

## **BIOSECURITY STANDARDS**

for PIC Multiplication Units and Gene Transfer Centers





### New biosecurity standards and protocols from Genus PIC

To All PIC employees and Partners,

I am pleased to enclose an important set of guidance for you: the latest outputs from PIC's global biosecurity program.

We all know how important biosecurity is, but also how fragile it can be. Recent outbreaks of diseases like African Swine Fever (ASF) in different parts of the world highlight that we can never be complacent. We must constantly improve what we do, and how we do it, to prevent the start or spread of such outbreaks and minimize their potentially devastating impact on animals, businesses and the industry as a whole.

Over the last year, the global PIC team has been working with customers, stakeholders, and industry experts to review and reformulate biosecurity standards in the light of the industry's latest health challenges. PIC has always played a leading role in this area: some of the protocols that have informed industry-wide practices (e.g. showering before entering facilities and 1000-point location scoring) were originally developed by this business.

This latest work involved planning, updating and testing protocols and practices to help prevent disease entering or leaving production facilities. The guidance enclosed is the output from this year-long program: we believe that following it will help you protect your operation.

The guidance is relevant to every facility, from a large commercial operation to a small family farm. It also highlights the role that every individual plays in protecting – or unwittingly undermining – biosecurity. I encourage you to share this material with your employees, partners and anyone else you work with: it will help us all, as an industry, rise to the challenges we face.

I hope you find this material helpful. If you have any questions about it, please contact Megan Mitchell – Biosecurity Manager.

Bill Christianson Chief Operating Officer, Genus PIC July 2019



## Introduction

The PIC Health Assurance Program is based on systematic risk assessment and mitigation (biosecurity), early detection of disease and opportune communication among stakeholders.

These standards embody PIC's biosecurity philosophy based on science, experience and implementation feasibility. This living document works as the foundational standards of PIC BioShield, the PIC biosecurity program to be implemented in each farm, (genetic nucleuses, gene transfer centers (GTCs) and multipliers) as well as the support structure (feed mills, truck washes and service providers) of the PIC system.

As BioShield is introduced to the PIC Multiplication system, the first phase focuses on Biosecurity Priority Items. These Priority Items specifically emphasize topics that set an important foundation for a biosecurity program. These are listed in Appendix 0.2. The second phase focuses on standards that further define and create a comprehensive biosecurity program.

The goal of the BioShield program is to prevent disease introduction and dissemination; thereby promoting animal wellbeing and maximum performance of PIC herds.

Farm managers/staff, production supervisors, multiplication partners, PIC Supply Chain (SC) and PIC Technical Service are all **accountable** for the dissemination and implementation of the program with guidance from the veterinary team. The Health Team Veterinarian (HTV) and the PIC Health Assurance Veterinarian (HAV) are **responsible** for the design and evaluation of the biosecurity program at each site.

Any deviations from the protocols or standards outlined in this document must be communicated to PIC Health Assurance and reviewed by Health Assurance and/or the Biosecurity Action Team.





## **Biosecurity Action Team**

The **PIC Biosecurity Action Team (BAT)**, comprised of Health Assurance and Supply Chain representatives, is responsible for the continuous review, dissemination and implementation of BioShield. The mission statement of BAT is:

Instill a culture of biosecurity within PIC by providing standardized processes, resources, and training to promote a mindset of personal accountability for maintaining our high-health supply and protecting customer herds.

To achieve this goal, BAT meets monthly to monitor biosecurity metrics, address risk factors, measure progress of mitigation plans and prepare an executive risk/action report for the business.

The biosecurity metrics to be monitored and targeted goals include:

Key Performance Indicator	Target
Number of lateral disease outbreaks	0
Percent completed disease outbreak investigations and agreed corrective action plans within first month	100%
Percent updated risk assessments at the end of each month	100%
Percent sites meeting PIC biosecurity standards & specific corrective action plans	>95%
Percent SCAN observations with mitigation plans in place within 14-days	>95%
Percent PIC Staff current on annual Biosecurity Training	100%



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# Facilities

"Facilities are one of the main strongholds we have for keeping out disease. Working to keep facilities updated and designed in a way to help follow bio-secure practices, will help keep the animals healthy and give the employees confidence and security in following the program." -Brian Melody, Owned Production Supply Chain Director, PIC

#### 1.1 Location

PIC Health Assurance (HA) must approve all existing and new herd locations. PIC uses a location scoring system called the 1000 Point Score (*Appendix 1.1-1*). The 1000 Point Score considers location risks associated with pig density, potential transport traffic, livestock markets and land topography.

A formal PIC 1000 Point Location Assessment will be completed/updated at each PIC Owned Production Site, Multiplication Unit and Gene Transfer Center (GTC) every three years by the HTV, HAV or PIC SC.

• Formalized reporting mechanisms are available for conducting 1000 Point Location Assessments.

To understand area swine density in real-time, a Location Self Assessment will be performed at each site, once per quarter, by the farm manager using the most updated location assessment report as a guide.

• See Appendix 1.1-2 for Location Self Assessment Standard Operating Procedure (SOP).

Sites with location scores falling below the minimum standard for their genetic level of production must be reevaluated for use in genetic production within 14-days to avoid a health hold.

• See Appendix 1.1-3 for Minimum Score Values by genetic level and reevaluation SOP.



#### **1.2 Compound Definitions**

The **clean areas** include the interior of the barns, office and connecting hallways, in addition to, all the areas and equipment in contact with live pigs. The **clean area perimeter** is a set of physical barriers including solid walls, cool cells, curtains and doors that protect and define the clean areas within a barn. Doors, showers, decontamination rooms and chutes, which border the clean areas, are referred to as **clean/dirty lines (CDL)**. Everything outside of the clean area is considered the dirty area; nothing may cross the CDL without an intervention or decontamination protocol.

The CDL must be clearly demarcated, easy to follow during work routines, logically designed to avoid cross-traffic and strictly respected.

The land surrounding the clean area perimeter, which is managed by the Multiplier/GTC, constitutes the **compound**. Access of vehicles, people or animals must be restricted. Interventions must be in place to prevent contact of the resident swine with other livestock, wild animals or people. The quarantine facility must also have a contained clean area and is considered dirty to the main barn until the quarantine process has been completed. See *Appendix 1.2* for compound diagram.





#### **1.3 Barn Perimeter and Compound**

An intact barn perimeter, as defined above, is required to avoid contact of the resident swine with other livestock, wild animals or people to minimize the risk of disease transmission.

- Sites must have a barrier (fence, netting, wire, etc.) to prevent nose-to-nose contact of all feral animals, birds and people to the resident pig population by protecting curtains and open hallways. A barrier to protect cool cells is highly recommended.
- A sign stipulating that no unauthorized access is permitted onto the compound must be placed as close as possible to the main road.
- A barrier (gate, chain, cable, etc.) must be in place on any driveway into the compound that directly connects to a public access road. The barrier must obstruct driveway access when the farm is not attended. It is highly advised to have the barrier shut and locked at all times.
- NO ENTRY/RE-ENTRY signs must be posted on the outside surface of each exterior door. Designated personnel entrance must be clearly marked.

All exterior doors must be kept closed and locked to prevent access from the outside at all times.

• Door and gate codes need to be changed with any employee turnover.



#### **1.4 Air Filtration**

Filtering air entering swine facilities for prevention of aerosolized pathogens is not required. Air filtration is scientifically proven to prevent pathogen introduction and should be considered as part of a comprehensive biosecurity program. Farms located in regions with increasing pig density are advised to consider air filtration. Filtration standards, auditing specifications, checklists and filter testing documents are available in *Appendix 1.4*.



#### **1.5 Buildings**

PIC building standards must be followed for all new and existing sites per contractual agreements. All new building designs must be approved by PIC Health Assurance in regards to biosecure facility design.

All sites must complete a yearly 1000 Point Biosecurity Assessment (Appendix 1.5-1) and monthly Biosecurity Checklist (Appendix 1.5-2).

- A PIC 1000 Point Biosecurity Assessment must be completed for each new site prior to initiating operations.
- All buildings will be structurally maintained to support daily operations and biosecurity parameters specified in this document.
  - Any sites that do not update or maintain biosecure functionality will be placed on a health hold.
- Buildings must not be used for demonstration purposes by builders, equipment suppliers, feed suppliers, etc.
- Sites must have a process or device at the gate for visitors to communicate with personnel inside the farm.
- Good housekeeping, in and outside the buildings in general and around feed bins in particular, should be exercised to minimize pest and insect attraction. Feed spills should be cleared promptly (at minimum daily).
- A 2 foot wide rock barrier, composed of a minimum size 1 inch rock, must be maintained with excellent weed control around the barn perimeter.
- Grass should be neatly mowed within 50 feet of all areas of the farm. At no time should piles of debris be allowed to collect around the farm.
- Longstanding areas of water collection (pools) or standing water within 50 feet of the pig barns must be addressed.
- No pigs are to be kept outside or on dirt lots.
- Passages between buildings must have a covered concrete walk-way, that is bird-proof, easily cleaned and disinfected. Facility location, purpose and design will determine the required criteria for the passages.
- Land locks are not to be opened for lawn care equipment to pass through the farm hallways. Land locks should have minimum maintenance upkeep and not be accessible through the farm hallways.



#### **1.6 Pest Control**

All compounds and buildings must follow a pest management plan to control birds, rodents, varmints and insects.

• All buildings must be bird proofed. Any damage to bird netting or the facility exterior which allows pest entry must be repaired immediately.

Continuous measures must be taken to control the rodent population on the compound, utilizing an effective control program. An effective program includes:

- A 2 foot wide rock barrier, composed of a minimum size 1 inch rock, must be maintained with excellent weed control around the barn perimeter.
- Farm staff are responsible for rodent control in the clean areas of the barn.
- Baiting must be monitored monthly, at minimum.
- It is highly recommended that external rodent control be the responsibility of a specialized firm, provided the vendor can complete the program in a biosecure manner.
- If the external rodent control will be completed by the farm staff:
  - At minimum, this program will consist of bait stations, placed every 50 feet around the perimeter of the facility (main barns and quarantine) and mortality disposal area.
  - Bait stations should be checked at minimum monthly to ensure functionality and bait freshness.
- A log should be kept to indicate and initial when rodent baiting is performed both internally and externally.
- Varmint deterrent protocols need to be practiced on the compound and buildings. This is especially important to prevent attraction to the mortality disposal area. See Mortality Management section for more details.
- Effective fly and mosquito control must be practiced. This includes but is not limited to spraying the premises, reducing the presence of standing water and/or other insect reduction methods.



#### 1.7 Water Source, Treatment and Quality Monitoring

Appropriate water sources are a deep well, city or rural water and must be deemed suitable for human consumption.

Use of surface water or shallow wells (less than 50 feet deep) is not permitted.

- Pending testing results, routine treatment of deep well water sources is required to control bacterial growth in water lines.
- If a storage tank is used, it must be fully enclosed.
- Recommendations for water testing, treatment and filtration protocols are available in Appendix 1.7.



Section 2:

# Live Pigs and Semen

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"Biosecurity is about a culture of doing what is right and needed even when no one is looking. Introducing live animals or semen involves risk; however, following the processes and procedures associated with quarantine, introduction, testing and movement will significantly lower the risk for PIC, our production partners and our customers and maximize the probability of success for all of us." -Matt Culbertson, Global Product Development Director, PIC No pigs or semen can be brought into a multiplier herd or GTC other than directly from a PIC approved and monitored herd. All delivered animals must go through the multiplier quarantine. Routine boar testing of the GTC must be documented.

#### 2.1 Animal Quarantine

Quarantine barns must have PIC approval, be separated from the main herd and have its <u>own air space, manure</u> pit, people entry, supply entry, feed bins, pest control and chutes.

The quarantine period begins with the last animal entry and is released into the acclimation phase with appropriate diagnostic testing. Any new animal entry into the same space as resident quarantine pigs, starts a new quarantine period.

The minimum requirements for quarantine/acclimation are:

- Mortality disposal must meet the applicable governmental (Federal, State, Provincial) regulations.
- Quarantine should have a dedicated chute and/or hallway for movements.
- Personnel entry into the quarantine/acclimation area must be shower in-out with barn specific attire.
- Quarantine/acclimation should have barn-specific internal equipment/supplies, entered via a decontamination process.
- Quarantine/acclimation units must be chored after exiting the main farm, and an overnight of downtime is required prior to returning to the main unit. Quarantine personnel, separate from the main farm staff, is preferred.
- The quarantine period should be no less than 30-days, beginning with the date of the last introduction of pigs into the quarantine facility.
- Biosecurity of the quarantine/acclimation unit will be maintained and follow all applicable requirements in this document.
- All animal movements into a PIC multiplication unit or GTC quarantine must follow PIC transport biosecurity standards. All trucks, trailers and drivers must have appropriate downtime and follow approved cleaning, disinfection and drying protocols at PIC approved facilities.
- Action plans must be in place for any quarantine groups of animals that have unexpected diagnostic results.
- If a novel agent is confirmed in the quarantine/acclimation, HTV and HAV must be notified immediately.

See Appendix 2.1 for recommended minimum quarantine testing.



#### 2.2 Semen Delivery and Introduction

Semen must be delivered in accordance with the PIC dynamic biosecurity pyramid. For reference, consult the 2017 Boar Stud Management Guidelines (*Appendix 2.2-1*).

- Semen courier must wear clean gloves, shoe covers and arrive to the delivery point in a clean/disinfected/dried vehicle. See *Appendix 2.2-2* for semen transport SOP.
- Semen must be delivered to a neutral site. Neutral sites are defined as an area physically separated from the farm compound that minimizes cross-over traffic with the semen courier.

#### Semen introduction to the farm must follow a decontamination process.

- When utilizing a double bag process, the outer bag must be removed and the inner bag decontaminated when entering the farm.
- Once semen has entered the farm, it should stay in its original inner packaging until approved for use.
  - In the event that diagnostics confirm contaminated semen is in the farm, under no circumstances should the individual semen bags be opened. Dispose of the entire lot of contaminated semen in its original packaging in the outside trash dumpster.





#### 2.3 Herd Establishment and Multiplication Pig Flow

PIC establishes all herds with the healthiest animals available. Nucleus herds must be populated exclusively with PIC genetics.

• Breeding herds, especially those dedicated for genetic multiplication, must be populated from a minimum number of source herds with the most equivalent health status. Single source is desired to minimize dissemination or destabilization of endemic agents.

Ideally, all breeding stock sales must originate from populations without any new pig introductions in the last 2 weeks. All-in/All-out flow is recommended.

• Preferably, new and existing sites should be compliant with two weeks between animal introductions. If unattainable due to facility or pig flow constraints, this must be disclosed in a Vet-to-Vet consultation (V2V) including PIC health testing protocols, alternative pig flows, and biosecurity procedures to avoid cross-traffic.

Gilts and boars must be placed in single sourced growing facilities. Co-mingling of flows can only occur when breeding herds share the same source farm for replacements.

• Any deviation from these pig flow standards must be individually discussed and approved by BAT.



Section 3:

## People

"Proper training of employees to help them develop a culture of biosecurity, will directly impact the health and wellness of our pigs. Constant and consistent training will help to ensure that Biosecurity is not just a program, but it is a mindset. It is important for people to understand how impactful their actions are to the pigs on a daily basis." -Courtney Garcia, Global HR Director, PIC

#### **3.1 Visitors**

A visitor is anyone who is not essential to the farm's daily operation. In general, visitors other than service personnel and maintenance workers are not permitted inside PIC Production Units unless by special permission of the Health Team Veterinarian or PIC Health Assurance.

Any visitor entering the compound, regardless of farm entry, is subject to biosecurity training and process.

Anyone requesting to visit a PIC Production Unit must adhere to the following steps:

- 1. complete basic biosecurity training
- 2. comply with farm specific visit requirements and approvals
- 3. contact the farm manager to coordinate the visit

Any visitors granted entrance must complete an interview process and will be asked a series of questions by the farm manager on site. With final farm manager approval, visitors will be signed into the log book. See *Appendix 3.1* for more details on farm visit permission and entry interview process.

#### *Pig contact includes the following:*

- Direct contact with live or dead pigs
- Entering a pig barn compound area
- Visiting auction markets, slaughter plants and livestock assembly yards
- Visiting petting zoos where pigs are kept
- Visiting trade fairs with live swine displays
- Entering veterinary diagnostic laboratories
- Visiting any other site deemed contaminated by PIC Health Assurance - Refer to section 3.5 downtime requirements
- All visitors or non-dedicated site personnel must arrive to the compound in a clean vehicle and must put on shoe covers when exiting their vehicle. Arrangements for acquiring shoe covers must be made prior to arrival at the compound.
- The farm manager (or other designated employee) should meet all visitors in a designated area, on the dirty side of the entrance, prior to the shower entry.

Prior to granting access, the manager is required to ask visitors the following set of questions. If their answers are not satisfactory they should be denied access to the unit. If the manager is unsure or has concerns the visitor may compromise the health of the unit, they must contact their supervisor for instruction before allowing access.

- What is your name and what is the purpose of your visit?
- Did you arrive in a clean vehicle?
- Did you put on shoe covers when exiting your vehicle? (Visually verify)
- When was your last contact with livestock other than pigs and where?
- When was your last pig contact and where?
- When was your last visit outside of the country and where?
- Do you understand the boot bench and shower in protocol?
- Do you feel well today?
- Have you, or anyone in your household, been ill or had a fever in the last 7-days?



#### **3.2 Production Staff**

The following criteria applies to members of the Production Staff for Multiplier Units or GTCs. It is the responsibility of the employee to notify Health Assurance if any of these conditions are not met.

Production Staff members must not live on a farm where pigs are kept or harvested. This includes production units, 4-H pigs, pet pigs, or pig hunting.

- Production Staff must not live in the same house with anyone who works with pigs other than those owned or controlled by PIC.
- Production Staff cannot share housing with other employees unless: 1) they work at the same unit or 2) they have obtained written consent from the HTV or HAV to the proposed living arrangement.
- Production Staff must not live in on-site housing at one flow and work at a different flow.
- Production Staff routinely working with any other production livestock enterprises must obtain written approval from HTV/HAV for risk assessment and mitigation.
- Any staff member that houses and cares for cattle, horses or poultry at their residence must change clothing and footwear before arriving at the farm. Regional animal health concerns may create more stringent precautions.
  - Staff members must report any unexplained illness or mortality in their herd/flock to their supervisor, HTV or HAV. Staff must follow HTV/HAV instructions regarding downtime and/or decontamination and containment protocols.
- Staff must shower and dress in a full change of clothes prior to their shift if they participated in a successful hunt or game processing. Pig exposure is to be treated as pig contact downtime whether from swine hunting or a processing facility.
- Production Staff finding themselves in direct contact with people involved in pig production (i.e. hardware or farm supply store) or finding themselves in any situation which might compromise the health of a unit must contact their supervisor/HTV/HAV for instruction regarding proper downtime and protocols before returning to the production unit.
- Production staff must wear site-specific footwear to complete tasks within the compound.



#### **3.3 Visitor/Production Staff Entrance Process**

All visitors and production staff must adhere to the following processes when entering the farm. Instructions for farm entry must be posted:

A solid-sided barrier/bench must be present and utilized at the farm entrance, a minimum of 12 in/30 cm in height

• Shoes, jackets, and hats are to be left on the dirty side and all visitors/farm personnel must swing their legs over the barrier/bench to enter the shower area, without allowing their feet/socks to touch the floor on the dirty side. Shoes are never permitted in the shower area.

All visitors to PIC production facilities must sign into the visitor log book and measure their basal body temperature and last contact with pigs

- Before entering the unit showers, all visitors/staff must have their basal body temperature measured.
  - Persons with a temperature of 100F/37.8C must follow their company specific Herd Health Protection Protocol. See *Appendix 3.3*, Herd Health Protection Protocol with information regarding Influenza A personnel procedures.
- All personal clothing and jewelry must be left on the dirty (outer) side of the shower. In the event that jewelry cannot physically be removed, additional washing and scrubbing is required.

All visitors/production staff must take a complete shower, 3-minutes minimum duration with body soap and shampoo, prior to entry. Hand washing and scrubbing under fingernails with a nail brush is also required.

- Cell phones and other personal electronic devices are not permitted in the farm. All other items that employees consider essential (i.e. lunches, medical devices) must be approved by the farm manager before use in the barn.
  - All approved items must either:
    - Pass through the fumigation room
    - Be disinfected at the pass-through window with disinfectant spray or wipes with 10-minutes minimum contact time
    - Through a UV light chamber (254nm wavelength) with 10-minutes minimum exposure time
  - No food or drink is permitted in the pig areas

#### Uncooked pork products are not allowed.

All clothing and supplies needed on the clean (inner) side of the shower will be provided by the farm.

- Towels must remain on the clean side of the unit
- After entering the production unit, no person shall leave the compound before showering and changing into their own clothes



#### **3.4 Entrance Maintenance**

Entry procedures and instructions must be posted in the barn entry area.

#### The site entrance should always be locked.

- The site entrance must be heated (greater than 70 degrees F/21 degrees C) to keep the area warm and dry.
- The entrance must be kept clean and disinfected regularly (See Approved Disinfectant List, Appendix 3.4).
- Items used on the clean side of the shower must enter the farm through the fumigation room.
- Floor mats utilized in the shower and on the dirty side of the shower are not allowed to enter the farm for cleaning.



#### **3.5 Downtime**

Please recognize these downtime requirements are what PIC has required as the minimum. Take into account any previous visits, pig contact, etc. and increase downtime as you feel necessary.

Minimum Downtime Requirements for Entering PIC Production Units								
		Away						
Herd to be entered	International Visitors	Sale barn or slaughter plant	From any commercial or non-PIC Multiplication site or Stud site	Between PIC Owned, TAME, or Affiliate production sites	Away from pig people or meetings			
Elite Farms (GN/Boar Multiplier)	By special permission only. 3 nights down from FAD negative country & 5 nights down from FAD positive country	Three (3) nights	Three (3) nights	Two (2) nights	Overnight			
Al Stud (GTC)	By special permission only. 3 nights down from FAD negative country & 5 nights down from FAD positive country	Three (3) nights	Three (3) nights	One (1) night	Overnight			
Grand or Parent Multiplier	Two (2) nights PRIOR to arrival in NA and 1-5 nights POST arrival in NA. 3 nights down from FAD negative country & 5 nights down from FAD positive country	Three (3) nights	Three (3) nights	Two (2) nights	Overnight			
Gilt Multiplier and Flow	Two (2) nights PRIOR to arrival in NA and 1-5 nights POST arrival in NA. 3 nights down from FAD negative country & 5 nights down from FAD positive country	Three (3) nights	Three (3) nights	-Overnight <sup>1</sup>	Overnight			

1. Same day is acceptable for downstream finishing flow

\*Downtime within a flow must follow a dynamic biosecurity pyramid. Refer to Appendix 3.5 for a dynamic biosecurity pyramid example.

\*\*Downtime Definitions: One night = minimum of 12-hours, Two nights = minimum of 36-hours,

*Three nights = minimum of 60-hours.* 

\*\*\*Always follow your most recent Dynamic Biosecurity Pyramid for health status.

All people entering PIC Production Units, including Production Staff, Veterinary Staff and any other authorized visitors, must observe the following downtimes with the production staff responsible for the enforcement.



Section 4:

# Equipment and Supply Entry

"The material entry process must provide a biological barrier against the outside world while allowing for timely introduction of items large and small. To achieve the goal, the process must be effective, simple, practical and understood by all that enter the farm."

-Jer Geiger Health Assurance Veterinarian, PIC

#### A written, farm-specific protocol, for entry of equipment and supplies is required and must be approved by the HTV or HAV.

The entry of supplies and equipment protocol must be posted on both the dirty and clean side of the supply entry room. Supplies entering the farms should be kept to a minimum and deemed necessary equipment. Consideration must be given to the following issues:

- Source of materials
- Risk of contamination
- Ability to disinfect materials
- Use of a disinfection process with downtime

#### **4.1 Decontamination Process**

General guidelines for material and equipment entry are as follows:

- Unless size or weight prohibits, supplies and equipment must be brought in through the fumigation room. See Appendix 4.1-1 for the Alternative Fomite Entry Protocol.
- Cell phones and other personal electronic devices are not permitted in the farm. All other items that employees consider essential (i.e. lunches, medical devices) must be approved by the farm manager before use in the barn.

#### All approved items must either:

- 1. Pass through the fumigation room
- 2. Be disinfected at the pass-through window with disinfectant spray or wipes with 10-minutes minimum

#### contact time

- 3. Through a UV light chamber (254nm wavelength) with 10-minutes minimum exposure time
  - No food or drink is permitted in the pig areas
  - Uncooked pork products are not allowed
- Fumigation rooms must be maintained at or above 70 degrees F/21 degrees C.
- All items entering the fumigation room must be free of organic material.
- Cardboard boxes or paper bags are not allowed to enter the farm.
  - When loading the fumigation room, all items must be unpackaged and external cardboard or bags discarded. Items must be disinfected in a single layer (not stacked) on open bottom shelves to allow contact with disinfectant on all surfaces.
- The fumigation room must be designed in a manner that prevents cross traffic between where supplies are entered and where supplies are accessed by the farm.
- Approved disinfectants are available in Appendix 3.4. Manufacture dilution rates must be followed.
- Process to decontaminate supplies must include complete coverage of the items with disinfectant by spraying or fogging, followed by 1 hour minimum contact time. See Appendix 4.1-2 for example decontamination SOPs.
- Supplies should not be stored for extended periods of time (more than 24-hours) in the fumigation room after disinfectant contact time is complete.

Fumigation logs must be kept with the following information: initials of person bringing in supplies, brief description of supplies, date/time placed in fumigation room, and date/time entered into the farm.



#### 4.2 Special Items

Special items are necessary farm supplies that cannot be coated or exposed to disinfectant. Examples include computers, ultrasound machines and semen holding containers. To enter special supplies, they must be placed in a clean area, segregated away from the main farm, for a minimum period of 7-days and maintained at 70 degrees F/21 degrees C. See *Appendix 4.2* for Special Item Disinfection Protocol.





Updated 06/30/2021

Section 5:



"Due to a tremendous number of foreign animal diseases that have been identified globally, and also to the ever-increasing global travel and international trade of feed ingredients; a biosecurity program for feed and ingredients is becoming a practical tool to reduce the likelihood of introducing pathogens into the feed chain. Achieving the biosecurity of feed, ingredients, and manufacturing involves the understanding of its importance, the commitment to implement and follow it, and the dedication for continuous improvement." -Uislei Orlando, Global Director of Nutrition, PIC

#### **5.1 Ingredients**

All ingredients must be purchased and handled in a biosecure manner.

- All ingredients received by the feed mill, should be transported in power units/trailers that have not previously transported swine or been used to haul ingredients to farms with swine on the premises.
- All reasonable attempts must be made to purchase grain ingredients from producers with no swine.
- Feed ingredients must be maintained and controlled in a manner that prevents exposure to contaminated materials.

#### The use of porcine origin ingredients in the rations is prohibited.

- If porcine origin ingredients are utilized in the feed mill, written permission must be acquired from PIC HA and the HTV.
  - Ingredients that may be permissible if origin is verified:
  - Bovine plasma or non-porcine source blood meal, spray dried egg protein, poultry meal, bakery meal or beef tallow when no swine products are processed at the plant of origin, transported in the same vehicles or stored in the same container.
  - Choice white grease when biosecurity protocols are followed during delivery and heat is applied during holding.
  - Dried distillers grain with solubles (DDGS) when stored in bird-proof facilities or when bird-control protocols are in place.
- All imported ingredients must have a feed ingredient risk assessment completed and appropriate mitigation strategies implemented before use, if required. Please refer to *Appendix 5.1-1*, PIC Feed Biosecurity Guidelines for details regarding ingredients and risk mitigation strategies.
- Routine use of antibiotics in the feed (except for Phase I & II starter diets if no other alternatives exist) or water, should not be practiced. Any short-term inclusion may be carried out under the direction of the HTV if PIC HA is informed in advance.
- Nutritional quality of the feed should be adequate to prevent any clinical or sub-clinical deficiencies from occurring, which could reduce the life of the pigs serving as Breeding Stock.
  - Refer to *Appendix 5.1-2*, PIC Nutrition Manual for supporting documentation on dietary specifications and recommendations.
- Withdrawal times for all products must be followed.
- Elite farms and multipliers that produce breeding stock for sale by PIC, should evaluate their risk of disease transmission via feed or feed ingredient to determine whether chemical mitigation strategies should be utilized in premixes or in the complete feed. Contact your HTV/HAV to identify the specific health risk of concern to determine the best option available at mitigating the target pathogen.



#### 5.2 Manufacturing

Manufacturing feed for PIC Production Units must be done at PIC approved facilities.

## To become an approved facility, a feed mill biosecurity assessment must be completed and approved by both HA and Supply Chain.

- Please see Appendix 5.2 for PIC Feed Mill Assessment.
- Approved feed mills must be audited by PIC HA or the HTV, using the feed mill biosecurity assessment with the following frequency:
  - Owned, GTC, and tame production: annually
  - In the event of any significant changes in protocols or quality of work.
- If the feed mill services other non-PIC pig sites, they should be high-health, monitored farms. The feed mill should have PIC dedicated trucks and protocols to segregate PIC feed deliveries from other pig sites they service.
- The mill should have a defined traffic pattern to control people and vehicle traffic.
- The feed mill must comply with the protocols and recommendations outlined in the PIC Feed Biosecurity Guidelines (Appendix 5.1-1).

