Form 3160-3
(August 1999)

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

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No.
SF 078040

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.
MUDGE GAS COM B 1 M

2. Name of Operator
BP AMERICA PRODUCTION COMPANY
Contact: CHERRY HLAVA
E-Mail: HLAVACL@BP.COM

9. API Well No.
30045 32735

3a. Address
HOUSTON, TX 77253-3092

3b. Phone No. (include area code)
Ph: 281-366-4081

10. Field and Pool, or Exploratory
BLANCO MV & BASIN DK

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

At surface SESE 750FSL 745FEL 36.90139 N Lat, 107.95056 W Lon

At proposed prod. zone SESE 750FSL 745FEL 36.90139 N Lat, 107.95056 W Lon

11. Sec., T., R., M., or Blk. and Survey or Area
Sec 11 T31N R11W Mer NMP

14. Distance in miles and direction from nearest town or post office*
7 MILES NORTH FROM AZTEC, NM

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)
745

16. No. of Acres in Lease
320.00

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

18. Distance from proposed location to nearest well, drilling, completed, applied for, on this lease, ft.
1400

19. Proposed Depth
7250 MD
7250 TVD

20. BLM/BIA Bond No. on file
WY2924

21. Elevations (Show whether DF, KB, RT, GL, etc.
5863 GL

22. Approximate date work will start
02/15/2004

23. Estimated duration
7

JAN 2005
RECEIVED
OIL CONS. DIV.
DIST. 3

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)	CHERRY HLAVA Ph: 281-366-4081	11/24/2004

Title
REGULATORY ANALYST

Approved by (Signature)	Name (Printed/Typed)	Date
/s/ Matthew H. Kade		1-4-05
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 #51220 verified by the BLM Well Information System
For BP AMERICA PRODUCTION COMPANY, sent to the Farmington

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

NMOCD

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

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

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
30-045-32735	71599 / 72319	Basin Dakota / Blanco Mesaverde

4 Property Code	5 Property Name	6 Well Number
~~000916~~ 34517	Mudge Gas Com B	# 1M

7 OGRID No.	8 Operator Name	9 Elevation
000778	BP AMERICA PRODUCTION COMPANY	5863

10 Surface Location

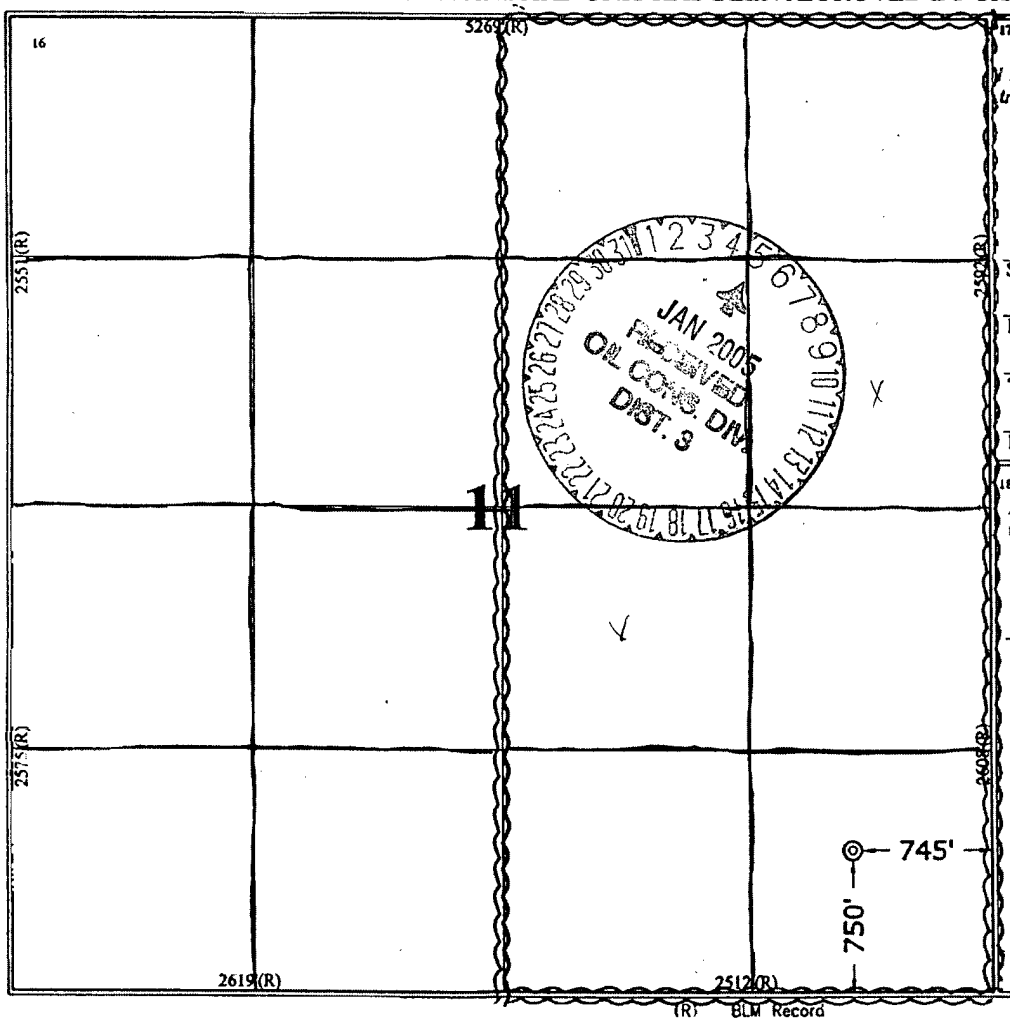
UL or Lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
P	11	31 N	11 W		750	SOUTH	745	EAST	SAN JUAN

