4/07/2014 DATE IN	SUSPENSE	MAM ENGINEER	4/08/2014 LOGGED IN	DHC TYPE	pMAM1409840720 APP NO.

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]

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

-DHC
-XTO Energy
5380

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

11668

Check One Only for [B] or [C]

well
MR Nura 15H)

[B] Commingling - Storage - Measurement
☒ DHC ☐ CTB ☐ PLC ☐ PC ☐ OLS ☐ OLM 30-045-30318

Pool
- Basin Fruitland Coal
71629
- Harper Hill Fruitland Sand Pictured Cliffs
78160

[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

[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.

KRISTEN D. BABCOCK	Kristen D. Babcock	REGULATORY ANALYST	4/2/2014
Print or Type Name	Signature	Title	Date

Kristen_Babcock@xtoenergy.com
e-mail Address

XTO ENERGY
A Subsidiary of ExxonMobil

382 CR 3100 Aztec, NM 87410
(505) 333-3100 FAX: (505) 333-3280

April 2, 2014

RECEIVED OCD
2014 APR -7 P 2:15

NMOCD
Phillip Goetze
1220 South St. Francis Dr.
Santa Fe, NM 87505

RE: Record Clean Up for Downhole Commingle
Harper Hill Fruitland Sand- Pictured Cliffs (78160) & Basin Fruitland Coal (71629) Pools
Area of T30N, R14W
San Juan County, NM

Dear Mr. Goetze,

XTO Energy Inc. and the NMOCD Aztec District Office reviewed all of the XTO operated wells within the Haprer Hill Fruitland Sand / PC Pool – located predominately within T30N, R14W, San Juan County NM – that had downhole comingling permits filed and approved through the NMOCD Aztec District Office by previous operators. These wells should have been filed and approved through the Santa Fe NMOCD, due to the fact that they are not pre-approved pools. XTO Energy Inc will be submitting these 12 wells to the Santa Fe NMOCD office for the appropriate approval. Allocations will remain as they were before.

	WELL NAME	API	DHC #	Year Approved	Operator that Submitted
1.	WF Federal 11 #1	30-045-32268	DHC-1923AZ	"2005"	Lance Oil and Gas
2.	WF Federal 25 #1	30-045-30681	DHC-2416AZ	"2007"	Lance Oil and Gas
3.	WF Federal 25 #2	30-045-30713	DHC-1209AZ	"2003"	Richardson Operating
4.	WF Federal 27 #3	30-045-30393	DHC-2138AZ	"2006"	Lance Oil and Gas
5.	WF Federal 03 #1	30-045-30202	DHC-3214AZ	"2009"	XTO Energy
6.	WF State 2 #3	30-045-30759	DHC-1896AZ	"2005"	Lance Oil and Gas
7.	Coolidge #2	30-045-31221	DHC-1076AZ	"2003"	Calpine Operating
8.	Coolidge Com #1	30-045-26184	DHC-1005AZ	"2002"	Calpine Operating
9.	Morton #2	30-045-25766	DHC-1003AZ	"2002"	Calpine Operating
10.	Morton #3	30-045-31215	DHC-1075AZ	"2003"	Calpine Operating
11.	Mr Nona 15 #1	30-045-30318	DHC-2573AZ	"2007"	Lance Oil and Gas
12.	Roosevelt #2	30-045-31222	DHC-1028AZ	"2003"	Calpine Operating

Sincerely,

Kristen D. Babcock

Kristen D. Babcock
Regulatory Analyst
xc: Jackson Dean, Ft. Worth Land

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

District II
811 S. First St., 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 Department

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

Form C-107A
Revised August 1, 2011

APPLICATION TYPE
_X_ Single Well
___ Establish Pre-Approved Pools
EXISTING WELLBORE
___Yes ___No

APPLICATION FOR DOWNHOLE COMMINGLING

XTO Energy, Inc. — 382 CR 3100, Aztec, NM 87410
Operator — Address

MR NONA 15 | #1 | UNIT LETTER E, Sec 15, T30N, R14W | SAN JUAN
Lease | Well No. | Unit Letter-Section-Township-Range | County

OGRID No. 5380 Property Code 303625 API No. 30-045-30318 Lease Type: _X_ Federal __ State ___ Fee

DATA ELEMENT	UPPER ZONE	INTERMEDIATE ZONE	LOWER ZONE
Pool Name	BASIN FRUITLAND COAL		HARPER HILL FRUITLAND SAND PICTURED CLIFFS
Pool Code	(71629)		(78160)
Top and Bottom of Pay Section (Perforated or Open-Hole Interval)	1343'-1452'		1454'-1462'
Method of Production (Flowing or Artificial Lift)	ROD/PUMP		ROD/PUMP
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)			
Oil Gravity or Gas BTU (Degree API or Gas BTU)			
Producing, Shut-In or New Zone	PRODUCING		PRODUCING
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: 1/1/14 Rates:O:0/G:159MCF/ W:0	Date: Rates:	Date:1/1/14 Rates: O:0/G:22MCF/W:0
Fixed Allocation Percentage (Note: If allocation is based upon something other than current or past production, supporting data or explanation will be required.)	Oil 88 % Gas 88 %	Oil % Gas %	Oil 12 % Gas 12 %

