

Well Name: CATTLEMEN FED COM	Well Location: T26S / R35E / SEC 17 / SWNE / 32.0448484 / -103.3872022	County or Parish/State: LEA / NM
Well Number: 513H	Type of Well: OIL WELL	Allottee or Tribe Name:
Lease Number: NMNM110841	Unit or CA Name:	Unit or CA Number:
US Well Number: 3002548131	Well Status: Drilling Well	Operator: TITUS OIL AND GAS PRODUCTION LLC

Notice of Intent

Sundry ID: 2643474

Type of Submission: Notice of Intent	Type of Action: Other
Date Sundry Submitted: 11/08/2021	Time Sundry Submitted: 01:56
Date proposed operation will begin: 11/14/2021	

Procedure Description: Pool Name correction from WC-025 G-09 S263619C; Wolfcamp to Jabalina; Wolfcamp, Southwest; Pool Code correction from 98234 to 96776; Depth change from 13,149' TVD and 20,895' MD to 13,065' TVD and 21,414' MD; Intermediate casing depth change from 11800' to 12200'; other plan adjustments to account for changes in well design. PLEASE NOTE: This well falls in the low cave-karst area, and should not be subject to 7-5/8" lead WOC as indicated in the original COA's. Attachments - Revised C-102 - Updated Drilling Plan - Updated Directional Plan - Updated Directional AC Report

Surface Disturbance

Is any additional surface disturbance proposed?: No

NOI Attachments

Procedure Description

- CATTLEMEN_FED_COM_513H__C102_20211108135639.pdf
- Cattlemen_Fed_Com_513H__Plan_3_11_04_21_AC_Report_20211108135504.pdf
- Cattlemen_Fed_Com_513H__Plan_3_11_04_21_20211108135504.pdf
- Cattlemen_Fed_Com_513H__APD_Temp__WC_3S_10M_20211108135504.pdf

Received by OCD: 12/16/2021 3:45:37 PM

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Well Name: CATTLEMEN FED COM	Well Location: T26S / R35E / SEC 17 / SWNE / 32.0448484 / -103.3872022	County or Parish/State: LEA / NM
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Lease Number: NMNM110841	Unit or CA Name:	Unit or CA Number:
US Well Number: 3002548131	Well Status: Drilling Well	Operator: TITUS OIL AND GAS PRODUCTION LLC

Conditions of Approval

Specialist Review
Cattlemen_Fed_Com_513H__COA_20211216075614.pdf

Operator Certification

I certify that the foregoing is true and correct. Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction. Electronic submission of Sundry Notices through this system satisfies regulations requiring a submission of Form 3160-5 or a Sundry Notice.

Operator Electronic Signature: RYAN DELONG	Signed on: NOV 08, 2021 01:56 PM
Name: TITUS OIL AND GAS PRODUCTION LLC	
Title: Regulatory Manager	
Street Address: 420 Throckmorton Street, Suite 1150	
City: Fort Worth	State: TX
Phone: (817) 852-6370	
Email address: rdelong@titusoil.com	

Field Representative

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

BLM Point of Contact

BLM POC Name: ZOTA M STEVENS	BLM POC Title: Petroleum Engineer
BLM POC Phone: 5752345998	BLM POC Email Address: ZSTEVENS@BLM.GOV
Disposition: Approved	Disposition Date: 12/16/2021
Signature: Zota Stevens	

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 30-025-48131	2 Pool Code 96776	3 Pool Name Jabalina; Wolfcamp, Southwest
4 Property Code	5 Property Name CATTLEMEN FED COM	6 Well Number 513H
7 OGRID No. 373986	8 Operator Name TITUS OIL & GAS PRODUCTION LLC	9 Elevation 3227'

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
G	17	26-S	35-E		2077'	NORTH	1942'	EAST	LEA

11 Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
O	20	26-S	35-E		10'	SOUTH	1870'	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.

16 SURFACE HOLE LOCATION (SHL) NEW MEXICO EAST - NAD 83 X= 834489.87 LAT.= 32.04484843° N Y= 381338.33 LONG.= 103.38720222° W NEW MEXICO EAST - NAD 27 X= 793301.88 LAT.= 32.04472199° N Y= 381280.92 LONG.= 103.38674121° W 2077' FNL, 1942' FEL - SECTION 17 FIRST TAKE POINT (FTP) NEW MEXICO EAST - NAD 83 X=834568.70 LAT.= 32.04302212° N Y=380674.57 LONG.= 103.38696660° W NEW MEXICO EAST - NAD 27 X=793380.69 LAT.= 32.04289566° N Y=380617.18 LONG.= 103.38650570° W 2541' FSL, 1870' FEL - SECTION 17 100' FNL, 549' FEL - LEASE LAST TAKE POINT (LTP) NEW MEXICO EAST - NAD 83 X=834643.85 LAT.= 32.02179223° N Y=372951.37 LONG.= 103.38694247° W NEW MEXICO EAST - NAD 27 X=793455.49 LAT.= 32.02166566° N Y=372894.19 LONG.= 103.38648276° W 100' FSL, 1870' FEL - SECTION 20 100' FSL, 551' FEL - LEASE BOTTOM HOLE LOCATION (BHL) NEW MEXICO EAST - NAD 83 X=834644.73 LAT.= 32.02154484° N Y=372861.38 LONG.= 103.38694216° W NEW MEXICO EAST - NAD 27 X=793456.38 LAT.= 32.02141827° N Y=372804.20 LONG.= 103.38648246° W 10' FSL, 1870' FEL - SECTION 20 10' FSL, 551' FEL - LEASE	17 OPERATOR CERTIFICATION I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division. Signature: <i>[Signature]</i> Date: 11/8/2021 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: 01/15/2020 Signature and Seal of Professional Surveyor: <i>[Signature]</i> Certificate Number: 25036
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Titus Oil & Gas Production, LLC - Cattlemen Fed Com 513H

1. Geologic Formations

TVD of target	13,065' EOL	Pilot hole depth	NA
MD at TD:	21,414'	Deepest expected fresh water:	400'

