APPENDIX C

MASTER DRILLING PROGRAM
OPERATOR: Petroleum Development Corporation (Pedco)
Carbon County, Wyoming

Drilling Program for the CBM Wells Listed Below:
Sections 5,8 & 9, T15N, R91W, 6th PM

WYW 141276	WYW 141277	WYW 148481
ARFederal 1591-1-5	ARFederal 1591-3-5	ARFederal 1591-3-9
ARFederal 1591-7-5	ARFederal 1591-5-5	ARFederal 1591-5-9
ARFederal 1591-9-5	ARFederal 1591-1-8	ARFederal 1591-13-9
ARFederal 1591-11-5	ARFederal 1591-7-8	
ARFederal 1591-13-5	ARFederal 1591-11-9	
ARFederal 1591-15-5	ARFederal 1591-15-9	
ARFederal 1591-3-8		
ARFederal 1591-5-8		
ARFederal 1591-9-8		
ARFederal 1591-15-8		

Table 1 contains formation tops and total well depths.

1. Estimated Tops of Important Geologic Markers:

Formation	**Depth (2455)**	**Depth (3600)**
Lewis Shale	Surface	Surface
Almond	1325’	2480’
Pine Ridge	1785’	2940’
Allen Ridge	1905’	3060’
TD	2455’	3600’

****** these depths would be the shallowest and deepest

Table 1
Blue Sky POD CBM Project Well Information

Well Information							Lease Information				Cementing Program			
No.	**Name**	**Number**	**Qtr/Qtr**	**Sec**	**Tns**	**Rng**	**Lease No.**	**Elevation**	**Formation**	**Depth**	**Casing**	**Hole**	**Depth**	**Cement (sx)**
1	ARFederal	1591-1-5	NENE	5	15N	91W	WYW141276	6520' GL	Lewis	0'	**Surface**	13 ½"	246	124
									Almond	1330'	**Production**	9 7/8"	2460	610
									Pine Ridge	1790'				
									Allen Ridge	1910'				
									Total Depth	2460'				
2	ARFederal	1591-3-5	NENW	5	15N	91W	WYW141277	6504' GL	Lewis	0'	**Surface**	13 ½"	284	143
									Almond	1710'	**Production**	9 7/8"	2840	704
									Pine Ridge	2170'				
									Allen Ridge	2290'				
									Total Depth	2840'				
3	ARFederal	1591-5-5	SWNW	5	15N	91W	WYW141277	6491' GL	Lewis	0'	**Surface**	13 ½"	312	158
									Almond	1990'	**Production**	9 7/8"	3120	774
									Pine Ridge	2450'				
									Allen Ridge	2570'				
									Total Depth	3120'				
4	ARFederal	1591-7-5	SWNE	5	15N	91W	WYW141276	6510' GL	Lewis	0'	**Surface**	13 ½"	274	138
									Almond	1610'	**Production**	9 7/8"	2740	680
									Pine Ridge	2070'				
									Allen Ridge	2190'				
									Total Depth	2740'				
5	ARFederal	1591-9-5	NESE	5	15N	91W	WYW141276	6497' GL	Lewis	0'	**Surface**	13 ½"	263	133
									Almond	1500'	**Production**	9 7/8"	2630	652
									Pine Ridge	1960'				
									Allen Ridge	2080'				
									Total Depth	2630'				
6	ARFederal	1591-11-5	NESW	5	15N	91W	WYW141276	6484' GL	Lewis	0'	**Surface**	13 ½"	300	152
									Almond	1840'	**Production**	9 7/8"	3000	744
									Pine Ridge	2300'				
									Allen Ridge	2420'				
									Total Depth	2970'				
7	ARFederal	1591-13-5	SWSW	5	15N	91W	WYW141276	6481' GL	Lewis	0'	**Surface**	13 ½"	340	172
									Almond	2090'	**Production**	9 7/8"	3400	843
									Pine Ridge	2550'				
									Allen Ridge	2670'				
									Total Depth	3220'				
8	ARFederal	1591-15-5	SWSE	5	15N	91W	WYW141276	6489' GL	Lewis	0'	**Surface**	13 ½"	290	146
									Almond	1740'	**Production**	9 7/8"	2900	719
									Pine Ridge	2200'				

Table 1
Blue Sky POD CBM Project Well Information

Well Information							Lease Information				Cementing Program			
No.	**Name**	**Number**	**Qtr/Qtr**	**Sec**	**Tns**	**Rng**	**Lease No.**	**Elevation**	**Formation**	**Depth**	**Casing**	**Hole**	**Depth**	**Cement (sx)**
									Allen Ridge	2320’				
									Total Depth	2870’				
9	ARFederal	1591-1-8	NENE	8	15N	91W	WYW141277	6500’ GL	Lewis	0’	**Surface**	13 ½”	289	146
									Almond	1760’	**Production**	9 7/8”	2890	717
									Pine Ridge	2220’				
									Allen Ridge	2340’				
									Total Depth	2890’				
10	ARFederal	1591-3-8	NENW	8	15N	91W	WYW141276	6480’ GL	Lewis	0’	**Surface**	13 ½”	329	166
									Almond	2160’	**Production**	9 7/8”	3290	816
									Pine Ridge	2620’				
									Allen Ridge	2740’				
									Total Depth	3290’				
11	ARFederal	1591-5-8	SWNW	8	15N	91W	WYW141276	6476’ GL	Lewis	0’	**Surface**	13 ½”	360	182
									Almond	2480’	**Production**	9 7/8”	3600	893
									Pine Ridge	2940’				
									Allen Ridge	3060’				
									Total Depth	3610’				
12	ARFederal	1591-7-8	SWNE	8	15N	91W	WYW141277	6500’ GL	Lewis	0’	**Surface**	13 ½”	314	159
									Almond	2010’	**Production**	9 7/8”	3140	779
									Pine Ridge	2470’				
									Allen Ridge	2590’				
									Total Depth	3140’				
13	ARFederal	1591-9-8	NESE	8	15N	91W	WYW141276	6565’ GL	Lewis	0’	**Surface**	13 ½”	319	161
									Almond	2060’	**Production**	9 7/8”	3190	791
									Pine Ridge	2520’				
									Allen Ridge	2640’				
									Total Depth	3190’				
14	ARFederal	1591-15-8	SWSE	8	15N	91W	WYW141276	6607’ GL	Lewis	0’	**Surface**	13 ½”	353	178
									Almond	2400’	**Production**	9 7/8”	3530	876
									Pine Ridge	2860’				
									Allen Ridge	2980’				
									Total Depth	3530’				
15	ARFederal	1591-3-9	NENW	9	15N	91W	WYW148481	6572’ GL	Lewis	0’	**Surface**	13 ½”	246	124
									Almond	1330’	**Production**	9 7/8”	2460	610
									Pine Ridge	1790’				
									Allen Ridge	1910’				
									Total Depth	2460’				
16	ARFederal	1591-5-9	SWNW	9	15N	91W	WYW148481	6539’ GL	Lewis	0’	**Surface**	13 ½”	268	135
									Almond	1550’	**Production**	9 7/8”	2680	665

