

SUBMIT IN TRIPLICATE*
(Other instructions on
reverse side)

Form approved.
Budget Bureau No. 1004-0136
Expires December 31, 1991

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

1a. TYPE OF WORK DRILL <input checked="" type="checkbox"/> DEEPEN <input type="checkbox"/>		5. LEASE DESIGNATION AND SERIAL NO. SF- 078765	
1b. TYPE OF WELL OIL <input type="checkbox"/> GAS <input checked="" type="checkbox"/> OTHER <input type="checkbox"/> SINGLE ZONE <input type="checkbox"/> MULTIPLE ZONE <input checked="" type="checkbox"/>		6. IF INDIAN, ALLOTTEE OR TRIBE NAME	
2. NAME OF OPERATOR Williams Production Company		7. UNIT AGREEMENT NAME Rosa Unit	
3. ADDRESS OF OPERATOR c/o Walsh Engineering 7415 E. Main St., Farmington, NM 87402 (505) 327-4892		8. FARM OR LEASE NAME, WELL NO. 156 B	
4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements. *) At Surface 1660' FSL & 2625' FEL At proposed Prod. Zone		9. API WELL NO. 30-045-31011	
14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE* 24 miles NE of Blanco, NM		10. FIELD AND POOL OR WILDCAT Blanco Mesa Verde/DK	
15. DISTANCE FROM PROPOSED* LOCATION TO NEAREST PROPERTY OR LEASE LINE, FT. (Also to nearest drlg. unit line, if any) 1660'		11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA Sec. 9, T31N, R6W	
16. NO. OF ACRES IN LEASE 2460.23		12. COUNTY OR PARISH San Juan	
17. NO. OF ACRES ASSIGNED TO THIS WELL 320		13. STATE NM	
18. DISTANCE FROM PROPOSED LOCATION* TO NEAREST WELL, DRILLING, COMPLETED, OR APPLIED FOR ON THIS LEASE, FT. 1300'		19. PROPOSED DEPTH 8168'	
20. ELEVATIONS (Show whether DF, R, or AC) 6386' GR		21. APPROX. DATE WORK WILL START* April 15, 2002	
22. APPROX. DATE WORK WILL START*			
23. PROPOSED CASING AND CEMENTING PROGRAM			
SIZE OF HOLE	SIZE OF CASING	WEIGHT/FOOT	SETTING DEPTH
14-3/4"	10-3/4"	32.75#	+/- 500'
9-7/8"	7-5/8"	26.4#	+/- 3673'
6-3/4"	5-1/2"	17.0#	+/- 8168'
QUANTITY OF CEMENT			
~625 cu.ft. Type III w/ 2% CaCl ₂			
~1242 cu.ft. 65/35 poz & ~335 cu.ft. Type			
~575 cu.ft. Prem. Lite HS w/ additives			

Williams Production Company proposes to drill a vertical well to develop the Mesa Verde and Dakota formations at the above described location in accordance with the attached drilling and surface use plans.

This location has been archaeologically surveyed by Independent Contract Archaeology. Copies of their report have been submitted directly to your office.

This APD also is serving as an application to obtain BLM road and pipeline right-of-ways. This well will require approximately 600' of new access road (see Pipeline & Well Plats #3 & #4). The well will be accessed by utilizing an existing road that crosses NE/SW, SE/NW, NE/NW sec. 9, SE/SW, SW/SW sec. 4, NW/NW sec. 9, N/2 sec. 8, NE/NE sec. 7, SE/SE sec. 6, W/2 sec. 5 all of T31N, R6W, SW/SW sec. 32, NE/SE, SE/NE, NE/NE sec. 31, SE/SE, NE/SE, SE/NW & NW/NW of sec. 30 all of T32N, R6W & NE/NE of sec. 25 of 32N, R/W where it joins San Juan County Road #4020.

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: If proposal is to deepen or plug back, give data on present productive zone and proposed new productive zone. If proposal is to drill or deepen directionally, give pertinent data on subsurface locations and measured and true vertical depths. Give blowout preventer program, if any.

SIGNED John C. Thompson TITLE John C. Thompson, Agent DATE 3/5/02

(This space for Federal or State office use)

PERMIT NO. _____ APPROVAL DATE _____

Application approval 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.

CONDITIONS OF APPROVAL, IF ANY:

APPROVED BY David J. Markiewicz TITLE _____ DATE JUL 29 2002

*See Instructions On Reverse Side

Title 18 U.S.C. Section 1001, makes 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.