#### The following rules apply to the ingredient reception process:

- Trucks entering the receiving area must have operational mud flaps and remove sludge/ice pack from the hopper.
- A discharge cone or collar at the bottom of the hopper must be used to minimize unwanted materials from falling into the pit during the unloading process.
- Drivers should stay inside their truck when possible. If they must exit their vehicle, driver access should be limited to the ingredient reception area and they are required to utilize shoe covers.
- The receiving pit must be covered when not in use to minimize open areas for birds, rodents and debris contamination.
- The receiving areas, including pits, must be cleaned daily. Spill-over materials should never be swept into the receiving pit, but discarded into an on-site dumpster.

#### The following rules apply to the manufacturing process:

- Warehouse and manufacturing area foot traffic should be limited to employees only. No outside suppliers or customers should be allowed.
- Separate pathways for incoming ingredients and outgoing deliveries should be utilized to minimize potential traffic crossover.
- A No Access Policy should be enforced to prohibit livestock transport vehicles from using the on-site scale and reclaimed feed must not return to the mill.
- Manufacturing areas should be cleaned weekly, especially the hand-add area that gives direct access to the mixer.
- Collected dust from air cleaning systems or floor sweepings must not be recycled into the mixer. These materials have high pathogen concentration and should be disposed of properly.
- All feed manufacturing and delivery equipment must be flushed routinely, especially before pig feed is produced.
- Batches/feed orders must be sequenced by species and biosecurity pyramid in multispecies mills.
- An aggressive pest control for both birds and rodents must be maintained. A monthly log of control measures taken must also be kept.



#### 5.3 Delivery

From a biosecurity perspective, it is highly recommended to utilize a dedicated truck and trailer for feed delivery. This greatly reduces cross-contamination risks with shared vehicles servicing other swine farms and flows.

If use of a dedicated feed truck and trailer is not feasible and shared deliveries occur with nonmultiplication farms, the following parameters must be adhered to:

- A dynamic biosecurity delivery pyramid must be documented, followed, and reviewed routinely by the HTV/HAV.
- Feed trucks and trailers must be washed, disinfected, and allowed to dry before moving back up the biosecurity pyramid. SOPs must be reviewed by the HTV/HAV.
- After feed delivery to a commercial site, post decontamination, 60 hours of downtime must occur before feed delivery to a GN/Boar or Parent Multiplier/GTC and a minimum of 12 hours of downtime before feed delivery to a Gilt Multiplier.
- All feed trucks must follow the most current dynamic biosecurity pyramid for the system and flow. Every time vehicles need to move up the biosecurity pyramid they must be washed, disinfected, dried and inspected before coming to the unit.
- Truck drivers should never come in contact with the feed. If a problem occurs during the delivery and the driver does contact the feed, the truck should be sent back and the feed not accepted.
- If an object is needed to assist with dislodging feed inside the truck, the driver must place a clean, heavy-duty trash bag over the object before placing it into the truck. Bag must be discarded after use.
- Any feed spillage must be cleared promptly. The driver should immediately report the spill to the farm staff for cleaning. Feed spills must be disposed of in an on-site dumpster or mixed in the compost.

Bagged feed transport and entry protocols must be reviewed and approved by the Health Team Veterinarian.

The following rules apply to bagged feed entry:

- Plastic (non-permeable) bags can be disinfected in the fumigation room. Bags must be free of organic matter and spread out in a single layer on shelves to ensure full contact with disinfectant on the entire bag surface.
- For feed in paper bags, each individual bag must be opened and the feed contents poured into barrels or carts specifically designated for feed storage. The dirty bag must not touch the clean barrel or cart.
- Feed for use in transit must follow a biosecure process (See Appendix 5.3, Bagged Feed for Use in Transit).
- Once feed is delivered to a multiplication farm, it cannot be reclaimed to a another multiplication site.
- Reclaimed feed can be transferred to a commercial site as needed with proper biosecurity considerations implemented for the transfer equipment.



#### Section 6:

## Transport

"In order to keep animals free of disease, we need to continue to refine and improve our bio-secure practices during transportation. Transport is a very easy way to spread disease quickly between farms, so it's imperative that the expectations, execution and culture around biosecurity is at the forefront of everyone's mind. "

-Nick McCulley, Global Supply Chain Director, PIC



#### 6.1 Equipment

All transport equipment that docks to a PIC multiplier/GTC must originate from a carrier previously approved by PIC Health Assurance and Supply Chain.

## Before entering a PIC breeding stock production site, trucks and trailers that dock to a PIC multiplier/GTC must be cleaned, disinfected, dried, and inspected.

- Truck disinfection, wash and inspection must occur at a PIC HA approved truck wash that incorporates approved protocols outlined in the PIC Transportation Biosecurity Protocols (*Appendix 6.1-1*). Refer to *Appendix 6.1-2* for the Truck Wash Facility Audit.
- The cargo area and equipment used therein, must be made of materials that are in good repair and of appropriate design to allow for proper cleaning and disinfection.
- All trailers must be empty before loading at any PIC Production Unit, unless sites are from the same production flow. Breeding stock from different sources within PIC will not be transported on the same delivery vehicle without PIC HA approval. Refer to *Appendix 6.1-3* for the PIC Transportation Assessment.

#### Transportation Assessments will be conducted annually.

- PIC breeding stock vehicles must avoid any location where other livestock trucks are likely to frequent (e.g. truck stops, rest stops, etc.).
- Transport routes will be determined with high consideration to biosecurity and efficiency by PIC logistics.
- Trucks that have carried dead animals or porcine origin products are not allowed into the compound. Trucks must maintain a minimum distance of ¼ mile (400 meters) from the closest production building, unless they are part of the inner-sanctum movement.
- Livestock trucks must be kept as far away as possible from PIC Production Sites. Trucks should never approach the compound unless they have first been properly cleaned, disinfected, dried and inspected at a PIC approved facility.
- Breeding stock trucks, drivers and trailers must be segregated from market, cull, feeder or roaster transportation units.
- If a tractor, driver and trailer previously hauling non-breeding stock must be re-purposed for breeding stock transport, it is required that the unit/driver must have a minimum of 60-hours downtime. The tractor (exterior/cab) and trailer must be decontaminated per PIC protocol. A third party inspection must be submitted to PIC HA.
- All vehicles must follow the most current dynamic biosecurity pyramid for the system and flow. Every time vehicles move up the biosecurity pyramid they must be decontaminated before coming to the unit.



#### 6.2 Driver

## All drivers and/or carriers transporting PIC genetics must be trained and approved by PIC Health Assurance and Supply Chain.

- Unapproved truck drivers must not enter the farm compound. All drivers must be TQA+ (Transport Quality Assurance plus) certified and have annual biosecurity training.
- PIC transport biosecurity training will be completed for new drivers at the time of hiring and on an annual basis for existing drivers.
- Any passengers accompanying the driver must follow the same biosecurity practices and downtime as the driver and remain inside the cab at pickup and delivery.
- No pets may accompany any driver in any delivery vehicle.
- Transport employees may not live on premises where pigs are kept, nor may they live with another person who works with swine or has contact with organic material originating from swine (e.g. nutrient management, rendering). PIC Logistics or PIC HA must be contacted if there are any questions.
- Drivers are required to wear shoe covers when exiting the truck cab at a PIC Production Unit. Clean rubber overshoes or multiple layers of disposable shoe covers, with clean cloth or disposable coveralls must be worn in the cargo area when loading or unloading pigs.

#### Drivers must follow the most current dynamic biosecurity pyramid for the system and flow.

• Drivers must observe a minimum of 12-hours of downtime (away from livestock and poultry) before loading breeding stock, and a minimum of 60-hours downtime after contact with commercial nurseries/finishers, terminal markets or cull stations. *See Appendix 6.2, PIC Transport Biosecurity Pyramid* for driver/tractor downtime.



#### PIC transport vehicles must only be washed and dried at PIC approved facilities.

• To become an approved facility, a Truck Wash Facility Audit (Appendix 6.1-2) must be completed and approved by both HA and Supply Chain.

Approved truck washes must be audited by PIC HA or Logistics using the PIC Truck Wash Facility Audit

Truck Wash Facility Audits must be conducted with the following frequency:

- Owned, GTC and Tame production: annually
- In the event of any significant changes in protocols or quality of work.
- Approved truck washes must maintain compliance with PIC biosecurity guidelines. In the event a truck wash becomes non-compliant, farm(s) utilizing the facility will be placed on health hold until biosecurity concerns are suitably addressed.
- Truck wash facilities utilizing recycled water are prohibited from washing breeding stock trailers.
- All trucks and trailers must be cleaned, disinfected, dried, and inspected in accordance with approved protocols outlined in the PIC Transportation Biosecurity Protocols (Appendix 6.1-1).
- If a shuttle vehicle is used to transfer pigs to a vehicle that is not washed and disinfected under PIC health control, the shuttle vehicle must be washed, disinfected, and dried prior to contacting the load-out again.





#### 6.4 Storage

Once a transport unit has been cleaned and disinfected it must be kept clean prior to loading. Ideally, transport units should be stored in an area that is:

- Physically and functionally separate from transport units that have not been cleaned or disinfected.
- Away from pets, farm animals, rodents, birds and wildlife.
- Away from people, contaminated equipment, feed and bedding.
- Away from exhaust fans and dusty areas.

## All clean trailers must have a visual inspection (observing for signs of bird or rodent activity) completed within 12-hours of use.

• If any contamination is present, the trailer must have another wash, disinfect, and dry before use. Documentation of visual inspection must be kept including date, pass/fail status, and initials of the inspecting party. Refer to *Appendix 6.4*, Trailer Inspection Standards.

Trailers that have either been dried through a TADD (Thermo Assisted Decontamination and Drying) or natural drying process, must either be recorded in a trailer wash log or marked with a tag to indicate the date of when the trailer was inspected as dry.



#### 6.5 Load-in and load-out

The load-out must be constructed and procedures executed to reduce the possibility of contamination of the PIC Production Unit with an infectious agent from transport vehicles, rodents, birds, etc.

All sites must submit farm-specific designs and procedures for load-out to PIC Health Assurance, the design must be approved before execution of a Multiplier Agreement

The load-out must be designed and constructed to facilitate proper animal handling. The following rules apply:

- There will be a farm (clean) section and a transport vehicle (dirty) section with a clean-dirty line clearly defining both areas. No crossover is allowed other than one-way animal movement.
- Once pigs have entered an area that may be contaminated by materials from the transport vehicle, the pigs must not re-enter the farm. A one-way door or gate must be in place between the farm section (clean) and the transport vehicle section (dirty) of the load-out to facilitate this. The load out facility must be designed so there is no direct contact between the pig personnel in the farm and the truck or driver.
- The entire load-out must be covered, bird-proofed, and constructed of materials that allow for thorough cleaning and disinfection.
- A loading area designated as a load-in only must also be covered and bird-proofed. As a load-in only facility, it does not need to have a one-way door and farm (clean)/transport vehicle (dirty) sections.
- All breeding stock shipments must be unloaded/loaded through a clean chute.
- The load-out must be washed and disinfected between uses (same day).
- Drainage into the buildings from the dirty section of the chute is prohibited.
- The load-out should be heated and have a separate pressure washing system or pressure washing line and hose.
- New PIC Production Units must submit load-out design and procedures for PIC HA approval, which must be obtained before execution of the Multiplier Agreement. Example load-out designs are available in *Appendix 6.5*.

*The following rules apply to the load-in and load-out process:* 

- Clean rubber overshoes or multiple layers of disposable shoe covers must be worn by the driver in the cargo area when loading or unloading pigs.
- Disposable or clean cloth coveralls must be worn by the driver in the cargo area.
- The clean-dirty line is the rear edge of the trailer. Drivers are not permitted to enter the multiplier, customer loading chutes or facilities.
- Farm staff must not cross the CDL from the loading chute into the trailer and utilize dedicated equipment in the load-out area (e.g. sort boards, rattle paddles, boots, coveralls and cleaning equipment). Deviations from this protocol require a written, site-specific protocol approved by HA.
- All staged loading, unloading, and loadout chute decontamination procedures must be designed for each facility, approved by PIC HA and made easily accessible for all production staff and drivers. This includes any use of shuttle vehicles or multiple transfer events. An example of Staged Loading is depicted in Appendix 6.5 - 2 : Staged Loading Example
- If a loading area is deemed a potential biosecurity risk, the driver and/or site manager has the authority and responsibility to question the situation and communicate to the HTV, PIC HA or Logistics.


Section 7:

# **Mortality Management**

"Mortality removal is a task that requires repeated high risk activity at the clean/dirty line. Good facility design, proper removal procedures, and a secure method of disposal once outside the farm, all help protect against pathogen introduction."

-Perry Harms, North America Health Assurance Director, PIC

## 7.1 Collection and Removal

Mortality is an expected part of animal production. Carcasses, tissues and fluids can carry pathogens. Upon discovery, dead pigs and afterbirth must be removed from the pen/crate in a timely and biosecure manner.

Farm-specific protocols for mortality collection and removal must be established by the production unit following PIC standards and must be approved by the HTV and the HAV.

- Farm-specific protocols for mortality collection and removal must be always accessible for farm staff.
- Farm staff must be trained on mortality removal during on-boarding and receive annual re-training. The production unit must keep updated training records which includes date of training, facilitator and trainees.
- A clean-dirty line (CDL), separating the inside (clean area) and the outside (dirty area), must be established at every extraction point, under the supervision of the HTV. The CDL needs to be clearly demarcated, easy to follow and strictly respected.
- A minimum number of extraction points (doors) will be designated by the production unit, under the supervision of the HTV, to remove mortalities and afterbirth. Where feasible, these exit points should be exclusively dedicated for this purpose. Appropriate signage must be posted to remind workers of the strict CDL and protocols.
- The extraction point(s) must be elevated, at minimum 18 inches (45 cms) relative to ground level, to facilitate carcasses falling by gravity across the CDL without the need for personnel assistance.
- As mortalities and afterbirth are collected throughout the day, they must stay on the clean side of the extraction point(s) and may not be removed from the barn until the end of the workday.
- All personnel and equipment used to collect mortalities and afterbirth (buckets, carts, barrels) must stay on the clean side of the CDL during the removal process. If an object or person contacts the dirty area, full decontamination and/or shower is required before re-entering the farm.
- Mortality collection equipment must be cleaned and disinfected weekly.
- Farm garbage must be taken out through a designated extraction point using the same biosecurity protocol for mortality removal. Once on the dirty side of the farm, bagged waste must be disposed of according to local regulations and available services. Garbage dumpsters or barrels should be located on the edge of the compound to prevent waste collection vehicles from entering the site for collection.



### 7.2 Disposal

The following standards apply to the disposal of mortalities.

- Dead animal disposal must meet the applicable governmental (Federal, State, Provincial) regulations.
- Mortality disposal should occur at the end of the workday. Once on the dirty side of the extraction point(s), carcasses and afterbirth must be disposed of within one hour.
- A designated employee and alternate must be responsible for outside mortality disposal. Staff are required to observe an overnight (minimum of 12-hours) of downtime before reentering the farm. Production units must provide footwear and clothing to be used, which must be washed outside the barn (dirty area).

A farm-specific protocol for mortality disposal must be established by the production unit that follow PIC standards and is approved by the HTV and/or HAV.

- See Appendix 7.2-1 for Sample Mortality Removal SOP. The protocols must be accessible for farm staff and include:
  - A plan to deal with outdoor spills quickly and thoroughly.
  - A maintenance plan for the mortality disposal area and equipment.
  - Step by step instructions for mortality transport and processing.
- Equipment used on the outside (dirty area) for carcass disposal must never be used for moving materials that could come in contact with the main herd or caretakers.
- If the equipment utilized for mortality disposal (tractor, bucket, trailer, etc.) is needed for other activities on the outside (dirty area), it must be decontaminated following a protocol approved by the HTV or HAV.

### Rendering is prohibited.

- Carcass removal from the compound/complex is not allowed for any reason. All mortalities must be disposed of through approved methods.
- On-site composting, incineration and burial are acceptable mortality and afterbirth disposal methods. Disposal areas must be maintained in a manner that wildlife, fowl and rodents are not attracted. Composting must be enclosed. The location must be approved by the HTV or HAV.
- Ideally, a daily log for mortality disposal, including date, time and responsible party, will be kept by the employee(s) responsible for the task and be accessible by the farm manager and supervisors. Reference *Appendix 7.2-2*, Daily Mortality Disposal Log.
- On-site composting bays must be emptied utilizing flow-dedicated equipment following the dynamic biosecurity pyramid or equipment that has been washed, disinfected, dried and inspected following the farm specific protocol developed by the production unit and approved by the HTV or HAV. Refer to *Appendix 7.2-3* for Compost Removal Equipment Decontamination Protocol.
- Mortalities from the quarantine area or removed from a trailer, must be disposed of after mortalities from the main herd. A protocol for equipment decontamination, post quarantine exposure must be approved by the HTV and/or HAV. Refer to *Appendix 7.2-4*, Protocol for Mortality Equipment Decontamination.

A catastrophe management plan, meeting government regulations, must be developed by the production unit and approved by the HTV or HAV in situations of extremely high mortality.

• Refer to Appendix 7.2-5 for Catastrophe Management Plan



### 7.3 Necropsies

On-site necropsies must be performed in a designated area that allows for proper cleaning and biosecure removal of carcasses. Necropsy equipment and sample collection materials must follow approved supply entry protocols and cannot be transferred between farms.

- The health status of dead animals is equivalent to the health status of their herd of origin. Personnel completing necropsies are subject to the origin farm downtime requirements or, at a minimum, 12-hours of downtime. This will apply even if the veterinarian does not visit the herd, regardless of where the necropsy was performed.
- Pending the outcome of a necropsy evaluation that changes the health status of the source herd and flow, the downtime should be adjusted accordingly.



Section 8:

# **Manure Management**

"Biosecurity needs to be a priority every minute of every day without exception. Many farms have introduced a disease while simply emptying pits/lagoons; farm specific protocols must be created to address all potential risks and everyone is responsible for adhering to these protocols" -Joe Jobin, Production General Manager - Apex & Aurora, PIC

### 8.1 Storage

The following standards apply to manure storage.

- Manure management must meet government (Federal, State, Provincial) regulations to comply with environmental, health and safety requirements.
- Deep and shallow pit slurry systems and non-recirculating shallow gutter lagoon systems are acceptable manure storage options.

# Recirculating systems are not allowed.

- Manager and responsible employees must be trained on manure storage and removal during on-boarding and receive annual re-training. The production unit must keep updated training records including date, facilitator and trainees.
- The farm manager is responsible for coordinating manure handling procedures.



### 8.2 Removal, Transportation and Application

Where feasible, every flow should have dedicated manure agitation, pumping, transportation and application equipment. Extensive consideration should be given for dedicated equipment (agitators, hoses and pump) at GTCs and breeding herds. In the event that non-dedicated equipment is utilized:

• All non-dedicated equipment must be thoroughly washed, disinfected, dried and inspected between farms. See *Appendix 8.2-1* for Manure Equipment Inspection Form.

Farm-specific protocols for manure handling must be established by the production unit that follow PIC standards and are approved by the HTV and/or HAV.

- The Manure Handling Protocol must be accessible for farm staff and service providers. Refer to *Appendix 8.2-2* for Sample Manure Handling SOP.
- Shared use of pumping equipment is only allowed within a production system.
- The production unit will provide a dynamic biosecurity pyramid flow to be followed by service providers and equipment with the same downtime specifications indicated for farm visitors:
  - Higher health farms must be serviced before lower health farms.
  - Higher genetic level farms must be serviced before lower genetic level farms.
  - Sow herds and GTCs must be serviced before grower sites.
- Regardless of operating on the dirty side, service providers must be trained on manure handling biosecurity and meet all farm visit requirements as any other visitor. PIC can provide the Multiplier/GTC with digital tools to support biosecurity education for service providers, focusing on protecting herd health during manure removal.
- During manure removal, transport and application:
  - Must be scheduled in advance and all farm staff notified.
  - Both equipment and service providers must be registered in the farm visitor logbook recording previous pig contact place and date.
  - A strict clean/dirty line between people handling effluent and any pig population must be established and communicated.
  - Personnel and farm vehicle cross-traffic when pumping and transporting effluent must be minimized. If the site is unable to have separate driveways to eliminate all crosstraffic, biosecure processes must be established and followed. Considerations must be made regarding pig movement and feed deliveries. Complete separation is ideal.



- Manure removed from PIC sites must be applied to adjacent fields, when possible.
- If considered necessary by the HTV or HAV, equipment sampling can be requested before use of the equipment.
- In the event of a disease outbreak, the farm agitator, hose and connection pieces will be decontaminated following a protocol approved by the HTV and/or HAV.
  - Pits must not be agitated for the 6 month period following.
- All potentially contaminated materials and the operating area must be decontaminated immediately after the procedure is completed.

Farm-specific protocols for manure equipment disinfection must be established by the production unit that follow PIC standards and are approved by the HTV and/or HAV.





Section 9:

# Health Hold

"Health Holds show the responsibility and commitment that PIC takes to protect customer health and ensure their success. While health holds are disruptive to both the multiplier and the customer, they are a necessary step in our biosecurity process to provide confidence that PIC and our multiplier partners have the customer's best interest in mind."

-Todd Wilken, North America Sales Director, PIC

### 9.1 Process and Criteria

Health holds are a process used to stop all live pig and/or semen movements, with the exception of terminal or cull pigs from a facility.

Source farm health holds may include downstream sites of the same flow, until health status is verified. The purpose of a health hold is to protect customer and connected PIC sites from a novel disease introduction.

- The following categories constitute a need for a health hold:
  - See Appendix 9.1 for a list of Biosecurity Observations that constitute an immediate Health Hold.
  - Abnormal clinical signs
  - Unexpected or incomplete diagnostic results
  - Health concerns within the same flow or neighboring farms
  - Biosecurity breach
  - Examples include farm break-in, inability to shower in, improper supply entry, unauthorized trucks entering the facility, etc.
  - Non-compliant feed mill, truck wash, transport or biosecurity assessment

All farm and PIC personnel must be observant and immediately report any abnormalities or concerns constituting a health hold. Concerns must be reported to PIC Health Assurance Operations and the PIC Health Assurance Veterinarian assigned to the farm. The determination to remove a site from health hold will be made by PIC Health Assurance, in cooperation with the Health Team Veterinarian, based on satisfactory follow-up, clinical signs, and diagnostics.



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Appendix 0.1



SOP Title	Appendix 0.1: PIC Biosecurity Standards Glossary
Farm	PIC Multiplication and GTC System
Date	21 Aug 2019

- Agitator (Manure) an apparatus for stirring liquid and solids contained in manure
- **Biosecurity** a set of preventive measures designed to reduce the risk of transmission of infectious diseases
- **Biosecurity pyramid** a set of farms linked by source or common health status. The pyramid places breeding animals and semen production at the top and finishing facilities at the bottom
- **Clean-Dirty Line (CDL)** boundary where the external environment (dirty side) contacts the internal environment (clean side) of the farm
- **Compost** area of the compound where carcasses are mixed with carbon material to be decomposed and make nutrient rich fertilizer
- Complex A group of similar swine facilities in close geographical proximity operated as a flow with a high level of dedicated personnel, equipment (including trailers, truck wash) and sufficient isolation. Must be approved by BAT
- Compound the land surrounding the clean area perimeter that is managed by the Multipler/GTC
- **Contact time** the amount of time that a surface must remain wet to allow the chemical (disinfectant) to be in contact with the organism to kill
- **Downtime** time during which a person is away from pigs or pig people before contacting pigs again
- **Dynamic biosecurity pyramid** A set of farms linked by source or common health status. As breeding stock and semen production are at the top with stable health, novel disease outbreaks of significant detriment to the flow will change the affected site's priority status on the pyramid. Regardless of production, sites that contract PRRSv, Coronavirus or *Mycoplasma hyopneumoniae* outbreaks will be placed at the bottom of the pyramid.
- Flow the path animals follow through facilities or locations during maturation
- Fogging process to cover materials to be decontaminated with aerosol that contains disinfectant



Appendix 0.1

General



- Fomite inanimate objects or materials that can become contaminated and carry infectious agents, such as clothes, utensils, and supplies
- Load In/Load Out area of the production facility where animals enter or exit the barn
- Necropsy a postmortem examination to discover the cause of death or the extent of disease
- Perimeter the continuous line forming the boundary of a closed structure
- **Quarantine** a place of isolation in which animals that have arrived from a non-associated source or been exposed to infectious or contagious disease are contained
- **Recirculating system (Manure)** a design where waste and manure re-enter the barn or pit from outside storage to flush or remove manure
- **Rendering** a process that converts waste animal tissue into usable materials (fertilizer, animal feed ingredients, etc)
- Sequenced loading a process where pigs exiting the production facility are moved following an unidirectional flow from the clean area (barn) to the transition area (load out chute) to the dirty area (trailer) in consecutive order
- **Shoe Covers** protective coverings for shoes worn to minimize the risk of transferring infectious agents from vehicle interior to the barn entrance
- Shuttle a vehicle which runs between two or more places regularly
- Slurry a semiliquid mixture, composed of fine particles of manure suspended in water
- Thermal Assisted Drying and Decontamination (TADD) a disinfection process where hot air is forced into the interior compartment of the trailer, increasing the surface temperature to 71°C to completely dry the surfaces to eliminate infectious agents
- Withdrawal time the minimum period from administering the last dose of medication and the production of meat or other animal-derived products for food



# PIC Biosecurity Standard Priority Items

Any violation of the Biosecurity Standard Priority Items outlined below will result in an immediate Health Hold unless a deviation has been approved by the PIC Biosecurity Action Team.

All farm employees and visitors are responsible for reporting any abnormalities, deviations, or concerns to PIC Health Assurance via the SCAN program.

# **1. Facilities**

### 1.1 Location

- All existing and new herd locations and buildings must be approved by PIC Health Assurance.
  - Explanation: Collaboration between PIC and its Production Partners on location and design of buildings allows both parties to establish and maintain high-health in herds that distribute PIC genetics to customers.
- 1000pt Location Assessments must be completed every 3 years by HTV/HAV/Supply Chain.
  - Explanation: The existence and health-status of herds surrounding partner facilities can be ever-changing. As such, PIC requires a thorough review of the location every 3 years for each facility which distributes PIC genetics.
- Location score self-assessments must be completed quarterly.
  - Explanation: Often the best resource for identifying changes in a local area (new facilities, changing health status, new ownership) are the farm employees themselves. To perform more-frequent checks of the surrounding area, PIC has instituted a self-reporting requirement for location scoring.
- All sites' 1000pt Location Assessment scores must meet minimum standards for their genetic level.
  - Explanation: PIC is committed to supplying high-health animals and genetics to customers. To ensure this commitment is kept, PIC has established minimum scores required for a site to operate at a specific genetic level. Ability to meet thresholds provides confidence that a site can provide healthy animals and semen.

### **1.2 Compound Definitions**

- All clean-dirty lines must be clearly demarcated.
  - Explanation: The Clean-Dirty Line is a touch point between the clean and dirty areas of a farm and must be strictly respected to protect the farm against the introduction of infectious agents that can affect herd health. To maintain the integrity of the clean area, all clean-dirty lines must be clearly identified within the facility and have a decontamination protocol to cross it. For example, CDL in load-outs, fumigation room, showers, etc can be painted in red.

#### **1.3 Barn Perimeter and Compound**

- An intact barn perimeter is required to prevent nose-to-nose contact with livestock/feral animals/people.
  - Explanation: This perimeter is an important defense mechanism for keeping potentially-infectious agents from reaching the farm's high-health population. To ensure welfare of the animals and reduce the risk of a biosecurity breach, an intact barn perimeter must exist.

#### **1.5 Buildings**

- Complete annual 1000pt Biosecurity Assessment.
  - Explanation: While location score is an important mechanism for monitoring the status and changes of the surrounding area, inadequate biosecurity practices on-farm present a significant risk to the farm's animal population. This assessment is to evaluate the biosecurity infrastructure and practices on-farm.
- Complete monthly Biosecurity Checklist.
  - Explanation: Maintaining Biosecurity is the responsibility of every person who enters the compound every day. To establish more-frequent evaluations of the on-farm Biosecurity practices, PIC has created the Biosecurity Checklist. The biosecurity checklist must be completed at least monthly or as frequent as production supervisors, HAVs, HTVs, SC or TS visit the farm.

#### **1.6 Pest Control**

- Farms must follow a pest management protocol to control bird, rodent, varmint, and insect intrusion.
  - Explanation: Pests present a significant threat to the health and welfare of animal populations. PIC requires that a proactive pest management plan be followed on the farm. Execution of the plan can be carried out by the farm employees or a professional service.

### 1.7 Water Source, Treatment and Quality Monitoring

- Surface water or shallow wells (<50 ft deep) are not permitted.
  - Explanation: Surface water and shallow wells have a high probability of the water within containing infectious agents. As such, it is PIC's policy that deep wells, treated city or rural water be utilized as a water source for herds containing PIC genetics. When this is not possible, a defined water treatment and monitoring protocol must be approved by the BAT.

# 2. Live Pigs and Semen

- No live pigs or semen can be brought into the multiplier herd or GTC other than directly from a PIC approved and monitored herd.
  - Explanation: PIC is committed to maintaining high-health supply for its customers and has committed significant resources to monitoring the health status of all multiplier herds. As such, PIC requires that all animals and genetics entering the facility come from a monitored source.

### 2.1 Animal Quarantine

- Quarantine barns must be separated from the main herd and have its own air space, manure storage, people entry, supply entry, feed bins, pest control and chutes.
  - Explanation: While PIC always observes strict biosecurity best-practices during transport, animals have the risk of being exposed to infectious agents during transport. Because of this fact, farms must use quarantine barns to allow pigs to be observed and tested for novel agents before being introduced to the main herd.