11 Bottom Hole Location If Different From Surface

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.
320			

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



(R) BLM Record

17 OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.

Signature: Cherry Hlava

Printed Name: Cherry Hlava

Title: Regulatory Analyst

Date: 11-19-04

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.

Date of Survey: September 9, 2004

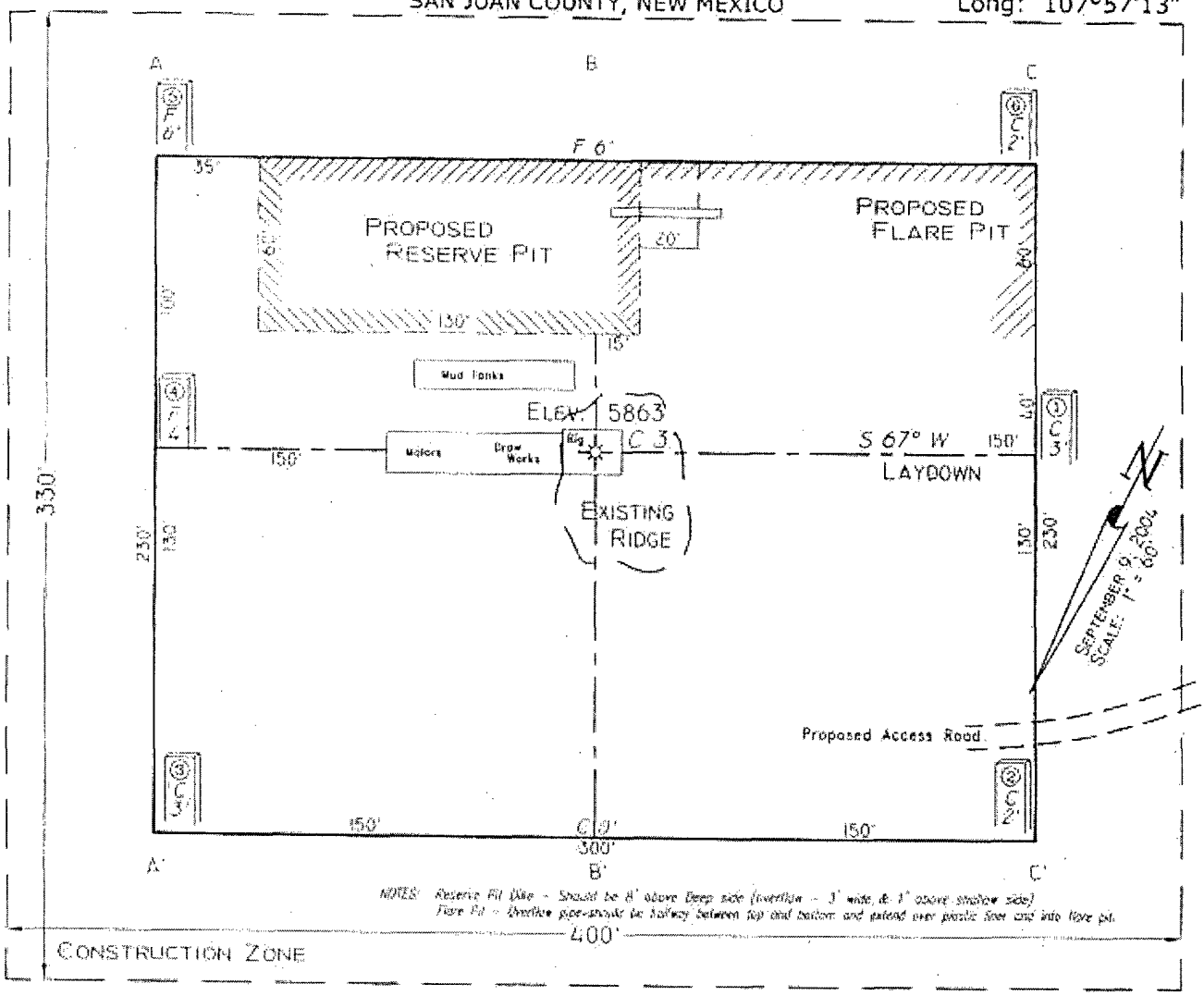
Signature and Seal of Professional Surveyor