Table 1
Blue Sky POD CBM Project Well Information

Well Information							Lease Information				Cementing Program			
No.	**Name**	**Number**	**Qtr/Qtr**	**Sec**	**Tns**	**Rng**	**Lease No.**	**Elevation**	**Formation**	**Depth**	**Casing**	**Hole**	**Depth**	**Cement (sx)**
									Pine Ridge	2010’				
									Allen Ridge	2130’				
									Total Depth	2680’				
17	ARFederal	1591-11-9	NESW	9	15N	91W	WYW141277	6572’ GL	Lewis	0’	**Surface**	13 ½”	251	127
									Almond	1380’	**Production**	9 7/8”	2510	623
									Pine Ridge	1840’				
									Allen Ridge	1960’				
									Total Depth	2510’				
18	ARFederal	1591-13-9	SWSW	9	15N	91W	WYW148481	6571’ GL	Lewis	0’	**Surface**	13 ½”	290	146
									Almond	1775’	**Production**	9 7/8”	2905	721
									Pine Ridge	2235’				
									Allen Ridge	2355’				
									Total Depth	2905’				
19	ARFederal	1591-15-9	SWSE	9	15N	91W	WYW141277	6627’ GL	Lewis	0’	**Surface**	13 ½”	245	124
									Almond	1325’	**Production**	9 7/8”	2455	609
									Pine Ridge	1785’				
									Allen Ridge	1905’				
									Total Depth	2455’				

2. Estimated Depth of Anticipated Water, Oil, Gas or Mineral Formations:

Allen Ridge	Methane gas
Almond	Methane gas

The Lewis Shale is not anticipated to contain any zones capable of producing water. There are several zones within the Mesaverde Group capable of producing fresh water, including the coal seams. Several coal seams may be tested for gas producing formations to total depth. All shallow water zones will be protected with casing and cement. Cement will be brought to surface to isolate all formations within the Mesaverde Group.

Planned Objective: Mesaverde Group

3. Minimum BOP Requirements: - refer to attached BOP schematics

1. The BOPE shall be closed whenever the well is unattended.
2. The BOPE shall be pressure tested when initially installed, whenever any seal subject to pressure testing is broken, after repairs, or every 30 days.
3. Pedco shall notify the Rawlins BLM office 24 hours prior to the BOPE test.

4. Supplementary Information:

The primary objective of this project is to drill, stimulate, and produce coalbed methane gas from the coal seams of the Mesaverde Group Formations.

Pedco proposes to test the coal zones between 1,910' and 3,090'. Stimulation of the perforated coal seams will be done by hydraulic fracturing. Fresh water, gelled water, and/or foam fracturing techniques will be used.

Please see the attached schematics for **Typical Drillsite Layout**, **Typical CBM Completed Well**, **Typical CBM Well Site, Typical Blow-Out Prevention Stack** and **Bottom Flange & Choke Manifold Schematic.**

5. Casing Program:

Hole Size	Casing Size	Casing Weight	Grade	Joint	Depth Set	New/Used	Range
13 1/2"	10 ¾"	32.75#	H-40	ST&C	0-245/360	New	3
9 7/8"	7"	23#	MC-50	LT&C	0-TD	New	3

Surface Casing:	10¾"	32.75 ppf.	H-40	STC	Collapse	Burst	Tension
				Ratings:	880	1820	205M

A. Burst = 0.052 * MW * TVD(shoe)
= 0.052 * 9.3ppg * 360'
= 174.1psi
Safety Factor = Rating/Burst
= 1820/174.1
= 10.45

B. Collapse = [0.052 * MW * TVD(shoe)] - [Gas Gradient * TVD]
= [0.052 * 9.3ppg * 360'] – [0.1psi/ft * 360']
= 138.1
Safety Factor = Rating/Collapse
= 880/138.1
= 6.37

C. Tension = Weight * D * [1 – (MW/65.5ppg)]
= 32.75ppf * 360' * [1 – (9.3ppg/65.5ppg)]
= 10139.4 lbs.
Safety Factor = Rating/Tension
= 205,000/10139.4
= 20.22

Surface casing shall have centralizers on the bottom three joints of the casing, starting with the shoe joint.

Production Casing:	7"	23 ppf.	MC-50	STC	Collapse	Burst	Tension
				Ratings:	3110	3960	273M

A. Burst = 0.052 * 13ppg * 3600'
= 2433.6psi
Safety Factor = Rating/Burst
= 3960/2433.6
= 1.63

B. Collapse = [0.052 * 13ppg * 3600'] – [0.1psi/ft * 3600']
= 2073.6psi
Safety Factor = Rating/Collapse
= 3110/2073.6
= 1.5

C. Tension weight = 23lbs./ft * 3600' * [1 – (13ppg/65.5ppg)]
= 23lbs./ft * 3600' * .8015
= 66364.2 lbs.
Safety Factor = Rating/Tension
= 273,000/66364.2
= 4.11

6. Mud Program:

Drilling mud will be used as the circulation medium. A fresh water, polymer, gel drilling mud will be used and visual monitoring will be done from spud to total depth. The anticipated mud weight will be between 8.5 – 13 ppg. Sufficient quantities of lost circulation material and barite will be available at the well site at all times for the purpose of assuring well control.

