

Form 3160-3
(June 2015)UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

FORM APPROVED
OMB No. 1004-0137
Expires: January 31, 20185. Lease Serial No.
NMNM13074

6. If Indian, Allottee or Tribe Name

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

8. Lease Name and Well No.
KYLE 34 WD FEDERAL COM

9H

9. API Well No.
30-015-5506910. Field and Pool, or Exploratory
Purple Sage/WOLFCAMP (GAS)11. Sec., T. R. M. or Blk. and Survey or Area
SEC 34/T24S/R28E/NMP1a. Type of work: ☒ DRILL ☐ REENTER
1b. Type of Well: ☒ Oil Well ☐ Gas Well ☐ Other
1c. Type of Completion: ☐ Hydraulic Fracturing ☒ Single Zone ☐ Multiple Zone2. Name of Operator
MARATHON OIL PERMIAN LLC3a. Address
990 TOWN & COUNTRY BLVD, HOUSTON, TX 770243b. Phone No. (include area code)
(713) 296-2113

4. Location of Well (Report location clearly and in accordance with any State requirements. *)

At surface SESW / 1021 FSL / 1778 FWL / LAT 32.1693187 / LONG -104.0780728

At proposed prod. zone NENW / 330 FNL / 1662 FEL / LAT 32.1803679 / LONG -104.0784606

14. Distance in miles and direction from nearest town or post office*
63 miles12. County or Parish
EDDY13. State
NM15. Distance from proposed*
location to nearest
property or lease line, ft.
(Also to nearest drig. unit line, if any)
100 feet

16. No of acres in lease

17. Spacing Unit dedicated to this well
320.018. Distance from proposed location*
to nearest well, drilling, completed,
applied for, on this lease, ft.
1720 feet19. Proposed Depth
10683 feet / 15459 feet20. BLM/BIA Bond No. in file
FED: NMB00155521. Elevations (Show whether DF, KDB, RT, GL, etc.)
2999 feet22. Approximate date work will start*
04/30/202423. Estimated duration
35 days

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No. 1, and the Hydraulic Fracturing rule per 43 CFR 3162.3-3 (as applicable)

1. Well plat certified by a registered surveyor.
2. A Drilling Plan.
3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO must be filed with the appropriate Forest Service Office).

4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).
5. Operator certification.
6. Such other site specific information and/or plans as may be requested by the BLM.

25. Signature
(Electronic Submission)Name (Printed/Typed)
NICOLE LEE / Ph: (713) 929-6600Date
08/31/2023Title
Regulatory Compliance RepresentativeApproved by (Signature)
(Electronic Submission)Name (Printed/Typed)
CHRISTOPHER WALLS / Ph: (575) 234-2234Date
04/24/2024Title
Petroleum EngineerOffice
Carlsbad Field Office

Application approval 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.

Conditions of approval, if any, are attached.

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.

(Continued on page 2)

*(Instructions on page 2)



INSTRUCTIONS

GENERAL: This form is designed for submitting proposals to perform certain well operations, as indicated on Federal and Indian lands and leases for action by appropriate Federal agencies, pursuant to applicable Federal laws 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, either are shown below or will be issued by, or may be obtained from local Federal offices.

ITEM I: If the proposal is to redrill to the same reservoir at a different subsurface location or to a new reservoir, use this form with appropriate notations. Consult applicable Federal regulations concerning subsequent work proposals or reports on the well.

ITEM 4: Locations on Federal or Indian land should be described in accordance with Federal requirements. Consult local Federal offices for specific instructions.

ITEM 14: Needed only when location of well cannot readily be found by road from the land or lease description. A plat, or plats, separate or on the reverse side, showing the roads to, and the surveyed location of, the well, and any other required information, should be furnished when required by Federal agency offices.

ITEMS 15 AND 18: If well is to be, or has been directionally drilled, give distances for subsurface location of hole in any present or objective productive zone.

ITEM 22: Consult applicable Federal regulations, or appropriate officials, concerning approval of the proposal before operations are started.

ITEM 24: 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 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., 25 U.S.C. 396; 43 CFR 3160

PRINCIPAL PURPOSES: The information will be used to: (1) process and evaluate your application for a permit to drill a new oil, gas, or service well or to reenter a plugged and abandoned well; and (2) document, for administrative use, information for the management, disposal and use of National Resource Lands and resources including (a) analyzing your proposal to discover and extract the Federal or Indian resources encountered; (b) reviewing procedures and equipment and the projected impact on the land involved; and (c) evaluating the effects of the proposed operation on the surface and subsurface water and other environmental impacts.

ROUTINE USE: Information from the record and/or the record will be transferred to appropriate Federal, State, and local or foreign agencies, when relevant to civil, criminal or regulatory investigations or prosecution, in connection with congressional inquiries and for regulatory responsibilities.

EFFECT OF NOT PROVIDING INFORMATION: Filing of this application and disclosure of the information is mandatory only if you elect to initiate a drilling or reentry operation on an oil and gas lease.

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

The BLM connects this information to a new evaluation of the technical, safety, and environmental factors involved with drilling for oil and/or gas on Federal and Indian oil and gas leases. This information will be used to analyze and approve applications. Response to this request is mandatory only if the operator elects to initiate drilling or reentry operations on an oil and gas lease. 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 Connection Clearance Officer (WO-630), 1849 C Street, N.W., Mail Stop 401 LS, Washington, D.C. 20240.

Additional Operator Remarks

Location of Well

0. SHL: SESW / 1021 FSL / 1778 FWL / TWSP: 24S / RANGE: 28E / SECTION: 34 / LAT: 32.1693187 / LONG: -104.0780728 (TVD: 0 feet, MD: 0 feet)

PPP: SESW / 330 FSL / 1671 FWL / TWSP: 24S / RANGE: 38E / SECTION: 34 / LAT: 32.1674189 / LONG: -104.0784195 (TVD: 10110 feet, MD: 10184 feet)

BHL: NENW / 330 FNL / 1662 FEL / TWSP: 24S / RANGE: 28E / SECTION: 34 / LAT: 32.1803679 / LONG: -104.0784606 (TVD: 10683 feet, MD: 15459 feet)

BLM Point of Contact

Name: JORDAN NAVARRETTE

Title: LIE

Phone: (575) 234-5972

Email: jnavarrette@blm.gov

CONFIDENTIAL

Review and Appeal Rights

A person contesting a decision shall request a State Director review. This request must be filed within 20 working days of receipt of the Notice with the appropriate State Director (see 43 CFR 3165.3). The State Director review decision may be appealed to the Interior Board of Land Appeals, 801 North Quincy Street, Suite 300, Arlington, VA 22203 (see 43 CFR 3165.4). Contact the above listed Bureau of Land Management office for further information.

CONFIDENTIAL



U.S. Department of the Interior
Bureau of Land Management

Application for Permit to Drill

APD Package Report

Date Printed: 05/03/2024 06:19 PM

APD ID: 10400094065

Well Status: AAPD

APD Received Date: 08/31/2023 01:09 PM

Well Name: KYLE 34 WD FEDERAL COM

Operator: MARATHON OIL PERMIAN LLC

Well Number: 9H

APD Package Report Contents

- Form 3160-3
- Operator Certification Report
- Application Report
- Application Attachments
 - Well Plat: 2 file(s)
- Drilling Plan Report
- Drilling Plan Attachments
 - Blowout Prevention Choke Diagram Attachment: 1 file(s)
 - Blowout Prevention BOP Diagram Attachment: 1 file(s)
 - Casing Design Assumptions and Worksheet(s): 4 file(s)
 - Proposed horizontal/directional/multi-lateral plan submission: 1 file(s)
 - Other Facets: 2 file(s)
 - Other Variances: 4 file(s)
- SUPO Report
- SUPO Attachments
 - Existing Road Map: 1 file(s)
 - Attach Well map: 1 file(s)
 - Production Facilities map: 1 file(s)
 - Water source and transportation map: 1 file(s)
 - Construction Materials source location attachment: 1 file(s)
 - Well Site Layout Diagram: 2 file(s)
- PWD Report
- PWD Attachments
 - None
- Bond Report
- Bond Attachments
 - None

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

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

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

☒ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-015-55069	² Pool Code 98220	³ Pool Name PURPLE SAGE; WOLFCAMP (GAS)
⁴ Property Code 331209	⁵ Property Name KYLE 34 WD FEDERAL COM	⁶ Well Number 9H
⁷ Grid No. 372098	⁸ Operator Name MARATHON OIL PERMIAN LLC	⁹ Elevation 2999'

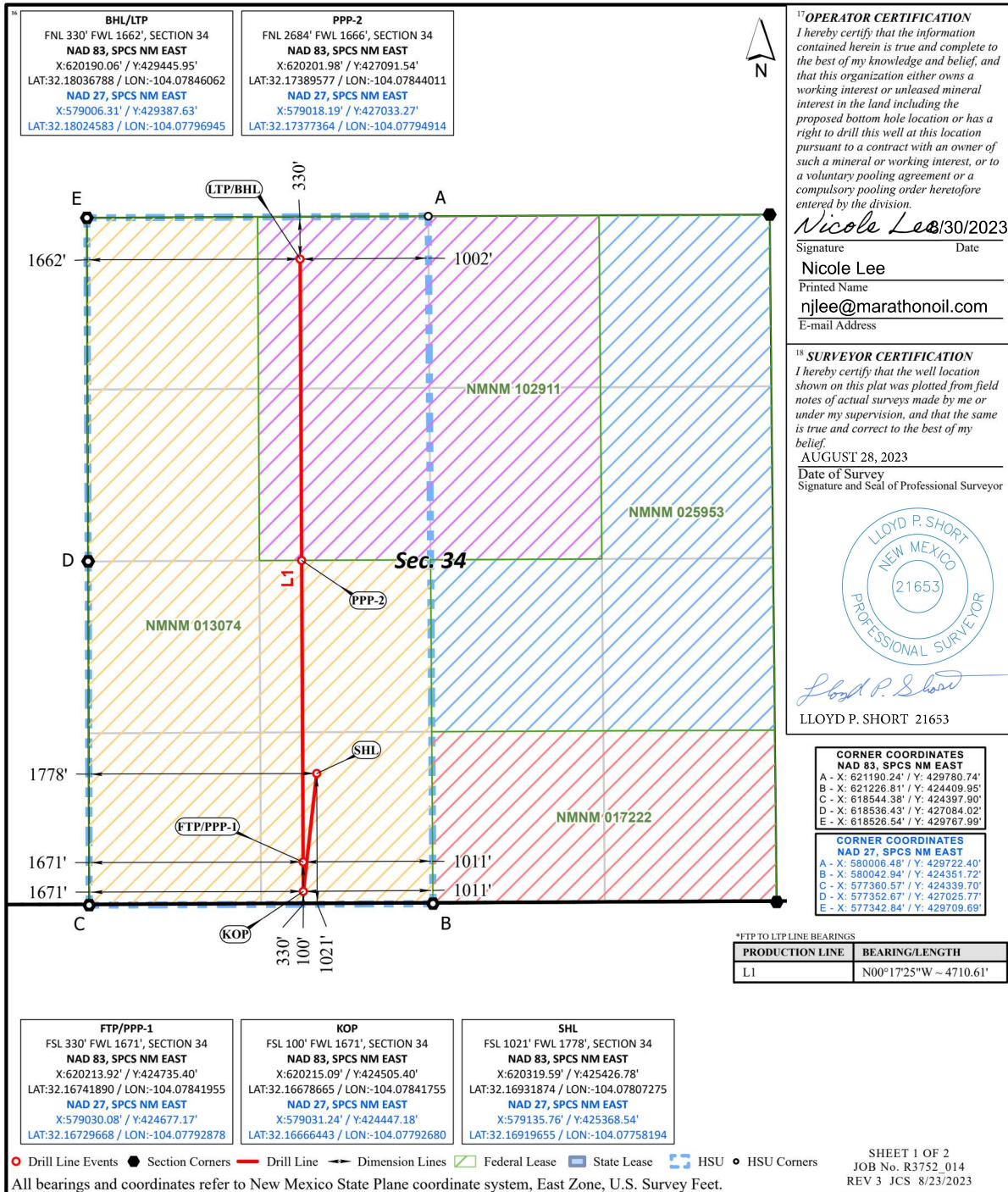
¹⁰ Surface Location

U/L or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
N	34	24S	28E		1021'	SOUTH	1778'	WEST	EDDY

¹¹ Bottom Hole Location If Different From Surface

U/L or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
C	34	24S	28E		330'	NORTH	1662'	WEST	EDDY
¹² Dedicated Acres 320.00	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.						

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.



State of New Mexico
Energy, Minerals and Natural Resources Department

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Submit Electronically
Via E-permitting

NATURAL GAS MANAGEMENT PLAN

This Natural Gas Management Plan must be submitted with each Application for Permit to Drill (APD) for a new or recompleted well.

Section 1 – Plan Description
Effective May 25, 2021

I. Operator: Marathon Oil Permian LLC OGRID: 972098 Date: 5 / 3 / 2024

II. Type: ☒ Original ☐ Amendment due to ☐ 19.15.27.9.D(6)(a) NMAC ☐ 19.15.27.9.D(6)(b) NMAC ☐ Other.

If Other, please describe:

III. Well(s): Provide the following information for each new or recompleted well or set of wells proposed to be drilled or proposed to be recompleted from a single well pad or connected to a central delivery point.

Well Name	API	ULSTR	Footages	Anticipated Oil BBL/D	Anticipated Gas MCF/D	Anticipated Produced Water BBL/D
Kyle 34 WD Fed Com 9H		N 34-24S-28E	1021 FSL 177	1000	1000	1500
Kyle Fed 24 28 34 TB 12H		O 34-24S-28E	726 FSL 1859	1000	1000	1500

IV. Central Delivery Point Name: Kyle CTB [See 19.15.27.9(D)(1) NMAC]

V. Anticipated Schedule: Provide the following information for each new or recompleted well or set of wells proposed to be drilled or proposed to be recompleted from a single well pad or connected to a central delivery point.

