Form 3160-3
(August 1999)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
OMB No. 1004-0136
Expires November 30, 2000

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No.
NMSF - 078513

6. If Indian, Allottee or Tribe Name

1a. Type of Work: ☒ DRILL ☐ REENTER

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

1b. Type of Well: ☐ Oil Well ☒ Gas Well ☐ Other ☒ Single Zone ☐ Multiple Zone

8. Lease Name and Well No.
ARNAUD A 1S

2. Name of Operator
BP AMERICA PRODUCTION COMPANY
Contact: MARY CORLEY
E-Mail: corleyml@bp.com

9. API Well No.

3a. Address
P.O. BOX 3092
HOUSTON, TX 77253

3b. Phone No. (include area code)
Ph: 281.366.4491
Fx: 281.366.0700

10. Field and Pool, or Exploratory
BASIN FRUITLAND COAL
30045 31430

4. Location of Well *(Report location clearly and in accordance with any State requirements.*)*

At surface NESE Lot 9 2280FSL 905FEL 36.59000 N Lat, 107.47800 W Lon

At proposed prod. zone

11. Sec., T., R., M., or Blk. and Survey or Area
Sec 17 T32N R9W Mer NMP
I

14. Distance in miles and direction from nearest town or post office*
22 MILES TO AZTEC, NEW MEXICO

12. County or Parish
SAN JUAN

13. State
NM

15. Distance from proposed location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any)
905

16. No. of Acres in Lease
316.42

17. Spacing Unit dedicated to this well
316.42 E/2

18. Distance from proposed location to nearest well, drilling, completed, applied for, on this lease, ft.
1500

19. Proposed Depth
3977 MD

20. BLM/BIA Bond No. on file
WY2924

21. Elevations (Show whether DF, KB, RT, GL, etc.
6972 GL

22. Approximate date work will start
04/15/2003

23. Estimated duration
3 DAYS

APR 2003

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No. 1, shall be attached to this form:

1. Well plat certified by a registered surveyor.
2. A Drilling Plan.
3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO shall be filed with the appropriate Forest Service Office).
4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).
5. Operator certification
6. Such other site specific information and/or plans as may be required by the authorized officer.

25. Signature	Name (Printed/Typed)	Date
(Electronic Submission)	MARY CORLEY	02/27/2003

Title
AUTHORIZED REPRESENTATIVE

Approved by (Signature)	Name (Printed/Typed)	Date
/s/ David J. Mankiewicz		APR 16 2003
Title	Office	

Application approval does not warrant or certify the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.
Conditions of approval, if any, are attached.

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.

Additional Operator Remarks (see next page)

Electronic Submission #18979 verified by the BLM Well Information System
For BP AMERICA PRODUCTION COMPANY, sent to the Farmington

This action is subject to technical and procedural review pursuant to 43 CFR 3165.3 and appeal pursuant to 43 CFR 3165.4

DRILLING OPERATIONS AUTHORIZED ARE SUBJECT TO COMPLIANCE WITH ATTACHED "GENERAL REQUIREMENTS".

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

NMOCD

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	[2] Pool Code	[3] Pool Name
30-045-31430	71629	Basin Fruitland Coal

[4] Property Code	[5] Property Name	[6] Well Number
000275	Arnaud A	# 1S

[7] OGRID No.	[8] Operator Name	[9] Elevation
000778	BP AMERICA PRODUCTION COMPANY	6972

