

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 - 078040
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 COMPANY		7. If Unit or CA Agreement, Name and No.
Contact: CHERRY HLAVA E-Mail: HLAVACL@BP.COM		8. Lease Name and Well No. MUDGE GAS COM B 1 N
3a. Address HOUSTON, TX 77253-3092	3b. Phone No. (include area code) Ph: 281-366-4081	9. API Well No. 3004532699
4. Location of Well (Report location clearly and in accordance with any State requirements. *) At surface SWNE 1975FNL 1875FEL 36.91467 N Lat, 107.95661 W Lon At proposed prod. zone SWNE 1975FNL 1875FEL 36.91467 N Lat, 107.95661 W Lon		10. Field and Pool, or Exploratory BASIN DK & BLANCO MV
14. Distance in miles and direction from nearest town or post office* 8 MILES NORTH FROM AZTEC, NM		11. Sec., T., R., M., or Blk. and Survey or Area Sec 11 T31N R11W Mer NMP G
15. Distance from proposed location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 1875	16. No. of Acres in Lease 320.00	12. County or Parish SAN JUAN
18. Distance from proposed location to nearest well, drilling, completed, applied for, on this lease, ft. 1500	19. Proposed Depth 7255 MD 7255 TVD	13. State NM
21. Elevations (Show whether DF, KB, RT, GL, etc.) 5842 GL	20. BLM/BIA Bond No. on file WY2924	17. Spacing Unit dedicated to this well 320.00 E/2
22. Approximate date work will start 02/15/2004		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:

- Well plat certified by a registered surveyor.
- A Drilling Plan.
- A Surface Use Plan (if the location is on National Forest System Lands, the SUPO shall be filed with the appropriate Forest Service Office).
- Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).
- Operator certification
- 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 11/19/2004
Title AGENT		
Approved by (Signature) 	Name (Printed/Typed)	Date 1-3-05
Title AFM	Office FFO	

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 #51115 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".

\*\* 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 <b>30-045-32699</b>		2 Pool Code <b>71599; 72319</b>		3 Pool Name <b>Basin Dakota; Blanco Mesaverde</b>		
4 Property Code <b>000910</b>		5 Property Name <b>Mudge Gas Com B</b>			6 Well Number <b># 1N</b>	
7 OGRID No. <b>000778</b>		8 Operator Name <b>BP AMERICA PRODUCTION COMPANY</b>			9 Elevation <b>5842</b>	

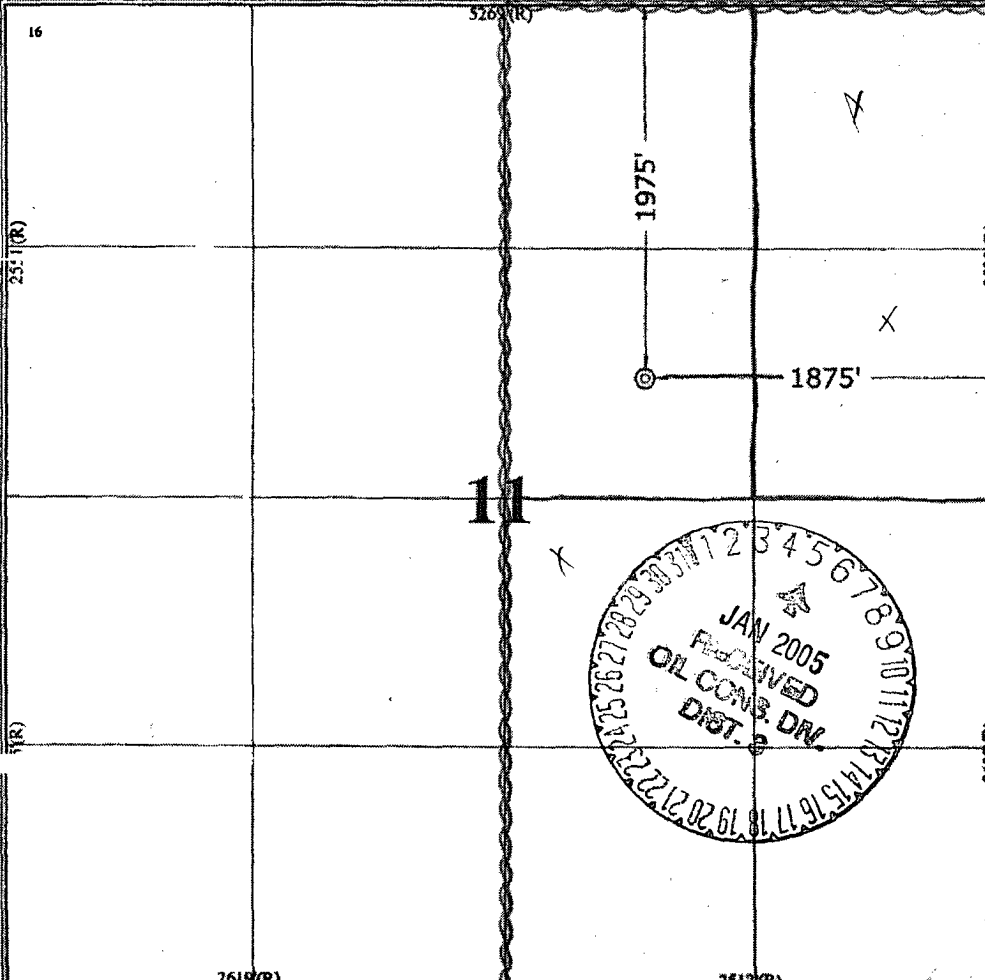
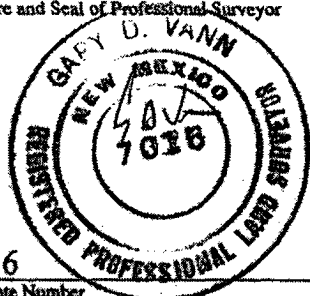
**10 Surface Location**