### 2.2 Semen Delivery and Introduction

- Semen introduction to the farm must follow a decontamination process.
  - Explanation: While PIC always observes strict biosecurity best-practices during production and distribution of semen. Semen, or its packaging, may be exposed to infectious agents. To mitigate the risk of spreading any potential pathogens, semen must follow a decontamination process before it is introduced into the farm.

#### 2.3 Herd Establishment and Multiplication Flow

- All-in/All-out flow is recommended. If this is unattainable due to facility or pig flow constraints, this must be disclosed in a Vet-to-Vet consultation (V2V) including PIC health testing protocols, alternative pig flows, and biosecurity procedures to avoid cross-traffic.
  - Explanation: All information should be disclosed in V2V consultations so the customer is aware of all biosecurity risks.
- If growing facilities cannot be single sourced, co-mingling of flows can only occur when breeding herds share the same source farm for replacements.
  - Explanation: Introducing animals from multiple sources to a single site presents a higher risk of introduction of a novel agent. To mitigate this risk, flows may only be combined if the flows receive animals from a single source farm.

2

# 3. People

### 3.1 Visitors

• All visitors must be approved by the PIC Health Team Veterinarian and/or PIC Health Assurance prior to entering the perimeter.

- Explanation: To mitigate the risk of infectious disease introduced by a visitor, PIC strictly controls access to its farms through its farm visit approval process. Only visitors approved by the PIC HTV and/or PIC Health Assurance may enter the farm.

### **3.2 Production Staff**

- Production staff must not live on a farm where pigs are kept or harvested.
  - Explanation: Exposure to pigs outside of the main herd can result in the transmission of infectious agents from one population to another. To ensure the high-health status of the main herd, Production staff are not allowed to live on a farm where pigs are kept or harvested.

#### 3.3 Visitor/Production Staff Entrance Process

- Solid barrier bench must be present and utilized at the farm entrance.
  - Explanation: The boot bench creates a physical barrier preventing materials from the outside world from entering the farm. Everyone crossing the bench is required to follow posted instructions to prevent introduction of exterior contaminants from reaching the clean side of the facility.
- All visitors to PIC production facilities must sign into the visitor log book and record their last contact with pigs.
  - Explanation: In the event of a biosecurity breach, the visitor log can be a valuable resource for identifying the source of the disruption. As such, PIC requires that all non-employees entering the farm must sign in on the visitor log.
- All visitors and production staff must shower into the farm.
  - Explanation: To mitigate the risk of someone bringing an infectious agent into the farm with them, a shower must be taken. Showering with hot water, soap, and shampoo removes harmful bacteria or viruses they may have picked up from the outside world.
- All clothing and supplies needed on the clean side will be provided by the farm.
  - Explanation: Everyone entering the farm must leave their street clothes on the dirty side of the shower due to the risk that these items may harbor infectious agents. By putting on clean, disinfected clothing after showering in, the risk of tracking in dangerous agents is minimized.
- Uncooked pork products are not permitted within the farm.
  - Explanation: Significant viral agents (such as ASF) have been confirmed to survive in pork products. As a result, PIC does not allow uncooked pork products in its facilities.

#### **3.4 Entrance Maintenance**

- All farm access points and doors including entrance door should always be locked.
  - Explanation: To prevent access to the facility from unapproved/unwanted visitors and ensure all farm entrants have observed the proper biosecurity protocols, all access points and doors must remain closed and locked at all times.

#### 3.5 Downtime

- All people entering PIC production units must observe the appropriate downtime in accordance with the PIC Downtime Chart.
  - Explanation: The observance of downtime aims to prevent the introduction of infectious agents carried by people into the herd. Time away from pigs and pig people allows any infectious agents the person may have picked up to be shed or neutralized before entering the farm. Anyone not meeting downtime must not enter the farm.

# 4. Supply & Equipment

### 4.1 Decontamination Process

- A written, farm specific protocol for entry of equipment and supplies is required and must be approved by the HTV/HAV.
  - Explanation: Any equipment or supplies brought into the clean side of the farm from the outside world present a risk of carrying infectious agents that can affect the health of the herd. These items must be disinfected according to a specific protocol that insures any agents are neutralized.
- Fumigation logs must be kept.
  - Explanation: A fumigation log helps ensure that (1) appropriate procedures are followed when introducing external material into the clean side of the farm and (2) the farm has a record of all materials that have entered the farm from external sources in case of a health or biosecurity incident.

# 5. Feed

### 5.1 Ingredients

- The use of porcine origin ingredients in feed rations is prohibited.
  - Explanation: Significant viral diseases (such as ASF, PEDV, and PRRSV) can survive in porcine origin ingredients for an
    extended period of time. To prevent exposing PIC multiplication and GTC sites to these agents, porcine origin ingredients
    are not permitted.

### 5.2 Manufacturing

- All feed mills must undergo a Feed Mill Biosecurity Assessment and be approved by PIC Health Assurance before utilization as an approved feed source.
  - Explanation: Feed Mills (and the feed they produce) present a significant biosecurity risk for disease introduction into a farm. Biosecurity critical control points at a feed mill include traffic patterns, pest control programs, and feed manufacturing and storage process. To ensure the feed mill operates in a biosecure manner, the facility must be inspected and approved by PIC Health Assurance before producing feed for multiplication and GTC sites.

### 5.3 Delivery

- A Bagged Feed Transport and Entry Protocol is required and must be approved by the Health Team Veterinarian.
  - Explanation: Bagged feed, if contaminated, can serve as a fomite for disease transmission to animals in transport. To mitigate this risk, a protocol which defines proper handling techniques is required.
- Non-dedicated feed delivery equipment must have SOPs developed for wash, disinfect, and dry of
  equipment that is reviewed routinely by HTV/HAV.
  - Explanation: Vehicles which travel from one customer to another could serve as a fomite for disease transmission from one site to another. Using a dedicated vehicle or implementing a PIC approved vehicle decontamination process for deliveries mitigates this risk.

# **6** Transport

### 6.1 Equipment

- Transport equipment must originate from a carrier and truck wash approved by PIC Health Assurance and PIC Supply Chain.
  - Explanation: PIC audits transport equipment regularly. To ensure equipment utilized in transport is handled in a biosecure manner, the equipment must originate from a carrier that has been audited and approved.
- Transport assessment will be conducted annually.
  - Explanation: To ensure continual observance of biosecurity best practices, PIC must evaluate and assess the practices of each transport carrier annually.
- All tractors and trailers must be cleaned, disinfected, dried, and inspected before use.
  - Explanation: Dirty or partially cleaned trailers present a significant health risk to the animals being transported. To mitigate the risk of infectious or contagious agents deposited in the trailer from previous loads or during storage, the trailer must be disinfected, dried, and inspected before use.



### 6.2 Driver

- All drivers and carriers must be trained and approved by PIC.
  - Explanation: Drivers must be trained by PIC staff to ensure they are aware of and follow biosecurity best practices during transport.
- Drivers must follow the PIC Transport Biosecurity Pyramid.
  - Explanation: Transport should progress down the biosecurity pyramid to limit the impact for potential exposure. Moving up the biosecurity pyramid, without proper downtime, presents significant risk to the health status of herds up the pyramid. As such, it is critical for drivers to observe appropriate downtime when moving up the pyramid.

#### 6.3 Vehicle Decontamination Process

- Each truck wash must undergo an initial and annual Truck Wash Facility Audit and be approved by PIC Health Assurance.
  - Explanation: Truck washes, if improperly managed, can present a health risk to the animals being transported and farms they haul from/deliver to. To ensure the truck wash is following appropriate biosecurity practices, PIC Health Assurance must perform a Truck Wash Facility Audit annually.

#### 6.4 Storage

- Trailers must have either tags with TADD/wash date or date must be recorded in a log that is easily accessible.
  - Explanation: All trucks transporting PIC animals must be washed and/or TADDed. Correctly washing and/or TADDing trailers mitigates the risk of infectious agents deposited in the trailer during previous loads.
- Trailers must pass a visual inspection prior to use.
  - Explanation: Trailers which are improperly washed and/or dried present a significant risk for disease transmission. Additionally, animals or birds may introduce disease during storage. To mitigate the risks presented by these situations, the trailer must be visually inspected to confirm its clean status before use.

#### 6.5 Load in Load out

- All sites must submit farm-specific designs and procedures for load-out to PIC Health Assurance, the design
  must be approved before execution of a Multiplier Agreement.
  - Explanation: Improperly designed load-outs serve as a biosecurity risk for disease introduction into the herd. By reviewing and approving designs before construction, PIC Health Assurance can help facilities mitigate this risk.

# 7 Mortality

### 7.1 Collection and Removal

- Site-specific protocols (HTV approved) must be developed and followed for the collection and removal
  of mortality.
  - Explanation: Mortalities may occur due to disease. To reduce the risk of contamination and ensure mortalities are collected in a biosecure manner, each facility must develop a protocol for collection and removal.

#### 7.2 Disposal

- Site-specific protocols (HTV/HAV approved) must be developed and followed for dead animal disposal.
  - Explanation: Improperly disposed mortalities can introduce a biosecurity and/or health risk to the main herd. To ensure mortality disposal occurs in a biosecure manner, each facility must develop a protocol for mortality disposal.
- Rendering is prohibited.
  - Explanation: Rendering presents a significant risk to the main herd's health status due to two main factors: (1) the mortality may be the result of disease, (2) equipment used to pick up mortalities for rendering follows a lax biosecurity program.
     To eliminate these risks, PIC does not allow rendering at any facilities containing PIC genetics. A biosecure deviation must be approved by PIC BAT before a rendering program is put in place.
- Each site must have a farm-specific catastrophe management plan that is approved by the Health Team Veterinarian or Health Assurance Veterinarian.
  - Explanation: Each site must be prepared to respond in a biosecure way in the event of a catastrophe. To ensure all resources are aware of the proper procedures in this situation, a catastrophe management plan must be created.

# 8 Manure

### 8.1 Storage

- Recirculating manure systems are prohibited.
  - Explanation: Recirculating systems present a risk that manure containing infectious agents is re-introduced to the farm. To eliminate this risk, PIC does not allow recirculating manure systems within facilities containing PIC genetics.

## 8.2 Removal, Transportation and Application

- Farm-specific protocols (HTV approved) must be developed and followed for manure handling.
  - Explanation: Manure presents a risk of containing infectious agents. To ensure manure is handled in a biosecure manner during removal, transport, and application, each farm must create and follow a manure handling protocol.
- A Manure Equipment Disinfection Protocol (HTV approved) must be developed and followed for manure equipment cleaning and disinfection.
  - Explanation: Manure presents a risk of containing infectious agents. To ensure all equipment that comes into contact with manure is free of pathogens before use, farms must create and follow a manure equipment disinfection protocol.

# 9 Health Hold

# 9.1 Process and Criteria

- Any farm placed on health hold must halt all movement of live pigs and/or semen, except for terminal or cull pigs, from the facility.
  - Explanation: Farms are placed on health hold for a variety or reasons. If a farm is placed on health hold, it is because PIC believes the farm presents a significant risk of contaminating other herds. As such, no live pigs or semen can be transported from this facility until the health hold is lifted.



## Appendix 0.3

# General

SOP Title	Appendix 0.3: Emergency Entry Protocol
Farm	PIC Multiplication and GTC System
Date	21-Aug-2019
Justification WHY?	Procedures must be in place for entering a swine unit in the event of an emergency such as the loss of power, no available water or fire/police/emergency responders.
Goals WHAT?	To have a universal plan that all parties are aware of in case of emergencies that minimizes as much biosecurity risk as possible to the site.
Responsible WHO?	Farm or Site Manager with input from the Health Team Veterinarian and the Health Assurance Veterinarian
Audit EXPECTATION	Emergency Entry Protocol properly displayed on the dirty-side farm entrance in case of Emergency

### **Pre-entry**

• Established protocol still applies regarding observing CDL at bench/barrier (leave shoes on dirty side of bench)

### **Temperature recording**

• Temperature will not be taken/recorded

### Shower

• Shower #1 is the designated shower for emergency entry

### **Dirty side**

• Disrobe, leaving all personal clothing and/or items on dirty side of shower. Thoroughly "wash" hands with hand sanitizer (from wall dispenser or from bottle kept on dirty side shelving)

### Shower stall

• Step through shower to clean side

### **Clean side**

- Put on clothing kept in the emergency kits on the clean side of the shower; the kit will contain:
  - Socks
  - Underwear
  - Tyvek suits



Appendix 0.3



General

- Disposable shower caps
- Disposable gloves (nitrile)
- Dot gloves (to go over disposable gloves)
- Flashlights
- Note: at MINIMUM, put on Tyvek suit and disposable gloves
- Note: all clothing items in the emergency kit are for one-time use only
- Proceed to boot area; put on boots and immediately assess the situation (power loss/ ventilation, fire, etc) and begin appropriate emergency procedures.
- When emergency is resolved, contact HAV and/or HTV to discuss the event.



# Facilities

"Facilities are one of the main strongholds we have for keeping out disease. Working to keep facilities updated and designed in a way to help follow bio-secure practices, will help keep the animals healthy and give the employees confidence and security in following the program." -Brian Melody, Owned Production Supply Chain Director, PIC





SOP Title	Appendix 1.1-1: 1000 Point Location Assessment
Farm	PIC Multiplication and GTC System
Date	1 Jul 2019

# Private & Confidential 1000 POINT SCORING ASSESSMENT

# SITE LOCATION

FARM NAME AND ADDRESS:	
GPS COORDINATES:	
OWNER:	
DATE OF ASSESSMENT:	
ASSESSED BY:	

PLEASE TICK ( ✓) THE APPROPRIATE CATEGORIES REGARDING THE UNIT BEING ASSESSED, THERE MAY BE MORE THAN ONE ANSWER. PLEASE ALSO PROVIDE THE NUMBER OF SOWS PLACES OR PIG PLACES, WHEN KNOWN

GIU (GENETIC	
IMPROVEMENT UNIT)	
DAM LINE NUCLEUS	
(PN/DN)	
SIRE LINE NUCLEUS (BOAR	
MULTIPLIER)	
GILT MULTIPLIER	
GTC	
COMMERCIAL UNIT	
OTHER (Please state)	

SOW HERD (Site I)	
NURSERY	
(Site II)	
GROWOUT	
(Site III)	
ISOLATION or	
QUARANTINE	

INDOOR SYSTEM	
OUTDOOR SYSTEM	





### **HEALTH STATUS**

PLEASE TICK ( ✓) THE APPROPRIATE HEALTH STATUS REGARDING THE UNIT BEING ASSESSED. PLEASE ADD ANY DISEASES THAT ARE DEEMED IMPORTANT FOR THE MOVEMENT OF BREEDING STOCK IN YOUR COUNTRY, IF NOT LISTED.

New site (no animals)	YES
	NO

	Positive	Negative	Vaccinated	Don't know
PRRS				
Mycoplasma hyopneumoniae				
PCVAD / PMWS				
Aujeszky				
Swine Dysentery				
Mange				
Actinobacillus pleuropneumoniae				
Atrophic Rhinitis				
Other				
Other				

HAS THE HEALTH STATUS CHANGED SINCE THE LAST ASSESSMENT? IF YES, PLEASE PROVDE THE FOLLOWING INFORMATION:

Estimated date of breakdown: \_\_\_\_\_

\_\_\_\_

Disease breakdown:

Most likely reason (if known):\_\_\_\_\_





# Appendix I: Details of units within 10 Km (6 miles) of the site being assessed

Note: When possible a map should be attached indicating the position of the site being assessed and the units detailed below.

Owners Name	Farm Address & Name	Type & Size of unit Breeder / Finisher / Growout	Map Grid Ref. GPS	Source of Pigs	Other Comments





## **1. TOTAL NUMBER OF PIGS NEARBY**

Please tick the box () corresponding to the appropriate answer for each of the three distance categories (i.e. <2km (1.2 miles), 2-5km (1.2-3 miles), 5-10km (3-6 miles)).

**Please note:** If there is more than one herd within a category add the number of pigs on each farm together, to give the total number of pigs in that distance category. For example 2 small herds in the 2-5 km (1.2-3 miles) distance category with 200 pigs each, gives a total of 400 pigs in that category.

In weaner producing unit (i.e. piglets grown on to 25-35kg (55-77 pounds) the total number of pigs is approximately 6 x the number of sows, in a farrow to finish unit, taking all progeny through to slaughter weight, the total number of pigs is approximately 12 x the number of sows.

5 – 10 Km (3 – 6 miles)	2 – 5 Km (1.2 – 3 miles)
None	□ None
<250 pigs	Backyard production (<50 pigs)
251 – 1000 pigs	250 pigs
☐ 1001 – 5000 pigs	251 – 1000 pigs
5001 – 10000 pigs	☐ 1001 – 5000 pigs
□ > 10000 pigs	5001 – 10000 pigs
	□ > 10000 pigs
< 2 Km (1.2 mile)	
< 2 Km (1.2 mile)	Comments:
< 2 Km (1.2 mile) <ul> <li>None</li> <li>Backyard production (&lt;50 pigs)</li> </ul>	Comments:
<ul> <li>&lt; 2 Km (1.2 mile)</li> <li>None</li> <li>Backyard production (&lt;50 pigs)</li> <li>&lt;250 pigs</li> </ul>	Comments:
<ul> <li>&lt; 2 Km (1.2 mile)</li> <li>None</li> <li>Backyard production (&lt;50 pigs)</li> <li>&lt;250 pigs</li> <li>251 – 1000 pigs</li> </ul>	Comments:
<ul> <li>&lt; 2 Km (1.2 mile)</li> <li>None</li> <li>Backyard production (&lt;50 pigs)</li> <li>&lt;250 pigs</li> <li>251 – 1000 pigs</li> <li>1001 – 5000 pigs</li> </ul>	Comments:
<ul> <li>&lt; 2 Km (1.2 mile)</li> <li>None</li> <li>Backyard production (&lt;50 pigs)</li> <li>&lt;250 pigs</li> <li>251 - 1000 pigs</li> <li>1001 - 5000 pigs</li> <li>5001 - 10000 pigs</li> </ul>	Comments:
< 2 Km (1.2 mile)          None         Backyard production (<50 pigs)	Comments:





# **2. LOCAL PIG DENSITY**

Please tick the box () corresponding to the appropriate answer.

**Note:** The local pig density is the total number of pigs / km<sup>2</sup> (number of pigs / square miles) within a 5 km (3 miles) radius of the farm that is being assessed. <u>Do not</u> include the actual or intended number of pigs for the site that is being assessed. (There are 78.5 km<sup>2</sup> (30 miles<sup>2</sup> in a 5 km (3 miles) radius circle.)

Low:  $< 100 \text{ pigs} / \text{km}^2 \text{ or } 0.4 \text{ miles}^2$ 

Medium: 100 – 200 pigs / km<sup>2</sup> or 0.4 miles<sup>2</sup>

] High: 200 – 400 pigs / km<sup>2</sup> or 0.4 miles<sup>2</sup>

Very High: > 400 pigs / km<sup>2</sup> or 0.4 miles<sup>2</sup>

### **3. REGIONAL PIG DENSITY**

Please tick the box () corresponding to the appropriate answer.

**Note:** This question assesses the overall region up to 20 to 50 km (12 to 30 miles) radius from the farm being assessed and not just the area within the immediate vicinity of the site being assessed, as in the Local Pig Density in the previous question (Question 2). For example the site may be in an "island" of low pig density but in a region of high density. Or conversely, in an immediate area of high pig density, but generally in a region of low pig density. If you do not have the information write the name of the region and the information will be obtained from the local PIC office.

Low	
Medium	
High	

Name of the region:





### 4. SIZE OF FARM BEING ASSESSED

Please tick the box (
) corresponding to the appropriate answer

**Note:** This is the anticipated operating herd size or number of places of the site being assessed. In breeding herds where the piglets are not taken off the farm at weaning the total number of pigs can be estimated by:

- 2.5 x number of sows when piglets are weaned outside the unit or
- 6.0 x number of sows when on-site nursery (25-35 kg or 55-77 pounds) or
- 12.0 x number of sows in a farrow-to-finish herd.

10,000 pigs
10,001 – 25,000 pigs
25,001 – 50,000 pigs
50,001 - 75,000 pigs
>75,000 pigs

# 5. NUMBER OF PIG FARMS WITHIN 5 KM (3 MILES)

Please tick the box (
) corresponding to the appropriate answer

Note: This does not include backyard production.

No pig farms within 5 km
< 3 pig farms
3 -6 pig farms
7- 12 pig farms
13 – 20 pig farms
>20 pig farms





# 6. TYPE OF PIG FARMS IN AREA WITHIN 5 KM (3 MILES)

Please tick the boxes () corresponding to the appropriate answers for each category i.e. all of the breeding herds, finishing units (all in, all out), finishing herds (continuous flow) that are to be found within 5km (3 miles) of the site being assessed. The programme will identify and take into consideration the "worst scoring pig farm" within 5 km (3 miles). Backyard production refers to less than 25 pigs, otherwise, it should be considered as a farm.

**Note:** UNDER PIC HEALTH CONTROL means that the health of the unit is routinely monitored as part of the PIC health programme (i.e. a GTC, nucleus unit, multiplication herd etc)

Breeding Herds or Finishing Units	Backyard Pig Production (< 50 pigs)
Related to the unit being assessed	Yes
Under PIC health control	🗌 No
Not under PIC health control	
None within 5km (3 miles)	





# 7. OTHER SOURCES OF POSSIBLE CONTAMINATION

Please tick the box () corresponding to the appropriate answer for each of the six categories:

Slaughterhouse or Processing Plant	Rubbish/Garbage Dump	Waste treatment site
□ > 5 km (3 miles)	□ >1 km (0.6 mile)	□ > 1 km (0.6 mile)
2.1-5 km (1.3-3 miles)	🗌 0.5-1 km (0.3-0.6 mile)	🗌 0.5-1 km (0.3-0.6 mile)
1-2 km (0.6-1.2 mile)	🗌 < 0.5 km (0.3 mile)	🗌 < 0.5 km (0.3 mile)
🗌 < 1 km (0.6 mile)		

Dead Animal Processor / Rendering plant	Livestock Market	Livestock Haulier (Trucker), Transhipment or Collection Centre
<ul> <li>2 km (1.2 mile)</li> <li>0.5-2 km (0.3-1.2 mile)</li> <li>&lt; 0.5 km (0.3 mile)</li> </ul>	<ul> <li>&gt; 10 km (6 miles)</li> <li>5-10 km (3-6 miles)</li> <li>2-5 km (1.2-3 mile)</li> <li>&lt; 2 km (1.2 mile)</li> </ul>	<ul> <li>&gt;1 km (0.6 mile)</li> <li>0.5-1 km (0.3-0.6 mile)</li> <li>&lt; 0.5 km (0.3 mile)</li> </ul>

Slurry spreading from other	Where is the nearest:
pig farm	
	Slaughterhouse:
$\square > 2 \text{ km} (1.2 \text{ miles})$	Publich/Carbaga dump
$1_{-2}$ km (0.6-1.2 mile)	Rubbish/Garbage dump:
	Waste treatment site:
$\Box < 1 \text{ km} (0.6 \text{ mile})$	waste treatment site.
	Dead animal processor:
	Livestock Market:
	Livestock Haulier (Trucker):





### 8. PREVAILING WIND AND TYPE OF TERRAIN

Please tick the box (\_\_) corresponding to the answer that most closely describes the prevailing wind surrounding the site. The prevailing wind is the wind that blows most frequently across a particular area:

Prevailing Wind Direction	Nearest pig farm up wind
North	□ > 5.0 km (3 miles)
South	2.1– 5 km (1.3 – 3 miles)
East	🔲 0.5– 2 km (0.3 – 1.2 mile)
🗌 West	🗌 < 500 m (yds)
Not available or applicable	

Please tick the box (\_\_) corresponding to the answer that most closely describes the terrain surrounding the site:

Mountainous and / or sea coast
Hilly or Rolling
Sheltered from the prevailing wind
Exposed to the prevailing wind
Flat
Wooded
Not wooded
Not wooded, but windbreak planned or existing
Farm is Filtered
Yes
No





# 9. TYPE OF ROADS

Please tick the box () corresponding to the appropriate answer for each question

Distance from the site to the nearest public road	Livestock vehicles using the adjacent public roads	
□ > 400 m (yds)	None None	
☐ 50 – 400 m (yds)	Little (<5 trucks / day)	
☐ 10 – 50 m (yds)	Medium (6-15 trucks / day)	
□ < 10 m (yds)	Heavy (> 16 trucks / day)	

### **10. OTHER ANIMALS**

Please tick the boxes ()) corresponding to the appropriate answers for each question. Please indicate which other animals are kept on or near to the site on a continual or regular basis.

Domestic Animals	Distance of domestic animals from the site being assessed
<ul> <li>Horses</li> <li>Large ruminants (cattle)</li> <li>Dogs</li> <li>Small ruminants (sheep, goat)</li> <li>Cats</li> <li>Poultry (including ducks)</li> </ul>	<pre>from the site being assessed</pre>
Pet pigs None	
Other	
Is there intensive domestic production within 500 m (yds)?	Wild Life Animals
Yes No	<ul> <li>Feral (wild) swine</li> <li>Other predator mammals</li> <li>None</li> </ul>





## **11. CLIMATE**

Please tick the box () for the category most closely describing the climate for the region where the unit is situated, according to the coldest season. Cold refers to a temperature of less than 10°C (50°F).

Dry – Warm (> 41°F / 5°C)
 Dry – Cold (< 41°F / 5°C)</li>
 Humid – Warm (> 41°F / 5°C)
 Humid – Cold (< 41°F / 5°C)</li>

# **OTHER COMMENTS:**





SOP Title	Appendix 1.1-2: Location Self-Assessment Standard Operating Procedure
Farm	PIC Multiplication and GTC System
Date	14 May 2019
Justification WHY?	Location biosecurity assesses the probability that the site will be challenged. Non-related sites near a high-level genetics herd pose a disease risk pending the type of production and health status.
Goals WHAT?	Understand local density in real-time and allow for better reaction time to potential risk events from swine farms within a 5 kilometer ring.
Responsible WHO?	HTV, Farm Manager
Audit EXPECTATION	Monthly reporting; Questions will be included on the Monthly Herd Vet Visit Report for submission.

### 1. Location Biosecurity

a. Probability that the site will be challenged, risk increases with swine sites located within a 5 kilometer radius of the genetic site.

### 2. Goals

- a. Quarterly reporting
  - i. Send reminders June 15, Sept 15, Dec 15 and Mar 15 that the assessment is due by the end of the month
- b. Assessment for the 5km ring only
  - i. Farms will be emailed the sites' previous Full Location Assessment and a map with the 5km ring
    - 1. Upon implementation, managers will have a training session with their HAV
- c. Responsibility of the farm manager to communicate to the HTV within two weeks of the update request
  - i. Should check with farm staff and local service providers for area changes
- d. HTV enters information within iAuditor
  - i. First page has three options:
    - 1. Changes from last Audit?
      - a. Yes- Significant = update the full location assessment in the next two weeks
      - b. Yes- Not Significant = add new info as a SCAN observation





# Appendix 1.1-2 Facilities

- c. No = assessment populates with previous data
- 2. Changes submitted will be assigned to the HAV/HTV and SC managers to determine significance and follow-up
- 3. Significant Changes (easily noted without neighbor contact)
  - a. New commercial construction
  - b. Neighboring site increases capacity (double or more)
  - c. 50 or more outdoor or seasonal feeder pigs
- 4. Significant Changes that require neighbor relations
  - a. Change of ownership
    - a. Site or management
    - b. Pigs
  - b. Existing or new knowledge of disease presence
- 5. Significant Change follow-up= Full Location Assessment completed As Soon As Possible
  - a. Does the Significant Change now alter the assessed site's score?
    - i. Pig Density
      - 1. Capacity
      - 2. Pigs per km squared within 5km ring
    - ii. Farm Density
      - 1. Number of new farms in 5km ring
    - iii. Type of Farm (Farrow, Nursery, Finisher)
    - iv. Production type (commercial, multiplication)
- 6. Non-Significant Changes= SCAN OBSERVATION
  - a. Feral Swine
    - i. Already a feral swine region or increased sightings
  - b. Industry Associations
    - i. If a new farm is found, an investigation by HTV of associated industry partners should be completed
      - 1. feed mill, truck wash, supplier, veterinarian
  - c. Wind/terrain/Climate
    - i. Is the new site up/down wind of farm and in a cold wet climate to intensify the area risk
    - ii. Ground cover (shelter belt) conducive to protection of site





SOP Title	Appendix 1.1-3: Minimum Score Values				
Farm	PIC Multiplication and GTC System				
Date	1 Jan 2019				
Justification WHY?	The 1000 Point Score considers location risks associated with pig density, potential transport traffic, livestock markets and land topography. High-value genetic multiplication sites must meet a minimum score standard to promote continued low pressure disease risk.				
Goals WHAT?	To maintain high health status and lessen disease introduction risk from non-related neighboring swine farms.				
Responsible WHO?	Once scores have been submitted for a site, the BAT will review any failing scores and submit their assessment and recommendations to the PIC leadership team for final determination.				
Audit EXPECTATION	Sites with location scores falling below the minimum standard for their genetic level of production must be reevaluated for use in genetic production within 14 days to avoid a health hold.				

