

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

1a. Type of Work DRILL	5. Lease Number NMSF-078146 Unit Reporting Number OTO FARMINGTON NM	
1b. Type of Well GAS	6. If Indian, All. or Tribe	
2. Operator ConocoPhillips	7. Unit Agreement Name	
3. Address & Phone No. of Operator PO Box 4289, Farmington, NM 87499 (505) 326-9700	8. Farm or Lease Name 9. Well Number Newberry A #1F	
4. Location of Well Unit B (NWNE), 1275' FNL & 1980' FEL Latitude 36° 91732'N Longitude 108° 11676'W	10. Field, Pool, Wildcat Blanco MV / Basin DK 11. Sec., Twn, Rge, Mer. (NMPM) Sec. 8, T31N, R12W API # 30-045- 33878	
14. Distance in Miles from Nearest Town	12. County San Juan	13. State NM
15. Distance from Proposed Location to Nearest Property or Lease Line 1275'		
16. Acres in Lease	17. Acres Assigned to Well MV & DK 320.0 - E/2	
18. Distance from Proposed Location to Nearest Well, Drlg, Compl, or Applied for on this Lease		
19. Proposed Depth 7107'	20. Rotary or Cable Tools Rotary	
21. Elevations (DF, FT, GR, Etc.) 5951' GL	22. Approx. Date Work will Start	
23. Proposed Casing and Cementing Program See Operations Plan attached		
24. Authorized by: <u>Patsy Clugst</u> Sr. Regulatory Analyst	Date <u>8/1/06</u>	

PERMIT NO.

APPROVAL DATE

APPROVED BY

TITLE

DATE

Archaeological Report attached

Environmental Assessment is attached.

NOTE: This format is issued in lieu of U.S. BLM Form 3160-3

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 presentations as to any matter within its jurisdiction.

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

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 30-045-33878		*Pool Code 72319 / 71599	*Pool Name BLANCO MESAVERDE / BASIN DAKOTA
*Property Code 31840	*Property Name NEWBERRY A		*Well Number 1F
*OGRID No 217817	*Operator Name CONOCOPHILLIPS COMPANY		*Elevation 5951'


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
B	8	31N	12W		1275	NORTH	1980	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 320.0 Acres - E/2 (MV) 320.0 Acres - E/2 (DK)					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

¹⁶ 5297.16' 1275' 1980' LAT: 36.91732°N LONG: 108.11676°W DATUM: NAD83 5211.36' 5264.82'	8	LEASE USA SF-078146	¹⁷ OPERATOR CERTIFICATION I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief. <i>Virgil E. Chavez</i> Signature Virgil E. Chavez Printed Name Projects & Operations Lead Title <i>June 15, 2006</i> 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. Survey Date: JANUARY 30, 2006 Signature and Seal of Professional Surveyor  JASON C. EDWARDS Certificate Number 15269

State of New Mexico

Energy, Minerals and Natural Resources

OIL CONSERVATION DIVISION

1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-103

May 27, 2004

SUNDRY NOTICES AND REPORTS ON WELLS
(DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS.)

1. Type of Well:

Oil Well ☐ Gas Well ☒ Other

2. Name of Operator

ConocoPhillips Company

3. Address of Operator

3401 E. 30TH STREET, FARMINGTON, NM 87402

4. Well Location

Unit Letter B : 1275 feet from the North line and 1980 feet from the East line
Section 8 Township 31N Rng 12W NMPM County San Juan11. Elevation (Show whether DR, RKB, RT, GR, etc.)
5951'

Pit or Below-grade Tank Application

☐ or Closure ☐

Pit type

New Drill

Depth to Groundwater

<50'

Distance from nearest fresh water well

>1000'

Distance from nearest surface water

>1000'

Pit Liner Thickness:

12

mil

Below-Grade Tank:

Volume

bbls;

Construction Material

12. Check Appropriate Box to Indicate Nature of Notice, Report or Other Data

NOTICE OF INTENTION TO:

PERFORM REMEDIAL WORK ☐TEMPORARILY ABANDON ☐PULL OR ALTER CASING ☐PLUG AND ABANDON ☐CHANGE PLANS ☐MULTIPLE COMPL ☐

OTHER:

New Drill

☒

SUBSEQUENT REPORT OF:

REMEDIAL WORK ☐COMMENCE DRILLING OPNS. ☐CASING/CEMENT JOB ☐ALTERING CASING ☐P AND A ☐OTHER: ☐

13. Describe proposed or completed operations. (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work). SEE RULE 1103. For Multiple Completions: Attach wellbore diagram of proposed completion or recompletion.

We are constructing Drilling and workover pits as per our General plan on file with the OCD dated June 2005 and we are closing all pits as per the November 1, 2004 Guidelines. Please be sure to include this language on all pit NOI's and C-144's.

I hereby certify that the information above is true and complete to the best of my knowledge and belief. I further certify that any pit or below-grade tank has been/will be constructed or closed according to NMOCD guidelines ☐, a general permit ☒ or an (attached) alternative OCD-approved plan ☐.

