

DATE IN 7/3/06	SUSPENSE	ENGINEER WILL JONES	LOGGED IN 7/3/06	TYPE DHC	APP NO. PTDSD618457640
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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]
- [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
- [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.

Cherry Hlava
Print or Type Name

Cherry Hlava
Signature

Regulatory Analyst 06/26/2006
Title Date
hlavacl@bp.com
e-mail Address

2006 JUL 3 PM 3 09

Allocation Method
Warren LS 4

BP America Production Company requests permission to complete the subject well into the Otero Chacra and tri-commingle production downhole with the existing Pictured Cliffs and Blanco Mesaverde Pools as per the attached procedure.

The interest owners are different between these three Pools, therefore additional notification is required prior to downhole commingling approval.

Production is proposed to be allocated based on the subtraction method using the projected future decline for production from the Pictured Cliffs and Mesaverde Pools. This production shall serve as a base for production subtracted from the total production for the commingled well. The balance of the production will be attributed to the Chacra. Attached are the future production decline estimates for the Pictured Cliffs & Mesaverde Pools.

Commingling Production Downhole in the subject well from the proposed pools will not reduce the value of the total remaining production.

Application has also been submitted to BLM on Form 3160-5, Federal Lease No. SF – 077123.

Pre Approved Pools:

Blanco-Mesaverde (72319) & Blanco-Pictured Cliffs (72359) Pools

Blanco-Mesaverde (72319) & Otero-Chacra (82329) Pools

Blanco-Pictured Cliffs (72359) & Otero-Chacra (82329) Pools

District I
1625 N. French Drive, Hobbs, NM 88240
2000
District II
811 South First Street, Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
Pools
District IV
2040 South Pacheco, Santa Fe, NM 87505

State of New Mexico
Energy, Minerals and Natural Resources Department

Form C-107A
Revised May 15,

OIL CONSERVATION DIVISION
2040 South Pacheco
Santa Fe, New Mexico 87505

APPLICATION TYPE
☒ Single Well
☐ Establish Pre-Approved

EXISTING WELLBORE
☒ Yes ☐ No
APPLICATION FOR DOWNHOLE COMMINGLING

BP America Production Company P. O. Box 3092 Houston, TX 77253
Operator Address
Warren LS 4 Unit H Section 14 T28N, R09W San Juan
Lease Well No. Unit Letter-Section-Township-Range County
OGRID No. 000778 Property Code 001212 API No. 30-045-07470 Lease Type: ☒ Federal ☐ State ☐ Fee

DATA ELEMENT	UPPER ZONE UNDES.	INTERMEDIATE ZONE UNDES.	LOWER ZONE
Pool Name	Blanco Pictured Cliffs	Otero Chacra	Blanco Mesaverde
Pool Code	72359	82329	72319
Top & Bottom of Pay Section (Perforated or Open-Hole Interval)	2454' - 2490'	To Be Determined	4642' - 4810'
Method of Production (Flowing or Artificial Lift)	Artificial Lift	Flowing	Artificial Lift
Bottomhole Pressure	180	700	480
Oil Gravity or Gas BTU (Degree API or Gas BTU)	1264	1230	1264
Producing, Shut-In or New Zone	Producing	New Zone	Producing
Date and Oil/Gas/Water Rates of Last Production.	Date: Rates:	Date: Rates:	Date: Rates:
Fixed Allocation Percentage	Oil % Gas %	Oil % Gas %	Oil % Gas %

ADDITIONAL DATA

Are all working, royalty and overriding royalty interests identical in all commingled zones? Yes ☒ 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 ☒ No ☐
Will commingling decrease the value of production? Yes ☐ No ☒
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 ☐ 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 Cherry Hlava TITLE Regulatory Analyst DATE 06/26/2006
TYPE OR PRINT NAME Cherry Hlava TELEPHONE NO. (281) 366-4081

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

District II
811 South First, Artesia, NM 88210

District III
1000 Rio Brazos Rd., Aztec, NM 87410

District IV
2040 South Pacheco, Santa Fe, NM 87505

State of New Mexico
Energy, Minerals & Natural Resources Department

OIL CONSERVATION DIVISION
2040 South Pacheco
Santa Fe, NM 87505

Form C-102
Revised August 15, 2000

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

AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-045-07470	² Pool Code 82329	³ Pool Name Otero Chacra
⁴ Property Code 001212	⁵ Property Name Warren LS	⁶ Well Number 4
⁷ OGRID No. 000778	⁸ Operator Name BP America Production Company	⁹ Elevation 6091' GR

