

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION OF PERMIT TO DRILL OR REENTER

APD WAS FILED ELECTRONICALLY IN WIS ON 02/01/2005 AND
REVISION TO DRILLING PLAN FILED IN WIS 02/11/05

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

1a. Type of Work: ☒ DRILL ☐ REENTER		5. Lease Serial No. NM - 013688
1b. Type of Well: ☐ Oil Well ☒ Gas Well Gas ☐ Other ☐ Single Zone ☐ 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 77079-2064	3b. Phone No. (include area code) 281-366-4081	8. Lease Name and Well No. ATLANTIC LS 1M
4. Location of Well (Report location clearly and in accordance with any State requirements.)* At surface 1765' FSL & 1045' FEL NESE At proposed prod. Zone 750' FSL & 850' FEL SESE		9. API Well No. 30-045-32878
10. Field and Pool, or Exploratory BASIN DAKOTA & BLANCO MESAVERDE		11. Sec., T., R., M., or Blk. and survey or Area SECTION 25 T31N & R10W I
12. County or Parish SAN JUAN		13. State NEW MEXICO
14. Distance in miles and direction from nearest town or post office* 10.7 MILES EAST FROM AZTEC, NM		
15. Distance from proposed* Location to nearest Property or lease line, ft. (Also to nearest drig. Ujnit line, if any) 1045'	16. No. of Acres in lease 297.40	17. Spacing Unit dedicated to this well 297.40 E/2
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.	19. Proposed Depth 8059' MD	20. BLM/BIA Bond No. on file WY2924
21. Elevations (show whether DF, KDB., RT, GL, etc.) 6631 GL	22. Approximate date work will start* 07/25/05	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. |

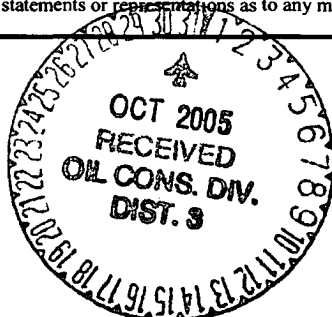
25. Signature <i>Cherry Hlava</i>	Name (Printed/typed) Cherry Hlava	Date 04/21/2005
Title Regulatory Analyst		
Approved by (Signature) <i>[Signature]</i>	Name (Printed/Typed)	Date 10/27/05
Title AFM		
Office PFO		

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)



HOLD C104 FOR directional survey

WMOCD

RECEIVED
OCT 25 PM 4 49
BIRMINGHAM, NM

District I
PO Box 1980, Hobbs NM 88241-1980
District II
PO Drawer KK, Aztec, 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

API Number 30-045-32875	Pool Code 71599; 72319	Pool Name Basin Dakota; Blanco Mesaverde
Property Code 000 278	Property Name Atlantic LS	Well Number # 1M
ORCID No 000778	Operator Name BP AMERICA PRODUCTION COMPANY	Elevation 6631

Surface Location

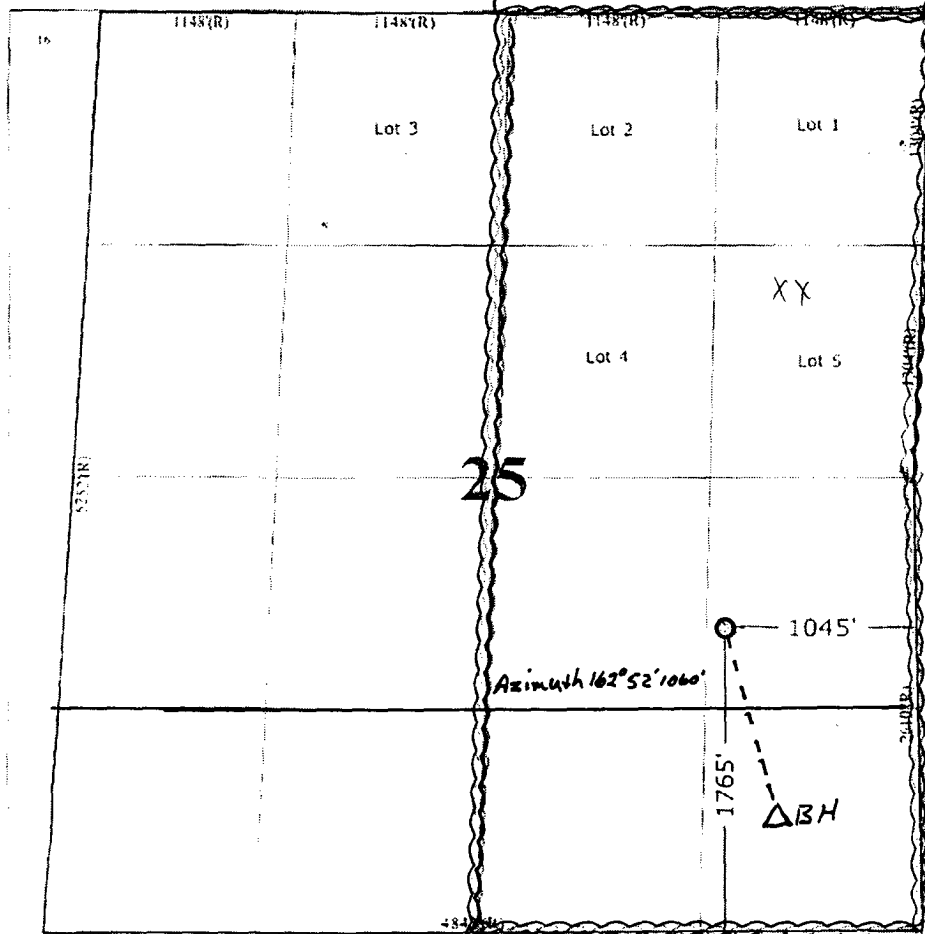
UL or Lot No	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
I	25	31 N	10 W		1765	SOUTH	1045	EAST	SAN JUAN

