

SUBMIT IN TRIPLICATE\*

(Other instructions on reverse side)

FORM APPROVED OMB NO. 1004-0136

## UNITED STATES DEPARTMENT OF THE INTERIOR

Expires February 28, 1995

	BUREAU O	5. LEASE DESIGNATION AND SERIAL NO. SF - 078095					
A	PPLICATION FOR	PERMIT TO DE	RILL OR DEEPEN	1	6. IF INDIAN, ALOT	TEE OR TRIBE	AME
a. TYPE OF WORK	DRILL X -	7. UNIT AGREEMEN	7. UNIT AGREEMENT NAME				
TYPE OF WELL OIL WELL	GAS X	8. FARM OR LEASE MUDGE LS	NAME, WELL N				
P.	MOCO PRODUCTION CO O. BOX 3092 OUSTON , TX	77079			9. API WELL NO.	45 -3	0637
ADDRESS AND TELEPHOMARY CORLEY AUTHORIZED REPR		PHONE 281.366. FAX: 281.366. EMAIL: corleym	.0700		10. FIELD AND POO	DL, OR WILDCA	
t Surface	oort location clearly and in accordance of the control of the cont	uiw ,	JUN 2001	67818	11. SEC.,T.,R.,M., OI AND SURVEY OR SECTION 5 T3 MERIDIAN N	R BLK. J AREA J SIN R11W MP	* 1
4. DISTANCE IN MILES AN MILES FROM AZT	D DIRECTION FROM THE NEARES		RECEIVED ON DAY	20.27	12. COUNTY OR PA SAN JUAN	RISH	13. STAT
5. DISTANCE FROM PROPO LOCATION TO NEAREST PROPERTY OR LEASE LINE Also to nearest drlg. unit line.	, FT.	16. NO. ACRES 309.57	TALEASE DAST. S	37. NO. OI TO THIS V 309.57	F ACRES ASSIGNED WELL		
IB. DISTANCE FROM PROPO TO NEAREST WELL, DRILL OR APPLIED FOR, ON THIS	OSED LOCATION* ING, COMPLETED,	19. PROPOSED 7616 MD /		20, ROTAL ROTAL	RY OR CABLE TOOLS RY		
1. ELEVATIONS ( Show who	when DE DT CD atc.)				22 ADDDOY DATE	WORK WILL ST	ART*
II. Eds Titte is ( one a min	6204 GL				05/20/2001		
<u></u> -	6204 GL	PROPOSED CASING	AND CEMENTING PROC	RAM	D	· · · · · · · · · · · · · · · · · · ·	
SIZE OF HOLE	GRADE, SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH		05/20/2001 QUANTITY	OF CEMENT	
SIZE OF HOLE  Notice of Staking Sub 23M. Amoco Producti approximately 7616', production rate, add t authority (NMOCD o established in the Basi Please see attached do	grade, Size of Casing  mitted 02/26/2001 as the Mitted 02/26/2001 as the Mitted on Company respectfully recomplete in the Basin Dakothe Blanco Mesaverde Pool rider R-11363) will be submit in Dakota Pool and prior to cuments in support of our a	weight per foot  udge B well 23M. Plea equest permission to di sta Pool, produce the w and commingle produc itted to all appropriate o completion of and dov application	se change lease name and rill the subject well to a to ell for approximately 30 ction downhole. Application	well number to tal depth of lays to establis on for downhor production he Blanco Mo	05/20/2001  QUANTITY  to Mudge LS  sh sle commingling has been esaverde.	OF CEMENT	
Notice of Staking Sub 23M. Amoco Producti approximately 7616', production rate, add t authority (NMOCD o established in the Basi Please see attached do procedural and appear	grade, SIZE OF CASING  mitted 02/26/2001 as the Mitted 02/26/2001 as the Mitter of Company respectfully recomplete in the Basin Dakothe Blanco Mesaverde Pool and prior to deciments in support of our analysis in	weight per foot  udge B well 23M. Pleasequest permission to do that Pool, produce the wand commingle produce itted to all appropriate to completion of and dovapplication  CER 3156.3	se change lease name and rill the subject well to a to ell for approximately 30 etion downhole. Applicati parties for approval afte whole commingling with	well number tal depth of lays to establis on for downhor production he Blanco Mo	QUANTITY  to Mudge LS  sh ble commingling has been esaverde.	G ASSESSED TO SECURITION	ely This
Notice of Staking Sub 23M. Amoco Producti approximately 7616', production rate, add t authority (NMOCD o established in the Basi Please see attached do procedural and appear	grade, SIZE OF CASING  mitted 02/26/2001 as the Mu complete in the Basin Dako the Blanco Mesaverde Pool rder R-11363) will be submi in Dakota Pool and prior to cuments in support of our a the success to treatment the success the success to the success	weight per foot  udge B well 23M. Plea equest permission to di ta Pool, produce the w and commingle produce itted to all appropriate to completion of and dov application  AM: If proposal is to deeper locations and measured BMISSION #3596 VER	se change lease name and rill the subject well to a to ell for approximately 30 etion downhole. Applicati parties for approval afte whole commingling with	well number tal depth of lays to establis on for downhor production he Blanco Mo	o5/20/2001  QUANTITY  to Mudge LS  sh ble commingling has been esaverde.	OF CEMENT  OF CEMENT  ACCEPTAGE  ACCEPTAGE  OF CEMENT	ely Teul ATTACHES

