

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENTFORM APPROVED
OMB NO. 1004-0137
Expires: January 31, 2018**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**

1. Type of Well ☒ Oil Well ☐ Gas Well ☐ Other		7. If Unit or CA/Agreement, Name and/or No.
2. Name of Operator MARATHON OIL PERMIAN, LLC		8. Well Name and No. URRACA FEDERAL COM 20H
3a. Address 5555 SAN FELIPE STREET HOUSTON, TX 77056		9. API Well No. 30-025-41968
3b. Phone No. (include area code) Ph: 713-296-3179		10. Field and Pool or Exploratory Area WILDCAT
4. Location of Well (Footage, Sec., T., R., M., or Survey Description) Sec 11 T23S R32E Mer NMP NWNW 330FNL 440FWL		11. County or Parish, State LEA COUNTY, NM

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
☐ Subsequent Report	☐ Alter Casing	☐ Hydraulic Fracturing	☐ Reclamation	☐ Well Integrity
☐ Final Abandonment Notice	☐ Casing Repair	☐ New Construction	☐ Recomplete	☒ Other
	☐ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon	Change to Original A
	☐ Convert to Injection	☐ Plug Back	☐ Water Disposal	PD

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 recompleat 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 performed 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 recompleat in a new interval, 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 determined that the site is ready for final inspection.

Marathon Oil Permian, LLC respectfully requests to make the following changes to the approved APD for this well:

Well Name - Urraca Federal Com 20H to Urraca Federal Com 23 32 11 SB 4H
Drilling Program - see attachments for changes to Target Formation, Casing Program, Cement Program, Directional, Well Head, and SHL.

Note: Similar sundry or this well submitted today 11/15/2017 EC# 395076 should be returned and this one used in it's place. This sundry has updated well names with "com".

NEPA covered under

Engineering Good. 25
3/12/18

Approved. CCR.03/20/2018. DOI-BLM-NM-P020-2014-0980-F.A. Same COA's apply

14. I hereby certify that the foregoing is true and correct.	
Electronic Submission #395090 verified by the BLM Well Information System For MARATHON OIL PERMIAN, LLC, sent to the Hobbs Committed to AFMSS for processing by PRISCILLA PEREZ on 12/13/2017 ()	
Name (Printed/Typed) MELISSA B SZUDERA	Title REGULATORY COMPLIANCE REP
Signature (Electronic Submission)	Date 11/15/2017

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

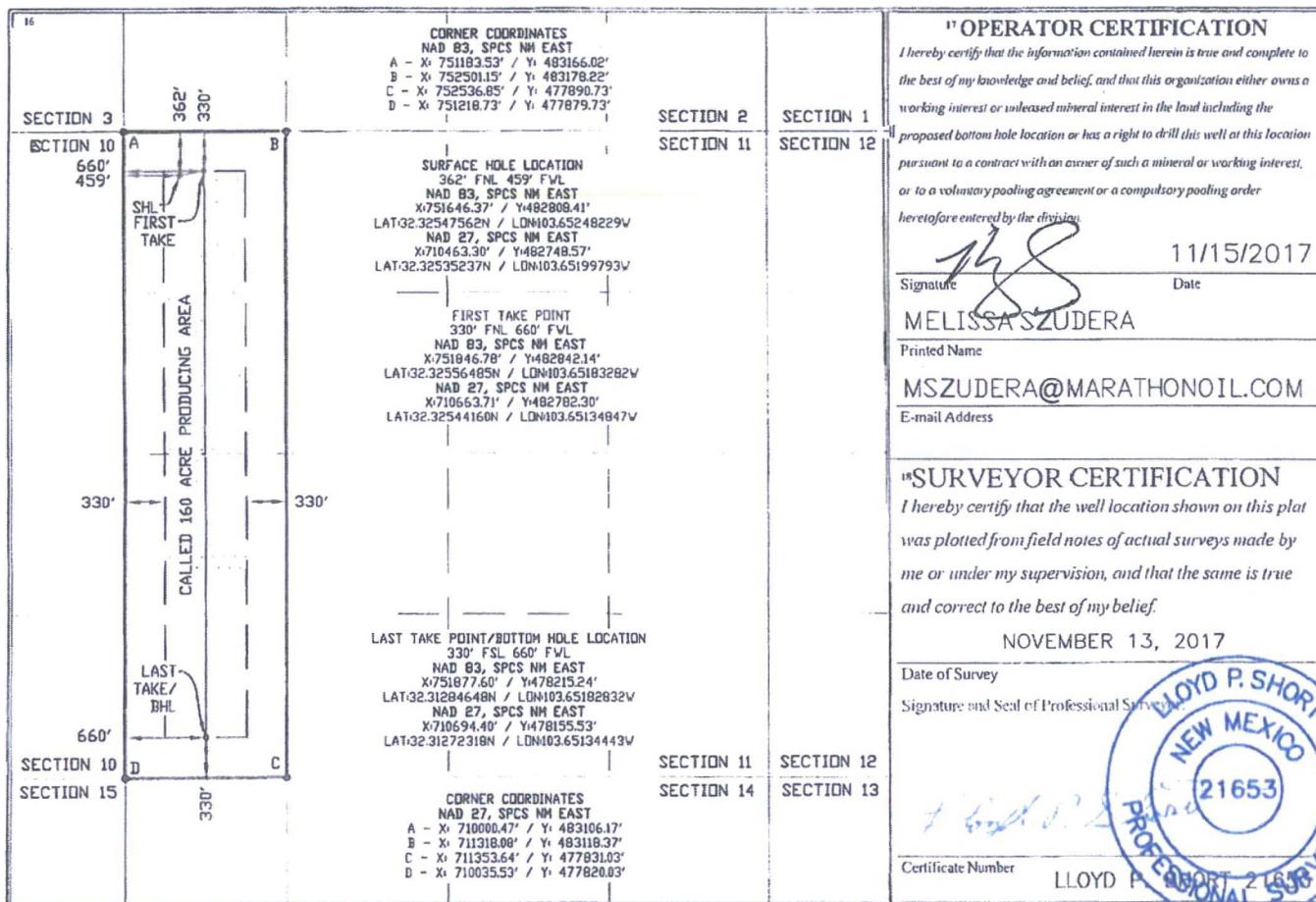
Approved By _____	Title _____	Date _____
Conditions of approval, if any, are attached. Approval of this notice does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.		
Office _____		

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.

