

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR DEEPEN

1a. TYPE OF WORK DRILL <input checked="" type="checkbox"/> DEEPEN <input type="checkbox"/>		5. LEASE DESIGNATION AND SERIAL NO. NM - 010989 ✓
b. TYPE OF WELL OIL WELL <input type="checkbox"/> GAS WELL <input checked="" type="checkbox"/> OTHER <input type="checkbox"/> SINGLE ZONE <input type="checkbox"/> MULTIPLE ZONE <input checked="" type="checkbox"/>		6. IF INDIAN, ALOTTEE OR TRIBE NAME
2. NAME OF OPERATOR AMOCO PRODUCTION COMPANY P.O. BOX 3092 HOUSTON, TX 77079		7. UNIT AGREEMENT NAME
3. ADDRESS AND TELEPHONE NO. MARY CORLEY AUTHORIZED REPRESENTATIVE PHONE: 281.366.4491 FAX: 281.366.0700 EMAIL: corleym@blm.com		8. FARM OR LEASE NAME, WELL NO. FIELDS 4M
4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements) At Surface: 2195FNL AND 1390FEL NWSE SEC 28 T32N R11W At proposed prod. zone		9. API WELL NO. 30-045-30633
14. DISTANCE IN MILES AND DIRECTION FROM THE NEAREST TOWN OR POST OFFICE 13 MILES FROM AZTEC		10. FIELD AND POOL, OR WILDCAT BASIN DAKOTA/BLANCO MESAVERDE
15. DISTANCE FROM PROPOSED* LOCATION TO NEAREST PROPERTY OR LEASE LINE, FT. (Also to nearest drlg. unit line, if any)	16. NO. ACRES IN LEASE 320.00	11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA SECTION 28 T32N R11W MERIDIAN NMP
18. DISTANCE FROM PROPOSED LOCATION* TO NEAREST WELL, DRILLING, COMPLETED, OR APPLIED FOR, ON THIS LEASE FT.	19. PROPOSED DEPTH 7762 MD / TVD 7852	12. COUNTY OR PARISH SAN JUAN
21. ELEVATIONS (Show whether DF, RT, GR, etc.) 6248 GL		13. STATE NM
22. APPROX. DATE WORK WILL START* 05/20/2001		

23. PROPOSED CASING AND CEMENTING PROGRAM				
SIZE OF HOLE	GRADE, SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT

Notice of Staking Submitted 02/26/2001 as the Fields A well 4M. Please change lease name to Fields well # 4M. Amoco Production Company respectfully request permission to drill the subject well to a total depth of approximately 7762', complete in the Basin Dakota Pool, produce the well for approximately 30 days to establish production rate, add the Blanco Mesaverde Pool and commingle production downhole. Application for downhole commingling authority (NMOCD order R-11363) will be submitted to all appropriate parties for approval after production has been established in the Basin Dakota Pool and prior to completion of and downhole commingling with the Blanco Mesaverde. Please see attached documents in support of our application

This action is subject to technical and procedural review pursuant to 43 CFR 3160.2 and appeal pursuant to 43 CFR 3160.4.

ALL APPLICANTS MUST COMPLY WITH ATTACHED "GENERAL REQUIREMENTS"

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: If proposal is to deepen, give data on present productive zone and proposed productive zone. If proposal is to drill or deepen directionally, give pertinent data on subsurface locations and measured and true vertical depths. Give blowout preventer program, if any.

24. ELECTRONIC SUBMISSION #3597 VERIFIED BY THE BLM WELL INFORMATION SYSTEM
FOR AMOCO PRODUCTION COMPANY SENT TO THE FARMINGTON FIELD OFFICE

SIGNED: MARY CORLEY TITLE: AUTHORIZED REPRESENTATIVE DATE: 04/11/2001

PERMIT NO. _____ APPROVAL DATE: 6/8/01

Application approval 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.

APPROVED BY: /s/ Lee Ottenl TITLE: _____ DATE: _____

HOLD 0104 FOR Basin Dakota NSL

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
OMB NO. 1004-0135
Expires: November 30, 2000

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.

