



INFORMATION MANUAL FOR ENHANCED BIOSECURITY FOR FMD PREVENTION: DAIRY

September 2017

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Comments

Please send comments or suggested edits for improvement to: smsinfo@iastate.edu

Additional Resources

The Secure Milk Supply website has additional resources available at: www.securemilksupply.org

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September 2017

Target Audience



This Information Manual and corresponding Self-Assessment Checklist applies to:

- Dairy operations with lactating cattle either raising, or shipping, heifers and bull calves off-site for rearing.
- Dairy operations with other susceptible species (beef cattle, pigs, sheep, goats) kept on the premises.
- All individuals delivering, servicing, or working on the operation, including family members and/or non-family employees responsible for animal care and husbandry.
- Dairy operations that have never been infected with foot and mouth disease (FMD) and have not been vaccinated for FMD.

Introduction

In the event of a foot and mouth disease (FMD) outbreak in the United States (U.S.), maintaining business continuity for the dairy industry is critical to the agricultural economy, food security, as well as animal health and well-being. The goal of the Secure Milk Supply (SMS) Plan is to provide a workable business continuity plan for dairy producers that have cattle with no evidence of FMD infection and associated industries that is credible to Responsible Regulatory Officials (local, state, tribal, and federal officials, as appropriate). In an actual FMD outbreak, decisions will be made by the Responsible Regulatory Officials based on the unique characteristics of each outbreak.

During an FMD outbreak, it is the producer's responsibility to keep their animals from becoming infected, focusing on what they can control on their premises. Biosecurity approaches are both structural and operational. Structural biosecurity is built into the physical construction and maintenance of a facility. Operational biosecurity involves management practices designed to prevent the introduction and spread of disease agents onto or off of an animal production premises. FMD will test the effectiveness of operational biosecurity because these practices depend on the awareness and behavior of individuals on the operation.

FMD is highly contagious and has a major impact on animal health and international trade; however, it does not pose a food safety or public health concern. Existing biosecurity plans for dairies may offer protection against endemic diseases but heightened precautions are needed for FMD. The enhanced biosecurity recommendations outlined in this document are based on the known exposure routes for FMD. Operations with susceptible species raised outdoors (on pasture, dry lots) may have more difficulty preventing FMD exposure depending on their proximity to infected premises and the presence of wildlife in the area.

This document emphasizes three concepts that all dairy operations should be ready to implement in the event of an FMD outbreak in the U.S.:

1. A Biosecurity Manager,
2. A written operation-specific enhanced biosecurity plan, and
3. A Line of Separation.

This Manual is organized around the sections in the Self-Assessment Checklist for Enhanced Biosecurity for FMD Prevention: Dairy (statements in outlined boxes). This Manual can be used to develop an

operation-specific, written, enhanced biosecurity plan prior to an FMD outbreak. All dairy premises should designate a Biosecurity Manager; this is item number 1 in the checklist below. The Biosecurity Manager develops the biosecurity plan PRIOR TO an outbreak; the plan should address items 2-11 on this checklist. The biosecurity plan should describe the scope of the operation, contain forms for documentation of training and signatures, explanations of procedures and signage used on the premises, and protocols written and communicated effectively in languages that are fully understood by the individuals responsible for implementation.

Implementing the biosecurity plan, including training individuals, before an FMD outbreak occurs provides the best chance to prevent animals on the operation from being exposed. However, implementing effective biosecurity to protect outdoor raised animals from FMD can be expensive and inconvenient. Once the biosecurity plan is written, dairy farm owners/managers may use the checklist in one of following ways:

- **In the absence of FMD in the United States**, dairy farm owners/managers should decide which items (#2-11) they will implement. The biosecurity plan should describe the strategy for how each item could be implemented (supplies needed, changes in management practices, etc.).
- **If FMD is diagnosed anywhere in the U.S.**, dairy farm owners/managers should immediately implement ALL of the items in the checklist to minimize the risk of exposing their animals.
- **If the dairy operation is located in an FMD Control Area**, Responsible Regulatory Officials may require that ALL of the items on the checklist, and possibly others, be implemented before animal movement is permitted, and perhaps before raw milk movement to processing is permitted.

Scope of Biosecurity Plan

Each location (premises) should have its own biosecurity plan. Begin by defining your premises, clearly describing the animals (all species) and animal housing (buildings, pastures, and dry lots) associated with the dairy operation. Additionally, other businesses operated from the same premises will need to be accounted for in the biosecurity plan (e.g., distribution or sales of milk or milk products, eggs, fruits, vegetables, feed, mineral, fertilizer, compost, seed, or equipment; petting zoo; hosting farm tours; repair shop; etc.). Animals owned by the operation but reared off-site and accessed via a public road may be considered a separate premises, have a separate Premises Identification Number (PIN), and therefore, a separate biosecurity plan. Biosecurity plans for premises owned/managed similarly may have significant overlap. Having a PIN may be required to request movement permits during an outbreak. A PIN includes a valid 911 address and a set of matching coordinates (latitude and longitude) reflecting the actual location of the animals on the premises. Request a PIN from your State Animal Health Official.

1. Biosecurity Manager and Written Plan

The Biosecurity Manager is identified for the operation. This individual is responsible for developing the biosecurity plan with the assistance of a veterinarian (if they are not a veterinarian) and ensuring biosecurity training of, or communicating biosecurity measures with, all individuals who enter the operation. The Biosecurity Manager has the written authority to ensure compliance with biosecurity protocols and take corrective action as needed.

The designated Biosecurity Manager for the operation should be able to develop and implement biosecurity procedures effective in protecting the animals from FMD virus infection. This individual should be familiar with the current structural and operational biosecurity of all locations where animals are housed as well as the health status of the animals. The Biosecurity Manager can be an owner, herd manager, veterinarian, or employee on-site. If the Biosecurity Manager is not a veterinarian, the

individual should consult with an experienced veterinarian who is familiar with the operation layout, daily procedures, and health status of the animals when developing the biosecurity plan.

If the dairy operation has animals at more than one location (premises) with movement of animals, people, equipment, or vehicles between them, each location should designate an on-site manager who is responsible for ensuring that the biosecurity protocols for that location are followed on a daily basis. It is important that the Biosecurity Manager, and their on-site designees, have the authority to take corrective action if protocols are violated or need to be revised. The Biosecurity Manager should identify an alternate contact person for the premises in the event that the primary Biosecurity Manager is gone or unavailable. The Biosecurity Manager and their designee should have their contact information posted in an area where it can easily be found.

The roles of the Biosecurity Manager include:

- Developing and implementing an effective, operation-specific biosecurity plan,
- Overseeing and documenting that all essential personnel have been trained in biosecurity protocols, and
- Taking corrective action, as needed, when biosecurity protocols are violated.

An operation-specific, written, enhanced biosecurity plan has been developed by the Biosecurity Manager. The plan is reviewed at least annually and whenever the operation goes through a change that affects biosecurity (expands, adds a new aspect of the business, etc.). The biosecurity plan clearly defines the scope of the operation and includes biosecurity for other susceptible species kept on the premises. The biosecurity plan includes a premises map labeled with the Line of Separation (LOS), LOS Access Point(s), cleaning and disinfection (C&D) station(s), designated parking area, and carcass disposal/pickup location. The map indicates vehicle movements (milk truck, animal transport vehicles, deliveries, etc.) and carcass removal pathways. The Biosecurity Manager ensures that all individuals entering the operation frequently (weekly or more often) have access to a copy of the biosecurity plan. The Biosecurity Manager is capable of implementing the written plan if FMD is diagnosed in the U.S.

The biosecurity plan must address how the operation will implement the biosecurity protocols in order to meet or exceed the [Biosecurity Performance Standards \(BPS\) for Raw Milk Collection and Transport](#) described in the SMS Plan, included where applicable (blue boxes) in this manual. BPS are a list of biosecurity measures, which when performed consistently and correctly, will help reduce FMD introduction and spread through best practices and standard operating procedures (SOPs). BPS are designed to be objective, realistic, and implementable.

The biosecurity protocols implemented must also include other susceptible species (cattle, pigs, sheep and goats) on the operation as well. For biosecurity guidance for beef cattle and pigs, see www.securebeef.org and www.securepork.org.

The biosecurity plan must include a premises map (satellite images are preferable) labeled with the following:

- Line of Separation (LOS),
- LOS Access Point(s) which serve as the designated entrance(s),
- Cleaning and disinfection (C&D) station(s),
- Designated parking area outside the LOS, away from animal areas,
- Carcass disposal/pickup location and carcass removal pathways, and
- Vehicle movement pathways (milk truck/tanker, animal transport vehicles, deliveries, etc.).

Additionally, if non-essential items will be delivered to the dairy, the premises map should indicate the designated area for delivery of these items. If non-essential items are to be delivered to an off-site location (e.g., post office, residence), this should be clearly indicated in the biosecurity plan and signs posted at the LOS Access Point(s).

[Appendix A](#) includes instructions on how to create the premises map for the operation-specific biosecurity plan. The Biosecurity Manager must document that he/she reviews the plan at least annually, whenever the operation goes through a change (expands, adds a new aspect of the business, etc.), or whenever the “Self-Assessment Checklist for Enhanced Biosecurity for FMD Prevention: Dairy” is updated/changed (visit www.securemilksupply.org). The Biosecurity Manager should continuously adapt the plan to address changing risks or recommendations. Due to the inherent variation between dairy operations, biosecurity plans must be created specifically for every premises.

The biosecurity plan should be located where it can be accessed by individuals frequently entering the operation, Responsible Regulatory Officials, or the attending veterinarian upon request.

If all checklist items are not “in place” after completion of the written plan, the Biosecurity Manager must be capable of implementing each item if FMD is diagnosed in the U.S.

2. Training

The Biosecurity Manager(s) and essential personnel are trained at least annually about the biosecurity measures necessary to keep FMD out of the herd; training is documented. The Biosecurity Manager(s) informs individuals entering the operation of the biosecurity measures they are to follow in a language they understand. Individuals are aware of the biosecurity concepts and procedures that apply to their specific areas of responsibility. The biosecurity plan describes the training required before entering this operation.

Encouraging Compliance through Training

Achieving good compliance with biosecurity practices by farm personnel and visitors is an ongoing challenge for animal production facilities. The biosecurity plan can only be effective if EVERYONE on the operation follows it, all of the time. Ideally, compliance with the biosecurity practices should become part of the culture of the facility. Poor compliance is usually due to a lack of knowledge or understanding of either the biosecurity protocols or the consequences if they do not comply.

The Biosecurity Manager(s), owners, and essential personnel should be trained at least annually to ensure their awareness of the biosecurity measures necessary to keep FMD out of the herd. There are many resources available on the Secure Milk Supply website (www.securemilksupply.org). The Biosecurity Manager(s) needs to inform individuals entering the operation of the biosecurity measures they are to follow in a language they understand. Individuals must be made aware of the biosecurity concepts and procedures that apply to their specific areas of responsibility.

All individuals entering must understand how to:

- ☐ Contact the Biosecurity Manager(s)
- ☐ Respect the Line of Separation (LOS)
- ☐ Cross the LOS, if required, following arrival and biosecure entry requirements
- ☐ Perform biosecurity measures for their specific job duties

Essential personnel must ALSO:

- ☐ Understand the importance of biosecurity;
- ☐ Review the entire biosecurity plan;

- ❑ Review the labeled premises map;
- ❑ Know who to report to if they see someone not complying or something preventing compliance; and
- ❑ Recognize the consequences for not complying with biosecurity protocols.

The Biosecurity Manager communicates with milk haulers/drivers, delivery and service personnel, veterinarians, livestock transporters, and visitors to promote awareness of biosecurity expectations and operation-specific practices prior to arrival at the facility. This may involve calling, emailing, texting, or faxing information to individuals prior to arrival or communicating with these individuals upon arrival, prior to entry.

Effective training can be done through one-on-one or group sessions, depending on the responsibilities of the individuals and their learning style. Document training sessions for essential personnel and all communication with visitors and service personnel (see [Appendix B](#) for an example Training Documentation Log).

- Example: Have all personnel sign and date a document after attending a training session and include a copy of the training agenda/content reviewed.
- Example: Keep a copy of the document sent to the milk hauler describing where and how to cross the LOS at an Access Point and their tasks (remain in cab, exit wearing protective boots/gloves, etc.) and have them sign it upon first arrival.

The Biosecurity Manager should continually emphasize the importance of the biosecurity practices for disease prevention. Communication of biosecurity is vital to any operation to protect cattle health. The Biosecurity Manager should be available to answer questions.

Source: BPS for Raw Milk Collection and Transport, September 2017
 5.1.1 When determining the location(s) for the line of separation (LOS) and controlled access point(s), the performance standard is to establish a boundary that adequately separates off-farm movements from on-farm movements to prevent exposure of susceptible animals.

3. Protecting the Dairy Operation

Line of Separation (LOS)

The biosecurity plan includes an LOS, which is established as an outer control boundary around, or within, the premises to limit movement of virus into areas where susceptible animals can be exposed. The LOS is clearly defined in the biosecurity plan and is clearly marked on the premises. Animals, vehicles, people, or items only cross the LOS through clearly marked and controlled LOS Access Point(s), following appropriate biosecurity measures. Cattle are prevented from nose-to-nose contact from livestock on adjacent premises. Cattle do not have access to streams, waterways, or runoff water that may have come from other premises.

The Biosecurity Manager should identify a Line of Separation (LOS), which is a clearly identified boundary around, or within, the entire dairy operation to separate off-farm from on-farm movements of vehicles, items, people and animals. The purpose of the LOS is to limit movement of FMD virus into areas where susceptible animals can be exposed directly (animal contact) and indirectly (contaminated vehicles, footwear, equipment, runoff). Access should only be allowed through a minimum number of clearly marked and controlled LOS Access Point(s) following appropriate biosecurity measures.

Think of the dairy operation as a castle and the LOS as the moat around it. The LOS Access Point is the drawbridge which is only lowered once specific biosecurity protocols are followed for all vehicles, personnel, and equipment to limit entry of FMD virus. Once the LOS is established, it should not move unless areas which were outside of the LOS are cleaned and disinfected before being moved inside the

LOS. A modified LOS may be needed during crop harvest when bringing in feedstuffs. This is further explained under [Section 4: Vehicles and Equipment](#), Non-animal Transport. It is important to establish a firm understanding of the LOS concept with all employees, visitors, and service personnel. The boundaries of the LOS need to be included on the premises map.

