Form 3160-3
(June 2015)

FORM APPROVED
OMB No. 1004-0137
Expires: January 31, 2018

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No.

6. If Indian, Allotee or Tribe Name

1a. Type of work: ☐ DRILL ☐ REENTER

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

1c. Type of Completion: ☐ Hydraulic Fracturing ☐ Single Zone ☐ Multiple Zone

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

8. Lease Name and Well No.

[331210]

2. Name of Operator

[372098]

9. API Well No. **30-025-49209**

3a. Address	3b. Phone No. *(include area code)*	10. Field and Pool, or Exploratory

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

At surface

At proposed prod. zone

11. Sec., T. R. M. or Blk. and Survey or Area

14. Distance in miles and direction from nearest town or post office*	12. County or Parish	13. State

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any)	16. No of acres in lease	17. Spacing Unit dedicated to this well

18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.	19. Proposed Depth	20. BLM/BIA Bond No. in file

21. Elevations (Show whether DF, KDB, RT, GL, etc.)	22. Approximate date work will start*	23. Estimated duration

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	Name *(Printed/Typed)*	Date

Title

Approved by *(Signature)*	Name *(Printed/Typed)*	Date

Title	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.

NGMP Rec 07/16/2021

KZ
07/20/2021

SL

APPROVED WITH CONDITIONS

(Continued on page 2)

*(Instructions on page 2)

Approval Date: 05/28/2021

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 wen, 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 directionany 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 wen 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 win 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 conects this information to anow 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 Conection Clearance Officer (WO-630), 1849 C Street, N.W., Mail Stop 401 LS, Washington, D.C. 20240.

Approval Date: 05/28/2021

Additional Operator Remarks

Location of Well

1. SHL: NENW / 436 FNL / 1519 FWL / TWSP: 22S / RANGE: 32E / SECTION: 14 / LAT: 32.3978386 / LONG: -103.6490886 (TVD: 0 feet, MD: 0 feet)
   PPP: NWNW / 100 FNL / 330 FWL / TWSP: 22S / RANGE: 32E / SECTION: 14 / LAT: 32.3987406 / LONG: -103.6529409 (TVD: 12061 feet, MD: 12254 feet)
   PPP: NWSW / 2639 FNL / 330 FWL / TWSP: 22S / RANGE: 32E / SECTION: 14 / LAT: 32.3917621 / LONG: -103.6529388 (TVD: 12151 feet, MD: 14582 feet)
   BHL: SWSW / 100 FSL / 330 FWL / TWSP: 22S / RANGE: 32E / SECTION: 14 / LAT: 32.3847785 / LONG: -103.6529368 (TVD: 12151 feet, MD: 17183 feet)

BLM Point of Contact

Name: Deborah Ham
Title: Legal Landlaw Examiner
Phone: 5752345965
Email: dham@blm.gov

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.

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

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

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

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

[1] API Number	[2] Pool Code	[3] Pool Name
30-025-49209	98166	WC-025 G-09 S233216K; UPR WOLFCAMP

[4] Property Code	[5] Property Name	[6] Well Number
329965	RAMATHORN 14 WA FED COM	2H

[7] OGRID No.	[8] Operator Name	[9] Elevation
372098	MARATHON OIL PERMIAN LLC	3739'

[10] Surface Location

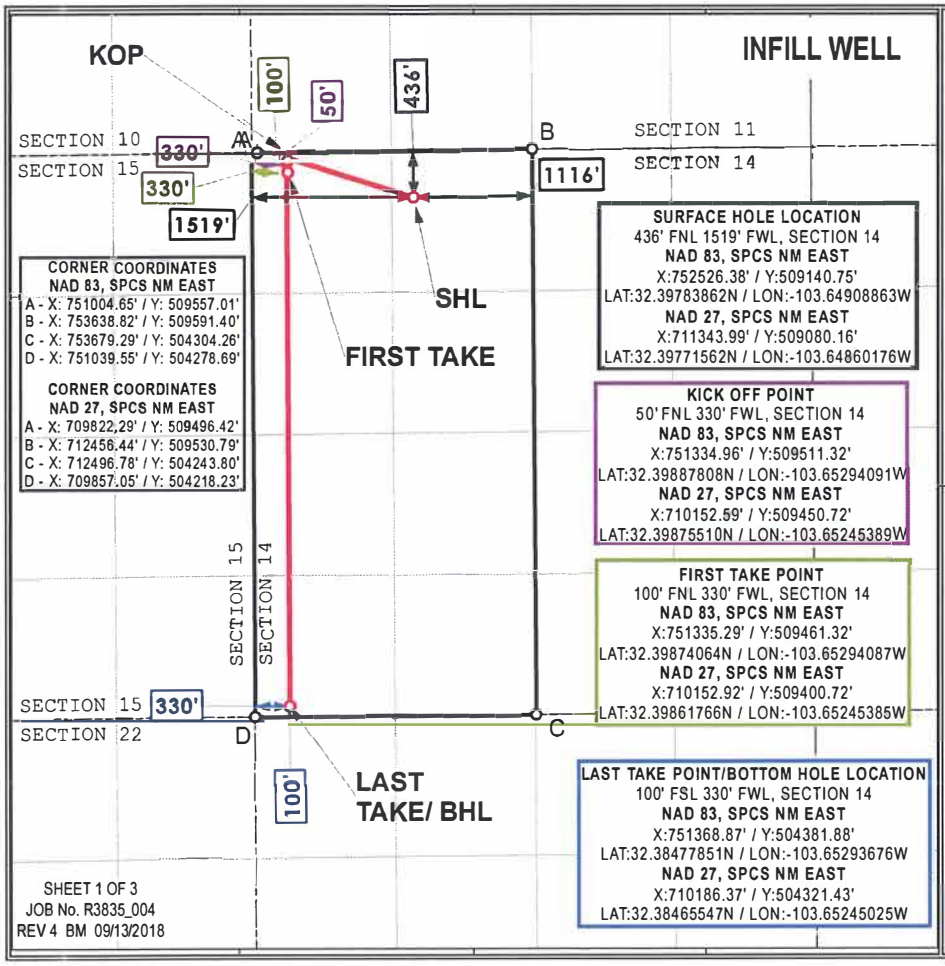
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
C	14	22S	32E	3	436	NORTH	1519	WEST	LEA

[11] Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
M	14	22S	32E		100	SOUTH	330	WEST	LEA

[12] Dedicated Acres	[13] Joint or Infill	[14] Consolidation Code	[15] Order No.
320.0			

No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.



[17] OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

Signature — Date: 10/04/2018

Melissa Szudera
Printed Name

mszudera@marathonoil.com
E-mail Address

[18] SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

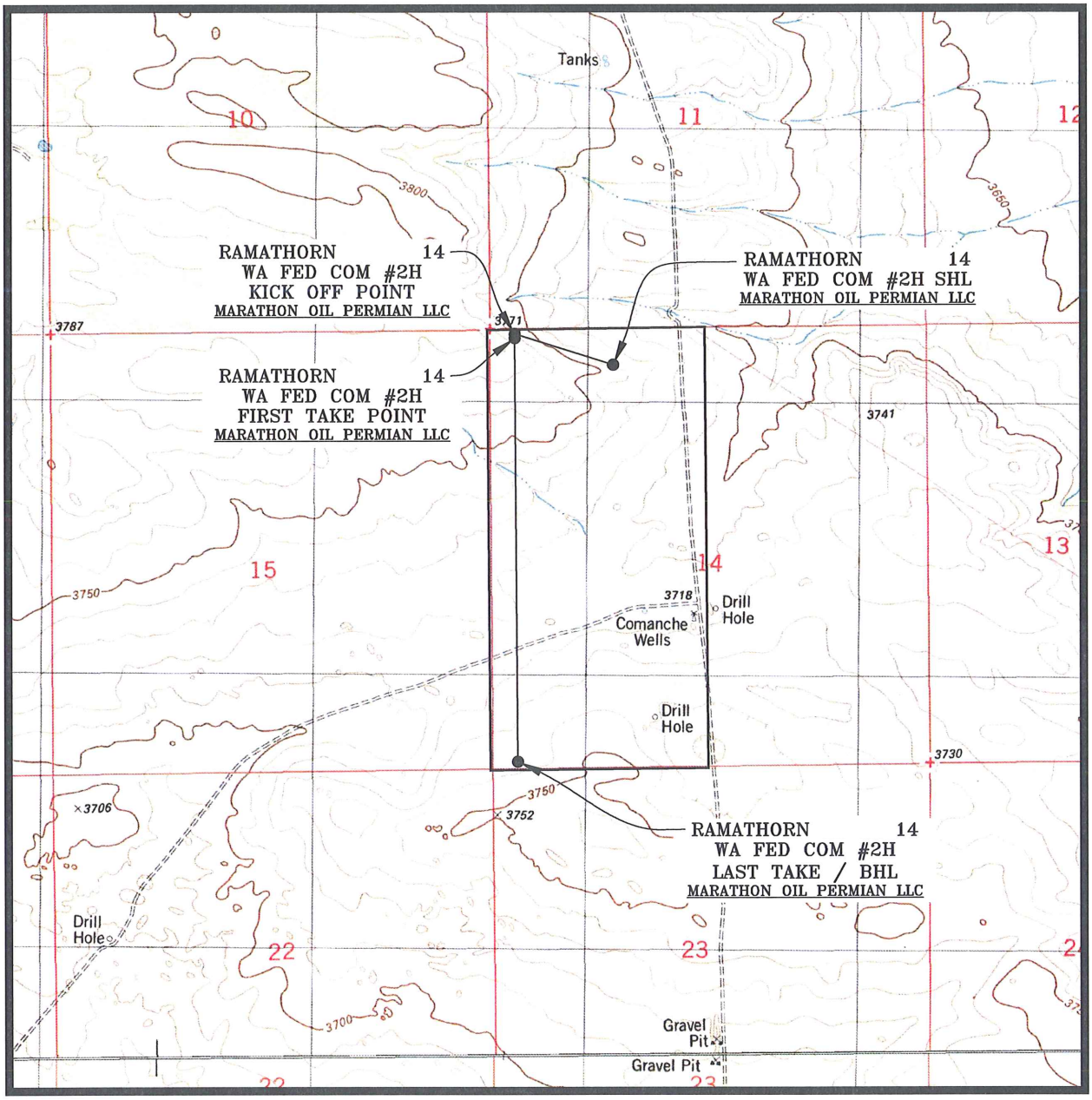
SEPTEMBER 18, 2018
Date of Survey

Signature and Seal of Professional Surveyor:

