

District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, Artesia, NM 88210
District III
1000 Rio Brazos Rd., Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy, Minerals & Natural Resources

Form C-101
May 27, 2004

RECEIVED

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

DEC 20 2005

Submit to appropriate District Office

UUL-ARTESIA

☐ AMENDED REPORT

APPLICATION FOR PERMIT TO DRILL, RE-ENTER, DEEPEN, PLUGBACK, OR ADD A ZONE

¹ Operator Name and Address Marathon Oil Company P.O. Box 3487 Houston, TX 77253-3487		² OGRID Number 14021
		³ API Number 30- 30-015-31655
⁴ Property Code 006409	⁵ Property Name Indian Hills Unit	⁶ Well No. 30
⁹ Proposed Pool 1 Indian Basin Wildcat Mississippian		¹⁰ Proposed Pool 2

⁷ Surface Location

UL or lot no.	Section	Township	Range	Lot. Idn	Feet from the	North/South Line	Feet from the	East/West line	County
L	20	21-S	24-E		1494'	South	688'	West	Eddy

⁸ Proposed 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
F	20	21-S	24-E		1493'	North	1523'	West	Eddy

Additional Well Location

¹¹ Work Type Code A	¹² Well Type Code G	¹³ Cable/Rotary	¹⁴ Lease Type Code Federal	¹⁵ Ground Level Elevation 3791'
¹⁶ Multiple N	¹⁷ Proposed Depth	¹⁸ Formation	¹⁹ Contractor	²⁰ Spud Date
Depth to ground water		Distance from nearest fresh water well		Distance from nearest surface water
Pit: Liner: Synthetic <input type="checkbox"/> _____ mils thick Clay <input type="checkbox"/> Pit Volume _____ bbls Drilling Method:				
Closed-Loop System <input type="checkbox"/> Fresh Water <input type="checkbox"/> Brine <input type="checkbox"/> Diesel/Oil-based <input type="checkbox"/> Gas/Air <input type="checkbox"/>				

²¹ Proposed Casing and Cement Program

Hole Size	Casing Size	Casing weight/foot	Setting Depth	Sacks of Cement	Estimated TOC
17 1/2"	13 3/8"	54.5 #	1200'	1250 sks	Surface
12 1/4"	9 5/8"	40 # & 53.5 #	8900'	2610 sks	Surface
8 1/2"	7"	26 #	8026'-10748'	350 sks	8026'

²² Describe the proposed program. If this application is to DEEPEN or PLUG BACK, give the data on the present productive zone and proposed new productive zone. Describe the blowout prevention program, if any. Use additional sheets if necessary.

Marathon Oil Company is proposing to re-complete the Indian Hills Unit No. 30 in the Mississippian formation with perforations between 10351' to 10540' as a test of this formation for economic viability. Please see attached proposed procedures.

Marathon is requesting that details of this application be held as confidential for as long as is possible.

CONFIDENTIAL

Please refer to NMCD Rule 1105

²³ I hereby certify that the information given above is true and complete to the best of my knowledge and belief. I further certify that the drilling pit will be constructed according to NMCD guidelines ☐ a general permit ☐, or an (attached) alternative OCD-approved plan ☐.
Signature: *Charles E. Kendrick*

Printed name: **Charles E. Kendrick**

Title: **Engineering Technician**

E-mail Address: **cekendrix@marathonoil.com**

Date: **12/16/2005**

Phone: **713-296-2096**

[Signature] OIL CONSERVATION DIVISION

Approved by:

Title:

Approval Date: **DEC 30 2005**

Expiration Date: **DEC 30 2006**

Conditions of Approval:

Attached ☐

District I
1625 N. French Dr., Hobbs, NM 88240

District II
1301 W. Grand Avenue, Artesia, NM 88210

District III
1000 Rio Brazos Rd., Aztec, NM 87410

District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy, Minerals & Natural Resources

OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-102
Revised June 10, 2003

Submit to Appropriate District Office
State Lease - 4 Copies
Fee Lease - 3 Copies

