

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

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

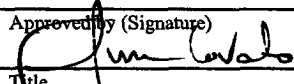
APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of Work: <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER		5. Lease Serial No. SF -0078194
1b. Type of Well: <input type="checkbox"/> Oil Well <input checked="" type="checkbox"/> Gas Well <input type="checkbox"/> Other <input type="checkbox"/> Single Zone <input checked="" type="checkbox"/> Multiple Zone		6. If Indian, Allottee or Tribe Name
2. Name of Operator BP AMERICA PRODUCTION CO		7. If Unit or CA Agreement, Name and No.
Contact: CHERRY HLAVA E-Mail: hlavaci@bp.com		8. Lease Name and Well No. LUDWICK LS 17 M
3a. Address HOUSTON, TX 77253-3092	3b. Phone No. (include area code) Ph: 281.366.4081	9. API Well No. 30-045-32923
4. Location of Well (Report location clearly and in accordance with any State requirements. *) At surface SWSE Lot 15 1010FSL 1660FEL 36.77861 N Lat, 107.90444 W Lon At proposed prod. zone SWSE Lot 15 1010FSL 1660FEL 36.77861 N Lat, 107.90444 W Lon		10. Field and Pool, or Exploratory BASIN DK & BLANCO MV
14. Distance in miles and direction from nearest town or post office* 7.4 MILES S/E FROM AZTEC, NM		11. Sec., T., R., M., or Blk. and Survey or Area Sec 29 T30N R10W Mer NMP
15. Distance from proposed location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 1010	16. No. of Acres in Lease 319.62	12. County or Parish SAN JUAN
18. Distance from proposed location to nearest well, drilling, completed, applied for, on this lease, ft. 100	19. Proposed Depth 7222 MD 7222 TVD	13. State NM
21. Elevations (Show whether DF, KB, RT, GL, etc.) 6136 GL	22. Approximate date work will start 06/01/2005	17. Spacing Unit dedicated to this well E/P 319.62
		20. BLM/BIA Bond No. on file WY2924
		23. Estimated duration 7

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. | 4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above). |
| 2. A Drilling Plan. | 5. Operator certification |
| 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). | 6. Such other site specific information and/or plans as may be required by the authorized officer. |

25. Signature (Electronic Submission)	Name (Printed/Typed) CHERRY HLAVA Ph: 281.366.4081	Date 03/02/2005
Title AGENT		
Approved by (Signature) 	Name (Printed/Typed)	Date 8/25/05
Title Field Manager - Minerals		

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 #54664 verified by the BLM Well Information System
For BP AMERICA PRODUCTION CO, sent to the Farmington



OPERATOR-SUBMITTED ** OPERATOR-SUBMITTED ** OPERATOR-SUBMITTED **

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	
		71599, 72319		Basin Dakota; Blanco Mesaverde	
4 Property Code		5 Property Name			6 Well Number
000811		Ludwick LS			# 17M
7 OGRID No.		8 Operator Name			9 Elevation
000778		BP AMERICA PRODUCTION COMPANY			6136

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
O (Lot 15)	29	30 N	10 W		1010	SOUTH	1660	EAST	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		14 Joint or Infill		15 Consolidation Code		16 Order No.			
319.62									