Well Name	API	Spud Date	TD Reached Date	Completion Commencement Date	Initial Flow Back Date	First Production Date
Kyle 34 WD FedCom 9H		01/15/2025	02/15/2025	04/15/2025	04/30/2025	04/30/2025
Kyle Fed 24 28 34 TB 12H		1/20/2025	2/20/2025	4/20/2025	4/30/2025	4/30/2025

VI. Separation Equipment: ☒ Attach a complete description of how Operator will size separation equipment to optimize gas capture.

VII. Operational Practices: ☒ Attach a complete description of the actions Operator will take to comply with the requirements of Subsection A through F of 19.15.27.8 NMAC.

VIII. Best Management Practices: ☒ Attach a complete description of Operator’s best management practices to minimize venting during active and planned maintenance.

Section 2 – Enhanced Plan**EFFECTIVE APRIL 1, 2022**

Beginning April 1, 2022, an operator that is not in compliance with its statewide natural gas capture requirement for the applicable reporting area must complete this section.

☒ Operator certifies that it is not required to complete this section because Operator is in compliance with its statewide natural gas capture requirement for the applicable reporting area.

IX. Anticipated Natural Gas Production:

Well	API	Anticipated Average Natural Gas Rate MCF/D	Anticipated Volume of Natural Gas for the First Year MCF

X. Natural Gas Gathering System (NGGS):

Operator	System	ULSTR of Tie-in	Anticipated Gathering Start Date	Available Maximum Daily Capacity of System Segment Tie-in

XI. Map. ☐ Attach an accurate and legible map depicting the location of the well(s), the anticipated pipeline route(s) connecting the production operations to the existing or planned interconnect of the natural gas gathering system(s), and the maximum daily capacity of the segment or portion of the natural gas gathering system(s) to which the well(s) will be connected.

XII. Line Capacity. The natural gas gathering system ☐ will ☐ will not have capacity to gather 100% of the anticipated natural gas production volume from the well prior to the date of first production.

XIII. Line Pressure. Operator ☐ does ☐ does not anticipate that its existing well(s) connected to the same segment, or portion, of the natural gas gathering system(s) described above will continue to meet anticipated increases in line pressure caused by the new well(s).

☐ Attach Operator's plan to manage production in response to the increased line pressure.

XIV. Confidentiality: ☐ Operator asserts confidentiality pursuant to Section 71-2-8 NMSA 1978 for the information provided in Section 2 as provided in Paragraph (2) of Subsection D of 19.15.27.9 NMAC, and attaches a full description of the specific information for which confidentiality is asserted and the basis for such assertion.

Section 3 - Certifications

Effective May 25, 2021

Operator certifies that, after reasonable inquiry and based on the available information at the time of submittal:

☒ Operator will be able to connect the well(s) to a natural gas gathering system in the general area with sufficient capacity to transport one hundred percent of the anticipated volume of natural gas produced from the well(s) commencing on the date of first production, taking into account the current and anticipated volumes of produced natural gas from other wells connected to the pipeline gathering system; or

☐ Operator will not be able to connect to a natural gas gathering system in the general area with sufficient capacity to transport one hundred percent of the anticipated volume of natural gas produced from the well(s) commencing on the date of first production, taking into account the current and anticipated volumes of produced natural gas from other wells connected to the pipeline gathering system.

If Operator checks this box, Operator will select one of the following:

Well Shut-In. ☐ Operator will shut-in and not produce the well until it submits the certification required by Paragraph (4) of Subsection D of 19.15.27.9 NMAC; or

Venting and Flaring Plan. ☐ Operator has attached a venting and flaring plan that evaluates and selects one or more of the potential alternative beneficial uses for the natural gas until a natural gas gathering system is available, including:

- (a) power generation on lease;
- (b) power generation for grid;
- (c) compression on lease;
- (d) liquids removal on lease;
- (e) reinjection for underground storage;
- (f) reinjection for temporary storage;
- (g) reinjection for enhanced oil recovery;
- (h) fuel cell production; and
- (i) other alternative beneficial uses approved by the division.

Section 4 - Notices

1. If, at any time after Operator submits this Natural Gas Management Plan and before the well is spud:

(a) Operator becomes aware that the natural gas gathering system it planned to connect the well(s) to has become unavailable or will not have capacity to transport one hundred percent of the production from the well(s), no later than 20 days after becoming aware of such information, Operator shall submit for OCD's approval a new or revised venting and flaring plan containing the information specified in Paragraph (5) of Subsection D of 19.15.27.9 NMAC; or

(b) Operator becomes aware that it has, cumulatively for the year, become out of compliance with its baseline natural gas capture rate or natural gas capture requirement, no later than 20 days after becoming aware of such information, Operator shall submit for OCD's approval a new or revised Natural Gas Management Plan for each well it plans to spud during the next 90 days containing the information specified in Paragraph (2) of Subsection D of 19.15.27.9 NMAC, and shall file an update for each Natural Gas Management Plan until Operator is back in compliance with its baseline natural gas capture rate or natural gas capture requirement.

2. OCD may deny or conditionally approve an APD if Operator does not make a certification, fails to submit an adequate venting and flaring plan which includes alternative beneficial uses for the anticipated volume of natural gas produced, or if OCD determines that Operator will not have adequate natural gas takeaway capacity at the time a well will be spud.

I certify that, after reasonable inquiry, the statements in and attached to this Natural Gas Management Plan are true and correct to the best of my knowledge and acknowledge that a false statement may be subject to civil and criminal penalties under the Oil and Gas Act.

Signature:	<i>Terri Stathem</i>
Printed Name:	Terri Stathem
Title:	Manager Regulatory Compliance
E-mail Address:	tstathem@marathonoil.com
Date:	5/3/2024
Phone:	713-817-0224
OIL CONSERVATION DIVISION (Only applicable when submitted as a standalone form)	
Approved By:	
Title:	
Approval Date:	
Conditions of Approval:	

APPENDIX

Section 1 - Parts VI, VII, and VIII

VI. Separation Equipment: ☒ Attach a complete description of how Operator will size separation equipment to optimize gas capture.

- Separation equipment is sized to allow for retention time and velocity to adequately separate oil, gas, and water at anticipated peak rates.
- All central tank battery equipment is designed to efficiently capture the remaining gas from the liquid phase.
- Valves and meters are designed to service without flow interruption or venting of gas.

VII. Operational Practices: ☒ Attach a complete description of the actions Operator will take to comply with the requirements of Subsection A through F of 19.15.27.8 NMAC.

◆ **19.15.27.8 (A) – Venting and Flaring Of Natural Gas**

- Marathon Oil Permian's field operations are designed with the goal of minimizing flaring and preventing venting of natural gas. If capturing the gas is not possible then the gas is combusted/flared using properly sized flares or combustors in accordance with state air permit rules.

◆ **19.15.27.8 (B) – Venting and Flaring During Drilling Operations**

- A properly-sized flare stack will be located at a minimum 100' from the nearest surface hole location on the pad.
- All natural gas produced during drilling operations will be flared. Venting will only occur if there is an equipment malfunction and/or to avoid risk of an immediate and substantial adverse impact on safety, public health, or the environment.

◆ **19.15.27.8 (C) – Venting and Flaring During Completion or Recompletion Operations**

- During all phases of flowback, wells will flow through a sand separator, or other appropriate flowback separation equipment, and the well stream will be directed to a central tank battery (CTB) through properly sized flowlines.
- The CTB will have properly sized separation equipment for maximum anticipated flow rates.
- Multiple stages of separation will be used to separate gas from liquids. All gas will be routed to a sales outlet. Fluids will be routed to tanks equipped with a closed loop system that will recover any residual gas from the tanks and route such gas to a sales outlet.

◆ **19.15.27.8 (D) – Venting and Flaring During Production Operations**

- During production, the well stream will be routed to the CTB where multiple stages of separation will separate gas from liquids. All gas will be routed to a sales outlet. Fluids will be routed to tanks equipped with a closed loop system that will recover any residual gas from the tanks and route such gas to a sales outlet, minimizing tank emissions.
- Flares are equipped with auto-ignition systems and continuous pilot operations.
- Automatic gauging equipment is installed on all tanks.

◆ **19.15.27.8 (E) – Performance Standards**

- Production equipment will be designed to handle maximum anticipated rates and pressure.
- Automatic gauging equipment is installed on all tanks to minimize venting.
- All flared gas will be combusted in a flare stack that is properly sized and designed to ensure proper combustion.
- Flares are equipped with continuous pilots and auto-ignitors along with remote monitoring of the pilot status.
- Weekly AVOs and monthly LDAR inspections will be performed on all wells and facilities that produce more than 60 MCFD.
- Gas/H₂S detectors will be installed throughout the facilities and wellheads to detect leaks and enable timely repairs.

◆ 19.15.27.8 (F) – Measurement or Estimation of Vented and Flared Natural Gas

- All high pressure flared gas is measured by equipment conforming to API 14.10.
- No meter bypasses are installed.
- When metering is not practical due to low pressure/low rate, the vented or flared volume will be estimated through flare flow curves with the assistance of air emissions consultants, as necessary.

VIII. Best Management Practices: ☒ Attach a complete description of Operator's best management practices to minimize venting during active and planned maintenance.

- Marathon Oil Permian will use best management practices to vent as minimally as possible during well intervention operations and downhole well maintenance.
- All natural gas is routed into the gas gathering system and directed to one of Marathon Oil Permian's multiple gas sales outlets.
- All venting events will be recorded and all start-up, shutdown, maintenance logs will be kept for control equipment.
- All control equipment will be maintained to provide highest run-time possible.
- All procedures are drafted to keep venting and flaring to the absolute minimum.



U.S. Department of the Interior
BUREAU OF LAND MANAGEMENT

Application Data

05/03/2024

APD ID: 10400094065

Submission Date: 08/31/2023

Highlighted data
reflects the most
recent changes
[Show Final Text](#)

Operator Name: MARATHON OIL PERMIAN LLC

Well Name: KYLE 34 WD FEDERAL COM

Well Number: 9H

Well Type: OIL WELL

Well Work Type: Drill

Section 1 - General

APD ID: 10400094065

Tie to previous NOS? N

Submission Date: 08/31/2023

BLM Office: Carlsbad

User: NICOLE LEE

Title: Regulatory Compliance
Representative

Federal/Indian APD: FED

Is the first lease penetrated for production Federal or Indian? FED

Lease number: NMNM13074

Lease Acres:

Surface access agreement in place?

Allotted?

Reservation:

Agreement in place? NO

Federal or Indian agreement:

Agreement number:

Agreement name:

Keep application confidential? Y

Permitting Agent? NO

APD Operator: MARATHON OIL PERMIAN LLC

Operator letter of

Operator Info

Operator Organization Name: MARATHON OIL PERMIAN LLC

Operator Address: 990 TOWN & COUNTRY BLVD

Zip: 77024

Operator PO Box:

Operator City: HOUSTON

State: TX

Operator Phone: (713)929-6600

Operator Internet Address:

Section 2 - Well Information

Well in Master Development Plan? NO

Master Development Plan name:

Well in Master SUPO? NO

Master SUPO name:

Well in Master Drilling Plan? NO

Master Drilling Plan name:

Well Name: KYLE 34 WD FEDERAL COM

Well Number: 9H

Well API Number:

Field/Pool or Exploratory? Field and Pool

Field Name: Purple Sage

Pool Name: WOLFCAMP
(GAS)

Operator Name: MARATHON OIL PERMIAN LLC**Well Name:** KYLE 34 WD FEDERAL COM**Well Number:** 9H**Is the proposed well in an area containing other mineral resources?** NATURAL GAS,OIL**Is the proposed well in a Helium production area?** N **Use Existing Well Pad?** N **New surface disturbance?****Type of Well Pad:** MULTIPLE WELL**Multiple Well Pad Name:** KYLE 34 FEDERAL COM**Number:** 276-3**Well Class:** HORIZONTAL**Number of Legs:** 1**Well Work Type:** Drill**Well Type:** OIL WELL**Describe Well Type:****Well sub-Type:** INFILL**Describe sub-type:****Distance to town:** 63 Miles**Distance to nearest well:** 1720 FT**Distance to lease line:** 100 FT**Reservoir well spacing assigned acres Measurement:** 320 Acres**Well plat:** A2_C102_Kyle_34_WD_Federal_Com_9H_20230830082830.pdf

A2_Kyle_Pay_receipt_20230831060426.pdf

Well work start Date: 04/30/2024**Duration:** 35 DAYS**Section 3 - Well Location Table****Survey Type:** RECTANGULAR**Describe Survey Type:****Datum:** NAD83**Vertical Datum:** NAVD88**Survey number:** 21653**Reference Datum:** GROUND LEVEL

Wellbore	NS-Foot	NS Indicator	EW-Foot	EW Indicator	Twsp	Range	Section	Aliquot/Lot/Tract	Latitude	Longitude	County	State	Meridian	Lease Type	Lease Number	Elevation	MD	TVD	Will this well produce from this
SHL Leg #1	102	FSL	177	FWL	24S	28E	34	Aliquot SESW	32.1693187	-104.0780728	EDD Y	NEW MEXICO	NEW MEXICO	F	NMNM 13074	2999	0	0	Y
KOP Leg #1	100	FSL	167	FWL	24S	38E	34	Aliquot SESW	32.1667947	-104.0740836	EDD Y	NEW MEXICO	NEW MEXICO	F	NMNM 13074	-7111	10184	10110	Y

Operator Name: MARATHON OIL PERMIAN LLC**Well Name:** KYLE 34 WD FEDERAL COM**Well Number:** 9H

Wellbore	NS-Foot	NS Indicator	EW-Foot	EW Indicator	Twsp	Range	Section	Aliquot/Lot/Tract	Latitude	Longitude	County	State	Meridian	Lease Type	Lease Number	Elevation	MD	TVD	Will this well produce from this
PPP Leg #1-1	330	FSL	167 1	FW L	24S	38E	34	Aliquot SESW	32.16741 89	- 104.0784 195	EDD Y	NEW MEXI CO	NEW MEXI CO	F	NMNM 13074	- 711 1	101 84	101 10	Y
EXIT Leg #1	330	FNL	166 2	FEL	24S	28E	34	Aliquot NENW	32.18036 79	- 104.0784 606	EDD Y	NEW MEXI CO	NEW MEXI CO	F	NMNM 102911	- 768 4	154 59	106 83	Y
BHL Leg #1	330	FNL	166 2	FEL	24S	28E	34	Aliquot NENW	32.18036 79	- 104.0784 606	EDD Y	NEW MEXI CO	NEW MEXI CO	F	NMNM 102911	- 768 4	154 59	106 83	Y