Is/ Lee Otteni

APPROVED BY-

District I PO Box 1980, Hobbs NM 88241-1980 District II PO Drawer KK, Artesia, NM 87211-0719 District III

Energy, Minerals & Natural Resources Department OIL CONSERVATION DIVISION

State of New Mexico

Form C-102 Revised February 21, 1994 Instructions on back Submit to Appropriate District Office

PO Box 2088 Santa Fe, NM 87504-2088

State Lease - 4 Copies Fee Lease - 3 Copies

1000 Rio Brazos Rd., Aztec, NM 87410 District IV PO Box 2088, Santa Pe, NM 87504-2088

309.57

AMENDED REPORT

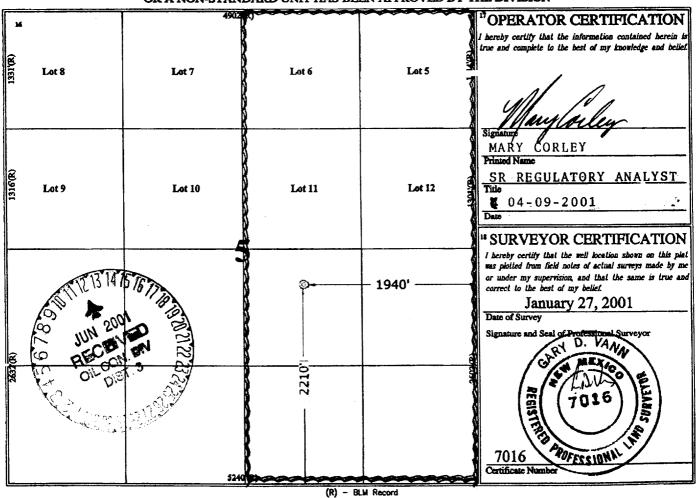
#### WELL LOCATION AND ACREAGE DEDICATION PLAT

