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Form 3160-3
(March 2012)

DEC 29 2014

RECEIVED

FORM APPROVED
OMB No. 1004-0137
Expires October 31, 2014

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of work: ☑ DRILL ☐ REENTER	5. Lease Serial No. NMNM118722
	6. If Indian, Allotee or Tribe Name
	7. If Unit or CA Agreement, Name and No.
1b. Type of Well: ☐ Oil Well ☐ Gas Well ☑ Other ☐ Single Zone ☐ Multiple Zone	8. Lease Name and Well No. SALADO DRAW SWD 13 #1 <314003>
2. Name of Operator CHEVRON USA INC. <4323>	9. API Well No. 30-025-42354
3a. Address 1616 W. BENDER BLVD HOBBS, NM 88240	3b. Phone No. (include area code) 575-263-0431
	10. Field and Pool, or Exploratory SWD;DEVONIAN,SILURIAN <97869>
4. Location of Well (Report location clearly and in accordance with any State requirements.*) At surface 290' FSL & 10' FWL At proposed prod. zone 290' FSL & 10' FWL	11. Sec., T. R. M. or Blk. and Survey or Area SEC 13 T26S, R32E UL:M (SHL) SEC 13 T26S, R32E UL:M (BHL)
14. Distance in miles and direction from nearest town or post office* 30 MILES WEST OF JAL, NEW MEXICO	12. County or Parish LEA / 13. State NM
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 290' FSL	16. No. of acres in lease 1,800 / 17. Spacing Unit dedicated to this well 40
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 1/4 MILE - LITTLEFIELD FED #2	19. Proposed Depth TVD 18,200' / 20. BLM/BIA Bond No. on file CA 0329
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3171' GL	22. Approximate date work will start* / 23. Estimated duration

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No.1, must be attached to this form: SWD-1488

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 must 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 BLM.

25. Signature Cindy Herrera-Murillo	Name (Printed/Typed) CINDY HERRERA-MURILLO	Date 07/08/2014
Title PERMITTING SPECIALIST		
Approved by (Signature) Stephen J Caffey	Name (Printed/Typed)	Date 12/23/14
Title For FIELD MANAGER	Office CARLSBAD FIELD OFFICE	

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, are attached. APPROVAL FOR TWO YEARS

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.

(Continued on page 2)

*(Instructions on page 2)

Carlsbad Controlled Water Basin

KA 12/29/14

SEE ATTACHED FOR CONDITIONS OF APPROVAL

Approval Subject to General Requirements & Special Stipulations Attached

DEC 29 2014

1. **FORMATION TOPS**

The estimated tops of important geologic markers are as follows:

FORMATION	SUB-SEA TVD	KB TVD	MD
Rustler	2549	650	650
Lamar	(1481)	4680	4680
Bell Canyon	(1501)	4700	4700
Cherry Canyon	(2551)	5750	5750
Brushy Canyon	(4181)	7380	7380
Bone Spring Limestone	(5451)	8650	8650
Upper Avalon	(5621)	8820	8820
Lower Avalon	(6231)	9430	9430
1st Bone Spring Sand	(6501)	9700	9700
2nd Bone Spring Sand	(7101)	10300	10300
3rd Bone Spring Sand	(8151)	11350	11350
Wolfcamp	(8791)	11990	11990
Strawn	(11401)	14600	14600
Atoka	(11801)	15000	15000
Morrow	(12701)	15900	15900
Barnett Shale	(13501)	16700	16700
Mississipian Lime	(14201)	17400	17400
Woodford	(14591)	17790	17790
Silurian Limestone	(14751)	17950	17950
TD	(15551)	18750	18750

2. **ESTIMATED DEPTH OF WATER, OIL, GAS & OTHER MINERAL BEARING FORMATIONS**

The estimated depths at which the top and bottom of the anticipated water, oil, gas, or other mineral bearing formations are expected to be encountered are as follows:

Substance	Formation	Depth
Deepest Expected Base of Fresh Water		650
Water	Rustler	650
Water	Bell Canyon	5750
Water	Cherry Canyon	7380
Oil/Gas	Brushy Canyon	8650
Oil/Gas	Bone Spring Limestone	8820
Oil/Gas	Lower Avalon	9430
Oil/Gas	1st Bone Spring Sand	9700
Oil/Gas	2nd Bone Spring Sand	10300
Oil/Gas	3rd Bone Spring Sand	11350
Oil/Gas	Wolfcamp	11990
Oil/Gas	Strawn	14600
Oil/Gas	Atoka	15000
Oil/Gas	Morrow	15900
Oil/Gas	Barnett Shale	16700
Oil/Gas	Mississipian Lime	17400
Oil/Gas	Woodford	17790
Disposal	Silurian Limestone	17950
Disposal	TD	18750

All shows of fresh water and minerals will be reported and protected.