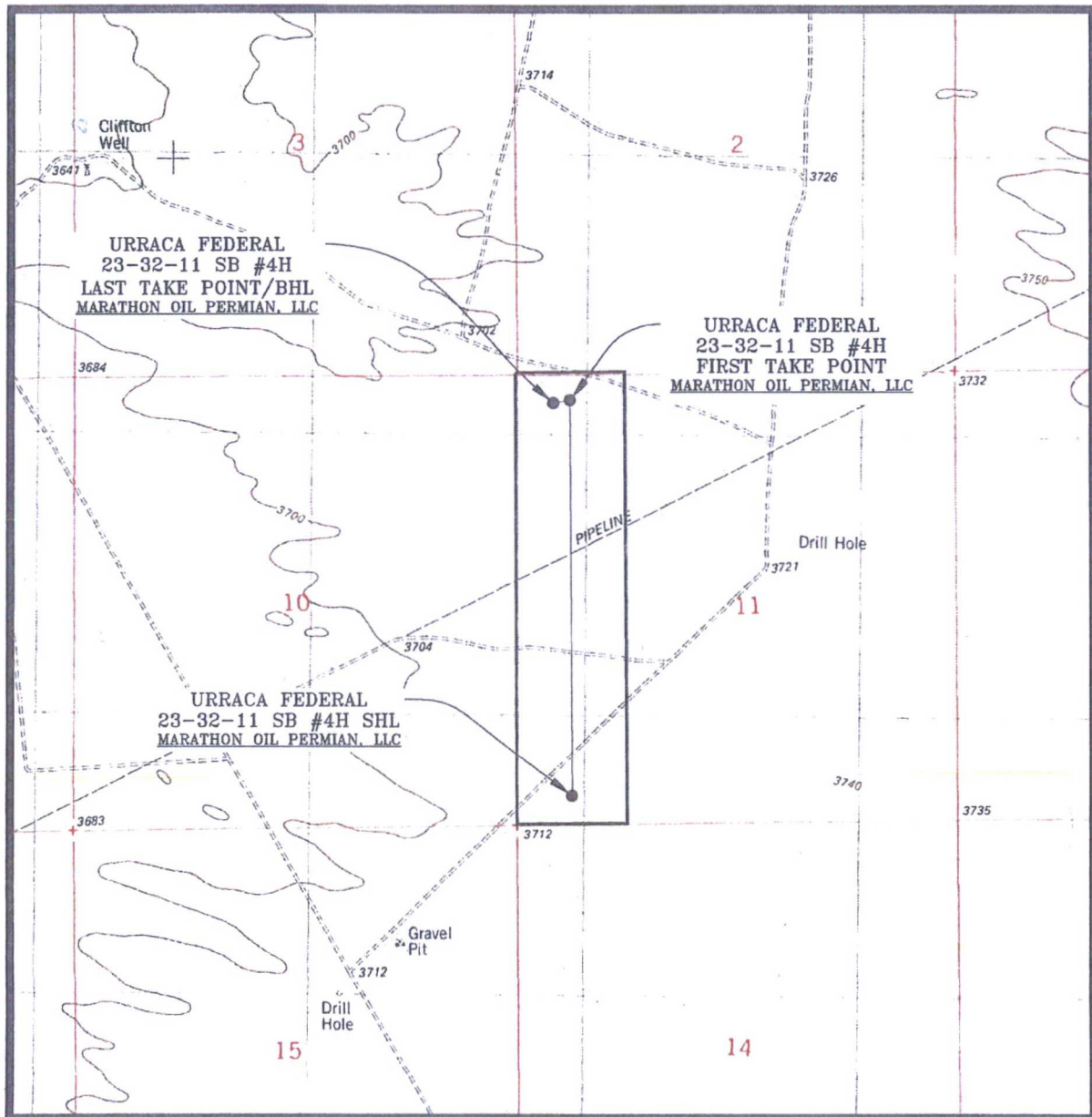
(Instructions on page 2)

** OPERATOR-SUBMITTED ** OPERATOR-SUBMITTED ** OPERATOR-SUBMITTED **

K9



LOCATION VERIFICATION MAP



SEC. 11 TWP. 23-S RGE. 32-E

SURVEY: N.M.P.M.

COUNTY: LEA

DESCRIPTION: 362' FNL & 459' FWL

ELEVATION: 3713'

OPERATOR: MARATHON OIL PERMIAN, LLC

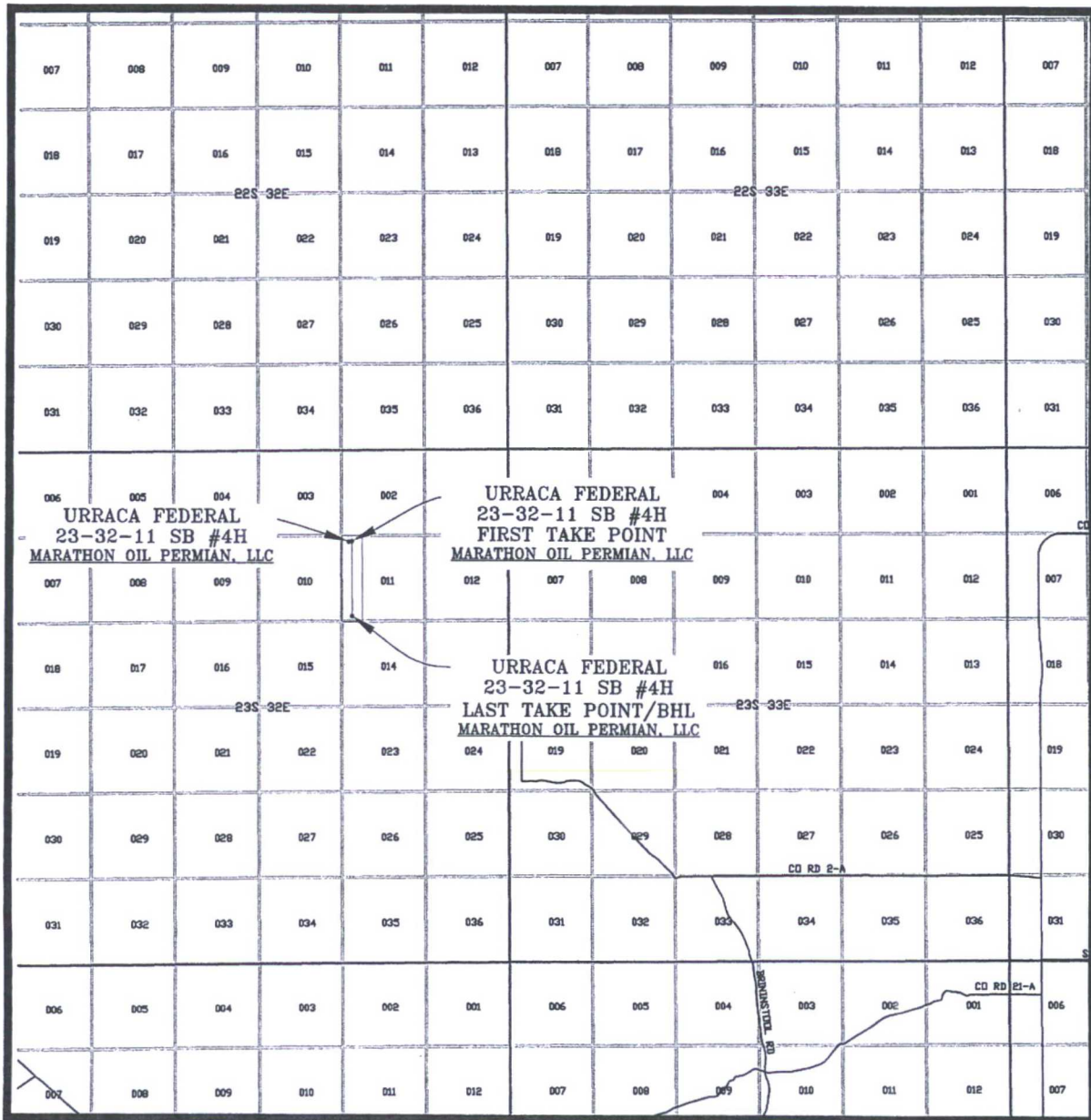
LEASE: URRACA FEDERAL 23-32-11

U.S.G.S. TOPOGRAPHIC MAP: BOOTLEG RIDGE, N.M.

