

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

Form C-101
August 1, 2011

Permit 292466

APPLICATION FOR PERMIT TO DRILL, RE-ENTER, DEEPEN, PLUGBACK, OR ADD A ZONE

1. Operator Name and Address V-F PETROLEUM INC P.O. Box 1889 Midland, TX 79702		2. OGRID Number 24010
		3. API Number 30-015-48056
4. Property Code 330182	5. Property Name COURTMAN 4 STATE COM	6. Well No. 231H

7. Surface Location

UL - Lot H	Section 4	Township 19S	Range 28E	Lot Idn H	Feet From 1980	N/S Line N	Feet From 100	E/W Line E	County Eddy
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8. Proposed Bottom Hole Location

UL - Lot E	Section 4	Township 19S	Range 28E	Lot Idn E	Feet From 2250	N/S Line N	Feet From 100	E/W Line W	County Eddy
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9. Pool Information

PALMILLO;BONE SPRING, SOUTHWEST	96413
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Additional Well Information

11. Work Type New Well	12. Well Type OIL	13. Cable/Rotary	14. Lease Type State	15. Ground Level Elevation 3530
16. Multiple N	17. Proposed Depth 13226	18. Formation Bone Spring	19. Contractor	20. Spud Date 3/1/2021
Depth to Ground water		Distance from nearest fresh water well		Distance to nearest surface water

☒ We will be using a closed-loop system in lieu of lined pits

21. Proposed Casing and Cement Program

Type	Hole Size	Casing Size	Casing Weight/ft	Setting Depth	Sacks of Cement	Estimated TOC
Surf	17.5	13.375	54.5	450	450	0
Int1	12.25	9.625	40	3500	825	0
Prod	8.75	5.5	17	13226	1550	3000

Casing/Cement Program: Additional Comments

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22. Proposed Blowout Prevention Program

Type	Working Pressure	Test Pressure	Manufacturer
Annular	3000	1500	TBD
Double Ram	3000	3000	TBD

23. I hereby certify that the information given above is true and complete to the best of my knowledge and belief. I further certify I have complied with 19.15.14.9 (A) NMAC ☒ and/or 19.15.14.9 (B) NMAC ☒ if applicable.	OIL CONSERVATION DIVISION	
Signature:		
Printed Name: Electronically filed by Pam O'Neil	Approved By: Kurt Simmons	
Title: Regulatory Manager	Title: Petroleum Specialist - A	
Email Address: pamo@vfpetroleum.com	Approved Date: 2/12/2021	Expiration Date: 2/12/2023
Date: 2/11/2021	Phone: 432-683-3344	Conditions of Approval Attached

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State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, New Mexico 87505

Form C-102

Revised August 1, 2011

Submit one copy to appropriate
District Office☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number	Pool Code 96413	Pool Name PALMILLO; BONE SPRING, SOUTHWEST
Property Code	Property Name COURTMAN 4 STATE COM	Well Number 231H
OGRID No. 24010	Operator Name V-F PETROLEUM INC.	Elevation 3530'

Surface Location

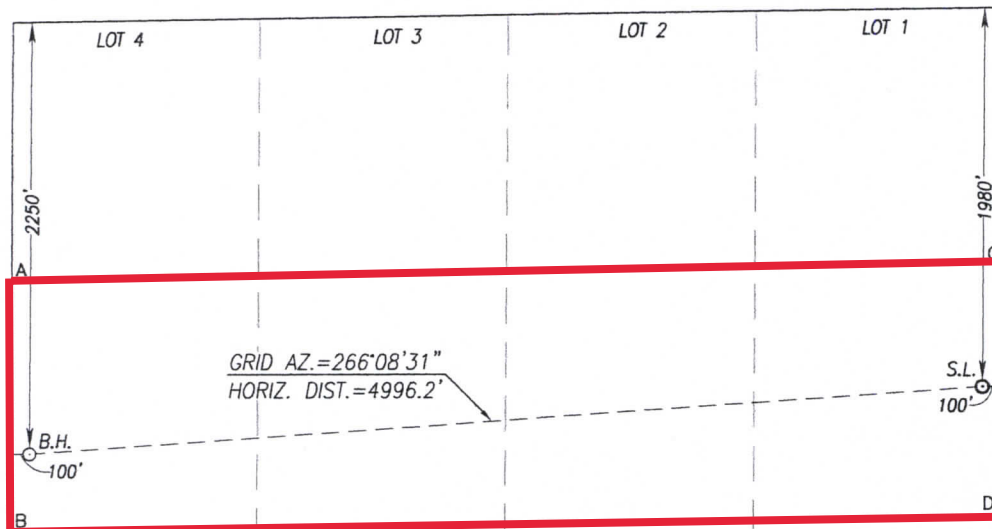
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
H	4	19-S	28-E		1980	NORTH	100	EAST	EDDY

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
E	4	19-S	28-E		2250	NORTH	100	WEST	EDDY

Dedicated Acres 160	Joint or Infill	Consolidation Code C	Order No.
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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



OPERATOR CERTIFICATION

I hereby certify that the information 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 mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

Jason L. Lodge 2/11/21
Signature Date

Printed Name

Jason@vfpetroleum.com

E-mail Address

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.