LLOYD P. SHORT NEW MEXICO 21653 PROFESSIONAL SURVEYOR

Certificate Number
LLOYD P. SHORT 21653

LOCATION VERIFICATION MAP



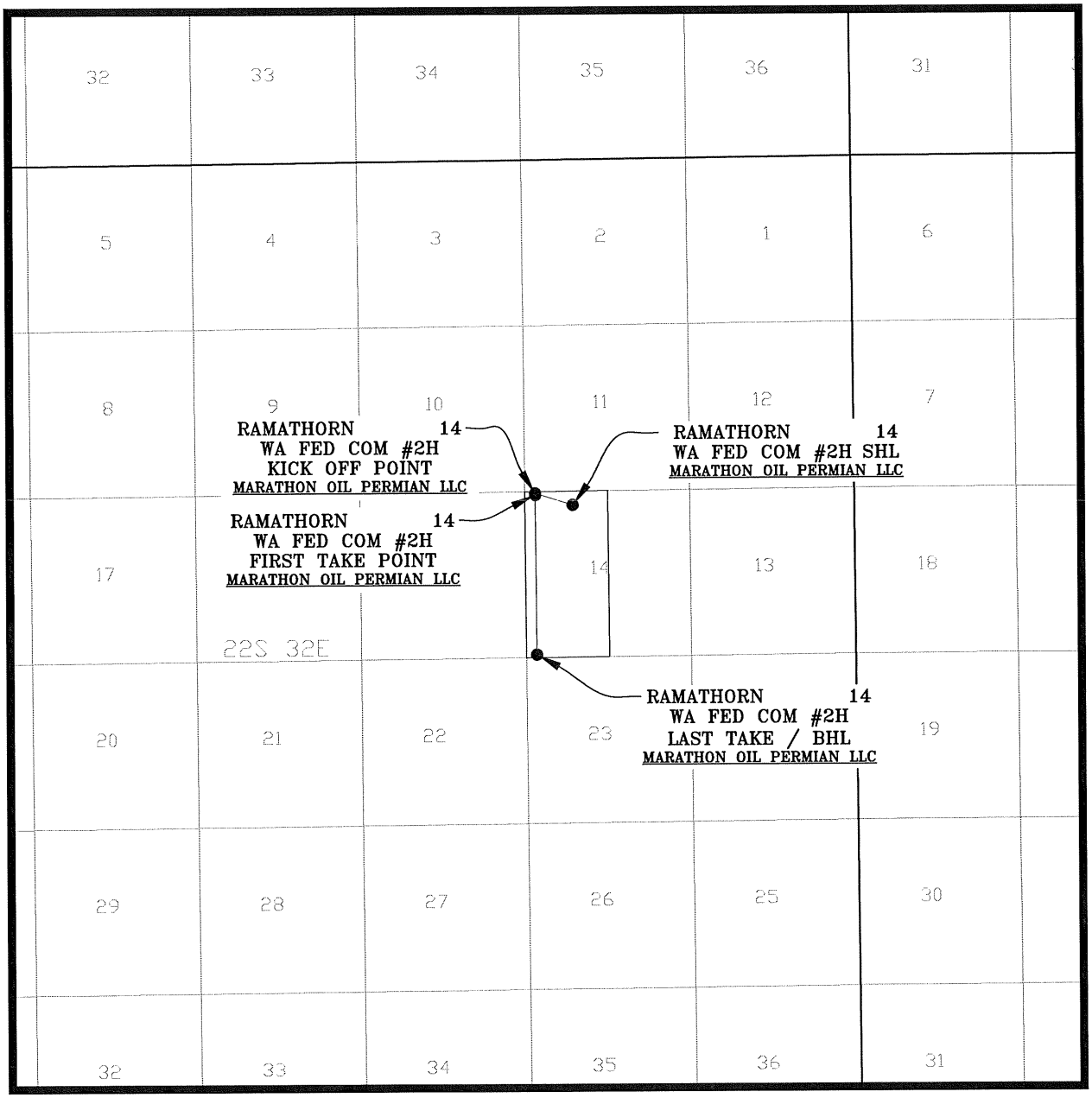
SEC. 14 TWP. 22-S RGE. 32-E
SURVEY: N.M.P.M.
COUNTY: LEA
DESCRIPTION: 436' FNL & 1519' FWL
ELEVATION: 3739'
OPERATOR: MARATHON OIL PERMIAN LLC
LEASE: RAMATHORN 14 FED COM
U.S.G.S. TOPOGRAPHIC MAP: THE DIVIDE, N.M.

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

SHEET 2 OF 3

PREPARED BY:
R-SQUARED GLOBAL, LLC
1309 LOUISVILLE AVENUE, MONROE, LA 71201
318-323-6900 OFFICE
JOB No. R3835_004

VICINITY MAP



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OPERATOR: MARATHON OIL PERMIAN LLC
LEASE: RAMATHORN 14 FED COM
U.S.G.S. TOPOGRAPHIC MAP: THE DIVIDE, N.M.

SCALE: 1" = 1 MILES

SHEET 3 OF 3

PREPARED BY:
R-SQUARED GLOBAL, LLC
1309 LOUISVILLE AVENUE, MONROE, LA 71201
318-323-6900 OFFICE
JOB No. R3835_004

State of New Mexico
Energy, Minerals and Natural Resources Department

Submit Electronically
Via E-permitting

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

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:** 372098 **Date:** 07 / 08 / 2021

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
RAMATHORN 14 WA FED COM 2H	30-025-49209	C-14-22S-32E	436' FNL 1519' FWL	1450	2900	5800

IV. Central Delivery Point Name: RAMATHORN 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
RAMATHORN 14 WA FED COM 2H	30-025-49209	07/10/2024	07/29/2024	09/05/2024	09/17/2024	09/20/2024

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:	
Printed Name:	Melissa Szudera
Title:	Adv Regulatory Compliance Rep
E-mail Address:	mszudera@marathonoil.com
Date:	07/08/2021
Phone:	713-296-3179

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.

AFMSS

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

Drilling Plan Data Report

06/01/2021

APD ID: 10400034855
Submission Date: 10/05/2018

Operator Name: MARATHON OIL PERMIAN LLC

Well Name: RAMATHORN 14 WA FED COM
Well Number: 2H

Well Type: OIL WELL
Well Work Type: Drill

Highlighted data reflects the most recent changes

Show Final Text

Section 1 - Geologic Formations

Formation ID	Formation Name	Elevation	True Vertical Depth	Measured Depth	Lithologies	Mineral Resources	Producing Formation
314869	RUSTLER	2828	911	911	ANHYDRITE, DOLOMITE	OTHER : Brine	N
314870	SALADO	1620	1209	1209	ANHYDRITE, SALT	OTHER : Brine	N
314883	CASTILE	-200	3029	3047	SALT	OTHER : Brine	N
314873	LAMAR	-1918	4747	4792	OTHER : Sand/Shales	OIL	N
314874	BELL CANYON	-1995	4824	4870	OTHER : Sands/Shale	OIL	N
314875	CHERRY CANYON	-3062	5891	5953	OTHER : Sands/Carbonates	OIL	N
314876	BRUSHY CANYON	-4122	6951	7030	OTHER : Sands/Carbonate	OIL	N
314877	BONE SPRING	-5817	8646	8746	OTHER : Sands/Carbonate	OIL	N
315271	WOLFCAMP	-9094	11922	12047	OTHER, SANDSTONE, SHALE : Carbonates	OIL	Y

Section 2 - Blowout Prevention

Pressure Rating (PSI): 10M
Rating Depth: 15000

Equipment: - 13 5/8 Annular, Double Ram and Blind Ram will be tested and installed before the 12 1/4", 8 3/4" and 6 1/8" holes. Minimum required WP for Annular is 5,000 for all casing strings and minimum required WP for Blind Ram and Double Ram is 10,000 for all casing strings.
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. BOP variance is requested for the annular to be 5000 PSI on 10,000 PSI BOP stack.
Testing Procedure: - BOP/BOPE will be tested by an independent service company to 250 psi low and the high pressure indicated above per Onshore Order 2 requirements. The System may be upgraded to a higher pressure but still tested to the working pressure listed in the table attached. If the system is upgraded all the components installed will be functional and tested. - The Annular will be tested to 100% of 5000 working pressure (see attached BOP plan). The working pressure of 10000 for the single Pipe Ram and Double Ram (Pipe & Blind) will be tested to 7000 psi. - 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 Onshore Order #2. On Exploratory wells or on that portion of any well approved for a 5M BOPE system or greater, a pressure

Operator Name: MARATHON OIL PERMIAN LLC

Well Name: RAMATHORN 14 WA FED COM **Well Number:** 2H

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.

Choke Diagram Attachment:

Drill_2_Choke__1__2__7____Contitech_Hose_SN_663393_20180924130542.pdf

Drill_2_Choke__1__2__7____Choke_Line_Test_Chart_SN_63393_20180924130527.pdf

Drill_2_Choke__1__2__7____Choke_Line_Flex_III_Rig_20180924130512.pdf

BOP Diagram Attachment:

Drill_2_BOP__1__2__7__8__22____Marathon_Permian___Drilling_Well_Control_Plan_06_05_2018_20181004061001.pdf

Drill_2_BOP__1__2__7____10M_Flex.BOPE_x_5M_ANNULAR.BLM_20180924130552.pdf

Drill_2_BOP__1__2__7____10M.THREE_CHOKE_MANIFOLD.BLM_20180924130603.pdf

Drill_2_BOP__1__2__7____WH_TH_DESIGN__2_DRAWING_20180924130626.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	1000	0	1000	3739	2739	1000	J-55	54.5	ST&C	5.52	2.5	BUOY	2.5	BUOY	2.5
2	INTERMEDIATE	12.25	9.625	NEW	API	N	0	4800	0	4755	3739	-1016	4800	J-55	40	LT&C	1.74	1.15	BUOY	2.19	BUOY	2.19
3	INTERMEDIATE	8.75	7.0	NEW	API	N	0	11580	0	11480	3739	-7741	11580	P-110	29	BUTT	2.21	1.18	BUOY	1.9	BUOY	1.9
4	PRODUCTION	6.125	4.5	NEW	API	N	11280	17183	11178	12151	-7439	-8412	5903	P-110	13.5	BUTT	1.33	1.56	BUOY	1.88	BUOY	1.88

Casing Attachments

Operator Name: MARATHON OIL PERMIAN LLC

Well Name: RAMATHORN 14 WA FED COM **Well Number:** 2H

Casing Attachments

Casing ID: 1 **String Type:** SURFACE

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Drill_3__1__2__7____Red_Hills_3_csg___liner__Surface_Csg_20181004123437.pdf

Casing ID: 2 **String Type:** INTERMEDIATE

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Drill_3__1__2__7____Red_Hills_3_csg___liner__Int_I_Csg_20181004123527.pdf

Casing ID: 3 **String Type:** INTERMEDIATE

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Drill_3__1__2__7____Red_Hills_3_csg___liner__Int_II_Csg_20181004124120.pdf

Operator Name: MARATHON OIL PERMIAN LLC

Well Name: RAMATHORN 14 WA FED COM **Well Number:** 2H

Casing Attachments

Casing ID: 4 **String Type:** PRODUCTION

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Drill_3__1__2__7____Red_Hills_3_csg___liner__Prod_Liner_20181004124346.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	N/A, tail only.	N/A, tail only.
PRODUCTION	Tail		11280	17183	592	1.22	14.5	723	30	Class H	0.1% retarder + 3.5% extender + 0.3% fluid loss + 0.1% Dispersant
SURFACE	Lead		0	800	636	1.75	13.5	1111	100	Class C	3 lbm/sk granular LCM + 0.1250 lbm/sk Poly-E-Flake
SURFACE	Tail		800	1000	204	1.33	14.8	278	100	Class C	N/A
INTERMEDIATE	Lead		0	3800	1204	1.75	12.8	2083	75	Class C	0.02 Gal/Sx Defoamer + 0.5% Extender + 1% Accelerator
INTERMEDIATE	Tail		3800	4800	353	1.33	14.8	470	50	Class C	0.3 % Retarder
INTERMEDIATE	Lead		4500	10500	568	2.7	11	1533	70	Class C	0.85% retarder + 10% extender + 0.02 gal/sk defoamer + 2.0% Extender + 0.15% Viscosifier
INTERMEDIATE	Tail		10500	11580	194	1.09	15.6	211	30	Class H	3% extender + 0.15% Dispersant + 0.03 gal/sk retarder

Operator Name: MARATHON OIL PERMIAN LLC

Well Name: RAMATHORN 14 WA FED COM **Well Number:** 2H

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
1000	4800	OTHER : Brine	9.9	10.2							
0	1000	WATER-BASED MUD	8.4	8.8							
4800	11580	OTHER : Cut Brine	8.8	9.4							
11580	17183	OIL-BASED MUD	11.5	13.5							

Section 6 - Test, Logging, Coring

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

GRL

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

GR

Coring operation description for the well:

None Planned.