Formation	Depth (TVD) from KB	Water/Mineral Bearing/ Target Zone?	Hazards*
Quaternary Fill	Surface	Water	
Rustler	1116	Water	
Top of Salt	1612	Salt	
Base of Salt	5088	Salt	
Lamar	5415	Salt Water	
Delaware	5447	Salt Water	
Bone Spring Lime	9331	Oil/Gas	
1st Bone Spring	10551	Oil/Gas	
2nd Bone Spring	11070	Oil/Gas	
3rd Bone Spring	12204	Oil/Gas	
Wolfcamp	12571	Oil/Gas	
Wolfcamp X Sand	12585	Oil/Gas	
Wolfcamp Y Sand	12646	Oil/Gas	
Wolfcamp A	12686	Oil/Gas	
Wolfcamp B	12989	Target Oil/Gas	

2. Casing Program

Hole Size	Casing Interval		Csg. Size	Weight (lbs)	Grade	Conn.	SF Collapse	SF Burst	SF Body
	From	To							
13.5"	0	1145	10.75"	45.5	J55	BTC	3.99	0.80	13.72
9.875"	0	12200	7.625"	29.7	HCL80	BTC	1.16	1.03	2.00
6.75"	0	12000	5.5"	20	P110	BTC	1.81	1.88	3.10
6.75"	12000	21,414	5"	18	P110	BTC	1.81	1.88	3.10
BLM Minimum Safety Factor							1.125	1	1.6 Dry 1.8 Wet

Intermediate casing will be kept at least 1/3 full while running casing to mitigate collapse.
 Surface burst based on 0.7 frac gradient at the shoe with Gas Gradient 0.1 psi/ft to surface and
 All casing strings will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.h

The 5" casing will be run back 200' into the intermediate casing to ensure the coupling OD clearance is greater than .422" for the cement bond tie in.

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

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3. Cementing Program

Casing	# Sks	Wt. lb/ gal	Yld ft3/ sack	H ₂ O gal/sk	500# Comp. Strength (hours)	Slurry Description
Surf.	250	13.5	1.75	9	12	Lead: Class C + 4% Gel + 1% CaCl ₂
	250	14.8	1.34	6.34	8	Tail: Class C + 2% CaCl ₂
Int	900	10.3	3.6	22.95	16	TXI Lightweight Blend
	250	15.0	1.27	5.72	8	Tail: Class H
Prod	350	11.9	2.5	19	72	Lead: 50:50:10 H Blend
	950	14.2	1.3	6.2	19	Tail: 50:50:2 Class H Blend

Contingency remediation cement plan for intermediate casing if cmt is not circulated to surface:1st Stage - Bradenhead Stage Notes

Operator will pump 1000+ sx of Class C and allow cement to fall into place. Operator will not put any fluid on top of the cement after the fall. This will leave annuls filled with air to TOC. We will WOC +/- 2 hrs (or when surface samples are firm enough) to ensure cement is set up. TOC will be above the Lamar allowing for the fill up stage.

2nd Stage - Fill Up Stage Notes

After WOC to allow the Bradenhead Stage to set up, operator will proceed with the Fill Up Stage. Since there is only air in the annulus (no fluid will be placed in annulus after bradenhead stage), we will pump cement with opposite valve set to allow air to displace out. Fill up cement will be mixed and pumped until returns are taken to surface to complete the fill up. This will confirm a solid column of cement in the annulus all the way to surface completing the top out job. Operator will WOC after cement returns have been taken to surface.

Casing String	TOC	% Excess
Surface	0'	50%
1 st Intermediate	0'	50%
Production	11,700'	35% OH in Lateral (KOP to EOL)

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4. Pressure Control Equipment

N	A variance is requested for the use of a diverter on the surface casing. See attached for schematic.
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BOP installed and tested before drilling which hole?	Size?	Min. Required WP	Type	x	Tested to:
9-7/8"	13-5/8"	3M	Annular	x	3000 psi
			Blind Ram		3M
			Pipe Ram		
			Double Ram		
			Other*		
6-3/4"	13-5/8"	10M	Annular	x	50% testing pressure
			Blind Ram	x	5M
			VBR Ram	x	
			VBR Ram	x	
			Other*		

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

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

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

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

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5. Mud Program

Depth		Type	Weight (ppg)	Viscosity	Water Loss
From	To				
0	Surf. Shoe	FW Gel	8.6 - 8.8	28-34	N/C
Surf csg	9-5/8" Int shoe	Nova N-Gauge	8.4 - 9	28-34	N/C
7-5/8" Int shoe	Lateral TD	OBM	10.8 - 11.8	35-45	<20

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

What will be used to monitor the loss or gain of fluid?	PVT/Pason/Visual Monitoring
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6. Logging and Testing Procedures

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

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

Titus Oil & Gas Production, LLC - Cattlemen Fed Com 513H

7. Drilling Conditions

Condition	Specify what type and where?
BH Pressure at deepest TVD	8020 psi at 13065' TVD
Abnormal Temperature	NO 185 Deg. F.

