

Well Name: Pierogi BS Fed Com	Well Location: T24S / R28E / SEC 34 / SWSE / 32.1684371 / -104.0725076	County or Parish/State: EDDY / NM
Well Number: 302H	Type of Well: CONVENTIONAL GAS WELL	Allottee or Tribe Name:
Lease Number: NMNM17222	Unit or CA Name:	Unit or CA Number:
US Well Number: 3001548294	Well Status: Drilling Well	Operator: MARATHON OIL PERMIAN LLC

Notice of Intent

Sundry ID: 2780560

Type of Submission: Notice of Intent

Type of Action: Drilling Operations

Date Sundry Submitted: 03/20/2024

Time Sundry Submitted: 12:24

Date proposed operation will begin: 03/20/2024

Procedure Description: Marathon Oil Permian LLC is submitting notification of sidetrack operations. Verbal approval was received before work commenced. While drilling intermediate hole section at 5250ft became stuck. The team attempted fishing the pipe and were unsuccessful. Contacted BLM requesting approval to run an open hole whipstock and sidetrack the well to continue. After reviewing the logs to confirm competent rock for a successful kick off and allowing for a sufficient amount of room to get the required well plan directional work done, it was decided to set the Whipstock at 4010ft MD. Bottom hole depth: 5247ft MD Top of Fish: ~4924ftMD Bottom of Fish: 5247ft MD Deepest interval/formation that was penetrated was the Brushy Canyon. 318ft of BHA remains in the hole. See attachment for details. (BHA was split at midway point of drill collar stands):

Surface Disturbance

Is any additional surface disturbance proposed?: No

NOI Attachments

Procedure Description

Pierogi_BS_Federal_Com_302H__Well_Plan_v3_20240320122239.pdf

Email_BLM_Communication__Pierogi_302H_Sidetrack_20240320103042.pdf

Well Name: Pierogi, BS Fed Com

Well Location: T24S / R28E / SEC 34 / SWSE / 32.1684371 / -104.0725076

County or Parish/State: EDDY / NM

Well Number: 302H

Type of Well: CONVENTIONAL GAS WELL

Allottee or Tribe Name:

Lease Number: NMNM17222

Unit or CA Name:

Unit or CA Number:

US Well Number: 3001548294

Well Status: Drilling Well

Operator: MARATHON OIL PERMIAN LLC

Operator

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

Operator Electronic Signature: ADRIAN COVARRUBIAS

Signed on: MAR 20, 2024 10:30 AM

Name: MARATHON OIL PERMIAN LLC

Title: regulatory Compliance Representative

Street Address: 990 TOWN & COUNTRY BLVD

City: HOUSTON

State: TX

Phone: (713) 296-3368

Email address: acovarrubias@marathonoil.com

Field

Representative Name:

Street Address:

City:

State:

Zip:

Phone:

Email address:

BLM Point of Contact

BLM POC Name: KEITH P IMMATTY

BLM POC Title: ENGINEER

BLM POC Phone: 5759884722

BLM POC Email Address: KIMMATTY@BLM.GOV

Disposition: Approved

Disposition Date: 03/20/2024

Signature: Keith Immatty

Form 3160-5
(June 2019)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

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

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

5. Lease Serial No.	NMNM17222
6. If Indian, Allottee or Tribe Name	

SUBMIT IN TRIPLICATE - Other instructions on page 2		7. If Unit of CA/Agreement, Name and/or No.
1. Type of Well ☐ Oil Well ☒ Gas Well ☐ Other		8. Well Name and No. Pierogi BS Fed Com/302H
2. Name of Operator MARATHON OIL PERMIAN LLC		9. API Well No. 3001548294
3a. Address 990 TOWN & COUNTRY BLVD, HOUSTON, TX	3b. Phone No. (include area code) (713) 296-2113	10. Field and Pool or Exploratory Area
4. Location of Well (Footage, Sec., T.,R.,M., or Survey Description) SEC 34/T24S/R28E/NMP		11. Country or Parish, State EDDY/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	
	☐ 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 recompleate horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be perfonned or provide the Bond No. on file with BLM/BIA. Required subsequent reports must be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompletion in a new interval, a Form 3160-4 must be filed once testing has been completed. Final Abandonment Notices must be filed only after all requirements, including reclamation, have been completed and the operator has detennined that the site is ready for final inspection.)

Marathon Oil Permian LLC is submitting notification of sidetrack operations. Verbal approval was received before work commenced.

While drilling intermediate hole section at 5250ft became stuck. The team attempted fishing the pipe and were unsuccessful. Contacted BLM requesting approval to run an open hole whipstock and sidetrack the well to continue.

After reviewing the logs to confirm competent rock for a successful kick off and allowing for a sufficient amount of room to get the required well plan directional work done, it was decided to set the Whipstock at 4010ft MD.

Bottom hole depth: 5247ft MD
Top of Fish: ~4924ftMD
Bottom of Fish: 5247ft MD

Continued on page 3 additional information

14. I hereby certify that the foregoing is true and correct. Name (Printed/Typed) ADRIAN COVARRUBIAS / Ph: (713) 296-3368	Title regulatory Compliance Representative
Signature (Electronic Submission)	Date 03/20/2024

THE SPACE FOR FEDERAL OR STATE OFFICE USE		
Approved by KEITH P IMMATTY / Ph: (575) 988-4722 / Approved	Title ENGINEER	Date 03/20/2024
Conditions of approval, if any, are attached. Approval of this notice does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.	Office CARLSBAD	

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

(Instructions on page 2)

GENERAL INSTRUCTIONS

This form is designed for submitting proposals to perform certain well operations and reports of such operations when completed as indicated on Federal and Indian lands pursuant to applicable Federal law and regulations. Any necessary special instructions concerning the use of this form and the number of copies to be submitted, particularly with regard to local area or regional procedures and practices, are either shown below, will be issued by or may be obtained from the local Federal office.

SPECIFIC INSTRUCTIONS

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

Item 13: Proposals to abandon a well and subsequent reports of abandonment should include such special information as is required by the local Federal office. In addition, such proposals and reports should include reasons for the abandonment; data on any former or present productive zones or other zones with present significant fluid contents not sealed off by cement or otherwise; depths (top and bottom) and method of placement of cement plugs; mud or other material placed below, between and above plugs; amount, size, method of parting of any casing, liner or tubing pulled and the depth to the top of any tubing left in the hole; method of closing top of well and date well site conditioned for final inspection looking for approval of the abandonment. If the proposal will involve **hydraulic fracturing operations**, you must comply with 43 CFR 3162.3-3, including providing information about the protection of usable water. Operators should provide the best available information about all formations containing water and their depths. This information could include data and interpretation of resistivity logs run on nearby wells. Information may also be obtained from state or tribal regulatory agencies and from local BLM offices.

NOTICES

The privacy Act of 1974 and the regulation in 43 CFR 2.48(d) provide that you be furnished the following information in connection with information required by this application.

AUTHORITY: 30 U.S.C. 181 et seq., 351 et seq., 25 U.S.C. 396; 43 CFR 3160.

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

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

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

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

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

Response to this request is mandatory.

The BLM would like you to know that you do not have to respond to this or any other Federal agency-sponsored information collection unless it displays a currently valid OMB control number.

BURDEN HOURS STATEMENT: Public reporting burden for this form is estimated to average 8 hours per response, including the time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding the burden estimate or any other aspect of this form to U.S. Department of the Interior, Bureau of Land Management (1004-0137), Bureau Information Collection Clearance Officer (WO-630), 1849 C St., N.W., Mail Stop 401 LS, Washington, D.C. 20240

Additional Information**Additional Remarks**

Deepest interval/formation that was penetrated was the Brushy Canyon.