SIGNATURE

TITLE

Sr. Regulatory Analyst

DATE

6/19/2006

Type or print name

Patsy Clugston

E-mail address:

pclugston@br-inc.com

Telephone No.

505-326-9518

For State Use Only

APPROVED BY

TITLE

DEPUTY OIL & GAS INSPECTOR, DIST. 53

DATE

AUG 16 2006

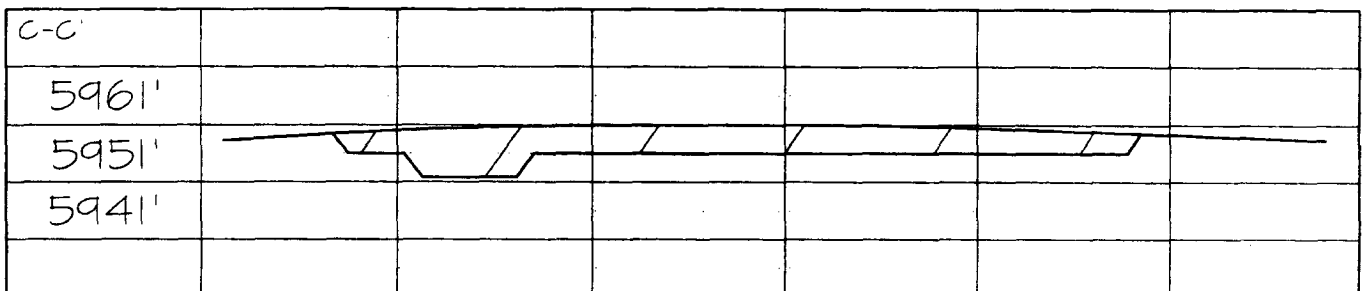
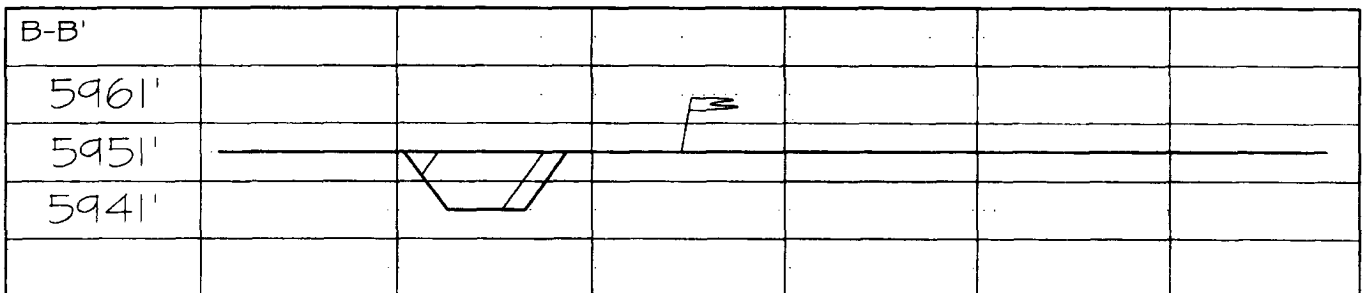
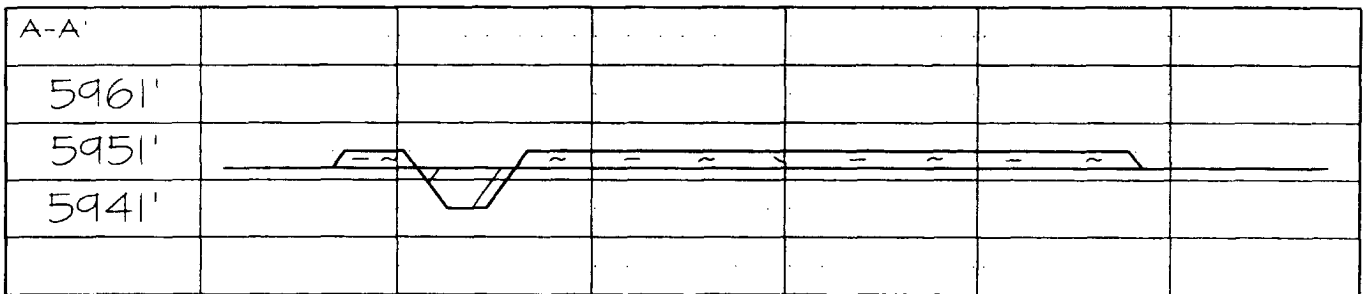
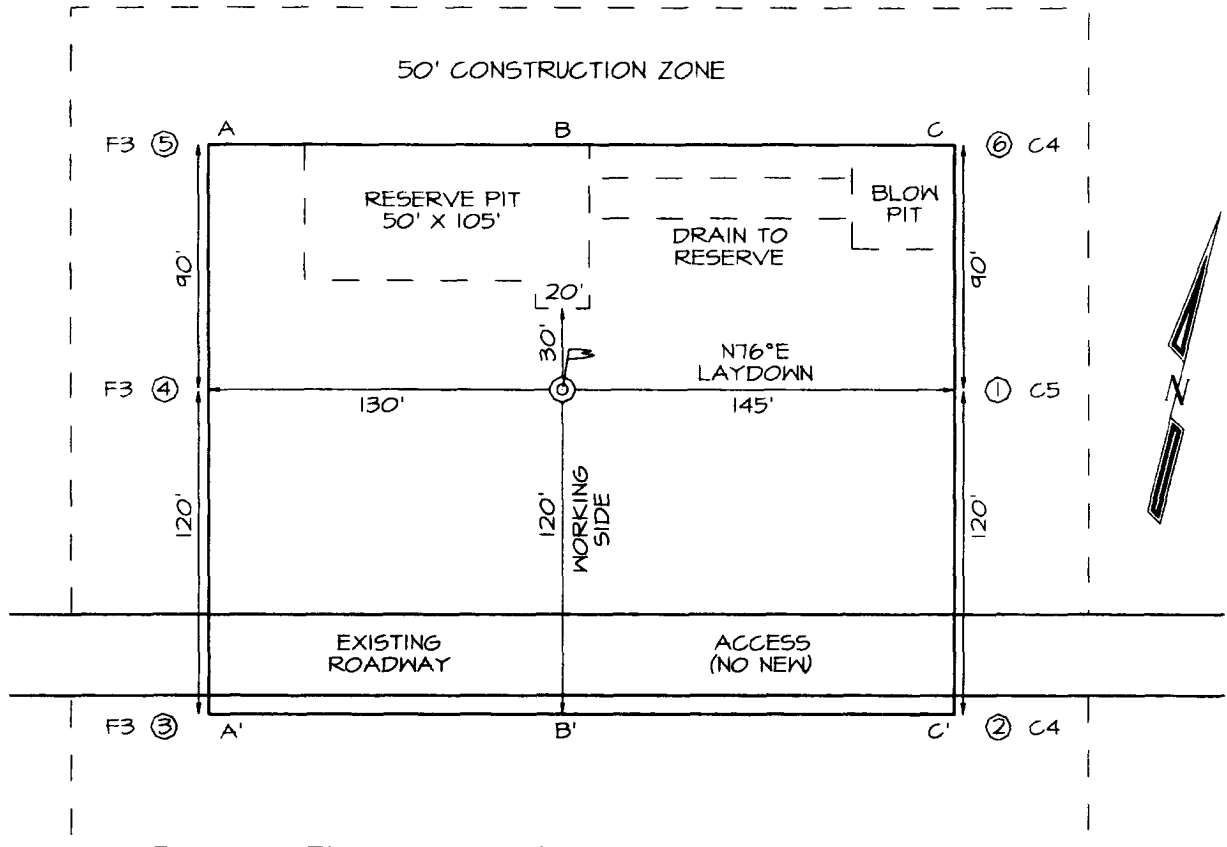
Conditions of Approval (if any):