NMOCD

A ✓

District I
PO Box 1980, Hobbs, NM 88241-1980

District II
PO Drawer DD, Artesia, NM 88211-0719

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 30-045-31011		*Pool Code 72319 - 71599	*Pool Name Blanco Mesaverde - Basin Dakota
*Property Code 17033	*Property Name ROSA UNIT		*Well Number 156B
*GRID No. 120782	*Operator Name WILLIAMS PRODUCTION COMPANY		*Elevation 6386'

¹⁰ Surface Location

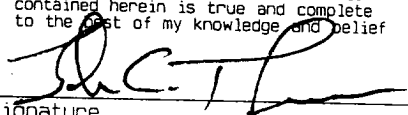
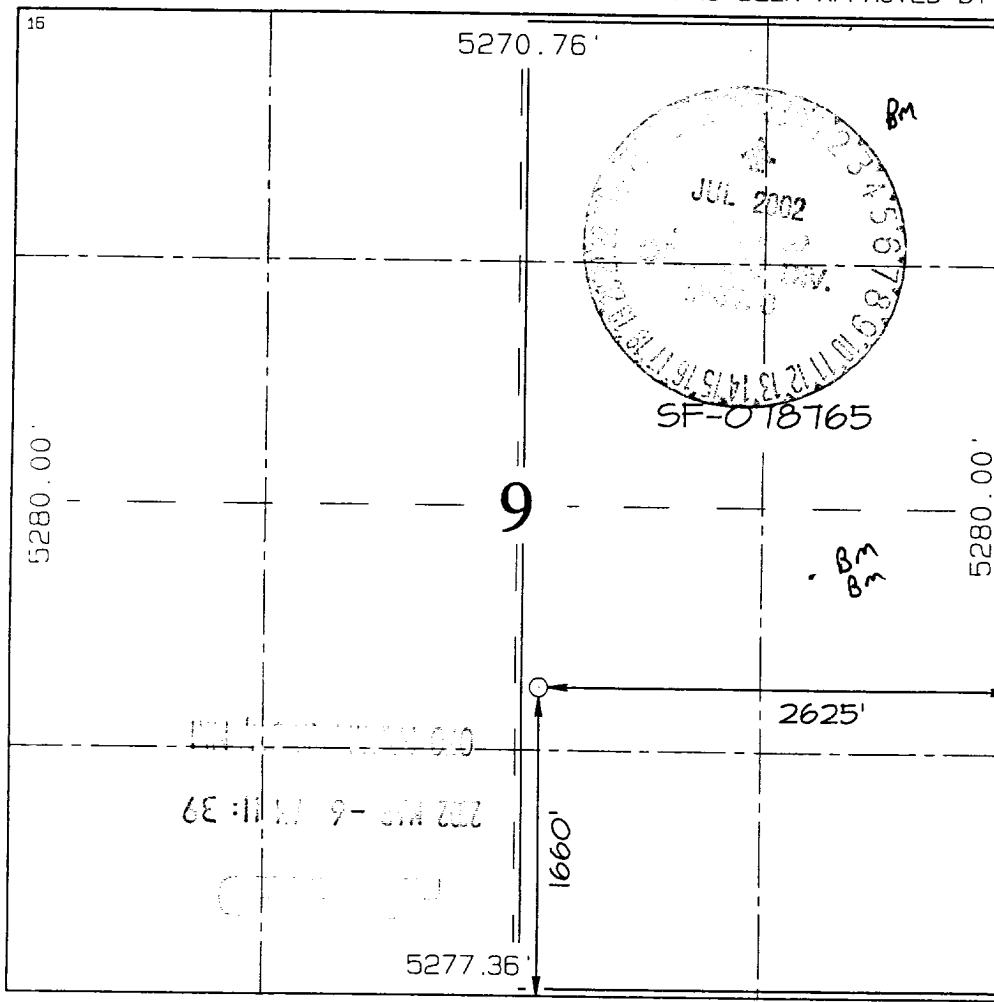
UL or lot no. J	Section 9	Township 31N	Range 6W	Lot Idn	Feet from the 1660	North/South line SOUTH	Feet from the 2625	East/West line EAST	County SAN JUAN
---------------------------	---------------------	------------------------	--------------------	---------	------------------------------	----------------------------------	------------------------------	-------------------------------	---------------------------

