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RECEIVED

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.
NMNM113419

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.
ENDER WIGGINS F C 25 34 14 WC FED COM 13H 327018

2. Name of Operator
MARATHON OIL PERMIAN LLC (372098)

9. API Well No.
30-025-46795

3a. Address	3b. Phone No. *(include area code)*	10. Field and Pool, or Exploratory
5555 San Felipe St. Houston TX 77056	(713)629-6600	WOLFCAMP / PITCHFORK RANCH; WO (76560)

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

At surface SENW / 2451 FNL / 1795 FWL / LAT 32.131011 / LONG -103.4434926

At proposed prod. zone NWNE / 100 FNL / 2310 FEL / LAT 32.1519734 / LONG -103.4396554

11. Sec., T. R. M. or Blk. and Survey or Area
SEC 14 / T25S / R34E / NMP

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

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
2458 feet	1240	480

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
600 feet	12569 feet / 20250 feet	FED: NMB001555

21. Elevations (Show whether DF, KDB, RT, GL, etc.)	22. Approximate date work will start*	23. Estimated duration
3332 feet	05/30/2018	30 days

24. Attachments

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

1. Well plat certified by a registered surveyor.
2. A Drilling Plan.
3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO must be filed with the appropriate Forest Service Office).
4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).
5. Operator certification.
6. Such other site specific information and/or plans as may be requested by the BLM.

25. Signature	Name *(Printed/Typed)*	Date
(Electronic Submission)	Jennifer Van Curen / Ph: (432)687-7328	05/09/2018

Title
Permitting Team Lean

Approved by *(Signature)*	Name *(Printed/Typed)*	Date
(Electronic Submission)	Cody Layton / Ph: (575)234-5959	01/10/2020

Title	Office
Assistant Field Manager Lands & Minerals	CARLSBAD

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.

OCD Rec 01/21/2020

KG 01/28/2020

NSL

(Continued on page 2)

APPROVED WITH CONDITIONS

Approval Date: 01/10/2020

REQUIRES NSL

*(Instructions on page 2)

(2)

INSTRUCTIONS

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

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

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

ITEM 14: Needed only when location of well cannot readily be found by road from the land or lease description. A plat, or plats, separate or on the reverse side, showing the roads to, and the surveyed location of, the 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.

(Continued on page 3)

Additional Operator Remarks

Location of Well

1. SHL: SENW / 2451 FNL / 1795 FWL / TWSP: 25S / RANGE: 34E / SECTION: 14 / LAT: 32.131011 / LONG: -103.4434926 (TVD: 0 feet, MD: 0 feet)
   PPP: SWSE / 0 FSL / 2310 FEL / TWSP: 25S / RANGE: 34E / SECTION: 14 / LAT: 32.1377385 / LONG: -103.4396597 (TVD: 12615 feet, MD: 15062 feet)
   PPP: SWNE / 2639 FSL / 2310 FEL / TWSP: 25S / RANGE: 34E / SECTION: 11 / LAT: 32.1449933 / LONG: -103.4396575 (TVD: 12597 feet, MD: 17701 feet)
   PPP: SWNE / 2539 FNL / 2310 FEL / TWSP: 25S / RANGE: 34E / SECTION: 14 / LAT: 32.1307594 / LONG: -103.4396623 (TVD: 12448 feet, MD: 12572 feet)
   BHL: NWNE / 100 FNL / 2310 FEL / TWSP: 25S / RANGE: 34E / SECTION: 11 / LAT: 32.1519734 / LONG: -103.4396554 (TVD: 12569 feet, MD: 20250 feet)

BLM Point of Contact

Name: Tenille Ortiz
Title: Legal Instruments Examiner
Phone: 5752342224
Email: tortiz@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.

PECOS DISTRICT
DRILLING OPERATIONS
CONDITIONS OF APPROVAL

OPERATOR'S NAME:	**Marathon Oil Permian**
LEASE NO.:	**NMNM113419**
WELL NAME & NO.:	**Ender Wiggins F C 25 34 14 TB 11H**
SURFACE HOLE FOOTAGE:	**2451' FSL & 1765' FWL**
BOTTOM HOLE FOOTAGE	**100' FNL & 2310' FWL**
LOCATION:	**Section 14, T 25S, R 34E, NMPM**
COUNTY:	**Lea County, New Mexico**

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

A. HYDROGEN SULFIDE

1. 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"** surface casing shall be set at approximately **950'** (a minimum of 25' into the Rustler Anhydrite and above the salt) and cemented to surface.
   a. **If cement does not circulate to 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 **6 hours** after pumping cement, ideally between 8-10 hours after.
   b. WOC time for a primary cement job will be a minimum of **8 hours** or **500 psi** compressive strength, whichever is greater. This is to include the lead cement.
   c. If cement falls back, remedial cementing will be done prior to drilling out the shoe.
   d. WOC time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 psi compressive strength, whichever is greater.

2. The **7-5/8"** intermediate casing shall be cemented to surface.
   a. **If cement does not circulate to surface,** see B.1.a, c & d.
   b. This casing must be kept at least 1/3 full at all times in order to meet BLM collapse requirements.
3. The **5-1/2"** production casing shall be cemented with at least **200' tie-back** into the previous casing. Operator shall provide method of verification.

C. PRESSURE CONTROL

1. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **5000 (5M)** psi.
2. 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.
3. Required safety valves, with appropriate wrenches and subs for the drill string being utilized, will be in the open position and accessible on the rig floor.

D. SPECIAL REQUIREMENTS

1. Submit a Communitization Agreement to the Carlsbad Field Office, 620 E Greene St. Carlsbad, New Mexico 88220, 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.
   a. The well sign on location shall include the surface and bottom hole lease numbers. <u>When the Communitization Agreement number is known, it shall also be on the sign.</u>

DR 1/7/2020

GENERAL REQUIREMENTS

1. The BLM is to be notified in advance for a representative to witness:
   a. Spudding the well (minimum of 24 hours)
   b. Setting and/or Cementing of all casing strings (minimum of 4 hours)
   c. BOP/BOPE tests (minimum of 4 hours)

      ☒ Eddy County: Call the Carlsbad Field Office, (575) 361-2822

      ☒ Lea County: Call the Hobbs Field Station, (575) 393-3612
2. 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:
      i. Notify the BLM when moving in and removing the Spudder Rig.
      ii. 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.
      iii. BOP/BOPE test to be conducted per Onshore Oil and Gas Order No. 2 as soon as 2nd Rig is rigged up on well.
3. 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.
4. 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 available upon request. 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 the portion of 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. 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. 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 Onshore Order 2 III.A.2.i must be followed.

5. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the BOP/BOPE 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 which 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. The results of the test shall be made available upon request.

   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 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. This test shall be performed prior to the test at full stack pressure.

   f. BOP/BOPE must be tested 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

1. 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

1. 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.
2. Porto-johns and trash containers will be on-location during fracturing operations or any other crew-intensive operations.

For the latest performance data, always visit our website: www.tenaris.com

Wedge 625®

Printed on: 01/03/2018

		Min. Wall Thickness	87.5%	(*)GradeP110	
Outside Diameter	5.500 in.	Connection OD Option	REGULAR	Coupling	Pipe Body
Wall Thickness	0.415 in.	Drift	API Standard	Body: White	1st Band: White
Grade	P110*	Type	Casing	1st Band: -	2nd Band: -
				2nd Band: -	3rd Band: -
				3rd Band: -	4th Band: -

PIPE BODY DATA

Geometry

Nominal OD	5.500 in.	Nominal Weight	23.00 lbs/ft	Drift	4.545 in.
Nominal ID	4.670 in.	Wall Thickness	0.415 in.	Plain End Weight	22.56 lbs/ft
OD Tolerance	API				

Performance

Body Yield Strength	729 x1000 lbs	Internal Yield	14530 psi	SMYS	110000 psi
Collapse	14540 psi				

CONNECTION DATA

Geometry

Connection OD	5.766 in.	Connection ID	4.601 in.	Make-up Loss	5.600 in.
Threads per in	3.12	Connection OD Option	REGULAR		

Performance

Tension Efficiency	91.3 %	Joint Yield Strength	665.577 x1000 lbs	Internal Pressure Capacity	14530.000 psi
Compression Efficiency	94.5 %	Compression Strength	688.905 x1000 lbs	Max. Allowable Bending	84 °/100 ft
External Pressure Capacity	14540.000 psi				

Make-Up Torques

Minimum	12000 ft-lbs	Optimum	14400 ft-lbs	Maximum	21000 ft-lbs

Operation Limit Torques

Operating Torque	31000 ft-lbs	Yield Torque	36000 ft-lbs

Notes

For further information on concepts indicated in this datasheet, download the Datasheet Manual from www.tenaris.com

Approval Date: 01/10/2020

AFMSS

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

Operator Certification Data Report

01/17/2020

Operator Certification

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

NAME: Melissa Szudera **Signed on:** 04/30/2018

Title: REGULATORY COMPLIANCE REPRESENTATIVE

Street Address: 5555 San Felipe St.

City: Houston **State:** TX **Zip:** 77056

Phone: (713)296-3179

Email address: mszudera@marathonoil.com

Field Representative

Representative Name:

Street Address:

City: **State:** **Zip:**

Phone:

Email address:

AFMSS

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

Application Data Report

01/17/2020

APD ID: 10400029696 **Submission Date:** 05/09/2018

Operator Name: MARATHON OIL PERMIAN LLC

Well Name: ENDER WIGGINS F C 25 34 14 WC **Well Number:** 13H

Well Type: CONVENTIONAL GAS WELL **Well Work Type:** Drill

[redacted]

Show Final Text

Section 1 - General

APD ID: 10400029696 **Tie to previous NOS?** N **Submission Date:** 05/09/2018

BLM Office: CARLSBAD **User:** Melissa Szudera **Title:** REGULATORY COMPLIANCE REPRESENTATIVE

Federal/Indian APD: FED **Is the first lease penetrated for production Federal or Indian?** FED

Lease number: NMNM113419 **Lease Acres:** 1240

Surface access agreement in place? **Allotted?** **Reservation:**

Agreement in place? NO **Federal or Indian agreement:**

Agreement number:

Agreement name:

Keep application confidential? YES

Permitting Agent? NO **APD Operator:** MARATHON OIL PERMIAN LLC

Operator letter of designation:

Operator Info

Operator Organization Name: MARATHON OIL PERMIAN LLC

Operator Address: 5555 San Felipe St.

Zip: 77056

Operator PO Box:

Operator City: Houston **State:** TX

Operator Phone: (713)629-6600

Operator Internet Address:

Section 2 - Well Information

Well in Master Development Plan? NO **Master Development Plan name:**

Well in Master SUPO? NO **Master SUPO name:**

Well in Master Drilling Plan? NO **Master Drilling Plan name:**

Well Name: ENDER WIGGINS F C 25 34 14 WC **Well Number:** 13H **Well API Number:**

Field/Pool or Exploratory? Field and Pool [redacted]

Operator Name: MARATHON OIL PERMIAN LLC

Well Name: ENDER WIGGINS F C 25 34 14 WC **Well Number:** 13H

Is the proposed well in an area containing other mineral resources? USEABLE WATER,NATURAL GAS,OIL

Is the proposed well in a Helium production area? N **Use Existing Well Pad?** NO **New surface disturbance?**

Type of Well Pad: MULTIPLE WELL **Multiple Well Pad Name:** ENDER WIGGINS FED COM 25 34 14 **Number:** 289-9

Well Class: HORIZONTAL **Number of Legs:** 1

Well Work Type: Drill

Well Type: CONVENTIONAL GAS WELL

Describe Well Type:

Well sub-Type: INFILL

Describe sub-type:

Distance to town: 34 Miles **Distance to nearest well:** 600 FT **Distance to lease line:** 2458 FT

Reservoir well spacing assigned acres Measurement: 480 Acres

Well plat: APP_2___ENDER_WIGGINS_FC_25_34_14_WC_13H_REV._4___CERTIFIED_C_102___10_11_2019__mro_rev_11.4.19__20191209104543.pdf

Well work start Date: 05/30/2018 **Duration:** 30 DAYS

Section 3 - Well Location Table

Survey Type: RECTANGULAR

Describe Survey Type:

Datum: NAD83 **Vertical Datum:** NAVD88

Survey number: R3816 **Reference Datum:**

Wellbore	NS-Foot	NS Indicator	EW-Foot	EW Indicator	Twsp	Range	Section	Aliquot/Lot/Tract	Latitude	Longitude	County	State	Meridian	Lease Type	Lease Number	Elevation	MD	TVD	Will this well produce from this lease?
SHL Leg #1	[redacted]			FWL	25S	34E	[redacted]	Aliquot SENW	[redacted]		LEA	NEW MEXICO	NEW MEXICO	F	FEE	[redacted]			
KOP Leg #1	[redacted]			FEL	25S	34E	[redacted]	Aliquot SWNE	[redacted]		LEA	NEW MEXICO	NEW MEXICO	F	FEE	[redacted]			

Operator Name: MARATHON OIL PERMIAN LLC

Well Name: ENDER WIGGINS F C 25 34 14 WC **Well Number:** 13H

Wellbore	NS-Foot	NS Indicator	EW-Foot	EW Indicator	Twsp	Range	Section	Aliquot/Lot/Tract	Latitude	Longitude	County	State	Meridian	Lease Type	Lease Number	Elevation	MD	TVD	Will this well produce from this lease?
PPP Leg #1-1				FEL	25S	34E		Aliquot SWNE			LEA	NEW MEXICO	NEW MEXICO	F	FEE				
PPP Leg #1-2				FEL	25S	34E		Aliquot SWNE			LEA	NEW MEXICO	FIRST PRIN	F	NMNM 108476				
PPP Leg #1-3				FEL	25S	34E		Aliquot SWSE			LEA	NEW MEXICO	NEW MEXICO	F	NMNM 113419				
EXIT Leg #1				FEL	25S	34E		Aliquot SWNE			LEA	NEW MEXICO	NEW MEXICO	F	NMNM 108476				
BHL Leg #1				FEL	25S	34E		Aliquot NWNE			LEA	NEW MEXICO	NEW MEXICO	F	NMNM 108476				

APD ID: 10400029696 **Submission Date:** 05/09/2018

Operator Name: MARATHON OIL PERMIAN LLC

Well Name: ENDER WIGGINS F C 25 34 14 WC **Well Number:** 13H

Well Type: CONVENTIONAL GAS WELL **Well Work Type:** Drill

[redacted]

Show Final Text

Section 1 - Geologic Formations

Formation ID	Formation Name	Elevation	True Vertical Depth	Measured Depth	Lithologies	Mineral Resources	Producing Formation
216944	[redacted]						
216945							
216946							
216948							
216949							
216950							
216953							
263091							

Section 2 - Blowout Prevention

Pressure Rating (PSI): 10M **Rating Depth:** 15152

[redacted]

Requesting Variance? YES

[redacted]

Operator Name: MARATHON OIL PERMIAN LLC

Well Name: ENDER WIGGINS F C 25 34 14 WC **Well Number:** 13H

Choke Diagram Attachment:

DRILL_2_CHOKE_Ender_Wiggins_F_C_25_34_14_WC_13H_10M.THREE_CHOKE_MANIFOLD.BLM_20180625134454.pdf

DRILL_2_CHOKE_Ender_Wiggins_F_C_25_34_14_WC_13H_Choke_Line_Test_Chart_SN_63393_20180625134456.pdf

DRILL_2_CHOKE_Ender_Wiggins_F_C_25_34_14_WC_13H_Choke_Line_Flex_III_Rig_20180625134455.pdf

DRILL_2_CHOKE_Ender_Wiggins_F_C_25_34_14_WC_13H_Contitech_Hose_SN_663393_20180625134456.pdf

BOP Diagram Attachment:

DRILL_2_BOP___Well_Control_Plan___Permian_20180625134519.pdf

DRILL_2_BOP_Ender_Wiggins_F_C_25_34_14_WC_13H_10M_Flex.BOPE.BLM_20180625134519.pdf

DRILL_2_BOP_Ender_Wiggins_F_C_25_34_14_WC_13H_WHTH_DESIGN__3_DRAWING_20180625134528.pdf

DRILL_2_BOP_Ender_Wiggins_F_C_25_34_14_WC_13H_PT_10K_DRAWING_20180625134520.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	950	0	950	3332	2382	950	J-55	54.5	ST&C	3.37	1.71	BUOY	2.93	BUOY	2.93
2	INTERMEDIATE	9.875	7.625	NEW	API	N	0	11900	0	11799	3332	-8467	11900	P-110	29.7	BUTT	2.21	1.18	BUOY	1.9	BUOY	1.9
3	PRODUCTION	6.75	5.5	NEW	API	Y	0	20247	0	12570	3332	-9238	20247	P-110	23	OTHER - WEDGE	1.73	1.2	BUOY	2.09	BUOY	2.09

Casing Attachments

Operator Name: MARATHON OIL PERMIAN LLC

Well Name: ENDER WIGGINS F C 25 34 14 WC **Well Number:** 13H

Casing Attachments

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

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

DRILL_3_Surface_Casing_plot_20180625134641.pdf

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

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

DRILL_3_Intermediate_I_Casing_plot_20180625134653.pdf

Casing ID: 3 **String Type:** PRODUCTION

Inspection Document:

Spec Document:

Tapered String Spec:

DRILL_3_5.500_BOX_x_4.500_PIN_Crossover_20180625135039.pdf

Casing Design Assumptions and Worksheet(s):

DRILL_3_Production_Casing_Plot_20180625135025.pdf

Section 4 - Cement

Operator Name: MARATHON OIL PERMIAN LLC

Well Name: ENDER WIGGINS F C 25 34 14 WC **Well Number:** 13H

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
	Lead					1.73					
	Tail										
	Lead					1.29					
	Tail										
	Lead					2.49					
	Tail										

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
950	11900	OIL-BASED MUD	8.4	10							
0	950	WATER-BASED MUD	8.4	8.8							
11900	20247	OIL-BASED MUD	11.5	13.5							

Operator Name: MARATHON OIL PERMIAN LLC

Well Name: ENDER WIGGINS F C 25 34 14 WC **Well Number:** 13H

Section 6 - Test, Logging, Coring

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

[redacted]

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

GR

Coring operation description for the well:

[redacted]

Section 7 - Pressure

[redacted]

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_Ender_Wiggins_F_C_6__7__10__11__12__13_GasCapturePlan__NMOCD__20180625140135.pdf
DRILL_7_Ender_Wiggins_F_C_25_34_14_6H_7H_10H_11H_12H_13H_Contingency_Plan_032218_20180625140138.pdf
DRILL_7_Ender_Wiggins_F_C_25_34_14_WC_13H_H2S_Contiengency_Plan_Summary_20180625140136.pdf
DRILL_7___EW_Pad_Flex_III_20191209111148.pdf