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
P	25	31 N	10 W		750	SOUTH	750	EAST	SAN JUAN

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
297.40			

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



OPERATOR CERTIFICATION

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

Cherry Hlava
Signature
Cherry Hlava
Printed Name
Regulatory Analyst
Title
2-1-05
Date

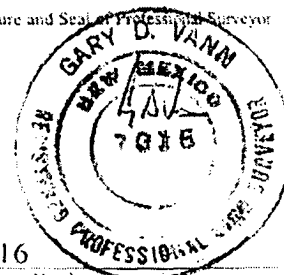
SURVEYOR CERTIFICATION

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

Change to BH 6-21-05
November 18, 2004

Date of Survey

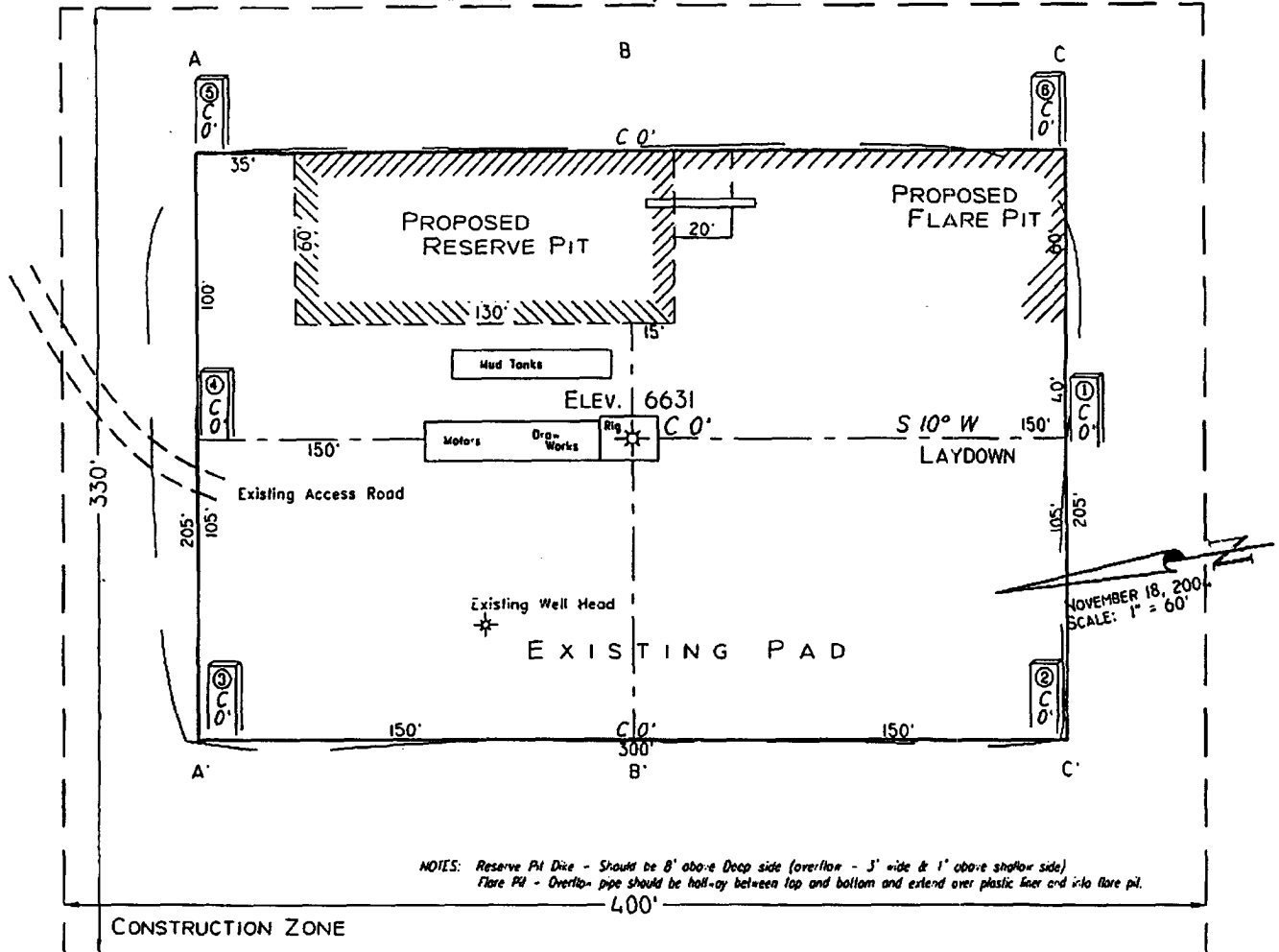
Signature and Seal of Professional Surveyor