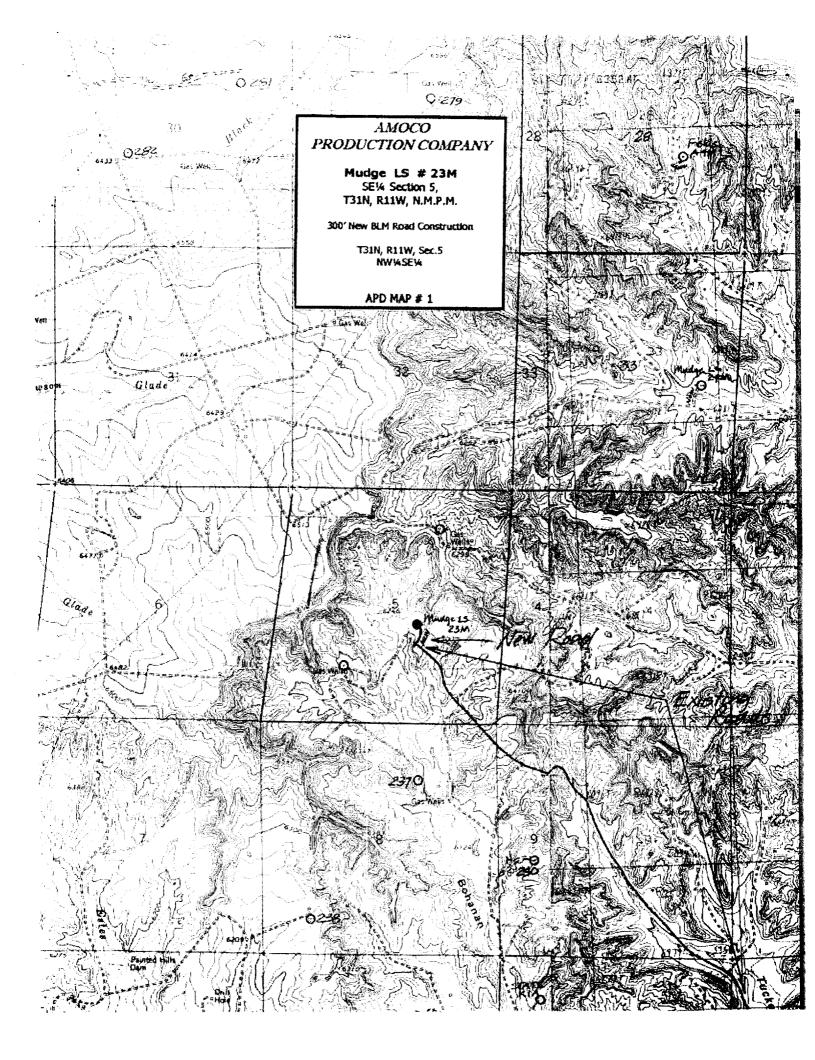
'API Number	<sup>1</sup> Poul Code	<sup>1</sup> Pool Name			
30-045-30	632 71599 & 72319	BASIN DAKOTA & BLANCO MESA	VERDE		
Property Code		<sup>‡</sup> Property Name			
000911	Mudge LS		# 23M		
1 OGRID No.		<sup>3</sup> Operator Name			
000778	AMOCO PRODUCT	TION COMPANY	6204 —		

10 Surface Location

Bottom Hole Location If Different From Surface		1	- Curface		L	L				•
UL or lot no. Section Township Range Lot Idn Feet from the North/South line Feet from the East/West une	County	East/West line	Peet from the	·		tom Hole	11 Bott	Township	Section	UL or lot no.
OL OF IN IN.				reactyboath and	Poet Holla day			,		OL OF ION ID.

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





#### **AMOCO PRODUCTION COMPANY** DRILLING AND COMPLETION PROGRAM

Prospect Name: Mudge LS

Lease: MUDGE LS

Well No: 23M

Surface Location: 5-31N-11W, 2210 FSL,1940 FEL

County: San Juan State: New Mexico **Date:** April 11, 2001 Field: Blanco Mesaverde/Basin Dakota