Drilling Plan Data Report

05/03/2024

U.S. Department of the Interior
BUREAU OF LAND MANAGEMENT

APD ID: 10400094065

Submission Date: 08/31/2023

Highlighted data
reflects the most
recent changes

Operator Name: MARATHON OIL PERMIAN LLC

Well Name: KYLE 34 WD FEDERAL COM

Well Number: 9H

Well Type: OIL WELL

Well Work Type: Drill

[Show Final Text](#)

Section 1 - Geologic Formations

Formation ID	Formation Name	Elevation	True Vertical	Measured Depth	Lithologies	Mineral Resources	Producing Formatio
13311686	SALADO	2999	686	686	ANHYDRITE, DOLOMITE, SALT	OTHER : Brine	N
13311687	CASTILE	2045	954	954	ANHYDRITE, SALT	OTHER : brine	N
13311688	BASE OF SALT	529	2470	2480	LIMESTONE, SANDSTONE	OTHER : brine	N
13311689	LAMAR	390	2609	2621	SANDSTONE, SHALE	OIL	N
13311690	BELL CANYON	335	2664	2677	SANDSTONE, SHALE	OIL	N
13311691	CHERRY CANYON	-502	3501	3527	OTHER : SAND/CARBONATE	OIL	N
13311692	BRUSHY CANYON	-1730	4729	4774	OTHER : SANDS/CARBONATE	OIL	N
13311693	BONE SPRING	-3329	6328	6395	OTHER : SANDS/CARBONATE	OIL	N
13311694	WOLFCAMP	-6542	9541	9615	OTHER, SANDSTONE : carbonates	OIL	Y

Section 2 - Blowout Prevention

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 50% WP for Annular and 10,000 psi for BOP Stack. Testing will be conducted by an independent service company per 43 CFR 3162 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 will be operationally checked each 24 hour period. Blind rams will be operationally checked on each trip out of the hole. These checks will be noted on the daily tour sheets. Other accessories to the BOP equipment will include a Kelly cock, full opening safety valve / inside BOP and choke lines and choke manifold. See attached schematics. Formation integrity test will be performed per 43 CFR 3162. 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

Operator Name: MARATHON OIL PERMIAN LLC**Well Name:** KYLE 34 WD FEDERAL COM**Well Number:** 9H

shoe shall be performed. A multibowl wellhead is being used. The BOP will be tested per 43 CFR 3162 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.

Choke Diagram Attachment:

D2_Example_Choke_Manifold_10M_20230816134509.pdf

BOP Diagram Attachment:

D2_Example_BOP_Diagram_10M_20230816134521.pdf

Section 3 - Casing

Casing ID	String Type	Hole Size	Csg Size	Condition	Standard	Tapered String	Top Set MD	Bottom Set MD	Top Set TVD	Bottom Set TVD	Top Set MSL	Bottom Set MSL	Calculated casing length MD	Grade	Weight	Joint Type	Collapse SF	Burst SF	Joint SF Type	Joint SF	Body SF Type	Body SF
1	SURFACE	17.5	13.375	NEW	API	N	0	450	0	450	2999	2549	450	J-55	54.5	BUTT	5.22	1.81	BUOY	4.52	BUOY	4.52
2	INTERMEDIATE	12.25	9.625	NEW	API	N	0	10083	0	10010	0	-7011	10083	P-110	40	BUTT	1.2	1.42	BUOY	2.44	BUOY	2.44
3	PRODUCTION	8.75	5.5	NEW	API	N	0	15459	0	10683	0	-7684	15459	P-110	23	OTHER - TLW	2.53	1.26	BUOY	2.22	BUOY	2.22

Casing Attachments**Casing ID:** 1 **String** SURFACE**Inspection Document:****Spec Document:****Tapered String Spec:****Casing Design Assumptions and Worksheet(s):**

D3_Kyle_34_WD_Federal_com_9H_Csg_Assumptions_20230822061817.pdf

Operator Name: MARATHON OIL PERMIAN LLC

Well Name: KYLE 34 WD FEDERAL COM

Well Number: 9H

Casing Attachments

Casing ID: 2 String INTERMEDIATE

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

D3_Kyle_34_WD_Federal_com_9H_Csg_Assumptions_20230822061852.pdf

Casing ID: 3 String PRODUCTION

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

D3_Kyle_34_WD_Federal_com_9H_Csg_Assumptions_20230822061924.pdf

5.500_23.00_Benteler_P110_CY_TLW_CDS__1__20230830135453.pdf

Section 4 - Cement

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
PRODUCTION	Lead		0	0	0	0	0	0	0	na	na
PRODUCTION	Tail		9783	15459	1107	1.68	13	1860	25	class h	retarder, extender, fluid loss, suspension agent
SURFACE	Lead		0	300	146	2.12	12.5	309	25	class c	extender, accelerator, lcm
SURFACE	Tail		300	450	99	1.32	14.8	130	25	class c	accelerator

Operator Name: MARATHON OIL PERMIAN LLC**Well Name:** KYLE 34 WD FEDERAL COM**Well Number:** 9H

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
INTERMEDIATE	Lead		0	9583	1734	2.18	12.4	3779	25	class c	extender, accelerator, lcm
INTERMEDIATE	Tail		9583	10083	147	1.33	14.8	196	25	class c	retarder

Section 5 - Circulating Medium

Mud System Type: Closed**Will an air or gas system be Used?** NO**Description of the equipment for the circulating system in accordance with Onshore Order #2:****Diagram of the equipment for the circulating system in accordance with Onshore Order #2:****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 (lbs/gal)	Max Weight (lbs/gal)	Density (lbs/cu ft)	Gel Strength (lbs/100 sqft)	PH	Viscosity (CP)	Salinity (ppm)	Filtration (cc)	Additional Characteristics
0	450	WATER-BASED MUD	8.4	8.8							
450	10083	OTHER : brine or oil based mud	9.2	10.2							
10083	15459	OIL-BASED MUD	10.5	12.5							

Operator Name: MARATHON OIL PERMIAN LLC

Well Name: KYLE 34 WD FEDERAL COM

Well Number: 9H

Section 6 - Test, Logging, Coring

List of production tests including testing procedures, equipment and safety measures:

GR from TD to Surface (horizontal well - vertical portion of well)

List of open and cased hole logs run in the well:

GAMMA RAY LOG,COMPENSATED NEUTRON LOG,DIRECTIONAL SURVEY,

Coring operation description for the well:

Run gamma-ray (GR), 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 - Pressure

Anticipated Bottom Hole Pressure: 6944

Anticipated Surface Pressure: 4593

Anticipated Bottom Hole Temperature(F): 195

Anticipated abnormal pressures, temperatures, or potential geologic hazards? NO

Describe:

Contingency Plans geohazards description:

Contingency Plans geohazards

Hydrogen Sulfide drilling operations plan required? NO

Hydrogen sulfide drilling operations

Section 8 - Other Information

Proposed horizontal/directional/multi-lateral plan submission:

D8_Kyle_34_WD_Federal_Com_9H_Directional_Plan_20230822062642.pdf

Other proposed operations facets description:

Other proposed operations facets attachment:

D8_Kyle_34_WD_Fed_Com_9H_Drill_Plan_20230822062656.pdf

D8_Kyle_34_WD_Fed_Com_9H_Rig_Layout_20230822062704.pdf

Other Variance attachment:

D8_Example_Flex_Hose_Testing_Info_20230816135521.pdf

D8_Example_Oil_Well_Control_Plan_20230816135520.pdf

D8_Example_Variance_Request_20230816135520.pdf

D8_Example_Wellhead_Diagram_20230816135520.pdf

MARATHON OIL PERMIAN, LLC.
DRILLING AND OPERATIONS PLAN



WELL NAME & NUMBER: **KYLE 34 WD FEDERAL COM 9H**
LOCATION: SECTION **34** TOWNSHIP **24S** RANGE **28E**
EDDY COUNTY, **NEW MEXICO**

Section 1: GEOLOGICAL FORMATIONS

Name of Surface Formation: Permian
Elevation: 2999 feet

Estimated Tops of Important Geological Markers:

Formation	TVD (ft)	MD (ft)	Elevation (ft SS)	Lithologies	Mineral Resources	Producing Formation?
Rustler	NA	NA	#VALUE!	Anhydrite	Brine	No
Salado	686	686	2313	Salt/Anhydrite	Brine	No
Castile	954	954	2045	Salt/Anhydrite	Brine	No
Base of Salt (BX)	2927	2927	72	Salt/Anhydrite	Brine	No
Lamar	2609	2609	390	Sandstone/Shale	None	No
Bell Canyon	2664	2664	335	Sandstone	Oil	No
Cherry Canyon	3501	3501	-502	Sandstone	Oil	No
Brushy Canyon	4729	4729	-1730	Sandstone	Oil	No
Bone Spring Lime	6328	6328	-3329	Limestone	None	No
Upper Avalon Shale	6328	6328	-3329	Shale	Oil	Yes
1st Bone Spring Sand	7240	7240	-4241	Sandstone	Oil	Yes
2nd Bone Spring Carbonate	8048	8048	-5049	Limestone/Shale	None	No
2nd Bone Spring Sand	8048	8048	-5049	Sandstone	Oil	Yes
3rd Bone Spring Carbonate	9170	9170	-6171	Limestone	Oil	No
3rd Bone Spring Sand	9170	9170	-6171	Sandstone	Oil	Yes
Wolfcamp	9541	9541	-6542	Sandstone/Shale/Carbonates	Natural Gas / Oil	Yes
Wolfcamp A	9677	9677	-6678	Sandstone/Shale/Carbonates	Natural Gas / Oil	Yes
Wolfcamp B	9874	9874	-6875	Sandstone/Shale/Carbonates	Natural Gas / Oil	No
Wolfcamp C	10099	10099	-7100	Sandstone/Shale/Carbonates	Natural Gas / Oil	No
Wolfcamp D	10476	10476	-7477	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	450	0	450	2999	2549	54.5	J55	BTC	5.22	1.81	BUOY	4.52	BUOY	4.52
Intermediate	12.25	9.625	0	10083	0	10010	2999	-7011	40	P110HC	BTC	1.20	1.42	BUOY	2.44	BUOY	2.44
Production	8.75	5.5	0	15459	0	10683	2999	-7684	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	300	146	2.12	12.5	309	25	Class C	Extender,Accelerator,LCM
Surface	Tail	300	450	99	1.32	14.8	130	25	Class C	Accelerator
Intermediate	Lead	0	9583	1734	2.18	12.4	3779	25	Class C	Extender,Accelerator,LCM
Intermediate	Tail	9583	10083	147	1.33	14.8	196	25	Class C	Retarder
Production	Tail	9783	15459	1107	1.68	13	1860	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	450	Water Based Mud	8.4	8.8
450	10083	Brine or Oil Based Mud	9.2	10.2
10083	15459	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: 6944 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.

Batch Drilling Plan

- Marathon Oil Permian LLC. respectfully requests the option to “batch” drill sections of a well with intentions of returning to the well for later completion.
- When it is determined that the use of a “batch” drilling process to increase overall efficiency and reduce rig time on location, the following steps will be utilized to ensure compliant well control before releasing drilling rig during the batch process.
- Succeeding a successful cement job, fluid levels will be monitored in both the annulus and casing string to be verified static.
- A mandrel hanger packoff will be ran and installed in the multi-bowl wellhead isolating and creating a barrier on the annulus. This packoff will be tested to 5,000 PSI validating the seals.
- At this point the well is secure and the drilling adapter will be removed from the wellhead.
- A 13-5/8” 5M temporary abandonment cap will be installed on the wellhead by stud and nut flange. The seals of the TA cap will then be pressure tested to 5,000 PSI.
- The drilling rig will skid to the next well on the pad to continue the batch drilling process.
- When returning to the well with the TA cap, the TA cap will be removed and the BOP will be nipped up on the wellhead.
- A BOP test will then be conducted according to Onshore Order #2 and drilling operations will resume on the subject well.

Request for Surface Rig

- Marathon Oil Permian LLC. Requests the option to contract a surface rig to drill, set surface casing and cement on the subject well. If the timing between rigs is such that Marathon Oil Permian LLC. would not be able to preset the surface section, the primary drilling rig will drill the well in its entirety per the APD.