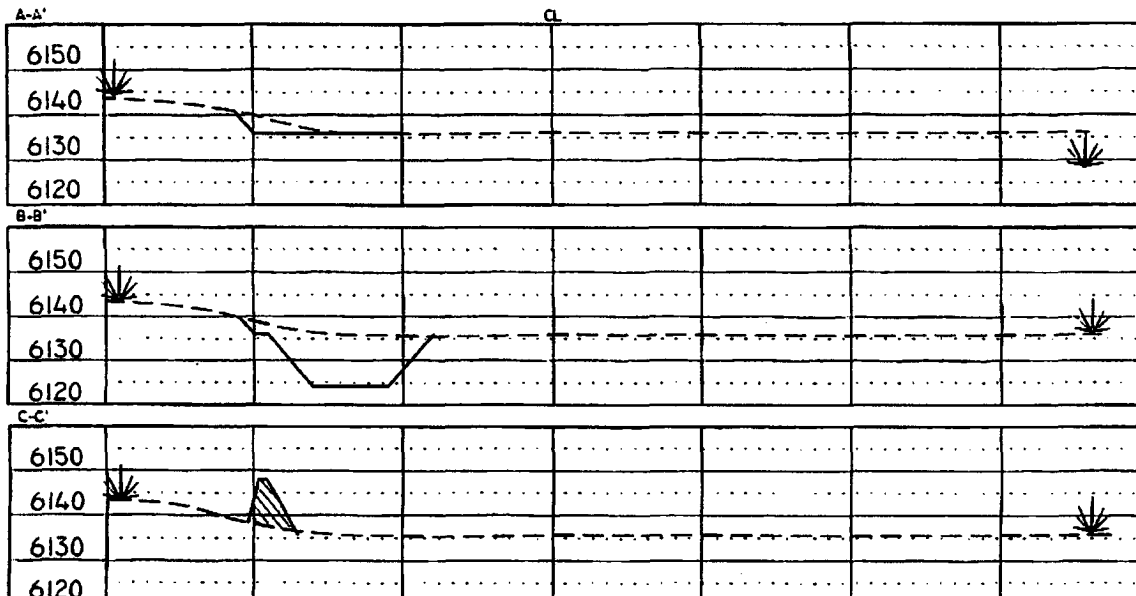
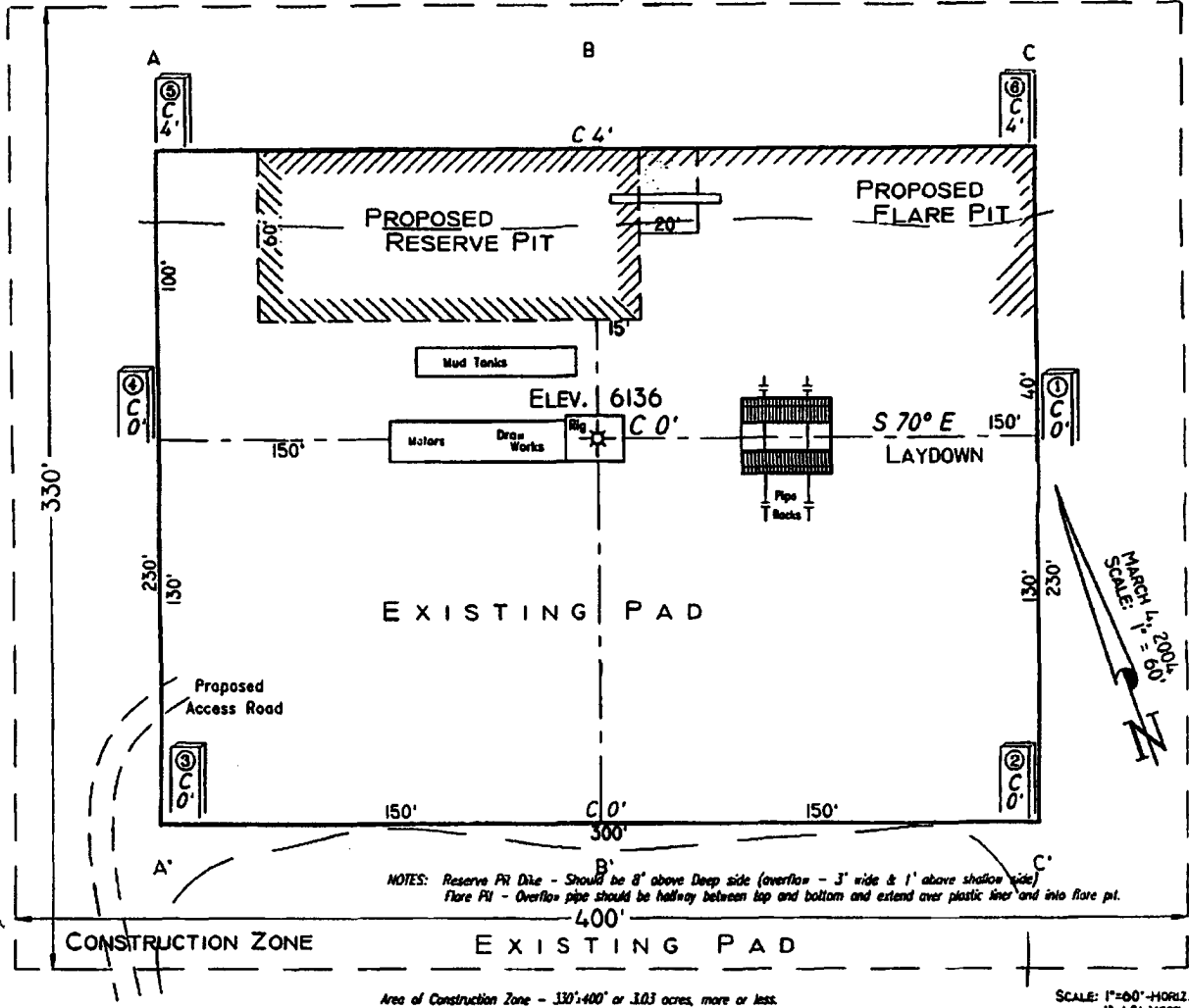
NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED
OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

