

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
APPLICATION FOR PERMIT TO DRILL OR REENTER

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

1a. Type of Work: <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER		5. Lease Serial No. SF - 078116
1b. Type of Well: <input type="checkbox"/> Oil Well <input checked="" type="checkbox"/> Gas Well Gas <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
3a. Address P.O. BOX 3092 HOUSTON, TX 77253-3092		8. Lease Name and Well No. MANSFIELD 1 M
3b. Phone No. (include area code) 281-366-4081		9. API Well No. NEW WELL 30-045-32651
4. Location of Well (Report location clearly and in accordance with any State requirements. *) At surface 1345' FNL 1740' FEL At proposed prod. Zone SAME AS SURFACE		10. Field and Pool, or Exploratory BASIN DAKOTA & BLANCO MESAVERDE
14. Distance in miles and direction from nearest town or post office* 10.3 MILES EAST FROM AZTEC		11. Sec., T., R., M., or Blk, and survey or Area SEC 19 T30N & R9W 6
15. Distance from proposed* Location to nearest Property or lease line, ft. 1345' (Also to nearest drig. Ujnit line, if any)	16. No. of Acres in lease 320	17. Spacing Unit dedicated to this well 320 This action is subject to technical and procedural review pursuant to 43 CFR 3165.8 and appeal pursuant to 43 CFR 3165.8
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 1200'	19. Proposed Depth 7540'	20. BLM/BIA Bond No. on file W2924
21. Elevations (show whether DF, KDB., RT, GL, etc.) 6158' GL DRILLING OPERATIONS AUTHORIZED ARE SUBJECT TO COMPLIANCE WITH ATTACHED "GENERAL REQUIREMENTS".	22. Approximate date work will start* 12/15/04	23. Estimated duration 7 DAYS
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 <i>Cherry Hlava</i>	Name (Printed/typed) Cherry Hlava	Date 10/18/04
Title Regulatory Analyst		
Approved by (Signature) <i>[Signature]</i>	Name (Printed/Typed) AFM	Date 11/19/04
Title AFM		

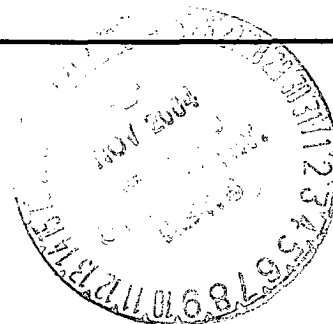
Application approval does not warrant or certify the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct Operations thereon.
Conditions of approval, if any, are attached.

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.

*(Instructions on reverse)

Additional Operator Remarks:

NMOCD



Notice of Staking was submitted on 9/23/04.

BP America Production Company respectfully requests permission to drill the subject well to a total depth of approximately 7540 feet and complete into the Basin Dakota Pool, produce the well to establish a production rate, perform a deliverability test, isolate the Dakota then complete into the Blanco Mesaverde pool and commingle production downhole.

SUPPLEMENTAL TO SURFACE USE PLAN

New Facilities:

A 4" diameter buried steel pipeline that is + or - 1000' in length will be constructed. The pipe wall thickness is .156 and the pipe weall 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 Services.

If conditions allow, 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% FLY ASH, 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.

APD/ROW

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 30-045-32651	² Pool Code 71599; 72319	³ Pool Name Basin Dakota; Blanco Mesa verde
⁴ Property Code 000816	⁵ Property Name Mansfield	⁶ Well Number # 1M
⁷ OGRID No. 000778	⁸ Operator Name BP AMERICA PRODUCTION COMPANY	⁹ Elevation 6158

¹⁰ Surface Location

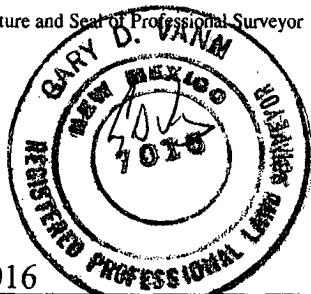
UL or Lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
G	19	30 N	9 W		1345	NORTH	1740	EAST	SAN JUAN