7. Cementing Program:

The following is the proposed procedure for cementing the 10 ¾" surface pipe and 7" long string:

Surface Casing:

Lead: Class "C" Type III, 14.4 ppg., yield 1.44ft3/sk @ 101% excess. Compressive strength in 24 hours at 80^{o}F 3100psi.

The surface casing shall be cemented back to surface. In the event cement does not circulate to surface or fall back of the cement column occurs, remedial cementing shall be done to cement the casing back to surface.

Long String:

Lead: Class "C" Type III, 14.4 ppg., yield 1.44ft^{3}/sk @ 35% excess. Compressive strength in 24 hours at 95^{o}F 3200psi.

Estimated top of cement back to surface.

8. Logging Program:

Cores: Rotary Cores will be taken as needed to evaluate the coal seams.

DSTs: None Planned

Logs: Induction, GR, SP, Density, Neutron and Caliper – From surface to TD
Cement Bond Log – From 10 ¾"casing shoe TD
Mud Logger – As Needed.

9. Pressure Data, Potential Hazards:

Bottom hole pressures anticipated @ 1000 – 1100 psi.
There is no history of hydrogen sulfide gas in the area and none is anticipated.

10. Anticipated Starting Dates and Notification of Operations:

A. Anticipated Starting Dates:

Anticipated Commencement Date	- Spring 2002, or upon approval
Drilling Days	- Approximately 7 Days Per Well
Completion Days	- Approximately 2 Days Per Well
Testing Days	- Approximately 7-14 Days Per Well

Note: Drilling operations will commence as soon as practical after approval of all necessary permits including the APDs.

B. Notification of Operations:

Rawlins Field Office, BLM
1300 North Third
Rawlins, Wyoming 82301
(307) 328-4200

Drilling Program for the Injection Wells Listed Below:

BLM Lease: WYW141276
Federal 1591-8I
1423' FNL & 2305' FWL of Sec. 8: SENW T15N,R91W

BLM Lease: WYW148481
Federal 1591-9I
500' FSL & 895' FWL of Sec. 9: SWSW T15N,R91W

1. **Estimated Tops of Important Geological Markers:**

Formation	Depth (1591-9I)	Depth (1591-8I)
Lewis Shale	surface	surface
Almond	+/- 1775'	+/- 2250'
Pine Ridge	+/- 2235'	+/- 2710'
Allen Ridge	+/- 2355'	+/- 2930'
Hatfield	+/- 3675'	+/- 4150'
Cherokee Creek	+/- 3935'	+/- 4410'
Deep Creek	+/- 4263'	+/- 4738'
TD	+/- 4700'	+/- 5200'

2. **Estimated Depth of Anticipated Water, Oil, Gas or Mineral Formations:**

The Lewis Shale is not anticipated to contain any zones capable of producing water. There are several zones within the Mesaverde capable of producing fresh water including the coal seams. The Steele Shale is not anticipated to contain any zones capable of producing water. All shallow water zones will be protected with casing and cement. Cement will be brought to surface to isolate all formations within the Mesaverde Group.

Planned Objective: Deep Creek/Cherokee Creek sands

3. **Minimum BOP Requirements:** - refer to exhibit "A" schematic

1. The BOPE shall be closed whenever the well is unattended.
2. The BOPE shall be pressure tested when initially installed to 1000 psi, whenever any seal subject to pressure testing is broken, after repairs, or every 30 days.
3. Notify BLM office in Rawlins 24 hours prior to BOPE test.

4. Supplementary Information:

The primary objective of this project is to test the Cherokee Creek and Deep Creek sands for their suitability for water disposal.

Please see the attached schematics for **Typical Drill Site Layout, Configuration Options, Typical Completed Disposal Well and Typical Water Disposal Facility**.

5. Casing Program:

Hole Size	Casing Size	Casing Wt.	Grade	Joint	Depth Set	New/Used	Rng.
13 1/2"	10 ¾"	32.75#	H-40	ST&C	0-470/520	New	3
9 7/8"	7"	23#	J-55	LT&C	0-4700/5200	New	3
Prod string	4 ½"	11.6#	J-55	Buttress	0-4700/5200	New	3

Surface Casing :	10 ¾"	32.75ppf.	H-40	STC	Collapse	Burst	Tension
				Ratings:	880	1820	205M

A. Burst = 0.052 * MW * TVD(shoe)
0.052 * 9.3ppg * 520
= 251.47psi
Safety Factor = Rating/Burst 1820/251.47 = 7.24

B. Collapse = 0.052 * MW * TVD(shoe)
= 0.052 * 8.8ppg * 520
= 237.95psi.
Safety Factor = Rating/Burst 880/237.95 = 3.7

C. Tension = Weight * D * [1 – (MW/65.5ppg)]
= 32.75ppf * 520' * [1 – (8.8ppg/65.5ppg)]
= 14816.1 lbs.
Safety Factor = Rating/Tension 205,000/14816.1 = 13.84

Surface casing shall have centralizers on the bottom three joints of the casing, starting with the shoe joint.

Production Casing:	7"	23ppf	J-55	LTC	Collapse	Burst	Tension
				Ratings:	3270	4360	313M

A. Burst = 0.052 * MW * TVD(td)
= 0.052 * 12.5ppg * 5200'
= 3380 psi
Safety Factor = Rating/Burst 4360/3380 = 1.29

B. Collapse = [0.052 * MW * TVD(shoe)] – [Gas Gradient * TVD]
= [0.052 * 12.5ppg * 5200'] – 0.1 * 5200]
= 2860 psi
= Safety Factor = Rating/Collapse 3270/2860 = 1.143

C. Tension weight * D * [1 – (MW/65.5)]
= 23#/ft * 5200 * [1 – (12.5ppg/65.5ppg)]
= 23#/ft * 5200 * .8092
= 96780.32
= Safety Factor = Rating/Tension 313,000/96780.32 = 3.23

6. Mud Program:

Drilling mud will be used as the circulation medium. A fresh water, polymer, gel drilling mud will be used and visual monitoring will be done from spud to total depth. The anticipated mud weight will be between 8.5 - 13ppg.. Sufficient quantities of lost circulation material and barite will be available at the well site at all times for the purpose of assuring well control.