16				5163(R)				17 OPERATOR CERTIFICATION	
Lot 4				Lot 3				I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.	
Lot 5				Lot 6				Signature Cherry Hlava	
Lot 12				Lot 11				Printed Name Cherry Hlava	
Lot 13				Lot 14				Title Regulatory Analyst	
Lot 15				Lot 16				Date 3-1-05	
Lot 10				Lot 9				18 SURVEYOR CERTIFICATION	
Lot 11				Lot 10				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.	
Lot 12				Lot 11				Date of Survey March 4, 2004	
Lot 13				Lot 14				Signature and Seal of Professional Surveyor	
Lot 14				Lot 15				GARY D. VANE NEW MEXICO REGISTERED PROFESSIONAL LAND SURVEYOR 7016	
Lot 15				Lot 16				Certificate Number 7016	

(R) - BLM Record

PAD LAYOUT PLAN & PROFILE
BP AMERICA PRODUCTION COMPANY
 Ludwick LS #17M
 1010' F/SL 1660' F/EL
 SEC. 29, T30N, R10W, N.M.P.M.
 SAN JUAN COUNTY, NEW MEXICO

Lat: 36°46'43"
 Long: 107°54'16"



NOTE: Contractor should call One-Call for location of any marked or unmarked buried pipelines or cables on well pad and/or access road at least two (2) working days prior to construction.

Cuts and fills shown are approximate - final finished elevation is to be adjusted so earthwork will balance. Corner stakes are approximate and do not include additional areas needed for sideslopes and drainages. Final Pad Dimensions are to be verified by Contractor.

VANN SURVEYS
 P. O. Box 1306
 Farmington, NM

BP AMERICA PRODUCTION COMPANY											
DRILLING AND COMPLETION PROGRAM											
2/25/2005											
Lease:	Ludwick LS	Well Name & No.	Ludwick LS #17M			Field:	Basin Dakota/Blanco Mesaverde				
County:	San Juan, New Mexico	Surface Location:	29-30N-10W: 1010' FSL, 1660' FEL								
Minerals:	Federal	Surface:	Lat: 36.7787211 deg; Long: -107.9038139 deg								
Rig :	Aztec 184	BH Location:	same								
OBJECTIVE:	Drill 240' below the top of the Two Wells Mbr, set 4-1/2" production casing, Stimulate DK, MF, and PL intervals.										
METHOD OF DRILLING				APPROXIMATE DEPTHS OF GEOLOGICAL MARKER							
TYPE OF TOOLS		DEPTH OF DRILLING		Actual GL: 6136		Estimated KB: 6,150.0'					
Rotary		0 - TD		Marker		SUBSEA		TVD			
APPROX. MD											
LOG PROGRAM											
Type		Depth Interval									
Single Run											
Cased Hole		TD to 7" shoe									
TDT- CBL		Identify 4 1/2" cement top									
REMARKS: - Please report any flares (magnitude & duration).				Ojo Alamo		4,874'		1,276'			
				Kirtland		4,728'		1,422'			
				Fruitland		4,151'		1,999'			
				Fruitland Coal		3,779'		2,371'			
				Pictured Cliffs		3,561'		2,589'			
				Lewis		3,305'		2,845'			
				Cliff House		2,117'		4,033'			
				Menefee		1,752'		4,398'			
				Point Lookout		1,254'		4,896'			
				Mancos		860'		5,290'			
				Greenhorn		-719'		6,869'			
				Graneros (bent,mkr)		-789'		6,939'			
Two Wells		-832'		6,982'							
Paguete		-906'		7,056'							
Cubero		-961'		7,111'							
L. Cubero		-978'		7,128'							
Encinal Cyn		-1,024'		7,174'							
TOTAL DEPTH:				-1,072'		7,222'		7,222'			
				# Probable completion interval				* Possible Pay			
SPECIAL TESTS				DRILL CUTTING SAMPLES			DRILLING TIME				
TYPE				FREQUENCY		DEPTH		FREQUENCY		DEPTH	
None				30'/10' intervals		2,945' to TD		Geolograph		0 - TD	
REMARKS:											
MUD PROGRAM:											
Interval	Type <input type="checkbox"/> Mud	#/gal	Vis, <input type="checkbox"/> sec/qt	/30 min	Other Specification						
200'	Spud	8.8 - 9.0	Sufficient to clean hole.								
2,945'	Water/LSND	8.4 - 9.0	<9		Sweep hole while whilst water drilling, LCM onsite						
7,222'	Air	1	1000 cfm for hammer		Volume sufficient to maintain a stable and clean wellbore						
CASING PROGRAM:											
Casing <input type="checkbox"/> String	Depth	Size	Casing Size	Grade, Thread	Weight	Landing Point	Cement				
Surface/Conductor	200'	13 1/2"	9-5/8"	H-40 ST&C	32#		cmt to surface				
Intermediate 1	2,945'	8-3/4"	7"	J/K-55 ST&C	20#	100' below LWIS	cmt to surface				
Production	7,222'	6-1/4"	4-1/2"	J-55	11.6#	DKOT	150' inside Intermediate - TOC survey required				
CORING PROGRAM:											
None											
COMPLETION PROGRAM:											
Rigless, 2-3 Stage Limited Entry Hydraulic Frac, FMC Unihead											
GENERAL REMARKS:											
Notify BLM/NMOC 24 hours prior to Spud, BOP testing, and Casing and Cementing.											
BOP Pressure Testing Requirements											
Formation	Depth	Anticipated bottom hole pressure				Max anticipated surface pressure**					
Cliffhouse	4,033'	500				0					
Point Lookout	4,896'	600				0					
Dakota	6,982'	2600				1063.96					
Requested BOP Pressure Test Exception = 1500 psi				** Note: Determined using the following formula: ABHP - (.22*TVD) = ASP							
Form 46 Reviewed by:		Logging program reviewed by:									
PREPARED BY:		APPROVED:		DATE:		APPROVED:		DATE:			
HGJ	JMP			25-Feb-05							
Form 46 7-84bw		For Drilling Dept.		For Production Dept.							