SCALE: 1" = 2000'
CONTOUR INTERVAL = 10'

PREPARED BY:
R-SQUARED GLOBAL, LLC
1309 LOUISVILLE AVENUE, MONROE, LA 71201
318-323-6900 OFFICE
JOB No. R3811_001

VICINITY MAP



SEC. 11 TWP. 23-S RGE. 32-E
 SURVEY: N.M.P.M.
 COUNTY: LEA
 DESCRIPTION: 362' FNL & 459' FWL
 ELEVATION: 3713'
 OPERATOR: MARATHON OIL PERMIAN, LLC
 LEASE: URRACA FEDERAL 23-32-11
 U.S.G.S. TOPOGRAPHIC MAP: BOOTLEG RIDGE, N.M.

SCALE: 1" = 2 MILES

PREPARED BY:
 R-SQUARED GLOBAL, LLC
 1309 LOUISVILLE AVENUE, MONROE, LA 71201
 318-323-8900 OFFICE
 JOB No. R3811_001

Marathon Oil Permian, LLC

Old Well Name: URRACA FEDERAL COM 20H

New Well Name: URRACA FEDERAL COM 23-32-11 SB 4H

REVISED SHL: 362' FNL & 459' FWL / Sec 11 – T23S – R32E

REVISED BHL: 330' FSL & 660' FWL / Sec 11 – T23S – R32E

API # 30-025-41968

Lea County, New Mexico

Drilling Program Changes

1. Target Formation:

Changes: target formation changed from Avalon Shale to 2nd Bone Spring. Revised a more accurate formation tops:

Formation	TVD RKB, ft.	Expected Fluid
Rustler	1180	
Salt	1410	
Castile	3550	
Lamar	4900	
Bell Canyon	5397	Hydrocarbons
Cherry Canyon	5835	
Brushy Canyon	7180	
Bone Spring	8790	Hydrocarbons
Avalon Shale	9300	Hydrocarbons
1st Bone Spring Sand	9975	Hydrocarbons
2nd Bone Spring Sand (Target)	10614	Hydrocarbons

2. Casing Program:

Changes:

- I. 5 ½" production casing depth was adjusted according to new depth.
- II. 5 ½" casing connection was changed to BTC from top to bottom.
- III. 5 ½" casing grade and weight was adjusted

Hole	Csg. Setting	Csg.	Csg.	Weight	Grade	Conn.	SF	SF	SF
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size	Depth (MD)		Setting Depth (TVD)	Size	(lbs/ft)			Collapse	Burst	Tension
	From	To								
8 3/4"	0	15,526	10,881	5 1/2"	20	P110	BTC	1.97	1.29	2.17

Minimum safety factors: Burst 1.125 Collapse 1.125 Tension 1.8 Wet/1.6 Dry

3. Cementing Program:

Changes:

- Revised cement slurry volumes for revised production casing depth

Casing	Slurry	Top MD	Bottom MD	#Sks	Wt. lbs/gal	Yield ft ³ /sx	Water gal/sk	Slurry Description
Production (5 1/2")	Lead	4,675	10,000	842	11.9	2.4	13.8	35:65 (poz/H) + salt + Sodium Metasilicate + Bentonite + Fluid Loss + Dispersant + LCM + Retarder
	Tail	10,000	15,526	1,463	14.5	1.24	5.5	50:50 (poz/H) + Bentonite + Salt + Fluid Loss + Dispersant + LCM + Retarder

Casing String	TOC (ft)	% Excess
Production Casing – 5 1/2"	4,675	50% Lead Slurry 30% Tail Slurry

4. Testing, Logging and Coring

Electric logging program: Only GR (MWD) from intermediate casing shoe to TD

5. Wellhead Changes:

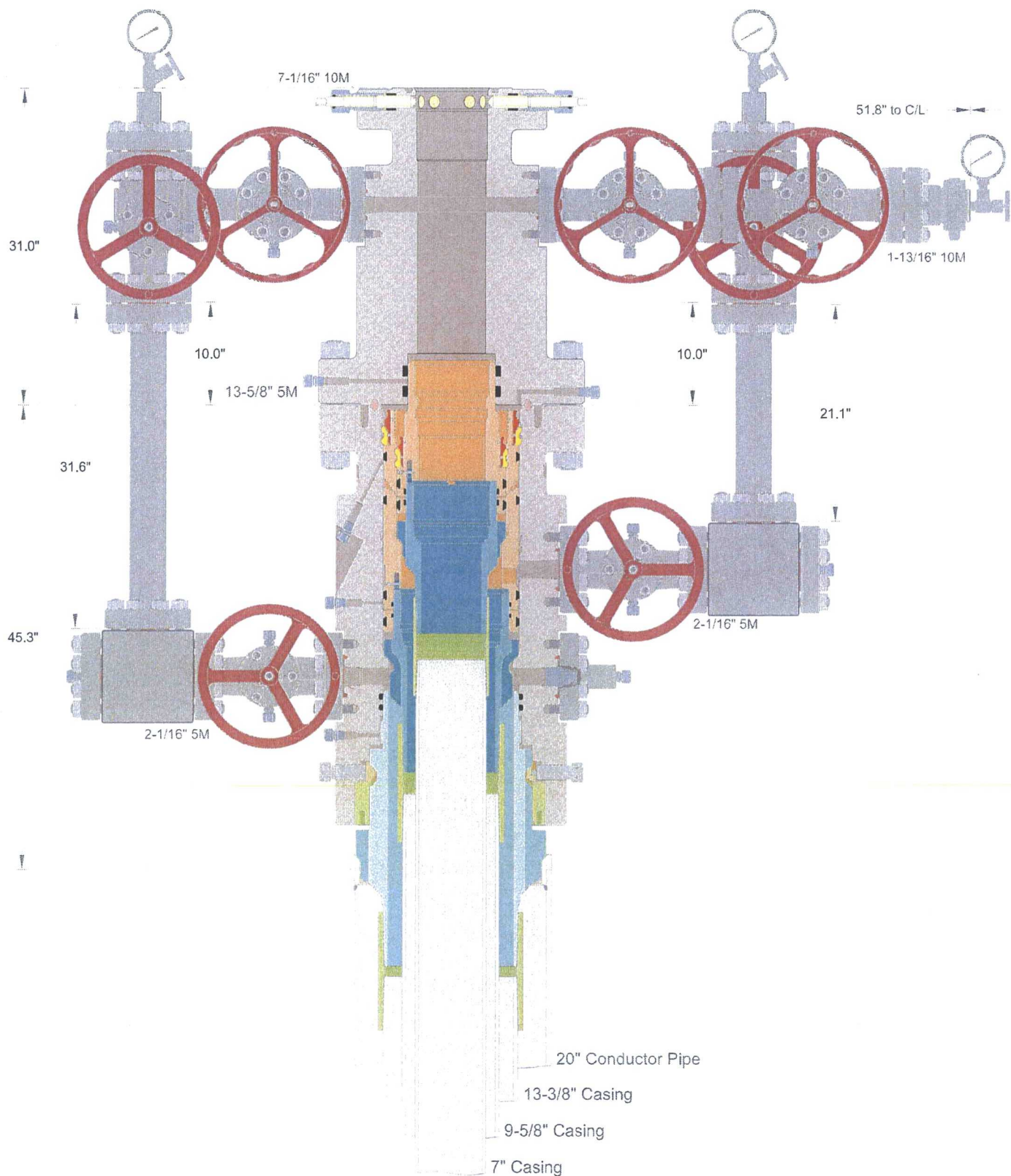
- A 5M multibowl wellhead will be used in this well.