7. Cementing Program:

The following is the proposed procedure for cementing the 10 ¾" surface pipe and 7" long string:

Surface casing:
Lead: Class "C" Type III, 14.4ppg., yield 1.44ft^3/sk @ 101% excess.
Compressive strength in 24 hours at 80^0F 3100psi.

#1591-8I	263 sacks of cement
#1591-9I	237 sacks of cement

The surface casing shall be cemented back to surface. In the event cement does not circulate to surface or fall back of the cement column occurs, remedial cementing shall be done to cement the casing back to surface.

Long string:
Lead: Class "C" Type III, 14.4ppg., yield 1.44ft^3/sk @ 35% excess.
Compressive strength in 24 hours at137^0F 3480psi.

#1591-8I	1290 sacks of cement
#1591-9I	1166 sacks of cement

Estimated top of cement back to surface.

8. Logging Program:

Logs: Induction, GR, SP, Density - Neutron and Caliper – From surface to TD
Cement Bond Log – From 10 ¾" casing shoe to TD
Mud Logger – From 10 ¾" casing shoe to TD

9. Pressure Data, Potential Hazards:

Bottom hole pressures anticipated to be 1000 – 1150psi.
There is no history of hydrogen sulfide gas in the area and none is anticipated.

10. Anticipated Starting Dates and Notification of Operations:

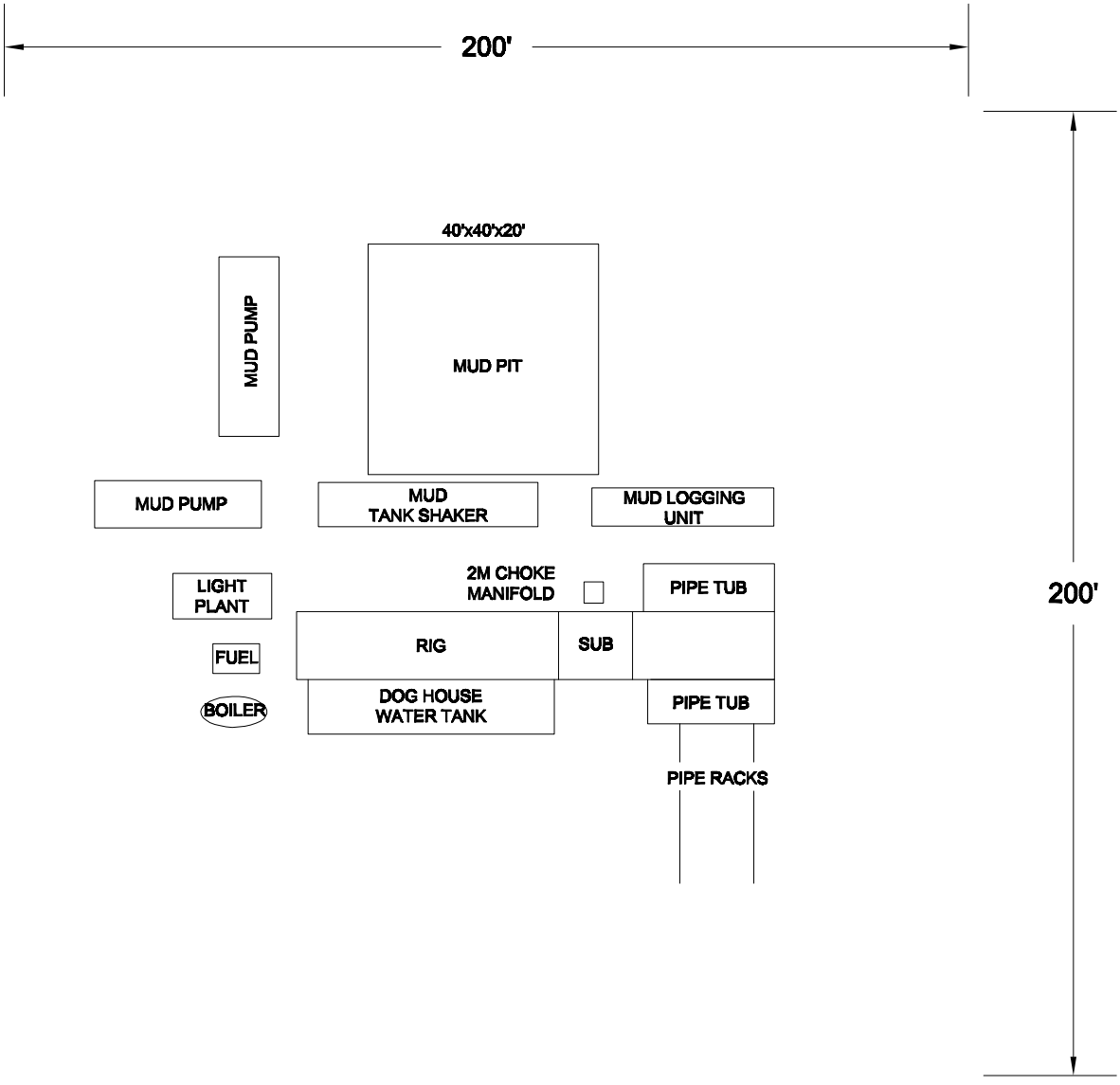
A. Anticipated Starting Dates:

Anticipated Commencement Date	-Spring 2002, or upon approval
Drilling Days	-Approximately 7 Days Per Well
Completion Days	-Approximately 2 Days Per Well
Testing Days	-Approximately 7 – 14 Days Per Well

Note: Drilling operations will commence as soon a practical after approval of all necessary permits including the APD's.