Additional Operator Remarks
Ludwick LS 17M
APD

BP America Production Company respectfully requests permission to drill the subject well to a total depth of approximately 7222'. Complete in the Basin Dakota Pool, isolate the Dakota; complete into the Blanco Mesaverde, establish a production rate; drill out the bridge plug and commingle production downhole.

Application for Downhole Commingling authority (NMOCD order R-11363) will be submitted to all appropriate for approval after Permit to Drill has been approved.

If terrain allows it is our intent to pre-set the 9 5/8" casing on the above mentioned well by drilling a surface hole with air/air mist in lieu of drilling mud and the surface casing be cemented with 94.5 cu/ft type I-II, 20% FLYASH, 14.5 PPG, 7.41 gal/sk, 1.61 cf/sk Yield, 80 DEG BHST ready mix cement. If the area will not allow for pre-set the approved cement program will be followed.

SUPPLEMENTAL TO SURFACE USE PLAN

New Facilities:

A 4.5" diameter buried steel pipeline that is +/- 200 feet in length will be constructed. The pipe wall thickness is .156 and the pipe wall strength is 42,000#. It will be adjacent to the access road and tie the well into an existing gas meter operated by BP America Production Company. The pipeline will not be used to transport gas to drill the well. After the well is spud the pipeline will be authorized by a right-of-way issued by El Paso Field Services.

APD/ROW

Cementing Program

Well Name: Ludwick LS 17M
 Location: 29-30N-10W, 1010 FSL, 1660 FEL
 County: San Juan
 State: New Mexico

Field: Blanco Mesaverde / Basin Dakota
 API No.
 Well Flac
 Formation: Dakota MesaVerde
 KB Elev (est) 6150
 GL Elev. (est) 6136

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	13.5	9.625	ST&C	Surface	NA	
Intermediate	2945	8.75	7	LT&C	Surface	NA	
Production -	7222	6.25	4.5	ST&C	2845	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	Recommended Mud Properties Prio Cementing:	
			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 %, Lead	100	75	40
Excess %, Tail	NA	0	40
BHST (est deg. F)	75	120	183
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.

Surface:

Preflush	20 bbl.	FreshWater	
Slurry 1	170 sx Class G Cement		195 cuft
TOC@Surface	+ 3% CaCl2 (accelerator)		
	+ 0.25 #/sk Cellophane Flake (lost circulation additive)		0.4887 cuft/ft OH

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

Intermediate:

Fresh Water 20 bbl fresh water

**SAN JUAN BASIN
Dakota Formation
Pressure Control Equipment**

Background

The objective Dakota 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", 2000 psi single ram preventer with 3000 psi annular preventer and rotating head.

All ram type and annular preventers as well as 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.

BP American Production Company
Well Control Equipment Schematic

