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.

SUBMIT IN TRIPLICATE *- Other instructions on page 2*

5. Lease Serial No.

6. If Indian, Allottee or Tribe Name

7. If Unit of CA/Agreement, Name and/or No.

1. Type of Well
☐ Oil Well ☐ Gas Well ☐ Other

8. Well Name and No.

2. Name of Operator

9. API Well No.

3a. Address

3b. Phone No. *(include area code)*

10. Field and Pool or Exploratory Area

4. Location of Well *(Footage, Sec., T.,R.,M., or Survey Description)*

11. Country or Parish, State

12. CHECK THE APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION			
☐ Notice of Intent	☐ Acidize	☐ Deepen	☐ Production (Start/Resume)	☐ Water Shut-Off
	☐ Alter Casing	☐ Hydraulic Fracturing	☐ Reclamation	☐ Well Integrity
☐ Subsequent Report	☐ Casing Repair	☐ New Construction	☐ Recomplete	☐ Other
	☐ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon	
☐ Final Abandonment Notice	☐ Convert to Injection	☐ Plug Back	☐ 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 recomplete 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.)

14. I hereby certify that the foregoing is true and correct. Name *(Printed/Typed)*

Title

Signature Adrian Covarrubias

Date

THE SPACE FOR FEDERAL OR STATE OFICE USE

Approved by

Title

Date

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

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)

District I
1625 N. French Dr., Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone: (575) 748-1283 Fax: (575) 748-9720
District III
1000 Rio Brazos Road, Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

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

Form C-102
Revised August 1, 2011
Submit one copy to appropriate District Office

☑ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

[1] API Number	[2] Pool Code	[3] Pool Name
30-025-51245	17644	DIAMONDTAIL; BONE SPRING

[4] Property Code	[5] Property Name	[6] Well Number
333868	CATNIP EVERDEEN FEDERAL COM	503H

[7] OGRID No.	[8] Operator Name	[9] Elevation
372098	MARATHON OIL PERMIAN, LLC	3706'

[10] Surface Location

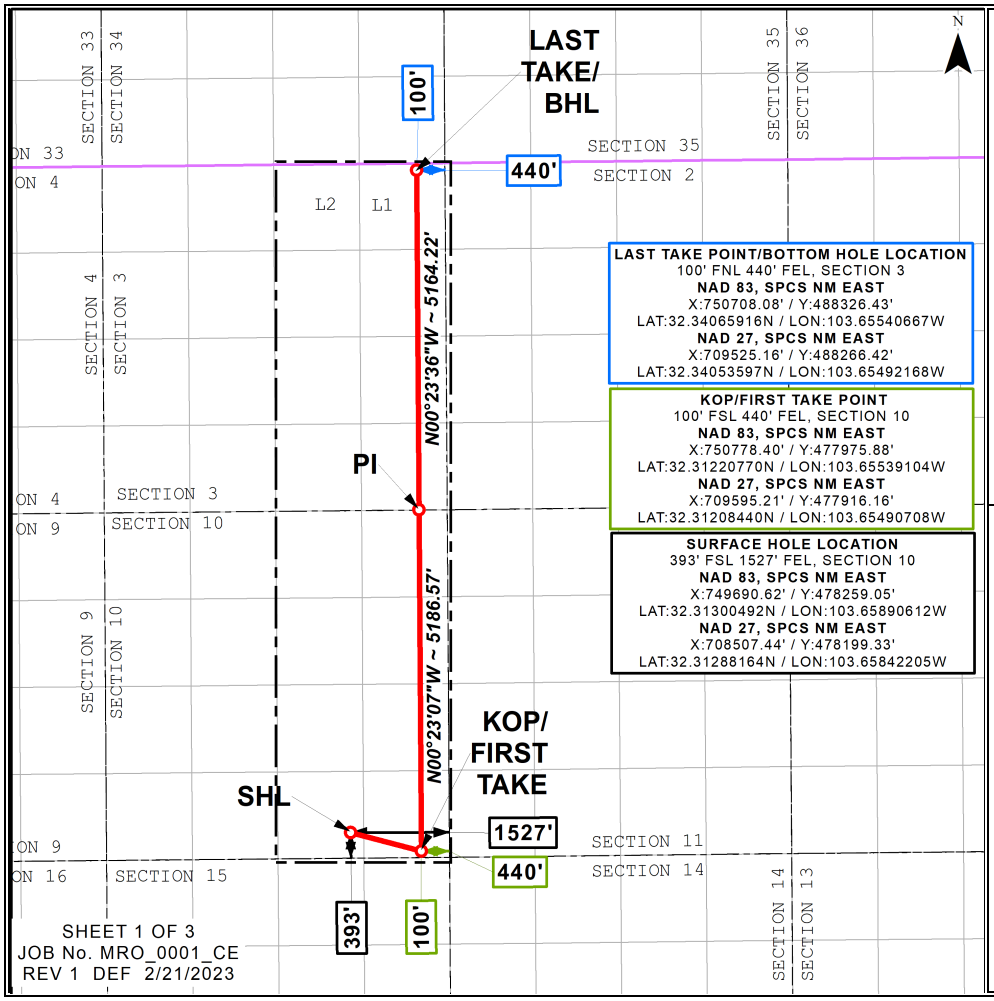
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
O	10	23S	32E		393	SOUTH	1527	EAST	LEA

[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
L 1	3	23S	32E		100	NORTH	440	EAST	LEA

[12] Dedicated Acres	[13] Joint or Infill	[14] Consolidation Code	[15] Order No.
640			

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.

Adrian Covarrubias 4/26/2023
Signature Date

Adrian Covarrubias
Printed Name

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.

MARCH 1, 2023
Date of Survey

Signature and Seal of Professional Surveyor:

LLOYD P. SHORT NEW MEXICO 21653 PROFESSIONAL SURVEYOR

LLOYD P. SHORT 21653
Certificate Number

Distances/areas relative to NAD 83 Combined Scale Factor: 0.99914426 Convergence Angle: 0°07'17.93119"

MARATHON OIL PERMIAN, LLC.

DRILLING AND OPERATIONS PLAN

WELL NAME & NUMBER: **CATNIP EVERDEEN FEDERAL COM 503H**

LOCATION: SECTION **10** TOWNSHIP **23S** RANGE **32E**

LEA COUNTY, **NEW MEXICO**

Section 1: GEOLOGICAL FORMATIONS

Name of Surface Formation: Permian

Elevation: 3706 *feet*

Estimated Tops of Important Geological Markers:

Formation	TVD (ft)	MD (ft)	Elevation (ft SS)	Lithologies	Mineral Resources	Producing Formation?
Rustler	1221	1248	2485	Anhydrite	Brine	No
Salado	1696	1723	2010	Salt/Anhydrite	Brine	No
Castile	3604	3631	102	Salt/Anhydrite	Brine	No
Base of Salt (BX)	4942	4969	-1236	Salt/Anhydrite	Brine	No
Lamar	4942	4969	-1236	Sandstone/Shale	None	No
Bell Canyon	4994	5021	-1288	Sandstone	Oil	No
Cherry Canyon	6117	6144	-2411	Sandstone	Oil	No
Brushy Canyon	7094	7121	-3388	Sandstone	Oil	No
Bone Spring Lime	8757	8784	-5051	Limestone	None	No
Upper Avalon Shale	8887	8914	-5181	Shale	Oil	Yes
1st Bone Spring Sand	9940	9967	-6234	Sandstone	Oil	Yes
2nd Bone Spring Carbonate	10242	10269	-6536	Limestone/Shale	None	No
2nd Bone Spring Sand	10607	10634	-6901	Sandstone	Oil	Yes
3rd Bone Spring Carbonate	11115	11142	-7409	Limestone	Oil	No
3rd Bone Spring Sand	11890	11917	-8184	Sandstone	Oil	Yes
Wolfcamp	12176	12203	-8470	Sandstone/Shale/Carbonates	Natural Gas / Oil	Yes
Wolfcamp A	12395	12422	-8689	Sandstone/Shale/Carbonates	Natural Gas / Oil	Yes
Wolfcamp B	12831	12858	-9125	Sandstone/Shale/Carbonates	Natural Gas / Oil	No
Wolfcamp C	12997	13024	-9291	Sandstone/Shale/Carbonates	Natural Gas / Oil	No
Wolfcamp D	13108	13135	-9402	Sandstone/Shale/Carbonates	Natural Gas / Oil	No

Section 2: BLOWOUT PREVENTER TESTING PROCEDURE

Pressure Rating (PSI): 10M

Rating Depth: 10000

Equipment: 13 5/8 BOP Annular (5,000 psi WP) and BOP Stack (10,000 psi WP) will be installed and tested before drilling all holes.