UL or Lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
<b>G</b>	<b>11</b>	<b>31 N</b>	<b>11 W</b>		<b>1975</b>	<b>NORTH</b>	<b>1875</b>	<b>EAST</b>	<b>SAN JUAN</b>

**11 Bottom Hole Location If Different From Surface**

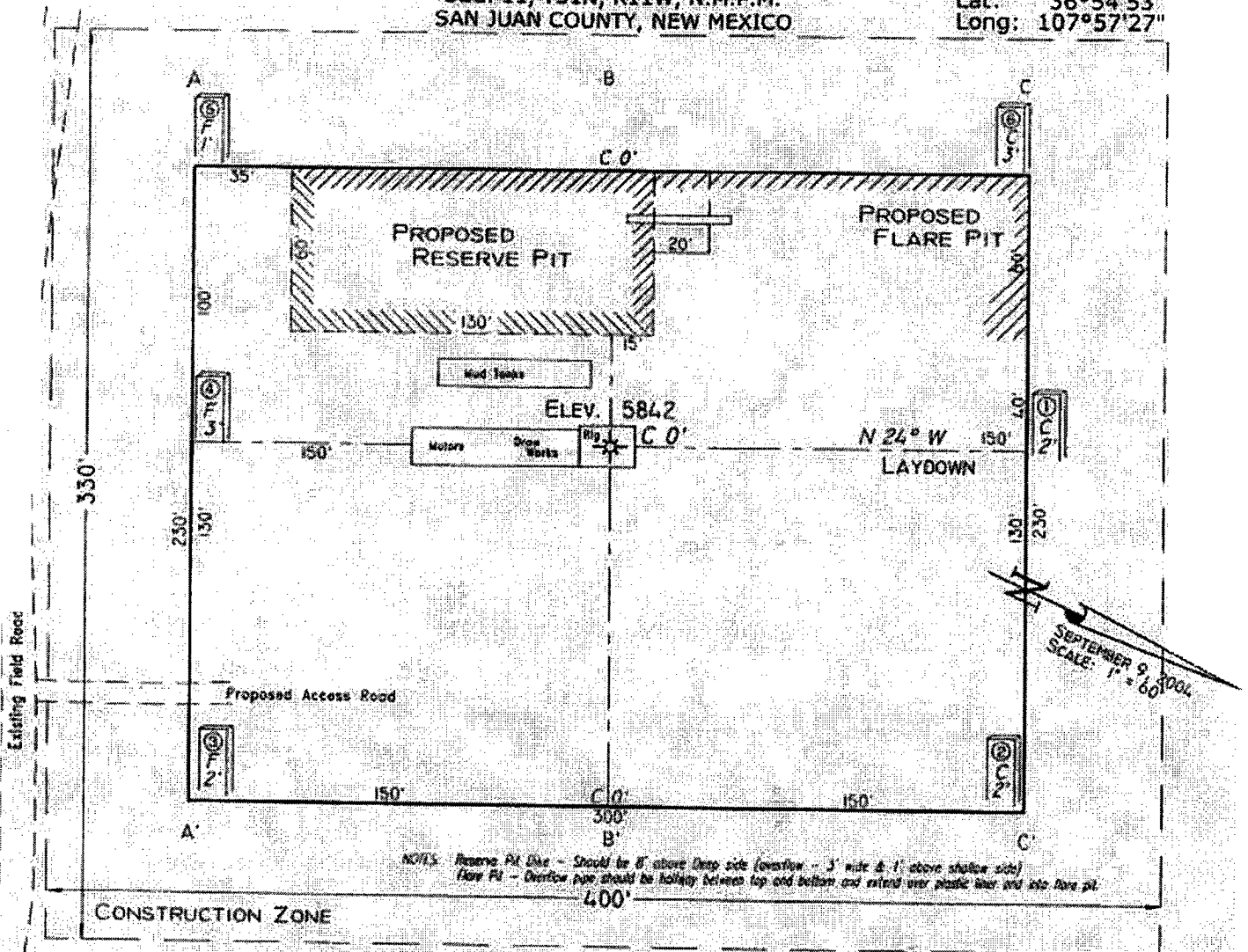
1 UL or lot no.	2 Section	3 Township	4 Range	5 Lot Idn	6 Feet from the	7 North/South line	8 Feet from the	9 East/West line	10 County
11 Dedicated Acres <b>320</b>		12 Joint or Infill		13 Consolidation Code		14 Order No.			