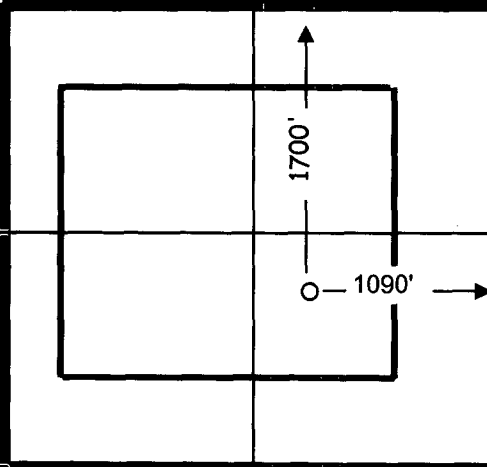
¹⁰ Surface Location

UL or lot no. Unit H	Section 14	Township 28N	Range 09W	Lot Idn	Feet from 1700	North/South North	Feet from 1090	East/West East	County San Juan
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¹¹ Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from	North/South	Feet	East/West	County
¹² Dedicated Acres 160	¹³ Joint or Infill	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

	¹⁷ OPERATOR CERTIFICATION I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief. <i>Cherry Hana to Hoto</i> Mary Corley Signature Printed Name Sr. Regulatory Analyst Title 2/21/2006 Date
	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. on file Date of Survey Signature and Seal of Professional Surveyor:
	Certificate Number

SJ Basin Tri-mingle Procedure

Well Name: Warren LS 4
Date: February 15, 2006
Repair Type: Payadd
API #: 30-045-07470
Location: T28N-R9W-Sec14
County: San Juan
State: New Mexico
Horizon: Mesaverde/Chacra

Engr: Jesse Gracia
ph (281) 366-1946

Objective: Perforate and frac Menefee and Chacra. Downhole tri-mingle PC, Chacra and MesaVerde

1. TOH with completion.
2. Perforate and fracture Menefee.
3. Perforate and fracture Chacra
4. Land tbg and return well to production.
5. Downhole co-mingle Chacra, and Mesaverde.

Procedure:

1. Perform pre-rig site inspection. Check for: size of location, Gas Taps, other wells, other operators, running equipment, wetlands, wash (dikes req.), H2S, barriers needed for equipment, Landowner issues, location of pits (buried lines in pits), Raptor nesting, critical location, check anchors. Check ID wellhead, if earth pit is required have One Call made 48 hours prior to digging.
2. Perform second site visit after lines are marked to ensure all lines clear marked pit locations. Planning and Scheduling to ready location for rig.
3. RU slickline unit or wireline unit. Pressure test lubricator and equipment. RIH and set **two** barriers (CIBP, tbg collar stop w/plug, or plug set in nipple) for isolation in tubing string.
4. Check and record tubing, casing, and bradenhead pressures. Ensure production casing has double casing valves installed. Double valve all casing strings.
5. MIRU workover rig. LO/TO all necessary equipment including but not limited to: meter run, Automation, Separators and water lines.
6. Blow down well. Kill with 2% KCL water ONLY if necessary.
7. Check all casing strings to ensure no pressure exist on any annulus. **The operations of removal of wellhead and installation of BOP's will be performed under a dispensation for one (1) barrier on the backside.**

8. Nipple down Wellhead. NU BOPs and diversion spool with 3" outlets and 3" pipe to the blow tank. Pressure test BOPs to 200 psi above BHP. Monitor flowing casing pressure with gauge (with casing flowing to blow tank) throughout workover.
9. Install stripping rubber, pull tubing hanger up above pipe rams, and shut pipe rams. Remove stripping rubber. Strip tubing hanger out of hole. Re-install stripping rubber.
10. TOH and LD 2-3/8" production tubing currently set at 4775'. Using approved "Under Balance Well Control Tripping Procedure".
11. TIH w/ scraper for 5-1/2". Check the distance between the top of the blind rams and the length of the bottom hole assembly that is being run. If the BHA is too long then the well has to be top killed and monitored prior to opening blind rams. RIH to PBTD at 4,820'. POOH.
12. Tubing set bridge plug at 4,600'. Fill casing w/ 2%KCl from the bottom up and test to 2,500 psi w/ rig pumps.
13. RU E-line equipment. Pressure test lubricator and equipment. Log well w/ CBL from CIBP to 2570. If TOC is below 2880', contact engineer to discuss need for remedial cement squeeze.
14. Log well w/ RST from CIBP to 3000'. Send to Houston in order to pick perf intervals.
15. TIH w/ workstring and blow well dry.
16. Prepare for explosive operations. Follow Schlumberger Explosive SOP including radio silence, suspension of welding operations, and isolation of electrical devices from the work area. Perform Pre-job Safety Meeting to review JSA and procedures. Meeting should address the VDR (vehicle data recorder) System that Bp people have installed on their vehicles. They must be shut off at the 300 foot sign by hitting 00 and then the enter button, and then wait for about 5 minutes for the unit to turn off. When the green light goes out, call the control center at 326-9475. This number is on a pickup list in the Optimizer room and should be your first point of contact followed by the front desk then the weekend pager. Verify the unit is not transmitting. You then can drive to location and park, but do not to exceed 10 Miles/hr. Note: 20 MPH will turn unit back on. If someone has On Star on their vehicle they cannot enter closer than 300 foot. On Star cannot be turned off. PLEASE take special caution. This is in conjunction with all cell phones, pagers, radios and any electronic device that transmits a signal.
17. RIH with 3-1/8" casing guns w/lubricator. Perforate Menefee formation:

w/ 2 SPF
18. RIH with 3-1/2" string and packer. Set packer at +/-2600'
19. NU Frac isolation equipment. Install and monitor production casing and treating pressure during entire job in frac van via pressure transducers on production casing and treating line. Spearhead 500 gal 15% HCL, establish injection rate, and proceed with

fracture stimulation according to Schlumberger schedule. Maintain surface pressures less than 3,000 psi during frac job. Flush frac with foam. Fill out GWSI scorecard.

