

State of New Mexico
Energy, Minerals & Natural Resources

Form C-101
May 27, 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

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 Marathon Oil Company P.O. Box 3487 Houston, TX 77253-3487 | | ² OGRID Number 14021 |
| | | ³ API Number 30- 30-025-34327 |
| ⁴ Property Code 6366 | ⁵ Property Name Bertha Barber | ⁶ Well No. 18Y |
| ⁹ Proposed Pool 1 Monument Blinebry (46990) | | ¹⁰ Proposed Pool 2 |

⁷ Surface Location

| | | | | | | | | | |
|--------------------|--------------|------------------|---------------|----------|-----------------------|---------------------------|----------------------|------------------------|---------------|
| UL or lot no. L | Section 5 | Township 20-S | Range 37-E | Lot. Idn | Feet from the 1766 | North/South Line South | Feet from the 663 | East/West line West | County 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 Location

| | | | | |
|--|-----------------------------------|--|-------------------------------|--|
| ¹¹ Work Type Code P | ¹² Well Type Code 0 | ¹³ Cable/Rotary | ¹⁴ Lease Type Code | ¹⁵ Ground Level Elevation 3559 |
| ¹⁶ Multiple N | ¹⁷ Proposed Depth | ¹⁸ Formation Blinebry | 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 |
|-----------|-------------|--------------------|---------------|-----------------|---------------|
| 14 3/4" | 11 3/4" | 42# | 515' | 435 | Surface |
| 11" | 8 5/8" | 32# | 4110' | 1190 | Surface |
| 7 7/8" | 5 1/2" | 17 & 15.5# | 7800' | 940 | Surface |
| | | | | | |
| | | | | | |

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 plugback the downhole commingled Bertha Barber No. 18Y to the Monument Tubb and Monument Abo pools, and come up hole and complete the well to the Blinebry formation. Please see attached work procedure.

Permit Expires 1 Year 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. I further certify that the drilling pit will be constructed according to NMOCD guidelines ☐ a general permit ☐, or an (attached) alternative OCD-approved plan ☐.

Signature: Charles E. Kendrix

Printed name: Charles E. Kendrix

Title: Regulatory Compliance Representative

E-mail Address: cekendrix@marathonoil.com

Date: 03/21/2007

Phone: 713-296-2096

OIL CONSERVATION DIVISION

Approved by:

Chris Williams

Title: OC DISTRICT SUPERVISOR/GENERAL MANAGER

Approval Date: MAR 26 2007 Expiration Date:

Conditions of Approval:

Attached ☐

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State of New Mexico
Energy, Minerals & Natural Resources

Form C-102
Revised October 12, 2005

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

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

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

| | | |
|---|--|---|
| ¹ API Number 30-025-34327 | ² Pool Code 46990 | ³ Pool Name Monument Blinebry |
| ⁴ Property Code 6366 | ⁵ Property Name Bertha Barber | ⁶ Well Number 18 Y |
| ⁷ OGRID No. 14021 | ⁸ Operator Name Marathon Oil Company | ⁹ Elevation 3559 |

¹⁰ Surface Location

| | | | | | | | | | |
|--------------------|--------------|------------------|--------------|----------|-----------------------|---------------------------|----------------------|------------------------|---------------|
| UL or lot no. L | Section 5 | Township 20-S | Range 37E | Lot. Idn | Feet from the 1766 | North/South line South | Feet from the 663 | East/West line West | County 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 |
| | | | | | | | | | |
| ¹² Dedicated Acres 40 | ¹³ Joint or Infill N | 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

| | | | | |
|---------------|--|--|--|--|
| ¹⁶ | | | | 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. Charles E. Kendrix 03/21/2007 Signature Date Charles E. Kendrix Printed Name |
| | | | | 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 |

663' #18 Y
1766'

Recompletion Procedure

Bertha Barber # 18Y

Lower Blinebry

Surface Hole Location: 1766' FSL & 663' FWL

Section 5, T-20-S, R-37-E, UL 'L'

Monument Field

Lea Co, NM

Date: March 6, 2007

Purpose: TA Tubb and Abo Perforations, test Lower Blinebry formation

Current Status: Abo and Tubb commingled producer.

WBS #: RW.07.xxxxx.CAP.CMP

AFE Cost: \$340,000 (gross)

WI: 100.00 %

NRI: 87.5 %

Elevation: GL: 3559' KB: 3572' TD: 7806' PBTD: 7775'

Conductor Casing: 11-3/4", 42#, H-40, ST&C set @ 515' with 345 sacks (circ'd 90 sx)

Surface Casing: 8-5/8", 32#, K-55, LT&C set @ 4078'. Cemented w/340 sacks (circ'd 114 sx off DV tool @ 2943'). Cemented DV tool @ 2943' with 850 sx, circ'd 50 sx to surface.