5. Lease Serial No.
NM - 010989

6. If Indian, Allottee or Tribe Name

SUBMIT IN TRIPLICATE - Other instructions on reverse side.

7. If Unit or CA/Agreement, Name and/or No.

1. Type of Well

☐ Oil Well ☒ Gas Well ☐ Other

8. Well Name and No.
FIELDS 4M

2. Name of Operator
AMOCO PRODUCTION COMPANY

Contact: MARY CORLEY
E-Mail: corleym@blm.com

9. API Well No.

3a. Address
P.O. BOX 3092
HOUSTON, TX 44253

3b. Phone No. (include area code)
Ph: 281.366.4401
Fax: 281.366.0700

10. Field and Pool, or Exploratory
BASIN DAKOTA/BLANCO MESAVERDE

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)

Sec 28 T32N R11W Mer NWSE
36.57300 N Lat, 107.59400 W Lon

11. County or Parish, and 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			
<input checked="" type="checkbox"/> Notice of Intent	<input type="checkbox"/> Acidize	<input type="checkbox"/> Deepen	<input type="checkbox"/> Production (Start/Resume)	<input type="checkbox"/> Water Shut-Off
<input type="checkbox"/> Subsequent Report	<input type="checkbox"/> Alter Casing	<input type="checkbox"/> Fracture Treat	<input type="checkbox"/> Reclamation	<input type="checkbox"/> Well Integrity
<input type="checkbox"/> Final Abandonment Notice	<input type="checkbox"/> Casing Repair	<input type="checkbox"/> New Construction	<input type="checkbox"/> Recomplete	<input checked="" type="checkbox"/> APDCH
	<input type="checkbox"/> Change Plans	<input type="checkbox"/> Plug and Abandon	<input type="checkbox"/> Temporarily Abandon	
	<input type="checkbox"/> Convert to Injection	<input type="checkbox"/> Plug Back	<input type="checkbox"/> 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 recompleat 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 recompleat 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.)

Application for Permit to Drill for the subject well was submitted on 04/11/2001. Amoco Production Company respectfully submits for your approval amendments to our drilling and completion Program as per the attached two (2) documents. The major change is in the casing and cementing program.

The subject well also requires NMOCD approval for a Non-Standard drilling location for the Basin Dakota completion. A request for an exception to Non-Standard is being submitted to the NMOCD under a separate application.

14. I hereby certify that the foregoing is true and correct.

**Electronic Submission #4549 verified by the BLM Well Information System
For AMOCO PRODUCTION COMPANY, sent to the Farmington
Committed to AFMSS for processing by Maurice Johnson on 05/30/2001 ()**

Name (Printed/Typed) MARY CORLEY

Title AUTHORIZED REPRESENTATIVE

Signature

Date 05/27/2001

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved By

Title

Date 6/11/01

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

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.

**** ORIGINAL ** ORIGINAL ** ORIGINAL ** ORIGINAL ** ORIGINAL ** ORIGINAL ** ORIGINAL ****

District I
PO Box 1980, Hobbs NM 88241-1980
District II
PO Drawer KK, Artesia, NM 87211-0719
District III
1000 Rio Brazos Rd., Aztec, NM 87410
District IV
PO Box 2088, Santa Fe, NM 87504-2088

State of New Mexico
Energy, Minerals & Natural Resources Department

OIL CONSERVATION DIVISION
PO Box 2088
Santa Fe, NM 87504-2088

Form C-102

Revised February 21, 1994

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

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

1 API Number 30-045-30633		2 Pool Code 71599 & 72319		3 Pool Name BASIN DAKOTA & BLANCO MESAVERDE		
4 Property Code 000510		5 Property Name Fields			6 Well Number # 4M	
7 OGRID No. 000778		8 Operator Name AMOCO PRODUCTION COMPANY			9 Elevation 6248	