3. **BOP EQUIPMENT**

The BOPE when rigged up on the 16" surface casing head will consist of a single blind ram preventer, drilling spool w/ side outlet valves, and an annular preventer. The BOPE will have a minimum rating of 2M for drill out below surface casing. The choke and kill lines will be installed on the drilling spool and will have a 2" minimum internal dia. The annular when installed on surface casing will be tested to 1000 psi.

After running the 13-3/8" intermediate casing a 13-5/8" BOPE system with a minimum rating of 5M will be installed, tested, used and maintained per Onshore Order 2.

After running the 9-5/8" production casing a 13-5/8" BOPE system with a minimum rating of 10M will be installed, tested, used and maintained per Onshore Order 2.

See COA Chevron requests a variance to use a CoFlex hose with a metal protective covering that will be utilized between the 13-5/8" BOP and Choke manifold. Please refer to the attached testing and certification documentation.

4. **CASING PROGRAM**

a. The proposed casing program will be as follows:

See COA

Purpose	From	To	Hole Size	Csg Size	Weight	Grade	Thread	Condition
Surface	0'	750'	20"	16"	75 #	J-55	BTC	New
1st Intermediate	0'	~~4,550'~~ 4,690'	14-3/4"	13-3/8"	68 #	J-55	TSH W513	New
2nd Intermediate	0'	12,500'	12-1/4"	9-5/8"	53.5 #	P-110IC	BTC	New
Drlg Liner	12,300'	15,000'	8-1/2"	7-5/8"	42.8 #	P-110	TSH W513	New
Prod Liner	14,800'	17,975'	6-1/8"	5-1/2"	20.0 #	P-110	TSH W513	New

b. 9-5/8" 53.5# P-110 BTC will be special drift to 8.5".

c. Casing design subject to revision based on geologic conditions encountered.

d. If for any reason the casing design for a particular well requires setting casing deeper than the following design, then the Casing Safety Factors will be recalcuated & sent to the BLM prior to drilling.

See COA

e. Chevron will fill casing at a minimum of every 20 jts (840') while running for intermediate and production casing strings in order to maintain collapse SF.

SF Calculations based on the following casing design:

Surface Casing:	750' MD/TVD
1st Intermediate Casing:	4690' MD/TVD
2nd Intermediate Casing:	12500' MD/TVD
Drlg Liner	15000' MD/TVD
Prod Liner	17975' MD/TVD
Open Hole	18750' MD/TVD

Casing String	Min SF Burst	Min SF Collapse	Min SF Tension	Min SF Tri-Axial
16" Surface	5.93	4.33	5.27	7.18
13-3/8" 1st Intermediate	1.9	1.87	1.83	2.31
9-5/8" 2nd Intermediate	1.92	1.11	2.06	1.39
7-5/8" Drlg Liner	3.08	1.23	2.13	1.31
5-1/2" Prod Liner	1.78	1.04	2.97	1.24

Min SF is the lowest of a group of safety factors defined by the following considerations and assumptions:

Casing Design Load Considerations and Assumptions:

Casing String	Load Case	Loading Mode	Internal Profile	External Profile
16" Surface Casing	Installed Load (Cementing)	Base Case	Displacement Fluid Density	Cement Slurry Density
	Full Evacuation	Collapse	Null	Running MW
	Pressure Test	Burst	Test Pressure + Internal Fluid MW	Pore Pressure
	Frac @ Shoe w/ Gas Grad Above	Burst	Frac Pressure at Shoe + Gas Grad to Surf	Pore Pressure
	100,000 Overpull	Tension	Running MW	Running MW
	Green Cement Pressure Test	Tension/Burst	Surface Pressure + Displacement Fluid Density	Cement Slurry Density
13-3/8" Intermediate Casing	Installed Load (Cementing)	Base Case	Displacement Fluid Density	Cement Slurry Density
	Partial Evacuation	Collapse	Null to 2000' and Drilling MW.	Running MW
	Pressure Test	Burst	Test Pressure + Internal Fluid MW	Cement Mix Water to Prior Csg Shoe and
	Gas Over Mud Ratio	Burst	1/2 Gas Column on Top of Drilling Mud	Cement Mix Water to Prior Csg Shoe and Pore Pressure Below
	100,000 Overpull	Tension	Running MW	Running MW
	Green Cement Pressure Test	Tension/Burst	Surface Pressure + Displacement Fluid Density	Cement Slurry Density
9-5/8" Intermediate Casing	Installed Load (Cementing)	Base Case	Displacement Fluid Density	MW to TOC and Cement Slurry Density
	Full Evacuation	Collapse	Null	Running MW
	Gas Over Mud Ratio	Burst	1/2 Gas Column On Top of Drilling MW	MW above TOC, Cement Mix Water to Prior Csg Shoe and Pore Pressure Below
	Pressure Test	Burst	Test Pressure + Internal Fluid MW	MW above TOC, Cement Mix Water to Prior Csg Shoe and Pore Pressure Below
	Liner Pressure Test	Burst	Test Pressure + Internal Fluid MW	MW above TOC, Cement Mix Water to Prior Csg Shoe and Pore Pressure Below
	Stimulation Surface Leak	Burst	Surface Injection Pressure On Top of Packer Fluid	MW above TOC, Cement Mix Water to Prior Csg Shoe and Pore Pressure Below
	100,000 Overpull	Tension	Running MW	Running MW
	Green Cement Pressure Test	Tension/Burst	Surface Pressure + Displacement Fluid Density	MW to TOC and Cement Slurry Density
7-5/8" & 5-1/2" Liner	Installed Load (Cementing)	Base Case	Displacement Fluid Density	Cement Slurry Density
	Full Evacuation	Collapse	Null	Running MW
	Pressure Test	Burst	Test Pressure + Internal Fluid MW	Cement Mix Water to Prior Csg Shoe and Pore Pressure Below
	Gas Over Mud Ratio	Burst	1/2 Gas Column On Top of Drilling MW	Cement Mix Water to Prior Csg Shoe and Pore Pressure Below
	Stimulation Surface Leak	Burst	Surface Injection Pressure On Top of Packer Fluid	Cement Mix Water to Prior Csg Shoe and Pore Pressure Below
	100,000 Overpull	Tension	Running MW	Running MW
	Green Cement Pressure Test	Tension/Burst	Surface Pressure + Displacement Fluid Density	Cement Slurry Density

5. **CEMENTING PROGRAM**

Slurry	Type	Top	Bottom	Weight (ppg)	Yield (sx/cu ft)	%Excess Open Hole	Sacks	Water gal/sk
Surface								
Lead	ExtendaCem CZ + 3 lb/sk Kol Seal + 1/8 lb per sk Poly Flake	0'	450'	13.7	1.68	100	381	8.79
Tail	Premium Plus Cement + 1% CaCl+ 3 lb/sk Kol Seal	450'	750'	14.8	1.34	100	377	6.48
1st Intermediate								
Lead	Halliburton Light H + 5% Salt + .125 lb/sk Poly Flake	0'	4,190'	12.9	1.85	100	887	9.87
Tail	HalCem C + Retarder	4,190'	4,690'	14.8	1.33	100	159	6.37
2nd Intermediate								
1st Stage Lead	VariCem-PB1 +.1% Fe-2+ .1% FWCA+ 3 lb/sk Kol-Seal + .1% HR-601 + .25 lb/sk D-Air 5000	6,000'	11,500'	11.3	2.54	50	1017	15.51
1st Stage Tail	VersaCem H + .3% Halad 344 + 5 lb/sk Silicalite - Powder + .1% SA-1015	11,500'	12,500'	13.2	1.63	50	308	8.34
2nd Stage Lead	VariCem-PB1 + .1% Fe-2+ .1% FWCA+ 3 lb/sk Kol-Seal + .1% HR-601 + .25 lb/sk D-Air 5000	3,690'	5,500'	11.3	2.54	50	769	15.51
2nd Stage Tail (DV Tool @ +/- 6000')	HalCem-C + Retarder	5,500'	6,000'	14.8	1.33	50	177	6.37
Drlg Liner								
Tail	VersaCem H + .5% Halad-344 + .3% Halad-322 + .25 lb/sk D-Air 5000	12,300'	15,000'	14.5	1.22	40	241	5.46
Prod Liner								
Tail	VersaCem H +.5% Halad-344 + .3% Halad-322 + .25 lb/sk D-Air 5000	14,800'	17,975'	14.5	1.22	40	146	5.46

1. Final cement volumes will be determined by caliper.
2. Surface casing shall have at least one centralizer installed on each of the bottom three joints starting with the shoe joint.
3. Cement volumes will be adjusted accordingly for depth change of multi-stage tool for 2nd Int. job.

6. MUD PROGRAM

From	To	Type	Weight	F. Vis	API Filtrate
0'	750'	Spud Mud	8.6 - 8.9	32 - 36	NC
750'	4,690'	Brine	9.8 - 10.2	28 - 30	NC
4,690'	12,500'	Cut Brine	8.8 - 9.3	28 - 30	NC
12,500'	15,000'	Weighted Brine/Polymer	10.0 - 12.5	40 - 45	< 20
15,000'	17,975'	Weighted Brine/Polymer	12.5 - 15.0	40 - 45	< 8
17,975'	18,750'	Cut Brine	8.4 - 9.0	28 - 30	NC

A closed loop system will by utilized consisting of above ground steel tanks. All wastes accumulated during drilling operations will be contained in a portable trash cage and removed from location and deposited in an approved sanitary landfill. Sanitary wastes will be contained in a chemical porta-toilet and then hauled to an approved sanitary landfill.