CONOCOPHILLIPS COMPANY NEWBERRY A #1F
1275' FNL & 1980' FEL, SECTION 8, T31N, R12W, NMPM
SAN JUAN COUNTY, NEW MEXICO ELEVATION: 5951'

PLAT NOTE:

SURFACE OWNER
 Montoya Sheep and
 Cattle Company

LATITUDE: 36.91732° N
LONGITUDE: 108.11676° W
 DATUM: NAD1983



PROJECT PROPOSAL - New Drill / Sidetrack

NEWBERRY A 1F

Lease:	AFE #: WAN.CNV.7219			AFE \$:
Field Name: NEW MEXICO-WEST	Rig: UNSCHEDULED 2007 RIG 1	State: NM	County: SAN JUAN	API #:
Geoscientist: Brain, Ted H.	Phone: 832-486-2592	Prod. Engineer: Piotrowicz, Greg M.	Phone: +1 832-486-3486	
Res. Engineer: Harrington, Tim R.	Phone: 832-486-2207	Proj. Field Lead: Fransen, Eric E.	Phone:	

Primary Objective (Zones):

Zone	Zone Name
R20002	MESAVERDE(R20002)
R20076	DAKOTA(R20076)

Location: Surface		Datum Code: NAD 27				Straight Hole	
Latitude: 36.917320	Longitude: -108.116760	X:	Y:	Section: 8		Range: 12W	
Footage X: 1980 FEL	Footage Y: 1275 FNL	Elevation: 5951	(FT)	Township: 31N			
Tolerance:							
Location Type: Year Round		Start Date (Est.):		Completion Date:		Date In Operation:	
Formation Data: Assume KB = 5967		Units = FT					