The LOS may be located along the property line or another boundary within the premises (for example, near or within the milk house). When determining the best location for the LOS, the following should be considered:

- Animal housing and holding areas
 - Traffic on roadways outside the LOS could be carrying FMD virus in organic matter (mud, manure, runoff); ensure the LOS is located some distance from animal housing (dairy animals and other susceptible species) and holding areas so off-farm organic matter does not cross the LOS onto the farm.
 - The distance from the LOS to animal housing will depend on the drive path surface (farther from dirt/gravel than paved), weather extremes (farther if rain/snow will cause vehicle tires to kick up liquid/organic matter into animal housing), and what is known about the FMD virus and its infectivity. There is not a specified distance as it varies with the above conditions.
 - Cattle should be prevented from nose-to-nose contact with livestock on adjacent premises.
 - This can be accomplished by pasture or dry lot rotation, not using certain lots or pastures, coordinating pasture use with your neighbors, or installing a temporary electric fence on your premises to create distance between shared fence lines.
 - Cattle should not have access to water sources (ponds, creeks, streams, waterways, or runoff water) that may be shared or have come from another livestock premises.
 - This can also be accomplished by not using certain pastures, providing temporary or portable water tanks, or installing a temporary electric fence around shared water sources.
- Animal movement patterns (bull calves, heifers, dry cows, other susceptible species, etc.)
- Drive path slope and ground topography (paved, gravel, dirt) to and near the milk house
- Weather conditions (rain, snow, mud) effect on drive paths near LOS Access Point(s)
 - This includes natural snow accumulation as well as plow routes and storage of snow.
- Traffic patterns on and off of the dairy operation
 - Minimize the need for on-farm personnel and traffic to repeatedly cross the LOS for daily activities
 - Select the fewest number of LOS Access Point(s)
 - Evaluate the use of scales and determine if they are primarily for off-farm weights (milk loads, heifers, cull cattle) or for on-farm weights (mixed feed being offered, milk fed to calves, etc.)
 - For ease of access to residences, maintenance shops, other non-animal business entities, exclude them from the LOS whenever possible
 - Designate an area outside the LOS or at another location for deliveries that are non-essential to the dairy operation
- Location of living quarters on the premises
 - Consider all the movements that need to occur for the household to operate (school bus, postal deliveries, non-farm employee vehicles, etc.)
 - For ease of access, locate households outside of the LOS whenever possible
- Planned construction projects

Multiple options exist to establish the LOS and they are highly dependent on the layout of the operation, traffic patterns, inputs and outputs. A table listing various inputs/outputs is available in [Appendix C](#). This,

along with the operational knowledge of the Biosecurity Manager can create a well-placed LOS. See Figure 1 in [Appendix D](#) for an example of an LOS.

The LOS boundaries should be clearly identified (road, posts, fences, flags, spray paint, ropes, etc.) and clearly visible to employees, visitors, and delivery personnel so that no one crosses the LOS without following the proper biosecurity measures. Vehicles and personnel remaining within the LOS will avoid areas potentially contaminated with FMD virus.

LOS Access Point(s)

Entry to the dairy operation is restricted to a limited number of controlled LOS Access Points. These LOS Access Points are protected with a suitable barrier (e.g., gate, cable, rope) to prevent unauthorized vehicles from entering. Each LOS Access Point is clearly marked with a sign in a language understood by all entering. Vehicles moving through an LOS Access Point are cleaned to remove visible contamination and disinfected. People and items moving through LOS Access Points follow specific biosecurity steps. The animal loading/unloading area does not serve as a people entry point. All movements (animals, vehicles, equipment, people) across the LOS are recorded and available for review upon request. Deliveries not essential to the dairy are made outside the LOS at a designated area indicated on the premises map.

Determine the LOS Access Point(s) based on current traffic patterns and suitability for a cleaning and disinfection (C&D) station. The LOS Access Points should be limited in number; the more LOS Access Points, the harder it is to ensure biosecurity protocols are being followed. If there is a location that is currently used for the majority of vehicle and equipment traffic, or a pathway that employees use to enter the operation from a designated parking area, then that location would be a logical place for an LOS Access Point. The LOS Access Point should not be adjacent to animal holding or housing areas.

All other unused driveways that are not LOS Access Points need to be protected with a suitable barrier (hay bales, semi-trucks, heavy equipment, etc.) to prevent unauthorized vehicles and people from entering.

Each LOS Access Point should be clearly marked with signs for all traffic entering the operation (e.g., vehicles, people, etc.) written in languages understood by all entering. Signs should include instructions for biosecurity protocols regarding vehicles, personnel, and items crossing the LOS, or should direct individuals where they can access these protocols. These protocols should be communicated with visitors, personnel, etc. prior to their arrival.

The LOS Access Point(s) needs to be included in the premises map; communicate the location(s) of LOS Access Point(s) to all authorized personnel crossing the LOS.

Movement of animals onto the dairy could introduce FMD virus if biosecurity protocols are not followed. New purchases or returning animals (heifers, dry cows) may require a movement permit if the origin or destination is located within a Control Area. Biosecurity protocols for animals crossing the LOS are found in [Section 6: Animal Movement, Loading/Unloading](#), vehicles in [Section 4: Vehicles and Equipment: Animal Transport](#), and livestock transporters in [Section 5: Personnel: Biosecure Entry/Exit Procedures](#).

Movement of people through the LOS Access Point(s) requires following biosecurity measures as outlined in [Section 5: Personnel](#). Clearly mark the LOS Access Point(s) for people with a suitable barrier (e.g., gate, bench, duct tape, shower, etc.). At a minimum, ensure personnel have a place to change clothing and change or disinfect their footwear, etc.

Movement of personal items and food across the LOS should be limited to what is necessary to perform job duties and the items (hats, glasses, cell phones, lunch bags) must be clean and not worn/used around

animals, or cleaned and disinfected before crossing. Food is consumed in designated areas, never brought into cattle areas. Signage with reminders or instructions should be posted at the LOS Access Points.

Deliveries that do not need to be made to the animal site (e.g., parcel deliveries) should be made to a designated area outside the LOS. This information should be communicated to the drivers when possible or clear signage posted at the LOS Access Point about where to leave parcel deliveries. Label this area on the premises map.

Movement of vehicles, equipment, and supplies across the LOS requires an operational cleaning and disinfection (C&D) station at the LOS Access Point (described below). More information on C&D of specific vehicles can be found in [Section 4: Vehicles and Equipment](#). Deliveries should be limited to those essential to the operation. All other deliveries should be left at another location without cattle outside the LOS. Label this designated area for non-essential items on the premises map.

Movement of milk truck/tanker and hauler/driver may or may not require crossing the LOS. Multiple options exist and are highly dependent on the dairy premises layout and capabilities of farm personnel. There are different Biosecurity Performance Standards associated with each approach. The drive path to the milk house should be clean (free of animal excrement). See [Appendix D](#), Figures 2 – 6 for examples of various LOS options for milk trucks/tankers.

All records of animal, vehicle, and equipment movements by date and time onto the premises should be maintained on the dairy premises and made available to Responsible Regulatory Officials in the event it is needed for a trace-back or trace-forward investigation. See [Appendix E](#) for an example Vehicle and Equipment Entry Log.

*Source: BPS for Raw Milk Collection and Transport, September 2017
4.2.1 The performance standard is for dairy premises personnel to record all vehicle and people movements that enter the dairy premises.*

Cleaning and Disinfection (C&D) Station

There is an operational, clearly marked, and equipped C&D station with the means to remove visible contamination and then disinfect vehicles, equipment, and items needing to cross the LOS. The C&D station is operated by individuals who have received documented training in proper selection and use of personal protective equipment and the principles of C&D. Runoff from the C&D station is managed following state and local regulations, ensuring it does not enter waterways, animal housing, or on-farm traffic areas. The biosecurity plan contains contingency plans for vehicle and equipment C&D in inclement weather.

All vehicles, equipment, and items crossing the LOS must be free of visible contamination and disinfected prior to entry which is best accomplished at a Cleaning and Disinfection (C&D) Station on-site. At least one stationary or mobile C&D Station should be available near an LOS Access Point to clean and disinfect vehicles, equipment, and items prior to crossing. The C&D stations should be equipped with good lighting, adequate water, soap, and a disinfectant labeled for FMD virus. See [Appendix F](#) for basic steps, supplies needed, and an example Standard Operating Procedure (SOP) for the C&D process. See [Appendix G](#) for a list of disinfectants labeled for FMD virus.

FMD virus is stable in the environment and in organic material (mud, manure, feed and bedding). Virus stability increases at lower temperatures and with protection from sunlight. FMD virus is inactivated at pH below 6.0 or above 9.0. To kill the FMD virus, it is important to use an effective disinfectant appropriate to the surface and to allow for proper wet contact times and adequate drying.

Designated individuals operating the C&D station should be trained in proper selection and use of personal protective equipment (PPE), how to effectively clean and disinfect items so they do not

introduce virus to the dairy operation, and how to safely use approved disinfectants. The PPE necessary is dependent on the disinfectant used; consult the label for more information.

When determining the location of the C&D Station, consider the following:

- The wash pad at the C&D Station should be free of dirt/mud (ideally on a hard/solid/paved or well-drained gravel surface)
- The wash pad and surrounding area should be sloped AWAY from animal housing, feed receiving or storage areas, waterways, and on-farm traffic areas.
- All applicable state or local regulations regarding the management (capture/diversion) of the runoff should be followed. This may require building drainage ditches, berms, or other physical barriers to ensure susceptible animals are not exposed.

Effective C&D can be very difficult in the winter in northern climates or during severe weather events unless conducted inside a building. Create a contingency plan for inclement weather and include this in the biosecurity plan. Below are a few suggestions.

- Contingency plans may include:
 - Creating a sheltered C&D station,
 - Using another structure on the premises (but outside of the LOS) as a temporary C&D station during inclement weather, or
 - Designating an off-site location, such as a truck wash, for washing all vehicles and equipment arriving on site during inclement weather (freezing temperatures, thunderstorms, high winds).
 - Vehicles or equipment washed and disinfected off-site must arrive free of visible contamination, and must not have been on any other premises with FMD-susceptible species after cleaning and disinfecting.
 - Determining alternate delivery options or on-site drive paths.
 - Feed delivery; auger the feed across the LOS into an on-site feed wagon or other vehicle/equipment.
 - Milk collection; dedicate a drive path to the milk house that is not used by on-site vehicles, equipment, or people (more in [Sections 3](#) and [7](#)).
 - Livestock loading; create a perimeter loading facility that prevents the livestock trailer from crossing the LOS. Use trailers from inside the LOS to transport to this area if a drover's lane is not available.

The C&D Station(s) needs to be marked on the premises map.

Designated Parking Area

There is a clearly marked, designated parking area outside of the LOS, away from animal areas, for vehicles that will not enter the operation and have NOT been cleaned and disinfected.

Designated parking areas outside of the LOS for employee and visitor vehicles minimizes the need to clean and disinfect them upon arrival and reduces the chance of FMD virus on vehicles entering the cattle side of the LOS. Locate the parking area where individuals can conveniently walk to the nearest LOS Access Point to better ensure compliance.

Signs should be posted designating the parking area to ensure vehicles remain away from the LOS and thus, animal areas, and the LOS Access Point(s). The designated parking area needs to be labeled on the premises map.

Designated vehicles that remain within the LOS should be available for individuals needing to haul equipment, supplies, or treatment materials to the animals since personal or company vehicles will be prohibited entry without C&D.

4. Vehicles and Equipment

All records of vehicle and equipment movements by date and time onto the premises should be maintained on the dairy premises and made available to Responsible Regulatory Officials in the event it is needed for a trace-back or trace-forward investigation. See [Appendix E: Vehicle, Equipment Entry Log](#) for an example Vehicle and Equipment Entry Log.

Vehicles and Equipment (non-animal transport)

All vehicles and equipment (not containing live animals) are cleaned and effectively disinfected prior to crossing the LOS, otherwise entry is prohibited.

Public roadways in the Control Area may be contaminated with FMD virus. Therefore, only allow vehicles and equipment to cross the LOS that are free of visible contamination and effectively disinfected at the dairy operation's C&D Station ([Section 2](#)) to reduce the chance of introducing virus. Basic steps, supplies needed, and an example Standard Operating Procedure (SOP) for the C&D process can be found in [Appendix F](#); a list of disinfectants labeled for FMD virus can be found in [Appendix G](#). Whenever possible, operation-dedicated equipment should be used and should not be shared unless absolutely necessary.

Entry of milk trucks/tankers, commodity feed trucks, feed wagons (especially those that leave to feed off-site animals and return to the operation), livestock trailers (more below), service personnel vehicles, and any other off-site vehicle or equipment needs to be done in a biosecure manner. Vehicles and equipment remaining inside the LOS do not need to go through C&D procedures unless it exits the LOS and needs to return. Vehicles and equipment that remain outside of the LOS do not need to be cleaned and disinfected.

Effective disinfection of vehicles and equipment requires thorough cleaning to remove visible contamination, application of a disinfectant labeled for FMD virus, then allowing time for the disinfectant to kill the virus. Alternatively, heat may be used to kill viruses after thorough cleaning.

Harvest vehicles and equipment (combines, auger carts, wagons, semi-trucks) used to haul crops (hay, silage, grain) may enter the operation frequently to deliver feedstuffs over a short period of time, a few times a year. These vehicles and equipment are difficult to effectively clean and disinfect and pose a risk of introducing virus from contaminated roadways. During crop harvest, the LOS may need to be temporarily modified to create a direct path to the feed storage area that does not overlap with vehicles used inside the LOS to feed or contact animals. Access to this area should be restricted to crop delivery vehicles and equipment ONLY during this time. If the drive path is near animals, consider temporarily moving those animals. During this modification of the LOS, this drive path should NOT be used by vehicles that are used inside the LOS to feed or contact animals. Alternative plans for getting feed out of this area daily need to be made that do not cross paths with the harvest vehicles.

It is still important to minimize the amount of organic material carried into this modified LOS area from roadways. Visible material on tires/undercarriage should still be removed prior to entering the premises, with every effort made to not spray the feedstuffs (hay, silage, grain) carried by the vehicle. Once visible material has been removed, the harvest vehicles/equipment should drive directly to the feed storage area. The vehicle disinfection step can be skipped – rather the drive path should be cleaned and disinfected after harvest/feed delivery is complete, ensuring runoff does not enter animal housing, waterways, or traffic areas within the LOS. Once the area is decontaminated, the LOS can be re-established as it was prior to harvest.

Livestock Truck/Trailers (animal transport vehicles)

All empty animal transport vehicles are cleaned and disinfected prior to arrival at the operation (outgoing loads) or before animals are loaded for delivery to the operation (incoming loads).

Livestock transporters and their vehicle may introduce FMD virus unless proper biosecurity protocols are followed. Specific livestock transporter details are provided under [Biosecure Entry/Exit Procedures](#).

Communicate with the source of incoming animals and with the transporter to ensure that all animal transport vehicles were cleaned and effectively disinfected prior to the loading of animals for delivery to this operation. Document all communication.

Empty livestock trucks/trailers must be free of all visible contamination (inside and out) followed by disinfection before crossing the LOS at an LOS Access Point.

Occupied livestock trucks/trailers cannot be effectively C&D with animals on board and should not physically cross the LOS. They have the potential to introduce FMD virus on their truck tires and the interior contents (manure, urine, bedding) can spill onto the operation. One way to avoid vehicle entry is to use internal vehicles to transport animals to the LOS Access Point. Animals can be transferred using a staged area like a transport chute onto the trailer parked outside of the LOS. Animals could be introduced to the operation in this same manner.

If this is not possible, the vehicle should take only the shortest, most direct drive path to the loading/unloading site that is clean and minimizes passing close to susceptible animals or unload animals using gates. The area where the off-site vehicle drove and parked should be considered contaminated and a possible source of FMD virus introduction to rest of the herd. In this situation, the drive path and loading site should be cleaned and disinfected. If it is a gravel or dirt path, this may be impossible and the risk cannot be mitigated. The Biosecurity Manager should ensure that individuals are trained in proper use of personal protective equipment (PPE), how to effectively C&D so virus is not introduced to the dairy operation, and how to safely use approved disinfectants.

5. Personnel

Prior to Arriving at the Dairy

Access is limited to individuals who are essential to the operation of the dairy. Everyone crossing the LOS on foot or exiting their vehicle inside the LOS arrives at the operation having showered and wearing clean clothing and footwear since last contacting susceptible animals. All individuals crossing the LOS have a signed agreement on file agreeing to follow these instructions.

Individuals arriving at the dairy should not cross the LOS unless their job duties require doing so. Individuals crossing the LOS in their vehicle should remain in the cab unless their job duties require them to exit the vehicle. Biosecure entry procedures for individuals crossing the LOS but not contacting animals may vary based on their job duties. The Biosecurity Manager is responsible for communicating these requirements to all individuals.

