

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

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

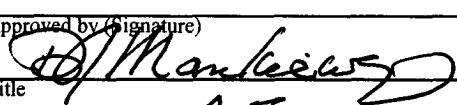
APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of Work: <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER		5. Lease Serial No. SF 078051
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.
3a. Address P.O. BOX 3092 HOUSTON, TX 77253-3092		8. Lease Name and Well No. MUDGE LS 24N
3b. Phone No. (include area code) Ph: 281.366.4081		9. API Well No. 3004532323
4. Location of Well (Report location clearly and in accordance with any State requirements. *) At surface SWNE 2180FNL 1835FEL 36.56600 N Lat, 107.59500 W Lon At proposed prod. zone		10. Field and Pool, or Exploratory BASIN DK & BLANCO MV
14. Distance in miles and direction from nearest town or post office* 11 MILES NORTH FROM AZTEC		11. Sec., T., R., M., or Blk. and Survey or Area 6 Sec 33 T32N R11W Mer NMP
15. Distance from proposed location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 1835'	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.	19. Proposed Depth 7600 MD	13. State NM
21. Elevations (Show whether DF, KB, RT, GL, etc.) 6124 GL	22. Approximate date work will start 06/25/2004	17. Spacing Unit dedicated to this well 320.00 E/2
		20. BLM/BLA Bond No. on file WY2924
		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.
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 (Electronic Submission)	Name (Printed/Typed) CHERRY HLAVA	Date 04/22/2004
Title REGULATORY ANALYST		
Approved by (Signature) 	Name (Printed/Typed) A. E. M.	Date 6-3/04
Title AFFO		

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 #28434 verified by the BLM Well Information System
For BP AMERICA PRODUCTION COMPANY, sent to the Farmington

NEED ARE
SUBMITTED WITH ATTACHED
GENERAL REQUIREMENTS.

procedural review pursuant to 43 CFR 3165.3
and appeal pursuant to 43 CFR 3165.4

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

NMOC

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 30045-32323		2 Pool Code 71599; 72319		3 Pool Name Basin Dakota; Blanco Mesaverde		
4 Property Code 000911		5 Property Name Mudge LS			6 Well Number # 24N	
7 OGRID No. 000778		8 Operator Name BP AMERICA PRODUCTION COMPANY			9 Elevation 6124	

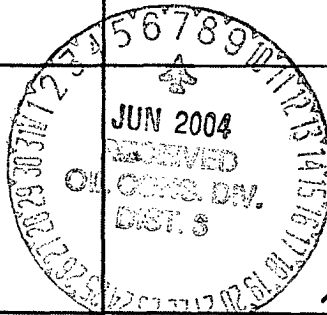
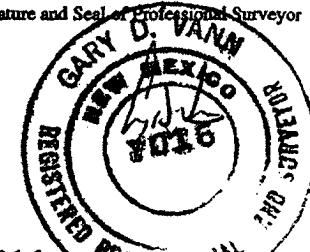
10 Surface Location

UL or Lot No. G	Section 33	Township 32 N	Range 11 W	Lot Idn	Feet from the 2180	North/South line NORTH	Feet from the 1835	East/West line EAST	County SAN JUAN
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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 320		14 Joint or Infill		15 Consolidation Code		16 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

 33	2180'	1835'	17 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 4-22-04 Date	
			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. February 20, 2004 Date of Survey Signature and Seal of Professional Surveyor  7016 Certificate Number	

**BP AMERICA PRODUCTION COMPANY
DRILLING AND COMPLETION PROGRAM**

Prospect Name: Mudge LS
Lease: Mudge
County: San Juan
State: New Mexico
Date: April 12, 2004

Well No: 24N
Surface Location: 33-32N-11W, 2180 FNL, 1835 FEL
Field: Blanco Mesaverde/Basin Dakota

OBJECTIVE: Drill 250' below the top of the Two Wells (DKOT), set 4.5" production casing across Dakota. Drill out from beneath casing to a depth no deeper than 7600', or 74' below casing shoe. Test and produce open hole interval. Stimulate CH, MF, PL and DK intervals