Formation Call & Casing Points	Depth (TVD in Ft)	SS (Ft)	Depletion (Yes/No)	BHP (PSIG)	BHT	Remarks
Surface Casing	216	5751	<input type="checkbox"/>			Severe lost circulation is possible. 12-1/4 hole. 9 5/8" 32.3 ppf, H-40, STC casing. Circulate cement to surface.
CJAM	1217	4750	<input type="checkbox"/>			Possible water flows.
KRLD	1452	4515	<input type="checkbox"/>			
FRLD	1897	4070	<input type="checkbox"/>			Possible gas.
PCCF	2317	3650	<input type="checkbox"/>			
LEWS	2517	3450	<input type="checkbox"/>			
Intermediate Casing	2617	3350	<input type="checkbox"/>			8 3/4" Hole. 7", 20 ppf, J-55, STC Casing. Circulate cement to surface.
CHRA	3477	2490	<input type="checkbox"/>			
CLFH	4067	1900	<input type="checkbox"/>			Gas; possibly wet
MENF	4167	1800	<input type="checkbox"/>			Gas.
PTLK	4692	1275	<input type="checkbox"/>			Gas.
MNCS	5042	925	<input type="checkbox"/>			
CRHN	6757	-790	<input type="checkbox"/>			Gas possible, highly fractured
TWLS	6877	-910	<input type="checkbox"/>			Gas
Total Depth	7107	-1140	<input type="checkbox"/>			6-1/4" Hole. 4-1/2", 11.6 ppf, N-80, LTC casing. Circulate cement a minimum of 100' inside the previous casing string. No open hole logs. Cased hole TDT with GR to surface.

Reference Wells:

Reference Type	Well Name	Comments
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PROJECT PROPOSAL - New Drill / Sidetrack

NEWBERRY A 1F

Logging Program:

Intermediate Logs: ☐ Log only if show ☐ GR/ILD ☐ Triple Combo

TD Logs: ☐ Triple Combo ☐ Dipmeter ☐ RFT ☐ Sonic ☐ VSP ☒ TDT

Additional Information:

Log Type	Stage	From (Ft)	To (Ft)	Tool Type/Name	Remarks
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Comments: Zones - Drilling Mud Program:

Surface: spud mud

Intermediate: fresh water mud with bentonite and polymer as needed

Below Intermediate: air/mist/nitrogen drilling media with foamer, polymer, & corrosion inhibitor as needed

Centralizer Program:

Surface: centralizers placed 10' above the shoe latched over a stop collar and at the top of the 2nd, 3rd, & 4th joints

Intermediate: centralizers placed 10' above the shoe latched over a stop collar and at the top of the 2nd, 4th, 6th, 8th, & 10th joints

Turbolizers placed one per joint from the top of the Ojo Alamo to the top of the Kirtland Shale

Below Intermediate: no centralizers used in air holes. In mud holes centralizers are spaced out appropriately

Newberry A #1F

APD Cement Calculations

HOLE: 12.25 "
CSG OD: 9.625 "
CSG ID: 9.001 "
WGT: 32.3 ppf
GRADE: H-40
EXCESS: 125 %
DEPTH: 235'

SURFACE:
Option 1
148 sx
30.8 bbls
172.9 cuft
1.17 ft³/sx
15.8 ppg
4.973 gal/sx
Class G Cement
+ 3% S001 Calcium Chloride
+ 0.25 lb/sx D029 Cellophane Flakes

Comp. Strength
6 hrs 250 psi
8 hrs 500 psi
psi
psi

Option 2
143 sx
30.8 bbls
172.9 cuft
1.21 ft³/sx
15.6 ppg
5.29 gal/sx
Standard Cement
+ 3% Calcium Chloride
+ 0.25 lb/sx Flocele

Comp. Strength
6 hrs 250 psi
8 hrs 500 psi
psi
psi

Option 3
65 sx
18.6 bbls
104.3 cuft
1.61 ft³/sx
14.5 ppg
7.41 gal/sx
Type I-II Ready Mix
+ 20% Fly Ash

Comp. Strength
8 hrs 475 psi
24 hrs 1375 psi

INTERMEDIATE LEAD:

Option 1
272 sx
131.8 bbls
739.8 cuft
2.72 ft³/sx
11.7 ppg
15.74 gal/sx
Class G Cement
+ 3% D079 Extender
+ 0.20% D046 Antifoam
+ 10 lb/sx Phenoseal

Comp. Strength
9 hrs 300 psi
48 hrs 525 psi
psi
psi

HOLE: 8.75 "
CSG OD: 7 "
CSG ID: 6.456 "
WGT: 20 ppf
GRADE: J-55
EXCESS: 150 %
TAIL: 523.4'
DEPTH: 2617'

Option 2
285 sx
131.8 bbls
739.8 cuft
2.60 ft³/sx
11.5 ppg
14.62 gal/sx
Type III Ashgrove Cement
+ 30 lb/sx San Juan Poz
+ 3% Bentonite
+ 5.0 lb/sx Phenoseal

Comp. Strength
1:47 hrs 50 psi
12 hrs 350 psi
24 hrs 450 psi
psi
psi

Option 3
281 sx
131.8 bbls
739.8 cuft
2.63 ft³/sx
11.7 ppg
15.92 gal/sx
Class G Cement
+ 3% D079 Extender
+ 0.20% D046 Antifoam
+ 1.0 lb/bbl CemNet

Comp. Strength
3 hrs 100 psi
24 hrs 443 psi
psi
psi

INTERMEDIATE TAIL:

Option 1
158 sx
36.8 bbls
206.3 cuft
1.31 ft³/sx
13.5 ppg
5.317 gal/sx
50/50 Poz: Class G Cement
+ 0.25 lb/sx D029 Cellophane Flakes
+ 3% S001 Calcium Chloride
+ 2% D020 Bentonite
+ 1.5 lb/sx D024 Gilsonite Extender
+ 0.1% D046 Antifoamer
+ 6 lb/sx Phenoseal

Comp. Strength
3:53 500 psi
8:22 1000 psi
24 hrs 3170 psi
48 hrs 5399 psi
psi
psi

HOLE: 6.25 "
CSG OD: 4.5 "
CSG ID: 4 "
WGT: 11.6 ppf
GRADE: N-80
EXCESS: 50 %
DEPTH: 7107'

Option 2
155 sx
36.8 bbls
206.3 cuft
1.33 ft³/sx
13.5 ppg
5.52 gal/sx
50/50 Poz: Standard Cement
+ 2% Bentonite
+ 6.0 lb/sx Phenoseal

Comp. Strength
2:05 50 psi
4:06 500 psi
12 hrs 1250 psi
24hrs 1819 psi
psi
psi

Option 3
161 sx
36.8 bbls
206.3 cuft
1.28 ft³/sx
13.5 ppg
5.255 gal/sx
50/50 Poz: Class G Cement
+ 2% D020 Bentonite
+ 5.0 lb/sx D024 Gilsonite Extender
+ 2% S001 Calcium Chloride
+ 0.1% D046 Antifoamer
+ 0.15% D065 Dispersant
+ 1.0 lb/bbl CemNet

Comp. Strength
24 hrs 1850 psi
48 hrs 3411 psi
psi
psi

PRODUCTION:

Option 1
496 sx
127.3 bbls
714.7 cuft
1.44 ft³/sx
13.0 ppg
6.47 gal/sx
50/50 Poz: Class G Cement
+ 0.25 lb/sx D029 Cellophane Flakes
+ 3% D020 Bentonite
+ 1.0 lb/sx D024 Gilsonite Extender
+ 0.25% D167 Fluid Loss
+ 0.25% D065 Dispersant
+ 0.1% D800 Retarder
+ 0.1% D046 Antifoamer
+ 3.5 lb/sx Phenoseal

Comp. Strength
7 hrs 500 psi
24 hrs 2100 psi
psi
psi

Option 2
493 sx
127.3 bbls
714.7 cuft
1.45 ft³/sx
13.1 ppg
6.55 gal/sx
50/50 Poz: Standard Cement
+ 3% Bentonite
+ 0.2% CFR-3 Friction Reducer
+ 0.1% HR-5 Retarder
+ 0.8% Halad-9 Fluid Loss Additive
+ 3.5 lb/sx Phenoseal

Comp. Strength
9:32 50 psi
12 hrs 500 psi
13:29 1026 psi
24 hrs 2300 psi
psi
psi

Option 3
500 sx
127.3 bbls
714.7 cuft
1.45 ft³/sx
13.1 ppg
6.55 gal/sx
50/50 Poz: Standard Cement
+ 3% Bentonite
+ 0.2% CFR-3 Friction Reducer
+ 0.1% HR-5 Retarder
+ 0.8% Halad-9 Fluid Loss Additive
+ 3.5 lb/sx Phenoseal

Comp. Strength
9:32 50 psi
12 hrs 500 psi
13:29 1026 psi
24 hrs 2300 psi
psi
psi

Newberry A #1F

HOLE: 12.25 "
CSG OD: 9.625 "
CSG ID: 9.001 "
WGT: 32.3 ppf
GRADE: H-40
EXCESS: 125 %
DEPTH: 235'

SURFACE:

INTERMEDIATE LEAD:

Option 4

257 sx
131.8 bbls
739.8 cuft
2.88 ft³/sx
11.5 ppg
16.85 gal/sx
Standard Cement
+ 3% Econolite (Extender)
+ 10 lb/sx Phenoseal

Comp. Strength
1:47 50 psi
12 hrs 350 psi
24 hrs 450 psi

HOLE: 8.75 "
CSG OD: 7 "
CSG ID: 6.456 "
WGT: 20 ppf
GRADE: J-55
EXCESS: 150 %
TAIL: 523.4'

Option 5

352 sx
131.8 bbls
739.8 cuft
2.10 ft³/sx
11.7 ppg
11.724 gal/sx
75% Type XI / 25% Class G Cement
+ 0.25 lb/sx D029 Callophane Flakes
+ 3% D079 Extender
+ 0.20% D046 Antifoam

Comp. Strength
10:56 500 psi
42 hrs 1012 psi

INTERMEDIATE TAIL:

DEPTH: 2617'

PRODUCTION:

HOLE: 6.25 "
CSG OD: 4.5 "
CSG ID: 4 "
WGT: 11.6 ppf
GRADE: N-80
EXCESS: 50 %
DEPTH: 7107'

TOPSET FRUITLAND COAL Wells: (topset casing above coal to prepare for cavitation/DO/UR)

Drilling Mud Program:

Surface: spud mud

Intermediate: fresh water mud with bentonite and polymer as needed

Below Intermediate: air/mist/nitrogen drilling media with foamer, polymer, & corrosion inhibitor as needed

