,360.62461531

Design	Plan 1 04-25-22			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	179.42

Plan Survey Tool Program	Date	4/25/2022		
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	20,792.41	Plan 1 04-25-22 (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	0.000	
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.000	
2,432.35	8.65	58.85	2,430.72	16.84	27.87	2.00	2.00	0.00	58.849	
11,489.41	8.65	58.85	11,384.82	721.24	1,193.23	0.00	0.00	0.00	0.000	
11,921.77	0.00	0.00	11,815.54	738.09	1,221.10	2.00	-2.00	0.00	180.000	
12,421.77	0.00	0.00	12,315.54	738.09	1,221.10	0.00	0.00	0.00	0.000	
13,173.15	90.17	179.42	12,793.00	259.27	1,225.91	12.00	12.00	0.00	179.425	
20,792.41	90.17	179.42	12,771.00	-7,359.58	1,302.43	0.00	0.00	0.00	0.000	BHL - Los Vaqueros F



Planning Report



Database:	USA Compass	Local Co-ordinate Reference:	Well Los Vaqueros Fed 434H
Company:	Titus Oil & Gas Production, LLC	TVD Reference:	RKB @ 3207.21usft (H&P 616)
Project:	Lea County, NM - (NAD83 NME)	MD Reference:	RKB @ 3207.21usft (H&P 616)
Site:	Los Vaqueros Fed 4	North Reference:	Grid
Well:	Los Vaqueros Fed 434H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan 1 04-25-22		

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
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00
KOP, Begin 2.00°/100' Build									
2,100.00	2.00	58.85	2,099.98	0.90	1.49	-0.89	2.00	2.00	0.00
2,200.00	4.00	58.85	2,199.84	3.61	5.97	-3.55	2.00	2.00	0.00
2,300.00	6.00	58.85	2,299.45	8.12	13.43	-7.98	2.00	2.00	0.00
2,400.00	8.00	58.85	2,398.70	14.42	23.86	-14.18	2.00	2.00	0.00
2,432.35	8.65	58.85	2,430.72	16.84	27.87	-16.56	2.00	2.00	0.00
Hold 8.65° Inc at 58.85° Azm									
2,500.00	8.65	58.85	2,497.59	22.11	36.57	-21.73	0.00	0.00	0.00
2,600.00	8.65	58.85	2,596.46	29.88	49.44	-29.38	0.00	0.00	0.00
2,700.00	8.65	58.85	2,695.32	37.66	62.31	-37.03	0.00	0.00	0.00
2,800.00	8.65	58.85	2,794.18	45.44	75.17	-44.67	0.00	0.00	0.00
2,900.00	8.65	58.85	2,893.04	53.22	88.04	-52.32	0.00	0.00	0.00
3,000.00	8.65	58.85	2,991.91	60.99	100.91	-59.97	0.00	0.00	0.00
3,100.00	8.65	58.85	3,090.77	68.77	113.77	-67.61	0.00	0.00	0.00
3,200.00	8.65	58.85	3,189.63	76.55	126.64	-75.26	0.00	0.00	0.00
3,300.00	8.65	58.85	3,288.50	84.32	139.51	-82.91	0.00	0.00	0.00
3,400.00	8.65	58.85	3,387.36	92.10	152.37	-90.55	0.00	0.00	0.00
3,500.00	8.65	58.85	3,486.22	99.88	165.24	-98.20	0.00	0.00	0.00
3,600.00	8.65	58.85	3,585.09	107.66	178.11	-105.85	0.00	0.00	0.00
3,700.00	8.65	58.85	3,683.95	115.43	190.98	-113.50	0.00	0.00	0.00
3,800.00	8.65	58.85	3,782.81	123.21	203.84	-121.14	0.00	0.00	0.00
3,900.00	8.65	58.85	3,881.68	130.99	216.71	-128.79	0.00	0.00	0.00
4,000.00	8.65	58.85	3,980.54	138.77	229.58	-136.44	0.00	0.00	0.00
4,100.00	8.65	58.85	4,079.40	146.54	242.44	-144.08	0.00	0.00	0.00
4,200.00	8.65	58.85	4,178.27	154.32	255.31	-151.73	0.00	0.00	0.00
4,300.00	8.65	58.85	4,277.13	162.10	268.18	-159.38	0.00	0.00	0.00
4,400.00	8.65	58.85	4,375.99	169.88	281.04	-167.02	0.00	0.00	0.00
4,500.00	8.65	58.85	4,474.86	177.65	293.91	-174.67	0.00	0.00	0.00
4,600.00	8.65	58.85	4,573.72	185.43	306.78	-182.32	0.00	0.00	0.00
4,700.00	8.65	58.85	4,672.58	193.21	319.64	-189.96	0.00	0.00	0.00
4,800.00	8.65	58.85	4,771.45	200.99	332.51	-197.61	0.00	0.00	0.00
4,900.00	8.65	58.85	4,870.31	208.76	345.38	-205.26	0.00	0.00	0.00
5,000.00	8.65	58.85	4,969.17	216.54	358.25	-212.90	0.00	0.00	0.00
5,100.00	8.65	58.85	5,068.04	224.32	371.11	-220.55	0.00	0.00	0.00
5,200.00	8.65	58.85	5,166.90	232.09	383.98	-228.20	0.00	0.00	0.00
5,300.00	8.65	58.85	5,265.76	239.87	396.85	-235.84	0.00	0.00	0.00
5,400.00	8.65	58.85	5,364.63	247.65	409.71	-243.49	0.00	0.00	0.00
5,500.00	8.65	58.85	5,463.49	255.43	422.58	-251.14	0.00	0.00	0.00
5,600.00	8.65	58.85	5,562.35	263.20	435.45	-258.78	0.00	0.00	0.00
5,700.00	8.65	58.85	5,661.22	270.98	448.31	-266.43	0.00	0.00	0.00
5,800.00	8.65	58.85	5,760.08	278.76	461.18	-274.08	0.00	0.00	0.00
5,900.00	8.65	58.85	5,858.94	286.54	474.05	-281.72	0.00	0.00	0.00
6,000.00	8.65	58.85	5,957.81	294.31	486.91	-289.37	0.00	0.00	0.00
6,100.00	8.65	58.85	6,056.67	302.09	499.78	-297.02	0.00	0.00	0.00
6,200.00	8.65	58.85	6,155.53	309.87	512.65	-304.66	0.00	0.00	0.00
6,300.00	8.65	58.85	6,254.40	317.65	525.52	-312.31	0.00	0.00	0.00
6,400.00	8.65	58.85	6,353.26	325.42	538.38	-319.96	0.00	0.00	0.00
6,500.00	8.65	58.85	6,452.12	333.20	551.25	-327.60	0.00	0.00	0.00
6,600.00	8.65	58.85	6,550.99	340.98	564.12	-335.25	0.00	0.00	0.00
6,700.00	8.65	58.85	6,649.85	348.75	576.98	-342.90	0.00	0.00	0.00
6,800.00	8.65	58.85	6,748.71	356.53	589.85	-350.54	0.00	0.00	0.00