318ft of BHA remains in the hole. See attachment for details. (BHA was split at midway point of drill collar stands):

Location of Well

0. SHL: SWSE / 846 FSL / 1858 FEL / TWSP: 24S / RANGE: 28E / SECTION: 34 / LAT: 32.1684371 / LONG: -104.0725076 (TVD: 0 feet, MD: 0 feet)

PPP: NWSE / 2685 FNL / 2011 FEL / TWSP: 24S / RANGE: 28E / SECTION: 34 / LAT: 32.1739055 / LONG: -104.0730489 (TVD: 9722 feet, MD: 12114 feet)

PPP: NWSE / 1343 FSL / 2018 FEL / TWSP: 24S / RANGE: 28E / SECTION: 34 / LAT: 32.1702137 / LONG: -104.0730363 (TVD: 9722 feet, MD: 10772 feet)

PPP: SWSE / 100 FSL / 330 FEL / TWSP: 24S / RANGE: 28E / SECTION: 34 / LAT: 32.1674291 / LONG: -104.0730268 (TVD: 9722 feet, MD: 10101 feet)

BHL: NWNE / 330 FNL / 1999 FEL / TWSP: 24S / RANGE: 28E / SECTION: 22 / LAT: 32.1803789 / LONG: -104.073071 (TVD: 9722 feet, MD: 14468 feet)

CONFIDENTIAL

DESIGN TARGET DETAILS

Name: KOP-2 V2, Pierogi 302H
LTP-PBHL V2, Pierogi 302H
PPP-2 V2, Pierogi 302H

GL @ 2999.00
+N/E/W: 0.00
Northing: 42501.88
Easting: 58059.43

Well: PIEROGI BS FEDERAL COM 302H
WELL @ 3022.50usft (Precision 580)
Northing: 42501.88
Easting: 58059.43

Longitude: 104° 4' 19.257 W
Latitude: 32° 10' 7.417 N

GL @ 2999.00
+N/E/W: 0.00
Northing: 42501.88
Easting: 58059.43

Well: PIEROGI BS FEDERAL COM 302H
WELL @ 3022.50usft (Precision 580)
Northing: 42501.88
Easting: 58059.43

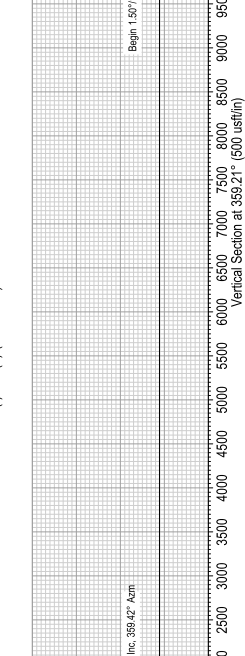
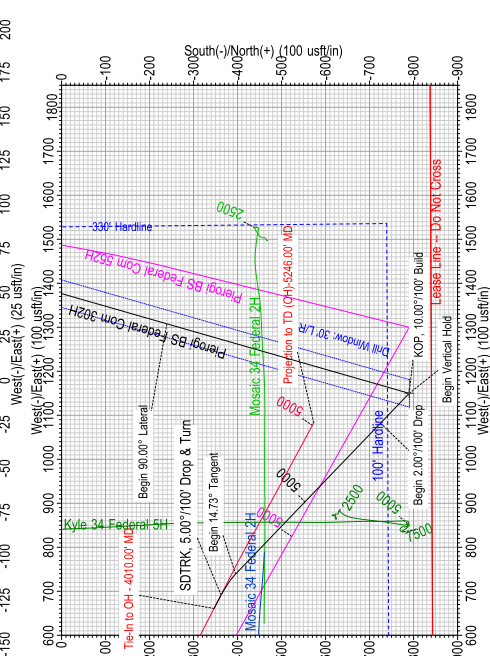
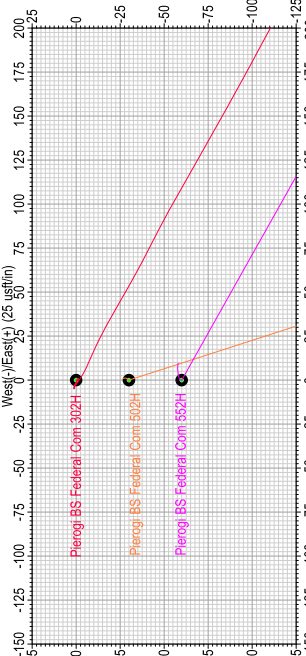
Longitude: 104° 4' 19.257 W
Latitude: 32° 10' 7.417 N

SECTION DETAILS

MD	Inc	Azi	TVD	+N/E/W	Dleg	TFace	VSecd	Annotation
4010.00	22.27	117.19	3878.03	-346.54	0.00	0.00	-355.62	Tie-In to OH - 4010.00' MD
4100.00	22.56	118.46	3961.23	-362.56	691.34	0.63	-372.06	SOTRK 5.00°/100' Drop & Turn
4283.67	14.73	133.84	4135.23	-395.60	739.25	5.00	-405.75	Begin 14.73° Tangent
6153.70	14.73	133.84	5943.83	-724.83	1082.13	0.00	-739.68	Begin 2.00°/100' Drop
6889.98	0.00	0.00	6672.04	-790.00	1150.00	2.00	-805.78	Begin Vertical Hold
7089.98	0.00	0.00	6872.04	-790.00	1150.00	0.00	-805.78	KOP 10.00°/100' Build
7989.98	90.00	16.00	7445.00	-239.24	1307.83	10.00	-257.25	Begin 90.00° Lateral
8349.98	90.00	16.00	7445.00	106.82	1407.16	0.00	87.41	Hold 90.00° Inc. 359.42° Azm
9178.85	90.00	359.42	7445.00	925.33	1517.99	2.00	-90.00	Hold 90.00° Inc. 359.42° Azm
18714.61	90.00	359.42	7445.00	10520.60	1421.29	0.00	10500.00	Begin 1.50°/100' Turn
19810.78	90.00	343.88	7445.00	11542.65	1271.30	1.50	-90.00	Hold 90.00° Inc. 358.78° Azm
20803.88	90.00	338.78	7445.00	12521.64	1121.99	1.50	90.00	Hold 90.00° Inc. 358.78° Azm
23430.27	90.00	338.78	7445.00	15147.43	1065.91	0.00	15131.29	PBHL

SURVEY PROGRAM

Depth From: 143.00
Tool: MS MWD + FDIR (OH) (Wellbore #1)
MS MWD + FDIR (OH) (Wellbore #2)
Design #3 (Wellbore #2)



Marathon Oil Corporation

Company: Marathon Oil
County: Eddy County, New Mexico (NAD 27)
Well: Pierogi BS Federal Com 302H
Rig: Precision 580
Wellbore: Wellbore #3
Design: Design #3
Date: 16:58, March 19 2024

Geodetic System: US State Plane 1927 (Exact solution)
Datum: NAD 1927 (NADCON CONUS)
Ellipsoid: Clarke 1866
Zone: New Mexico East 3001
System Datum: Mean Sea Level