Pro Directional Survey Report



Company:	Marathon Oil	Local Co-ordinate Reference:	Well No. 9H
Project:	Eddy County, NM	TVD Reference:	Well @ 3025.50usft (GL: 2999' + KB: 26.5' (H&P498))
Site:	Kyle 34 WD Fed Com (4-9-22)	MD Reference:	Well @ 3025.50usft (GL: 2999' + KB: 26.5' (H&P498))
Well:	No. 9H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Prelim Plan A	Database:	WellPlanner1

Project	Eddy County, NM		
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	Kyle 34 WD Fed Com (4-9-22)								
Site Position:		Northing:	425,318.54	usft	Latitude:	32.169059			
From:	Map	Easting:	579,110.76	usft	Longitude:	-104.077663			
Position Uncertainty:		0.00	usft	Slot Radius:	13-3/16	"	Grid Convergence:	0.14	°

Well	No. 9H					
Well Position	+N/-S	0.00 usft	Northing:	425,318.61 usft	Latitude:	32.169059
	+E/-W	0.00 usft	Easting:	579,140.67 usft	Longitude:	-104.077567
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level:	2,999.00 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	10/29/2018	7.15	59.92	47,934.60

Design	Prelim Plan A				
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		359.71

Survey Tool Program	Date	10/30/2018			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
0.00	1,150.00	Prelim Plan A (OH)	MWD+IFR1	OWSG MWD + IFR1	
1,150.00	5,400.00	Prelim Plan A (OH)	MWD+IFR1	OWSG MWD + IFR1	
5,400.00	10,000.00	Prelim Plan A (OH)	MWD+IFR1	OWSG MWD + IFR1	
10,000.00	15,459.16	Prelim Plan A (OH)	MWD+IFR1	OWSG MWD + IFR1	

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	
[Kyle34WD#9H]FTP										
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	



Pro Directional Survey Report



Company:	Marathon Oil	Local Co-ordinate Reference:	Well No. 9H
Project:	Eddy County, NM	TVD Reference:	Well @ 3025.50usft (GL: 2999' + KB: 26.5' (H&P498))
Site:	Kyle 34 WD Fed Com (4-9-22)	MD Reference:	Well @ 3025.50usft (GL: 2999' + KB: 26.5' (H&P498))
Well:	No. 9H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Prelim Plan A	Database:	WellPlanner1

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)
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	2.00	180.00	1,599.98	-1.75	0.00	-1.75	2.00	2.00	0.00
1,700.00	4.00	180.00	1,699.84	-6.98	0.00	-6.98	2.00	2.00	0.00
1,800.00	6.00	180.00	1,799.45	-15.69	0.00	-15.69	2.00	2.00	0.00
1,900.00	8.00	180.00	1,898.70	-27.88	0.00	-27.88	2.00	2.00	0.00
2,000.00	10.00	180.00	1,997.47	-43.52	0.00	-43.52	2.00	2.00	0.00
2,100.00	10.00	180.00	2,095.95	-60.89	0.00	-60.89	0.00	0.00	0.00
2,200.00	10.00	180.00	2,194.43	-78.25	0.00	-78.25	0.00	0.00	0.00
2,300.00	10.00	180.00	2,292.91	-95.62	0.00	-95.62	0.00	0.00	0.00
2,400.00	10.00	180.00	2,391.39	-112.98	0.00	-112.98	0.00	0.00	0.00
2,500.00	10.00	180.00	2,489.87	-130.35	0.00	-130.35	0.00	0.00	0.00
2,600.00	10.00	180.00	2,588.35	-147.71	0.00	-147.71	0.00	0.00	0.00
2,700.00	10.00	180.00	2,686.83	-165.08	0.00	-165.07	0.00	0.00	0.00
2,800.00	10.00	180.00	2,785.31	-182.44	0.00	-182.44	0.00	0.00	0.00
2,900.00	10.00	180.00	2,883.79	-199.81	0.00	-199.80	0.00	0.00	0.00
3,000.00	10.00	180.00	2,982.27	-217.17	0.00	-217.17	0.00	0.00	0.00
3,100.00	10.00	180.00	3,080.75	-234.54	0.00	-234.53	0.00	0.00	0.00
3,200.00	10.00	180.00	3,179.23	-251.90	0.00	-251.90	0.00	0.00	0.00
3,300.00	10.00	180.00	3,277.72	-269.27	0.00	-269.26	0.00	0.00	0.00
3,400.00	10.00	180.00	3,376.20	-286.63	0.00	-286.63	0.00	0.00	0.00
3,500.00	10.00	180.00	3,474.68	-303.99	0.00	-303.99	0.00	0.00	0.00
3,600.00	10.00	180.00	3,573.16	-321.36	0.00	-321.36	0.00	0.00	0.00
3,700.00	10.00	180.00	3,671.64	-338.72	0.00	-338.72	0.00	0.00	0.00
3,800.00	10.00	180.00	3,770.12	-356.09	0.00	-356.08	0.00	0.00	0.00
3,900.00	10.00	180.00	3,868.60	-373.45	0.00	-373.45	0.00	0.00	0.00
4,000.00	10.00	180.00	3,967.08	-390.82	0.00	-390.81	0.00	0.00	0.00
4,100.00	10.00	180.00	4,065.56	-408.18	0.00	-408.18	0.00	0.00	0.00
4,200.00	10.00	180.00	4,164.04	-425.55	0.00	-425.54	0.00	0.00	0.00
4,300.00	10.00	180.00	4,262.52	-442.91	0.00	-442.91	0.00	0.00	0.00
4,400.00	10.00	180.00	4,361.00	-460.28	0.00	-460.27	0.00	0.00	0.00
4,500.00	10.00	180.00	4,459.48	-477.64	0.00	-477.64	0.00	0.00	0.00
4,600.00	10.00	180.00	4,557.97	-495.01	0.00	-495.00	0.00	0.00	0.00



Pro Directional Survey Report



Company:	Marathon Oil	Local Co-ordinate Reference:	Well No. 9H
Project:	Eddy County, NM	TVD Reference:	Well @ 3025.50usft (GL: 2999' + KB: 26.5' (H&P498))
Site:	Kyle 34 WD Fed Com (4-9-22)	MD Reference:	Well @ 3025.50usft (GL: 2999' + KB: 26.5' (H&P498))
Well:	No. 9H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Prelim Plan A	Database:	WellPlanner1

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	10.00	180.00	4,656.45	-512.37	0.00	-512.37	0.00	0.00	0.00
4,800.00	10.00	180.00	4,754.93	-529.74	0.00	-529.73	0.00	0.00	0.00
4,900.00	10.00	180.00	4,853.41	-547.10	0.00	-547.10	0.00	0.00	0.00
5,000.00	10.00	180.00	4,951.89	-564.47	0.00	-564.46	0.00	0.00	0.00
5,100.00	10.00	180.00	5,050.37	-581.83	0.00	-581.82	0.00	0.00	0.00
5,200.00	10.00	180.00	5,148.85	-599.20	0.00	-599.19	0.00	0.00	0.00
5,300.00	10.00	180.00	5,247.33	-616.56	0.00	-616.55	0.00	0.00	0.00
5,400.00	10.00	180.00	5,345.81	-633.93	0.00	-633.92	0.00	0.00	0.00
5,500.00	10.00	180.00	5,444.29	-651.29	0.00	-651.28	0.00	0.00	0.00
5,600.00	10.00	180.00	5,542.77	-668.66	0.00	-668.65	0.00	0.00	0.00
5,700.00	10.00	180.00	5,641.25	-686.02	0.00	-686.01	0.00	0.00	0.00
5,800.00	10.00	180.00	5,739.73	-703.39	0.00	-703.38	0.00	0.00	0.00
5,900.00	10.00	180.00	5,838.22	-720.75	0.00	-720.74	0.00	0.00	0.00
6,000.00	10.00	180.00	5,936.70	-738.12	0.00	-738.11	0.00	0.00	0.00
6,100.00	10.00	180.00	6,035.18	-755.48	0.00	-755.47	0.00	0.00	0.00
6,200.00	10.00	180.00	6,133.66	-772.84	0.00	-772.84	0.00	0.00	0.00
6,300.00	10.00	180.00	6,232.14	-790.21	0.00	-790.20	0.00	0.00	0.00
6,400.00	10.00	180.00	6,330.62	-807.57	0.00	-807.56	0.00	0.00	0.00
6,500.00	10.00	180.00	6,429.10	-824.94	0.00	-824.93	0.00	0.00	0.00
6,514.62	10.00	180.00	6,443.49	-827.48	0.00	-827.47	0.00	0.00	0.00
6,600.00	8.29	180.00	6,527.79	-841.05	0.00	-841.04	2.00	-2.00	0.00
6,700.00	6.29	180.00	6,626.98	-853.74	0.00	-853.73	2.00	-2.00	0.00
6,800.00	4.29	180.00	6,726.54	-862.96	0.00	-862.95	2.00	-2.00	0.00
6,900.00	2.29	180.00	6,826.37	-868.71	0.00	-868.70	2.00	-2.00	0.00
7,000.00	0.29	180.00	6,926.34	-870.96	0.00	-870.95	2.00	-2.00	0.00
7,014.62	0.00	0.00	6,940.96	-871.00	0.00	-870.99	2.00	-2.00	0.00
7,100.00	0.00	0.00	7,026.34	-871.00	0.00	-870.99	0.00	0.00	0.00
7,200.00	0.00	0.00	7,126.34	-871.00	0.00	-870.99	0.00	0.00	0.00
7,300.00	0.00	0.00	7,226.34	-871.00	0.00	-870.99	0.00	0.00	0.00
7,400.00	0.00	0.00	7,326.34	-871.00	0.00	-870.99	0.00	0.00	0.00
7,500.00	0.00	0.00	7,426.34	-871.00	0.00	-870.99	0.00	0.00	0.00
7,600.00	0.00	0.00	7,526.34	-871.00	0.00	-870.99	0.00	0.00	0.00
7,700.00	0.00	0.00	7,626.34	-871.00	0.00	-870.99	0.00	0.00	0.00
7,800.00	0.00	0.00	7,726.34	-871.00	0.00	-870.99	0.00	0.00	0.00
7,900.00	0.00	0.00	7,826.34	-871.00	0.00	-870.99	0.00	0.00	0.00
8,000.00	0.00	0.00	7,926.34	-871.00	0.00	-870.99	0.00	0.00	0.00
8,100.00	0.00	0.00	8,026.34	-871.00	0.00	-870.99	0.00	0.00	0.00
8,200.00	0.00	0.00	8,126.34	-871.00	0.00	-870.99	0.00	0.00	0.00
8,300.00	0.00	0.00	8,226.34	-871.00	0.00	-870.99	0.00	0.00	0.00
8,400.00	0.00	0.00	8,326.34	-871.00	0.00	-870.99	0.00	0.00	0.00
8,500.00	0.00	0.00	8,426.34	-871.00	0.00	-870.99	0.00	0.00	0.00
8,600.00	0.00	0.00	8,526.34	-871.00	0.00	-870.99	0.00	0.00	0.00



Pro Directional Survey Report



Company:	Marathon Oil	Local Co-ordinate Reference:	Well No. 9H
Project:	Eddy County, NM	TVD Reference:	Well @ 3025.50usft (GL: 2999' + KB: 26.5' (H&P498))
Site:	Kyle 34 WD Fed Com (4-9-22)	MD Reference:	Well @ 3025.50usft (GL: 2999' + KB: 26.5' (H&P498))
Well:	No. 9H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Prelim Plan A	Database:	WellPlanner1

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)
8,700.00	0.00	0.00	8,626.34	-871.00	0.00	-870.99	0.00	0.00	0.00
8,800.00	0.00	0.00	8,726.34	-871.00	0.00	-870.99	0.00	0.00	0.00
8,900.00	0.00	0.00	8,826.34	-871.00	0.00	-870.99	0.00	0.00	0.00
9,000.00	0.00	0.00	8,926.34	-871.00	0.00	-870.99	0.00	0.00	0.00
9,100.00	0.00	0.00	9,026.34	-871.00	0.00	-870.99	0.00	0.00	0.00
9,200.00	0.00	0.00	9,126.34	-871.00	0.00	-870.99	0.00	0.00	0.00
9,300.00	0.00	0.00	9,226.34	-871.00	0.00	-870.99	0.00	0.00	0.00
9,400.00	0.00	0.00	9,326.34	-871.00	0.00	-870.99	0.00	0.00	0.00
9,500.00	0.00	0.00	9,426.34	-871.00	0.00	-870.99	0.00	0.00	0.00
9,600.00	0.00	0.00	9,526.34	-871.00	0.00	-870.99	0.00	0.00	0.00
9,700.00	0.00	0.00	9,626.34	-871.00	0.00	-870.99	0.00	0.00	0.00
9,800.00	0.00	0.00	9,726.34	-871.00	0.00	-870.99	0.00	0.00	0.00
9,900.00	0.00	0.00	9,826.34	-871.00	0.00	-870.99	0.00	0.00	0.00
10,000.00	0.00	0.00	9,926.34	-871.00	0.00	-870.99	0.00	0.00	0.00
10,100.00	0.00	0.00	10,026.34	-871.00	0.00	-870.99	0.00	0.00	0.00
10,183.66	0.00	0.00	10,110.00	-871.00	0.00	-870.99	0.00	0.00	0.00
[Kyle34WD#9H]KOP									
10,200.00	1.63	350.95	10,126.34	-870.77	-0.04	-870.76	10.00	10.00	0.00
10,250.00	6.63	350.95	10,176.20	-867.21	-0.60	-867.20	10.00	10.00	0.00
10,300.00	11.63	350.95	10,225.55	-859.37	-1.85	-859.35	10.00	10.00	0.00
10,350.00	16.63	350.95	10,274.02	-847.32	-3.77	-847.29	10.00	10.00	0.00
10,400.00	21.63	350.95	10,321.24	-831.14	-6.35	-831.10	10.00	10.00	0.00
10,450.00	26.63	350.95	10,366.85	-810.96	-9.56	-810.90	10.00	10.00	0.00
10,500.00	31.63	350.95	10,410.51	-786.93	-13.39	-786.85	10.00	10.00	0.00
10,550.00	36.63	350.95	10,451.89	-759.23	-17.80	-759.13	10.00	10.00	0.00
10,600.00	41.63	350.95	10,490.66	-728.07	-22.77	-727.95	10.00	10.00	0.00
10,650.00	46.63	350.95	10,526.53	-693.70	-28.24	-693.55	10.00	10.00	0.00
10,700.00	51.63	350.95	10,559.24	-656.37	-34.19	-656.19	10.00	10.00	0.00
10,750.00	56.63	350.95	10,588.52	-616.37	-40.56	-616.15	10.00	10.00	0.00
10,800.00	61.63	350.95	10,614.17	-574.00	-47.31	-573.75	10.00	10.00	0.00
10,850.00	66.63	350.95	10,635.97	-529.58	-54.38	-529.30	10.00	10.00	0.00
10,900.00	71.63	350.95	10,653.77	-483.45	-61.73	-483.14	10.00	10.00	0.00
10,950.00	76.63	350.95	10,667.44	-435.97	-69.29	-435.62	10.00	10.00	0.00
11,000.00	81.63	350.95	10,676.86	-387.50	-77.01	-387.10	10.00	10.00	0.00
11,050.00	86.63	350.95	10,681.97	-338.39	-84.83	-337.96	10.00	10.00	0.00
11,083.66	90.00	350.95	10,682.96	-305.17	-90.12	-304.71	10.00	10.00	0.00
11,100.00	90.00	351.44	10,682.96	-289.02	-92.63	-288.55	3.00	0.00	3.00
11,200.00	90.00	354.44	10,682.96	-189.79	-104.91	-189.26	3.00	0.00	3.00
11,300.00	90.00	357.44	10,682.96	-90.06	-111.99	-89.49	3.00	0.00	3.00
11,375.74	90.00	359.71	10,682.96	-14.34	-113.88	-13.77	3.00	0.00	3.00
11,400.00	90.00	359.71	10,682.96	9.92	-114.00	10.49	0.00	0.00	0.00
11,500.00	90.00	359.71	10,682.96	109.91	-114.50	110.49	0.00	0.00	0.00