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 320	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.
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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	385'(R)	1315'(R)	1315'(R)	1315'(R)	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 Hlava</i> Signature Cherry Hlava Printed Name Regulatory Analyst Title 10-18-04 Date
	Lot 1				
	Lot 2				
	Lot 3				
	5281'(R)				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. Restaked: September 11, 2004 July 14, 2004 Date of Survey GARY D. VANM Signature and Seal of Professional Surveyor  7016 Certificate Number
Lot 4					
379'(R)	1295'(R)	1295'(R)	1295'(R)		

(R) - BLM Record

Submit 3 Copies To Appropriate District Office
District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Ave., Artesia, NM 88210
District III
1000 Rio Brazos Rd., Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy, Minerals and Natural Resources

Form C-103
March 4, 2004

OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

SUNDRY NOTICES AND REPORTS ON WELLS (DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS.)	
1. Type of Well: Oil Well <input type="checkbox"/> Gas Well <input checked="" type="checkbox"/> Other	WELL API NO. NEW WELL
2. Name of Operator BP AMERICA PRODUCTION CO	5. Indicate Type of Lease STATE <input type="checkbox"/> FEE <input type="checkbox"/>
3. Address of Operator P.O. BOX 3092 HOUSTON, TX 77079-2064	6. State Oil & Gas Lease No.
4. Well Location Unit Letter <u>G</u> : <u>1345</u> feet from the <u>North</u> line and <u>1740</u> feet from the <u>East</u> line Section <u>19</u> Township <u>30N</u> Range <u>09W</u> NMPM <u>SAN JUAN</u> County	7. Lease Name or Unit Agreement Name Mansfield (APD filed with BLM SF - 078116)
	8. Well Number 1 M
	9. OGRID Number
	10. Pool name or Wildcat Basin Dakota & Blanco Mesaverde
11. Elevation (Show whether DR, RKB, RT, GR, etc.) 6158'	
Pit or Below-grade Tank Application (For pit or below-grade tank closures, a form C-144 must be attached)	
Pit Location: UL <u>G</u> Sect <u>19</u> Twp <u>30N</u> Rng <u>09W</u> Pit type <u>Drilling</u> Depth to Groundwater <u>>100'</u> Distance from nearest fresh water well <u>1000'</u> Distance from nearest surface water <u>>1000'</u> Below-grade Tank Location UL <u>G</u> Sect <u>19</u> Twp <u>30N</u> Rng <u>09W</u> ; <u>1295</u> feet from the <u>North</u> line and <u>1725</u> feet from the <u>East</u> line PLEASE SEE ATTACHED PAD LAYOUT	

12. Check Appropriate Box to Indicate Nature of Notice, Report or Other Data

NOTICE OF INTENTION TO:	SUBSEQUENT REPORT OF:
PERFORM REMEDIAL WORK <input type="checkbox"/> PLUG AND ABANDON <input type="checkbox"/>	REMEDIAL WORK <input type="checkbox"/> ALTERING CASING <input type="checkbox"/>
TEMPORARILY ABANDON <input type="checkbox"/> CHANGE PLANS <input type="checkbox"/>	COMMENCE DRILLING OPNS. <input type="checkbox"/> PLUG AND ABANDONMENT <input type="checkbox"/>
PULL OR ALTER CASING <input type="checkbox"/> MULTIPLE COMPLETION <input type="checkbox"/>	CASING TEST AND CEMENT JOB <input type="checkbox"/>
OTHER: Lined Drilling PIT PERMIT <input checked="" type="checkbox"/>	OTHER: <input type="checkbox"/>

13. Describe proposed or completed operations. (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work). SEE RULE 1103. For Multiple Completions: Attach wellbore diagram of proposed completion or recompletion.

Please reference BP America's San Juan Basin Drilling/Workover Pit construction Plan on file with the NMOCD. Pit construction Plan issued date of 04/15/2004. Pit will be closed according to closure plan on file.