ADDITIONAL DATA

Are all working, royalty and overriding royalty interests identical in all commingled zones? Yes__X__ No___
If not, have all working, royalty and overriding royalty interest owners been notified by certified mail? Yes___ No___

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

Will commingling decrease the value of production? Yes___ No__X__

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? Yes__X__ No___

NMOCD Reference Case No. applicable to this well: _____

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 Kristen D. Babcock TITLE REGULATORY ANALYST DATE 4/2/14

TYPE OR PRINT NAME KRISTEN D. BABCOCK TELEPHONE NO. (505) 333-3206

E-MAIL ADDRESS kristen_babcock@xtoenergy.com

RCVD APR16'07
OIL CONS. DIV.
DIST. 3

Form 3160-5
(September 2001)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
OMB No. 1004-0135
Expires: January 31, 2004

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.

07 APR -5 AM 11: 44
070 FARMINGTON NM

RECEIVED
BLM

SUBMIT IN TRIPLICATE- Other instructions on reverse side.

1. Type of Well: ☐ Oil Well ☑ Gas Well ☐ Other	5. Lease Serial No. NMNM - 023473
2. Name of Operator: Lance Oil & Gas Company, Inc.	6. If Indian, Allottee or Tribe Name: N/A
3a. Address: P. O. Box 70, Kirtland, NM 87417	3b. Phone No. *(include area code)*: 505-598-5601
4. Location of Well *(Footage, Sec., T., R., M., or Survey Description)*: 1,935' FNL & 710' FWL, Section 15, T30N-R14W, NMPM	7. If Unit or CA/Agreement, Name and/or No.: NA
	8. Well Name and No.: Mr. Nona 15 #1
	9. API Well No.: 30 - 045 - 30318
	10. Field and Pool, or Exploratory Area: Basin Fruitland Coal/Harper Hill PC
	11. County or Parish, State: San Juan County, NM

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

TYPE OF SUBMISSION	TYPE OF ACTION			
☑ Notice of Intent	☐ Acidize	☐ Deepen	☐ Production (Start/Resume)	☐ Water Shut-Off
☑ Subsequent Report	☐ Alter Casing	☐ Fracture Treat	☐ Reclamation	☐ Well Integrity
☐ Final Abandonment Notice	☐ Casing Repair	☐ New Construction	☐ Recomplete	☐ Other Downhole Commingle Application
	☐ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon	
	☐ Convert to Injection	☐ Plug Back	☐ 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 recomplete 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 recompletion 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.)

Lance requests approval to allocate production from the Mr. Nona 15 #1 well to Basin Fruitland Coal and Harper Hill Pictured Cliffs sandstone reservoirs in proportion to the recoverable reserves in-place calculated for each reservoir in accordance with legally-accepted reservoir engineering practices. The methodology was thoroughly reviewed with the BLM and NMOCD on Thursday afternoon, July 13, 2006. An attachment is enclosed entitled "Supplement to Downhole Commingling Application - Fruitland Coal & Pictured Cliffs Sandstone Allocation Methodology". The Mr. Nona 15 #1 is completed in the Basin Fruitland Coal and Harper Hill PC. However, the Mr. Nona 15 #1 is currently producing from only the Basin Fruitland Coal with a bridge plug set over the Harper Hill Pictured Cliffs. The well is perforated as follows:

Basin Fruitland coal: 1,343' - 54' KB, 1,360' KB, 1,384' KB, 1,394' - 95' KB and 1,439' - 52' KB
Harper Hill Pictured Cliffs: 1,454' - 1,462' KB

DHC2573AZ

The working, royalty and overriding royalty interests differ between in the commingled zones. All interest owners were notified by certified mail (return receipt) on September 29, 2006. No objections were received regarding the impending commingling application. The produced fluids from all commingled zones are compatible with each other and commingling will not decrease the value of production. Lance is requesting approval to allocate production based upon a split of Basin Fruitland Coal - 88.4% and Harper Hill Pictured Cliffs - 11.6%.

Your timely approval would be appreciated as Lance has a rig in the area to commence pulling the bridge plug as soon as possible.

14. I hereby certify that the foregoing is true and correct
Name *(Printed/Typed)*: Thomas M. Erwin, P.E. | Title: Production Superintendent

Signature: Thomas M. Erwin 4/4/07 | Date: 04/03/2007

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved by: Joe Hewitt	Title: GCO	Date: 4-13-07
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.	Office: FDO	

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.