**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**

	<b>17 OPERATOR CERTIFICATION</b> I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.  Signature: <i>Cherry Hlava</i> Printed Name: <b>Cherry Hlava</b> Title: <b>Regulatory Analyst</b> Date: <b>11-19-04</b>
	<b>18 SURVEYOR CERTIFICATION</b> 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.  Date of Survey: <b>September 9, 2004</b> Signature and Seal of Professional Surveyor:  Certificate Number: <b>7016</b>

**PAD LAYOUT PLAN & PROFILE**  
**BP AMERICA PRODUCTION COMPANY**  
Mudge Gas Com B # 1N  
1975' F/NL 1875' F/EL  
SEC. 11, T31N, R11W, N.M.P.M.  
SAN JUAN COUNTY, NEW MEXICO

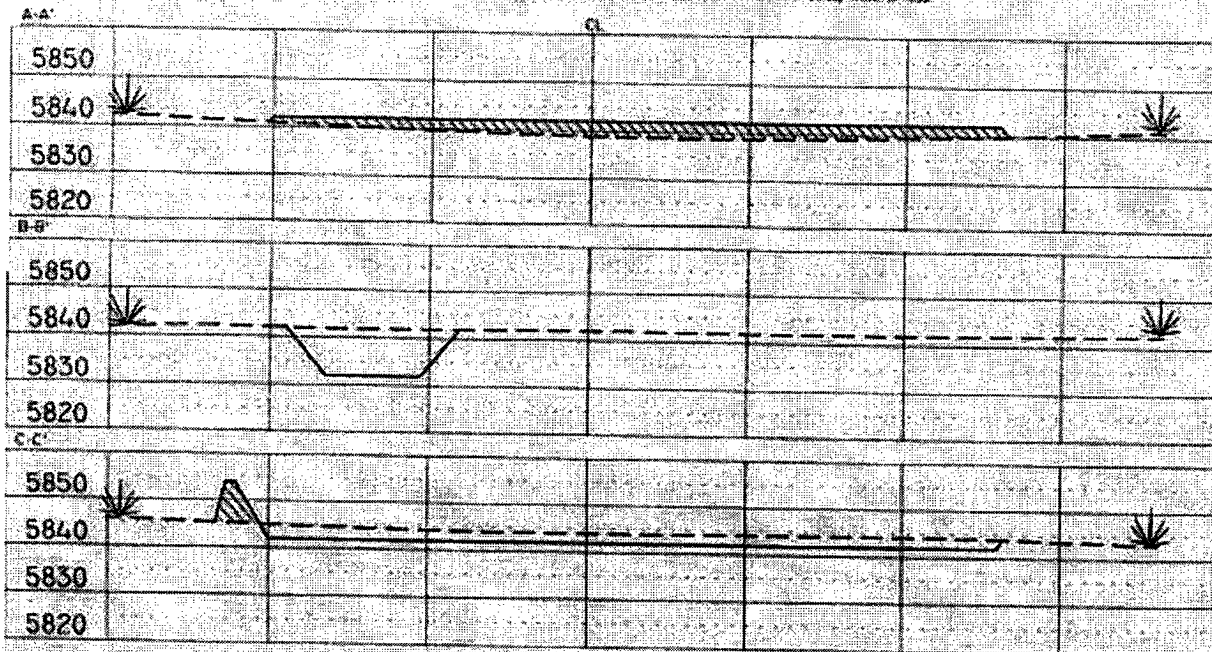
Lat: 36°54'53"  
Long: 107°57'27"