METHOD OF DRILLING		APPROXIMATE DEPTHS OF GEOLOGICAL MARKER			
TYPE OF TOOLS Rotary	DEPTH OF DRILLING 0 - TD	Estimated GL: 6124'		Estimated KB: 6138'	
LOG PROGRAM		MARKER		SUBSEA	TVD
TYPE DEPTH INTERVAL <u>OPEN HOLE: GR-CCL-TDT</u> <u>CASED HOLE</u> GR-CCL-TDT CBL TDT – TD to 7" shoe incl. openhole Identify 4.5" cement top		Ojo Alamo		4435'	1703'
		Kirtland Shale		4373'	1765'
		Fruitland		3921'	2217'
		Fruitland Coal	*	3607'	2531'
		Pictured Cliffs	*	3315'	2823'
		Lewis Shale	#	3118'	3020'
		Cliff House	#	1798'	4340'
		Menefee Shale	#	1407'	4731'
		Point Lookout	#	1043'	5095'
		Mancos		632'	5506'
		Greenhorn		-1025'	7163'
		Bentonite Marker		-1075'	7213'
		Two Wells	#	-1138'	7276'
		Paguate	#	-1217'	7355'
		Cubero	#	-1245'	7383'
Lower Cubero	#	-1272'	7410'		
Encinal Canyon	#	-1328'	7466'		
Casing point		-1388'	7526'		
Burro Canyon	#	-1404'	7542'		
		TOTAL DEPTH		-1462'	7600'
REMARKS: - Please report any flares (magnitude & duration).		# Probable completion interval			
		* Possible Pay			
SPECIAL TESTS		DRILL CUTTING SAMPLES		DRILLING TIME	
TYPE None		FREQUENCY 10'	DEPTH 3120' to TD	FREQUENCY Geologist	DEPTH 0-TD
REMARKS:					
MUD PROGRAM:					
Approx. Interval	Type Mud	Weight, #/gal	Vis, sec/qt	W/L cc's/30 min	Other Specification
0 - 120	Spud	8.6-9.2			
120 - 3120 (1)	Water/LSND	8.6-9.2			
3120 - 7526	Gas/Air/Mist	Volume sufficient to maintain a stable and clean wellbore			
7526 - 7600	Gas/Air/Mist	Volume sufficient to maintain a stable and clean wellbore			
REMARKS: (1) The hole will require sweeps to keep unloaded while fresh water drilling. Let hole conditions dictate frequency.					
CASING PROGRAM: (Normally, tubular goods allocation letter specifies casing sizes to be used. Hole sizes will be governed by Contract)					
Casing String	Estimated Depth	Casing Size	Grade	Weight	Hole Size
Surface/Conductor	120	9 5/8"	H-40 ST&C	32#	13.5"
Intermediate	3120	7"	J/K-55 ST&C	20#	8.75"
Production	7526	4 1/2"	J-55	11.6#	6.25"
REMARKS: (1) Circulate Cement to Surface (2) Set casing 100' into Lewis Shale (3) Bring cement 100' above 7" shoe					
CORING PROGRAM: None					
None					
COMPLETION PROGRAM:					
Test and produce open hole. Cased hole: Rigless, 3-4 Stage Limited Entry Hydraulic Frac					
GENERAL REMARKS:					
Notify BLM/NMOCDD 24 hours prior to Spud; BOP testing, and Casing and Cementing.					
Form 46 Reviewed by:		Logging program reviewed by: N/A			
PREPARED BY:		APPROVED:		DATE:	
KAS/MNP/JMP				April 12, 2004	
Form 46 12-00 MNP				Version 1.0	

BOP Test Pressure

BP America Production Company BOP Pressure Testing Requirements

Well Name: Mudge LS
County: San Juan

24N
State: New Mexico

Formation	TVD	Anticipated Bottom Hole Pressure	Maximum Anticipated Surface Pressure **
Ojo Alamo	1703		
Fruitland Coal	2531		
PC	2823		
Lewis Shale	3020		
Cliff House	4340	500	0
Menefee Shale	4731		
Point Lookout	5095	600	0
Mancos	5506		
Dakota	7276	2600	1500

** Note: Determined using the following formula: $ABHP - (.22 \times TVD) = ASP$

Requested BOP Pressure Test Exception: 1500 psi

**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 LS 24N
 Location: 33-32N-11W, 2180 FNL, 1835 FEL
 County: San Juan
 State: New Mexico

Field: Blanco Mesaverde / Basin Dakota
 API No.
 Well Flac
 Formation: Dakota MesaVerde
 KB Elev (est) 6138
 GL Elev. (est) 6124