Production Casing: 5-1/2", 15.5 / 17 #, K-55 / L-80 set 7806' w/ 375 sx (circ'd 20 sx off DV tool @ 5119'). Cemented DV tool @ 5119' with 565 sx, circ'd 80 sx to surface.

Tubing: 2-7/8", 6.5#, J-55, EUE at 7759'; 2-7/8" seating nipple @ 7729'

| Size, Wt, Grade | ID (in) | Drift (in) | Burst (psig) | Collapse (psig) | bbls /1000 ft |
|---------------------|---------|------------|--------------|-----------------|---------------|
| 8-5/8", 32#, K-55 | 7.921 | 7.796 | 3930 | 2530 | 60.9 |
| 5-1/2", 15.5#, K-55 | 4.950 | 4.825 | 4810 | 4040 | 23.8 |
| 5-1/2", 17#, L-80 | 4.892 | 4.767 | 7740 | 6280 | 23.2 |
| 2-7/8", 6.5#, J-55 | 2.441 | 2.347 | 7260 | 7680 | 5.79 |

Pressure Information: Abo and Tubb: ~300 psig SIBHP estimate
Blinebry ~2850 psig SIBHP estimate if virgin reservoir pressure

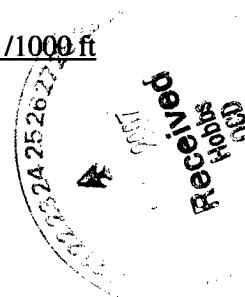
Perforations:

Abo: 6874-6880', 6916-6923', 7061-7065', 7104-7117', 7128-7138', 7144-7204', 7231-7239', 7256-7274', 7332-7338', 7437-7442', 7505-7510', 7527-7536', 7551-7565', 7672-7694'

Tubb: 6414-6437', 6444-6457'

Safety:

- Hold daily safety meeting explaining the proposed procedure.
- H2S concentration - 5,000 ppm
- Keep TIW valve on rig floor at all times.
- Keep kill-string in well at night if tubing is pulled.
- Follow MOC SOP's throughout job.



Note: Use proper PPE when working in and around Acid, this would include but is not limited to splash guards, aprons, and HCL resistant gloves. Record types & volumes of fluids pumped for well control throughout job.

Procedure:

1. 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.
2. If necessary, install and test safety anchors to 22,500 lbs.
3. MIRU two (2) frac tanks. Fill one tank with 2% KCl water for acid flush and well control. If fresh water is required, Marathon will supply a third frac tank if needed and acidizing contractor will bring surfactant to make treated water for acid job.
4. MIRU Pulling Unit. Make sure Geronimo line is staked securely, H2S monitor is in place, guardrails are in place & the unit is properly grounded to the wellhead.
5. Install 7-1/16", 3M hydraulic BOPs w/ 2-7/8" pipe rams & blind rams (equipped w/ valved outlets below blinds). Test pipe rams & blind rams to 250 & 3,000 psig.
6. POOH with rods. POOH w/ 2-7/8" tubing and rod pump, laying down rod pump.
7. PU 5-1/2" bit and casing scraper and RIH to 7775', hydro-testing tubing below slips to 5,800 psig. Visually inspect tubing for corrosion or scale. POOH with 5-1/2" bit and casing scraper.
8. MIRU Baker-Atlas. RU frac valve, equalizing line, and 3K lubricator w/ pack-off. Pressure test the lubricator to 3000 psi against the frac valve. If necessary, RIH w/ junk catcher and 5-1/2" gauge ring on wireline to CIBP @ 6350'. Dump one bailer of cement (10') on top of CIBP @ 6350'. Gamma ray correlate the first run to the Schlumberger Open Hole log dated March 7, 1998. **Monitor fluid levels between runs.** RIH with PFC-GR and 3-1/8" select fire gun loaded with 311T charges at 2 JSPF at 120 degree phasing and perforate the following intervals after gamma-ray correlating to the Schlumberger open log dated March 7, 1998:

| Top | Bottom | Interval | Gun Number | Shots/ft | Total Shots |
|----------------|--------|------------|---------------|----------|-------------|
| 6048' | 6054' | 6' | 1 | 2 | 12 |
| 6073' | 6077' | 4' | 1 | 2 | 8 |
| 6114' | 6118' | 4' | 1 | 2 | 8 |
| 6128' | 6133' | 5' | 2 | 2 | 10 |
| 6150' | 6158' | 8' | 2 | 2 | 16 |
| 6178' | 6182' | 8' | 2 | 2 | 16 |
| 6214' | 6233' | 19' | 3 | 2 | 38 |
| Totals: | | 54' | 3 guns | | 108 |

RDMO Baker-Atlas.

