


DATE IN 9/15/06	SUSPENSE	ENGINEER W Jones	LOGGED IN 9/15/06	TYPE DHC 3798	APP NO. PTDS0625855082	RECEIVED MARP SEP 15 2006 MINING & MINERALS DIVISION
--------------------	----------	---------------------	----------------------	---------------------	---------------------------	---

ABOVE THIS LINE FOR DIVISION USE ONLY

NEW MEXICO OIL CONSERVATION DIVISION
- Engineering Bureau -
1220 South St. Francis Drive, Santa Fe, NM 87505



ADMINISTRATIVE APPLICATION CHECKLIST

THIS CHECKLIST IS MANDATORY FOR ALL ADMINISTRATIVE APPLICATIONS FOR EXCEPTIONS TO DIVISION RULES AND REGULATIONS WHICH REQUIRE PROCESSING AT THE DIVISION LEVEL IN SANTA FE

Application Acronyms:

[NSL-Non-Standard Location] [NSP-Non-Standard Proration Unit] [SD-Simultaneous Dedication]
[DHC-Downhole Commingling] [CTB-Lease Commingling] [PLC-Pool/Lease Commingling]
[PC-Pool Commingling] [OLS - Off-Lease Storage] [OLM-Off-Lease Measurement]
[WFX-Waterflood Expansion] [PMX-Pressure Maintenance Expansion]
[SWD-Salt Water Disposal] [IPI-Injection Pressure Increase]
[EOR-Qualified Enhanced Oil Recovery Certification] [PPR-Positive Production Response]

2006 SEP 15 AM 10 56

[1] TYPE OF APPLICATION - Check Those Which Apply for [A]

- [A] Location - Spacing Unit - Simultaneous Dedication
☐ NSL ☐ NSP ☐ SD

Check One Only for [B] or [C]

- [B] Commingling - Storage - Measurement
☒ DHC ☐ CTB ☐ PLC ☐ PC ☐ OLS ☐ OLM

- [C] Injection - Disposal - Pressure Increase - Enhanced Oil Recovery
☐ WFX ☐ PMX ☐ SWD ☐ IPI ☐ EOR ☐ PPR

- [D] Other: Specify _____

[2] NOTIFICATION REQUIRED TO: - Check Those Which Apply, or Does Not Apply

- [A] ☐ Working, Royalty or Overriding Royalty Interest Owners **SAME INTEREST OWNERSHIP**
[B] ☐ Offset Operators, Leaseholders or Surface Owner
[C] ☐ Application is One Which Requires Published Legal Notice
[D] ☐ Notification and/or Concurrent Approval by BLM or SLO
U.S. Bureau of Land Management - Commissioner of Public Lands, State Land Office
[E] ☐ For all of the above, Proof of Notification or Publication is Attached, and/or,
[F] ☐ Waivers are Attached

[3] SUBMIT ACCURATE AND COMPLETE INFORMATION REQUIRED TO PROCESS THE TYPE OF APPLICATION INDICATED ABOVE.

[4] **CERTIFICATION:** I hereby certify that the information submitted with this application for administrative approval is **accurate** and **complete** to the best of my knowledge. I also understand that **no action** will be taken on this application until the required information and notifications are submitted to the Division.

Note: Statement must be completed by an individual with managerial and/or supervisory capacity.

FRANK M. KRUGH
Print or Type Name

Frank M. Krugh
Signature

Reg. Comp. Rep. III
Title

9/14/06
Date

frankrugh@marathon.com
e-mail Address



P.O. Box 3487
Houston, TX 77253-3487
5555 San Felipe Street
Houston, TX 77056-2799
Telephone 713/629-6600

September 14, 2006

New Mexico Oil Conservation Division
Attn: Mr. Will Jones
1220 South St. Francis Drive
Santa Fe, New Mexico 87505

RE: Exception to 19.15.5.303 C (3) (b) DHC E. S. Owens 26 #1

Dear Mr. Jones:

Marathon Oil Company is requesting approval to downhole commingle the San Andres and Grayburg Formations during the initial completion of the E. S. Owens 26 #1 well (API 30-025-37756). Because this is the initial completion, Marathon does not have one year of production data for these zones. It is our intent to perforate the upper San Andres and the lower Grayburg intervals and then to acidize both intervals at the same time. Once acidized, the formations will be commingled down hole and produced. By conducting completion activities in this manner, costs associated with completing these zones separately will be reduced.