DBJECTIVE: Drill 400' bel											_		
OBJECTIVE: Drill 400' below the base of the Greenhorn Limestone, set 4" Lin													
METHOD OF DRILLING				APF	ROXIMA	ATE D	EPTH	IS OF G	SEOL	OGIC	AL MA	RKER	- 1
TYPE OF TOOLS	DEPTH	DEPTH OF DRILLING				GL:	6204		Estim	nated	KB: 6	3218	
Rotary		0 - TD			MARKER			SL	JBSE/	4	MEA	S. DEP	ſΗ
	LOG PROGRAM				Alamo	-				5141		10	)77
_		INVERA	1	1 -	land Coal		*			3997		22	221
TYPE	DEFIN	INACION	· II		red Cliffs	I	*			3352			366
OPEN HOLE	TD to E	TD to 5 ½" shoe			is Shale		#			3318			900
GR-Induction		½" shoe			House		#			1748			170
Density/Neutron		½" shoe		-	efee Shal	ام	#			1549			669
Sonic	10.03	/2 51106			t Lookout	1	#			1091			127
CASED HOLE	TOT D	BTD-7 5/	(9" choo	Man			"			984			234
GR-CCL-TDT					enhom					-950			168
0.51		L - PBTD			tonite Mar	kor				-998			216
CBL	100 01 4	+ - 50 at	bove 7 5/8 "shoe		Wells	KCI	#	1		1060			278
REMARKS:	(	ration)			ota MB	- 1	#			1170			388
<ul> <li>Please report any flares</li> </ul>	(magnitude & dur	ration).			o Canyon	.	*			1290			508
				1	o Canyon rison	'	*			1340			558
				_	AL DEPT	<del>.  </del>		<del> </del>		1398			616
											Pov		, iQ
					obable co				_ P(	ossible		T11.	
S	SPECIAL TESTS	3			ILL CUT						LING		
TYPE				1	EQUENC		EPTH			QUEN		DEPTI	1
None				10 f	eet	Pr	oductio	n hole	Geole	ograph	1	0-TD	
REMARKS:													
REMIALICO.													
		:-											_
MUD PROGRAM:	1 -		1			Laan		- /00!-	- 10	\4h	Cif	ication	
Approx. Interval	Туре		Weight, #/g	al Vis	s, sec/qt	VV/I	L CC.	s/30 mii	ין כ	tner .	Specii	ication	
0 - 120-135													
U - 120-133	3 jts.   Spud		8.6-9.2										
		r/LSND	8.6-9.2										
120-135 - 2171	(1)(2) Water	r/LSND		icient to	o maintai	n a sta	ıble a	nd clea	n well	bore			_
120-135 - 2171 2171 - 7216	(1)(2) Water Gas/A	r/LSND Air/Mist	8.6-9.2 Volume suff	icient to	o maintai	n a sta	ıble a	nd clea	n well	bore			
120-135 - 2171 2171 - 7216 7216 7616	(1)(2) Water	r/LSND Air/Mist	8.6-9.2	icient to	o maintai	n a sta	ıble a	nd clea	n well	bore			
120-135 - 2171 2171 - 7216 7216 7616	(1)(2) Water Gas/A LSND	r/LSND Air/Mist D	8.6-9.2 Volume suff 8.6-9.2		··········						uency.		
120-135 - 2171 2171 - 7216 7216 7616 REMARKS: (1) The hole will require	(1)(2) Water Gas/A LSND	r/LSND Air/Mist D	8.6-9.2 Volume suffi 8.6-9.2 ded while fresh	water	drilling.	Let ho	le cor	nditions			uency.		
120-135 - 2171 2171 - 7216 7216 7616 REMARKS: (1) The hole will require (2) Top set Fruitland Co	(1)(2) Water Gas/A LSND e sweeps to keep coal to minimize	r/LSND Air/Mist D p unload lost circ	8.6-9.2 Volume suffi 8.6-9.2  ded while freshulation, air volu	water	drilling. maintain	Let ho	le cor	nditions ty.	dictat	e freq			
120-135 - 2171 2171 - 7216 7216 7616 REMARKS: (1) The hole will require (2) Top set Fruitland Co	(1)(2) Water Gas/A LSND e sweeps to kee coal to minimize I (Normally, tubular goo	r/LSND Air/Mist D p unload lost circ	8.6-9.2 Volume suffi 8.6-9.2  ded while fresholation, air volution letter specifies	water ume to casing si	drilling. maintain zes to be us	Let ho	le cor stabilit le sizes	nditions ty. will be go	dictate	e freq	tract)		
120-135 - 2171 2171 - 7216 7216 7616 REMARKS: (1) The hole will require (2) Top set Fruitland Co	(1)(2) Water Gas/A LSND e sweeps to kee coal to minimize I (Normally, tubular goo	r/LSND Air/Mist D p unload lost circ	8.6-9.2 Volume suffi 8.6-9.2  ded while freshulation, air volu	water	drilling. maintain zes to be us	Let ho	le cor stabilit le sizes	nditions ty.	dictate	e freq	tract)	, Cmt, I	-
120-135 - 2171 2171 - 7216 7216 7616  REMARKS: (1) The hole will require (2) Top set Fruitland Co CASING PROGRAM: ( Casing String	(1)(2) Water Gas/A LSND e sweeps to kee coal to minimize I (Normally, tubular goo Estimated Depth	r/LSND Air/Mist Dep unload lost circ lods allocat	8.6-9.2 Volume suffi 8.6-9.2  ded while freshulation, air volution letter specifies casing Size	water ume to casing si Grade	drilling. maintain zes to be us	Let ho hole s sed. Hol Weig	le cor stabili le sizes j <b>ht</b>	nditions ty. will be go Hole S	dictate	e freq by Con <b>Land</b>	tract)		-
120-135 - 2171 2171 - 7216 7216 7616 REMARKS: (1) The hole will require (2) Top set Fruitland Co	(1)(2) Water Gas/A LSND e sweeps to kee coal to minimize I (Normally, tubular goo Estimated Depth 120-	r/LSND Air/Mist D ap unload lost circlods allocat C	8.6-9.2 Volume suffi 8.6-9.2  ded while freshulation, air volution letter specifies asing Size	water ume to casing si Grade	drilling. maintain zes to be us	Let ho hole s sed. Hol Weig	le cor stabilit le sizes jht	nditions ty. s will be go Hole S	dictate	e freq by Con <b>Land</b>	tract)		
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120-135 - 2171 2171 - 7216 7216 7616  REMARKS: (1) The hole will require (2) Top set Fruitland Co CASING PROGRAM: ( Casing String  Surface/Conductor Intermediate 1 Intermediate 2	e sweeps to kee coal to minimize I (Normally, tubular god Estimated Depth	r/LSND Air/Mist D  p unload lost circl ods allocal  C  -135 2171	8.6-9.2 Volume suffi 8.6-9.2  ded while freshulation, air volution letter specifies casing Size	ume to casing si Grade J-55 S K-55 I	drilling. maintain zes to be us s ST&C LT&C LT&C	Let ho hole s sed. Hol Weig 40 26	le cor stabilit le sizes tht	nditions ty. will be go Hole S	dictate	by Con Land 1 1,2	tract)		
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Cementing Program: MUDGE LS 23M