B. Notification of Operations:

Rawlins Field Office, BLM
1300 North Third
Rawlins, WY 82301
(307) 328-4200

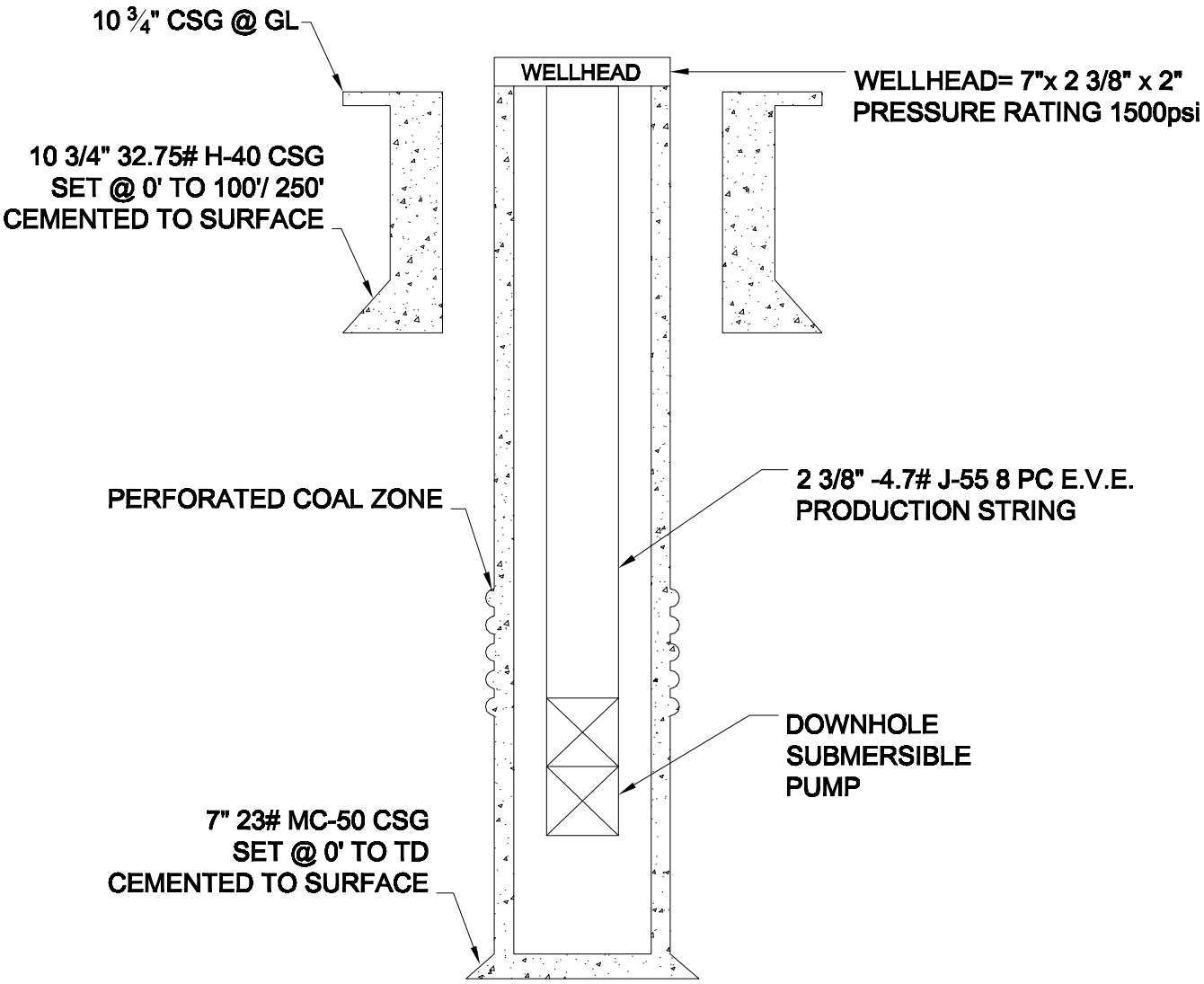


PETROLUEM DEVELOPMENT CORP.