Section 8 - Other Information

Proposed horizontal/directional/multi-lateral plan submission:

DRILL_8_PD___EW_WC_13H___ENDER_WIGGINS_FEDERAL_COM_25_34_14_WC_13H_DRILLING_PLAN___Rev2_20191209111209.pdf
DRILL_8_PD___EW_WC_13H___Marathon_EnderWigginsWC_13H_WA14H__PrelimC_36x48WM_20191209111306.PDF
DRILL_8_PD___EW_WC_13H___Marathon_EnderWigginsWC_13H_WA14H__PrelimC_WPReport_20191209111323.pdf
DRILL_8_PD___ENDER_WIGGINS_DOGIE_DRAW_MIDDLE_PAD___FED_MIN_MAP_20191209111336.pdf

Other proposed operations facets description:

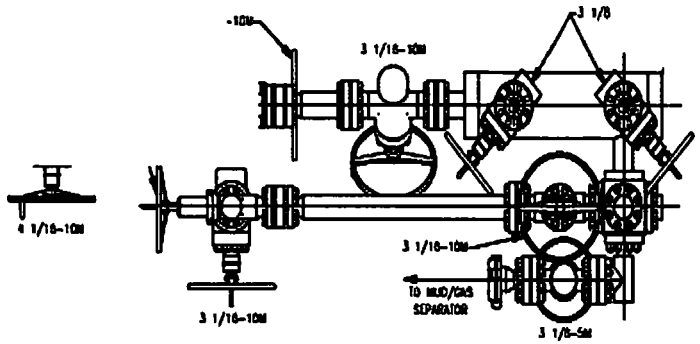
Potential Hazards:
- H2S detection equipment will be in operation after drilling out the surface casing shoe until the production casing has been cemented. Breathing equipment will be on location from drilling out the surface shoe until production casing is cemented. If H2S is encountered the operator 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

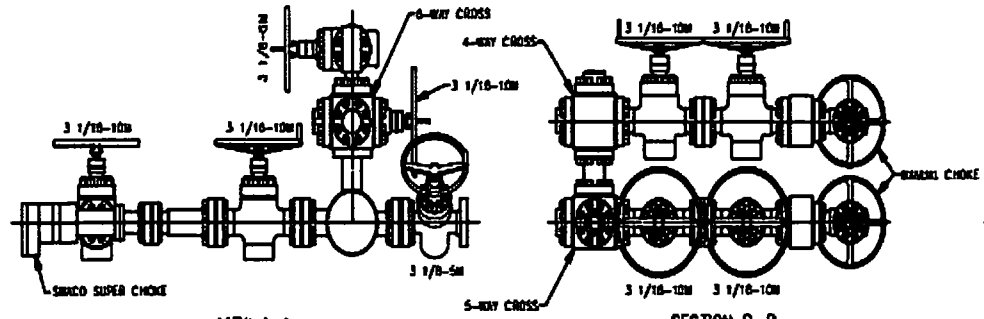
separator where gas may be flared safely.
- No losses are anticipated at this time.
- All personnel will be familiar with all aspects of safe operation of equipment being used to drill this well.
- Adequate flare lines will be installed off the mud/gas separator where gas may be flared safely.

Other proposed operations facets attachment:

DRILL_8_FACET_Batch_Drilling_Plan_and_Surface_Rig_Request_20180613061127__2__20180625140315.pdf

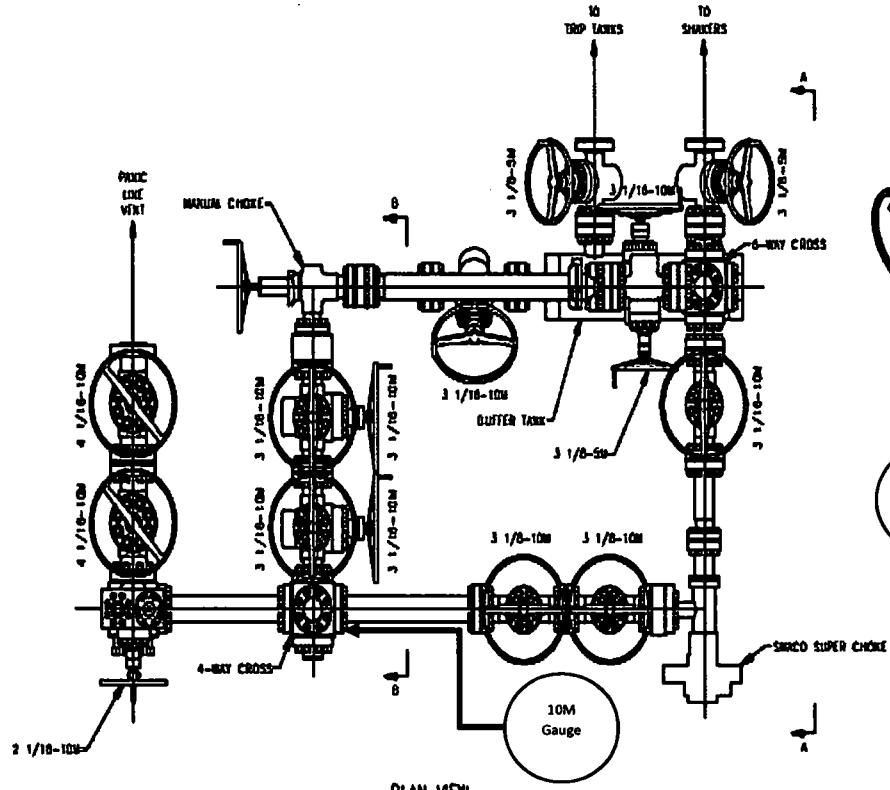
Other Variance attachment:



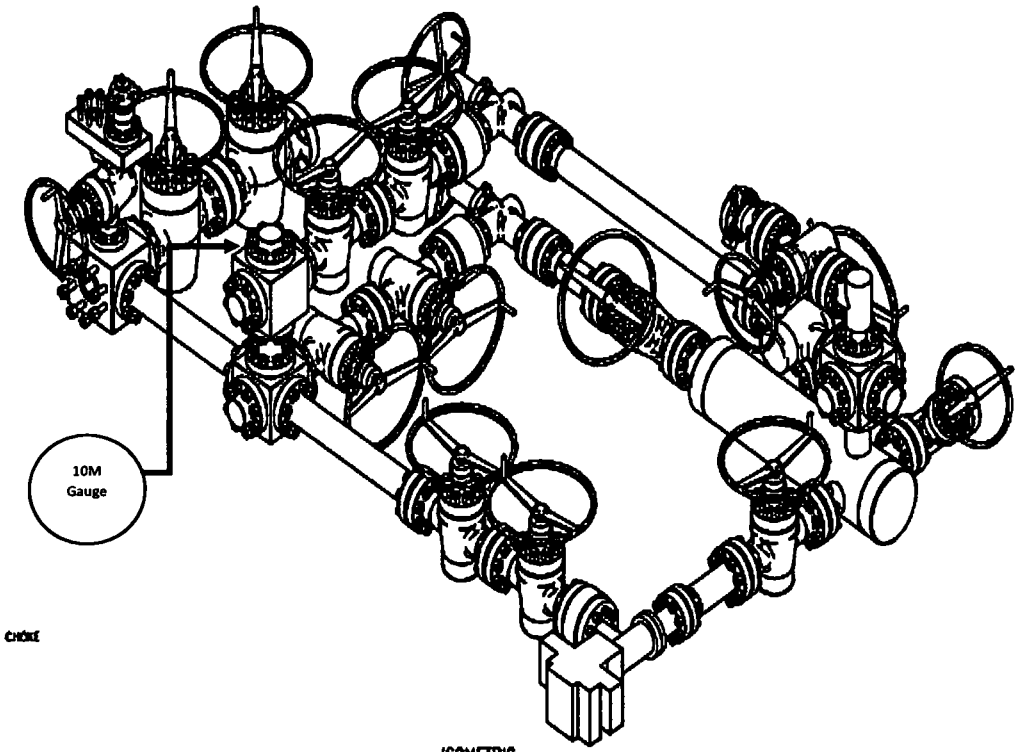


VIEW A-A

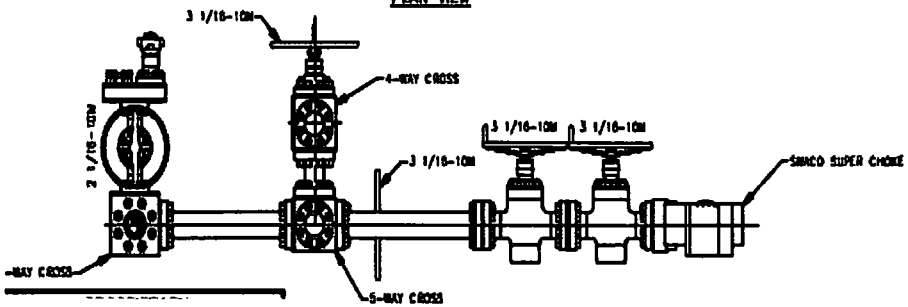
SECTION B-B



PLAN VIEW



ISOMETRIC



(Well Control-Positions/Roles Continued)

- **Derrick Hand, Assistant Driller Introductory Level**
  - Role is to assist Driller with kick detection by physically monitoring the well at the mixing pits/tanks
  - Regularly record mud weights/viscosity for analysis by the Supervisor level and mud engineer so pre-influx signs can be detected
  - Mix required kill fluids as directed by Supervisor or Driller
  - Due to role on the rig, training and certification is targeted more toward monitoring for influxes, either via mud samples or visual signs on the pits/tanks

- **Motorman, Floor Hand Introductory Level**
  - Role is to assist the Supervisor, Driller, or Derrick Hand with detecting influxes
  - Be certain all valves are aligned for proper well control as directed by Supervisor
  - Perform Supervisor or Driller assigned tasks during a well control event
  - Due to role on the rig, training and certification is targeted more toward monitoring for influxes

1.2 WELL CONTROL-COMPONENT AND PREVENTER COMPATIBILITY CHECKLIST

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

- **Example 8-3/4" Production hole section, 10M requirement**

Component	OD	Preventer	RWP
Drill pipe	5"	Fixed lower 5" Upper 4.5-7" VBR	10M
HWDP	5"	Fixed lower 5" Upper 4.5-7" VBR	10M
Drill collars and MWD tools	6.25-6.75"	Upper 4.5-7" VBR	10M
Mud Motor	6.75"	Upper 4.5-7" VBR	10M
Production casing	5.5"	Upper 4.5-7" VBR	10M
ALL	0-13-5/8"	Annular	5M
Open-hole	-	Blind Rams	10M

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

1.3 WELL CONTROL-BOP TESTING

BOP Test will be completed per Onshore Oil and Gas Order #2 Well Control requirements. The 5M Annular Preventer on a required 10M BOP stack will be tested to 70 % of rated working pressure including a 10 minute low pressure test. Pressure shall be maintained at least 10 minutes.

1.4 WELL CONTROL - DRILLS

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

Type	Frequency	Objective	Comments
Shallow gas kick drill - drilling	Once per well with crew on tour	Response training to a shallow gas influx	To be done prior to drilling surface hole if shallow gas is noted
Kick drill - drilling	Once per week per crew	Response training to an influx while drilling (bit on bottom)	Only one kick drill per week per crew is required, alternating between drilling and tripping.
Kick drill - tripping	Once per week per crew	Response training to an influx while tripping (bit off bottom). Practice stabbing TIW valve	
Choke drill	Once per well with crew on tour	Practice in operating the remotely operated choke with pressure in the well	Before drilling out of the last casing set above a prospective reservoir Include the scenario of flowing well with gas on drill floor as a table top
H_2S drill	Prior to drilling into a potential H_2S zone/reservoir	Practice in use of respiratory equipment	

1.5 WELL CONTROL – MONITORING

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

- Prior to dropping a survey instrument.
- Prior to dropping a core ball.
- After a well kill operation.
- When the mud density is reduced in the well.

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

1.6 WELL CONTROL – SHUT IN

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

2. SHUT-IN PROCEDURES:

2.1 PROCEDURE WHILE DRILLING

- Sound alarm (alert crew)
- Space out drill string – Stop rotating, pick the drill string up off bottom, and space out to ensure no tool joint is located in the BOP element selected for initial closure.
- Shut down pumps (stop pumps and observe well.)
- Shut-in Well - If flow is suspected or confirmed, close uppermost applicable BOP element. (HCR and choke will already be in the closed position.)
    - **Note:** Either the uppermost pipe ram or annular preventer can be used.
- Confirm shut-in
- Notify toolpusher/company representative
- Gather all relevant data required:
    - SIDPP and SICP
    - Hole Depth and Hole TVD
    - Pit gain
    - Time
    - Kick Volume
    - Pipe depth
    - MW in, MW out
    - SPR's (Slow Pump Rate's)
- Regroup and identify forward plan (let well stabilize, update kill sheet, inventory mud additives and mud volumes on location)
- Company Representative, Drilling Superintendent, Drilling Engineer and Drilling Manager will discuss well control kill method to be utilized. A verbal Risk Assessment and preferred kill method will be finalized. Initial Risk Assessment will be finalized within 1 hour of initial shut in.
- No well kill operation commences until there is a plan agreed by the Superintendent, On-Site Supervisor and the Drilling Contractor PIC.
- Recheck all pressures and fluid volume on accumulator unit
- If pressure has built or is anticipated during the kill to reach 2,500 psi or greater, the annular preventer CANNOT be used as per Oil Company Well Control Policy, swap to the upper BOP pipe ram.

2.2 PROCEDURE WHILE TRIPPING

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

Procedure While Tripping (Continued)

- Time
- Kick Volume
- Pipe depth
- MW in, MW out
- SPR's (Slow Pump Rate's)

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

2.3 PROCEDURE WHILE RUNNING CASING

- Sound alarm (alert crew)
- Stab crossover and full opening safety valve and close
- Space out casing (ensure no coupling is located in the BOP element selected for initial closure).
- Shut down pumps (stop pumps and observe well.)
- Shut-in Well - If flow is suspected or confirmed, close uppermost applicable BOP element. (HCR and choke will already be in the closed position.)
  - **Note:** Either the uppermost pipe ram or annular preventer can be used.
- Confirm shut-in
- Notify tool pusher/company representative
- Gather all relevant data required:
  - SIDPP and SICP
  - Hole Depth and Hole TVD
  - Pit gain
  - Time
  - Kick Volume
  - Pipe depth
  - MW in, MW out
  - SPR's (Slow Pump Rate's)
- Regroup and identify forward plan (let well stabilize, update kill sheet, inventory mud additives and mud volumes on location)
- Company Representative, Drilling Superintendent, Drilling Engineer and Drilling Manager will discuss well control kill method to be utilized. A verbal Risk Assessment and preferred kill method will be finalized. Initial Risk Assessment will be finalized within 1 hour of initial shut in.
- No well kill operation commences until there is a plan agreed by the Superintendent, On-Site Supervisor and the Drilling Contractor PIC.
- Recheck all pressures and fluid volume on accumulator unit
  If pressure has built or is anticipated during the kill to reach 2,500 psi or greater, the annular preventer CANNOT be used, swap to the upper BOP pipe ram.

2.4 PROCEDURE WITH NO PIPE IN HOLE (OPEN HOLE)

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

2.5 PROCEDURE WHILE PULLING BHA THRU STACK

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

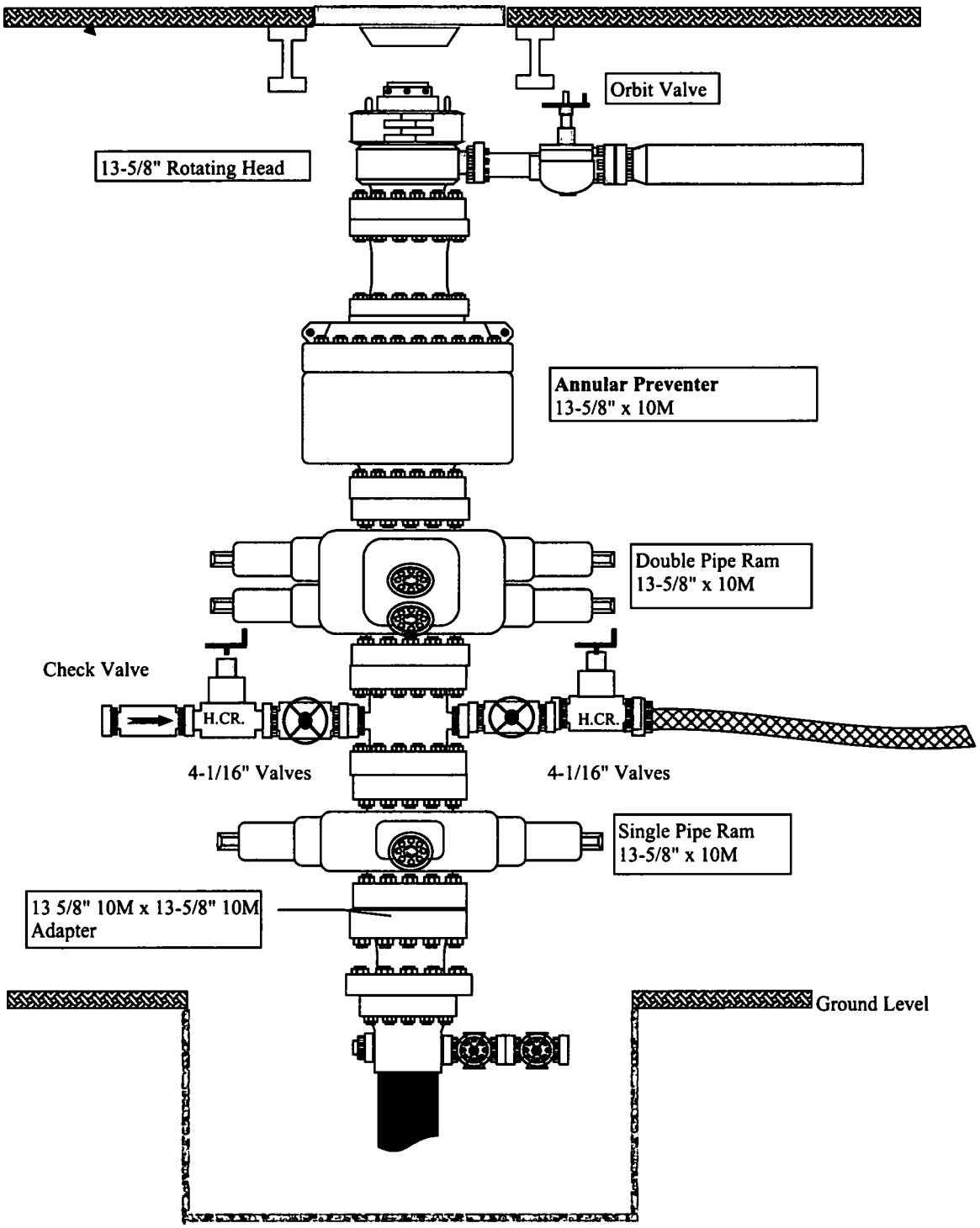
- **With BHA in the stack and compatible ram preventer and pipe combo immediately available.**
    - Sound alarm (alert crew)
    - Stab crossover and full opening safety valve and close
    - Space out drill string with upset just beneath the compatible pipe ram.
    - Shut-in using compatible pipe ram. (HCR and choke will already be in the closed position.)
    - Confirm shut-in
    - Notify toolpusher/company representative
    - Read and record the following:
        - SIDPP and SICP
        - Pit gain