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 320.0 Acres - (E/2)					¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.
---	--	--	--	--	-------------------------------	----------------------------------	-------------------------

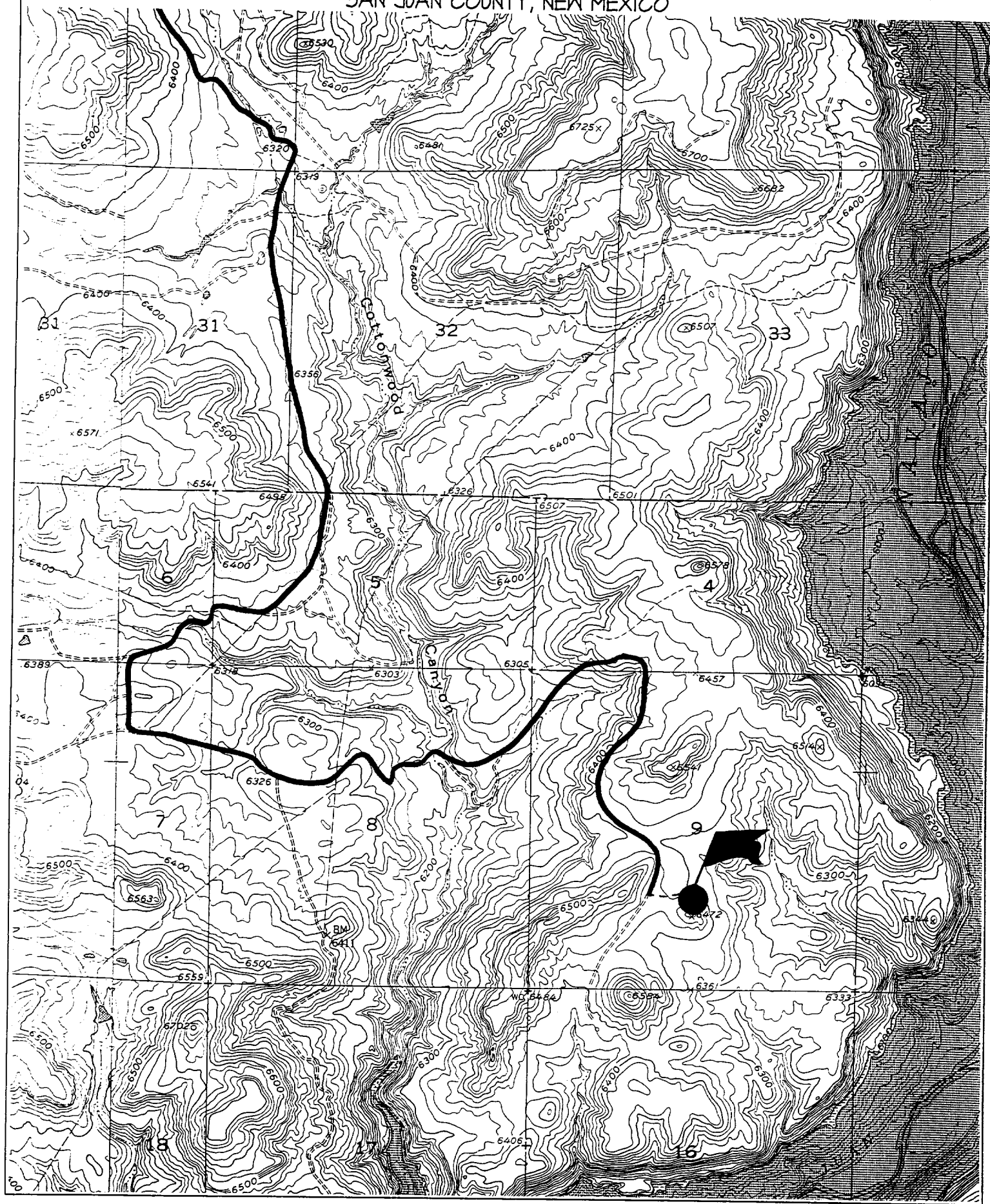
NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED
OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

¹⁵	5270.76'		¹⁷ OPERATOR CERTIFICATION I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.  Signature John C. Thompson Printed Name Agent/Engineer Title 3/4/02 Date
	5280.00'		
 5280.00' 5270.76' 5280.00' 1660' 2625' 5277.36' 9 SF-018765 BM			

WILLIAMS PRODUCTION COMPANY ROSA UNIT #156B

1660' FSL & 2625' FEL, SECTION 9, T31N, R6W, N.M.P.M.