FEBRUARY 06, 2019

Date of Survey
Signature & Seal of Professional Surveyor:

Ronald J. Eidson 7/30/2019
Certificate Number Gary G. Eidson 12641
Ronald J. Eidson 3239

LSL Rel w.o.: 19.11.0115 JWSC W.O.: 19.13.0853

BOTTOM HOLE LOCATION

NAD 27 NME
Y= 614937.2 N
X= 544565.9 E
LAT.=32.690478° N
LONG.=104.188474° W

CORNER COORDINATES TABLE

NAD 27 NME
A - Y= 615846.8 N, X= 544475.2 E
B - Y= 614531.0 N, X= 544461.7 E
C - Y= 615921.3 N, X= 549655.4 E
D - Y= 614603.4 N, X= 549643.3 E

GEODETIC COORDINATES

NAD 27 NME
SURFACE LOCATION
Y= 615273.3 N
X= 549549.4 E
LAT.=32.691382° N
LONG.=104.172274° W

BOTTOM HOLE LOCATION

NAD 83 NME
Y= 614999.5 N
X= 585745.4 E
LAT.=32.690594° N
LONG.=104.188984° W

CORNER COORDINATES TABLE

NAD 83 NME
A - Y= 615909.1 N, X= 585654.7 E
B - Y= 614593.3 N, X= 585641.3 E
C - Y= 615983.6 N, X= 590834.9 E
D - Y= 614665.7 N, X= 590822.9 E

GEODETIC COORDINATES

NAD 83 NME
SURFACE LOCATION
Y= 615335.6 N
X= 590729.0 E
LAT.=32.691498° N
LONG.=104.172783° W

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GAS CAPTURE PLAN

Date: 2/12/2021

☒ Original

Operator & OGRID No.: [24010] V-F PETROLEUM INC

☐ Amended - Reason for
Amendment: _____

This Gas Capture Plan outlines actions to be taken by the Operator to reduce well/production facility flaring/venting for new completion (new drill, recomple to new zone, re-frac) activity.

Note: Form C-129 must be submitted and approved prior to exceeding 60 days allowed by Rule (Subsection A of 19.15.18.12 NMAC).

Well(s)/Production Facility – Name of facility

The well(s) that will be located at the production facility are shown in the table below.

Well Name	API	Well Location (ULSTR)	Footages	Expected MCF/D	Flared or Vented	Comments
COURTMAN 4 STATE COM #231H	30-015-48056	H-4-19S-28E	1980N 0100E	1500	Flared	

Gathering System and Pipeline Notification

Well(s) will be connected to a production facility after flowback operations are complete, if gas transporter system is in place. The gas produced from production facility is dedicated to DCP OPERATING COMPANY, LP and will be connected to DCP OPERATING COMPANY, LP High/Low Pressure gathering system located in Eddy County, New Mexico. It will require 1500' of pipeline to connect the facility to High/Low Pressure gathering system. V-F PETROLEUM INC provides (periodically) to DCP OPERATING COMPANY, LP a drilling, completion and estimated first production date for wells that are scheduled to be drilled in the foreseeable future. In addition, V-F PETROLEUM INC and DCP OPERATING COMPANY, LP have periodic conference calls to discuss changes to drilling and completion schedules. Gas from these wells will be processed at DCP OPERATING COMPANY, LP Processing Plant located in Sec. 20, Twn. 19S, Rng. 28E, Eddy County, New Mexico. The actual flow of the gas will be based on compression operating parameters and gathering system pressures.

Flowback Strategy

After the fracture treatment/completion operations, well(s) will be produced to temporary production tanks and gas will be flared or vented. During flowback, the fluids and sand content will be monitored. When the produced fluids contain minimal sand, the wells will be turned to production facilities. Gas sales should start as soon as the wells start flowing through the production facilities, unless there are operational issues on DCP OPERATING COMPANY, LP system at that time. Based on current information, it is V-F PETROLEUM INC's belief the system can take this gas upon completion of the well(s).

Safety requirements during cleanout operations from the use of underbalanced air cleanout systems may necessitate that sand and non-pipeline quality gas be vented and/or flared rather than sold on a temporary basis.

Alternatives to Reduce Flaring

Below are alternatives considered from a conceptual standpoint to reduce the amount of gas flared.

- Power Generation – On lease
 - Only a portion of gas is consumed operating the generator, remainder of gas will be flared
- Compressed Natural Gas – On lease
 - Gas flared would be minimal, but might be uneconomical to operate when gas volume declines
- NGL Removal – On lease
 - Plants are expensive, residue gas is still flared, and uneconomical to operate when gas volume declines

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Santa Fe, NM 87505

Form APD Comments

Permit 292466

PERMIT COMMENTS

Operator Name and Address: V-F PETROLEUM INC [24010] P.O. Box 1889 Midland, TX 79702		API Number: 30-015-48056
		Well: COURTMAN 4 STATE COM #231H
Created By	Comment	Comment Date