Individuals and their clothing/footwear may become contaminated with FMD virus through a variety of activities and contacts when they are off-site such as:

- Living with people who work at other livestock production sites;
- Working at or visiting other livestock production sites (pig, cattle, sheep or goat);
- Working at or visiting auction markets, buying stations, slaughter plants, or rendering facilities;
- Hunting or contact with feral swine, deer, etc.; and

- Stopping at a gas station which may have been previously visited by rendering truck drivers or livestock haulers.

It is possible to reduce the potential for people to introduce FMD virus by taking certain precautions prior to arrival at the dairy operation. All individuals contacting animals should:

- Ensure that the inside of their vehicle is clean (free of all animal manure/excrement) prior to arrival and has not become contaminated by soiled clothes, footwear, or other items.
- Ensure they have showered and changed into clean clothes and footwear prior to arrival on the premises.
 - For individuals that work with the animals and live on-site, showering and changing into clean clothing/footwear before leaving the house is necessary.
 - For individuals living off-site, after showing and changing into clean clothes and footwear, do NOT contact animals, live or dead, or facilities where they are held prior to arrival at the dairy.
- Understand and be able to follow all procedures for crossing the LOS before arrival.
- Sign an agreement verifying they have been informed of these biosecurity protocols and will abide them (example agreement included in [Appendix H](#)).

Entry Logbook

Everyone crossing the LOS Access Point(s) completes the entry logbook, unless they are a scheduled worker. The entry logbook is monitored by an individual working on the dairy to ensure accurate completion. The contact information and work schedule records for all caretakers are maintained.

Prior to crossing the LOS, all individuals (other than scheduled workers) granted entrance must sign the Entry Logbook maintained on-site. Information recorded must include (at minimum): name, phone number, reason for entry, and if they had livestock (cattle, pigs, sheep, goats) contact in the last seven days, and describe where (auction, packing plant, exhibition, home, etc. and City/State).

The Biosecurity Manager should ensure the entry logbook is maintained. Operations can use their own logbook if it contains the information described above or use the SMS People Entry Logbook form (see [Appendix I](#)). The entry logbook should be monitored by an individual working on the dairy to ensure accurate completion. The Entry Logbook should be available for review and kept up-to-date.

Employee and family member contact information and work schedule records must be maintained and be accurate.

Biosecure Entry/Exit Procedures

All individuals who cross an LOS Access Point on foot or exit their vehicle inside the LOS ensure that visible contamination on their footwear, clothing, or exposed skin does not enter or exit the operation, following the a biosecure entry and exit procedures as specified in the biosecurity plan.

All individuals crossing the LOS on foot or exiting their vehicle should arrive having showered, wearing clean clothing and footwear. The inside of their vehicle should be clean and have no visible contamination (soiled clothes, footwear, or other items) that could transfer to their clean clothing, clean footwear, and exposed skin. Additional biosecure entry procedures may vary based on whether or not individuals will have contact with animals or their excretions (milk, manure, etc.).

Biosecurity entry procedures should be communicated in writing to individuals frequenting the dairy and with trucking companies so they can be shared with the truck drivers. One way to accomplish this is through development of Standard Operating Procedures (SOPs).

Milk haulers/drivers are one of the most frequent individuals arriving at dairy operations. See [Milk Collection](#) for specific information.

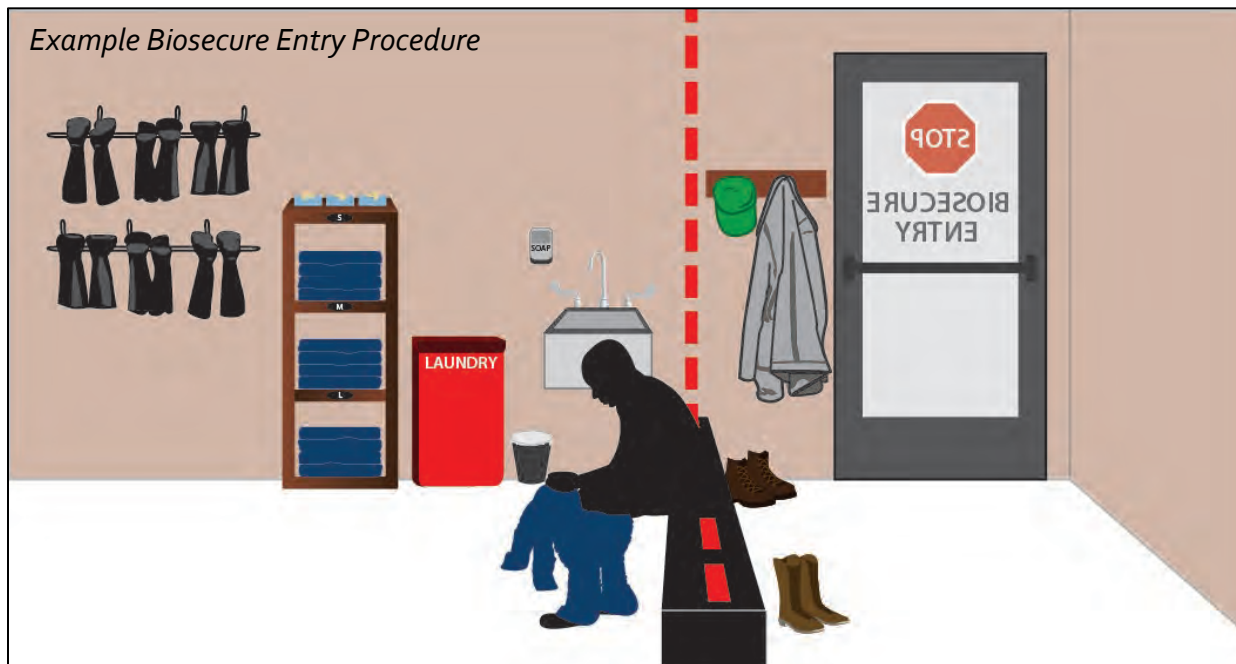
All individuals crossing the LOS should also, at a minimum:

- Wear dairy-dedicated footwear, **OR**
- Wear disposable or disinfectable footwear; **AND**
- Ensure hands are clean
 - Wash hands and/or
 - Wear disposable or disinfectable gloves over clean hands
- All **animal handlers** must also put on dairy-dedicated clothing **OR** put on clean coveralls/protective outerwear

These procedures should occur at the designated LOS Access Point for people entry or as the individual exits the cab of their vehicle on the cattle side of the LOS. If there is a possibility of direct contact with animals or animal manure/excretions, they should also wear dairy-dedicated clothing **OR** clean coveralls/protective outerwear. Individuals exiting their cab are encouraged to carry a change of street clothes/extra coveralls/protective outerwear in the event their street clothes become soiled with animal manure/excretions. The goal is to not transfer manure/excretions on clothing to the vehicle cab or from dairy operation to another livestock operation.

Keep on record all communications (written, oral, etc.) that occurred between the Biosecurity Manager and milk haulers/drivers, livestock transporters, delivery, or service personnel, including dates and times of said communication. For example, keep a copy of the information sent to the milk hauler or feed company with a premises map showing where the milk or feed trucks are to drive and what the drivers are supposed to wear (disposable footwear, disposable gloves, no hats, etc.).

The Danish Entry System is one example of a Biosecure Entry Procedure for people to cross at an LOS Access Point. This system includes a dedicated entrance area, which may be a shed, trailer, or other covered area that straddles the LOS. The LOS Access Point is identified with a disinfectable solid barrier (sealed plywood, plastic bench, chairs, stools) that clearly demarcates the separation of off-farm from on-farm. Both sides of the barrier have clothing and footwear storage and supplies and/or facilities for handwashing. An example of a Danish Entry that could be implemented on a dairy operation is shown in the figure.



Biosecure Exit Procedure

The goal is to prevent visible contamination on clothing, footwear, and exposed skin from leaving the dairy and being transferred to other locations with susceptible species. Individuals should remove any protective outerwear and disposable footwear, clean and disinfect footwear, and remove gloves (and/or wash hands if soiled) before crossing the LOS. Soiled clothes could be left on the dairy to be laundered or transported off premises enclosed in a garbage bag/tote and stored until they can be laundered/cleaned and disinfected. Soiled footwear should also remain on the dairy or be thoroughly cleaned and disinfected before exiting. The dairy should provide a convenient place for this to occur with trash bins, containers for laundry, a sink with running water and soap, and a scrub brush, water, and disinfectant. If soiled clothing or footwear is removed from the operation, they should be enclosed in a garbage bag/tote and stored until they can be laundered/cleaned and disinfected.

6. Animal Movement

All animal movement into, out of, or through a Control Area requires a movement permit issued by Responsible Regulatory Officials. Permit movement criteria must be met before animal movement may occur in an effort to prevent spread of FMD virus between operations.

All records of animal movements by date and time onto the dairy operation should be maintained on site and made available to Responsible Regulatory Officials in the event it is needed for a trace-back or trace-forward investigation. See [Appendix J](#) for an Animal Movement Log.

The Biosecurity Manager communicates all biosecurity procedures pertaining to animal movement with the source or destination of animals and/or with the transport companies. All communication is documented.

Incoming Animals

Animals only come from sources with documented biosecurity practices and no current or previous evidence of FMD infection.

It is not possible to prove that cattle are free of FMD virus; it is only possible to demonstrate lack of evidence of infection. A lack of evidence of infection means that, based on available surveillance tools, the cattle have no abnormal clinical signs and no visible lesions as documented by personnel on the dairy; diagnostic test results may or may not be available. All incoming animals must come directly from a premises with no current or previous evidence of infection with FMD. Once infection occurs, spread within the herd is rapid (days). Prior to animal movement from a premises located within a Control Area, daily observation of all susceptible species for at least 7 days is necessary to determine if there is evidence of infection with FMD. This process is called Active Observational Surveillance and is explained in the Secure Milk Supply Plan (www.securemilksupply.org).

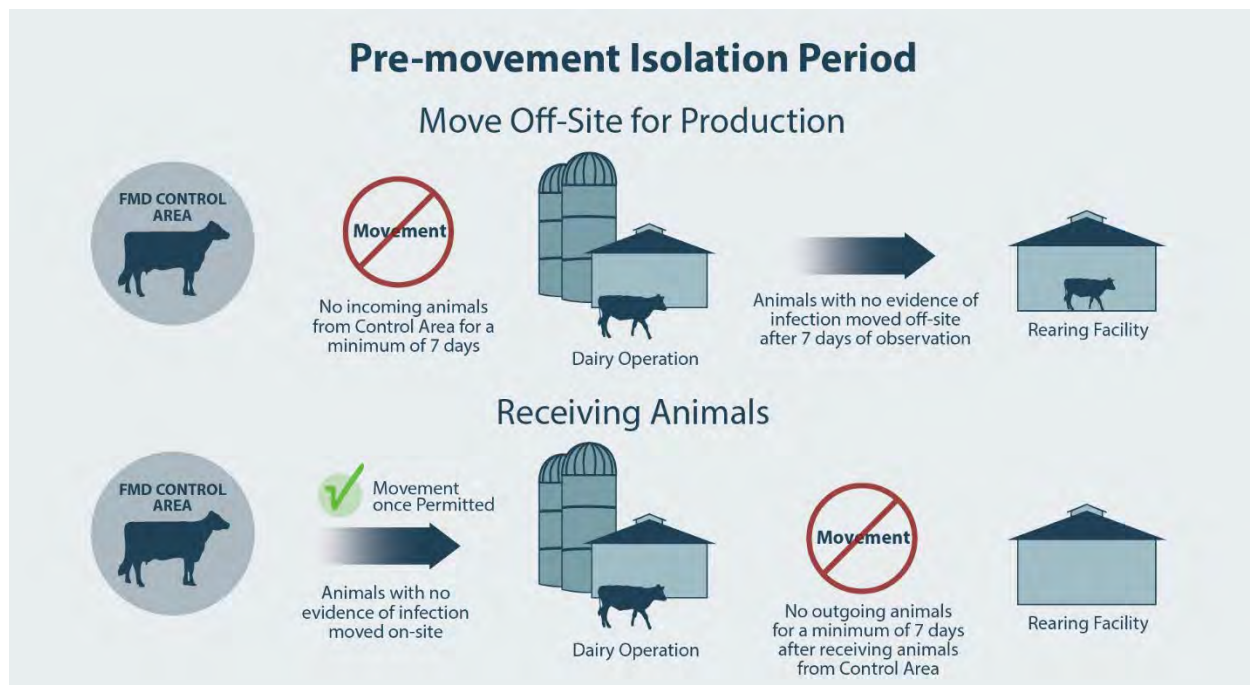
If animals are raised off-site, ensure that the off-site premises' biosecurity plan aligns with yours and their personnel are trained to look for signs of FMD. If cattle cannot return to the dairy to calve due to prolonged animal movement restrictions, ensure that the off-site premises is prepared to care for newborn calves and capable of milking fresh cows or calves are kept with their dams to nurse. Likewise, your premises should be prepared to raise calves to an older age on-site.

Pre-Movement Isolation Period

No animals from an FMD Control Area are introduced onto the operation for at least 7 days prior to moving animals to another production site with susceptible animals.

Animals from a Control Area are at higher risk of being infected with FMD virus but may be undetected clinically if in the early stages of infection. Restricting animal introduction for a minimum of 7 days before animals are moved to another production site will increase confidence that FMD virus was not introduced through animal movements. The pre-movement isolation period puts a 7 day period between different types of movements (incoming or outgoing), no matter which movement comes first. Cattle moving off of the dairy directly to slaughter may do so at any point in time once movement requirements have been met and a permit issued.

For example, if a dairy in a Control Area needs to move their pre-weaned calves off-site for rearing, they should NOT introduce susceptible animals from a Control Area to their operation for a minimum of 7 days prior. The dairy needs to be prepared to feed and care for those newborn calves for a minimum of 7 days. Once a movement permit is issued, those calves can move off-site. If that same dairy needs to bring pre-fresh cows/heifers from the Control Area to the dairy to calve, that should only occur AFTER the calves were moved off-site. Once those pre-fresh cows/heifers enter the operation, no new susceptible animals can be moved off-site for rearing for a minimum of 7 days. This minimum of a one-week restricted entry time provides added assurance to those receiving the animals that no clinical signs were found in the animals on the premises of origin. See figure below.



Contingency Plan for Interrupted Animal Movement

A plan exists to manage animals (heifer and bull calves, cull cattle) in a biosecure manner on-site in the event animal movement is stopped for several weeks.

Dairy premises that move animals off-site for rearing (heifers) or market (bull calves, cull cattle) need to have a plan to care for those animals for one to several weeks in the event animal movement is stopped. Describe the plan to provide housing to ensure protection from the elements, feed (milk, milk replacer, starter) to meet nutrient needs, and personnel trained in their health care and husbandry needs. Inventory to purchase new hutches, bottles, buckets, etc. may be limited during an outbreak. Introducing items from other livestock operations poses a biosecurity risk unless protocols are followed. Dairy operations should also develop plans for cull cattle in the event of movement restrictions. The plan should include welfare considerations and the possibility of humane euthanasia depending on the reason for culling.

Loading/Unloading Animals

Animals leaving the operation only move in one direction across the LOS at an Access Point. The animal loading/unloading area is NOT a people entry point. Areas contaminated by personnel or animals after loading/unloading are cleaned and effectively disinfected according to the biosecurity plan.

Animal loading procedures should minimize cross-contamination by maintaining directional flow of animals—animals which have crossed the LOS to the outside *should not* be allowed to cross back to the cattle side of the LOS. The LOS Access Point in the loading area must be marked in a way that is always visible to personnel moving animals, even during loadout (when the floor may be covered with manure and debris). Methods to prevent animals from crossing back across the LOS to the cattle side during the loading process may include an extra person, gate, or panel. Moving young calves may require two people – one on the cattle side of the LOS and one that remains on the trailer to receive them.