Procedures While Pulling BHA thru Stack (Continued)

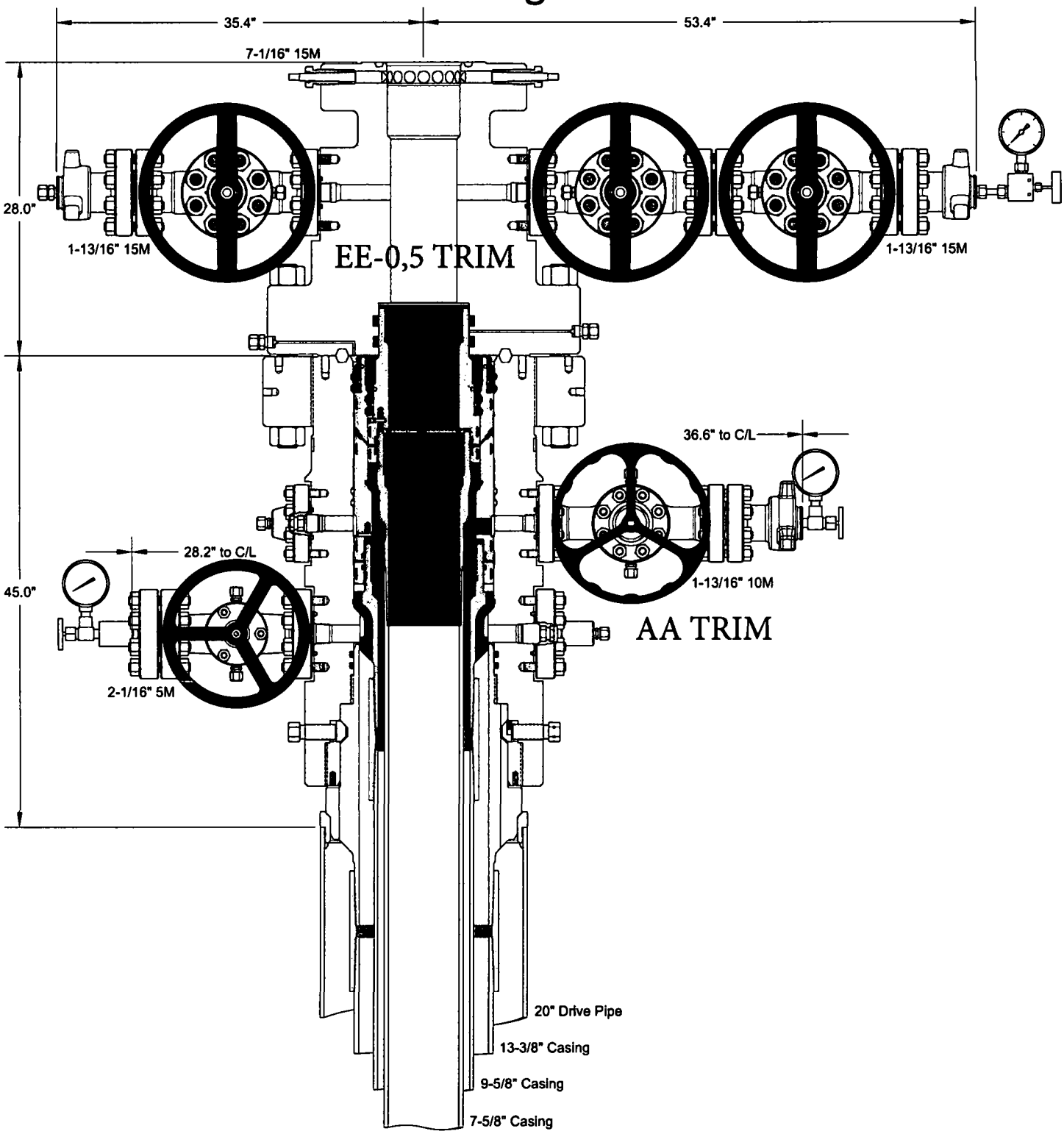
    - Time
  - Regroup and identify forward plan

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

Operator : **Marathon Oil**

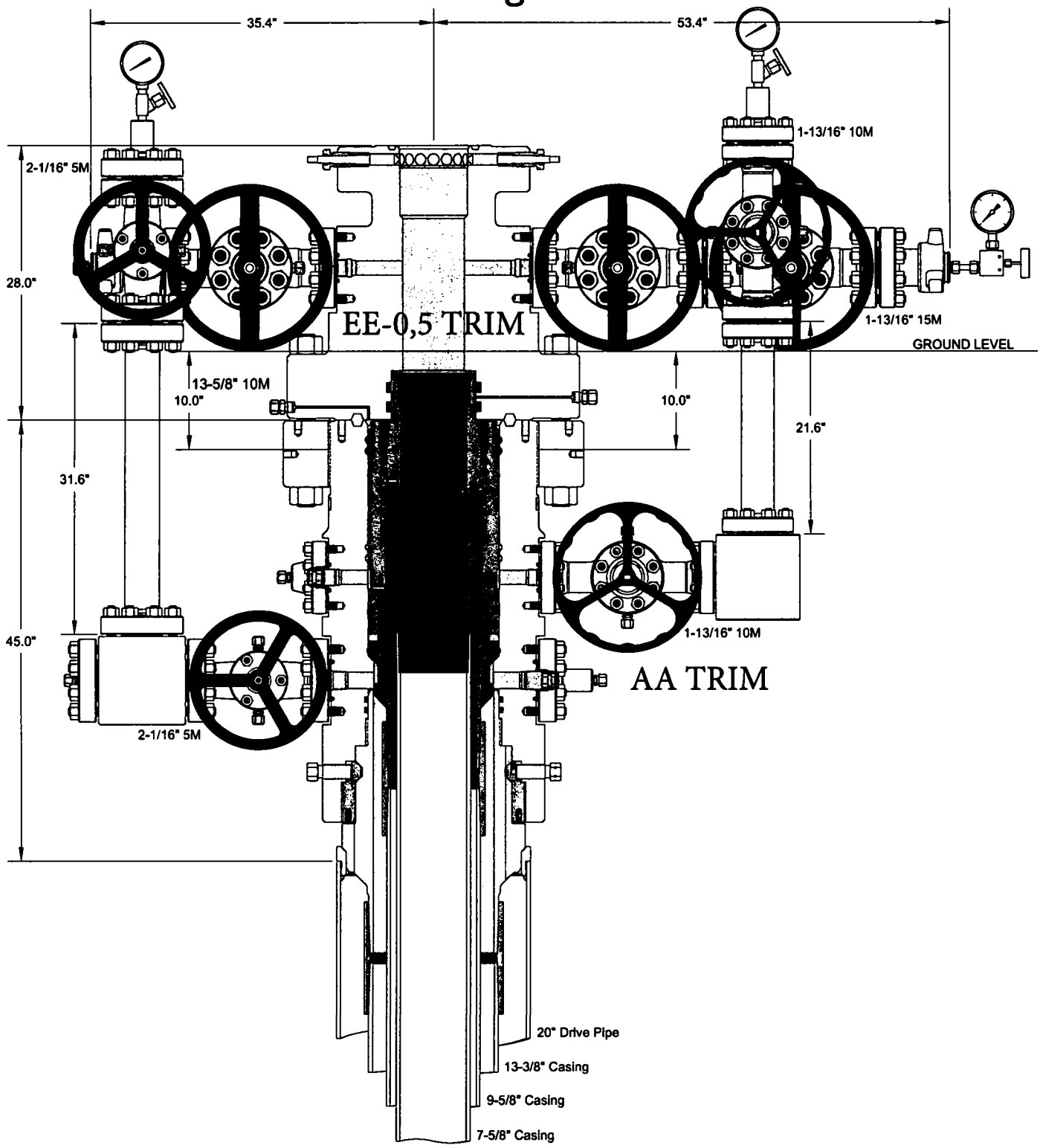


WH&TH Design # 3



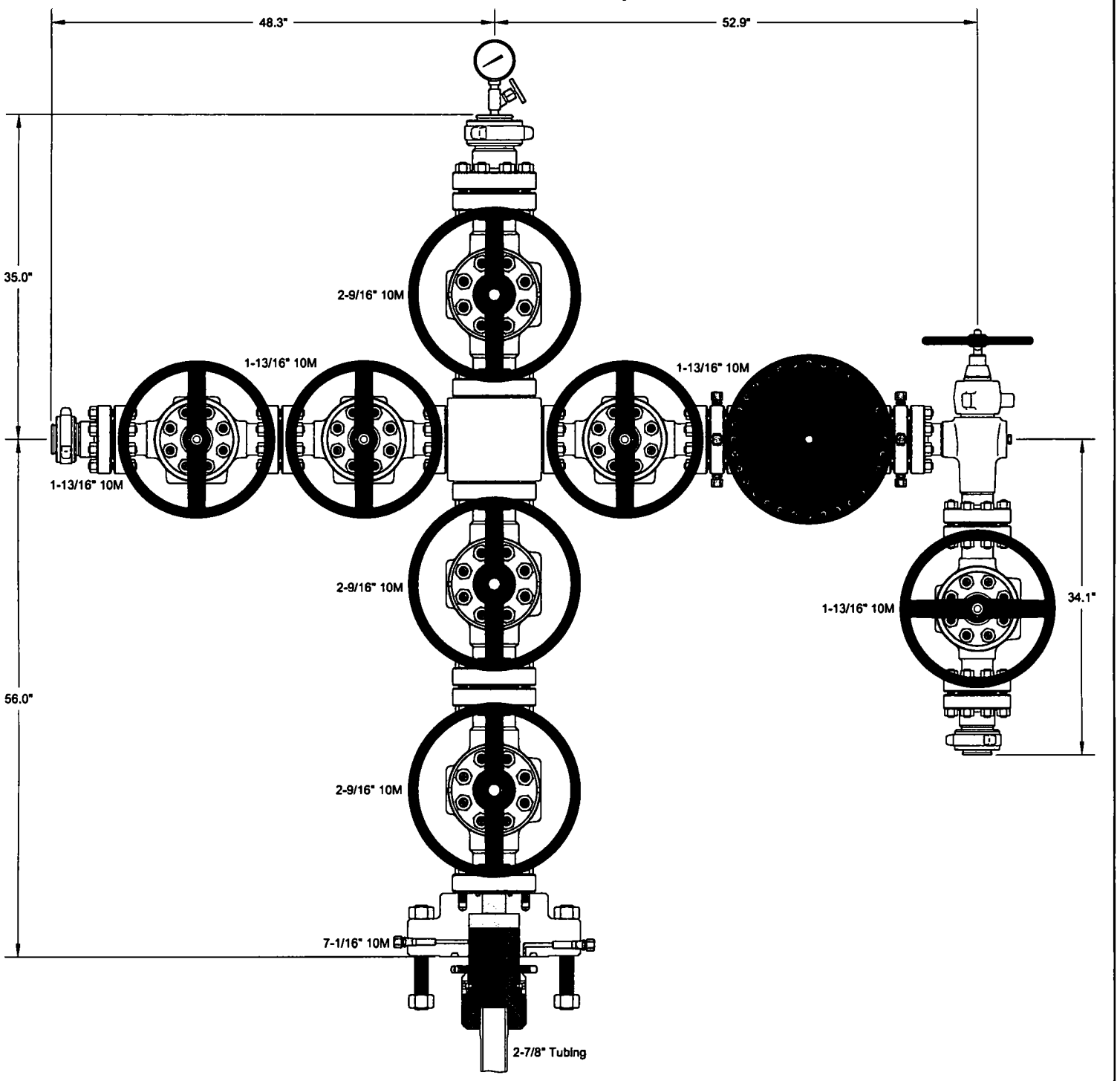
CACTUS WELLHEAD LLC	MARATHON OIL COMPANY		
20" x 13-3/8" x 9-5/8" x 7-5/8" MBU-3T-CFL-R-DBLO Wellhead 13-5/8" 10M x 7-1/16" 15M CTH-DBLHPS Tubing Head (28" LG) Utilizing Pin Down Mandrel Casing Hangers	DRAWN	DLE	23AUG17
	APPRV		
	DRAWING NO.	ODE0001826	

WH&TH Design # 3



CACTUS WELLHEAD LLC	MARATHON OIL COMPANY		
20" x 13-3/8" x 9-5/8" x 7-5/8" MBU-3T-CFL-R-DBLO Wellhead 13-5/8" 10M x 7-1/16" 15M CTH-DBLHPS Tubing Head (28" LG) Utilizing Pin Down Mandrel Casing Hangers With Annulus Risers	DRAWN	DLE	23AUG17
	APPRV		
	DRAWING NO.	ODE0001826	

PT 10K: Natural Flow / Gas Lift



CACTUS WELLHEAD LLC	MARATHON OIL COMPANY ODESSA		
7-1/16" 10M x 2-9/16" 10M x 1-13/16" 10M Production Tree With CW-EN-CL Adapter and Hanger	DRAWN	DLE	12FEB18
	APPRV		
	DRAWING NO.	ODE0001831	

TOTAL SAFETY

MARATHON OIL COMPANY

ENDER WIGGINS F C 25-34-14

WXY Well # 6H
WC Well # 7H
WA Well # 10H
TB Well # 11H
WD Well # 12H
WC Well # 13H

SHL: 2451' FNL & 1735' FWL of Unit Letter 'F', Section 14, T-25S, R-34E
BHL: 150' FNL & 1325' FWL of Unit Letter 'D', Section 11, T-25S, R-34E

LEA County, New Mexico

Rig: H&P 498

3/22/2018

EMERGENCY MEDICAL PROCEDURES
DO NOT PANIC
REMAIN CALM-THINK

1. HOLD YOUR BREATH. (DO NOT INHALE, STOP BREATHING)

2. PUT ON BREATHING APPARATUS. (NOTE: DO NOT ATTEMPT RESCUE UNTIL YOU HAVE PUT ON BREATHING APPARATUS.)

3. REMOVE VICTIM (S) TO FRESH AIR AS QUICKLY AS POSSIBLE.

4. BE SURE YOU HAVE MOVED VICTIM OUT OF CONTAMINATED AREA BEFORE REMOVING YOUR RESPIRATOR.

5. APPLY MOUTH-TO-MOUTH ARTIFICIAL RESPIRATION, WHICH IS MORE EFFECTIVE, WHILE SOMEONE ELSE GETS THE OXYGEN RESUSCITATOR. RENDER OXYGEN RESUSCITATION ONLY IF PORPERLY TRAINED IN ITS USE.

6. PROVIDE FOR PROMPT TRANSPORTATION TO HOSPITAL AND CONTUNUE GIVING ARTIFICIAL RESPIRATION IF NEEDED.

7. HOSPITAL (S) OR MEDICAL FACILITIES NEED TO BE INFORMED BEFOREHAND, OF THE POSSIBILITY OF H2S GAS POISONING, NO MATTER HOW REMOTE THE POSSIBLITY IS.

Lea Regional Medical Center	(575)492-5000
5419 N Lovington Hwy, Hobbs, NM 88240	
AMBULANCE	911
FIRE DEPARTMENT- HOBBS, NM	(575) 397-9308
POLICE - HOBBS, NM	(575) 397-9265

8. NOTIFY EMERGENCY-ROOM PERSONEL THAT THE VICTIM (S) HAVE POSSIBLY BEEN EXPOSED TO H2S GAS POISONING.

****
****

TOTAL SAFETY INC
1420 East Greene St.
Carlsbad, NM 88220

THIS H2S DRILLING OPERATIONS PLAN WAS
PREPARED BY: Sean Chamblee
Strategic Account Manager
Cell: 713-703-6295

TOTAL SAFETY INC

1420 East Greene St
Carlsbad, NM 88220
Phone: 432-561-5049

H2S DRILLING OPERATIONS PLAN INDEX

VII. LIST OF APPENDICES
- A. Emergency and Medical Facilities
- B. Law Enforcement Agencies and Fire Fighting Facilities
- C. Well Control Specialists
- D. Governmental Agencies

VIII. RESIDENTS AND LANDOWNERS
- A. Radius of Exposure Map with Residences Shown
- B. Residents Within Radius of Exposure and Telephone Numbers

IX. ADDITIONAL INFORMATION
- A. Hydrogen Sulfide Essay
- B. Hydrogen Sulfide Hazards
- C. Toxicity Table
- D. Treatment
- E. Characteristics of H2S
- F. Safe Practices

INTRODUCTION

H2S DRILLING OPERATIONS PLAN
This Drilling Operations Plan was written specifically for:

MARATHON OIL COMPANY
3122 NATIONAL PARKS HIGHWAY
CALRSBAD, NM 88220

Action Plan for Accidental Release of H2S

ENDER WIGGINS F C 25-34-14
WXY Well # 6H
WC Well # 7H
WA Well # 10H
TB Well # 11H
WD Well # 12H
WC Well # 13H

LEA COUNTY, NM

Information, provisions and practices, as set forth in this plan, may be subject to revision and/or updating.