Y	A variance is requested to use a multibowl wellhead. 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. A landing ring will be installed on the 20" conductor. A hanger will be installed on the surface casing that will land on the landing ring. The hanger will hold the surface casing in tension during the WOC duration. The wellhead will be installed on the surface casing. See attached wellhead schematic.
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6. Directional Plan

Changes:

- Revised directional plan to account for new depth, FTP and LTP, see attached directional plan.



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CACTUS WELLHEAD LLC

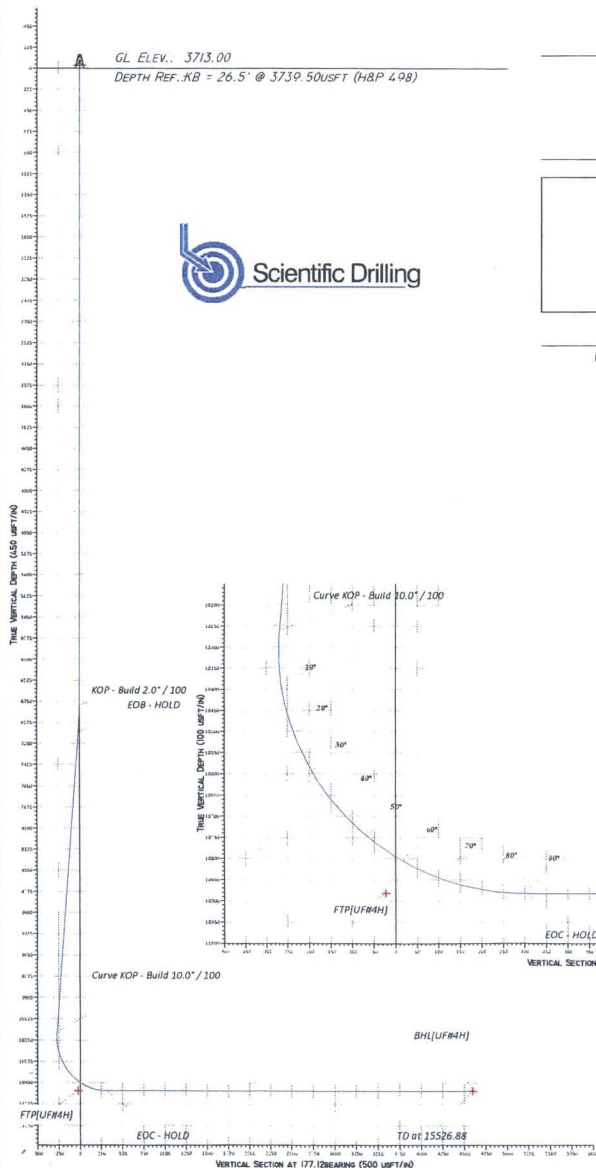
MARATHON OIL COMPANY

20" x 13-3/8" x 9-5/8" x 7" MBU-3T-CFL-R-DBLO Wellhead
With 13-5/8" 5M x 7-1/16" 10M CTH-DBLHPS Tubing Head (31" LG)
Utilizing Pin Down Mandrel Casing Hangers

DRAWN	DLE	24JUL17
APPRV		
DRAWING NO.	ODE0001624	



LEA COUNTY, NM (NAD27)
URRACA FEDERAL
23-32-II SB #4H
OH
PLAN #1
H&P 498



WELL DETAILS					
GROUND LEVEL: 3713.00					
+N/-S	+E/-W	NORTHING	EASTING	LATITUDE	LONGITUDE
0.00	0.00	482748.57	710663.30	32° 19' 31.269 N	103° 39' 7.195 W

SECTION DETAILS							
MD	INC	ΔZ	TVD	+N/-S	+E/-W	DLEG	TFACE
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6787.00	0.00	0.00	6787.00	0.00	0.00	0.00	0.00
7078.50	5.85	35.00	7078.00	12.14	8.50	2.00	55.00
10278.50	5.85	35.00	10261.5	278.50	196.95	0.00	0.00
11226.25	90.00	180.00	10881.02	-292.51	231.22	10.00	164.86
15526.88	90.00	180.00	10881.00	-4593.22	231.11	0.00	81.97
							RTB [UF#4H]

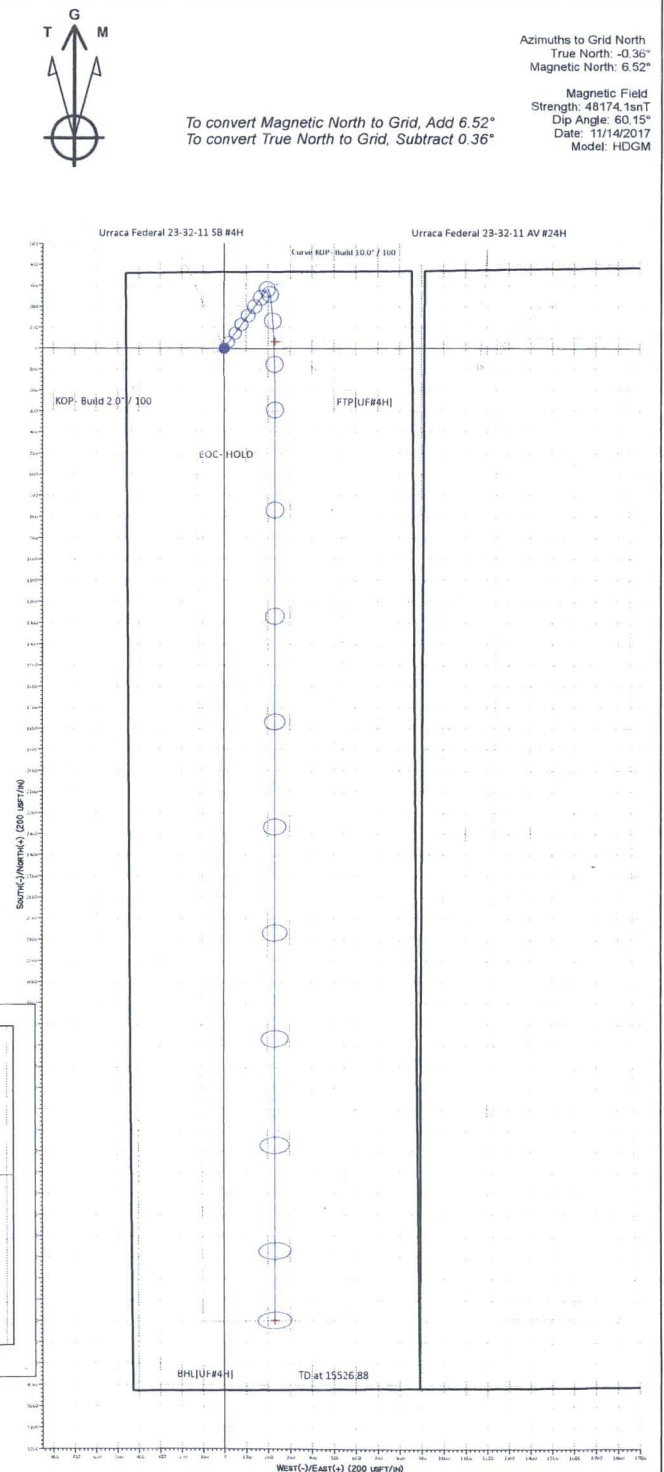
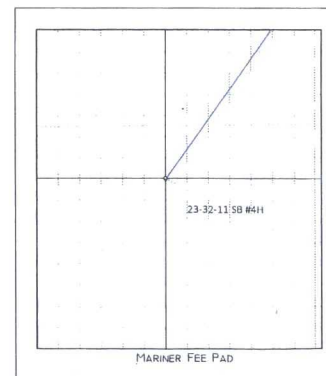
DESIGN TARGET DETAILS				
Name	TVD	+N/-S	+E/-W	Northing
BHL[UF#4H]	10881.00	-4593.22	231.11	478155.53
FTP[UF#4H]	10881.00	33.73	231.11	482782.30
Easting				
710694.40				