All fluids and cuttings will be disposed of in accordance with New Mexico Oil Conservation Division rules and regulations.

A mud test shall be performed every 24 hours after mudding up to determine, as applicable: density, viscosity, gel strength, filtration, and pH.

Visual mud monitoring equipment shall be in place to detect volume changes indicating loss or gain of circulating fluid volume. When abnormal pressures are anticipated – a pit volume totalizer (PVT), stroke counter, and flow sensor will be used to detect volume changes indicating loss or gain of circulating fluid volume.

A weighting agent and lost circulating material (LCM) will be onsite to mitigate pressure or lost circulation as hole conditions dictate.

7. TESTING, LOGGING, AND CORING

The anticipated type and amount of testing, logging, and coring are as follows:

a. Drill stem tests are not planned.
b. The logging program will be as follows:

TYPE	Logs	Interval	Timing
Mudlogs	2 man mudlog	12-1/4" to TD	Drillout of 13-3/8" Int
MWD	MWD Gamma	12-1/4" to TD	Drillout of 13-3/8" Int
Triple Combo	-	12-1/4", 8-1/2", 6-1/8"	After Drilling Hole Sec.
Lithosconner	-	12-1/4", 8-1/2", 6-1/8"	After Drilling Hole Sec.
Dipole Sonic	-	12-1/4", 8-1/2", 6-1/8"	After Drilling Hole Sec.
SGR	-	12-1/4", 8-1/2", 6-1/8"	After Drilling Hole Sec.
FMI	-	12-1/4"	After Drilling Hole Sec.
MDT	Total of 6 MDT Tests	12-1/4"	After Drilling Hole Sec.
SWC	50 1" RSW Cores	12-1/4"	After Drilling Hole Sec.

c. Conventional whole core samples are not planned.
d. A Directional Survey will be run.

8. ABNORMAL PRESSURES AND HYDROGEN SULFIDE

a. Normal pressures are anticipated throughout the Delaware section. Pressures are anticipated to gradually increase from the Bone Springs into the Wolfcamp. Anticipated pressure ramps are expected 1000' into the Wolfcamp and again 200' into the Atoka with the pressures returning to normal in the Mississipian Lime to TD. Estimated Silurian BHP is 8214 psi.

b. Hydrogen sulfide gas is not anticipated. An H2S Contingency plan is attached with this APD in the event that H2S is encountered