Marathon Oil

**Eddy County, New Mexico (NAD 27)
Pierogi BS Federal Com (302H, 502H, 552H)
Pierogi BS Federal Com 302H**

Wellbore #2

Plan: Design #3

Standard Planning Report

19 March, 2024





MS Directional Planning Report



Database:	EDM 5000.15 Conroe DB	Local Co-ordinate Reference:	Well Pierogi BS Federal Com 302H
Company:	Marathon Oil	TVD Reference:	WELL @ 3022.50usft (Precision 580)
Project:	Eddy County, New Mexico (NAD 27)	MD Reference:	WELL @ 3022.50usft (Precision 580)
Site:	Pierogi BS Federal Com (302H, 502H, 552H)	North Reference:	Grid
Well:	Pierogi BS Federal Com 302H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #2		
Design:	Design #3		

Project	Eddy County, New Mexico (NAD 27)		
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	Pierogi BS Federal Com (302H, 502H, 552H)		
Site Position:		Northing:	425,201.89 usft
From:	Map	Easting:	580,858.43 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 10' 7.417 N
		Longitude:	104° 4' 19.257 W

Well	Pierogi BS Federal Com 302H					
Well Position	+N/-S	0.00 usft	Northing:	425,201.88 usft	Latitude:	32° 10' 7.417 N
	+E/-W	0.00 usft	Easting:	580,858.43 usft	Longitude:	104° 4' 19.257 W
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level:	2,999.00 usft
Grid Convergence:		0.139 °				

Wellbore	Wellbore #2				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IFR	3/10/2024	6.613	59.735	47,383.70

Design	Design #3				
Audit Notes:					
Version:	Phase:	PLAN	Tie On Depth:	4,010.00	
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.00	0.00	0.00	359.21	

Plan Survey Tool Program	Date	3/19/2024			
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks	
1	4,010.00	23,430.27	Design #3 (Wellbore #2)	MWD+IFR1+FDIR	
				OWSG MWD + IFR1 + FDIR	



MS Directional
Planning Report



Database:	EDM 5000.15 Conroe DB	Local Co-ordinate Reference:	Well Pierogi BS Federal Com 302H
Company:	Marathon Oil	TVD Reference:	WELL @ 3022.50usft (Precision 580)
Project:	Eddy County, New Mexico (NAD 27)	MD Reference:	WELL @ 3022.50usft (Precision 580)
Site:	Pierogi BS Federal Com (302H, 502H, 552H)	North Reference:	Grid
Well:	Pierogi BS Federal Com 302H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #2		
Design:	Design #3		

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
4,010.00	22.27	117.19	3,878.03	-346.54	661.00	0.00	0.00	0.00	0.000	
4,100.00	22.56	118.48	3,961.23	-362.56	691.34	0.63	0.32	1.43	60.000	
4,283.67	14.73	133.84	4,135.23	-395.60	739.25	5.00	-4.27	8.36	155.045	
6,153.70	14.73	133.84	5,943.83	-724.83	1,082.13	0.00	0.00	0.00	0.000	
6,889.98	0.00	0.00	6,672.04	-790.00	1,150.00	2.00	-2.00	0.00	180.000	
7,089.98	0.00	0.00	6,872.04	-790.00	1,150.00	0.00	0.00	0.00	0.000	
7,989.98	90.00	16.00	7,445.00	-239.24	1,307.93	10.00	10.00	0.00	16.000	
8,349.98	90.00	16.00	7,445.00	106.82	1,407.16	0.00	0.00	0.00	0.000	
9,178.85	90.00	359.42	7,445.00	925.33	1,517.99	2.00	0.00	-2.00	-90.000	
18,774.61	90.00	359.42	7,445.00	10,520.60	1,421.29	0.00	0.00	0.00	0.000	
19,810.78	90.00	343.88	7,445.00	11,542.65	1,271.30	1.50	0.00	-1.50	-90.000	
20,803.89	90.00	358.78	7,445.00	12,521.64	1,121.99	1.50	0.00	1.50	90.000	
23,430.27	90.00	358.78	7,445.00	15,147.43	1,065.91	0.00	0.00	0.00	0.000	LTP-PBHL v2_Pierc



MS Directional Planning Report



Database:	EDM 5000.15 Conroe DB	Local Co-ordinate Reference:	Well Pierogi BS Federal Com 302H
Company:	Marathon Oil	TVD Reference:	WELL @ 3022.50usft (Precision 580)
Project:	Eddy County, New Mexico (NAD 27)	MD Reference:	WELL @ 3022.50usft (Precision 580)
Site:	Pierogi BS Federal Com (302H, 502H, 552H)	North Reference:	Grid
Well:	Pierogi BS Federal Com 302H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #2		
Design:	Design #3		

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
143.00	0.28	186.44	143.00	-0.35	-0.04	-0.35	0.20	0.20	0.00
232.00	0.36	115.86	232.00	-0.69	0.19	-0.69	0.42	0.09	-79.30
319.00	0.28	124.48	319.00	-0.92	0.61	-0.93	0.11	-0.09	9.91
423.00	0.17	127.46	423.00	-1.16	0.94	-1.18	0.11	-0.11	2.87
529.00	0.46	301.56	529.00	-1.04	0.70	-1.05	0.59	0.27	164.25
623.00	0.72	294.38	622.99	-0.59	-0.16	-0.59	0.29	0.28	-7.64
718.00	0.70	303.69	717.98	-0.03	-1.18	-0.01	0.12	-0.02	9.80
812.00	0.61	296.89	811.98	0.52	-2.11	0.55	0.13	-0.10	-7.23
907.00	0.65	297.95	906.97	1.00	-3.03	1.04	0.04	0.04	1.12
1,002.00	0.84	278.71	1,001.96	1.36	-4.20	1.42	0.33	0.20	-20.25
1,097.00	0.20	186.45	1,096.96	1.30	-4.90	1.37	0.92	-0.67	-97.12
1,192.00	0.45	103.42	1,191.96	1.05	-4.56	1.11	0.49	0.26	-87.40
1,287.00	0.33	95.28	1,286.96	0.94	-3.93	0.99	0.14	-0.13	-8.57
1,382.00	0.22	123.41	1,381.96	0.81	-3.50	0.86	0.18	-0.12	29.61
1,451.00	0.17	128.23	1,450.95	0.67	-3.31	0.72	0.08	-0.07	6.99
1,546.00	2.07	126.62	1,545.93	-0.44	-1.82	-0.41	2.00	2.00	-1.69
1,640.00	4.12	122.13	1,639.79	-3.25	2.40	-3.28	2.19	2.18	-4.78
1,735.00	6.06	113.20	1,734.41	-7.04	9.90	-7.17	2.20	2.04	-9.40
1,830.00	7.70	115.21	1,828.73	-11.72	20.27	-12.00	1.74	1.73	2.12
1,924.00	9.86	119.11	1,921.62	-18.32	33.00	-18.77	2.38	2.30	4.15
2,019.00	10.55	120.06	2,015.12	-26.64	47.63	-27.29	0.75	0.73	1.00
2,114.00	11.48	118.34	2,108.36	-35.48	63.48	-36.35	1.04	0.98	-1.81
2,209.00	13.67	116.86	2,201.08	-45.04	81.82	-46.16	2.33	2.31	-1.56
2,304.00	15.75	119.59	2,292.96	-56.48	103.05	-57.90	2.31	2.19	2.87
2,399.00	17.91	119.52	2,383.89	-70.05	126.97	-71.79	2.27	2.27	-0.07
2,493.00	19.53	119.27	2,472.91	-84.85	153.26	-86.96	1.73	1.72	-0.27
2,588.00	20.47	118.17	2,562.18	-100.46	181.76	-102.95	1.07	0.99	-1.16
2,683.00	21.33	118.89	2,650.93	-116.65	211.53	-119.55	0.94	0.91	0.76
2,778.00	23.34	118.40	2,738.80	-133.95	243.21	-137.29	2.12	2.12	-0.52
2,872.00	23.54	117.52	2,825.04	-151.48	276.24	-155.27	0.43	0.21	-0.94
2,967.00	22.98	117.41	2,912.32	-168.78	309.53	-173.03	0.59	-0.59	-0.12
3,062.00	22.59	117.03	2,999.91	-185.61	342.24	-190.31	0.44	-0.41	-0.40
3,157.00	22.14	116.57	3,087.76	-201.91	374.51	-207.05	0.51	-0.47	-0.48
3,251.00	22.75	116.43	3,174.64	-217.92	406.63	-223.51	0.65	0.65	-0.15
3,346.00	22.71	116.40	3,262.26	-234.25	439.50	-240.29	0.04	-0.04	-0.03
3,441.00	22.24	116.45	3,350.05	-250.41	472.02	-256.90	0.50	-0.49	0.05
3,536.00	20.89	115.90	3,438.39	-265.82	503.36	-272.73	1.44	-1.42	-0.58
3,631.00	20.93	116.37	3,527.14	-280.75	533.79	-288.09	0.18	0.04	0.49
3,725.00	22.23	117.49	3,614.55	-296.42	564.61	-304.18	1.45	1.38	1.19
3,820.00	22.47	117.78	3,702.41	-313.18	596.62	-321.37	0.28	0.25	0.31
3,915.00	22.50	117.30	3,790.19	-329.98	628.83	-338.61	0.20	0.03	-0.51
4,010.00	22.27	117.19	3,878.03	-346.54	661.00	-355.62	0.25	-0.24	-0.12
Tie-In to OH - 4010.00' MD									
4,100.00	22.56	118.48	3,961.23	-362.56	691.34	-372.06	0.63	0.32	1.43
SDTRK, 5.00°/100' Drop & Turn									
4,200.00	18.14	125.26	4,054.98	-380.71	720.93	-390.61	5.00	-4.42	6.78
4,283.67	14.73	133.84	4,135.23	-395.60	739.25	-405.75	5.00	-4.08	10.25
Begin 14.73° Tangent									
4,300.00	14.73	133.84	4,151.02	-398.47	742.25	-408.67	0.00	0.00	0.00
4,400.00	14.73	133.84	4,247.74	-416.08	760.58	-426.53	0.00	0.00	0.00
4,500.00	14.73	133.84	4,344.45	-433.69	778.92	-444.38	0.00	0.00	0.00
4,600.00	14.73	133.84	4,441.17	-451.29	797.25	-462.24	0.00	0.00	0.00