3-22-2018

MARATHON OIL COMPANY
3122 NATIONAL PARKS HIGHWAY
CALRSBAD, NM 88220

ENDER WIGGINS F C 25-34-14
WXY Well # 6H
WC Well # 7H
WA Well # 10H
TB Well # 11H
WD Well # 12H
WC Well # 13H
LEA COUNTY, NM

Directions:

FROM CARLSBAD, NM, AT THE INTERSECTION OF W. GREENE ST. AND N. CANAL ST. HEAD EAST ON W. GREENE STREET TOWARD S. CANAL ST. FOR 2.2 MILES TO REFINERY ROAD ON THE RIGHT. TRAVEL SOUTHEAST ON REFINERY ROAD FOR 12.5 MILES TO NEW MEXICO STATE HIGHWAY 31 ON THE LEFT. TRAVEL NORTHEAST ON NEW MEXICO STATE HIGHWAY 31 FOR 2.4 MILES TO NEW MEXICO STATE HIGHWAY 128 E ON THE RIGHT. TRAVEL SOUTHEAST ON NEW MEXICO STATE HIGHWAY 128 E. FOR 38.7 TO BATTLE AXE ROAD ON THE RIGHT. TRAVEL ON BATTLE AXE RD. FOR 0.3 MILES. TURN RIGHT TO STAY ON BATTLE AXE ROAD AND CONTINUE FOR 2.6 MILES. TURN RIGHT TO STAY ON BATTLE AXE ROAD AND CONTINUE FOR 2.6 MILES. AGAIN , TURN RIGHT TO STAY ON BATTLE AXE ROAD AND CONTINUE FOR 2.6 MILES TO AN EX ISTING LEASE ROAD ON THE R IGHT. TRAVEL SOUTHEAST ON SAID EXISTING ROAD FOR 0.8 MILES TO THE PROPOSED.

GPS Coordinates: 32.1310249, -103.44368638
LEA COUNTY, NEW MEXICO

PURPOSE OF PLAN: The purpose of this plan is to safeguard the lives of the public, contract personnel and company personnel in the event of equipment failure or disasters during drilling or completion operations in formations that may contain Hydrogen Sulfide Gas, H2S.

As a precautionary measure, this Drilling Plan has been prepared to assure the safety of all concerned, should a disaster occur. However, the Oil Company Representative may have specified materials and practices for the drilling or completion of this well, which supercede the minimum requirements as outlined in this plan.

Definitions: For the purpose of this plan the following definitions are to be referred to:

Controlled Release – Any release that is planned and occurs during normal operations. A controlled release is managed per the procedures outlined in this section.

Uncontrolled Release – Any release that is unplanned and not immediately contained utilizing established shut-in procedures. An uncontrolled release is normally associated with a loss of well control.

SCBA – (Self Contained Breathing Apparatus) – A full-face mask respirator with a supplied positive pressure air source.

Donned SCBA – When it is required per this plan to **"don"** a SCBA, personnel will be 100% masked up and be on supplied breathing air.

SCBA On Person – When it is required per this plan to have SCBA "on person", personnel will be required to wear the SCBA equipment - but not be masked up.

"Qualified Buddy" – Person who has been fit tested and is trained and is familiar with the requirements of donning an SCBA. This person will provide immediate assistance to another person who may be utilizing an SCBA or SkaPack in an IDLH atmosphere in the event of an emergency situation.

In Scope Personnel – Rig Personnel who will be working or otherwise present in potential H2S release areas, including the rig floor, cellar, pits, and shaker areas. This would not include 3rd party contractors who do not have a function, besides evacuating the rig, during an emergency condition such as during a well control event or H2S / LEL alarm. All qualified personnel that have a function to shut a well in during an emergency will be considered In-Scope per this plan

Out of Scope Personnel –. All personnel that are not in scope will be Out of Scope per the definition of this plan

H2S Office – Onsite office trailer space or vehicle that will be designated as the H2S office

Marathon H2S Plan Custodian – Marathon HES Advisor, Supervisor or Technician that has been specifically assigned per the authorization page of this plan to maintain this document.

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
	96994	PITCHFORK RANCH; WOLFCAMP SOUTH

[4] Property Code	[5] Property Name	[6] Well Number
	ENDER WIGGINS F C 25-34-14 WXY	6H

[7] OGRID No.	[8] Operator Name	[9] Elevation
372098	MARATHON OIL PERMIAN LLC	3332

[10] Surface Location

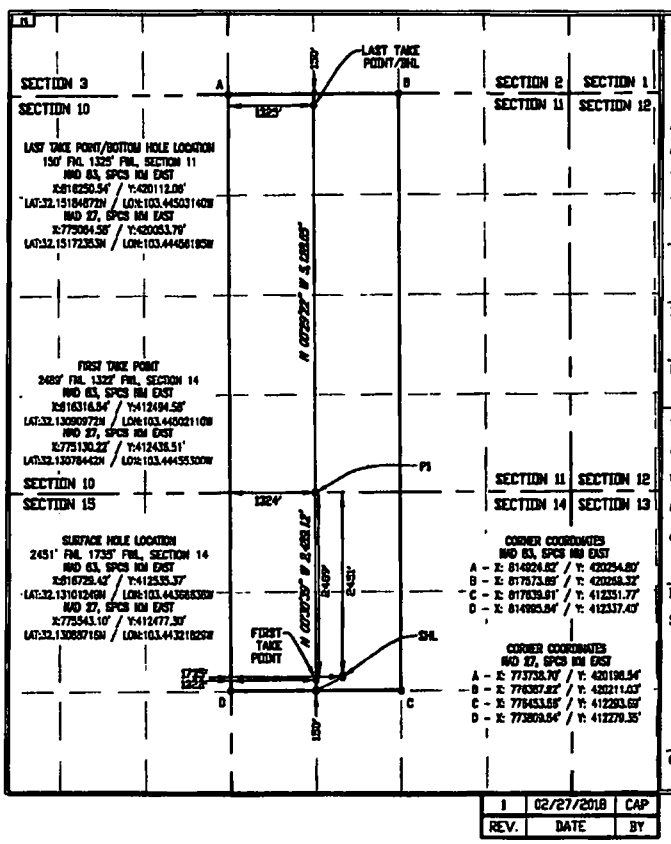
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
F	14	25S	34E		2451	NORTH	1735	WEST	LEA

[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
D	11	25S	34E		150	NORTH	1325	WEST	LEA

[12] Dedicated Acres	[13] Joint or Infill	[14] Consolidation Code	[15] Order No.
480.00			

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.



REV.	DATE	BY
1	02/27/2018	CAP

[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

Printed Name

E-mail Address

[18] SURVEYOR CERTIFICATION

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

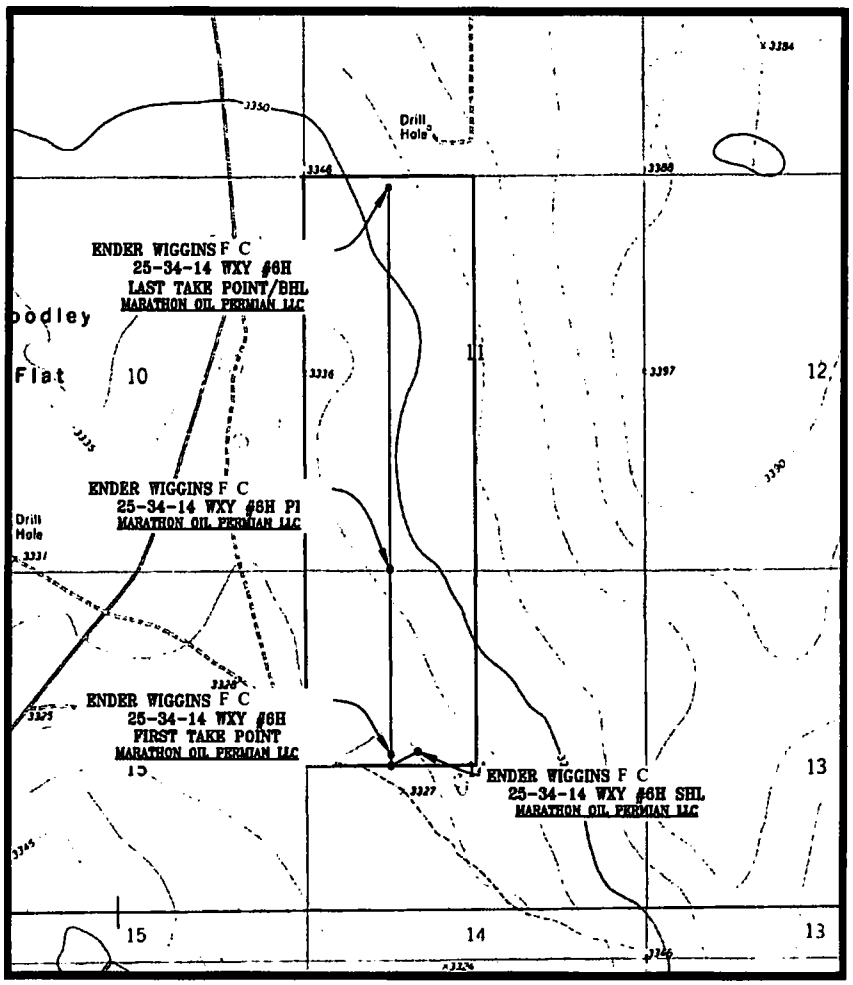
Date of Survey

Signature and Seal of Professional Surveyor:

Certificate Number

PRELIMINARY
THIS DOCUMENT IS NOT TO BE USED FOR CONSTRUCTION, BIDDING, RECORDATION, CONVEYANCE, SALE OR AS THE BASIS FOR THE ISSUANCE OF A PERMIT.

LOCATION VERIFICATION MAP



SEC. 14 TWP. 25-S RGE. 34-E
SURVEY: N.M.P.M.
COUNTY: LEA
DESCRIPTION: 2451' FNL & 1735' FWL
ELEVATION: 3332'
OPERATOR: MARATHON OIL PERMIAN LLC
LEASE: ENDER WIGGINS F C 25-34-14
U.S.G.S. TOPOGRAPHIC MAP: WOODLEY FLAT, N.M.

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

PREPARED BY:
R-SQUARED GLOBAL, LLC
1309 LOUISVILLE AVENUE, MONROE, LA 71201
318-323-6900 OFFICE
JOB No. R3816_008

SAFETY EQUIPMENT

All H2S related Safety Equipment must be installed, tested and Operational at a depth of 500 fee above, or 3 days prior to penetrating the first zone expected to contain H2S.

SAFETY EQUIPMENT PROVIDED BY TOTAL SAFETY INC.

QTY	EQUIPMENT
6 each	30-minute self-contained breathing apparatus
6 each	ELSA Escape Packs
1 Lot	Sufficient low-pressure airline hose with quick connects
1	6 Channel fixed H2S monitor
4	H2S Sensors (Loc determined at rig up – General: Cellar, Shale Shaker, floor/driller area)
4	Explosion proof Alarm Station (1-Drill Floor, 1- Pits/Shakers, 1- Generators, 1 Quarters area)
10	Personal H2S Monitors
1	Gastec pump type gas detector
Set	Various range of H2s & SO2 detector tubes
2 each	Windsocks w/frames and poles
1 Set	H2S and briefing area signs
1 Set	Well condition signs and flags
1	Flare Gun & Flares

TYPE OF EQUIPMENT AND STORAGE LOCATIONS

1. There will be six 30-minute self-contained breathing apparatus on location. They will be positioned as follows: Two at Briefing Area #1 Two at Briefing Area #2, Two at rig dog house. SCBA Facepieces will be equipped with voice amplifiers for effective means of communication when using protective breathing apparatus.

2. There will be six Escape-type packs on location. One for the Derrickman. One on the Shaker. One at the bottom of rig dog house stairway and spares.

3. A Gastec, pump type, gas detector with low and high range detector tubes for H2S and SO2 will be located in the doghouse

4. Two Briefing Areas will be designated at opposite ends of the location.

5. The Briefing Area most upwind is designated as the Safety Briefing Area #1. In an emergency, personnel must assemble at this upwind area for instructions from their supervisor.

6.The H2S 'Safety" trailer provided by Total Safety, Inc. will contain a cascade system of at least 5 each -300 C.F. air cylinders that will provide a continuous air supply to air lines located on the rig. Note: This trailer will **Only** be provided if H2S conditions require the use of the Air Trailer. (If Required)

7. Two windsocks will be installed so as to be visible from all parts of the location.

8. A well condition warning sign will be displayed at the location entrance to advise of current operating conditions. The condition signs must be at least 200' from the entrance but not more than 500' away.

9. A list of emergency telephone numbers will be kept on rig floor, tool pusher's trailer, the Oil Company's trailer and in the "safety" trailer (if Provided).

10. The primary means of communication will be cell phones.

11. A barricade will be available to block the entrance to location should an emergency occur. In most cases the use of a vehicle is used to block the entrance.

12. A 6-channel H2S monitor will be located in the doghouse. The 3 sensors will be installed: one on the shale shaker, one at the Cellar, one at the rig floor.

13. An undulating high and low pitch siren and light will be installed on the derrick "A" leg.

14. If H2S concentration reach 10 ppm an explosion-proof bug blower (fan) will be installed under the rig floor to disperse possible accumulations of H2S.

15. Any time it is necessary to flare gas containing H2S, a Sulfur Dioxide monitor or Detector tubes will be used to determine SO2 concentrations.

16. A flare gun with flares will also be provided in the event it is necessary to ignite the well from a safe distance.

OPERATING PROCEDURES

BLOWOUT PREVENTION MEASURES DURING DRILLING

1. Blowout Prevention Requirements:
   All BOP equipment shall meet the American Petroleum Institute specifications as to materials acceptable for H2S service and tested accordingly (or to BLM specifications).

2. Drilling String Requirements:
   All drill string components are to be of material that meets the American Petroleum Institute's specifications for H2S service. All drill string components should be inspected to IADC critical service specifications prior to running in well.

GAS MONITORING EQUIPMENT

1. A continuous H2S detection system, consisting of three H2S detectors and an audible/visual warning system will be in operating during all phases of this H2S Drilling Operations Plan. The detection system will be adjusted and calibrated such that an H2S exposure of 10 ppm or higher (at any sensor) will trigger the audible and visual portion (wailing or yelping siren) of the warning system (i.e. H2S continually present at or above threshold levels) a trained operator or H2S supervisor will monitor the H2S detection system.

2. When approaching or completing H2S formations, crewmembers may attach personnel H2S monitors to their person.

3. Hand held H2S sampling gas detectors will be used to check areas not covered by automatic monitoring equipment.

CREW TRAINING AND PROTECTION

1. All personal working at the well site will be properly trained in accordance with the general training requirements outlined in the API Recommended Practices for Safe Drilling of Wells Containing H2S. The training will cover, but will not be limited to, the following:

a. General information of H2S AND SO2 GAS
b. Hazards of these gases
c. Safety equipment on location
d. Proper use and care of personal protective equipment
e. Operational procedures in dealing with H2S gas
f. Evacuation procedures
g. First aid, reviving an H2S victim, toxicity, etc.
h. Designated Safe Briefing Areas
i. Buddy System
j. Regulations
k. Review of Drilling Operations Plan

2. Initial training shall be completed when drilling reaches, a depth of 500' above or 3 days prior to penetrating (whichever comes first) the first zone containing or expected to contain H2S. It must also include a review of the site specific Drilling Operations Plan and, if applicable, the Public Protections Plan.

3. Weekly H2S and well control drills for all personnel on each working crew shall be conducted.

4. All training sessions and drills shall be recorded on the driller's log or its equivalent.

5. Safety Equipment:
As outlined in the Safety Equipment index, H2S safety protection equipment will be available to/or assigned each person on location.

6. One person (by job title) shall be designated and identified to all on-site personnel as the person primarily responsible for the overall operation of the on-site safety and training programs. This will be the PIC

METALLURGICAL CONSIDERATONS

1. Steel drill pipe used in H2S environments should have yield strength of 95,000psi or less because of potential embrittlement problems. Must conform to the current National Association of Corrosion Engineers (NACE) Standard MR-0175-90, Material Requirement, Sulfide Stress Cracking Resistant Metallica Material for Oil Field Equipment. Drill stem joints near the top of the drill string are normally under the highest stress levels during drilling and do not have the protection of elevated down hole temperatures. These factors should be considered in design of the drill string. Precautions should be taken to minimize drill string stress caused by conditions such as excessive dogleg severity, improper torque, whip, abrasive wear or tool joints and joint imbalance. American Petroleum Institute, Bulletin RR 7G, will be used as a guideline for drill string precautions.

2. Corrosion inhibitors may be applied to the drill pipe or to the mud system as an additional safeguard.

3. Blowout preventors should meet or exceed the recommendations for H2S service as set forth in the latest edition of API RI 53.

MUD PROGRAM AND TREATING

1. It is of utmost importance that the mud be closely monitored for detection of H2S and reliability of the H2S treating chemicals.

2. Identification and analysis of sulfides in the mud and mud filtrates will be carried out per operators prescribed procedures.

3. The mud system will be pre-treated with Zinc Carbonate, Ironite Sponge or similar chemicals of H2S control prior to drilling into the H2s bearing formation. Sufficient quantities of corrosion inhibitor should be on location to treat the drill string during Drill Stem Test Operations. Additionally, Aqua Ammonia should be on hand to treat the drill string for crew protection, should H2S be encountered while tripping string following drill stem testing

WELL CONTROL EQUIPMENT

1. Flare System
    a. A flare system shall be designed and installed to safely gather and burn H2S Bearing gas.
        1. Flare lines shall be located as far from the operating site as feasible and in a manner to compensate for wind changes.
        2. The flare line mouth shall be located not less then 150' from wellbore.
        3. Flare lines shall be straight unless targeted with running tees.
        4. Flare Gun & Flares to ignite the well

2. Remote Controlled Choke
    a. A remote controlled choke shall be installed for all H2S drilling and where feasible for completion operations. A remote controlled valve may be used in lieu of this requirement for completions operations.

3. Mud-gas separators and rotating heads shall be installed and operable for all exploratory wells.

OPERATING CONDITIONS

A Well Condition Sign and Flag will be posted on all access roads to the location. The sign shall be legible and large enough to be read by all persons entering the well site and be placed a minimum of 200' but no more than 500' from the well site which allows vehicles to turn around at a safe distance prior to reaching the site.

DEFINITION OF WARNING FLAGS

1. Condition:
   GREEN-NORMAL OPERATIONS
   Any operation where the possibility of encountering H2S exists but no H2S has been detected.

2. Condition:
   YELLOW-POTENTIAL DANGER, CAUTION
   Any operation where the possibility of encountering H2S exists and in all situations where concentrations of H2S are detected in the air below the threshold level (10ppm)
   a. Cause of condition:
      *Circulating up drill breaks
      *Trip gas after trip
      *Circulating out gas on choke
      *Poisonous gas present, but below threshold concentrations
      *Drill stem test
   b. Safety Action:
      *Check safety equipment and keep it with you
      *Be alert for a change in condition
      *Follow instructions

3. Condition:
   RED-EXTREME DANGER
   Presence of H2S at or greater than 10ppm. Breathing apparatus must be worn.

   a. Safety action:

*MASK UP. All personal will have protective breathing equipment with them. All nonessential personnel will move to the Safe Briefing Area and stay there until instructed to do otherwise. All essential Qualified Personnel, using the "Buddy System" (those necessary to maintain control of the well) will don breathing apparatus to perform operations related to well control.