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

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

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

N H₂S is present

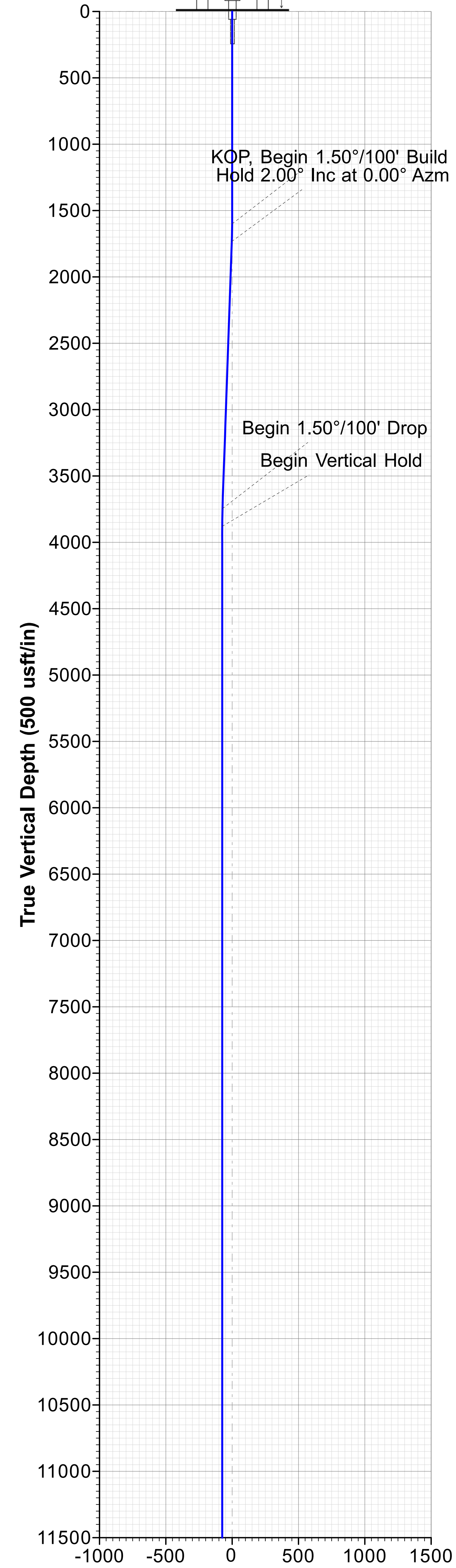
Y H₂S Plan attached

8. Other Facets of Operation

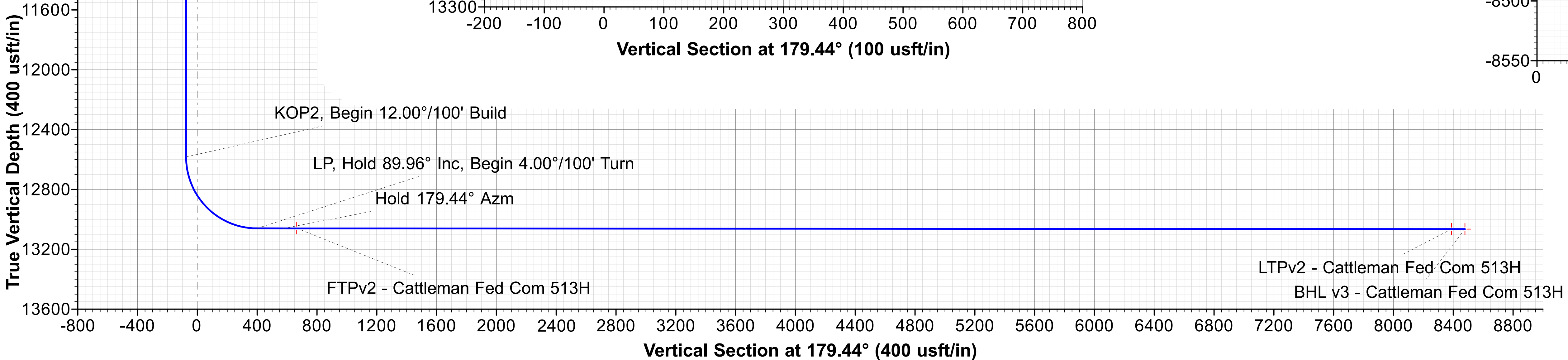
Y	Is it a walking operation?
N	Is casing pre-set?

x	H ₂ S Plan.
x	BOP & Choke Schematics.
x	Directional Plan
x	Multibowl Schematic

RKB @ 3253.50usft (Est KB)
Ground Level: 3227.00



Vertical Section at 179.44° (500 usft/in)



Map System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone Name: New Mexico Eastern Zone
Local Origin: Well 513H, Grid North
Latitude: 32° 2' 41.454348 N
Longitude: 103° 23' 13.927992 W
Grid East: 834489.87
Grid North: 381338.33
Scale Factor: 1.000
Geomagnetic Model: MVHD
Sample Date: 29-Feb-20
Magnetic Declination: 6.49°
Dip Angle from Horizontal: 59.66°
Magnetic Field Strength: 47596.72099337nT

To convert a Magnetic Direction to a Grid Direction, Add 5.99°
To convert a Magnetic Direction to a True Direction, Add 6.49° East
To convert a True Direction to a Grid Direction, Subtract 0.50°

WELL DETAILS

+N/-S	+E/-W	Northing	Ground Level:	Easting	Latitude	Longitude
0.00	0.00	381338.33	3227.00	834489.87	32° 2' 41.454348 N	103° 23' 13.927992 W