16-3/4" Class-II BOP Schematic

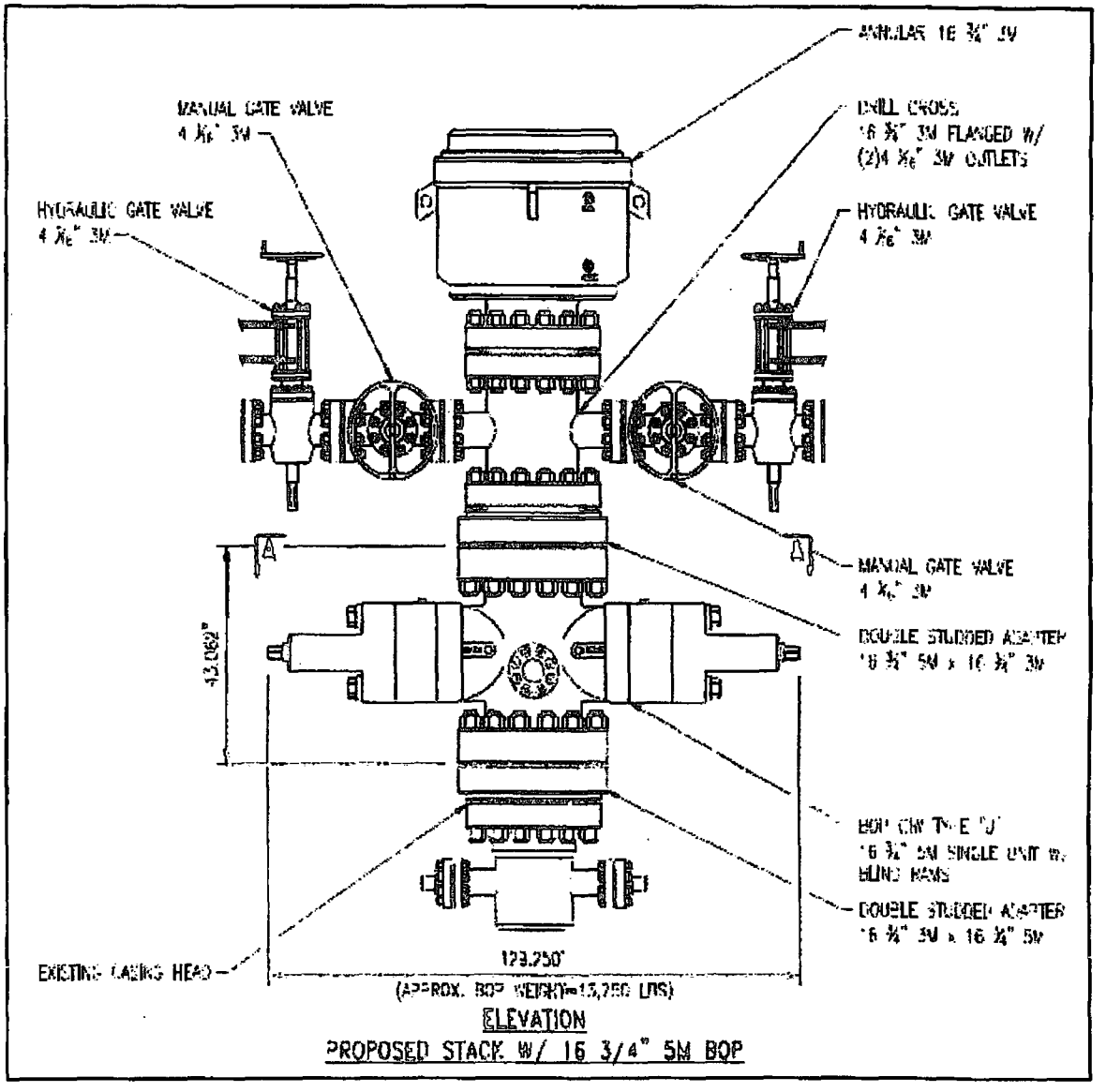


Diagram A

BLOWOUT PREVENTOR SCHEMATIC

Minimum Requirements

OPERATION : 2nd Intermediate Hole Section

Minimum System Pressure Rating : 5,000 psi

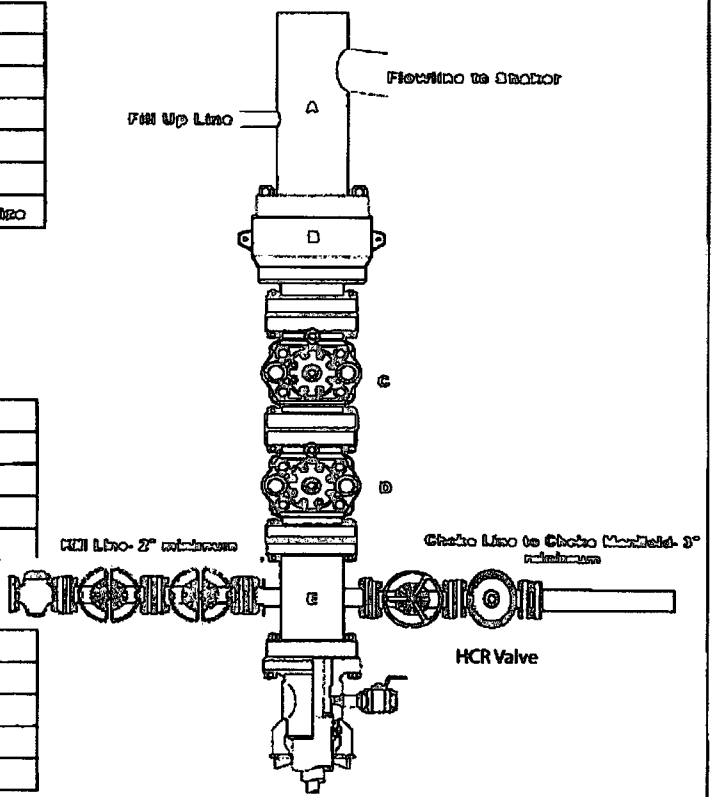
	SIZE	PRESSURE	DESCRIPTION
A		N/A	Bell Nipple
B	13 5/8"	5,000 psi	Annular
C	13 5/8"	5,000 psi	Pipe Ram
D	13 5/8"	5,000 psi	Blind Ram
E	13 5/8"	5,000 psi	Mud Cross
F			
DSA		As required for each hole size	

Kill Line

SIZE	PRESSURE	DESCRIPTION
2"	5,000 psi	Gate Valve
2"	5,000 psi	Gate Valve
2"	5,000 psi	Check Valve

Choke Line

SIZE	PRESSURE	DESCRIPTION
3"	5,000 psi	Gate Valve
3"	5,000 psi	HCR Valve



Installation Checklist

The following item must be verified and checked off prior to pressure testing of BOP equipment.