The decision to ignite the well is the responsibility of the operator's on-site representative and should be made only as a last resort, when it is clear that:

*human life is endangered

*there is no hope of controlling the well under prevailing conditions

Order evacuation of local people within the danger zone. Request help from local authorities, State Police, Sheriff's Dept. and Service Representative.

CIRCULATING OUT KICK (WAIT AND WEIGHT METHOD)

If it is suspected that H2S is present with the gas whenever a kick is taken, the wait and weight method of eliminating gas and raising the mud will be followed.

1. Wait and Weight Method:
    a. The wait and Weight Method is:
    *increase density of mud in pits to 'kill' weight mud.
    *open choke and bring pump to initial circulating pressure by holding casing pressure at original valve until pump is up to predetermined speed.
    *when initial circulating pressure is obtained on drill pipe, zero pump stroke counter and record time.
    *reduce drill pipe pressure from initial circulating pressure to final circulating pressure by using pump strokes and/or time according to graph
    *when 'kill' weight mud is at the bit, hold final circulating pressure until kill weight mud is to surface.

    b. If a kick has occurred, the standard blowout procedure will be followed and the wait and weight method will be used to kill the well. When the well has been put on the choke and circulation has been established, the following safety procedure must be established.
        *determine when gas is anticipated to reach surface.

*all non-essential personnel must be moved to safe briefing area
*all remaining personnel will check out and keep with them their protective breathing apparatus.
*mud men will see that the proper amount of H2S scavenging chemical is in the mud and record times checked
*make sure ignition flare is burning and valves are open to designated flare stacks

CORING OPERATIONS IN H2S BEARING ZONES

1. Personal protective breathing apparatus will be worn from 10 to 15 stands in advance of retrieving the core barrel. Cores to be transported should be sealed and marked to the presence of H2S.
    a. Yellow Caution Flag will be flown at the well condition sign.
    b. The "NO SMOKING" rule will be enforced

DRILL STEM TESTING OF H2S ZONES

1. The DST subsurface equipment will be suitable for H2S service as recommended by the API
2. Drill stem testing of H2S zone will be conducted in daylight hours
3. All non-essential personnel will be moved to an established safe area or off location
4. The "NO SMOKING" rule will be enforced
5. DST fluids will be circulated through a remote controlled choke and a separator to permit flaring of gas. A continuous pilot light will be used.
6. A yellow or red flag will be flown at entrance to location depending on present gas condition
7. If warranted, the use of Aqua Ammonia for neutralizing the toxicity of H2S from drill string
    a. During drill stem tests adequate Filming Amine for H2S corrosion and Aqua Ammonia for neutralizing H2S should be on location.
8. On completion of DST, if H2S contaminated formation fluids or gases are present in drill string, floor workers will be masked up before test valve is removed from drill string and continue "mask

on" conditions until such time that readings in the work area do not exceed 10ppm of H2S gas.

EMERGENCY PROCEDURES

SOUNDING ALARM

In case of an alarm the crews will muster up at the designated area. Total Safety will be dispatched with (2) HES Techs who are to go in under protective breathing air and check the alarm readings and sniff ambient air for the presence of H2S.

By no means are the Co. Rep or HES Advisor to go in under air with the HES Tech. If there is another method in place where the Rig Manager is to go in with the Tech we need to ensure that the rig company has cleared them and that they are properly trained.

1. The fact is to be instilled in the minds of all rig personnel that the sounding alarm means only one thing: H2S IS PRESENT. Everyone is to proceed to his assigned station and the contingency plan is put into effect.

DRILLING CREW ACTIONS

1. All personnel will don their protective breathing apparatus. The driller will take necessary precautions as indicated in operating procedures.
2. The Buddy system will be implemented. All personnel will act upon directions from the operator's on-site representative.
3. If there are non-essential personnel on location, they will move off location.
4. Entrance to the location will be patrolled, and the proper well condition flag will be displayed at the entrance to the location.

RESPONSIBILITIES OF PERSONNEL

In order to assure the proper execution of this plan, it is essential that one person be responsible for and in complete charge of implementing these procedures. The responsibility will be as follows:

1. The operator's on-site representative or his assistant
2. Contract Tool Pusher

STEPS TO BE TAKEN

In the event of an accidental release of a potentially hazardous volume of H2S, the following steps will be taken:

1. Contact by the quickest means of communications: the main offices of Oil Company & Contractor as listed on the preceding page.
2. An assigned crewmember will blockade the entrance to the location. No unauthorized personnel will be allowed entry into the location.
3. The operator's on-site representative will remain on location and attempt to regain control of the well.
4. The drilling company's rig superintendent will begin evacuation of those persons in immediate danger. He will begin by telephoning residents in the danger zone. In the event of no contact by telephoning, the tool pusher will proceed at once to each dwelling for a person-to-person contact. In the event the tool pusher cannot leave the location, he will assign a responsible crewmember to proceed in the evacuation off local residents. Upon arrival, the Sheriff's Department and TOTAL SAFETY personnel will aid in further evacuation.

LEAK IGNITION

Leak Ignition procedure: (used to ignite a leak in the event it becomes necessary to protect the public)

1. Two men, the operator's on-site representative and the contractor's rig superintendent or TOTAL SAFETY's representative(s), wearing self-contained pressure demand air masks must determine the perimeter of the flammable area. This should be done with one man using an H2S detector and the other one using a flammable gas detector. The flammable perimeter should be established at 30% to 40% of the lower flammable limits.
2. After the flammable perimeter has been established and all employees and citizens have been removed from the area, the ignition team should move to the up-wind area of the leak perimeter and fire a flare into the area if the leak isn't ignited on the first attempt, move in 20 to 30 feet and fire again. Continue moving in and firing until the leak is ignited or the flammable gas detector indicates the ignition

team is moving into the hazardous area. If trouble is incurred in igniting the leak by firing toward the leak, try firing 40 degrees to 90 degrees to each side of the area where you have been firing. If still no ignition is accomplished ignite the copper line burner and push it into the leak area. This should accomplish ignition. If ignition is not possible due to the makeup of the gas, the toxic leak perimeter must be established and maintained to insure evacuation is completed and continue until the emergency is secure.

3. The following equipment and man-power will be required to support the ignition team:
    a. one flare gun with flares
    b. four pressure demand air packs
    c. two nylon ropes tied to the ignition team
    d. two men in a clear area equipped with air packs
    e. portable propane bottle with copper line
4. The person with the final authority to ignite the well.

GENERAL EQUIPMENT

1. Two areas on the location will be designated as Briefing Areas. The one that is upwind from the well will be designated a the "Safe Briefing Area"
2. In the case of an emergency, personnel will assemble in the upwind area as per prior instructions from the operator's representative.
3. The H2S "Safety" trailer provide by TOTAL SAFETY will contain 10 air cylinders, a resuscitator, one 30-minute air pack and will have a windsock.
4. Two other windsocks will be installed.
5. A condition warning sign will be displayed at the location entrance.
6. A list of emergency telephone numbers will be kept on the rig floor, tool pusher's trailer and the Oil Company's trailer.
7. Two barricades will be available to block the entrance to location.
8. An undulating high and low pitch siren will be installed.
9. A telephone line or mobile phone will be available at the well site for incoming and outgoing communications.

CRITICAL OPERATIONS

These guidelines will be implemented during H2S alarms on drilling locations with the intent of minimizing catastrophic damage of "**critical tasks**" ONLY and exposure of field personnel (e.g. cement in the stack). We will wait on Total Safety (or H2S Safety Company) for all other alarm events that aren't defined as "critical".

1.) H2S alarm sounds, crews secure well, and muster based off of wind direction. MOC Operation, MOC Safety, and H2S service company notification will be made and representative from the H2S Service Company is in route to location.
2.) Two qualified in scope personnel will don SCBA, utilizing the "buddy system", and respond to area of H2S alarm location to verify the presence of H2S utilizing hand held four gas analyzer or other approved and provided method.
3.) If no H2S is found, the "all clear" will be authorized by the Marathon Oil Drilling Superintendent and HES to resume operations. H2S service company will still be required to respond.

Note: Personnel will return to muster area awaiting H2S service company and additional equipment if H2S is verified.

Note: Personnel will be trained annually on H2S and the elements of this guideline. The MOC HES Advisor and Co Man will receive hands on training from a H2S service company field tech, on how to properly identify the location of the alarming sensor, and the proper method for checking the alarmed area.

APPENDICES

EMERGENCY & MEDICAL FACILITIES:

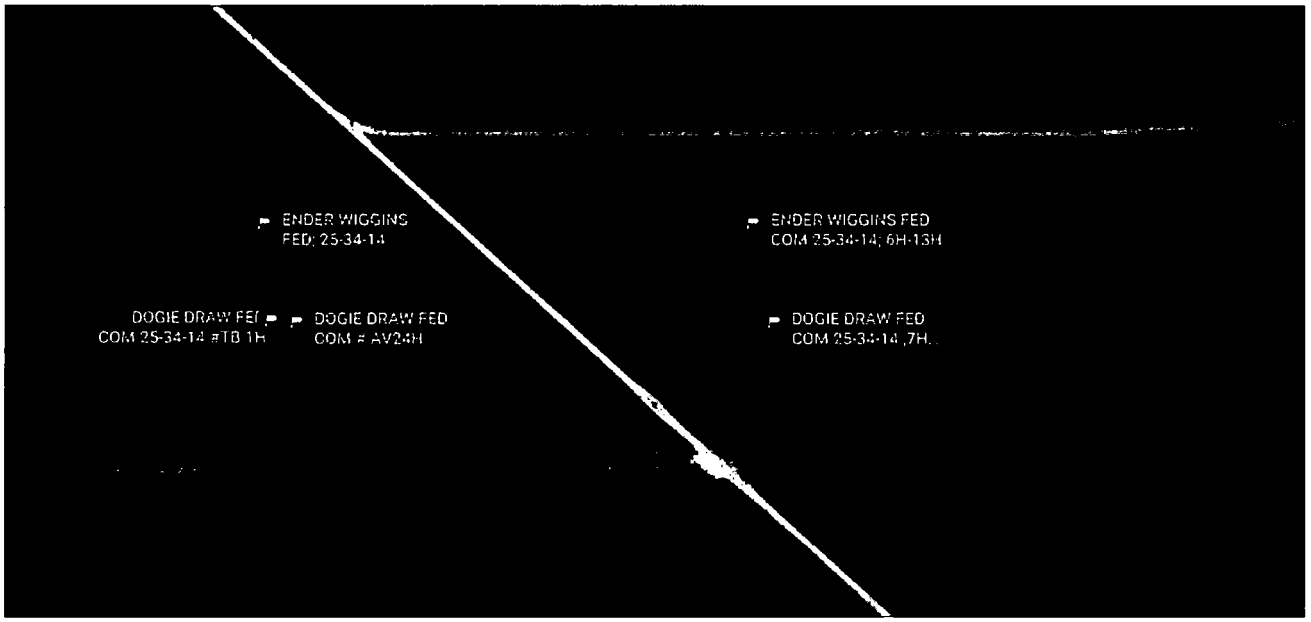
Marathon Oil Corporation Emergency Numbers			
Brent Evans	Drilling Manager	blevans@marathonoil.com	832 967-8474
Mark Bly	Drilling Superintendent	permiansuper@marathonoil.com	281-840-0467
Chad Butler	Drilling Superintendent	permiansuper@marathonoil.com	281-840-0467
Jacob Beaty	Drilling Engineer	jabeaty@marathonoil.com	713-296-1915
Noah Adams	HES Professional	njadams@marathonoil.com	713-591-4068
Nick Rogers	Lead HES Advisor	permiandches@marathonoil.com	281-659-3734
Scott Doughty	Lead HES Advisor	permiandches@marathonoil.com	281-659-3734
H&P 480	Company Man	Hp480@marathonoil.com	281-768-9946
H&P 498	Company Man	Hp498@marathonoil.com	281-745-0771
H&P 441	Company Man	Hp441@marathonoil.com	
H&P 423	Company Man	Hp423@marathonoil.com	
Precision 594	Company Man	Prec594@marathonoil.com	
H&P 480	HES Advisor	Hp480hes@marathonoil.com	
H&P 498	HES Advisor	Hp498hes@marathonoil.com	
H&P 441	HES Advisor	Hp441hes@marathonoil.com	
H&P 423	HES Advisor	Hp423hes@marathonoil.com	
Precision 594	HES Advisor	Prec594hes@marathonoil.com	

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

1. For Life Flight, 1st dial "911" They will determine nearest helicopter and confirm the need for helicopter.

RESIDENTS AND LANDOWNERS

AERIAL SATELLITE MAP



RESIDENCE

THERE ARE NO RESIDENCE WITHIN 1 MILE RADIUS OF WELL LOCATION.

ADDITIONAL INFORMATION

A. HYDROGEN SULFIDE ESSAY

A deadly enemy of those people employed in the petroleum industry, this gas can paralyze or kill quickly. At least part of the answer lies in education in the hazards, symptoms, characteristics, safe practices, treatment, and the proper use of personal protective equipment.

B. HYDROGEN SULFIDE HAZARDS

The principal hazard to personnel is asphyxiation or poisoning by inhalation. Hydrogen Sulfide is a colorless, flammable gas having an offensive odor and a sweetish taste. It is highly toxic and doubly hazardous because it is heavier than air (specific gravity = 1.19). It's offensive odor, like that of a rotten egg, has been used as an indicator by many old timers in the oil field, but is not a reliable warning of the presence of gas in a dangerous concentration because people differ greatly I their ability to detect smells. Where high concentrations are encountered, the olfactory nerves are rapidly paralyzed, diluting the sense of smell as a warning indicator. A concentration of a few hundredths of one percent higher than that causing irritation can cause asphyxia and death-in other words there is a very narrow margin between conscious ness and unconsciousness, and between unconsciousness and death.

Where high concentrations cause respiratory paralysis, spontaneous breathing does not return unless artificial respiration is applies. Although breathing is paralyzed the heart may continue beating for ten minutes after the attack.

C. PHYSIOLOGICAL SYSTEMS

ACUTE: results in almost instantaneous asphyxia, with seeming respiratory paralysis acute poisoning, or strangulation, may occur after even a few seconds inhalation of high concentration and results in panting respiration, pallor, cramps, paralysis and almost immediate loss of consciousness with extreme rapidity from respiratory and cardiac paralysis. One breath of a sufficiently high concentration may have this result.

SUBACUTE: RESULTS IN IRRITATION, PRINCIPALLY OF THE EYES, PERSISTENT COUGH, TIGHTENING OR BURNING IN THE CHEST AND SKIN IRRITATION FOLOWED BY DEPRESSION OF THE CENTRAL NERVOUS SYSTEM. The eye irritation ranges in severity from mild conjunctivitis to swelling and bulging of the conjunctiva photophobia (abnormal intolerance of light) and temporary blindness.

D. TREATMENT

1. Victim should be removed to fresh air immediately by rescuers wearing respiratory protective equipment. Protect yourself while rescuing.
2. If the victim is not breathing, begin immediately to apply artificial respiration. (See other chart for the chances for life after breathing has stopped.) If a resuscitator is available let another employee get it and prepare for use.
3. Treat for shock, keep victim warm and comfortable
4. Call a doctor, in all cases, victims of poisoning should be attended by a physician.

E. CHARACTERISTICS OF H2S

1. Extremely Toxic (refer to chart for toxicity of Hydrogen Sulfide).
2. Heavier than air. Specific gravity= 1.19.
3. Colorless, has odor of rotten eggs.
4. Burns with a blue flame and produces sulfur Dioxide (SO2) gas, which is very irritating to eyes and lungs. The SO2 is also toxic and can cause serious injury.
5. H2S is almost as toxic as hydrogen cyanide.
6. H2S forms explosive mixture, with air between 4.3% and 46% by volume.
7. Between 5 and 6 times as toxic as carbon monoxide.
8. Produces irritation to eyes, throat, and respiratory tract.
9. Threshold Limit Value (TLV) maximum of eight hours exposure without protective respiratory equipment-10ppm.