NOTES: Reserve Pit Dike - Should be 18" above Deep side (elevation - 3' wide & 1' above shallow side)  
Flare Pit - Dewater pipe should be halfway between top and bottom and extend over plastic liner and into flare pit.

Area of Construction Zone - 130'x400' or 3.03 acres, more or less.

SCALE: 1"=60' HORIZ.  
1"=40' VERT.



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 setbacks and drainages. Final Pad Dimensions are to be verified by Contractor.

VANN SURVEYS  
P. O. Box 1306  
Formington, NM

# BP AMERICA PRODUCTION COMPANY

## DRILLING AND COMPLETION PROGRAM

11/18/2004

<b>Lease:</b>	Mudge GC B	<b>Well Name &amp; No.</b>	Mudge GC B #1N	<b>Field:</b>	Blanco Mesaverde/Basin Dakota
<b>County:</b>	San Juan, New Mexico	<b>Surface Location:</b>	11-31N-11W : 1975' FNL, 1875' FEL		
<b>Minerals:</b>	State	<b>Surface:</b>	Lat: 36.9146682 Long:-107.9566092		
<b>Rig :</b>	Aztec 184	<b>BH Location:</b>	same		

**OBJECTIVE:** Drill 250' below the top of the Two Wells Mbr, set 4-1/2" production casing, Drill out from beneath casing to a depth no deeper than 7255', or 50' below casing shoe. Test and produce open hole interval. Stimulate DK, MF, and PL intervals.

METHOD OF DRILLING		APPROXIMATE DEPTHS OF GEOLOGICAL MARKER				
TYPE OF TOOLS	DEPTH OF DRILLING	Actual GL:	5842'	Estimated KB:	5,856.0'	
Rotary	0 - TD	Marker		SUBSEA	TVD	APPROX. MD
LOG PROGRAM		Ojo Alamo		5,051'	805'	805'
Type	Depth Interval	Kirtland		4,998'	858'	858'
Single Run		Fruitland	*	3,986'	1,870'	1,870'
		Fruitland Coal	*	3,630'	2,226'	2,226'
		Pictured Cliffs	*	3,304'	2,552'	2,552'
		Lewis	*	3,077'	2,779'	2,779'
Cased Hole		Cliff House	#	1,786'	4,070'	4,070'
TDT- CBL	TD to 7" shoe	Menefee	#	1,468'	4,388'	4,388'
	Identify 4 ½" cement top	Point Lookout	#	1,035'	4,821'	4,821'
REMARKS:		Mancos		728'	5,128'	5,128'
- Please report any flares (magnitude & duration).		Greenhorn		-961'	6,817'	6,817'
		Graneros (bent,mkr)		-1,015'	6,871'	6,871'
		Two Wells	#	-1,075'	6,931'	6,931'
		Paguate	#	-1,158'	7,014'	7,014'
		Cubero	#	-1,192'	7,048'	7,048'
		L. Cubero	#	-1,226'	7,082'	7,082'
		Encinal Cyn	#	-1,271'	7,127'	7,127'
		Casing point		-1,325'	7,181'	7,181'
		Burro Canyon	#	-1,349'	7,205'	7,205'
		TOTAL DEPTH:		-1,399'	7,255'	7,255'
				# Probable completion interval		* Possible Pay

SPECIAL TESTS	DRILL CUTTING SAMPLES	DRILLING TIME
TYPE	FREQUENCY	DEPTH
None	30'/10' intervals	2,879' to TD
REMARKS:	Geologist	0 - TD

**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.		
2,879'	Water/LSND	8.4 - 9.0		<9	Sweep hole while whilst water drilling, LCM onsite
7,181'	Air	1	1000 cfm for hammer		Volume sufficient to maintain a stable and clean wellbore
7,255'	Air	1			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	2,879'	8-3/4"	7"	J/K-55 ST&C	20#	100' below LWIS	cmt to surface
Production	7,181'	6-1/4"	4-1/2"	J-55	11.6#	DKOT	150' inside Intermediate - TOC survey required
Open Hole	7,255'						