Planning Report



Database:	USA Compass	Local Co-ordinate Reference:	Well Los Vaqueros Fed 434H
Company:	Titus Oil & Gas Production, LLC	TVD Reference:	RKB @ 3207.21usft (H&P 616)
Project:	Lea County, NM - (NAD83 NME)	MD Reference:	RKB @ 3207.21usft (H&P 616)
Site:	Los Vaqueros Fed 4	North Reference:	Grid
Well:	Los Vaqueros Fed 434H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan 1 04-25-22		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
6,900.00	8.65	58.85	6,847.58	364.31	602.72	-358.19	0.00	0.00	0.00
7,000.00	8.65	58.85	6,946.44	372.09	615.58	-365.84	0.00	0.00	0.00
7,100.00	8.65	58.85	7,045.30	379.86	628.45	-373.48	0.00	0.00	0.00
7,200.00	8.65	58.85	7,144.17	387.64	641.32	-381.13	0.00	0.00	0.00
7,300.00	8.65	58.85	7,243.03	395.42	654.18	-388.78	0.00	0.00	0.00
7,400.00	8.65	58.85	7,341.89	403.20	667.05	-396.42	0.00	0.00	0.00
7,500.00	8.65	58.85	7,440.76	410.97	679.92	-404.07	0.00	0.00	0.00
7,600.00	8.65	58.85	7,539.62	418.75	692.79	-411.72	0.00	0.00	0.00
7,700.00	8.65	58.85	7,638.48	426.53	705.65	-419.36	0.00	0.00	0.00
7,800.00	8.65	58.85	7,737.35	434.31	718.52	-427.01	0.00	0.00	0.00
7,900.00	8.65	58.85	7,836.21	442.08	731.39	-434.66	0.00	0.00	0.00
8,000.00	8.65	58.85	7,935.07	449.86	744.25	-442.30	0.00	0.00	0.00
8,100.00	8.65	58.85	8,033.94	457.64	757.12	-449.95	0.00	0.00	0.00
8,200.00	8.65	58.85	8,132.80	465.42	769.99	-457.60	0.00	0.00	0.00
8,300.00	8.65	58.85	8,231.66	473.19	782.85	-465.24	0.00	0.00	0.00
8,400.00	8.65	58.85	8,330.53	480.97	795.72	-472.89	0.00	0.00	0.00
8,500.00	8.65	58.85	8,429.39	488.75	808.59	-480.54	0.00	0.00	0.00
8,600.00	8.65	58.85	8,528.25	496.52	821.45	-488.18	0.00	0.00	0.00
8,700.00	8.65	58.85	8,627.12	504.30	834.32	-495.83	0.00	0.00	0.00
8,800.00	8.65	58.85	8,725.98	512.08	847.19	-503.48	0.00	0.00	0.00
8,900.00	8.65	58.85	8,824.84	519.86	860.06	-511.12	0.00	0.00	0.00
9,000.00	8.65	58.85	8,923.71	527.63	872.92	-518.77	0.00	0.00	0.00
9,100.00	8.65	58.85	9,022.57	535.41	885.79	-526.42	0.00	0.00	0.00
9,200.00	8.65	58.85	9,121.43	543.19	898.66	-534.06	0.00	0.00	0.00
9,300.00	8.65	58.85	9,220.30	550.97	911.52	-541.71	0.00	0.00	0.00
9,400.00	8.65	58.85	9,319.16	558.74	924.39	-549.36	0.00	0.00	0.00
9,500.00	8.65	58.85	9,418.02	566.52	937.26	-557.00	0.00	0.00	0.00
9,600.00	8.65	58.85	9,516.89	574.30	950.12	-564.65	0.00	0.00	0.00
9,700.00	8.65	58.85	9,615.75	582.08	962.99	-572.30	0.00	0.00	0.00
9,800.00	8.65	58.85	9,714.61	589.85	975.86	-579.94	0.00	0.00	0.00
9,900.00	8.65	58.85	9,813.48	597.63	988.72	-587.59	0.00	0.00	0.00
10,000.00	8.65	58.85	9,912.34	605.41	1,001.59	-595.24	0.00	0.00	0.00
10,100.00	8.65	58.85	10,011.20	613.18	1,014.46	-602.88	0.00	0.00	0.00
10,200.00	8.65	58.85	10,110.07	620.96	1,027.33	-610.53	0.00	0.00	0.00
10,300.00	8.65	58.85	10,208.93	628.74	1,040.19	-618.18	0.00	0.00	0.00
10,400.00	8.65	58.85	10,307.79	636.52	1,053.06	-625.82	0.00	0.00	0.00
10,500.00	8.65	58.85	10,406.66	644.29	1,065.93	-633.47	0.00	0.00	0.00
10,600.00	8.65	58.85	10,505.52	652.07	1,078.79	-641.12	0.00	0.00	0.00
10,700.00	8.65	58.85	10,604.38	659.85	1,091.66	-648.76	0.00	0.00	0.00
10,800.00	8.65	58.85	10,703.25	667.63	1,104.53	-656.41	0.00	0.00	0.00
10,900.00	8.65	58.85	10,802.11	675.40	1,117.39	-664.06	0.00	0.00	0.00
11,000.00	8.65	58.85	10,900.97	683.18	1,130.26	-671.70	0.00	0.00	0.00
11,100.00	8.65	58.85	10,999.84	690.96	1,143.13	-679.35	0.00	0.00	0.00
11,200.00	8.65	58.85	11,098.70	698.74	1,155.99	-687.00	0.00	0.00	0.00
11,300.00	8.65	58.85	11,197.56	706.51	1,168.86	-694.64	0.00	0.00	0.00
11,400.00	8.65	58.85	11,296.43	714.29	1,181.73	-702.29	0.00	0.00	0.00
11,489.41	8.65	58.85	11,384.82	721.24	1,193.23	-709.13	0.00	0.00	0.00
Begin 2.00°/100' Drop									
11,500.00	8.44	58.85	11,395.29	722.06	1,194.58	-709.93	2.00	-2.00	0.00
11,600.00	6.44	58.85	11,494.45	728.75	1,205.65	-716.51	2.00	-2.00	0.00
11,700.00	4.44	58.85	11,593.99	733.65	1,213.76	-721.33	2.00	-2.00	0.00
11,800.00	2.44	58.85	11,693.81	736.75	1,218.89	-724.37	2.00	-2.00	0.00
11,900.00	0.44	58.85	11,793.77	738.05	1,221.03	-725.65	2.00	-2.00	0.00
11,921.77	0.00	0.00	11,815.54	738.09	1,221.10	-725.69	2.00	-2.00	0.00