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: BOP/BOPE will be tested to 250 psi low and a high of 100% WP for the Annular and 5,000psi for the BOP Stack before drilling the intermediate hole, 10,000psi for the BOP Stacking before drilling the production hole. Testing will be conducted by an independent service company per Onshore Order 2 requirements. The System may be upgraded to a higher pressure but still tested to the working pressure listed in the Equipment Description above. If the system is upgraded all the components installed will be functional and tested.

Pipe rams and Blind rams will be operationally checked on each trip out of the hole, but not to exceed more than once per day. These checks will be noted on the daily tour sheets. Other accessories to the BOP equipment will include a Kelly cock, full opening safety valve / inside BOP and choke lines and choke manifold. See attached schematics.

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. 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. See attached schematic.

Section 3: CASING PROGRAM

String Type	Hole Size	Casing Size	Top Set MD	Bottom Set MD	Top Set TVD	Bottom Set TVD	Top Set MSL	Bottom Set MSL	Weight (lbs/ft)	Grade	Joint Type	Collapse SF	Burst SF	Joint SF Type	Joint SF	Body SF Type	Body SF
Surface	17.5	13.375	0	1318	0	1291	3706	2415	54.5	J55	BTC	5.22	1.81	BUOY	4.52	BUOY	4.52
Intermediate	12.25	9.625	0	10308	0	10220	3706	-6514	40	P110HC	BTC	1.20	1.42	BUOY	2.44	BUOY	2.44
Production	8.75	5.5	0	21135	0	10893	3706	-7187	23	P110HC	TLW	2.53	1.26	BUOY	2.22	BUOY	2.22
All casing strings will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.h												Safety Factors will Meet or Exceed					

Casing Condition: New
Casing Standard: API
Tapered String? No

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

Section 4: CEMENT PROGRAM

String Type	Lead/Tail	Top MD	Bottom MD	Quantity (sks)	Yield (ft³/sks)	Density (ppg)	Slurry Volume (ft³)	Excess (%)	Cement Type	Additives
Surface	Lead	0	1168	501	2.12	12.5	1063	25	Class C	Extender,Accelerator,LCM
Surface	Tail	1168	1318	99	1.32	14.8	130	25	Class C	Accelerator
Intermediate	Lead	0	9808	1799	2.18	12.4	3921	25	Class C	Extender,Accelerator,LCM
Intermediate	Tail	9808	10308	147	1.33	14.8	196	25	Class C	Retarder
Production	Tail	10008	21135	2132	1.68	13	3582	25	Class H	Retarder, Extender, Fluid Loss, Suspension Agent

Stage tool depth(s) will be adjusted based on hole conditions and cement volumes will be adjusted proportionally. Stage tool will be set a minimum of 50 feet below previous casing and a minimum of 200 feet above current shoe. Lab reports with the 500 psi compressive strength time for the cement will be onsite for review.

Pilot Hole? No
Pilot Hole Depth: N/A
KOP Depth: N/A
Plugging Procedure for Pilot Hole: N/A

Plug Top	Plug Bottom	Excess (%)	Quantity (sx)	Density (ppg)	Yield (ft3/sks)	Water gal/sk	Slurry Description and Cement Type

Section 5: CIRCULATING MEDIUM

Mud System Type: Closed
Will an air or gas system be used? No

Describe what will be on location to control well or mitigate other conditions:
The necessary mud products for additional weight and fluid loss control will be on location at all times.

Describe the mud monitoring system utilized:
Losses or gains in the mud system will be monitored visually/manually as well as with an electronic PVT.

Circulating Medium Table:

Top Depth	Bottom Depth	Mud Type	Min. Weight (ppg)	Max Weight (ppg)
0	1318	Water Based Mud	8.4	8.8
1318	10308	Brine or Oil Based Mud	9.2	10.2
10308	21135	Oil Based Mud	10.5	12.5

Section 6: TESTING, LOGGING, CORING

List of production tests including testing procedures, equipment and safety measures:
GR from TD to surface (horizontal well - vertical portion of hole)

List of open and cased hole logs run in the well:
GR while drilling from Intermediate casing shoe to TD.

Coring operation description for the well:
Run gamma-ray (GR) and corrected neutron log (CNL) or analogous to surface for future development of the area, one per shared well pad not to exceed 200' radial distance.

Section 7: ANTICIPATED PRESSURE

Anticipated Bottom Hole Pressure: **7080** PSI
Anticipated Bottom Hole Temperature: **195** ˚F
Anticipated Abnormal Pressure? **No**
Anticipated Abnormal Temperature? **No**

Potential Hazards:
H2S detection equipment will be in operation after drilling out the surface casing shoe until the production casing has been cemented. Breathing equipment will be on location from drilling out the surface shoe until production casing is cemented. If H2S is encountered the operator will comply with Onshore Order #6. Adequate flare lines will be installed off the mud/gas separator where gas may be flared safely. All personnel will be familiar with all aspects of safe operation of equipment being used to drill this well. See attached H2S Contingency Plan.

Section 8: OTHER INFORMATION

Auxiliary Well Control and Monitoring Equipment:
A Kelly cock will be in the drill string at all times. A full opening drill pipe stabbing valve having the appropriate connections will be on the rig floor unobstructed and readily accessible at all times.
Hydrogen Sulfide detection equipment will be in operation after drilling out the surface casing shoe until the production casing is cemented. Breathing equipment will be on location upon drilling the surface casing shoe until total depth is reached. If Hydrogen Sulfide is encountered, measured amounts and formations will be reported to the BLM.

Anticipated Starting Date and Duration of Operations:
Road and location construction will begin after the BLM has approved the APD. Anticipated spud date will be as soon as possible after BLM approval and as soon as a rig will be available. Move in operations and drilling is expected to take 30 days.

DRILL PLAN CHANGE REGISTER

CATNIP EVERDEEN FEDERAL COM 503H
SECTION 10, TOWNSHIP 23S, RANGE 32E
LEA COUNTY, NEW MEXICO

Original Document Date: Friday, April 21, 2023
Prepared By: Court Nelson
Submitted By: Adrian Covarrubias

Revised Date:	Monday, October 18, 2021	Submittal Date:	Monday, November 1, 2021
Revised By:	Court Nelson (Drilling Engineer)	Submittal Type:	NOI Change to AAPD Sundry Notice
	Matt Baker (Geologist)	Submitted By:	Melissa Szudera

Summary of Revisions:

Section	Description
2 - Casing	Removed second intermediate string
4 - Cement	Removed second intermediate string
5 - Mud	Removed second intermediate string

Revised Date:		Submittal Date:	
Revised By:		Submittal Type:	
		Submitted By:	

Summary of Revisions:

Section	Description

Revised Date:		Submittal Date:	
Revised By:		Submittal Type:	
		Submitted By:	

Summary of Revisions:

Section	Description

Revised Date:		Submittal Date:	
Revised By:		Submittal Type:	
		Submitted By:	

Summary of Revisions:

Section	Description

RKB @ 3729.60usft (Cactus 169)