MS Directional Planning Report



Database:	EDM 5000.15 Conroe DB	Local Co-ordinate Reference:	Well Pierogi BS Federal Com 302H
Company:	Marathon Oil	TVD Reference:	WELL @ 3022.50usft (Precision 580)
Project:	Eddy County, New Mexico (NAD 27)	MD Reference:	WELL @ 3022.50usft (Precision 580)
Site:	Pierogi BS Federal Com (302H, 502H, 552H)	North Reference:	Grid
Well:	Pierogi BS Federal Com 302H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #2		
Design:	Design #3		

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)
4,700.00	14.73	133.84	4,537.89	-468.90	815.59	-480.10	0.00	0.00	0.00
4,800.00	14.73	133.84	4,634.60	-486.50	833.92	-497.95	0.00	0.00	0.00
4,900.00	14.73	133.84	4,731.32	-504.11	852.26	-515.81	0.00	0.00	0.00
5,000.00	14.73	133.84	4,828.03	-521.71	870.59	-533.67	0.00	0.00	0.00
5,100.00	14.73	133.84	4,924.75	-539.32	888.93	-551.52	0.00	0.00	0.00
5,200.00	14.73	133.84	5,021.46	-556.92	907.26	-569.38	0.00	0.00	0.00
5,300.00	14.73	133.84	5,118.18	-574.53	925.60	-587.24	0.00	0.00	0.00
5,400.00	14.73	133.84	5,214.89	-592.14	943.93	-605.09	0.00	0.00	0.00
5,500.00	14.73	133.84	5,311.61	-609.74	962.27	-622.95	0.00	0.00	0.00
5,600.00	14.73	133.84	5,408.32	-627.35	980.60	-640.81	0.00	0.00	0.00
5,700.00	14.73	133.84	5,505.04	-644.95	998.94	-658.66	0.00	0.00	0.00
5,800.00	14.73	133.84	5,601.75	-662.56	1,017.27	-676.52	0.00	0.00	0.00
5,900.00	14.73	133.84	5,698.47	-680.16	1,035.61	-694.38	0.00	0.00	0.00
6,000.00	14.73	133.84	5,795.19	-697.77	1,053.95	-712.23	0.00	0.00	0.00
6,100.00	14.73	133.84	5,891.90	-715.37	1,072.28	-730.09	0.00	0.00	0.00
6,153.70	14.73	133.84	5,943.83	-724.83	1,082.13	-739.68	0.00	0.00	0.00
Begin 2.00°/100' Drop									
6,200.00	13.80	133.84	5,988.71	-732.73	1,090.35	-747.69	2.00	-2.00	0.00
6,300.00	11.80	133.84	6,086.22	-748.07	1,106.33	-763.25	2.00	-2.00	0.00
6,400.00	9.80	133.84	6,184.44	-761.05	1,119.85	-776.42	2.00	-2.00	0.00
6,500.00	7.80	133.84	6,283.26	-771.64	1,130.88	-787.16	2.00	-2.00	0.00
6,600.00	5.80	133.84	6,382.55	-779.84	1,139.42	-795.48	2.00	-2.00	0.00
6,700.00	3.80	133.84	6,482.20	-785.64	1,145.46	-801.36	2.00	-2.00	0.00
6,800.00	1.80	133.84	6,582.07	-789.02	1,148.98	-804.79	2.00	-2.00	0.00
6,889.98	0.00	0.00	6,672.04	-790.00	1,150.00	-805.78	2.00	-2.00	0.00
Begin Vertical Hold									
6,900.00	0.00	0.00	6,682.06	-790.00	1,150.00	-805.78	0.00	0.00	0.00
7,000.00	0.00	0.00	6,782.06	-790.00	1,150.00	-805.78	0.00	0.00	0.00
7,089.98	0.00	0.00	6,872.04	-790.00	1,150.00	-805.78	0.00	0.00	0.00
KOP, 10.00°/100' Build									
7,100.00	1.00	16.00	6,882.06	-789.92	1,150.02	-805.70	10.00	10.00	0.00
7,150.00	6.00	16.00	6,931.95	-786.98	1,150.87	-802.77	10.00	10.00	0.00
7,200.00	11.00	16.00	6,981.38	-779.88	1,152.90	-795.70	10.00	10.00	0.00
7,250.00	16.00	16.00	7,029.99	-768.66	1,156.12	-784.53	10.00	10.00	0.00
7,300.00	21.00	16.00	7,077.39	-753.41	1,160.49	-769.34	10.00	10.00	0.00
7,350.00	26.00	16.00	7,123.22	-734.25	1,165.99	-750.26	10.00	10.00	0.00
7,400.00	31.00	16.00	7,167.15	-711.32	1,172.56	-727.42	10.00	10.00	0.00
7,450.00	36.00	16.00	7,208.83	-684.80	1,180.16	-701.01	10.00	10.00	0.00
7,500.00	41.00	16.00	7,247.95	-654.89	1,188.74	-671.22	10.00	10.00	0.00
7,550.00	46.00	16.00	7,284.20	-621.82	1,198.23	-638.28	10.00	10.00	0.00
7,600.00	51.00	16.00	7,317.32	-585.83	1,208.54	-602.44	10.00	10.00	0.00
7,650.00	56.00	16.00	7,347.05	-547.21	1,219.62	-563.97	10.00	10.00	0.00
7,700.00	61.00	16.00	7,373.17	-506.24	1,231.37	-523.17	10.00	10.00	0.00
7,750.00	66.00	16.00	7,395.47	-463.24	1,243.70	-480.34	10.00	10.00	0.00
7,800.00	71.00	16.00	7,413.79	-418.53	1,256.52	-435.82	10.00	10.00	0.00
7,850.00	76.00	16.00	7,427.98	-372.46	1,269.73	-389.93	10.00	10.00	0.00
7,900.00	81.00	16.00	7,437.95	-325.38	1,283.23	-343.04	10.00	10.00	0.00
7,950.00	86.00	16.00	7,443.60	-277.64	1,296.92	-295.50	10.00	10.00	0.00
7,989.98	90.00	16.00	7,445.00	-239.24	1,307.93	-257.25	10.00	10.00	0.00
Begin 90.00° Lateral									
8,000.00	90.00	16.00	7,445.00	-229.61	1,310.69	-247.66	0.00	0.00	0.00
8,100.00	90.00	16.00	7,445.00	-133.48	1,338.25	-151.92	0.00	0.00	0.00
8,200.00	90.00	16.00	7,445.00	-37.36	1,365.82	-56.18	0.00	0.00	0.00
8,300.00	90.00	16.00	7,445.00	58.77	1,393.38	39.55	0.00	0.00	0.00