Planning Report



Database:	USA Compass	Local Co-ordinate Reference:	Well Los Vaqueros Fed 434H
Company:	Titus Oil & Gas Production, LLC	TVD Reference:	RKB @ 3207.21usft (H&P 616)
Project:	Lea County, NM - (NAD83 NME)	MD Reference:	RKB @ 3207.21usft (H&P 616)
Site:	Los Vaqueros Fed 4	North Reference:	Grid
Well:	Los Vaqueros Fed 434H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan 1 04-25-22		

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)
Begin Vertical Hold									
12,421.77	0.00	0.00	12,315.54	738.09	1,221.10	-725.69	0.00	0.00	0.00
KOP2, Begin 12.00°/100' Build									
12,500.00	9.39	179.42	12,393.42	731.69	1,221.17	-719.30	12.00	12.00	0.00
12,600.00	21.39	179.42	12,489.66	705.21	1,221.43	-692.81	12.00	12.00	0.00
12,700.00	33.39	179.42	12,578.29	659.29	1,221.89	-646.89	12.00	12.00	0.00
12,800.00	45.39	179.42	12,655.43	595.96	1,222.53	-583.55	12.00	12.00	0.00
12,900.00	57.39	179.42	12,717.73	517.96	1,223.31	-505.55	12.00	12.00	0.00
13,000.00	69.39	179.42	12,762.44	428.73	1,224.21	-416.31	12.00	12.00	0.00
13,100.00	81.39	179.42	12,787.62	332.14	1,225.18	-319.72	12.00	12.00	0.00
13,173.15	90.17	179.42	12,793.00	259.27	1,225.91	-246.85	12.00	12.00	0.00
LP, Hold 90.16° Inc at 179.42° Azm									
13,200.00	90.17	179.42	12,792.92	232.42	1,226.18	-219.99	0.00	0.00	0.00
13,300.00	90.17	179.42	12,792.63	132.42	1,227.18	-119.99	0.00	0.00	0.00
13,400.00	90.17	179.42	12,792.35	32.43	1,228.19	-19.99	0.00	0.00	0.00
13,500.00	90.17	179.42	12,792.06	-67.57	1,229.19	80.01	0.00	0.00	0.00
13,600.00	90.17	179.42	12,791.77	-167.56	1,230.20	180.01	0.00	0.00	0.00
13,700.00	90.17	179.42	12,791.48	-267.56	1,231.20	280.01	0.00	0.00	0.00
13,800.00	90.17	179.42	12,791.19	-367.55	1,232.21	380.01	0.00	0.00	0.00
13,900.00	90.17	179.42	12,790.90	-467.55	1,233.21	480.00	0.00	0.00	0.00
14,000.00	90.17	179.42	12,790.61	-567.54	1,234.21	580.00	0.00	0.00	0.00
14,100.00	90.17	179.42	12,790.32	-667.53	1,235.22	680.00	0.00	0.00	0.00
14,200.00	90.17	179.42	12,790.04	-767.53	1,236.22	780.00	0.00	0.00	0.00
14,300.00	90.17	179.42	12,789.75	-867.52	1,237.23	880.00	0.00	0.00	0.00
14,400.00	90.17	179.42	12,789.46	-967.52	1,238.23	980.00	0.00	0.00	0.00
14,500.00	90.17	179.42	12,789.17	-1,067.51	1,239.24	1,080.00	0.00	0.00	0.00
14,600.00	90.17	179.42	12,788.88	-1,167.51	1,240.24	1,180.00	0.00	0.00	0.00
14,700.00	90.17	179.42	12,788.59	-1,267.50	1,241.24	1,280.00	0.00	0.00	0.00
14,800.00	90.17	179.42	12,788.30	-1,367.50	1,242.25	1,380.00	0.00	0.00	0.00
14,900.00	90.17	179.42	12,788.01	-1,467.49	1,243.25	1,480.00	0.00	0.00	0.00
15,000.00	90.17	179.42	12,787.73	-1,567.49	1,244.26	1,580.00	0.00	0.00	0.00
15,100.00	90.17	179.42	12,787.44	-1,667.48	1,245.26	1,680.00	0.00	0.00	0.00
15,200.00	90.17	179.42	12,787.15	-1,767.47	1,246.27	1,780.00	0.00	0.00	0.00
15,300.00	90.17	179.42	12,786.86	-1,867.47	1,247.27	1,880.00	0.00	0.00	0.00
15,400.00	90.17	179.42	12,786.57	-1,967.46	1,248.27	1,980.00	0.00	0.00	0.00
15,500.00	90.17	179.42	12,786.28	-2,067.46	1,249.28	2,080.00	0.00	0.00	0.00
15,600.00	90.17	179.42	12,785.99	-2,167.45	1,250.28	2,180.00	0.00	0.00	0.00
15,700.00	90.17	179.42	12,785.70	-2,267.45	1,251.29	2,280.00	0.00	0.00	0.00
15,800.00	90.17	179.42	12,785.42	-2,367.44	1,252.29	2,380.00	0.00	0.00	0.00
15,900.00	90.17	179.42	12,785.13	-2,467.44	1,253.30	2,480.00	0.00	0.00	0.00
16,000.00	90.17	179.42	12,784.84	-2,567.43	1,254.30	2,580.00	0.00	0.00	0.00
16,100.00	90.17	179.42	12,784.55	-2,667.43	1,255.30	2,680.00	0.00	0.00	0.00
16,200.00	90.17	179.42	12,784.26	-2,767.42	1,256.31	2,780.00	0.00	0.00	0.00
16,300.00	90.17	179.42	12,783.97	-2,867.41	1,257.31	2,879.99	0.00	0.00	0.00
16,400.00	90.17	179.42	12,783.68	-2,967.41	1,258.32	2,979.99	0.00	0.00	0.00
16,500.00	90.17	179.42	12,783.39	-3,067.40	1,259.32	3,079.99	0.00	0.00	0.00
16,600.00	90.17	179.42	12,783.11	-3,167.40	1,260.33	3,179.99	0.00	0.00	0.00
16,700.00	90.17	179.42	12,782.82	-3,267.39	1,261.33	3,279.99	0.00	0.00	0.00
16,800.00	90.17	179.42	12,782.53	-3,367.39	1,262.33	3,379.99	0.00	0.00	0.00
16,900.00	90.17	179.42	12,782.24	-3,467.38	1,263.34	3,479.99	0.00	0.00	0.00
17,000.00	90.17	179.42	12,781.95	-3,567.38	1,264.34	3,579.99	0.00	0.00	0.00
17,100.00	90.17	179.42	12,781.66	-3,667.37	1,265.35	3,679.99	0.00	0.00	0.00
17,200.00	90.17	179.42	12,781.37	-3,767.37	1,266.35	3,779.99	0.00	0.00	0.00