Ground Level: 3706.00

Marathon Oil Corporation

Project: Lea County, NM (NAD27 NME)
Site: Catnip Everdeen
Well: Catnip Everdeen Federal Com 503H
Wellbore: OH
Design: Plan 1 04-13-23
Rig: Cactus 169

PHOENIX TECHNOLOGY SERVICES

T G M

Azimuths to Grid North
True North: -0.36°
Magnetic North: 5.92°

Magnetic Field
Strength: 47565.6nT
Dip Angle: 59.88°
Date: 6/10/2023
Model: MVHD

WELL DETAILS

3706.00

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	478199.33	708507.44	32° 18' 46.373935 N	103° 39' 30.319329 W

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
FTP - CEFC 503H	10893.60	-283.17	1087.77	477916.16	709595.21	32° 18' 43.503856 N	103° 39' 17.665486 W
LTP/BHL - CEFC 503H	10893.60	10067.09	1017.72	488266.42	709525.16	32° 20' 25.929501 N	103° 39' 17.718073 W
TP1 - CEFC 503H	10893.60	4902.32	1053.04	483101.65	709560.48	32° 19' 34.819236 N	103° 39' 17.687648 W

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target	Annotation
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.00		
2	1300.00	0.00	0.00	1300.00	0.00	0.00	0.00	0.000	0.00		KOP, Begin 2.00°/100' Build
3	1750.05	9.00	107.02	1748.20	-10.33	33.73	2.00	107.024	-10.56		Hold 9.00° Inc at 107.02° Azm
4	8572.66	9.00	107.02	8486.80	-322.84	1054.37	0.00	0.000	-330.01		Begin 2.00°/100' Drop
5	9022.71	0.00	0.00	8935.00	-333.17	1088.10	2.00	180.000	-340.57		Begin Vertical Hold
6	10408.36	0.00	0.00	10320.64	-333.17	1088.10	0.00	0.000	-340.57		KOP2, Begin 10.00°/100' Build
7	11308.36	90.00	359.62	10893.60	239.78	1084.27	10.00	359.616	232.39		LP, Hold 90.00° Inc at 359.62° Azm
8	15971.01	90.00	359.62	10893.60	4902.32	1053.04	0.00	0.000	4895.04	TP1 - CEFC 503H	Begin 2.00°/100' Turn
9	15971.41	90.00	359.61	10893.60	4902.72	1053.04	2.00	-90.000	4895.44		Begin 2.00°/100' Turn
10	21135.90	90.00	359.61	10893.60	10067.09	1017.72	0.00	0.000	10059.93	LTP/BHL - CEFC 503H	TD at 21135.90

Map System: US State Plane 1927 (Exact solution)
Datum: NAD 1927 (NADCON CONUS)
Ellipsoid: Clarke 1866
Zone Name: New Mexico East 3001

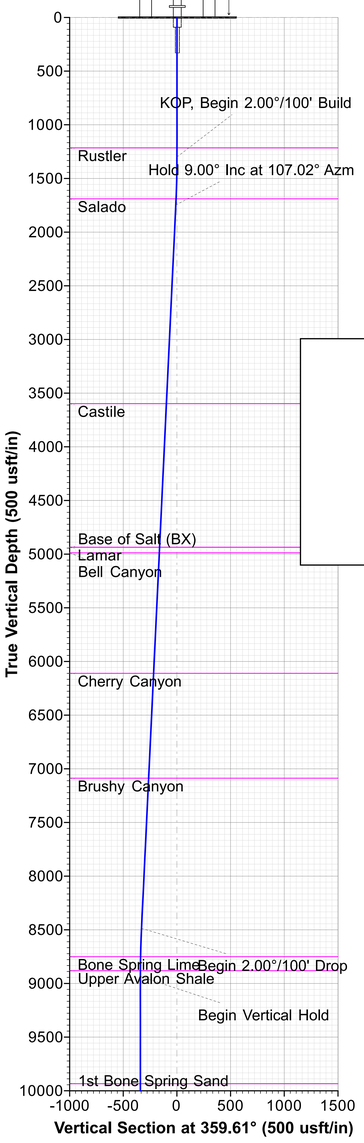
Local Origin: Well Catnip Everdeen Federal Com 503H, Grid North

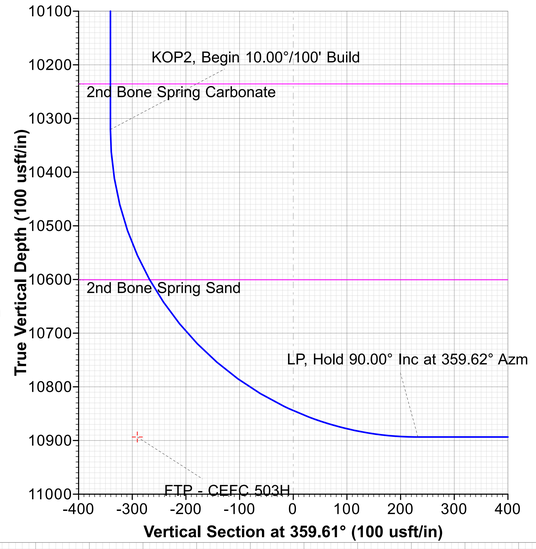
Latitude: 32° 18' 46.373935 N
Longitude: 103° 39' 30.319329 W

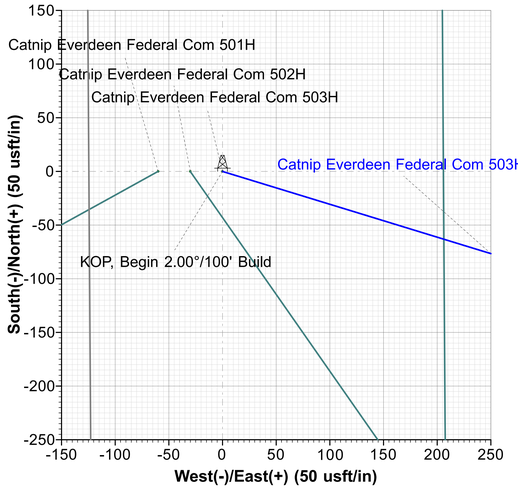
Grid East: 708507.44
Grid North: 478199.33
Scale Factor: 1.000

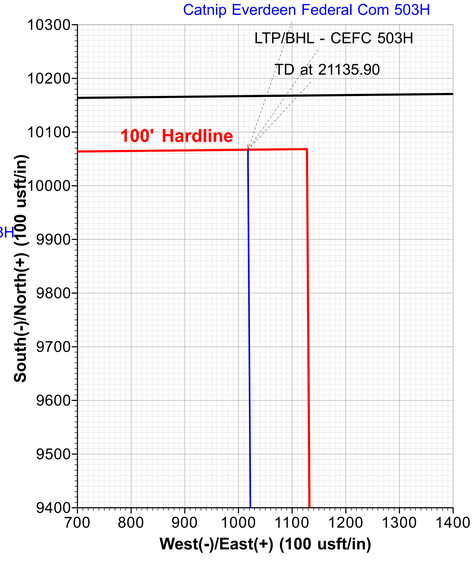
Geomagnetic Model: MVHD
Sample Date: 10-Jun-23
Magnetic Declination: 6.285°
Dip Angle from Horizontal: 59.880°
Magnetic Field Strength: 47565.57851259nT