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Form APD Conditions

Permit 292466

PERMIT CONDITIONS OF APPROVAL

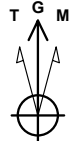
Operator Name and Address: V-F PETROLEUM INC [24010] P.O. Box 1889 Midland, TX 79702	API Number: 30-015-48056
	Well: COURTMAN 4 STATE COM #231H

OCD Reviewer	Condition
ksimmons	Notify OCD 24 hours prior to casing & cement
ksimmons	Will require a File As Drilled C-102 and a Directional Survey with the C-104
ksimmons	Cement is required to circulate on both surface and intermediate1 strings of casing
kpickford	Surface casing must be set 25' below top of Rustler Anhydrite or salt in order to seal off protectable water
kpickford	The Operator is to notify NMOCD by sundry (Form C-103) within ten (10) days of the well being spud
kpickford	The Operator is to notify NMOCD by sundry (Form C-103) within ten (10) days of the well being spud 2)- Drilling Sundries Form C-103 (Casing and Cement test are to be submitted within 10 days 3)- Completion Reports & Logs are to be submitted within 45 days 4)- Deviation / Directional Drill Survey are to be filed with or prior to C-104
kpickford	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
kpickford	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

V-F PETROLUEM

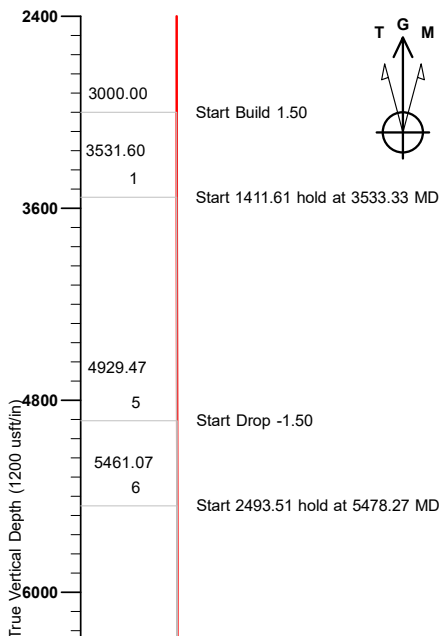
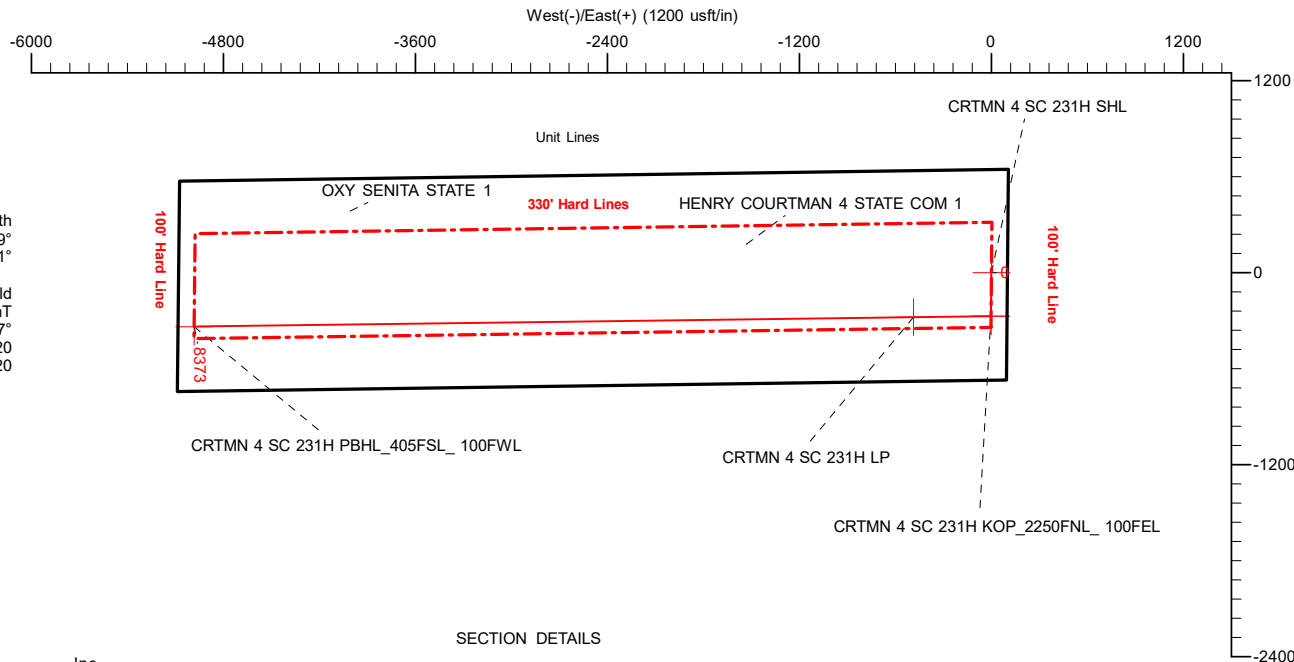
Project: Eddy County, NM (NAD27) NMEZ Grid
Site: Courtman 4 State COM
Well: 231H
Wellbore: Lateral
Design: Plan #1

3530+20 @ 3550.00usft (Planning)
NAD 1927 (NADCON CONUS)