DRILLING TARGET 10881 TVD @ OVS // 90.0° INC.

WINDOW: 15 UP // 15 DOWN

SITE DETAILS: URRACA FEDERAL		PROJECT DETAILS: LEA COUNTY, NM (NAD27)	
Site Centre Northing:	482748.57	Geometric System:	US STATE PLANE 1927 (EXACT SOLUTION)
Easting:	710663.30	Datum:	NAD 1927 (NADCON CORUS)
Positional Uncertainty:	0.00	Ellipsoid:	CLARKE 1866
Convergence:	0.36	Zone:	NEW MEXICO EAST 3001
Local North:	GRID	System Datum:	MEAN SEA LEVEL

FORMATION TOP DETAILS		MAP SYSTEM: US STATE PLANE 1927 (EXACT SOLUTION)	
NO FORMATION DATA IS AVAILABLE		Datum:	NAD 1927 (NADCON CORUS)
		Ellipsoid:	CLARKE 1866
		Zone Name:	NEW MEXICO EAST 3001
		Local Offset:	WELL 23-32-II SB #4H, GRID NORTH
		Latitude:	32° 19' 31.269 N
		Longitude:	103° 39' 7.195 W
		Grid East:	710663.30
		Grid North:	482748.57
		Scale Factor:	1.000
		Geometric Model:	HDGM
		Sample Date:	16-Nov-17
		Magnetic Declination:	6.88°
		Dip Angle from Horizontal:	60.15°
		Magnetic Field Strength:	481.4
		To convert Magnetic North to Grid:	ADD 6.52°
		To convert Magnetic North to True:	ADD 6.88° EAST
		To convert True North to Grid:	SUBTRACT 0.36°



Azimuths to Grid North
True North: -0.36°
Magnetic North: 6.52°
Magnetic Field
Strength: 481.4 T
Dip Angle: 60.15°
Date: 11/14/2017
Model: HDGM

To convert Magnetic North to Grid, Add 6.52°
To convert True North to Grid, Subtract 0.36°

Marathon Oil Permian, LLC

Lea County, NM (NAD27)

Urraca Federal

23-32-11 #4H

OH

Plan: Plan #1

Standard Planning Report

14 November, 2017



www.scientificdrilling.com



Planning Report

Database:	Midland District	Local Co-ordinate Reference:	Well 23-32-11 #4H
Company:	Marathon Oil Permian, LLC	TVD Reference:	KB = 26.5' @ 3739.50usft (H&P 498)
Project:	Lea County, NM (NAD27)	MD Reference:	KB = 26.5' @ 3739.50usft (H&P 498)
Site:	Urraca Federal	North Reference:	Grid
Well:	23-32-11 #4H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Project	Lea County, NM (NAD27)		
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		Using geodetic scale factor

Site	Urraca Federal			
Site Position:		Northing:	482,748.57 usft	Latitude: 32° 19' 31.269 N
From:	Map	Easting:	710,463.30 usft	Longitude: 103° 39' 7.193 W
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence: 0.36 °

Well	23-32-11 #4H			
Well Position	+N/-S	0.00 usft	Northing: 482,748.57 usft	Latitude: 32° 19' 31.269 N
	+E/-W	0.00 usft	Easting: 710,463.30 usft	Longitude: 103° 39' 7.193 W
Position Uncertainty	0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level: 3,713.00 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	11/14/2017	6.88	60.15	48,174

Design	Plan #1			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (bearing)
	0.00	0.00	0.00	177.12

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (bearing)	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	
6,787.00	0.00	0.00	6,787.00	0.00	0.00	0.00	0.00	0.00	0.00	
7,078.50	5.83	35.00	7,078.00	12.14	8.50	2.00	2.00	0.00	35.00	
10,278.50	5.83	35.00	10,261.45	278.40	194.94	0.00	0.00	0.00	0.00	
11,226.23	90.00	180.00	10,881.02	-292.57	231.22	10.00	8.88	15.30	144.86	
15,526.88	90.00	180.00	10,881.00	-4,593.22	231.11	0.00	0.00	0.00	81.97	BHL[UF#4H]