Location	Minimum objectives				Maximum
	GIU GTC	SLN DLN	Gilt Multiplier	Grow out Nursery	
Number of pigs nearby*	160	150	130	100	200
Local Pig density*	120	113	98	75	150
Regional Pig density*	80	75	65	50	100
Size of farm being assessed	40	40	30	30	50
Number of pig farms within 5 Km	40	40	30	30	50
Worst scoring pig farm in the area	80	75	65	50	100
Other sources of possible contamination*	80	75	65	50	100
Type of Terrain	80	75	65	50	100
Type of Roads	60	56	49	37	75
Other animals	40	37	32	25	50
Climate	20	19	16	13	25
Total	800	755	645	510	1000




SOP Title	Appendix 1.2: Compound Diagram		
Farm	PIC Multiplication and GTC System		
Date	1 Jan 2019		
Justification WHY?	The <b>clean areas</b> include the interior of the barns, office and connecting hallways, in addition to, all the areas and equipment in contact with live pigs. The <b>clean area perimeter</b> is a set of physical barriers including solid walls, cool cells, curtains and doors that protect and define the clean areas within a barn. Doors, showers, decontamination rooms and chutes, which border the clean areas, are referred to as <b>clean/dirty lines (CDL</b> ). Everything outside of the clean area is considered the dirty area; nothing may cross the CDL without an intervention or decontamination protocol. The CDL must be clearly demarcated, easy to follow during work routines, logically designed to avoid cross-traffic and strictly respected. The land surrounding the clean area perimeter, which is managed by the Multiplier/GTC, constitutes the <b>compound</b> . Access of vehicles, people or animals must be restricted. Interventions must be in place to prevent contact of the resident swine with other livestock, wild animals or people. The quarantine facility must also have a contained clean area and is considered dirty to the main barn until the quarantine process has been completed.		
Goals WHAT?	Establish clearly demarcated lines of separation from clean and dirty areas of the farm compound to prevent disease contamination to a site.		
Responsible WHO?	All farm employees, associated production and support staff and visitors.		
Audit EXPECTATION	Clean/dirty lines, farm perimeters and compound integrity are to be respected at all times.		







SOP Title	Appendix 1.4: Air Filtration Reference Documents		
Farm	PIC Multiplication and GTC System		
Date	1 Oct 2019		
	Air filtration is scientifically proven to prevent pathogen introduction and should be		
Justification	considered as part of a comprehensive biosecurity program. Farms located in regions with		
WHY?	increasing pig density are advised to consider air filtration.		
Goals	Prevent pathogen entry into swine facilities via aerosols.		
WHAT?			
Responsible	Farm manager with the assistance of the HTV or HAV		
WHO?			
Audit	Filtration systems should be audited yearly, facility integrity should be monitored daily to		
EXPECTATION	monthly pending on the air leakage concerns.		

#### **Filter Specifications**

Filters must be rated at an 95% or higher efficiency per the *ANSI/ASHRAE Standard 52.2* filter testing specifications. Specifically, they are 95% efficient at removing particles 1 to 0.3 microns in size from air flowing through the media. This is the necessary level to remove pathogens from contaminated aerosols. See tables below from the National Air Filtration Association (NAFA) on Minimal Efficiency Reporting Value (MERV):

TABLE 2:	ANSI/ASHRAE	52.2 PARTICLE	SIZE RANGES

Range	Size	Group
1	0.30 to 0.40	
2	0.40 to 0.55	E1
3	0.55 to 0.70	EI
4	0.70 to 1.00	
5	1.00 to 1.30	
6	1.30 to 1.60	Fo
7	1.60 to 2.20	EZ
8	2.20 to 3.00	
9	3.00 to 4.00	
10	4.00 to 5.50	ED
11	5.50 to 7.00	E3
12	7.00 to 10.00	

TABLE 3: MERV PARAMETERS

Standard 52.2 Minimum	Composite Average Particle Size Efficiency, % in Size Range, µm			A
Efficiency Reporting Value (MERV)	Range 1 (0.3-1.0)	Range 2 (1.0-3.0)	Range 3 (3.0-10.0)	Average Arrestance, %
1	n/a	n/a	E3 < 20	A <sub>avg</sub> < 65
2	n/a	n/a	E3 < 20	$65 \le A_{avg} < 70$
3	n/a	n/a	E3 < 20	$70 \le A_{avg} < 75$
4	n/a	n/a	E3 < 20	75 ≤ A <sub>avg</sub>
5	n/a	n/a	20 ≤ E3	n/a
6	n/a	n/a	35 ≤ E3	n/a
7	n/a	n/a	50 ≤ E3	n/a
8	n/a	20 ≤ E <sub>2</sub>	70 ≤ E3	n/a
9	n/a	35 ≤ E <sub>2</sub>	75 ≤ E3	n/a
10	n/a	50 ≤ E <sub>2</sub>	80 ≤ E3	n/a
11	20 ≤ E <sub>1</sub>	65 ≤ E <sub>2</sub>	85 ≤ E3	n/a
12	35 ≤ E <sub>1</sub>	80 ≤ E <sub>2</sub>	90 ≤ E3	n/a
13	50 ≤ E <sub>1</sub>	85 ≤ E <sub>2</sub>	90 ≤ E3	n/a
14	75 ≤ E <sub>1</sub>	90 ≤ E <sub>2</sub>	95 ≤ E3	n/a
15	85 ≤ E <sub>1</sub>	90 ≤ E <sub>2</sub>	95 ≤ E3	n/a
16	95 ≤ E <sub>1</sub>	95 ≤ E <sub>2</sub>	95 ≤ E3	n/a

To maintain proper air flow all times of the year, work with a ventilation expert to ensure proper flow in cubic feet per minute (cfm) for the production population. Filters must be



Appendix 1.4

**Facilities** 



Appendix 1.4 Facilities

installed to provide needed cfms with appropriate static pressure maintenance to adequately ventilate without restriction and potential by-pass of the filter system.

#### **Filter Auditing**

Filters should be audited yearly to understand if efficiency levels are maintaining. Replacement must be considered for pathogen prevention once the filter falls below a MERV 15 level. Randomly select filters from all buildings on site to test efficiency per ASHRAE 52.2 standards at an approved facility.

#### **Building Audits**

Filtered swine facilities must be routinely audited for air leaks or back-drafting to prevent unfiltered air into the barn or air by-passing the filtration system. Daily awareness of air leaks must be monitored by all staff members. Monthly and yearly building audits must be done with the following key areas to assess:

- all outside access doors (personnel, chutes, fumigation rooms, mortality removal, etc.)
  - o closed and sealed from air leaks
- all exhaust fans and back-drafting prevention devices
- ceiling inlets
- windows and trim
- feed tubes
- batten straps and wall joints
- attic spaces





#### **Filtration Assessment Example Checklist**

#### (main barns and quarantine)

Item	Yes/No	Comments
All fans/shutters sealed		
Filter walls maintained		
Fan covers intact when fans not in		
use		
Barns walls intact		
Feed system closed		
Operational doors with proper		
thresholds and seals		
Emergency exit doors sealed		
Chute doors sealed		
Fumigation room door sealed		
Mortality/garbage extraction door		
sealed		
Air locks maintained		
Fan shutters intact		
Fan covers when fans are not in use		
All rooms inspected for cracks or		
leak spots (trim)		
Ceiling integrity maintained		
Windows intact		
Positive vs. negative pressure		
maintained		
(fan check vs. static pressure monitoring)		
Curtain integrity		
Attic inspection		
(side chutes and floor integrity)		
Filter box inspection/No air by-pass		
Proper filter clips		
Adequate attic insulation		
(12 inches deep min)		
Dit covers sealed		
Packdrafting provention process for		
manura removal from nit		
manure removal from pit		





SOP Title	Appendix 1.5-1: 1000 Point Biosecurity Assessment	
Farm	PIC Multiplication and GTC System	
Date	1 Jul 2019	

### **PRIVATE & CONFIDENTIAL**

# 1000 POINT SCORING ASSESSMENT (2021 Revision)

# FARM BIOSECURITY

FARM NAME AND ADDRESS:	
PREMISE ID or GOVT ID	
OWNER:	
DATE OF ASSESSMENT:	
ASSESSED BY:	

# For additional details or clarity on the questions in this assessment, please reference the PIC Biosecurity Standards or contact PIC Health Assurance.

PLEASE CHECK ( ✓ ) THE APPROPRIATE CATEGORIES REGARDING THE UNIT BEING ASSESSED. ONLY SELECT ONE RESPONSE UNLESS STATED OTHERWISE IN THE QUESTION.





FARM TYPE	
GENETIC NUCLEUS	
DAM LINE NUCLEUS (PARENT	
OR DAUGHTER NUCLEUS)	
SIRE LINE NUCLEUS (BOAR	
MULTIPLIER)	
GENE TRANSFER CENTER	
GILT MULTIPLIER	
COMMERCIAL UNIT	
OTHER	
(Please state)	

INDOOR SYSTEM	
OUTDOOR SYSTEM	

NUMBER OF SOW OR PIG PLACES	
SOW HERD	-
NURSERY	-
FINISHING	-
WEAN TO FINISH	-
QUARANTINE	-
GENE TRANSFER CENTER	-

CUSTOMER	





# **1. LOAD-IN & LOAD-OUT AREA/TRANSFER FACILITY**

Indicate if there is not a designated load in & load out area (load in-out). The load in-out area could be either a separate load out building (transfer facility) or simply a designated area with a loading bay/chute that is connected directly to the site.

**Note:** If there is more than one loading facility, please score the worst.

#### ARE THERE LOAD IN-OUT AREAS/TRANSFER FACILITIES PRESENT?

Yes	(answer 1.1	thru 1.12	2)
No			

If NO, please explain process used to load animals out and then proceed to Section 2 – Quarantine)

1.1 - How many load in-out areas are attached to the main barn?

#### **1.2** - Briefly describe designated use if more than one:

1.3 - Does the site have a detached load in-out/transfer facility or chute?	
Yes (if checked, answer $1.3A - 1.3A$ ii then move to $1.4$ )	
No. loading areas are attached to main barn (if checked, answer ONLY 1.3B then move to	1.4)
1.3A – Where is the load in-out/transfer facility or chute located?	,
$\Box$ Compound edge	
Off site of main farm	
Within 50ft of main farm	
1.3Ai – Is a dedicated shuttle used to move animals from the main farm to	the
transfer facility?	
Yes	
No	
1.3Aii – Is the shuttle vehicle stored in a biosecure facility and properly	
decontaminated after every use?	
Yes	
No	
1.3B – Load in-out area is located in:	
a designated area with doors to separate it from the main farm	
an open area with connections to the main farm	





#### 1.4 - What is the hygiene program for the load in-out area/chute?

Cleaned, disinfected AND dried between load out events (i.e. same day/multiple loads)

Cleaned, BUT either NOT DISINFECTED OR DRIED after every use

NOT cleaned or disinfected after every use

#### 1.5 - Are the load in-out/transfer facilities or chute covered?

Yes

No	

**1.6** - Does the design and construction prevent drainage (washing organic material, rainwater, etc.) from entering the barn?

Yes
No

**1.7** - Does construction and building materials permit satisfactory cleaning and disinfection? *Wooden chutes considered unsatisfactory* 

Yes
No

**1.8** – Is there clear definition between clean and dirty sides within the load in-out areas/transfer facilities or chutes?

Yes (answer question 1.8a)
No (proceed to question 1.9)

**1.8a** - Are the established protocols for the load in-out areas/transfer facilities or chutes adequate so that cross-contamination does not occur?

Yes
No

**1.9** - Does the load in-out area/transfer facility or chute have a sequenced or staged loading process to prevent re-entry of loaded animals back into the main barn?

Yes
No

1.10 – Load in-out areas and/or transfer facilities are always cleaned, disinfected and dried prior to loading/un-loading BREEDING stock?

Yes No

**1.11** - Does the farm use dedicated equipment in the load in-out area and/or transfer facilities during the loading process? For example, sort boards, rattle paddles and cleaning equipment.



Yes No

**1.12** - Does the farm personnel use dedicated footwear and clothing in the load in-out areas and/or transfer facilities? *For example, boots and coveralls.* 





## 2. Quarantine Facilities

#### 2.1 - Are replacement breeding stock introduced into the unit?

Yes (answer 2.2)

No or internal multiplication (proceed to Section 3 – Compound and Perimeter)

#### 2.2 - Is quarantine facility present?

Yes (answer 2.2a thru 2.2q)

No (proceed to Section 3 – Compound and Perimeter)

#### 2.2a - Are the live animals introduced from a unit under a strict health program?

PIC Health monitoring program

Another health program but under veterinary supervision

Unknown

#### 2.2b - Personnel who work in the quarantine facility:

Work ONLY in the quarantine

Work in the main unit and quarantine BUT go only from the main unit to the quarantine and DO NOT return to the main unit on the same day.

Work in the main unit and quarantine AND may go from the quarantine to the main unit on the SAME DAY.

2.2c - Personnel take a complete shower through the designated quarantine shower each time they enter and exit the facility?



2.2d - Does the design and construction of the quarantine allow it to be easily cleaned and disinfected between groups? (*Yes = concrete floors, No=dirt floors*)

Yes
No

2.2e - Is the quarantine adequately cleaned and disinfected between groups?

Yes
No

#### 2.2f - Where is the quarantine located?

Greater than 5km (3 miles)

Less than 5km (3 miles)

On-site, not attached

On-site, attached

#### 2.2g - Is the quarantine operated on an all in/all out basis:









#### 2.2h - Duration of quarantine:

Greater than or equal to 30 days Less than 30 days

#### 2.2i - Is equipment and machinery shared between quarantine and main unit?

NOT shared

ONLY on completion of the period of quarantine

Shared DAILY OR WEEKLY between the quarantine and main unit

#### 2.2j - Quarantine has designated feed bins?

Yes
No

#### 2.2k - Quarantine has adequate pest control protocol?

Yes
No

#### 2.21 - Does the quarantine have designated mortality disposal?

Yes
No

No, shared with main farm and mortalities handled after main farm

No, quarantine mortalities disposed of as needed

#### 2.2m - While in the quarantine phase, is manure storage separate from the main unit?

Independent
Shared

#### 2.2n - Quarantine has an adequate supply entry protocol?

Yes
No

#### 2.20 - Is the compound and barn perimeter of the quarantine adequate?

Yes
No

**2.2p** - Are there load in-out facilities that are dedicated to the quarantine and completely separated from the main barn(s)?

Yes
No

2.2q – Upon quarantine release, does site utilize a clean, disinfected, dried, and PIC approved transport vehicle and driver to move animals into the main unit?









## **3. Compound and Perimeter**

#### 3.1 - Does the farm have a COMPLETE compound fence?

Yes
No

3.2 - Does the barn perimeter clearly define and separate the clean areas from the dirty areas? Barn perimeter is defined as a set of physical barriers including solid walls, cool cells, curtains, and doors that protect and define the clean areas within a barn.

Yes
No

#### 3.3 - Are all the clean-dirty lines clearly demarcated?

Yes
No

3.4 - Are the walkways or corridors between buildings covered, bird proof, and constructed of washable materials?

Yes
No

3.5 - Does the farm design, including hallways and curtains, prevent potential contact of pigs from outside the barn?

Yes
No

No curtains or open hallways

#### 3.6 - Is the farm filtered?

Yes (answer 3.6a-3.6d)

- No (proceed to Section 4 Compound and Farm Entrance)
- 3.6a Do the filters meet standards for efficiency and are they inspected at least annually?

Yes
No

3.6b- Do the fans create and maintain the appropriate positive or negative pressure and are they checked daily?



3.6c - Is the farm free of air leaks or backdraft that allows unfiltered air into the barn and is this assessed monthly?



3.6d - Is the associated Quarantine filtered?



Never

Biosecurity

Stop



# 4. Compound and Farm Entrance

# 4.1 – Is there a barrier (gate/chain/etc.) at the compound entrance of the farm preventing direct access from public roads or controlling other potential unauthorized entry?

- Entry barrier is locked 24 hours/day and access is controlled.
- Entry barrier is locked only when farm is un-attended and access is controlled.
- \_\_\_ Entry barrier not present or not controlled.

#### 4.2 - Is there a system in place for visitors on the outside to contact personnel in the farm?

Yes
No

#### 4.3 - Is there a separate parking area for staff versus visitor vehicles?

Yes
No

### 4.4 - Are all visitors required to wear shoe covers or farm supplied footwear upon exiting their vehicle?

Yes
No

#### 4.5 - Do all external doors (with the exception of the designated personnel entrance) and gates have 'No Entry' signs posted?



#### 4.6 - Is there a visitor log to record last pig contact, downtime and if temperatures were taken?

Yes and always completed
Yes but irregular use
None

# 4.7 - PIC specified downtimes are enforced for everyone entering the unit regarding last pig contact and the date?



4.8 - Are there written instructions posted for farm entry processes (i.e. shower posters and bench entry posters)?



- 4.9 For items such as office supplies, lunches, etc. is the origin verified as free from pig contact prior to entry?
  - Yes



**Facilities** 



#### 4.10 - What is the primary decontamination protocol that is used to enter items such as office

#### supplies, lunch, etc.?

- UV Light Chamber
- Double-bagging with disinfection
- Disinfection only
  - Other PIC approved method
- None None

#### 4.11 - Is the boot bench or barrier appropriately placed and used?

- Adequate bench/barrier and process
- Inadequate bench/barrier or process
- No bench/barrier present

# 4.12 - Does the farm have specific footwear or shoe covers available for completing outside tasks within the compound?



## **5. Personnel Entrance**

#### 5.1 - Does the personnel entrance have:

- Shower available and required for everyone EACH TIME they enter (answer 5.1a)
- Shower available but NOT REQUIRED for everyone (answer 5.1a)
- No shower, BUT changing facilities available (proceed to 5.2)
- NO SHOWER or changing facilities available (proceed to 5.2)

#### 5.1a - Are soap, shampoo, hot water and nail brushes provided?

	Yes
	No

#### 5.2 - Are the showers and/or changing facilities:

Clean

#### 5.3 - Does the farm provide a full change of dedicated clothing including under-clothing, outerclothing, and footwear?

- Complete clothing change (answer 5.3a & 5.3b)
- Partial clothing change (answer 5.3a & 5.3b)

] No clothing provided (proceed to 5.4)

#### 5.3a - Dedicated clothing and footwear are worn:

On clean side

Same attire and footwear on both clean and dirty side

#### 5.3b - Where and how are the dedicated farm clothing washed?

In the farm

Off site, adequate biosecurity process Off site, inadequate biosecurity process



Updated 06/30/2021



Appendix 1.5-1 Facilities

#### 5.4 – Where are the break areas located within the farm?

- Inside the clean area
- Outside the clean area
- Non-existent or not needed

#### 5.5 - What is the protocol regarding pork products entering the farm?

- ALL pork products prohibited
- Uncooked pork prohibited BUT processed pork allowed
- NO restrictions on pork products

#### 5.6 - Where is the barn office located?

- Inside the clean area
- Outside the clean area
- Non-existent

#### 5.7 - What type of access exists between the dirty area and the office?

No Direct = high counter, window or plexiglass

- Direct = open access point, door or low counter
- No direct access
- Direct access

#### 5.8 - Are the farm personnel in contact with:

\_\_\_\_ Household members working on other pig units

A different pig unit, or keeping pigs at home

- Other production livestock
- None of the above

#### 5.9 - Are any non-approved personal items permitted inside clean area?

Examples may include watches, jewellery, mobile phones, laptop computers, etc

Yes No

#### 5.10 - Are materials and equipment from other units introduced into the herd?

*Examples may include contractors' pregnancy diagnosing equipment, necropsy tools, maintenance tools, snares, etc* 







## 6. Supply Entry and Fumigation Room

#### 6.1 - Is there a fumigation room (supply entry room) within the unit, in a separate space away from

- the pig areas, for supply entry?
  - Yes (proceed to 6.2 6.10)
  - No (briefly describe supply entry process)

#### 6.2 - What is the chemical decontamination process for routine supplies? (check all that apply)

	Chemical	disinfection
--	----------	--------------

60 minutes contact time

Room temperature above 70F/21C

- None of the above
- 6.3 Is the farm using an approved disinfectant at correct concentration with a minimum 60-minute contact time?

Approved disinfectants are listed in Appendix 3.4 – Approved Disinfectants & Dilution Rates Yes

- 6.4 -Is there a biosecure decontamination entry protocol for supplies that cannot feasibly enter through the fumigation room or be exposed to disinfectant?
  - Adequate protocol
  - Inadequate protocol
  - No protocol

6.5 - Is the external cardboard/porous packaging removed before supplies are decontaminated?

Yes
No

6.6 – Fumigation room log kept with initials of person bringing in supplies, brief description of supplies, date/time placed in fumigation room and date/time entered into the farm?

Yes
No

6.7 - Are supplies delivered to a location with a biosecure transfer process?

Yes
No

#### 6.8 - Where are the supplies initially delivered to?

- Neutral location outside of the compound edge
- At the compound edge
- Delivered within the compound directly to the dirty side of the fumigation room
- No designated location





#### 6.9 - Who manages the delivery of supplies directly into the fumigation room?

- Managed by Farm personnel
- Verified biosecure supplier
- Third Party (UPS, FedEx, Amazon, etc.)
- Other, provide explanation:

#### 6.10 - Are delivery contents verified for accuracy, particularly vaccines, prior to farm entry?

Yes
No

#### 6.11 - Does this farm use bedding?

- \_\_\_\_ Yes (answer 6.11a-6.11c)
- ] No (proceed to Section 7 Feed)

#### 6.11a - Bedding used from:

Biosecure source

#### 6.11b - Bedding deliveries unloaded:

Outside compound

#### 6.11c - Bedding is stored in an enclosed, heated biosecure area?

Yes
No

## 7. Feed

#### 7.1 – Is the feed mill(s) for this farm?

- Dedicated Mill/On-site Mill/Directly Attached feed mill
- Third party mill that only services multiplication
- Third party mill with no other swine clients
- Third party mill with other swine clients

#### 7.2 - Is feed purchased or manufactured from a PIC assessed and approved feed mill?

Yes
No

#### 7.3 - Feed delivery vehicles are:

- Decontaminated Dedicated truck
- Clean or first delivery
- Not applicable mill attached to farm
- Dirty or been to other farms





#### 7.4 - Feed delivery vehicles from the mill:

Remain outside the compound edge and a site dedicated feed shuttle used

Feed bins are located within a fence, in close proximity to the barns, and feed trucks do not cross through

Enter the compound, having completed a proper decontamination procedure, and feed dropped directly into bin

Feed Mill directly attached

#### 7.5 - Are the feed bins and lines biosecurely enclosed?

Yes
No

#### 7.6 - Does the feed contain swine origin ingredients?

Yes (answer question 7.6a)	
No (proceed to question 7.7)	)

#### 7.6a - Do the swine origin ingredients have an approved PIC process for use?

Yes
No

#### 7.7 - Bagged feed, mineral and vitamin supplements delivered to the farm:

- Paper bags opened, and only bulk contents enter the farm
- Plastic bags fumigated into the unit with downtime
- Bags placed in designated area with downtime

No protocol

Not applicable, no bagged products enter the farm

## 8. Manure Management

# 8.1 - Does the farm have a manure management plan that includes storage, handling, application, and spill handling?

Yes
No

#### 8.2 - Where is the manure collection equipment utilized?

- Outside the compound
- Inside the compound

#### 8.3 - What type of equipment is used to collect and distribute manure?

- Dedicated equipment used at this site only
- Owned equipment dedicated to a flow or associated production systems
- Third party (answer 8.3a)

Yes

No

# 8.3a - Is all non-dedicated equipment thoroughly washed, disinfected, dried and inspected between farms?



**Facilities** 



8.4 - Is all the equipment that contacts the farm (agitators, hoses, etc.) dedicated to the site or associated production systems flow?

Yes
No

# 9. Water Supply

#### 9.1 - Is the water from the public supply or deep well?

- Yes (proceed to 9.2)
- No (answer 9.1a)

#### 9.1a - What type of treatment or testing is done on the water supply?

Chlorinated or another adequate treatment

- Routinely monitored with adequate results
- No treatment or monitoring in place

#### 9.2 - Are water storage tanks used at this site?

No (proceed to Section 10 – Service Providers)

#### 9.2a - Are water storage tanks covered and secured?

Yes
No

#### 9.2b - Are water storage tanks routinely emptied and clean?

Yes
No

## **10. Service Providers**

#### 10.1 - Are third party service providers (electricians, fuel, garbage, plumbers, maintenance, etc.):

- Dedicated and complete biosecurity training
- Not dedicated but complete biosecurity training
- No biosecurity training

#### 10.2 - Acknowledgement forms are completed for all third-party service providers?

Yes
No





Appendix 1.5-1 Facilities

## **11. Health Management Procedures**

#### 11.1 - Is manure storage under perforated flooring kept at low levels?

Yes
No

No manure storage below flooring present

# **11.2** - Is the responsible PIC Health Assurance team member or veterinarian immediately notified regarding biosecurity concerns?

Yes
No

**11.3** - Is the vaccination program approved by PIC Health Assurance and steps taken to verify prohibited vaccines are not used?

Yes
No

# **12.** Mortality Management

12.1 - Is a mortality log kept recording date of removal, time and responsible party?

Yes
No

12.2 - How many mortality extraction points are within the farm?

12.3 - Are all the mortality extraction points elevated a minimum of 18 inches or 45.7 centimetres above ground level and CDL is demarcated?

Yes
No

12.4 - Do personnel return to the main farm within the same day after completing mortality chores?

DO NOT return
DO return

#### 12.5- Who completes mortality chores?

- Personnel that never enter the farm
- Trained personnel
- Any available farm personnel

#### 12.6 - Does the farm provide clothing and footwear dedicated for the mortality removal process?

\_\_\_ Yes \_\_\_ No

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#### 12.7 - Where is mortality transfer equipment stored?

- Enclosed facility that is heated
- \_\_\_\_ Enclosed facility that is **NOT** heated
- Uncovered
- Outside compound





# 12.8 - How often is the mortality equipment cleaned and disinfected following a PIC approved protocol?

- \_\_\_\_ After each use
- Weekly
- Periodically
- Not cleaned and disinfected

#### 12.9 - Is the mortality removed from the compound or is it disposed of on-site?

- Removed from the compound
- On-site disposal

#### 12.10 - Is the mortality equipment used for any other purpose?

Yes (provide brief explanation)

No

#### 12.11 - What is the PRIMARY method of mortality disposal used at this farm?

- Incineration (answer Incin.1 & Incin.2)
- Burial (answer Burial.1 & Burial.2)
- Composting (answer Compost.1 & Compost.2)
- Rendering Company Pick Up (answer Render.1)
- Other (please describe)

Incin.1 - Is the incinerator maintained in a biosecure location?

Yes
No

Incin.2 - Incinerator has no leakage or carcass exposure to prevent vermin/varmint attractant?

Yes
No

Burial.1 - Is burial area maintained in a biosecure manner with no bird, feral animal or rodent exposure?

Yes
No

Burial.2 - Are carcasses completely buried?

	Yes
	No

Yes

No

#### Compost.1 - Is the compost enclosed?





	Compost.2	2 - Are	carcasses	completel	v covered?
--	-----------	---------	-----------	-----------	------------

Yes
No

#### Render.1 - Does this farm have an approved biosecure rendering protocol?

Yes (answer Render 1.a-c)

No (proceed to question 12.2)

# Render.1a - Are carcasses stored within the compound prior to disposal in a designated and biosecure area?

	Yes	(Answer	Render.1ai)	
--	-----	---------	-------------	--

No (Proceed to Render.1b)

Immediate disposal (Answer Render.1ai)

Render.1ai – How are carcasses transferred from the compound storage area to the collection point?

Dedicated compound vehicle



#### Render.1b – Where is the rendering company collection point located?

Outside of the compound with biosecure transfer process

- At compound edge with biosecure transfer process
- Within compound with adequate biosecure transfer process
- Non-biosecure collection process

Render.1c - Is the rendering company collection vehicle?

- First collection, but risk of cross-contamination
  - Dedicated collection vehicle
  - First collection, empty, clean and disinfected on arrival
  - None of the above

#### 12.2 – Does this site use any additional mortality disposal method(s)?

Yes (please describe)
No





## **13. Pest Management**

#### **13.1 – Control of rodents is:**

- Adequate
  - Improvement needed
  - Inadequate

#### 13.2 - Control of birds is:

- Adequate
- Improvement needed
- \_\_\_ Inadequate

#### 13.3 - Control of insects is:

- Adequate
  - Improvement needed
- Inadequate

#### 13.4 - Domestic animals are:

- Not present or always outside the compound
- Always inside the compound
- Movement across the compound edge

#### 13.5 - Feral animals are:

Not present or always outside the compound

- Always inside the compound
- Movement across the compound edge

## 14. Transport

**NOTE:** for this section, a rig is defined as a dedicated trailer connected to a dedicated power unit (i.e. truck, tractor, etc.), trailer and associated driver(s).

#### 14.1 - Is this farm:

PIC Owned or have any TAME sales (answer 14.1a)

User Group or Closed Herd Multiplier (proceed to 14.2)

Customer, commercial or other (proceed to 14.2)

#### 14.1a Does the farm utilize PIC approved carriers?

Yes
No

#### 14.2 - REPLACEMENT stock movements into a MULTIPLIER HERD or GTC are carried out by

- PIC approved rig(s)
- Farm dedicated rig(s)
- Third party rig(s)
- Not applicable, closed herd with internal replacements
- Not applicable, site is a gilt/boar grower unit





14.2a How many times do these movements happen per month? (approximate)

14.2b Are any of these items dedicated to the farm/flow? (select all that apply)

Driver

14.2c For these movements, which of the following pieces backs up to slaughter plants or buying stations? (select all that apply)



14.2d What percentage of 3<sup>rd</sup> party audits are completed on the tractor & trailer to ensure they are properly clean, disinfected, and dry? (3<sup>rd</sup> party auditors are defined as anyone other than the person who washes the trailer)



14.2e Is the tractor always vacuumed, washed, disinfected & 100% dried before loading?



14.2f Does the driver observe 3 nights (60hours) downtime from hauling a market load or commercial animals before loading these movements?

Yes
No

14.2g Do the drivers complete biosecurity training annually?