F. SAFE PRACTICES

If you are faced with an H2S problem in your operations, the following safe practices are recommended:

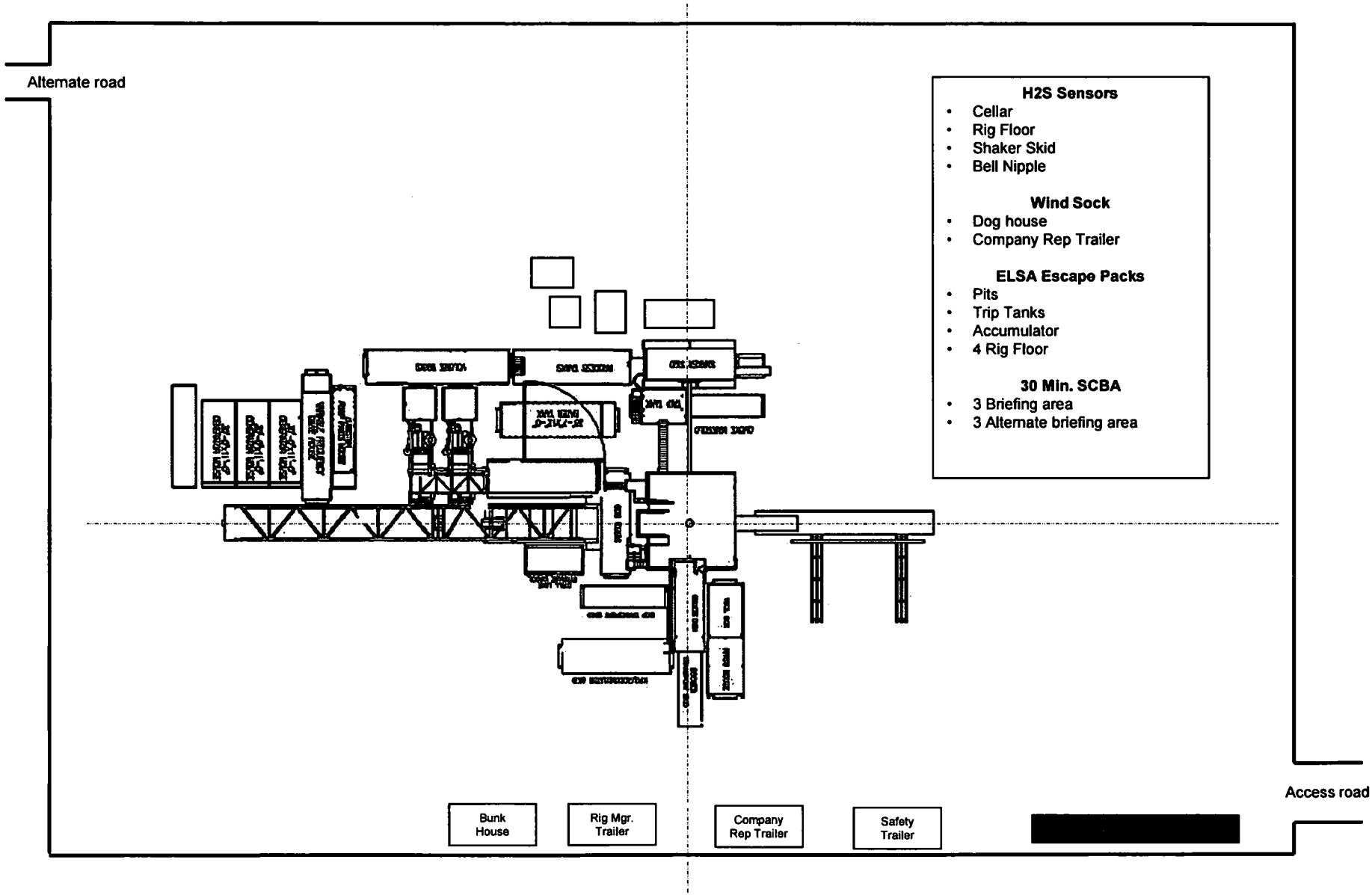
1. Be absolutely sure all concerned are familiar with the hazards concerning H2S and how to avoid it.
2. All employees should know how to operate and maintain respiration equipment.
3. Be able to give and demonstrate artificial respiration.
4. Post areas where there is poisonous gas with suitable warning signs.
5. Be sure all new employees are thoroughly schooled before they are sent to the field-tomorrow may be too late.
6. Teach men to avoid gas whenever possible-work on the windward side, have fresh air mask available.
7. Never let bad judgment guide you-wear respiratory equipment when gauging tanks, etc. Never try to hold your breath in order to enter a contaminated atmosphere.
8. In areas of high concentration, a two-man operation is preferred.
9. Never enter a tank, cellar or other enclosed place where gas can accumulate without proper respiratory protective equipment and a safety belt secured to a lifeline held by another person outside.
10. Always check out danger areas first with H2S detectors before allowing anyone to enter. DO NOT TRY TO DETERMINE THE PRESENCE OF GAS BY its ODOR.
11. Wear proper respiratory equipment for the job at hand. Never take a chance with equipment with which you are unfamiliar. If in doubt, consult your supervisor.
12. Carry out practice drills every month with emergency and maintenance breathing air equipment. Telling or showing a group how to operate equipment is not enough-make them show you.
13. Maximum care should be taken to prevent the escape of fumes into the air of working places by leaks, etc.
14. Communication such as radio and telephones should be provided for those people employed where H2S may be present.

TOXICITY OF HYDROGEN SULFIDE TO MEN

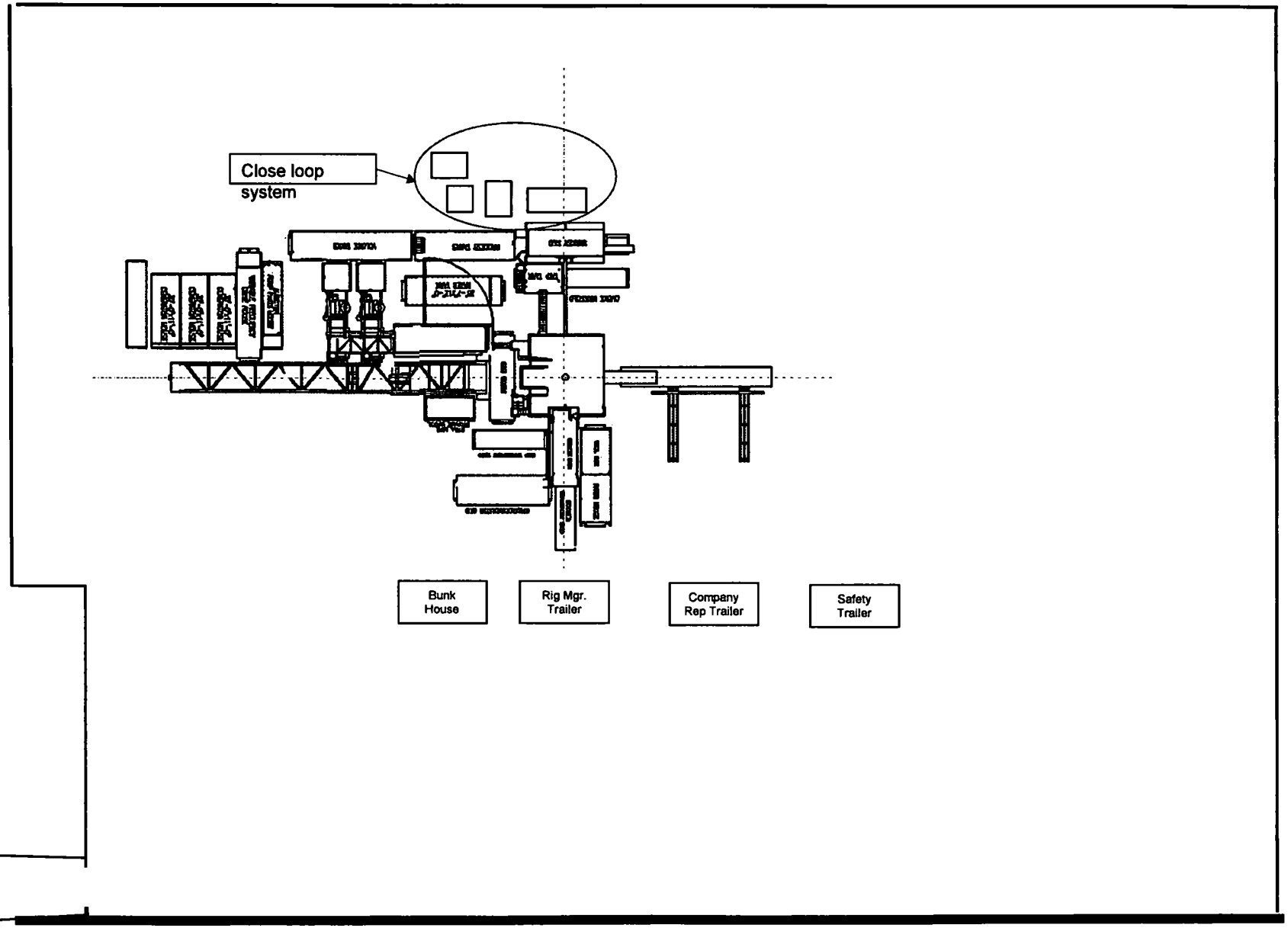
H2S Per Cent (PPM)**	0 - 2 Minutes	0 - 15 Minutes	15 - 30 Minutes	30 Minutes to 1 hour	1 - 4 Hours	4 - 8 Hours	4 - 48 Hours
0.005 (50) 0.010 (100)				Mild Conjunctivities; respiratory tract irritation			
0.010 (100) 0.015 (150)		Coughing; irritation of eyes; loss of sense of smell	Disturbed respiration; pain in eyes; sleepiness	Throat	Salivation & mucous discharge; sharp pain in eyes; coughing	Increased symptoms*	Hemorrhage & death*
0.015 (150) 0.020 (200)		Loss of sense of smell	Throat & eye irritation	Throat & eye irritation	Difficult breathing; blurred vision; light & shy	Serious irritating effects	Hemorrhage & death*
0.025 (250) 0.035 (350)	Irritation of eyes; loss of sense of smell	Irritation of eyes	Painful secretion of tears; weariness	Light & shy; nasal catarrh; pain in eyes; difficult breathing	Hemorrhage & death		
0.035 (350)		Irritation of eyes; loss of sense of smell	Difficult respiration coughing; irritation of eyes	Increased irritation of eyes and nasal tract; dull pain head; weariness; light shy	Dizziness weakness; increased irritation; death	Death*	
0.050 (500)	Coughing collapse & unconsciousness	Respiratory disturbances; irritation of eyes; collapse	Serious eye irritation; palpitation of heart; few cases of death*	Severe pain in eyes and head dizziness; trembling of extreities; great weakness & death*			
0.060 (600) 0.070 (700) 0.808 (800) 0.100 (1000) 0.150 (1500)	Collapse * unconsciousness; death*	Collapse* unconsciousness; death*					

*Data secured from experiments of dogs which have susceptibility similar to men. **PPM - parts per million

MARATHON OIL - H2S Preparedness and Contingency Plan Summary



MARATHON OIL - FLEX III PAD (Closed Loop System)



Marathon Oil Corporation

Marathon Oil
Lea County, NM
Ender Wiggins FC 25-34-14 (6-11-13)
WC No. 13H
Prelim Plan C

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

RKB Elevation: well @ 3357.00usft

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	412477.26	775603.10	32.130886	-103.443024	

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	VSect
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	1500.00	0.00	0.00	1500.00	0.00	0.00	0.00	0.00
3	2000.00	10.00	93.94	1997.47	-2.99	43.42	2.00	-3.34
4	8347.02	10.00	93.94	8248.06	-78.76	1142.96	0.00	-87.93
5	8847.02	0.00	0.00	8745.52	-81.75	1186.38	2.00	-91.27
6	12256.49	0.00	0.00	12155.00	-81.75	1186.38	0.00	-91.27
7	13010.64	90.50	359.54	12632.45	399.85	1182.54	12.00	390.34
8	20246.93	90.50	359.54	12569.57	7635.63	1124.91	0.00	7626.35

WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

Name	TVD	+N/-S	+E/-W	Northing	Easting
[EnderWggns#13H]FTP	12155.00	-81.75	1186.38	412395.51	776789.48
[EnderWggns#13H]LTP/BHL	12569.57	7635.63	1124.91	420112.89	776728.01

PRODIRECTIONAL

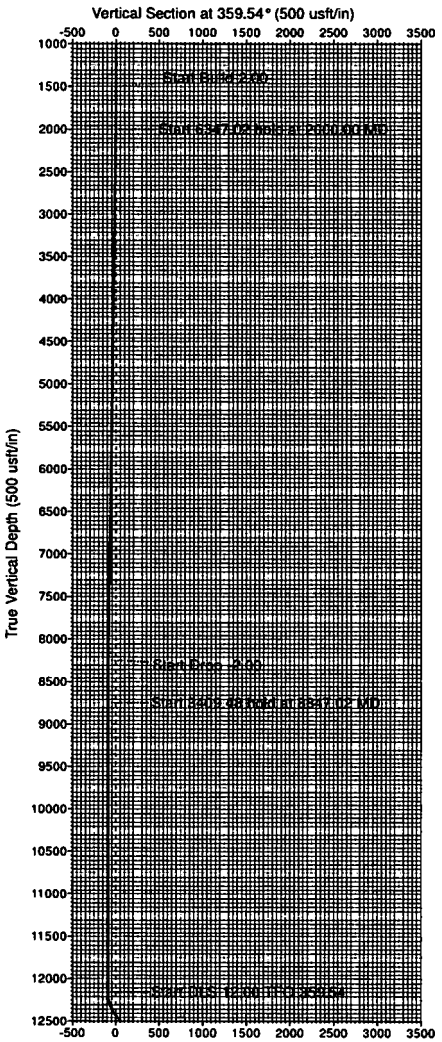
Azimuths to Grid North
True North: -0.47°
Magnetic North: 6.09°

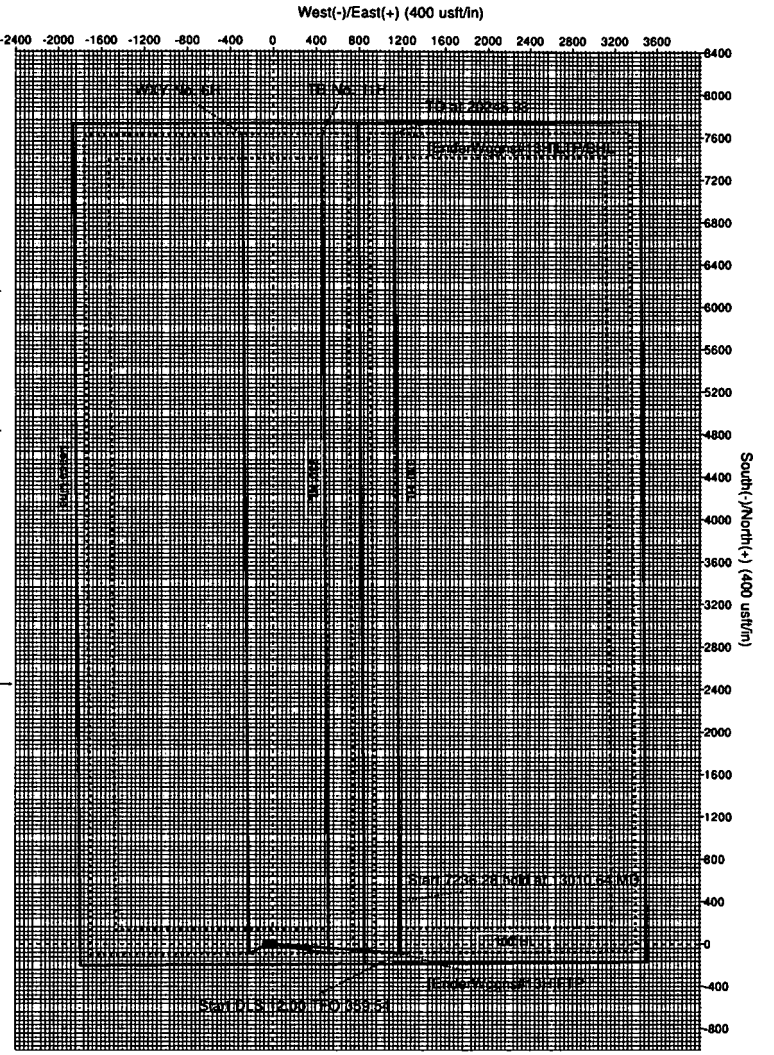
Magnetic Field
Strength: 47768.7snT
Dip Angle: 59.73°
Date: 9/10/2019
Model: HDGM

Azimuth Corrections

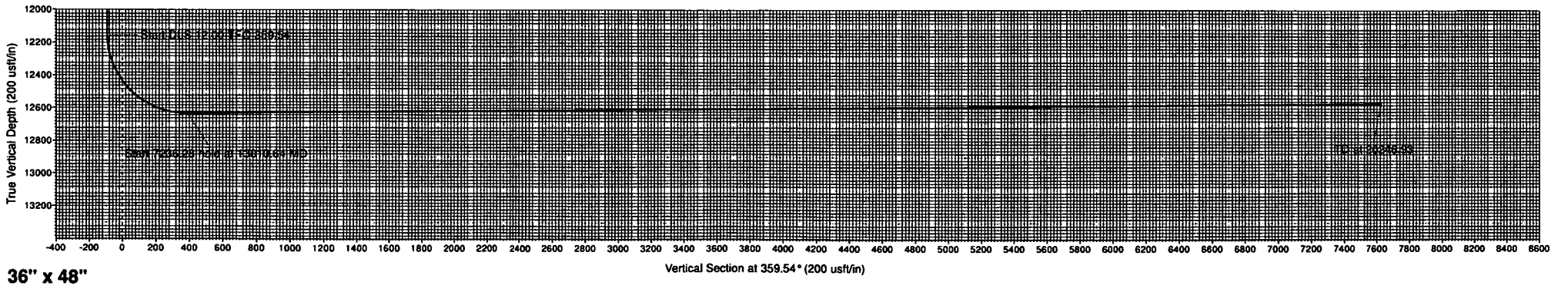
Total Magnetic Corr. (M to G): 6.09°

Declination (M to T): 6.57° East





Target Line: 12636' TVD @ 0' VS: 90.5° INC



36" x 48"

Marathon Oil

Pro Directional
Survey Report

PRODIRECTIONAL

Company:	Marathon Oil	**Local Co-ordinate Reference:**	Well WC 13H
Project:	Lea County, NM	**TVD Reference:**	well @ 3357.00usft
Site:	Ender Wiggins FC 25-34-14 (6-11-13)	**MD Reference:**	well @ 3357.00usft
Well:	WC 13H	**North Reference:**	Grid Minimum
Wellbore:	OH	**Survey Calculation Method:**	Curvature
Design:	Prelim Plan C	**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	Ender Wiggins FC 25-34-14 (6-11-13)				
Site Position:		**Northing:**	412,477.26 usft	**Latitude:**	32.130886
From:	Map	**Easting:**	775,603.10 usft	**Longitude:**	-103.443025
Position Uncertainty:	0.00 usft	**Slot Radius:**	13-3/16 "	**Grid Convergence:**	0.47 °

Well	WC 13H					
Well Position	**+N/-S**	0.00 usft	**Northing:**	412,477.26 usft	**Latitude:**	32.130886
	+E/-W	0.00 usft	**Easting:**	775,603.10 usft	**Longitude:**	-103.443025
Position Uncertainty		0.00 usft	**Wellhead Elevation:**	usft	**Ground Level:**	3,332.00 usft

Wellbore	OH			
Magnetics	**Model Name**	**Sample Date**	**Declination (°)**	**Dip Angle (°)**	**Field Strength (nT)**
	HDGM	9/10/2019	6.57	59.73	47,768.70

Design	Prelim Plan C				
Audit Notes:					
Version:		**Phase:**	PLAN	**Tie On Depth:**	0.00
Vertical Section:	**Depth From (TVD) (usft)**	**+N/-S (usft)**	**+E/-W (usft)**	**Direction (°)**	
	0.00	0.00	0.00	359.54	

Survey Tool Program **Date** 10/30/2019

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.00	20,246.93	Prelim Plan C (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
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00