Centralizer Program:

Surface: centralizers placed 10' above the shoe latched over a stop collar and at the top of the 2nd, 3rd, & 4th joints

Intermediate: centralizers placed 10' above the shoe latched over a stop collar and at the top of the 2nd, 4th, 6th, 8th, & 10th joints

Turbolizers placed one per joint from the top of the Ojo Alamo to the top of the Kirtland Shale

Below Intermediate: no centralizers used in air holes. In mud holes centralizers are spaced out appropriately

CASE & FRAC FRUITLAND COAL Wells: (casing set below coal to prepare for frac completion)

Drilling Mud Program:

Surface: spud mud

Production: fresh water mud with bentonite and polymer as needed

Centralizer Program:

Surface: centralizers placed 10' above the shoe latched over a stop collar and at the top of the 2nd, 3rd, & 4th joints

Production: centralizers placed 10' above the shoe latched over a stop collar and at the top of the 2nd, 4th, 6th, 8th, & 10th joints

Turbolizers placed one per joint from the top of the Ojo Alamo to the top of the Kirtland Shale

MESA VERDE Wells:

Drilling Mud Program:

Surface: spud mud

Intermediate: fresh water mud with bentonite and polymer as needed

Below Intermediate: air/mist drilling media with foamer, polymer, & corrosion inhibitor as needed

Centralizer Program:

Surface: centralizers placed 10' above the shoe latched over a stop collar and at the top of the 2nd, 3rd, & 4th joints

Intermediate: centralizers placed 10' above the shoe latched over a stop collar and at the top of the 2nd, 4th, 6th, 8th, & 10th joints

Turbolizers placed one per joint from the top of the Ojo Alamo to the top of the Kirtland Shale

Below Intermediate: no centralizers used in air holes. In mud holes centralizers are spaced out appropriately

DAKOTA Wells:

Drilling Mud Program:

Surface: spud mud

Intermediate: fresh water mud with bentonite and polymer as needed

Below Intermediate: air/mist/nitrogen drilling media with foamer, polymer, & corrosion inhibitor as needed

Centralizer Program:

Surface: centralizers placed 10' above the shoe latched over a stop collar and at the top of the 2nd, 3rd, & 4th joints

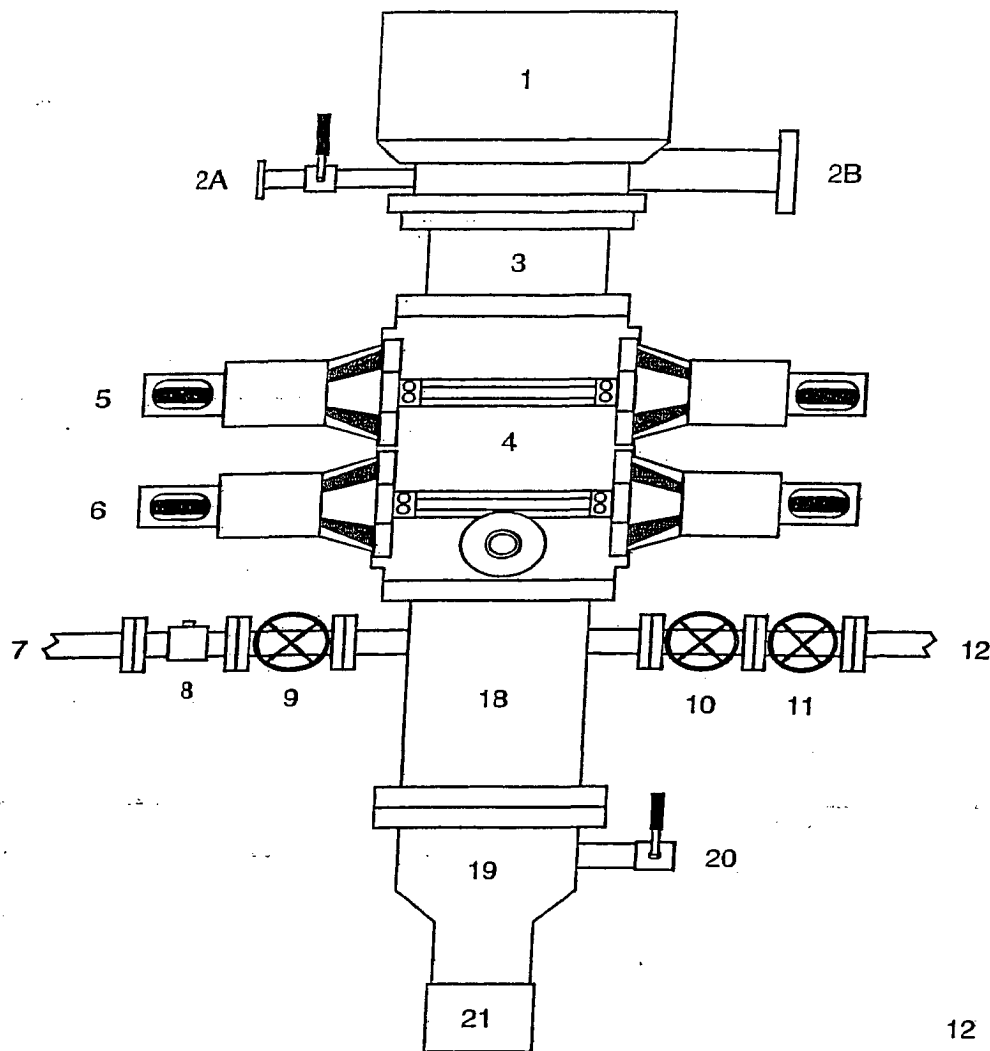
Intermediate: centralizers placed 10' above the shoe latched over a stop collar and at the top of the 2nd, 4th, 6th, 8th, & 10th joints