7016
Certificate Number

PAD LAYOUT PLAN & PROFILE
BP AMERICA PRODUCTION COMPANY
 Atlantic LS # 1M
 1765' F/SL 1045' F/EL
 SEC. 25, T31N, R10W, N.M.P.M.
 SAN JUAN COUNTY, NEW MEXICO

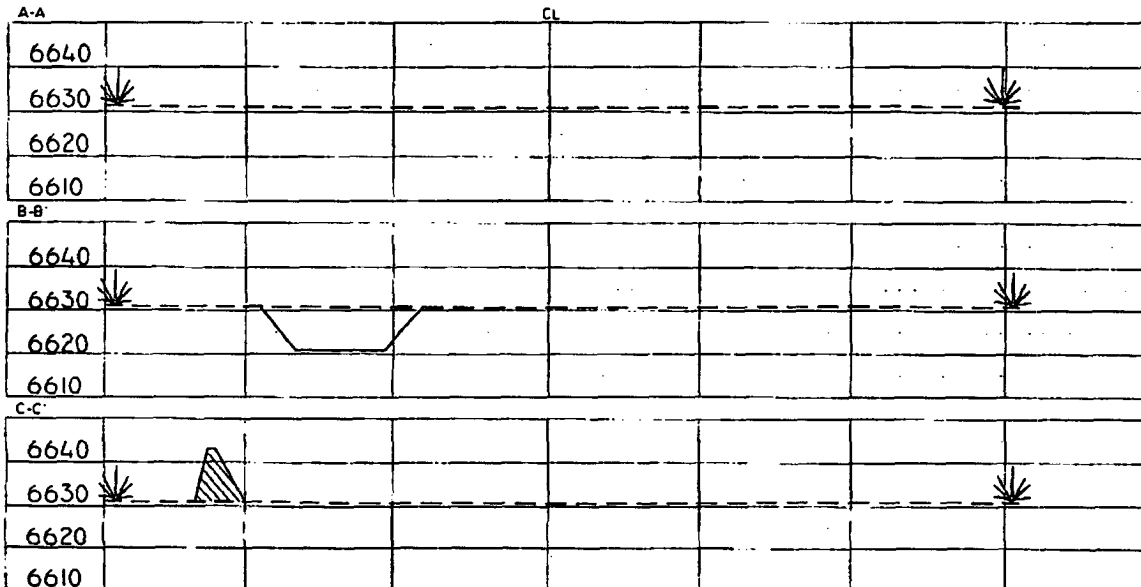
Lat: 36°52'02"
 Long: 107°49'52"



NOTES: Reserve Pit Dike - Should be 6' above Deep side (overflow - 3' wide & 1' above shallow side)
 Flare Pit - Overflow pipe should be half-way between top and bottom and extend over plastic liner and into flare pit.

Area of Construction Zone - 330'x400' or 303 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

Additional Operator Remarks
Atlantic A LS 1M
APD

~~APD WAS FILED ELECTRONICALLY IN WIS ON 02/01/2005 AND REVISION TO DRILLING
PLAN FILED IN WIS 02/11/05~~

NOTICE OF STAKING WAS SUBMITTED ON 01/28/2005.

BP America Production Company respectfully requests permission to directional drill the subject well to a total depth of approximately 8059' MD & 7992' TVD'. 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

BP AMERICA PRODUCTION COMPANY

DRILLING AND COMPLETION PROGRAM

REVISED 02/10/05

2/10/2005

Lease:	Atlantic LS	Well Name & No.	Atlantic LS #1M	Field:	Blanco Mesaverde/Basin Dakota
County:	San Juan, New Mexico	Surface Location:	25-31N-10W:1765' FSL, 1045' FEL		
Minerals:		Surface:	Lat: 36.8671579 deg; Long: -107.8304140 deg		
Rig :	Aztec 184	BH Location:	1150' FSL, 850' FEL; Lat: 36.8654698 deg; Long: -107.8297521 deg		
OBJECTIVE:	Drill 250' 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:	6631	Estimated KB:	6,645.0'
Rotary	0 - TD	Marker		SUBSEA	TVD

LOG PROGRAM		Ojo Alamo	4,561'	2,084'	2,116'
Type	Depth Interval	Kirtland	4,459'	2,186'	2,221'
Single Run		Fruitland	3,855'	2,790'	2,840'
		Fruitland Coal	3,568'	3,077'	3,134'
		Pictured Cliffs	3,261'	3,384'	3,447'
		Lewis	3,072'	3,573'	3,638'
Cased Hole	TD to 7" shoe	Cliff House	1,690'	4,955'	5,022'
TDT- CBL		Menefee	1,367'	5,278'	5,345'
		Point Lookout	933'	5,712'	5,779'
	Identify 4 1/2" cement top				