SAN JUAN COUNTY, NEW MEXICO





WILLIAMS PRODUCTION COMPANY

OPERATIONS PLAN

(Note: This procedure will be adjusted on site based upon actual conditions)

DATE: 3/4/2002

WELL NAME: Rosa Unit 156B **FIELD:** Basin Blanco MV/DK

SURFACE LOCATION: NW/4 SE/4 Sec. 9-T31N-R6W **SURFACE:** BLM
San Juan, NM

ELEVATION: 6386' GR **MINERALS:** BLM

LEASE # SF-078765

MEASURED DEPTH: 8168'

I. GEOLOGY: Surface formation - San Jose

A. FORMATION TOPS: (KB)

	<u>MD</u>		<u>MD</u>
Ojo Alamo	2368'	Mancos sh	5973'
Kirtland sh	2478'	Gallup ss	7008'
Fruitland cl	2993'	Greenhorn ls	7728'
Pictured Cliffs ss	3198'	Graneros sh	7788'
Lewis sh	3488'	Dakota ss	7918'
Cliff House ss	5403'		
Menefee	5448'		
Point Lookout ss	5668'	Total Depth	8168'

B. LOGGING PROGRAM: IND/GR from TD to the Intermediate Casing Shoe.
DEN/Neutron/GR (selected intervals by on-site Geologist). *Subject to change as wellbore conditions dictate.*

C. NATURAL GAUGES: Gauge any noticeable increases in gas flow. Gauge well @ 5800' and before TOH for logs. Record all gauges in Tour book and on morning reports.

II. DRILLING

- A. MUD PROGRAM:** Clear water with benex to 7" casing point. LSND to log and run pipe. Treat for lost circulation as necessary. Obtain 100% returns prior to cementing. Notify Engineering of any mud losses.
- B. BOP TESTING:** While drill pipe is in use, the pipe rams will be function tested not less than once each day. The blind rams will be function tested once each trip. The anticipated reservoir is expected to be less than 1300 psi, so the rams will be tested to 1500 psi. The drum brakes will be inspected and tested each tour. All tests, inspections and SPR's will be recorded in the tour book as to time and results.

III. MATERIALS

A. CASING PROGRAM:

<u>CASING TYPE</u>	<u>HOLE SIZE</u>	<u>DEPTH</u>	<u>CASING SIZE</u>	<u>WT. & GRADE</u>
Surface	14-3/4"	+/- 500'	10-3/4"	32.75# H-40
Intermediate	9-7/8"	+/-3673'	7-5/8"	26.4# K-55
Prod. Casing	6-3/4"	+/- 8168'	5-1/2"	17.0# N-80

B. FLOAT EQUIPMENT:

1. SURFACE CASING: 10-3/4" notched regular pattern guide shoe. Run (1) Standard centralizer on each of the bottom (3) Joints.
2. INTERMEDIATE CASING: 7-5/8" cement nose guide shoe with a self- fill insert float. Place float one (1) joint above the shoe and five (5) centralizers, spaced every other joint, starting with the float collar. Place turbulent centralizers, at 120' intervals, starting at 1500' to the surface. Total centralizers (5 regular and 13 turbulent).
3. PRODUCTION CASING: 5-1/2" whirler type cement nose guide shoe with a latch collar on top of 20' bottom joint. Place 20' marker joint on top of 10 th joint and one above 5100'.

C. CEMENTING:

(Note: Volumes may be adjusted onsite due to actual conditions)

1. SURFACE: Use 460sx (625cu.ft.) of class "Type III" with 2% CaCl₂ and 1/4# of cello-flake/sk (Yield = 1.39 cu.ft./sk, Weight = 14.5 #/gal.). 125% excess to circulate the surface. WOC 12 hours. Test to 1500#.
2. INTERMEDIATE: Lead: 595sx (1242cu.ft.) of class "Premium Lite" 65/35, Type III/Poz with 8% gel and 1/4# cello-flake/sk (Yield = 2.09 cu.ft./sk, Weight = 12.1 #/gal.). Tail: 240sx (335cu.ft.) of class "Type III" with 1/4# cello-flake/sk (Yield = 1.39 cu.ft./sk, Weight = 14.5#/gal.). 100% excess in lead and tail to circulate to surface. Total volume = 1577 cu.ft. WOC 12 hours. Run a temperature survey after 8 hours if cement is not circulated.
3. PRODUCTION CASING: 30 sks Scavenger of Premium Light HS + 1% FL-52 + .2% CD-32 + .25 #/sk Celloflake + 4% Phenoseal + .3% R3. (Weight = 11 #/gal.). **Cement Slurry**: 290 sx (575 ft³) of Premium Light HS + 1% FL-52 + .2% CD-32 + .25 #/sk Celloflake + 4% Phenoseal + .1% R3. (Yield = 1.99 ft³/sk, Weight = 12.5 #/gal.). Displace cement at a minimum of 8 BPM. Use 50% excess in calculation to raise cement 100' into intermediate casing. Total volume 575 ft³. WOC 12 hours.