	Surface	Intermediate	12	Liner
Excess %, Bit	100%	80	50	10
Excess %, Caliper	NA	NA	NA	30
BHST (est deg. F)	60	120	150	160
Pipe Movement	NA	Rotate/Reciprocate	Rotate/Reciprocate	as per Liner Co.
Rate, Max (bpm)	7	4	4	2
Rate Recommended (bpm)	6	4	3	2
Pressure, Max (psi)	200	2000	2000	2000
Shoe Joint	40	80	80	40
Batch Mix	NA	NA	NA	NA
Circulating prior cmtng (hr)	0.5	1.5	2.5	2
Time Between Stages, (hr)	NA	NA	NA	NA
Special Instructions	1,6,7	1,6,8	1,6,9	2,3,4,6
* •				

- 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 liner cement job to minimize drillout.
- \*\* After cement set time the liner top will be drilled out and liner circulated clean with treated water.
  \*\*\* Run TMD cased hole logs to identify pay; Perforating and CH logs can be run rigless.

Surface:				
Preflush	201	bbl. FreshWater		
Slurry 1	120sx (	Class G Cement		139cuft
TOC@Surface	+ 2	% CaCl2 (accelerator)		
	0.2	5 #/sk Cellophane Flake (los	st circulation additive)	0.5563 cuft/ft OH
		% D46 antifoam		100% excess
  Slurry Properties:	Density	Yield	Water	
	(lb/gal)	(ft3/sk)	(gal/sk)	
Slurry 1	15.8	1.16	4.95	
Casing Equipment:	10-3/4", 8R, ST&C			
	1 Guide Shoe			
	1 Top Wooden Plug	g		
	1 Autofill insert float	t valve		
	4 Centralizers			
	1 Stop Ring			
	1 Thread Lock Com	npound		