Planning Report



Database:	USA Compass	Local Co-ordinate Reference:	Well Los Vaqueros Fed 434H
Company:	Titus Oil & Gas Production, LLC	TVD Reference:	RKB @ 3207.21usft (H&P 616)
Project:	Lea County, NM - (NAD83 NME)	MD Reference:	RKB @ 3207.21usft (H&P 616)
Site:	Los Vaqueros Fed 4	North Reference:	Grid
Well:	Los Vaqueros Fed 434H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan 1 04-25-22		

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)
17,300.00	90.17	179.42	12,781.08	-3,867.36	1,267.36	3,879.99	0.00	0.00	0.00
17,400.00	90.17	179.42	12,780.80	-3,967.35	1,268.36	3,979.99	0.00	0.00	0.00
17,500.00	90.17	179.42	12,780.51	-4,067.35	1,269.36	4,079.99	0.00	0.00	0.00
17,600.00	90.17	179.42	12,780.22	-4,167.34	1,270.37	4,179.99	0.00	0.00	0.00
17,700.00	90.17	179.42	12,779.93	-4,267.34	1,271.37	4,279.99	0.00	0.00	0.00
17,800.00	90.17	179.42	12,779.64	-4,367.33	1,272.38	4,379.99	0.00	0.00	0.00
17,900.00	90.17	179.42	12,779.35	-4,467.33	1,273.38	4,479.99	0.00	0.00	0.00
18,000.00	90.17	179.42	12,779.06	-4,567.32	1,274.39	4,579.99	0.00	0.00	0.00
18,100.00	90.17	179.42	12,778.77	-4,667.32	1,275.39	4,679.99	0.00	0.00	0.00
18,200.00	90.17	179.42	12,778.49	-4,767.31	1,276.39	4,779.99	0.00	0.00	0.00
18,300.00	90.17	179.42	12,778.20	-4,867.31	1,277.40	4,879.99	0.00	0.00	0.00
18,400.00	90.17	179.42	12,777.91	-4,967.30	1,278.40	4,979.99	0.00	0.00	0.00
18,500.00	90.17	179.42	12,777.62	-5,067.29	1,279.41	5,079.99	0.00	0.00	0.00
18,600.00	90.17	179.42	12,777.33	-5,167.29	1,280.41	5,179.99	0.00	0.00	0.00
18,700.00	90.17	179.42	12,777.04	-5,267.28	1,281.42	5,279.98	0.00	0.00	0.00
18,800.00	90.17	179.42	12,776.75	-5,367.28	1,282.42	5,379.98	0.00	0.00	0.00
18,900.00	90.17	179.42	12,776.46	-5,467.27	1,283.42	5,479.98	0.00	0.00	0.00
19,000.00	90.17	179.42	12,776.18	-5,567.27	1,284.43	5,579.98	0.00	0.00	0.00
19,100.00	90.17	179.42	12,775.89	-5,667.26	1,285.43	5,679.98	0.00	0.00	0.00
19,200.00	90.17	179.42	12,775.60	-5,767.26	1,286.44	5,779.98	0.00	0.00	0.00
19,300.00	90.17	179.42	12,775.31	-5,867.25	1,287.44	5,879.98	0.00	0.00	0.00
19,400.00	90.17	179.42	12,775.02	-5,967.25	1,288.45	5,979.98	0.00	0.00	0.00
19,500.00	90.17	179.42	12,774.73	-6,067.24	1,289.45	6,079.98	0.00	0.00	0.00
19,600.00	90.17	179.42	12,774.44	-6,167.23	1,290.45	6,179.98	0.00	0.00	0.00
19,700.00	90.17	179.42	12,774.15	-6,267.23	1,291.46	6,279.98	0.00	0.00	0.00
19,800.00	90.17	179.42	12,773.87	-6,367.22	1,292.46	6,379.98	0.00	0.00	0.00
19,900.00	90.17	179.42	12,773.58	-6,467.22	1,293.47	6,479.98	0.00	0.00	0.00
20,000.00	90.17	179.42	12,773.29	-6,567.21	1,294.47	6,579.98	0.00	0.00	0.00
20,100.00	90.17	179.42	12,773.00	-6,667.21	1,295.48	6,679.98	0.00	0.00	0.00
20,200.00	90.17	179.42	12,772.71	-6,767.20	1,296.48	6,779.98	0.00	0.00	0.00
20,300.00	90.17	179.42	12,772.42	-6,867.20	1,297.48	6,879.98	0.00	0.00	0.00
20,400.00	90.17	179.42	12,772.13	-6,967.19	1,298.49	6,979.98	0.00	0.00	0.00
20,500.00	90.17	179.42	12,771.84	-7,067.19	1,299.49	7,079.98	0.00	0.00	0.00
20,600.00	90.17	179.42	12,771.56	-7,167.18	1,300.50	7,179.98	0.00	0.00	0.00
20,700.00	90.17	179.42	12,771.27	-7,267.17	1,301.50	7,279.98	0.00	0.00	0.00
20,792.41	90.17	179.42	12,771.00	-7,359.58	1,302.43	7,372.39	0.00	0.00	0.00
TD at 20792.41									



Planning Report



Database:	USA Compass	Local Co-ordinate Reference:	Well Los Vaqueros Fed 434H
Company:	Titus Oil & Gas Production, LLC	TVD Reference:	RKB @ 3207.21usft (H&P 616)
Project:	Lea County, NM - (NAD83 NME)	MD Reference:	RKB @ 3207.21usft (H&P 616)
Site:	Los Vaqueros Fed 4	North Reference:	Grid
Well:	Los Vaqueros Fed 434H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan 1 04-25-22		