Pro Directional Survey Report



Company:	Marathon Oil	Local Co-ordinate Reference:	Well No. 9H
Project:	Eddy County, NM	TVD Reference:	Well @ 3025.50usft (GL: 2999' + KB: 26.5' (H&P498))
Site:	Kyle 34 WD Fed Com (4-9-22)	MD Reference:	Well @ 3025.50usft (GL: 2999' + KB: 26.5' (H&P498))
Well:	No. 9H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Prelim Plan A	Database:	WellPlanner1

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)
11,600.00	90.00	359.71	10,682.96	209.91	-115.00	210.49	0.00	0.00	0.00
11,700.00	90.00	359.71	10,682.96	309.91	-115.50	310.49	0.00	0.00	0.00
11,800.00	90.00	359.71	10,682.96	409.91	-116.00	410.49	0.00	0.00	0.00
11,900.00	90.00	359.71	10,682.96	509.91	-116.51	510.49	0.00	0.00	0.00
12,000.00	90.00	359.71	10,682.97	609.91	-117.01	610.49	0.00	0.00	0.00
12,100.00	90.00	359.71	10,682.97	709.91	-117.51	710.49	0.00	0.00	0.00
12,200.00	90.00	359.71	10,682.97	809.91	-118.01	810.49	0.00	0.00	0.00
12,300.00	90.00	359.71	10,682.97	909.90	-118.51	910.49	0.00	0.00	0.00
12,400.00	90.00	359.71	10,682.97	1,009.90	-119.01	1,010.49	0.00	0.00	0.00
12,500.00	90.00	359.71	10,682.97	1,109.90	-119.52	1,110.49	0.00	0.00	0.00
12,600.00	90.00	359.71	10,682.97	1,209.90	-120.02	1,210.49	0.00	0.00	0.00
12,700.00	90.00	359.71	10,682.97	1,309.90	-120.52	1,310.49	0.00	0.00	0.00
12,800.00	90.00	359.71	10,682.97	1,409.90	-121.02	1,410.49	0.00	0.00	0.00
12,900.00	90.00	359.71	10,682.97	1,509.90	-121.52	1,510.49	0.00	0.00	0.00
13,000.00	90.00	359.71	10,682.98	1,609.90	-122.02	1,610.49	0.00	0.00	0.00
13,100.00	90.00	359.71	10,682.98	1,709.89	-122.53	1,710.49	0.00	0.00	0.00
13,200.00	90.00	359.71	10,682.98	1,809.89	-123.03	1,810.49	0.00	0.00	0.00
13,300.00	90.00	359.71	10,682.98	1,909.89	-123.53	1,910.49	0.00	0.00	0.00
13,400.00	90.00	359.71	10,682.98	2,009.89	-124.03	2,010.49	0.00	0.00	0.00
13,500.00	90.00	359.71	10,682.98	2,109.89	-124.53	2,110.49	0.00	0.00	0.00
13,600.00	90.00	359.71	10,682.98	2,209.89	-125.03	2,210.49	0.00	0.00	0.00
13,700.00	90.00	359.71	10,682.98	2,309.89	-125.54	2,310.49	0.00	0.00	0.00
13,800.00	90.00	359.71	10,682.98	2,409.89	-126.04	2,410.49	0.00	0.00	0.00
13,900.00	90.00	359.71	10,682.98	2,509.88	-126.54	2,510.49	0.00	0.00	0.00
14,000.00	90.00	359.71	10,682.99	2,609.88	-127.04	2,610.49	0.00	0.00	0.00
14,100.00	90.00	359.71	10,682.99	2,709.88	-127.54	2,710.49	0.00	0.00	0.00
14,200.00	90.00	359.71	10,682.99	2,809.88	-128.04	2,810.49	0.00	0.00	0.00
14,300.00	90.00	359.71	10,682.99	2,909.88	-128.54	2,910.49	0.00	0.00	0.00
14,400.00	90.00	359.71	10,682.99	3,009.88	-129.05	3,010.49	0.00	0.00	0.00
14,500.00	90.00	359.71	10,682.99	3,109.88	-129.55	3,110.49	0.00	0.00	0.00
14,600.00	90.00	359.71	10,682.99	3,209.88	-130.05	3,210.49	0.00	0.00	0.00
14,700.00	90.00	359.71	10,682.99	3,309.87	-130.55	3,310.49	0.00	0.00	0.00
14,800.00	90.00	359.71	10,682.99	3,409.87	-131.05	3,410.49	0.00	0.00	0.00
14,900.00	90.00	359.71	10,682.99	3,509.87	-131.55	3,510.49	0.00	0.00	0.00
15,000.00	90.00	359.71	10,683.00	3,609.87	-132.06	3,610.49	0.00	0.00	0.00
15,100.00	90.00	359.71	10,683.00	3,709.87	-132.56	3,710.49	0.00	0.00	0.00
15,200.00	90.00	359.71	10,683.00	3,809.87	-133.06	3,810.49	0.00	0.00	0.00
15,300.00	90.00	359.71	10,683.00	3,909.87	-133.56	3,910.49	0.00	0.00	0.00
15,400.00	90.00	359.71	10,683.00	4,009.87	-134.06	4,010.49	0.00	0.00	0.00
15,459.16	90.00	359.71	10,683.00	4,069.02	-134.36	4,069.65	0.00	0.00	0.00

[Kyle34WD#9H]LTP/BHL



Pro Directional Survey Report



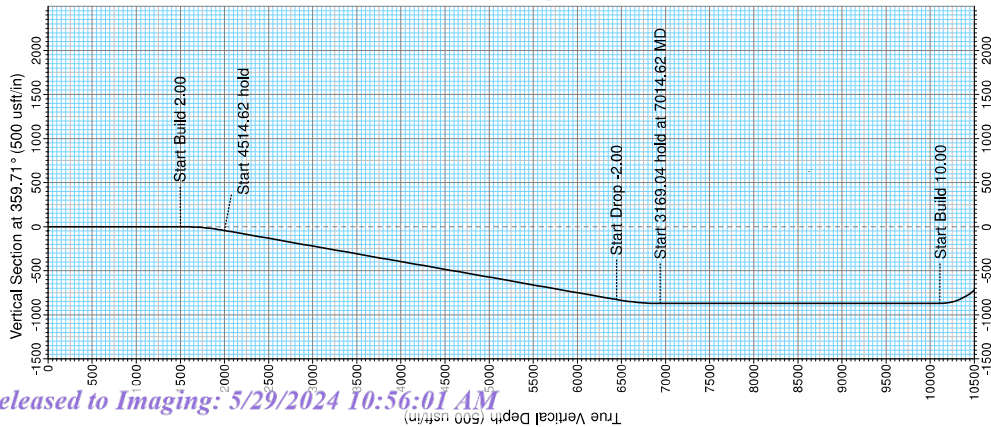
Company:	Marathon Oil	Local Co-ordinate Reference:	Well No. 9H
Project:	Eddy County, NM	TVD Reference:	Well @ 3025.50usft (GL: 2999' + KB: 26.5' (H&P498))
Site:	Kyle 34 WD Fed Com (4-9-22)	MD Reference:	Well @ 3025.50usft (GL: 2999' + KB: 26.5' (H&P498))
Well:	No. 9H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Prelim Plan A	Database:	WellPlanner1

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
[Kyle34WD#9H]FTP - plan misses target center by 650.90usft at 0.00usft MD (0.00 TVD, 0.00 N, 0.00 E) - Point	0.00	0.00	0.00	-641.44	-110.59	424,677.17	579,030.08	32.167297	-104.077929
[Kyle34WD#9H]KOP - plan hits target center - Point	0.00	0.00	10,110.00	-871.00	0.00	424,447.61	579,140.67	32.166665	-104.077573
[Kyle34WD#9H]LTP/BHI - plan hits target center - Point	0.00	0.00	10,683.0 0	4,069.02	-134.36	429,387.63	579,006.31	32.180246	-104.077970

Checked By: _____ Approved By: _____ Date: _____



Marathon Oil
Eddy County, NM
Kyle 34 WD Fed Com (4-9-22)
No. 9H
Prelim Plan A
GL: 2999' + KB: 26.5' (H&P498)



US State Plane 1927 (Exact solution)
NAD 1983 (Clarke 1866 CONUS)
New Mexico East 3001
Mean Sea Level

RKB Elevation: Well @ 3025.50usft (GL: 2999' + KB: 26.5' (H&P498))

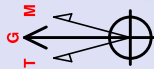
	+N-S	+E-W	North	East	Longitude	Latitude	Slot
	0.00	0.00	425318.61	579140.67	-104.077566	32.169059	

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N-S	+E-W	Dleg	Vsect
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	1500.00	0.00	0.00	1500.00	0.00	0.00	0.00	0.00
3	2000.00	10.00	180.00	1997.47	-43.52	0.00	2.00	-43.52
4	5514.62	10.00	180.00	6443.49	-827.48	0.00	0.00	-827.47
5	6514.62	0.00	0.00	6443.49	-827.48	0.00	0.00	-827.47
6	10183.62	0.00	0.00	8910.36	-371.00	0.00	2.00	-870.99
7	11083.66	90.00	359.71	10882.96	-305.17	-90.12	0.00	-304.71
8	11375.74	90.00	359.71	10682.96	-14.34	-113.88	3.00	-13.77
9	15453.16	90.00	359.71	10683.00	4069.02	-134.36	0.00	4069.65

WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

Name	TVD	+N-S	+E-W	North	East
[Kyle34WD#9H]FTP	0.00	-641.44	-110.59	424677.17	579030.08
[Kyle34WD#9H]KOP	10110.00	-871.00	-87.00	424447.61	579140.67
[Kyle34WD#9H]LTP/BHL	10683.00	4069.02	-134.36	429387.63	579006.31

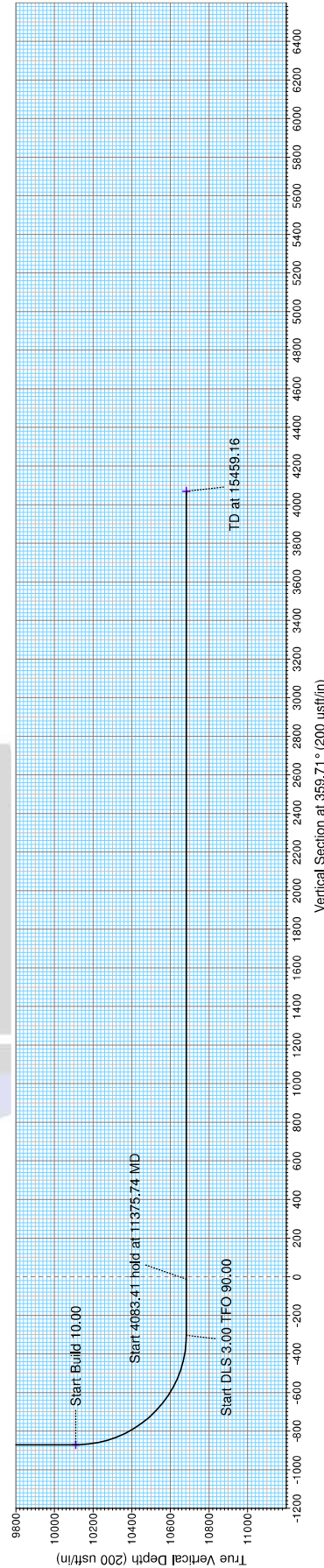


Azimuths to Grid North
True North: -0.14°
Magnetic North: 7.01°
Magnetic Field
Strength: 47934.6nT
Dip Angle: 59.92°
Date: 12/25/16
Model: NDCM

Azimuth Corrections

Total Magnetic Corr. (M to G): 7.01°
Declination (M to T): 7.15° East

Target Line: 10683' TVD @ 0° VS: 90° INC



1. DRILLING WELL CONTROL PLAN

1.1 WELL CONTROL - CERTIFICATIONS

Required IADC/IWCF Well Control Certifications Supervisor Level:

Any personnel who supervises or operates the BOP must possess a valid current IADC training certification and photo identification. This would include the onsite drilling supervisor, tool pusher/rig manager, driller, and any personnel that will be acting in these capacities. Another example of this may be a wireline or snubbing crew rigged up on the rig to assist the rig, the operator of each system must also have a valid control certification for their level of operation.

BLM recognizes IADC training as the industry approved accredited training. Online self-certifications will not be acceptable. Enforcement actions for the lack of a valid Supervisory Level certificate shall be prompt action to correct the deficiency. **Enforcement actions include but are not limited to immediate replacement of personnel lacking certifications, drilling operations being shut down or installment of a 10M annular.**

IADC Driller Level for all Drillers and general knowledge for the Assistant Driller, Derrick Hands, Floor Hands and Motor Hands is recognized by the BLM; however, a Driller Level certification will need to be presented only if acting in a temporary Driller Level certification capacity.

Well Control-Position/Roles

IADC Well control training and certification is targeted toward each role, e.g., Supervisor Level toward those who direct, Driller Level to those who act, Introductory to those who need to know.