9. RIH with 5-1/2" CIBP on 2-7/8" tubing and set CIBP @ 6350'. POOH with 2-7/8" tubing.



Bertha Barber # 18Y Blinebry Recompletion

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10. RIH with 5-1/2" treating packer on 2-7/8" tubing and use packer to test CIBP @ 6350' to 500 psig. PU treating packer to 6233' and spot acid across Lower Blinebry perforations from 6233 – 6048'. PUH with treating packer to +/- 6000'. If necessary, tubing will be pickled w/ 500 gals of 15% HCl acid at this time. Reverse pickle acid to surface. Set treating packer at +/- 6000'.
11. MIRU acid pump contractor. Have at least 500 HHP on location for pumping and positive displacement ball injector. Test surface lines to 6000 psig. **MAXIMUM SURFACE PRESSURE NOT TO EXCEED 6000 PSI.** Pump job @ max rate not to exceed 5800 psi under packer and limit to 80% of casing burst pressure (3848 psi) if pumping down casing. Inhibit acid for 4-hours at 100 deg F. Load ball injector with 160 (1.1 SG) 7/8" diameter ball sealers. Pump 6000 gals of 15% NeFeHCl acid into perforations from 6048-6233', dropping ~1 ball for each barrel of acid pumped (total of 160 balls). Flush acid to bottom perf using 40 bbls of 2% KCl water then over displace into formation w/ 10 bbls 2% KCl water. Release packer, RIH to knock ball sealers off perfs. Shut-in well for 15 minutes to allow acid to spend. RDMO acid pump contractor.
12. Attempt to flow well back to frac tank. If well will not kick-off, RU swabbing equipment and kick well off. Use caution when swabbing well and take small bites of fluid until well starts to unload. Report swab volumes and tubing pressures to Ken Baker in Houston.
13. Once well is flowing, notify production operations personnel.
14. If well will not flow, unset treating packer. POOH with 2-7/8" workstring and lay down treating packer. PU & RIH w/ production string, landing pump intake at 6233'. Remove BOP and install wellhead. Set well to pumping.
15. RDMOPU.
16. Turn well to sales and report test rates to Ken Baker in Houston.