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	-0.17	179.42	12,771.00	-7,359.58	1,302.43	365,107.17	830,983.22	32° 0' 1.148327 N 103° 23' 56.297020 W	
- plan hits target center									
- Rectangle (sides W100.00 H7,619.23 D0.00)									
LTP - Los Vaqueros Fed	0.00	0.00	12,771.00	-7,269.59	1,301.52	365,197.16	830,982.31	32° 0' 2.038865 N 103° 23' 56.298556 W	
- plan misses target center by 2.43usft at 20700.00usft MD (12771.27 TVD, -7267.17 N, 1301.50 E)									
- Point									
FTP - Los Vaqueros Fed	0.00	0.00	12,793.00	259.27	1,225.91	372,726.02	830,906.70	32° 1' 16.543991 N 103° 23' 56.420760 W	
- plan hits target center									
- Point									

Casing Points				
Measured Depth	Vertical Depth		Casing Diameter	Hole Diameter
(usft)	(usft)	Name	(")	(")
20,792.41	12,771.00	20" Casing	20	24

Plan Annotations				
Measured Depth	Vertical Depth	Local Coordinates		Comment
(usft)	(usft)	+N/-S (usft)	+E/-W (usft)	
2,000.00	2,000.00	0.00	0.00	KOP, Begin 2.00°/100' Build
2,432.35	2,430.72	16.84	27.87	Hold 8.65° Inc at 58.85° Azm
11,489.41	11,384.82	721.24	1,193.23	Begin 2.00°/100' Drop
11,921.77	11,815.54	738.09	1,221.10	Begin Vertical Hold
12,421.77	12,315.54	738.09	1,221.10	KOP2, Begin 12.00°/100' Build
13,173.15	12,793.00	259.27	1,225.91	LP, Hold 90.16° Inc at 179.42° Azm
20,792.41	12,771.00	-7,359.58	1,302.43	TD at 20792.41

**PECOS DISTRICT
SURFACE USE
CONDITIONS OF APPROVAL**

OPERATOR'S NAME:	Titus Oil and Gas Production LLC
LEASE NO.:	NMNM 062932
COUNTY:	Lea County, New Mexico
LOCATION:	Township 26S, Range 35E, section 30

Wells:

Well Pad 1
Los Vaqueros Fed 202H
Surface Hole Location: 211' FNL & 2036' FWL, Section 30, T. 26 S., R. 35 E.
Bottom Hole Location: 10' FSL & 2178' FWL, Section 31, T. 26 S, R 35 E.

Well Pad 2
Los Vaqueros Fed 202H
Surface Hole Location: 210' FNL & 2573' FEL, Section 30, T. 26 S., R. 35 E.
Bottom Hole Location: 10' FSL & 1650' FEL, Section 31, T. 26 S, R 35 E.

Well Pad 3
Los Vaqueros Fed 434H
Surface Hole Location: 353' FNL & 1559' FEL, Section 30, T. 26 S., R. 35 E.
Bottom Hole Location: 10' FSL & 330' 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
- ☐ **Construction**
 - Notification
 - Topsoil
 - Closed Loop System
 - Federal Mineral Material Pits
 - Well Pads
 - Roads
- ☐ **Road Section Diagram**
- ☒ **Production (Post Drilling)**
 - Well Structures & Facilities
- ☐ **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 resource (historic or prehistoric site or object) discovered by the holder, or any person working on the holder's behalf, on public or Federal land shall be immediately reported to the Authorized Officer. The holder shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery will be made by the Authorized Officer to determine appropriate actions to prevent the loss of significant cultural or scientific values. The holder will be responsible for the cost of evaluation and any decision as to the proper mitigation measures will be made by the Authorized Officer after consulting with the holder.

OR

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

The proponent has contributed funds commensurate to the undertaking into an account for offsite mitigation. Participation in the PA serves as mitigation for the effects of this project on cultural resources. If any human skeletal remains, funerary objects, sacred objects, or objects of cultural patrimony are discovered at any time during construction, all construction activities shall halt and the BLM will be notified as soon as possible within 24 hours. Work shall not resume until a Notice to Proceed is issued by the BLM. See Stipulation 6 for more information.

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

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

Any paleontological resource (historic or prehistoric site or object) discovered by the holder, or

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

IV. NOXIOUS WEEDS

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

V. SPECIAL REQUIREMENT(S)

Watershed:

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

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.

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.

VI. CONSTRUCTION

A. NOTIFICATION

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

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

B. TOPSOIL

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

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

C. CLOSED LOOP SYSTEM

Tanks are required for drilling operations: No Pits.

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

D. FEDERAL MINERAL MATERIALS PIT

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

E. WELL PAD SURFACING

Surfacing of the well pad is not required.

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

F. EXCLOSURE FENCING (CELLARS & PITS)

Exclosure Fencing

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

G. ON LEASE ACCESS ROADS

Road Width

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

Surfacing

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

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

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

Crowning

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

Ditching

Ditching shall be required on both sides of the road.

Turnouts

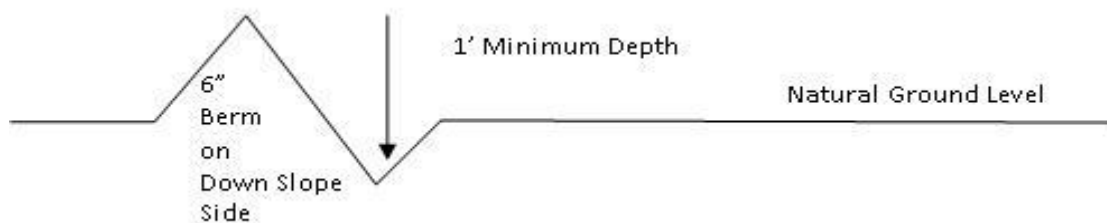
Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall conform to Figure 1; cross section and plans for typical road construction.