- ☐ **The installed BOP equipment meets at least the minimum requirements (rating, type, size, configuration) as shown on this schematic. Components may be substituted for equivalent equipment rated to higher pressures. Additional components may be put into place as long as they meet or exceed the minimum pressure rating of the system.**
- ☐ **All valves on the kill line and choke line will be full opening and will allow straight through flow.**
- ☐ **The kill line and choke line will be straight unless turns use tee blocks or are targeted with running tees, and will be anchored to prevent whip and reduce vibration.**
- ☐ **Manual (hand wheels) or automatic locking devices will be installed on all ram preventers. Hand wheels will also be installed on all manual valves on the choke line and kill line.**
- ☐ **A valve will be installed in the closing line as close as possible to the annular preventer to act as a locking device. This valve will remain open unless accumulator is inoperative.**
- ☐ **Upper kelly cock valve with handle will be available on rig floor along with safety valve and subs to fit all drill string connections in use.**

After Installation Checklist is complete, fill out the information below and email to Superintendent and Drilling Engineer

Wellname: _____

Representative: _____

Date: _____

Diagram B

CHOKE MANIFOLD SCHEMATIC

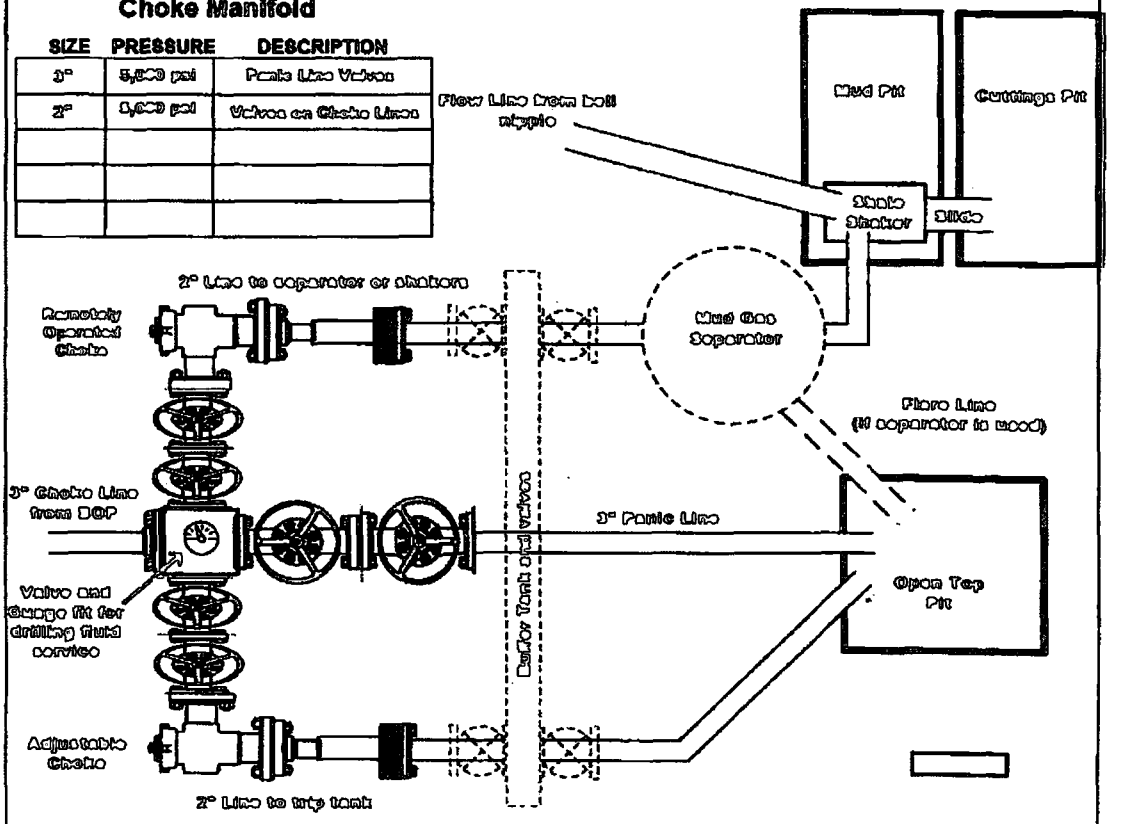
Minimum Requirements

OPERATION : 2nd Intermediate Hole Section

Minimum System Pressure Rating : 5,000 psi

Choke Manifold

SIZE	PRESSURE	DESCRIPTION
3"	5,000 psi	Panic Line Valve
2"	5,000 psi	Valves on Choke Lines



Installation Checklist

The following item must be verified and checked off prior to pressure testing of BOP equipment.