PREPARED BY: K. J. Baker

DATE: 3/6/2007

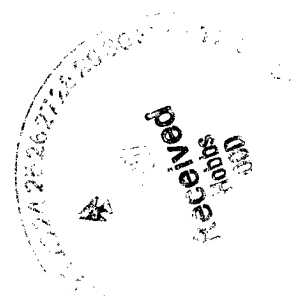
APPROVED BY: _____

DATE: _____

xc: B. Arnett, II R. Bose K. Baker J. Renno R. Angel

Randy Bose – (Wk) 432-688-1410
(Cell) 432-557-3470
(Hm) 432-687-3907

Ken Baker - (Wk) 713-296-3124
(Cell) 936-520-4692



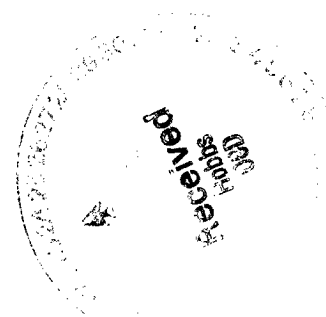
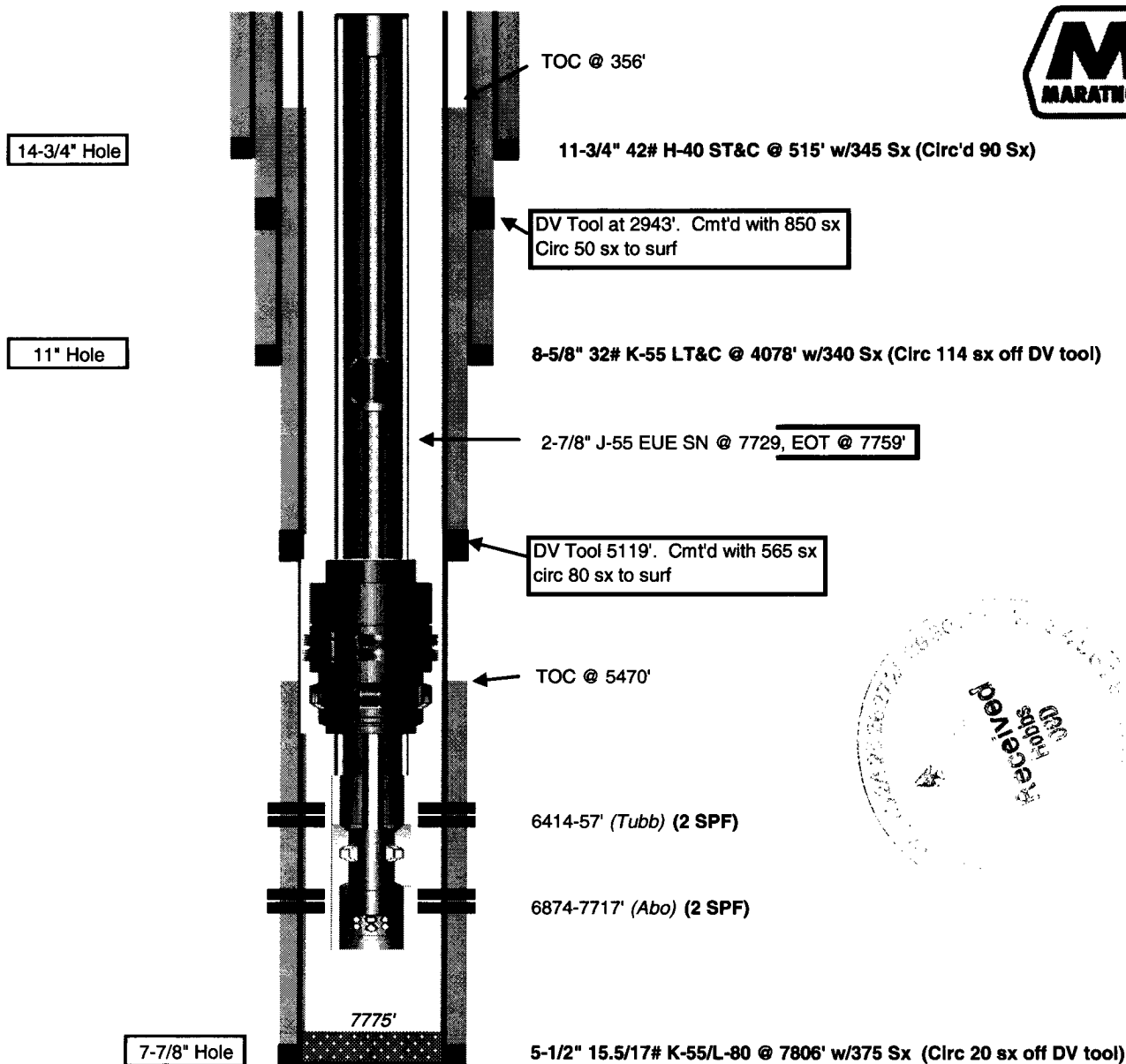
Bertha Barber # 18Y Blinebry Recompletion
Page 4

| Well Name & No. | | BERTHA BARBER NO. 18 | | Field |
|-----------------|-----------|----------------------|------------|----------|
| County | LEA | API | 3002534327 | State |
| Spudded | 2/15/1998 | Comp Drig | 3/9/1998 | Location |

| | | | |
|--|--|---------------|----------|
| MONUMENT | | Date 08/14/06 | |
| NEW MEXICO | | By | R S Bose |
| 1766' FSL & 663' FWL, Section 5, Township 20S, Range 37E, UL 'L' | | | |



GL: 3559'
 KB: 3572'



Bertha Barber # 18Y Blinebry Recompletion
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Bertha Barber # 18Y Well History

MAR' 98: Perf @ 7144-7204 @ 2 SPF. Acidized with 2M gals 15%w/120 BS. Swab test for 3 days. Results???

Perf @ 7672-94; 7551-65; 7527-36; 7505-10; 7437-42; 7332-38; 7256-74; 7231-39, all @ 2 SPF @ 120 degree phasing

Acidize all perfs @ 7231-7694 with 7500 gals 15%.

Isolate perfs @ 7437-7565 and acidize w/2000 gals. Isolate perfs @ 7144-7338 and acidize w/1850 gals.

Swab all perfs @ 7144-7694 for 4 days. Results???

Perf @ 7697-7717; 7128-38; 7104-17; 7061-65; 6916-23; 6874-80, all @ 2 SPF @ 120 degree phasing.

Isolate perfs @ 7672-7717 and acidize w/3000 gals. Isolate perfs @ 7061-7138 and acidize w/2500 gals. Isolate/acidize @ 6874-6923.

Swab all perfs @ 6874-7717 for 4 days. Swab test: 7 BOPD and 29 BWPD. Also allocated 60 MCFD when DHC

APR' 98: Perf Tubb @ 6414-37 and 6444-57 @ 2 SPF, total of 72 holes. Acidized w/2700 gals and 110 BS.

Frac'd Tubb perfs @ 6414-6457 w/ 928 bbls. gelled water w/55,100# sand. IP @ 41 BOPD/140 MCF/D/ 180 BWPD.

DEC' 98: Removed CIBP @ 6825'. DHC Tubb and Abo.

RECEIVED
TUBBS
10/10/98