Azimuths to Grid North
True North: -0.09°
Magnetic North: 6.91°

Magnetic Field
Strength: 47825.4nT
Dip Angle: 60.27°
Date: 04/24/2020
Model: IGRF2020

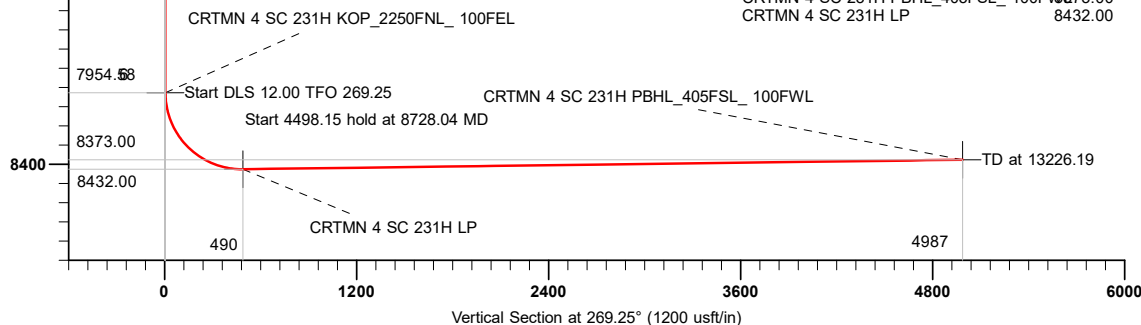


SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3000.00	0.00	0.00	3000.00	0.00	0.00	0.00	0.00	0.00
3533.33	8.00	180.52	3531.60	-37.17	-0.33	1.50	180.52	0.82
4944.94	8.00	180.52	4929.47	-233.62	-2.10	0.00	0.00	5.16
5478.27	0.00	0.00	5461.07	-270.79	-2.44	1.50	180.00	5.98
7971.78	0.00	0.00	7954.58	-270.79	-2.44	0.00	0.00	5.98
8728.04	90.75	269.25	8432.00	-277.13	-486.13	12.00	269.25	489.71
13226.19	90.75	269.25	8373.00	-336.10	-4983.50	0.00	0.00	4987.47

TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting
CRTMN 4 SC 231H FTP_2250FNL_100FEL	0.00	-270.79	-2.44	615002.51	549546.96
CRTMN 4 SC 231H SHL	0.00	0.00	0.00	615273.30	549549.40
CRTMN 4 SC 231H KOP_2250FNL_100FEL	7954.58	-270.79	-2.44	615002.51	549546.96
CRTMN 4 SC 231H PBHL_405FSL_100FWL	8432.00	-336.10	-4983.50	614937.20	544565.90
CRTMN 4 SC 231H LP	8432.00	-277.13	-486.13	614996.17	549063.27



To convert a Magnetic Direction to a Grid Direction, Add 6.91°
To convert a Magnetic Direction to a True Direction, Add 6.99° East
Magnetic North is 6.91° East of Grid North (Magnetic Convergence)
Magnetic North is 6.99° East of True North (Magnetic Declination)

Plan: Plan #1 (231H/Lateral)
Created By: Mekka Williams
eSolina Well Design
mekka@esolinawelldesign.com
12:35, April 27 2020

TRUE PERFORMANCE DIRECTIONAL
5075 E 52ND ST, ODESSA TX 79762
903-777-6827



Planning Report

Database:	TP_EDM	Local Co-ordinate Reference:	Well 231H
Company:	V-F PETROLUEM	TVD Reference:	3530+20 @ 3550.00usft (Planning)
Project:	Eddy County, NM (NAD27) NMEZ Grid	MD Reference:	3530+20 @ 3550.00usft (Planning)
Site:	Courtman 4 State COM	North Reference:	Grid
Well:	231H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Lateral		
Design:	Plan #1		

Project	Eddy County, NM (NAD27) NMEZ Grid		
Map System:	US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico East 3001		

Site	Courtman 4 State COM		
Site Position:		Northing:	615,273.30 usft
From:	Map	Easting:	549,549.40 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13.20 in
		Latitude:	32° 41' 28.974 N
		Longitude:	104° 10' 20.185 W
		Grid Convergence:	0.09 °

Well	231H		
Well Position	+N/-S	0.00 usft	Northing: 615,273.30 usft
	+E/-W	0.00 usft	Easting: 549,549.40 usft
Position Uncertainty	0.00 usft	Wellhead Elevation:	Latitude: 32° 41' 28.974 N
			Longitude: 104° 10' 20.185 W
			Ground Level: 3,530.00 usft

Wellbore	Lateral				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2020	04/24/20	6.99	60.27	47,825

Design	Plan #1			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	269.25

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
3,000.00	0.00	0.00	3,000.00	0.00	0.00	0.00	0.00	0.00	0.00	
3,533.33	8.00	180.52	3,531.60	-37.17	-0.33	1.50	1.50	0.00	180.52	
4,944.94	8.00	180.52	4,929.47	-233.62	-2.10	0.00	0.00	0.00	0.00	
5,478.27	0.00	0.00	5,461.07	-270.79	-2.44	1.50	-1.50	0.00	180.00	
7,971.78	0.00	0.00	7,954.58	-270.79	-2.44	0.00	0.00	0.00	0.00	
8,728.04	90.75	269.25	8,432.00	-277.13	-486.13	12.00	12.00	-12.00	269.25	
13,226.19	90.75	269.25	8,373.00	-336.10	-4,983.50	0.00	0.00	0.00	0.00	CRTMN 4 SC 231H P

