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

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State of New Mexico
Energy Minerals and Natural Resources

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

Form C-101
June 16, 2008

Submit to appropriate District Office

☐ AMENDED REPORT

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

[1] Operator Name and Address	[2] OGRID Number
Marathon Oil Company **P.O Box 3487 Houston, 77253-3487**	**14021** ✓
	[3] API Number **30 – 025-06826** ✓

[5] Property Code	[5] Property Name	[6] Well No
6428 ✓	**W.S. Marshall B**	**9** ✓

[9] Proposed Pool 1	[10] Proposed Pool 2
Penrose-Skelly-Grayburg ✓	**N/A**

[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
K	**27**	**21S**	**37E**	**K**	**2310**	**South**	**1650**	**West**	**Lea** ✓

[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

[11] Work Type Code	[12] Well Type Code	[13] Cable/Rotary	[14] Lease Type Code	[15] Ground Level Elevation
P-'Plugback'	**O-'Single Oil Completion'**		**P-'Private'** ✓	**3411'**
[16] Multiple	[17] Proposed Depth	[18] Formation	[19] Contractor	[20] Spud Date
N		**Grayburg**	**Key Energy Services**	**06/12/51**

[21] Proposed Casing and Cement Program

Hole Size	Casing Size	Casing weight/foot	Setting Depth	Sacks of Cement	Estimated TOC
17"	13 3/8"	48#	308	300 sacks	Surface
11"	8 5/8"	23#	2800	1200 sacks	Surface
8"	5 ½"	17#	7500	1100 sacks	3200

[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 plug back the Blinebry & Abo formations by setting a CIBP above the top of the squeezed off perfs of the Paddock @ 5040' in the W.S. Marshall B No. 9. We will then proceed with the plans to re-complete the well to the Penrose Skelly Grayburg pool. Please see attachment for the details of the workover proposal. A C-102 for the Penrose Skelly is attached.

Permit Expires 2 Years From Approval Date Unless ~~Drilling~~ Underway
Plugback

[23] I hereby certify that the information given above is true and complete to the best of my knowledge and belief.	OIL CONSERVATION DIVISION	
Signature: Rick R. Schell	Approved by:	
Printed name: **Rick R. Schell**	Title: **PETROLEUM ENGINEER**	
Title. **Regulatory Compliance Representative**	Approval Date:	Expiration Date:
E-mail Address: **rrschell@MarathonOil.com**	OCT 31 2008	
Date. **01-OCT-2008** Phone: **713-296-3412**	Conditions of Approval Attached ☐	

Recompletion Procedure

W.S. Marshall Well No. 9
2310' FSL, 1650' FWL
Section 27, 21S-37E
Lea County, New Mexico

WBS NO: RW.08.17691.CAP.CMP

Date: June 3, 2008

Purpose: Recomplete to Grayburg

Elevation: **KB:** 3425' **PBTD:** 7320'
GL: 3412' **TD:** 7588'

Estimated Cost: $355,000

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

Surface Casing: 13-3/8", 48#, H-40 set at 308'. Cemented w/ 300 sx. TOC @ ?

Intermediate Casing: 8-5/8", 32#, J-55 set at 2800'. Cemented w/1200 sx. TOC @ ?

Production Casing: 5-1/2", 17#, J-55 set at 7500'. Cemented with 1100 sx. Top of good cmt @ 3200' (CBL).

Production Tubing: 2-3/8", 4.7#, J-55, EUE. EOT @ 7130'.

Reservoir Pressure: Expected Pressure ~ <1630 psi

Open Perforations: 5484'- 5917'; 6765'-7086'

SQZ Perforations: 5125-65', 7143-7205', 7245-70'

Safety Issues: H2S gas likely to be present

Tubular Performance/Capacities:

	ID (in.)	Drift (in.)	Burst* (psi)	Collapse (psi)	Capacity (bbl/ft)
2-3/8" 4.7 # J-55	1.995	1.901	6160	8100	.00387
5-1/2" 17# J-55	4.892	4.767	4256	4910	.0232
Tbg/Csg Annulus	------	------	------	------	.0178

*80%

RECOMPLETION PROCEDURE
W.S. Marshall Well No. 9
Lea County, New Mexico

Procedure:

1. Use fresh water as workover fluid.

2. RU WSU. Kill well with fresh water. Unseat pump POOH w/ Rods and pump. Unflange well head, release TAC. Install and test BOPE. POOH Stand Back 2-3/8" Tbg.

3. RIH with cast iron bridge plug (CIBP). Set CIBP at +/-5100'. Circulate wellbore full w/freshwater and test to 2000 psi. PU end of tubing to 3850' and circulate a balance 4.3 - bbl slug of acid from 3850' to 3665' using 7-1/2" NEFEHCL inhibited for 48-hours at 125 deg F. POOH with tubing and tools.

4. **Perforate:**
   RU Baker-Atlas electric line with pack-off.. For depth control, use McCullough GRL dated 1-12-1960. RU and test pack-off to 1000 psi. RIH with 3-1/8" slick guns loaded with 311T charges at 1 SPF and perforate 50 feet with 50 holes as follows. ***(It is desired to perforate from top down to maximize acid in wellbore):***

   3680-90 (10', 10 holes)
   3700-10 (10', 10 holes)
   3737-42 (5', 5 holes)
   3765-70 (5', 5 holes)
   3810-20 (10', 10 holes)
   3825-30 (5', 5 holes)
   3844-49 (5', 5 holes)

   50 Net Feet – 50 Holes

   After last gun has been shot, tag CIBP at 5100' and verify setting depth of CIBP. Dump 1 bailer of cement on CIBP. Pump 5 bbls of fresh water down casing to flush excess acid.

   RD Baker-Atlas.

   Casing collars at: 3629', 3673', 3712', 3755', 3796', 3837', 3879'. With short joints @ 3505 -3464-3424'.

5. Frac per Halliburton design.

   - 156,182 # 20/40 brown sand
   - Five (5) – 500-bbl frac tanks w/ freshwater
   - Pump down casing at 55 BPM w/ treesaver
   - Use expedite on all sand
   - Displace with 95% of casing capacity to top perf (80 bbls)
   - Start flush when 2 ppg below max concentration

6. RD Halliburton equipment and tree saver.

7. RIH with 2-3/8" tubing and 4-3/4" bit and clean-out sand to 5100'. Reverse circulate well until clean returns. POOH laying down 2-3/8" TBG. Obtain 4000' of 2 7/8" 6.5# J-55 EUE TBG.

8. RIH with 4000' of 2-7/8" production equipment to produce Grayburg only. Remove BOP. Install wellhead. Set pump intake below lower perfs. Set TAC above top perforation. Install rods and pump. PWOP. Design pump to move upwards of 300 BWPD.