(Instructions on page 2)

NMOCD

LANCE OIL & GAS COMPANY, INC.

Mr. Nona 15 #1
SWNW Section 15, T30N - R14W
San Juan County, New Mexico

Supplement to Downhole Commingling Application
Fruitland Coal - Pictured Cliffs Sandstone Allocation Methodology

The Mr. Nona 15 #1 is capable of producing from both the Basin Fruitland Coal and the Harper Hill Pictured Cliffs intervals. Currently, open perforations exist in both intervals; however, a plug is in-place over the Pictured Cliffs perforations keeping production from this interval behind pipe until downhole commingling is approved. Pursuant to Order R-11363, Lance Oil and Gas seeks approval to downhole commingle the "Pre-approved pools and areas": Basin Fruitland Coal (71629) and Harper Hill Pictured Cliffs (78160) in this well.

The Basin Fruitland Coal is perforated from 1,343' – 54' KB, 1,360' KB, 1,384' KB, 1,394' – 95' KB and 1,439' – 52' KB. The Harper Hill Pictured Cliffs is perforated from 1,454' – 62' KB. Lance Oil & Gas Company, Inc. (Lance) requests downhole commingling of production from the two zones with an allocation of future production to each zone that is not evenly split. Further, Lance intends to allocate production to the Basin Fruitland Coal and the Pictured Cliffs sandstone reservoir in proportion to the recoverable reserves in-place calculated for each reservoir, rather than by a production-based method.

In requesting this approach, Lance is acknowledging the fact that coal reservoirs and sandstone reservoirs are very different in their gas storage capacity and productive performance. The reserves extracted from each reservoir horizon, therefore, will be substantially disproportionate over the expected life of the well. Lance recommends this reserve-based allocation method because production-based methods suffer from the fact that once the juxtaposed coal and sand reservoirs are frac'd, they communicate with each other and the production attributable to each is very difficult to determine accurately. In addition, because sandstone and coal reservoirs perform so differently, the proportion of production attributable to each change very significantly over the life of the well as drawdown occurs. This adds yet another level of uncertainty and complexity to production-based allocation methods.

Calculations of reserves, on the other hand, can be done with accuracy in either reservoir type, and in accord with legally-accepted standard reservoir engineering practices. Lance advocates using this approach to allocating the total recoverable resource because it is a more fair way of assessing the resource volume that will be eventually produced from either zone. The reserves method acknowledges that all of the recoverable reserves in each zone will be extracted over the life of the well, and assures that respective parties will be properly credited for those reserves. The approach also avoids problematic issues with determining relative rates of production from each reservoir – particularly after frac'ing – and the change in those rates that occurs over time. Instead it leaves in-place a fixed proportion of production from each reservoir until all reserves are recovered. This further simplifies accounting for companies and interest owners by keeping the allocation constant over time until the end of the well's productive life.

On July 13th, 2006, Lance Oil & Gas Company, Inc. presented the results of a reservoir study to the BLM and NMOCD that demonstrated how reserves for each reservoir can be determined with accuracy using this method for our wells and how an allocation by this method would work. The reserve calculation is accomplished using industry-accepted and legally-accepted engineering and geological methods for calculating gas-in-place for CBM reservoirs and for gas sand reservoirs.

For CBM reservoirs the volume of recoverable reserves is given by

$$RGIP = Rf*[1359.7*A*h*RhoB*Gc]$$

Where:

- *A* = The drainage area of the well, which is taken as the spacing unit for the reservoir and is in this area being developed at 160 Acres.
- *h* = Thickness of the coal using a density cutoff of 2.0 g/cc.
- *RhoB* = Average bulk density of the coal seam.
- *Gc* = In-situ average gas content of the coal seam(s).

For Gas Sand reservoirs, this is given by:

$$RGIP = Rf*[(43,560*A*h*(1-Sw)*PHIe)/Bg]$$

Where:

- *Rf* = Recovery Factor, determined by the ratio of final gas formation volume factor to initial gas formation volume factor in the reservoir.
- *A* = The drainage area of the well, which is taken as the spacing unit for the reservoir and is in this area being developed at 160 Acres.
- *h* = Thickness of the reservoir interval over which there is sufficient gas saturation (1-Sw) for significant productivity.
- *Sw* = The average total water saturation in the reservoir over the interval having sufficient gas saturation for significant productivity.
- *PHIe* = Average "effective" porosity in the reservoir over the interval having sufficient gas saturation for significant productivity.

By using this method, the proposed allocation we propose for the Mr. Nona 15 #1 is:

Fruitland Coal - 88.40%
Pictured Cliffs - 11.60%

If you have any questions about the proposal, please contact Mr. Bill Lyons with Lance Oil and Gas Company, Inc, San Juan Basin Business Unit, 1099 18th Street, Suite 1200, Denver, CO 80202