20. Flowback frac immediately. Flow well through choke manifold on ¼", ½" and ¾" chokes increasing drawdown until well dies or stabilizes. This is to aid in reducing sand flowback. Recommend 8 hours of flow for each choke size.
21. TOH w/ 3-1/2" string and packer.
22. Set BP at +/- 4300' to isolate the MV formation.
23. Prepare for explosive operations. Follow Schlumberger Explosive SOP including radio silence, suspension of welding operations, and isolation of electrical devices from the work area. Perform Pre-job Safety Meeting to review JSA and procedures. Meeting should address the VDR (vehicle data recorder) System that Bp people have installed on their vehicles. They must be shut off at the 300 foot sign by hitting 00 and then the enter button, and then wait for about 5 minutes for the unit to turn off. When the green light goes out, call the control center at 326-9475. This number is on a pickup list in the Optimizer room and should be your first point of contact followed by the front desk then the weekend pager. Verify the unit is not transmitting. You then can drive to location and park, but do not to exceed 10 Miles/hr. Note: 20 MPH will turn unit back on. If someone has On Star on their vehicle they cannot enter closer than 300 foot. On Star cannot be turned off. PLEASE take special caution. This is in conjunction with all cell phones, pagers, radios and any electronic device that transmits a signal.
24. RIH with 3-1/8" casing guns w/lubricator. Perforate Chacra formation:
w/ 2 SPF
25. RIH with 3-1/2" string and packer. Set packer at +/-2600'
26. NU Frac isolation equipment. Install and monitor production casing and treating pressure during entire job in frac van via pressure transducers on production casing and treating line. Spearhead 500 gal 15% HCL, establish injection rate, and proceed with fracture stimulation according to Schlumberger schedule. Maintain surface pressures less than 3,000 psi during frac job. Flush frac with foam. Fill out GWSI scorecard.
27. Flowback frac immediately. Flow well through choke manifold on ¼", ½" and ¾" chokes increasing drawdown until well dies or stabilizes. This is to aid in reducing sand flowback. Recommend 8 hours of flow for each choke size.
28. Rig up air package/unit, pressure test all lines (Testing procedure to be supplied from air company), TIH with tubing and bit for 5-1/2" casing. Cleanout fill to top of BP set at 4,300'. **Perform well test on Chacra and document well test in DIMS.**
29. Cleanout fill and BP set at 4,300' and BP set at 4600'. Cleanout to PBTD at 4,820'. Blow well dry.

30. Rabbit tubing and RIH with 2-3/8" production tubing (with muleshoe, F-nipple with plug, 4 ft pup, X-nipple with plug).
31. Land 2-3/8" production tubing at +/-4,600'. Lock down hanger.
32. Pressure test tubing to 500 psi with air unit, make sure tubing spool valves are open. Care should be taken during pressure testing of the tubing due to potential problem caused if tubing parts close to surface or above the hanger. Check all casing string for pressure. **The operations of removal of wellhead and installation of BOP's will be performed under a dispensation for one (1) barrier on the backside.**
33. ND BOP's. NU Wellhead. During Master valve placement ensure the top of hanger has spacer nipple in place to bottom of bonnet flange so plunger equipment will not hang up through tree. Pressure test Wellhead.
34. RU WL unit. Run gauge ring for 2-3/8" tubing. Pull plugs and set tubing stop for plunger. Communicate plunger equipment status to IC room personnel.
35. RD slickline unit.
36. Test well for air. Return well to production and downhole tri-mingle PC, Chacra and Mesaverde.

Warren LS #4

Sec 14, T28N, R9W

API # 30-045-07470

GL: 6091'

History:

Completed as DK/PC dual in July 1957

Downhole commingled in 1985

Tubing replaced 11/02

Pictured Cliffs Perforations

2454' - 2490' w/ 40,000#s sand

Liner top sqz'd w/ 100 sxs cmt

Mesaverde Perforations

PL/MF: 4642' - 4810' w/ 60,000#s sand

est. TOC @ surface (circ)

10-3/4" 32# Armco SW @ 174'
150 sxs cmt (circulated)

Est. TOC @ 1400' (temp surv)

5-1/2" Burnes hanger @ 2574'

7-5/8" 26#, J55 @ 2618'
250 sxs cmt

Est. TOC @ TOL (temp surv)

Tubing: 2-3/8" 4.7#, J55 8rd @ 4775'

5-1/2" liner, 15.5#, J55 @ 4922'
300 sxs cmt

PBTD: 4820'

NOTES:

updated: 2/13/06 JG

[illegible]

[illegible]