Operator Name: MARATHON OIL PERMIAN LLC

Well Name: RAMATHORN 14 WA FED COM **Well Number:** 2H

Section 7 - Pressure

Anticipated Bottom Hole Pressure: 8530 **Anticipated Surface Pressure:** 5856.78

Anticipated Bottom Hole Temperature(F): 195

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

Describe:

Contingency Plans geoharzards description:

Contingency Plans geohazards attachment:

Hydrogen Sulfide drilling operations plan required? YES

Hydrogen sulfide drilling operations plan:

Drill_7___H2S_Contiengency_Plan_Summary_20180927133914.pdf

Drill_7___Ramathorn_14_Fed_Com_Pad___H2S_Contingency_Plan_030118_20180927133929.pdf

Drill_7___GCP___Ramathorn_14_Fed_Com_Pad___08_24_2018_20180927133904.pdf

Section 8 - Other Information

Proposed horizontal/directional/multi-lateral plan submission:

Drill_8_PD___Ramathorn_14_Fed_Com_Pad___Federal_Minerals_Map_20180927134056.pdf

Drill_7_PD___Marathon_RamathornWA_2H_PrelimA_36x48WM_20181004125002.pdf

Drill_7_PD___Marathon_RamathornWA_2H_PrelimA_WPReport_20181004125010.pdf

Drill_7_PD___RAMATHORN_14_WA_FED_COM_2H_20190624084850.pdf

Other proposed operations facets description:

- 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.

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.
- No abnormal temperatures or pressures are anticipated. All personnel will be familiar with all aspects of safe operation of equipment being used to drill this well. Adequate flare lines will be installed off the mud/gas separator where gas may be flared safely.
- No losses are anticipated at this time.
- All personnel will be familiar with all aspects of safe operation of equipment being used to drill this well.
- Adequate flare lines will be installed off the mud/gas separator where gas may be flared safely.

Other proposed operations facets attachment:

Drill_8_OF___RAMATHORN_14_FED_COM_Pad___Flex_III_Closed_Loop_Rig_Layout_20180927134116.pdf

Drill_8___Batch_Drilling_Plan_and_Surface_Rig_Request_20180924132356.pdf

Operator Name: MARATHON OIL PERMIAN LLC

Well Name: RAMATHORN 14 WA FED COM **Well Number:** 2H

Other Variance attachment:

Marathon Oil
Lea County, NM
Ramathorn 14 WA Fed Com (1-2-7) #2H
Prelim Plan A
GL: 3739' + KB: 25' (PD594)

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

RKB Elevation: Well @ 3764.00usft (GL: 3739' + KB: 25' (PD594))

+N/-S	+E/-W	Northing	Easting	Latittude	Longitude	Slot
0.00	0.00	509080.16	711343.99	32.397716	-103.648602	

SECTION DETAILS- PILOT

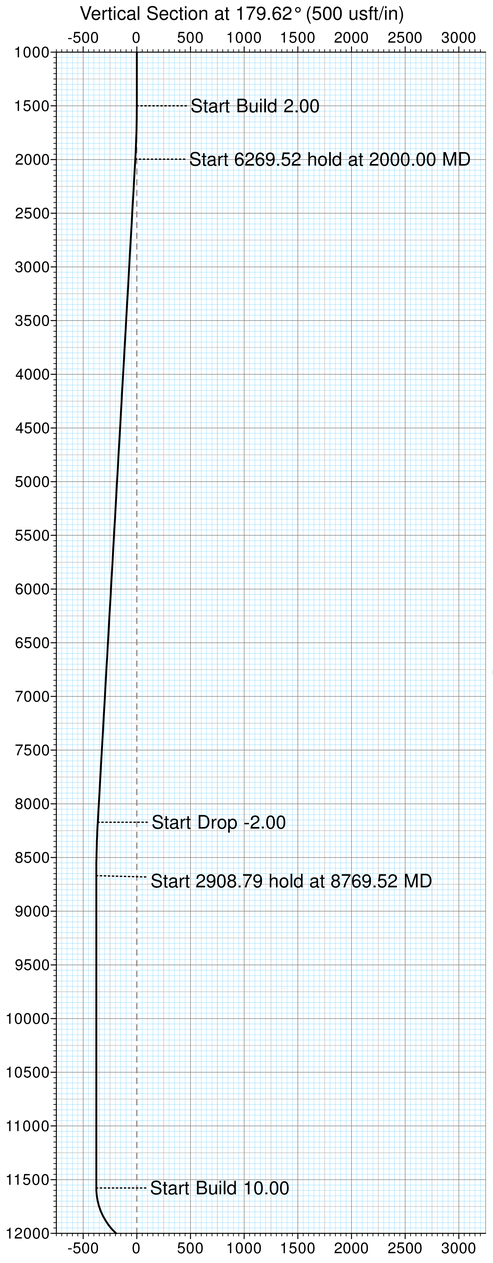
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	VSect
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	1500.00	0.00	0.00	1500.00	0.00	0.00	0.00	0.00
3	2000.00	10.00	288.34	1997.47	13.70	-41.31	2.00	-13.97
4	8269.52	10.00	288.34	8171.74	356.30	-1074.69	0.00	-363.42
5	8769.52	0.00	0.00	8669.21	370.00	-1116.00	2.00	-377.39
6	11678.32	0.00	0.00	11578.00	370.00	-1116.00	0.00	-377.39
7	12578.32	90.00	186.00	12150.96	-199.82	-1175.89	10.00	192.02
8	12790.92	90.00	179.62	12150.96	-412.06	-1186.31	3.00	404.18
9	17137.69	90.00	179.62	12151.00	-4758.73	-1157.62	0.00	4750.95
10	17182.69	90.00	179.62	12151.00	-4803.73	-1157.32	0.00	4795.95

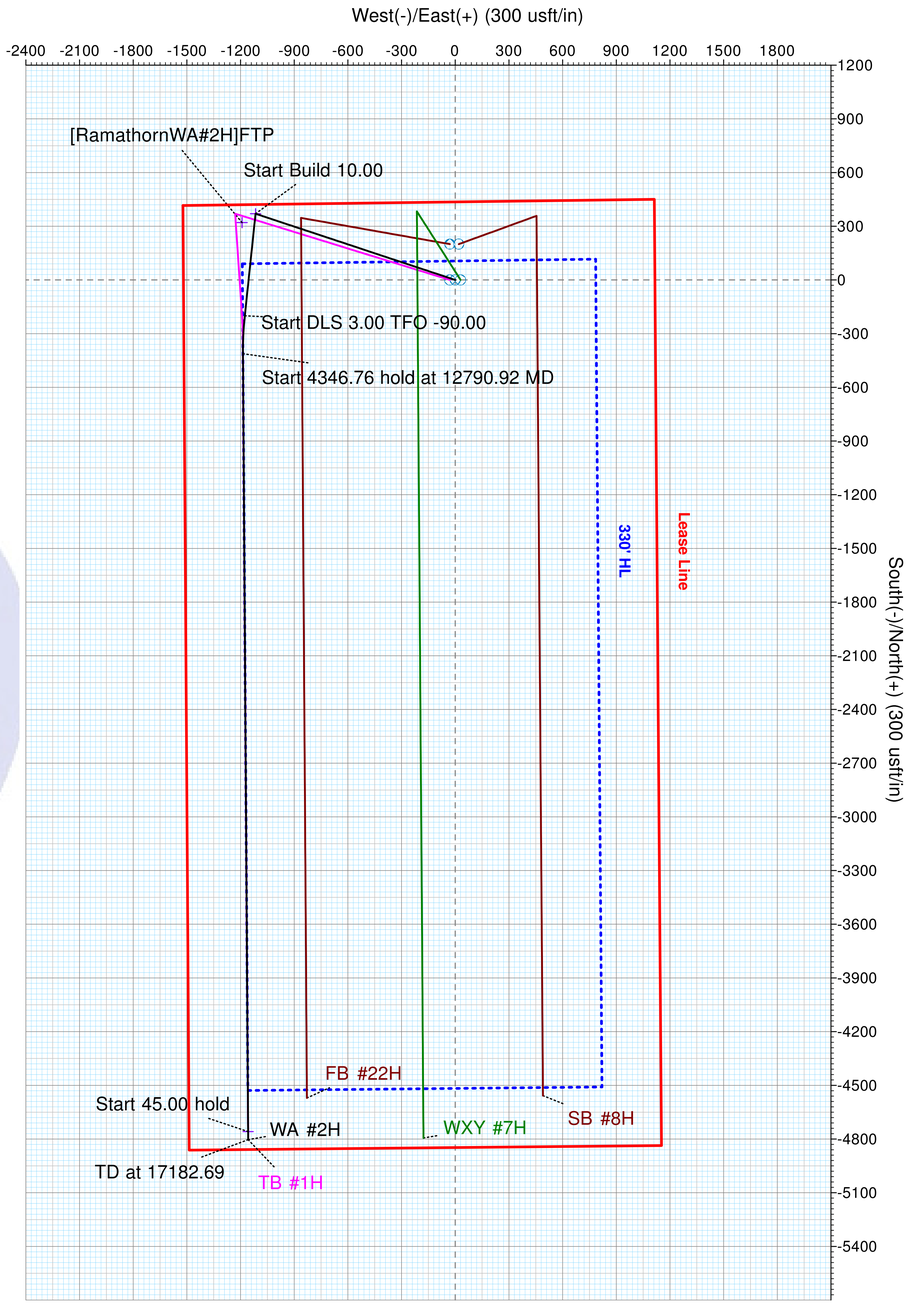
SECTION DETAILS- LATERAL

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	288.34	1997.47	13.70	-41.31	2.00	-13.97
4	8269.52	10.00	288.34	8171.74	356.30	-1074.69	0.00	-363.42
5	8769.52	0.00	0.00	8669.21	370.00	-1116.00	2.00	-377.39
6	11678.32	0.00	0.00	11578.00	370.00	-1116.00	0.00	-377.39
7	12578.32	90.00	186.00	12150.96	-199.82	-1175.89	10.00	192.02
8	12790.92	90.00	179.62	12150.96	-412.06	-1186.31	3.00	404.18
9	17137.69	90.00	179.62	12151.00	-4758.73	-1157.62	0.00	4750.95
10	17182.69	90.00	179.62	12151.00	-4803.73	-1157.32	0.00	4795.95