Cementing Program: MUDGE LS 23M

<u></u>		oemening i re	<del></del>			<del></del>	
ntermediate:							
	Fresh Water		20 bbl	fresh wate			
	Lead		210	6sx Class "	G" Cement		627 cuft
	Slurry 1			+ 3% D79	extender		
	TOC@Surface			+ 2% S1 C	alcium Chl	oride	
				+1/4 #/sk.	Cellophane	Flake	
				+ 0.1% D4	6 antifoam	•	
	Tail		15	2sx 50/50 C	lass "G"/P	oz	193 cuft
	Slurry 2			+ 2% gel (	extender)		
		500ft fill		0.1% D46	antifoam		0.2148 cuft/ft OH
				+1/4 #/sk.	Cellophane	e Flake	0.2338 cuft/ft csg ann
				+ 2% CaC	l2 (accelera	ator)	80% excess
Slurry Properties:		Density		Yield		Water	
•		(lb/gal)		(ft3/sk)		(gal/sk)	
Slurry 1		11.4		2	.9	17.77	
Slurry 2		13.5		1.	27	5.72	
Casing Equipment:		7-5/8", 8R, ST&C					
•		1 Float Shoe (auto	ofill with mir	nimal LCM ii	n mud)		
		1 Float Collar (auto	ofill with mi	inimal LCM	in <b>mu</b> d)		
		1 Stop Ring					
		9 Centralizers (one	e in middle	of first joint,	then every	third collar)	
		2 Fluidmaster van					
		8 Centalizers one				f surface casing	
		1 Top Rubber Plu					
•		1 Thread Lock Co	mpound				

Int 2:						
	Fresh Water		10 bbl	CW100		
	Lead		485LiteCrete D961 / D124 / D154			1037 cuft
	Slurry 1			+ 0.03 gps D47 ar	ntifoam	
	TOC@Surface			+ 0.5% D112 fluid	loss	
<del></del>		the race of		+ 0.11% D65 TIC		
	Tail		;	80sx 50/50 Class "G	*/Poz	115 cuft
	Slurry 2			+ 5% D20 gel (ext	ender)	+ 5 #/sk D24 gilsonite
		500ft fill		+ 0.1% D46 antifo	am	+ 0.15% D65 TIC
				+ 1/4 #/sk. Cellopt	nane Flake	+ 0.1% D800 retarder
				+ 0.25% D167 Flu	id Loss	
						0.1521 cuft/ft OH
Slurry Properties:		Density		Yield	Water	50 % excess
<b>,</b> . <b>,</b>		(lb/gal)		(ft3/sk)	(gal/sk)	0.0999 cuft/ft csg ann
Slurry 1		9.5		2.14	6.38	
Slurry 2		13		1.44	6.5	
Casing Equipment:		5-1/2", 8R, ST&C				
5		1 Float Shoe (aut	ofill with m	inimal LCM in mud)		
		1 Float Collar (aut	tofill with n	ninimal LCM in mud)		
		1 Stop Ring				
		35 Centralizers (e	very third	joint		
		1 Top Rubber Plu	ıg			
		1 Thread Lock Co	ompound			

Cementing Program: MUDGE LS 23M

Production (liner):				
Preflush	10 bbl.	CW100 / LCM wash	l	
Lead Cement		2350/50 Poz/G		34 cuft
Slurry 1		5% D20 bentonite	0.1% D46 antifoa	m
	100ft lap	0.25#/sk D29 celloph	nane	
	100ft cap	0.25% D167 Fluid lo	ess	0.0358 cuft/ft OH
		0.15% D65 TIC		0.0464 cuft/ft csg ann
		0.15% D800 retarde	r	0.1336 cuft/ft csg
Slurry Properties:	Density		Water	10% excess
•	(lb/gal)	(ft3/sk)	(gal/sk)	
Slurry 1	13	1.44	6.5	
Liner Float Equipment:	Float Shoe and Float Co	ollar (furnished by Liner Ha	anger Company)	
	1 Thread Lock Compou	nd		
Note:				
	w/Liner hand to drop plug, or set/re			
	ould be pumped at 2-3 bpm max rate			
	p and lines before displacement. Sk			
4. This is to be	e a rigless completion. After cemen	t set time, liner top will be	dressed off an liner	
circulated clea	an with 2 % KCl or 2 gal/1000 gal Li	64.		

#### FEDERAL CEMENTING REQUIREMENTS

- 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.

### Amoco Production Company BOP Pressure Testing Requirements

Well Name:

MUDGE LS 23M

County:

San Juan

State: New Mexico

Formation	TVD	Anticipated Bottom Hole Pressure	Maximum Anticipated Surface Pressure **
Ojo Alamo	1077		
Fruitland Coal	2221		
PC	2866		
Lewis Shale	2900		
Cliff House	4470	500	0
Menefee Shale	4669		
Point Lookout	5127	600	0
Mancos	5234		
Dakota	7278	2600	1499

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

Requested BOP Pressure Test Exception: 3000 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**

<u>Interval</u>

**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.