[10] Surface Location

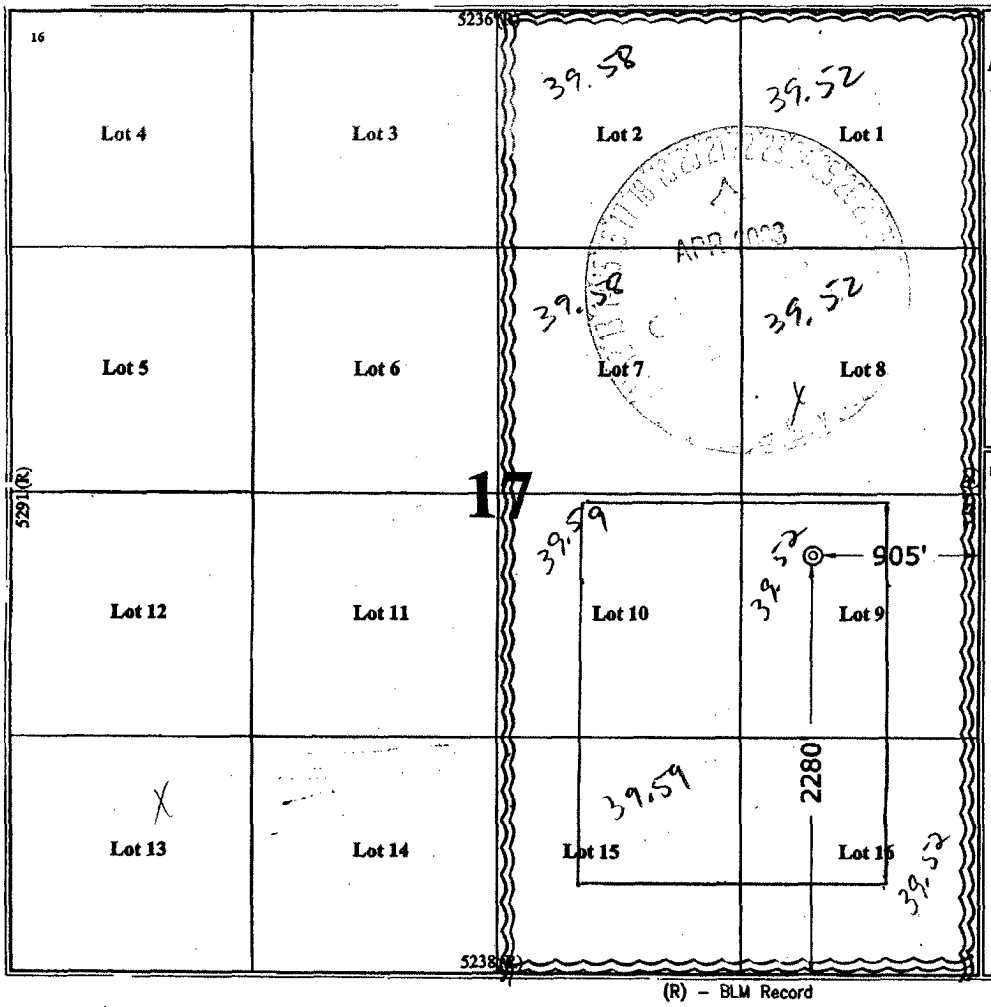
UL or Lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
I (Lot 9)	17	32 N	9 W		2280	SOUTH	905	EAST	SAN JUAN

[11] Bottom Hole Location If Different From Surface

[7] 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	[13] Joint or Infill	[14] Consolidation Code	[15] Order No.
316.42			

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.

Mary Corley
Signature

Mary Corley
Printed Name

Sr. Regulatory Analyst
Title

02-27-2003
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.

January 29, 2003
Date of Survey

Signature and Seal of Professional Surveyor

GARY D. VANN — NEW MEXICO — 7016 — REGISTERED PROFESSIONAL LAND SURVEYOR

7016
Certificate Number

(R) – BLM Record

BP AMERICA PRODUCTION COMPANY
DRILLING AND COMPLETION PROGRAM

Prospect Name: Arnaud A
Lease:
Well No: 1S
Surface Location: Section 17I, T32N, R9W; 2280' FSL, 905' FEL
County: San Juan
State: New Mexico
Field: Basin Fruitland Coal
Date: February 20, 2003

OBJECTIVE: Drill to a TD of 3977' md, set 7" casing and perf and frac the Fruitland Coal interval.

METHOD OF DRILLING

TYPE OF TOOLS	DEPTH OF DRILLING
Rotary	0 – 3977' MD, 3989' KB

LOG PROGRAM

TYPE	DEPTH INVERAL
OPEN HOLE	
Run 3-detector Litho-Density. (**see Remarks section below**).	TD up to minimum charge.
CASED HOLE	

REMARKS:
- Primary presentation is Bulk Density Presentation (5"=100') with <1.75 g/cc shaded as coal. High resolution pass across the Fruitland interval only. Three final prints to Dan Crosby in Houston. Customer LAS file to Bill Pelzmann in Houston – PELZMANN@BP.COM

APPROXIMATE DEPTHS OF GEOLOGICAL MARK

Estimated GL: 6972 Estimated KB: 698

MARKER		SUBSEA	MEAS.
Ojo Alamo		4737	
Kirtland		4599	
Fruitland		3685	
Fruitland Coal	*#	3532	
Pictured Cliffs	*	3143	
TOTAL DEPTH		2995	

Probable completion interval * Possible Pay

SPECIAL TESTS

TYPE
None

DRILL CUTTING SAMPLES

FREQUENCY	DEPTH
none	none

DRILLING TI

FREQUENCY	DI
Geolograph	0-

REMARKS: **Obtain reservoir pressures by individual coal seam before starting production.**

MUD PROGRAM:

Approx. Interval			Type Mud	Weight, #/ga	Vis, sec/qt	W/L cc's/30 min	Other Specifica
0	- 120		Spud	8.6-9.2			
120	- 3977	(1)	Water/LSND	8.6-9.2		<6	
	-		Gas/Air/N2/Mist	Volume sufficient to maintain a stable and clean wellbore			

REMARKS:
(1) The hole will require sweeps to keep unloaded while fresh water drilling. Let hole conditions dictate frequency.