DESIGN TARGET DETAILS

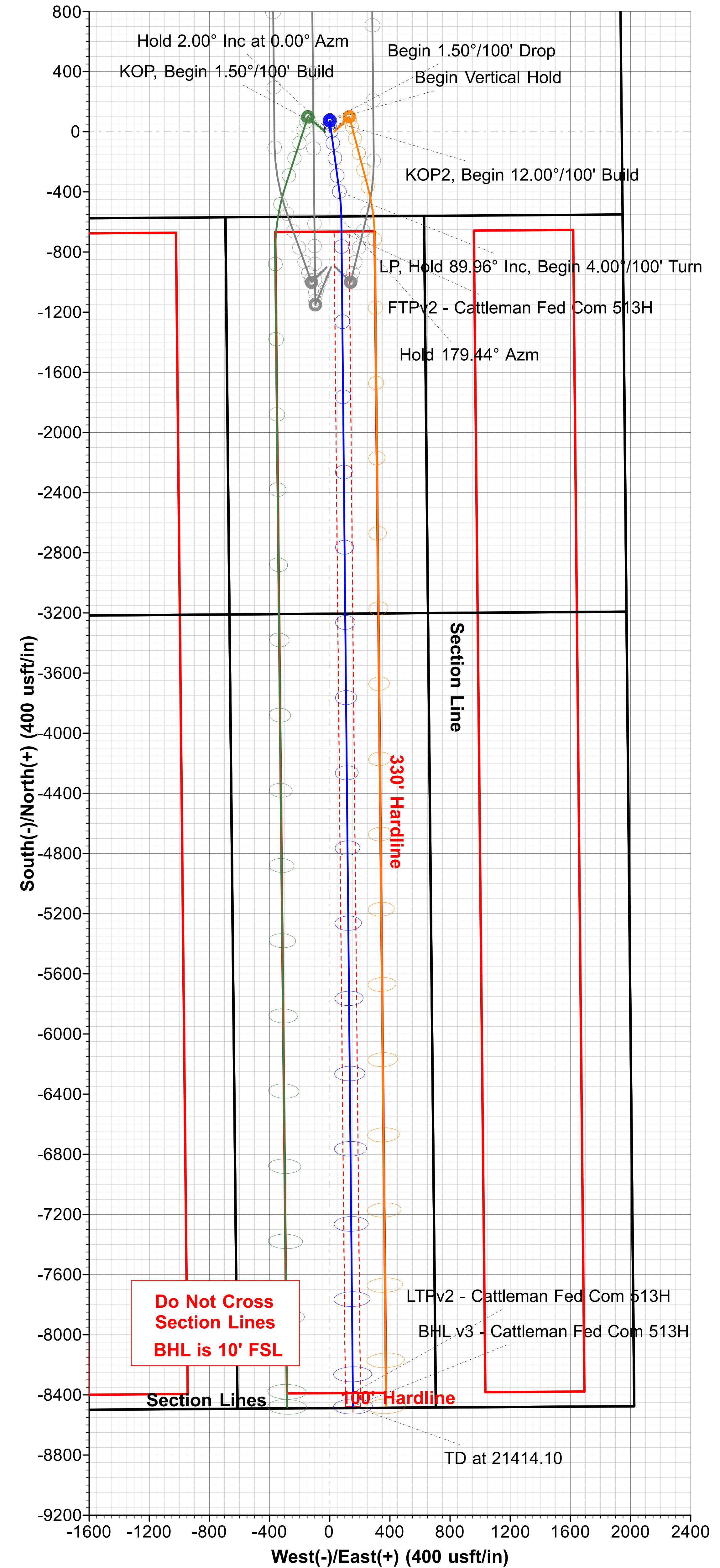
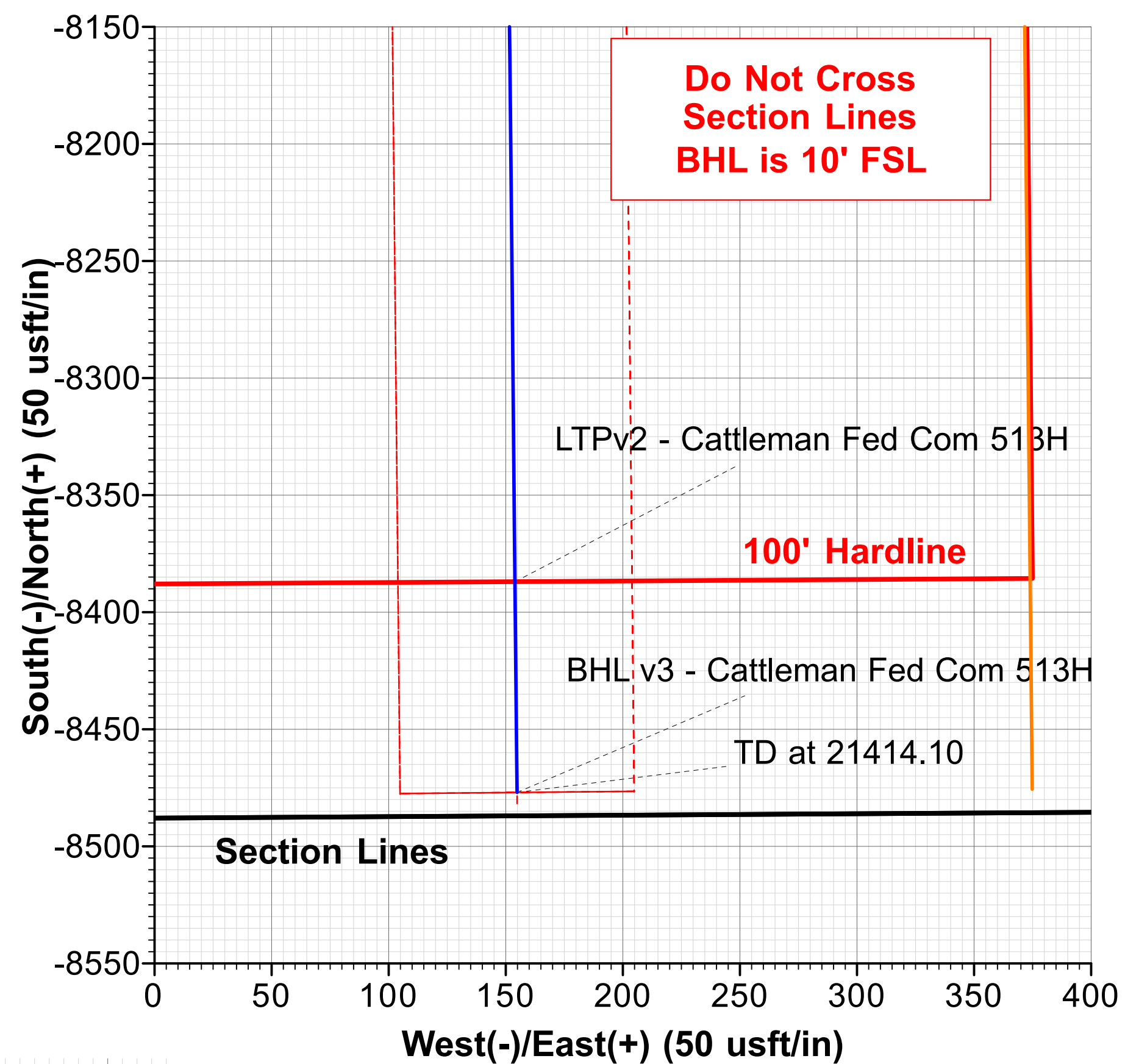
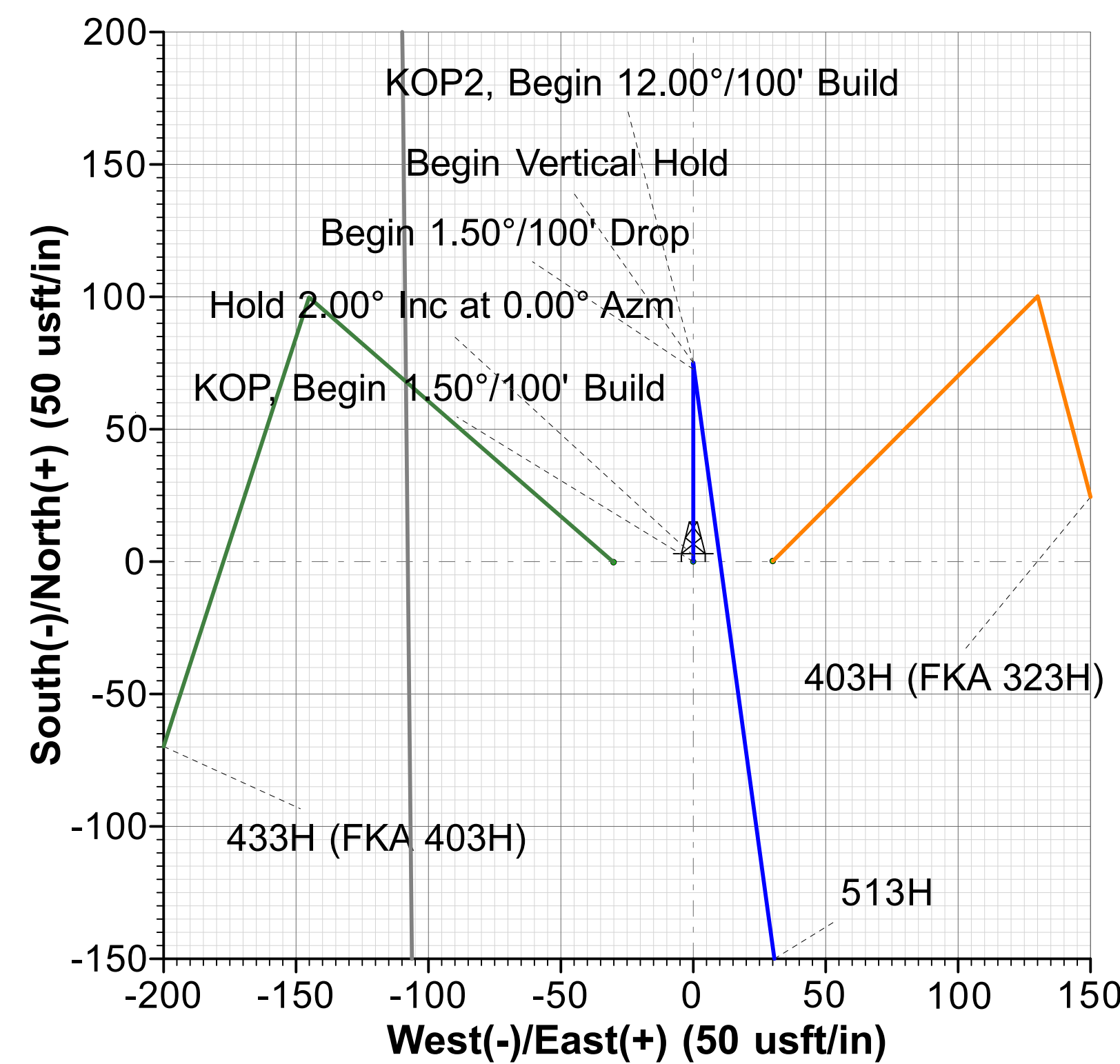
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
FTPv2 - Cattleman Fed Com 513H	13059.50	-663.76	78.83	380674.57	834568.70	32° 2' 34.879632 N	103° 23' 13.079760 W
LTPv2 - Cattleman Fed Com 513H	13065.44	-8386.95	153.98	372951.37	834643.85	32° 1' 18.452028 N	103° 23' 12.992892 W
BHL v3 - Cattleman Fed Com 513H	13065.50	-8476.95	154.86	372861.38	834644.73	32° 1' 17.561424 N	103° 23' 12.991776 W