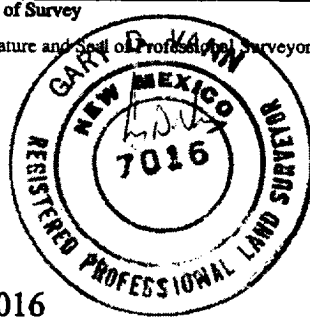
10 Surface Location

UL or Lot No. J	Section 28	Township 32 N	Range 11 W	Lot Idn	Feet from the 2195	North/South line SOUTH	Feet from the 1390	East/West line EAST	County SAN JUAN
--------------------	---------------	------------------	---------------	---------	-----------------------	---------------------------	-----------------------	------------------------	--------------------

11 Bottom Hole Location If Different From Surface

12 UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
13 Dedicated Acres 320.00		14 Joint or Infill		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		5066 (R)		17 OPERATOR CERTIFICATION I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief. Signature: <i>Mary Corley</i> Printed Name: MARY CORLEY Title: SR. REGULATORY ANALYST Date: 04/09/2001	
5250 (R)		28		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. January 26, 2001 Date of Survey Signature and Seal of Professional Surveyor  7016 Certificate Number	
		5049 (R)			

**AMOCO PRODUCTION COMPANY
DRILLING AND COMPLETION PROGRAM**

Prospect Name: Fields
Lease: FIELDS
County: San Juan
State: New Mexico
Date: May 27, 2001

Well No: 4M
Surface Location: 28-32N-11W, 2195 FSL, 1390 FEL
Field: Blanco Mesaverde/Basin Dakota

OBJECTIVE: Drill 450' below the base of the Greenhorn Limestone, set 4 1/2" production casing, Stimulate LS, CH, MF, PL and DK intervals

METHOD OF DRILLING		APPROXIMATE DEPTHS OF GEOLOGICAL MARKER			
TYPE OF TOOLS	DEPTH OF DRILLING	Estimated GL: 6248		Estimated KB: 6262	
Rotary	0 - TD				
LOG PROGRAM		MARKER		SUBSEA	MEAS. DEPTH
TYPE	DEPTH INVERAL	Ojo Alamo		4406	1857
OPEN HOLE		Fruitland Coal	*	3951	2312
GR-Induction	TD to 7" shoe	Pictured Cliffs	*	3298	2964
Density/Neutron	TD to 7" shoe	Lewis Shale	#	3251	3012
		Cliff House	#	1538	4724
		Menefee Shale	#	1384	4878
		Point Lookout	#	1010	5253
		Mancos		881	5382
		Greenhorn		-1050	7312
		Bentonite Marker		-1100	7362
		Two Wells	#	-1160	7422
		Dakota MB	#	-1270	7532
		Burro Canyon	*	-1415	7677
		Morrison	*	-1465	7727
		TOTAL DEPTH		-1590	7852
REMARKS:		# Probable completion interval * Possible Pay			
- Please report any flares (magnitude & duration).					
SPECIAL TESTS		DRILL CUTTING SAMPLES		DRILLING TIME	
TYPE		FREQUENCY	DEPTH	FREQUENCY	DEPTH
None		10 feet	Production hole	Geolograph	0-TD
REMARKS:					

MUD PROGRAM:						
Approx. Interval	Type Mud	Weight, #/ga	Vis, sec/qt	W/L cc's/30 min	Other Specification	
0 - 200 3 jts.	Spud	8.6-9.2				
200 - 3112 (1)	Water/LSND	8.6-9.2		<6		
3112 - 7677	Gas/Air/N2/Mist	Volume sufficient to maintain a stable and clean wellbore				
7677 - 7852 (2)	LSND	9.0-9.2		<6		

REMARKS:
(1) The hole will require sweeps to keep unloaded while fresh water drilling. Let hole conditions dictate frequency.
(2) Mud up 50' above Morrison +/-.

