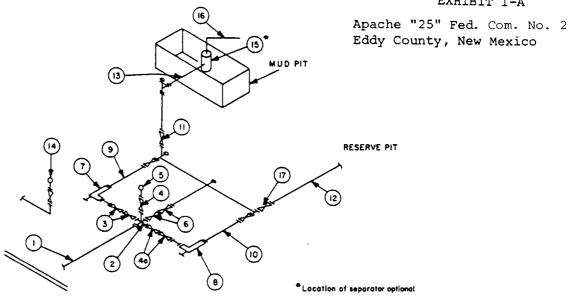
MINIMUM CHOKE MANIFOLD 3,000, 5,000 and 10,000 PSI Working Pressure

3 MWP - 5 MWP - 10 MWP

EXHIBIT 1-A



REYOND SUBSTRUCTU	00

			MINI	MUM REQL	JIREMENT	\$				
			3,000 MWP		5,000 MWP			10,000 MWP		
No.		I.D.	NOMINAL	RATING	I.D.	NOMINAL	RATING	I.D.	NOMINAL	RATING
1	Line from drilling spool		3″	3,000		3*	5,000		3″	10,000
2	Cross 3"x3"x3"x2"			3,000			5,000			
	Cross 3"x3"x3"x3"									10,000
3	Valves(1) Gate □ Plug □(2)	3-1/8"		3,000	3-1/8"		5,000	3-1/8"		10,000
4	Valve Gate □ Plug □(2)	1-13/16"		3,000	1-13/16"		5,000	1-13/16"		10,000
4a	Vaives(1)	2-1/16"		3,000	2-1/16"		5,000	3-1/8"		10,000
5	Pressure Gauge			3,000			5,000			10,000
6	Valves Gate □ Plug □(2)	3-1/8*		3,000	3-1/8"		5,000	3-1/8"		10,000
7	Adjustable Choke(3)	2"		3,000	2"	1	5,000	2*	<u> </u>	10,000
8	Adjustable Choke	1"		3,000	1"		5,000	2"		10,000
9	Line		3"	3,000		3"	5,000		3"	10,000
10	Line		2"	3,000		2"	5,000		3*	10,000
11	Valves Gate □ Plug □(2)	3-1/8*		3,000	3-1/8"		5,000	3-1/8"		10,000
12	Lines		3"	1,000		3*	1,000		3"	2,000
13	Lines		3″	1,000		3"	1,000		3*	2,000
14	Remote reading compound standpipe pressure gauge			3,000			5,000			10,000
15	Gas Separator	1	2'x5'			2'x5'			2'x5'	
16	Line		4"	1,000		4"	1,000		4"	2,000
17	Vaives Gate ☐ Plug ☐(2)	3-1/8"		3,000	3-1/8"		5,000	3-1/8"		10,000

- (1) Only one required in Class 3M.
- (2) Gate valves only shall be used for Class 10M.
- (3) Remote operated hydraulic choke required on 5,000 psi and 10,000 psi for drilling.

EQUIPMENT SPECIFICATIONS AND INSTALLATION INSTRUCTIONS

- 1. All connections in choke manifold shall be welded, studded, flanged or Cameron clamp of comparable rating.
- 2. All flanges shall be API 6B or 6BX and ring gaskets shall be API RX or BX. Use only BX for 10 MWP.
- 3. All lines shall be securely anchored.
- 4. Chokes shall be equipped with tungsten carbide seats and needles, and replacements shall be available.
- 5. Choke manifold pressure and standpipe pressure gauges shall be available at the choke manifold to assist in regulating chokes. As an alternate with automatic chokes, a choke manifold pressure gauge shall be located on the rig floor in conjunction with the standpipe pressure gauge.
- 6. Line from drilling spool to choke manifold should be as straight as possible. Lines downstream from chokes shall make turns by large bends or 90° bends using bull plugged tees.
- 7. Discharge lines from chokes, choke bypass and from top of gas separator should vent as far as practical from the well.

PRESERVED
JUN 21 1993