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	120	13.5	9.625	ST&C	Surface	NA	
Intermediate	3120	8.75	7	ST&C	Surface	NA	
Production -	7526	6.25	4.5	ST&C	3020	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:	
			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	100	100 sx Class C Cement
TOC@Surface		+ 2% CaCl2 (accelerator)

127
117 cuft

0.4887 cuft/ft OH

Slurry Properties:

	Density (lb/gal)	Yield (ft ³ /sk)	Water (gal/sk)
Slurry 1	15.2	1.27	5.8

Cementing Program

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	260 sx Class "G" Cement	679 cuft
Slurry 1	+ 3% D79 extender	
TOC@Surface	+ 2% S1 Calcium Chloride	
	+1/4 #/sk. Cellophane Flake	
	+ 0.1% D46 antifoam	
Tail	60 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	0.1746 cuft/ft csg ann
	+ 2% CaCl2 (accelerator)	

Slurry Properties:	Density	Yield	Water
	(lb/gal)	(ft3/sk)	(gal/sk)
Slurry 1	11.4	2.61	17.77
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
 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	170 LiteCrete D961 / D124 / D154	428' 445 cuft
Slurry 1	+ 0.03 gps D47 antifoam	
TOC, 100' above 7" shoe	+ 0.5% D112 fluid loss	
	+ 0.11% D65 TIC	
Tail	160 sx 50/50 Class "G"/Poz	230' 248 cuft
Slurry 2	+ 5% D20 gel (extender)	+ 5 #/sk D24 gilsonite
1520 ft fill	+ 0.1% D46 antifoam	+ 0.15% D65 TIC
	+ 1/4 #/sk. Cellophane Flake	+ 0.1% D800 retarder
	+ 0.25% D167 Fluid Loss	
		0.1026 cuft/ft OH

Cementing Program

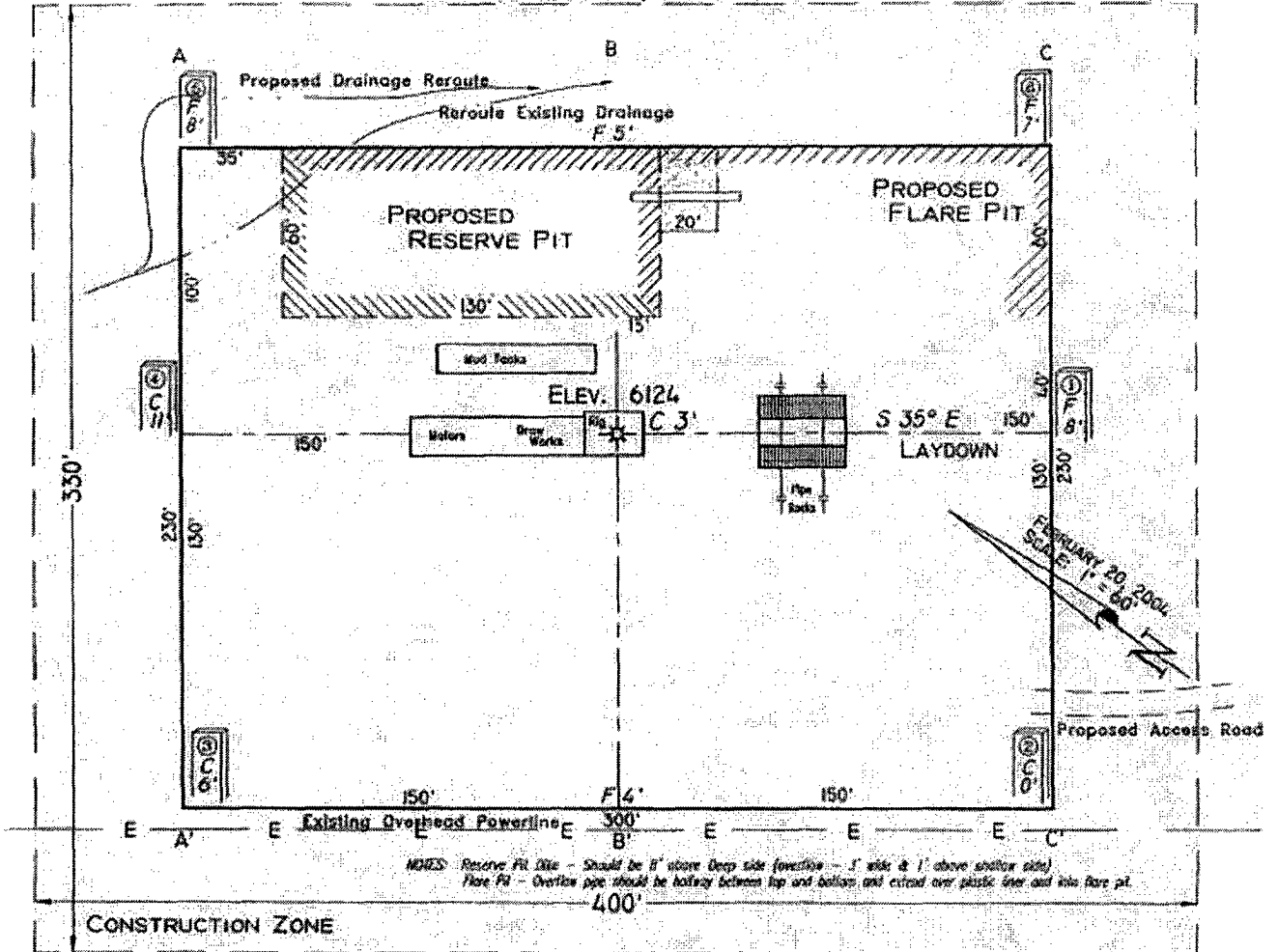
Slurry Properties:	Density (lb/gal)	Yield (ft ³ /sk)	Water (gal/sk)	
Slurry 1	9.5	2.52	6.38	0.1169 cuft/ft csg ann
Slurry 2	13	1.44	6.5	Top of Mancos 5506