IV COMPLETION

A. CBL

1. Run Cement Bond Log across all intervals to be perforated and find Top of Cement behind all casing strings if cement not circulated to surface..

B. PRESSURE TEST

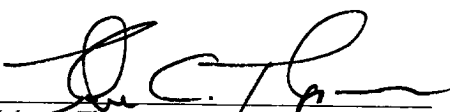
1. Pressure test 7 5/8" & 5-1/2" casing to 3300# for 15 minutes.

C. STIMULATION

1. Stimulate Dakota with approximately 70,000# of 20/40 sand in x-link foam.
2. Isolate Dakota with a RBP.
3. Stimulate Point Lookout with approximately 80,000# of 20/40 sand in slick water.
4. Isolate Point Lookout with a RBP.
5. Perforate the Menefee/Cliff House as determined from the open hole logs.
6. Stimulate with approximately 80,000# of 20/40 sand in slick water.
7. Test each zone before removing bridge plugs.

D. RUNNING TUBING

1. Dakota: Run 2-1/16", 3.25#, J-55, IJ tubing with 1/2 mule shoe on bottom, SN with pump-out plug on top of bottom joint. Will run a production packer with 5 Seal Units to isolate Dakota from Mesaverde formation. Land tubing approximately 100' below top Dakota perf.
2. Mesa Verde: Run 2-1/16", 2.9#, J-55, EUE tubing with a SN (1.91" ID) on top of bottom joint. Land tubing approximately 25' above the bottom Point Lookout perforations.