Yes
No

14.3 – Breeding stock movements from a multiplier site directly to CUSTOMER sites are carried out by:

- PIC approved rig(s)
- Farm dedicated rig(s)
- Third party rig(s)

Not applicable, site has no customer deliveries

Other, please explain \_\_\_\_\_

14.3a How many times do these movements happen per month? (approximate)

14.3b Are any of these items dedicated to the farm/flow? (select all that apply)



Driver
Tractor
Trailer

**Facilities** 



14.3c For these movements, which of the following pieces backs up to slaughter plants or buying stations? (select all that apply)

Driver Tractor

14.3d What percentage of 3<sup>rd</sup> party audits are completed on the tractor & trailer to ensure they are properly clean, disinfected, and dry? (3<sup>rd</sup> party auditors are defined as anyone other than the person who washes the trailer)



14.3e Is the tractor always vacuumed, washed, disinfected & 100% dried before loading?

Yes
No

14.3f Does the driver observe 3 nights (60hours) downtime from hauling a market load or commercial animals before loading these movements?

Yes
No

14.3g Do the drivers complete biosecurity training annually?

Yes
No

14.4 - Breeding stock movements to GROWING sites (within the associated sow farm flow) are carried out by:

PIC	approved	rig	(s)	

Farm dedicated rig(s)

Third party rig(s)

Not applicable (i.e. farrow to finish or growing unit within the sow farm flow)

\_ Other, please explain \_\_\_\_\_

14.4a How many times do these movements happen per month? (approximate)

14.4b Are any of these items dedicated to the farm/flow? (select all that apply)

Driver
Tractor
Trailer

Driver Tractor

Trailer

14.4c For these movements, which of the following pieces backs up to slaughter plants or buying stations? (select all that apply)



Updated 06/30/2021



SOP Title	Appendix 1.5-2: Monthly Biosecurity Checklist
Farm	PIC Multiplication and GTC System
Date	1 Jul 2019

Standards Item	Pass	Fail	Standard	Scoring
1.3 Restricted access to barn and compound			A barrier (gate, chain, wire, etc.) must be in place on any driveway into the compound that directly connects to a public access road. The barrier must obstruct driveway access when the farm is unattended. All exterior doors must be kept locked to prevent access from the outside at all times. NO ENTRY/RE- ENTRY signs must be posted on the outside of each exterior door.	5 points
1.6 Pest control			Must have a pest control policy. All buildings must be bird proofed. Any damage to bird netting or the facility exterior which allows pest entry must be repaired immediately. A 2- foot-wide rock barrier must be maintained with excellent weed control around the barn. Bait stations are present around building perimeter and contain fresh bait.	5 points
1.5 No feed spills			Any feed spillage must be cleared promptly	5 points
7.2 Mortality disposal maintenance			Mortality disposal area is separated from the barn, is in good physical repair, and carcasses are covered or stored out of public view. Disposal area is maintained in a manner that wildlife, fowl and rodents are not attracted. A daily mortality log is kept including date, time, and responsible party.	5 points
3.1/3.2 Shoe cover use			All visitors wear shoe covers when exiting their vehicle and remove them upon re-entry to their vehicle.	5 points
3.3 Bench			The bench is appropriately placed and used.	5 points
3.1 Visitor logbook			Log book is filled out by the farm manager for all visitors (including company employees who do not work at the site daily). Log book should reflect proper downtime is achieved for all visitors.	5 points
3.3 Shower condition and use			Shower-in procedure is visible, showers are clean, barn clothing and towels are provided and remain on the clean side of the shower. No jewelry or personal items pass onto the clean side of the shower.	10 points
<b>4.1</b> Observe or verify process of <b>fumigation</b> room use			To be acceptable the fumigation room must: 1. be clean 2. if cross traffic is possible have a proper mitigation method in place 3. have disinfectant in the fogger 4. have a posted written protocol and log 5. have all items laid out in a single layer so that disinfectant can reach all sides.	10 points
<b>3.3/2.2</b> Observe of verify process of lunch, personal item entry, and semen entry			Check operation, time and process of UV light chamber. In absence of UV light chamber, lunches are entered via double bag technique. Personal items are not allowed to enter. Uncooked pork products are not permitted within the farm. If applicable, semen is delivered to the dirty side of the farm and then transferred across the CDL by leaving the exterior bag on the dirty side of the farm, disinfecting the interior bag, and pulling the interior bag to the clean side of the farm without touching the exterior bag or anything on the dirty side.	10 points
1.2 Clearly demarcated clean/dirty lines (CDL)			Clearly demarcated CDL at shower, load outs, fumigation room, pass-through window/UV light chamber and mortality removal points.	10 points





6.5 Observe or verify process of biosecure loading	No clean/dirty line crossover is allowed other than one-way animal movement. Pigs or contaminated materials/people must not re-enter the farm (clean). A one-way door/gate must be in place between the farm (clean) and the vehicle (dirty).Farm staff utilize dedicated equipment in the load out.	10 points
6.5 Clean load outs	The load-out must be washed and disinfected after use (same day). Drainage into the buildings from the dirty section is prohibited.	5 points
7.1 Observe or verify process of biosecure mortality removal	The CDL needs to be clearly demarcated, easy to follow and strictly respected. Mortalities and afterbirth must stay on the clean side of the extraction point(s) until the end of the workday. Personnel and equipment used to collect mortalities must stay on the clean side of the CDL. If an object or person contacts the dirty area, full decontamination and/or shower is required before re-entering the farm. Employees remove mortalities at the end of the day and do not re-enter the farm without overnight downtime.	10 points

#### Total: \_\_\_/100

\*Passing Score for the checklist is 100%. Any score below 100% requires SCAN observations be generated for all failed areas. SCAN observations must be addressed within 14 days. In 14 days a follow-up checklist is completed to ensure all observations have been properly addressed. If all items were not addressed, the farm is placed on health hold.





SOP Title	Appendix 1.7: Water Treatment and Filtration Protocols
Farm	PIC Multiplication and GTC System
Date	1 Oct 2019
Justification WHY?	Providing quality drinking water to pigs is a vital part of a comprehensive health program.
Goals WHAT?	-Pathogen free, appropriate levels of dissolved solids or minerals and palatable -Must be suitable for human consumption
Responsible WHO?	Farm manager with the assistance of the HTV or HAV
Audit EXPECTATION	Yearly for approved shallow wells, as needed for deep wells or city/rural water supply

#### Water Testing Protocol

- 1. Two samples should be collected to assess water quality; from the raw water source (well or holding tank) and at the end of the line (pig consumption point or drinker).
- 2. Samples should be collected as sanitarily as possible.
  - a. Wear gloves and avoid contamination of the sample collection container
  - b. Do not sanitize the drinker as this will not be a representative sample of what the pigs are consuming
  - c. Engage the drinker and fill the collection container to the very top, there should be no air pockets
  - d. Tape the lid shut if necessary to prevent spills, label and submit the samples
- 3. Samples should be tested for the following:
  - a. pH
  - b. Dissolved Solids
  - c. Fecal Coliform Counts
  - d. e. Coli
  - e. Iron
  - f. Manganese
  - g. Nitrates
  - h. Calcium or Hardness



Appendix 1.7

**Facilities** 



Appendix 1.7 Facilities

Water Concern	Monitoring/Levels	Intervention Strategies and Concerns	
Bacteria or viral	Ideally None, or	Disinfection with chlorine, chlorine dioxide or peroxide at	
Contamination	negative culture	well or in water line flow prior to animal spaces	
	growth		
pH Level	6.5-6.8	Acidification of lines helps control bacterial growth, can aid	
		in increased conversion and increases palatability. Use	
		organic or inorganic acids or blends.	
Iron Levels	Less than 1ppm	Best controlled with filtration. Can cause diarrhea issues,	
		especially in young pigs and can promote bacterial growth	
		in water lines.	
Manganese Levels	Less than 0.1ppm	Best controlled with filtration. Can cause diarrhea issues,	
		especially in young pigs and can promote bacterial growth	
		in water lines.	
Sulfates	Less than 300	Can cause palatability issues due to smell. Best controlled	
		with filtration or oxidation.	
Nitrates	Less than 10	An early indicator of bacterial growth in water lines. Best	
		controlled by oxidizing water.	
Dissolved Solids	Less than 400	Can lead to line blockages and water flow reduction.	
		Excessive amounts can also promote osmotic diarrhea.	
		Best controlled with filtration.	

#### Filtration

Filtration needs must be calculated from usage, gallons per day or minute. Various types of filtration systems exist with varied cost to maintain and utilize. Based on the farms usage, the filter system must provide adequate contact time and surface area to efficiently and consistently remove solids. Consult with a water filtration expert before installing a system into your farm.



Section 2:

# Live Pigs and Semen

15

"Biosecurity is about a culture of doing what is right and needed even when no one is looking. Introducing live animals or semen involves risk; however, following the processes and procedures associated with quarantine, introduction, testing and movement will significantly lower the risk for PIC, our production partners and our customers and maximize the probability of success for all of us." -Matt Culbertson, Global Product Development Director, PIC



SOP Title	Appendix 2.1: Recommended Minimum Quarantine Testing		
Farm	PIC Multiplication and GTC System		
Date	2 July 2019		
Justification WHY?	All breeding stock replacement animals must go through a quarantine process pre-entry to the main farm. Animals must be monitored for clinical signs for a minimum of 30 days and health status verified through diagnostic testing to protect and maintain herd high-health status of the site.		
Goals WHAT?	<ul> <li>Verification of herd health status</li> <li>Early detection of disease</li> <li>Protection of customer herds from disease introduction via gilts or boars</li> </ul>		
Responsible WHO?	Health Team Veterinarian with assistance from the farm production or site managers		
Audit EXPECTATION	Diagnostic submissions and results will be monitored by the HTV, HAV and HO		

#### **Recommended Quarantine Procedure**

Day 1 to 30 – Follow biosecurity protocols and watch for clinical signs

- Day 2 to 7 For early detection to protect the main farm
  - Collect 30 serum samples or entire quarantined population (whichever is less) to test for PRRS ELISA (individual) and PRRS PCR (pools of 5). Test two of the six pools for Senecavirus A PCR (boar studs).
  - Collect fecal swabs from 15 animals or entire quarantined population (whichever is less) and test for PEDV/PDCoV/TGEV PCR (only if TGEV is offered as Multiplex) in pools of 5 samples.

OR

 Collect oral fluids (one rope placed in every other pen) and test for PRRS PCR and PEDV/PDCoV/TGEV PCR (only if TGEV is offered as Multiplex). Test two of the six ropes for SenecavirusA PCR (boar studs).

Test	Sample	Number of animals to sample	Pooling
PRRSV ELISA	Serum	30 samples or 100% of animals (whichever is less)	Individual
M. hyopneumoniae		*Only if main herd is negative for Mycoplasma	Individual
IDEXX ELISA*		hyopneumoniae	
PRRSV PCR	Serum	65 samples* or 100% of animals (whichever is	Pools of 5
		less) *This will allow for a detection of 3 to 5%	
		prevalence with 99% Se and 95% confidence	
PEDV PCR	Fecal	15 samples or 100% of animals (whichever is less)	Pools of 5
PDCoV PCR	swab		
TGEV PCR(as included in			
triplex)			

After Day 27 – Collect serum and fecal samples based on the table below.





SOP Title	Appendix 2.2-1: Boar Stud Management Guidelines Manual is included with Appendices
Farm	PIC Multiplication and GTC System
Date	1 July 2019





# Live Pigs & Semen

SOP Title	Appendix 2.2-2: Semen Transport SOP	
Farm	PIC Multiplication and GTC System	
Date	21 Aug 2019	
Justification WHY?	Ensure safe, consistent delivery of semen in a biosecure manner.	
Goals WHAT?	To ensure biosecure semen delivery to the farms and reduce potential disease transmission.	
Responsible WHO?	GTC Manager or designated Logistics Manager	
Audit EXPECTATION	Each GTC Manager or designated Logistics Manager should conduct semi-annual reviews and audits of all processes regarding semen delivery to the farms.	

#### **Prior to Departure:**

- **1.** Delivery vehicle should be clean and dry before starting any delivery route.
- **2.** A disinfected and dried floor mat must be placed on the driver side floor.
- **3.** Check the delivery vehicle and ensure it is fully stocked with an ample supply of new disposable boot covers, gloves and trash bags.
- 4. Disposable boots and gloves must be worn while loading the vehicle.

#### **Delivery of Semen:**

- 1. Semen deliveries must be to a neutral site where there is no pig contact. Neutral sites are defined as those separated from the farm compound that minimizes cross over traffic with the semen courier.
- 2. Drivers must put on new disposable boots and gloves at each delivery. Boot covers are to be put on one at a time, when exiting the vehicle. A bare shoe must never touch the ground. After the delivery has been made, re-entering the vehicle should be done whereby the boot cover is taken off, without the boot cover touching the inside of the vehicle. Gloves and boots should be rolled up and discarded in a trash bag inside the delivery vehicle.

#### After the Final Delivery:

- **1.** The vehicle must be washed, including an underbody wash, prior to being returned to the vehicle storage area. Locate a car wash that is OPEN throughout the winter.
- **2.** All trash must be disposed of at a non-farm site not associated or close to the GTC, i.e. car wash, gas station.
- **3.** The vehicle must be returned to a vehicle storage garage away from the GTC and no vehicle or driver can return to the GTC after a route.
- 4. The vehicle wheels must be disinfected as pulling into the vehicle storage garage.
- **5.** All surfaces on the inside of the vehicle should be wiped down with disinfecting wipes. This includes seats, car mats, dash, brake and gas pedals, steering wheels, shift levers, i.e. all places touched by the driver.





- **6.** If the vehicle has carpet and or cloth seats, these should be sprayed down with a disinfecting spray (Lysol) and allowed to dry.
- 7. The vehicle interior must be kept clean and vacuumed.
- 8. All floor mats must be removed and hung up and sprayed with disinfectant.

Note: If health information is found out during the delivery route on a specific farm, relay that information to the GTC supervisor.



Section 3:

# People

"Proper training of employees to help them develop a culture of biosecurity, will directly impact the health and wellness of our pigs. Constant and consistent training will help to ensure that Biosecurity is not just a program, but it is a mindset. It is important for people to understand how impactful their actions are to the pigs on a daily basis." -Courtney Garcia, Global HR Director, PIC



SOP Title	Appendix 3.1: Farm Visit Permission and Entry Interview Process
Farm	PIC Multiplication and GTC System
Date	1 Oct 2019
Justification WHY?	A visitor is anyone who is not essential to the farm's daily operations. All visitors are required to observe minimum downtime requirements. Non-PIC visitors other than service personnel and maintenance workers are not permitted inside PIC Production Units unless by special permission from a PIC Health Assurance Veterinarian. A sponsor is responsible for ensuring a visitor complies with PIC downtime rules, as well as, other biosecurity measures required for
	entry into the unit.
Goals WHAT?	<ul> <li>-Visit Request entered and approved through the Farm Visit Request App OR site specific visitor entry process prior to entry into the unit.</li> <li>-All visitors have completed all Biosecurity Training or farm equivalent process prior to entering the unit.</li> </ul>
Responsible WHO?	PIC Health Operations and Farm Manager or other responsible party
Audit EXPECTATION	All visit requests are to be entered and approved prior to entry.

All visitors, prior to entering a farm, must follow a site-specific entry protocol. Visitor request protocols help to mitigate biosecurity concerns and ensure that all visitors are receiving proper approval prior to the visit.

The following is an **example** of Farm Visit Permission and Entry Interview Process.

All PIC Owned Production Farm visitors are required to enter a Visitor Approval Process in the Farm Visit Request App located at <u>www.pic.com/visits</u>.





Appendix 3.1

People



Once clicking on the **New Visit Request button**, the visitor must enter in the following information (\* are required to be filled out to submit the form):

- 1. Visitor Name\*
- 2. Visitor Email\*
- 3. Visitor Phone
- 4. International Visitor

(Must be toggled to Yes if you have been out of the country of the farm's origin prior to the visit.)

- a. Country of Origin
- b. Date of Arrival in Country
- 5. Pig Contact within 6 months of Visit (Toggle to No if no previous pig contact in 6 months)
  - a. Last Pig Contact On or Before\* List the Date of Last Pig Contact
    - b. Last Pig Contact Location\* Any Location can be written in.
- 6. Site to Visit \* Choose Farm Name from Drop-Down list.
- 7. Expected Visit Start Date \*
- 8. Expected Visit End Date \*
- 9. Reason for Visit \* Choose from Drop Down List
- Additional Comments Please enter in additional comments deemed necessary for the visit. (For example: I will need to bring in two new snares that will need to be disinfected through the Fumigation room prior to entry.)
- 11. Visitor Training Complete Only toggle to Yes if you have completed the Biosecurity Video Training and Quiz.

Click on **Submit** once all areas have been filled out completely.

All requests once submitted must be approved by Health Operations (HO) first and then approved by the Site Manager. Once the visit is approved by both HO and the Site Manager, an email is generated and sent to the person who entered the request.

#### **Annual Biosecurity Video Training**

Prior to entering the site, every visitor must complete **Biosecurity Video Training** on a yearly basis.

The video training is located at <a href="https://www.pic.com/services/biosecurity-training/">https://www.pic.com/services/biosecurity-training/</a> .

Once the visitor has viewed the training videos, they must complete and pass the quiz on the training video.




Appendix 3.1 People

PIC	Biosecurity Video Questions for Farm Entry		Never Stop Improving Swine Hea
Name:		Date:	
	Employee	Visitor/Candidate	Contractor

Answer all questions and submit your answers to the Health Assurance team. If necessary, this quiz does allow multiple attempts. Please do not enter the farm until you have completed the Biosecurity Video training and have passed this quiz.

- 1. How long should you shower at the farm shower before crossing over to the clean side of the farm?
  - a. 2 minutes
  - b. 3 minutes
  - c. 5 minutes
  - d. I do not need to shower at the farm if I showered at home
- 2. If you have a valid reason to go out to the dirty area, what should you do before returning to the clean area?
  - a. Change your shoes
  - b. Wash your hands
  - c. Shower
  - d. Nothing
- What must a visitor put on when exiting their vehicle at the farm? 3.
  - a. Walk fast to the main door
  - b. Wear a Cover-suit
  - c. Disinfect shoes and hands
  - d. Put shoe covers on
- 4. If you have been in a sale barn, a slaughter facility, a commercial or a non-PIC site, what is the minimum downtime required to enter a PIC site?
  - a. 1 night b. 2 nights

  - c. 3 nights
  - d. 5 nights
- 5. Who must approve introduction of any food, equipment, or anything deemed necessary for visitors?
  - a. Maintenance personnel
  - b. Farm Manager
  - c. Any farm staff
  - d. The visitor if experienced enough

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Biosecurity Video Questions - Farm Entry

www.pic.com



Appendix 3.1

All visitors or non-dedicated site personnel must arrive to the farm in a clean vehicle (washed, cleaned, and disinfected inside and outside of the vehicle) and must put on shoe covers when exiting their vehicle. The farm manager should meet all visitors in a designated area, on the dirty side of the entrance, prior to the shower entry. Prior to granting access to the shower entry, the manager is required to ask visitors the following set of questions.

#### Questions

- What is your name and what is the purpose of your visit?
- Did you arrive in a clean vehicle?
- Did you put on shoe covers when exiting your vehicle? Visually Verify
- When was your last contact with livestock other than pigs and where?
- When was your last pig contact and where?
- When was your last visit outside of the country and where?
- Do you understand the boot bench and shower in/out protocols?
- Do you feel well today?
- Have you, or anyone in your household, been ill or had a fever in the last seven (7) days?

If their answers are not satisfactory, they should be denied access to the unit. If the manager is unsure or has concerns, the visitor may compromise the health of the unit. They must contact their supervisor for instructions before allowing access.

#### Any visitors granted entrance must follow these procedures:

- Take temperature according to PIC protocol before entering unit. Temperature must be <100°F/37C.
- Proper Shower-In/Shower-Out
- Sign and record temperature in the Visitor Logbook maintained by the farm manager. The logbook must also identify when and where their last pig contact occurred.
- Genus PIC NA will provide N95 respirators to all visitors under the standards set by our "Visitor Voluntary N95 Respirator" policy.
- Once on site, visitors will be given a copy of the policy to review and sign.

If the visitor refuses to follow any of the above protocols, then they should be denied access to the unit. It is important that all visitors understand that the Farm Manager can and should deny farm access to anyone whom they see as a potential Biosecurity threat.





# People

SOP Title	Appendix 3.3: Herd Health Protection Protocol	
Farm	PIC Multiplication and GTC System	
Date	1 Oct 2019	
Justification WHY?	The high health status of PIC animals is key to customer confidence and business continuity.	
Goals WHAT?	To minimize the risk of infectious disease transfer to PIC animals.	
Responsible WHO?	All persons entering a PIC animal facility.	
Audit EXPECTATION	All personnel must establish and record their basal body temperature before entering the facility using an approved method.	

#### Overview

In an effort to reduce the risk of employees and visitors transferring Influenza A Virus to animals and other employees, all individuals entering a PIC facility must record their basal body temperature. Anyone with a temperature of 100F/37.8C or greater will not be allowed to enter the facility. Eligible employees are encouraged to utilize Earned Time Off\* (ETO) when experiencing symptoms of illness. This will reduce the risk of infecting others and provide the time necessary for medical attention and recovery.

#### Procedure

Before entering the unit showers, all personnel must record their basal body temperature. This process should be observed by a unit manager/supervisor and recorded. The currently approved method of determining and recording temperature is the Braun Ear Thermometer (instructions for the proper use of thermometers will accompany the equipment). Persons with a temperature of 100F/37.8C or greater will not be allowed entry for a minimum of seven (7) days (see timeline below). This time will be deducted from an eligible employee's ETO and will qualify for the Salary Continuance Program\*\* beginning the fourth (4th) day with proper medical documentation.

\*see Section III-2.0 of the Genus US Human Resources Policy Manual \*\* see Section III-8.0 of the Genus US Human Resources Policy Manual



Chart derived from research performed by Dr. Marie Grammer, University of Minnesota





# People

SOP Title	Appendix 3.4: Approved Disinfectants and Dilution Rates	
Farm	PIC Multiplication and GTC System	
Date	26 Aug 2019	
Justification WHY?	Application of disinfectant is an integral part of the prevention of disease introduction. To be effective, a disinfectant must be mixed at the appropriate dilution ratio and used according to directions (pre-application process, contact time, etc.)	
Goals WHAT?	Maintain list of approved disinfectants and proper dilution rates and ensure all staff understand the dilution ratios and proper application	
Responsible WHO?	All persons entering a PIC animal facility.	
Audit EXPECTATION	-Disinfectant list and dilution rates posted -Detailed and accurate explanation of disinfectant usage and dilution rates by all staff -Presence of approved disinfectants and evidence of proper dilution rates (fumigation room, pre-entry, within farm, etc.)	

Approved disinfectant		Dilution ratio		
Synergize	1:128	1 oz/ US gal	8 ml/ liter	
Ag Forte	1:128	1 oz/ US gal	8 ml/ liter	
Intervention (LIS)	1:64 2 oz/ US gal	2 oz/US gal	NA	Minimum 10 minutes contact
		2 02/ 03 gai		time.
Prevail (Canada)	1.40	NΔ	25 ml/liter	Minimum 5 minutes contact
Frevali (Callada)	1.40	NA	25 mily inter	time.
				Use scoop that accompanies
Virkon S	1:100	1.3 oz/US gal	10 grams/ liter	product to properly measure the
				disinfectant powder.





Appendix 3.5



SOP Title	Appendix 3.5: Dynamic Biosecurity Pyramid Example
Farm	PIC Multiplication and GTC System
Date	1 Jul 2019

Downtime Requirements for Visitors and PIC Personnel						
All questions reg	arding downtir	nes should be directed to	o the Health Tear	m Veterinarian or	<b>PIC Health Ass</b>	urance.
	Date	e Last Updated:	8/15/	/2019		
Please Read from Left to Right		·				
	AUR GN GTC	AUR GN GTC Isolation	AUR GN Site 1	AUR GN Site 1A	AUR GN Site 2	AUR GN Site 3
AUR GN GTC		same day	same day	same day	same day	same day
AUR GN GTC Isolation	over night		over night	over night	over night	over night
AUR GN Site 1	over night	over night		same day	same day	same day
AUR GN Site 1A	over night	over night	over night		over night	over night
AUR GN Site 2	over night	over night	over night	over night		same day
AUR GN Site 3	over night	over night	over night	over night	same day	
1. Downtimes are subject to change if the health status of the farm changes.						
2. All visitors are required to follow	the farm's blosecu	rity entry protocol- no exceptions	•			
*Downtime Definitions One night = Minimum of 12 hours					Diach	
Two nights = Minimum of 36 hours	ro nights = Minimum of 36 hours					



Section 4:

# Equipment and Supply Entry

"The material entry process must provide a biological barrier against the outside world while allowing for timely introduction of items large and small. To achieve the goal, the process must be effective, simple, practical and understood by all that enter the farm."

-Jer Geiger Health Assurance Veterinarian, PIC



SOP Title	Appendix 4.1-1: Alternate Fomite Entry Protocol
Farm	PIC Multiplication and GTC System
Date	26 Aug 2019
Justification WHY?	Occasionally equipment needed in the farm will not fit through the fumigation room. A process is needed to enter these items in a biosecure manner.
Goals WHAT?	Provide an outline for the process of entering items through a designated area other than the fumigation room.
Responsible WHO?	All staff with approval from the HTV or HAV
Audit EXPECTATION	-Alternate fomite entry form is posted -Detailed and accurate explanation of alternate fomite entry process by all staff -Previously used alternate fomite entry form is on file -Observation of proper execution of alternate fomite entry

#### Overview

Protocols for alternative fomite entry must incorporate the following biosecure processes:

- A designated entry area must be determined that is segregated away from the main herd and areas used daily by the production staff
- The item(s) origin or sourcing must be known and biosecure
- The item(s) must be clean and free of any organic material/debris when loading into the designated area
- Pending the sensitivity of the item(s):
  - o coat the item with an approved disinfectant on all surfaces and sides
  - if the item(s) is disinfectant sensitive, isolate in the designated area for a minimum of 7-14 days with the temperature of the area maintained at 70 degrees F
- Isolation period must be pre-determined pending the item(s) to be entered





Fomite Alternate Entry Application		
Farm		
Date of Application		
Date of Fomite Entry		
Description of Supplies Entering		
Source of Supplies		
Method of Entry	Step 1	
	Step 2	
	Step 3	
	Step 4	
	Step 5	
	Step 6	
	Step 7	
	Step 8	

#### Please submit this form to the following for approval. Only 1 approval response from this list is necessary.

Primary Approver (Name)	
Secondary Approver (Name)	
Electronic Signature	
(from either Primary or Secondary approver)	





SOP Title	Appendix 4.1-2: Example Decontamination SOPs	
Farm	PIC Multiplication and GTC System	
Date	1 Feb 19	
Justification WHY?	Incoming supplies pose a risk for introduction of bacteria or viruses to a farm.	
Goals WHAT?	Biosecure supply entry to prevent disease introduction to a farm.	
Responsible WHO?	Designated Farm Staff HTV or HAV must approve protocol.	
Audit EXPECTATION	-Fumigation room log book current and accurate -Detailed and accurate explanation of this SOP by designated staff -Observation of execution of SOP	

#### Example: Apex Fumigation Room Protocol

- Incoming supplies will be unloaded into the outer hot storage room to allow minimum 7 days additional downtime at 85-90 degrees prior to entry to fumigation (D/D) room
- If an item is needed urgently it may be taken to the D/D room directly and <u>must</u> go through the proper procedures for entry
- For any items whose physical dimensions make proper processing thru the D/D room impractical or impossible, an alternative fomite form must be properly filled out and the plan approved prior to those items entering the site
- If the D/D green light is on, load a quantity of supplies from the outer hot storage room into the vehicle that will all fit on the empty D/D room racks (you'll have to estimate) and haul the supplies to the D/D room
- Unload the supplies from the pickup into the "dirty" (near the outside door) side of the D/D room <u>WITHOUT stepping into the room</u> set them on the D/D room floor from outside the room
- Once the supplies have been set inside the D/D room, either remove your shoes as you step into the room (leave them outside the door) or slip on a pair of disposable booties as you step into the D/D room. <u>NEVER</u> step into the D/D room with uncovered street shoes
- Open the outer boxes and transfer contents to the D/D room shelves; break down boxed supplies to the "least common denominator" (example: boxed case of 6 bottles Lincomix will be unboxed to expose individual bottles to the disinfection process)
- When the un-boxing process is completed and all the individual items are on the racks, spray both the <u>bottom, top and all sides</u> of the items with an approved disinfectant solution
- Fill out the D/D room log
- If vaccines are included in the items to be disinfected, fill out the vaccine entry log
- Before leaving the D/D room, click on the switch that starts the two-hour timer
- Click the timer switch closest to the door to start the fogger (10-minute set time)





- Visually verify that the fogger is dispensing an approved disinfectant solution
- Make sure the inner lock mechanism is horizontal (to lock) each time you leave the room
- Disinfected items need a <u>minimum</u> of two hours of dry time AND need to be dry before they can enter the farm from the D/D room; <u>overnight drying is preferable</u>
- Drop off the flattened outer boxes into the outer hot storage room or take them to the truck wash dumpsters at the end of the day
- Fill out D/D log columns indicating date/time properly processed supplies entered the barn





SOP Title	Appendix 4.2: Special Item Disinfection Protocol	
Farm	PIC Multiplication and GTC System	
Date	1 Feb 19	
Justification WHY?	Occasionally equipment that cannot tolerate exposure to disinfectant via the standard fumigation room protocol must be brought into the farm. These items must go through a process that reduces risk of exposing the farm to bacterial or viral contamination.	
Goals WHAT?	Enter disinfectant sensitive equipment into the farm in a biosecure manner.	
Responsible WHO?	-Designated Farm Staff -HTV or HAV must approve protocol	
Audit EXPECTATION	-Fumigation room log book current and accurate -Detailed and accurate explanation of this SOP by designated staff -Observation of execution of SOP	

#### Pre-entry routine:

- Remove any/all external cardboard or plastic wrapping that has contacted off-site areas
- Equipment or item(s) must be clean of organic material
- Clean disinfectant-tolerant surfaces of the item(s) with disinfectant wipes and allow to dry in warm (minimum 70 degrees F) room
- For bulk items that cannot contact disinfectant, leave in the inner container or re-package and wipe/spray outer container with disinfectant
- When dry, place item(s) in a bag or container
- Leave item(s) in sealed bag or container in a designated room at 70 degrees F minimum temperature for minimum of 7 days

#### After 7 days downtime:

- Take item(s) to the fumigation room while still in sealed bag or container
- When in the fumigation room, put on fresh set of disposable gloves
- While wearing disposable gloves, remove one item at a time from sealed bag/container, thoroughly wipe disinfectant-tolerant item(s) with disinfectant wipes and place in designated clean area
  - Disinfectant sensitive items should be left in the inner packaging and the packaging surfaced wiped down to be placed in the designated clean area
- When all items have been wiped down and are in the designated clean area, initiate isolation protocols to prevent any other fomite or people entry to the room
- Drying time must be at least one hour; overnight drying time is preferable
- Site personnel may then bring item(s) into the farm from the clean side





#### Alternative disinfection protocols:

- **1. Alcohol:** Wipe all exterior parts with alcohol (recommend 70% isopropyl) and allow it to evaporate. Repeat as necessary to remove gross contamination and stains.
- 2. Gas sterilization: Temperature and humidity-sensitive items can be effectively disinfected with gas sterilization. The two most common types of gas sterilization used are ethylene oxide (ETO) and hydrogen peroxide gas plasma. ETO effectively inhibits normal cellular metabolism and replication. It requires two hours of exposure and an aeration process to get rid of excess, toxic ETO gas. Hydrogen peroxide gas plasma works by creation of highly reactive free radicals that attack viral and bacterial membranes. It takes an hour to complete with no aeration time necessary.
- **3.** UV light: Exposure of each surface of the object should be at a wavelength of 254nm for at least 10 minutes.
- 4. Ozone: Exposure of all surfaces to 20-30 ppm for 20-30 minutes is required.
- **5. Compressed air:** Use air cans or compressors to remove dust and debris from gaps/openings/crevices on disinfectant sensitive items.
- **6.** Interior cleaning by third party maintenance: For items like ultrasounds and cameras, third party cleaning services exist that will take the item apart to clean its interior parts.