Planning Report

Database:	TP_EDM	Local Co-ordinate Reference:	Well 231H
Company:	V-F PETROLUEM	TVD Reference:	3530+20 @ 3550.00usft (Planning)
Project:	Eddy County, NM (NAD27) NMEZ Grid	MD Reference:	3530+20 @ 3550.00usft (Planning)
Site:	Courtman 4 State COM	North Reference:	Grid
Well:	231H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Lateral		
Design:	Plan #1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CRTMN 4 SC 231H FTP_2250FNL_100FEL - CRTMN 4 SC 231H SHL									
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	0.00	0.00	1,900.00	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
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00
2,300.00	0.00	0.00	2,300.00	0.00	0.00	0.00	0.00	0.00	0.00
2,400.00	0.00	0.00	2,400.00	0.00	0.00	0.00	0.00	0.00	0.00
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00
2,600.00	0.00	0.00	2,600.00	0.00	0.00	0.00	0.00	0.00	0.00
2,700.00	0.00	0.00	2,700.00	0.00	0.00	0.00	0.00	0.00	0.00
2,800.00	0.00	0.00	2,800.00	0.00	0.00	0.00	0.00	0.00	0.00
2,900.00	0.00	0.00	2,900.00	0.00	0.00	0.00	0.00	0.00	0.00
3,000.00	0.00	0.00	3,000.00	0.00	0.00	0.00	0.00	0.00	0.00
3,100.00	1.50	180.52	3,099.99	-1.31	-0.01	0.03	1.50	1.50	0.00
3,200.00	3.00	180.52	3,199.91	-5.23	-0.05	0.12	1.50	1.50	0.00
3,300.00	4.50	180.52	3,299.69	-11.77	-0.11	0.26	1.50	1.50	0.00
3,400.00	6.00	180.52	3,399.27	-20.92	-0.19	0.46	1.50	1.50	0.00
3,500.00	7.50	180.52	3,498.57	-32.68	-0.29	0.72	1.50	1.50	0.00
3,533.33	8.00	180.52	3,531.60	-37.17	-0.33	0.82	1.50	1.50	0.00
3,600.00	8.00	180.52	3,597.62	-46.45	-0.42	1.03	0.00	0.00	0.00
3,700.00	8.00	180.52	3,696.65	-60.37	-0.54	1.33	0.00	0.00	0.00
3,800.00	8.00	180.52	3,795.67	-74.28	-0.67	1.64	0.00	0.00	0.00
3,900.00	8.00	180.52	3,894.70	-88.20	-0.79	1.95	0.00	0.00	0.00
4,000.00	8.00	180.52	3,993.73	-102.12	-0.92	2.26	0.00	0.00	0.00
4,100.00	8.00	180.52	4,092.75	-116.03	-1.05	2.56	0.00	0.00	0.00
4,200.00	8.00	180.52	4,191.78	-129.95	-1.17	2.87	0.00	0.00	0.00
4,300.00	8.00	180.52	4,290.81	-143.87	-1.30	3.18	0.00	0.00	0.00
4,400.00	8.00	180.52	4,389.83	-157.78	-1.42	3.49	0.00	0.00	0.00
4,500.00	8.00	180.52	4,488.86	-171.70	-1.55	3.79	0.00	0.00	0.00
4,600.00	8.00	180.52	4,587.89	-185.62	-1.67	4.10	0.00	0.00	0.00
4,700.00	8.00	180.52	4,686.91	-199.53	-1.80	4.41	0.00	0.00	0.00
4,800.00	8.00	180.52	4,785.94	-213.45	-1.92	4.72	0.00	0.00	0.00
4,900.00	8.00	180.52	4,884.97	-227.37	-2.05	5.02	0.00	0.00	0.00
4,944.94	8.00	180.52	4,929.47	-233.62	-2.10	5.16	0.00	0.00	0.00
5,000.00	7.17	180.52	4,984.05	-240.89	-2.17	5.32	1.50	-1.50	0.00