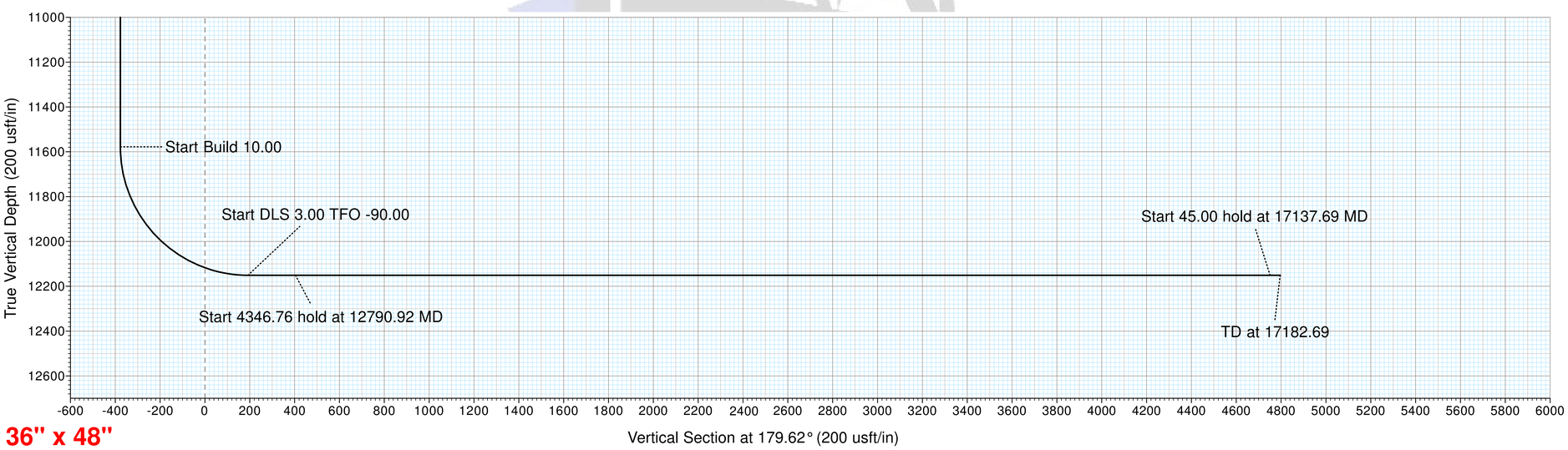
WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

Name	TVD	+N/-S	+E/-W	Northing	Easting
[RamathornWA#2H]FTP	0.00	320.56	-1191.07	509400.72	710152.92
[RamathornWA#2H]KOP	11578.00	370.00	-1116.00	509450.16	710227.99
[RamathornWA#2H]LTP/BHL	12151.00	-4758.73	-1157.62	504321.43	710186.37





Target Line: 12151' TVD @ 0' VS :: 90° INC



36" x 48"

Azimuths to Grid North
True North: -0.37°
Magnetic North: 6.47°

Magnetic Field
Strength: 48135.6snT
Dip Angle: 60.20°
Date: 8/29/2018
Model: HDGM

Azimuth Corrections

Total Magnetic Corr. (M to G): 6.47°

Declination (M to T): 6.83° East

Marathon Oil

Pro Directional
Survey Report

PRODIRECTIONAL

Company:	Marathon Oil	**Local Co-ordinate Reference:**	Well #2H
Project:	Lea County, NM	**TVD Reference:**	Well @ 3764.00usft (GL: 3739' + KB: 25' (PD594))
Site:	Ramathorn 14 WA Fed Com (1-2-7)	**MD Reference:**	Well @ 3764.00usft (GL: 3739' + KB: 25' (PD594))
Well:	WA #2H	**North Reference:**	Grid
Wellbore:	OH	**Survey Calculation Method:**	Minimum Curvature
Design:	Prelim Plan A	**Database:**	WellPlanner1

Project Lea 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 Ramathorn 14 WA Fed Com (1-2-7)

Site Position:		**Northing:**	509,080.31 usft	**Latitude:**	32.397717
From:	Map	**Easting:**	711,313.98 usft	**Longitude:**	-103.648699
Position Uncertainty:	0.00 usft	**Slot Radius:**	13-3/16 "	**Grid Convergence:**	0.37 °

Well #2H

Well Position	**+N/-S**	0.00 usft	**Northing:**	509,080.16 usft	**Latitude:**	32.397716
	+E/-W	0.00 usft	**Easting:**	711,343.99 usft	**Longitude:**	-103.648602
Position Uncertainty		0.00 usft	**Wellhead Elevation:**	usft	**Ground Level:**	3,739.00 usft

Wellbore OH

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	8/29/2018	6.83	60.20	48,135.60

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	179.62

Survey Tool Program **Date** 8/30/2018

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.00	1,850.00	Prelim Plan A (OH)	MWD+IFR1	OWSG MWD + IFR1
1,850.00	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	17,182.69	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
[RamathornWA#2H]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

Marathon Oil

Pro Directional

Survey Report

PRODIRECTIONAL

Company:	Marathon Oil	**Local Co-ordinate Reference:**	Well #2H
Project:	Lea County, NM	**TVD Reference:**	Well @ 3764.00usft (GL: 3739' + KB: 25' (PD594))
Site:	Ramathorn 14 WA Fed Com (1-2-7)	**MD Reference:**	Well @ 3764.00usft (GL: 3739' + KB: 25' (PD594))
Well:	#2H	**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	288.34	1,599.98	0.55	-1.66	-0.56	2.00	2.00	0.00
1,700.00	4.00	288.34	1,699.84	2.20	-6.62	-2.24	2.00	2.00	0.00
1,800.00	6.00	288.34	1,799.45	4.94	-14.90	-5.04	2.00	2.00	0.00
1,900.00	8.00	288.34	1,898.70	8.77	-26.46	-8.95	2.00	2.00	0.00
2,000.00	10.00	288.34	1,997.47	13.70	-41.31	-13.97	2.00	2.00	0.00
2,100.00	10.00	288.34	2,095.95	19.16	-57.79	-19.54	0.00	0.00	0.00
2,200.00	10.00	288.34	2,194.43	24.63	-74.28	-25.12	0.00	0.00	0.00
2,300.00	10.00	288.34	2,292.91	30.09	-90.76	-30.69	0.00	0.00	0.00
2,400.00	10.00	288.34	2,391.39	35.55	-107.24	-36.27	0.00	0.00	0.00
2,500.00	10.00	288.34	2,489.87	41.02	-123.72	-41.84	0.00	0.00	0.00
2,600.00	10.00	288.34	2,588.35	46.48	-140.21	-47.41	0.00	0.00	0.00
2,700.00	10.00	288.34	2,686.83	51.95	-156.69	-52.99	0.00	0.00	0.00
2,800.00	10.00	288.34	2,785.31	57.41	-173.17	-58.56	0.00	0.00	0.00
2,900.00	10.00	288.34	2,883.79	62.88	-189.65	-64.13	0.00	0.00	0.00
3,000.00	10.00	288.34	2,982.27	68.34	-206.14	-69.71	0.00	0.00	0.00
3,100.00	10.00	288.34	3,080.75	73.81	-222.62	-75.28	0.00	0.00	0.00
3,200.00	10.00	288.34	3,179.23	79.27	-239.10	-80.86	0.00	0.00	0.00
3,300.00	10.00	288.34	3,277.72	84.74	-255.58	-86.43	0.00	0.00	0.00
3,400.00	10.00	288.34	3,376.20	90.20	-272.07	-92.00	0.00	0.00	0.00
3,500.00	10.00	288.34	3,474.68	95.67	-288.55	-97.58	0.00	0.00	0.00
3,600.00	10.00	288.34	3,573.16	101.13	-305.03	-103.15	0.00	0.00	0.00
3,700.00	10.00	288.34	3,671.64	106.60	-321.51	-108.73	0.00	0.00	0.00
3,800.00	10.00	288.34	3,770.12	112.06	-338.00	-114.30	0.00	0.00	0.00
3,900.00	10.00	288.34	3,868.60	117.52	-354.48	-119.87	0.00	0.00	0.00
4,000.00	10.00	288.34	3,967.08	122.99	-370.96	-125.45	0.00	0.00	0.00
4,100.00	10.00	288.34	4,065.56	128.45	-387.44	-131.02	0.00	0.00	0.00
4,200.00	10.00	288.34	4,164.04	133.92	-403.93	-136.59	0.00	0.00	0.00
4,300.00	10.00	288.34	4,262.52	139.38	-420.41	-142.17	0.00	0.00	0.00
4,400.00	10.00	288.34	4,361.00	144.85	-436.89	-147.74	0.00	0.00	0.00
4,500.00	10.00	288.34	4,459.48	150.31	-453.38	-153.32	0.00	0.00	0.00
4,600.00	10.00	288.34	4,557.97	155.78	-469.86	-158.89	0.00	0.00	0.00