- The animal loading/unloading area must not act as a people entry point. If personnel cross the LOS in the load-out area from the cattle side to the outside, the person must re-enter by crossing at an LOS Access Point and follow the biosecure entry procedure.

Contamination of the loading area can occur due to human movement across the LOS, animals that cross back to the cattle side during loading, etc. Any areas on the cattle side of the LOS that are contaminated during loading/unloading must be cleaned and effectively disinfected by trained personnel. Remove all visible contamination, then apply an approved disinfectant for the recommended wet contact time; consult the label and follow the application directions.

For more information on managing the livestock trailer, see [Livestock Truck/Trailers \(animal transport vehicles\)](#), [Section 4 Vehicles and Equipment](#).

7. Animal Product Movement

Animal products such as milk, semen, or embryos transported on or off dairy operations are potential sources for FMD virus spread. FMD is not a public health or a food safety concern.

Milk Collection

The milk hauler/driver follows our farm-specific standard operating procedure that meets or exceeds the Secure Milk Supply Plan Biosecurity Performance Standards for Raw Milk Collection and Transport. The drive path to the milk house is labeled on our premises map. Our biosecurity plan describes the drive path to the milk house, whether the milk truck crosses the LOS or not, the use of single or commingled tankers on this operation, the type of milk transfer hose used, and whether the milk hauler/driver exits the cab to load milk.

Raw milk containing FMD virus and any vehicles, equipment, or personnel clothing/footwear that comes in contact with raw milk could spread the virus to susceptible animals if biosecurity protocols are not followed. The SMS Plan includes Biosecurity Performance Standards (BPS) for Raw Milk Collection and Transport that provides guidance to assure FMD virus is not spread by milk trucks/tankers and the milk hauler/driver via the movement of raw milk.

Milk Trucks/Tankers carrying milk originating from multiple operations within an FMD Control Area pose a higher risk of FMD spread if biosecurity protocols are not followed. Milk truck/tankers crossing the LOS must be free of visible contamination and effectively disinfected at the dairy operation's C&D Station. As discussed under [Section 3: LOS Access Points](#) and [Appendix D](#), some dairy operation layouts may allow for milk truck/tanker entry without crossing the LOS.

- **Option 1: NOT crossing the LOS: Truck/Tanker/Hauler Collecting Milk**
 - Tanker, hauler and transfer hose do not cross the LOS (i.e., the milk house is “outside” of the LOS)
 - Hauler/driver transporting direct load tankers, transport tankers, or commingled loads
 - Hauler enters the milk house to pump milk
 - No C&D of truck/tanker required
- **Option 2: Crossing the LOS: Only the Transfer Hose Crosses**
 - Truck/tanker and hauler/driver do not cross the LOS

- Hauler/driver transporting direct load tankers, transport tankers, or commingled loads
- Farm staff handles the transfer hose on the milk house side of the LOS
- Licensed milk hauler on staff
- Transfer hose undergoes exterior C&D
- No C&D of truck/tanker required
- **Option 3: Crossing the LOS: Milk Truck/Tanker, Hauler/Driver Exits the Cab**
 - Truck/Tanker, hauler/driver, and transfer hose cross the LOS Access Point onto the farm-side of the LOS to collect milk
 - Hauler/driver transporting direct load tankers, transport tankers, or commingled loads
 - C&D of truck/tanker required
 - Hauler/Driver either stays in cab or exits following proper biosecurity protocols
 - Hauler/Driver has no direct contact with farm personnel, animal housing, animals, or milk products to be fed to susceptible animals

Source: BPS for Raw Milk Collection and Transport, September 2017

4.2.3 Milk trucks/tankers carrying raw milk from other premises (multiple farm pickups or no CIP between loads); the performance standard is to minimize raw milk contamination of subsequent dairy premises.

4.2.4 To mitigate the risk of bioaerosols escaping the air vent during milk pumping and transporting, the performance standard is to close and lock the dome lid (secured by the dog legs).

4.3.1 Milk sample vial(s) collected/picked up on farm; the performance standard is to ensure no visible contamination on the exterior of the disinfectable outer container (plastic sealable bag).

The **milk transfer hose** can either be truck-mounted or farm-dedicated. Truck mounted milk transfer hoses have the advantage of having minimal contamination from residual raw milk from other dairies as well as the exterior is C&D when crossing the LOS. A farm-dedicated milk transfer hose, stays at the farm and is cleaned and disinfected by farm personnel.

Milk haulers/drivers and all personnel involved in the milk collection process must follow a specific SOP which is available upon request. These individuals must sign the Employee and Visitor Arrival Agreement verifying they have been informed of these biosecurity protocols and will abide them. The signed agreements are available upon request. Milk haulers/drivers ensure the inside of their vehicle is kept clean (free of all animal manure/excrement) and not be contaminated by soiled clothes, footwear, or other items.

When transporting commingled loads or multiple single loads on the same day, milk haulers that have been on other operations and pose a risk of FMD virus introduction if biosecurity protocols are not followed. Establish the expectations for the activities of haulers/drivers on your operation and describe it in your biosecurity plan. Develop specific standard operating procedures (SOP) for milk collection and communicate this to all personnel involved in the process. Everyone must be prepared to properly perform their duties in a biosecure manner.

- If the farm management prefers the hauler to remain in the cab, work with the State to determine the requirements to have a licensed weigher/sampler on farm.
- If farm personnel are connecting/disconnecting the tractor from the tanker, ensure these actions are allowed by the hauling company for insurance purposes.
- See [Appendix K](#) for Milk Hauler/Driver Biosecurity Expectations

The Biosecurity Manager ensures the milk truck/tanker hauling milk from other operations does not leak milk in an area that cannot be effectively disinfected.

C&D station personnel should inspect the milk tanker storage compartment and external surfaces for milk leakage during transit. If milk leakage is excessive (i.e., it will leave a puddle on your dairy premises), the tanker should return to the plant so the problem can be addressed before picking up additional raw milk. Personnel who found the leak should describe how the leak will be fixed, on-site if possible, to return the milk plant, hauler operation, or elsewhere. Trucks/tankers with minimal leakage should have the storage compartment cleaned and disinfected, as well as the rest of the tanker exterior. Milk leaked/spilled onto porous surfaces (soil, mud, gravel or pitted concrete driveways) are difficult to clean and disinfect to inactivate the FMD virus making prevention steps critical. Should large quantities of milk not originating from the current dairy premises leak or spill outside of the milk house, the hauler should alert the dairy premises personnel to clean and disinfect the area.

Milk samples collected on-farm are transported in a container/bag that can be disinfected to remove visible contamination on the exterior.

For farms that send labeled milk samples with the truck/tanker, ensure the exterior is not contaminated. The disinfectant used must not come in contact with the milk or the interior or exterior of the vial. Milk samples stored in a cooler must be made of a material that can also be cleaned and disinfected.

Feeding Dairy Products

Calves on the operation are fed either colostrum/milk originating from the operation where they are housed or colostrum/milk replacer manufactured according to the World Organization for Animal Health (OIE) recommendations for inactivation of FMD virus for animal consumption.

Raw milk is a source of virus transmission to susceptible animals so it is important to only use colostrum/milk that originated on the same operation where the calves are raised. An alternative is to use colostrum/milk replacer products that are manufactured according to OIE recommendations for animal consumption. Normal high temperature – short time (HTST) pasteurization (72°C [161°F] for at least 15 seconds) does not completely inactivate all FMD virus in raw milk. FMD is not a public health or a food safety concern; it is an animal health disease. Additional treatment of raw milk is needed to prevent FMD virus transmission to susceptible animals (cattle, swine, sheep, and goats). This also applies to any waste milk or milk products (whey, lactose, etc.) fed to adult cattle. Waste milk may include expired grocery store products (pasteurized milk, yogurt, ice cream, cream, etc.) that may or may not undergo additional processing prior to being fed to adult dairy cattle as part of their daily ration.

Adult cattle on the operation are fed waste milk that has been treated to World Organization for Animal health (OIE) recommendations for inactivation of FMD virus for animal consumption.

The World Organization for Animal Health (OIE) sets the international sanitary standards for trade in animal products and are the guidelines used in the SMS Plan for inactivation of FMD virus in milk for animal consumption. World Organization for Animal Health (OIE) Terrestrial Animal Health Code 2016, Article 8.8.36 at http://www.oie.int/index.php?id=169&L=0&htmfile=chapitre_fmd.htm describes:

Procedures for the inactivation of the FMD virus in milk for animal consumption

For the inactivation of viruses present in milk for animal consumption, one of the following procedures should be used:

- The HTST process applied twice (HTST is high temperature – short time pasteurization with a minimum temperature of 72°C [161°F] for at least 15 seconds); or
- HTST combined with another physical treatment, e.g. maintaining a pH 6 for at least one hour or additional heating to at least 72°C [161°F] combined with dessication; or
- UHT combined with another physical treatment referred to in point 2 above (UHT is ultra-high temperature with a minimum temperature of 132°C [270°F] for at least one second).

Milk Disposal

A milk disposal plan exists in the event raw milk cannot be moved to processing off-farm.

The goal of the SMS Plan is continued movement of milk to processing from dairies with no evidence of infection in an FMD Control Area. However, depending on the scope and characteristics of an outbreak, it is important to have a contingency plan for milk disposal in the event the milk truck/tanker cannot pick it up or is not allowed to pick it up. Having options for different times of year is ideal. FMD virus can be shed in milk up to four days before seeing clinical signs in an infected cow. Therefore, on-site disposal plans should consider the need to prevent wildlife (deer, feral pigs) from consuming waste milk. Consider the following in your disposal plan:

- Capacity of lagoon/manure slurry, including which months it may be unavailable
- Land applying it as long as there are no streams or waterways that can be contaminated and spread the virus downstream
- Injecting into soil on-site
- Other options that would meet local, state, and outbreak environmental regulations

Semen, Embryos

Semen and embryos collected after FMD has been diagnosed in the U.S. come from sources with documented, enhanced biosecurity practices and have no current or previous evidence of FMD infection. Semen and embryos are transported in containers whose exteriors can be cleaned and effectively disinfected to minimize the risk of virus transmission.

FMD virus can be transmitted to cattle exposed through direct contact with, or from surfaces coming in contact with, contaminated semen and embryos. All semen and embryos arriving onto the site must come from sources with documented biosecurity protocols and a lack of evidence of FMD infection (based on available surveillance tools, the cattle have no abnormal clinical signs and no visible lesions as documented by personnel on the dairy; diagnostic test results may or may not be available).

Since semen can contain FMD virus before clinical signs are observed, it should be held, frozen, at the source herd for 14 days after collection. If bulls do not show clinical signs today, the semen produced 14 days ago is very likely to be free from FMD infection. Embryos collected from cows without clinical signs of FMD should be held, frozen, for a minimum of 14 days before placing into a recipient animal.

The source herd needs to document Active Observational Surveillance (as described in the SMS Plan) for at least 14 days prior to movement of product. Responsible Regulatory Officials may also require periodic inspection of donor animals by an Accredited Veterinarian and/or laboratory testing a sample from the donor animal(s) to demonstrate a lack of evidence of infection prior to issuing a movement permit for semen or embryos.

Semen and embryos should be transported in containers that can be cleaned and effectively disinfected on the exterior as it crosses the LOS to minimize the risk of virus introduction. The collection, storage, and transport of embryos and semen must be closely monitored and biosecurity protocols must be followed to prevent exposure of disease agents to susceptible animals.

8. Carcass Disposal

Dead animals are disposed of in a manner that prevents the attraction of wildlife, rodents, and other scavengers. Rendering trucks and other vehicles hauling dead animals to a common disposal site do not cross the LOS.

Develop a plan for carcass disposal of all deceased cattle using normal mortality numbers and a contingency plan for a large of mortalities unrelated to FMD infection (toxicity, etc.). The plan should include the process for removing dead cattle from buildings and lots as well as storage and disposal of carcasses in methods compliant with state and federal laws. These regulations may change during or after an FMD outbreak. Options for disposal may include burial, incineration, composting or rendering—check with local authorities for the state and federal laws pertaining to animal disposal. Guidance may also be provided by the regulatory officials managing the outbreak response. Landfills may not be a reliable option for disposal of carcasses in an FMD outbreak.

- Incineration or composting of carcasses from premises with no evidence of infection may be performed either on-site or off-site, inside the LOS or outside of the LOS, as long as it is accomplished in a biosecure manner.
- Burial and composting must be accomplished in such a way that prevents wildlife, pets, and rodents from accessing the carcasses.
- Rendering trucks and other vehicles hauling dead animals to a common disposal site must not cross the LOS. The ideal location for carcass holding for rendering pickup is at the edge of the LOS, so that equipment used to move carcasses within the LOS does not need to exit the LOS and rendering trucks have access to the carcasses without the truck or personnel entering the LOS. Any on-site equipment exiting the LOS must go through C&D at a LOS Access Point before crossing the LOS back to the cattle side. Routes for carcass movement and disposal should be labeled on the premises map.

Carcass disposal options should be described in the biosecurity plan, including on-site and off-site possibilities, and carcass movement drawn on the premises map. For example, if rendering is used, the plan should describe how the animals are moved to the pickup location and demonstrate that the rendering truck never crosses the LOS. If the operation disposes of carcasses on-site, then the burial or compost location and land area required should be labeled on the premises map. The dairy operation's animal disposal plan needs to be reviewed and updated at least once a year. See [Appendix D](#) for some examples of deadstock removal pathways.

9. Manure Management

Manure is stored and removed in a manner that prevents exposure of susceptible animals (either on or off the premises of origin) to disease agents and meets state, local, and Responsible Regulatory Officials' regulations.

Techniques for manure management vary with the type of production system, physical characteristics of the operation, and weather. Infected animals shed FMD virus in their manure. Therefore, the risk of introduction of FMD virus increases when manure handling equipment is shared between operations and personnel do not follow effective biosecurity protocols, including cleaning and disinfection. For these

reasons, it is very important for the Biosecurity Manager to develop operation-specific standard operating procedures (SOPs) for manure management for the operation.

A plan exists for storing manure on-site in the event it cannot be permitted to move off-site during an outbreak.

Contingency planning for long-term manure storage may be necessary for prolonged outbreaks. Spreading or storing manure off-site may not be a permitted movement depending on the risk of FMD virus spread; all local state and Responsible Regulatory Official regulations will need to be met.

All manure hauling personnel must have showered and changed into clean clothes and footwear prior to arriving at the production site.

Vehicles and equipment contaminated with cattle or hog manure from other premises are a potential source of infection. Therefore, require all manure hauling vehicles and equipment from other sites are cleaned to remove all manure and disinfected with either heat or a chemical disinfectant followed by drying. These protocols should be shared in writing with any contract companies, signed and dated when read, and copies kept on file at the dairy operation. Whenever possible, operation-specific dedicated equipment should be used (for example, site-specific pumps or skid loaders) and equipment should not be shared unless absolutely necessary.

If the equipment cannot be effectively C&D, the LOS near the manure storage facility could be temporarily modified during manure removal. After manure removal is completed, the LOS should be re-established by cleaning and disinfecting the area accessed during manure removal.

See [Appendix F](#) for additional information on cleaning and disinfection.

10. Wildlife, Rodent, and Other Animal Control

Control measures are in place to minimize interaction between cattle and other animals (deer, feral pigs, rodents, dogs, cats, horses, etc.).

Free-roaming animals like wildlife, dogs, cats, rodents, and birds can potentially spread FMD virus from infected to susceptible animals via contaminated fur, hooves, foot pads, feet/claws, or feathers. Complete exclusion of wildlife like deer, feral pigs, rodents, and birds can be difficult, but every effort should be made to minimize interaction with cattle.