TYPICAL DRILLSITE LAYOUT

SCALE: NTS	DATE: 5.18.01	DRAWN BY: ML	FIGURE: -

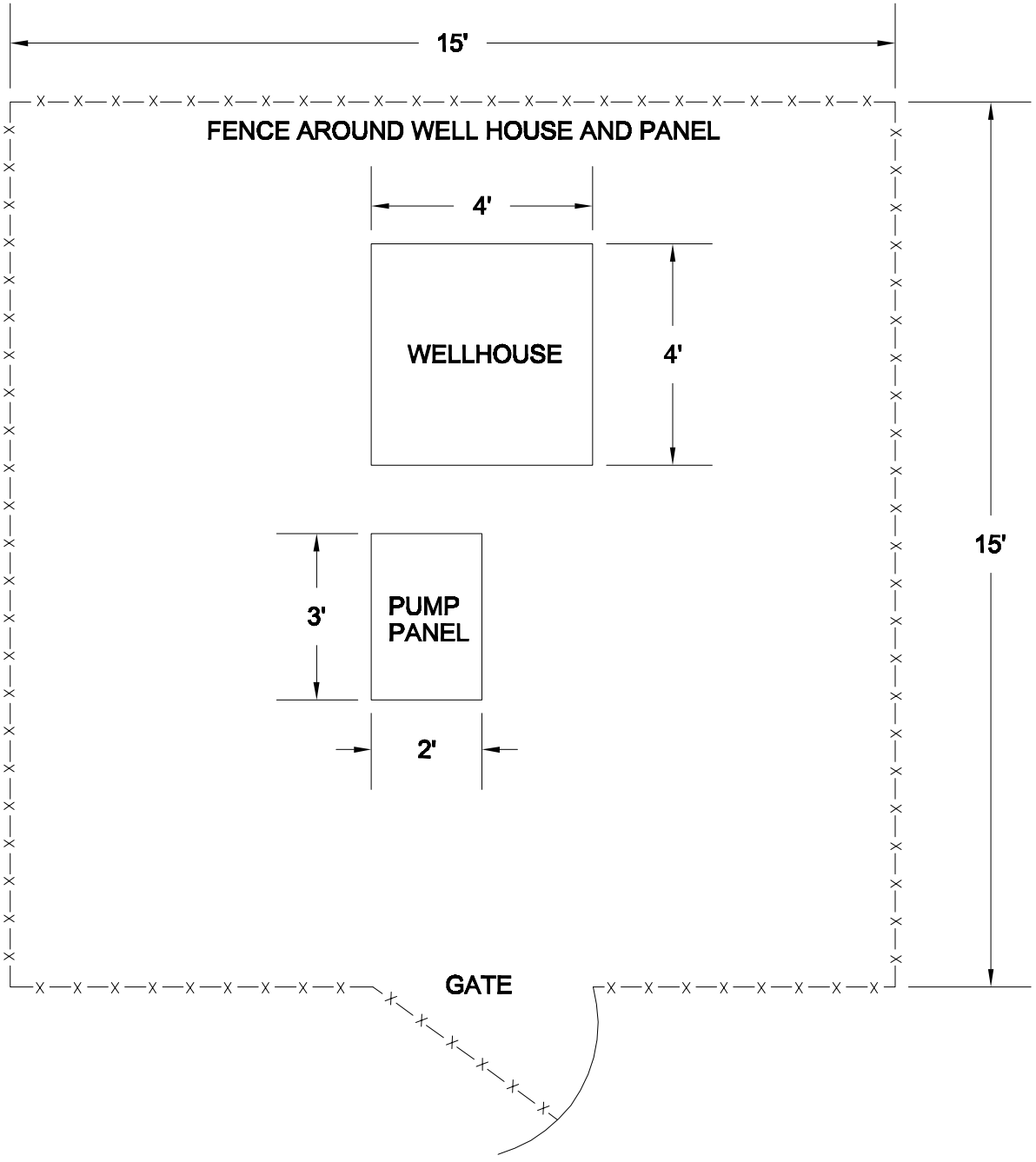
1172/Exhibit A



PETROLUEM DEVELOPMENT CORP.

TYPICAL CBM COMPLETED WELL

SCALE: NTS	DATE: 05.04.01	DRAWN BY: MTM	FIGURE: 4



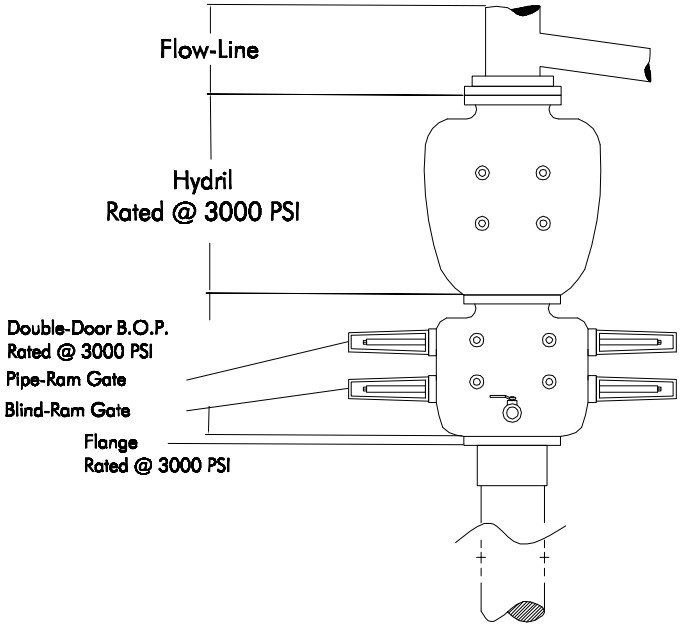
PETROLUEM DEVELOPMENT CORP.

TYPICAL CBM WELL SITE

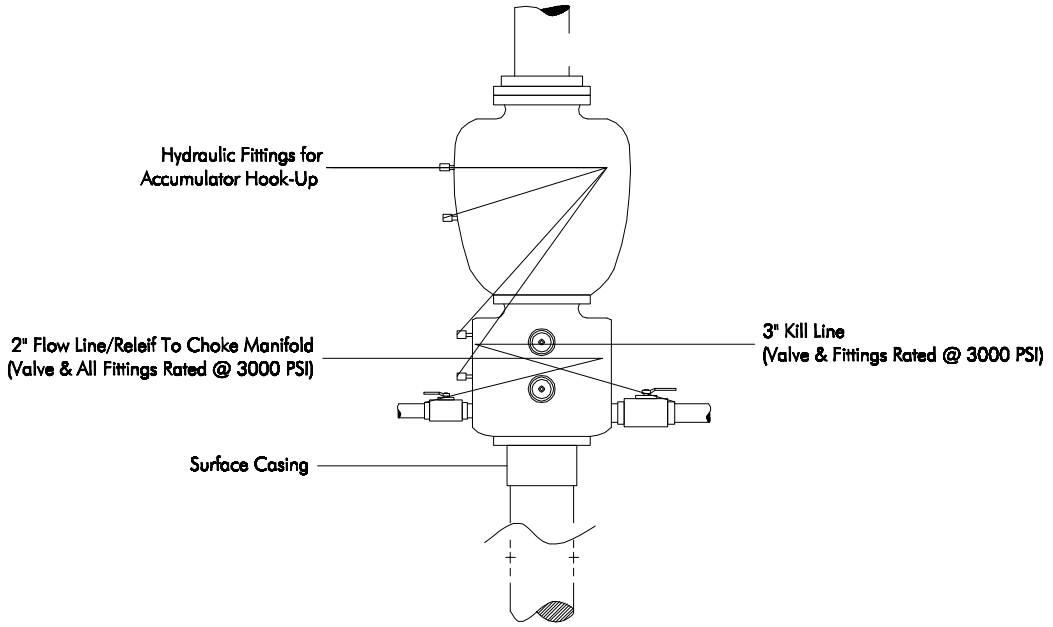
SCALE: NTS	DATE: 05.04.01	DRAWN BY: MTM	FIGURE: 5