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	Target	Annotation
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
2	1600.00	0.00	0.00	1600.00	0.00	0.00	0.00	0.00	0.00		KOP, Begin 1.50°/100' Build
3	1733.40	2.00	0.00	1733.38	2.33	0.00	1.50	0.00	-2.33		Hold 2.00° Inc at 0.00° Azm
4	3747.88	2.00	0.00	3746.62	72.67	0.00	0.00	0.00	-72.67		Begin 1.50°/100' Drop
5	3881.28	0.00	0.00	3880.00	75.00	0.00	1.50	180.00	-75.00		Begin Vertical Hold
6	12584.28	0.00	0.00	12583.00	75.00	0.00	0.00	0.00	-75.00		KOP2, Begin 12.00°/100' Build
7	13333.95	89.96	172.25	13060.46	-397.77	64.34	12.00	172.25	398.38		LP, Hold 89.96° Inc, Begin 4.00°/100' Turn
8	13513.65	89.96	179.44	13060.58	-576.88	77.36	4.00	89.97	577.61		Hold 179.44° Azm
9	21414.10	89.96	179.44	13065.50	-8476.95	154.86	0.00	0.00	8478.06	BHL v3 - Cattleman Fed Com 513H	TD at 21414.10

LEGEND

— 433H (FKA 323H), OH, Plan 3 11-04-21 V0
— 403H (FKA 323H), OH, Plan 3 11-04-21 V0
— 513H, OH, Plan 3 11-04-21 V0
— 433H (FKA 403H), OH, Plan 3 11-04-21 V0
— 413H (FKA 403H), OH, Plan 3 11-04-21 V0
— Plan 3 11-04-21





Titus Oil & Gas Production, LLC

Lea County, NM - (NAD83 NME)

Cattleman Fed Com (NAD83)

513H

OH

Plan: Plan 3 11-04-21

Standard Planning Report

04 November, 2021





Planning Report



Database:	USA Compass	Local Co-ordinate Reference:	Well 513H
Company:	Titus Oil & Gas Production, LLC	TVD Reference:	RKB @ 3253.50usft (Est KB)
Project:	Lea County, NM - (NAD83 NME)	MD Reference:	RKB @ 3253.50usft (Est KB)
Site:	Cattleman Fed Com (NAD83)	North Reference:	Grid
Well:	513H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan 3 11-04-21		

Project	Lea County, NM - (NAD83 NME)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site	Cattleman Fed Com (NAD83)					
Site Position:		Northing:	381,095.42 usft	Latitude:	32° 2' 39.166941 N	
From:	Map	Easting:	833,147.27 usft	Longitude:	103° 23' 29.550174 W	
Position Uncertainty:		0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.50 °

Well	513H					
Well Position	+N/-S	242.91 usft	Northing:	381,338.32 usft	Latitude:	32° 2' 41.454348 N
	+E/-W	1,342.60 usft	Easting:	834,489.87 usft	Longitude:	103° 23' 13.927992 W
Position Uncertainty		1.00 usft	Wellhead Elevation:		Ground Level:	3,227.00 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	MVHD	2/29/2020	6.49	59.66	47,596.72099337

Design	Plan 3 11-04-21			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	179.44

Plan Survey Tool Program	Date	11/4/2021		
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	21,414.10	Plan 3 11-04-21 (OH)	MWD+HDGM
				OWSG Rev.2 MWD + HDGM

