

State of New Mexico
Energy, Minerals & Natural Resources

Form C-101
March 4, 2004

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

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

RECEIVED

AUG 19 2004

Submit to appropriate District Office
State Lease - 6 Copies
Fee Lease - 5 Copies
OCD-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 Texas 77253-3487		² OGRID Number 14021 ✓
⁴ Property Code 006403 ✓		³ API Number 30- 015-00037
⁵ Property Name Indian Basin Gas Com		⁶ Well No. 1

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
E	23	21-S	23-E		1980'	North	660'	East West	Edy

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
⁹ Proposed Pool 1 Indian Basin Morrow (78960) ✓					¹⁰ Proposed Pool 2				

Drilling Pit Location and Other Information

UL or lot no.	Section	Township	Range	Lot. Idn	Feet from the	North/South Line	Feet from the	East/West line	County
Depth to ground water				Distance from nearest fresh water well			Distance from nearest surface water		
¹¹ Work Type Code P		¹² Well Type Code S		¹³ Cable/Rotary N/A		¹⁴ Lease Type Code Federal		¹⁵ Ground Level Elevation 3832'	
¹⁶ Multiple N		¹⁷ Proposed Depth 9800		¹⁸ Formation Morrow		¹⁹ Contractor		²⁰ Spud Date 05/29/1963	

²¹ Proposed Casing and Cement Program

Hole Size	Casing Size	Casing weight/foot	Setting Depth	Sacks of Cement	Estimated TOC
12 1/4"	9 5/8"	32#	2250'	1000	0
7 13/16"	7"	26#	10100'	1350	6070'

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 is proposing to permanently plug back the Devonian zone in the Indian Basin Gas Com No.1. The well is currently producing Morrow gas up the casing annulus through perfs that were previously squeezed. Marathon proposes to plug the Devonian with a CIBP at 10000' topped with 200' cement. Marathon will recompleate the well to the Morrow. The Morrow zone will be produced through the tubing under a packer with the squeezed Upper Penn and Wolfcamp perfs isolated behind the packer. Please see attachments for a work-over procedure & wellbore diagrams for before & after the plug back.

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 NMOCD guidelines <input type="checkbox"/> a general permit <input type="checkbox"/> , or an (attached) alternative OCD-approved plan <input type="checkbox"/> .		OIL CONSERVATION DIVISION	
Signature: <i>Charles E. Kendrick</i>		Approved by: TIM W. GUM	
Printed name: Charles E. Kendrick		Title: DISTRICT II SUPERVISOR	
Title: Engineering Technician		Approval Date: SEP 02 2004 Expiration Date: SEP 02 2005	
E-mail Address: cekendrix@MarathonOil.com		Conditions of Approval: Oper. To squeeze ON Devonian	
Date: 08/09/2004	Phone: 713-296-2096	Attached <input type="checkbox"/>	

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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 30-015-00037		² Pool Code 78960		³ Pool Name Indian Basin Morrow	
⁴ Property Code 006403		⁵ Property Name Indian Basin Gas Com			⁶ Well Number 1
⁷ OGRID No. 14021		⁸ Operator Name Marathon Oil Company			⁹ Elevation 3832

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
E	23	21-S	R-23		1980'	North	660'	West	Eddy

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

¹² Dedicated Acres 640	¹³ Joint or Infill N	¹⁴ Consolidation Code	¹⁵ Order No.
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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

¹⁶ 	<p>RECEIVED AUG 19 2004 JUL-ARTESIA</p>			¹⁷ OPERATOR CERTIFICATION I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief. Signature	
				Printed Name Charles E. Kendrick Engineering Technician	
				Title and E-mail Address cekendrix@MarathonOil	
				Date 08/09/2004	
			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. 08/09/2004 Date of Survey Signature and Seal of Professional Surveyer:		
			Certificate Number		

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENTFORM APPROVED
OMB NO. 1004-0135
Expires: November 30, 2000**SUNDRY NOTICES AND REPORTS ON WELLS**
*Do not use this form for proposals to drill or to re-enter an abandoned well. Use form 3160-3 (APD) for such proposals.*5. Lease Serial No.
NM0384628

6. If Indian, Allottee or Tribe Name

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

SUBMIT IN TRIPLICATE - Other instructions on reverse side.