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, Ci
Surface/Conductor	120	9 5/8"			12.5"	1
Intermediate	3977	7"			8.75"	1
Production						

REMARKS:
(1) Circulate Cement to Surface

SAN JUAN BASIN
Fruitland Formation
Pressure Control Equipment

Background

The objective Fruitland Coal formation maximum surface pressure is anticipated to be less than 1000 psi, based on shut-in surface pressures from adjacent wells. Pressure control equipment working pressure minimum requirements are therefore 2000 psi. Equipment to be used will conform to API RP-53 (Figure 2.C.2) for a 2000 psi system per Federal Onshore Order No. 2. Due to available conventional equipment within the area, 3000 psi rated pressure control equipment will typically be utilized in a double ram type arrangement. Regional drilling rights to be utilized have substructure height limitations which exclude the use of annular preventers; therefore a rotating head will be installed above these rams. This pressure control equipment will be utilized for conventional drilling below conductor to total depth in the Basin Dakota. No abnormal temperature, pressure, or H2S anticipated.

Equipment Specification

Interval	BOP Equipment
Below conductor casing to total depth	11" nominal or 7 1/16",3000 psi double ram preventer with rotating head.

All ram type preventers and related control equipment will be hydraulically tested to 250 psi (low pressure) and 2000 psi (high pressure), upon installation, following any repairs or equipment replacements, or at 30 day intervals. Accessories to BOP equipment will include kelly cock, upper kelly cock with a handle available, floor safety valves and choke manifold which will also be tested to equivalent pressure.

FEDERAL CEMENTING REQUIREMENTS

1. **All permeable zones containing fresh water and other usable water containing 10,000 PPM or less total dissolved solids will be isolated and protected from contamination by cement circulated in place for the protection of permeable zones per the NTL-FRA 90-1 Section III A.**

2. **The hole size will be no smaller than 1 ½" larger diameter than the casing O.D. across all water zones.**

3. **An adequate spacer will be pumped ahead of the cement slurry to help prevent mud contamination of the cement.**

4. **An adequate number of casing centralizers will be run through usable water zones to ensure that the casing is centralized through these zones. The adequate number of centralizers to use will be determined by API SPEC 10D.**

5. **Centralizers will impart a swirling action around the casing and will be used just below and into the base of the lowest usable water zone.**

6. **A chronological log will be kept recording the pump and slurry information and will be sent to the BLM with the subsequent sundry.**

Cementing Program

Well Name:	Arnuad A 1S	Field:	Basin Fruitland Coal
Location:	Sec 17 - 32N - 9W, 2280' FSL, 905" FEL	API No.	
County:	San Juan	Well Flac	
State:	New Mexico	Formation:	Fruitland Coal
		KB Elev (est)	6984
		GL Elev. (est)	6972

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	120	12.5	9.625	ST&C	Surface	NA	
Production -	3977	8.75	7	LT&C	Surface	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	8.845
Production -	7	20	K-55	3740	2270	234	0.0405	6.456

Mud Program

Apx. Interval (ft.)	Mud Type	Mud Weight
0 - SCP	Water/Spud	8.6-9.2
SCP - TD	Water/LSND	8.6-9.2
SCP - TD	Gas/Air/N2/Mist	NA

Recommended Mud Properties Prio Cementing:

PV	<20
YP	<10
Fluid Loss	<6

Cementing Program:

	Surface	Production
Excess %, Lead	100	40
Excess %, Tail	NA	40
BHST (est deg. F)	75	120
Special Instructions	1,6,7	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 minmize drillout.

Surface:

Preflush	20 bbl.	FreshWater	
Slurry 1	80 sx Class G Cement		83 cuft
TOC@Surface	+ 2% CaCl2 (accelerator)		
	0.25 #/sk Cellophane Flake (lost circulation additive)		0.347 cuft/ft OH
	0.1% D46 antifoam		

Slurry Properties:	Density (lb/gal)	Yield (ft3/sk)	Water (gal/sk)
Slurry 1	15.8	1.16	4.95

Casing Equipment: 9-5/8", 8R, ST&C
1 Guide Shoe

Cementing Program

1 Top Wooden Plug
1 Autofill insert float valve
Centralizers, 1 per joint except top joint
1 Stop Ring
1 Thread Lock Compound

Production:

Fresh Water		10 bbl	CW100	
Lead		280 sx	Class "G" Cement	727 cuft
Slurry 1			+ 3% D79 extender	
TOC@Surface			+ 2% S1 Calcium Chloride	
			+1/4 #/sk. Cellophane Flake	
			+ 0.1% D46 antifoam'	
Tail		90 sx	50/50 Class "G"/Poz	105 cuft
Slurry 2			+ 2% gel (extender)	
	500 ft fill		0.1% D46 antifoam	0.1503 cuft/ft OH
			+1/4 #/sk. Cellophane Flake	0.1746 cuft/ft csg ann
			+ 2% CaCl2 (accelerator)	

Slurry Properties:	Density (lb/gal)	Yield (ft3/sk)	Water (gal/sk)
Slurry 1	11.4	2.61	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 Top Rubber Plug
1 Thread Lock Compound