REMARKS: - Please report any flares (magnitude & duration).	Mancos		655'	5,990'	6,057'	
	Greenhorn		-994'	7,639'	7,706'	
	Graneros (bent,mkr)		-1,039'	7,684'	7,751'	
	Two Wells	#	-1,097'	7,742'	7,809'	
	Paguate	#	-1,188'	7,833'	7,900'	
	Cubero	#	-1,219'	7,864'	7,931'	
	L. Cubero	#	-1,239'	7,884'	7,951'	
	Encinal Cyn	#	-1,283'	7,928'	7,995'	
	TOTAL DEPTH:			-1,347'	7,992'	8,059'
	# Probable completion interval				* Possible Pay	

SPECIAL TESTS	DRILL CUTTING SAMPLES		DRILLING TIME	
TYPE	FREQUENCY	DEPTH	FREQUENCY	DEPTH
None	30'/10' intervals	3,738' to TD	Geolograph	0 - TD

REMARKS:	
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MUD PROGRAM:					
Interval	TypeMud	#/gal	Vis, sec/qt	/30 min	Other Specification
200'	Spud	8.8 - 9.0	Sufficient to clean hole.		
3,738'	Water/LSND	8.4 - 9.0		<9	Sweep hole while whilst water drilling, LCM onsite
8,059'	Air	1	1000 cfm for hammer		Volume sufficient to maintain a stable and clean wellbore

CASING PROGRAM:							
CasingString	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	3,738'	8-3/4"	7"	J/K-55 ST&C	20#	100' below LWIS	cmt to surface
Production	8,059'	6-1/4"	4-1/2"	J-55	11.6#	DKOT	150' inside Intermediate - TOC survey required

CORING PROGRAM:	None
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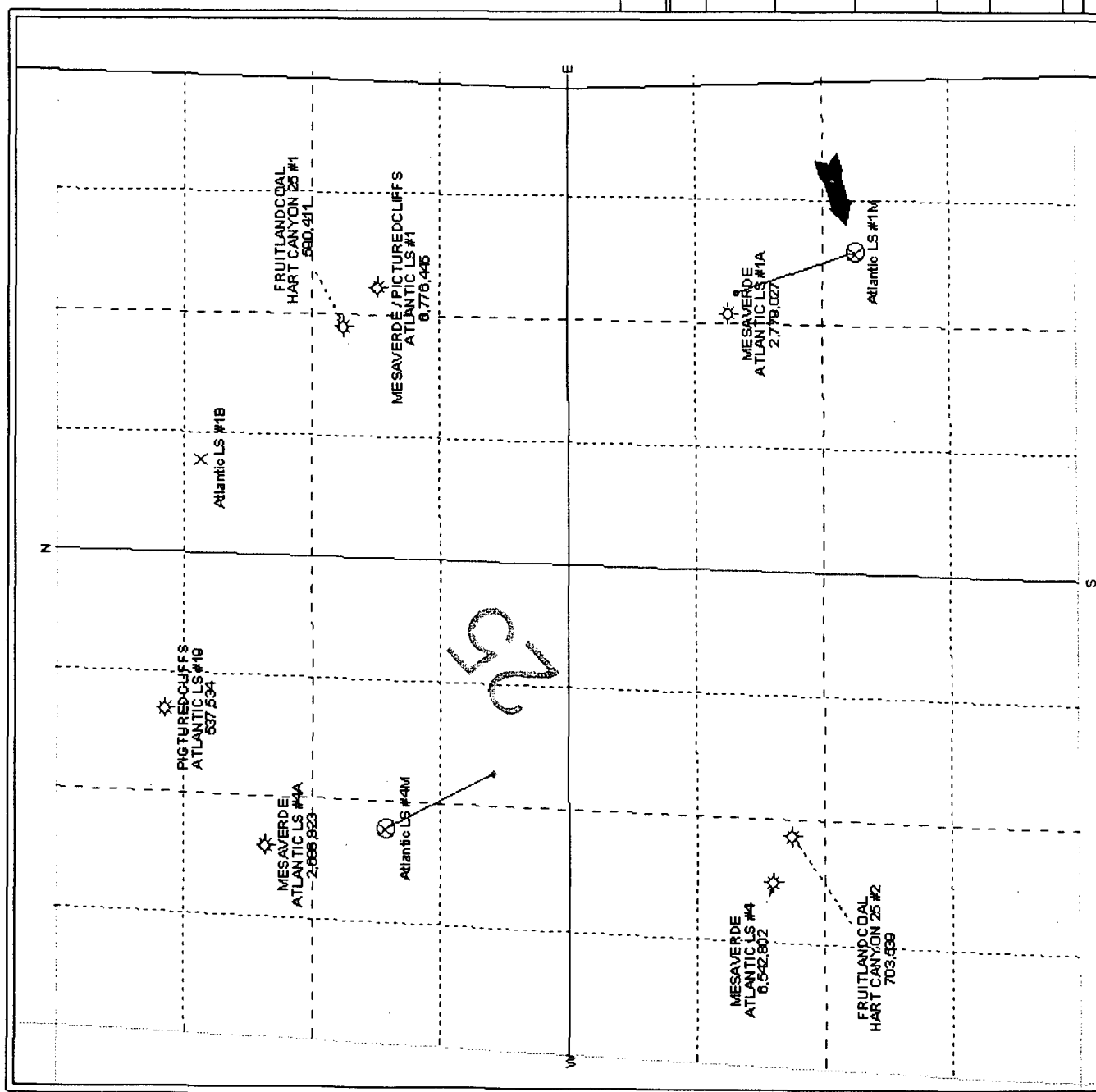
COMPLETION PROGRAM:	Rigless, 2-3 Stage Limited Entry Hydraulic Frac, FMC Unihead
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GENERAL REMARKS:	Notify BLM/NMOCD 24 hours prior to Spud, BOP testing, and Casing and Cementing.
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BOP Pressure Testing Requirements			
Formation	Depth	Anticipated bottom hole pressure	Max anticipated surface pressure**
Cliffhouse	4,955'	500	0
Point Lookout	5,712'	600	0
Dakota	7,742'	2600	896.76