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,733.40	2.00	0.00	1,733.38	2.33	0.00	1.50	1.50	0.00	0.00	
3,747.88	2.00	0.00	3,746.62	72.67	0.00	0.00	0.00	0.00	0.00	
3,881.28	0.00	0.00	3,880.00	75.00	0.00	1.50	-1.50	0.00	180.00	
12,584.28	0.00	0.00	12,583.00	75.00	0.00	0.00	0.00	0.00	0.00	
13,333.95	89.96	172.25	13,060.46	-397.77	64.34	12.00	12.00	0.00	172.25	
13,513.65	89.96	179.44	13,060.58	-576.88	77.36	4.00	0.00	4.00	89.97	
21,414.10	89.96	179.44	13,065.50	-8,476.95	154.86	0.00	0.00	0.00	0.00	BHL v3 - Cattleman F



Planning Report



Database:	USA Compass	Local Co-ordinate Reference:	Well 513H
Company:	Titus Oil & Gas Production, LLC	TVD Reference:	RKB @ 3253.50usft (Est KB)
Project:	Lea County, NM - (NAD83 NME)	MD Reference:	RKB @ 3253.50usft (Est KB)
Site:	Cattleman Fed Com (NAD83)	North Reference:	Grid
Well:	513H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan 3 11-04-21		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
KOP, Begin 1.50°/100' Build									
1,700.00	1.50	0.00	1,699.99	1.31	0.00	-1.31	1.50	1.50	0.00
1,733.40	2.00	0.00	1,733.37	2.33	0.00	-2.33	1.50	1.50	0.00
Hold 2.00° Inc at 0.00° Azm									
1,800.00	2.00	0.00	1,799.93	4.65	0.00	-4.65	0.00	0.00	0.00
1,900.00	2.00	0.00	1,899.87	8.15	0.00	-8.15	0.00	0.00	0.00
2,000.00	2.00	0.00	1,999.81	11.64	0.00	-11.64	0.00	0.00	0.00
2,100.00	2.00	0.00	2,099.75	15.13	0.00	-15.13	0.00	0.00	0.00
2,200.00	2.00	0.00	2,199.69	18.62	0.00	-18.62	0.00	0.00	0.00
2,300.00	2.00	0.00	2,299.63	22.11	0.00	-22.11	0.00	0.00	0.00
2,400.00	2.00	0.00	2,399.57	25.61	0.00	-25.60	0.00	0.00	0.00
2,500.00	2.00	0.00	2,499.51	29.10	0.00	-29.10	0.00	0.00	0.00
2,600.00	2.00	0.00	2,599.44	32.59	0.00	-32.59	0.00	0.00	0.00
2,700.00	2.00	0.00	2,699.38	36.08	0.00	-36.08	0.00	0.00	0.00
2,800.00	2.00	0.00	2,799.32	39.57	0.00	-39.57	0.00	0.00	0.00
2,900.00	2.00	0.00	2,899.26	43.06	0.00	-43.06	0.00	0.00	0.00
3,000.00	2.00	0.00	2,999.20	46.56	0.00	-46.55	0.00	0.00	0.00
3,100.00	2.00	0.00	3,099.14	50.05	0.00	-50.05	0.00	0.00	0.00
3,200.00	2.00	0.00	3,199.08	53.54	0.00	-53.54	0.00	0.00	0.00
3,300.00	2.00	0.00	3,299.02	57.03	0.00	-57.03	0.00	0.00	0.00
3,400.00	2.00	0.00	3,398.96	60.52	0.00	-60.52	0.00	0.00	0.00
3,500.00	2.00	0.00	3,498.90	64.02	0.00	-64.01	0.00	0.00	0.00
3,600.00	2.00	0.00	3,598.83	67.51	0.00	-67.50	0.00	0.00	0.00
3,700.00	2.00	0.00	3,698.77	71.00	0.00	-71.00	0.00	0.00	0.00
3,747.88	2.00	0.00	3,746.62	72.67	0.00	-72.67	0.00	0.00	0.00
Begin 1.50°/100' Drop									
3,800.00	1.22	0.00	3,798.72	74.14	0.00	-74.13	1.50	-1.50	0.00
3,881.28	0.00	0.00	3,880.00	75.00	0.00	-75.00	1.50	-1.50	0.00
Begin Vertical Hold									
12,584.28	0.00	0.00	12,583.00	75.00	0.00	-75.00	0.00	0.00	0.00
KOP2, Begin 12.00°/100' Build									
12,600.00	1.89	172.25	12,598.71	74.74	0.03	-74.74	12.00	12.00	0.00
12,700.00	13.89	172.25	12,697.59	61.17	1.88	-61.15	12.00	12.00	0.00
12,800.00	25.89	172.25	12,791.45	27.53	6.46	-27.47	12.00	12.00	0.00
12,900.00	37.89	172.25	12,876.21	-24.71	13.57	24.85	12.00	12.00	0.00
13,000.00	49.89	172.25	12,948.15	-93.28	22.90	93.50	12.00	12.00	0.00
13,100.00	61.89	172.25	13,004.13	-175.16	34.05	175.49	12.00	12.00	0.00
13,200.00	73.89	172.25	13,041.71	-266.79	46.52	267.24	12.00	12.00	0.00
13,300.00	85.89	172.25	13,059.23	-364.16	59.77	364.73	12.00	12.00	0.00
13,333.95	89.96	172.25	13,060.46	-397.77	64.34	398.38	12.00	12.00	0.00
LP, Hold 89.96° Inc, Begin 4.00°/100' Turn									
13,400.00	89.96	174.89	13,060.51	-463.40	71.74	464.08	4.00	0.00	4.00
13,500.00	89.96	178.89	13,060.58	-563.24	77.16	563.96	4.00	0.00	4.00
13,513.65	89.96	179.44	13,060.58	-576.88	77.36	577.61	4.00	0.00	4.00
Hold 179.44° Azm									
13,600.00	89.96	179.44	13,060.64	-663.23	78.20	663.96	0.00	0.00	0.00
13,700.00	89.96	179.44	13,060.70	-763.22	79.18	763.96	0.00	0.00	0.00
13,800.00	89.96	179.44	13,060.76	-863.22	80.17	863.96	0.00	0.00	0.00
13,900.00	89.96	179.44	13,060.82	-963.22	81.15	963.96	0.00	0.00	0.00
14,000.00	89.96	179.44	13,060.89	-1,063.21	82.13	1,063.96	0.00	0.00	0.00
14,100.00	89.96	179.44	13,060.95	-1,163.21	83.11	1,163.96	0.00	0.00	0.00