MS Directional Planning Report



Database:	EDM 5000.15 Conroe DB	Local Co-ordinate Reference:	Well Pierogi BS Federal Com 302H
Company:	Marathon Oil	TVD Reference:	WELL @ 3022.50usft (Precision 580)
Project:	Eddy County, New Mexico (NAD 27)	MD Reference:	WELL @ 3022.50usft (Precision 580)
Site:	Pierogi BS Federal Com (302H, 502H, 552H)	North Reference:	Grid
Well:	Pierogi BS Federal Com 302H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #2		
Design:	Design #3		

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)
8,349.98	90.00	16.00	7,445.00	106.82	1,407.16	87.41	0.00	0.00	0.00
Begin 2.00°/100' Turn									
8,400.00	90.00	15.00	7,445.00	155.01	1,420.52	135.41	2.00	0.00	-2.00
8,500.00	90.00	13.00	7,445.00	252.04	1,444.71	232.10	2.00	0.00	-2.00
8,600.00	90.00	11.00	7,445.00	349.85	1,465.50	329.61	2.00	0.00	-2.00
8,700.00	90.00	9.00	7,445.00	448.32	1,482.87	427.84	2.00	0.00	-2.00
8,800.00	90.00	7.00	7,445.00	547.35	1,496.78	526.66	2.00	0.00	-2.00
8,900.00	90.00	5.00	7,445.00	646.79	1,507.24	625.95	2.00	0.00	-2.00
9,000.00	90.00	3.00	7,445.00	746.55	1,514.21	725.60	2.00	0.00	-2.00
9,100.00	90.00	1.00	7,445.00	846.48	1,517.70	825.47	2.00	0.00	-2.00
9,178.85	90.00	359.42	7,445.00	925.33	1,517.99	904.31	2.00	0.00	-2.00
Hold 90.00° Inc, 359.42° Azm									
9,200.00	90.00	359.42	7,445.00	946.48	1,517.78	925.46	0.00	0.00	0.00
9,300.00	90.00	359.42	7,445.00	1,046.47	1,516.77	1,025.46	0.00	0.00	0.00
9,400.00	90.00	359.42	7,445.00	1,146.47	1,515.76	1,125.46	0.00	0.00	0.00
9,500.00	90.00	359.42	7,445.00	1,246.46	1,514.75	1,225.46	0.00	0.00	0.00
9,600.00	90.00	359.42	7,445.00	1,346.46	1,513.75	1,325.46	0.00	0.00	0.00
9,700.00	90.00	359.42	7,445.00	1,446.45	1,512.74	1,425.46	0.00	0.00	0.00
9,800.00	90.00	359.42	7,445.00	1,546.44	1,511.73	1,525.45	0.00	0.00	0.00
9,900.00	90.00	359.42	7,445.00	1,646.44	1,510.72	1,625.45	0.00	0.00	0.00
10,000.00	90.00	359.42	7,445.00	1,746.43	1,509.71	1,725.45	0.00	0.00	0.00
10,100.00	90.00	359.42	7,445.00	1,846.43	1,508.71	1,825.45	0.00	0.00	0.00
10,200.00	90.00	359.42	7,445.00	1,946.42	1,507.70	1,925.45	0.00	0.00	0.00
10,300.00	90.00	359.42	7,445.00	2,046.42	1,506.69	2,025.45	0.00	0.00	0.00
10,400.00	90.00	359.42	7,445.00	2,146.41	1,505.68	2,125.45	0.00	0.00	0.00
10,500.00	90.00	359.42	7,445.00	2,246.41	1,504.68	2,225.45	0.00	0.00	0.00
10,600.00	90.00	359.42	7,445.00	2,346.40	1,503.67	2,325.45	0.00	0.00	0.00
10,700.00	90.00	359.42	7,445.00	2,446.40	1,502.66	2,425.45	0.00	0.00	0.00
10,800.00	90.00	359.42	7,445.00	2,546.39	1,501.65	2,525.45	0.00	0.00	0.00
10,900.00	90.00	359.42	7,445.00	2,646.39	1,500.65	2,625.45	0.00	0.00	0.00
11,000.00	90.00	359.42	7,445.00	2,746.38	1,499.64	2,725.45	0.00	0.00	0.00
11,100.00	90.00	359.42	7,445.00	2,846.38	1,498.63	2,825.45	0.00	0.00	0.00
11,200.00	90.00	359.42	7,445.00	2,946.37	1,497.62	2,925.45	0.00	0.00	0.00
11,300.00	90.00	359.42	7,445.00	3,046.37	1,496.61	3,025.44	0.00	0.00	0.00
11,400.00	90.00	359.42	7,445.00	3,146.36	1,495.61	3,125.44	0.00	0.00	0.00
11,500.00	90.00	359.42	7,445.00	3,246.36	1,494.60	3,225.44	0.00	0.00	0.00
11,600.00	90.00	359.42	7,445.00	3,346.35	1,493.59	3,325.44	0.00	0.00	0.00
11,700.00	90.00	359.42	7,445.00	3,446.35	1,492.58	3,425.44	0.00	0.00	0.00
11,800.00	90.00	359.42	7,445.00	3,546.34	1,491.58	3,525.44	0.00	0.00	0.00
11,900.00	90.00	359.42	7,445.00	3,646.34	1,490.57	3,625.44	0.00	0.00	0.00
12,000.00	90.00	359.42	7,445.00	3,746.33	1,489.56	3,725.44	0.00	0.00	0.00
12,100.00	90.00	359.42	7,445.00	3,846.33	1,488.55	3,825.44	0.00	0.00	0.00
12,200.00	90.00	359.42	7,445.00	3,946.32	1,487.54	3,925.44	0.00	0.00	0.00
12,300.00	90.00	359.42	7,445.00	4,046.32	1,486.54	4,025.44	0.00	0.00	0.00
12,400.00	90.00	359.42	7,445.00	4,146.31	1,485.53	4,125.44	0.00	0.00	0.00
12,500.00	90.00	359.42	7,445.00	4,246.31	1,484.52	4,225.44	0.00	0.00	0.00
12,600.00	90.00	359.42	7,445.00	4,346.30	1,483.51	4,325.44	0.00	0.00	0.00
12,700.00	90.00	359.42	7,445.00	4,446.30	1,482.51	4,425.43	0.00	0.00	0.00
12,800.00	90.00	359.42	7,445.00	4,546.29	1,481.50	4,525.43	0.00	0.00	0.00
12,900.00	90.00	359.42	7,445.00	4,646.29	1,480.49	4,625.43	0.00	0.00	0.00
13,000.00	90.00	359.42	7,445.00	4,746.28	1,479.48	4,725.43	0.00	0.00	0.00
13,100.00	90.00	359.42	7,445.00	4,846.28	1,478.47	4,825.43	0.00	0.00	0.00
13,200.00	90.00	359.42	7,445.00	4,946.27	1,477.47	4,925.43	0.00	0.00	0.00