Planning Report

Database:	Midland District	Local Co-ordinate Reference:	Well 23-32-11 #4H
Company:	Marathon Oil Permian, LLC	TVD Reference:	KB = 26.5' @ 3739.50usft (H&P 498)
Project:	Lea County, NM (NAD27)	MD Reference:	KB = 26.5' @ 3739.50usft (H&P 498)
Site:	Urraca Federal	North Reference:	Grid
Well:	23-32-11 #4H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (bearing)	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
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	0.00	0.00	3,100.00	0.00	0.00	0.00	0.00	0.00	0.00
3,200.00	0.00	0.00	3,200.00	0.00	0.00	0.00	0.00	0.00	0.00
3,300.00	0.00	0.00	3,300.00	0.00	0.00	0.00	0.00	0.00	0.00
3,400.00	0.00	0.00	3,400.00	0.00	0.00	0.00	0.00	0.00	0.00
3,500.00	0.00	0.00	3,500.00	0.00	0.00	0.00	0.00	0.00	0.00
3,600.00	0.00	0.00	3,600.00	0.00	0.00	0.00	0.00	0.00	0.00
3,700.00	0.00	0.00	3,700.00	0.00	0.00	0.00	0.00	0.00	0.00
3,800.00	0.00	0.00	3,800.00	0.00	0.00	0.00	0.00	0.00	0.00
3,900.00	0.00	0.00	3,900.00	0.00	0.00	0.00	0.00	0.00	0.00
4,000.00	0.00	0.00	4,000.00	0.00	0.00	0.00	0.00	0.00	0.00
4,100.00	0.00	0.00	4,100.00	0.00	0.00	0.00	0.00	0.00	0.00
4,200.00	0.00	0.00	4,200.00	0.00	0.00	0.00	0.00	0.00	0.00
4,300.00	0.00	0.00	4,300.00	0.00	0.00	0.00	0.00	0.00	0.00
4,400.00	0.00	0.00	4,400.00	0.00	0.00	0.00	0.00	0.00	0.00
4,500.00	0.00	0.00	4,500.00	0.00	0.00	0.00	0.00	0.00	0.00
4,600.00	0.00	0.00	4,600.00	0.00	0.00	0.00	0.00	0.00	0.00
4,700.00	0.00	0.00	4,700.00	0.00	0.00	0.00	0.00	0.00	0.00
4,800.00	0.00	0.00	4,800.00	0.00	0.00	0.00	0.00	0.00	0.00
4,900.00	0.00	0.00	4,900.00	0.00	0.00	0.00	0.00	0.00	0.00
5,000.00	0.00	0.00	5,000.00	0.00	0.00	0.00	0.00	0.00	0.00
5,100.00	0.00	0.00	5,100.00	0.00	0.00	0.00	0.00	0.00	0.00
5,200.00	0.00	0.00	5,200.00	0.00	0.00	0.00	0.00	0.00	0.00
5,300.00	0.00	0.00	5,300.00	0.00	0.00	0.00	0.00	0.00	0.00

Planning Report

Database: Midland District
 Company: Marathon Oil Permian, LLC
 Project: Lea County, NM (NAD27)
 Site: Urraca Federal
 Well: 23-32-11 #4H
 Wellbore: OH
 Design: Plan #1

Local Co-ordinate Reference: Well 23-32-11 #4H
 TVD Reference: KB = 26.5' @ 3739.50usft (H&P 498)
 MD Reference: KB = 26.5' @ 3739.50usft (H&P 498)
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (bearing)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
5,400.00	0.00	0.00	5,400.00	0.00	0.00	0.00	0.00	0.00	0.00
5,500.00	0.00	0.00	5,500.00	0.00	0.00	0.00	0.00	0.00	0.00
5,600.00	0.00	0.00	5,600.00	0.00	0.00	0.00	0.00	0.00	0.00
5,700.00	0.00	0.00	5,700.00	0.00	0.00	0.00	0.00	0.00	0.00
5,800.00	0.00	0.00	5,800.00	0.00	0.00	0.00	0.00	0.00	0.00
5,900.00	0.00	0.00	5,900.00	0.00	0.00	0.00	0.00	0.00	0.00
6,000.00	0.00	0.00	6,000.00	0.00	0.00	0.00	0.00	0.00	0.00
6,100.00	0.00	0.00	6,100.00	0.00	0.00	0.00	0.00	0.00	0.00
6,200.00	0.00	0.00	6,200.00	0.00	0.00	0.00	0.00	0.00	0.00
6,300.00	0.00	0.00	6,300.00	0.00	0.00	0.00	0.00	0.00	0.00
6,400.00	0.00	0.00	6,400.00	0.00	0.00	0.00	0.00	0.00	0.00
6,500.00	0.00	0.00	6,500.00	0.00	0.00	0.00	0.00	0.00	0.00
6,600.00	0.00	0.00	6,600.00	0.00	0.00	0.00	0.00	0.00	0.00
6,700.00	0.00	0.00	6,700.00	0.00	0.00	0.00	0.00	0.00	0.00
6,787.00	0.00	0.00	6,787.00	0.00	0.00	0.00	0.00	0.00	0.00
KOP - Build 2.0° / 100									
6,800.00	0.26	35.00	6,800.00	0.02	0.02	-0.02	2.00	2.00	0.00
6,900.00	2.26	35.00	6,899.97	1.83	1.28	-1.76	2.00	2.00	0.00
7,000.00	4.26	35.00	6,999.80	6.48	4.54	-6.25	2.00	2.00	0.00
7,078.50	5.83	35.00	7,078.00	12.14	8.50	-11.70	2.00	2.00	0.00
EOB - HOLD									
7,100.00	5.83	35.00	7,099.39	13.93	9.75	-13.42	0.00	0.00	0.00
7,200.00	5.83	35.00	7,198.87	22.25	15.58	-21.44	0.00	0.00	0.00
7,300.00	5.83	35.00	7,298.35	30.57	21.40	-29.45	0.00	0.00	0.00
7,400.00	5.83	35.00	7,397.83	38.89	27.23	-37.47	0.00	0.00	0.00
7,500.00	5.83	35.00	7,497.32	47.21	33.06	-45.49	0.00	0.00	0.00
7,600.00	5.83	35.00	7,596.80	55.53	38.88	-53.51	0.00	0.00	0.00
7,700.00	5.83	35.00	7,696.28	63.85	44.71	-61.52	0.00	0.00	0.00
7,800.00	5.83	35.00	7,795.77	72.17	50.54	-69.54	0.00	0.00	0.00
7,900.00	5.83	35.00	7,895.25	80.49	56.36	-77.56	0.00	0.00	0.00
8,000.00	5.83	35.00	7,994.73	88.81	62.19	-85.58	0.00	0.00	0.00
8,100.00	5.83	35.00	8,094.21	97.13	68.01	-93.59	0.00	0.00	0.00
8,200.00	5.83	35.00	8,193.70	105.45	73.84	-101.61	0.00	0.00	0.00
8,300.00	5.83	35.00	8,293.18	113.78	79.67	-109.63	0.00	0.00	0.00
8,400.00	5.83	35.00	8,392.66	122.10	85.49	-117.65	0.00	0.00	0.00
8,500.00	5.83	35.00	8,492.14	130.42	91.32	-125.66	0.00	0.00	0.00
8,600.00	5.83	35.00	8,591.63	138.74	97.15	-133.68	0.00	0.00	0.00
8,700.00	5.83	35.00	8,691.11	147.06	102.97	-141.70	0.00	0.00	0.00
8,800.00	5.83	35.00	8,790.59	155.38	108.80	-149.72	0.00	0.00	0.00
8,900.00	5.83	35.00	8,890.08	163.70	114.62	-157.73	0.00	0.00	0.00
9,000.00	5.83	35.00	8,989.56	172.02	120.45	-165.75	0.00	0.00	0.00
9,100.00	5.83	35.00	9,089.04	180.34	126.28	-173.77	0.00	0.00	0.00
9,200.00	5.83	35.00	9,188.52	188.66	132.10	-181.79	0.00	0.00	0.00
9,300.00	5.83	35.00	9,288.01	196.98	137.93	-189.80	0.00	0.00	0.00
9,400.00	5.83	35.00	9,387.49	205.30	143.75	-197.82	0.00	0.00	0.00
9,500.00	5.83	35.00	9,486.97	213.62	149.58	-205.84	0.00	0.00	0.00
9,600.00	5.83	35.00	9,586.46	221.94	155.41	-213.85	0.00	0.00	0.00
9,700.00	5.83	35.00	9,685.94	230.27	161.23	-221.87	0.00	0.00	0.00
9,800.00	5.83	35.00	9,785.42	238.59	167.06	-229.89	0.00	0.00	0.00
9,900.00	5.83	35.00	9,884.90	246.91	172.89	-237.91	0.00	0.00	0.00
10,000.00	5.83	35.00	9,984.39	255.23	178.71	-245.92	0.00	0.00	0.00
10,100.00	5.83	35.00	10,083.87	263.55	184.54	-253.94	0.00	0.00	0.00
10,200.00	5.83	35.00	10,183.35	271.87	190.36	-261.96	0.00	0.00	0.00