Planning Report



Database:	USA Compass	Local Co-ordinate Reference:	Well 513H
Company:	Titus Oil & Gas Production, LLC	TVD Reference:	RKB @ 3253.50usft (Est KB)
Project:	Lea County, NM - (NAD83 NME)	MD Reference:	RKB @ 3253.50usft (Est KB)
Site:	Cattlemen Fed Com (NAD83)	North Reference:	Grid
Well:	513H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan 3 11-04-21		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
14,200.00	89.96	179.44	13,061.01	-1,263.20	84.09	1,263.96	0.00	0.00	0.00	
14,300.00	89.96	179.44	13,061.07	-1,363.20	85.07	1,363.96	0.00	0.00	0.00	
14,400.00	89.96	179.44	13,061.14	-1,463.19	86.05	1,463.96	0.00	0.00	0.00	
14,500.00	89.96	179.44	13,061.20	-1,563.19	87.03	1,563.96	0.00	0.00	0.00	
14,600.00	89.96	179.44	13,061.26	-1,663.18	88.01	1,663.96	0.00	0.00	0.00	
14,700.00	89.96	179.44	13,061.32	-1,763.18	88.99	1,763.96	0.00	0.00	0.00	
14,800.00	89.96	179.44	13,061.38	-1,863.17	89.98	1,863.96	0.00	0.00	0.00	
14,900.00	89.96	179.44	13,061.45	-1,963.17	90.96	1,963.96	0.00	0.00	0.00	
15,000.00	89.96	179.44	13,061.51	-2,063.16	91.94	2,063.96	0.00	0.00	0.00	
15,100.00	89.96	179.44	13,061.57	-2,163.16	92.92	2,163.96	0.00	0.00	0.00	
15,200.00	89.96	179.44	13,061.63	-2,263.15	93.90	2,263.96	0.00	0.00	0.00	
15,300.00	89.96	179.44	13,061.70	-2,363.15	94.88	2,363.96	0.00	0.00	0.00	
15,400.00	89.96	179.44	13,061.76	-2,463.14	95.86	2,463.96	0.00	0.00	0.00	
15,500.00	89.96	179.44	13,061.82	-2,563.14	96.84	2,563.96	0.00	0.00	0.00	
15,600.00	89.96	179.44	13,061.88	-2,663.13	97.82	2,663.96	0.00	0.00	0.00	
15,700.00	89.96	179.44	13,061.94	-2,763.13	98.81	2,763.96	0.00	0.00	0.00	
15,800.00	89.96	179.44	13,062.01	-2,863.12	99.79	2,863.96	0.00	0.00	0.00	
15,900.00	89.96	179.44	13,062.07	-2,963.12	100.77	2,963.96	0.00	0.00	0.00	
16,000.00	89.96	179.44	13,062.13	-3,063.11	101.75	3,063.96	0.00	0.00	0.00	
16,100.00	89.96	179.44	13,062.19	-3,163.11	102.73	3,163.96	0.00	0.00	0.00	
16,200.00	89.96	179.44	13,062.26	-3,263.10	103.71	3,263.96	0.00	0.00	0.00	
16,300.00	89.96	179.44	13,062.32	-3,363.10	104.69	3,363.96	0.00	0.00	0.00	
16,400.00	89.96	179.44	13,062.38	-3,463.09	105.67	3,463.96	0.00	0.00	0.00	
16,500.00	89.96	179.44	13,062.44	-3,563.09	106.65	3,563.96	0.00	0.00	0.00	
16,600.00	89.96	179.44	13,062.50	-3,663.08	107.63	3,663.96	0.00	0.00	0.00	
16,700.00	89.96	179.44	13,062.57	-3,763.08	108.62	3,763.96	0.00	0.00	0.00	
16,800.00	89.96	179.44	13,062.63	-3,863.08	109.60	3,863.96	0.00	0.00	0.00	
16,900.00	89.96	179.44	13,062.69	-3,963.07	110.58	3,963.96	0.00	0.00	0.00	
17,000.00	89.96	179.44	13,062.75	-4,063.07	111.56	4,063.96	0.00	0.00	0.00	
17,100.00	89.96	179.44	13,062.82	-4,163.06	112.54	4,163.96	0.00	0.00	0.00	
17,200.00	89.96	179.44	13,062.88	-4,263.06	113.52	4,263.96	0.00	0.00	0.00	
17,300.00	89.96	179.44	13,062.94	-4,363.05	114.50	4,363.96	0.00	0.00	0.00	
17,400.00	89.96	179.44	13,063.00	-4,463.05	115.48	4,463.96	0.00	0.00	0.00	
17,500.00	89.96	179.44	13,063.06	-4,563.04	116.46	4,563.96	0.00	0.00	0.00	
17,600.00	89.96	179.44	13,063.13	-4,663.04	117.44	4,663.96	0.00	0.00	0.00	
17,700.00	89.96	179.44	13,063.19	-4,763.03	118.43	4,763.96	0.00	0.00	0.00	
17,800.00	89.96	179.44	13,063.25	-4,863.03	119.41	4,863.96	0.00	0.00	0.00	
17,900.00	89.96	179.44	13,063.31	-4,963.02	120.39	4,963.96	0.00	0.00	0.00	
18,000.00	89.96	179.44	13,063.38	-5,063.02	121.37	5,063.96	0.00	0.00	0.00	
18,100.00	89.96	179.44	13,063.44	-5,163.01	122.35	5,163.96	0.00	0.00	0.00	
18,200.00	89.96	179.44	13,063.50	-5,263.01	123.33	5,263.96	0.00	0.00	0.00	
18,300.00	89.96	179.44	13,063.56	-5,363.00	124.31	5,363.96	0.00	0.00	0.00	
18,400.00	89.96	179.44	13,063.62	-5,463.00	125.29	5,463.96	0.00	0.00	0.00	
18,500.00	89.96	179.44	13,063.69	-5,562.99	126.27	5,563.96	0.00	0.00	0.00	
18,600.00	89.96	179.44	13,063.75	-5,662.99	127.25	5,663.96	0.00	0.00	0.00	
18,700.00	89.96	179.44	13,063.81	-5,762.98	128.24	5,763.96	0.00	0.00	0.00	
18,800.00	89.96	179.44	13,063.87	-5,862.98	129.22	5,863.96	0.00	0.00	0.00	
18,900.00	89.96	179.44	13,063.94	-5,962.97	130.20	5,963.96	0.00	0.00	0.00	
19,000.00	89.96	179.44	13,064.00	-6,062.97	131.18	6,063.96	0.00	0.00	0.00	
19,100.00	89.96	179.44	13,064.06	-6,162.96	132.16	6,163.96	0.00	0.00	0.00	
19,200.00	89.96	179.44	13,064.12	-6,262.96	133.14	6,263.96	0.00	0.00	0.00	
19,300.00	89.96	179.44	13,064.18	-6,362.95	134.12	6,363.96	0.00	0.00	0.00	
19,400.00	89.96	179.44	13,064.25	-6,462.95	135.10	6,463.96	0.00	0.00	0.00	
19,500.00	89.96	179.44	13,064.31	-6,562.94	136.08	6,563.96	0.00	0.00	0.00	