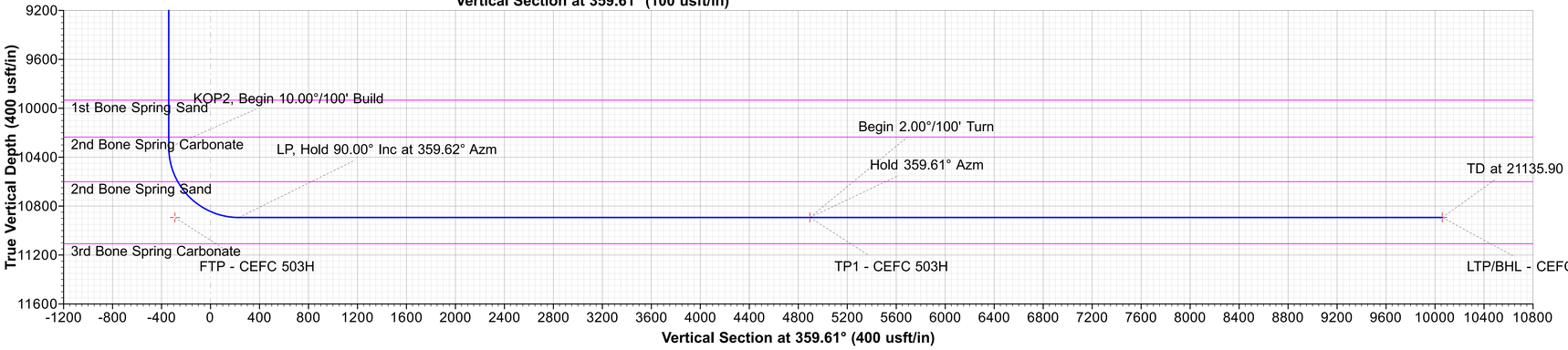
To convert a Magnetic Direction to a Grid Direction, Add 5.924°
To convert a Magnetic Direction to a True Direction, Add 6.285° East
To convert a True Direction to a Grid Direction, Subtract 0.361°

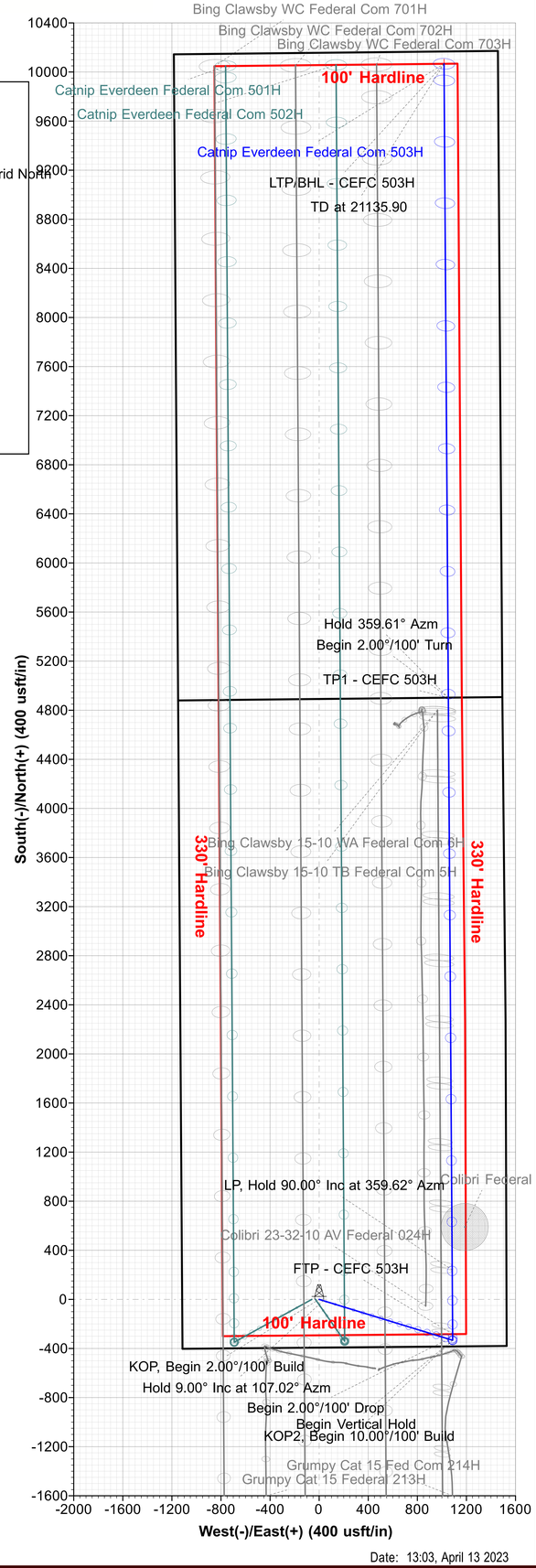












Date: 13:03, April 13 2023

PHOENIX
TECHNOLOGY SERVICES

Marathon Oil Permian LLC

Lea County, NM (NAD27 NME)
Catnip Everdeen
Catnip Everdeen Federal Com 503H

OH

Plan: Plan 1 04-13-23

Standard Planning Report

13 April, 2023

Marathon Oil Corporation

PHOENIX TECHNOLOGY SERVICES

Phoenix
Planning Report

Marathon Oil Corporation

Database:	USAEDMDB	**Local Co-ordinate Reference:**	Well Catnip Everdeen Federal Com 503H
Company:	Marathon Oil Permian LLC	**TVD Reference:**	RKB @ 3729.60usft (Cactus 169)
Project:	Lea County, NM (NAD27 NME)	**MD Reference:**	RKB @ 3729.60usft (Cactus 169)
Site:	Catnip Everdeen	**North Reference:**	Grid
Well:	Catnip Everdeen Federal Com 503H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan 1 04-13-23		

Project Lea County, NM (NAD27 NME)

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 Catnip Everdeen

Site Position:		**Northing:**	478,199.33 usft	**Latitude:**	32° 18' 46.377673 N
From:	Map	**Easting:**	708,447.44 usft	**Longitude:**	103° 39' 31.018451 W
Position Uncertainty:	0.00 usft	**Slot Radius:**	13-3/16 "		

Well Catnip Everdeen Federal Com 503H

Well Position	**+N/-S**	0.00 usft	**Northing:**	478,199.33 usft	**Latitude:**	32° 18' 46.373935 N
	+E/-W	0.00 usft	**Easting:**	708,507.44 usft	**Longitude:**	103° 39' 30.319329 W
Position Uncertainty		0.00 usft	**Wellhead Elevation:**	usft	**Ground Level:**	3,706.00 usft
Grid Convergence:		0.361 °				

Wellbore OH

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	MVHD	6/10/23	6.285	59.880	47,565.57851259

Design Plan 1 04-13-23

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	359.61

Plan Survey Tool Program **Date** 4/13/23

	Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	21,135.90	Plan 1 04-13-23 (OH)	MWD+IFR1+MS OWSG Rev. 2 MWD + IFR1	

PHOENIX TECHNOLOGY SERVICES

Phoenix
Planning Report

Marathon Oil Corporation

Database:	USAEDMDB	**Local Co-ordinate Reference:**	Well Catnip Everdeen Federal Com 503H
Company:	Marathon Oil Permian LLC	**TVD Reference:**	RKB @ 3729.60usft (Cactus 169)
Project:	Lea County, NM (NAD27 NME)	**MD Reference:**	RKB @ 3729.60usft (Cactus 169)
Site:	Catnip Everdeen	**North Reference:**	Grid
Well:	Catnip Everdeen Federal Com 503H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan 1 04-13-23		

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	
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.000	
1,750.05	9.00	107.02	1,748.20	-10.33	33.73	2.00	2.00	0.00	107.024	
8,572.66	9.00	107.02	8,486.80	-322.84	1,054.37	0.00	0.00	0.00	0.000	
9,022.71	0.00	0.00	8,935.00	-333.17	1,088.10	2.00	-2.00	0.00	180.000	
10,408.36	0.00	0.00	10,320.64	-333.17	1,088.10	0.00	0.00	0.00	0.000	
11,308.36	90.00	359.62	10,893.60	239.78	1,084.27	10.00	10.00	0.00	359.616	
15,971.01	90.00	359.62	10,893.60	4,902.32	1,053.04	0.00	0.00	0.00	0.000	TP1 - CEFC 503H
15,971.41	90.00	359.61	10,893.60	4,902.72	1,053.04	2.00	0.00	-2.00	-90.000	
21,135.90	90.00	359.61	10,893.60	10,067.09	1,017.72	0.00	0.00	0.00	0.000	LTP/BHL - CEFC 5(