John C. Thompson
Engineer

Walsh Engineering & Production

Well Control Equipment Schematic for 2M Service

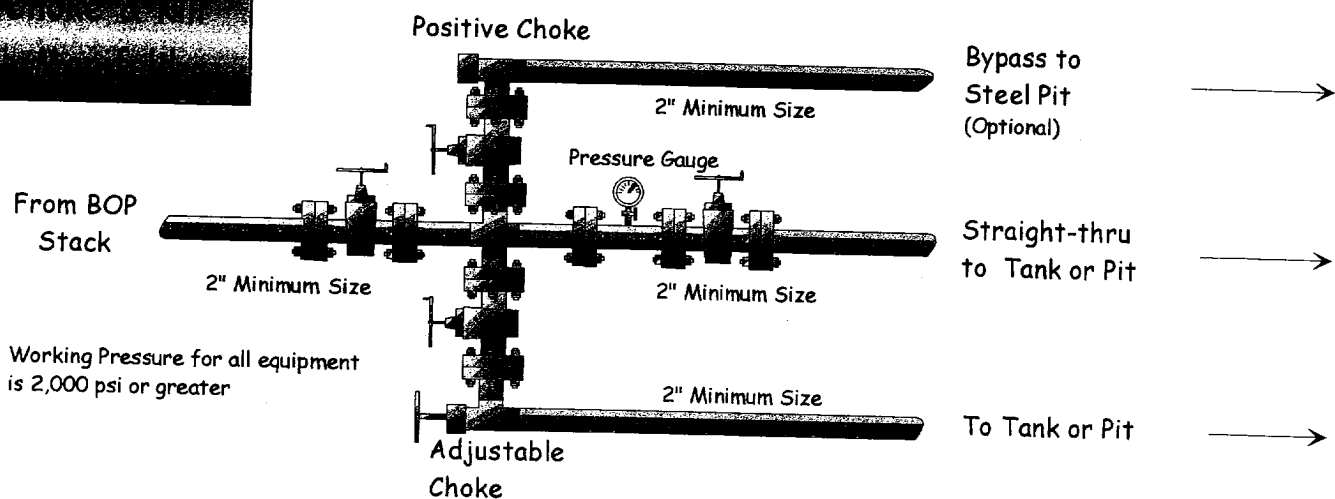
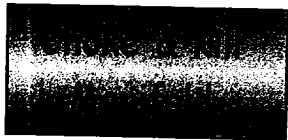
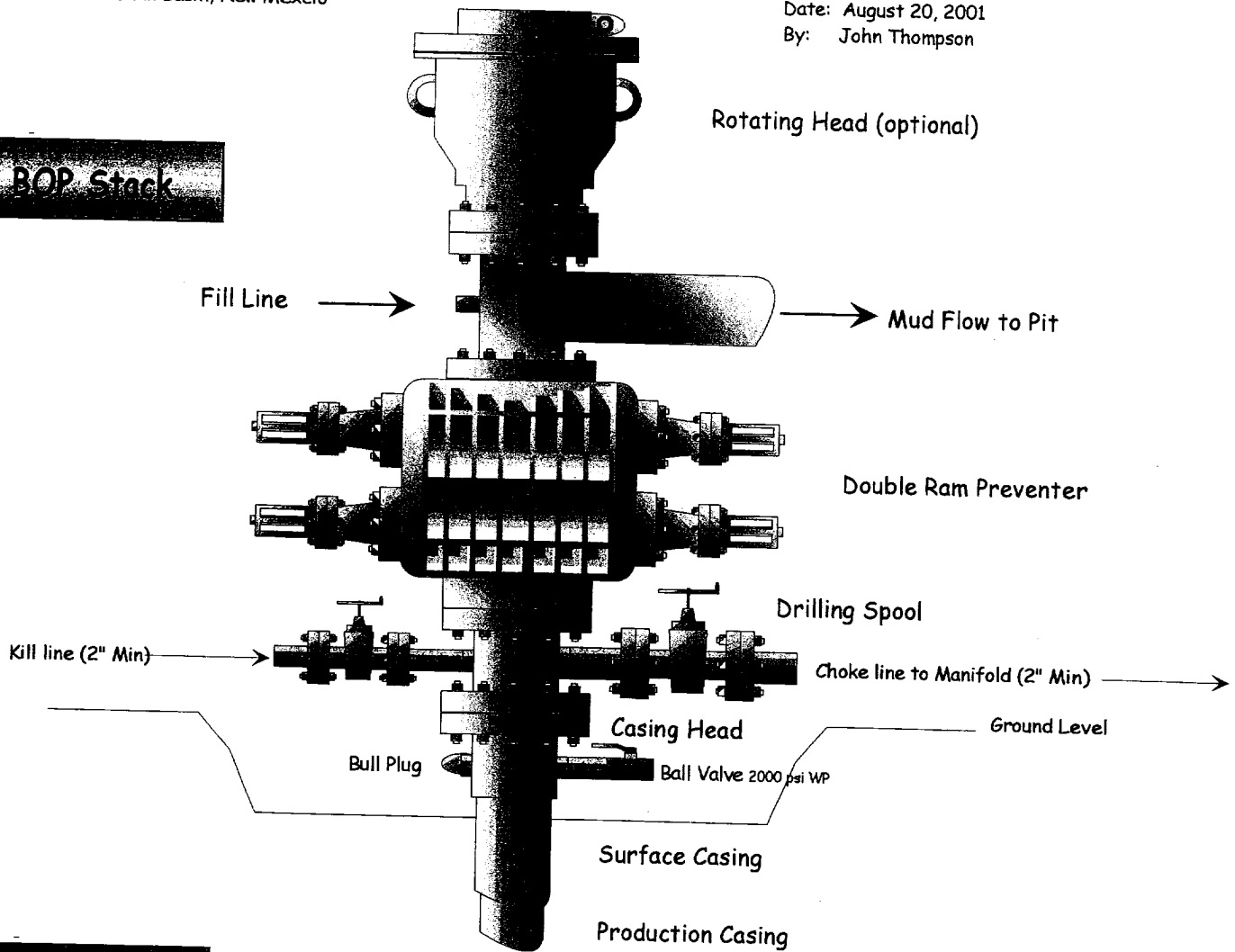
Attachment to Drilling Technical Program

Typical BOP setup

Location: San Juan Basin, New Mexico

Date: August 20, 2001

By: John Thompson



Working Pressure for all equipment
is 2,000 psi or greater