Planning Report

Database:	TP_EDM	Local Co-ordinate Reference:	Well 231H
Company:	V-F PETROLUEM	TVD Reference:	3530+20 @ 3550.00usft (Planning)
Project:	Eddy County, NM (NAD27) NMEZ Grid	MD Reference:	3530+20 @ 3550.00usft (Planning)
Site:	Courtman 4 State COM	North Reference:	Grid
Well:	231H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Lateral		
Design:	Plan #1		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
5,100.00	5.67	180.52	5,083.42	-252.08	-2.27	5.57	1.50	-1.50	0.00	
5,200.00	4.17	180.52	5,183.05	-260.66	-2.35	5.76	1.50	-1.50	0.00	
5,300.00	2.67	180.52	5,282.86	-266.63	-2.40	5.89	1.50	-1.50	0.00	
5,400.00	1.17	180.52	5,382.81	-269.99	-2.43	5.97	1.50	-1.50	0.00	
5,478.27	0.00	0.00	5,461.07	-270.79	-2.44	5.98	1.50	-1.50	0.00	
5,500.00	0.00	0.00	5,482.80	-270.79	-2.44	5.98	0.00	0.00	0.00	
5,600.00	0.00	0.00	5,582.80	-270.79	-2.44	5.98	0.00	0.00	0.00	
5,700.00	0.00	0.00	5,682.80	-270.79	-2.44	5.98	0.00	0.00	0.00	
5,800.00	0.00	0.00	5,782.80	-270.79	-2.44	5.98	0.00	0.00	0.00	
5,900.00	0.00	0.00	5,882.80	-270.79	-2.44	5.98	0.00	0.00	0.00	
6,000.00	0.00	0.00	5,982.80	-270.79	-2.44	5.98	0.00	0.00	0.00	
6,100.00	0.00	0.00	6,082.80	-270.79	-2.44	5.98	0.00	0.00	0.00	
6,200.00	0.00	0.00	6,182.80	-270.79	-2.44	5.98	0.00	0.00	0.00	
6,300.00	0.00	0.00	6,282.80	-270.79	-2.44	5.98	0.00	0.00	0.00	
6,400.00	0.00	0.00	6,382.80	-270.79	-2.44	5.98	0.00	0.00	0.00	
6,500.00	0.00	0.00	6,482.80	-270.79	-2.44	5.98	0.00	0.00	0.00	
6,600.00	0.00	0.00	6,582.80	-270.79	-2.44	5.98	0.00	0.00	0.00	
6,700.00	0.00	0.00	6,682.80	-270.79	-2.44	5.98	0.00	0.00	0.00	
6,800.00	0.00	0.00	6,782.80	-270.79	-2.44	5.98	0.00	0.00	0.00	
6,900.00	0.00	0.00	6,882.80	-270.79	-2.44	5.98	0.00	0.00	0.00	
7,000.00	0.00	0.00	6,982.80	-270.79	-2.44	5.98	0.00	0.00	0.00	
7,100.00	0.00	0.00	7,082.80	-270.79	-2.44	5.98	0.00	0.00	0.00	
7,200.00	0.00	0.00	7,182.80	-270.79	-2.44	5.98	0.00	0.00	0.00	
7,300.00	0.00	0.00	7,282.80	-270.79	-2.44	5.98	0.00	0.00	0.00	
7,400.00	0.00	0.00	7,382.80	-270.79	-2.44	5.98	0.00	0.00	0.00	
7,500.00	0.00	0.00	7,482.80	-270.79	-2.44	5.98	0.00	0.00	0.00	
7,600.00	0.00	0.00	7,582.80	-270.79	-2.44	5.98	0.00	0.00	0.00	
7,700.00	0.00	0.00	7,682.80	-270.79	-2.44	5.98	0.00	0.00	0.00	
7,800.00	0.00	0.00	7,782.80	-270.79	-2.44	5.98	0.00	0.00	0.00	
7,900.00	0.00	0.00	7,882.80	-270.79	-2.44	5.98	0.00	0.00	0.00	
7,971.78	0.00	0.00	7,954.58	-270.79	-2.44	5.98	0.00	0.00	0.00	
CRTMN 4 SC 231H KOP_2250FNL_100FEL										
7,975.00	0.39	269.25	7,957.80	-270.79	-2.45	6.00	12.00	12.00	0.00	
8,000.00	3.39	269.25	7,982.78	-270.80	-3.27	6.82	12.00	12.00	0.00	
8,025.00	6.39	269.25	8,007.69	-270.83	-5.40	8.95	12.00	12.00	0.00	
8,050.00	9.39	269.25	8,032.45	-270.88	-8.83	12.38	12.00	12.00	0.00	
8,075.00	12.39	269.25	8,057.00	-270.94	-13.55	17.10	12.00	12.00	0.00	
8,100.00	15.39	269.25	8,081.26	-271.02	-19.55	23.10	12.00	12.00	0.00	
8,125.00	18.39	269.25	8,105.18	-271.11	-26.81	30.36	12.00	12.00	0.00	
8,150.00	21.39	269.25	8,128.69	-271.22	-35.31	38.86	12.00	12.00	0.00	
8,175.00	24.39	269.25	8,151.72	-271.35	-45.03	48.58	12.00	12.00	0.00	
8,200.00	27.39	269.25	8,174.21	-271.49	-55.95	59.50	12.00	12.00	0.00	
8,225.00	30.39	269.25	8,196.10	-271.65	-68.02	71.57	12.00	12.00	0.00	
8,250.00	33.39	269.25	8,217.32	-271.83	-81.23	84.78	12.00	12.00	0.00	
8,275.00	36.39	269.25	8,237.83	-272.01	-95.52	99.07	12.00	12.00	0.00	
8,300.00	39.39	269.25	8,257.55	-272.21	-110.87	114.42	12.00	12.00	0.00	
8,325.00	42.39	269.25	8,276.45	-272.43	-127.23	130.79	12.00	12.00	0.00	
8,350.00	45.39	269.25	8,294.47	-272.66	-144.56	148.12	12.00	12.00	0.00	
8,375.00	48.39	269.25	8,311.55	-272.90	-162.81	166.36	12.00	12.00	0.00	
8,400.00	51.39	269.25	8,327.66	-273.15	-181.92	185.48	12.00	12.00	0.00	
8,425.00	54.39	269.25	8,342.74	-273.41	-201.85	205.41	12.00	12.00	0.00	
8,450.00	57.39	269.25	8,356.76	-273.68	-222.55	226.11	12.00	12.00	0.00	
8,475.00	60.39	269.25	8,369.68	-273.96	-243.95	247.51	12.00	12.00	0.00	