Down hole commingling percentages for each zone will be determined by the number of perforations in each zone in comparison to the total number of perforations in both zones. For this well, 36 perforations will be shot in the San Andres and 28 perforations will be shot in the Grayburg. A total of 64 perforations will be shot. Therefore, 56.3% of the production will be allocated to the San Andres with the remaining 43.7% being allocated to the Grayburg.

Neither completion is capable of making top allowable. The interest ownership is identical for both formations of interest.

If additional information is needed, please feel free to contact me at 713-296-3546 or through email @ fmkruqh@marathonoil.com.

Sincerely,

MARATHON OIL COMPANY

A handwritten signature in cursive script that reads 'Frank M. Krugh'.

Frank M. Krugh
Regulatory Compliance Rep. III

MARATHON OIL COMPANY

P.O. BOX 3487

HOUSTON, TEXAS 77253-3487

Operator
E. S. OWENS 26

1

Address
K- 26 - 22S - 36E

LEA

Lease

Well No.

Unit Letter-Section-Township-Range

County

OGRID No. 14021

Property Code 35508

API No. 30-025-37756

Lease Type: Federal State X Fee

DATA ELEMENT	UPPER ZONE	INTERMEDIATE ZONE	LOWER ZONE
Pool Name	WILDCAT GRAYBURG OIL		WILDCAT SAN ANDRES OIL
Pool Code	WILDCAT		WILDCAT
Top and Bottom of Pay Section (Perforated or Open-Hole Interval)	4120' - 4130' & 4158' - 4162'		4162' - 4180'
Method of Production (Flowing or Artificial Lift)	PUMPING		PUMPING
Bottomhole Pressure (Note: Pressure data will not be required if the bottom perforation in the lower zone is within 150% of the depth of the top perforation in the upper zone)	Calculated 1788 PSI		Calculated 1810 PSI
Oil Gravity or Gas BTU (Degree API or Gas BTU)	Unknown at this time		Unknown at this time
Producing, Shut-In or New Zone	New Zone		New Zone
Date and Oil/Gas/Water Rates of Last Production. (Note: For new zones with no production history, applicant shall be required to attach production estimates and supporting data.)	Date: SEE ATTACHMENT Rates:	Date: Rates:	Date: SEE ATTACHMENT Rates:
Fixed Allocation Percentage (Note: If allocation is based upon something other than current or past production, supporting data or explanation will be required.)	Oil 43.7 % Gas 43.7 %	Oil % Gas %	Oil 56.3 % Gas 56.3 %

ADDITIONAL DATA

Are all working, royalty and overriding royalty interests identical in all commingled zones?
If not, have all working, royalty and overriding royalty interest owners been notified by certified mail? N/A

Are all produced fluids from all commingled zones compatible with each other?

Will commingling decrease the value of production?

If this well is on, or communitized with, state or federal lands, has either the Commissioner of Public Lands or the United States Bureau of Land Management been notified in writing of this application? N/A

NMOCD Reference Case No. applicable to this well:

Yes X No
Yes No
Yes X No
Yes No X
Yes No

Attachments:

- C-102 for each zone to be commingled showing its spacing unit and acreage dedication.
- Production curve for each zone for at least one year. (If not available, attach explanation.)
- For zones with no production history, estimated production rates and supporting data.
- Data to support allocation method or formula.
- Notification list of working, royalty and overriding royalty interests for uncommon interest cases.
- Any additional statements, data or documents required to support commingling.

PRE-APPROVED POOLS

If application is to establish Pre-Approved Pools, the following additional information will be required:

List of other orders approving downhole commingling within the proposed Pre-Approved Pools
List of all operators within the proposed Pre-Approved Pools
Proof that all operators within the proposed Pre-Approved Pools were provided notice of this application.
Bottomhole pressure data.