1. Type of Well

☒ Oil Well ☐ Gas Well ☐ Other8. Well Name and No.
INDIAN BASIN GAS COM 12. Name of Operator
MARATHON OIL COMPANYContact: CHARLES KENDRIX
E-Mail: cekendrix@marathonoil.com9. API Well No.
30-015-000373a. Address
P.O. BOX 3487
HOUSTON, TX 77253-34873b. Phone No. (include area code)
Ph: 713.296.2096**RECEIVED**10. Field and Pool, or Exploratory
DEVONIAN

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)

Sec 23 T22S R23E SWNW 1980FNL 660FWL

AUG 19 2004

OCD-ARTESIA

11. County or Parish, and State
EDDY COUNTY, NM

12. CHECK APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION			
<input checked="" type="checkbox"/> Notice of Intent	<input type="checkbox"/> Acidize	<input type="checkbox"/> Deepen	<input type="checkbox"/> Production (Start/Resume)	<input type="checkbox"/> Water Shut-Off
<input type="checkbox"/> Subsequent Report	<input type="checkbox"/> Alter Casing	<input type="checkbox"/> Fracture Treat	<input type="checkbox"/> Reclamation	<input type="checkbox"/> Well Integrity
<input type="checkbox"/> Final Abandonment Notice	<input type="checkbox"/> Casing Repair	<input type="checkbox"/> New Construction	<input type="checkbox"/> Recomplete	<input type="checkbox"/> Other
	<input type="checkbox"/> Change Plans	<input type="checkbox"/> Plug and Abandon	<input type="checkbox"/> Temporarily Abandon	
	<input type="checkbox"/> Convert to Injection	<input checked="" type="checkbox"/> Plug Back	<input type="checkbox"/> Water Disposal	

13. Describe Proposed or Completed Operation (clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recompleat horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports shall be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompleat in a new interval, a Form 3160-4 shall be filed once testing has been completed. Final Abandonment Notices shall be filed only after all requirements, including reclamation, have been completed, and the operator has determined that the site is ready for final inspection.)

Marathon is proposing to plug back the Devonian SWD zone in the Indian Basin Gas Com No. 1. The well is currently being produced through the casing annulus from perforations in the Morrow reservoir due to a failed cement squeeze on this reservoir. Marathon intends to put the Morrow back into full production pending approval from the BLM and the NMOCD on plugging back the Devonian zone. If Marathon cannot get the well to meet NMOCD's casing integrity requirements, we will proceed with plugging and abandoning the well. Please see the attachments for a diagram of the wellbore before work-over and proposed wellbore after work-over.

14. I hereby certify that the foregoing is true and correct.

**Electronic Submission #34393 verified by the BLM Well Information System
For MARATHON OIL COMPANY, sent to the Carlsbad**

Name (Printed/Typed) CHARLES KENDRIX

Title AUTHORIZED REPRESENTATIVE

Signature (Electronic Submission)

Date 08/11/2004

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved By _____
Conditions of approval, if any, are attached. Approval of this notice does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.

Title

Date

Office

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.

**** OPERATOR-SUBMITTED ** OPERATOR-SUBMITTED ** OPERATOR-SUBMITTED ****



P.O. Box 3487
Houston, TX 77056-3487
Telephone: (713) 296-2096
FAX: (713) 499-6750

August 12, 2004

New Mexico Oil Conservation Division
Attn: Mr. Tim Gum
1301 Grand Avenue
Artesia, New Mexico 88210

RECEIVED

AUG 19 2004

OCD-ARTESIA

Re: Plug-Back of Indian Basin Gas Com No. 1. (Old Indian Basin Acid Gas Disposal Well)

Dear Mr. Gum,

Marathon Oil Company is planning to perform a plug-back and recompletion of the Indian Basin Gas Com. No. 1 well, located in Eddy County, New Mexico in Section 23, Township 21 South, Range 23 East. This well was previously used as an acid gas injection well into the Devonian formation (~10,100') through 3-1/2" IPC tubing. However, no acid gas has been injected since January 24, 2001 because Marathon completed a new injection well. The tubing side is shut-in and the well has been producing from the Morrow formation (~9,100) up the well's annulus, through previously squeezed Morrow perforations, since November 1, 2001 (see Attachment #1). This letter serves to provide you with a summary of our operational intentions of this plug-back and recompletion, and to request guidance on procedural requirements relating to the abandonment of the Devonian section and the subsequent casing integrity test prior to the recompletion to the Morrow.