PHOENIX TECHNOLOGY SERVICES

Phoenix

Planning Report

Marathon Oil Corporation

Database:	USAEDMDB	**Local Co-ordinate Reference:**	Well Catnip Everdeen Federal Com 503H
Company:	Marathon Oil Permian LLC	**TVD Reference:**	RKB @ 3729.60usft (Cactus 169)
Project:	Lea County, NM (NAD27 NME)	**MD Reference:**	RKB @ 3729.60usft (Cactus 169)
Site:	Catnip Everdeen	**North Reference:**	Grid
Well:	Catnip Everdeen Federal Com 503H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan 1 04-13-23		

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
1,214.60	0.00	0.00	1,214.60	0.00	0.00	0.00	0.00	0.00	0.00
Rustler									
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
KOP, Begin 2.00°/100' Build									
1,400.00	2.00	107.02	1,399.98	-0.51	1.67	-0.52	2.00	2.00	0.00
1,500.00	4.00	107.02	1,499.84	-2.04	6.67	-2.09	2.00	2.00	0.00
1,600.00	6.00	107.02	1,599.45	-4.59	15.01	-4.70	2.00	2.00	0.00
1,690.81	7.82	107.02	1,689.60	-7.79	25.45	-7.97	2.00	2.00	0.00
Salado									
1,700.00	8.00	107.02	1,698.70	-8.16	26.66	-8.34	2.00	2.00	0.00
1,750.05	9.00	107.02	1,748.20	-10.33	33.73	-10.56	2.00	2.00	0.00
Hold 9.00° Inc at 107.02° Azm									
1,800.00	9.00	107.02	1,797.54	-12.62	41.20	-12.90	0.00	0.00	0.00
1,900.00	9.00	107.02	1,896.30	-17.20	56.16	-17.58	0.00	0.00	0.00
2,000.00	9.00	107.02	1,995.07	-21.78	71.12	-22.26	0.00	0.00	0.00
2,100.00	9.00	107.02	2,093.84	-26.36	86.08	-26.94	0.00	0.00	0.00
2,200.00	9.00	107.02	2,192.61	-30.94	101.04	-31.63	0.00	0.00	0.00
2,300.00	9.00	107.02	2,291.38	-35.52	116.00	-36.31	0.00	0.00	0.00
2,400.00	9.00	107.02	2,390.15	-40.10	130.96	-40.99	0.00	0.00	0.00
2,500.00	9.00	107.02	2,488.92	-44.68	145.92	-45.67	0.00	0.00	0.00
2,600.00	9.00	107.02	2,587.68	-49.26	160.88	-50.35	0.00	0.00	0.00
2,700.00	9.00	107.02	2,686.45	-53.84	175.84	-55.04	0.00	0.00	0.00
2,800.00	9.00	107.02	2,785.22	-58.42	190.80	-59.72	0.00	0.00	0.00
2,900.00	9.00	107.02	2,883.99	-63.00	205.76	-64.40	0.00	0.00	0.00
3,000.00	9.00	107.02	2,982.76	-67.58	220.72	-69.08	0.00	0.00	0.00
3,100.00	9.00	107.02	3,081.53	-72.16	235.68	-73.77	0.00	0.00	0.00
3,200.00	9.00	107.02	3,180.30	-76.74	250.64	-78.45	0.00	0.00	0.00
3,300.00	9.00	107.02	3,279.06	-81.32	265.60	-83.13	0.00	0.00	0.00
3,400.00	9.00	107.02	3,377.83	-85.90	280.56	-87.81	0.00	0.00	0.00
3,500.00	9.00	107.02	3,476.60	-90.49	295.52	-92.49	0.00	0.00	0.00
3,600.00	9.00	107.02	3,575.37	-95.07	310.48	-97.18	0.00	0.00	0.00
3,622.51	9.00	107.02	3,597.60	-96.10	313.85	-98.23	0.00	0.00	0.00
Castile									
3,700.00	9.00	107.02	3,674.14	-99.65	325.44	-101.86	0.00	0.00	0.00
3,800.00	9.00	107.02	3,772.91	-104.23	340.40	-106.54	0.00	0.00	0.00
3,900.00	9.00	107.02	3,871.68	-108.81	355.36	-111.22	0.00	0.00	0.00
4,000.00	9.00	107.02	3,970.44	-113.39	370.32	-115.91	0.00	0.00	0.00
4,100.00	9.00	107.02	4,069.21	-117.97	385.28	-120.59	0.00	0.00	0.00
4,200.00	9.00	107.02	4,167.98	-122.55	400.24	-125.27	0.00	0.00	0.00
4,300.00	9.00	107.02	4,266.75	-127.13	415.20	-129.95	0.00	0.00	0.00
4,400.00	9.00	107.02	4,365.52	-131.71	430.16	-134.64	0.00	0.00	0.00
4,500.00	9.00	107.02	4,464.29	-136.29	445.12	-139.32	0.00	0.00	0.00
4,600.00	9.00	107.02	4,563.06	-140.87	460.08	-144.00	0.00	0.00	0.00
4,700.00	9.00	107.02	4,661.82	-145.45	475.03	-148.68	0.00	0.00	0.00
4,800.00	9.00	107.02	4,760.59	-150.03	489.99	-153.36	0.00	0.00	0.00
4,900.00	9.00	107.02	4,859.36	-154.61	504.95	-158.05	0.00	0.00	0.00
4,977.19	9.00	107.02	4,935.60	-158.15	516.50	-161.66	0.00	0.00	0.00
Base of Salt (BX) - Lamar									
5,000.00	9.00	107.02	4,958.13	-159.19	519.91	-162.73	0.00	0.00	0.00
5,029.84	9.00	107.02	4,987.60	-160.56	524.38	-164.13	0.00	0.00	0.00
Bell Canyon									
5,100.00	9.00	107.02	5,056.90	-163.77	534.87	-167.41	0.00	0.00	0.00

PHOENIX TECHNOLOGY SERVICES

Phoenix

Planning Report

Marathon Oil Corporation

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Project:	Lea County, NM (NAD27 NME)	**MD Reference:**	RKB @ 3729.60usft (Cactus 169)
Site:	Catnip Everdeen	**North Reference:**	Grid
Well:	Catnip Everdeen Federal Com 503H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan 1 04-13-23		