Drainage

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

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

Cross Section of a Typical Lead-off Ditch



All lead-off ditches shall be graded to drain water with a 1 percent minimum to 3 percent maximum ditch slope. The spacing interval are variable for lead-off ditches and shall be

determined according to the formula for spacing intervals of lead-off ditches, but may be amended depending upon existing soil types and centerline road slope (in %);

Formula for Spacing Interval of Lead-off Ditches

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

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

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

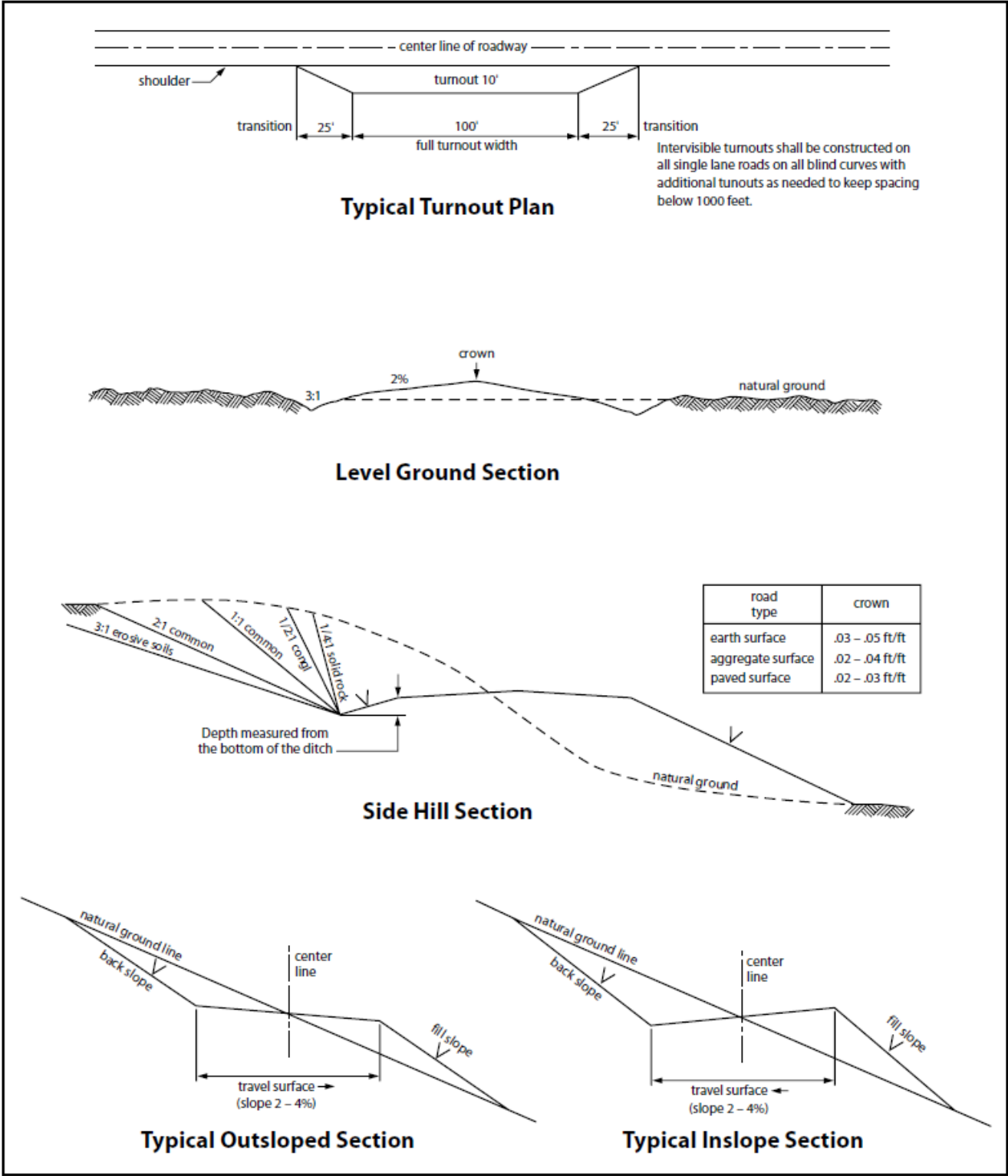


Figure 1. Cross-sections and plans for typical road sections representative of BLM resource or FS local and higher-class roads.

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).

VIII. INTERIM RECLAMATION

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

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

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

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

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

IX. FINAL ABANDONMENT & RECLAMATION

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

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

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

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

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

Seed Mixture 2, for Sandy Sites

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

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

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

Species

	<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.:	NMNM62932
LOCATION:	Section 30, T.26 S., R.35 E., NMPM
COUNTY:	Lea County, New Mexico

WELL NAME & NO.:	Los Vaqueros Fed Com 434H
SURFACE HOLE FOOTAGE:	353'/N & 1559'/E
BOTTOM HOLE FOOTAGE:	10'/S & 330'/E

COA

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

A. HYDROGEN SULFIDE

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

B. CASING

1. The **10-3/4** inch surface casing shall be set at approximately **1055** 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.
2. The **7-5/8** inch intermediate casing shall be set at **12200 ft** intermediate casing is:
 - Cement to surface. If cement does not circulate, see B.1.0 a c-d above.

Wait on cement (WOC) time for a primary cement job is to include the tail cement slurry due to cave/karst.
 3. The minimum required fill of cement behind the **5-1/2 x 5** 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 **10,000 (10M) psi. Variance is approved to use a 5000 (5M) Annular which shall be tested to 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
- i. 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 092022