**CORING PROGRAM:**  
None

**COMPLETION PROGRAM:**  
Rigless, 2-3 Stage Limited Entry Hydraulic Frac, FMC Unihead. Open hole (7181-7255) produced natural

**GENERAL REMARKS:**  
Notify BLM/NMOC D 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	4,070'	500	0
Point Lookout	4,821'	600	0
Dakota	6,931'	2600	1075.18

Requested BOP Pressure Test Exception = 1500 psi      \*\* Note: Determined using the following formula: ABHP - (.22"TV D) = ASP

Form 46 Reviewed by:      Logging program reviewed by:

## Cementing Program

Well Name: Mudge GC B #1N		Well Flac
Location: 11-31N-11W : 1975' FNL, 1875' FEL		Formation: Blanco Mesaverde/Basin Dakota
County: San Juan		KB Elev (est) 5856
State: New Mexico		GL Elev. (est) 5842

### 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	2879	8.75	7	LT&C	Surface	NA	
Production -	7181	6.25	4.5	ST&C	2779	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	
Intermediate	7	20	K-55	3740	2270	234	0.0405	6.456	
Production -	4.5	11.6	J-55	5350	4960	154	0.0155	3.875	

### Mud Program

Apx. Interval (ft.)	Mud Type	Mud Weight	Recommended Mud Properties Prio Cementing:
0 - SCP	Water/Spud	8.6-9.2	PV <20
SCP - ICP	Water/LSND	8.6-9.2	YP <10
ICP - ICP2	Gas/Air Mist	NA	Fluid Lc <15
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	154 sx Class C Cement		195 cuft
TOC@Surface	+ 2% CaCl2 (accelerator)		
			0.4887 cuft/ft OH

### Slurry Properties:

	Density (lb/gal)	Yield (ft3/sk)	Water (gal/sk)
Slurry 1	15.2	1.27	5.8

### 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	
Lead	231 sx Class "G" Cement		608 cuft
Slurry 1	+ 3% D79 extender		
TOC@Surface	+1/4 #/sk. Cellophane Flake		
	+ 5 lb/sk Gilsonite		
Tail	59 sx 50/50 Class "G"/Poz		75 cuft
Slurry 2	+ 2% gel (extender)		
	+1/4 #/sk. Cellophane Flake		0.1503 cuft/ft OH
	+ 2% CaCl2 (accelerator)		0.1746 cuft/ft csg ann
	+ 5 lb/sk Gilsonite		

### Slurry Properties:

	Density (lb/gal)	Yield (ft3/sk)	Water (gal/sk)	Schlumberger Private
Amoco				Page 1
Slurry 1	11.4	2.63	15.8	
Slurry 2	13.5	1.27	5.72	

### Casing Equipment:

7", 8R, ST&C

## Cementing Program

1 Float Shoe (autofill with minimal LCM in mud)  
 1 Float Collar (autofill with minimal LCM in mud)  
 1 Stop Ring  
 Centralizers one in middle of first joint, then every third collar  
 1 Top Rubber Plug  
 1 Thread Lock Compound

Production:				
	Fresh Water	10 bbl	CW100	
Lead		183 LiteCrete D961 / D124 / D154	460 cuft	
Slurry 1		+ 0.03 gps D47 antifoam		
TOC, 400' above 7" shoe		+ 0.5% D112 fluid loss		
		+ 0.11% D65 TIC		
Tail		155 sx 50/50 Class "G"/Poz	223 cuft	
Slurry 2		+ 5% D20 gel (extender)		
1553 ft fill		+ 0.1% D46 antifoam		
		+ 1/4 #/sk. Cellophane Flake		
		+ 0.25% D167 Fluid Loss		
		+ 5 lb/sk Gilsonite		
		+ 0.1% d800, retarder		
		+ 0.15% D65, dispersant		
			0.1026 cuft/ft OH	
Slurry Properties:	Density	Yield	Water	
	(lb/gal)	(ft <sup>3</sup> /sk)	(gal/sk)	0.1169 cuft/ft csg ann
Slurry 1	9.5	2.52	6.38	
Slurry 2	13	1.44	6.5	Top of Mancos
				5128
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 Centralizers, every 4th joint in mud drilled holes, none in air drilled holes. 1 Top Rubber Plug 1 Thread Lock Compound			