Requested BOP Pressure Test Exception = 1500 psi	** Note: Determined using the following formula: ABHP - (.22*TVD) = ASP
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Form 46 Reviewed by:	Logging program reviewed by:	DATE:	APPROVED:	DATE:
PREPARED BY:	APPROVED:	10-Feb-05		
HGJ	JMP			
Form 46 7-84bw	For Drilling Dept.		For Production Dept.	



BP America Production

Atlantic LS #1M

25-31W-10W

relatively defined BHL



PROJECTED WELL DATA

WELL CYMBALS
Filing #: new well location

PEAPLIC
8-2-1655-5555
6-2-1655-5555

2019-2020

January 13, 2005

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

SUNDRY NOTICES AND REPORTS ON WELLS
*Do not use this form for proposals to drill or to re-enter an
Abandoned well. Use Form 3160-3 (APD) for such proposals.*

FORM APPROVED
OMB No. 1004-0135
Expires November 30, 2000

5. Lease Serial No.
NM 013688
6. If Indian, Allottee or tribe Name

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

SUBMIT IN TRIPLICATE - Other instructions on reverse side

RECEIVED
070 FARMINGTON NM

1. Type of Well
☐ Oil Well ☒ Gas Well ☐ Other

8. Well Name and No.
ATLATNIC LS IM

2. Name of Operator
BP AMERICA PRODUCTION COMPANY

9. API Well No.
New Well 30045 32875

3a. Address
PO BOX 3092 HOUSTON, TX 77253

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

10. Field and Pool, or Exploratory Area
BASIN DAKOTA & BLANCO MESAVERDE

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)
1765' FSL & 1045' FEL; SEC 25 T31N R10W NESE Mer NMP

11. County or Parish, State
SAN JUAN, NM

12. CHECK APPROPRIATE BOX(ES) TO INDICATE NATURE OR NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION

☒ Notice of Intent

☐ Subsequent Report

☐ Final Abandonment Notice

TYPE OF ACTION

☐ Acidize

☐ Alter Casing

☐ Casing Repair

☐ Change Plans

☐ Convert to Injection

☐ Deepen

☐ Fracture Treat

☐ New Construction

☐ Plug and Abandon

☐ Plug Back

☐ Production (Start/Resume)

☐ Reclamation

☐ Recomplete

☐ Water Disposal

☐ Water shut-Off

☐ Well Integrity

☐ Other **Change to BH
Location**

13. Describe Proposed or Completed Operation (clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recompleat horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports shall be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompleat in a new interval, a Form 3160-5 shall be filed once testing has been completed. Final Abandonment Notices shall be filed only after all requirements, including reclamation, have been completed, and the operator has determined that the site is ready for final inspection.

The original APD was submitted on 02/02/2005. At this time the APD has not been approved.

BP America respectfully requests permission to change the Bottom Hole location

From: 1150' FSL & 850' FEL

TO: 750' FSL & 750' FEL

The surface location remains the same.

The Intermediate and Production casing will change and therefore will change the cement program slightly. Please see the attached documentation.

14. I hereby certify that the foregoing is true and correct
Name (Printed/typed)

Cherry Hlava

Title **Regulatory Analyst**

Signature

Cherry Hlava

Date **06/22/2005**

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved by

[Signature]

Title

AFM

Date

10/27/05

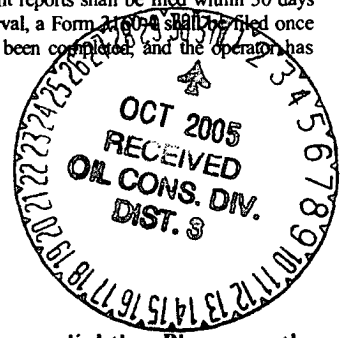
Conditions of approval, if any, are attached. Approval of this notice does not warrant or Certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.