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

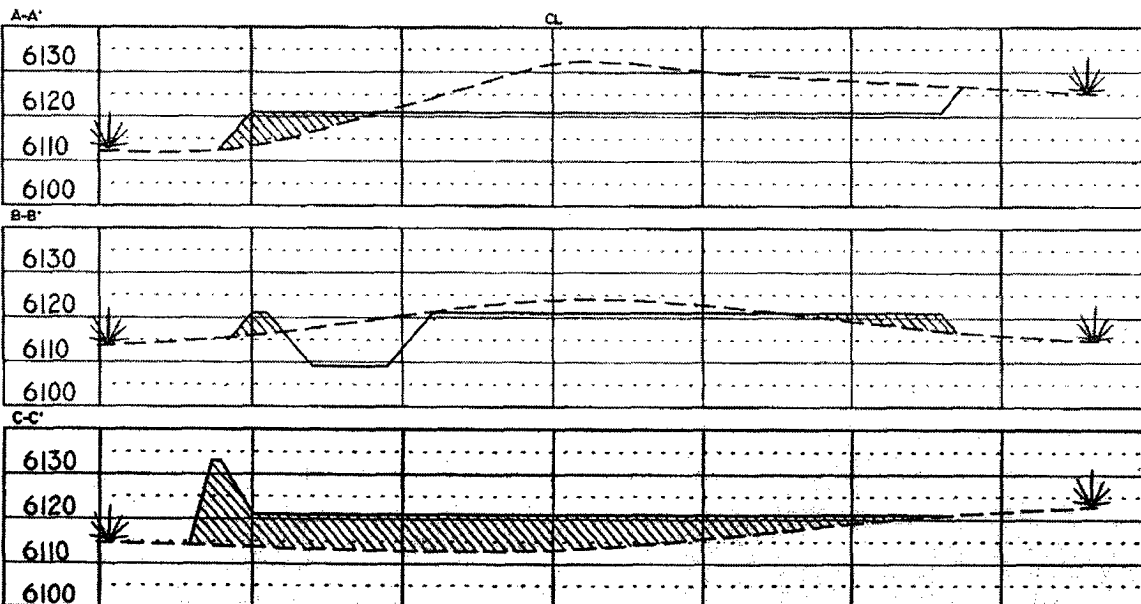
PAD LAYOUT PLAN & PROFILE
BP AMERICA PRODUCTION COMPANY
 Mudge LS #24N
 2180' F/NL 1835' F/EL
 SEC. 33, T32N, R11W, N.M.P.M.
 SAN JUAN COUNTY, NEW MEXICO

Lat: 36°56'33"
 Long: 107°59'32"



Area of Construction Zone - 383' x 103' or 1.03 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

BP American Production Company
Well Control Equipment Schematic