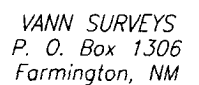
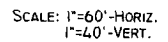
I hereby certify that the information above is true and complete to the best of my knowledge and belief. I further certify that any pit or below-grade tank has been/will be constructed or closed according to NMOCD guidelines ☐, a general permit ☐ or an (attached) alternative OCD-approved plan ☐.

SIGNATURE Cherry Hlava TITLE Regulatory Analyst DATE 10/18/04
Type or print name Cherry Hlava E-mail address: hlavacl@bp.com Telephone No. 281-366-4081

(This space for State use)

APPROVED BY [Signature] TITLE DEPUTY OIL & GAS INSPECTOR DIST. #2 DATE NOV 22 2004
Conditions of approval, if any:

Lat: 36°48'03"
Long: 107°49'06"



BP AMERICA PRODUCTION COMPANY

DRILLING AND COMPLETION PROGRAM 10/08/04

Lease:	Mansfield	Well Name & No.	Mansfield #1M	Field:	Blanco Mesaverde/Basin Dakota
County:	San Juan, New Mexico	Surface Location:	19-30N-9W : 1345' FNL, 1740' FEL		
Minerals:	State	Surface:	Lat: 36.8003406 Long:-107.8177417		
Rig :	Aztec 184	BH Location:	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 7540', or 90' 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:	6158	Estimated KB:	6,172.0'
Rotary	0 - TD	Marker		SUBSEA	TVD

LOG PROGRAM		Ojo Alamo	4,580'	1,587'	1,587'
Type	Depth Interval	Kirtland	4,481'	1,686'	1,686'
Single Run		Fruitland	3,890'	2,277'	2,277'
		Fruitland Coal	3,563'	2,604'	2,604'
		Pictured Cliffs	3,328'	2,839'	2,839'
		Lewis	3,001'	3,166'	3,166'
Cased Hole		Cliff House	1,811'	4,356'	4,356'
TDT- CBL	TD to 7" shoe, including open holes interval	Menefee	1,509'	4,658'	4,658'
	Identify 4 1/2" cement top	Point Lookout	1,085'	5,082'	5,082'

REMARKS:		Mancos	732'	5,435'	5,435'
- Please report any flares (magnitude & duration).		Greenhorn	-935'	7,102'	7,102'
		Graneros (bent,mkr)	-989'	7,156'	7,156'
		Two Wells	-1,034'	7,201'	7,201'
		Paguate	-1,138'	7,305'	7,305'
		Cubero	-1,182'	7,349'	7,349'
		L. Cubero	-1,206'	7,373'	7,373'
		Encinal Cyn	-1,239'	7,406'	7,406'
		Casing point	-1,283'	7,450'	7,450'
		Burro Canyon	-1,303'	7,470'	7,470'
		TOTAL DEPTH:	-1,373'	7,540'	7,540'
		# Probable completion interval		* Possible Pay	

SPECIAL TESTS		DRILL CUTTING SAMPLES		DRILLING TIME	
TYPE		FREQUENCY	DEPTH	FREQUENCY	DEPTH
Production test of the open hole interval		30'/10' intervals	3,266' to TD	Geolograph	0 - TD

REMARKS:

MUD PROGRAM:					
Interval	TypeMud	#/gal	Vis, sec/qt	/30 min	Other Specification
200'	Spud	8.8 - 9.0	Sufficient to clean hole.		
3,266'	Water/LSND	8.4 - 9.0		<9	Sweep hole while whilst water drilling, LCM onsite
7,450'	Air	1	1000 cfm for hammer		Volume sufficient to maintain a stable and clean wellbore
7,540'	Air	1	1000 cfm for bit		Volume sufficient to maintain a stable and clean wellbore

CASING PROGRAM:							
CasingString	Depth	Hole 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	3,266'	8-3/4"	7"	J/K-55 ST&C	20#	100' below LWIS	cmt to surface
Production	7,450'	6-1/4"	4-1/2"	J-55	11.6#	DKOT	150' inside Intermediate -
Open hole	7,540'						TOC survey required

CORING PROGRAM: None

COMPLETION PROGRAM:

Rigless, 2-3 Stage Limited Entry Hydraulic Frac, FMC Unihead

GENERAL REMARKS:

Notify BLM/NMOCD 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	4,356'	500	0
Point Lookout	5,082'	600	0
Dakota	7,201'	2600	1015.78

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	8-Oct-04		
Form 46 7-84bw	For Drilling Dept.		For Production Dept.	