Section 5:



"Due to a tremendous number of foreign animal diseases that have been identified globally, and also to the ever-increasing global travel and international trade of feed ingredients; a biosecurity program for feed and ingredients is becoming a practical tool to reduce the likelihood of introducing pathogens into the feed chain. Achieving the biosecurity of feed, ingredients, and manufacturing involves the understanding of its importance, the commitment to implement and follow it, and the dedication for continuous improvement." -Uislei Orlando, Global Director of Nutrition, PIC



SOP Title	Appendix 5.1-1: Feed Biosecurity Guidelines	
Farm	PIC Multiplication and GTC System	
Date	1 Jul 2019	
Justification WHY?	Feed entry is a necessary process in animal production. Incoming feed poses a risk for disease introduction. There is concern for the spread of not only domestic, but foreign animal diseases. Appropriate protocols must be in place to mitigate risk associated with feed entry.	
Goals WHAT?	Mitigate feed contamination risk during manufacturing and delivery of feed. Enter feed for use in farm in a biosecure manner.	
Responsible WHO?	PIC Health Assurance, PIC farm staff, and site associated feed mills.	
Audit EXPECTATION	<ul> <li>-Feed supplied from a PIC approved mill</li> <li>-Absence of any ingredients banned in PIC diets</li> <li>-Completion of feed ingredient risk assessment for PIC diets</li> <li>-Observation of proper execution of feed entry SOP</li> <li>-No paper bagged feed enters the site</li> <li>-Compliant and current feed mill biosecurity assessment</li> </ul>	

#### Introduction

Proper execution of biosecurity protocols at PIC associated feed mill facilities is essential to prevent the spread of animal disease through feed or feed ingredients. Due to ever-increasing global travel and international trade of feed ingredients, there is concern for the spread of not only domestic, but foreign animal diseases. Biosecurity programs are an important tool for reducing the likelihood that pathogens will be introduced into the feed chain.

After a comprehensive review of available scientific information, PIC has developed a set of risk mitigation strategies and practical recommendations to minimize the potential transmission of domestic or FAD in the production and distribution of feed throughout its multiplication system. This evolving document will be continuously updated as new science-based information and industry knowledge become available.

#### **Risk Mitigation Strategies**

Contamination of feed with disease-causing pathogens can occur at numerous points in the feed manufacturing process. These include, but are not limited to, the use of contaminated ingredients, contamination during ingredient reception, cross-contamination during manufacturing at the feed mill, and by delivery vehicles and personnel. The processes outlined below, if executed correctly, help mitigate these risks and increase mill biosecurity. The figure below outlines potential sources of contamination within the manufacturing process.





## Feed



Source: American Feed Industry Association: Developing Biosecurity Practices for Feed and Ingredient Manufacturing

#### Feed Mill

#### **Operations | Ingredient reception**

Biosecurity surrounding the receiving area should include:

- All containers delivering feed ingredients must be properly cleaned before loading to avoid cross-contamination with previously hauled ingredients or feed.
- All ingredients received by the feed mill should be transported in power units/trailers that have not previously transported swine or been used to haul ingredients to farms with swine on the premises.
- All ingredients should be sourced from approved suppliers. All reasonable attempts must be made to purchase grain ingredients from producers with no swine.
- All incoming containers should have ingredients and seals inspected to evaluate for any visual evidence of environmental contamination. All bagged products should be evaluated for package integrity and/or potential surface contamination. Any contaminated ingredients should be rejected.
- It is recommended a receiving log be kept documenting all incoming ingredients (include batch or lot number for traceability if applicable), including rejected items.
- All trucks are required to have operational mud flaps.
- Sludge/ice pack must be removed from the area around the trailer opening where ingredients fall into pit with a rubber mallet or power washer before entering the receiving area. Any vehicles which do not comply with the mill's cleanliness standards should be rejected.
- A discharge cone or collar placed at the bottom of the hopper must be used to minimize unwanted materials from falling into pit during the unloading process.
- Well defined clean/dirty lines must be in place to control people and vehicle traffic.





- Drivers should remain in their truck when possible. If they must exit their vehicle, driver access should be limited to the ingredient reception area and they are required to utilize shoe covers.
- Reduce bulk ingredient deliveries when snow is present by reducing by-product usage for a period of time or increasing storage.
- The receiving pit must be covered when not in use to minimize open areas for birds, rodents, and debris contamination.
- The receiving areas, including pits, must be cleaned daily. All material collected from the floor must be disposed of properly in an on-site dumpster; spill-over materials should never be swept into the receiving pit.

#### Operations | Manufacturing

- To reduce the chances that manure or contaminated ingredients come in contact with other ingredients or complete feed, it is recommended:
  - Limit warehouse and manufacturing area foot traffic to employees ONLY. No outside suppliers or customers should be allowed.
    - Visitors to the mill should be limited to only those necessary for mill operation or inspection. Visitors should never wander the premises unaccompanied. A company representative should always accompany any visitors.
  - Well defined clean/dirty lines must be in place to control people and equipment traffic.
  - Separate pathways for incoming ingredients and outgoing deliveries should be utilized to minimize potential vehicle traffic crossover.
  - A No-access policy should be enforced to prohibit livestock transport vehicles from using the on-site scale and reclaimed feed must not return to the mill.
  - Manufacturing areas should be cleaned daily, especially the hand-add area that gives direct access to the mixer.
  - Collected dust from air cleaning systems or floor sweepings must not be recycled into the mixer. These materials have high pathogen concentration and should be disposed of properly.
  - All feed manufacturing and delivery equipment must be flushed routinely, especially before pig feed is produced (similar to the method in eliminating antibiotic residues).
  - Batches/feed orders must be sequenced by species and biosecurity pyramid in multispecies mills.
  - The warehouse should be heated if possible.
  - An aggressive pest control for both birds and rodents must be maintained. A monthly log of control measures taken must also be kept.





#### Operations | Delivery

- To minimize the risk of contamination of feed delivery vehicles and mills by infected herds, specific biosecurity measures should be implemented:
  - For GN, SLN, and GTC herds, dedicated feed trucks or an inner-sanctum truck should be used. For other herds, feed transport vehicles should be segregated, at minimum, between multiplication and commercial production. In some cases, transfer to farm or system specific trucks may be necessary.
  - All feed trucks must follow the most current dynamic biosecurity pyramid for the system and flow:
    - Feed should be delivered to negative farms first and positive sites at the conclusion of the week.
    - Sow farms should be served before growing sites.
    - When a feed vehicle needs to move up the biosecurity pyramid, the vehicle must be washed, disinfected, dried, and inspected before loading.
  - Detailed cleaning and disinfection of feed truck exterior and truck cab should follow these guidelines:
    - Performed on a daily basis given available equipment and facilities.
    - Utilize approved disinfectants.
    - Disinfectants should be applied to wet surfaces and allowed to dry to be most effective.
    - Thermal assisted drying decontamination (TADD) is recommended.
    - If assisted drying is not available, disinfected vehicles are allowed to dry overnight in a warmed facility, if needed to achieve drying in winter conditions.
    - Vehicles should be inspected after decontamination and verified "clean-dry" before loading in the feed mill.
  - Defined clean/dirty lines should be established for feed-hauling vehicles in feed mills and farms.
  - Feed should never be swept from on top of the truck into the truck.
  - If an object is needed to assist with dislodging feed inside the truck, the driver must place a clean, heavy-duty, trash bag over the object before placing it into the truck. The bag must be discarded after use. A broom should not be used to dislodge feed inside the truck, a straight pole is recommended as it can be cleaned and disinfected.
  - Truck drivers should never come in contact with the feed. If a problem occurs during the delivery and the driver does contact the feed, the truck should be sent back and the feed not accepted.
  - Drivers should remain in their cab at known positive sites. Multipliers should provide logistic support for feed delivery to those positive sites. At other sites, drivers should utilize disposable plastic boots when outside of their cab.



### Appendix 5.1-1

Feed



- Spray bottles with disinfectant and windshield liquid (during cold weather) as well as disinfectant wipes should be provided to all drivers to decontaminate their cabins when they return to their vehicles.
- Any feed spillage must be cleared promptly at the farm. The driver should immediately report the spill to the farm staff for cleaning. Feed spills must be disposed of in an onsite dumpster or mixed in the compost.

#### Ingredients

Ingredients **NOT** allowed in PIC multiplication diets:

- Porcine protein origin ingredients including plasma and blood meal, as well as dried porcine enteric products.
- Meat and bone meal of all species, as well as pet food.
- If porcine origin ingredients are utilized in the feed mill, written permission must be acquired from PIC HA and the HTV.

Ingredients that may be permissible if origin is verified:

- Bovine plasma or non-porcine source blood meal, spray dried egg protein, poultry meal, bakery meal or beef tallow - when no swine products are processed at the plant of origin, transported in the same vehicles, or stored in the same container.
- Choice white grease when biosecurity protocols are followed during delivery and heat is applied during holding.
- Dried distillers grain with solubles (DDGS) when stored in bird-proof facilities or when bird-control protocols are in place.
- Corn stored in enclosed warehouse/bin is preferred. However, on the ground storage when grain goes through drying and enclosed storage for 30 days before usage is acceptable. (Covered outside storage is also thought to mitigate risk compared to un-covered outside storage).
- Verify all product mixtures such as base mixes or add packs contain source verified ingredients and are free of ingredients in the not allowed list.
- Continuous communication with the nutritionist is encouraged for strategic substitution of ingredients. For example, vegetable oils have been used to replace animal fats and porcine plasma has been replaced with highly digestible sources of crude protein.
- All imported ingredients must have a feed ingredient risk assessment completed and appropriate mitigation strategies implemented before use, if required.
- Guidelines for assessment and mitigation of FAD transmission risk from feed ingredients

(September 7<sup>th</sup> 2018 – in collaboration with KSU Nutrition group and SHIC)







#### Decision Tree to Assess and Minimize FAD Transmission Risk from Feed Ingredients



\*The Swine Health Information Center maintains and publishes monitoring reports for diseases on its Swine Disease Matrix, which include: foot and mouth disease virus, classical swine fever virus and African swine fever virus. See below for table of member countries recognized by the OiE as free from FMD, CSF and ASF.

 $\dagger$ Ingredients with heightened demonstrated ability to harbor pathogenic swine viruses include, but are not limited to: 1) conventional soybean meal<sup>1</sup>, 2) lysine hydrochloride<sup>1</sup>, 3) choline chloride<sup>1</sup>, 4) vitamin D<sup>1</sup>, 5) pork sausage casings<sup>1</sup>, 6) organic soybean meal<sup>1</sup>, 7) soy oil cake<sup>1</sup>, 8) DDGS<sup>1</sup>, 9) moist cat food<sup>1</sup>, 10) moist dog food<sup>1</sup>, 11) dry dog food<sup>1</sup>, 12) porcine-based ingredients<sup>2</sup>, or 13) rice hulls<sup>3</sup>.

<sup>‡</sup>Available data is limited and depends upon both the ingredient and mitigation, but may include: extended storage times, irradiation, thermal processing, or chemical treatment (formaldehyde- or medium chain fatty acid-based liquids, etc.).



#### Questions to Assess Supplier and Ingredient Feed Safety Risk

- 1. Does the facility have a biosecurity program in place to minimize the spread of viruses from people, vehicles, and ingredients?
- 2. Does the facility have documented employee training on feed safety?
- 3. Does the facility have an effective pest control program?
- 4. Does the facility have a supplier approval program that includes traceability capabilities?
- 5. Is the facility certified by a 3rd party certification body for food safety, such as FAMI-QS, ISO, SQF, etc.?
- 6. Does the facility utilize ingredients that were manufactured or packaged outside the United States?
  - a. If yes, was the ingredient imported following the FDA Foreign Supplier Verification Program?
    - i. If yes, did the hazard analysis specifically address swine viruses known to survive in feed ingredients, such as foot and mouth disease virus, classical swine fever virus, African swine fever virus, and pseudorabies virus?
    - ii. If yes, what mitigations strategies are used for ingredients sourced from countries of heightened viral risk to prevent or minimize risk of transmission?
  - b. If yes, are there alternative suppliers and/or ingredients available?
- 7. What is the origin of the ingredient (vegetal, animal, mineral, or synthetic)?
- 8. What is the state of matter of the final feed ingredient and all raw materials used for production (gas, solid, liquid)?
- 9. How are the raw materials harvested-obtained and transported to the production facility?
- 10. Are there any opportunities for direct or indirect contact of raw materials or feed ingredients with livestock during the procurement, production and distribution process?
- 11. What is the minimum number of days it could take since obtaining the raw ingredients to delivery to a feed mill in North America?

#### \*OiE World Organization for Animal Health member countries recognized as free from Foot and mouth disease (FMD), classical swine fever (CSF) and African swine fever (ASF)

Australia	Finland	New Caledonia	Sweden
Austria	France	New Zealand	Switzerland
Canada	Germany	Norway	The Netherlands
Chile	Hungary	Portugal	United Kingdom
Costa Rica	Ireland	Slovakia	United States of America
Denmark	Mexico	Spain	

When feasible, ingredients should only be imported from countries listed in this table





#### Complete Feed

- No creep feed or milk replacer with porcine proteins is allowed in sow farms.
  - If the farm has an internal GDU or staging room, confirm that no animal-origin products are used in the diets.
- No paper bags are allowed in sow farms.
  - For feed in paper bags, each individual bag must be opened and the feed contents poured into barrels or carts specifically designated for feed storage.
  - The dirty bag must not touch the clean barrel or cart.
  - If plastic bags need to be used, effective disinfection of the entire exterior of the bag is necessary.
  - Plastic (non-permeable) bags can be disinfected in the fumigation room. Bags must be free of organic matter and spread out in a single layer on shelves to ensure full contact with disinfectant on the entire bag surface.

#### Monitoring

Developing close and trusting relationships with every mill that manufactures feed for a PIC genetic farm is a priority for PIC Health Assurance and Supply Chain teams. The systematic approach to reducing disease transmission risk by implementing specific feed manufacturing and distributions protocols will mutually benefit the feed mill enterprise and the PIC multiplication partner. The continuous communication of concerns, constraints and alternatives is critical for success. Periodical educational and problem-solving sessions between the feed mill ownership/ management, the multiplier ownership/veterinarian and PIC are encouraged.

#### Feed Mill Assessment

Approved feed mills must be audited by PIC HA or the HTV, using the feed mill biosecurity assessment with the following frequency:

- Owned, GTC, and tame production: annually
- In the event of any significant changes in protocols or quality of work.

#### **Routine and Proactive Communication**

Feed mill management is responsible for routinely communicating to multiplier management any significant change of ingredient source or process from the most updated assessment.

#### Targeted Ingredient and Environmental PCR Testing

Testing a limited number of samples by PCR once a week or month has very limited sensitivity considering the high volume and rotation of feed ingredients. Although a positive test may have tremendous educational and awareness value, a negative result only indicates that the specific agent was not detected in the sample. One way to increase sensitivity and make a conscientious investment of resources is the targeted testing of specific ingredients, areas and situations. Testing between 6-12 ingredients and environmental samples for PEDV/PDCoV or PRRSV by PCR during an assessment of a



Appendix 5.1-1

Feed



feed mill or an outbreak investigation may be useful in identifying risk factors and modifying processes and behaviors.

#### Sampling Protocol of Incoming Ingredients - (Feed Manufacturing KSU, 20017)

While testing each sample is not practical, randomizing testing, while adding frequency to sources of high volume or high-risk ingredients from vendors is recommended. Good production practices include the retention of ingredient and finished feed samples for future investigative testing.

- Preparing samples for testing (AAFCO Feed Inspector's Manual Fourth Edition8):
  - Packages or Feed Bags
    - Wear sterile disposable gloves
    - Use sterile whirl-pak bag. If whirl-pak bags are not available, use 2 sterile disposable 250 ml/8 oz cups per sample. Open the package in such a manner to permit withdrawal of sample without contacting packaging material. Use a separate sterile transfer utensil for each sample, to transfer product from container to whirl-pak bag.
    - Draw the sub-samples from five packages in the lot. These bags should be 2/3 full. Close bag immediately.
  - Bulk Containers
    - Wear sterile disposable gloves
    - Use sterile whirl-pak bag. If whirl-pak bags not available, use 2 sterile disposable 250/ml/8oz cups per sample. Take 5 well-spaced sub-samples directly by scooping from the lot with sterile sampling cup or by passing sterile sampling cup or whirl-pak through the stream of a lot being transferred into or out of a storage bin. If using sampling cup, transfer sub-samples to whirl-pak bag. Close bag immediately.
  - Samples should vary from 1.1 (500 grams) to 2.2 (1kg) pounds. Need to be frozen and should not be sent to lab over the weekend.

#### Compliance

#### Feed Mill Assessments

HTVs and/or PIC Health Assurance-Supply Chain

- 100% compliance (no past due assessments)
- Ad hoc assessments completed in the event of any significant changes in ownership, protocols, or quality of work

#### If a Critical Risk Factor(s) is Identified

The multiplier needs to provide PIC with a corrective action plan (feed mill assessment and plan become part of farm's profile) within fourteen days of the audit. The observation also needs to be submitted to SCAN.



Feed



- Critical risk factors at the feed mill level include:
  - Use of porcine protein origin ingredients, meat and bone meal of all species, and/or pet food
  - o Lack of a dynamic biosecurity pyramid flow for feed delivery
  - $\circ$   $\;$  Lack of an ingredient reception protocol to mitigate risk
  - Unverified source of bovine plasma or non-porcine source blood meal, spray dried egg protein, poultry meal, bakery meal, beef tallow, choice white grease, DDGS or corn stored on the ground
  - Use of a high risk ingredient manufactured or packaged in a country with active FMD, ASF, or CSF without implementation of proper mitigation strategies (refer to decision tree outlined above)
- PIC will follow up on the corrective action plan provided by the multiplier. Another feed mill assessment may need to be scheduled within 30 days.
- If requirements are not met, a health hold will be implemented until mandatory vet-to-vets are completed for the first seed stock shipment to every customer from the multiplication site(s) served by the specific feed mill, similar to a "change of source" vet-to-vet.
- The HTV will have available the most current assessment, the corrected action plan, and the reasons why the specific requirements were not met. The goal of the communication is not only to explain the existence of risk factors but to emphasize the importance of the surveillance protocols in the multiplication flow and isolation at destination. Health Assurance will serve as an additional resource when needed.

#### **Continued Biosecurity Training**

Educate mill ownership, management and personnel on disease impact, risk of transmission and alternatives.

#### Additional Information

For more information on feed biosecurity, please contact PIC Health Assurance.

#### References

- American Feed Industry Association, Developing Biosecurity Practices for Feed and Ingredient Manufacturing, January 2019
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- Woodworth et al. 2014. PEDV mitigation during feed manufacturing. SDEC Pijoan Symposium
- Sampling: Procedures for feed, MF-2036, Feed Manufacturing, KSU, 2001
- Feed Inspector's Manual, 4th Edition, AAFCO, 2013
- Nutrition Specifications Manual, PIC, 2013







SOP Title         Appendix 5.1-2: PIC Nutrition Manual           Manual is included in Appendices	
Farm	PIC Multiplication and GTC System
Date	1 Jul 2019

Find the most up-to-date version of the PIC Nutrition Manual at pic.com.







SOP Title	Appendix 5.2: Feed Mill Assessment
Farm	PIC Multiplication and GTC System
Date	1 Jul 2019

#### **Private & Confidential**

# FEED MILL ASSESSMENT

FEED MILL NAME AND ADDRESS:	
ASSOCIATED PIC MULTIPICATION HERD(S):	
DATE CONDUCTED:	
ASSESSED BY:	

### For additional details or clarity on the questions in this assessment, please reference the PIC Biosecurity Standards or contact PIC Health Assurance.

PLEASE CHECK ( 🖌 ) THE APPROPRIATE CATEGORIES REGARDING THE FEED MILL BEING ASSESSED.

#### **Distance from Animals**

- 1. Distance to Nearest Pigs:
  - Less than 1/2 mile (0.8 km) 1/2 to 1 mile (0.8 km to 1.6 km) Greater than 1 mile (1.6 km)
- 2. Distance to Nearest Livestock
  - Less than ½ mile (0.8 km) 1/2 to 1 mile (0.8 km to 1.6 km) Greater than 1 mile (1.6 km)



Feed



#### **Ingredient Reception**

- 3. Is an ingredient reception protocol visible to inbound drivers?
  - \_\_Yes \_\_No
- 4. Is there separation of inbound and outbound trucks/equipment?
  - ∐Yes □No
- 5. Who unloads inbound bulk ingredients?
  - Inbound driver
- 6. When exiting their tractor cabs, do inbound drivers observe biosecurity protocols by putting on disposable booties prior to exiting the tractor cab?



7. Is there equipment in place to prevent overflow of the bulk ingredients to areas around the dump grate at the unloading pit?

Yes
No

- 8. If bulk ingredients spill around the inbound grate, how is material on the concrete deck handled?
  - Swept into the unloading pit
  - Swept up and discarded into dumpster
- 9. What is the protocol to clean the undercarriage and tires of inbound tractors and trailers prior to unloading at the mill?
  - washed and disinfected
  - remove snow and ice and are then disinfected
  - only required to remove snow and ice
  - No protocol

#### Manufacturing

10. Does the mill have written biosecurity protocols in place?



- 11. Does the mill allow non-employees in the production area?
  - Yes



Appendix 5.2

Feed



12. Does the mill have defined clean/dirty lines to control foot traffic?

	Yes
	No

**13.** Does the mill have separate pathways for incoming ingredients and outgoing completed feed to minimize vehicle traffic crossover?



14. Does the mill supply boots/coverall to outside visitors while on site?



15. Do any mill personnel work routinely with pigs?



16. Does the mill prepare feed for other pigs?



a. If yes, are the other pigs PIC owned or contract multiplication units?

	Yes
	No

- 17. Does the mill prepare feed for other livestock?
  - Yes
- a. If yes, what species?
  - Cattle
    Poultry
    Sheep
    Fish
    Other:
- 18. Does the mill offer pelleting?
  - Yes
- 19. Does the mill have a standard operating procedure to protect the feed from becoming contaminated during the milling process?



20. Does mill have a designed rodent and bird control protocol?





Appendix 5.2

Feed



#### 21. When are feed spills at the mill removed?

- Immediately
- At the end of the DAY
- At the end of the WEEK
- Not removed

#### Delivery

22. Is feed delivery based on a dynamic biosecurity pyramid?

Yes
No

23.	Is feed delivered to PIC multiplier pigs before non-PIC units?
	Yes
	No

#### 24. Are deliveries to PIC units made in dedicated trucks?

Yes
No

#### 25. Is feed delivered in trucks used only for hauling feed?

Yes
No

#### 26. What other vehicles enter the feed mill? (check all that apply)

Personnel vehicles	Feed trucks from	other farms
Grain trucks	Livestock trucks	
Waste removal trucks	s Utility trucks	Other:

27. What is the traffic pattern at the mill? Describe/draw on back of this form.

#### 28. Is there a separate inbound and outbound driveway?

Yes
No

29. Do incoming ingredient trucks and outgoing complete feed trucks use the same scale?



#### 30. Is the on-site scale used for purposes other than feed production at the mill?

Example - weighing other livestock transport vehicles







#### 31. Are the undercarriage and tires of the trucks cleaned?

Yes
No

a. If yes, what method is used? (select 1 option for each water, pressure & volume)

Hot

|High |High

Water:	
Pressure:	
Volume:	

Cold
Low
Low

#### b. Is detergent used?

Yes, name of detergent used -

#### 32. Are the undercarriage and tires of the trucks disinfected?

Yes
No

#### a. If yes, how often are they disinfected?

Completion of the delivery route

Between farms

End of the day

As needed or periodically

#### 33. Are the truck cabs interiors cleaned?

Yes, briefly describe how they are cleaned -

#### a. How often are truck cab interiors cleaned?

Daily
Weekly
Monthly

\_\_\_As needed

#### 34. Do the truck cabs have floor mats?



a. If yes, how often are they washed, disinfected and dried?

Daily Weekly

Monthly

\_\_As needed

**36.** What plan exists if there is a disease concern on any of the farms served by the mill? (For instance, does the mill have enough trucks or a washing and disinfecting plan in place that ensures that a truck that has been to a diseased farm will never go on to other farms OR it will not visit another farm without a wash and disinfect?)







Feed

37. Do the feed trucks enter the compound edge of PIC farms?



38. Do the feed trucks enter the compound edge of non-PIC farms?

Yes
No

- 39. Is there a plan in place to control feed spills at the farms?
  - \_\_Yes \_\_No
    - a. If yes, please answer the following questions:
      - i. How are feed spills at the farm handled?
         Farm is notified and farm staff picks up
         Driver picks up the spill
      - ii. Where is the spilled feed disposed?
        Placed in dumpster
        Swept onto ground
        Placed back in feed bin
        Other:
      - iii. Is feed from a farm ever returned to the mill?
         Yes, please describe process:
         No

#### Ingredients

- 40. For all imported feed ingredients, has a feed ingredient risk assessment been completed?
  - Yes (answer part a)
  - No (skip to question 41)
    - a. Have appropriate mitigation strategies been implemented for imported ingredients in accordance with the PIC feed biosecurity guidelines?
       Yes
       No
- **41. Which grains are used in the feed?** (select all that apply)
  - Corn
    Soybeans
    Wheat
    Milo
    Barley
    DDGS
    Other



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# Feed

#### 42. From whom is the grain purchased? (select all that apply)

- Self
  - Grain elevator
- Feed mill
- Unknown
- Other swine producer
- From grain producer

#### 43. Is the grain stored?

Yes, how long is the grain stored?

No

#### a. If yes, where is the grain stored?

On the ground In covered bin In uncovered bin

# b. Are bird and rodent control protocols in place for grain storage? Yes No

#### c. Are the vehicles that haul grain used for hauling livestock?

Yes No

#### 44. Animal Proteins and by-products

Туре	Used in multiplier feed Mark Y or N	Used in mill Mark Y or N	Main Source	Risk of cross- contamination High or Low
Porcine Plasma				
PEP E				
DPS DPS				
Bovine Plasma				
Non-porcine source blood meal				
Spray dried egg protein				
Meat and bone meal				
Poultry meal				
Fish Meal				
Bakery meal				
Pet food				

#### 45. How are smaller quantity ingredients supplied to this mill?

Bags Totes

Other – please describe



Appendix 5.2 Feed



#### 46. How are minor ingredient products physically placed into the ration?

Hand add
Micro table
Other – please describe

# 47. Are vitamin and trace Minerals and other micro ingredients, stored in a heated area (minimum 70F/21C) for more than 2 weeks?