Marathon Oil

Pro Directional

Survey Report

PRODIRECTIONAL

Company:	Marathon Oil	**Local Co-ordinate Reference:**	Well #2H
Project:	Lea County, NM	**TVD Reference:**	Well @ 3764.00usft (GL: 3739' + KB: 25' (PD594))
Site:	Ramathorn 14 WA Fed Com (1-2-7)	**MD Reference:**	Well @ 3764.00usft (GL: 3739' + KB: 25' (PD594))
Well:	WA #2H	**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	288.34	4,656.45	161.24	-486.34	-164.46	0.00	0.00	0.00
4,800.00	10.00	288.34	4,754.93	166.71	-502.82	-170.04	0.00	0.00	0.00
4,900.00	10.00	288.34	4,853.41	172.17	-519.31	-175.61	0.00	0.00	0.00
5,000.00	10.00	288.34	4,951.89	177.64	-535.79	-181.19	0.00	0.00	0.00
5,100.00	10.00	288.34	5,050.37	183.10	-552.27	-186.76	0.00	0.00	0.00
5,200.00	10.00	288.34	5,148.85	188.57	-568.75	-192.33	0.00	0.00	0.00
5,300.00	10.00	288.34	5,247.33	194.03	-585.24	-197.91	0.00	0.00	0.00
5,400.00	10.00	288.34	5,345.81	199.49	-601.72	-203.48	0.00	0.00	0.00
5,500.00	10.00	288.34	5,444.29	204.96	-618.20	-209.05	0.00	0.00	0.00
5,600.00	10.00	288.34	5,542.77	210.42	-634.68	-214.63	0.00	0.00	0.00
5,700.00	10.00	288.34	5,641.25	215.89	-651.17	-220.20	0.00	0.00	0.00
5,800.00	10.00	288.34	5,739.73	221.35	-667.65	-225.78	0.00	0.00	0.00
5,900.00	10.00	288.34	5,838.22	226.82	-684.13	-231.35	0.00	0.00	0.00
6,000.00	10.00	288.34	5,936.70	232.28	-700.61	-236.92	0.00	0.00	0.00
6,100.00	10.00	288.34	6,035.18	237.75	-717.10	-242.50	0.00	0.00	0.00
6,200.00	10.00	288.34	6,133.66	243.21	-733.58	-248.07	0.00	0.00	0.00
6,300.00	10.00	288.34	6,232.14	248.68	-750.06	-253.65	0.00	0.00	0.00
6,400.00	10.00	288.34	6,330.62	254.14	-766.54	-259.22	0.00	0.00	0.00
6,500.00	10.00	288.34	6,429.10	259.61	-783.03	-264.79	0.00	0.00	0.00
6,600.00	10.00	288.34	6,527.58	265.07	-799.51	-270.37	0.00	0.00	0.00
6,700.00	10.00	288.34	6,626.06	270.53	-815.99	-275.94	0.00	0.00	0.00
6,800.00	10.00	288.34	6,724.54	276.00	-832.47	-281.51	0.00	0.00	0.00
6,900.00	10.00	288.34	6,823.02	281.46	-848.96	-287.09	0.00	0.00	0.00
7,000.00	10.00	288.34	6,921.50	286.93	-865.44	-292.66	0.00	0.00	0.00
7,100.00	10.00	288.34	7,019.99	292.39	-881.92	-298.24	0.00	0.00	0.00
7,200.00	10.00	288.34	7,118.47	297.86	-898.40	-303.81	0.00	0.00	0.00
7,300.00	10.00	288.34	7,216.95	303.32	-914.89	-309.38	0.00	0.00	0.00
7,400.00	10.00	288.34	7,315.43	308.79	-931.37	-314.96	0.00	0.00	0.00
7,500.00	10.00	288.34	7,413.91	314.25	-947.85	-320.53	0.00	0.00	0.00
7,600.00	10.00	288.34	7,512.39	319.72	-964.33	-326.11	0.00	0.00	0.00
7,700.00	10.00	288.34	7,610.87	325.18	-980.82	-331.68	0.00	0.00	0.00
7,800.00	10.00	288.34	7,709.35	330.65	-997.30	-337.25	0.00	0.00	0.00
7,900.00	10.00	288.34	7,807.83	336.11	-1,013.78	-342.83	0.00	0.00	0.00
8,000.00	10.00	288.34	7,906.31	341.58	-1,030.26	-348.40	0.00	0.00	0.00
8,100.00	10.00	288.34	8,004.79	347.04	-1,046.75	-353.97	0.00	0.00	0.00
8,200.00	10.00	288.34	8,103.27	352.50	-1,063.23	-359.55	0.00	0.00	0.00
8,269.52	10.00	288.34	8,171.74	356.30	-1,074.69	-363.42	0.00	0.00	0.00
8,300.00	9.39	288.34	8,201.78	357.92	-1,079.56	-365.07	2.00	-2.00	0.00
8,400.00	7.39	288.34	8,300.71	362.51	-1,093.41	-369.75	2.00	-2.00	0.00
8,500.00	5.39	288.34	8,400.08	366.01	-1,103.97	-373.33	2.00	-2.00	0.00
8,600.00	3.39	288.34	8,499.78	368.42	-1,111.24	-375.78	2.00	-2.00	0.00
8,700.00	1.39	288.34	8,599.69	369.73	-1,115.20	-377.12	2.00	-2.00	0.00

Marathon Oil

Pro Directional

Survey Report

PRODIRECTIONAL

Company:	Marathon Oil	**Local Co-ordinate Reference:**	Well #2H
Project:	Lea County, NM	**TVD Reference:**	Well @ 3764.00usft (GL: 3739' + KB: 25' (PD594))
Site:	Ramathorn 14 WA Fed Com (1-2-7)	**MD Reference:**	Well @ 3764.00usft (GL: 3739' + KB: 25' (PD594))
Well:	#2H	**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)
8,769.52	0.00	0.00	8,669.21	370.00	-1,116.00	-377.39	2.00	-2.00	0.00
8,800.00	0.00	0.00	8,699.68	370.00	-1,116.00	-377.39	0.00	0.00	0.00
8,900.00	0.00	0.00	8,799.68	370.00	-1,116.00	-377.39	0.00	0.00	0.00
9,000.00	0.00	0.00	8,899.68	370.00	-1,116.00	-377.39	0.00	0.00	0.00
9,100.00	0.00	0.00	8,999.68	370.00	-1,116.00	-377.39	0.00	0.00	0.00
9,200.00	0.00	0.00	9,099.68	370.00	-1,116.00	-377.39	0.00	0.00	0.00
9,300.00	0.00	0.00	9,199.68	370.00	-1,116.00	-377.39	0.00	0.00	0.00
9,400.00	0.00	0.00	9,299.68	370.00	-1,116.00	-377.39	0.00	0.00	0.00
9,500.00	0.00	0.00	9,399.68	370.00	-1,116.00	-377.39	0.00	0.00	0.00
9,600.00	0.00	0.00	9,499.68	370.00	-1,116.00	-377.39	0.00	0.00	0.00
9,700.00	0.00	0.00	9,599.68	370.00	-1,116.00	-377.39	0.00	0.00	0.00
9,800.00	0.00	0.00	9,699.68	370.00	-1,116.00	-377.39	0.00	0.00	0.00
9,900.00	0.00	0.00	9,799.68	370.00	-1,116.00	-377.39	0.00	0.00	0.00
10,000.00	0.00	0.00	9,899.68	370.00	-1,116.00	-377.39	0.00	0.00	0.00
10,100.00	0.00	0.00	9,999.68	370.00	-1,116.00	-377.39	0.00	0.00	0.00
10,200.00	0.00	0.00	10,099.68	370.00	-1,116.00	-377.39	0.00	0.00	0.00
10,300.00	0.00	0.00	10,199.68	370.00	-1,116.00	-377.39	0.00	0.00	0.00
10,400.00	0.00	0.00	10,299.68	370.00	-1,116.00	-377.39	0.00	0.00	0.00
10,500.00	0.00	0.00	10,399.68	370.00	-1,116.00	-377.39	0.00	0.00	0.00
10,600.00	0.00	0.00	10,499.68	370.00	-1,116.00	-377.39	0.00	0.00	0.00
10,700.00	0.00	0.00	10,599.68	370.00	-1,116.00	-377.39	0.00	0.00	0.00
10,800.00	0.00	0.00	10,699.68	370.00	-1,116.00	-377.39	0.00	0.00	0.00
10,900.00	0.00	0.00	10,799.68	370.00	-1,116.00	-377.39	0.00	0.00	0.00
11,000.00	0.00	0.00	10,899.68	370.00	-1,116.00	-377.39	0.00	0.00	0.00
11,100.00	0.00	0.00	10,999.68	370.00	-1,116.00	-377.39	0.00	0.00	0.00
11,200.00	0.00	0.00	11,099.68	370.00	-1,116.00	-377.39	0.00	0.00	0.00
11,300.00	0.00	0.00	11,199.68	370.00	-1,116.00	-377.39	0.00	0.00	0.00
11,400.00	0.00	0.00	11,299.68	370.00	-1,116.00	-377.39	0.00	0.00	0.00
11,500.00	0.00	0.00	11,399.68	370.00	-1,116.00	-377.39	0.00	0.00	0.00
11,600.00	0.00	0.00	11,499.68	370.00	-1,116.00	-377.39	0.00	0.00	0.00
11,678.32	0.00	0.00	11,578.00	370.00	-1,116.00	-377.39	0.00	0.00	0.00
[RamathornWA#2H]KOP									
11,700.00	2.17	186.00	11,599.68	369.59	-1,116.04	-376.99	10.00	10.00	0.00
11,750.00	7.17	186.00	11,649.50	365.55	-1,116.47	-372.94	10.00	10.00	0.00
11,800.00	12.17	186.00	11,698.77	357.20	-1,117.35	-364.60	10.00	10.00	0.00
11,850.00	17.17	186.00	11,747.13	344.61	-1,118.67	-352.02	10.00	10.00	0.00
11,900.00	22.17	186.00	11,794.19	327.88	-1,120.43	-335.30	10.00	10.00	0.00
11,950.00	27.17	186.00	11,839.62	307.13	-1,122.61	-314.57	10.00	10.00	0.00
12,000.00	32.17	186.00	11,883.05	282.53	-1,125.19	-289.98	10.00	10.00	0.00
12,050.00	37.17	186.00	11,924.16	254.25	-1,128.17	-261.73	10.00	10.00	0.00
12,100.00	42.17	186.00	11,962.63	222.52	-1,131.50	-230.02	10.00	10.00	0.00
12,150.00	47.17	186.00	11,998.18	187.57	-1,135.17	-195.10	10.00	10.00	0.00