Planning Report

Database:	Midland District	Local Co-ordinate Reference:	Well 23-32-11 #4H
Company:	Marathon Oil Permian, LLC	TVD Reference:	KB = 26.5' @ 3739.50usft (H&P 498)
Project:	Lea County, NM (NAD27)	MD Reference:	KB = 26.5' @ 3739.50usft (H&P 498)
Site:	Urraca Federal	North Reference:	Grid
Well:	23-32-11 #4H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (bearing)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
10,278.50	5.83	35.00	10,261.45	278.40	194.94	-268.25	0.00	0.00	0.00
Curve KOP - Build 10.0° / 100									
10,300.00	4.26	51.92	10,282.86	279.79	196.19	-269.57	10.00	-7.33	78.69
10,350.00	4.11	125.38	10,332.76	279.89	199.12	-269.54	10.00	-0.29	146.91
10,400.00	8.10	155.70	10,382.48	275.65	202.03	-265.14	10.00	7.98	60.64
10,450.00	12.82	165.08	10,431.64	267.07	204.91	-256.44	10.00	9.43	18.77
10,500.00	17.69	169.42	10,479.86	254.24	207.73	-243.48	10.00	9.74	8.67
10,550.00	22.61	171.92	10,526.79	237.24	210.48	-226.37	10.00	9.85	5.00
10,600.00	27.57	173.56	10,572.06	216.22	213.13	-205.23	10.00	9.90	3.28
10,650.00	32.53	174.73	10,615.33	191.32	215.66	-180.24	10.00	9.93	2.35
10,700.00	37.51	175.62	10,656.26	162.74	218.06	-151.57	10.00	9.95	1.78
10,750.00	42.48	176.33	10,694.56	130.69	220.30	-119.45	10.00	9.96	1.42
10,800.00	47.47	176.92	10,729.91	95.42	222.37	-84.12	10.00	9.97	1.17
10,850.00	52.45	177.42	10,762.07	57.20	224.26	-45.86	10.00	9.97	1.00
10,900.00	57.44	177.86	10,790.78	16.32	225.94	-4.94	10.00	9.97	0.87
10,930.30	60.46	178.10	10,806.40	-9.62	226.85	21.01	10.00	9.98	0.80
FTP[UF#4H]									
10,950.00	62.43	178.25	10,815.82	-26.92	227.41	38.31	10.00	9.98	0.76
11,000.00	67.42	178.60	10,837.01	-72.17	228.65	83.57	10.00	9.98	0.71
11,050.00	72.41	178.94	10,854.17	-119.11	229.65	130.50	10.00	9.98	0.66
11,100.00	77.40	179.25	10,867.19	-167.36	230.41	178.73	10.00	9.98	0.63
11,150.00	82.39	179.55	10,875.96	-216.57	230.93	227.90	10.00	9.98	0.60
11,200.00	87.38	179.85	10,880.42	-266.35	231.19	277.63	10.00	9.98	0.59
11,226.23	90.00	180.00	10,881.02	-292.57	231.22	303.82	10.00	9.98	0.59
EOC - HOLD									
11,300.00	90.00	180.00	10,881.02	-366.34	231.22	377.50	0.00	0.00	0.00
11,400.00	90.00	180.00	10,881.02	-466.34	231.22	477.37	0.00	0.00	0.00
11,500.00	90.00	180.00	10,881.02	-566.34	231.22	577.24	0.00	0.00	0.00
11,600.00	90.00	180.00	10,881.02	-666.34	231.22	677.12	0.00	0.00	0.00
11,700.00	90.00	180.00	10,881.02	-766.34	231.22	776.99	0.00	0.00	0.00
11,800.00	90.00	180.00	10,881.02	-866.34	231.22	876.87	0.00	0.00	0.00
11,900.00	90.00	180.00	10,881.02	-966.34	231.22	976.74	0.00	0.00	0.00
12,000.00	90.00	180.00	10,881.02	-1,066.34	231.22	1,076.61	0.00	0.00	0.00
12,100.00	90.00	180.00	10,881.02	-1,166.34	231.22	1,176.49	0.00	0.00	0.00
12,200.00	90.00	180.00	10,881.02	-1,266.34	231.22	1,276.36	0.00	0.00	0.00
12,300.00	90.00	180.00	10,881.02	-1,366.34	231.22	1,376.23	0.00	0.00	0.00
12,400.00	90.00	180.00	10,881.02	-1,466.34	231.22	1,476.11	0.00	0.00	0.00
12,500.00	90.00	180.00	10,881.01	-1,566.34	231.21	1,575.98	0.00	0.00	0.00
12,600.00	90.00	180.00	10,881.01	-1,666.34	231.21	1,675.85	0.00	0.00	0.00
12,700.00	90.00	180.00	10,881.01	-1,766.34	231.21	1,775.73	0.00	0.00	0.00
12,800.00	90.00	180.00	10,881.01	-1,866.34	231.21	1,875.60	0.00	0.00	0.00
12,900.00	90.00	180.00	10,881.01	-1,966.34	231.21	1,975.47	0.00	0.00	0.00
13,000.00	90.00	180.00	10,881.01	-2,066.34	231.20	2,075.35	0.00	0.00	0.00
13,100.00	90.00	180.00	10,881.01	-2,166.34	231.20	2,175.22	0.00	0.00	0.00
13,200.00	90.00	180.00	10,881.01	-2,266.34	231.20	2,275.10	0.00	0.00	0.00
13,300.00	90.00	180.00	10,881.01	-2,366.34	231.20	2,374.97	0.00	0.00	0.00
13,400.00	90.00	180.00	10,881.01	-2,466.34	231.19	2,474.84	0.00	0.00	0.00
13,500.00	90.00	180.00	10,881.01	-2,566.34	231.19	2,574.72	0.00	0.00	0.00
13,600.00	90.00	180.00	10,881.01	-2,666.34	231.19	2,674.59	0.00	0.00	0.00
13,700.00	90.00	180.00	10,881.01	-2,766.34	231.19	2,774.46	0.00	0.00	0.00
13,800.00	90.00	180.00	10,881.01	-2,866.34	231.18	2,874.34	0.00	0.00	0.00
13,900.00	90.00	180.00	10,881.01	-2,966.34	231.18	2,974.21	0.00	0.00	0.00
14,000.00	90.00	180.00	10,881.01	-3,066.34	231.18	3,074.08	0.00	0.00	0.00

Planning Report

Database: Midland District
 Company: Marathon Oil Permian, LLC
 Project: Lea County, NM (NAD27)
 Site: Urraca Federal
 Well: 23-32-11 #4H
 Wellbore: OH
 Design: Plan #1