Yes

#### 48. What type of fats/oils are utilized in rations in this mill?

Bovine tallow Porcine Animal/Vegetable Blend Vegetable Oil Other explain:

#### 49. Is there a risk of cross-contamination with swine products?

Yes
No

#### Is the Feed Mill Approved for Use?

☐ Yes ☐ No

Comments:





SOP Title	Appendix 5.3: Biosecurity for Feed Used in Transit
Farm	PIC Multiplication and GTC System
Date	1 Jul 19
Justification WHY?	Feed entry is a necessary process in animal production. Incoming feed poses a risk for disease introduction. Appropriate protocols must be in place to disinfect feed containers for use in transit to mitigate risk associated with their entry.
Goals WHAT?	Enter feed for use in transit in a biosecure manner.
Responsible WHO?	PIC Export, Transport, and Health Assurance. PIC farm staff and associated feed mills.
Audit EXPECTATION	-Feed supplied is from the appropriate facility and of correct diet -Feed free from any banned ingredients listed in PIC feed biosecurity guidelines -Observation of proper execution of feed entry SOP -No paper bagged feed enters the transit vehicle

#### Feed for Use in Transit

If feed is required for use in transit during export or other long duration shipments, the following biosecurity guidelines apply:

- Feed should be supplied through the source facility or servicing mill, for use in transit or shortly after arrival at the destination.
- When possible, the diets should be the same as those the pigs are eating at the source facility.
- The feed should not contain ingredients banned by PIC feed biosecurity guidelines (e.g. porcine plasma, meat/bone meal).
- The export process must order feed (specify quantity) more than two weeks in advance.
- The clean transport trailer should not go to the feed mill. Feed should be shuttled from the mill or source facility to the transport trailer by a clean/biosecure vehicle.
  - The shuttle vehicle should not be otherwise used to transport feed or feed ingredients prohibited by PIC HA, carcasses, or live animals. The cargo area must be clean and dry.
- Plastic feed bags or totes may be transferred to the clean transport trailer after thorough exposure of all bag surfaces to aerosol disinfectant (e.g. Tek-trol, Lysol sprays).
  - The disinfected bags should have sufficient time to dry before any exposure to pigs. Paper feed bags should be transferred to clean plastic containers/totes with lids.
- In emergency situations, the points above still apply, and PIC HA must approve the source and transfer process.



Appendix 5.3

Feed

#### Section 6:

# Transport

"In order to keep animals free of disease, we need to continue to refine and improve our bio-secure practices during transportation. Transport is a very easy way to spread disease quickly between farms, so it's imperative that the expectations, execution and culture around biosecurity is at the forefront of everyone's mind. "

-Nick McCulley, Global Supply Chain Director, PIC



Transport



	Appendix 6.1-1: PIC North America Transport Biosecurity Standards for Commercial
SOP Title	Carriers
Farm	All PIC North America Contracted Vendors
Date	1 Jul 2019
Justification WHY?	Introduction of disease to PIC or customer farms from a transportation related event will cause significant disruption in product availability, profitability, and genetic progress.
Goals WHAT?	Educate contract vendors, PIC staff, and multiplication partners about transportation biosecurity risks and provide clear standards and protocols to mitigate the risk.
Responsible WHO?	PIC Supply Chain, PIC Health Assurance, and contracted vendors
	-Only approved carriers, equipment, and truck washes utilized
Audit	-Documented driver TQA certification and annual biosecurity training
EXPECTATION	-Appropriate downtime followed and documented on all drivers and equipment
	-Demonstration of correct loading and unloading procedures by drivers

#### **General Rules**

- PIC biosecurity protocols must always be followed. Any deviations must be reviewed and approved by PIC BioShield.
- All trailers must be cleaned and disinfected at PIC North America approved truck washes and have appropriate drying and downtime before contacting a PIC North America breeding stock production site.
- All PIC North America approved truck washes must incorporate PIC approved protocols and supplies as outlined below in these guidelines.
- The cargo area and equipment used therein must be made of materials that are in good repair and can be readily cleaned and disinfected. Wood is not permitted except for shovel handles or brooms.
- All trailers must be empty before loading at a PIC North America breeding stock production system.
- Clean rubber boots/overshoes or plastic boot covers and clean cloth or disposable coveralls (long sleeves) must always be worn in the clean cargo area when loading or unloading pigs.
- Drivers are not permitted to enter the multiplier or customer loading chutes or facilities.
- No pets may accompany any driver in any delivery vehicle.
- All drivers must be TQA+ (Transport Quality Assurance plus) certified and have annual biosecurity training.
- Trucks transporting PIC animals should avoid any location where other livestock trucks are likely to frequent (e.g. truck stops, rest stops, etc.).
- Judicious use of an electric prod on breeding stock is acceptable only under special circumstances and with the explicit permission of the customer.



Transport



- Drivers transporting PIC animals may not live on a premise where pigs are kept, nor may they live with another person who works with swine or has contact with organic material originating from swine (e.g. nutrient management, rendering, etc.).
- Drivers are responsible for providing an accurate animal count as they are loading and unloading.
- Drivers are responsible for receiving and delivering PIC shipping documents: health papers, transfer sheets, Quality Assurance forms, and scale tickets. The delivery is not complete without these documents.
- PIC Dispatch and/or PIC Health Assurance must be contacted if there are any questions.

#### **Health Responsibilities**

- If a loading area is deemed a potential biosecurity risk, the driver has the authority, responsibility and right to question the situation. When in doubt, call PIC Dispatch or Health Assurance before proceeding.
- Drivers must remain alert to animal health concerns. Any observations indicating a health concern (i.e., coughing, diarrhea, lethargy, etc.) must be reported to PIC Dispatch and Health Assurance IMMEDIATELY.

#### **PIC Approved Truck Washes**

- Vehicles transporting PIC animals must be washed at PIC approved truck washes before loading.
- Approved truck washes will be audited semi-annually to annually by PIC Health Assurance or Logistics using the PIC Truck Wash Facility Audit.
- In the event of any significant changes in protocols or quality of work, additional truck wash audits will be conducted at the request of PIC Health Assurance or Logistics.
- Truck washes are assigned and scheduled by PIC Central Dispatch. If truck washes are not listed on the Control Log, contact dispatch for instructions.

#### **Approved Carriers and Equipment**

- Carriers must be on the PIC Approved Carrier list. PIC Transportation, and Health Assurance must all approve to a establish a new carrier. Approval includes receipt of a signed copy of the Acknowledgement in the Master Service Agreement.
- PIC prefers to use equipment dedicated to PIC. Non-dedicated equipment may be used to haul PIC North America pigs if approved by PIC Central Dispatch and Health Assurance.
- The following procedure must be completed prior to allowing an independent carrier to commence hauling PIC North America breeding stock with non-dedicated equipment:
  - Wash, disinfect and dry at a PIC approved truck wash. PIC dispatch will make the appointment with the truck wash.




- Undergo a post decontamination inspection by Health Assurance or a Health Assurance approved third party inspector.
- $\circ$  Have 60 hours downtime following the final wash, disinfection, and drying.
- Non-dedicated drivers must follow all PIC North America protocols.
- Comply with any additional protocols as directed by PIC Logistics and/or Health Assurance. These may include, but are not limited to, the following options:
  - Pre-wash trailer at an approved location prior to washing at the final truck wash facility.
    - Pre-washing is typically required to lower the risk of contamination to the final truck wash facility.
  - Temperature Assisted Disinfection and Drying (TADD)
    - TADD refers to the application of high temperatures over a short period of times following a standard wash and disinfection.
    - Standard TADD requires heating to 160F for a minimum of 20 minutes.
  - Truck and trailer isolation
    - Following proper decontamination protocols, isolation of the truck and trailer in a location separated from the PIC approved truck wash facility may be required.
  - Diagnostic monitoring
    - Truck and trailer surfaces may be sampled and diagnostically evaluated for bacteria and viruses for quality control purposes.
- PIC Supply Chain Logistics will provide the carrier with all current protocols and guidelines pertinent to transport.

#### Decontamination

- Washing
  - $\circ$  The washing phase includes, but may not be limited to, the following components:
    - Scraping and flushing (i.e. high volume, low pressure water) to remove gross organic material from internal and external surfaces
    - Detergent application using a PIC approved detergent
    - High pressure, hot water wash
- Disinfection
  - Disinfection includes, but may not be limited to, the following components:
    - Removal of any pooled residual wash water
    - Disinfection application using a PIC approved disinfectant
    - Adherence to minimum contact time and temperature per disinfectant label indications





**Transport** 

- Drying
  - Drying includes, but may not be limited to, the following components:
    - Removal of any pooled residual water or disinfectant using gravity and a proper incline or air hose
    - Complete drying of all surfaces to ensure inactivation of any residual microorganisms of concern
    - Where weather conditions prevent adequate drying outside, other methods must be used (e.g. inside storage, forced air, heating) to ensure the vehicle is completely dry.
- Inspection
  - All clean trailers must have a visual inspection (observing for signs of bird or rodent activity) completed within 12 hours of use.
  - If any contamination is present, the trailer must have another wash, disinfect, and dry before use.
  - Documentation of visual inspection must be kept including date, pass/fail status, and initials of the inspecting party.
  - In certain situations, PIC Logistics and Health Assurance may require a third-party inspection (i.e. not the approved truck wash or approved carrier) to verify adequate decontamination.
- Please refer to the "Guidelines for Decontamination of Trucks and Trailers" outlined below in this document

#### Downtime

- Trailers/Trucks
  - Transport should proceed down the genetic pyramid for each particular system. Please refer to the PIC Transport Biosecurity Pyramid for additional information.
  - One night of downtime (12 hours) is required for transport within a genetic level.
  - Two nights of downtime (36 hours) is required when moving up the genetic pyramid between PIC sites.
  - Three nights of downtime (60 hours) is required when moving up the genetic pyramid from a slaughter/customer facility to a PIC site.
- Drivers
  - The driver downtime required prior to hauling breeding stock is equivalent to the downtime required for the equipment.
  - For PIC managed systems only: Drivers are allowed to travel to the same farm twice on the same day if they meet the following criteria:
    - The first load of the day is breeding stock
    - The delivery was a "drop and hook". (Delivery was not made to a truck/trailer or a production site).
    - The tractor is washed and disinfected after the drop and hook.





- The drivers have washed hands and retrieved clean coveralls and boots.
- A clean trailer with standard downtime is used for the second load.
- Direct contact with non-PIC North America pigs requires 3 nights downtime with a change of clothing and shoes. Direct pig contact includes:
  - Visiting non-PIC production facilities
  - Visiting auction markets, slaughter plants, livestock assembly yards
  - Visiting petting zoos where pigs are kept
  - Visiting trade fairs with live swine displays
  - Visiting veterinary diagnostic laboratories
- Indirect pig contact requires one night of downtime with a change of clothing and shoes. Indirect pig contact includes:
  - Entering the vehicle of a person who works with pigs
  - Visiting farm premises where pigs are kept (including a farm house on premises)
  - Visiting any other site deemed contaminated by Health Assurance
- Any pig contact outside of normal work must be reported to dispatch prior hauling any PIC pigs.

#### Inner Sanctum Transport

- Inner sanctum transport is system-specific and is controlled by production under PIC Health Assurance biosecurity guidelines. The following standards apply:
  - o Unidirectional flow following health pyramid structure
  - o Inner sanctum vehicle should be dedicated to the system
  - In the event non-PIC dedicated trucks, trailers, and equipment is required, the protocol for entering non-dedicated equipment applies. Once non-dedicated equipment enters the system, it follows system-specific rules.
- Inner sanctum movements include the following: Quarantine to main farm, sow farm to nursery, nursery to finisher, or other movements within a system.

#### **Multi-Drop Deliveries**

- PIC accepts three alternatives for deliveries.
  - The preferred method is delivery to an empty, clean, disinfected and dry quarantine facility.
  - Truck-to-truck transfers at an approved neutral location using clean shuttle vehicles.
  - Direct farm deliveries, subject to customer biosecurity codes, are acceptable.
- Co-mingling of sources in the same truck is not allowed without prior Health Assurance approval.
- PIC North America breeding stock units must always be the first drop on multi-drop deliveries. Absolutely no exceptions will be made.





• All loading and drop sequences for multi-drop shipments are subject to approval by Health Assurance.

#### **Guidelines for Specific Procedures**

#### Truck-to-Truck Transfer Protocol

- A neutral site distant from the destination farm and other pig farms is required for the transfer. This is pre-determined by dispatch and customer, subject to Health Assurance approval.
- Dispatch determines the transfer time and location. If a single site is used for multiple transfers, they are scheduled to avoid more than one customer vehicle at the site at the same time.
- The customer vehicle must be clean, disinfected and dry. Only clean fresh bedding is allowed in the vehicle.
- The PIC North America driver must visually inspect the customer's vehicle prior to contact with the PIC truck. If the vehicle is not completely clean, the PIC driver will refuse to unload and contact the dispatcher for instructions.
- Standard protocols for entering the PIC North America trailer are followed by the PIC driver. This involves putting on clean coveralls and boots in a manner that avoids contact with the ground when entering the trailer.
- The customer is at no time permitted to enter the PIC North America trailer.
- Pig flow is one way only. Pigs are not allowed to return to the PIC North America trailer after entering the customer vehicle.
- Drivers must contact the PIC North America Transport Manager or Health Assurance immediately if there are any questions or concerns arising from the "truck-to-truck" transfer.

#### Loading and Unloading Procedures

- Objectives:
  - $\circ$   $\;$  To protect the source herd from disease introduction during loading.
  - To protect the animals on the trailer from disease introduction while unloading or during a transfer.
  - To avoid injury to the animals.
- Preparation before loading
  - Shower and put on clean clothes, which includes a clean hat if a hat is to be worn.
     Showering and changing or laundering clothes between loads is required.
  - Inspect the tractor to make sure it is clean. Drivers are responsible for cleaning and disinfecting the tractor cab between loads.
  - Place clean supplies (coveralls, gloves, plastic and/or rubber boots) into the clean box.
     Clean plastic boots and garbage bags should be stored in the cab. A clean set of boots, gloves and coveralls is required for each load. It is the driver's responsibility to have



Appendix 6.1-1

Transport

Transport



adequate supplies for all deliveries including additional supplies for unexpected situations for each load.

- Review your scheduled loads provided by PIC Dispatch. Standard presentation is via the PIC Trip Information App installed on your phone or other device. Contact Dispatch with any questions. Drivers are to deliver as directed. Any changes to arrival dates or times must have prior approval from PIC Dispatch.
- Conduct a pre-trip inspection of the trailer to make sure it is clean. If required to enter cargo area, wear clean rubber boots or booties and coveralls.
- Load shavings into the vehicle. Use at least 12 cubic feet of shavings per fully loaded deck. Close the shavings trailer door.
- Enter the odometer reading in the Start Odometer box of the PIC Trip Information App before leaving for the source farm.
- Proceed to a certified scale to get the empty weight. Printed scale tickets with the business letterhead are required by US federal law. Hand-written scale tickets or photos of the scale meter are not acceptable.
- General rules for loading and unloading
  - There should be no gaps between the delivery vehicle and the loading chute or shuttle vehicle large enough to cause injury to the animals during the loading / unloading process.
  - All breeding stock must be handled with the greatest of care to avoid injury. Animals should never be handled in a rough or violent manner.
  - The use of electric prods is generally not allowed. In extreme situations, where the driver feels that he/she needs to use an electric prod, use will be as follows:
  - When loading, judicious use of the prod is at the driver's discretion.
  - When unloading, the farm manager must give prior approval. The farm manager's decision is final and must be followed.
  - Only drivers are allowed in the cargo area unless previously approved by PIC Health Assurance.
  - Drivers are not allowed to enter any production facility.
  - Rubber boots or disposable boot covers and clean coveralls (long sleeves) must be worn each time a driver enters the cargo area of the delivery vehicle.
  - There should be no crossover traffic by farm staff and driver. The "clean-dirty" line at the end of the trailer must be observed unless an alternative protocol is previously approved and documented with a transport waiver.
  - Once an animal has been loaded, it can never return to the unit. Pig flow is one-way only. Absolutely no exceptions will be made.
  - Do not load lame, sick or unsound animals. It is the responsibility of the driver to refuse to load animals they think are lame, sick or unsound.





- Loading procedure
  - Weigh at the certified scale nearest the source farm before loading. Note the empty weight in the appropriate field on the PIC-Trip Information App.
  - Upon arrival at the source farm, note the arrival time and odometer readings in the appropriate app spaces.
  - Before stepping down from the cab, put on a clean pair of plastic boot covers or PIC approved shoe covers over regular footwear.
  - Retrieve coveralls, PIC approved foot wear, and gloves from the clean box.
  - Put on coveralls, not allowing coveralls to touch the ground.
  - Put on clean PIC approved foot wear (rubber boots or plastic boot covers) as you step into the cargo area. Do not touch the clean area of the cargo area without clean boots and do not allow clean boots to touch the ground.
  - Put on clean work gloves prior to moving animals.
  - Using the Load Plan, if provided by PIC dispatch, or driver's best judgment, receive animals into the delivery vehicle. Count the animals as they are loaded. Confirm the count of each group with farm staff or your co-driver before proceeding. Drivers may decide to load fewer animals per pen than listed on the Load Plan, but drivers will NOT load more animals per pen than planned. Always load to comfort.
  - After loading, exit the cargo area and place used coveralls, boots/boot covers and gloves into a new garbage bag. Place the garbage bag into the "dirty" supply box or leave the bag in the cargo area for unloading. Dirty boots, gloves and coveralls ARE NEVER to be worn in the cab of the truck. Do not throw any debris onto the ground at any time.
  - Obtain and check the appropriate paperwork from the source farm: Transfer sheets and Health papers. Sign the transfer sheet after noting any quantity discrepancies in the "comments" field in the app. Report any discrepancies to dispatch. Health papers and Transfer Sheets are as important as the pigs.
  - Prior to re-entering the cab, slide the plastic boot covers off of regular footwear, turning plastic booties inside out and dispose of in a garbage bag.
  - Inside the cab, clean hands with a towelette or hand sanitizer. Place the towelette in a garbage bag.
  - Note departure time in the appropriate space in the app.
  - Weigh at the certified scale nearest the source farm. Printed scale tickets are required.
     Note the loaded weight in the appropriate space.
  - $\circ$   $\;$   $\;$  Proceed to the delivery site using the directions in the app.
- Unloading procedure
  - Call the delivery contact listed in the "Contacts" when 1 hour out from the delivery site or as instructed on the Contracted Route Plan to confirm your ETA.
  - Before exiting the cab, note the arrival time and odometer reading in the appropriate spaces in the app.





- Before stepping down from the cab, put on a clean pair of rubber boots or plastic boot covers over regular footwear.
- Retrieve coveralls, rubber boots and gloves from the clean box or cargo area.
- Put on coveralls, not allowing the coveralls to touch the ground.
- Put on clean rubber boots as you step onto the cargo area. Do not step onto the clean area of the cargo area without clean boots and do not allow clean boots to touch the ground.
- Unload animals, observing the clean-dirty line at the end of the trailer. Count the animals as they are unloaded. Confirm the count of each group with farm staff or your co-driver before proceeding.
- Animal flow must be one-way only. Once an animal leaves the cargo area it should never re-enter. During a multi-drop delivery, if an animal re-enters the cargo area, the remaining animals are compromised. This situation necessitates immediate contact of dispatch or PIC Health Assurance.
- $\circ$   $\;$  The driver should never enter the customer facilities or vehicle.
- The customer should never enter the cargo area of the delivery vehicle unless previously approved and documented with a transport waiver (or the loading ramp if a ramp is provided with the trailer).
- After unloading, exit the cargo area and place used coveralls, boots/boot covers and gloves into a new garbage bag. Place the garbage bag into the "dirty" supply box or leave the bag in the cargo area for unloading. Used boots, gloves and coveralls are never to be worn in the cab of the truck. Do not throw any debris onto the ground at any time.
- Have the customer sign the transfer sheets, noting any issues or discrepancies in the app; i.e. DOAs, differences in counts, sick or injured animals, etc. Give the customer the appropriate paperwork (the customer copy of the Transfer Sheets, health papers, Acclimatization Recommendations, Quality Feedback Form) and thank them. Retain the PIC copy of the Transfer Sheets.
- Prior to re-entering the cab, slide plastic boots off regular footwear, turning plastic boots inside out and dispose of in a garbage bag.
- Inside the cab, clean hands with a towelette or hand sanitizer. Place the towelette in a garbage bag.
- Note the departure time in the appropriate space in the app. Take pictures of the transfer sheets and scale tickets in the appropriate "Photos" options fields, if you have not already done so.
- Proceed to the PIC approved truck wash indicated in the app or as otherwise directed.
   Note the time of arrival and the odometer reading at the truck wash in the app.



Transport



- Check all PIC-Trip Information App photos of ALL delivery documents before closing the trip. All Delivery Documents Include:
  - Transfer Sheets signed by the source farm, driver and receiving farm with any count discrepancies or issues noted.
  - Printed scale tickets for empty and loaded weights.
  - Bills of lading (if present).
- If the document photos are not clear, take photos of the documents with your mobile device and email them to PIC Invoicing.
  - PIC Invoicing email: <u>PIC.NAm.Invoicing@genusplc.com</u>

#### **Biosecurity Contact List for Drivers**

Department	Contact	Email	Mobile
PIC Dispatch	Quinn Bauman	quinn.bauman@genusplc.com	615-519-4139
PIC Logistics	Ole Torgersen	ole.torgersen@genusplc.com	270-206-1119
PIC Health Assurance	Deanne Hemker	deanne.hemker@genusplc.com	618-322-9266

#### **Inclement Weather Procedures**

- Transport Quality Assurance (TQA) is a quality assurance program designed specifically for the transporters, producers, and handlers of pigs.
  - Please refer TQA Version 6 Handbook for detailed recommendations on transporting pigs in hot and cold weather and recommended stocking densities.
- It is important to make sure washing, disinfecting and drying of tractors and trailers are not compromised by cold weather.
  - $\circ$  It is not possible to effectively dry equipment outside in freezing temperatures.
  - $\circ$   $\;$  Trailers should be completely dry before spreading bedding and loading pigs.
  - Disinfectants cannot be effectively applied if frozen.
  - Disinfectant can be mixed with propylene glycol or windshield washer solution to prevent freezing. It should be mixed at the rates below:

Temperature	% Propylene Glycol	Per 50 Gallon	Per 100 Gallon	Per 5 Gallons	Per 2 Gallon Sprayer
21-31 F	2.5%	1.25 Gal. PG	2.5 Gal. PG	16 oz.	7 oz.
11-20 F	5%	2.5 Gal. PG	5.0 Gal. PG	32 oz.	13 oz.
0-10 F	10%	5.0 Gal. PG	10.0 Gal. PG	64 oz.	25 oz.

#### \*Inclusion rates (amount of propylene glycol added to normal disinfection solution)



Transport



- For Hydrofoamers or similar hose-type sprayers with 32 oz. reservoir:
  - Set sprayer to dispense Synergize at a 1:128 dilution rate
  - For 21-31° F, add the following: 16 oz. Synergize, 2 oz. PG,14 oz. water
  - For 11-20° F, add the following: 16 oz. Synergize, 4 oz. PG, 12 oz. water
  - For 0-10° F, add the following: 16 oz. Synergize, 8 oz. PG, 8 oz. water

#### **Electric Prod Use Guidelines**

- PIC prefers that electric prods not be used in the transport of its pigs, but will allow their limited use in certain circumstances.
- Use of electric prods on breeding stock is generally not allowed. In extreme situations where the driver thinks that he needs to use an electric prod, use will be as follows:
  - When loading, judicious use of the prod is at the driver's discretion.
  - When unloading, the receiving farm manager must give prior approval. The farm manager's decision is final and must be followed.
- "Judicious" means governed by or arising from sound judgment. Use of an electric prod might be considered judicious in the following situations:
  - proper use of a board, rattle paddle or other appropriate handling tools have been ineffective.
  - the pigs are at least 12 weeks of age.
  - the pigs are being moved in appropriately sized groups so the pig or pigs blocking the forward movement of the group can be reached with the prod.
  - pigs are only touched with the prod.
  - the prod is touched only to the pig or pigs blocking forward movement of the group.
  - no pig in the group is touched with the prod more than twice during the loading or unloading process.
  - no pig is touched with the prod in a sensitive area, including, but not limited to, the face, eyes, rectum, udder, belly or genitals.
  - activation of the electric stimulus is brief, pressing the button for no more than 1 second.
  - the driver using the prod is not obviously upset or angry.
  - the percentage of pigs vocalizing (squealing) is low.
- A touch with the electric prod is as good as a shock. Observers will assume a shock is applied each time the prod touches a pig. Inappropriate use of an electric prod will be reported if:
  - the driver is obviously angry or upset.
  - the driver is swearing, using obscenities.
  - the driver is yelling excessively.
  - $\circ$   $\;$  the driver strikes the pigs with the prod or jams it with force into them.
  - the driver does not use other acceptable handling tools properly before resorting to the electric prod.
  - the driver touches every pig with the prod.



Transport



- the prod is applied to sensitive areas of the pig, including, but not limited to, the face, eyes, genitals, rectum, belly or udder.
- $\circ$  there is prolonged prod contact with a pig or pigs.
- the pigs vocalize excessively.
- $\circ$   $\;$  the use of the prod is not getting the desired result, forward movement of the pigs.

#### Truck and Trailer Decontamination Guidelines

- Before entering the wash bay:
  - If using an Over-the-Road wash, the bay must be cleaned before PIC trucks enter.
  - Scrape and sweep all manure, bedding, and debris from the cargo area and dispose of appropriately.
  - Enter the wash bay from the DIRTY side of the building.
- In the wash bay:
  - Allow vehicle to thaw if necessary before washing.
  - Turn on exhaust fan.
  - Put on rubber overshoes, coveralls, and any other PPE.
  - Empty shavings bags, dirty overshoes or boot covers, coveralls, and gloves and place them in designated location (garbage or laundry). Remove and discard any trash from the tractor cab.
  - Position brooms, shovels, sort boars, paddles, etc. for washing.
  - When using winter panels, pull all panels and wash both side of the panels.
- Washing process:
  - Thoroughly rinse the interior cargo area (all decks even if all decks were not used) free of manure and shavings.
  - Using the foamer head, apply detergent, according to label directions, to all interior surfaces working from the floor up.
  - Continue using the foamer head and apply detergent to the exterior of the trailer and truck, including the clean and dirty boxes.
  - Do not let the detergent dry on any surface.
  - Working from the top and proceeding down, high pressure wash the exterior of the trailer and tractor first, then the trailer interior, including any winter panels, ramps, gates, sort boards, brooms, shovels, and dirty and clean boxes.
  - Using the foamer head, apply an approved disinfectant (see below) to all exterior surfaces first and then apply to interior surfaces of the cargo area including any winter panels, ramps, gates, sort boars, brooms, shovels, and dirty and clean boxes.





Approved disinfectant	Dilution ratio			
Synergize	1:128	1 oz/ US gal	8 ml/ liter	
Ag Forte	1:128	1 oz/ US gal	8 ml/ liter	
Intervention (US)	1:64	2 oz/ US gal	NA	minimum 10 minutes contact time
Prevail (Canada)	1:40	NA	25 ml/ liter	minimum 5 minutes contact time
Virkon S	1:100	1.3 oz/ US gal	10 grams/ liter	Use scoop that accompanies
				product to properly measure the
				disinfectant powder.

- Without entering the cab, clean the cab with a wet/dry vacuum on seats, floors, and pedals. Removable floor mats should be taken out and washed.
- Disinfect the pedals and floor of the cab.
- Before entering the cab to move the unit, removes the overshoes and coveralls worn during washing and place in designated location.
- Clean other cab surfaces (steering wheel, door handles, shifter, dashboard, etc.) using a clean cloth that is wet with disinfectant solution.
- After washing:
  - Move decontaminated equipment to the CLEAN storage area.
  - Use heat assisted drying (TADD) where possible.
  - If heat assisted drying is unavailable, part the tractor/trailer on a slope to ensure proper drainage.
  - $\circ$   $\;$  Rinse and disinfect the floor of the wash bay area.





#### **PIC Transport Guidelines Acknowledgement**

The PIC Transport Guidelines were developed to generally describe the current policies and procedures focusing on the successful delivery of PIC pigs.

No policy manual can anticipate every circumstance or question about policy, so as time passes, the need may arise to make changes to these policies. The company reserves the right to revise, supplement or rescind any policies within the manual at any time, with or without notice but we will make every effort to communicate such changes to you as timely as possible.

**ACKNOWLEDGEMENT**: I acknowledge the PIC Transport Guidelines for Commercial Carriers. I understand that it is my responsibility to review these policies and become familiar with them and their content. I also understand that it is my responsibility to seek clarification on any policy which I do not fully understand. I understand that I am to provide commercial carrier services in accord with these guidelines. I recognize that failure to do so may result in legal action by PIC North America.

Date

Print Name

Signature

Fax the signed copy to PIC Transport: 615-265-2850 or Email to ole.torgersen@genusplc.com







SOP Title	Appendix 6.1-2: Truck Wash Facility Audit
Farm	PIC Multiplication and GTC System
Date	1 Jul 2019

#### **Private & Confidential**

### TRUCK WASH ASSESSMENT

TRUCK WASH NAME	
AND ADDRESS:	
PHONE NUMBER:	
BUSINESS HOURS:	
MAJOR ROADS TO TRUCK WASH:	
DATE CONDUCTED:	
ASSESSED BY:	

### For additional details or clarity on the questions in this assessment, please reference the PIC Biosecurity Standards or contact PIC Health Assurance.

PLEASE CHECK ( < ) THE APPROPRIATE CATEGORIES REGARDING THE TRUCK WASH BEING ASSESSED.

