Virginia Department of Agriculture and Consumer Services
Dairy Services
PO Box 1163 - Richmond, VA 23218 – 804-786-1452

Date: _____ Permit Number: _____

GUIDE FOR THE SUBMISSION OF PLAN FOR MILKING OPERATIONS

Proposed Project: _____ Project Completion Date _____

Farm Name _____

Name of Producer _____ Telephone # _____

Address _____

City _____ State _____ Zip Code _____

County _____

Equipment Dealer/Installer _____

Address _____ Telephone # _____

City _____ State _____ Zip Code _____

Cooperative Field Representative _____ Telephone # _____

Address _____

City _____ State _____ Zip Code _____

Dairy Services Inspector_____

Before work begins, please submit properly prepared plans for all milkhouses, milking barns, stables, and parlors regulated by Virginia Department of Agriculture and Consumer Services (VDACS) Dairy Services, which are constructed, reconstructed, or extensively altered, to the VDACS, Dairy Services, 102 Governor Street, Richmond VA 23219. All workmanship and materials must comply with applicable standards.

This guide is intended to provide a format for the submission of the information and drawings essential for plan approval. Please complete the information requested in all sections, **attach the necessary drawings**, and submit the completed package to the VDCAS Dairy Services Inspector for the county in which your dairy operation is located. For alterations to existing permitted operations, fill out those sections applicable along with appropriate drawings. You may contact either your marketing representative or the Virginia Department of Agriculture and Consumer Services (804-786-1452) for the name of the Dairy Inspector in your county.

Following plan approval for all proposed milking installations, the Dairy Inspector will provide you with an application form for a "Grade "A" or Manufactured Grade Dairy Farm Permit", and will collect a water sample for evidence of a safe water supply. When the installation is completed and the operation is ready for inspection prior to permitting, your Dairy Inspector must be contacted to schedule an inspection. When alterations to existing permitted operations are completed, contact your Dairy Services Inspector to schedule an inspection. FINAL APPROVAL OF PLANS AND EQUIPMENT WILL TAKE PLACE DURING THE FINAL INSPECTION AND PRIOR TO ISSUANCE OF A PERMIT TO OPERATE.

CONSTRUCTION INFORMATION

	Milkhouse	**Milking Barn or Parlor**
Floors:	_____	_____
Walls: Material	_____	_____
Finish & Color	_____	_____
Ceiling: Material	_____	_____
Finish & Color	_____	_____
Heating:	_____	_____
Ventilation:	_____	_____
Doors: Construction	_____	_____
Lighting: Number	_____	_____
Type	_____	_____

Attach detailed drawing(s) showing the following:

1. Milkhouse location and layout to include: Wash vats, location of milk receiver and moisture trap, location of pre-cooler, hand sink, bulk tank(s), temperature recorder(s), entrances, hose port, lighting fixtures, equipment racks, drains, hose port pad (material & size), and distances of pieces of equipment from each other and the walls. Also include adjacent rooms which contain compressor, water heaters or other equipment.

2. Milking barn or parlor to include: Layout, traffic pattern, and adjacent holding or housing areas. In parlor operations show pipeline details to include: location of receiver and moisture trap, milk lines, CIP lines, inlets, milk meters, direction of milk flow, and milk line high point.

NOTE: The equipment used in this installation shall conform to or exceed 3A accepted practices for the design, fabrication and installation of milking and milk handling equipment. All sections of milk pipeline must be accessible for inspection.
Effective with new or renovated installations, with work beginning October 1, 2015 or later, all pipeline ferrules must be welded. Rolled or pressed-on ferrules on new pipeline installations are no longer accepted after 10-1-15. Installing a used pipeline system on a farm is considered a new installation, and must adhere to the requirements listed above.
Contractor is required to have a Boroscope on site for weld inspection and to provide "coupon" welds prior to the start of welding.