Office

FPO

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.

NMOCB



BP AMERICA PRODUCTION COMPANY

DRILLING AND COMPLETION PROGRAM

1/13/2005 (Revised 06/16/2005)

Lease:	Atlantic LS	Well Name & No.	Atlantic LS #1M	Field:	Blanco Mesaverde/Basin Dakota
County:	San Juan, New Mexico	Surface Location:	25-31N-10W:1765' FSL, 1045' FEL		
Minerals:		Surface:	Lat: 36.8671579 deg; Long: -107.8304140 deg		
Rig :	Aztec 184	BH Location:	750' FSL, 750' FEL; Lat: 36.8643919 deg; Long: -107.8293766 deg		

OBJECTIVE: Drill 250' 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:	6631	Estimated KB: 6,645.0'				
Rotary	0 - TD	Marker		SUBSEA	TVD	APPROX. MD		
LOG PROGRAM		Ojo Alamo		4,561'	2,084'	2,161'		
Type	Depth Interval	Kirtland		4,459'	2,186'	2,269'		
Single Run		Fruitland	*	3,855'	2,790'	2,908'		
		Fruitland Coal	*	3,568'	3,077'	3,212'		
		Pictured Cliffs	*	3,261'	3,384'	3,533'		
		Lewis	*	3,072'	3,573'	3,729'		
Cased Hole		Cliff House	#	1,690'	4,955'	5,117'		
TDT- CBL	TD to 7" shoe	Menefee	#	1,367'	5,278'	5,440'		
	Identify 4 ½" cement top	Point Lookout	#	933'	5,712'	5,874'		
REMARKS:		Mancos		655'	5,990'	6,152'		
- Please report any flares (magnitude & duration).		Greenhorn		-994'	7,639'	7,801'		
		Graneros (bent,mkr)		-1,039'	7,684'	7,846'		
		Two Wells	#	-1,097'	7,742'	7,904'		
		Paguete	#	-1,188'	7,833'	7,995'		
		Cubero	#	-1,219'	7,864'	8,026'		
		L. Cubero	#	-1,239'	7,884'	8,046'		
		Encinal Cyn	#	-1,283'	7,928'	8,090'		
		TOTAL DEPTH:		-1,347'	7,992'	8,154'		
				# Probable completion interval				# Possible Pay

SPECIAL TESTS		DRILL CUTTING SAMPLES		DRILLING TIME	
TYPE		FREQUENCY	DEPTH	FREQUENCY	DEPTH
None		30'/10' intervals	3,829' to TD	Geologist	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.		
3,829'	Water/LSND	8.4 - 9.0		<9	Sweep hole while whilst water drilling, LCM onsite
8,154'	Air	1	1000 cfm for hammer		Volume sufficient to maintain a stable and clean wellbore

CASING PROGRAM:							
CasingString	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	3,829'	8-3/4"	7"	J/K-55 ST&C	20#	100' below LWIS	cmt to surface
Production	8,154'	6-1/4"	4-1/2"	P-110	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/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	4,955'	500	0
Point Lookout	5,712'	600	0
Dakota	7,742'	2600	896.76

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:		
HGJ	JMP	13/2005 (Revised 06/16/2005)	
Form 46 7-84bw	For Drilling Dept.		
	For Production Dept.		

Cementing Program

Well Name:	Atlantic LS #1M	REVISED 06/22/05	
Location:	25-31N-10W:1765' FSL, 1045' FEL BH 750' FSL & 750' FEL		
County:	San Juan	Well Flac	
State:	New Mexico	Formation:	Blanco Mesaverde/Basin Dakota
		KB Elev (est)	6645
		GL Elev. (est)	6631

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	3829	8.75	7	LT&C	Surface	NA	
Production -	8154	6.25	4.5	ST&C	3729	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	2270	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	<u>Recommended Mud Properties Prio Cementing:</u>	
			PV	<20
			YP	<10
0 - SCP	Water/Spud	8.6-9.2	Fluid Loss	<15
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	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

Cementing Program

Intermediate:

Fresh Water	20 bbl	fresh water		
Lead		326 sx Class "G" Cement		858 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	Yield	Water	
	(lb/gal)	(ft3/sk)	(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 collar			
	1 Top Rubber Plug			
	1 Thread Lock Compound			

Production:

Fresh Water	10 bbl	CW100		
Lead		187 LiteCrete D961 / D124 / D154		471 cuft
Slurry 1		+ 0.03 gps D47 antifoam		
TOC, 400' above 7" shoe		+ 0.5% D112 fluid loss		
		+ 0.11% D65 TIC		
Tail		150 sx 50/50 Class "G"/Poz		216 cuft
Slurry 2		+ 5% D20 gel (extender)		
1502 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)	(ft3/sk)	(gal/sk)	
Slurry 1	9.5	2.52	6.38	
Slurry 2	13	1.44	6.5	0.1169 cuft/ft csg ann
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			