- **Supervisor Level**
 - Specifies and has oversight that the correct actions are carried out
 - Role is to supervise well control equipment, training, testing, and well control events
 - Directs the testing of BOP and other well control equipment
 - Regularly direct well control crew drills
 - Land based rigs – usually runs the choke during a well kill operation
 - Due to role on the rig, training and certification is targeted more toward management of well control and managing an influx out of the well
- **Driller Level**
 - Performs an action to prevent or respond to well control accident
 - Role is to monitor the well via electronic devices while drilling and detect unplanned influxes
 - Assist with the testing of BOP and other well control equipment
 - Regularly assist with well control crew drills
 - When influx is detected, responsible to close the BOP
 - Due to role on the rig, training and certification is targeted more toward monitoring and shutting the well in (closing the BOP) when an influx is detected

(Well Control-Positions/Roles Continued)

- **Derrick Hand, Assistant Driller Introductory Level**
 - Role is to assist Driller with kick detection by physically monitoring the well at the mixing pits/tanks
 - Regularly record mud weights/viscosity for analysis by the Supervisor level and mud engineer so pre-influx signs can be detected
 - Mix required kill fluids as directed by Supervisor or Driller
 - Due to role on the rig, training and certification is targeted more toward monitoring for influxes, either via mud samples or visual signs on the pits/tanks
- **Motorman, Floor Hand Introductory Level**
 - Role is to assist the Supervisor, Driller, or Derrick Hand with detecting influxes
 - Be certain all valves are aligned for proper well control as directed by Supervisor
 - Perform Supervisor or Driller assigned tasks during a well control event
 - Due to role on the rig, training and certification is targeted more toward monitoring for influxes

1.2 WELL CONTROL-COMPONENT AND PREVENTER COMPATIBILITY CHECKLIST

The table below, which covers the drilling and casing of the 10M Stack portion of the well, outlines the tubulars and the compatible preventers in use. This table, combined with the mud program, documents that two barriers to flow can be maintained at all times, independent of the rating of the annular preventer.

- Example 6-1/8" Production hole section, 10M requirement

Component	OD	Preventer	RWP
Drill pipe	4"	Upper and Lower 3.5-5.5" VBRs	10M
HWDP	4"	Upper and Lower 3.5-5.5" VBRs	10M
Drill collars and MWD tools	4.75-5"	Upper and Lower 3.5-5.5" VBRs	10M
Mud Motor	4.75-5.25"	Upper and Lower 3.5-5.5" VBRs	10M
Production casing	4.5"	Upper and Lower 3.5-5.5" VBRs	10M
ALL	0-13-5/8"	Annular	5M
Open-hole	-	Blind Rams	10M

- VBR = Variable Bore Ram. Compatible range listed in chart.

1.3 WELL CONTROL-BOP TESTING

BOP Test will be completed per Onshore Oil and Gas Order #2 Well Control requirements. The 5M Annular Preventer on a required 10M BOP stack will be tested to 70 % of rated working

pressure including a 10 minute low pressure test. Pressure shall be maintained at least 10 minutes.

1.4 WELL CONTROL - DRILLS

The following drills are conducted and recorded in the Daily Drilling Report and the Contractor's reporting system while engaged in drilling operations:

Type	Frequency	Objective	Comments
Shallow gas kick drill - drilling	Once per well with crew on tour	Response training to a shallow gas influx	To be done prior to drilling surface hole if shallow gas is noted
Kick drill - drilling	Once per week per crew	Response training to an influx while drilling (bit on bottom)	Only one kick drill per week per crew is required, alternating between drilling and tripping.
Kick drill - tripping	Once per week per crew	Response training to an influx while tripping (bit off bottom). Practice stabbing TIW valve	

1.5 WELL CONTROL – MONITORING

- Drilling operations which utilize static fluid levels in the wellbore as the active barrier element, a means of accurately monitoring fill-up and displacement volumes during trips are available to the driller and operator. A recirculating trip tank is installed and equipped with a volume indicator easily read from the driller's / operator's position. This data is recorded on a calibrated chart recorder or digitally. The actual volumes are compared to the calculated volumes.
- The On-Site Supervisor ensures hole-filling and pit monitoring procedures are established and documented for every rig operation.
- The well is kept full of fluid with a known density and monitored at all times even when out of the hole.
- Flow checks are a minimum of 15 minutes.
- A flow check is made:
 - In the event of a drilling break.
 - After indications of down hole gains or losses.
 - Prior to all trips out of the hole.
 - After pulling into the casing shoe.
 - Before the BHA enters the BOP stack.
 - If trip displacement is incorrect.

Well Control-Monitoring (Continued)

- Prior to dropping a survey instrument.
- Prior to dropping a core ball.

- After a well kill operation.
- When the mud density is reduced in the well.
- Flow checks may be made at any time at the sole discretion of the driller or his designate. The Onsite Supervisor ensures that personnel are aware of this authority and the authority to close the well in immediately without further consultation.
- Record slow circulating rates (SCR) after each crew change, bit trip, and 500' of new hole drilled and after any variance greater than 0.2 ppg in MW. Slow pump rate recordings should include return flow percent, TVD, MD & pressure. SCR's will be done on all pumps at 30, 40 & 50 SPM. Pressures will be recorded at the choke panel. SCR will be recorded in the IADC daily report and ORB Wellview daily report
- Drilling blind (i.e. without returns) is permissible only in known lithology where the absence of hydrocarbons has been predetermined and written approval of the Drilling Manager.
- All open hole logs to be run with pack-off or lubricator.
- The Drilling Contractor has a fully working pit level totalizer / monitoring system with read out for the driller and an audible alarm set to 10 BBL gain / loss volume. Systems are selectable to enable monitoring of all pits in use. Pit volumes are monitored at all times, especially when transferring fluids. Both systems data is recorded on a calibrated chart recorder or electronically.
- The Drilling Contractor has a fully working return mud flow indicator with drillers display and an audible alarm, and is adjustable to record any variance in return volumes.

1.6 WELL CONTROL – SHUT IN

- The “hard shut in” method (i.e. against a closed choke using either an annular or ram type preventer) is the Company standard.
- The HCR(s) or failsafe valves are left closed during drilling to prevent any erosion and buildup of solids. The adjustable choke should also be left closed.
- The rig specific shut in procedure, the BOP configuration along with space-out position for the tool joints is posted in the Driller's control cabin or doghouse.
- No well kill operation commences until there is a plan agreed by the Superintendent, On-Site Supervisor and the Drilling Manager.
- During a well kill by circulation, constant bottom hole pressure is maintained throughout.
- Kill sheets are maintained by the Driller and posted in the Driller's control cabin or doghouse. The sheet is updated at a minimum every 500 feet.

2. SHUT-IN PROCEDURES:

2.1 PROCEDURE WHILE DRILLING

- Sound alarm (alert crew)

- Space out drill string – Stop rotating, pick the drill string up off bottom, and space out to ensure no tool joint is located in the BOP element selected for initial closure.
- Shut down pumps (stop pumps and observe well.)
- Shut-in Well - If flow is suspected or confirmed, close uppermost applicable BOP element. (HCR and choke will already be in the closed position.)
 - **Note:** Either the uppermost pipe ram or annular preventer can be used.
- Confirm shut-in
- Notify toolpusher/company representative
- Gather all relevant data required:
 - SIDPP and SICP
 - Hole Depth and Hole TVD
 - Pit gain
 - Time
 - Kick Volume
 - Pipe depth
 - MW in, MW out
 - SPR's (Slow Pump Rate's)
- Regroup and identify forward plan (let well stabilize, update kill sheet, inventory mud additives and mud volumes on location)
- Company Representative, Drilling Superintendent, Drilling Engineer and Drilling Manager will discuss well control kill method to be utilized. A verbal Risk Assessment and preferred kill method will be finalized. Initial Risk Assessment will be finalized within 1 hour of initial shut in.
- No well kill operation commences until there is a plan agreed by the Superintendent, On-Site Supervisor and the Drilling Contractor PIC.
- Recheck all pressures and fluid volume on accumulator unit
- If pressure has built or is anticipated during the kill to reach 1,000 psi or greater, the annular preventer will not be used as the primary pressure control device and operations will swap to the upper BOP pipe ram.

2.2 PROCEDURE WHILE TRIPPING

- Sound alarm (alert crew)
- Stab full opening safety valve in the drill string and close.
- Space out drill string (ensure no tool joint is located in the BOP element selected for initial closure).
- Shut down pumps (stop pumps and observe well.)
- Shut-in Well - If flow is suspected or confirmed, close uppermost applicable BOP element. (HCR and choke will already be in the closed position.)
 - **Note:** Either the uppermost pipe ram or annular preventer can be used.
- Confirm shut-in
- Notify tool pusher/company representative
- Gather all relevant data required:
 - SIDPP and SICP
 - Hole Depth and Hole TVD
 - Pit gain

Procedure While Tripping (Continued)

- Time
- Kick Volume
- Pipe depth

- MW in, MW out
- SPR's (Slow Pump Rate's)
- Regroup and identify forward plan (let well stabilize, update kill sheet, inventory mud additives and mud volumes on location)
- Company Representative, Drilling Superintendent, Drilling Engineer and Drilling Manager will discuss well control kill method to be utilized. A verbal Risk Assessment and preferred kill method will be finalized. Initial Risk Assessment will be finalized within 1 hour of initial shut in.
- No well kill operation commences until there is a plan agreed by the Superintendent, On-Site Supervisor and the Drilling Contractor PIC.
- Recheck all pressures and fluid volume on accumulator unit
- If pressure has built or is anticipated during the kill to reach 1,000 psi or greater, the annular preventer will not be used as the primary pressure control device and operations will swap to the upper BOP pipe ram.

2.3 PROCEDURE WHILE RUNNING CASING

- Sound alarm (alert crew)
- Stab crossover and full opening safety valve and close
- Space out casing (ensure no coupling is located in the BOP element selected for initial closure).
- Shut down pumps (stop pumps and observe well.)
- Shut-in Well - If flow is suspected or confirmed, close uppermost applicable BOP element. (HCR and choke will already be in the closed position.)
 - **Note:** Either the uppermost pipe ram or annular preventer can be used.
- Confirm shut-in
- Notify tool pusher/company representative
- Gather all relevant data required:
 - SIDPP and SICP
 - Hole Depth and Hole TVD
 - Pit gain
 - Time
 - Kick Volume
 - Pipe depth
 - MW in, MW out
 - SPR's (Slow Pump Rate's)
- Regroup and identify forward plan (let well stabilize, update kill sheet, inventory mud additives and mud volumes on location)
- Company Representative, Drilling Superintendent, Drilling Engineer and Drilling Manager will discuss well control kill method to be utilized. A verbal Risk Assessment and preferred kill method will be finalized. Initial Risk Assessment will be finalized within 1 hour of initial shut in.
- No well kill operation commences until there is a plan agreed by the Superintendent, On-Site Supervisor and the Drilling Contractor PIC.
- Recheck all pressures and fluid volume on accumulator unit
- If pressure has built or is anticipated during the kill to reach 1,000 psi or greater, the annular preventer will not be used as the primary pressure control device and operations will swap to the upper BOP pipe ram.

2.4 PROCEDURE WITH NO PIPE IN HOLE (OPEN HOLE)

- Sound alarm (alert crew)
- Shut-in with blind rams or BSR. (HCR and choke will already be in the closed position.)
- Confirm shut-in

- Notify toolpusher/company representative
- Gather all relevant data required:
 - Shut-In Pressure
 - Hole Depth and Hole TVD
 - Pit gain
 - Time
 - Kick Volume
 - MW in, MW out
 - SPR's (Slow Pump Rate's)
- Regroup and identify forward plan (let well stabilize, update kill sheet, inventory mud additives and mud volumes on location)
- Company Representative, Drilling Superintendent, Drilling Engineer and Drilling Manager will discuss well control kill method to be utilized. A verbal Risk Assessment and preferred kill method will be finalized. Initial Risk Assessment will be finalized within 1 hour of initial shut in.
- No well kill operation commences until there is a plan agreed by the Superintendent, On-Site Supervisor and the Drilling Contractor PIC.
- Recheck all pressures and fluid volume on accumulator unit.

2.5 PROCEDURE WHILE PULLING BHA THRU STACK

- PRIOR to pulling last joint of drill pipe thru the stack.
- Perform flow check, if flowing.
- Sound alarm (alert crew).
- Stab full opening safety valve and close
- Space out drill string with tool joint just beneath the upper pipe ram.
- Shut-in using upper pipe ram. (HCR and choke will already be in the closed position).
- Confirm shut-in.
- Notify toolpusher/company representative
- Read and record the following:
 - SIDPP and SICP
 - Pit gain
 - Time
- Regroup and identify forward plan
- **With BHA in the stack and compatible ram preventer and pipe combo immediately available.**
 - Sound alarm (alert crew)
 - Stab crossover and full opening safety valve and close
 - Space out drill string with upset just beneath the compatible pipe ram.
 - Shut-in using compatible pipe ram. (HCR and choke will already be in the closed position.)
 - Confirm shut-in
 - Notify toolpusher/company representative
 - Read and record the following:
 - SIDPP and SICP
 - Pit gain

Procedures While Pulling BHA thru Stack (Continued)

- Time
- Regroup and identify forward plan

- **With BHA in the stack and NO compatible ram preventer and pipe combo immediately available.**
 - Sound alarm (alert crew)
 - If possible to pick up high enough, pull string clear of the stack and follow “Open Hole” scenario.
 - If impossible to pick up high enough to pull the string clear of the stack:
 - Stab crossover, make up one joint/stand of drill pipe, and full opening safety valve and close
 - Space out drill string with tool joint just beneath the upper pipe ram.
 - Shut-in using upper pipe ram. (HCR and choke will already be in the closed position.)
 - Confirm shut-in
 - Notify toolpusher/company representative
 - Read and record the following:
 - SIDPP and SICP
 - Pit gain
 - Time

PECOS DISTRICT DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	MARATHON OIL PERMIAN LLC
WELL NAME & NO.:	KYLE 34 WD FEDERAL COM 9H
SURFACE HOLE FOOTAGE:	1021'N & 1778'/W
BOTTOM HOLE FOOTAGE:	330'/S & 1662'/W
LOCATION:	Section 34, T.24 S., R.28 E.
COUNTY:	Eddy County, New Mexico

COA

H2S	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
Potash	<input checked="" type="radio"/> None	<input type="radio"/> Secretary	<input type="radio"/> R-111-P
Cave/Karst Potential	<input type="radio"/> Low	<input type="radio"/> Medium	<input checked="" type="radio"/> High
Cave/Karst Potential	<input type="radio"/> Critical		
Variance	<input type="radio"/> None	<input checked="" type="radio"/> Flex Hose	<input type="radio"/> Other
Wellhead	<input type="radio"/> Conventional	<input checked="" type="radio"/> Multibowl	<input type="radio"/> Both
Wellhead Variance	<input type="radio"/> Diverter		
Other	<input type="checkbox"/> 4 String	<input type="checkbox"/> Capitan Reef	<input type="checkbox"/> WIPP
Other	<input type="checkbox"/> Fluid Filled	<input type="checkbox"/> Pilot Hole	<input type="checkbox"/> Open Annulus
Cementing	<input type="checkbox"/> Contingency Cement Squeeze	<input type="checkbox"/> EchoMeter	<input type="checkbox"/> Primary Cement Squeeze
Special Requirements	<input type="checkbox"/> Water Disposal	<input checked="" type="checkbox"/> COM	<input type="checkbox"/> Unit
Special Requirements	<input type="checkbox"/> Batch Sundry		
Special Requirements Variance	<input type="checkbox"/> Break Testing	<input type="checkbox"/> Offline Cementing	<input type="checkbox"/> Casing Clearance

A. HYDROGEN SULFIDE

A Hydrogen Sulfide (H2S) Drilling Plan shall be activated AT SPUD. As a result, the Hydrogen Sulfide area must meet Onshore Order 6 requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, please provide measured values and formations to the BLM.