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-015-31655	² Pool Code WC	³ Pool Name Indian Basing Mississippi Wildcat
⁴ Property Code 006409	⁵ Property Name Indian Hills Unit	
⁶ Well Number 30	⁷ OGRID No. 14021	
⁸ Operator Name Marathon Oil Company		⁹ Elevation 3791'

¹⁰ Surface Location

UL or lot no. L	Section 20	Township 21-S	Range 24-E	Lot. Idn	Feet from the 1494'	North/South line South	Feet from the 688'	East/West line West	County Eddy
---------------------------	----------------------	-------------------------	----------------------	----------	-------------------------------	----------------------------------	------------------------------	-------------------------------	-----------------------

¹¹ Bottom Hole Location If Different From Surface

UL or lot no. F	Section 20	Township 21-S	Range 24-E	Lot. Idn	Feet from the 1493'	North/South line North	Feet from the 1523'	East/West line West	County Eddy
¹² Dedicated Acres 320	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.						

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

	¹⁷ OPERATOR CERTIFICATION I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief. <u>Charles E. Kendrick</u> Signature Charles E. Kendrick Printed Name Engineering Technician cekendrix@marathonoil.com Title and E-mail Address 12/16/2005 Date
	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 Surveyer: Certificate Number

Procedure to Perforate and Acid Frac Mississippian Lime Formation

INDIAN HILLS UNIT #30 Former Devonian Formation SWD

Surface Location: 1,494' FSL & 688' FWL, Section 20, T-21-S, R-24-E
Devonian Bottom Hole Location: 1,050' FNL & 1,930' FWL, Sec. 20, T-21-S, R-24-E
Indian Basin Field, Eddy Co, NM

Date: December 07, 2005
Purpose: Perforate and acid frac Mississippian Lime Formation for production test
Current Status: Inactive. Devonian formation SWD cement squeezed on 11/5/05 and 11/29/05.

Elevation/Depths: GL: 3,791' KB: 3,817' TD: 11,443' PBTD: 10,600'

Perforations: Morrow Perforations (Squeezed 8/22/02 with 40 sks cement):
9866-9887', 9958-9966', 9969-9982'

Devonian SWD Open Hole
(Squeezed 11/5/05 and 11/29/05 with 285 sks cement): 10,748-11,443'

Pressure Information: Mississippian Lime – ~4,900 psi BHP

General Procedure:

1. Check well for pressure. ND wellhead tree. NU Frac Valve and flow cross. RU pump truck.
2. MIRU flow testers with 10,000# manifold with hardlines going to flow-back tank and production equipment.
3. RU Baker Atlas Logging Truck and Mast Truck. RU frac valve, equalizing line, and 5K lubricator w/ grease injection, pump-in sub, WL BOPs, and blowdown sub. Pressure test the frac valve and lubricator to 5,000 psi. Check wellhead for stray current and voltage. Gamma ray correlate the first run to the Schlumberger Open Hole Litho-Density Compensated Neutron log dated 7/13/2001. POOH.

Note: Pump truck should be rigged up so the 5K lubricator can be isolated while testing the 7" production liner.

4. Perforate the following intervals using 4.5" Predator XP Hollow Carrier system firing 39 gram Predator 4539 charges @ 2JSPF at 120 degree phasing.

<u>INTERVAL</u>	<u>FEET</u>	<u>Gun Number</u>	<u># of Holes</u>
10351'-10371'	20'	1	40

Indian Hills Unit #30 – 12/2005 Perforate and Acid Frac Mississippian Lime Formation

Page 2 of 3

10406'-10416'	10'	2	20
10514'-10540'	<u>26'</u>	<u>3</u>	<u>52</u>
TOTALS:	56'	3 Guns	112 Holes

Note: The well is loaded with fresh water (8.33 ppg) and the reservoir pressure is estimated at 4,900 psig, so perforations will be shot ~400 psig under-balanced assuming mid-perforation interval of 10,445'.