Biosecurity measures that address wildlife, dogs, cats, rodents, and birds fall into three categories: clean, exclude, and control.

Clean: General farm maintenance, weed/grass control around buildings, sanitation, and drainage are important because it reduces attraction of wildlife and rodents. Trash should be regularly removed and feed spills cleaned up immediately. Waste milk and dead cattle should be disposed of/removed promptly.

Exclude: Outdoor raised animals are at risk of wildlife contact. Sturdy, double fencing at a height that accounts for jumping deer and aggressive feral pigs surrounding dry lots, pastures, and buildings housing cattle is one option that could be implemented. Complete exclusion of wildlife may not be possible.

Control: Bird control should follow local or state regulations. Dogs and cats should be secured during an outbreak to prevent contact with cattle and feed areas. Ask your neighbors to do the same to prevent roaming. Rodent control options could include:

- Dairy operation designates a rodent control monitor for the operation who effectively implements a written rodent control plan.
 - Keep records current and ensure that they contain, at minimum, monthly entries. An example is included in [Appendix L](#).

- Dairy operation uses a professional rodent control company.
 - Movement of pest control operators occurs through the LOS Access Point(s) and requires following biosecurity measures as outlined in [Section 5: Biosecure Entry/Exit Procedures](#).
 - Keep records (e.g., invoices or other documentation) provided by a licensed pest control operator describing rodent control measures for the operation.

State and local regulations for controlling wildlife, birds, insects, and rodents must be followed. Use of chemical control methods must follow all label directions and regulations to avoid contamination of cattle. While complete control may not be achieved, it should be attempted.

11. Feed

Feedstuffs are delivered, stored, mixed, and fed in a manner that minimizes contamination and feed spills are cleaned up promptly to avoid attracting wildlife.

Feed delivery trucks that cross the LOS must be cleaned and disinfected before crossing. Alternatively, certain feedstuffs could be augered across the LOS into an on-site feed wagon or other vehicle/equipment to prevent entry of the feed delivery truck. Feedstuffs can be contaminated if exposed to wildlife carrying FMD virus. Therefore, feed ingredients should be stored in such a way that limits bird, rodent and other wildlife access. Bagged feed must be elevated off the floor and proper rodent control procedures should be implemented in feed ingredient storage areas. All feed spills or feed ingredient spills should be cleaned up as soon as possible to minimize attraction of wildlife and rodents.

- Grain and feed should be stored and handled so that it cannot be contaminated or be treated to eliminate contamination.
- Grain and feed commodity delivery trailers should be covered during transport so that the contents cannot be contaminated.
- Finished feed and feed ingredients should be stored in closed bins or buildings which eliminate the potential for contamination with disease agents.

It is important to consider the entry and movement of feed delivery vehicles and the feed they carry when determining the best location for the LOS and Access Points.

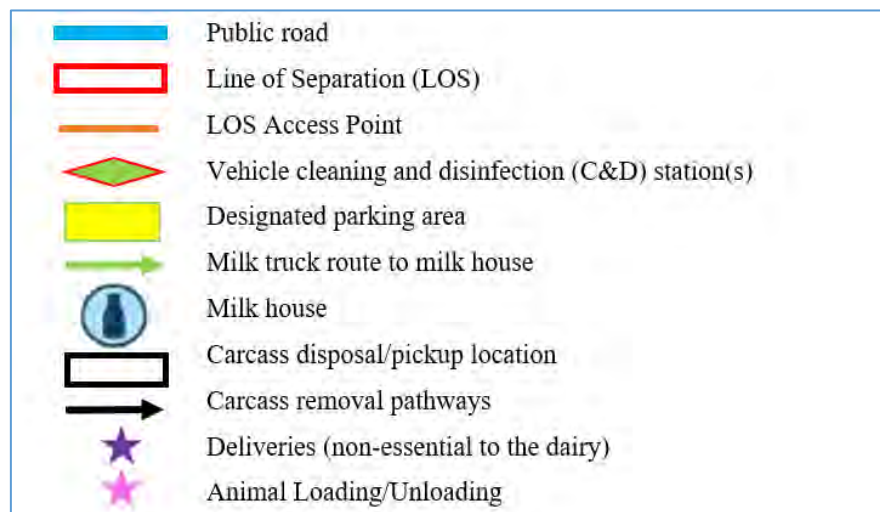
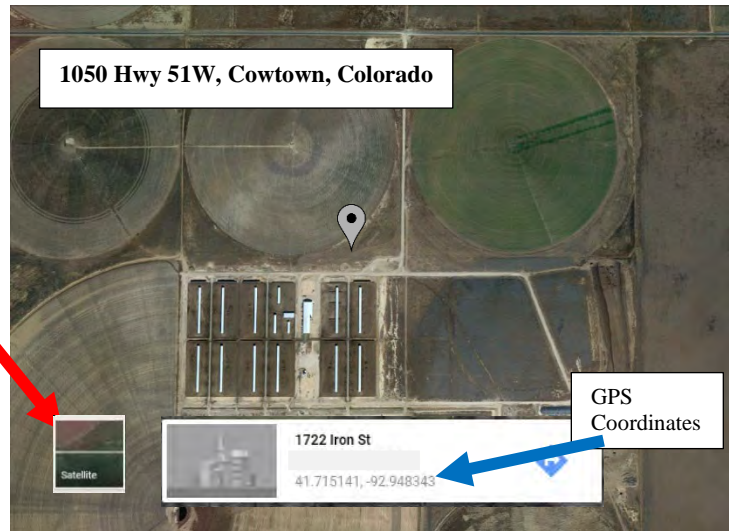
Appendix A: Creating a Premises Map for a Biosecurity Plan

The first step is to get an aerial map of your operation (steps described below). It can then be [labeled by hand](#) or [using a computer](#) (also described below).

Getting an Aerial View from Google Maps

*Google Maps is one example of aerial images provided free of charge online. There are others such as www.bing.com/maps and <http://zoom.earth>; use what works best for your operation. The steps below pertain to Google Maps.

1. Open an internet browser. Type in the URL: <https://www.google.com/maps>
2. Type in the address of your production site (address where the buildings are located, not home address—if different).
3. Click on the small box in the lower left that says “Satellite”
4. Zoom in so that you can visualize all barns and accessory structures once you see the satellite view. The entire site should still fit within the screen.
5. Find your site location on the map where the animals are located and click. A gray “pushpin” icon will appear. At the bottom of the screen, you will see the GPS coordinates in light gray below the location’s address. Copy this information to include in your premises map.
6. Go to your biosecurity plan in Microsoft Word, but keep the internet browser in Google Maps open behind Word. Click on “**Insert**” in the toolbar; click “**screenshot**,” click “**screen clipping**.” The browser will move to the front and be frosted. You can now use the mouse to select the area you want to copy into the word document.
7. Label the map with the following items and include a legend:



Labeling Map By Hand

Use color pencils or pens to draw the lines, arrows, and shapes listed above on your map.

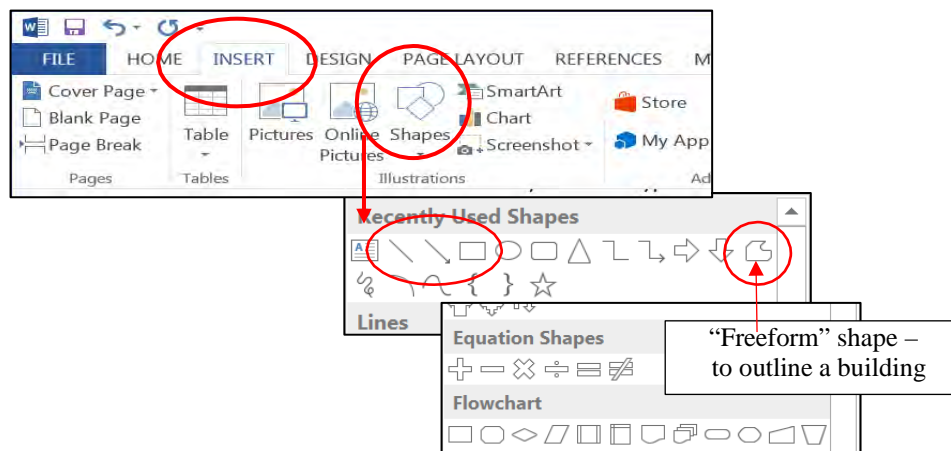
Here is an example of a completed map with legend:



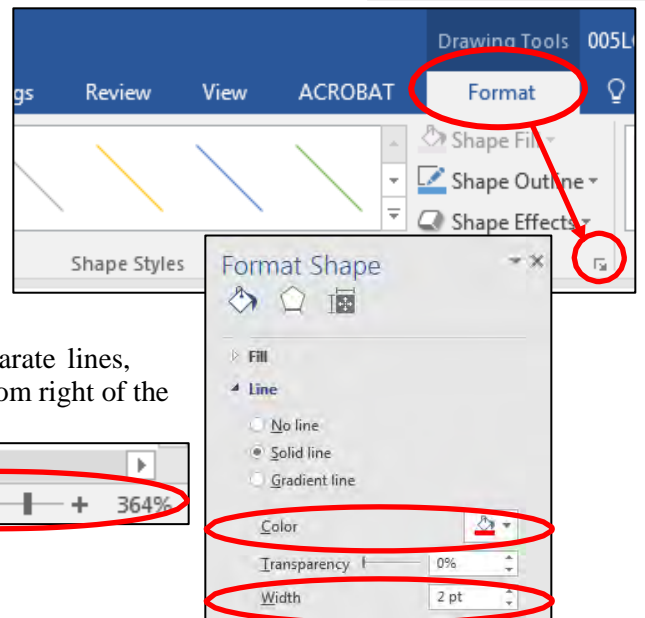
Labeling Map Using Computer

If Using Microsoft Word

1. Use the **Insert:Shapes** from the control panel to place the various shapes and lines.



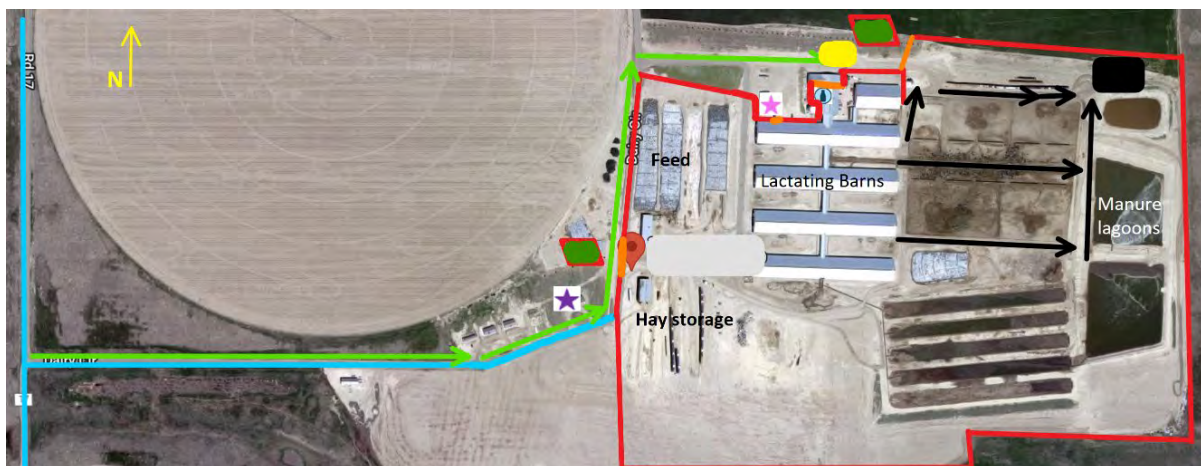
2. Use the “Line” tool to make the LOS surrounding the farm. This allows for editing individual areas if the LOS was to change in the future. The “Freeform” tool is helpful to use in smaller, more complicated areas of the LOS (*example on right*), but will make it difficult to edit later and should only be used in stationary areas of your LOS.
3. After you insert your first line, click the “Format” tab at the top of the page. Click the expander button in the “Shape Styles” section to expand your formatting pane to the right side of the page.
 - Use the “Format Shape” panel on the right to adjust the color and line width of your lines, arrows, and shapes.
4. Copy the formatted line by selecting it and hitting “Ctrl + C” on your keyboard. Paste a new line (“Ctrl + V”), already formatted, next to the first one you created. Drag the ends of the lines to connect them at the appropriate locations.



If you have a hard time seeing where to connect the separate lines, zoom in on your map using the zoom option at the bottom right of the word document.



Here is an example of a completed map using the symbols/colors from the above legend:



Appendix B: Group Training Form

Trainer Name: _____ Phone: _____ Email: _____

Trainees Place of Employment (Name): _____

Premises ID _____ Training Date: _____

	Trainee First and Last Name	Training Topic	Trainee Signature Upon Completion of Training
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			

Appendix C: Inputs/Outputs to the Operation & Contingency Planning

C&D of vehicles crossing the LOS is time and resource intense. Carefully planning the location of the LOS based on the types, drive path, frequency, and necessity of inputs/outputs can help focus resources to minimize FMD virus entry. Decide if some movements could be modified. For example: Move your garbage bin to the edge of the LOS so the garbage truck can pick it up without crossing the LOS or auger grain across the LOS into a farm wagon that remains inside the LOS.

Below are some input/outputs that may apply to your dairy operation. Evaluating the frequency and travel path can be used to help determine LOS placement. Include the completed chart in your biosecurity plan.

The last column helps with a contingency plan. If movements were limited, determine how long you could go without certain inputs or if some movements could be less frequent and still maintain the operation.

Inputs/Outputs	Frequency of input/output	Path traveled by:	How long could you go without this movement?
Milk truck/tanker	<input type="checkbox"/> More than once/day <input type="checkbox"/> Daily <input type="checkbox"/> Every other day	<input type="checkbox"/> Onsite vehicles <input type="checkbox"/> Equipment <input type="checkbox"/> People <input type="checkbox"/> Animals <input type="checkbox"/> None	<input type="checkbox"/> One day? <input type="checkbox"/> Few days (2-6 days)?
Feed commodity delivery (bulk ingredients, bagged feed, liquid feed)	<input type="checkbox"/> More than once/day <input type="checkbox"/> Daily <input type="checkbox"/> Every other day	<input type="checkbox"/> Onsite vehicles <input type="checkbox"/> Equipment <input type="checkbox"/> People <input type="checkbox"/> Animals <input type="checkbox"/> None	<input type="checkbox"/> One day? <input type="checkbox"/> Few days (2-6 days)? <input type="checkbox"/> Week? <input type="checkbox"/> Month? <input type="checkbox"/> Year?
Ration (mixed feed) delivery to cattle onsite	<input type="checkbox"/> More than once/day <input type="checkbox"/> Daily <input type="checkbox"/> Every other day	<input type="checkbox"/> Onsite vehicles <input type="checkbox"/> Equipment <input type="checkbox"/> People <input type="checkbox"/> Animals <input type="checkbox"/> None	<input type="checkbox"/> One day? <input type="checkbox"/> Few days (2-6 days)? <input type="checkbox"/> Week?
Ration (mixed feed) delivery to cattle off-site (heifers, dry cows, pastured cattle, steers, etc.)	<input type="checkbox"/> More than once/day <input type="checkbox"/> Daily <input type="checkbox"/> Every other day	<input type="checkbox"/> Onsite vehicles <input type="checkbox"/> Equipment <input type="checkbox"/> People <input type="checkbox"/> Animals <input type="checkbox"/> None	<input type="checkbox"/> One day? <input type="checkbox"/> Few days (2-6 days)? <input type="checkbox"/> Week?
Feed harvest (silage, hay, grain)	<input type="checkbox"/> Monthly <input type="checkbox"/> Annually	<input type="checkbox"/> Onsite vehicles <input type="checkbox"/> Equipment <input type="checkbox"/> People <input type="checkbox"/> Animals <input type="checkbox"/> None	<input type="checkbox"/> Week? <input type="checkbox"/> Month?
Bedding inputs	<input type="checkbox"/> Daily <input type="checkbox"/> Weekly <input type="checkbox"/> Monthly <input type="checkbox"/> Annually	<input type="checkbox"/> Onsite vehicles <input type="checkbox"/> Equipment <input type="checkbox"/> People <input type="checkbox"/> Animals <input type="checkbox"/> None	<input type="checkbox"/> One day? <input type="checkbox"/> Few days (2-6 days)? <input type="checkbox"/> Week?

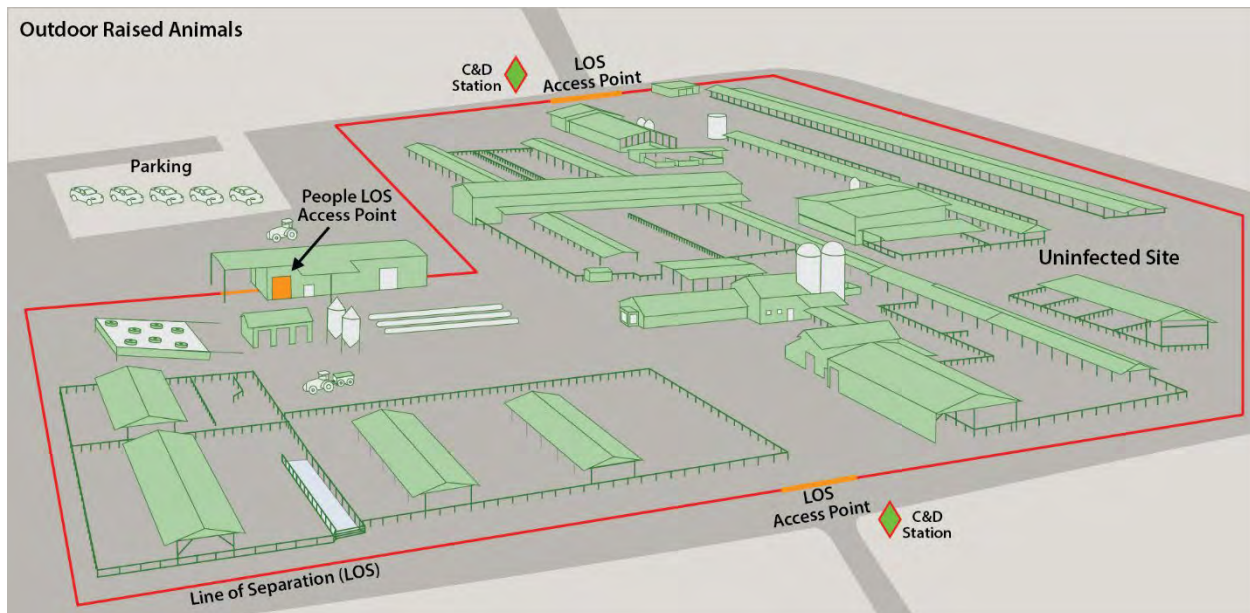
Inputs/Outputs	Frequency of input/output	Path traveled by:	How long could you go without this movement?
Fuel delivery	<input type="checkbox"/> Daily <input type="checkbox"/> Weekly <input type="checkbox"/> Monthly <input type="checkbox"/> Annually	<input type="checkbox"/> Onsite vehicles <input type="checkbox"/> Equipment <input type="checkbox"/> People <input type="checkbox"/> Animals <input type="checkbox"/> None	<input type="checkbox"/> One day? <input type="checkbox"/> Few days (2-6 days)? <input type="checkbox"/> Week?
Propane delivery	<input type="checkbox"/> Daily <input type="checkbox"/> Weekly <input type="checkbox"/> Monthly <input type="checkbox"/> Annually	<input type="checkbox"/> Onsite vehicles <input type="checkbox"/> Equipment <input type="checkbox"/> People <input type="checkbox"/> Animals <input type="checkbox"/> None	<input type="checkbox"/> One day? <input type="checkbox"/> Few days (2-6 days)? <input type="checkbox"/> Week?
Veterinary personnel	<input type="checkbox"/> Daily <input type="checkbox"/> Weekly <input type="checkbox"/> Monthly <input type="checkbox"/> Annually	<input type="checkbox"/> Onsite vehicles <input type="checkbox"/> Equipment <input type="checkbox"/> People <input type="checkbox"/> Animals <input type="checkbox"/> None	<input type="checkbox"/> One day? <input type="checkbox"/> Few days (2-6 days)? <input type="checkbox"/> Week? <input type="checkbox"/> Month? <input type="checkbox"/> Year?
Pharmaceutical deliveries	<input type="checkbox"/> Daily <input type="checkbox"/> Weekly <input type="checkbox"/> Monthly <input type="checkbox"/> Annually	<input type="checkbox"/> Onsite vehicles <input type="checkbox"/> Equipment <input type="checkbox"/> People <input type="checkbox"/> Animals <input type="checkbox"/> None	<input type="checkbox"/> One day? <input type="checkbox"/> Few days (2-6 days)? <input type="checkbox"/> Week? <input type="checkbox"/> Month? <input type="checkbox"/> Year?
Mail/package deliveries	<input type="checkbox"/> Daily <input type="checkbox"/> Weekly <input type="checkbox"/> Monthly <input type="checkbox"/> Annually	<input type="checkbox"/> Onsite vehicles <input type="checkbox"/> Equipment <input type="checkbox"/> People <input type="checkbox"/> Animals <input type="checkbox"/> None	<input type="checkbox"/> One day? <input type="checkbox"/> Few days (2-6 days)? <input type="checkbox"/> Week?
Milking equipment service personnel	<input type="checkbox"/> Daily <input type="checkbox"/> Weekly <input type="checkbox"/> Monthly <input type="checkbox"/> Annually	<input type="checkbox"/> Onsite vehicles <input type="checkbox"/> Equipment <input type="checkbox"/> People <input type="checkbox"/> Animals <input type="checkbox"/> None	<input type="checkbox"/> One day? <input type="checkbox"/> Few days (2-6 days)? <input type="checkbox"/> Week? <input type="checkbox"/> Month? <input type="checkbox"/> Year?
Milk testing personnel	<input type="checkbox"/> Daily <input type="checkbox"/> Weekly <input type="checkbox"/> Monthly <input type="checkbox"/> Annually	<input type="checkbox"/> Onsite vehicles <input type="checkbox"/> Equipment <input type="checkbox"/> People <input type="checkbox"/> Animals <input type="checkbox"/> None	<input type="checkbox"/> One day? <input type="checkbox"/> Few days (2-6 days)? <input type="checkbox"/> Week? <input type="checkbox"/> Month? <input type="checkbox"/> Year?
Garbage removal	<input type="checkbox"/> Daily <input type="checkbox"/> Weekly <input type="checkbox"/> Monthly <input type="checkbox"/> Annually	<input type="checkbox"/> Onsite vehicles <input type="checkbox"/> Equipment <input type="checkbox"/> People <input type="checkbox"/> Animals <input type="checkbox"/> None	<input type="checkbox"/> One day? <input type="checkbox"/> Few days (2-6 days)? <input type="checkbox"/> Week?
Dead animal removal	<input type="checkbox"/> Daily <input type="checkbox"/> Weekly <input type="checkbox"/> Monthly <input type="checkbox"/> Annually	<input type="checkbox"/> Onsite vehicles <input type="checkbox"/> Equipment <input type="checkbox"/> People <input type="checkbox"/> Animals <input type="checkbox"/> None	<input type="checkbox"/> One day? <input type="checkbox"/> Few days (2-6 days)? <input type="checkbox"/> Week? <input type="checkbox"/> Month? <input type="checkbox"/> Year?

Inputs/Outputs	Frequency of input/output	Path traveled by:	How long could you go without this movement?
Manure removal	<input type="checkbox"/> Daily <input type="checkbox"/> Weekly <input type="checkbox"/> Monthly <input type="checkbox"/> Annually	<input type="checkbox"/> Onsite vehicles <input type="checkbox"/> Equipment <input type="checkbox"/> People <input type="checkbox"/> Animals <input type="checkbox"/> None	<input type="checkbox"/> One day? <input type="checkbox"/> Few days (2-6 days)? <input type="checkbox"/> Week? <input type="checkbox"/> Month? <input type="checkbox"/> Year?
Incoming cattle (bred heifers, pre-fresh cows, bulls, etc.)	<input type="checkbox"/> Daily <input type="checkbox"/> Weekly <input type="checkbox"/> Monthly <input type="checkbox"/> Annually	<input type="checkbox"/> Onsite vehicles <input type="checkbox"/> Equipment <input type="checkbox"/> People <input type="checkbox"/> Animals <input type="checkbox"/> None	<input type="checkbox"/> One day? <input type="checkbox"/> Few days (2-6 days)? <input type="checkbox"/> Week? <input type="checkbox"/> Month? <input type="checkbox"/> Year?
Outgoing cattle (bull calves, bred heifers, dry cows, etc.)	<input type="checkbox"/> Daily <input type="checkbox"/> Weekly <input type="checkbox"/> Monthly <input type="checkbox"/> Annually	<input type="checkbox"/> Onsite vehicles <input type="checkbox"/> Equipment <input type="checkbox"/> People <input type="checkbox"/> Animals <input type="checkbox"/> None	<input type="checkbox"/> One day? <input type="checkbox"/> Few days (2-6 days)? <input type="checkbox"/> Week? <input type="checkbox"/> Month? <input type="checkbox"/> Year?
Other _____	<input type="checkbox"/> Daily <input type="checkbox"/> Weekly <input type="checkbox"/> Monthly <input type="checkbox"/> Annually	<input type="checkbox"/> Onsite vehicles <input type="checkbox"/> Equipment <input type="checkbox"/> People <input type="checkbox"/> Animals <input type="checkbox"/> None	<input type="checkbox"/> One day? <input type="checkbox"/> Few days (2-6 days)? <input type="checkbox"/> Week? <input type="checkbox"/> Month? <input type="checkbox"/> Year?

Appendix D: Line of Separation Examples

Figure 1: Illustration of an LOS around a Dairy Operation

This example dairy demonstrates the concepts of the LOS around the perimeter of the operation with two LOS Access Points, each with a C&D station. There is a separate LOS Access Point for people to enter.



Figures 2 & 3: Not Crossing the LOS: Truck/Tanker/Hauler Collecting Milk

Below are examples of farms where their layout and direct route to the milk house would allow the milk tanker and hauler/driver to pick up milk without crossing the LOS. In this situation, the farm would establish its **milk house as outside the LOS** during milk collection and the hauler performs all milk collection activities. Dairy premises that utilize direct load tankers may also have a farm layout conducive to this approach.

Here is a brief checklist to determine if a dairy premises can utilize this option and minimize introduction of FMD virus from the milk tanker and hauler/driver:

- ☐ Milk house is adjacent to a public road and tanker does not enter dairy premises to collect milk – OR –
- ☐ Drive path leading to the milk house does not pass close to susceptible animals
- ☐ Area in front of the milk house does not slope towards animal housing or holding areas
- ☐ The hauler/driver is trained in proper protective gear donning, doffing and disposal
- ☐ Doors leading from the milk house can be established as controlled access points with signage, proper biosecurity steps posted, and all supplies required to meet the biosecurity steps
- ☐ Dairy premises personnel are trained in proper cleaning and disinfection protocols for the milk house
- ☐ Dairy premises personnel are trained in proper protective gear donning, doffing and disposal

Figure 2: Milk house is Outside the LOS



Figure 3: Milk house is Outside the LOS



A critical control point for preventing FMD virus introduction to the herd is the door from the milk house into the milking parlor during milk collection. Dairy premises personnel are responsible for cleaning and disinfecting the milk house and equipment once the hauler leaves. Haulers and farm personnel would need to follow the Biosecurity Performance Standards: Raw Milk Collection and Transport document.

This option closely aligns with normal milk collection activities in a non-FMD outbreak situation. It also offers a solution to the weather challenges (severe wind, heavy rains causing mud, heavy snow, freezing temperatures, etc.) as well as locations faced with water shortages. Each dairy premises should develop a farm-specific standard operating procedure (SOP) that meets or exceeds the biosecurity performance standards that is acceptable to the decision makers in their state.

Milk Truck/Tanker and Hauler/Driver Enter the Milk House and Do Not Cross LOS

These example farms have multiple entrances so the one leading directly to the milk house could be dedicated to just the milk tanker. The milk house is OUTSIDE the LOS during milk collection. All doors from the milk house leading to the farm side are controlled access points and biosecurity protocols must be followed to cross the threshold. Traffic entering the milk house, either from the outside or from the milking parlor, should be minimized at all times during an FMD outbreak. Dairy premises personnel entry should be prohibited during the time the milk hauler is there collecting milk.

Signage indicating milk collection is underway should be readily available for the milk hauler to post while in the milk house, stating no entry by dairy premises personnel during that time. Signage indicating milk collection is complete, but the milk house needs to be cleaned and disinfected should be readily available for the milk hauler to post before leaving. Signage indicating safe entry by dairy premises personnel should be readily available for dairy premises personnel to post after C&D is complete.

The hauler, wearing gloves and protective footwear, is responsible for milk collection activities according to the PMO. Dairy premises personnel, wearing gloves, protective outerwear, and protective footwear that are NOT worn around susceptible animals, are responsible for cleaning and disinfecting all surfaces of the milk house contacted by spilled milk or the hauler after milk collection is complete. Only after the milk house has been C&D can other personnel enter the space to perform their normal work tasks.

Each dairy premises should develop a farm-specific standard operating procedure (SOP) that meets or exceeds the Biosecurity Performance Standards that is acceptable to the decision makers in their state. The Biosecurity Performance Standards listed in [Appendix K](#) are **in addition** to those found in Sections 3, 4, and 5.1 of the Biosecurity Performance Standards: Raw Milk Collection and Transport document (FINAL September 2017).

Figures 4 & 5: Crossing the LOS: Only the Transfer Hose

Below are examples of farms where the layout and direct route to the milk house would allow the milk tanker and hauler/driver to pick up milk without crossing the LOS. In this situation, the farm would establish the **area just in front of the milk house as outside the LOS**. The hose porthole could define the LOS Access Point. C&D of the tanker would not be required.

One critical control point for preventing FMD virus introduction to the herd is ensuring the transfer hose exterior has no visible contamination as it crosses the LOS at a controlled access point. Another critical control point is to ensure residual raw milk in a truck-mounted transfer hose is not deposited on subsequent dairy premises. The hauler/driver works with farm personnel to accomplish milk collection activities, each staying on their respective sides of the LOS.

Below is a brief checklist to determine if a dairy premises can utilize this option and minimize introduction of FMD virus from the milk truck/tanker and hauler/driver:

- ☐ Milk house is adjacent to a public road and tanker does not enter dairy premises to collect milk – OR –
- ☐ Drive path leading to the milk house does not pass close to susceptible animals
- ☐ Area in front of the milk house does not slope towards animal housing or holding areas
- ☐ State requirements for a licensed weigher/sampler to perform milk collection duties can be met
- ☐ A transfer hose is available that is long enough to reach from the bulk tank to the milk tanker through a controlled access point and does not exceed pump manufacturers recommendations
- ☐ The hauler/driver can work with farm personnel to accomplish milk collection activities
- ☐ The hauler/driver is trained in proper protective gear donning, doffing and disposal
- ☐ Dairy premises personnel are trained in proper cleaning and disinfection protocols for the milk transfer hose
- ☐ Dairy premises personnel are trained in proper protective gear donning, doffing and disposal

Below are aerial photos of U.S. dairy premises with the LOS and LOS Access Points labeled. These farms have multiple entrances so the one leading directly to the milk house could be dedicated to just the milk tanker. C&D of the milk truck/tanker would not be required as it remains outside the LOS. The hauler/driver also remains outside the LOS. Only the milk transfer hose crosses the controlled access point.