B. CASING

Primary Casing Design:

1. The 13-3/8 inch surface casing shall be set at approximately **450** feet (a minimum of 70 feet (Eddy County) into the Rustler Anhydrite, above the salt, and below usable fresh water) and cemented to the surface.

- a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.
 - b. Wait on cement (WOC) time for a primary cement job will be a minimum of **8 hours** or 500 pounds compressive strength, whichever is greater. (This is to include the lead cement)
 - c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.
 - d. If cement falls back, remedial cementing will be done prior to drilling out that string.
2. The **9-5/8** inch intermediate casing shall be set at approximately **10,010** feet TVD. **Keep casing minimum half full during run for collapse SF.** The minimum required fill of cement behind the **9-5/8** inch intermediate casing is:

Option 1 (Single Stage):

- Cement to surface. If cement does not circulate see B.1.a, c-d above.
Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst or potash.

Option 2:

Operator has proposed a DV tool, the depth may be adjusted as long as the cement is changed proportionally **and the DV tool is placed below the salt interval.** The DV tool may be cancelled if cement circulates to surface on the first stage.

- a. First stage to DV tool: Cement to circulate. If cement does not circulate off the DV tool, contact the appropriate BLM office before proceeding with second stage cement job.
 - b. Second stage above DV tool:
 - Cement to surface. If cement does not circulate, contact the appropriate BLM office.
Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst or potash.
- ❖ In High Cave/Karst Areas if cement does not circulate to surface on the first two casing strings, the cement on the 3rd casing string must come to surface.

3. The **5-1/2** inch production casing shall be set at approximately **15,549** feet. 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.
Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst or potash.

C. PRESSURE CONTROL

1. Variance approved to use flex line from BOP to choke manifold. Manufacturer's specification to be readily available. No external damage to flex line. Flex line to be installed as straight as possible (no hard bends).'
2. Operator has proposed a multi-bowl wellhead assembly. This assembly will only be tested when installed on the **13-3/8** inch surface casing. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **10,000 (10M) psi**. **Variance is approved to use a 5000 (5M) Annular which shall be tested to 3500 (70% Working Pressure) psi.**
 - a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
 - b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
 - c. Manufacturer representative shall install the test plug for the initial BOP test.
 - d. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.
 - e. Whenever any seal subject to test pressure is broken, all the tests in OOGO2.III.A.2.i must be followed.

D. SPECIAL REQUIREMENT (S)

Communitization Agreement

- The operator will submit a Communitization Agreement to the Santa Fe Office, 301 Dinosaur Trail Santa Fe, New Mexico 87508, at least 90 days before the anticipated date of first production from a well subject to a spacing order issued by the New Mexico Oil Conservation Division. The Communitization Agreement will include the signatures of all working interest owners in all Federal and Indian leases subject to the Communitization Agreement (i.e., operating rights owners and lessees of record), or certification that the operator has obtained the written signatures of all such owners and will make those signatures available to the BLM immediately upon request.

- The operator will submit an as-drilled survey well plat of the well completion, but are not limited to, those specified in Onshore Order 1 and 43 CFR part 3170 Subpart 3172.
- If the operator does not comply with this condition of approval, the BLM may take enforcement actions that include, but are not limited to, those specified in 43 CFR 3163.1.
- In addition, the well sign shall include the surface and bottom hole lease numbers. When the Communitization Agreement number is known, it shall also be on the sign.

GENERAL REQUIREMENTS

The BLM is to be notified in advance for a representative to witness:

- a. Spudding well (minimum of 24 hours)
 - b. Setting and/or Cementing of all casing strings (minimum of 4 hours)
 - c. BOPE tests (minimum of 4 hours)
 - If well located in Eddy County
EMAIL or call the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220,
BLM_NM_CFO_DrillingNotifications@BLM.GOV
(575) 361-2822
 - If well located in Lea County
Call the Hobbs Field Station, 414 West Taylor, Hobbs NM 88240,
(575) 689-5981
1. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval.
 - a. In the event the operator has proposed to drill multiple wells utilizing a skid/walking rig. Operator shall secure the wellbore on the current well, after installing and testing the wellhead, by installing a blind flange of like pressure rating to the wellhead and a pressure gauge that can be monitored while drilling is performed on the other well(s).
 - b. When the operator proposes to set surface casing with Spudder Rig
 - Notify the BLM when moving in and removing the Spudder Rig.
 - Notify the BLM when moving in the 2nd Rig. Rig to be moved in within 90 days of notification that Spudder Rig has left the location.
 - BOP/BOPE test to be conducted per **43 CFR part 3170 Subpart 3172** as soon as 2nd Rig is rigged up on well.

2. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works are located, this does not include the dog house or stairway area.
3. The record of the drilling rate along with the GR/N well log run from TD to surface (horizontal well – vertical portion of hole) shall be submitted to the BLM office as well as all other logs run on the borehole 30 days from completion. If available, a digital copy of the logs is to be submitted in addition to the paper copies. The Rustler top and top and bottom of Salt are to be recorded on the Completion Report.

A. CASING

1. Changes to the approved APD casing program need prior approval if the items substituted are of lesser grade or different casing size or are Non-API. The Operator can exchange the components of the proposal with that of superior strength (i.e. changing from J-55 to N-80, or from 36# to 40#). Changes to the approved cement program need prior approval if the altered cement plan has less volume or strength or if the changes are substantial (i.e. Multistage tool, ECP, etc.). The initial wellhead installed on the well will remain on the well with spools used as needed.
2. Wait on cement (WOC) for Potash Areas: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi for all cement blends, 2) until cement has been in place at least 24 hours. WOC time will be recorded in the driller's log. The casing integrity test can be done (prior to the cement setting up) immediately after bumping the plug.
3. Wait on cement (WOC) for Water Basin: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi at the shoe, 2) until cement has been in place at least 8 hours. WOC time will be recorded in the driller's log. See individual casing strings for details regarding lead cement slurry requirements. The casing integrity test can be done (prior to the cement setting up) immediately after bumping the plug.
4. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. Have well specific cement details onsite prior to pumping the cement for each casing string.
5. No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.

6. 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. Formation at the shoe shall be tested to a minimum of the mud weight equivalent anticipated to control the formation pressure to the next casing depth or at total depth of the well. This test shall be performed before drilling more than 20 feet of new hole.
7. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.
8. Whenever a casing string is cemented in the R-111-P potash area, the NMOCD requirements shall be followed.

B. PRESSURE CONTROL

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in **43 CFR part 3170 Subpart 3172** and **API STD 53 Sec. 5.3**.
2. If a variance is approved for a flexible hose to be installed from the BOP to the choke manifold, the following requirements apply: The flex line must meet the requirements of API 16C. Check condition of flexible line from BOP to choke manifold, replace if exterior is damaged or if line fails test. Line to be as straight as possible with no hard bends and is to be anchored according to Manufacturer's requirements. The flexible hose can be exchanged with a hose of equal size and equal or greater pressure rating. Anchor requirements, specification sheet and hydrostatic pressure test certification matching the hose in service, to be onsite for review. These documents shall be posted in the company man's trailer and on the rig floor.
3. 5M or higher system requires an HCR valve, remote kill line and annular to match. The remote kill line is to be installed prior to testing the system and tested to stack pressure.
4. If the operator has proposed a multi-bowl wellhead assembly in the APD. The following requirements must be met:
 - a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
 - b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
 - c. Manufacturer representative shall install the test plug for the initial BOP test.

- d. Whenever any seal subject to test pressure is broken, all the tests in **43 CFR part 3170 Subpart 3172** must be followed.
 - e. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.
- 5. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.
 - a. In a water basin, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. The casing cut-off and BOP installation can be initiated four hours after installing the slips, which will be approximately six hours after bumping the plug. For those casing strings not using slips, the minimum wait time before cut-off is eight hours after bumping the plug. BOP/BOPE testing can begin after cut-off or once cement reaches 500 psi compressive strength (including lead cement), whichever is greater. However, if the float does not hold, cut-off cannot be initiated until cement reaches 500 psi compressive strength (including lead when specified).
 - b. In potash areas, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. For all casing strings, casing cut-off and BOP installation can be initiated at twelve hours after bumping the cement plug. The BOPE test can be initiated after bumping the cement plug with the casing valve open. (only applies to single stage cement jobs, prior to the cement setting up.)
 - c. The tests shall be done by an independent service company utilizing a test plug not a cup or J-packer and can be initiated immediately with the casing valve open. The operator also has the option of utilizing an independent tester to test without a plug (i.e. against the casing) pursuant to **43 CFR part 3170 Subpart 3172** with the pressure not to exceed 70% of the burst rating for the casing. Any test against the casing must meet the WOC time for water basin (8 hours) or potash (24 hours) or 500 pounds compressive strength, whichever is greater, prior to initiating the test (see casing segment as lead cement may be critical item).
 - d. The test shall be run on a 5000 psi chart for a 2-3M BOP/BOP, on a 10000 psi chart for a 5M BOP/BOPE and on a 15000 psi chart for a 10M BOP/BOPE. If a linear chart is used, it shall be a one hour chart. A circular chart shall have a maximum 2 hour clock. If a twelve hour or twenty-four hour chart is used, tester shall make a notation that it is run with a two hour clock.
 - e. The results of the test shall be reported to the appropriate BLM office.
 - f. All tests are required to be recorded on a calibrated test chart. A copy of the

BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.

- g. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug. This test shall be performed prior to the test at full stack pressure.
- h. BOP/BOPE must be tested by an independent service company within 500 feet of the top of the Wolfcamp formation if the time between the setting of the intermediate casing and reaching this depth exceeds 20 days. This test does not exclude the test prior to drilling out the casing shoe as per **43 CFR part 3170 Subpart 3172**.

C. DRILLING MUD

Mud system monitoring equipment, with derrick floor indicators and visual and audio alarms, shall be operating before drilling into the Wolfcamp formation, and shall be used until production casing is run and cemented.

D. WASTE MATERIAL AND FLUIDS

All waste (i.e. drilling fluids, trash, salts, chemicals, sewage, gray water, etc.) created as a result of drilling operations and completion operations shall be safely contained and disposed of properly at a waste disposal facility. No waste material or fluid shall be disposed of on the well location or surrounding area.

Porto-johns and trash containers will be on-location during fracturing operations or any other crew-intensive operations.

KPI 4/8/2024



U.S. Department of the Interior
BUREAU OF LAND MANAGEMENT

Operator Certification Data Report

05/03/2024

Operator

I hereby certify that I, or someone under my direct supervision, have inspected the drill site and access route proposed herein; that I am familiar with the conditions which currently exist; that I have full knowledge of state and Federal laws applicable to this operation; that the statements made in this APD package are, to the best of my knowledge, true and correct; and that the work associated with the operations proposed herein will be performed in conformity with this APD package and the terms and conditions under which it is approved. I also certify that I, or the company I represent, am responsible for the operations conducted under this application. These statements are subject to the provisions of 18 U.S.C. 1001 for the filing of false statements.