**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", 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.**
-

NEW MEXICO MULTIPOINT REQUIREMENTS

1. Existing Roads

- A. The proposed location is staked as shown on the Certified Plat.
- B. Route and distance from nearest town is identified on the form 3160-3, item #14.
- C. Access road(s) to location are identified on Exhibits A & B.
- D. Not applicable unless exploratory well.
- E. All existing roads within one-mile radius of the well site are shown on Exhibit B.
- F. Improvements and/or maintenance of existing roads may be done as deemed necessary for 's's operations, or as required by the surface management agency.

2. Access Roads

- A. Width: 16' Driving Surface
- B. Maximum Grades: 0 - 8%
- C. Turnouts: None
- D. Drainage will be used as required
- E. Size and location of culverts, if needed. will be determined at the onsite inspection or during construction.
- F. Surfacing materials may be applied to the proposed road and/or location if the conditions merit it.
- G. Gates and/or cattle guards will be installed at fence crossings if deemed necessary by the land owner or the surface management agency.
- H. The proposed new access road is center-line flagged if applicable.

3. Location and Existing Wells

- A - H All existing wells, to the best of our knowledge, are identified on Exhibit C (9 Section Plat).

4. Location of Existing and/or Proposed Facilities

- A. All existing facilities owned or controlled by are shown on Exhibits D & E
- B. If this proposed well is productive, BP will own or have control of these facilities on location: storage tanks, well head production unit, and if applicable, a pump jack and/or compressor. Also there will be buried production lines from the wellhead to the production unit and/or storage tanks. BP will submit a Sundry Notice when off-pad plans are finalized.
- C. Rehabilitation, whether the well is productive or not, will be made on all unused areas in accordance with surface owner or manager approval.

5. Location and Type of Water supply

Water will be obtained from a privately permitted water source through a contract water hauling company, It will be hauled in vacuum trucks via the access road (Exhibit A). The appropriate permits for this activity have been obtained by the water transporter.

6. Source of Construction Materials

- A - D No off-site materials will be needed to build the proposed location or access road.

7. Methods of Handling Waste Disposal

A closed loop mud system will be used during drilling operations. All drill cuttings will be trenched, and buried on location. Drilling fluids will be stored for reuse or disposed of at an approved disposal facility. A reserve pit for produced water containment will be constructed during completion operations. The reserve pit will be fenced on three sides and the 4th side will be fenced upon removal of the rig. The pit will be allowed to sit for 90 days and then

pulled as required by NTL-2B. Produced water will be disposed of at an approved injection well or an evaporation site. Sanitary facilities and a steel mesh portable trash container will remain on location throughout drilling operations and will be removed to a designated disposal area. The well site will be properly cleaned upon removal of the rig.

8. Ancillary Facilities

To the best of our knowledge, no ancillary facilities will be needed at this time.

9. Well Site Layout

A - C Cross-sections etc. See Exhibit D. Exact location of rig related equipment will be determined when BP contracts a drilling rig; however, all this equipment will be contained on location. The location diagram reflects actual area of well pad. Total disturbed area will vary due to cut and fill slopes.

D. Reserve Pit(s):

Unlined ☐

Lined ☒ (8-10 mil reinforced plastic, size sufficient to cover pit area and fit underneath a rig tank.)

10. Plans for Restoration of Surfaces

Restoration of the surface will be conducted after the reserve pit has dried. The pit will then be cleaned up and back filled and the entire disturbed area will be re-contoured. The topsoil stockpile will then be uniformly placed over this area and reseeded of the site will be carried out as instructed by the appropriate management agency. Methods to protect against erosion will be employed. After final abandonment, additional restoration efforts will be applied.