- ☐ **The installed BOP equipment meets at least the minimum requirements (rating, type, size, configuration) as shown on this schematic. Components may be substituted for equivalent equipment rated to higher pressures. Additional components may be put into place as long as they meet or exceed the minimum pressure rating of the system.**
- ☐ **Adjustable Chokes may be Remotely Operated but will have backup hand pump for hydraulic actuation in case of loss of rig air pressure or power.**
- ☐ **Flare and Panic lines will terminate a minimum of 150' from the wellhead. These lines will terminate at a location as per approved APD.**
- ☐ **The choke line, kill line, and choke manifold lines will be straight unless turns use tee blocks or are targeted with running tees, and will be anchored to prevent whip and reduce vibration. This excludes the line between mud gas separator and shale shaker.**
- ☐ **All valves (except chokes) on choke line, kill line, and choke manifold will be full opening and will allow straight through flow. This excludes any valves between mud gas separator and shale shakers.**
- ☐ **All manual valves will have hand wheels installed.**
- ☐ **If used, flare system will have effective method for ignition**
- ☐ **All connections will be flanged, welded, or clamped (no threaded connections like hammer unions)**
- ☐ ***If* buffer tank *is* used, a valve will be used on all lines at any entry or exit point to or from the buffer tank.**

After Installation Checklist is complete, fill out the information below and email to Superintendent and Drilling Engineer