Turbolizers placed one per joint from the top of the Ojo Alamo to the top of the Kirtland Shale

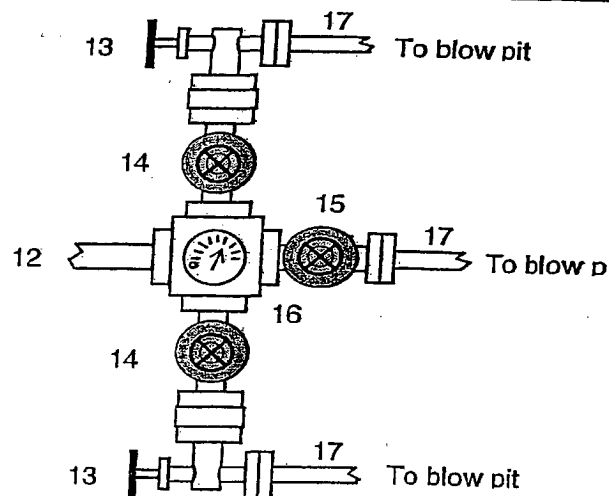
Below Intermediate: no centralizers used in air holes. In mud holes centralizers are spaced out appropriately

BLOWOUT PREVENTER ARRANGEMENT & PROGRAM

For Drilling to Intermediate Casing Point & Setting 7" Intermediate Casing



1. Rotating Head
- 2A. Fill-up Line & valve
- 2B. Flowline
3. Spacer Spool
4. Double Ram BOP (11", 3000 psi)
5. Pipe Rams
6. Blind Rams
7. Kill Line
8. Kill Line Check Valve
9. Kill Line Valve
10. Inner Choke Line Valve (3")
11. Outer Choke Line Valve (3")
12. Choke Line (3")
13. Variable Choke
14. Choke Line Valve (2")
15. Panic Line Valve (3")
16. Choke Manifold Pressure Gauge
17. Choke Line (2")
18. Mud Cross Spacer Spool
19. Casing Head "A" Section
20. Casing Head "A" Section 2" Valve
21. 9 5/8" Casing Collar