Planning Report

Database:	TP_EDM	Local Co-ordinate Reference:	Well 231H
Company:	V-F PETROLUEM	TVD Reference:	3530+20 @ 3550.00usft (Planning)
Project:	Eddy County, NM (NAD27) NMEZ Grid	MD Reference:	3530+20 @ 3550.00usft (Planning)
Site:	Courtman 4 State COM	North Reference:	Grid
Well:	231H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Lateral		
Design:	Plan #1		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
8,500.00	63.39	269.25	8,381.46	-274.25	-265.99	269.56	12.00	12.00	0.00	
8,525.00	66.39	269.25	8,392.07	-274.54	-288.62	292.19	12.00	12.00	0.00	
8,550.00	69.39	269.25	8,401.48	-274.85	-311.78	315.35	12.00	12.00	0.00	
8,575.00	72.39	269.25	8,409.66	-275.16	-335.40	338.97	12.00	12.00	0.00	
8,600.00	75.39	269.25	8,416.60	-275.47	-359.41	362.99	12.00	12.00	0.00	
8,625.00	78.39	269.25	8,422.27	-275.79	-383.75	387.33	12.00	12.00	0.00	
8,650.00	81.39	269.25	8,426.66	-276.11	-408.36	411.94	12.00	12.00	0.00	
8,675.00	84.39	269.25	8,429.75	-276.44	-433.16	436.74	12.00	12.00	0.00	
8,700.00	87.39	269.25	8,431.55	-276.77	-458.09	461.68	12.00	12.00	0.00	
8,725.00	90.39	269.25	8,432.03	-277.09	-483.08	486.67	12.00	12.00	0.00	
8,728.05	90.75	269.25	8,432.00	-277.13	-486.13	489.72	11.98	11.98	0.00	
CRTMN 4 SC 231H LP										
8,800.00	90.75	269.25	8,431.06	-278.08	-558.07	561.66	0.00	0.00	0.00	
8,900.00	90.75	269.25	8,429.75	-279.39	-658.05	661.65	0.00	0.00	0.00	
9,000.00	90.75	269.25	8,428.44	-280.70	-758.04	761.65	0.00	0.00	0.00	
9,100.00	90.75	269.25	8,427.12	-282.01	-858.02	861.64	0.00	0.00	0.00	
9,200.00	90.75	269.25	8,425.81	-283.32	-958.00	961.63	0.00	0.00	0.00	
9,300.00	90.75	269.25	8,424.50	-284.63	-1,057.99	1,061.62	0.00	0.00	0.00	
9,400.00	90.75	269.25	8,423.19	-285.94	-1,157.97	1,161.61	0.00	0.00	0.00	
9,500.00	90.75	269.25	8,421.88	-287.25	-1,257.95	1,261.60	0.00	0.00	0.00	
9,600.00	90.75	269.25	8,420.57	-288.56	-1,357.93	1,361.59	0.00	0.00	0.00	
9,700.00	90.75	269.25	8,419.25	-289.88	-1,457.92	1,461.59	0.00	0.00	0.00	
9,800.00	90.75	269.25	8,417.94	-291.19	-1,557.90	1,561.58	0.00	0.00	0.00	
9,900.00	90.75	269.25	8,416.63	-292.50	-1,657.88	1,661.57	0.00	0.00	0.00	
10,000.00	90.75	269.25	8,415.32	-293.81	-1,757.86	1,761.56	0.00	0.00	0.00	
10,100.00	90.75	269.25	8,414.01	-295.12	-1,857.85	1,861.55	0.00	0.00	0.00	
10,200.00	90.75	269.25	8,412.70	-296.43	-1,957.83	1,961.54	0.00	0.00	0.00	
10,300.00	90.75	269.25	8,411.38	-297.74	-2,057.81	2,061.53	0.00	0.00	0.00	
10,400.00	90.75	269.25	8,410.07	-299.05	-2,157.80	2,161.53	0.00	0.00	0.00	
10,500.00	90.75	269.25	8,408.76	-300.36	-2,257.78	2,261.52	0.00	0.00	0.00	
10,600.00	90.75	269.25	8,407.45	-301.67	-2,357.76	2,361.51	0.00	0.00	0.00	
10,700.00	90.75	269.25	8,406.14	-302.98	-2,457.74	2,461.50	0.00	0.00	0.00	
10,800.00	90.75	269.25	8,404.82	-304.30	-2,557.73	2,561.49	0.00	0.00	0.00	
10,900.00	90.75	269.25	8,403.51	-305.61	-2,657.71	2,661.48	0.00	0.00	0.00	
11,000.00	90.75	269.25	8,402.20	-306.92	-2,757.69	2,761.47	0.00	0.00	0.00	
11,100.00	90.75	269.25	8,400.89	-308.23	-2,857.68	2,861.47	0.00	0.00	0.00	
11,200.00	90.75	269.25	8,399.58	-309.54	-2,957.66	2,961.46	0.00	0.00	0.00	
11,300.00	90.75	269.25	8,398.27	-310.85	-3,057.64	3,061.45	0.00	0.00	0.00	
11,400.00	90.75	269.25	8,396.95	-312.16	-3,157.62	3,161.44	0.00	0.00	0.00	
11,500.00	90.75	269.25	8,395.64	-313.47	-3,257.61	3,261.43	0.00	0.00	0.00	
11,600.00	90.75	269.25	8,394.33	-314.78	-3,357.59	3,361.42	0.00	0.00	0.00	
11,700.00	90.75	269.25	8,393.02	-316.09	-3,457.57	3,461.41	0.00	0.00	0.00	
11,800.00	90.75	269.25	8,391.71	-317.40	-3,557.56	3,561.41	0.00	0.00	0.00	
11,900.00	90.75	269.25	8,390.40	-318.72	-3,657.54	3,661.40	0.00	0.00	0.00	
12,000.00	90.75	269.25	8,389.08	-320.03	-3,757.52	3,761.39	0.00	0.00	0.00	
12,100.00	90.75	269.25	8,387.77	-321.34	-3,857.50	3,861.38	0.00	0.00	0.00	
12,200.00	90.75	269.25	8,386.46	-322.65	-3,957.49	3,961.37	0.00	0.00	0.00	
12,300.00	90.75	269.25	8,385.15	-323.96	-4,057.47	4,061.36	0.00	0.00	0.00	
12,400.00	90.75	269.25	8,383.84	-325.27	-4,157.45	4,161.35	0.00	0.00	0.00	
12,500.00	90.75	269.25	8,382.53	-326.58	-4,257.43	4,261.34	0.00	0.00	0.00	
12,600.00	90.75	269.25	8,381.21	-327.89	-4,357.42	4,361.34	0.00	0.00	0.00	
12,700.00	90.75	269.25	8,379.90	-329.20	-4,457.40	4,461.33	0.00	0.00	0.00	
12,800.00	90.75	269.25	8,378.59	-330.51	-4,557.38	4,561.32	0.00	0.00	0.00	
12,900.00	90.75	269.25	8,377.28	-331.82	-4,657.37	4,661.31	0.00	0.00	0.00	