Wellname: _____

Representative: _____

Date: _____

Diagram C

10M BLOWOUT PREVENTER SCHEMATIC

Minimum Requirements

OPERATION: Production and Open Hole Sections

Minimum System Pressure Rating: 10,000 PSI

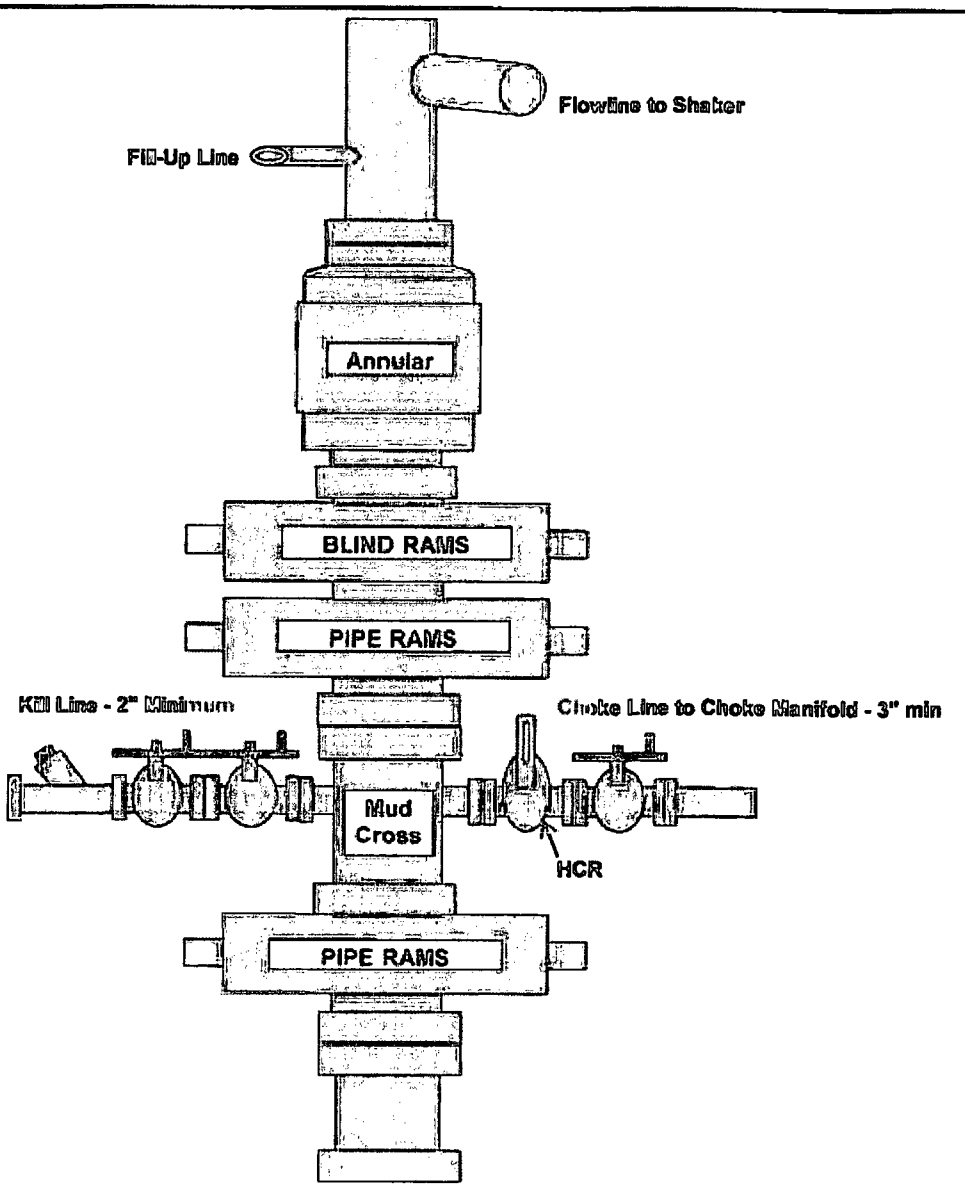


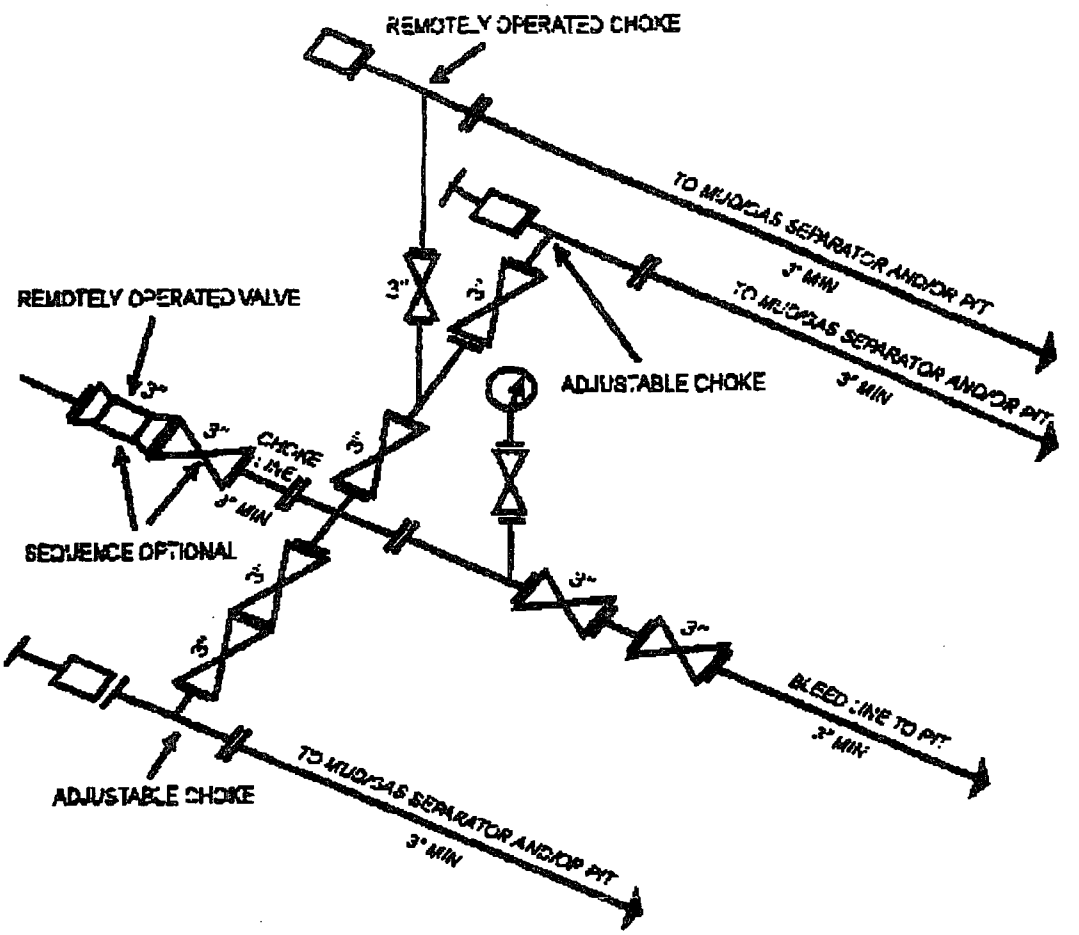
Diagram D

10M Choke Manifold SCHEMATIC

Minimum Requirements

OPERATION: Production and Open Hole Sections

Minimum System Pressure Rating: 10,000 PSI



10M AND 15M CHOKE MANIFOLD EQUIPMENT - CONFIGURATION OF CHOKES MAY VARY

[53 FR 49661, Dec. 9, 1988 and 54 FR 39528, Sept. 27, 1989]

Diagram E

Exhibit D

Salado Draw SWD 13 #1 Pad Layout – Ensign ADR 1500S