

**District I**

1625 N. French Dr., Houston, TX 77002

**District II**

1301 W. Grand Avenue, Artesia, NM 88210

**District III**

1000 Rio Brazos Road, Aztec, NM 87410

**District IV**

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

State of New Mexico  
Energy Minerals and Natural Resources

Form C-101

June 16, 2008

## Oil Conservation Division

1220 South St. Francis Dr.

Santa Fe, NM 87505

Submit to appropriate District Office

☐ AMENDED REPORT**APPLICATION FOR PERMIT TO DRILL, RE-ENTER, DEEPEN, PLUGBACK, OR ADD A ZONE**

<sup>1</sup> Operator Name and Address <b>Marathon Oil Company</b> P.O. Box 3487 / Mail Stop: #3308 Houston, 77253-3487		<sup>2</sup> OGRID Number <b>14021</b>
<sup>3</sup> Property Code <b>6440</b>	<sup>5</sup> Property Name <b>McGrail State</b>	<sup>4</sup> API Number <b>30-025-33607</b>
<sup>9</sup> Proposed Pool 1 <b>Monument-Yeso-Northwest</b>		<sup>6</sup> Well No. <b>9</b>
<sup>10</sup> 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
<b>K</b>	<b>26</b>	<b>19-S</b>	<b>36-E</b>		<b>1980'</b>	<b>South</b>	<b>1650'</b>	<b>West</b>	<b>LEA</b>

**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

**Additional Well Information**

<sup>11</sup> Work Type Code <b>P</b>	<sup>12</sup> Well Type Code <b>O</b>	<sup>13</sup> Cable/Rotary	<sup>14</sup> Lease Type Code <b>S</b>	<sup>15</sup> Ground Level Elevation <b>3681'</b>
<sup>16</sup> Multiple	<sup>17</sup> Proposed Depth	<sup>18</sup> Formation <b>Yeso</b>	<sup>19</sup> Contractor <b>Key Energy Services</b>	<sup>20</sup> Spud Date <b>10-15-1996</b>

**21 Proposed Casing and Cement Program**

Hole Size	Casing Size	Casing weight/foot	Setting Depth	Sacks of Cement	Estimated TOC
<b>17" 1/2</b>	<b>13 3/8"</b>	<b>48#</b>	<b>500'</b>	<b>300 sacks</b>	<b>Surface</b>
<b>11"</b>	<b>8 5/8"</b>	<b>24.32#</b>	<b>2850'</b>	<b>800 sacks</b>	<b>Surface</b>
<b>7 7/8"</b>	<b>5 1/2"</b>	<b>15.5, 17#</b>	<b>7500'</b>	<b>950 sacks</b>	<b>+/- 1,000</b>

<sup>22</sup> 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 plug back the 'Abo' formation by setting a 'CIBP' above the top perms of the 'Abo' @ 7095' in the McGrail State No. 9. We will then proceed with the plans to re-complete the well to the Yeso pool. Please see attachment for the details of the workover proposal, and a C102-Well Location Plat for the 'Monument-Yeso-Northwest' is attached.

**Permit Expires 2 Years From Approval**

**Date Unless Drilling Underway**

**Plugback**

<sup>23</sup> I hereby certify that the information given above is true and complete to the best of my knowledge and belief.

Signature:



Printed name: Rick R. Schell

Title: Regulatory Compliance Representative

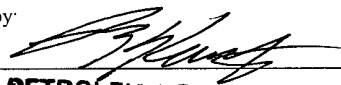
E-mail Address: RRSHELL@MarathonOil.com

Date: 10-13-2008

Phone: 713-296-3412

## OIL CONSERVATION DIVISION

Approved by:



Title: PETROLEUM ENGINEER

Approval Date: NOV 20 2008

Expiration Date:

Conditions of Approval Attached ☐

**Recompletion Procedure**  
**McGrail State Well No. 9**  
1980' FSL, 1650' FWL  
Section 26, 19S-36E, UL "K"  
Lea County, New Mexico

**WBS NO:** RW.08.17695.CAP

**Date:** May 30, 2008

**Purpose:** Recomplete to Yeso

**Elevation:**   **KB:** 3697'                               **PBTD:** 7508'  
                  **GL:** 3681'                               **TD:** 8000'

**Estimated Cost:** \$314,500

**Estimated Rig Days:** 5

**WI:** 100%                               **NRI:** 87.5%

**Surface Casing:** 13-3/8", 48#, H-40 casing set at 516'. Cemented w/ 525 sx. Circulated cement to surface (210 sx).

**Inter. Casing:** 8-5/8", 24/32#, K-55 casing set at 2845'. Cemented w/ 1000 sx. Circulated cement to surface (106 sx).

**Production Casing:** 5-1/2", 15.5/17#, K-55 casing to 8000'. Cemented shoe with 270 sx. TOC at 6450'. Remedial cement through perfs at 6080'. Sqz 1075 sx. TOC at 556' (TS- 2/97)

**Production Tubing:** 2-7/8", 6.5#, J-55, EUE, SN @ 7455'

**Perforations:**               **Current:** 7183-87', 7322-26', 7350-54',7376-79', 7396-410', 7419-29', 7422-51', 7452-55'