NAME:

Signed on: 08/31/2023

Title:

Street Address:

City:

State:

Zip:

Phone:

Email address:

Field

Representative Name:

Street Address:

City:

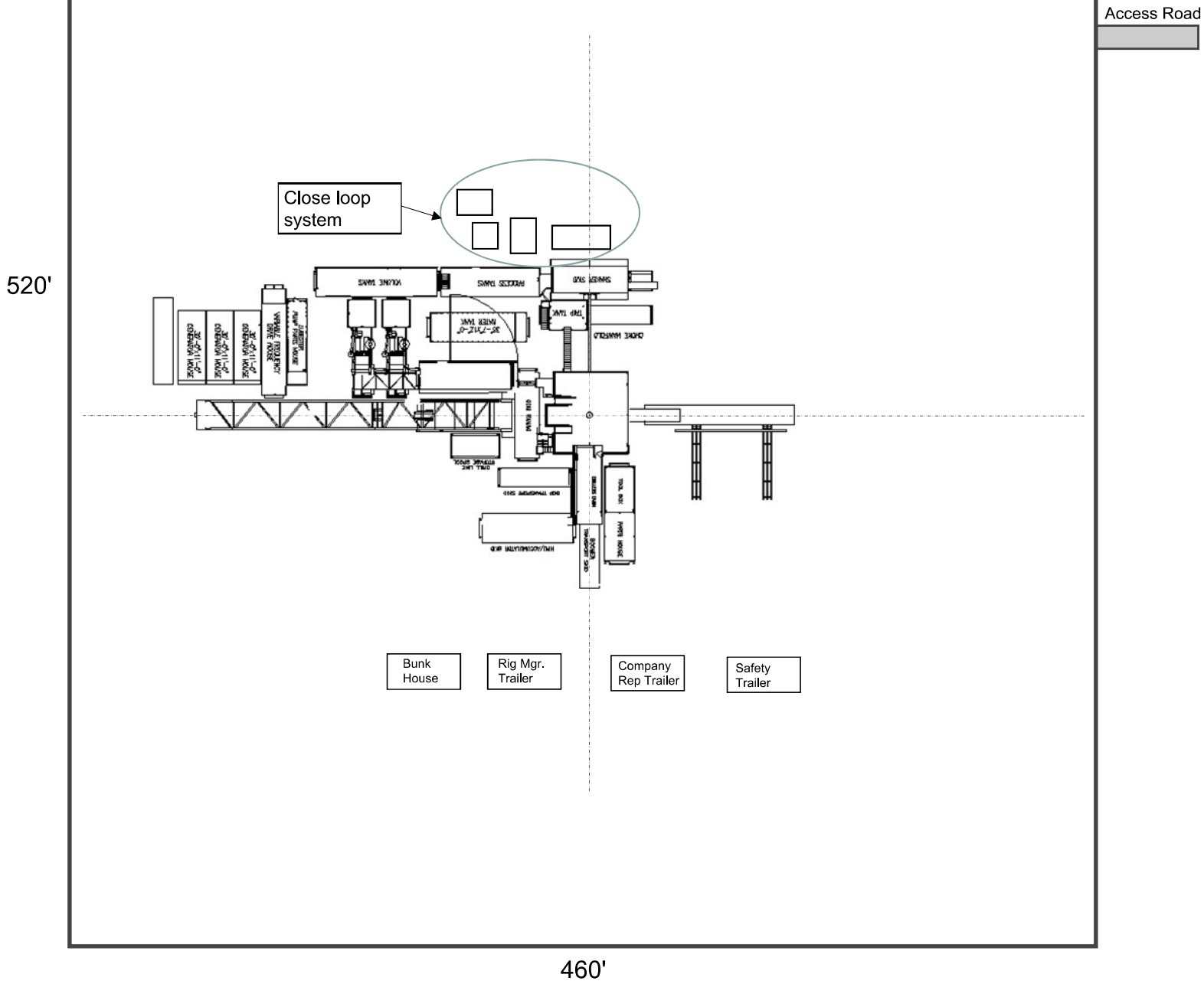
State:

Zip:

Phone:

Email address:

MARATHON OIL DRILLING RIG LAYOUT (Closed Loop System)



KYLE 34 FEDERAL COM
WD 4H, WD 9H, WD 22H



**Hydrogen Sulfide (H₂S)
Contingency Plan**

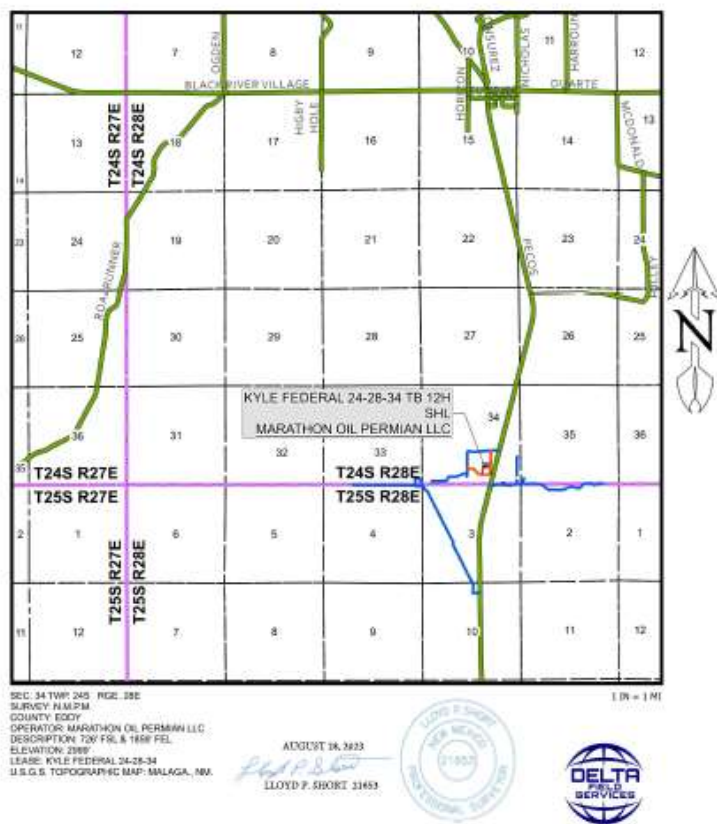
**Kyle 34 WD Fed Com 9H
1021 FSL' FSL & 1778' FWL Sec. 34 T-24S R-28E**

**Kyle Fed 24-28-34 TB 12H
726' FSL & 1859' FEL Sec. 34 T-24S R-28E**

Eddy County NM

**Marathon Oil Permian, LLC
Kyle 34 WD Fed Com 9H
Kyle Fed 24-28-34 TB 12H**

This is an open drilling site. H₂S monitoring equipment and emergency response equipment will be used within 500' of zones known to contain H₂S, including warning signs, wind indicators and H₂S monitor.



Escape

Crews shall escape upwind of escaping gas in the event of an emergency release of gas. Escape can be facilitated from the location entrance road. Crews should then block the entrance to the location from the lease road so as not to allow anyone traversing into a hazardous area. The blockade should be at a safe distance outside of the ROE. There are no homes or buildings in or near the ROE.

Assumed 100 ppm ROE = 3000'

100 ppm H₂S concentration shall trigger activation of this plan.

Emergency Procedures

In the event of a release of gas containing H₂S, the first responder(s) must

- Isolate the area and prevent entry by other persons into the 100 ppm ROE.
- Evacuate any public places encompassed by the 100 ppm ROE.
- Be equipped with H₂S monitors and air packs in order to control the release.
- Use the "buddy system" to ensure no injuries occur during the response
- Take precautions to avoid personal injury during this operation.
- Contact operator and/or local officials to aid in operation. See list of phone numbers attached.
- Have received training in the
 - Detection of H₂S, and
 - Measures for protection against the gas,
 - Equipment used for protection and emergency response.

Ignition of Gas Source

Should control of the well be considered lost and ignition considered, take care to protect against exposure to Sulfur Dioxide (SO₂). Intentional ignition must be coordinated with the NMOCD and local officials. Additionally, the NM State Police may become involved. NM State Police shall be the Incident Command on scene of any major release. Take care to protect downwind whenever there is an ignition of the gas

Characteristics of H₂ S and SO₂

Common Name	Chemical Formula	Specific Gravity	Threshold Limit	Hazardous Limit	Lethal Concentration
Hydrogen Sulfide	H ₂ S	1.189 Air = 1	10 ppm	100 ppm/hr	600 ppm
Sulfur Dioxide	SO ₂	2.21 Air = 1	2 ppm	N/A	1000 ppm

Contacting Authorities

Marathon Oil Permian, LLC personnel must liaison with local and state agencies to ensure a proper response to a major release. Additionally, the OCD must be notified of the release as soon as possible but no later than 4 hours. Agencies will ask for information such as type and volume of release, wind direction, location of release, etc. Be prepared with all information available. The following call list of essential and potential responders has been prepared for use during a release. Marathon Oil Permian LLC response must be in coordination with the State of New Mexico's 'Hazardous Materials Emergency Response Plan' (HMER)

Marathon Oil Permian, LLC

Hydrogen Sulfide Drilling Operation Plan

I. HYDROGEN SULFIDE (H₂S) TRAINING

All personnel, whether regularly assigned, contracted, or employed on an unscheduled basis, will receive training from a qualified instructor in the following areas prior to commencing drilling operations on this well:

- The hazards and characteristics of hydrogen sulfide (H₂S)
- The proper use and maintenance of personal protective equipment and life support systems.
- The proper use of H₂S detectors, alarms, warning systems, briefing areas, evacuation procedures, and prevailing winds.
- The proper techniques for first aid and rescue procedures.

In addition, supervisory personnel will be trained in the following areas:

- The effects of H₂S metal components. If high tensile tubulars are to be used, personnel will be trained in their special maintenance requirements.
- Corrective action and shut-in procedures when drilling or reworking a well and blowout prevention and well control procedures.
- The contents and requirements of the H₂S Drilling Operations Plan.
- There will be weekly H₂S and well control drills for all personnel in each crew.

II. HYDROGEN SULFIDE TRAINING

Note: All H₂S safety equipment and systems will be installed, tested, and operational when drilling reaches a depth of 500 feet above, or three days prior to penetrating the first zone containing or reasonably expected to contain H₂S.

- Well Control Equipment
 - Flare line
 - Choke manifold - Remotely Operated
 - Blind rams and pipe rams to accommodate all pipe sizes with properly sized closing unit

- Auxiliary equipment may include if applicable: annular preventer and rotating head.
 - Mud/Gas Separator
- Protective equipment for essential personnel:
 - 30-minute SCBA units located at briefing areas, as indicated on well site diagram, with escape units available in the top doghouse. As it may be difficult to communicate audibly while wearing these units, hand signals shall be utilized.
 - Fire extinguishers are located at various locations around the rig. First Aid supplies are located in the top doghouse and the rig manger's office.
- H2S detection and monitoring equipment:
 - Portable H2S monitors positioned on location for best coverage and response. These units have warning lights which activate when H2S levels reach 10 ppm and audible sirens which activate at 15 ppm.Sensor locations:
 - Bell nipple
 - Rig floor
 - Cellar
 - Possum Belly/Shale shaker
 - Choke manifold
- Visual warning systems:
 - Wind direction indicators as shown on well site diagram
 - Caution/Danger signs shall be posted on roads providing direct access to locations. Signs will be painted a high visibility yellow with black lettering of sufficient size to be reasonable distance from the immediate location. Bilingual signs will be used when appropriate.
- Mud program:
 - The mud program has been designed to minimize the volume of H2S circulated to surface. Proper mud weight, safe drilling practices and the use of H2S scavengers will minimize hazards when penetrating H2S bearing zones.

- Metallurgy:
 - All drill strings, casings, tubing, wellhead, blowout preventer, drilling spool, kill lines, choke manifold lines, and valves shall be H₂S trim.
 - All elastomers used for packing and seals shall be H₂S trim.
- Communication:
 - Company personnel have/use cellular telephones in the field.
 - Land line (telephone) communications at Office
- Well testing:
 - Drill stem testing will be performed with a minimum number of personnel in the immediate vicinity, which are necessary to safety and adequately conduct the test. The drill stem testing will be conducted during daylight hours and formation fluids will not be flowed to the surface. All drill-stem-testing operations conducted in an H₂S environment will use the closed chamber method of testing.
 - There will be no drill stem testing.

EMERGENCY & MEDICAL FACILITIES

Marathon Oil Corporation Emergency Numbers			
Anders Storaune	Drilling Manager	astoraune@marathonoil.com	713-296-2985
Allen Livingston	Drilling Superintendent	alivingston@marathonoil.com	832-680-2348
Joshua Love	Drilling Superintendent	jlove@marathonoil.com	405-657-6126
Steve Donley	Drilling Engineer	sdonley@marathonoil.com	405-593-4331
Court Nelson	Drilling Engineer	cnelson1@marathonoil.com	406-565-0604
Scott Schmidt	Drilling Engineer	sschmidt1@marathonoil.com	405-249-6843
John Burt	HES Supervisor	jburt@marathonoil.com	713-296-2903
Unit Rig 409	Company Man	unit409@marathonoil.com	
Precision Rig 580	Company Man	precision580@marathonoil.com	
Cactus Rig 169	Company Man	cactus169@marathonoil.com	
Cactus Rig 170	Company Man	cactus170@marathonoil.com	
Cactus Rig 171	Company Man	cactus171@marathonoil.com	

Emergency Services Area Numbers: Or Call 911			
Sheriff (Eddy County, NM)	575-887-7551	New Mexico Poison Control	800-222-1222
Sheriff (Lea County, NM)	575-396-3611	Border Patrol (Las Cruces, NM)	575-528-6600
New Mexico State Police	575-392-5580/5588	Energy Minerals & Natural Resources Dept.	575-748-1283
Carlsbad Medical Center	575-887-4100	Environmental Health Dept.	505-476-8600
Lea Regional Medical Center	575-492-5000	OSHA (Santa Fe, NM)	505-827-2855
Police (Carlsbad, NM)	575-885-2111		
Police (Hobbs, NM)	575-392-9265		
Fire (Carlsbad, NM)	575-885-3124		
Fire (Hobbs, NM)	575-397-9308		
Ambulance Service	911	TOTAL SAFETY H2S - SAFETY SERVICES For Life Flight 1 st dial 911, nearest helicopter will be determined	432-561-5049

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 340776

CONDITIONS

Operator: MARATHON OIL PERMIAN LLC 990 Town & Country Blvd. Houston, TX 77024	OGRID:
	372098
	Action Number:
	340776
Action Type: [C-101] BLM - Federal/Indian Land Lease (Form 3160-3)	

CONDITIONS

Created By	Condition	Condition Date
ward.rikala	Notify OCD 24 hours prior to casing & cement	5/29/2024
ward.rikala	Will require a File As Drilled C-102 and a Directional Survey with the C-104	5/29/2024
ward.rikala	Once the well is spud, to prevent ground water contamination through whole or partial conduits from the surface, the operator shall drill without interruption through the fresh water zone or zones and shall immediately set in cement the water protection string	5/29/2024
ward.rikala	Cement is required to circulate on both surface and intermediate1 strings of casing	5/29/2024
ward.rikala	If cement does not circulate on any string, a CBL is required for that string of casing	5/29/2024
ward.rikala	Oil base muds are not to be used until fresh water zones are cased and cemented providing isolation from the oil or diesel. This includes synthetic oils. Oil based mud, drilling fluids and solids must be contained in a steel closed loop system	5/29/2024