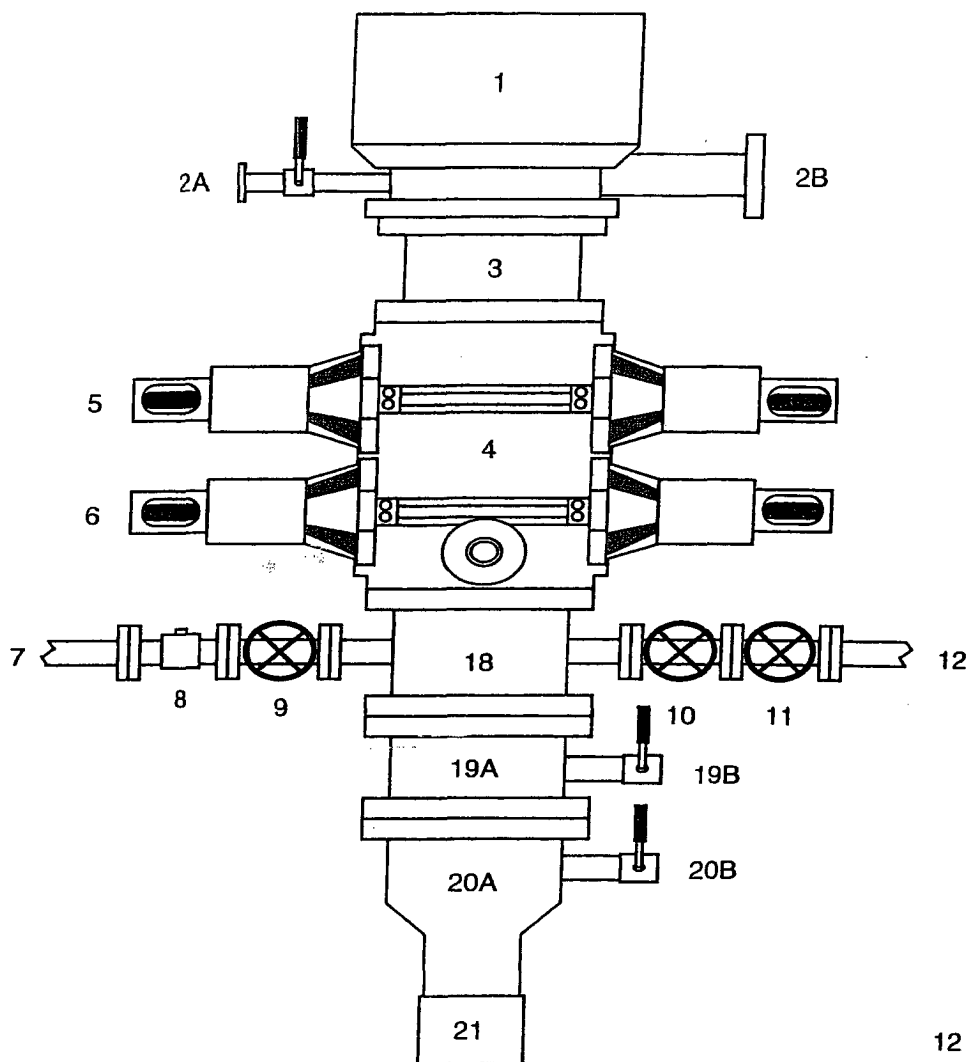


A 12-1/4" hole will be drilled to approximately 220' and the 9-5/8" surface casing will be run and cemented. The Casing Head "A" Section will be screwed onto the 9-5/8" surface casing stub. The BOP will be installed on the Casing Head "A" Section. A test plug will be set in the wellhead and the pipe rams and choke manifold will be tested to 200 psi to 300 psi (low pressure test) for 10 minutes and to 1000 psi (high pressure test) for 10 minutes. Then the test plug will be removed, and the 9-5/8" casing will be pressure tested against closed blind rams to 200 psi to 300 psi for 10 minutes and to 1000 psi for 30 minutes (this value is one 44% of the minimum internal yield pressure of the 9-5/8" casing). (Note: per regulatory requirements we will wait on cement at least 8 hrs after placement before testing the 9-5/8" surface casing). Then an 8-3/4" hole will be drilled to intermediate casing point and 7" intermediate casing will be run and cemented.

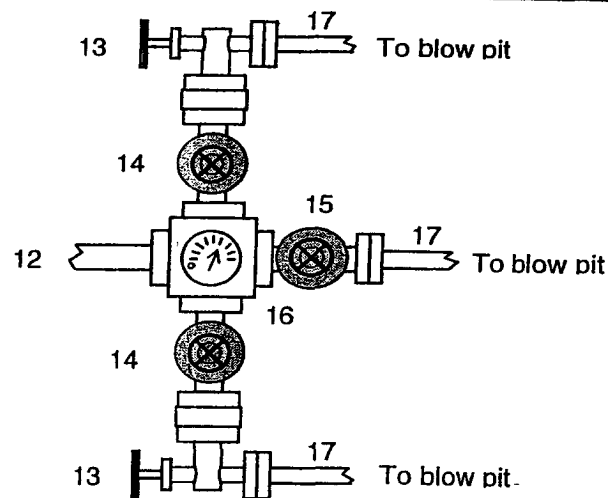
In addition to the equipment in the above diagram the following equipment will comprise the BOP system:

BLOWOUT PREVENTER ARRANGEMENT & PROGRAM

For Drilling to TD and Setting 4.5 inch Casing



1. Rotating Head
- 2A. Fill-up Line & valve
- 2B. Bleeie Line (for Air Drilling)
3. Spacer Spool
4. Double Ram BOP (11", 3000 psi)
5. Pipe Rams
6. Blind Rams
7. Kill Line
8. Kill Line Check Valve
9. Kill Line Valve
10. Inner Choke Line Valve (3")
11. Outer Choke Line Valve (3")
12. Choke Line (3")
13. Variable Choke
14. Choke Line Valve (2")
15. Panic Line Valve (3")
16. Choke Manifold Pressure Gauge
17. Choke Line (2")
18. Mud Cross Spacer Spool
- 19A. Csg Spool "B" Section (11", 3M)
- 19B. "B" Section Csg Valve (2", 3M)
- 20A. Csg Head "A" Section (11", 3M)
- 20B. "A" Section Csg Valve (2", 3M)
21. 9 5/8" Casing Collar



After the 7" intermediate casing has been run and cemented, the Casing Spool ("B" Section) will be installed on the wellhead ("A" Section) and the BOP will be installed on the Casing Spool. A test plug will be set in the wellhead and the pipe rams, blind rams, and choke manifold will be tested to 200 psi to 300 psi (low pressure test) for 10 minutes and to 3000 psi (high pressure test) for 10 minutes. Then the test plug will be removed and the 7" casing will be pressure tested against closed blind rams to 200 psi to 300 psi for 10 minutes and to 1800 psi for 30 minutes - this test pressure is 48% of the minimum internal yield strength of 3740 psi for the 7", 20#, J-55, STC casing. Then we will air drill the 6-1/4" hole to TD and run and cement the 4-1/2" casing.

In addition to the equipment in the above diagram the following equipment will comprise the BOP system:

1. Upper Kelly cock Valve with handle
2. Stab-in TIW valve for all drillstrings in use