TITUS

Oil & Gas LLC

TITUS Oil & Gas Production, LLC

100 Throckmorton Street

Suite 1630

Fort Worth, TX 76102

Hydrogen Sulfide (H₂S) Contingency Plan

For

Los Vaqueros Fed Com 434H

Sec-30 T-26S R-35E

353 FNL & 1559' FEL

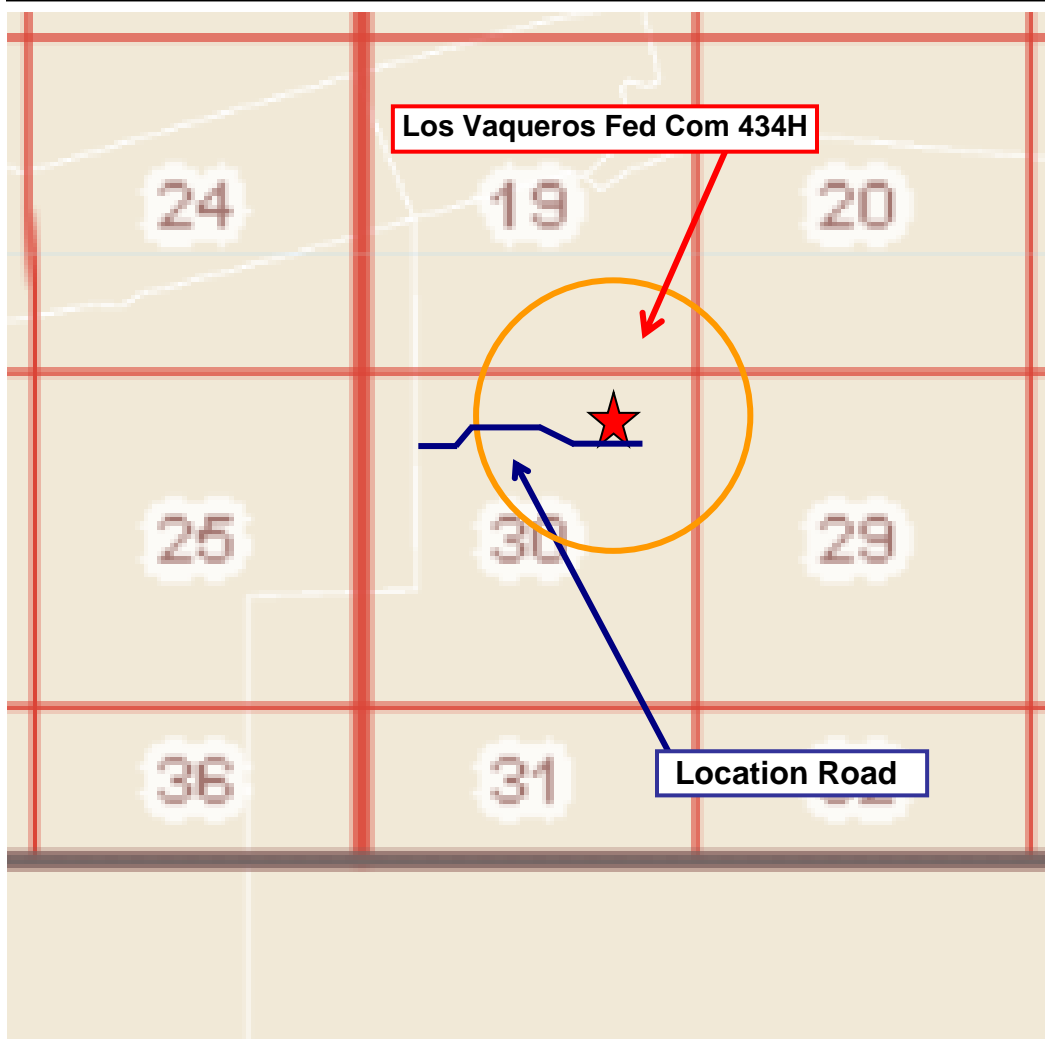
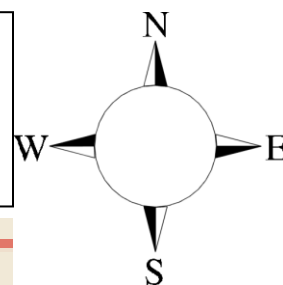
LAT. = 32.02057866' N (NAD83)

LONG = 103.40296807' W

Lea County NM

Los Vaqueros Fed Com 434H

This is an open drilling site. H₂S monitoring equipment and emergency response equipment will be used within 500' of zones known to contain H₂S, including warning signs, wind indicators and H₂S monitor.



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

Escape

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

Assumed 100 ppm ROE = 3000'

100 ppm H₂S concentration shall trigger activation of this plan.

Emergency Procedures

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

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

Ignition of Gas Source

Should control of the well be considered lost and ignition considered, take care to protect against exposure to Sulfur Dioxide (SO₂). Intentional ignition must be coordinated with the NMOCD and local officials. Additionally the NM State Police may become involved. NM State Police shall be the Incident Command on scene of any major release. Take care to protect downwind whenever there is an ignition of the gas

Characteristics of H₂S and SO₂

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

Contacting Authorities

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

Hydrogen Sulfide Drilling Operation Plan

I. HYDROGEN SULFIDE (H₂S) TRAINING

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

1. The hazards and characteristics of hydrogen sulfide (H₂S)
2. The proper use and maintenance of personal protective equipment and life support systems.
3. The proper use of H₂S detectors, alarms, warning systems, briefing areas, evacuation procedures, and prevailing winds.
4. The proper techniques for first aid and rescue procedures.

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

1. The effects of H₂S metal components. If high tensile tubulars are to be used, personnel will be trained in their special maintenance requirements.
2. Corrective action and shut-in procedures when drilling or reworking a well and blowout prevention and well control procedures.
3. The contents and requirements of the H₂S Drilling Operations Plan and Public Protection Plan.

There will be an initial training session just prior to encountering a known or probable H₂S zone (within 3 days or 500 feet) and weekly H₂S and well control drills for all personnel in each crew. The initial training session shall include a review of the site specific H₂S Drilling Operations Plan and the Public Protection Plan.

II. HYDROGEN SULFIDE TRAINING

Note: All H₂S safety equipment and systems will be installed, tested, and operational when drilling reaches a depth of 500 feet above, or three days prior to penetrating the first zone containing or reasonably expected to contain H₂S.

1. Well Control Equipment

- A. Flare line
- B. Choke manifold – Remotely Operated
- C. Blind rams and pipe rams to accommodate all pipe sizes with properly sized closing unit
- D. Auxiliary equipment may include if applicable: annular preventer and rotating head.
- E. Mud/Gas Separator

2. Protective equipment for essential personnel:

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

3. H₂S detection and monitoring equipment:

Portable H₂S monitors positioned on location for best coverage and response. These units have warning lights which activate when H₂S levels reach 10 ppm and audible sirens which activate at 15 ppm. Sensor locations:

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

Visual warning systems:

- A. Wind direction indicators as shown on well site diagram
- B. Caution/ Danger signs shall be posted on roads providing direct access to locations. Signs will be painted a high visibility yellow with black lettering of sufficient size to be reasonable distance from the immediate location. Bilingual signs will be used when appropriate.

4. Mud program:

The mud program has been designed to minimize the volume of H₂S circulated to surface. Proper mud weight, safe drilling practices and the use of H₂S scavengers will minimize hazards when penetrating H₂S bearing zones.

5. Metallurgy:

- A. All drill strings, casings, tubing, wellhead, blowout preventer, drilling spool, kill lines, choke manifold lines, and valves shall be H₂S trim.
- B. All elastomers used for packing and seals shall be H₂S trim.

6. Communication:

- A. Company personnel have/use cellular telephones in the field.
- B. Land line (telephone) communications at Office

7. Well testing:

- A. Drill stem testing will be performed with a minimum number of personnel in the immediate vicinity, which are necessary to safety and adequately conduct the test. The drill stem testing will be conducted during daylight hours and formation fluids will not be flowed to the surface. All drill-stem-testing operations conducted in an H₂S environment will use the closed chamber method of testing.
- B. There will be no drill stem testing.