Planning Report



Database:	USA Compass	Local Co-ordinate Reference:	Well 513H
Company:	Titus Oil & Gas Production, LLC	TVD Reference:	RKB @ 3253.50usft (Est KB)
Project:	Lea County, NM - (NAD83 NME)	MD Reference:	RKB @ 3253.50usft (Est KB)
Site:	Cattleman Fed Com (NAD83)	North Reference:	Grid
Well:	513H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan 3 11-04-21		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
19,600.00	89.96	179.44	13,064.37	-6,662.94	137.06	6,663.96	0.00	0.00	0.00	
19,700.00	89.96	179.44	13,064.43	-6,762.94	138.05	6,763.96	0.00	0.00	0.00	
19,800.00	89.96	179.44	13,064.50	-6,862.93	139.03	6,863.96	0.00	0.00	0.00	
19,900.00	89.96	179.44	13,064.56	-6,962.93	140.01	6,963.96	0.00	0.00	0.00	
20,000.00	89.96	179.44	13,064.62	-7,062.92	140.99	7,063.96	0.00	0.00	0.00	
20,100.00	89.96	179.44	13,064.68	-7,162.92	141.97	7,163.96	0.00	0.00	0.00	
20,200.00	89.96	179.44	13,064.74	-7,262.91	142.95	7,263.96	0.00	0.00	0.00	
20,300.00	89.96	179.44	13,064.81	-7,362.91	143.93	7,363.96	0.00	0.00	0.00	
20,400.00	89.96	179.44	13,064.87	-7,462.90	144.91	7,463.96	0.00	0.00	0.00	
20,500.00	89.96	179.44	13,064.93	-7,562.90	145.89	7,563.96	0.00	0.00	0.00	
20,600.00	89.96	179.44	13,064.99	-7,662.89	146.88	7,663.96	0.00	0.00	0.00	
20,700.00	89.96	179.44	13,065.06	-7,762.89	147.86	7,763.96	0.00	0.00	0.00	
20,800.00	89.96	179.44	13,065.12	-7,862.88	148.84	7,863.96	0.00	0.00	0.00	
20,900.00	89.96	179.44	13,065.18	-7,962.88	149.82	7,963.96	0.00	0.00	0.00	
21,000.00	89.96	179.44	13,065.24	-8,062.87	150.80	8,063.96	0.00	0.00	0.00	
21,100.00	89.96	179.44	13,065.30	-8,162.87	151.78	8,163.96	0.00	0.00	0.00	
21,200.00	89.96	179.44	13,065.37	-8,262.86	152.76	8,263.96	0.00	0.00	0.00	
21,300.00	89.96	179.44	13,065.43	-8,362.86	153.74	8,363.96	0.00	0.00	0.00	
21,400.00	89.96	179.44	13,065.49	-8,462.85	154.72	8,463.96	0.00	0.00	0.00	
21,414.10	89.96	179.44	13,065.50	-8,476.95	154.86	8,478.06	0.00	0.00	0.00	
TD at 21414.10										

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
FTPv2 - Cattleman Fed - hit/miss target - Shape	0.00	0.00	13,059.50	-663.76	78.83	380,674.57	834,568.70	32° 2' 34.879632 N 103° 23' 13.079760 W		
- plan misses target center by 1.30usft at 13600.53usft MD (13060.64 TVD, -663.76 N, 78.21 E)										
- Point										
LTPv2 - Cattleman Fed - plan hits target center - Point	0.00	0.00	13,065.44	-8,386.95	153.98	372,951.37	834,643.85	32° 1' 18.452028 N 103° 23' 12.992892 W		
BHL v3 - Cattleman Fed - plan hits target center - Rectangle (sides W100.00 H7,813.56 D0.00)	0.04	179.44	13,065.50	-8,476.95	154.86	372,861.37	834,644.73	32° 1' 17.561424 N 103° 23' 12.991776 W		

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")	
21,445.15		20" Casing	20	24	



Planning Report



Database:	USA Compass	Local Co-ordinate Reference:	Well 513H
Company:	Titus Oil & Gas Production, LLC	TVD Reference:	RKB @ 3253.50usft (Est KB)
Project:	Lea County, NM - (NAD83 NME)	MD Reference:	RKB @ 3253.50usft (Est KB)
Site:	Cattleman Fed Com (NAD83)	North Reference:	Grid
Well:	513H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan 3 11-04-21		

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
1,600.00	1,600.00	0.00	0.00	KOP, Begin 1.50°/100' Build
1,733.40	1,733.37	2.33	0.00	Hold 2.00° Inc at 0.00° Azm
3,747.88	3,746.62	72.67	0.00	Begin 1.50°/100' Drop
3,881.28	3,880.00	75.00	0.00	Begin Vertical Hold
12,584.28	12,583.00	75.00	0.00	KOP2, Begin 12.00°/100' Build
13,333.95	13,060.46	-397.77	64.34	LP, Hold 89.96° Inc, Begin 4.00°/100' Turn
13,513.65	13,060.58	-576.88	77.36	Hold 179.44° Azm
21,414.10	13,065.50	-8,476.95	154.86	TD at 21414.10

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 67613

CONDITIONS

Operator: Titus Oil & Gas Production, LLC 420 Throckmorton St, Ste 1150 Fort Worth, TX 76012	OGRID: 373986
	Action Number: 67613
	Action Type: [C-103] NOI Change of Plans (C-103A)

CONDITIONS

Created By	Condition	Condition Date
pkautz	None	12/17/2021