1172/Exhibit A

Front View



Side View



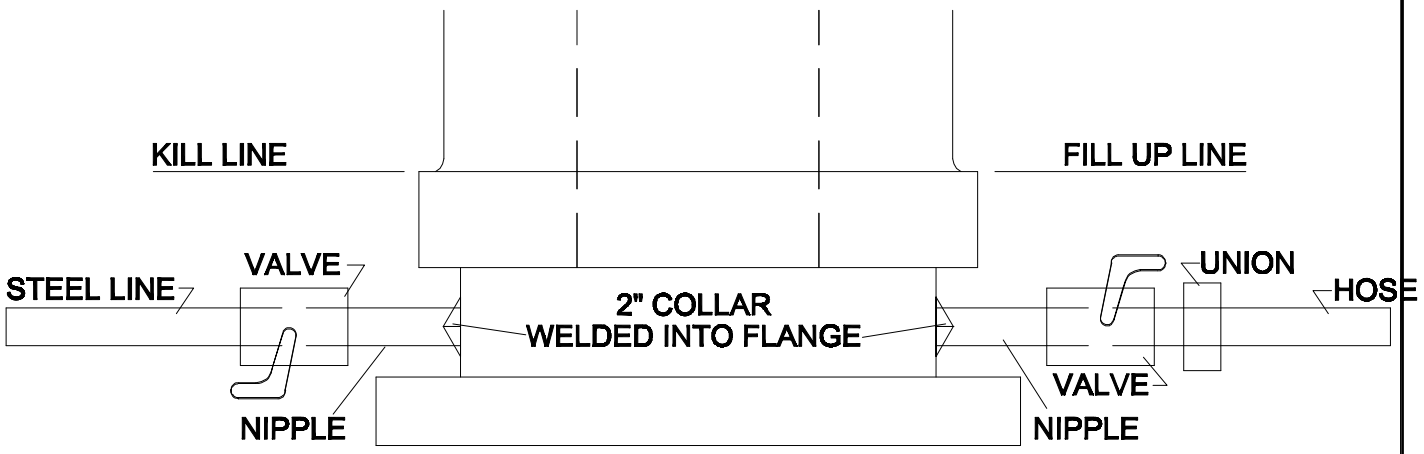
*Note: All Valves, Fittings, Unions and Hoses Associated with the Stack will be rated @ 3000 PSI and Tested @ 1000 PSI

PETROLUEM DEVELOPMENT CORP.

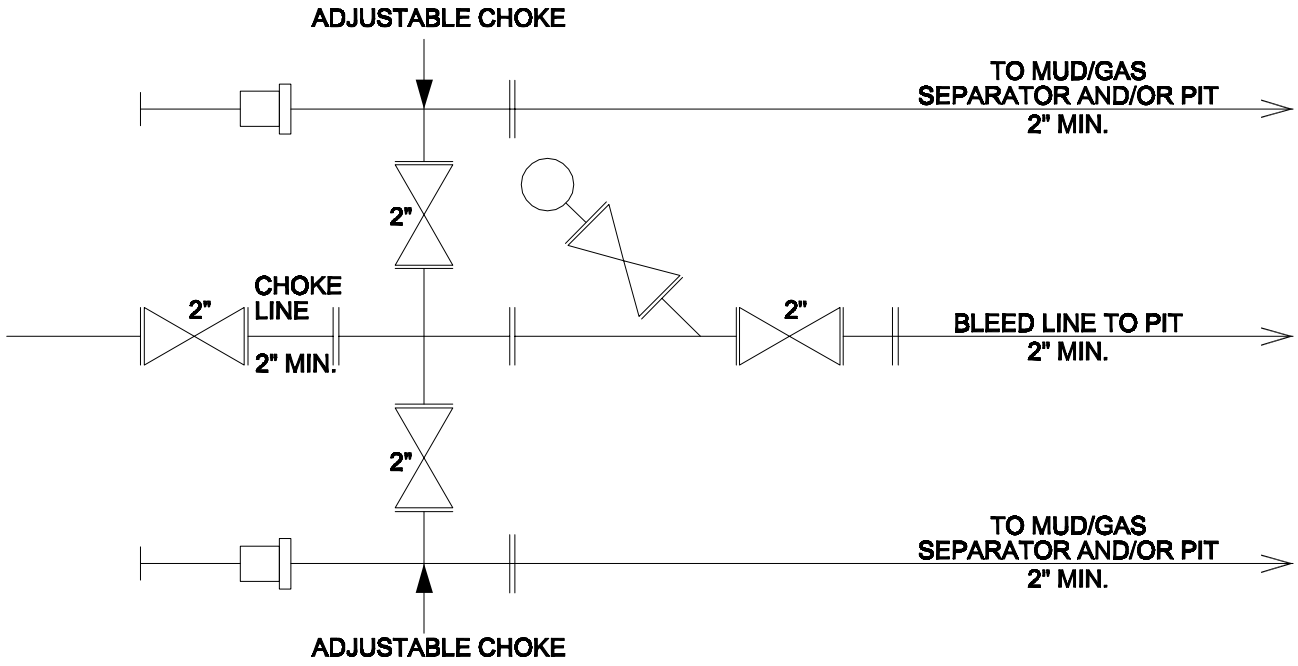
TYPICAL BLOW-OUT PREVENTION STACK

SCALE: NTS	DATE: 11.13.01	DRAWN BY: PBE	FIGURE: ???

BOTTOM FLANGE ON ANNULAR B.O.P.



2M CHOKE MANIFOLD EQUIPMENT



SPECIFICATIONS

10" - 900 FLANGES ON B.O.P.
10" - 900 FLANGES ON ROTATING HEAD
6" - 600 FLANGES ON FLOWLINE
2" - COLLAR ON EACH SIDE OF B.O.P. AT BOTTOM

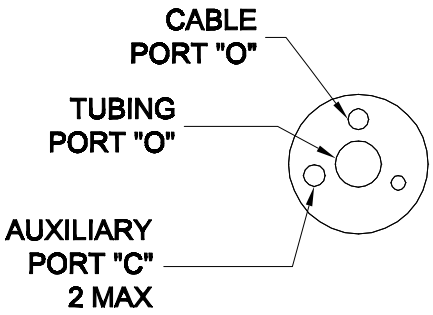
PETROLUEM DEVELOPMENT CORP.