Marathon Oil

Pro Directional

Survey Report

PRODIRECTIONAL

Company:	Marathon Oil	**Local Co-ordinate Reference:**	Well #2H
Project:	Lea County, NM	**TVD Reference:**	Well @ 3764.00usft (GL: 3739' + KB: 25' (PD594))
Site:	Ramathorn 14 WA Fed Com (1-2-7)	**MD Reference:**	Well @ 3764.00usft (GL: 3739' + KB: 25' (PD594))
Well:	#2H	**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)
12,200.00	52.17	186.00	12,030.53	149.68	-1,139.16	-157.23	10.00	10.00	0.00
12,250.00	57.17	186.00	12,059.44	109.12	-1,143.42	-116.70	10.00	10.00	0.00
12,300.00	62.17	186.00	12,084.68	66.22	-1,147.93	-73.83	10.00	10.00	0.00
12,350.00	67.17	186.00	12,106.07	21.29	-1,152.65	-28.93	10.00	10.00	0.00
12,400.00	72.17	186.00	12,123.43	-25.33	-1,157.55	17.65	10.00	10.00	0.00
12,450.00	77.17	186.00	12,136.65	-73.27	-1,162.59	65.56	10.00	10.00	0.00
12,500.00	82.17	186.00	12,145.61	-122.17	-1,167.73	114.43	10.00	10.00	0.00
12,550.00	87.17	186.00	12,150.26	-171.67	-1,172.93	163.89	10.00	10.00	0.00
12,578.32	90.00	186.00	12,150.96	-199.82	-1,175.89	192.02	10.00	10.00	0.00
12,600.00	90.00	185.35	12,150.96	-221.40	-1,178.03	213.58	3.00	0.00	-3.00
12,700.00	90.00	182.35	12,150.96	-321.16	-1,184.75	313.29	3.00	0.00	-3.00
12,790.92	90.00	179.62	12,150.96	-412.06	-1,186.31	404.18	3.00	0.00	-3.00
12,800.00	90.00	179.62	12,150.96	-421.14	-1,186.25	413.26	0.00	0.00	0.00
12,900.00	90.00	179.62	12,150.96	-521.13	-1,185.59	513.26	0.00	0.00	0.00
13,000.00	90.00	179.62	12,150.96	-621.13	-1,184.93	613.26	0.00	0.00	0.00
13,100.00	90.00	179.62	12,150.96	-721.13	-1,184.27	713.26	0.00	0.00	0.00
13,200.00	90.00	179.62	12,150.96	-821.13	-1,183.61	813.26	0.00	0.00	0.00
13,300.00	90.00	179.62	12,150.96	-921.13	-1,182.95	913.26	0.00	0.00	0.00
13,400.00	90.00	179.62	12,150.96	-1,021.12	-1,182.29	1,013.26	0.00	0.00	0.00
13,500.00	90.00	179.62	12,150.97	-1,121.12	-1,181.63	1,113.26	0.00	0.00	0.00
13,600.00	90.00	179.62	12,150.97	-1,221.12	-1,180.97	1,213.26	0.00	0.00	0.00
13,700.00	90.00	179.62	12,150.97	-1,321.12	-1,180.31	1,313.26	0.00	0.00	0.00
13,800.00	90.00	179.62	12,150.97	-1,421.11	-1,179.65	1,413.26	0.00	0.00	0.00
13,900.00	90.00	179.62	12,150.97	-1,521.11	-1,178.99	1,513.26	0.00	0.00	0.00
14,000.00	90.00	179.62	12,150.97	-1,621.11	-1,178.33	1,613.26	0.00	0.00	0.00
14,100.00	90.00	179.62	12,150.97	-1,721.11	-1,177.67	1,713.26	0.00	0.00	0.00
14,200.00	90.00	179.62	12,150.97	-1,821.11	-1,177.01	1,813.26	0.00	0.00	0.00
14,300.00	90.00	179.62	12,150.97	-1,921.10	-1,176.35	1,913.26	0.00	0.00	0.00
14,400.00	90.00	179.62	12,150.97	-2,021.10	-1,175.69	2,013.26	0.00	0.00	0.00
14,500.00	90.00	179.62	12,150.98	-2,121.10	-1,175.03	2,113.26	0.00	0.00	0.00
14,600.00	90.00	179.62	12,150.98	-2,221.10	-1,174.37	2,213.26	0.00	0.00	0.00
14,700.00	90.00	179.62	12,150.98	-2,321.09	-1,173.71	2,313.26	0.00	0.00	0.00
14,800.00	90.00	179.62	12,150.98	-2,421.09	-1,173.05	2,413.26	0.00	0.00	0.00
14,900.00	90.00	179.62	12,150.98	-2,521.09	-1,172.39	2,513.26	0.00	0.00	0.00
15,000.00	90.00	179.62	12,150.98	-2,621.09	-1,171.73	2,613.26	0.00	0.00	0.00
15,100.00	90.00	179.62	12,150.98	-2,721.09	-1,171.07	2,713.26	0.00	0.00	0.00
15,200.00	90.00	179.62	12,150.98	-2,821.08	-1,170.41	2,813.26	0.00	0.00	0.00
15,300.00	90.00	179.62	12,150.98	-2,921.08	-1,169.75	2,913.26	0.00	0.00	0.00
15,400.00	90.00	179.62	12,150.98	-3,021.08	-1,169.09	3,013.26	0.00	0.00	0.00
15,500.00	90.00	179.62	12,150.98	-3,121.08	-1,168.43	3,113.26	0.00	0.00	0.00
15,600.00	90.00	179.62	12,150.99	-3,221.08	-1,167.77	3,213.26	0.00	0.00	0.00
15,700.00	90.00	179.62	12,150.99	-3,321.07	-1,167.11	3,313.26	0.00	0.00	0.00

Marathon Oil

Pro Directional

Survey Report

PRODIRECTIONAL

Company:	Marathon Oil	**Local Co-ordinate Reference:**	Well #2H
Project:	Lea County, NM	**TVD Reference:**	Well @ 3764.00usft (GL: 3739' + KB: 25' (PD594))
Site:	Ramathorn 14 WA Fed Com (1-2-7)	**MD Reference:**	Well @ 3764.00usft (GL: 3739' + KB: 25' (PD594))
Well:	#2H	**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)
15,800.00	90.00	179.62	12,150.99	-3,421.07	-1,166.45	3,413.26	0.00	0.00	0.00
15,900.00	90.00	179.62	12,150.99	-3,521.07	-1,165.79	3,513.26	0.00	0.00	0.00
16,000.00	90.00	179.62	12,150.99	-3,621.07	-1,165.13	3,613.26	0.00	0.00	0.00
16,100.00	90.00	179.62	12,150.99	-3,721.06	-1,164.47	3,713.26	0.00	0.00	0.00
16,200.00	90.00	179.62	12,150.99	-3,821.06	-1,163.81	3,813.26	0.00	0.00	0.00
16,300.00	90.00	179.62	12,150.99	-3,921.06	-1,163.15	3,913.26	0.00	0.00	0.00
16,400.00	90.00	179.62	12,150.99	-4,021.06	-1,162.49	4,013.26	0.00	0.00	0.00
16,500.00	90.00	179.62	12,150.99	-4,121.06	-1,161.83	4,113.26	0.00	0.00	0.00
16,600.00	90.00	179.62	12,151.00	-4,221.05	-1,161.17	4,213.26	0.00	0.00	0.00
16,700.00	90.00	179.62	12,151.00	-4,321.05	-1,160.51	4,313.26	0.00	0.00	0.00
16,800.00	90.00	179.62	12,151.00	-4,421.05	-1,159.85	4,413.26	0.00	0.00	0.00
16,900.00	90.00	179.62	12,151.00	-4,521.05	-1,159.19	4,513.26	0.00	0.00	0.00
17,000.00	90.00	179.62	12,151.00	-4,621.04	-1,158.53	4,613.26	0.00	0.00	0.00
17,100.00	90.00	179.62	12,151.00	-4,721.04	-1,157.87	4,713.26	0.00	0.00	0.00
17,137.69	90.00	179.62	12,151.00	-4,758.73	-1,157.62	4,750.95	0.00	0.00	0.00
[RamathornWA#2H]LTP/BHL									
17,182.69	90.00	179.62	12,151.00	-4,803.73	-1,157.32	4,795.95	0.00	0.00	0.00

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
[RamathornWA#2H]FTP - plan misses target center by 1233.45usft at 0.00usft MD (0.00 TVD, 0.00 N, 0.00 E) - Point	0.00	0.00	0.00	320.56	-1,191.07	509,400.72	710,152.92	32.398618	-103.652454
[RamathornWA#2H]KOF - plan hits target center - Point	0.00	0.00	11,578.00	370.00	-1,116.00	509,450.16	710,227.99	32.398752	-103.652210
[RamathornWA#2H]LTP - plan hits target center - Point	0.00	0.00	12,151.00	-4,758.73	-1,157.62	504,321.43	710,186.37	32.384656	-103.652451

Checked By: _____ Approved By: _____ Date: _____

PECOS DISTRICT
DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	**MARATHON OIL PERMIAN LLC**
LEASE NO.:	**NMNM085937**
WELL NAME & NO.:	RAMATHORN 14 WA FED COM 2H
SURFACE HOLE FOOTAGE:	436'/N & 1519'/W
BOTTOM HOLE FOOTAGE	100'/S & 330'/W
LOCATION:	Section 14, T.22 S., R.32 E., NMPM
COUNTY:	LEA County, New Mexico

COA

H2S	○ Yes	◉ No	
Potash	◉ None	○ Secretary	○ R-111-P
Cave/Karst Potential	◉ Low	○ Medium	○ High
Cave/Karst Potential	○ Critical		
Variance	○ None	◉ Flex Hose	○ Other
Wellhead	○ Conventional	◉ Multibowl	○ Both
Other	☐ 4 String Area	☐ Capitan Reef	☐ WIPP
Other	☑ Fluid Filled	☐ Cement Squeeze	☐ Pilot Hole
Special Requirements	☐ Water Disposal	☑ COM	☐ Unit

A. HYDROGEN SULFIDE

Hydrogen Sulfide (H2S) monitors shall be installed prior to drilling out the surface shoe. If H2S is detected in concentrations greater than 100 ppm, the Hydrogen Sulfide area shall meet Onshore Order 6 requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, provide measured values and formations to the BLM.

B. CASING

1. The **13-3/8** inch surface casing shall be set at approximately **1020 feet** (a minimum of 25 feet (Lea County) into the Rustler Anhydrite and above the salt) 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**

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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 **4800 feet**. 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.**

Intermediate casing must be kept fluid filled to meet BLM minimum collapse requirement.

3. The minimum required fill of cement behind the **7** inch production casing is:

Option 1 (Single Stage):

- Cement should tie-back at least **200 feet** into previous casing string. Operator shall provide method of verification.

4. The minimum required fill of cement behind the **4-1/2** inch production liner is:

- Cement should tie-back **100 feet** into the previous casing. Operator shall provide method of verification.

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. BOP REQUIREMENTS

Option 1:

a. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **2000 (2M)** psi.

b. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the intermediate casing shoe shall be **10,000 (10M)** psi.

Option 2:

Operator has proposed a multi-bowl wellhead assembly. This assembly will only be tested when installed on the 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 5000 (5M) 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.

- 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)

☒ Eddy County
Call the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220, (575) 361-2822

☒ Lea County
Call the Hobbs Field Station, 414 West Taylor, Hobbs NM 88240, (575) 393-3612

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 Onshore Oil and Gas Order No. 2 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 intergrity 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 intergrity 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 Onshore Oil and Gas Order No. 2 and API RP 53 Sec. 17.

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 OOGO2.III.A.2.i 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 when specified), 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 plug. However, **no tests** shall commence until the cement has had a minimum of 24 hours setup time, except the casing pressure test can be initiated immediately after bumping the plug (only applies to single stage cement jobs).

c. The tests shall be done by an independent service company utilizing a test plug not a cup or J-packer. The operator also has the option of utilizing an independent tester to test without a plug (i.e. against the casing) pursuant to Onshore Order 2 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 Onshore Order No. 2.

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.

RI12242020

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PECOS DISTRICT
SURFACE USE
CONDITIONS OF APPROVAL

OPERATOR'S NAME: Marathon Oil Permian LLC
LEASE NO.: NMNM085937
LOCATION: Section 14, T.22 S., R.32 E., NMPM
COUNTY: Lea County, New Mexico

Ramathorn 14 SB Fed Com 22H
Surface Hole Location: 236' FNL & 1490' FWL, Section 14, T. 22 S., R. 32 E.
Bottom Hole Location: 330' FSL & 660' FWL, Section 14, T. 22 S., R. 32 E.

Ramathorn 14 SB Fed Com 8H
Surface Hole Location: 236' FNL & 1540' FWL, Section 14, T. 22 S., R. 32 E.
Bottom Hole Location: 100' FSL & 1979' FWL, Section 14, T. 22 S., R. 32 E.

Ramathorn 14 TB Fed Com 1H
Surface Hole Location: 436' FNL & 1489' FWL, Section 14, T. 22 S., R. 32 E.
Bottom Hole Location: 100' FSL & 330' FWL, Section 14, T. 22 S., R. 32 E.