**Safety Issues:**               High Concentration Of H<sub>2</sub>S Gas (28,000 ppm)

**Tubular Performance/Capacities:**

	ID	Drift	Burst	Collapse	Capacity
	(in.)	(in.)	(psi)	(psi)	(bbl/ft)
2-7/8" 6.5# J-55	2.441	2.347	5808	7680	.00579
5-1/2" 15.5# K-55	4.95	4.825	3848	4040	.0238
Tbg/Csg Annulus	-----	-----	-----	-----	.0158

**Procedure:**

1. MIRU WSU. POOH with rods and pump. Install and test BOPE. POOH with 2-7/8" tubing.
2. Make bit and scraper run to PBTD at +/- 7500'. Pick-up additional tubing as needed for this operation.
3. RIH with cast iron bridge plug (CIBP). Set CIBP at +/-7150'. Swab well down for negative test on sqz perfs @ 6080'. Circulate wellbore full w/freshwater and test to 500 psi. PU end of tubing to 6720' and circulate a balance 3-bbl slug of acid from 6720' to 6600' using 7-1/2" NEFEHCL inhibited for 48-hours at 125 deg F. Be sure to keep the acid off the squeezed perfs at 6080'. POOH with tubing and tools.
4. RU Baker Atlas electric line. Install pack-off. RU lubricator and RIH with 3-1/8" slick gun with 311T charges loaded 2 SPF, phasing is not critical. Perforate from top-down to maximize benefit of acid. For depth control use Wedge Dia-Log CBL dated 11/10/96.

## RECOMPLETION PROCEDURE

McGrail State Well No. 9

Lea County, New Mexico

May 30, 2008

6622-24 (2', 4 holes)  
6636-38 (2', 4 holes)  
6644-46 (2', 4 holes)  
6674-78 (4', 8 holes)  
6694-98 (4', 8 holes)  
6704-08 (4', 8 holes)  
6714-16 (2', 4 holes)

Yeso 20 Net Feet – 40 Holes

Casing collars at: 6722', 6676', 6633', 6587'. With 41' short joint @6904'-45'.

After last gun has been shot, tag CIBP and verify setting depth of top of CIBP. Dump 1 bailer of cement on CIBP. Pump 5 bbls of fresh water down casing to flush excess acid.

5. RIH w/TBG and PKR. Set packer @ 6590'. Load and test backside to 500 psi. Establish injection into new perforations.
6. RU acid company for acid stimulation. Need a minimum of 500 HHP on location. Pump +/- 60 bbls of 15% NEFEHCL inhibited for 4 hours at 125 deg F. Use a ball injector loaded with 50 (1.1 SG) ball sealers for acid diversion. Start off pumping 5 bbls of acid, then drop 1-ball for each 1-bbl of acid pumped. After last ball, pump remaining acid. Pump at maximum rate (4-5 BPM is desired) not to exceed 5000 psi surface pressure. Displace acid with 45 bbls of fresh water.
7. Release packer and lower past bottom perforation to knock ball sealers off perforations.
8. PU packer to 6590'. Set load and test the backside to 500 psi. Swab test well until dark. Report swab results. If fluid level is high, BHP in next step is not required. If fluid level is low, plan to obtain BHP as noted below.
9. Next morning RU slick line, RIH w/Amerada BHP gauge to measure the bottom hole pressure. Make last stop @ mid-perf (6669). Make stops every 1000' while GIH. RD slickline.
10. Release packer, POOH.
11. RIH with production tubing, insert pump and rods. PWOP.

District I

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District II

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District III

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District IV

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State of New Mexico

Energy, Minerals &amp; Natural Resources Department

OIL CONSERVATION DIVISION

1220 South St. Francis Dr.

Santa Fe, NM 87505

Form C-102

Revised October 12, 2005

Submit to Appropriate District Office

State Lease - 4 Copies

Fee Lease - 3 Copies

☐ AMENDED REPORT

## WELL LOCATION AND ACREAGE DEDICATION PLAT

<sup>1</sup> API Number 30-025-33607		<sup>2</sup> Pool Code 97089	<sup>3</sup> Pool Name Monument Yeso Northwest
<sup>4</sup> Property Code 6440	<sup>5</sup> Property Name McGrail State		<sup>6</sup> Well Number 9
<sup>7</sup> OGRID No. 014021	<sup>8</sup> Operator Name MARATHON OIL COMPANY		<sup>9</sup> Elevation 3681'

<sup>10</sup> Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
K	26	19 S	36 E		1980	SOUTH	1650	WEST	LEA

<sup>11</sup> 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

<sup>12</sup> Dedicated Acres 40	<sup>13</sup> Joint or Infill No	<sup>14</sup> Consolidation Code	<sup>15</sup> 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.

<sup>16</sup>	<sup>17</sup> <b>OPERATOR CERTIFICATION</b> 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: <i>Rick R. Schell</i> Date: 10-13-08 Printed Name: Rick R. Schell REGULATORY COMPLIANCE REP. (rrschell@MarathonOil.com)
	<sup>18</sup> <b>SURVEYOR CERTIFICATION</b> 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