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Well:	Pierogi BS Federal Com 302H	Survey Calculation Method:	Minimum Curvature
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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)
13,300.00	90.00	359.42	7,445.00	5,046.27	1,476.46	5,025.43	0.00	0.00	0.00
13,400.00	90.00	359.42	7,445.00	5,146.26	1,475.45	5,125.43	0.00	0.00	0.00
13,500.00	90.00	359.42	7,445.00	5,246.26	1,474.44	5,225.43	0.00	0.00	0.00
13,600.00	90.00	359.42	7,445.00	5,346.25	1,473.44	5,325.43	0.00	0.00	0.00
13,700.00	90.00	359.42	7,445.00	5,446.25	1,472.43	5,425.43	0.00	0.00	0.00
13,800.00	90.00	359.42	7,445.00	5,546.24	1,471.42	5,525.43	0.00	0.00	0.00
13,900.00	90.00	359.42	7,445.00	5,646.24	1,470.41	5,625.43	0.00	0.00	0.00
14,000.00	90.00	359.42	7,445.00	5,746.23	1,469.41	5,725.43	0.00	0.00	0.00
14,100.00	90.00	359.42	7,445.00	5,846.23	1,468.40	5,825.43	0.00	0.00	0.00
14,200.00	90.00	359.42	7,445.00	5,946.22	1,467.39	5,925.42	0.00	0.00	0.00
14,300.00	90.00	359.42	7,445.00	6,046.22	1,466.38	6,025.42	0.00	0.00	0.00
14,400.00	90.00	359.42	7,445.00	6,146.21	1,465.37	6,125.42	0.00	0.00	0.00
14,500.00	90.00	359.42	7,445.00	6,246.21	1,464.37	6,225.42	0.00	0.00	0.00
14,600.00	90.00	359.42	7,445.00	6,346.20	1,463.36	6,325.42	0.00	0.00	0.00
14,700.00	90.00	359.42	7,445.00	6,446.20	1,462.35	6,425.42	0.00	0.00	0.00
14,800.00	90.00	359.42	7,445.00	6,546.19	1,461.34	6,525.42	0.00	0.00	0.00
14,900.00	90.00	359.42	7,445.00	6,646.19	1,460.34	6,625.42	0.00	0.00	0.00
15,000.00	90.00	359.42	7,445.00	6,746.18	1,459.33	6,725.42	0.00	0.00	0.00
15,100.00	90.00	359.42	7,445.00	6,846.18	1,458.32	6,825.42	0.00	0.00	0.00
15,200.00	90.00	359.42	7,445.00	6,946.17	1,457.31	6,925.42	0.00	0.00	0.00
15,300.00	90.00	359.42	7,445.00	7,046.17	1,456.30	7,025.42	0.00	0.00	0.00
15,400.00	90.00	359.42	7,445.00	7,146.16	1,455.30	7,125.42	0.00	0.00	0.00
15,500.00	90.00	359.42	7,445.00	7,246.16	1,454.29	7,225.42	0.00	0.00	0.00
15,600.00	90.00	359.42	7,445.00	7,346.15	1,453.28	7,325.41	0.00	0.00	0.00
15,700.00	90.00	359.42	7,445.00	7,446.15	1,452.27	7,425.41	0.00	0.00	0.00
15,800.00	90.00	359.42	7,445.00	7,546.14	1,451.27	7,525.41	0.00	0.00	0.00
15,900.00	90.00	359.42	7,445.00	7,646.14	1,450.26	7,625.41	0.00	0.00	0.00
16,000.00	90.00	359.42	7,445.00	7,746.13	1,449.25	7,725.41	0.00	0.00	0.00
16,100.00	90.00	359.42	7,445.00	7,846.13	1,448.24	7,825.41	0.00	0.00	0.00
16,200.00	90.00	359.42	7,445.00	7,946.12	1,447.24	7,925.41	0.00	0.00	0.00
16,300.00	90.00	359.42	7,445.00	8,046.11	1,446.23	8,025.41	0.00	0.00	0.00
16,400.00	90.00	359.42	7,445.00	8,146.11	1,445.22	8,125.41	0.00	0.00	0.00
16,500.00	90.00	359.42	7,445.00	8,246.10	1,444.21	8,225.41	0.00	0.00	0.00
16,600.00	90.00	359.42	7,445.00	8,346.10	1,443.20	8,325.41	0.00	0.00	0.00
16,700.00	90.00	359.42	7,445.00	8,446.09	1,442.20	8,425.41	0.00	0.00	0.00
16,800.00	90.00	359.42	7,445.00	8,546.09	1,441.19	8,525.41	0.00	0.00	0.00
16,900.00	90.00	359.42	7,445.00	8,646.08	1,440.18	8,625.41	0.00	0.00	0.00
17,000.00	90.00	359.42	7,445.00	8,746.08	1,439.17	8,725.41	0.00	0.00	0.00
17,100.00	90.00	359.42	7,445.00	8,846.07	1,438.17	8,825.40	0.00	0.00	0.00
17,200.00	90.00	359.42	7,445.00	8,946.07	1,437.16	8,925.40	0.00	0.00	0.00
17,300.00	90.00	359.42	7,445.00	9,046.06	1,436.15	9,025.40	0.00	0.00	0.00
17,400.00	90.00	359.42	7,445.00	9,146.06	1,435.14	9,125.40	0.00	0.00	0.00
17,500.00	90.00	359.42	7,445.00	9,246.05	1,434.13	9,225.40	0.00	0.00	0.00
17,600.00	90.00	359.42	7,445.00	9,346.05	1,433.13	9,325.40	0.00	0.00	0.00
17,700.00	90.00	359.42	7,445.00	9,446.04	1,432.12	9,425.40	0.00	0.00	0.00
17,800.00	90.00	359.42	7,445.00	9,546.04	1,431.11	9,525.40	0.00	0.00	0.00
17,900.00	90.00	359.42	7,445.00	9,646.03	1,430.10	9,625.40	0.00	0.00	0.00
18,000.00	90.00	359.42	7,445.00	9,746.03	1,429.10	9,725.40	0.00	0.00	0.00
18,100.00	90.00	359.42	7,445.00	9,846.02	1,428.09	9,825.40	0.00	0.00	0.00
18,200.00	90.00	359.42	7,445.00	9,946.02	1,427.08	9,925.40	0.00	0.00	0.00
18,300.00	90.00	359.42	7,445.00	10,046.01	1,426.07	10,025.40	0.00	0.00	0.00
18,400.00	90.00	359.42	7,445.00	10,146.01	1,425.07	10,125.40	0.00	0.00	0.00
18,500.00	90.00	359.42	7,445.00	10,246.00	1,424.06	10,225.39	0.00	0.00	0.00
18,600.00	90.00	359.42	7,445.00	10,346.00	1,423.05	10,325.39	0.00	0.00	0.00