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

Prepared in conjunction with

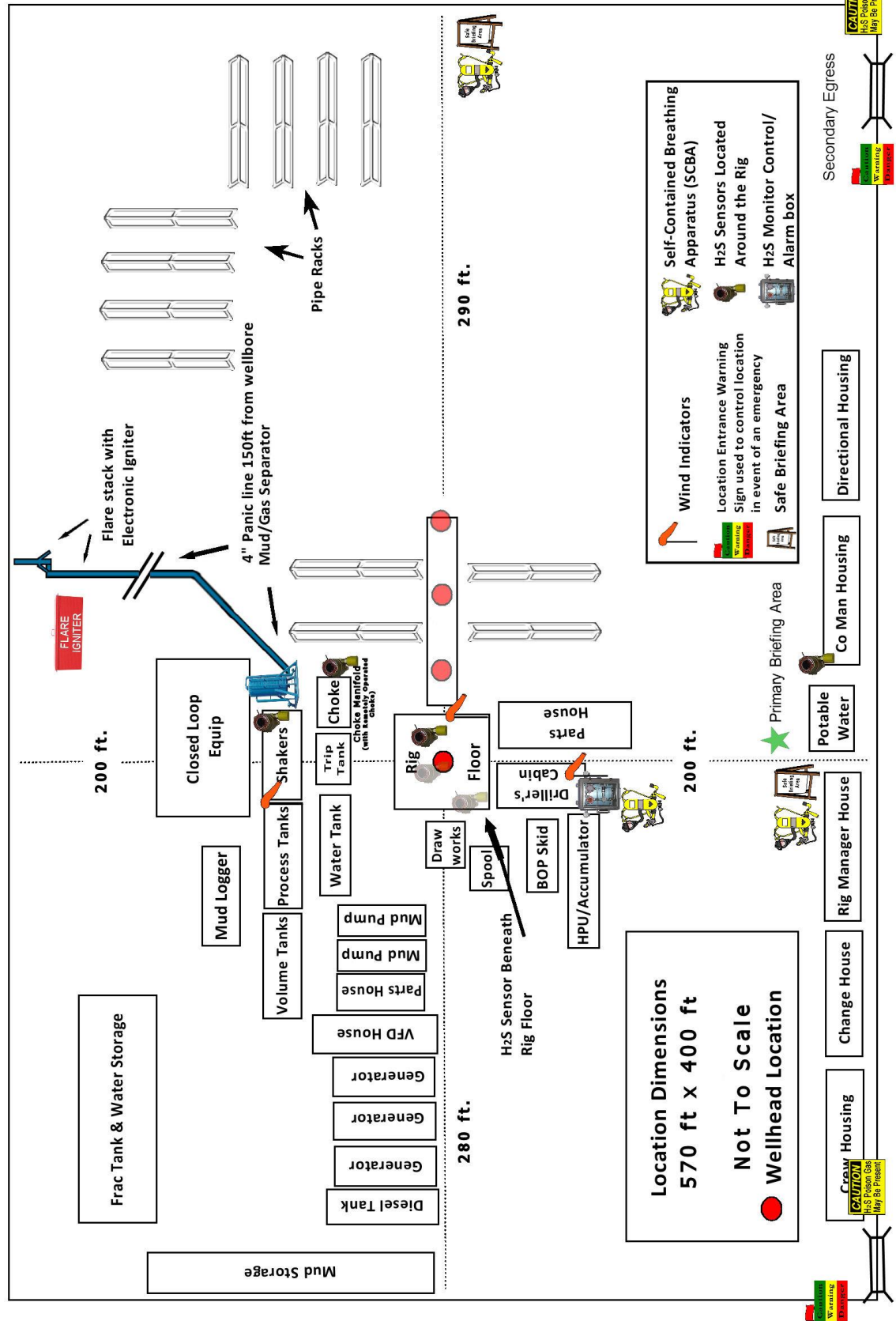
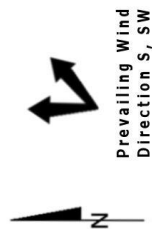
Dave Small



TITUS Oil & Gas Production - Well Pad

Rig Location Layout

Safety Equipment Location



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



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

Drilling Plan Data Report

02/20/2024

APD ID: 10400086111

Submission Date: 06/14/2022

Highlighted data
reflects the most
recent changes

Operator Name: TITUS OIL AND GAS PRODUCTION LLC

Well Name: LOS VAQUEROS FED COM

Well Number: 434H

Well Type: OIL WELL

Well Work Type: Drill

[Show Final Text](#)

Section 1 - Geologic Formations

Formation ID	Formation Name	Elevation	True Vertical	Measured Depth	Lithologies	Mineral Resources	Producing Formatio
9322169	QUATERNARY	0	0	0	ALLUVIUM	USEABLE WATER	N
9322170	RUSTLER	-1030	1030	1030	ANHYDRITE	USEABLE WATER	N
9322171	TOP SALT	-1482	1482	1482	SALT	NONE	N
9322172	BASE OF SALT	-5052	5052	5052	SALT	NONE	N
9322173	LAMAR	-5348	5348	5348	LIMESTONE	NONE	N
9322174	DELAWARE	-5372	5372	5412	SANDSTONE, SHALE, SILTSTONE	NONE	N
9322175	BONE SPRING LIME	-9211	9211	9291	LIMESTONE	NATURAL GAS, OIL	N
9322176	BONE SPRING 1ST	-10578	10578	10674	LIMESTONE, SANDSTONE, SHALE, SILTSTONE	NATURAL GAS, OIL	N
9322177	BONE SPRING 2ND	-11065	11065	11166	LIMESTONE, SANDSTONE, SHALE, SILTSTONE	NATURAL GAS, OIL	Y
9322178	BONE SPRING 3RD	-12137	12137	12236	LIMESTONE, SANDSTONE, SHALE, SILTSTONE	NATURAL GAS, OIL	N
9322179	Wolfcamp	-12548	12548	12670	SHALE	NATURAL GAS, OIL	Y

Section 2 - Blowout Prevention

Pressure Rating (PSI): 10M

Rating Depth: 12793

Equipment: 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. 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.

BOP SHEET

Annular Preventer

13-3/8 2,500 PSI WP

Ram Preventers

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

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

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

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

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

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

CONDITIONS

Action 320853

CONDITIONS

Operator: Earthstone Operating, LLC 300 N. Marienfeld St Ste 1000 Midland, TX 79701	OGRID: 331165
	Action Number: 320853
	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	3/11/2024
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	3/11/2024
pkautz	Oil base muds are not to be used until fresh water zones are cased and cemented providing isolation from the oil or diesel. This includes synthetic oils. Oil based mud, drilling fluids and solids must be contained in a steel closed loop system	3/11/2024
pkautz	Cement is required to circulate on both surface and intermediate1 strings of casing	3/11/2024
pkautz	If cement does not circulate on any string, a CBL is required for that string of casing	3/11/2024