SCHEMATIC

BOTTOM FLANGE ON ANNULAR B.O.P. &
2M CHOKE MANIFOLD EQUIPMENT

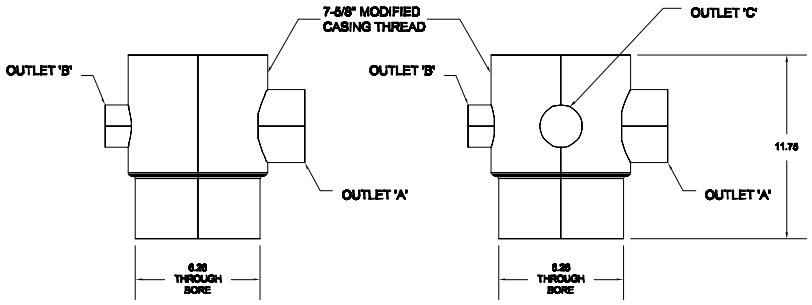
SCALE: as noted	DATE: 05.04.01	DRAWN BY: MTM	FIGURE: 2

MANDREL STYLE



GS-3 / GS-4
CENTERED HANGER
WITH CABLE PORT &
UP TO 2 AUX PORTS

BODY STYLES



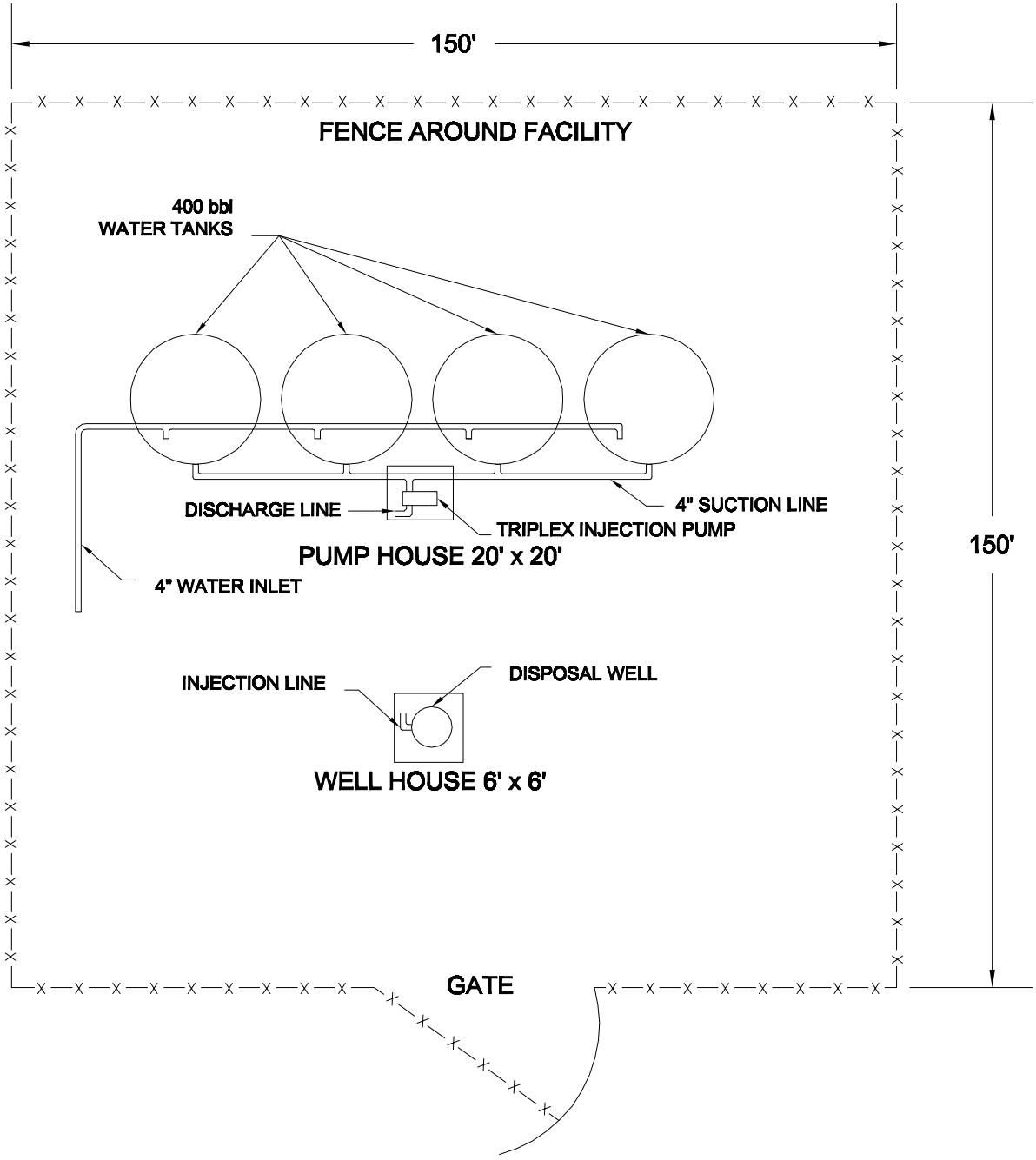
Standard Body Configurations				
Body Style	Bottom Connection	Outlet "A"	Outlet "B"	Outlet "C"
4 x 2	7" Short Casing (Male or Female)	4' LP Female	2" LP Female	NA
4 x 3	7" Short Casing (Male or Female)	4" LP Female	3" LP Female	NA
4 x 2 x 2	7" Short Casing (Male or Female)	4" LP Female	2" LP Female	2" LP Female

Standard Mandrel Configurations				
Mandrel Style	Port "C"	Port "D"	Port "E"	Approx Wt - LBS
GS-3	2-3/8" UPTBG Box Down X	1" LP	(1) 1/2" LP Box Up	26
GS-4	2-3/8" UPTBG Box Up	Box Up	(2) 1/2" LP Box Up	26

PETROLUEM DEVELOPMENT CORP.

CONFIGURATION OPTIONS

SCALE: NTS | DATE: 05.04.01 | DRAWN BY: MTM | FIGURE: 3



PETROLUEM DEVELOPMENT CORP.

TYPICAL WATER DISPOSAL FACILITY

SCALE: NTS	DATE: 05.04.01	DRAWN BY: MTM	FIGURE: 8

1172/Exhibit A