Company:	Marathon Oil	**Local Co-ordinate Reference:**	Well WC 13H
Project:	Lea County, NM	**TVD Reference:**	well @ 3357.00usft
Site:	Ender Wiggins FC 25-34-14 (6-11-13)	**MD Reference:**	well @ 3357.00usft
Well:	WC 13H	**North Reference:**	Grid Minimum
Wellbore:	OH	**Survey Calculation Method:**	Curvature
Design:	Prelim Plan C	**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)
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	93.94	1,599.98	-0.12	1.74	-0.13	2.00	2.00	0.00
1,700.00	4.00	93.94	1,699.84	-0.48	6.96	-0.54	2.00	2.00	0.00
1,800.00	6.00	93.94	1,799.45	-1.08	15.66	-1.20	2.00	2.00	0.00
1,900.00	8.00	93.94	1,898.70	-1.92	27.81	-2.14	2.00	2.00	0.00
2,000.00	10.00	93.94	1,997.47	-2.99	43.42	-3.34	2.00	2.00	0.00
2,100.00	10.00	93.94	2,095.95	-4.19	60.74	-4.67	0.00	0.00	0.00
2,200.00	10.00	93.94	2,194.43	-5.38	78.07	-6.01	0.00	0.00	0.00
2,300.00	10.00	93.94	2,292.91	-6.57	95.39	-7.34	0.00	0.00	0.00
2,400.00	10.00	93.94	2,391.39	-7.77	112.71	-8.67	0.00	0.00	0.00
2,500.00	10.00	93.94	2,489.87	-8.96	130.04	-10.00	0.00	0.00	0.00
2,600.00	10.00	93.94	2,588.35	-10.15	147.36	-11.34	0.00	0.00	0.00
2,700.00	10.00	93.94	2,686.83	-11.35	164.69	-12.67	0.00	0.00	0.00
2,800.00	10.00	93.94	2,785.31	-12.54	182.01	-14.00	0.00	0.00	0.00
2,900.00	10.00	93.94	2,883.79	-13.74	199.33	-15.34	0.00	0.00	0.00
3,000.00	10.00	93.94	2,982.27	-14.93	216.66	-16.67	0.00	0.00	0.00
3,100.00	10.00	93.94	3,080.75	-16.12	233.98	-18.00	0.00	0.00	0.00
3,200.00	10.00	93.94	3,179.23	-17.32	251.30	-19.33	0.00	0.00	0.00
3,300.00	10.00	93.94	3,277.72	-18.51	268.63	-20.67	0.00	0.00	0.00
3,400.00	10.00	93.94	3,376.20	-19.70	285.95	-22.00	0.00	0.00	0.00
3,500.00	10.00	93.94	3,474.68	-20.90	303.28	-23.33	0.00	0.00	0.00
3,600.00	10.00	93.94	3,573.16	-22.09	320.60	-24.66	0.00	0.00	0.00
3,700.00	10.00	93.94	3,671.64	-23.29	337.92	-26.00	0.00	0.00	0.00
3,800.00	10.00	93.94	3,770.12	-24.48	355.25	-27.33	0.00	0.00	0.00
3,900.00	10.00	93.94	3,868.60	-25.67	372.57	-28.66	0.00	0.00	0.00
4,000.00	10.00	93.94	3,967.08	-26.87	389.89	-30.00	0.00	0.00	0.00
4,100.00	10.00	93.94	4,065.56	-28.06	407.22	-31.33	0.00	0.00	0.00
4,200.00	10.00	93.94	4,164.04	-29.25	424.54	-32.66	0.00	0.00	0.00
4,300.00	10.00	93.94	4,262.52	-30.45	441.87	-33.99	0.00	0.00	0.00
4,400.00	10.00	93.94	4,361.00	-31.64	459.19	-35.33	0.00	0.00	0.00
4,500.00	10.00	93.94	4,459.48	-32.84	476.51	-36.66	0.00	0.00	0.00
4,600.00	10.00	93.94	4,557.97	-34.03	493.84	-37.99	0.00	0.00	0.00
4,700.00	10.00	93.94	4,656.45	-35.22	511.16	-39.33	0.00	0.00	0.00
4,800.00	10.00	93.94	4,754.93	-36.42	528.48	-40.66	0.00	0.00	0.00
4,900.00	10.00	93.94	4,853.41	-37.61	545.81	-41.99	0.00	0.00	0.00
5,000.00	10.00	93.94	4,951.89	-38.80	563.13	-43.32	0.00	0.00	0.00
5,100.00	10.00	93.94	5,050.37	-40.00	580.46	-44.66	0.00	0.00	0.00
5,200.00	10.00	93.94	5,148.85	-41.19	597.78	-45.99	0.00	0.00	0.00
5,300.00	10.00	93.94	5,247.33	-42.38	615.10	-47.32	0.00	0.00	0.00

Company:	Marathon Oil	**Local Co-ordinate Reference:**	Well WC 13H
Project:	Lea County, NM	**TVD Reference:**	well @ 3357.00usft
Site:	Ender Wiggins FC 25-34-14 (6-11-13)	**MD Reference:**	well @ 3357.00usft
Well:	WC 13H	**North Reference:**	Grid Minimum
Wellbore:	OH	**Survey Calculation Method:**	Curvature
Design:	Prelim Plan C	**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)
5,400.00	10.00	93.94	5,345.81	-43.58	632.43	-48.65	0.00	0.00	0.00
5,500.00	10.00	93.94	5,444.29	-44.77	649.75	-49.99	0.00	0.00	0.00
5,600.00	10.00	93.94	5,542.77	-45.97	667.07	-51.32	0.00	0.00	0.00
5,700.00	10.00	93.94	5,641.25	-47.16	684.40	-52.65	0.00	0.00	0.00
5,800.00	10.00	93.94	5,739.73	-48.35	701.72	-53.99	0.00	0.00	0.00
5,900.00	10.00	93.94	5,838.22	-49.55	719.05	-55.32	0.00	0.00	0.00
6,000.00	10.00	93.94	5,936.70	-50.74	736.37	-56.65	0.00	0.00	0.00
6,100.00	10.00	93.94	6,035.18	-51.93	753.69	-57.98	0.00	0.00	0.00
6,200.00	10.00	93.94	6,133.66	-53.13	771.02	-59.32	0.00	0.00	0.00
6,300.00	10.00	93.94	6,232.14	-54.32	788.34	-60.65	0.00	0.00	0.00
6,400.00	10.00	93.94	6,330.62	-55.52	805.66	-61.98	0.00	0.00	0.00
6,500.00	10.00	93.94	6,429.10	-56.71	822.99	-63.32	0.00	0.00	0.00
6,600.00	10.00	93.94	6,527.58	-57.90	840.31	-64.65	0.00	0.00	0.00
6,700.00	10.00	93.94	6,626.06	-59.10	857.64	-65.98	0.00	0.00	0.00
6,800.00	10.00	93.94	6,724.54	-60.29	874.96	-67.31	0.00	0.00	0.00
6,900.00	10.00	93.94	6,823.02	-61.48	892.28	-68.65	0.00	0.00	0.00
7,000.00	10.00	93.94	6,921.50	-62.68	909.61	-69.98	0.00	0.00	0.00
7,100.00	10.00	93.94	7,019.99	-63.87	926.93	-71.31	0.00	0.00	0.00
7,200.00	10.00	93.94	7,118.47	-65.07	944.25	-72.64	0.00	0.00	0.00
7,300.00	10.00	93.94	7,216.95	-66.26	961.58	-73.98	0.00	0.00	0.00
7,400.00	10.00	93.94	7,315.43	-67.45	978.90	-75.31	0.00	0.00	0.00
7,500.00	10.00	93.94	7,413.91	-68.65	996.23	-76.64	0.00	0.00	0.00
7,600.00	10.00	93.94	7,512.39	-69.84	1,013.55	-77.98	0.00	0.00	0.00
7,700.00	10.00	93.94	7,610.87	-71.03	1,030.87	-79.31	0.00	0.00	0.00
7,800.00	10.00	93.94	7,709.35	-72.23	1,048.20	-80.64	0.00	0.00	0.00
7,900.00	10.00	93.94	7,807.83	-73.42	1,065.52	-81.97	0.00	0.00	0.00
8,000.00	10.00	93.94	7,906.31	-74.62	1,082.84	-83.31	0.00	0.00	0.00
8,100.00	10.00	93.94	8,004.79	-75.81	1,100.17	-84.64	0.00	0.00	0.00
8,200.00	10.00	93.94	8,103.27	-77.00	1,117.49	-85.97	0.00	0.00	0.00
8,300.00	10.00	93.94	8,201.75	-78.20	1,134.82	-87.31	0.00	0.00	0.00
8,347.02	10.00	93.94	8,248.06	-78.76	1,142.96	-87.93	0.00	0.00	0.00
8,400.00	8.94	93.94	8,300.32	-79.36	1,151.66	-88.60	2.00	-2.00	0.00
8,500.00	6.94	93.94	8,399.35	-80.31	1,165.44	-89.66	2.00	-2.00	0.00
8,600.00	4.94	93.94	8,498.81	-81.02	1,175.76	-90.46	2.00	-2.00	0.00
8,700.00	2.94	93.94	8,598.57	-81.49	1,182.62	-90.98	2.00	-2.00	0.00
8,800.00	0.94	93.94	8,698.51	-81.72	1,186.00	-91.24	2.00	-2.00	0.00
8,847.02	0.00	0.00	8,745.52	-81.75	1,186.38	-91.27	2.00	-2.00	0.00
8,900.00	0.00	0.00	8,798.51	-81.75	1,186.38	-91.27	0.00	0.00	0.00
9,000.00	0.00	0.00	8,898.51	-81.75	1,186.38	-91.27	0.00	0.00	0.00
9,100.00	0.00	0.00	8,998.51	-81.75	1,186.38	-91.27	0.00	0.00	0.00
9,200.00	0.00	0.00	9,098.51	-81.75	1,186.38	-91.27	0.00	0.00	0.00
9,300.00	0.00	0.00	9,198.51	-81.75	1,186.38	-91.27	0.00	0.00	0.00
9,400.00	0.00	0.00	9,298.51	-81.75	1,186.38	-91.27	0.00	0.00	0.00

Company:	Marathon Oil	**Local Co-ordinate Reference:**	Well WC 13H
Project:	Lea County, NM	**TVD Reference:**	well @ 3357.00usft
Site:	Ender Wiggins FC 25-34-14 (6-11-13)	**MD Reference:**	well @ 3357.00usft
Well:	WC 13H	**North Reference:**	Grid
Wellbore:	OH	**Survey Calculation Method:**	Minimum Curvature
Design:	Prelim Plan C	**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)
9,500.00	0.00	0.00	9,398.51	-81.75	1,186.38	-91.27	0.00	0.00	0.00
9,600.00	0.00	0.00	9,498.51	-81.75	1,186.38	-91.27	0.00	0.00	0.00
9,700.00	0.00	0.00	9,598.51	-81.75	1,186.38	-91.27	0.00	0.00	0.00
9,800.00	0.00	0.00	9,698.51	-81.75	1,186.38	-91.27	0.00	0.00	0.00
9,900.00	0.00	0.00	9,798.51	-81.75	1,186.38	-91.27	0.00	0.00	0.00
10,000.00	0.00	0.00	9,898.51	-81.75	1,186.38	-91.27	0.00	0.00	0.00
10,100.00	0.00	0.00	9,998.51	-81.75	1,186.38	-91.27	0.00	0.00	0.00
10,200.00	0.00	0.00	10,098.51	-81.75	1,186.38	-91.27	0.00	0.00	0.00
10,300.00	0.00	0.00	10,198.51	-81.75	1,186.38	-91.27	0.00	0.00	0.00
10,400.00	0.00	0.00	10,298.51	-81.75	1,186.38	-91.27	0.00	0.00	0.00
10,500.00	0.00	0.00	10,398.51	-81.75	1,186.38	-91.27	0.00	0.00	0.00
10,600.00	0.00	0.00	10,498.51	-81.75	1,186.38	-91.27	0.00	0.00	0.00
10,700.00	0.00	0.00	10,598.51	-81.75	1,186.38	-91.27	0.00	0.00	0.00
10,800.00	0.00	0.00	10,698.51	-81.75	1,186.38	-91.27	0.00	0.00	0.00
10,900.00	0.00	0.00	10,798.51	-81.75	1,186.38	-91.27	0.00	0.00	0.00
11,000.00	0.00	0.00	10,898.51	-81.75	1,186.38	-91.27	0.00	0.00	0.00
11,100.00	0.00	0.00	10,998.51	-81.75	1,186.38	-91.27	0.00	0.00	0.00
11,200.00	0.00	0.00	11,098.51	-81.75	1,186.38	-91.27	0.00	0.00	0.00
11,300.00	0.00	0.00	11,198.51	-81.75	1,186.38	-91.27	0.00	0.00	0.00
11,400.00	0.00	0.00	11,298.51	-81.75	1,186.38	-91.27	0.00	0.00	0.00
11,500.00	0.00	0.00	11,398.51	-81.75	1,186.38	-91.27	0.00	0.00	0.00
11,600.00	0.00	0.00	11,498.51	-81.75	1,186.38	-91.27	0.00	0.00	0.00
11,700.00	0.00	0.00	11,598.51	-81.75	1,186.38	-91.27	0.00	0.00	0.00
11,800.00	0.00	0.00	11,698.51	-81.75	1,186.38	-91.27	0.00	0.00	0.00
11,900.00	0.00	0.00	11,798.51	-81.75	1,186.38	-91.27	0.00	0.00	0.00
12,000.00	0.00	0.00	11,898.51	-81.75	1,186.38	-91.27	0.00	0.00	0.00
12,100.00	0.00	0.00	11,998.51	-81.75	1,186.38	-91.27	0.00	0.00	0.00
12,200.00	0.00	0.00	12,098.51	-81.75	1,186.38	-91.27	0.00	0.00	0.00
12,256.49	0.00	0.00	12,155.00	-81.75	1,186.38	-91.27	0.00	0.00	0.00
[EnderWggns#13H]FTP									
12,275.00	2.22	359.54	12,173.50	-81.39	1,186.38	-90.91	12.00	12.00	0.00
12,300.00	5.22	359.54	12,198.45	-79.77	1,186.36	-89.29	12.00	12.00	0.00
12,325.00	8.22	359.54	12,223.27	-76.84	1,186.34	-86.37	12.00	12.00	0.00
12,350.00	11.22	359.54	12,247.91	-72.62	1,186.31	-82.15	12.00	12.00	0.00
12,375.00	14.22	359.54	12,272.29	-67.12	1,186.26	-76.64	12.00	12.00	0.00
12,400.00	17.22	359.54	12,296.35	-60.35	1,186.21	-69.87	12.00	12.00	0.00
12,425.00	20.22	359.54	12,320.03	-52.32	1,186.15	-61.85	12.00	12.00	0.00
12,450.00	23.22	359.54	12,343.25	-43.07	1,186.07	-52.59	12.00	12.00	0.00
12,475.00	26.22	359.54	12,365.96	-32.62	1,185.99	-42.14	12.00	12.00	0.00
12,500.00	29.22	359.54	12,388.09	-20.99	1,185.90	-30.51	12.00	12.00	0.00
12,525.00	32.22	359.54	12,409.58	-8.22	1,185.79	-17.74	12.00	12.00	0.00
12,550.00	35.22	359.54	12,430.37	5.65	1,185.68	-3.87	12.00	12.00	0.00
12,575.00	38.22	359.54	12,450.40	20.60	1,185.56	11.08	12.00	12.00	0.00
12,600.00	41.22	359.54	12,469.63	36.57	1,185.44	27.05	12.00	12.00	0.00

Company:	Marathon Oil	**Local Co-ordinate Reference:**	Well WC 13H
Project:	Lea County, NM	**TVD Reference:**	well @ 3357.00usft
Site:	Ender Wiggins FC 25-34-14 (6-11-13)	**MD Reference:**	well @ 3357.00usft
Well:	WC 13H	**North Reference:**	Grid
Wellbore:	OH	**Survey Calculation Method:**	Minimum Curvature
Design:	Prelim Plan C	**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)
12,625.00	44.22	359.54	12,488.00	53.53	1,185.30	44.01	12.00	12.00	0.00
12,650.00	47.22	359.54	12,505.45	71.43	1,185.16	61.91	12.00	12.00	0.00
12,675.00	50.22	359.54	12,521.94	90.21	1,185.01	80.69	12.00	12.00	0.00
12,700.00	53.22	359.54	12,537.42	109.83	1,184.85	100.32	12.00	12.00	0.00
12,725.00	56.22	359.54	12,551.86	130.24	1,184.69	120.72	12.00	12.00	0.00
12,750.00	59.22	359.54	12,565.21	151.37	1,184.52	141.86	12.00	12.00	0.00
12,775.00	62.22	359.54	12,577.44	173.18	1,184.35	163.66	12.00	12.00	0.00
12,800.00	65.22	359.54	12,588.50	195.59	1,184.17	186.08	12.00	12.00	0.00
12,825.00	68.22	359.54	12,598.38	218.55	1,183.99	209.04	12.00	12.00	0.00
12,850.00	71.22	359.54	12,607.05	242.00	1,183.80	232.48	12.00	12.00	0.00
12,875.00	74.22	359.54	12,614.47	265.87	1,183.61	256.35	12.00	12.00	0.00
12,900.00	77.22	359.54	12,620.64	290.09	1,183.42	280.58	12.00	12.00	0.00
12,925.00	80.22	359.54	12,625.53	314.60	1,183.22	305.09	12.00	12.00	0.00
12,950.00	83.22	359.54	12,629.13	339.34	1,183.03	329.83	12.00	12.00	0.00
12,975.00	86.22	359.54	12,631.43	364.23	1,182.83	354.72	12.00	12.00	0.00
13,000.00	89.22	359.54	12,632.42	389.21	1,182.63	379.70	12.00	12.00	0.00
13,010.64	90.50	359.54	12,632.45	399.85	1,182.54	390.34	12.00	12.00	0.00
13,100.00	90.50	359.54	12,631.67	489.20	1,181.83	479.69	0.00	0.00	0.00
13,200.00	90.50	359.54	12,630.80	589.19	1,181.04	579.69	0.00	0.00	0.00
13,300.00	90.50	359.54	12,629.93	689.18	1,180.24	679.69	0.00	0.00	0.00
13,400.00	90.50	359.54	12,629.06	789.18	1,179.44	779.68	0.00	0.00	0.00
13,500.00	90.50	359.54	12,628.20	889.17	1,178.65	879.68	0.00	0.00	0.00
13,600.00	90.50	359.54	12,627.33	989.16	1,177.85	979.68	0.00	0.00	0.00
13,700.00	90.50	359.54	12,626.46	1,089.16	1,177.05	1,079.67	0.00	0.00	0.00
13,800.00	90.50	359.54	12,625.59	1,189.15	1,176.26	1,179.67	0.00	0.00	0.00
13,900.00	90.50	359.54	12,624.72	1,289.14	1,175.46	1,279.66	0.00	0.00	0.00
14,000.00	90.50	359.54	12,623.85	1,389.14	1,174.66	1,379.66	0.00	0.00	0.00
14,100.00	90.50	359.54	12,622.98	1,489.13	1,173.87	1,479.66	0.00	0.00	0.00
14,200.00	90.50	359.54	12,622.11	1,589.12	1,173.07	1,579.65	0.00	0.00	0.00
14,300.00	90.50	359.54	12,621.24	1,689.12	1,172.27	1,679.65	0.00	0.00	0.00
14,400.00	90.50	359.54	12,620.37	1,789.11	1,171.48	1,779.65	0.00	0.00	0.00
14,500.00	90.50	359.54	12,619.51	1,889.10	1,170.68	1,879.64	0.00	0.00	0.00
14,600.00	90.50	359.54	12,618.64	1,989.09	1,169.89	1,979.64	0.00	0.00	0.00
14,700.00	90.50	359.54	12,617.77	2,089.09	1,169.09	2,079.63	0.00	0.00	0.00
14,800.00	90.50	359.54	12,616.90	2,189.08	1,168.29	2,179.63	0.00	0.00	0.00
14,900.00	90.50	359.54	12,616.03	2,289.07	1,167.50	2,279.63	0.00	0.00	0.00
15,000.00	90.50	359.54	12,615.16	2,389.07	1,166.70	2,379.62	0.00	0.00	0.00
15,100.00	90.50	359.54	12,614.29	2,489.06	1,165.90	2,479.62	0.00	0.00	0.00
15,200.00	90.50	359.54	12,613.42	2,589.05	1,165.11	2,579.62	0.00	0.00	0.00
15,300.00	90.50	359.54	12,612.55	2,689.05	1,164.31	2,679.61	0.00	0.00	0.00
15,400.00	90.50	359.54	12,611.69	2,789.04	1,163.51	2,779.61	0.00	0.00	0.00
15,500.00	90.50	359.54	12,610.82	2,889.03	1,162.72	2,879.60	0.00	0.00	0.00
15,600.00	90.50	359.54	12,609.95	2,989.02	1,161.92	2,979.60	0.00	0.00	0.00