Ramathorn 14 WA Fed Com 2H
Surface Hole Location: 436' FNL & 1519' FWL, Section 14, T. 22 S., R. 32 E.
Bottom Hole Location: 100' FSL & 330' FWL, Section 14, T. 22 S., R. 32 E.

Ramathorn 14 WXY Fed Com 7H
Surface Hole Location: 436' FNL & 1549' FWL, Section 14, T. 22 S., R. 32 E.
Bottom Hole Location: 100' FSL & 1310' FWL, Section 14, T. 22 S., R. 32 E.

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Standard Conditions of Approval (COA) apply to this APD. If any deviations to these standards exist or special COAs are required, the section with the deviation or requirement will be checked below.

I. GENERAL PROVISIONS

The approval of the Application For Permit To Drill (APD) is in compliance with all applicable laws and regulations: 43 Code of Federal Regulations 3160, the lease terms, Onshore Oil and Gas Orders, Notices To Lessees, New Mexico Oil Conservation Division (NMOCD) Rules, National Historical Preservation Act As Amended, and instructions and orders of the Authorized Officer. Any request for a variance shall be submitted to the Authorized Officer on Form 3160-5, Sundry Notices and Report on Wells.

II. PERMIT EXPIRATION

If the permit terminates prior to drilling and drilling cannot be commenced within 60 days after expiration, an operator is required to submit Form 3160-5, Sundry Notices and Reports on Wells, requesting surface reclamation requirements for any surface disturbance. However, if the operator will be able to initiate drilling within 60 days after the expiration of the permit, the operator must have set the conductor pipe in order to allow for an extension of 60 days beyond the expiration date of the APD. (Filing of a Sundry Notice is required for this 60 day extension.)

III. ARCHAEOLOGICAL, PALEONTOLOGY & HISTORICAL SITES

Any cultural and/or paleontological resource discovered by the operator or by any person working on the operator's behalf shall immediately report such findings to the Authorized Officer. The operator is fully accountable for the actions of their contractors and subcontractors. The operator shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery shall be made by the Authorized Officer to determine the appropriate actions that shall be required to prevent the loss of significant cultural or scientific values of the discovery. The operator shall be held responsible for the cost of the proper mitigation measures that the Authorized Officer assesses after consultation with the operator on the evaluation and decisions of the discovery. Any unauthorized collection or disturbance of cultural or paleontological resources may result in a shutdown order by the Authorized Officer.

IV. NOXIOUS WEEDS

The operator shall be held responsible if noxious weeds become established within the areas of operations. Weed control shall be required on the disturbed land where noxious weeds exist, which includes the roads, pads, associated pipeline corridor, and adjacent land affected by the establishment of weeds due to this action. The operator shall consult with the Authorized Officer for acceptable weed control methods, which include following EPA and BLM requirements and policies.

V. SPECIAL REQUIREMENT(S)

Timing Limitation Stipulation / Condition of Approval for lesser prairie-chicken:
Oil and gas activities including 3-D geophysical exploration, and drilling will not be allowed in lesser prairie-chicken habitat during the period from March 1st through June 15th annually. During that period, other activities that produce noise or involve human activity, such as the maintenance of oil and gas facilities, pipeline, road, and well pad construction, will be allowed except between 3:00 am and 9:00 am. The 3:00 am to 9:00 am restriction will not apply to normal, around-the-clock operations, such as venting, flaring, or pumping, which do not require a human presence during this period. Additionally, no new drilling will be allowed within up to 200 meters of leks known at the time of permitting. Normal vehicle use on existing roads will not be restricted. Exhaust noise from pump jack engines must be muffled or otherwise controlled so as not to exceed 75 db measured at 30 feet from the source of the noise.

Ground-level Abandoned Well Marker to avoid raptor perching: Upon the plugging and subsequent abandonment of the well, the well marker will be installed at ground level on a plate containing the pertinent information for the plugged well. For more installation details, contact the Carlsbad Field Office at 575-234-5972.

Hydrology:
The entire well pad(s) will be bermed to prevent oil, salt, and other chemical contaminants from leaving the well pad. The compacted berm shall be constructed at a minimum of 12 inches with impermeable mineral material (e.g. caliche). Topsoil shall not be used to construct the berm. No water flow from the uphill side(s) of the pad shall be allowed to enter the well pad. The integrity of the berm shall be maintained around the surfaced pad throughout the life of the well and around the downsized pad after interim reclamation has been completed. Any water erosion that may occur due to the construction of the well pad during the life of the well will be quickly corrected and proper measures will be taken to prevent future erosion. Stockpiling of topsoil is required. The top soil shall be stockpiled in an appropriate location to prevent loss of soil due to water or wind erosion and not used for berming or erosion control. If fluid collects within the bermed area, the fluid must be vacuumed into a safe container and disposed of properly at a state approved facility.

Tank battery locations will be lined and bermed. A 20 mil permanent liner will be installed with a 4 oz. felt backing to prevent tears or punctures. Tank battery berms must be large enough to contain 1 ½ times the content of the largest tank or 24 hour production, whichever is greater. Automatic shut off, check valves, or similar systems will be installed for tanks to minimize the effects of catastrophic line failures used in production or drilling.

Livestock Watering Requirement
Any damage to structures that provide water to livestock throughout the life of the well, caused by operations from the well site, must be immediately corrected by the operator. The operator must notify the BLM office (575-234-5972) and the private surface landowner or the grazing allotment holder if any damage occurs to structures that provide water to livestock.

VI. CONSTRUCTION

A. NOTIFICATION

The BLM shall administer compliance and monitor construction of the access road and well pad. Notify the Carlsbad Field Office at (575) 234-5909 at least 3 working days prior to commencing construction of the access road and/or well pad.

When construction operations are being conducted on this well, the operator shall have the approved APD and Conditions of Approval (COA) on the well site and they shall be made available upon request by the Authorized Officer.

B. TOPSOIL

The operator shall strip the top portion of the soil (root zone) from the entire well pad area and stockpile the topsoil along the edge of the well pad as depicted in the APD. The root zone is typically six (6) inches in depth. All the stockpiled topsoil will be redistributed over the interim reclamation areas. Topsoil shall not be used for berming the pad or facilities. For final reclamation, the topsoil shall be spread over the entire pad area for seeding preparation.

Other subsoil (below six inches) stockpiles must be completely segregated from the topsoil stockpile. Large rocks or subsoil clods (not evident in the surrounding terrain) must be buried within the approved area for interim and final reclamation.

C. CLOSED LOOP SYSTEM

Tanks are required for drilling operations: No Pits.

The operator shall properly dispose of drilling contents at an authorized disposal site.

D. FEDERAL MINERAL MATERIALS PIT

Payment shall be made to the BLM prior to removal of any federal mineral materials. Call the Carlsbad Field Office at (575) 234-5972.

E. WELL PAD SURFACING

Surfacing of the well pad is not required.

If the operator elects to surface the well pad, the surfacing material may be required to be removed at the time of reclamation. The well pad shall be constructed in a manner which creates the smallest possible surface disturbance, consistent with safety and operational needs.

F. EXCLOSURE FENCING (CELLARS & PITS)

Exclosure Fencing
The operator will install and maintain exclosure fencing for all open well cellars to prevent access to public, livestock, and large forms of wildlife before and after drilling operations until the pit is free of fluids and the operator initiates backfilling. (For examples of exclosure fencing design, refer to BLM's Oil and Gas Gold Book, Exclosure Fence Illustrations, Figure 1, Page 18.)

G. ON LEASE ACCESS ROADS

Road Width
The access road shall have a driving surface that creates the smallest possible surface disturbance and does not exceed fourteen (14) feet in width. The maximum width of surface disturbance, when constructing the access road, shall not exceed twenty-five (25) feet.

Surfacing
Surfacing material is not required on the new access road driving surface. If the operator elects to surface the new access road or pad, the surfacing material may be required to be removed at the time of reclamation.

Where possible, no improvements should be made on the unsurfaced access road other than to remove vegetation as necessary, road irregularities, safety issues, or to fill low areas that may sustain standing water.

The Authorized Officer reserves the right to require surfacing of any portion of the access road at any time deemed necessary. Surfacing may be required in the event the road deteriorates, erodes, road traffic increases, or it is determined to be beneficial for future field development. The surfacing depth and type of material will be determined at the time of notification.

Crowning
Crowning shall be done on the access road driving surface. The road crown shall have a grade of approximately 2% (i.e., a 1" crown on a 14' wide road). The road shall conform to Figure 1; cross section and plans for typical road construction.

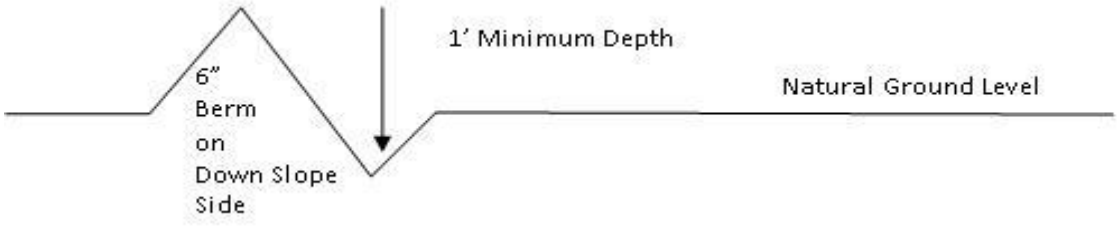
Ditching
Ditching shall be required on both sides of the road.

Turnouts
Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall conform to Figure 1; cross section and plans for typical road construction.

Drainage
Drainage control systems shall be constructed on the entire length of road (e.g. ditches, sidehill outsloping and insloping, lead-off ditches, culvert installation, and low water crossings).

A typical lead-off ditch has a minimum depth of 1 foot below and a berm of 6 inches above natural ground level. The berm shall be on the down-slope side of the lead-off ditch.

Cross Section of a Typical Lead-off Ditch



All lead-off ditches shall be graded to drain water with a 1 percent minimum to 3 percent maximum ditch slope. The spacing interval are variable for lead-off ditches and shall be determined according to the formula for spacing intervals of lead-off ditches, but may be amended depending upon existing soil types and centerline road slope (in %);

Formula for Spacing Interval of Lead-off Ditches

Example - On a 4% road slope that is 400 feet long, the water flow shall drain water into a lead-off ditch. Spacing interval shall be determined by the following formula:

$$\text{400 foot road with 4\% road slope: } \frac{400'}{4\%} + 100' = 200' \text{ lead-off ditch interval}$$

Cattle guards
An appropriately sized cattle guard sufficient to carry out the project shall be installed and maintained at fence/road crossings. Any existing cattle guards on the access road route shall be repaired or replaced if they are damaged or have deteriorated beyond practical use. The operator shall be responsible for the condition of the existing cattle guards that are in place and are utilized during lease operations.

Fence Requirement
Where entry is granted across a fence line, the fence shall be braced and tied off on both sides of the passageway prior to cutting. The operator shall notify the private surface landowner or the grazing allotment holder prior to crossing any fences.

Public Access
Public access on this road shall not be restricted by the operator without specific written approval granted by the Authorized Officer.