Scientific Drilling
Directional Drilling Operations

Field: SAN JUAN, New Mexico
Site: SEC 25-T31N-R10W
Well: Atlantic LS #1M
Wellpath: OH
Plan: Plan #1



SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	
3	930.38	18.91	163.79	919.00	-99.00	28.78	3.00	163.79	103.09	
4	3211.52	18.91	163.79	3077.00	-808.94	235.17	0.00	0.00	842.43	Fruitland coal-1M
5	3831.26	12.71	163.79	3673.00	-971.02	282.29	1.00	180.00	1011.22	7" CSG PT.
6	4255.07	0.00	0.00	4093.33	-1015.99	295.36	3.00	180.00	1058.05	
7	8153.73	0.00	0.00	7992.00	-1015.99	295.36	0.00	0.00	1058.05	PBHL-1M

TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Shape
Fruitland coal-1M	3077.00	-808.94	235.17	2134165.107	2724186.247	Point
7" CSG PT.	3673.00	-971.02	282.29	2134003.041	2724233.363	Point
PBHL-1M	7992.00	-1015.00	295.00	2133959.065	2724246.072	Circle (Radius: 100)

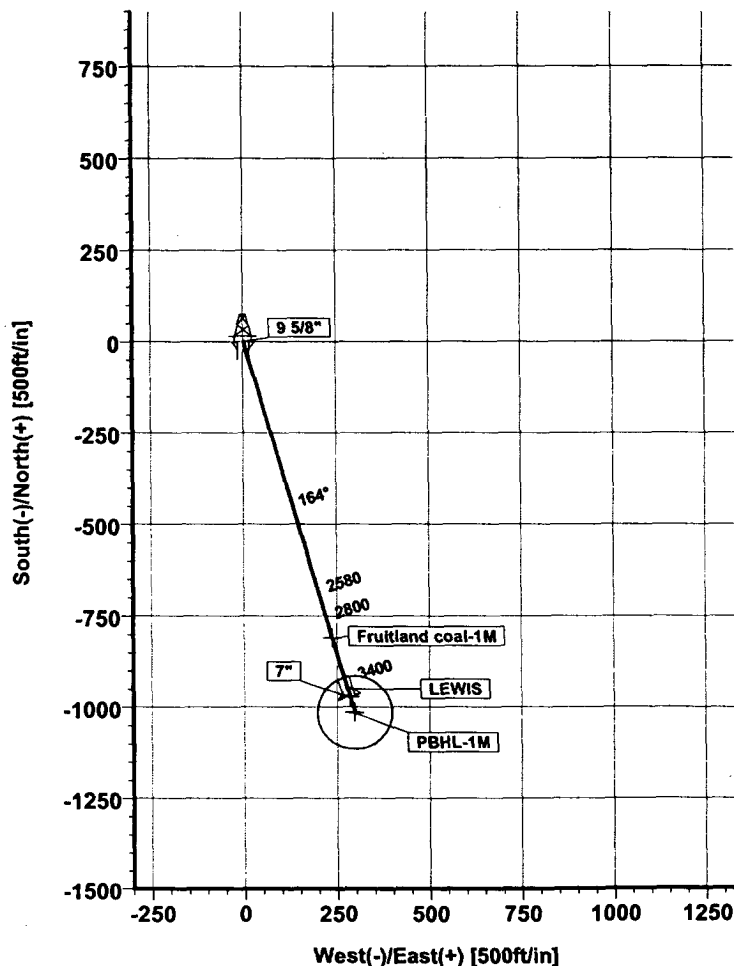
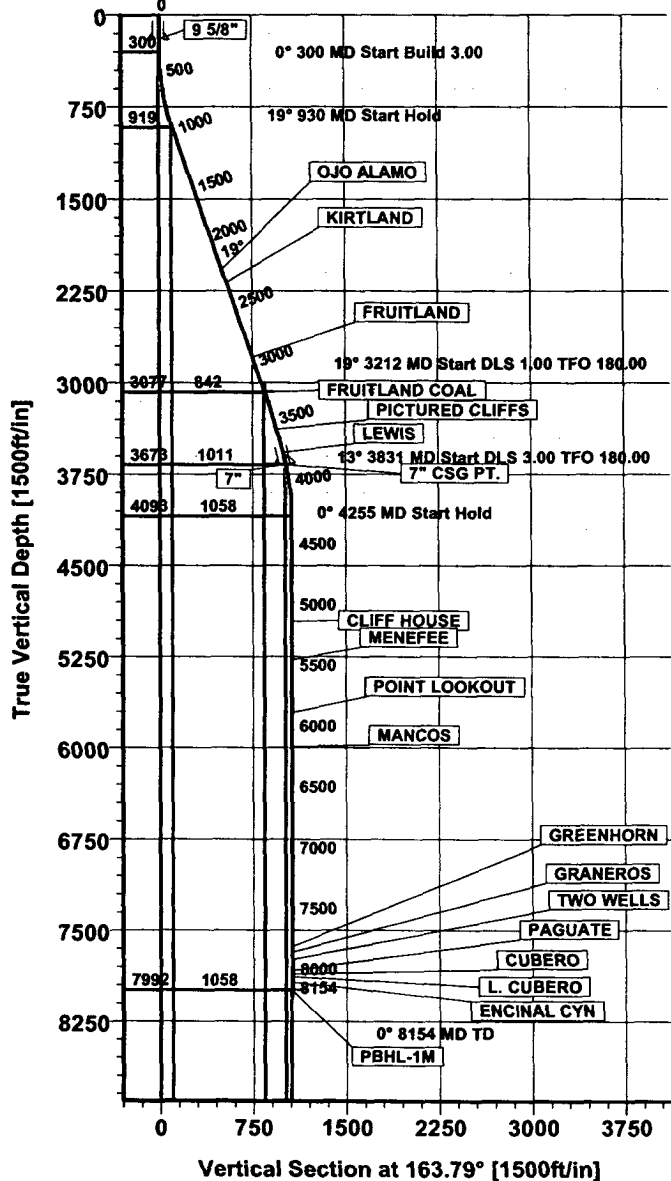
WELL DETAILS