Company:	Marathon Oil	**Local Co-ordinate Reference:**	Well WC 13H
Project:	Lea County, NM	**TVD Reference:**	well @ 3357.00usft
Site:	Ender Wiggins FC 25-34-14 (6-11-13)	**MD Reference:**	well @ 3357.00usft
Well:	WC 13H	**North Reference:**	Grid
Wellbore:	OH	**Survey Calculation Method:**	Minimum Curvature
Design:	Prelim Plan C	**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)
15,700.00	90.50	359.54	12,609.08	3,089.02	1,161.12	3,079.60	0.00	0.00	0.00
15,800.00	90.50	359.54	12,608.21	3,189.01	1,160.33	3,179.59	0.00	0.00	0.00
15,900.00	90.50	359.54	12,607.34	3,289.00	1,159.53	3,279.59	0.00	0.00	0.00
16,000.00	90.50	359.54	12,606.47	3,389.00	1,158.74	3,379.59	0.00	0.00	0.00
16,100.00	90.50	359.54	12,605.60	3,488.99	1,157.94	3,479.58	0.00	0.00	0.00
16,200.00	90.50	359.54	12,604.73	3,588.98	1,157.14	3,579.58	0.00	0.00	0.00
16,300.00	90.50	359.54	12,603.87	3,688.98	1,156.35	3,679.57	0.00	0.00	0.00
16,400.00	90.50	359.54	12,603.00	3,788.97	1,155.55	3,779.57	0.00	0.00	0.00
16,500.00	90.50	359.54	12,602.13	3,888.96	1,154.75	3,879.57	0.00	0.00	0.00
16,600.00	90.50	359.54	12,601.26	3,988.96	1,153.96	3,979.56	0.00	0.00	0.00
16,700.00	90.50	359.54	12,600.39	4,088.95	1,153.16	4,079.56	0.00	0.00	0.00
16,800.00	90.50	359.54	12,599.52	4,188.94	1,152.36	4,179.55	0.00	0.00	0.00
16,900.00	90.50	359.54	12,598.65	4,288.93	1,151.57	4,279.55	0.00	0.00	0.00
17,000.00	90.50	359.54	12,597.78	4,388.93	1,150.77	4,379.55	0.00	0.00	0.00
17,100.00	90.50	359.54	12,596.91	4,488.92	1,149.97	4,479.54	0.00	0.00	0.00
17,200.00	90.50	359.54	12,596.05	4,588.91	1,149.18	4,579.54	0.00	0.00	0.00
17,300.00	90.50	359.54	12,595.18	4,688.91	1,148.38	4,679.54	0.00	0.00	0.00
17,400.00	90.50	359.54	12,594.31	4,788.90	1,147.58	4,779.53	0.00	0.00	0.00
17,500.00	90.50	359.54	12,593.44	4,888.89	1,146.79	4,879.53	0.00	0.00	0.00
17,600.00	90.50	359.54	12,592.57	4,988.89	1,145.99	4,979.52	0.00	0.00	0.00
17,700.00	90.50	359.54	12,591.70	5,088.88	1,145.20	5,079.52	0.00	0.00	0.00
17,800.00	90.50	359.54	12,590.83	5,188.87	1,144.40	5,179.52	0.00	0.00	0.00
17,900.00	90.50	359.54	12,589.96	5,288.87	1,143.60	5,279.51	0.00	0.00	0.00
18,000.00	90.50	359.54	12,589.09	5,388.86	1,142.81	5,379.51	0.00	0.00	0.00
18,100.00	90.50	359.54	12,588.23	5,488.85	1,142.01	5,479.51	0.00	0.00	0.00
18,200.00	90.50	359.54	12,587.36	5,588.84	1,141.21	5,579.50	0.00	0.00	0.00
18,300.00	90.50	359.54	12,586.49	5,688.84	1,140.42	5,679.50	0.00	0.00	0.00
18,400.00	90.50	359.54	12,585.62	5,788.83	1,139.62	5,779.49	0.00	0.00	0.00
18,500.00	90.50	359.54	12,584.75	5,888.82	1,138.82	5,879.49	0.00	0.00	0.00
18,600.00	90.50	359.54	12,583.88	5,988.82	1,138.03	5,979.49	0.00	0.00	0.00
18,700.00	90.50	359.54	12,583.01	6,088.81	1,137.23	6,079.48	0.00	0.00	0.00
18,800.00	90.50	359.54	12,582.14	6,188.80	1,136.43	6,179.48	0.00	0.00	0.00
18,900.00	90.50	359.54	12,581.27	6,288.80	1,135.64	6,279.48	0.00	0.00	0.00
19,000.00	90.50	359.54	12,580.40	6,388.79	1,134.84	6,379.47	0.00	0.00	0.00
19,100.00	90.50	359.54	12,579.54	6,488.78	1,134.04	6,479.47	0.00	0.00	0.00
19,200.00	90.50	359.54	12,578.67	6,588.77	1,133.25	6,579.46	0.00	0.00	0.00
19,300.00	90.50	359.54	12,577.80	6,688.77	1,132.45	6,679.46	0.00	0.00	0.00
19,400.00	90.50	359.54	12,576.93	6,788.76	1,131.66	6,779.46	0.00	0.00	0.00
19,500.00	90.50	359.54	12,576.06	6,888.75	1,130.86	6,879.45	0.00	0.00	0.00
19,600.00	90.50	359.54	12,575.19	6,988.75	1,130.06	6,979.45	0.00	0.00	0.00
19,700.00	90.50	359.54	12,574.32	7,088.74	1,129.27	7,079.45	0.00	0.00	0.00
19,800.00	90.50	359.54	12,573.45	7,188.73	1,128.47	7,179.44	0.00	0.00	0.00
19,900.00	90.50	359.54	12,572.58	7,288.73	1,127.67	7,279.44	0.00	0.00	0.00

Company:	Marathon Oil	**Local Co-ordinate Reference:**	Well WC 13H
Project:	Lea County, NM	**TVD Reference:**	well @ 3357.00usft
Site:	Ender Wiggins FC 25-34-14 (6-11-13)	**MD Reference:**	well @ 3357.00usft
Well:	WC 13H	**North Reference:**	Grid
Wellbore:	OH	**Survey Calculation Method:**	Minimum Curvature
Design:	Prelim Plan C	**Database:**	WellPlanner1

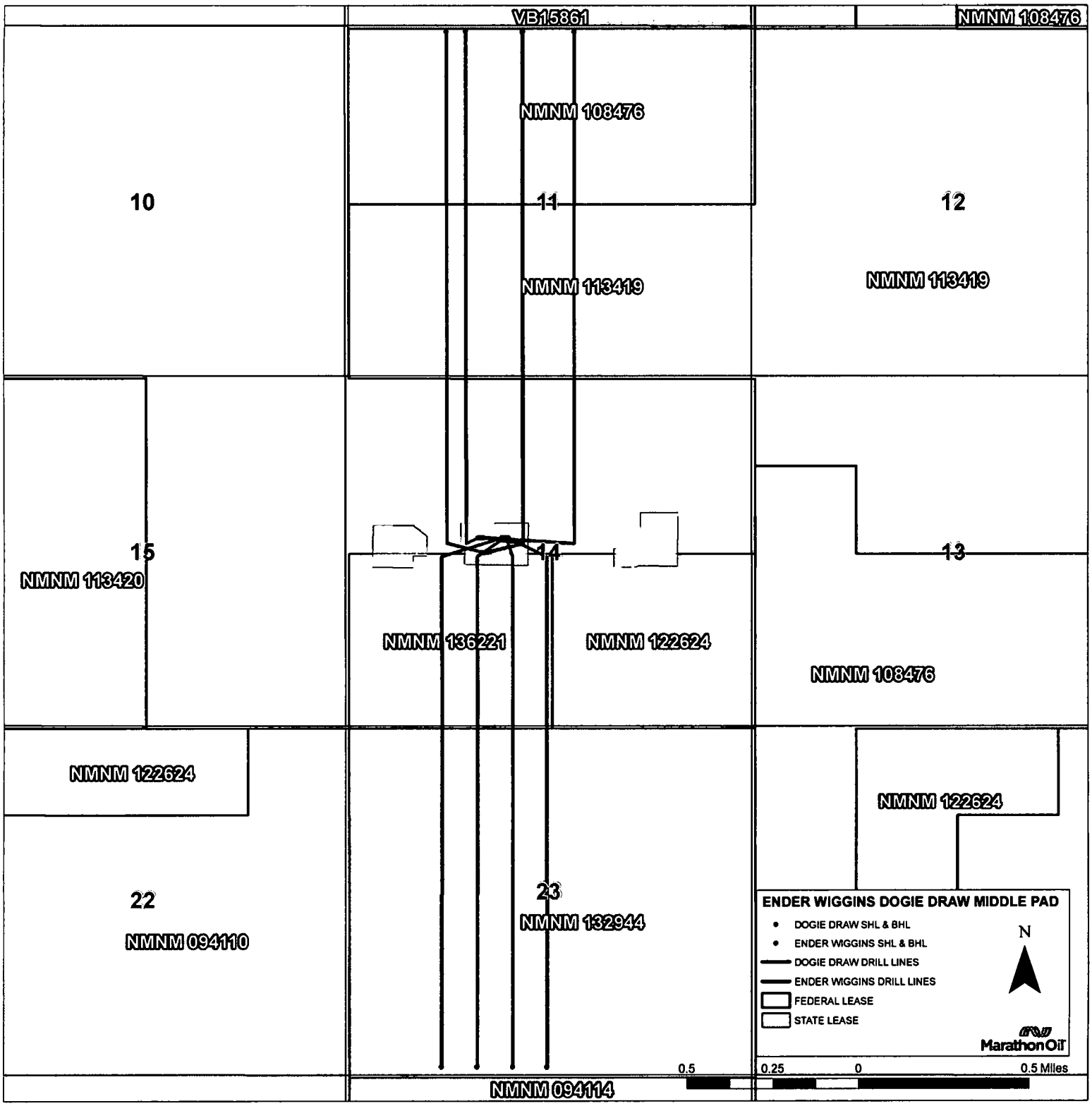
Planned Survey

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)
20,000.00	90.50	359.54	12,571.72	7,388.72	1,126.88	7,379.43	0.00	0.00	0.00
20,100.00	90.50	359.54	12,570.85	7,488.71	1,126.08	7,479.43	0.00	0.00	0.00
20,200.00	90.50	359.54	12,569.98	7,588.71	1,125.28	7,579.43	0.00	0.00	0.00
20,246.93	90.50	359.54	12,569.57	7,635.63	1,124.91	7,626.35	0.00	0.00	0.00
[EnderWggns#13H]LTP/BHL									

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
[EnderWggns#13H]FTP - plan hits target center - Point	0.00	0.00	12,155.00	-81.75	1,186.38	412,395.51	776,789.48	32.130634	-103.439195
[EnderWggns#13H]LTP/BHL - plan hits target center - Point	0.00	0.00	12,569.57	7,635.63	1,124.91	420,112.89	776,728.01	32.151848	-103.439186

Checked By: _____ Approved By: _____ Date: _____


VB15861
NMNM 108476
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10
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13
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NMNM 122624
NMNM 108476
NMNM 122624
NMNM 122624
22
NMNM 094110
23
NMNM 132944
ENDER WIGGINS DOGIE DRAW MIDDLE PAD
DOGIE DRAW SHL & BHL
ENDER WIGGINS SHL & BHL
DOGIE DRAW DRILL LINES
ENDER WIGGINS DRILL LINES
FEDERAL LEASE
STATE LEASE
N
MarathonOil
0.5
0.25
0
0.5 Miles
NMNM 094114

Batch Drilling Plan

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

Request for Surface Rig

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

AFMSS

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

PWD Data Report

01/17/2020

APD ID: 10400029696 **Submission Date:** 05/09/2018

Operator Name: MARATHON OIL PERMIAN LLC

Well Name: ENDER WIGGINS F C 25 34 14 WC **Well Number:** 13H

Well Type: CONVENTIONAL GAS WELL **Well Work Type:** Drill

Section 1 - General

Would you like to address long-term produced water disposal? NO

Section 2 - Lined Pits

Would you like to utilize Lined Pit PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner: **PWD disturbance (acres):**

Lined pit PWD on or off channel:

Lined pit PWD discharge volume (bbl/day):

Lined pit specifications:

Pit liner description:

Pit liner manufacturers information:

Precipitated solids disposal:

Decribe precipitated solids disposal:

Precipitated solids disposal permit:

Lined pit precipitated solids disposal schedule:

Lined pit precipitated solids disposal schedule attachment:

Lined pit reclamation description:

Lined pit reclamation attachment:

Leak detection system description:

Leak detection system attachment:

Operator Name: MARATHON OIL PERMIAN LLC

Well Name: ENDER WIGGINS F C 25 34 14 WC **Well Number:** 13H

Lined pit Monitor description:

Lined pit Monitor attachment:

Lined pit: do you have a reclamation bond for the pit?

Is the reclamation bond a rider under the BLM bond?

Lined pit bond number:

Lined pit bond amount:

Additional bond information attachment:

Section 3 - Unlined Pits

Would you like to utilize Unlined Pit PWD options? NO

Produced Water Disposal (PWD) Location:

PWD disturbance (acres): **PWD surface owner:**

Unlined pit PWD on or off channel:

Unlined pit PWD discharge volume (bbl/day):

Unlined pit specifications:

Precipitated solids disposal:

Decribe precipitated solids disposal:

Precipitated solids disposal permit:

Unlined pit precipitated solids disposal schedule:

Unlined pit precipitated solids disposal schedule attachment:

Unlined pit reclamation description:

Unlined pit reclamation attachment:

Unlined pit Monitor description:

Unlined pit Monitor attachment:

Do you propose to put the produced water to beneficial use?

Beneficial use user confirmation:

Estimated depth of the shallowest aquifer (feet):

Does the produced water have an annual average Total Dissolved Solids (TDS) concentration equal to or less than that of the existing water to be protected?

TDS lab results:

Geologic and hydrologic evidence:

State authorization:

Unlined Produced Water Pit Estimated percolation:

Unlined pit: do you have a reclamation bond for the pit?

Operator Name: MARATHON OIL PERMIAN LLC

Well Name: ENDER WIGGINS F C 25 34 14 WC **Well Number:** 13H

Is the reclamation bond a rider under the BLM bond?

Unlined pit bond number:

Unlined pit bond amount:

Additional bond information attachment:

Section 4 - Injection

Would you like to utilize Injection PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner: **PWD disturbance (acres):**

Injection PWD discharge volume (bbl/day):

Injection well mineral owner:

Injection well type:

Injection well number: **Injection well name:**

Assigned injection well API number? **Injection well API number:**

Injection well new surface disturbance (acres):

Minerals protection information:

Mineral protection attachment:

Underground Injection Control (UIC) Permit?

UIC Permit attachment:

Section 5 - Surface Discharge

Would you like to utilize Surface Discharge PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner: **PWD disturbance (acres):**

Surface discharge PWD discharge volume (bbl/day):

Surface Discharge NPDES Permit?

Surface Discharge NPDES Permit attachment:

Surface Discharge site facilities information:

Surface discharge site facilities map:

Section 6 - Other

Would you like to utilize Other PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner: **PWD disturbance (acres):**

Other PWD discharge volume (bbl/day):

Operator Name: MARATHON OIL PERMIAN LLC

Well Name: ENDER WIGGINS F C 25 34 14 WC **Well Number:** 13H

Other PWD type description:

Other PWD type attachment:

Have other regulatory requirements been met?

Other regulatory requirements attachment:

AFMSS

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

Bond Info Data Report

01/17/2020

APD ID: 10400029696

Submission Date: 05/09/2018

Operator Name: MARATHON OIL PERMIAN LLC

Well Name: ENDER WIGGINS F C 25 34 14 WC

Well Number: 13H

Show Final Text

Well Type: CONVENTIONAL GAS WELL

Well Work Type: Drill

Bond Information

Federal/Indian APD: FED

BLM Bond number: NMB001555

BIA Bond number:

Do you have a reclamation bond? NO

Is the reclamation bond a rider under the BLM bond?

Is the reclamation bond BLM or Forest Service?

BLM reclamation bond number:

Forest Service reclamation bond number:

Forest Service reclamation bond attachment:

Reclamation bond number:

Reclamation bond amount:

Reclamation bond rider amount:

Additional reclamation bond information attachment: