APD ID: 10400028923 **Submission Date:** 04/02/2018

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: GAUCHO 21 FED **Well Number:** 7H

Well Type: OIL WELL **30-025-45238** **Well Work Type:** Drill

Highlighted data reflects the most recent changes

Show Final Text

Section 1 - General

APD ID: 10400028923 **Tie to previous NOS?** **Submission Date:** 04/02/2018

BLM Office: CARLSBAD **User:** Rebecca Deal **Title:** Regulatory Compliance Professional

Federal/Indian APD: FED **Is the first lease penetrated for production Federal or Indian?** FED

Lease number: NMNM043564 **Lease Acres:** 1920

Surface access agreement in place? **Allotted?** **Reservation:**

Agreement in place? NO **Federal or Indian agreement:**

Agreement number:

Agreement name:

Keep application confidential? YES

Permitting Agent? NO **APD Operator:** DEVON ENERGY PRODUCTION COMPANY LP

Operator letter of designation:

OCD – HOBBS
09/27/2018
RECEIVED

Operator Info

Operator Organization Name: DEVON ENERGY PRODUCTION COMPANY LP

Operator Address: 333 West Sheridan Avenue **Zip:** 73102

Operator PO Box:

Operator City: Oklahoma City **State:** OK

Operator Phone: (405)552-6571

Operator Internet Address:

Section 2 - Well Information

Well in Master Development Plan? EXISTING **Mater Development Plan name:** Gaucho 1 MDP

Well in Master SUPO? NO **Master SUPO name:**

Well in Master Drilling Plan? NO **Master Drilling Plan name:**

Well Name: GAUCHO 21 FED **Well Number:** 7H **Well API Number:**

Field/Pool or Exploratory? Field and Pool **Field Name:** WC-025 G-06 S223421L; BONE SPRING **Pool Name:** BONE SPRING

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: GAUCHO 21 FED **Well Number:** 7H

Is the proposed well in an area containing other mineral resources? NATURAL GAS,OIL

Describe other minerals:

Is the proposed well in a Helium production area? N **Use Existing Well Pad?** NO **New surface disturbance?**

Type of Well Pad: MULTIPLE WELL **Multiple Well Pad Name:** GAUCHO 21-21 PAD **Number:** 2

Well Class: HORIZONTAL **Number of Legs:** 1

Well Work Type: Drill

Well Type: OIL WELL

Describe Well Type:

Well sub-Type: INFILL

Describe sub-type:

Distance to town: **Distance to nearest well:** 3200 FT **Distance to lease line:** 175 FT

Reservoir well spacing assigned acres Measurement: 160 Acres

Well plat: Gaucho_21_Fed_7H_C_102_Rev_20180613092539.pdf

Well work start Date: 12/30/2018 **Duration:** 45 DAYS

Section 3 - Well Location Table

Survey Type: RECTANGULAR

Describe Survey Type:

Datum: NAD83 **Vertical Datum:** NAVD88

Survey number: 6103

	NS-Foot	NS Indicator	EW-Foot	EW Indicator	Twsp	Range	Section	Aliquot/Lot/Tract	Latitude	Longitude	County	State	Meridian	Lease Type	Lease Number	Elevation	MD	TVD
SHL Leg #1	326	FSL	545	FEL	22S	34E	21	Aliquot SESE	32.3708257	-103.4682176	LEA	NEW MEXICO	NEW MEXICO	F	NMNM 043564	3428	0	0
KOP Leg #1	326	FSL	1580	FEL	22S	34E	21	Aliquot SESE	32.3699327	-103.4715293	LEA	NEW MEXICO	NEW MEXICO	F	NMNM 043564	-6333	9851	9761
PPP Leg #1	326	FSL	1580	FEL	22S	34E	21	Aliquot SESE	32.3708257	-103.4715293	LEA	NEW MEXICO	NEW MEXICO	F	NMNM 043564	-6886	10600	10314

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: GAUCHO 21 FED **Well Number:** 7H

	NS-Foot	NS Indicator	EW-Foot	EW Indicator	Twsp	Range	Section	Aliquot/Lot/Tract	Latitude	Longitude	County	State	Meridian	Lease Type	Lease Number	Elevation	MD	TVD
EXIT Leg #1	330	FNL	1580	FEL	22S	34E	21	Aliquot NENE	32.3835477	-103.4715293	LEA	NEW MEXICO	NEW MEXICO	F	NMNM 043564	-6966	15074	10394
BHL Leg #1	330	FNL	1580	FEL	22S	34E	21	Aliquot NWNE	32.3835477	-103.4715293	LEA	NEW MEXICO	NEW MEXICO	F	NMNM 043564	-6966	15074	10394

APD ID: 10400028923 **Submission Date:** 04/02/2018

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: GAUCHO 21 FED **Well Number:** 7H

Well Type: OIL WELL **Well Work Type:** Drill

Highlighted data reflects the most recent changes

Show Final Text

Section 1 - Geologic Formations

Formation ID	Formation Name	Elevation	True Vertical Depth	Measured Depth	Lithologies	Mineral Resources	Producing Formation
1	UNKNOWN	3472	0	0	OTHER : Surface	NONE	No
2	RUSTLER	1832	1640	1640	SANDSTONE	NATURAL GAS,OIL	No
3	TOP OF SALT	1547	1925	1925	SALT	NONE	No
4	BASE OF SALT	-228	3700	3700	SALT	NONE	No
5	YATES	-458	3930	3930	SANDSTONE	NONE	No
6	DELAWARE	-1784	5256	5256	SANDSTONE	NATURAL GAS,OIL	No
7	CHERRY CANYON	-2544	6016	6016	SANDSTONE	NATURAL GAS,OIL	No
8	LOWER BRUSHY CANYON 8A	-4792	8264	8264	SANDSTONE	NATURAL GAS,OIL	No
9	BONE SPRING LIME	-4971	8443	8443	LIMESTONE	NATURAL GAS,OIL	No
10	BONE SPRING 1ST	-6025	9497	9497	SANDSTONE	NATURAL GAS,OIL	No
11	BONE SPRING 2ND	-6574	10046	10046	SANDSTONE	NATURAL GAS,OIL	No

Section 2 - Blowout Prevention

Pressure Rating (PSI): 3M **Rating Depth:** 5100

Equipment: BOP/BOPE will be installed per Onshore Oil & Gas Order #2 requirements prior to drilling below 13-3/8” surface casing, a 13-5/8" BOP/BOPE system with a minimum rating of 3M will be installed on the wellhead system. BOP/BOPE will be tested by an independent service company per Onshore Oil & Gas Order #2 requirements and MASP (Maximum Anticipated Surface Pressure) calculations. If the system is upgraded, all the components installed will be functional and tested.

Requesting Variance? YES

Variance request: A variance is requested for the use of a flexible choke line from the BOP stack to the choke manifold. See attached for specs for hydrostatic test chart.

Testing Procedure: A multibowl wellhead may be used. The BOP will be tested per Onshore Order #2 after installation on the surface casing which will cover testing requirements for a maximum of 30 days. If any seal subject to test pressure is

broken the system must be tested.

Choke Diagram Attachment:

Gaucho_21_Fed_7H_3M_BOPE_CK_20180402124739.pdf

BOP Diagram Attachment:

Gaucho_21_Fed_7H_3M_BOPE_CK_20180402124808.pdf

Pressure Rating (PSI): 3M **Rating Depth:** 10390

Equipment: BOP/BOPE will be installed per Onshore Oil & Gas Order #2 requirements prior to drilling below 13-3/8" surface casing, a 13-5/8" BOP/BOPE system with a minimum rating of 3M will be installed on the wellhead system. BOP/BOPE will be tested by an independent service company per Onshore Oil & Gas Order #2 requirements and MASP (Maximum Anticipated Surface Pressure) calculations. If the system is upgraded, all the components installed will be functional and tested.
Requesting Variance? YES

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Choke Diagram Attachment:

Gaucho_21_Fed_7H_3M_BOPE_CK_20180402124949.pdf

BOP Diagram Attachment:

Gaucho_21_Fed_7H_3M_BOPE_CK_20180402125015.pdf

Section 3 - Casing

Casing ID	String Type	Hole Size	Csg Size	Condition	Standard	Tapered String	Top Set MD	Bottom Set MD	Top Set TVD	Bottom Set TVD	Top Set MSL	Bottom Set MSL	Calculated casing length MD	Grade	Weight	Joint Type	Collapse SF	Burst SF	Joint SF Type	Joint SF	Body SF Type	Body SF
1	SURFACE	17.5	13.375	NEW	API	N	0	1625	0	1625	-7874	-9474	1625	H-40	48	STC	1.125	1	BUOY	1.6	BUOY	1.6
2	INTERMEDIATE	12.25	9.625	NEW	API	N	0	5100	0	5100	-7874	-12874	5100	J-55	40	OTHER - BTC	1.125	1	BUOY	1.6	BUOY	1.6
3	PRODUCTION	8.75	5.5	NEW	API	N	0	15074	0	10394	-7874	-7939	15074	P-110	17	OTHER - BTC	1.125	1	BUOY	1.6	BUOY	1.6

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: GAUCHO 21 FED **Well Number:** 7H

Casing Attachments

Casing ID: 1 **String Type:** SURFACE

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Gaucho_21_Fed_7HG_Surf_Csg_Ass_20180402133730.pdf

Casing ID: 2 **String Type:** INTERMEDIATE

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Gaucho_21_Fed_7H_Int_Csg_Ass_20180402133748.pdf

Casing ID: 3 **String Type:** PRODUCTION

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Gaucho_21_Fed_7H_Prod_Csg_Ass_20180402133809.pdf

Section 4 - Cement

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: GAUCHO 21 FED **Well Number:** 7H

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
SURFACE	Lead		0	1102	675	1.74	12.5	1172	50	C	0.125 lbs/sack Poly-F-Flake
SURFACE	Tail		1102	1602	391	1.33	14.8	521	50	C	0.125 lbs/sack Poly-F-Flake
INTERMEDIATE	Lead		0	4100	823	1.94	12.5	1597	30	C	(65:35) Class C Cement: Poz (Fly Ash): 6% BWOC Bentonite + 5% BWOW Sodium Chloride + 0.125 lbs/sks Poly-E-Flake
INTERMEDIATE	Tail		4100	5100	319	1.33	14.8	425	30	C	0.125 lbs/sks Poly-F-Flake
PRODUCTION	Lead		4900	9767	516	3.57	9	1535	10	Tuned	Tuned Light
PRODUCTION	Tail		9851	15074	921	1.46	13.2	1345	10	NeoCem	NeoCem

Section 5 - Circulating Medium

Mud System Type: Closed

Will an air or gas system be Used? NO

Description of the equipment for the circulating system in accordance with Onshore Order #2:

Diagram of the equipment for the circulating system in accordance with Onshore Order #2:

Describe what will be on location to control well or mitigate other conditions: Sufficient mud materials to maintain mud properties and meet minimum lost circulation and weight increase requirements will be kept on location at all times.

Describe the mud monitoring system utilized: PVT/Pason/Visual Monitoring

Circulating Medium Table

Top Depth	Bottom Depth	Mud Type	Min Weight (lbs/gal)	Max Weight (lbs/gal)	Density (lbs/cu ft)	Gel Strength (lbs/100 sqft)	PH	Viscosity (CP)	Salinity (ppm)	Filtration (cc)	Additional Characteristics
0	1602	WATER-BASED MUD	8.5	8.8				2			

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: GAUCHO 21 FED **Well Number:** 7H

Top Depth	Bottom Depth	Mud Type	Min Weight (lbs/gal)	Max Weight (lbs/gal)	Density (lbs/cu ft)	Gel Strength (lbs/100 sqft)	PH	Viscosity (CP)	Salinity (ppm)	Filtration (cc)	Additional Characteristics
1602	5100	SALT SATURATED	10	10.2				2			
5100	14819	WATER-BASED MUD	8.5	8.8				2			

Section 6 - Test, Logging, Coring

List of production tests including testing procedures, equipment and safety measures:

Will run GR/CNL fromTD to surface (horizontal well – vertical portion of hole). Stated logs run will be in the Completion Report and submitted to the BLM.

List of open and cased hole logs run in the well:

GR

Coring operation description for the well:

N/A

Section 7 - Pressure

Anticipated Bottom Hole Pressure: 4756 **Anticipated Surface Pressure:** 2469.32

Anticipated Bottom Hole Temperature(F): 165

Anticipated abnormal pressures, temperatures, or potential geologic hazards? NO

Describe:

Contingency Plans geoharzards description:

Contingency Plans geohazards attachment:

Hydrogen Sulfide drilling operations plan required? YES

Hydrogen sulfide drilling operations plan:

Gaucho_21_Fed__7H_H2S_Plan_20180402093229.pdf

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: GAUCHO 21 FED **Well Number:** 7H

Section 8 - Other Information

Proposed horizontal/directional/multi-lateral plan submission:

Gaucho_21_Fed_7H_Dir_Svy_20180329102402.pdf

Other proposed operations facets description:

MULTI-BOWL VERBIAGE
MULTI-BOWL WELLHEAD
CLOSED-LOOP DESIGN PLAN
ANTICOLLISION PLAN

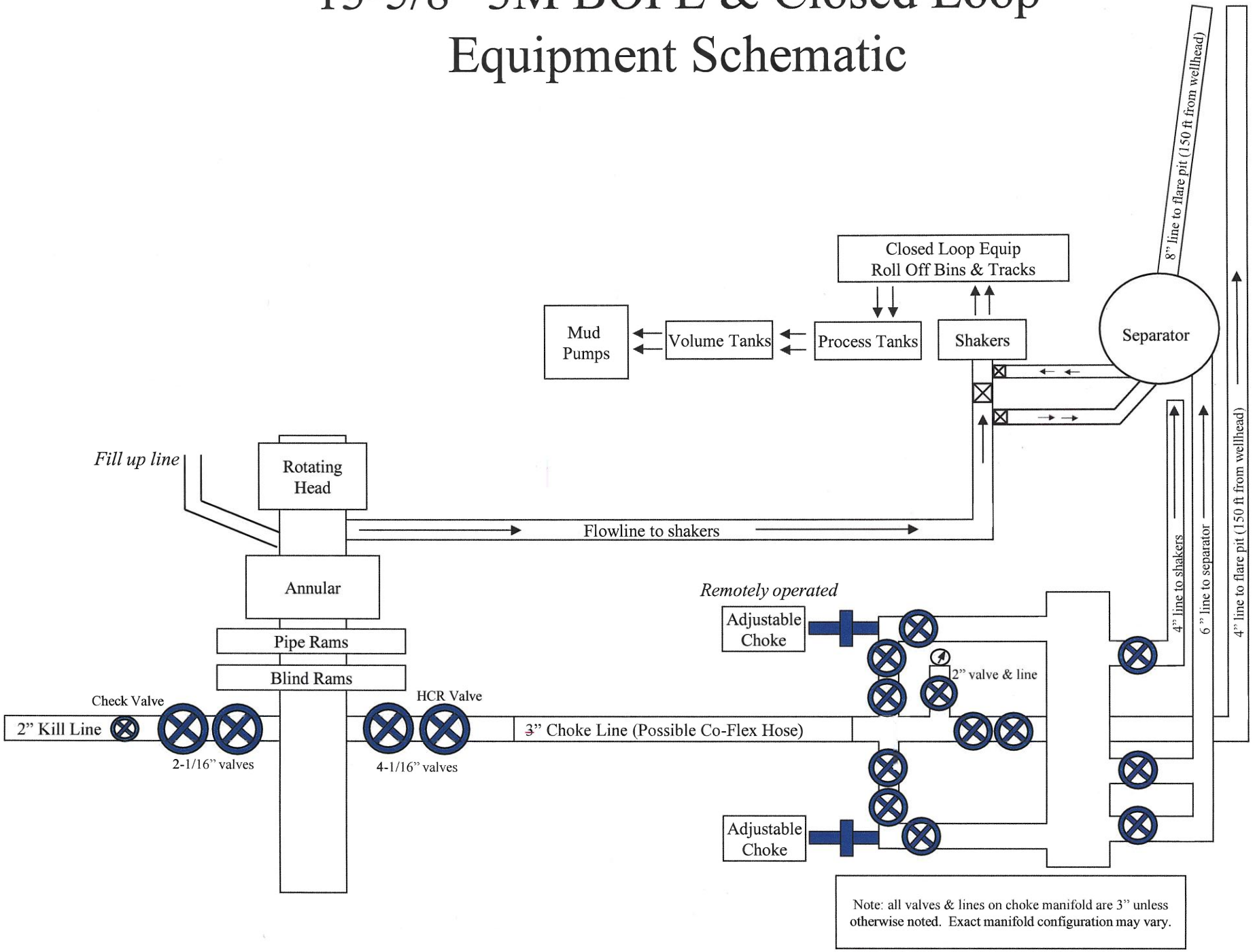
Other proposed operations facets attachment:

Gaucho_21_Fed_7H_MB_Wellhd_3M_20180329101707.pdf
Gaucho_21_Fed_7H_Clsd_Loop_20180329101834.pdf
Gaucho_21_Fed_7H_MB_Verb_3M_20180329102702.pdf
Gaucho_21_Fed_7H_Drlg_Plan_20180329103150.pdf
Gaucho_21_Fed_7H_GCP_20180613092553.pdf
GAUCHO_21_FED_7H_Spudder_Rig_Info_20180613092747.pdf

Other Variance attachment:

Gaucho_21_Fed_7H_Co_flex_20180329103243.pdf

13-5/8" 3M BOPE & Closed Loop Equipment Schematic



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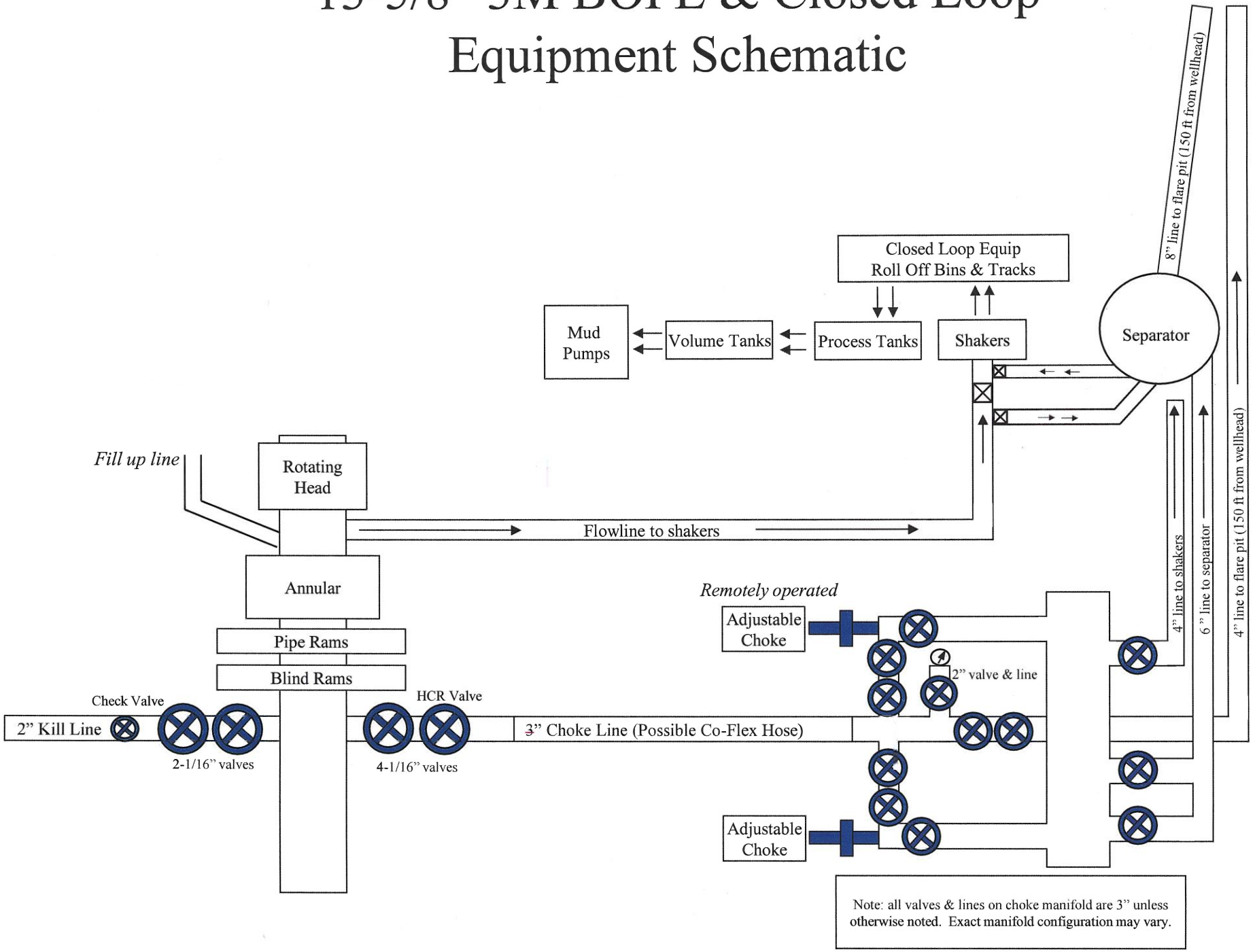

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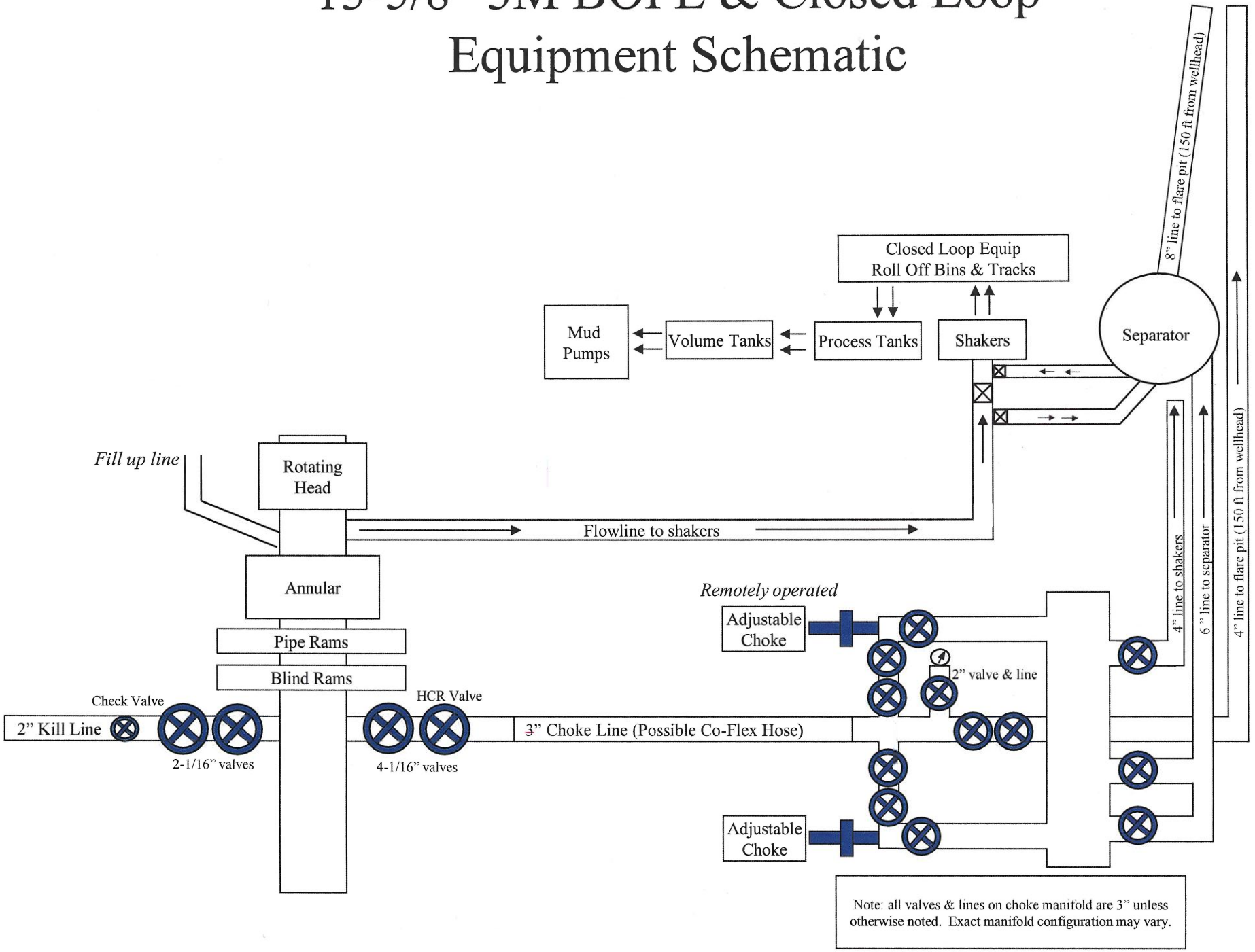

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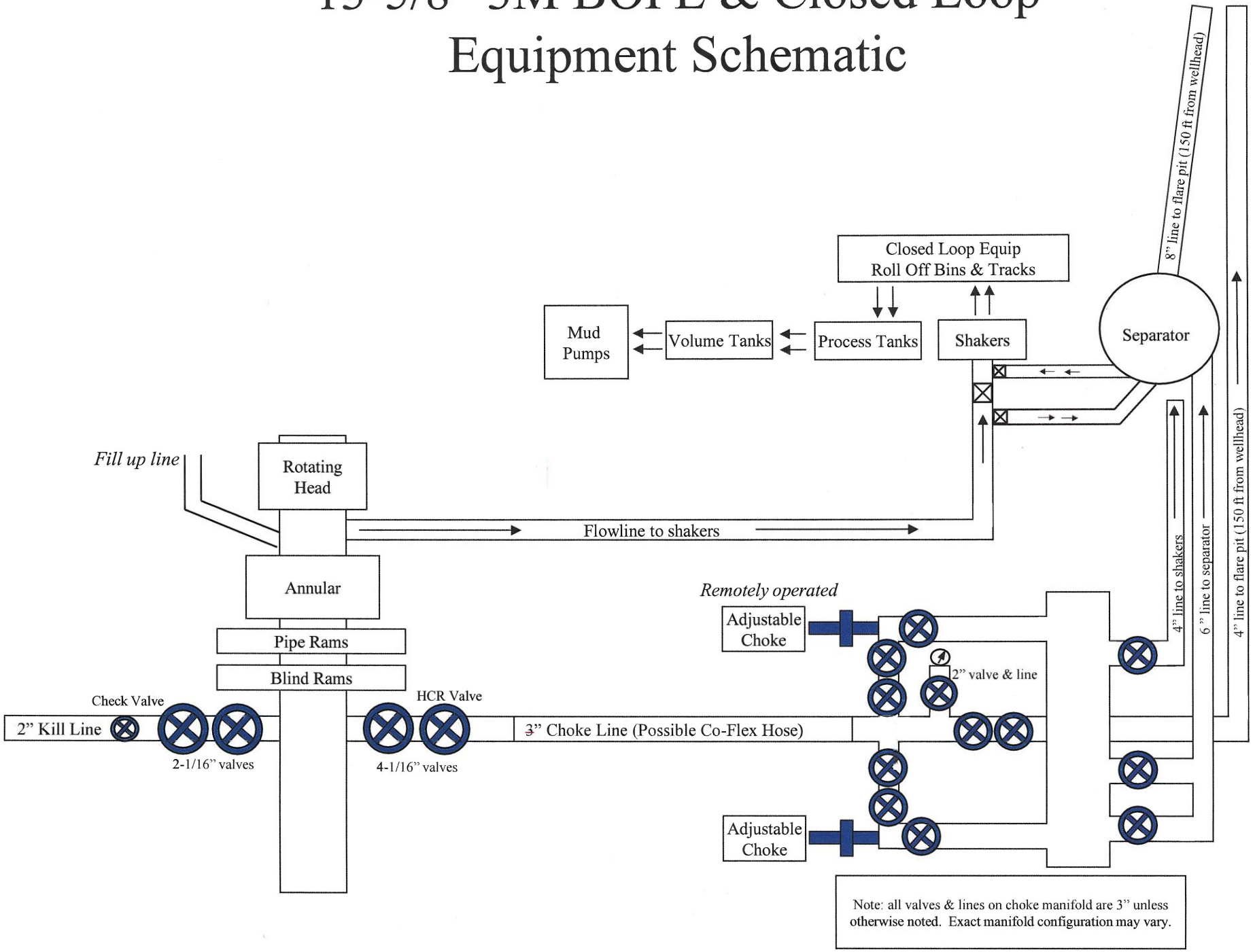

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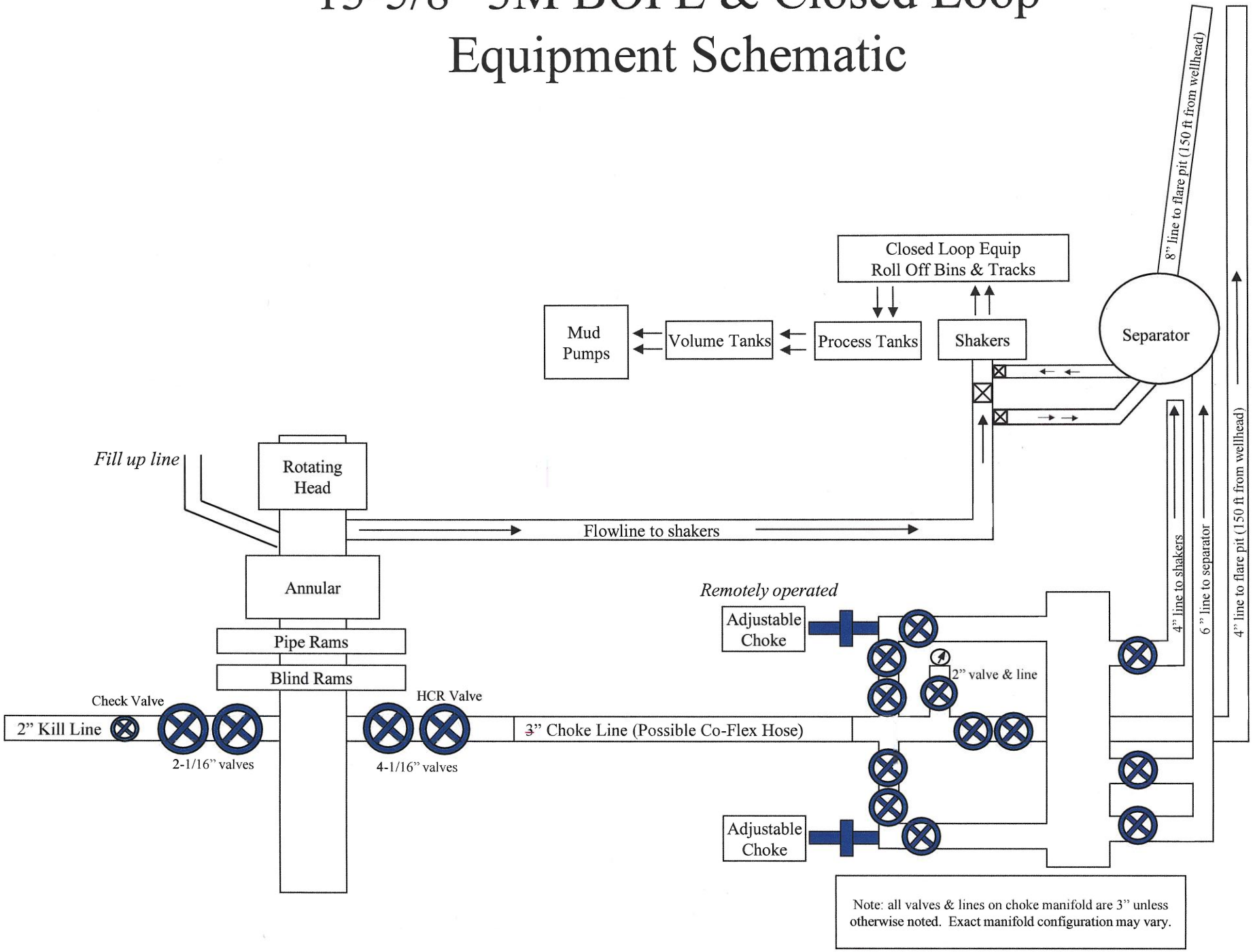

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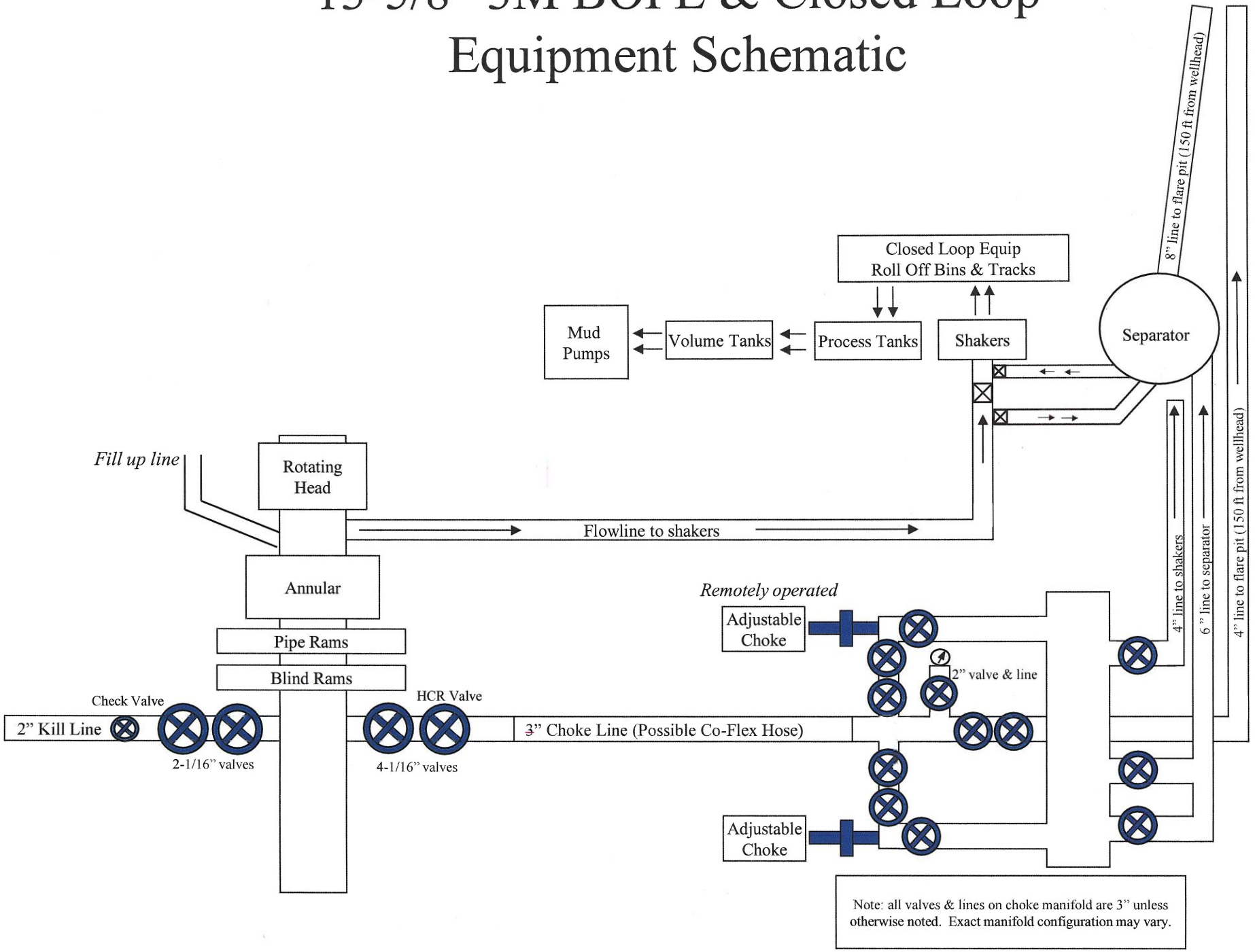

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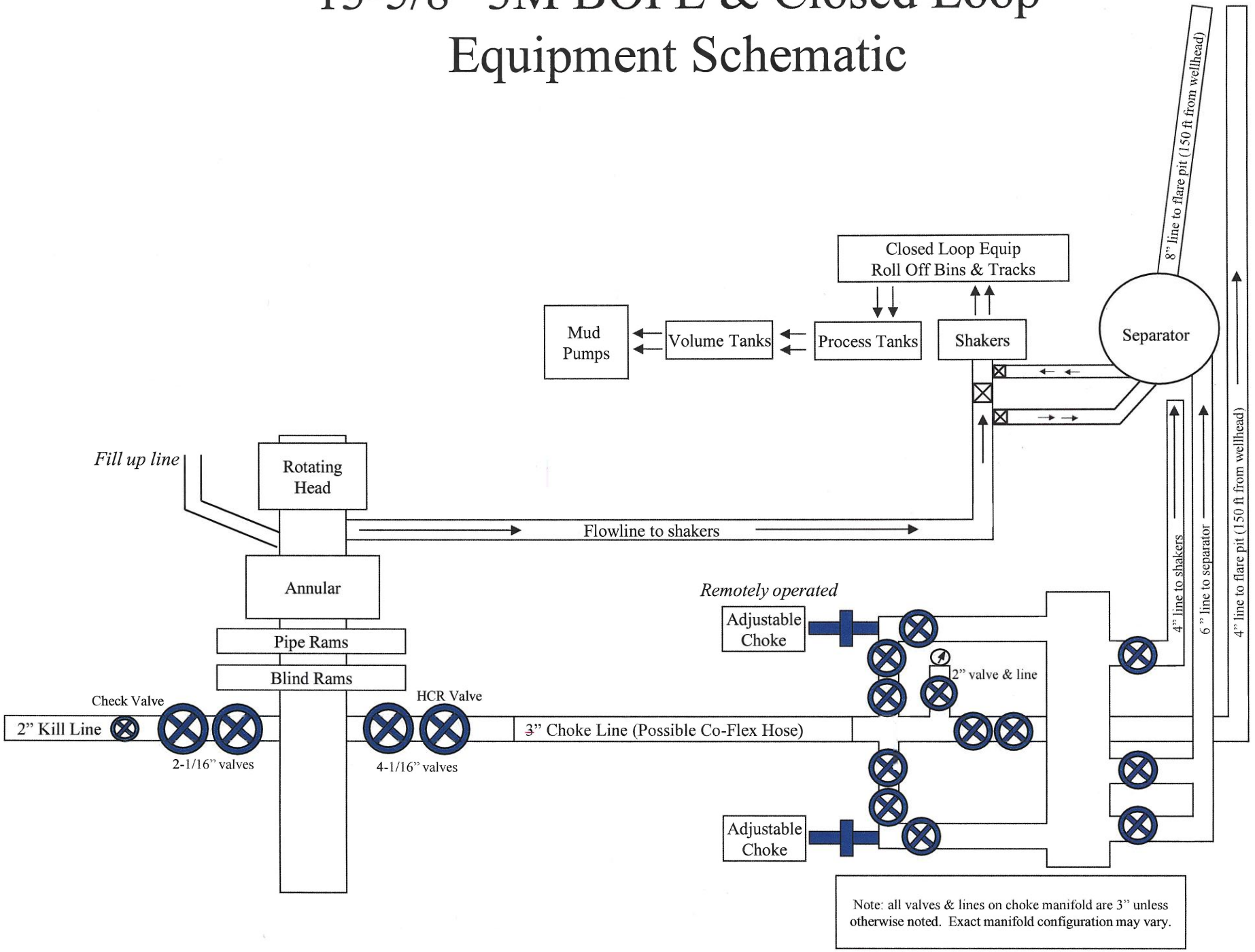

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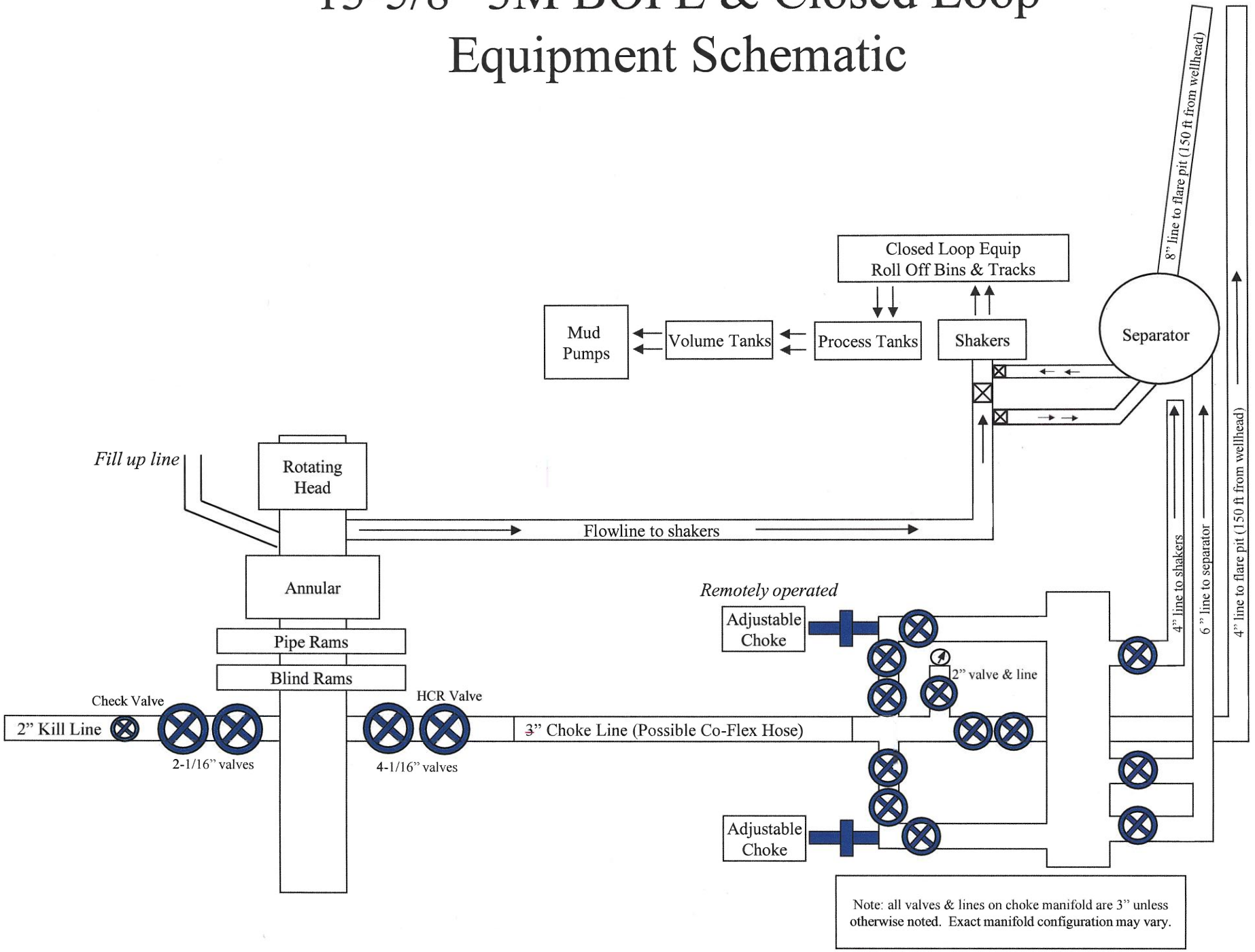

Casing Assumptions and Load Cases

Surface

All casing design assumptions were ran in Stress Check to determine safety factor which meet or exceed both Devon Energy and BLM minimum requirements. All casing strings will be filled while running in hole in order to not exceed collapse rating of the pipe.

Surface Casing Burst Design		
Load Case	**External Pressure**	**Internal Pressure**
Pressure Test	Formation Pore Pressure	Max mud weight of next hole-section plus Test psi
Drill Ahead	Formation Pore Pressure	Max mud weight of next hole section
Displace to Gas	Formation Pore Pressure	Dry gas from next casing point

Surface Casing Collapse Design		
Load Case	**External Pressure**	**Internal Pressure**
Full Evacuation	Water gradient in cement, mud above TOC	None
Cementing	Wet cement weight	Water (8.33ppg)

Surface Casing Tension Design	
Load Case	**Assumptions**
Overpull	100kips
Runing in hole	3 ft/s
Service Loads	N/A

Casing Assumptions and Load Cases

Intermediate

All casing design assumptions were ran in Stress Check to determine safety factor which meet or exceed both Devon Energy and BLM minimum requirements. All casing strings will be filled while running in hole in order to not exceed collapse rating of the pipe.

Intermediate Casing Burst Design		
Load Case	**External Pressure**	**Internal Pressure**
Pressure Test	Formation Pore Pressure	Max mud weight of next hole-section plus Test psi
Drill Ahead	Formation Pore Pressure	Max mud weight of next hole section
Fracture @ Shoe	Formation Pore Pressure	Dry gas

Intermediate Casing Collapse Design		
Load Case	**External Pressure**	**Internal Pressure**
Full Evacuation	Water gradient in cement, mud above TOC	None
Cementing	Wet cement weight	Water (8.33ppg)

Intermediate Casing Tension Design	
Load Case	**Assumptions**
Overpull	100kips
Runing in hole	2 ft/s
Service Loads	N/A

Casing Assumptions and Load Cases

Production

All casing design assumptions were ran in Stress Check to determine safety factor which meet or exceed both Devon Energy and BLM minimum requirements. All casing strings will be filled while running in hole in order to not exceed collapse rating of the pipe.

Production Casing Burst Design		
Load Case	**External Pressure**	**Internal Pressure**
Pressure Test	Formation Pore Pressure	Fluid in hole (water or produced water) + test psi
Tubing Leak	Formation Pore Pressure	Packer @ KOP, leak below surface 8.6 ppg packer fluid
Stimulation	Formation Pore Pressure	Max frac pressure with heaviest frac fluid

Production Casing Collapse Design		
Load Case	**External Pressure**	**Internal Pressure**
Full Evacuation	Water gradient in cement, mud above TOC.	None
Cementing	Wet cement weight	Water (8.33ppg)

Production Casing Tension Design	
Load Case	**Assumptions**
Overpull	100kips
Runing in hole	2 ft/s
Service Loads	N/A

Casing Assumptions and Load Cases

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Cementing	Wet cement weight	Water (8.33ppg)

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Fracture @ Shoe	Formation Pore Pressure	Dry gas

Intermediate Casing Collapse Design		
Load Case	**External Pressure**	**Internal Pressure**
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Intermediate Casing Tension Design	
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Casing Assumptions and Load Cases

Production

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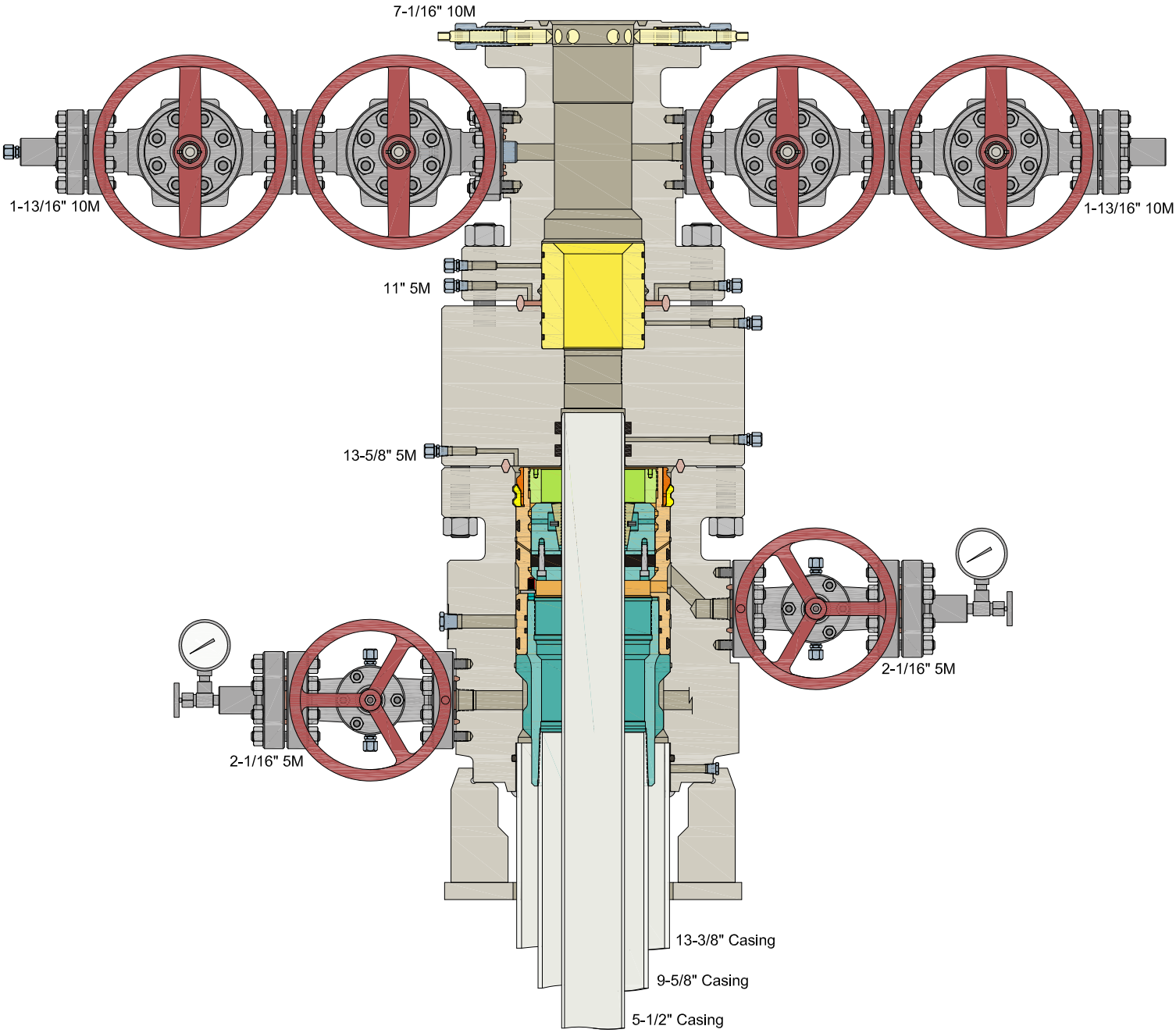
Cementing	Wet cement weight	Water (8.33ppg)

Production Casing Tension Design	
Load Case	**Assumptions**
Overpull	100kips
Runing in hole	2 ft/s
Service Loads	N/A


7-1/16" 10M
1-13/16" 10M
1-13/16" 10M
11" 5M
13-5/8" 5M
2-1/16" 5M
2-1/16" 5M
13-3/8" Casing
9-5/8" Casing
5-1/2" Casing

Devon Energy, Gaucho 21 Fed 7H

1. Geologic Formations

TVD of target	10,394’	Pilot hole depth	N/A
MD at TD:	15,047’	Deepest expected fresh water:	

Basin

Formation	Depth (TVD) from KB	Water/Mineral Bearing/ Target Zone?	Hazards*
Rustler	1606		
Top of Salt	1876		
Base of Salt	3669		
Yates	3839		
Capitan	4181		
Delaware	5284		
Brushy Canyon	5484		
Bone Spring	8503		
1st BSPG Sand	9544		
2nd BSPG Lime	9624		
2nd BSPG Sand	10084		

*H2S, water flows, loss of circulation, abnormal pressures, etc.

2. Casing Program

Hole Size	Casing Interval		Csg. Size	Weight (lbs)	Grade	Conn.
	From	To				
17.5”	0	1,625’	13.375”	48	H-40	STC
12.25”	0	5,100’	9.625”	40	J-55	LTC
8.75”	0	15,074	5.5”	17	P-110	BTC
BLM Minimum Safety Factor				Collapse: 1.125	Burst: 1.00	Tension: 1.6 Dry 1.8 Wet

- All casing strings will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.h
- Rustler top will be validated via drilling parameters (i.e. reduction in ROP) and surface casing setting depth revised accordingly if needed.
- Int casing shoe will be selected based on drilling data / gamma, setting depth with be revised accordingly if needed.

Must have table for contingency casing

	Y or N
Is casing new? If used, attach certification as required in Onshore Order #1	Y
Does casing meet API specifications? If no, attach casing specification sheet.	Y
Is premium or uncommon casing planned? If yes attach casing specification sheet.	N
Does the above casing design meet or exceed BLM’s minimum standards? If not provide justification (loading assumptions, casing design criteria).	Y
Will the intermediate pipe be kept at a minimum 1/3 fluid filled to avoid approaching the collapse pressure rating of the casing?	Y
Is well located within Capitan Reef?	N
If yes, does production casing cement tie back a minimum of 50’ above the Reef?	
Is well within the designated 4 string boundary.	
Is well located in SOPA but not in R-111-P?	N
If yes, are the first 2 strings cemented to surface and 3rd string cement tied back 500’ into previous casing?	
Is well located in R-111-P and SOPA?	N
If yes, are the first three strings cemented to surface?	
Is 2nd string set 100’ to 600’ below the base of salt?	
Is well located in high Cave/Karst?	N
If yes, are there two strings cemented to surface?	
(For 2 string wells) If yes, is there a contingency casing if lost circulation occurs?	
Is well located in critical Cave/Karst?	N
If yes, are there three strings cemented to surface?	

3. Cementing Program

Casing	# Sks	Wt. lb/ gal	H_20 gal/sk	Yld ft3/ sack	500# Comp. Strength (hours)	Slurry Description
13-3/8" Surface	675	12.5	10.654	1.735	31 hr 40 mn	C + Adds
	391	14.8	6.368	1.33	4 hr 48 mn	C + Adds
9-5/8" Inter.	823	12.5	10.654	1.94	31 hr 40 mn	35:65 Poz:C + Adds
	319	14.8	6.352	1.33	5 hr 48 mn	C + Adds
5-1/2" Prod	516	9	15.442	3.569	19 hr 3 mn	C + Adds
	921	13.2	5.175	1.46	9 hr 6 mn	50:50 Poz:H + Adds

If a DV tool is used, depth(s) will be adjusted based on hole conditions and cement volumes will be adjusted proportionally. DV tool will be set a minimum of 50 feet below previous casing and a minimum of 200 feet above current shoe. Lab reports with the 500 psi compressive strength time for the cement will be onsite for review.

Casing String	TOC	% Excess
13-3/8" Surface	0'	50%
9-5/8" Intermediate	0'	30%
5-1/2" Production Casing	4,900'	10%

4. Pressure Control Equipment

N	A variance is requested for the use of a diverter on the surface casing. See attached for schematic.

BOP installed and tested before drilling which hole?	Size?	Min. Required WP	Type	✓	Tested to:
12-1/4"	13-5/8"	3M	Annular	x	50% of working pressure
			Blind Ram		3M
			Pipe Ram		
			Double Ram	x	
			Other*		
8-3/4"	13-5/8"	3M	Annular	x	50% testing pressure
			Blind Ram		3M
			Pipe Ram		
			Double Ram	x	
			Other *		
			Annular		
			Blind Ram		
			Pipe Ram		
			Double Ram		
			Other *		

*Specify if additional ram is utilized.

BOP/BOPE will be tested by an independent service company to 250 psi low and the high pressure indicated above per Onshore Order 2 requirements. The System may be upgraded to a higher pressure but still tested to the working pressure listed in the table above. If the system is upgraded all the components installed will be functional and tested.

Pipe rams will be operationally checked each 24 hour period. Blind rams will be operationally checked on each trip out of the hole. These checks will be noted on the daily tour sheets. Other accessories to the BOP equipment will include a Kelly cock and floor safety valve (inside BOP) and choke lines and choke manifold. See attached schematics.

Y	Formation integrity test will be performed per Onshore Order #2. On Exploratory wells or on that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.i.

Y	A variance is requested for the use of a flexible choke line from the BOP to Choke Manifold. See attached for specs and hydrostatic test chart.	
	Y	Are anchors required by manufacturer?
Y	A multibowl wellhead may be used. The BOP will be tested per Onshore Order #2 after installation on the surface casing which will cover testing requirements for a maximum of 30 days. If any seal subject to test pressure is broken the system must be tested. Devon proposes using a multi-bowl wellhead assembly. This assembly will only be tested when installed on the surface casing. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be 3000 (3M) psi. • Wellhead will be installed by wellhead representatives. • If the welding is performed by a third party, the wellhead representative will monitor the temperature to verify that it does not exceed the maximum temperature of the seal. • Wellhead representative will install the test plug for the initial BOP test. • Wellhead company will install a solid steel body pack-off to completely isolate the lower head after cementing intermediate casing. After installation of the pack-off, the pack-off and the lower flange will be tested to 3M, as shown on the attached schematic. Everything above the pack-off will not have been altered whatsoever from the initial nipple up. Therefore the BOP components will not be retested at that time. • If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head will be cut and top out operations will be conducted. • Devon will pressure test all seals above and below the mandrel (but still above the casing) to full working pressure rating. • Devon will test the casing to 0.22 psi/ft or 1500 psi, whichever is greater, as per Onshore Order #2. After running the 13-3/8" surface casing, a 13-5/8" BOP/BOPE system with a minimum rating of 3M will be installed on the wellhead system and will undergo a 250 psi low pressure test followed by a 3,000 psi high pressure test. The 3,000 psi high and 250 psi low test will cover testing requirements a maximum of 30 days, as per Onshore Order #2. If the well is not complete within 30 days of this BOP test, another full BOP test will be conducted, as per Onshore Order #2. After running the 9-5/8' intermediate casing with a mandrel hanger, the 13-5/8" BOP/BOPE system with a minimum rating of 3M will already be installed on the wellhead. The pipe rams will be operated and checked each 24 hour period and each time the drill pipe is out of the hole. These tests will be logged in the daily driller's log. A 2" kill line and 3" choke line will be incorporated into the drilling spool below the ram BOP. In addition to the rams and annular preventer, additional BOP accessories include a kelly cock, floor safety valve, choke lines, and choke manifold rated at 3,000 psi WP.	

	Devon's proposed wellhead manufactures will be FMC Technologies, Cactus Wellhead, or Cameron. Devon requests a variance to use a flexible line with flanged ends between the BOP and the choke manifold (choke line). The line will be kept as straight as possible with minimal turns.

5. Mud Program

Depth		Type	Weight (ppg)	Viscosity	Water Loss
From	To				
0	1,625'	FW Gel	8.5-8.8	28-34	N/C
1,625'	5,100'	Saturated Brine	10.0-10.2	28-34	N/C
5,100'	TD	Cut Brine	8.5-8.8	28-34	N/C

Sufficient mud materials to maintain mud properties and meet minimum lost circulation and weight increase requirements will be kept on location at all times.

What will be used to monitor the loss or gain of fluid?	PVT/Pason/Visual Monitoring

6. Logging and Testing Procedures

Logging, Coring and Testing.	
x	Will run GR/CNL from TD to surface (horizontal well – vertical portion of hole). Stated logs run will be in the Completion Report and submitted to the BLM.
	No Logs are planned based on well control or offset log information.
	Drill stem test? If yes, explain
	Coring? If yes, explain

Additional logs planned		Interval
	Resistivity	Int. shoe to KOP
	Density	Int. shoe to KOP
X	CBL	Production casing
X	Mud log	Intermediate shoe to TD
	PEX	

7. Drilling Conditions

Condition	Specify what type and where?
BH Pressure at deepest TVD	4,756 psi
Abnormal Temperature	No

Mitigation measure for abnormal conditions. Describe. Lost circulation material/sweeps/mud scavengers.

Hydrogen Sulfide (H2S) monitors will be installed prior to drilling out the surface shoe. If H2S is detected in concentrations greater than 100 ppm, the operator will comply with the provisions of Onshore Oil and Gas Order #6. If Hydrogen Sulfide is encountered, measured values and formations will be provided to the BLM.	
N	H2S is present
Y	H2S Plan attached

8. Other facets of operation

Is this a walking operation? Potentially

1. If operator elects, drilling rig will batch drill the surface holes and run/cement surface casing; walking the rig to next wells on the pad.
2. The drilling rig will then batch drill the intermediate sections and run/cement intermediate casing; the wellbore will be isolated with a blind flange and pressure gauge installed for monitoring the well before walking to the next well.
3. The drilling rig will then batch drill the production hole sections on the wells with OBM, run/cement production casing, and install TA caps or tubing heads for completions.

NOTE: During batch operations the drilling rig will be moved from well to well however, it will not be removed from the pad until all wells have production casing run/cemented.

Will be pre-setting casing? Potentially

1. Spudder rig will move in and drill surface hole.
    a. Rig will utilize fresh water based mud to drill surface hole to TD. Solids control will be handled entirely on a closed loop basis.
2. After drilling the surface hole section, the spudder rig will run casing and cement following all of the applicable rules and regulations (OnShore Order 2, all COAs and NMOCD regulations).
3. The wellhead will be installed and tested once the 10 ¾" surface casing is cut off and the WOC time has been reached.
4. A blind flange with the same pressure rating as the wellhead will be installed to seal the wellbore. Pressure will be monitored with a pressure gauge installed on the wellhead.
5. Spudder rig operations is expected to take 4-5 days per well on a multi well pad.
6. The NMOCD will be contacted and notified 24 hours prior to commencing spudder rig operations.
7. Drilling operations will be performed with the drilling rig. At that time an approved BOP stack will be nippled up and tested on the wellhead before drilling operations commences on each well.
    a. The NMOCD will be contacted / notified 24 hours before the drilling rig moves back on to the pad with the pre-set surface casing.

Attachments

_x_ Directional Plan

___ Other, describe