Name	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
Atlantic LS #1M	-1981.28	-292.78	2134973.980	2723951.097	36°52'01.768N	107°49'49.490W	N/A

SITE DETAILS

SEC 25-T31N-R10W
SAN JUAN NEW MEXICO

Ground Level: 6408.00
Positional Uncertainty: 0.00
Convergence: 0.00





Scientific Drilling Planning Report



Company: BP	Date: 6/16/2005	Time: 12:23:27	Page: 1
Field: SAN JUAN, New Mexico	Co-ordinate(NE) Reference: Well: Atlantic LS #1M, Grid North		
Site: SEC 25-T31N-R10W	Vertical (TVD) Reference: AGL=6631+KB=13.5' 6645.0		
Well: Atlantic LS #1M	Section (VS) Reference: Well (0.00N,0.00E,163.79Azi)		
Wellpath: OH	Plan:	Plan #1	

Field: SAN JUAN, New Mexico SAN JUAN COUNTY, NEW MEXICO USA	Map System: US State Plane Coordinate System 1983	Map Zone: New Mexico, Western Zone
Geo Datum: GRS 1980	Coordinate System: Well Centre	
Sys Datum: Mean Sea Level	Geomagnetic Model: igrf2005	

Site: SEC 25-T31N-R10W SAN JUAN NEW MEXICO		
Site Position:	Northings: ft	Latitude:
From: Lease Line	Easting: ft	Longitude:
Position Uncertainty: 0.00 ft		North Reference: Grid
Ground Level: 6408.00 ft		Grid Convergence: 0.00 deg

Well: Atlantic LS #1M	Slot Name:
Well Position: +N/-S -1981.28 ft	Latitude: 36 52 1.768 N
+E/-W -292.78 ft	Longitude: 107 49 49.490 W
Position Uncertainty: 0.00 ft	

Wellpath: OH	Drilled From: Surface		
Current Datum: AGL=6631+KB=13.5'	Tie-on Depth: 0.00 ft		
Magnetic Data: 6/16/2005	Above System Datum: Mean Sea Level		
Field Strength: 51459 nT	Declination: 10.66 deg		
Vertical Section: Depth From (TVD)	Mag Dip Angle: 63.70 deg		
ft	+N/-S	+E/-W	Direction
ft	ft	ft	deg
0.00	0.00	0.00	163.79

Plan: Plan #1	Date Composed: 6/16/2005
Principal: Yes	Version: 5
	Tied-to: From Surface

Plan Section Information

MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	TFO deg	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	
930.38	18.91	163.79	919.00	-99.00	28.78	3.00	3.00	0.00	163.79	
3211.52	18.91	163.79	3077.00	-808.94	235.17	0.00	0.00	0.00	0.00	Fruitland coal-1M
3831.26	12.71	163.79	3673.00	-971.02	282.29	1.00	-1.00	0.00	180.00	7" CSG PT.
4255.07	0.00	0.00	4093.33	-1015.99	295.36	3.00	-3.00	-38.65	180.00	
8153.73	0.00	0.00	7992.00	-1015.99	295.36	0.00	0.00	0.00	0.00	PBHL-1M

Section 1 : Start Hold

MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	VS ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	TFO deg
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Section 2 : Start Build 3.00

MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	VS ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	TFO deg
400.00	3.00	163.79	399.95	-2.51	0.73	2.62	3.00	3.00	0.00	0.00
500.00	6.00	163.79	499.63	-10.05	2.92	10.46	3.00	3.00	0.00	0.00
600.00	9.00	163.79	598.77	-22.58	6.56	23.51	3.00	3.00	0.00	0.00
700.00	12.00	163.79	697.08	-40.08	11.65	41.74	3.00	3.00	0.00	0.00
800.00	15.00	163.79	794.31	-62.49	18.17	65.08	3.00	3.00	0.00	0.00
900.00	18.00	163.79	890.18	-89.76	26.09	93.48	3.00	3.00	0.00	0.00
930.38	18.91	163.79	919.00	-99.00	28.78	103.09	3.00	3.00	0.00	0.00

**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