GARY D. VANN — NEW MEXICO — REGISTERED PROFESSIONAL LAND SURVEYOR — 10

Certificate Number: 7016

PAD LAYOUT PLAN & PROFILE
BP AMERICA PRODUCTION COMPANY
Mudge Gas Com B # 1M
750' F/SL 745' F/EL
SEC. 11, T31N, R11W, N.M.P.M.
SAN JUAN COUNTY, NEW MEXICO

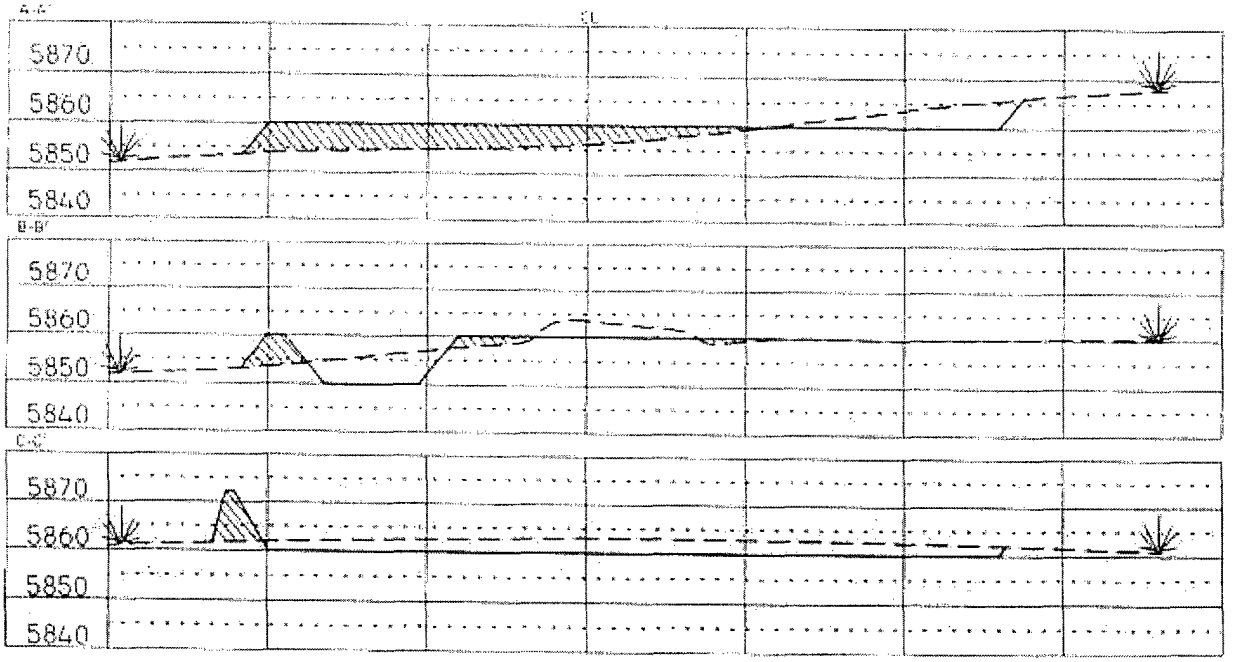
Lat: 36°54'28"
Long: 107°57'13"



NOTES: Reserve Pit Dike - Should be 8' above Deep side (Inside - 3' wide, & 1' above shallow side)
Flare Pit - Berm/fire pipe should be halfway between top and bottom and extend over plastic liner and into flare pit.

Area of Construction Zone - 330'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 sideslopes and drainages. Final Pad Dimensions are to be verified by Contractor.

VANN SURVEYS
P. O. Box 1306
Farmington, NM

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.

Cementing Program

Well Name: Mudge GC B #1M
Location: 11-31N-11W : 750' FSL, 745' FEL
County: San Juan
State: New Mexico

Well Flac
Formation: Blanco Mesaverde/Basin Dakota
KB Elev (es 5877
GL Elev. (e: 5863

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	2880	8.75	7	LT&C	Surface	NA	
Production -	7171	6.25	4.5	ST&C	2780	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
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

Recommended Mud Properties Prio Cementing:
PV <20
YP <10
Fluid L <15

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 minmize 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)		
500 ft fill	+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)
Slurry 1	11.4	2.63	15.8
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

Centralizers one in middle of first joint, then every third joint
1 Top Rubber Plug
1 Thread Lock Compound

Production:

Fresh Water	10 bbl	CW100		
Lead Slurry 1 TOC, 400' above 7" shoe		183 LiteCrete D961 / D124 / D154 + 0.03 gps D47 antifoam + 0.5% D112 fluid loss + 0.11% D65 TIC	462 cuft	
Tail Slurry 2 1528 ft fill		152 sx 50/50 Class "G"/Poz + 5% D20 gel (extender) + 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	219 cuft	
			0.1026 cuft/ft OH	

Slurry Properties:	Density (lb/gal)	Yield (ft3/sk)	Water (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 5143

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

BP AMERICA PRODUCTION COMPANY

DRILLING AND COMPLETION PROGRAM

11/18/2004

Lease:	Mudge GC B	**Well Name & No.**	Mudge GC B #1M	**Field:**	Blanco Mesaverde/Basin Dakota
County:	San Juan, New Mexico	**Surface Location:**	11-31N-11W : 750' FSL, 745' FEL		
Minerals:	State	**Surface:**	Lat: 36.9077892 Long:-107.9530475		
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 7250', or 79' below casing shoe. Test and produce open hole interval. Stimulate DK, MF, and PL intervals.

METHOD OF DRILLING

TYPE OF TOOLS	DEPTH OF DRILLING
Rotary	0 - TD

LOG PROGRAM

Type	Depth Interval
Single Run	
Cased Hole	
TDT- CBL	TD to 7" shoe
	Identify 4 ½" cement top

REMARKS:

- Please report any flares (magnitude & duration).

APPROXIMATE DEPTHS OF GEOLOGICAL MARKER

Actual GL: 5863 Estimated KB: 5,877.0'

Marker		SUBSEA	TVD	APPROX. MD
Ojo Alamo		5,058'	819'	819'
Kirtland		5,006'	871'	871'
Fruitland	*	3,990'	1,887'	1,887'
Fruitland Coal	*	3,652'	2,225'	2,225'
Pictured Cliffs	*	3,312'	2,565'	2,565'
Lewis	*	3,097'	2,780'	2,780'
Cliff House	#	1,836'	4,041'	4,041'
Menefee	#	1,515'	4,362'	4,362'
Point Lookout	#	1,057'	4,820'	4,820'
Mancos		734'	5,143'	5,143'
Greenhorn		-940'	6,817'	6,817'
Graneros (bent,mkr)		-992'	6,869'	6,869'
Two Wells	#	-1,044'	6,921'	6,921'
Paguate	#	-1,132'	7,009'	7,009'
Cubero	#	1,161'	7,038'	7,038'
L. Cubero	#	-1,193'	7,070'	7,070'
Encinal Cyn	#	-1,230'	7,107'	7,107'
Casing point		-1,294'	7,171'	7,171'
Burro Canyon	#	-1,313'	7,190'	7,190'
TOTAL DEPTH:		-1,373'	7,250'	7,250'

Probable completion interval * Possible Pay

SPECIAL TESTS

TYPE
None

REMARKS:

DRILL CUTTING SAMPLES			DRILLING TIME	
FREQUENCY	DEPTH		FREQUENCY	DEPTH
30'/10' intervals	2,880'	to TD	Geolograph	0 - TD

MUD PROGRAM:

Interval	Type□Mud	#/gal	Vis, □sec/qt	/30 min	Other Specification
200'	Spud	8.8 - 9.0	Sufficient to clean hole.		
2,880'	Water/LSND	8.4 - 9.0		<9	Sweep hole while whilst water drilling, LCM onsite
7,171'	Air	1	1000 cfm for hammer		Volume sufficient to maintain a stable and clean wellbore
7250	Air	1			Volume sufficient to maintain a stable and clean wellbore

CASING PROGRAM:

Casing□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	2,880'	8-3/4"	7"	J/K-55 ST&C	20#	100' below LWIS	cmt to surface
Production	7,171'	6-1/4"	4-1/2"	J-55	11.6#	DKOT	150' inside Intermediate - TOC survey required
Open hole	7250'						

CORING PROGRAM:

None

COMPLETION PROGRAM:

Rigless, 2-3 Stage Limited Entry Hydraulic Frac, FMC Unihead. Open hole (7171-7250) produced natural

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	4,041'	500	0
Point Lookout	4,820'	600	0
Dakota	6,921'	2600	1077.38

Requested BOP Pressure Test Exception = 1500 psi

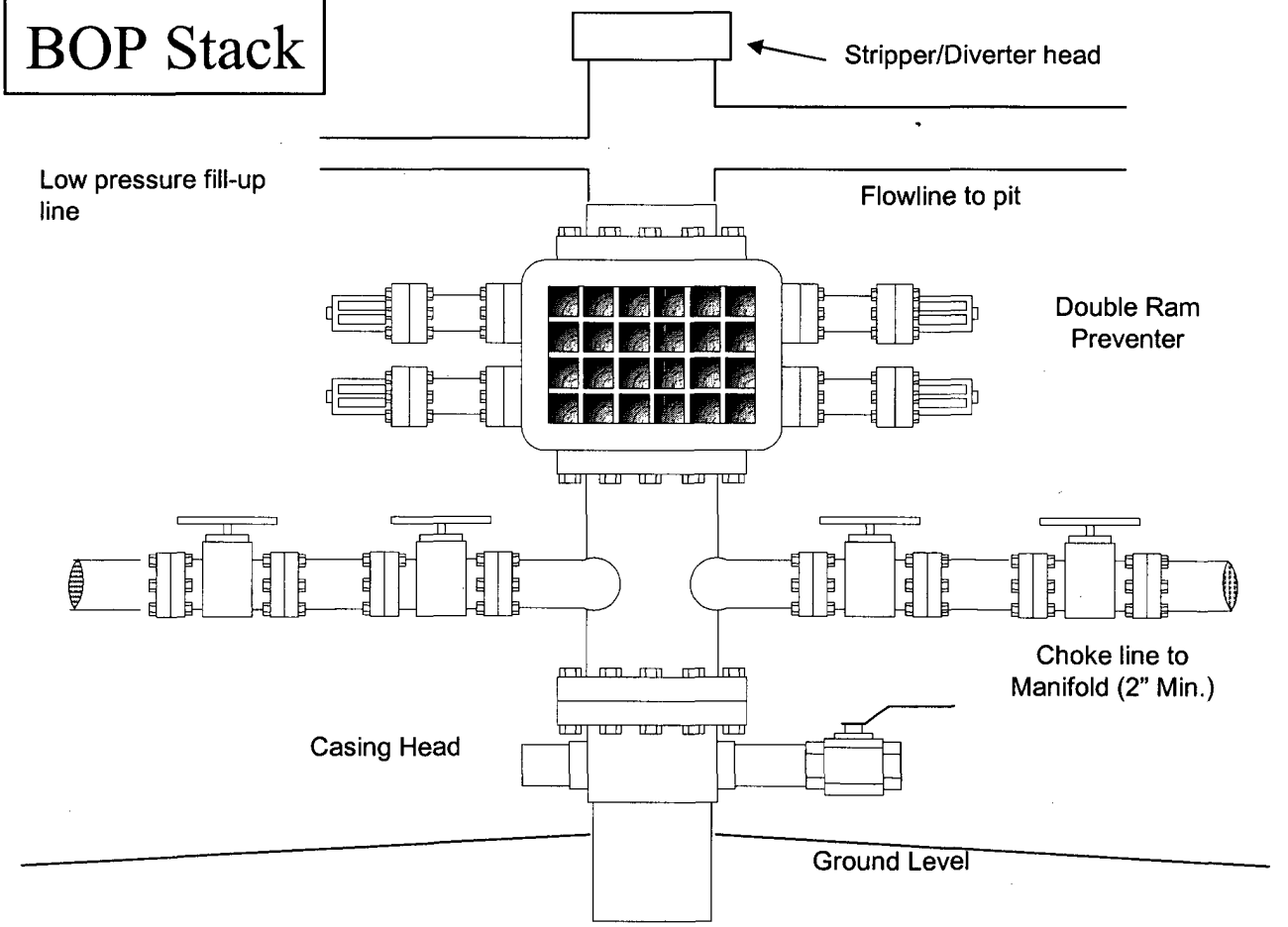
** Note: Determined using the following formula: ABHP – (.22*TVD) = ASP

Form 46 Reviewed by: Logging program reviewed by:

BP America Production Company

Well Control Equipment Schematic

BOP Stack



Choke & Kill Manifold