The hauler, wearing gloves and protective footwear, is responsible for connecting the transfer hose to the tanker and transporting milk samples (where applicable) without crossing the LOS.

Dairy premises personnel, wearing gloves, will handle the transfer hose on the farm side (inside the LOS) and connect it to the bulk tank. Unless an emergency waiver is in place at the state level, this farm must have a licensed weigher/sampler on farm to measure and record milk weight, collect a bulk tank sample, and ensure milk quality prior to pumping according to the PMO regulations. Dairy premises personnel are responsible for cleaning and disinfecting the exterior surface of the milk transfer hose and the interior (if farm-dedicated) according to the PMO for Grade A milk.

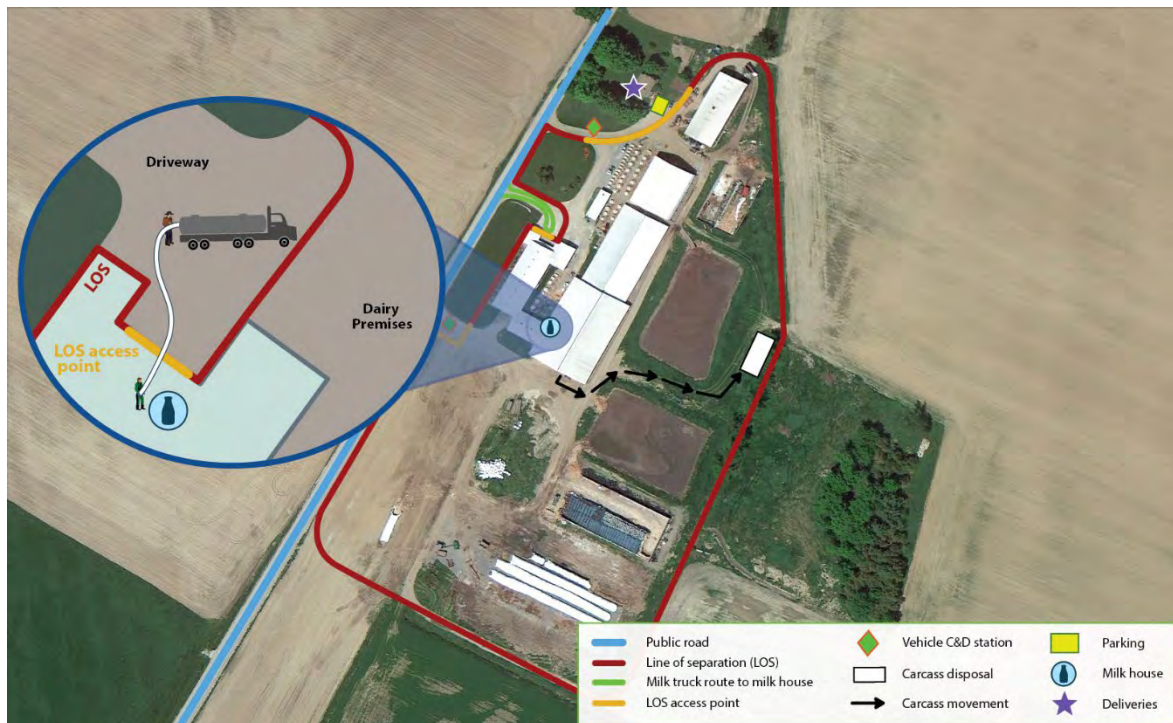
Each dairy premises should develop a farm-specific standard operating procedure (SOP) that meets or exceeds the Biosecurity Performance Standards that is acceptable to the decision makers in their state. The Biosecurity Performance Standards listed in [Appendix K](#) are **in addition** to those found in Sections 3, 4, and 5.1 of the Biosecurity Performance Standards: Raw Milk Collection and Transport document (FINAL September 2017).

Figure 4: Crossing the LOS: Only the Transfer Hose

Milk Truck/Tanker, Hauler/Driver do not cross LOS



Figure 5: Crossing the LOS: Only the Transfer Hose



Figures 6 & 7: Crossing the LOS: Milk Truck/Tanker, Hauler/Driver

Below are examples of farms that house or hold animals near the milk truck/tanker drive path to the milk house. The LOS should be established at some distance from these animals. There are three critical control points for preventing FMD virus introduction to the herd in this situation:

- Milk truck/tanker is cleaned and disinfected (C&D) prior to crossing the controlled access point at the LOS
- Milk hauler/driver exiting the cab to collect milk does not contact people, animals, milk fed to susceptible animals, and wears proper PPE
 - Another option: Haulers/drivers do not exit the cab
- Truck-mounted transfer hose is handled to prevent depositing raw milk and environmental contamination from previous farm pickups onto the dairy premises
 - Another option: Use a farm-dedicated transfer hose.

Dairy premises need to follow their State's requirements to have a licensed weigher/sampler on farm to complete all the steps necessary to collect milk. Dairy premises with direct load tankers should ensure their personnel are trained in tractor-trailer connections and covered under insurance to perform these duties.

Below is a brief checklist to determine if a dairy premises needs to C&D the milk truck/tanker to minimize introduction of FMD virus. If one or more are checked, milk truck/tanker C&D should occur:

- ☐ Drive path leading to the milk house passes close to susceptible animals
- ☐ Drive path leading to milk house is shared with vehicles that are used on-farm in animal areas
- ☐ Area in front of the milk house slopes towards animal housing or holding areas

Below are aerial photos of U.S. dairy premises with the LOS and controlled access points (temporary barrier to vehicle traffic) labeled. The drive path to the milk house passes near animal housing or holding areas. Therefore, the milk truck/tanker should undergo cleaning and disinfection prior to crossing the controlled access point at the LOS to minimize the potential for FMD virus to enter the dairy premises.

The milk hauler may need to exit the cab to collect milk and specific BPS need to be met to minimize the potential for FMD virus to enter the dairy premises.

Truck-mounted transfer hoses may need to be used to pump milk and specific BPS need to be met to minimize the potential for FMD virus to enter the dairy premises.

Each dairy premises should develop a farm-specific standard operating procedure (SOP) that meets or exceeds the Biosecurity Performance Standards that is acceptable to the decision makers in their state. The Biosecurity Performance Standards listed in [Appendix K](#) are **in addition** to those found in Sections 3, 4, and 5.1 of the Biosecurity Performance Standards: Raw Milk Collection and Transport document (FINAL September 2017).

Figure 6: Milk Tanker, Hauler/Driver crosses LOS



Figure 7: Milk Tanker, Hauler/Driver crosses LOS



Appendix E: Vehicle and Equipment Entry Log

Premises Name: _____

Premises ID: _____ Address: _____ Contact Name: _____ Phone: _____

Date	License Plate # & State	Driver Name	Driver Phone #	Vehicle Description	Reason for Entry	C&D on site?	Initials of Person Supervising Entry
						Yes No	
						Yes No	
						Yes No	
						Yes No	
						Yes No	
						Yes No	
						Yes No	
						Yes No	
						Yes No	
						Yes No	

Appendix F: Setting Up and Operating a Cleaning and Disinfection (C&D) Station

Effective disinfection of equipment and vehicles requires thorough cleaning, application of an effective disinfectant, and time for the disinfectant to work (consult disinfectant labels to determine the contact time necessary for virus elimination/inactivation).

When setting up a C&D station, consider the following:

- The C&D station should be free of dirt/mud. A hard or solid surface is recommended, but a well-drained gravel surface is acceptable. It is important to prepare the wash pad of a C&D station of a material that is easy to clean and does not harbor disease agents.
- Choose the location of the C&D pad carefully. Consider the location of the LOS Access Point(s), the direction of the slope of the lane, the farm topography around potential wash pad sites, and how the land next to the wash pad is used. If the C&D pad is not directly adjacent to the LOS Access Point, locate the C&D wash pad such that cross-traffic between newly disinfected vehicles and dirty vehicles not entering the LOS is prevented.
- It is preferable to choose a location for the C&D pad that drains away from the LOS, high-traffic areas, and animal housing. It is very important that contaminated water not flow into the animal housing.
 - Also, remember that wastewater from the C&D station should be managed following state, local, and municipality regulations. Review the appropriate laws for specifics on wastewater/effluent regulations. Many areas have specific rules concerning wastewater runoff, to ensure that it does not enter waterways, streams, or other waters of the state.
 - You may need to build a berm or channels around the C&D pad to ensure wastewater runoff is collected.
- Adequate lighting should be provided to conduct vehicle C&D in non-daylight hours.
- Ensure protective gear is available. Personnel need to wear protective gear that protects their street clothes/footwear, eyes, and face from environmental contamination, washing procedures, and disinfectant sprays. All protective gear and equipment should be stored at or near the disinfection station.
- Provide a container to store protective gear until it is disposed of. FMD virus is not a public health concern, but contaminated clothing and footwear can carry the virus, potentially exposing susceptible animals.

Cleaning and disinfection procedures for vehicles crossing the LOS should be similar to the following:

- **Soak** the most visibly contaminated areas to aid in washing removing organic materials on tires, wheel wells, undercarriage, mud flaps, splash guards, and steps.
- **Wash**, wipe, spray or scrub the areas with excess organic matter starting with the dirtiest and working towards the cleaner areas.
 - Pressure washers can enhance organic matter removal.
 - Ensure that the spray and wash water runoff from the vehicle does not reach animal holding/housing areas as FMD virus in organic matter could result in animal exposure.
- **Rinse** and remove all detergent/soap residues by applying a low pressure water rinse on all surfaces, starting with the top of the tanker and working down.
- **Read** the product label on the disinfectant and handle the solution correctly to ensure safety of the handler and effectiveness of the disinfectant. Personal protective equipment may be needed to mix up solutions.

- Note the recommended dilutions, water temperature, environmental temperature, and the need for ventilation when using the product.
- **Disinfect** by applying the product to the cleaned areas of the vehicle, starting with the tires to maximize contact time before moving.
 - The vehicle can be slowly rolled forward to allow the disinfectant to contact all parts of the tires.
 - Allow the product adequate wet contact time (per label directions) with all surfaces to inactivate the virus. Solution must remain ‘wet’ to actively work; reapplication may be necessary.

An example SOP is below for wearing protective gear, inspecting, cleaning and disinfecting vehicles. Modify to meet your specific operation needs.

Establish the C&D Station

Setting up C&D Station

1. Set up C&D station outside or adjacent to an LOS Access Point. Maintain C&D station free of dirt, manure and other contaminants.
2. Provide and properly maintain vegetative filter area around C&D station for wash water runoff. Manage runoff so that it does not enter animal housing, drive paths, flowing streams, ditches or other avenues that enter or leave dairy operation. Follow state or local regulations regarding management of runoff.
3. Make sure the following supplies are available and can last four days minimum, stored out of the elements, and refilled when low
 - a. Rubber gloves (2 pair for each person, each washing)
 - b. Waterproof outerwear covering street clothing, skin, head, neck (2 sets in sizes ...)
 - c. Safety glasses, goggles, or face shields (2 pairs)
 - d. Protective footwear (in sizes ...) that remain at the C&D station
 - e. Plastic garbage bags for disposal of gloves
 - f. **NAME OF DISINFECTANT**
 - g. Water (60 gallons per vehicle)
 - h. Pressure washer
 - i. Fuel or power source for pressure washer
 - j. Long handle brush (2)
 - k. Timer for disinfectant contact times
 - l. Vehicle log sheet with pens
4. Maintain a supply inventory log (see below) and written plan for restocking supplies, including names addresses and other contact information for suppliers and the means by which supplies will be delivered to the company or hauler/driver in a timely manner
5. Mix the (**NAME OF DISINFECTANT**) solution fresh daily. (Citric acid disinfectant 3% solution is 13 pounds of 99% food grade anhydrous powder to 50 gallons of water). Mix thoroughly
 - a. Wear protective gear when mixing up solution. Read label
 - b. Do NOT mix or use with bleach or chlorinated products

Putting on (Donning) Protective Gear at C&D Station

1. Inspect all protective gear for damage or contamination; do not use unless intact, clean
2. Put on waterproof outerwear making sure it completely covers all street clothes and exposed skin, including neck and head
3. Put on gloves
 - a. Cover wrist opening with protective outerwear or
 - b. Seal with tape to prevent water, disinfectant running inside
4. Put on protective footwear

- a. Cover top of footwear with protective outerwear or
 - b. Seal with tape to prevent water, disinfectant running down the pant leg inside the footwear
5. Put on the face shield over the hooded outerwear

Inspecting and Cleaning Vehicles

1. Wash down the wash pad surface to remove mud/manure before vehicle enters
 - a. Monitor wash effluent to ensure it enters a grassy area or catch basin and does not cross the pavement
 - b. If crosses, build a berm to hold it within the wash area
2. Guide vehicle to wash pad
3. Driver remains in vehicle
4. Record vehicle entry details on log sheet
 - a. Origin of vehicle, driver name, contact number, vehicle identification, previous and next stop (name and location)
5. Walk around and visually inspect the exterior of vehicle for contamination, focusing on the tires, wheel wells, undercarriage, mud flaps, splash guards and steps
 - a. Milk Tankers: Look for milk streaks on the side of the tanker (indicates leakage from dome lid)
6. Milk Tankers: Break the seal (if applicable), give it to the driver and inspect the storage compartment for milk leakage
 - a. Notify driver of any milk leakage so it can be addressed after the next off-load
7. If exterior is visibly contaminated, soak the dirty areas with water and soap
 - a. Have driver move vehicle forward slightly to ensure tire contact surface is cleaned
 - b. Scrub heavily soiled areas
8. Pressure wash off the soap and visible contamination
9. Rinse with low pressure water working from the top of the contaminated area down

Disinfecting Vehicles

1. Apply the (NAME OF DISINFECTANT) disinfectant to the cleaned areas of the vehicle, starting with the tires to maximize contact time before moving
 - a. Have driver move vehicle forward slightly to ensure disinfectant contact with the entire tire surface
2. Allow the (NAME OF DISINFECTANT) to contact the surfaces for XX minutes (start time upon first application) to inactivate the virus
 - a. Solution must remain 'wet' to actively work; reapplication may be necessary
3. Wash down drive path area where wash water/runoff traveled
4. Apply (NAME OF DISINFECTANT) solution to drive path where wash water/runoff traveled and allow XX minutes of wet contact time
5. Allow vehicle to enter premises

Removing (Doffing) Protective Gear at C&D Station

1. Water rinse off protective gear from top to bottom to remove any potential contamination from outerwear, gloves, and footwear
2. Remove face shield and store in a protected location
3. Remove gloves
 - a. If reusable, store in a protected location or
 - b. Dispose of in garbage bag
4. Remove protective outerwear, protective footwear
 - a. Store in a protected location near the C&D station to be worn upon next vehicle C&D
5. Put on protective footwear that can be worn around animals before leaving C&D station
6. Remove all disposable PPE and dispose of properly

Vehicles Exiting Operation

1. Proceed to exit, wait for farm personnel to open gate, and leave operation
2. Farm personnel will close gate upon vehicle exit and record departure information on Farm Visitor Log

C&D Station Supply Inventory Log

Minimum 4 day supply, maintain in good condition, inventory every 6 months

Premises ID: _____ Address: _____

Contact Name: _____ Phone: _____

Supplies	Inventory Date	Current Amount/ Sizes	Supply Order Invoice #	Purchased From	Additional Info (make, model#)	Initials
Rubber Gloves						
Waterproof outerwear						
Safety glasses/ goggles/ face shields						
Protective footwear						
Water storage						
Pressure washer & fuel/propane						
Timer						
Waste Receptacle						
Long handle brush						
Disinfectant						
Light source with power cord						
Signage						
Barrier Gate(s)						

Appendix G: Approved Disinfectants for FMD Virus

Source: Approved Disinfectants for FMD Virus, September 2017 at <http://www.cfsph.iastate.edu/pdf-library/FMD-Resources/DisinfectantsForFMDVirus.pdf>

Introduction

In the U.S., the Environmental Protection Agency (EPA) regulates disinfectants (referred to as antimicrobial pesticides by the EPA) under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA). This law requires that all label use directions and safety precautions be followed. The labeling for each EPA-registered disinfectant lists the disease agents it effectively inactivates. In the case of the foot and mouth disease (FMD) virus, there are only a few labeled products and only one is registered as a sanitizer on food contact surfaces. In emergencies, when EPA registered products may not be available, EPA may grant exemptions for unregistered uses of registered pesticides, or uses of unregistered pesticides, to USDA-APHIS personnel, State Departments of Agriculture personnel, or possibly farmers or individuals to use a specific pesticide for a limited time by designated personnel. USDA-APHIS has exemptions in place for the use of citric acid and sodium hypochlorite (bleach), against the FMD virus in the event that registered pesticides are not available during an outbreak.