MS Directional Planning Report



Database:	EDM 5000.15 Conroe DB	Local Co-ordinate Reference:	Well Pierogi BS Federal Com 302H
Company:	Marathon Oil	TVD Reference:	WELL @ 3022.50usft (Precision 580)
Project:	Eddy County, New Mexico (NAD 27)	MD Reference:	WELL @ 3022.50usft (Precision 580)
Site:	Pierogi BS Federal Com (302H, 502H, 552H)	North Reference:	Grid
Well:	Pierogi BS Federal Com 302H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #2		
Design:	Design #3		

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)
18,700.00	90.00	359.42	7,445.00	10,445.99	1,422.04	10,425.39	0.00	0.00	0.00
18,774.61	90.00	359.42	7,445.00	10,520.60	1,421.29	10,500.00	0.00	0.00	0.00
Begin 1.50°/100' Turn									
18,800.00	90.00	359.04	7,445.00	10,545.99	1,420.95	10,525.39	1.50	0.00	-1.50
18,900.00	90.00	357.54	7,445.00	10,645.94	1,417.97	10,625.38	1.50	0.00	-1.50
19,000.00	90.00	356.04	7,445.00	10,745.78	1,412.37	10,725.29	1.50	0.00	-1.50
19,100.00	90.00	354.54	7,445.00	10,845.44	1,404.16	10,825.05	1.50	0.00	-1.50
19,200.00	90.00	353.04	7,445.00	10,944.85	1,393.35	10,924.60	1.50	0.00	-1.50
19,300.00	90.00	351.54	7,445.00	11,043.94	1,379.94	11,023.87	1.50	0.00	-1.50
19,400.00	90.00	350.04	7,445.00	11,142.65	1,363.94	11,122.79	1.50	0.00	-1.50
19,500.00	90.00	348.54	7,445.00	11,240.91	1,345.36	11,221.29	1.50	0.00	-1.50
19,600.00	90.00	347.04	7,445.00	11,338.64	1,324.21	11,319.31	1.50	0.00	-1.50
19,700.00	90.00	345.54	7,445.00	11,435.79	1,300.51	11,416.77	1.50	0.00	-1.50
19,800.00	90.00	344.04	7,445.00	11,532.29	1,274.28	11,513.62	1.50	0.00	-1.50
19,810.78	90.00	343.88	7,445.00	11,542.65	1,271.30	11,524.03	1.50	0.00	-1.50
Begin 1.50°/100' Turn									
19,900.00	90.00	345.22	7,445.00	11,628.64	1,247.53	11,610.34	1.50	0.00	1.50
20,000.00	90.00	346.72	7,445.00	11,725.66	1,223.29	11,707.67	1.50	0.00	1.50
20,100.00	90.00	348.22	7,445.00	11,823.27	1,201.59	11,805.58	1.50	0.00	1.50
20,200.00	90.00	349.72	7,445.00	11,921.42	1,182.46	11,903.98	1.50	0.00	1.50
20,300.00	90.00	351.22	7,445.00	12,020.04	1,165.90	12,002.82	1.50	0.00	1.50
20,400.00	90.00	352.72	7,445.00	12,119.05	1,151.93	12,102.02	1.50	0.00	1.50
20,500.00	90.00	354.22	7,445.00	12,218.40	1,140.55	12,201.51	1.50	0.00	1.50
20,600.00	90.00	355.72	7,445.00	12,318.01	1,131.78	12,301.24	1.50	0.00	1.50
20,700.00	90.00	357.22	7,445.00	12,417.82	1,125.62	12,401.12	1.50	0.00	1.50
20,803.89	90.00	358.78	7,445.00	12,521.64	1,121.99	12,504.98	1.50	0.00	1.50
Hold 90.00° Inc, 358.78° Azm									
20,900.00	90.00	358.78	7,445.00	12,617.73	1,119.94	12,601.09	0.00	0.00	0.00
21,000.00	90.00	358.78	7,445.00	12,717.71	1,117.80	12,701.09	0.00	0.00	0.00
21,100.00	90.00	358.78	7,445.00	12,817.69	1,115.67	12,801.08	0.00	0.00	0.00
21,200.00	90.00	358.78	7,445.00	12,917.66	1,113.53	12,901.08	0.00	0.00	0.00
21,300.00	90.00	358.78	7,445.00	13,017.64	1,111.40	13,001.08	0.00	0.00	0.00
21,400.00	90.00	358.78	7,445.00	13,117.62	1,109.26	13,101.08	0.00	0.00	0.00
21,500.00	90.00	358.78	7,445.00	13,217.59	1,107.13	13,201.07	0.00	0.00	0.00
21,600.00	90.00	358.78	7,445.00	13,317.57	1,104.99	13,301.07	0.00	0.00	0.00
21,700.00	90.00	358.78	7,445.00	13,417.55	1,102.86	13,401.07	0.00	0.00	0.00
21,800.00	90.00	358.78	7,445.00	13,517.53	1,100.72	13,501.06	0.00	0.00	0.00
21,900.00	90.00	358.78	7,445.00	13,617.50	1,098.59	13,601.06	0.00	0.00	0.00
22,000.00	90.00	358.78	7,445.00	13,717.48	1,096.45	13,701.06	0.00	0.00	0.00
22,100.00	90.00	358.78	7,445.00	13,817.46	1,094.31	13,801.06	0.00	0.00	0.00
22,200.00	90.00	358.78	7,445.00	13,917.43	1,092.18	13,901.05	0.00	0.00	0.00
22,300.00	90.00	358.78	7,445.00	14,017.41	1,090.04	14,001.05	0.00	0.00	0.00
22,400.00	90.00	358.78	7,445.00	14,117.39	1,087.91	14,101.05	0.00	0.00	0.00
22,500.00	90.00	358.78	7,445.00	14,217.37	1,085.77	14,201.04	0.00	0.00	0.00
22,600.00	90.00	358.78	7,445.00	14,317.34	1,083.64	14,301.04	0.00	0.00	0.00
22,700.00	90.00	358.78	7,445.00	14,417.32	1,081.50	14,401.04	0.00	0.00	0.00
22,800.00	90.00	358.78	7,445.00	14,517.30	1,079.37	14,501.04	0.00	0.00	0.00
22,900.00	90.00	358.78	7,445.00	14,617.27	1,077.23	14,601.03	0.00	0.00	0.00
23,000.00	90.00	358.78	7,445.00	14,717.25	1,075.10	14,701.03	0.00	0.00	0.00
23,100.00	90.00	358.78	7,445.00	14,817.23	1,072.96	14,801.03	0.00	0.00	0.00
23,200.00	90.00	358.78	7,445.00	14,917.21	1,070.83	14,901.02	0.00	0.00	0.00
23,300.00	90.00	358.78	7,445.00	15,017.18	1,068.69	15,001.02	0.00	0.00	0.00
23,400.00	90.00	358.78	7,445.00	15,117.16	1,066.56	15,101.02	0.00	0.00	0.00