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)
5,200.00	9.00	107.02	5,155.67	-168.35	549.83	-172.09	0.00	0.00	0.00
5,300.00	9.00	107.02	5,254.44	-172.94	564.79	-176.78	0.00	0.00	0.00
5,400.00	9.00	107.02	5,353.20	-177.52	579.75	-181.46	0.00	0.00	0.00
5,500.00	9.00	107.02	5,451.97	-182.10	594.71	-186.14	0.00	0.00	0.00
5,600.00	9.00	107.02	5,550.74	-186.68	609.67	-190.82	0.00	0.00	0.00
5,700.00	9.00	107.02	5,649.51	-191.26	624.63	-195.50	0.00	0.00	0.00
5,800.00	9.00	107.02	5,748.28	-195.84	639.59	-200.19	0.00	0.00	0.00
5,900.00	9.00	107.02	5,847.05	-200.42	654.55	-204.87	0.00	0.00	0.00
6,000.00	9.00	107.02	5,945.82	-205.00	669.51	-209.55	0.00	0.00	0.00
6,100.00	9.00	107.02	6,044.58	-209.58	684.47	-214.23	0.00	0.00	0.00
6,166.84	9.00	107.02	6,110.60	-212.64	694.47	-217.36	0.00	0.00	0.00
Cherry Canyon									
6,200.00	9.00	107.02	6,143.35	-214.16	699.43	-218.92	0.00	0.00	0.00
6,300.00	9.00	107.02	6,242.12	-218.74	714.39	-223.60	0.00	0.00	0.00
6,400.00	9.00	107.02	6,340.89	-223.32	729.35	-228.28	0.00	0.00	0.00
6,500.00	9.00	107.02	6,439.66	-227.90	744.31	-232.96	0.00	0.00	0.00
6,600.00	9.00	107.02	6,538.43	-232.48	759.27	-237.64	0.00	0.00	0.00
6,700.00	9.00	107.02	6,637.20	-237.06	774.23	-242.33	0.00	0.00	0.00
6,800.00	9.00	107.02	6,735.96	-241.64	789.19	-247.01	0.00	0.00	0.00
6,900.00	9.00	107.02	6,834.73	-246.22	804.15	-251.69	0.00	0.00	0.00
7,000.00	9.00	107.02	6,933.50	-250.80	819.11	-256.37	0.00	0.00	0.00
7,100.00	9.00	107.02	7,032.27	-255.38	834.07	-261.06	0.00	0.00	0.00
7,156.02	9.00	107.02	7,087.60	-257.95	842.45	-263.68	0.00	0.00	0.00
Brushy Canyon									
7,200.00	9.00	107.02	7,131.04	-259.97	849.03	-265.74	0.00	0.00	0.00
7,300.00	9.00	107.02	7,229.81	-264.55	863.99	-270.42	0.00	0.00	0.00
7,400.00	9.00	107.02	7,328.58	-269.13	878.95	-275.10	0.00	0.00	0.00
7,500.00	9.00	107.02	7,427.34	-273.71	893.91	-279.78	0.00	0.00	0.00
7,600.00	9.00	107.02	7,526.11	-278.29	908.87	-284.47	0.00	0.00	0.00
7,700.00	9.00	107.02	7,624.88	-282.87	923.82	-289.15	0.00	0.00	0.00
7,800.00	9.00	107.02	7,723.65	-287.45	938.78	-293.83	0.00	0.00	0.00
7,900.00	9.00	107.02	7,822.42	-292.03	953.74	-298.51	0.00	0.00	0.00
8,000.00	9.00	107.02	7,921.19	-296.61	968.70	-303.20	0.00	0.00	0.00
8,100.00	9.00	107.02	8,019.96	-301.19	983.66	-307.88	0.00	0.00	0.00
8,200.00	9.00	107.02	8,118.72	-305.77	998.62	-312.56	0.00	0.00	0.00
8,300.00	9.00	107.02	8,217.49	-310.35	1,013.58	-317.24	0.00	0.00	0.00
8,400.00	9.00	107.02	8,316.26	-314.93	1,028.54	-321.93	0.00	0.00	0.00
8,500.00	9.00	107.02	8,415.03	-319.51	1,043.50	-326.61	0.00	0.00	0.00
8,572.66	9.00	107.02	8,486.80	-322.84	1,054.37	-330.01	0.00	0.00	0.00
Begin 2.00°/100' Drop									
8,600.00	8.45	107.02	8,513.82	-324.05	1,058.34	-331.25	2.00	-2.00	0.00
8,700.00	6.45	107.02	8,612.97	-327.85	1,070.74	-335.13	2.00	-2.00	0.00
8,800.00	4.45	107.02	8,712.51	-330.64	1,079.83	-337.98	2.00	-2.00	0.00
8,838.19	3.69	107.02	8,750.60	-331.43	1,082.42	-338.79	2.00	-2.00	0.00
Bone Spring Lime									
8,900.00	2.45	107.02	8,812.32	-332.40	1,085.59	-339.78	2.00	-2.00	0.00
8,968.31	1.09	107.02	8,880.60	-333.02	1,087.61	-340.41	2.00	-2.00	0.00
Upper Avalon Shale									
9,000.00	0.45	107.02	8,912.29	-333.14	1,088.02	-340.54	2.00	-2.00	0.00
9,022.71	0.00	0.00	8,935.00	-333.17	1,088.10	-340.57	2.00	-2.00	0.00
Begin Vertical Hold									
10,021.31	0.00	0.00	9,933.60	-333.17	1,088.10	-340.57	0.00	0.00	0.00
1st Bone Spring Sand									

PHOENIX TECHNOLOGY SERVICES

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Planning Report

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Wellbore:	OH		
Design:	Plan 1 04-13-23		

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)
10,323.31	0.00	0.00	10,235.60	-333.17	1,088.10	-340.57	0.00	0.00	0.00
2nd Bone Spring Carbonate									
10,408.36	0.00	0.00	10,320.64	-333.17	1,088.10	-340.57	0.00	0.00	0.00
KOP2, Begin 10.00°/100' Build									
10,500.00	9.16	359.62	10,411.90	-325.86	1,088.06	-333.25	10.00	10.00	0.00
10,600.00	19.16	359.62	10,508.73	-301.42	1,087.89	-308.81	10.00	10.00	0.00
10,700.00	29.16	359.62	10,599.85	-260.53	1,087.62	-267.93	10.00	10.00	0.00
10,700.86	29.25	359.62	10,600.60	-260.12	1,087.62	-267.51	10.00	10.00	0.00
2nd Bone Spring Sand									
10,800.00	39.16	359.62	10,682.49	-204.45	1,087.24	-211.85	10.00	10.00	0.00
10,900.00	49.16	359.62	10,754.14	-134.87	1,086.78	-142.26	10.00	10.00	0.00
11,000.00	59.16	359.62	10,812.61	-53.90	1,086.23	-61.30	10.00	10.00	0.00
11,100.00	69.16	359.62	10,856.13	35.99	1,085.63	28.60	10.00	10.00	0.00
11,200.00	79.16	359.62	10,883.38	132.07	1,084.99	124.68	10.00	10.00	0.00
11,300.00	89.16	359.62	10,893.54	231.42	1,084.32	224.03	10.00	10.00	0.00
11,308.36	90.00	359.62	10,893.60	239.78	1,084.27	232.39	10.00	10.00	0.00
LP, Hold 90.00° Inc at 359.62° Azm									
11,400.00	90.00	359.62	10,893.60	331.42	1,083.65	324.03	0.00	0.00	0.00
11,500.00	90.00	359.62	10,893.60	431.41	1,082.98	424.03	0.00	0.00	0.00
11,600.00	90.00	359.62	10,893.60	531.41	1,082.31	524.03	0.00	0.00	0.00
11,700.00	90.00	359.62	10,893.60	631.41	1,081.64	624.03	0.00	0.00	0.00
11,800.00	90.00	359.62	10,893.60	731.41	1,080.97	724.03	0.00	0.00	0.00
11,900.00	90.00	359.62	10,893.60	831.41	1,080.31	824.03	0.00	0.00	0.00
12,000.00	90.00	359.62	10,893.60	931.40	1,079.64	924.03	0.00	0.00	0.00
12,100.00	90.00	359.62	10,893.60	1,031.40	1,078.97	1,024.03	0.00	0.00	0.00
12,200.00	90.00	359.62	10,893.60	1,131.40	1,078.30	1,124.03	0.00	0.00	0.00
12,300.00	90.00	359.62	10,893.60	1,231.40	1,077.63	1,224.03	0.00	0.00	0.00
12,400.00	90.00	359.62	10,893.60	1,331.39	1,076.96	1,324.03	0.00	0.00	0.00
12,500.00	90.00	359.62	10,893.60	1,431.39	1,076.29	1,424.03	0.00	0.00	0.00
12,600.00	90.00	359.62	10,893.60	1,531.39	1,075.62	1,524.03	0.00	0.00	0.00
12,700.00	90.00	359.62	10,893.60	1,631.39	1,074.95	1,624.03	0.00	0.00	0.00
12,800.00	90.00	359.62	10,893.60	1,731.39	1,074.28	1,724.03	0.00	0.00	0.00
12,900.00	90.00	359.62	10,893.60	1,831.38	1,073.61	1,824.03	0.00	0.00	0.00
13,000.00	90.00	359.62	10,893.60	1,931.38	1,072.94	1,924.03	0.00	0.00	0.00
13,100.00	90.00	359.62	10,893.60	2,031.38	1,072.27	2,024.03	0.00	0.00	0.00
13,200.00	90.00	359.62	10,893.60	2,131.38	1,071.60	2,124.03	0.00	0.00	0.00
13,300.00	90.00	359.62	10,893.60	2,231.37	1,070.93	2,224.03	0.00	0.00	0.00
13,400.00	90.00	359.62	10,893.60	2,331.37	1,070.26	2,324.03	0.00	0.00	0.00
13,500.00	90.00	359.62	10,893.60	2,431.37	1,069.59	2,424.03	0.00	0.00	0.00
13,600.00	90.00	359.62	10,893.60	2,531.37	1,068.92	2,524.03	0.00	0.00	0.00
13,700.00	90.00	359.62	10,893.60	2,631.37	1,068.25	2,624.03	0.00	0.00	0.00
13,800.00	90.00	359.62	10,893.60	2,731.36	1,067.58	2,724.03	0.00	0.00	0.00
13,900.00	90.00	359.62	10,893.60	2,831.36	1,066.91	2,824.03	0.00	0.00	0.00
14,000.00	90.00	359.62	10,893.60	2,931.36	1,066.24	2,924.03	0.00	0.00	0.00
14,100.00	90.00	359.62	10,893.60	3,031.36	1,065.57	3,024.03	0.00	0.00	0.00
14,200.00	90.00	359.62	10,893.60	3,131.35	1,064.90	3,124.03	0.00	0.00	0.00
14,300.00	90.00	359.62	10,893.60	3,231.35	1,064.23	3,224.03	0.00	0.00	0.00
14,400.00	90.00	359.62	10,893.60	3,331.35	1,063.56	3,324.03	0.00	0.00	0.00
14,500.00	90.00	359.62	10,893.60	3,431.35	1,062.89	3,424.03	0.00	0.00	0.00
14,600.00	90.00	359.62	10,893.60	3,531.35	1,062.22	3,524.03	0.00	0.00	0.00
14,700.00	90.00	359.62	10,893.60	3,631.34	1,061.55	3,624.03	0.00	0.00	0.00
14,800.00	90.00	359.62	10,893.60	3,731.34	1,060.88	3,724.03	0.00	0.00	0.00
14,900.00	90.00	359.62	10,893.60	3,831.34	1,060.21	3,824.03	0.00	0.00	0.00