Planning Report

Database:	TP_EDM	Local Co-ordinate Reference:	Well 231H
Company:	V-F PETROLUEM	TVD Reference:	3530+20 @ 3550.00usft (Planning)
Project:	Eddy County, NM (NAD27) NMEZ Grid	MD Reference:	3530+20 @ 3550.00usft (Planning)
Site:	Courtman 4 State COM	North Reference:	Grid
Well:	231H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Lateral		
Design:	Plan #1		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
13,000.00	90.75	269.25	8,375.97	-333.13	-4,757.35	4,761.30	0.00	0.00	0.00	
13,100.00	90.75	269.25	8,374.66	-334.45	-4,857.33	4,861.29	0.00	0.00	0.00	
13,200.00	90.75	269.25	8,373.34	-335.76	-4,957.31	4,961.28	0.00	0.00	0.00	
13,226.19	90.75	269.25	8,373.00	-336.10	-4,983.50	4,987.47	0.00	0.00	0.00	
CRTMN 4 SC 231H PBHL_405FSL_100FWL										

Design Targets										
Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
CRTMN 4 SC 231H FTF - plan misses target center by 270.80usft at 0.00usft MD (0.00 TVD, 0.00 N, 0.00 E) - Point	0.00	0.00	0.00	-270.79	-2.44	615,002.51	549,546.96	32° 41' 26.294 N	104° 10' 20.219 W	
CRTMN 4 SC 231H SHL - plan hits target center - Point	0.00	0.00	0.00	0.00	0.00	615,273.30	549,549.40	32° 41' 28.974 N	104° 10' 20.185 W	
CRTMN 4 SC 231H KOI - plan hits target center - Point	0.00	0.00	7,954.58	-270.79	-2.44	615,002.51	549,546.96	32° 41' 26.294 N	104° 10' 20.219 W	
CRTMN 4 SC 231H PBI - plan hits target center - Point	0.00	0.00	8,373.00	-336.10	-4,983.50	614,937.20	544,565.90	32° 41' 25.719 N	104° 11' 18.506 W	
CRTMN 4 SC 231H LP - plan misses target center by 0.01usft at 8728.05usft MD (8432.00 TVD, -277.13 N, -486.13 E) - Point	0.00	0.00	8,432.00	-277.13	-486.13	614,996.17	549,063.27	32° 41' 26.239 N	104° 10' 25.879 W	