Safety

Follow all safety precautions and use directions listed on the product label during the handling and mixing of disinfectant solutions. Wear eye and respiratory protection when mixing or spraying disinfectants. Wear gloves to avoid skin contact with caustic materials. Immediately wash off any disinfectant that contacts bare skin.

Contact Time

Before disinfecting, all surfaces must be cleaned (see [section 7](#)). Disinfectants will not be effective unless the surface they are applied to remains visibly wet for the required period of time. Read label directions for this contact time. Disinfectants mixed with water are susceptible to evaporation in hot or windy conditions and in direct sunlight and thus will not be completely effective unless reapplied. Curved surfaces that cause disinfectants to runoff (like milk trucks/tankers) may require reapplication to keep the surface wet for the required contact time. Since disinfectants, climates, and environmental regulations vary, work with the animal health authority for specific recommendations. Dairy equipment can be damaged by inappropriate uses of disinfectants, so proper use is critical to destroying the virus while maintaining the equipment.

Proprietary Products

EPA registered products with a label claim to inactivate FMD virus are listed in Table 1. Any of these products may be selected and used according to their labels. For more detailed information about available products, refer to the official label currently filed by the EPA by searching (product name or registration number) on the U.S. EPA Pesticide Product Label Search website at <http://iaspub.epa.gov/apex/pesticides/f?p=PPLS:1:1719419566286576>.

Table 1. Pesticide Products Approved by EPA For Use Against FMDv

EPA Reg. No.	Product Name	Company	Active ingredient(s)	Use sites
1677-129	Oxonia Active *Alternate name Oxysept 333 appears on label that lists FMDv	Ecolab, Inc.	Hydrogen peroxide Peroxyacetic acid	Foot and mouth disease virus in/on livestock barns, livestock premises, animal quarters, animal cages, milking equipment, dairy equipment, and agricultural premises
6836-86	Lonza DC 101	Lonza, Inc.	Alkyl dimethyl benzyl ammonium chloride Didecyl dimethyl ammonium chloride Octyl decyl dimethyl ammonium chloride Dioctyl dimethyl ammonium chloride	Foot and mouth disease virus in/on livestock premises, livestock feeding and watering equipment, and livestock equipment
10324-67	Maquat MQ615-AS	Mason Chemical Company	Octyl Decyl Dimethyl Ammonium Chloride Didecyl Dimethyl Ammonium Chloride Dioctyl Dimethyl Ammonium Chloride Alkyl	Foot and mouth disease virus on non-porous (inanimate and environmental) surfaces in animal feed equipment, livestock pens, livestock stables, livestock equipment, dairies, milk storage handling systems, bulk milk tanks, milk pipelines, milk pails inflations and tubing, dairy product dispensing equipment, animal quarantine areas, waterers, stalls, floors, vehicles and human footwear
70060-19	Aseptrol S10-TAB	BASF Catalysts, LLC	Sodium chlorite Sodium dichloroisocyanurate dihydrate	Foot and mouth disease virus in/on animal cages, animal stables, animal feeding/watering equipment, animal equipment, and animal transportation vehicle
70060-30	Aseptrol FC-TAB	BASF Catalysts, LLC	Sodium chlorite Sodium dichloroisocyanurate dihydrate	Foot and mouth disease virus in/on livestock premises, livestock feeding equipment, livestock watering equipment, livestock equipment, livestock transportation equipment, hog barns/houses/parlors/pens, animal quarters, animal cages, animal feeding and watering equipment, animal equipment, animal transportation vehicles, and shoe baths.

EPA Reg. No.	Product Name	Company	Active ingredient(s)	Use sites
71654-6	Virkon S	E.I. du Pont de Nemours & Company	Sodium chloride Potassium peroxymonosulfate	Foot and mouth disease virus in/on animal feed equipment, livestock barns, livestock pens, livestock stalls, livestock stables, livestock equipment, cattle feedlot, hog farrowing pen premises, hog barns/houses/parlors/pens, animal quarters, animal feeding and watering equipment, animal equipment, agricultural premises, agricultural equipment, animal transportation vehicles, and human footwear
74559-4	ACCEL (Concentrate) Disinfectant Cleaner *Alternate name INTERVENTion Farm Animal Care Disinfectant Cleaner & Deodorizer appears on label that lists FMDv	Virox Technologies	Hydrogen peroxide	Foot and mouth disease virus in/on animal premises, animal housing facilities, farm premises, equine production, boot and shoe wash, vehicles, facilities used for temporary confinement of animals (May 2017 label, not in NPIRS yet)

Source of Table 1: Pesticides to use against selected foreign animal diseases, July 2017 at http://www.aphis.usda.gov/animal_health/emergency_management/downloads/fad_epa_disinfectants.pdf

Exemptions for Use of Registered Products

USDA-APHIS has an exemption in place for the use of citric acid and sodium hypochlorite (bleach) against FMD virus in the event the proprietary products are not available. As with all disinfectants, all label use directions and safety precautions must be followed. For more information, see:

https://www.aphis.usda.gov/aphis/ourfocus/animalhealth/emergency-management/ct_disinfectants.

Citric acid (99% food grade anhydrous granular or powder)

A 3% solution is made by adding 4 ounces of citric acid powder to 1 gallon of water (or 30 grams to 1 liter of water). For larger batches (50 gallons), add 13 pounds of citric acid powder to 48.5 gallons of water. Mix thoroughly.

- Recommended wet contact time
 - 30 minutes for porous surfaces (wood, asphalt, and pervious concrete)
 - 15 minutes for non-porous surfaces (metal, plastic, glass and any painted or sealed material)
- The solution must be mixed fresh daily and is corrosive.
- The solution must not be mixed or used with bleach, chlorinated products, or mildew stain removers.

- Citric acid solution can be used on food and nonfood contact surfaces.
 - USDA-APHIS has an exemption for use of citric acid against FMD virus by USDA APHIS personnel, any State Departments of Agriculture personnel, farmers, and any other individuals who need to use this disinfectant on surfaces potentially exposed to FMD (EPA Quarantine Exemption issued to USDA, February 2016).
- A 3% solution is VERY corrosive and causes irreversible eye damage. Avoid contact with eyes, exposed skin, and clothing. Personal protective equipment is recommended to protect from dermal and inhalation exposure. Read and follow all label recommendations.
- The citric acid section 18 exemption label contains additional information for personal protection, first aid, and proper disposal and can be found at:
https://www.aphis.usda.gov/aphis/ourfocus/animalhealth/emergency-management/ct_disinfectants

Sodium hypochlorite 5.25%, 8.25% or 12% (concentrated household bleach)

To make a 0.3% sodium hypochlorite solution (3,000 ppm available chlorine), add:

- 1 part 5.25% sodium hypochlorite product to 16.5 parts water
- 1 part 8.25% sodium hypochlorite product to 26.5 parts water
- 1 part 12.0% sodium hypochlorite product to 39 parts water
 - NEVER add water to sodium hypochlorite
 - USDA-APHIS has an exemption for use of sodium hypochlorite against FMD virus by USDA APHIS personnel, any State Departments of Agriculture personnel, farmers, and any other individuals who need to use this disinfectant on surfaces potentially exposed to FMD (EPA Quarantine Exemption issued to USDA, September 2015, Amended June 2017).

Recommended wet contact time:

- 30 minutes for porous surfaces (wood, asphalt, and pervious concrete), reapplying solution when necessary. Rewet with a minimum of two applications with at least 15 minutes between the first and last application.
- 15 minutes for non-porous surfaces (metal, plastic, glass and any painted or sealed material), reapplying solution when necessary.
- The solution must be mixed fresh and is corrosive.
- No treatments are permitted on food or feed items or where food or feed are present.
- A 0.3% solution is VERY corrosive and may cause severe damage to exposed skin and eyes. Personal protective equipment is recommended to protect from dermal and inhalation exposure. Read and follow all label recommendations.

The sodium hypochlorite section 18 exemption label contains additional information for personal protection, first aid, and proper disposal and can be found at:

https://www.aphis.usda.gov/aphis/ourfocus/animalhealth/emergency-management/ct_disinfectants

Appendix H: Employee and Visitor Arrival Agreement

If I cross the Line of Separation, at a minimum I agree to the following biosecurity measures:

- Shower and change into clean clothes and footwear prior to my arrival at the premises
- After showering and changing into clean clothing and footwear offsite, I will not have any contact with animals or facilities where livestock or deadstock are held (e.g., my home, other premises, auction market, buying station, slaughter plant, rendering plant) prior to my arrival onsite.
- I will maintain a clean vehicle interior, free from contamination of soiled clothes, footwear, or other items.

I agree to follow additional biosecurity measures once on the premises based on my job duties that reduce the risk of introducing disease to the animals.

If I observe or perform a breach of biosecurity (accidental or intentional), I will promptly inform the Biosecurity Manager of the date, time, and nature of the incident.

Print Name

Phone

Signature

Date

Appendix I: People Entry Log

Premises Name: _____

Premises ID: _____ Address: _____ Contact Name: _____ Phone: _____

Date MM- DD-YY	Name	Contact Phone	Reason for Entry	Have you had livestock contact in the last 7 days?		Where was this Last Contact? (Packing plant, farm, auction, exhibition, etc. AND City/State)
				Yes	No	
				Yes	No	
				Yes	No	
				Yes	No	
				Yes	No	
				Yes	No	
				Yes	No	
				Yes	No	
				Yes	No	
				Yes	No	
				Yes	No	
				Yes	No	
				Yes	No	

Appendix J: Animal Movement Log

Premises Name: _____

Premises ID: _____ Address: _____ Contact Name: _____ Phone: _____

Date	Animal/ Group ID	# Head in Shipment	Origin Address (PIN)	Destination Address (PIN)	Reason for Entry/Exit	Transporter Contact Information (Company, Driver name, Phone)	Initials of Movement Supervisor

Appendix K: Milk Hauler/Driver Biosecurity Expectations

One of the most frequent arrivals onto a dairy premises is the milk hauler/driver. Establish the expectations for their actions on farm and communicate it to the hauling company and all milk haulers/drivers that arrive at your operation. Below are examples for the various milk collection options involving the hauler/driver. Include the biosecurity measures that best fit your facility and personnel capabilities and prevent the introduction or spread of FMD virus. More details can be found in the SMS Biosecurity Performance Standards for Raw Milk Collection and Transport, September 2017 available at: http://securemilksupply.org/Assets/SMS-BPS-Raw-Milk-Collection-Transport-Factors_FINAL-DRAFT.pdf

General – Applies to ALL Haulers/Drivers

- Follow the state regulatory requirements
 - Licensed weigher/sampler records milk weight, collects bulk tank sample, and ensures the state regulatory requirements are followed
- Ensure no residual raw milk remains in the truck/tanker or hose before the truck/tanker leaves the processing plant, whenever Clean-in-Place is not done
- Avoid tire contact with manure or other organic material whenever possible
- Keep the interior of the cab and exterior of the truck/tanker as clean as possible with no visible contamination
- Carry and wear appropriate protective gear when exiting the cab to prevent milk spray on exposed skin, street clothing, and footwear
 - Single use (disposable) gloves – all haulers exiting cab
 - Protective footwear – all haulers exiting cab
 - Protective outerwear – all haulers transporting commingled loads or more than one farm in a single day
- Carry an approved disinfectant and spray equipment (e.g., garden sprayer) for cleaning and disinfection (C&D) of small milk spills during collection
- Avoid contact with people, animals, or milk fed to susceptible animals
- Close and secure the dome lid during milk pumping and transporting

Farm-Specific Options – Choose 1 of the 3 options to include in your biosecurity plan

1. Milk Truck/Tanker Does NOT Cross the LOS

➤ *Milk house is outside the LOS and milk hauler/driver performs all milk collection tasks*

- Before re-entering the cab
 - Remove gloves and disposable footwear OR disinfect non-disposable footwear
- Milk house equipment C&D
 - Dairy premises personnel perform milk equipment C&D after the hauler leaves

2. Only the Transfer Hose Crosses the LOS

- *Area just in front of the milk house is outside the LOS or hose porthole is LOS Access Point*
- *Milk hauler/driver remains outside the LOS and dairy premises personnel remain inside the LOS*
- *Requires a licensed weigher/sampler on farm to complete all necessary steps to collect milk*

Milk hauler/driver responsibilities

- Pass capped TRUCK-MOUNTED transfer hose to dairy personnel
 - Dairy premises personnel will spray hose exterior surface with FMD-approved disinfectant as it crosses the line of separation (LOS)
 - Dairy premises personnel connect transfer hose to bulk tank after performing weigher/sampler duties
 - After loading is complete and when the transfer hose is used on other farms before being cleaned/sanitized
 - Hauler will cap tanker end of hose and pass entire hose to dairy premises personnel to spray exterior with disinfectant as it crosses the LOS
 - Dairy premises personnel will rinse interior with potable water from milk house until discharge is clean and clear, cap both ends and pass back to hauler/driver
- Receive capped TRUCK-MOUNTED transfer hose from dairy personnel
 - Connect to tanker for milk collection (if not already connected). Pump milk.
 - Hauler/Driver will spray hose exterior surface with FMD-approved disinfectant as it crosses the line of separation (LOS), before storing on tanker.
- OR Connect FARM-DEDICATED transfer hose to truck/tanker; Disconnect when done and pass to dairy premises personnel
 - Dairy premises personnel will spray hose exterior surface with FMD-approved disinfectant as it crosses the line of separation (LOS) and clean interior with rest of milking equipment
- Re-enter the cab
 - Remove gloves and disposable outerwear/footwear OR disinfect non-disposable outerwear and footwear
- Transport milk samples to processing plant

3. Milk Truck/Tanker Crosses the LOS and Hauler/Driver

- *Milk truck/tanker must cross the LOS to pick up milk*
- *Determine if hauler/driver exits cab or not; if not, follow guidance above for milk collection by dairy personnel*
- Milk truck/tanker C&D required before crossing LOS
 - Dairy premises personnel perform milk truck/tanker C&D upon entry and exit of the farm
- Re-enter the cab
 - Remove gloves and disposable outerwear/footwear OR disinfect non-disposable outerwear and footwear

Appendix L: Record of Checking Rodent Bait Stations

Rodent bait stations must be checked weekly and contents replaced when low.			
	Date	Signature	Comments
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			