This well is extremely close to the existing Indian Basin Gas Plant (IBGP) acid gas compressor and therefore makes workover operations very challenging due to the health, environmental, and safety issues that are inherent when working closely with high pressure, sour gas. In early October, the IBGP is planning a 5 day turnaround, offering us a timeframe in which the acid gas compressor will not be running; therefore, the proposed work on this well can be safely pursued. However, should we determine that the Devonian abandonment and Morrow recompletion cannot be completed in the 5 day window, Marathon will most likely be forced to explore the viability of permanently abandoning the well in that timeframe.

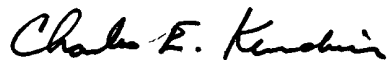
To abandon the open-hole Devonian section, Marathon intends to first pull the existing wellbore hardware, and run in the hole to set a CIBP onto which a ~200' cement plug will be set. In the interest of the short timeframe with which to work on this well, the Morrow will likely be completed with tubing conveyed perforating guns (and a foamer string to help decrease the hydraulic head on the formation). Also, a production packer will be set above the reperforated Morrow perforations and below the previously squeezed Upper Penn perforations (see Attachment #2). At this stage of the operations, Marathon intends to load the backside and pressure test the casing above the Morrow to verify its integrity, or to identify any potential perforation leaks – because we know the Morrow formation's squeezed perforations are leaking, it is prudent to test the casing only after we have isolated the Morrow under a packer to help to identify any additional leaks.

In the event that casing leaks above the Morrow are discovered, it is *this* guidance from the NMOCD office that Marathon wishes to receive. Operationally, we have 3 options that can be pursued to adequately handle any casing integrity issue. The first option, and the one preferred by Marathon, would

be to simply connect the backside to a meter, and flow it to alleviate any chance of pressure build-up. The second option would be to run in the hole with a second production packer (above the first one set in the Morrow recompletion and, most likely, above the squeezed Wolfcamp formation) to isolate the leak from the surface. The third option would be to run in the hole with a bridge plug and a packer to try to identify the true location of the leak and squeeze it. Clearly, this third option is time-prohibitive since we will not be able to plan to do this and to complete the plug-back/recompletion in the previously discussed 5 day timeframe.

In summary, Marathon would very much appreciate the opportunity to discuss with you this operation, and to get specific clarification on the rules associated with abandoning an acid gas injection formation as well as the rules associated with annular casing leaks and acceptable remediations. When you have a moment and have reviewed our letter and associated attachments, please feel free to call Marathon's Indian Basin operations engineer, Mark Mick, at 713-296-1921, if you have any questions and to schedule a conference call with our team to further discuss this issue. Mark can also be reached via e-mail at msmick@marathonoil.com.

Sincerely,

A handwritten signature in black ink that reads "Charles E. Kendrix". The signature is written in a cursive, flowing style.

Charles E. Kendrix
Engineering Technician

Summary: IBGC#1 Morrow Recompletion Procedure

CIBP with Cement Plug

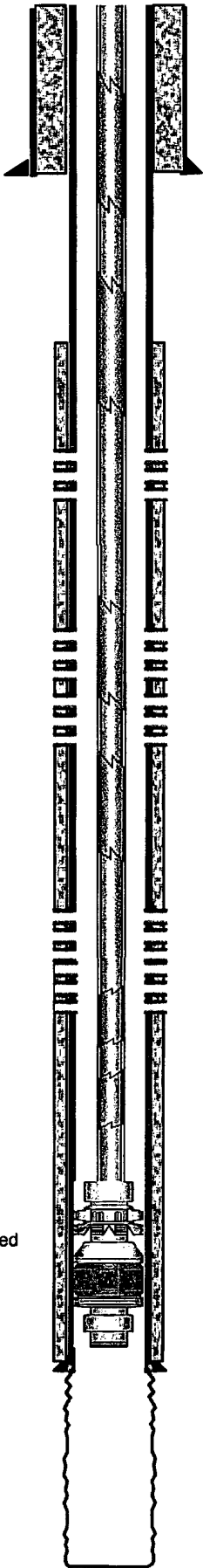
1. POOH with 3-1/2" internally coated tubing and packer
2. RU wireline. RIH with CIBP on wireline.
3. Set CIBP at ~10,000, which is 100' above 7" casing shoe.
4. Wireline dump bail ~8 bbls of cement on top of CIBP, providing a ~200' cement plug.
5. Load the well with 7% KCl water to pressure test the plug.
6. RIH with 2-3/8" tubing, foamer string, and TCP guns with propellant sleeve. On bottom of tubing have an RTTS packer, tbg. sub, 'X' profile, tbg. joint, 'XN' profile, mechanical gun release, and then TCP guns.
7. Set RTTS packer at ~8,800' (between the Upper Penn and Morrow).
8. Load the backside and pressure test the casing down the annulus to verify integrity of casing and previously squeezed perforations in the Upper Penn and Wolfcamp.
9. Perforate Morrow from ~9,039' – 9,263'.
10. Produce Morrow.