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Construction Steps

1. Salvage topsoil
2. Construct road
3. Redistribute topsoil
4. Revegetate slopes

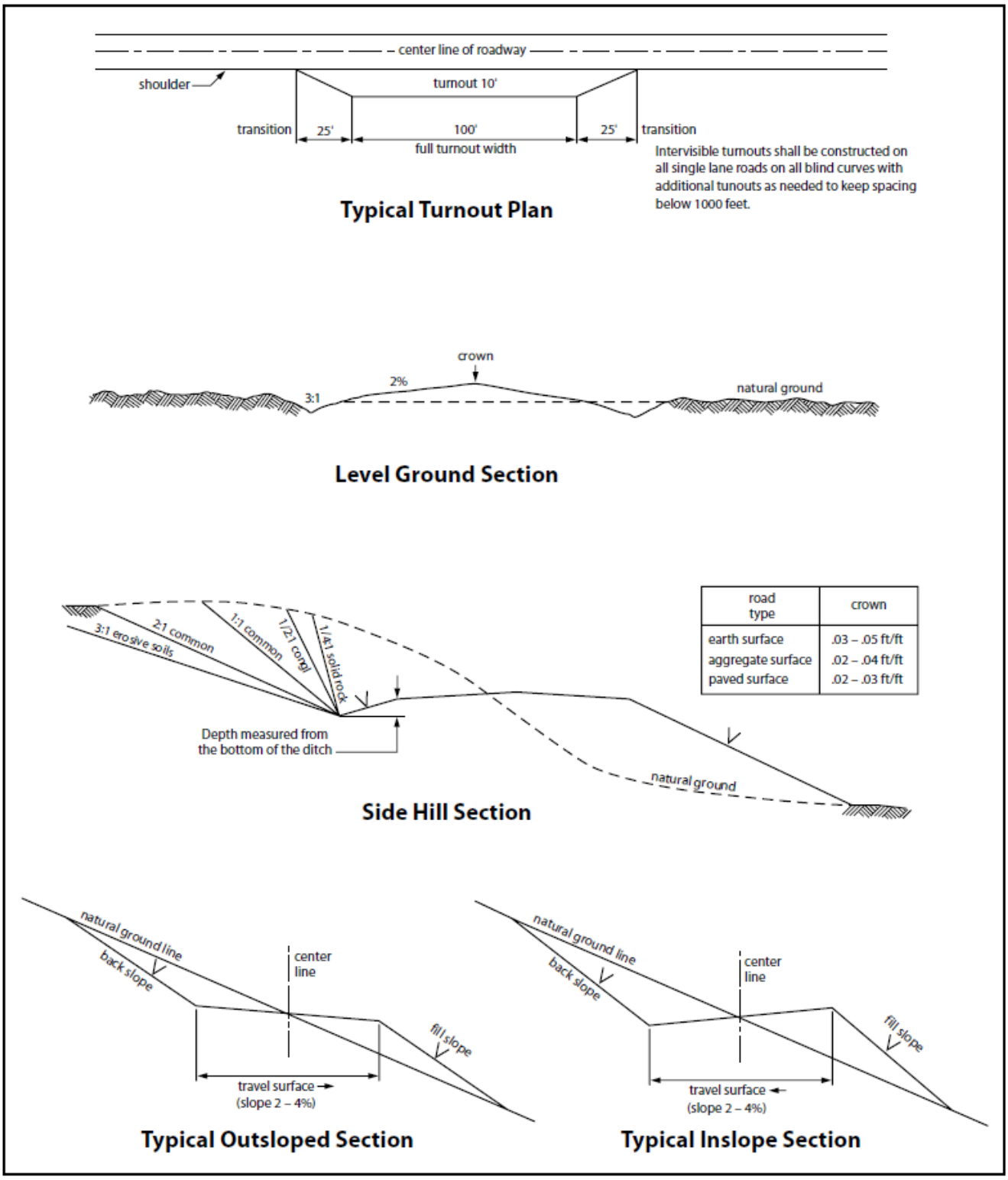

Figure 1. Cross-sections and plans for typical road sections representative of BLM resource or FS local and higher-class roads.

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VII. PRODUCTION (POST DRILLING)

A. WELL STRUCTURES & FACILITIES

Placement of Production Facilities
Production facilities should be placed on the well pad to allow for maximum interim recontouring and revegetation of the well location.

Exclosure Netting (Open-top Tanks)
Immediately following active drilling or completion operations, the operator will take actions necessary to prevent wildlife and livestock access, including avian wildlife, to all open-topped tanks that contain or have the potential to contain salinity sufficient to cause harm to wildlife or livestock, hydrocarbons, or Resource Conservation and Recovery Act of 1976-exempt hazardous substances. At a minimum, the operator will net, screen, or cover open-topped tanks to exclude wildlife and livestock and prevent mortality. If the operator uses netting, the operator will cover and secure the open portion of the tank to prevent wildlife entry. The operator will net, screen, or cover the tanks until the operator removes the tanks from the location or the tanks no longer contain substances that could be harmful to wildlife or livestock. Use a maximum netting mesh size of 1 ½ inches. The netting must not be in contact with fluids and must not have holes or gaps.

Chemical and Fuel Secondary Containment and Exclosure Screening
The operator will prevent all hazardous, poisonous, flammable, and toxic substances from coming into contact with soil and water. At a minimum, the operator will install and maintain an impervious secondary containment system for any tank or barrel containing hazardous, poisonous, flammable, or toxic substances sufficient to contain the contents of the tank or barrel and any drips, leaks, and anticipated precipitation. The operator will dispose of fluids within the containment system that do not meet applicable state or U. S. Environmental Protection Agency livestock water standards in accordance with state law; the operator must not drain the fluids to the soil or ground. The operator will design, construct, and maintain all secondary containment systems to prevent wildlife and livestock exposure to harmful substances. At a minimum, the operator will install effective wildlife and livestock exclosure systems such as fencing, netting, expanded metal mesh, lids, and grate covers. Use a maximum netting mesh size of 1 ½ inches.

Open-Vent Exhaust Stack Exclosures
The operator will construct, modify, equip, and maintain all open-vent exhaust stacks on production equipment to prevent birds and bats from entering, and to discourage perching, roosting, and nesting. (*Recommended exclosure structures on open-vent exhaust stacks are in the shape of a cone*.) Production equipment includes, but may not be limited to, tanks, heater-treaters, separators, dehydrators, flare stacks, in-line units, and compressor mufflers.

Containment Structures
Proposed production facilities such as storage tanks and other vessels will have a secondary containment structure that is constructed to hold the capacity of 1.5 times the largest tank, plus freeboard to account for precipitation, unless more stringent protective requirements are deemed necessary.

Painting Requirement
All above-ground structures including meter housing that are not subject to safety requirements shall be painted a flat non-reflective paint color, **Shale Green** from the BLM Standard Environmental Color Chart (CC-001: June 2008).

VIII. INTERIM RECLAMATION

During the life of the development, all disturbed areas not needed for active support of production operations should undergo interim reclamation in order to minimize the environmental impacts of development on other resources and uses.

Within six (6) months of well completion, operators should work with BLM surface management specialists (Jim Amos: 575-234-5909) to devise the best strategies to reduce the size of the location. Interim reclamation should allow for remedial well operations, as well as safe and efficient removal of oil and gas.

During reclamation, the removal of caliche is important to increasing the success of revegetating the site. Removed caliche that is free of contaminants may be used for road repairs, fire walls or for building other roads and locations. In order to operate the well or complete workover operations, it may be necessary to drive, park and operate on restored interim vegetation within the previously disturbed area. Disturbing revegetated areas for production or workover operations will be allowed. If there is significant disturbance and loss of vegetation, the area will need to be revegetated. Communicate with the appropriate BLM office for any exceptions/exemptions if needed.

All disturbed areas after they have been satisfactorily prepared need to be reseeded with the seed mixture provided below.

Upon completion of interim reclamation, the operator shall submit a Sundry Notices and Reports on Wells, Subsequent Report of Reclamation (Form 3160-5).

IX. FINAL ABANDONMENT & RECLAMATION

At final abandonment, well locations, production facilities, and access roads must undergo "final" reclamation so that the character and productivity of the land are restored.

Earthwork for final reclamation must be completed within six (6) months of well plugging. All pads, pits, facility locations and roads must be reclaimed to a satisfactory revegetated, safe, and stable condition, unless an agreement is made with the landowner or BLM to keep the road and/or pad intact.

After all disturbed areas have been satisfactorily prepared, these areas need to be revegetated with the seed mixture provided below. Seeding should be accomplished by drilling on the contour whenever practical or by other approved methods. Seeding may need to be repeated until revegetation is successful, as determined by the BLM.

Operators shall contact a BLM surface protection specialist prior to surface abandonment operations for site specific objectives (Jim Amos: 575-234-5909).

Ground-level Abandoned Well Marker to avoid raptor perching: Upon the plugging and subsequent abandonment of the well, the well marker will be installed at ground level on a plate containing the pertinent information for the plugged well.

Seed Mixture for LPC Sand/Shinnery Sites

Holder shall seed all disturbed areas with the seed mixture listed below. The seed mixture shall be planted in the amounts specified in pounds of pure live seed (PLS)* per acre. There shall be no primary or secondary noxious weeds in the seed mixture. Seed will be tested and the viability testing of seed shall be done in accordance with State law(s) and within nine (9) months prior to purchase. Commercial seed shall be either certified or registered seed. The seed container shall be tagged in accordance with State law(s) and available for inspection by the Authorized Officer.

Seed will be planted using a drill equipped with a depth regulator to ensure proper depth of planting where drilling is possible. The seed mixture will be evenly and uniformly planted over the disturbed area (smaller/heavier seeds have a tendency to drop the bottom of the drill and are planted first). Holder shall take appropriate measures to ensure this does not occur. Where drilling is not possible, seed will be broadcast and the area shall be raked or chained to cover the seed. When broadcasting the seed, the pounds per acre are to be doubled. Seeding shall be repeated until a satisfactory stand is established as determined by the Authorized Officer. Evaluation of growth may not be made before completion of at least one full growing season after seeding.

Species to be planted in pounds of pure live seed* per acre:

Species	lb/acre
Plains Bristlegrass	5lbs/A
Sand Bluestem	5lbs/A
Little Bluestem	3lbs/A
Big Bluestem	6lbs/A
Plains Coreopsis	2lbs/A
Sand Dropseed	1lbs/A

*Pounds of pure live seed:

Pounds of seed **x** percent purity **x** percent germination = pounds pure live seed

 Approval Date: 05/28/2021

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1625 N. French Dr., Hobbs, NM 88240
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District II
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District III
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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 36676

CONDITIONS

Operator: MARATHON OIL PERMIAN LLC 5555 San Felipe St. Houston, TX 77056	OGRID: 372098
	Action Number: 36676
	Action Type: [C-101] BLM - Federal/Indian Land Lease (Form 3160-3)

CONDITIONS

Created By	Condition	Condition Date
pkautz	Will require a File As Drilled C-102 and a Directional Survey with the C-104	7/21/2021
pkautz	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	7/21/2021