NOTE: All drain lines or hoses emanating from wash vats, receiver jars, bulk tank washers, water softeners and/or other equipment can not be plumbed directly to a floor drain. There must be an air gap between these lines and/or hoses and the floor drain. It is also recommended that these lines and/or hoses be up off the floor.

I. TYPE OF MILKING OPERATION

A. Pipeline System ☐

B. Pails ☐

C. Direct Load ☐

D. Automatic Milking Installation (Robotic) ☐

Number of AMI's_____

(For AMI's, complete sections IV, V, VI, VII VIII, IX, X, XII)

TYPE OF MILKING AREA

A. Parlor ☐

1. Parallel ☐
2. Herringbone ☐
3. Rotary ☐
4. Basement ☐

B. Stanchion Barn ☐

C. Tie Stall Barn ☐

D. Other

II. FABRICATION OF MILKING SYSTEM

A. Milk Line

1. Materials _____
2. Diameter (in) _____
3. Length (ft) _____
4. Welded _____
5. Gasketed _____
6. Slope (in. per 10ft) _____
7. High Line _____
8. Max. height from floor (in) _____
9 . Low Line _____

B. Receiver:

1. Number of inlets _____
2. Size of milk inlets (in.) _____
3. Size of vacuum inlets (in.) _____
4. Sanitary Trap: Location _____
5. Are automatic drains being used?
6. Is the drain hose off the floor?

Auxiliary Milking Equipment	Number	Manufacture	New/Used
1. Milking Claws	_____	_____	_____
2. Milking Pails and Lids	_____	_____	_____
3. Milk Meters	_____	_____	_____
4. Milk Weighing Devices	_____	_____	_____
5. Automatic Take-Offs	_____	_____	_____

6. Automatic Backflush _____ _____ _____

7. End of Milking Indicators _____ _____ _____

8. Milk Filtration _____ _____ _____

9. Transfer Station _____ _____ _____

10. Other (Explain) _____

III. VACUUM SYSTEM

1. Main Air Line Material _____ Diameter (in.) _____ Length (ft.) _____

2. Pulsator Air Line Material _____ Diameter (in.) _____ Length (ft.) _____

3. Automatic Drains in Pulsator Air Lines? Yes No

4. Number of Clusters _____

5. Vacuum Pumps Brand _____ Models _____ Hp _____

6. Total Vacuum Pump Capacity _____ CFM/ASME at 15 in. Hg _____

7. Vacuum Regulator Brand _____ Models _____

8. Number of Distribution Tanks _____

9. Other _____

IV. MILK COOLING AND STORAGE SYSTEM (Direct Load see section XI)

1. Pre-Cooler Brand _____ Type _____ Number _____

2. Type ofcoolent _____ Bulk Tank Mfg. Date: _____

3. Bulk Tanks/SiloBrand _____ Models _____ Serial No. _____

Milk Capacity_____ Cooling Capacity BTU/hr._____

Are milkline or pump drains being used? _____ If so, where are they located? _____

Is the milk load out pump used as a wash pump? _____

How is the milk load out hose washed, drained and stored if kept at farm?

_____

NOTE: All farm bulk tanks shall be equipped with an approved temperature recording device.

V. WASH AND SANITIZING SYSTEM

NOTE: It is recommended that the water temperature during the wash cycle be maintained above 120°F

Automatic System _____ Manual System _____

Automatic Pre-Rinse Diverter Valve _____

Wash Cycle	Pre-Rinse _____	Gallons _____	
	Wash Cycle _____	Gallons _____	
	Acid/Post Rinse _____	Gallons _____	
	Sanitize _____	Gallons _____	

Wash Manifolds

NOTE: If cleaning chemical and/or sanitizers are pumped from a container larger than one (1) gallon and the pumping unit is connected to a WATER SOURCE and there is NO AIR GAP present, then a BACK FLOW PREVENTION DEVICE is required upstream of where the cleaning and/or sanitizing agents are added to the system.

VI. MANUALLY CLEANED COMPONENTS (Explain all that apply)

1. Diverter Plugs _____
2. Manual Shut-Off Valves _____
3. Bulk Tank Outlet Valves _____
4. Butterfly Valves _____
5. Fresh Cow Pails (proper storage) _____
6. Other (Explain) _____

VII. PHYSICAL SEPERATION OF WASH SYSTEM (LINES) FROM:

1. Milking System during milking
2. Milk Tank during milk storage
3. Other (Explain)

_____

VIII. WATER SUPPLIES

1. Type of water supply (Drilled Well, Spring, Public, etc,) and location. _____

   _____

2. Do you have more than one water supply? (Type and number) _____

   _____

3. Are your multiple supplies connected thru a common manifold? _____

4. The following water system applications require a reduced pressure zone back flow prevention device (double check valve assembly with an atmospheric break). Indicate the ones which apply to your system.

A. Drilled Well and/or Public Supply (local code requirement) _____

B. Protection between potable and non-potable supplies _____

C. Protection at chemical injection sites _____

D. Protection at submerged inlets _____

E. Protection at manure pan flush site _____

5. Will you be installing a high pressure washer which requires a pressure relief valve and/or a low pressure cut off switch?

_____

6. Water disinfection system (If applicable):

_____

IX. WATER HEATING EQUIPMENT

1. Type of Water Heater Electric ☐ Gas ☐ Other

2. Capacity of Water Heater Gallons _____

3. Recovery Rate Gal/Hr/100F Rise _____

Additional Heating Systems Type _____

X. CATTLE WATERING SYSTEM

1. What type of supply will you be using to provide water for your cattle?

_____

2. Is system separate from the milkhouse supply? _____

3. If connected to the milkhouse supply, does proper back flow prevention exist? (Type).

_____

XI. DIRECT LOAD SYSTEM

1. Pre-cooler / chiller Brand _____ Type _____

2. Type of coolant _____

3. Sampling Device _____

4. Is the sampling device located inside refrigerator? _____

5. Are collected samples stored in a refrigerator? _____ Location _____

6. Type and location of temperature recording devices.

7. _____

8. Type and number of load-out doors. _____

9. Is tanker parking in an enclosure or on exposed pad?

10. _____

11. Location of tanker pad drains and terminus of drains.

12. _____

XII. AUTOMATIC MILKING INSTALLATIONS

Automatic Milking Installations (AMI's) will be reviewed on each plan submission and installation for compliance. Please provide the following documentation on as many attached sheets as needed:

1. Dictate how the installation meets all provisions of Appendix Q of the PMO adopted by reference: Virginia "Regulations Governing Grade "A" Milk": 2 VAC 5-490, January 21, 2015 revision.
2. Include system flow drawings, for both milk and CIP;
3. Include building drawings and layouts for the milkhouse and parlor;
4. Provide a valve function testing protocol for the system;
5. Provide any documentation for 3-A Sanitary Standard compliant components;
6. Provide any FDA issued guidance (M-I's, M-A's or M-B's) specific to the model of machine being installed;

<u>NOTE FOR ALL PLANS:</u> Attach detailed drawings of the milkhouse/load-out area to include location of pre-cooler/chiller, recording devices, sampling device for direct load, layout of pipeline, CIP line, and all truck hose connections.

Date Received by Inspector	Received by Central Office	Plan Approval
_____	_____	_____

Sketches/Drawings:

Sketches/Drawings:

Virginia Department of Agriculture and Consumer Services
Application to Install a Pipeline Milking System in a Milking Parlor

Name of Producer: _____ Date: _____

Address: _____ Telephone: _____

I HEREBY MAKE APPLICATION FOR PERMISSION TO INSTALL OR ALTER A CLEANED-IN-PLACE PIPELINE SYSTEM. THE EQUIPMENT WILL CONFORM TO OR EXCEED JA ACCEPTED PRACTICES FOR THE DESIGN, FABRICATION AND INSTALLATION OF MILKING AND MILK HANDLING EQUIPMENT.