IB GC#1: Current Wellbore Configuration

Marathon Oil Company
Indian Basin Gas Com No. 1
1980' FNL 660' FWL
UL "E", Sec 23, T-21-S, R-23-E
6-Jul-04

GL: 3832' DF:3842' KB: 3843'



Surface Casing
9 5/8" Set @ 2250' w/ 1000 sks cmt

Production Casing
7" 23-26& 29# Set @ 10100' Cmtd w/ 1350 sks

Tubing 3 1/2" IPC

Top of Cement on production casing @ 6070'

Squeezed Wolfcamp perms 6574'-6768'

Squeezed Upper Penn Perfs 7376'-7538'

Squeezed Upper Penn Perfs 7670'-7764'

7670'-7674'

7681'-7688'

7710'-7718'

7725'-7727'

7736'-7740'

7748'-7754'

7760'-7764'

Squeezed Morrow Perfs 9039'-9263' (Leaking)

9039'-9049'

9199'-9207'

9227'-9235' Perf w/ 4JSPF

9238'-9246'

9251'-9263'

9227'-9263' Reshot w/ 4JSPF

Baker Model R Nickel coated
Packer set @ 9965'

Open hole Devonian SWD

TD 10438'

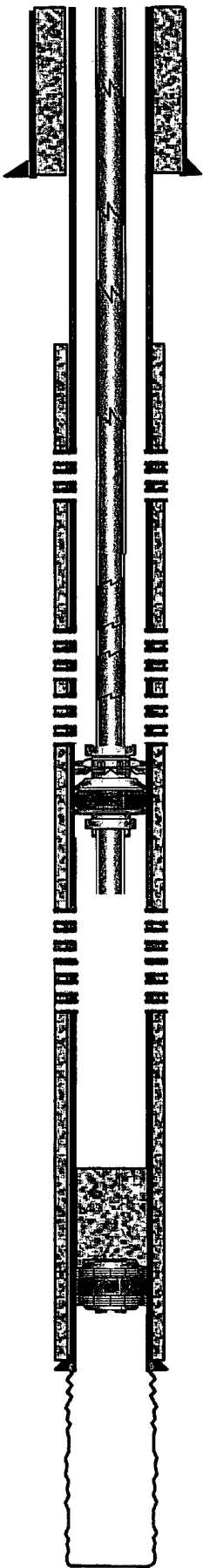
Well Name & Number:	Indian Basin Gas Com No. 1		Lease	NM 0384628		
County or Parish:	Eddy	State/Prov.	New Mexico		Country:	USA
Perforations: (MD)	See detail above		(TVD)	10438'		
Date Completed:	08/06/04				RKB:	
Prepared By:	Charles Kendrix		Last Revision Date:		08/06/04	



IB GC#1: Proposed Wellbore Configuration

Marathon Oil Company
Indian Basin Gas Com No. 1
1980' FNL 660' FWL
UL "E", Sec 23, T-21-S, R-23-E
6-Jul-04

GL: 3,832' DF:3,842' KB: 3,843'



Surface Casing
9 5/8" Set @ 2250' w/ 1,000 sks cmt

Production Casing
7" 23-26& 29# Set @ 10,100' Cmtd w/ 1350 sks

Tubing 2 3/8" IPC

Top of Cement on production casing @ 6,070'

Squeezed Wolfcamp perms 6574'-6768'

Squeezed Upper Penn Perfs 7376'-7538'

Squeezed Upper Penn Perfs 7670'-7764'

7670'-7674'	7681'-7688'
7710'-7718'	7725'-7727'
7736'-7740'	7748'-7754'
7760'-7764'	

2 3/8" x 7" PLS Packer
Set at ~8,800'

Reperforated Morrow Perfs 9039'-9263'

~200' Cement plug on
top of CIBP

Cast-Iron Bridge Plug
Set at ~10,000'

Open hole Devonian SWD

TD 10,438'

Well Name & Number:	Indian Basin Gas Com No. 1	Lease	NM 0384628		
County or Parish:	Eddy	State/Prov.	New Mexico	Country:	USA
Perforations: (MD)	See detail above	TVD:	10,438'		
Date Completed:	08/12/04	RKB:	3,843'		
Prepared By:	Mark Mick	Rev. Date	08/10/04		