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNATURE Frank M. Krugh TITLE Reg. Comp. Rep. III DATE 9/14/2006

TYPE OR PRINT NAME Frank M. Krugh TELEPHONE NO. (713) 296-3546

E-MAIL ADDRESS fmkrugh@marathonoil.com

DISTRICT I
1625 N. FRENCH DR., HOBBES, 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 and Natural Resources Department

OIL CONSERVATION DIVISION
1220 SOUTH ST. FRANCIS DR.
Santa Fe, New Mexico 87505

Form C-102
Revised October 12, 2005
Submit to Appropriate District Office
State Lease - 4 Copies
Fee Lease - 3 Copies

WELL LOCATION AND ACREAGE DEDICATION PLAT

☐ AMENDED REPORT

API Number	Pool Code	Pool Name WILDCAT SAN ANDRES
Property Code	Property Name E.S. OWENS 26	Well Number 1
OGRID No. 14021	Operator Name MARATHON OIL COMPANY	Elevation 3495'

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	22-S	36-E		1650	SOUTH	2310	WEST	LEA

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
Dedicated Acres 40	Joint or Infill	Consolidation Code	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

	<p>OPERATOR CERTIFICATION</p> <p>I hereby certify that the information 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 mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.</p> <p><i>Frank M Krugh</i> 3/15/06 Signature Date</p> <p>FRANK M KRUGH Printed Name</p> <p>Reg. Comp. Rep. III</p>
	<p>SURVEYOR CERTIFICATION</p> <p>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.</p> <p>FEBRUARY 14, 2006</p> <p>Date Surveyed DSR</p> <p>Signature & Seal of Professional Surveyor</p> <p><i>Gary Edson</i> 2/23/06 06.11.0293</p>
	<p>Certificate No. GARY EDSON 12841</p>

DISTRICT I

1225 N. FRENCH DR., HOBBES, NM 88240

DISTRICT II

1301 W. GRAND AVENUE, ARTESIA, NM 88210

DISTRICT III

1000 Rio Brazos Rd., Aztec, NM 87410

DISTRICT IV

1225 S. ST. FRANCIS DR., SANTA FE, NM 87505

State of New Mexico

Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION

1220 SOUTH ST. FRANCIS DR.
Santa Fe, New Mexico 87505

Form C-102

Revised October 12, 2005

Submit to Appropriate District Office

State Lease - 4 Copies

Fee Lease - 3 Copies

WELL LOCATION AND ACREAGE DEDICATION PLAT

☐ AMENDED REPORT

API Number	Pool Code	Pool Name WILDCAT GRAYBURG
Property Code	Property Name E.S. OWENS 26	Well Number 1
OGRID No. 14021	Operator Name MARATHON OIL COMPANY	Elevation 3495'

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	22-S	36-E		1650	SOUTH	2310	WEST	LEA

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
Dedicated Acres 40	Joint or Infill	Consolidation Code	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

	<p>OPERATOR CERTIFICATION</p> <p>I hereby certify that the information 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 mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.</p> <p><i>Frank M. Krugh</i> 3/15/06 Signature Date</p> <p>FRANK M. KRUGH Printed Name</p> <p>Reg. Comp. Rep. III</p>
	<p>SURVEYOR CERTIFICATION</p> <p>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.</p> <p>FEBRUARY 14, 2006</p> <p>Date Surveyed DSR</p> <p>Signature & Seal of Professional Surveyor</p> <p><i>Gary E. Edson</i> 2/23/06 06.11.0293</p> <p>Certificate No. GARY EDSON 12641</p>

**E. S. OWENS 26 #1
ALLOCATION DETAIL
DETERMINED BY PERCENTAGE OF PERFORATIONS**

<u>FORMATION</u>	<u>INTERVAL</u>	<u>FEET</u>	<u>NUMBER OF HOLES</u>
GRAYBURG	4120' – 4130'	10'	20
	4158' – 4162'	4'	8
	TOTAL GRAYBURG		28 SHOTS
SAN ANDRES	4162' – 4180'	18	36
	TOTAL SAN ANDRES		36
TOTAL SHOTS:			64