11. Surface Ownership:

Bureau of Land Management

12. Other Information

A. General Description

1. Archaeological clearance, topography, soil character, and flora and fauna are detailed in the archeologist's report forwarded by an approved contact archaeologist to the appropriate management agency.
2. Land uses include recreation, grazing and oil and gas development.

13. Operator's Representative and Certification

BP America Production Company
Pat Draughon, Resource Manager
P. O. Box 3092
Houston, TX 77253

I hereby certify that I, or persons under my direct supervision, have inspected the proposed drill site and access route; that I am familiar with the conditions which presently exist; that the statements made in this plan area, to the best of my knowledge, are true and correct; and, that the work associated with the operations proposed herein will be performed by AMERICAN PRODUCTION COMPANY and its contractors and sub-contractors in conformity with this plan and the terms and conditions under which it is approved.

Date: 10/18/2004

By Cherry Hlava

For Pat Draughon, Resource Manager

Cementing Program

Well Name: Mansfield #1M
 Location: 19-30N-9W : 1345' FNL, 1740' FEL
 County: San Juan
 State: New Mexico

Well Flac:
 Formation: Dakota/ MesaVerde
 KB Elev (est) 6172
 GL Elev. (est) 6158

Casing Program:

Casing String	Est. Depth (ft.)	Hole Size (in.)	Casing Size (in.)	Thread	TOC (ft.)	Stage Tool Or TOL (ft.)
Surface	200	13.5	9.625	ST&C	Surface	NA
Intermediate	3266	8.75	7	ST&C	Surface	NA
Production -	7450	6.25	4.5	ST&C	3166	NA

Casing Properties:

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	2270	1400	254	0.0787	8.845
Intermediate	7	20	K-55	3740	2270	234	0.0405	6.331
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:
			PV <20
			YP <10
			Fluid Los <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	128	190
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.

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:

Slurry 1	Density (lb/gal)	Yield (ft ³ /sk)	Water (gal/sk)
	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 272 sx Class "G" Cement 710 cuft
 Slurry 1 + 3% D79 extender
 TOC@Surface + 2% S1 Calcium Chloride
 +1/4 #/sk. Cellophane Flake
 + 0.1% D46 antifoam
 Tail 59 sx 50/50 Class "G"/Poz 75 cuft
 Slurry 2 + 2% gel (extender)
 500 ft fill 0.1% D46 antifoam
 0.1503 cuft/ft OH
 +1/4 #/sk. Cellophane Flake
 + 2% CaCl2 (accelerator) 0.1746 cuft/ft csg ann

Slurry Properties:

Slurry 1	Density (lb/gal)	Yield (ft ³ /sk)	Water (gal/sk)
	11.4	2.61	17.77
Slurry 2	Density (lb/gal)	Yield (ft ³ /sk)	Water (gal/sk)
	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
 14 Centralizers (one in middle of first joint, then every third collar)
 2 Fluidmaster vane centralizers @ base of Ojo
 1 Top Rubber Plug
 1 Thread Lock Compound

Production:

Fresh Water 10 bbl CW100

Lead 152 LiteCrete D961 / D124 / D154 383 cuft
 Slurry 1 + 0.03 gps D47 antifoam
 TOC, 100' above 7" shoe + 0.5% D112 fluid loss Schlumberger Private
 Amoco Page 1

+ 0.11% D65 TIC

Cementing Program

Tail
Slurry 2

1515 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

0.1026 cuft/ft OH

Slurry Properties:

	Density (lb/gal)	Yield (lb/sk)	Water (gal/sk)	
Slurry 1	9.5	2.52	6.38	0.1169 cuft/ft csg ann
Slurry 2	13	1.44	6.5	Top of Mancos 5435

Casing Equipment:

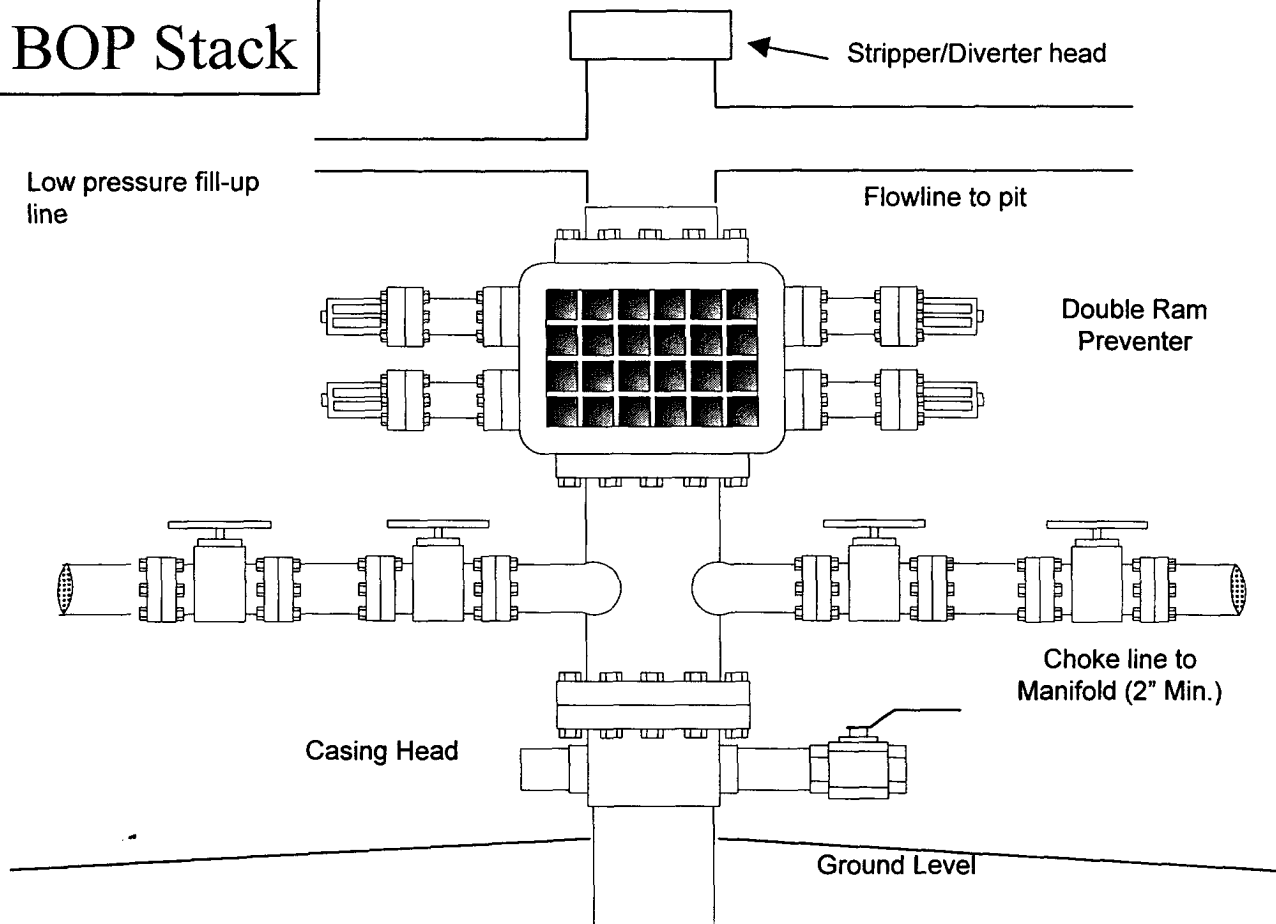
4-1/2", 8R, ST&C
1 Float Shoe (autofill with minimal LCM in mud)
1 Float Collar (autofill with minimal LCM in mud)
1 Stop Ring
Centralizers, every 4th joint
1 Top Rubber Plug
1 Thread Lock Compound

BP America Production Company

Well Control Equipment Schematic



BOP Stack



Choke & Kill Manifold