CASING PROGRAM: (Normally, tubular goods allocation letter specifies casing sizes to be used. Hole sizes will be governed by Contract)

Casing String	Estimated Depth	Casing Size	Grade	Weight	Hole Size	Landing Pt, Cmt, Etc.
Surface/Conductor	200	9 5/8"	H-40 ST&C	32#	12.25"	1
Intermediate 1	3112	7"	J/K-55 ST&C	20#	8.75"	1,2
Production	7852	4 1/2"	J-55	11.6#	6.25"	3

REMARKS:
(1) Circulate Cement to Surface
(2) Set casing 100' into Lewis Shale
(3) Bring cement 100' above 7" shoe

CORING PROGRAM:

None

COMPLETION PROGRAM:

Rigless, 4-6 Stage Limited Entry Hydraulic Frac

GENERAL REMARKS:

Notify BLM/NMOCD 24 hours prior to Spud, BOP testing, and Casing and Cementing.

Form 46 Reviewed by: _____ Logging program reviewed by: _____ N/A

PREPARED BY:	APPROVED:	DATE:	
HGJ/KAT		May 3, 2001	
Form 46 12-00 KAT		Version 3.0	

BOP Test Pressure

Amoco Production Company BOP Pressure Testing Requirements

Well Name: Fields
County: San Juan

4M
State: New Mexico

Formation	TVD	Anticipated Bottom Hole Pressure	Maximum Anticipated Surface Pressure **
Ojo Alamo	1857		
Fruitland Coal	2312		
PC	2964		
Lewis Shale	3012		
Cliff House	4724	500	0
Menefee Shale	4878		
Point Lookout	5253	600	0
Mancos	5382		
Dakota	7422	2600	1416

** Note: Determined using the following formula: $ABHP - (.22 \times TVD) = ASP$

Requested BOP Pressure Test Exception: 3000 psi

Cementing Program

Well Name: Fields 4M	Field: Blanco Mesaverde / Basin Dakota
Location: 28-32N-11W, 2195 FSL, 1390 FEL	API No. 1390
County: San Juan	Well Flac 1390
State: New Mexico	Formation: Dakota MesaVerde
	KB Elev (est) 6262
	GL Elev. (est) 6248

Casing Program:

Casing String	Est. Depth (ft.)	Hole Size (in.)	Casing Size (in.)	Thread	TOC (ft.)	Stage Tool Or TOL (ft.)	Cmt Cir. Out (bbl.)
Surface	200	12.25	9.625	ST&C	Surface	NA	
Intermediate	3112	8.75	7	LT&C	Surface	NA	
Production -	7812	6.25	4.5	?	3012	NA	

Casing Properties:

(No Safety Factor Included)

Casing String	Size (in.)	Weight (lb/ft)	Grade	Burst (psi.)	Collapse (psi.)	Joint St. (1000 lbs.)	Capacity (bbl/ft.)	Drift (in.)
Surface		9.625	32 H-40	3370		1400	254	0.0787
Intermediate		7	20 K-55	3740		2270	234	0.0405
Production -		4.5	11.6 J-55	5350		4960	154	0.0155

Mud Program

Apx. Interval (ft.)	Mud Type	Mud Weight	<u>Recommended Mud Properties Prio Cementing:</u>	
			PV	<20
			YP	<10
			Fluid Loss<15	
0 - SCP	Water/Spud	8.6-9.2		
SCP - ICP	Water/LSND	8.6-9.2		
ICP - ICP2	Gas/Air Mist	NA		
ICP2 - TD	LSND	8.6 - 9.2		

Cementing Program:

	Surface	Intermediate	Production
Excess %, Bit	100%	80	10
Excess %, Caliper	NA	NA	30
BHST (est deg. F)	60	120	160
Pipe Movement	NA	Rotate/Reciprocate	Rotate/Reciprocate
Rate, Max (bpm)	7	4	2
Rate Recommended (bpm)	6	4	2
Pressure, Max (psi)	200	2000	2000
Shoe Joint	40	80	40
Batch Mix	NA	NA	NA
Circulating prior cmtng (hr)	0.5	1.5	2
Time Between Stages, (hr)	NA	NA	NA
Special Instructions	1,6,7	1,6,8	2,4,6

1. Do not wash pumps and lines.
2. Wash pumps and lines.
3. Reverse out
4. Run Blend Test on Cement
5. Record Rate, Pressure, and Density on 3.5" disk
6. Confirm densitometer with pressurized mud scales
7. 1" cement to surface if cement is not circulated.
8. If cement is not circulated to surface, run temp. survey 10-12 hr. after landing plug.