PHOENIX TECHNOLOGY SERVICES

Phoenix

Planning Report

Marathon Oil Corporation

Database:	USAEDMDB	**Local Co-ordinate Reference:**	Well Catnip Everdeen Federal Com 503H
Company:	Marathon Oil Permian LLC	**TVD Reference:**	RKB @ 3729.60usft (Cactus 169)
Project:	Lea County, NM (NAD27 NME)	**MD Reference:**	RKB @ 3729.60usft (Cactus 169)
Site:	Catnip Everdeen	**North Reference:**	Grid
Well:	Catnip Everdeen Federal Com 503H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan 1 04-13-23		

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)
15,000.00	90.00	359.62	10,893.60	3,931.34	1,059.54	3,924.03	0.00	0.00	0.00
15,100.00	90.00	359.62	10,893.60	4,031.33	1,058.87	4,024.03	0.00	0.00	0.00
15,200.00	90.00	359.62	10,893.60	4,131.33	1,058.20	4,124.03	0.00	0.00	0.00
15,300.00	90.00	359.62	10,893.60	4,231.33	1,057.53	4,224.03	0.00	0.00	0.00
15,400.00	90.00	359.62	10,893.60	4,331.33	1,056.86	4,324.03	0.00	0.00	0.00
15,500.00	90.00	359.62	10,893.60	4,431.33	1,056.19	4,424.03	0.00	0.00	0.00
15,600.00	90.00	359.62	10,893.60	4,531.32	1,055.52	4,524.03	0.00	0.00	0.00
15,700.00	90.00	359.62	10,893.60	4,631.32	1,054.86	4,624.03	0.00	0.00	0.00
15,800.00	90.00	359.62	10,893.60	4,731.32	1,054.19	4,724.03	0.00	0.00	0.00
15,900.00	90.00	359.62	10,893.60	4,831.32	1,053.52	4,824.03	0.00	0.00	0.00
15,971.01	90.00	359.62	10,893.60	4,902.32	1,053.04	4,895.04	0.00	0.00	0.00
Begin 2.00°/100' Turn									
15,971.41	90.00	359.61	10,893.60	4,902.72	1,053.04	4,895.44	2.02	0.00	-2.02
Hold 359.61° Azm									
16,000.00	90.00	359.61	10,893.60	4,931.31	1,052.84	4,924.03	0.00	0.00	0.00
16,100.00	90.00	359.61	10,893.60	5,031.31	1,052.16	5,024.03	0.00	0.00	0.00
16,200.00	90.00	359.61	10,893.60	5,131.31	1,051.47	5,124.03	0.00	0.00	0.00
16,300.00	90.00	359.61	10,893.60	5,231.31	1,050.79	5,224.03	0.00	0.00	0.00
16,400.00	90.00	359.61	10,893.60	5,331.30	1,050.11	5,324.03	0.00	0.00	0.00
16,500.00	90.00	359.61	10,893.60	5,431.30	1,049.42	5,424.03	0.00	0.00	0.00
16,600.00	90.00	359.61	10,893.60	5,531.30	1,048.74	5,524.03	0.00	0.00	0.00
16,700.00	90.00	359.61	10,893.60	5,631.30	1,048.05	5,624.03	0.00	0.00	0.00
16,800.00	90.00	359.61	10,893.60	5,731.30	1,047.37	5,724.03	0.00	0.00	0.00
16,900.00	90.00	359.61	10,893.60	5,831.29	1,046.69	5,824.03	0.00	0.00	0.00
17,000.00	90.00	359.61	10,893.60	5,931.29	1,046.00	5,924.03	0.00	0.00	0.00
17,100.00	90.00	359.61	10,893.60	6,031.29	1,045.32	6,024.03	0.00	0.00	0.00
17,200.00	90.00	359.61	10,893.60	6,131.29	1,044.64	6,124.03	0.00	0.00	0.00
17,300.00	90.00	359.61	10,893.60	6,231.28	1,043.95	6,224.03	0.00	0.00	0.00
17,400.00	90.00	359.61	10,893.60	6,331.28	1,043.27	6,324.03	0.00	0.00	0.00
17,500.00	90.00	359.61	10,893.60	6,431.28	1,042.58	6,424.03	0.00	0.00	0.00
17,600.00	90.00	359.61	10,893.60	6,531.28	1,041.90	6,524.03	0.00	0.00	0.00
17,700.00	90.00	359.61	10,893.60	6,631.27	1,041.22	6,624.03	0.00	0.00	0.00
17,800.00	90.00	359.61	10,893.60	6,731.27	1,040.53	6,724.03	0.00	0.00	0.00
17,900.00	90.00	359.61	10,893.60	6,831.27	1,039.85	6,824.03	0.00	0.00	0.00
18,000.00	90.00	359.61	10,893.60	6,931.27	1,039.16	6,924.03	0.00	0.00	0.00
18,100.00	90.00	359.61	10,893.60	7,031.27	1,038.48	7,024.03	0.00	0.00	0.00
18,200.00	90.00	359.61	10,893.60	7,131.26	1,037.80	7,124.03	0.00	0.00	0.00
18,300.00	90.00	359.61	10,893.60	7,231.26	1,037.11	7,224.03	0.00	0.00	0.00
18,400.00	90.00	359.61	10,893.60	7,331.26	1,036.43	7,324.03	0.00	0.00	0.00
18,500.00	90.00	359.61	10,893.60	7,431.26	1,035.75	7,424.03	0.00	0.00	0.00
18,600.00	90.00	359.61	10,893.60	7,531.25	1,035.06	7,524.03	0.00	0.00	0.00
18,700.00	90.00	359.61	10,893.60	7,631.25	1,034.38	7,624.03	0.00	0.00	0.00
18,800.00	90.00	359.61	10,893.60	7,731.25	1,033.69	7,724.03	0.00	0.00	0.00
18,900.00	90.00	359.61	10,893.60	7,831.25	1,033.01	7,824.03	0.00	0.00	0.00
19,000.00	90.00	359.61	10,893.60	7,931.24	1,032.33	7,924.03	0.00	0.00	0.00
19,100.00	90.00	359.61	10,893.60	8,031.24	1,031.64	8,024.03	0.00	0.00	0.00
19,200.00	90.00	359.61	10,893.60	8,131.24	1,030.96	8,124.03	0.00	0.00	0.00
19,300.00	90.00	359.61	10,893.60	8,231.24	1,030.27	8,224.03	0.00	0.00	0.00
19,400.00	90.00	359.61	10,893.60	8,331.23	1,029.59	8,324.03	0.00	0.00	0.00
19,500.00	90.00	359.61	10,893.60	8,431.23	1,028.91	8,424.03	0.00	0.00	0.00
19,600.00	90.00	359.61	10,893.60	8,531.23	1,028.22	8,524.03	0.00	0.00	0.00
19,700.00	90.00	359.61	10,893.60	8,631.23	1,027.54	8,624.03	0.00	0.00	0.00
19,800.00	90.00	359.61	10,893.60	8,731.23	1,026.86	8,724.03	0.00	0.00	0.00
19,900.00	90.00	359.61	10,893.60	8,831.22	1,026.17	8,824.03	0.00	0.00	0.00