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 MD Reference: KB = 26.5' @ 3739.50usft (H&P 498)
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (bearing)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
14,100.00	90.00	180.00	10,881.01	-3,166.34	231.17	3,173.96	0.00	0.00	0.00
14,200.00	90.00	180.00	10,881.01	-3,266.34	231.17	3,273.83	0.00	0.00	0.00
14,300.00	90.00	180.00	10,881.01	-3,366.34	231.17	3,373.70	0.00	0.00	0.00
14,400.00	90.00	180.00	10,881.01	-3,466.34	231.16	3,473.58	0.00	0.00	0.00
14,500.00	90.00	180.00	10,881.01	-3,566.34	231.16	3,573.45	0.00	0.00	0.00
14,600.00	90.00	180.00	10,881.01	-3,666.34	231.15	3,673.32	0.00	0.00	0.00
14,700.00	90.00	180.00	10,881.01	-3,766.34	231.15	3,773.20	0.00	0.00	0.00
14,800.00	90.00	180.00	10,881.01	-3,866.34	231.14	3,873.07	0.00	0.00	0.00
14,900.00	90.00	180.00	10,881.00	-3,966.34	231.14	3,972.94	0.00	0.00	0.00
15,000.00	90.00	180.00	10,881.00	-4,066.34	231.14	4,072.82	0.00	0.00	0.00
15,100.00	90.00	180.00	10,881.00	-4,166.34	231.13	4,172.69	0.00	0.00	0.00
15,200.00	90.00	180.00	10,881.00	-4,266.34	231.13	4,272.57	0.00	0.00	0.00
15,300.00	90.00	180.00	10,881.00	-4,366.34	231.12	4,372.44	0.00	0.00	0.00
15,400.00	90.00	180.00	10,881.00	-4,466.34	231.12	4,472.31	0.00	0.00	0.00
15,500.00	90.00	180.00	10,881.00	-4,566.34	231.11	4,572.19	0.00	0.00	0.00
15,526.88	90.00	180.00	10,881.00	-4,593.22	231.11	4,599.04	0.00	0.00	0.00

TD at 15526.88 - BHL[UF#4H]

Design Targets

Target Name	Dip Angle (°)	Dip Dir. (bearing)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
BHL[UF#4H]	0.00	0.00	10,881.00	-4,593.22	231.11	478,155.53	710,694.40	32° 18' 45.804 N	103° 39' 4.840 W
- plan hits target center									
- Point									
FTP[UF#4H]	0.00	0.00	10,881.00	33.73	231.11	482,782.30	710,694.40	32° 19' 31.588 N	103° 39' 4.497 W
- plan misses target center by 86.38usft at 10930.30usft MD (10806.40 TVD, -9.62 N, 226.85 E)									
- Point									

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
6,787.00	6,787.00	0.00	0.00	KOP - Build 2.0° / 100
7,078.50	7,078.00	12.14	8.50	EOB - HOLD
10,278.50	10,261.45	278.40	194.94	Curve KOP - Build 10.0° / 100
11,226.23	10,881.02	-292.57	231.22	EOC - HOLD
15,526.88	10,881.00	-4,593.22	231.11	TD at 15526.88

PECOS DISTRICT DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	MARATHON OIL PERMIAN,LLC
LEASE NO.:	NMNM85940
WELL NAME & NO.:	URRACA FEDERAL COM 23 32 11 SB 4H
SURFACE HOLE FOOTAGE:	362' FNL & 459' FWL
BOTTOM HOLE FOOTAGE	330' FSL & 660' FWL
LOCATION:	Section 11, T. 23 S., R 32 E., NMPM
COUNTY:	Lea County, New Mexico

COA

All previous COAs still apply expect the following:

H2S	☒ Yes	☒ No	
Potash	☒ None	☐ Secretary	☐ R-111-P
Cave/Karst Potential	☒ Low	☐ Medium	☐ High
Variance	☐ None	☒ Flex Hose	☐ Other
Wellhead	☒ Conventional	☐ Multibowl	☐ Both
Other	☐ 4 String Area	☐ Capitan Reef	☐ WIPP

A. CASING

- The minimum required fill of cement behind the **5-1/2** inch production casing is:
 - Cement should tie-back at least 200 feet into previous casing string. Operator shall provide method of verification.

ZS 031218

In a Lesser Prairie-Chicken section.

13 3/8	surface csg in a	17 1/2	inch hole.	Design Factors			SURFACE	
Segment	#/ft	Grade	Coupling	Joint	Collapse	Burst	Length	
"A"	48.00	H 40	ST&C	5.30	1.41	0.68	1,265	
"B"							0	
w/8.4#/g mud, 30min Sfc Csg Test psig: 659			Tail Cmt	does not	circ to sfc.	Totals:	1,265	
Comparison of Proposed to Minimum Required Cement Volumes								
Hole	Annular	1 Stage	1 Stage	Min	1 Stage	Drilling	Calc	Req'd
Size	Volume	Cmt Sx	CuFt Cmt	Cu Ft	% Excess	Mud Wt	MASP	BOPE
17 1/2	0.6946	745	1239	933	33	8.30	1460	2M

Burst Frac Gradient(s) for Segment(s) A, B = 1.37, b All > 0.70, OK.

9 5/8 casing inside the 13 3/8					Design Factors		INTERMEDIATE	
Segment	#/ft	Grade	Coupling	Joint	Collapse	Burst	Length	
"A"	40.00	J 55	LT&C	2.67	1.01	0.78	4,875	
"B"							0	
w/8.4#/g mud, 30min Sfc Csg Test psig: 638							Totals: 4,875	
The cement volume(s) are intended to achieve a top of				0	ft from surface or a		1265	
Hole Size	Annular Volume	1 Stage Cmt Sx	1 Stage CuFt Cmt	Min Cu Ft	1 Stage % Excess	Drilling Mud Wt	Calc MASP	Req'd BOPE
12 1/4	0.3132	1170	2044	1626	26	10.00	2693	3M
ALT. COLLAPSE SF:								
								1.01*1.5= 1.52

Burst Frac Gradient(s) for Segment(s): A, B, C, D = 0.81, b, c, d All > 0.70, OK.

5 1/2 Segment	casing inside the #/ft	9 5/8 Grade	Coupling	Body	Design Factors		PRODUCTION	
"A"	20.00	P 110	BUTT	2.95	Collapse 2.31	Burst 2.48	Length 10,279	
"B"	20.00	P 110	BUTT	8.23	1.97	2.48	5,247	
w/8.4#/g mud, 30min Sfc Csg Test psig: 2,261						Totals:	15,526	
B Segment Design Factors would be:				53.25	2.18	if it were a vertical well		
No Pilot Hole Planned			MTD 15526	Max VTD 10881	Csg VD 10881	Curve KOP 10279	Dogleg° 90	
				Severity° 10				
The cement volume(s) are intended to achieve a top of				4675	ft from surface or a		200	
Hole Size	Annular Volume	1 Stage Cmt Sx	1 Stage CuFt Cmt	Min Cu Ft	1 Stage % Excess	Drilling Mud Wt	Calc MASP	Req'd BOPE
8 3/4	0.2526	2305	3835	2748	40	9.00		