Instructions
1. All blanks that apply to this installation must be completed.
2. This application to be accompanied by a detailed drawing showing the following: (a) high point, (b) direction of milk flow, (c) inlets, (d) location of receiver, (e) regulator(s), (f) parlor or stable walls, (g) milk house location - include wash vat(s) and tank(s), (h) air injector location, (i) vacuum pump(s), and (j) plate cooler.

I. A. Pipeline System: Make: _____ Model No: _____ Milking system no of units: _____
Welded ☐ or Gasketed ☐ No. Inspector Ports _____
B. Type: Pump ☐ Vacuum ☐ No. of inlets _____ Weigh jars _____ Low line _____ Meters _____
C. Filtration Location: _____ Type: Pressure _____ Gravity _____
D. Separate vac line for abnormal milking equip _____
E. Provisions for washing vacuum system _____
F. Main Vacuum supply line size: Diameter____ in. Length____ ft. Material type_____
G. Vacuum Pulsator Line Size: Diameter ___ ft. Length ___ ft. Material type_____ (recommended min size 1 to 14 units = 2"; 15 or more = 3")
Auto Drains _____ Vacuum regulator (Brand)_____

II. Vacuum Requirements: ASAE Standard

3A Vacuum Requirements for Pipeline Milkers
(Vacuum level 15 inches of mercury)

Reserve	35 CFM
No. Milker units 0 x 3.0 cfm Milk	= 0.00
meter 0 x 0.50 cfm (with air bleeds)	= _____
Other special equipment Example - Vacuum backflush sweep see 3A	= _____
Extra Allowance for washing Example - more than one air injector sequenced to open simultaneously see 3A	= _____
Total Requirement	_____

Milk Pipeline Size Requirements per Slope Maximum no of units per slope

Milkline size	Slope (inches per 10 ft)				
	1"	1 ¼"	1 ½"	1 ¾"	2 ½"
2 in.	1	1	2	2	3
2 ½ in.	4	4	5	6	8
3 in.	9	10	12	13	16

III. Vacuum Supplier

	Pump 1	Pump 2
Make:	_____	_____
Model:	_____	_____
Motor Hp:	_____	_____
Pump rpn:	_____	_____
CFM:	_____	_____

IV. Washing Equipment: Auto _____ Manual _____ Automatic pre-rinse divert valve _____ Air injector _____
A. Number of wash vats _____ Time Wash Cycle _____ minutes
B. Water: Pre-rinse _____ gal. Post-rinse _____ gal. Hot Water Needed _____ gal.
C. Hot Water: Type Heater _____ Capacity ____gal.
D. Equipment to be washed by recirculation Reverse flush
E. Supplementary (Booster heater). _____ BTU-hr.
F. Units to be cleaned-in-place in milking parlor _____
G. The following items but not limited to these items are to be manually cleaned after each usage _____
H. Physical separation of wash line from wash vat _____

V. MANUFACTURERS CLEANING RECOMMENDATIONS OR A RINSING, CLEANING, AND SANITIZING REGIMEN WHICH HAS BEEN DEMONSTRATED TO BE EFFECTIVE SHALL BE EMPLOYED AND POSTED IN MILKROOM.

Owner or authorized representative (signed) _____

Milking machine dealer (signed,address,tel No.) _____

THIS APPLICATION WHEN PROPERLY FILLED OUT AND SIGNED BY THE OFFICIAL AGENCY SERVES AS THE OFFICIAL APPROVAL. ANY FUTURE MODIFICATION OF THIS EQUIPMENT MUST HAVE PRIOR WRITTEN APPROVAL.

Plan Approval Dairy Inspector _____ Date _____

Regional Manager _____ Date _____

Installation Approval Dairy Inspector _____ Date _____