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

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**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 H<sub>2</sub>S 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.
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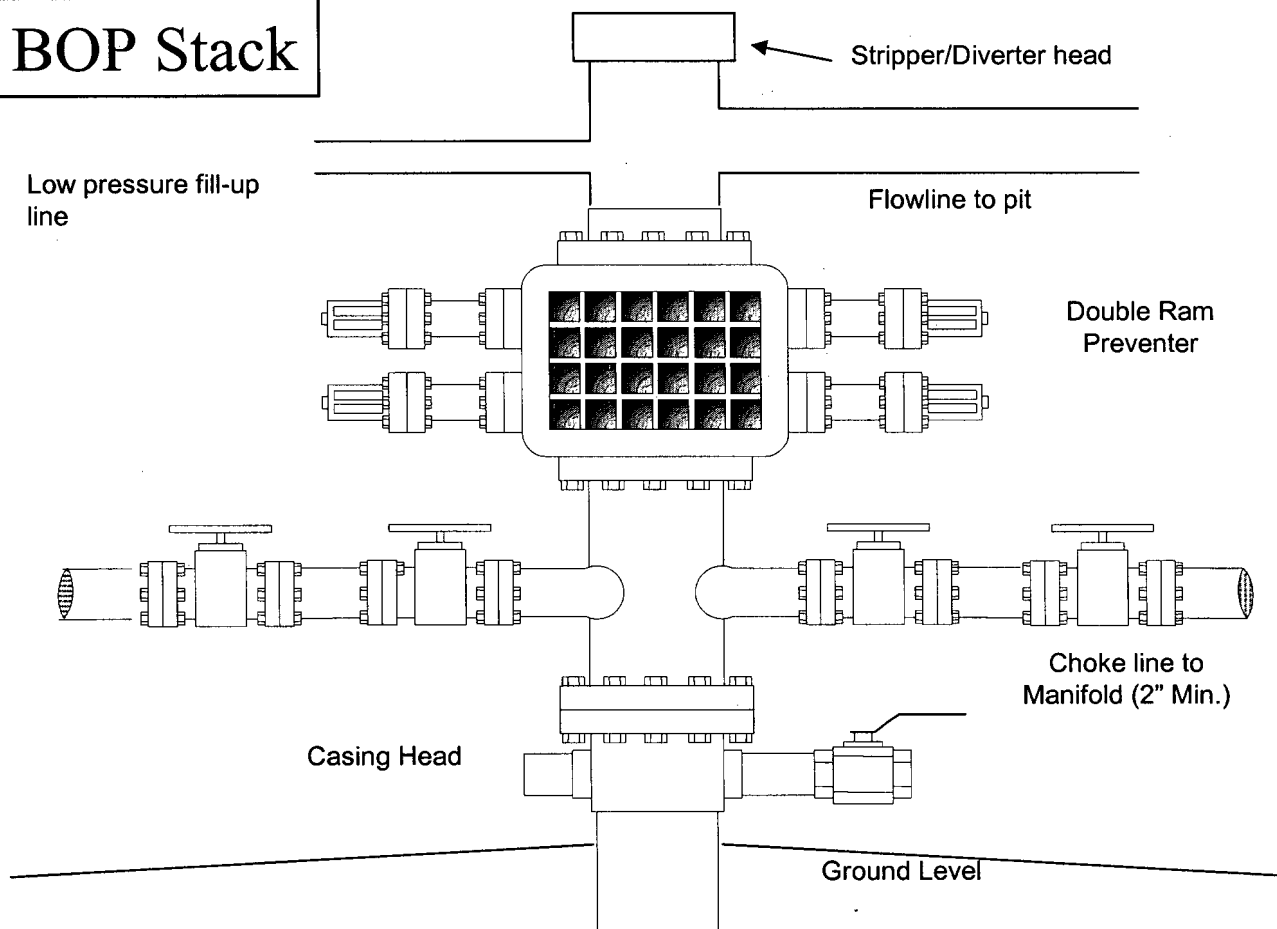
All ram type preventers and related control equipment will be hydraulically tested to 250 psi (low pressure) and 2000 psi (high pressure), upon installation, following any repairs or equipment replacements, or at 30 day intervals. Accessories to BOP equipment will include kelly cock, upper kelly cock with a handle available, floor safety valves and choke manifold which will also be tested to equivalent pressure.

# BP America Production Company

## Well Control Equipment Schematic



### BOP Stack



### Choke & Kill Manifold