Notes:

- *Do not wash up on top of plug. Wash lines before displacing production cement job to minimize drillout.
- *** Run TMD cased hole logs to identify pay; Perforating and CH logs can be run rigless.

Surface:

Preflush 20 bbl. FreshWater

Cementing Program

Slurry 1 TOC@Surface		108 sx Class G Cement + 2% CaCl ₂ (accelerator) 0.25 #/sk Cellophane Flake (lost circulation additive) 0.1% D46 antifoam	125 cuft 0.3132 cuft/ft OH 100 % excess
Slurry Properties:	Density (lb/gal)	Yield (ft ³ /sk)	Water (gal/sk)
Slurry 1	15.8	1.16	4.95

Casing Equipment:

- 9-5/8", 8R, ST&C
- 1 Guide Shoe
- 1 Top Wooden Plug
- 1 Autofill insert float valve
- 4 Centralizers
- 1 Stop Ring
- 1 Thread Lock Compound

Intermediate:

Fresh Water 20 bbl fresh water

Lead Slurry 1 TOC@Surface		237 sx Class "G" Cement + 3% D79 extender + 2% S1 Calcium Chloride + 1/4 #/sk. Cellophane Flake + 0.1% D46 antifoam'	687 cuft
Tail Slurry 2 500 ft fill		107 sx 50/50 Class "G"/Poz + 2% gel (extender) 0.1% D46 antifoam + 1/4 #/sk. Cellophane Flake + 2% CaCl ₂ (accelerator)	135 cuft 0.1503 cuft/ft OH 0.1746 cuft/ft csg ann 80 % excess
Slurry Properties:	Density (lb/gal)	Yield (ft ³ /sk)	Water (gal/sk)
Slurry 1	11.4	2.9	17.77
Slurry 2	13.5	1.27	5.72

Casing Equipment:

- 7", 8R, ST&C
- 1 Float Shoe (autofill with minimal LCM in mud)
- 1 Float Collar (autofill with minimal LCM in mud)
- 1 Stop Ring
- 10 Centralizers (one in middle of first joint, then every third collar)
- 2 Fluidmaster vane centralizers @ base of Ojo
- 7 Centralizers one every 4th joint from Ojo to base of surface casing
- 1 Top Rubber Plug
- 1 Thread Lock Compound

Production:

Fresh Water 10 bbl CW100

Lead Slurry 1 TOC@Surface		146 LiteCrete D961 / D124 / D154 + 0.03 gps D47 antifoam + 0.5% D112 fluid loss	313 cuft
---------------------------------	--	---	----------

Cementing Program

+ 0.11% D65 TIC

Tail
Slurry 2

1930 ft fill

151 sx 50/50 Class "G"/Poz
+ 5% D20 gel (extender)
+ 0.1% D46 antifoam
+ 1/4 #/sk. Cellophane Flake
+ 0.25% D167 Fluid Loss

218 cuft
+ 5 #/sk D24 gilsonite
+ 0.15% D65 TIC
+ 0.1% D800 retarder

Slurry Properties:

	Density (lb/gal)	Yield (ft ³ /sk)	Water (gal/sk)	
Slurry 1	9.5	2.14	6.38	0.1026 cuft/ft OH
Slurry 2	13	1.44	6.5	10 % excess 0.1169 cuft/ft csg ann

Top of Mancos
5382

Casing Equipment:

4-1/2", 8R, ST&C

1 Float Shoe (autofill with minimal LCM in mud)
1 Float Collar (autofill with minimal LCM in mud)
1 Stop Ring
39 Centralizers (every third joint)

1 Top Rubber Plug
1 Thread Lock Compound

Note:

1. The job should be pumped at 2-3 bpm max rate. Do not exceed 3 bpm on displacement
2. Wash pump and lines before displacement. Slow to 1 bpm for the last 30 bbl of displacement.