PHOENIX TECHNOLOGY SERVICES

Phoenix
Planning Report

Marathon Oil Corporation

Database:	USAEDMDB	**Local Co-ordinate Reference:**	Well Catnip Everdeen Federal Com 503H
Company:	Marathon Oil Permian LLC	**TVD Reference:**	RKB @ 3729.60usft (Cactus 169)
Project:	Lea County, NM (NAD27 NME)	**MD Reference:**	RKB @ 3729.60usft (Cactus 169)
Site:	Catnip Everdeen	**North Reference:**	Grid
Well:	Catnip Everdeen Federal Com 503H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan 1 04-13-23		

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)
20,000.00	90.00	359.61	10,893.60	8,931.22	1,025.49	8,924.03	0.00	0.00	0.00
20,100.00	90.00	359.61	10,893.60	9,031.22	1,024.80	9,024.03	0.00	0.00	0.00
20,200.00	90.00	359.61	10,893.60	9,131.22	1,024.12	9,124.03	0.00	0.00	0.00
20,300.00	90.00	359.61	10,893.60	9,231.21	1,023.44	9,224.03	0.00	0.00	0.00
20,400.00	90.00	359.61	10,893.60	9,331.21	1,022.75	9,324.03	0.00	0.00	0.00
20,500.00	90.00	359.61	10,893.60	9,431.21	1,022.07	9,424.03	0.00	0.00	0.00
20,600.00	90.00	359.61	10,893.60	9,531.21	1,021.38	9,524.03	0.00	0.00	0.00
20,700.00	90.00	359.61	10,893.60	9,631.20	1,020.70	9,624.03	0.00	0.00	0.00
20,800.00	90.00	359.61	10,893.60	9,731.20	1,020.02	9,724.03	0.00	0.00	0.00
20,900.00	90.00	359.61	10,893.60	9,831.20	1,019.33	9,824.03	0.00	0.00	0.00
21,000.00	90.00	359.61	10,893.60	9,931.20	1,018.65	9,924.03	0.00	0.00	0.00
21,100.00	90.00	359.61	10,893.60	10,031.19	1,017.97	10,024.03	0.00	0.00	0.00
21,135.90	90.00	359.61	10,893.60	10,067.09	1,017.72	10,059.93	0.00	0.00	0.00
TD at 21135.90									

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
FTP - CEFC 503H - plan misses target center by 203.28usft at 10896.71usft MD (10751.98 TVD, -137.35 N, 1086.79 E) - Point	0.00	0.00	10,893.60	-283.17	1,087.77	477,916.16	709,595.21	32° 18' 43.503856 N	3° 39' 17.665486 W
LTP/BHL - CEFC 503I - plan hits target center - Point	0.00	0.00	10,893.60	10,067.09	1,017.72	488,266.42	709,525.16	32° 20' 25.929501 N	3° 39' 17.718073 W
TP1 - CEFC 503H - plan hits target center - Point	0.00	0.00	10,893.60	4,902.32	1,053.04	483,101.65	709,560.48	32° 19' 34.819236 N	3° 39' 17.687648 W

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,214.60	1,214.60	Rustler		0.000	359.61
1,690.81	1,689.60	Salado		0.000	359.61
3,622.51	3,597.60	Castile		0.000	359.61
4,977.19	4,935.60	Base of Salt (BX)		0.000	359.61
4,977.19	4,935.60	Lamar		0.000	359.61
5,029.84	4,987.60	Bell Canyon		0.000	359.61
6,166.84	6,110.60	Cherry Canyon		0.000	359.61
7,156.02	7,087.60	Brushy Canyon		0.000	359.61
8,838.19	8,750.60	Bone Spring Lime		0.000	359.61
8,968.31	8,880.60	Upper Avalon Shale		0.000	359.61
10,021.31	9,933.60	1st Bone Spring Sand		0.000	359.61
10,323.31	10,235.60	2nd Bone Spring Carbonate		0.000	359.61
10,700.86	10,600.60	2nd Bone Spring Sand		0.000	359.61

PHOENIX TECHNOLOGY SERVICES

Phoenix
Planning Report

Marathon Oil Corporation

Database:	USAEDMDB	**Local Co-ordinate Reference:**	Well Catnip Everdeen Federal Com 503H
Company:	Marathon Oil Permian LLC	**TVD Reference:**	RKB @ 3729.60usft (Cactus 169)
Project:	Lea County, NM (NAD27 NME)	**MD Reference:**	RKB @ 3729.60usft (Cactus 169)
Site:	Catnip Everdeen	**North Reference:**	Grid
Well:	Catnip Everdeen Federal Com 503H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan 1 04-13-23		

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Comment
1,300.00	1,300.00	0.00	0.00	KOP, Begin 2.00°/100' Build
1,750.05	1,748.20	-10.33	33.73	Hold 9.00° Inc at 107.02° Azm
8,572.66	8,486.80	-322.84	1,054.37	Begin 2.00°/100' Drop
9,022.71	8,935.00	-333.17	1,088.10	Begin Vertical Hold
10,408.36	10,320.64	-333.17	1,088.10	KOP2, Begin 10.00°/100' Build
11,308.36	10,893.60	239.78	1,084.27	LP, Hold 90.00° Inc at 359.62° Azm
15,971.01	10,893.60	4,902.32	1,053.04	Begin 2.00°/100' Turn
15,971.41	10,893.60	4,902.72	1,053.04	Hold 359.61° Azm
21,135.90	10,893.60	10,067.09	1,017.72	TD at 21135.90

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 236640

CONDITIONS

Operator: MARATHON OIL PERMIAN LLC 990 Town & Country Blvd. Houston, TX 77024	OGRID: 372098
	Action Number: 236640
	Action Type: [C-103] NOI Change of Plans (C-103A)

CONDITIONS

Created By	Condition	Condition Date
pkautz	IN ADDITION TO PRVIOUS COA, IF ON ANY STRING CEMENT DOES NOT CIRCULATE, A CBL MUST BE RUN ON THAT STRING OF CASING.	8/10/2023