5. RDMO Baker Atlas.

Stage 1 – Lower Mississippian Lime

6. Marathon Rig Supervisor & Workover Rig Supervisor will inspect the well & location prior to rigging up. Perform all necessary Lock-out/Tag-out to properly secure well. Make sure all associated personnel have proper PPE for the proposed job. Isolate pressure shutdowns. If warranted, test safety anchors to 22,500 lbs.
7. MIRU Workover Rig. Remove all well-control equipment & store properly. Install 11", 3M hydraulic BOPs w/ 3-1/2" pipe rams & blind rams (equipped w/ valved outlets below blinds). Test pipe rams & blind rams to 250 & 1,000 psig.
8. Close blind rams to isolate lubricator from the well. Pressure test casing and BOPs to 5,000 psig.
9. Make sure Geronimo line is staked securely, H₂S monitors are in place, guardrails are in place, & the unit is properly grounded to the wellhead.
10. Spot five 500 bbl frac tanks and fill tanks with treated fresh water.
11. PU 6-1/8" bit and scraper and 3-1/2", 9.3#, 8rd EUE workstring, strapping in hole to tag TOC at 10,600'. POOH with 3-1/2" workstring and lay down 6-1/8" bit and scraper.
12. PU 7" RBP on 7" x 3-1/2" RTTS packer and profile nipple and RIH on 3-1/2", 9.3#, 8rd EUE workstring to tag TOC at 10,600'. PU to 10,590' and set RBP. PU 10' and set RTTS packer at 10,580'. Test RBP to 6,000 psig surface pressure. Release RTTS packer, strap out of hole to 10,450'.
13. RU Halliburton and pump 1,000 gallons of 15% HCL pickling acid. Reverse out spent acid. Set RTTS packer at 10,450'.
14. MIRU Halliburton and ProTechnics (for completion diagnostics tracer). Conduct onsite fluid tests. Hold pre-frac safety meeting. Pressure test surface lines to >10,000 psig. Set pump trips to 7,500 psig. Hydrotest tubing to 9,000 psig surface pressure while going in the hole. Retrieve standing valve. Test casing annulus to 500 psig (Note: Do not exceed 500 psig surface pressure on casing annulus at any time during the job). After pumping 5,000 gallons of Treated Water pad, acid frac the perforated interval 10514' – 10,540' with 6,000 gallons of 15% Zonal Coverage Acid 15/II and 6,000 gallons of 15% Carbonate Completion Acid Sour in alternating stages. Flush acid with 3,000 gallons of treated water. (Note 1: See attached Halliburton stimulation recommendation dated 12/5/05; Note 2: See attached ProTechnics Completion Diagnostics Proposal dated 12/7/05.)

Stage 2 – Upper Mississippian Lime

15. Release RTTS packer. RIH and release RBP at 10,590'. Strap out of hole to 10,450' and set RBP. PU 10' and set RTTS packer at 10,440'. Test RBP to 6,000 psig surface pressure. Release RTTS packer,

strap out of hole to 10,300' and set RTTS packer at 10,300'.

16. RU Halliburton and ProTechnics (for completion diagnostics tracer). Pump 5,000 gallon pad of Treated Water, then acid frac the perforated intervals 10351'-10371' and 10406'-10416' with 9,000 gallons of 15% Zonal Coverage Acid 15/II and 9,000 gallons of 15% CCA Sour in alternating stages. Flush acid with 3,000 gallons of treated water. (Note: See attached Halliburton stimulation recommendation dated 12/5/05; Note 2: See attached ProTechnics Completion Diagnostics Proposal dated 12/7/05.)
17. Release RTTS packer and RIH to RBP at 10,450'. Release RBP. POOH and lay down RBP and RTTS packer.
18. RIH with 7" x 3 1/2" production packer and set packer at 10,440'.
19. Land tubing in seaboard head. Remove BOP's and NU wellhead.
20. RU swab lubricator and run swab line to frac tank. Swab frac fluids back to frac tank and kick well off to production. RD swab lubricator.
21. RDMO Pulling Unit. Record types & volumes of fluids pumped for well control throughout job.
22. Allow up to six weeks for well to clean up and recover all frac fluids. MIRU slickline unit. MIRU ProTechnics. Gamma ray correlate the first run to the Schlumberger Open Hole Litho-Density Compensated Neutron log dated 7/13/2001. Run Frac Tracer Profile to determine frac height. Depending on productivity of the well, a production profile log may also be run simultaneously.