MS Directional Planning Report



Database:	EDM 5000.15 Conroe DB	Local Co-ordinate Reference:	Well Pierogi BS Federal Com 302H
Company:	Marathon Oil	TVD Reference:	WELL @ 3022.50usft (Precision 580)
Project:	Eddy County, New Mexico (NAD 27)	MD Reference:	WELL @ 3022.50usft (Precision 580)
Site:	Pierogi BS Federal Com (302H, 502H, 552H)	North Reference:	Grid
Well:	Pierogi BS Federal Com 302H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #2		
Design:	Design #3		

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)
23,430.27	90.00	358.78	7,445.00	15,147.43	1,065.91	15,131.29	0.00	0.00	0.00
PBHL									

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
KOPv3_Pierogi 302H - plan hits target center - Point	0.00	0.00	6,872.04	-790.00	1,150.00	424,411.88	582,008.43	32° 9' 59.571 N	104° 4' 5.901 W
LTP-PBHL v2_Pierogi - plan hits target center - Point	0.00	0.01	7,445.00	15,147.43	1,065.91	440,349.31	581,924.34	32° 12' 37.296 N	104° 4' 6.422 W
PPP-2 v2_Pierogi 302 - plan misses target center by 31.69usft at 8760.51usft MD (7445.00 TVD, 508.19 N, 1491.70 E) - Point	0.00	0.00	7,445.00	503.78	1,523.08	425,705.66	582,381.51	32° 10' 12.366 N	104° 4' 1.523 W

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
4,010.00	3,878.03	-346.54	661.00	Tie-In to OH - 4010.00' MD	
4,100.00	3,961.23	-362.56	691.34	SDTRK, 5.00°/100' Drop & Turn	
4,283.67	4,135.23	-395.60	739.25	Begin 14.73° Tangent	
6,153.70	5,943.83	-724.83	1,082.13	Begin 2.00°/100' Drop	
6,889.98	6,672.04	-790.00	1,150.00	Begin Vertical Hold	
7,089.98	6,872.04	-790.00	1,150.00	KOP, 10.00°/100' Build	
7,989.98	7,445.00	-239.24	1,307.93	Begin 90.00° Lateral	
8,349.98	7,445.00	106.82	1,407.16	Begin 2.00°/100' Turn	
9,178.85	7,445.00	925.33	1,517.99	Hold 90.00° Inc, 359.42° Azm	
18,774.61	7,445.00	10,520.60	1,421.29	Begin 1.50°/100' Turn	
19,810.78	7,445.00	11,542.65	1,271.30	Begin 1.50°/100' Turn	
20,803.89	7,445.00	12,521.64	1,121.99	Hold 90.00° Inc, 358.78° Azm	
23,430.27	7,445.00	15,147.43	1,065.91	PBHL	

Covarrubias, Adrian (MRO)

To: Stathem, Terri (MRO); Monaco, Anthony (MRO)
Subject: RE: [EXTERNAL] Pierogi 302H Side Track

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From: Immatty, Keith P <kimmatty@blm.gov>
Sent: Wednesday, March 20, 2024 8:55 AM
To: Monaco, Anthony (MRO) <amonaco@marathonoil.com>
Cc: Stathem, Terri (MRO) <tstathem@marathonoil.com>
Subject: RE: [EXTERNAL] Pierogi 302H Side Track

This Message Is From an External Sender - Beware of links/attachments.

Report Suspicious

Reviewed and is OK. Where will the whipstock be set, close to top of fish?

Terri,

Could you please submit a "NOI-Drilling Operations" sundry?

- In the description, please list out the well information Tony has listed below and additionally the whipstock set depth
- Please attach updated directional plans and a copy of this email

Please let me know when you have a sundry ID for me and I will get it processed.

Regards,

Keith Immatty

From: Monaco, Anthony (MRO) <amonaco@marathonoil.com>
Sent: Wednesday, March 20, 2024 7:22 AM
To: Immatty, Keith P <kimmatty@blm.gov>
Subject: [EXTERNAL] Pierogi 302H Side Track

This email has been received from outside of DOI - Use caution before clicking on links, opening attachments, or responding.

Keith,

Per our conversation, we were drilling intermediate hole section at 5250ft and became stuck. The team attempted fishing the pipe and were unsuccessful. Plan forward we are requested approval to run an open hole whipstock and side track the well to continue.

Well Information:

Well Name: Pierogi BS Federal COM 302H

API Number: 30-015-48294

Bottom hole depth: 5247ft MD

Top of Fish: ~4924ftMD

Bottom of Fish: 5247ft MD

Original BHA is attached.

Deepest interval/formation that was penetrated was the Brushy Canyon.

318ft of BHA remains in the hole. See snapshot below (BHA was split at midway point of drill collar stands):

			BOTTOM HOLE ASSEMBLY						
Operator:			Marathon Oil		Rig:	Precision 580	Total Length:		
Well:			Pierogi BS Federal Com 302H - Wellbore 1		BHA #:	2	BHA Weight (Air/Mud):		
Field:			Eddy County, New Mexico (NAD 27) - Marathon Oil		Bit #:	2	Wt. Below Jars (Air/Mud):		
Date In:					Depth In:	0	Total Drilled:		
Date Out:					Depth Out:	0	Drilling / Circ. Hours:		
Survey Offset:			66		Gamma Offset:	63			
Proposed BHA	#	SN	Description	OD [in]	ID [in]	PN OD [in] / PN Len [Usft]	Cnx Up / Cnx Dn	Wt[lb/ft] / Comp Wt[klbs] / Tot Wt[klbs]	
	1	68496	12.25 Ulterra SPL616 w/ 6x12 3x13	12.25			6 5/8 REG		
	2	96D530DLE	Mpack 7/8 7.0 Adj 1.83 w/ 11 3/4 Stab	8		8.750 / 2.20	6 5/8 REG / 6 5/8 REG		
	3	AWSS-5209	11 3/4 STAB	8.25	2.73		6 5/8 REG / 6 5/8 REG		
	4	AWS800-10-5515	8 NMPC	8.125	3.25		6 5/8 REG / 6 5/8 REG		
	5	AWNT-3473	UBHO (PSS 1.47)	8	3.25		6 5/8 REG / 6 5/8 REG		
	6	AWS800-30-9413MSD	8 NMDC	8.375	3.25		6 5/8 REG / 6 5/8 REG		
	7	AWS800-30-9380MSD	8 NMDC	8.125	3.25		6 5/8 REG / 6 5/8 REG		
	8	800-002	Cougar Thruster	8.25	3.15	1.980 / 8.00	6 5/8 REG / 6 5/8 REG		
	9		4 Stands DC	8	3.25		6 5/8 REG / 6 5/8 REG		

Please let me know if you need anything else.

Best,

Tony Monaco

Drilling Engineer

Office: 713-296-3146

Mobile: 412-443-1313

amonaco@marathonoil.com

Marathon Oil | 990 Town & Country Blvd | Houston, TX 77024

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 325213

CONDITIONS

Operator: MARATHON OIL PERMIAN LLC 990 Town & Country Blvd. Houston, TX 77024	OGRID: 372098
	Action Number: 325213
	Action Type: [C-103] NOI Change of Plans (C-103A)

CONDITIONS

Created By	Condition	Condition Date
ward.rikala	Accepted for record	7/12/2024