GRAYBURG PERCENTAGE OF PRODUCTION = $28 / 64 = 43.7\%$

SAN ANDRES PERCENTAGE OF PRODUCTION = $36 / 64 = 56.3\%$

Completion Procedure

API No. 30-025-37756

E. S. Owen 26 # 1

2310' FWL & 1650' FSL

Section 26, T22S-R36E, UL "K"

Lea County, New Mexico

WBS NO: DD.06.13714.CAP.CMP

Date: September 13, 2006

Purpose: Complete in San Andres

Elevation: **KB:** 3504' **PBTD:** 2873'
 GL: 3495' **TD:** 4316'

Estimated Cost:

Estimated Rig Days:

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

Surface Casing: 8-5/8", 24#, J-55 set at 1244'. Cemented w/ 780 sx. TOC at Surface. Circulated 233 sx.

Production Casing: 5-1/2", 15.5#, J-55 LT&C at 4296'. Cemented w/ 116 sx. TOC Surface. Circulated 40 bbls off DV tool. Cement DV with 1500 sx, circ 190 bbls to surface. Top out with 25 sx.

Production Tubing: 2-7/8", 6.5#, J-55, EUE

Reservoir Pressure: Estimated at <1900 psi

Safety Issues: H₂S Gas Present (15,000 PPM anticipated)

Performance/Capacities:

<u>Tubular</u>	<u>ID</u>	<u>Drift</u>	<u>Burst (80%)</u>	<u>Capacity</u>
	<u>(in.)</u>	<u>(in.)</u>	<u>(psi)</u>	<u>(bbl/ft)</u>
2-7/8" 6.5# J-55	2.441	2.347	5808	.00579
5-1/2" 15.5# K-55	4.95	4.825	3848	.0238
Tbg/Csg Annulus	-----	-----	-----	.0158

Procedure:

1. Level location, fill in cellar. Check production casing for trapped pressure. Safely bleed-down any trapped pressure. Install rig anchors and pumping unit with electricity. Use fresh water as workover fluid.
2. RU WSU. Install BOPE but test only to 500 psi. RIH with 2-7/8" tubing and 4-3/4" bit to DV tool at 2873'. Pressure test casing to 500 psi. Drill out DV tool. Test casing to 500 psi. RIH to PBTD @ +/- 4273'.
3. PU end of tubing to 4180' and circulate 10-bbl balanced plug of 7-1/2% HCL across perf interval. Inhibit acid for 24-hours at 100 deg. F. POOH with tubing.
4. **Perforate:**
RU Baker-Atlas electric line with pack-off and mast unit. RIH with RAL Cement Bond log/Gamma Ray/CCL and run cased-hole log from float collar at +/- 4273' to 2300'. Place 1000 psi on casing while running RAL. Correlate log to Halliburton open-hole density log dated 5/3/06. Test BOP and casing to 2000 psi using fresh water. RU and test pack-off and lubricator. RIH with 3-1/8" slick guns loaded with 311T charges loaded 2 SPF and perforate 32 feet with 64 holes as follows:

4120-30 (10' – 20 holes) @ 2 SPF

4158-80 (22' – 44 holes) @ 2 SPF

COMPLETION PROCEDURE

E. S. Owen 26 # 1

Lea County, New Mexico

RD Baker-Atlas.

5. Break down perfs with kill truck and verify injection rate using fresh water. Use at least 15-bbbls of water to make sure all acid is in formation.
6. RIH with tubing and packer. Set packer at +/- 4050'. Test backside to 500 psi. Swab test well for +/- 1/2-day to determine if additional acid work is required. If additional acid work is required
7. **ACID:**
 - RU acid company with 75 bbbls of 15% NEFEHCl acid, inhibited for 4-hrs at 100 deg. F. Use 75 (1.1 SG) ball sealers for diversion. Drop 1 ball at a time (do not drop in groups). Distribute balls evenly through-out the acid. Pump at 5 BPM (or maximum rate) not to exceed 4000 psi.
 - Over-displace acid with about 30 bbbls of fresh water. Let acid soak for about 1-hour, then swab test +/- 1-day to determine entry rate and hydrocarbon cut.
 - POOH with packer. RIH with production equipment with pump intake below bottom perforation and put well on pump.

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