- 1. Building Condition is:
  - Inadequate Adequate Well Maintained





#### 2. Site Condition is:

- Inadequate
- Well Maintained

#### 3. Equipment condition is:

- Inadequate
- Well Maintained

#### 4. Distance to Nearest Pigs:

Less than 1/2 mile (0.8 km) 1/2 to 1 mile (0.8 km to 1.6 km) Greater than 1 mile (1.6 km)

#### 5. Distance to Nearest Livestock

Less than ½ mile (0.8 km)
1/2 to 1 mile (0.8 km to 1.6 km)
Greater than 1 mile (1.6 km)

#### 6. Does this wash have a heated bay?

Yes
No

#### 7. Driveway surface is made of:

Blacktop Gravel Other:

#### 8. Facility type:

Pull-through Back-in/Pull-out

#### 9. Is there a controlled traffic pattern?

Yes

#### **10.** Total average number of non-PIC swine trailers washed per week at this location:

- a. How many are classified as breeding stock or intersanctum movements
- b. How many are classified as slaughter/cull movements

#### 11. Total average number of other livestock trailers washed per week:

#### 12. Do the personnel receive training on wash and decontamination procedures?

Yes No (skip to question 13)



Transport



- a. If yes, is the training documented and records stored on site?
   Yes
   No
- b. If yes, how often does the personnel training occur?
  - Daily
    Weekly
    Monthly
    Annually
- 13. How many people work at the truck wash?

#### 14. Is bedding disposal allowed at this truck wash?

Yes

No (skip to question 15)

- a. If yes, where is bedding dumped?
  - Dumpster
  - Lagoon

Other (describe):

#### Procedures

- 15. Does the truck wash utilize recycled water?
  - Yes
- 16. Is water heated to a minimum of 110F/43.3C?
  - Yes

No - list the temperature:

#### 17. Does the truck wash pre-flush trailers prior to washing?

Yes – where is the pre-flush located?

- 18. Does the truck wash utilize a high-pressure washing system?
  - Yes No – What is the PSI used?

#### 19. Does this truck wash use soap or detergents?

Yes - Products used:

#### 20. Does this truck wash use disinfectants?

Yes - Products used and concentration:







21. Are vacuums available for cleaning interior tractor cabs?

	Yes
	No

- 22. Are carpet shampooing or cleaners available?
  - Yes
- 23. Is floor mat disinfection available?

	Yes
	No

24. Is drying time allowed in wash bay?

Yes
No

25. Is the drying area heated?

Yes
No

26. Are trailers used for PIC tagged with the wash or TADD date?

Yes
No

- 27. Does this truck wash have a Thermo Assisted Drying and Decontamination system?

  Yes
  No
- 28. What temperature reached during the drying process?
- 29. How long is the maximum temperature maintained?
- 30. Is the wash bay cleaned between trailers?

Yes
No

31. Is the wash bay disinfected after each wash?



32. Do personnel change boots between each trailer wash?

Yes
No

33. Personnel changes clothing between trailers?







### **Transport**

#### 34. Are clean trailers visually inspected for cleanliness?

- Yes
  - No (skip to question 35)
    - a. If yes, who completes the inspection?
      - Third party inspector
      - Truck wash supervisor
      - Personnel who washed the trailer

#### 35. Are clean trailers stored on site?

Yes

No

- a. If yes, how are they stored?
  - Outdoor
    - Enclosed and NON-heated
  - Enclosed AND heated

#### **Services**

Availability of:

#### 1. Fresh savings:

- \_\_Yes
- No
- 2. Fuel:
  - Yes

#### 3. Restaurant:

- \_Yes \_No
- 4. Lodging:
  - Yes

#### 5. Laundry:



- 6. Showers:
  - Yes No

Please include a schematic of the facility in relation to the roads and the traffic pattern for trucks entering and exiting the wash out, (i.e. pull-through, back in/pull-out, designated clean/dirty drives, etc.) on the back of this form.





### Transport

#### PAYMENT

Approximate Cost per Wash \$: \_\_\_\_\_

#### Is the Truck Wash Approved for Use?

Yes

Comments:





SOP Title	Appendix 6.1-3: PIC Transportation Assessment	
Farm	PIC Multiplication and GTC System	
Date	1 Jul 2019	
Justification WHY?	All trailers must be empty before loading at any PIC Production Unit, unless sites are from the same production flow. Breeding stock from different sources within PIC will not be transported on the same delivery vehicle without PIC HA approval.	
Goals WHAT?	To measure transportation biosecurity risk and provide clear standards and protocols to mitigate the risk.	
Responsible WHO?	HTV, HAV, SC account manager, and production manager	
Audit EXPECTATION	Transportation Assessments will be conducted annually.	

#### Guidelines for transport risk assessment of PIC multiplication/GTC flows

- 1. Once a year, the HTV, the HAV, the SC account manager and the production manager will meet to map and review the transportation events and biosecurity.
- 2. The new risk assessment done on iAuditor will be uploaded to the Health Hub and be available for V2V communications.
- 3. Any specific corrective actions need to be summarized, addressed within two weeks and a progress report shared with PIC HA of the risk assessment to avoid mandatory V2V.
- 4. The HTV monthly herd visit report will incorporate a question to verify the fulfillment of the agreed transportation plan. If any issue is identified a new assessment needs to be completed in the next two weeks.
- 5. Any time during the year, the HAV, the SC account manager or a 3rd party auditor can validate the fulfillment of the plan and report any deviations of the process using the SCAN tool.

For the official PIC Transportation Assessment in Excel form, please email <u>pic.info@genusplc.com</u>.





# Appendix 6.1-3 Transport

Trailer		If not dedicated ask what other work does the trailer/tractor/driver do?									
Movement	Hoy many transportation events per month?	Is the trailer dedicated to this farm/flow?	Risk weight	Does the trailer back to slaughter plant or sales barn?	Risk weight	Is the trailer always washed, disinfected and 100% dried before loading?	Risk weight	vdded risk	6 3rd p audits	RISK SCORE	Briefly describe the movement: day(s) of the week, route(s), decontamination process, storage, transfer(s)
Weaned pigs (breeding stock)			m		m		m	•		200	
Weaned pigs (by-product/commercial)			m		e		m	•		200	
Feeder pigs from nursery to finisher or in-beween site.	0		m		ŝ		m	•		200	
Culled sows/boars to market			m		ŝ		m	•		200	
Replacement gilts/boars from external finisher/GDU			m		ŝ		m	0		200	
Non-select gilts/boars to market			e		ŝ		m	0		200	
Gilt/boar sales to customers			e		œ		÷	0		200	
Total	0		e					0			
Tractor											
Movement	Hoy many transportation	Is the tractor dedicated to	Risk	Does the tractor back to slaughter plant or sales	Risk	Is the tractor always vacummed, washed, dicinfected and 100% dried hafter loading?	Risk	vdded	6 3rd p	RISK	
			weight	barn?	weight	מוצועובנרבם פעם דחמ% מנובם מבומנב ומפמועל:	weight	risk	audits	SCURE	
Weaned pigs (breeding stock)			e		m		m	0		200	
Weaned pigs (by-product/commercial)			m		ŝ		m	0		200	
Feeder pigs from nursery to finisher or in-beween site.	8		m		m		m	0		200	
Culled sows/boars to market			m		ŝ		m	0		200	
Replacement gilts/boars from external finisher/GDU			en				m	•		200	
Non-select gilts/boars to market			en		ŝ		m	•		200	
Gilt/boar sales to customers			e		e		m	•		200	
Total	0							0			
Driver											
Movement	Hoy many transportation	Is the driver dedicated to this	Risk	Does the driver visit slaughter plant or sales	Risk	Does driver observe 3 nights (60 hours) downtime after going out of the system	Risk	vdded %	trained	RISK	
	events per month?	farm/flow?	weight	barn?	weight	before loading?	weight	risk	lrivers	SCORE	
Weaned pigs (breeding stock)			m		ŝ		m	•	,	200	
Weaned pigs (by-product/commercial)			m		m		m	•		200	
Feeder pigs from nursery to finisher or in-beween site.	10		m		m		m	•		200	
Culled sows/boars to market			en		ŝ		m	0		200	
Replacement gilts/boars from external finisher/GDU			e		e		m	•		200	
Non-select gilts/boars to market			en		ŝ		m	•		200	
Gilt/boar sales to customers			m		ε		m	•		200	
Total	0							0		~	iummary of corrective action items to address within 2 wks:
Overal risk											



Updated 06/30/2021

**BioShield** 

Appendix 6.2 Transport





Never Stop Improving Piescurity.

Updated 06/30/2021





SOP Title	Appendix 6.4: Trailer I	nspection Standards	
Farm	PIC Multiplication and	GTC System	
Date	1 Jul 2019		
Date:	Time:	Location:	_Trailer #

Type of Trailer: 2-deck / 3-deck / 4-deck / Stall TADD or Heated Dry Completed: Yes / No

Thoroughly check each area for cleanliness and circle appropriate answer. Clean is defined as no visible signs of manure or debris in the trailer.

Trailer Exterior	Clear	n
exterior walls (sides, nose, tail)	Yes	No
tires & rims	Yes	No
wheel well/undercarriage	Yes	No
storage boxes	Yes	No
rubber bumpers	Yes	No
winter panels	Yes	No
Trailer Interior - Rear	Clear	n
walls	Yes	No
floors	Yes	No
ceiling	Yes	No
ramp	Yes	No
gates (all sides)	Yes	No
Trailer Interior – All Decks	Clear	n
walls	Yes	No
floors	Yes	No
ceiling	Yes	No
gates (All sides)	Yes	No
decks (Top)	Yes	No
decks (Bottom)	Yes	No
Trailer Interior – Nose	Clear	n
walls	Yes	No
floors	Yes	No
ceiling	Yes	No
gates (All sides)	Yes	No
Equipment	Clear	n
sort boards	Yes	No
paddles/shakers	Yes	No
	Inspe	ected by

Never Stop Improving Biosecurity



SOP Title	Appendix 6.5-1: Example Load-Out Designs		
Farm	PIC Multiplication and GTC System		
Date	1 Jul 2019		
Justification WHY?	Improperly constructed or designed loads outs or shuts pose a risk for disease introduction. Appropriate load out design and construction must be followed mitigate risk		
Goals WHAT?	Design and construct proper loading/unloading facilities that will reduce the risk of disease introduction to any owned farm or contract multiplier		
Responsible WHO?	PIC Owned Farms & PIC Contracted Multiplication		
Audit EXPECTATION	-Materials must allow for cleaning and disinfection -Clear protocols for cleaning and disinfection -Must be covered and bird-proofed -Easily understood CDL process for staff and drivers		

#### Load Out Design & Guidelines

- Construction materials must allow for thorough cleaning and disinfection. Wood is not permitted in pig contact areas because it is difficult to disinfect effectively.
- The entire load-out must be covered and bird-proofed.
- The load-out should be designed to be washed and disinfected after each use, which means having a separate pressure washing system or pressure washing line and hose.
- In cool and cold climates heat is required to allow complete drying and thorough disinfection.
- Water cannot be allowed to drain back into the unit, this means a separate drain line to a leach field or manure storage.
- Clear protocols need to be established for cleaning and disinfection procedures. This can determine type and location of access doors.
- Once in the chute, animals should not be able to re-enter the farm, this requires installation of a non-return gate.
- Both farm employees and drivers must have a clear understanding of the "clean" and "dirty" line.
- Ramp height needs to be adjustable to accommodate different vehicle heights. The mechanism to control the height of the ramp must be simple and safe to operate with a safety mechanism to prevent the sudden drop of the ramp if the lift and support apparatus fails.
- The slope of the ramp should be no more than 20% at its highest setting. This means that to achieve a maximum height of 48" the chute must be 20' long.
- The width of the ramp should be 36".
- Ramp cleats (if present) need to be spaced eight inches apart for large animals and three inches apart for piglets.
- A level area at the top of the ramp is recommended to improve flow into and out of the trailer.
- Electrical lighting is important if any loading occurs after dark.
- Dependent upon the type of site, for example one that requires multiple shipments into and out of the site in a short time period, a separate load in and load out may be needed to avoid compromising cleaning and disinfection procedures.



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"Mortality removal is a task that requires repeated high risk activity at the clean/dirty line. Good facility design, proper removal procedures, and a secure method of disposal once outside the farm, all help protect against pathogen introduction."

-Perry Harms, North America Health Assurance Director, PIC



SOP Title	Appendix 7.2-1: Sample Mortality Removal SOP		
Farm	PIC Multiplication and GTC System		
Date	1 Jul 2019		
Justification WHY?	Mortality is an expected part of animal production. Carcasses, tissues or fluids can be a source of disease transmission. The process to remove and dispose of mortalities generates a risk of moving viruses and bacteria from the outside, into the farm, potentially causing a disease outbreak.		
Goals WHAT?	Collect, remove and transfer mortalities from the barn, to the disposal area in a timely, effective and biosecure manner.		
Responsible WHO?	Designated employee(s) with mortality handling training Protocols to be approved by the HTV or HAV		
Audit EXPECTATION	<ul> <li>-Absence of decomposed pigs in any pens or hallways</li> <li>-Absence of carcasses, tissues or fluids outside of the barn or disposal area</li> <li>-Detailed and accurate explanation of this SOP by designated employee(s) and alternate(s)</li> <li>-Current and complete mortality log sheet</li> <li>-Appropriate function of disposal equipment and 100% covered carcasses in composting bay</li> </ul>		

#### **Collection:**

- □ Remove dead animal from pen
  - ✓ Record death on animal card, pen and/or room sheet
- □ All mortalities are to be transported to a designated mortality exit area:
  - ✓ Cart/buckets for piglets or nursery pigs
  - ✓ manual cart for pigs <250 pounds</p>
  - ✓ automated or manual cart for pigs >250 pounds
- Remove all tags from dead animal with conventional "tag cutter" (slicing tools are deemed unsafe and are not to be used)
  - Retain a tag from each dead animal and record ID along with death reason either on back of tag or in notebook. Transfer this information to the appropriate place within the office.





#### **Removal:**

- Person assigned to outside (dirty) area will arrange with designated barn person (inside-clean) to coordinate removal; this movement will occur at the end of the workday
- Person operating outside (dirty) will not re-enter the site immediately following completion of the task. Overnight downtime is required before re-entry (minimum of 12 hours)
- When removal of mortalities from inside the barn to outside is to be done, following steps will apply:
  - ✓ threshold is the established and demarcated clean/dirty line (CDL)
  - ✓ Inside person will open door
  - Inside person will take one animal at a time to door threshold without stepping on threshold or outside the doorway. Depending on size of animal, this may be accomplished either by snare or with one of the appropriate mechanized units without touching the threshold of the doorway
  - ✓ If any object or equipment from the clean side (inside) touches the outside of the CDL, wash with high pressure water and disinfect. Ensure the inside personnel is not contaminated by following appropriate decontamination measures and report a SCAN observation.
  - ✓ Inside person will situate dead animal on the "clean" (inside) side and release the mortality to fall out the door to the ground or tractor bucket situated below the threshold
  - ✓ Process is repeated until all dead animals are removed to the outside
  - ✓ Inside person will shut/latch the door
  - ✓ Inside person will wash the area inside the doorway with high pressure water and disinfect
  - ✓ Mortality log sheet must be filled out
  - ✓ Mortality collection equipment is washed and disinfected weekly

#### **Disposal- Compost:**

- Having already donned appropriate attire, the outside personnel colleting mortalities from the exit will transport carcasses to the compost
- Compost piles must be maintained to prevent rodent or vermin exposure and enclosed
- Carcasses must be completely buried with an adequate amount of wood shavings/straw/carbon source
- Once buried, ensure compost is re-enclosed and no carcass pieces are exposed/out of the pile
- Verify bait stations are in place
- D Mortality equipment should be stored in a biosecure place with heat and disinfection available
- Clothing to complete mortality chores must be removed and washed





SOP Title	Appendix 7.2-2: Daily mortality disposal log
Farm	PIC Multiplication and GTC System
Date	28 Aug 2019

Date	Time	Initials	Approximate pounds of material	Observations





SOP Title	Appendix 7.2-3: Compost Removal Equipment Decontamination Protocol
Farm	PIC Multiplication and GTC System
Date	27 Aug 2019
Justification WHY?	Composting can attract wildlife and insects carrying infectious agents from other farms; therefore, equipment used for compost removal must be cleaned and disinfected after use.
Goals WHAT?	Implement scheduled cleaning/disinfection of specific equipment used for compost removal to reduce the risk of contaminating the farm with bacteria and/or viruses.
Responsible WHO?	Primary responsible person, secondary person
Audit EXPECTATION	-Detailed and accurate explanation of this SOP by designated staff -Appropriate equipment available for the execution of this SOP -Record kept of cleaning and disinfection process (equipment decontamination logbook) -Observation of proper execution of this SOP

#### **Decontamination Protocol**

At a minimum the specific equipment used for compost removal will be washed, disinfected, dried and inspected after every time it is used. Process will include:

- Removal of all organic material (carcass remains, etc.) during washing process; approved disinfectant must be sprayed when done washing. Provide the disinfectant commercial name and label dilution rate.
- Washing of floorboards of cab area of equipment or truck; approved disinfectant must be sprayed when cleaning is done. Provide the disinfectant commercial name and label dilution rate.
- Wipe down of any cab areas/enclosures and dashboard instruments that cannot be washed with disinfectant wipes. Anything that cannot be washed must be wiped down.
- The equipment needs to be completely dried before used for any other activity around the farm.
- The farm manager or the primary responsible person will inspect the equipment and record the decontamination process in the equipment decontamination logbook.

Equipment should be stored in a covered or enclosed area to prevent weather related cleaning issues. If covered storage is not available, then seek the advice of your HTV or HAV to request an alternate process approval.

When weather permits, decontamination process will be performed on-site; when weather does not permit, this process will be performed at the closest livestock transport decontamination facility (prearrangement required). (Fill out where decontamination is done if not on-site. The previous statement is an example.)



SOP Title	Appendix 7.2-4: Protocol for Mortality Equipment Decontamination
Farm	PIC Multiplication and GTC System
Date	26 Aug 2019
Justification WHY?	Mortalities that attract wildlife and insects that can carry infection agents from other farms; therefore equipment used for mortality removal/disposal and any other on-site activities, needs to be cleaned and disinfected daily.
Goals WHAT?	Implement scheduled cleaning/disinfection of site equipment used for mortality disposal, to reduce the risk of contaminating the garage, pre-entry, and/or any supplies entering farm with bacteria and/or viruses.
Responsible WHO?	Primary responsible person, secondary person
Audit EXPECTATION	-Detailed and accurate explanation of this SOP by designated staff -Appropriate equipment available for the execution of this SOP -Record kept of cleaning and disinfection process (equipment decontamination logbook) -Observation of proper execution of this SOP

#### **Decontamination Protocol**

At a minimum mortality equipment used for mortality removal/disposal will be washed and disinfected daily if also used for any other on-site activity; or weekly if used exclusively for mortality removal/disposal. Process will include:

- Thorough removal of all organic material (carcass remains, etc.) during washing process; approved disinfectant must be sprayed when done washing. Provide disinfectant commercial name and label dilution rate.
- Washing of floorboards of cab area of equipment or truck; approved disinfectant must be sprayed when cleaning is done. Provide disinfectant commercial name and label dilution rate.
- Wipe down of any cab areas/enclosures and dashboard instruments that cannot be washed with disinfectant wipes. <u>Anything that cannot be washed must be wiped down.</u>
- The equipment needs to be completely dried before used for any other activity around the farm.
- The farm manager or the primary responsible person will inspect the equipment and record the decontamination process in the equipment decontamination logbook.

Equipment should be stored in a covered or enclosed area to prevent weather related cleaning issues. If covered storage is not available, then seek the advice of your HTV or HAV to request an alternate process approval.

When weather permits, cleaning decontamination process will be performed on-site; when weather does not permit, this process will be performed at the closest livestock transport decontamination facility (pre-arrangement required). (Fill out where cleaning decontamination is done if not on-site during inclement weather. The previous statement is an example.)





SOP Title	Appendix 7.2-5: Catastrophe Management Plan
Farm	PIC Multiplication and GTC System
Date	1 Jul 2019
Justification WHY?	In the event of a foreign animal disease (FAD) the animal health authority will direct the response. However, in any other catastrophic event (toxicity, heat stress, etc.) humane euthanasia as well as carcass removal and disposal is needed at a larger volume than usual.
Goals WHAT?	Opportune, safe and humane euthanasia of affected animals; and biosecure management of mortalities in accordance with state and federal laws.
Responsible WHO?	Designated and trained employee(s) and HAV/HTV for euthanasia Farm employees to assist removal Designated and trained employee(s) for disposal
Audit EXPECTATION	-Verified training of staff and designated/alternate employees on euthanasia and disposal. -Available and updated Catastrophe Management Plan and needed equipment/supplies.

#### Catastrophe Management Plan Example: Bluegrass

#### Euthanasia

Follow Bluegrass current approved euthanasia protocol for specific age/weight. Euthanasia must be performed by trained and designated staff, HAV or HTV following health and safety regulations and animal wellbeing guidelines.

#### **Mortality trench**

Dig a trench 23ft deep, 30ft wide and 50ft long (31,500ft<sup>3</sup> after 2ft top cover), located 300ft East of the farrowing barn, between the finisher barns and South lagoon. The dimensions and location of the trench must be confirmed by Supply Chain Manager and HAV based on USDA and EPA regulations once the extent of the emergency has been determined.

Contact \_\_\_\_\_\_ contractor at \_\_\_\_\_\_ phone number to confirm job quote and arrange immediate work.

#### **Collection and removal**

#### Partial depopulation

A portion of the herd will stay alive and remain on site; therefore, clean/dirty lines and biosecurity protocols must be maintained.

- Animals able to walk need to be moved to the closest mortality extraction point for euthanasia.
- Remove dead animals from pen or crates utilizing the appropriate equipment:
  - $\circ$   $\,$  Cart for suckling and nursery pigs  $\,$
  - Porky's Pickup or manual cart for pigs <250 pounds
  - Hercules Arm or manual cart for pigs >250 pounds
- Transport mortalities to the mortality extraction point and follow normal mortality removal protocol respecting clean/dirty line integrity.





#### Total depopulation

100% of the herd will be euthanized; therefore, clean/dirty line and biosecurity protocols DO NOT need to be maintained.

- Animals able to walk need to be moved to a designated location by the closest emergency mortality extraction point for euthanasia.
- The Northwest and the Southwest doors of every barn will be designated as emergency mortality extraction points during this contingency.
- Remove dead animals from pen or crates utilizing the appropriate equipment:
  - Cart for suckling and nursery pigs
  - Porky's Pickup or manual cart for pigs <250 pounds
  - Hercules Arm or manual cart for pigs >250 pounds
- Transport mortalities to the outside of closest emergency mortality extraction point once the mortality trench and removal equipment are ready. No need to respect clean/dirty line.

#### Disposal

Trained and designated employee or contractor safely transport carcasses to fill the trench. Once 100% of mortalities have been disposed, cover with two (2) inches of quicklime and a minimum of three (3) feet of soil. <u>https://www.nrcs.usda.gov/wps/portal/nrcs/detail/ct/soils/?cid=nrcs142p2\_011166</u>



"Biosecurity needs to be a priority every minute of every day without exception. Many farms have introduced a disease while simply emptying pits/lagoons; farm specific protocols must be created to address all potential risks and everyone is responsible for adhering to these protocols" -Joe Jobin, Production General Manager - Apex & Aurora, PIC



SOP Title	Appendix 8.2-1: Manure Equipment Inspection Form
Farm	PIC Multiplication and GTC System
Date	1 Jul 2019

Date of inspection:	Date of manure pumping:	
Manure company:	Equipment type/description:	
Name of associated multiplication sites (sow, boar stud or grow-out farms):		
Person responsible for equipment and phone number:		
Person conducting the inspection:		

#### Before manure-handling equipment is moved to the production facility, it should be thoroughly flushed, pressure-washed, disinfected, dried and inspected

Inspection Questions		Answers	
Does the equipment movement follow a dynamic biosecurity pyramid flow?		No	
What was the prior use of this equipment?			
When?			
Where			
If a pig-related site, what is the health status/history of that site?			
Has the equipment interior (anywhere contacting effluent) been thoroughly flushed?		No	
Was the exterior washed?		No	
Was the exterior/interior disinfected?		No	
Is the exterior completely dry?		No	
Is there any evidence of any organic matter in the equipment? (If yes, REWASH)		No	
Was the tractor/truck cab interior cleaned?		No	
Did the manure hauling personnel change clothing since last operation?		No	
Did the manure hauling personnel take a thorough shower since last operation?Yes		No	
Did the manure hauling personnel have PIC-required downtime since last operation?		No	

Observations		
Date:	Signature:	Approved? (Yes/No)



Biosecurity.



SOP Title	Appendix 8.2-2: Sample Manure Handling SOP
Farm	PIC Multiplication and GTC System
Date	1 July 2019
Justification WHY?	Equipment and/or personnel utilized to remove manure from a farm could be contaminated with pathogens from pigs or other livestock risking the health of the herd.
Goals WHAT?	To remove manure from deep pits, slurry stores or lagoons and apply to adjacent fields in a safe and biosecure manner.
Responsible WHO?	Site manager or designated alternate HTV or HAV must approve protocol
Audit EXPECTATION	-Completed inspection forms for contracted manure management equipment and vehicles -Detailed and accurate explanation of this SOP by designated personnel -An understanding of current and previous location for personnel and equipment during pumping

#### Example SOP: Apex

#### Planning

- Apex dedicated pit pump(s) and hoses will have been washed/disinfected prior to storage following
  most recent use
- Soil testing and manure application plan will be completed prior to contractor's arrival
- Communication of expected contractor arrival will be done a minimum of one week prior to arrival
- Fuel for on-site tractor(s) and air compressor will be provided via stationary storage tank at Site 2 and/or portable tank; fuel tanks will be filled prior to contractor's arrival and levels monitored throughout the pumping process; oil will also be provided for on-site equipment

#### Equipment segregation and decontamination

- Primary pit pump, additional agitator pump (if used), pump tractor and hose reel tractor will be provided by Apex (as dedicated equipment) and will remain on-site during the pumping process
- Tarp(s) used to seal the pumpout around the pump will be provided by the Apex site(s)
- Contractors will wash and disinfect their equipment prior to arrival at Apex truck wash
- Contractors will follow PIC farm visit training, acknowledgments and downtime requirements
- Upon arrival at Apex truck wash, contractor or Apex truck wash staff will re-wash and disinfect contractor's equipment that will be on the "dirty" side of the Site perimeter fence
- Contractor equipment will observe one-night downtime at the truck wash following the rewash/disinfect
- Contractor equipment must pass inspection and noted as such on the inspection form prior to leaving the Apex truck wash; equipment that fails inspection must be re-washed/disinfected
- Apex biosecurity pyramid will dictate movement of on-site equipment from site to site; if movement of equipment is from site lower on pyramid to site higher on pyramid, hoses must be blown out with compressed air and pump(s) must be washed/disinfected prior to movement to the next site





- If equipment movement is from site higher on pyramid to a site lower on the pyramid, washing/disinfection of pump(s) is not required. Apex biosecurity pyramid as it relates to movement of on-site pumping equipment is:
  - From Site 1 to Site 2 no wash/disinfection is required
  - From Site 2 to GTC no wash/disinfection is required
  - From GTC to Site 1 wash/disinfection of pump(s) is required
  - $\circ$  From GTC to Site 2 wash/disinfection of pump(s) is required
  - From Site 1 to GTC wash/disinfection of pump(s) is required
  - From Site 2 to Site 1 wash/disinfection of pump(s) is required
- When pumping is complete, Apex hoses will be blown out with compressed air, and manure pump(s) and hoses will be washed/disinfected/inspected at Apex truck wash prior to storage

#### Removal (pumping) process

- Only one contract vehicle and two staff will be allowed on-site. The vehicle will not have been at a swine site for at least one week previously, and will be washed/disinfected at the Apex truck wash
- On-site contractor vehicle will be run through the TADD and spend one-night downtime at the Apex truck wash. The vehicle (including cab) needs an approved inspection prior to admittance on-site
- On-site contractor personnel/supervisor will communicate with Apex site manager the plan for moving to different pumpout or barn in advance, to allow ventilation adjustments inside the barn(s)
- Prior to pumping, ventilation of room to be pumped out of will be adjusted appropriately, h2s monitors hung in that room, towels placed under doorway to that room
- While pit pumping is ongoing, site manager will remind staff daily to be mindful of h2s levels in the barn
- Apex site manager will provide pit level measurements periodically and/or as requested by contractor supervisor
- Neither of the two contractor on-site personnel are allowed to assist with hoses on the "dirty" side of the compound fence until approximately 1 million gallons have been pumped from the pit(s); at that time their assistance is allowed only if necessary


Section 9:

## Health Hold

"Health Holds show the responsibility and commitment that PIC takes to protect customer health and ensure their success. While health holds are disruptive to both the multiplier and the customer, they are a necessary step in our biosecurity process to provide confidence that PIC and our multiplier partners have the customer's best interest in mind."

-Todd Wilken, North America Sales Director, PIC



SOP Title	Appendix 9.1: Biosecurity Observations that Constitute an Immediate Health Hold
Farm	PIC Multiplication and GTC System
Date	1 Oct 2019
Justification WHY?	Health holds are a process used to stop all live pig and/or semen movements, with the exception of terminal or cull pigs from a facility.
Goals WHAT?	Protect high health herds and down-steam customer flow.
Responsible WHO?	All farm staff, HTV and HAV
Audit EXPECTATION	All farm personnel are expected to report biosecurity concerns to the HTV and/or HAV. The HTV/HAV have the final decision on applying a health hold and associated duration.

Biosecurity Observations that Constitute an Immediate Health Hold (main farm or quarantine) \* Any low risk item that has been brought to a farm/owner's attention without resolution or compliance by the third notification can result in a health hold until the item has been resolved.

- 1. Lack of a formal risk assessment completed within 14 days from the discovery of un-related pig flow or new construction in the 10k ring
- 2. Compromised barn perimeter
- 3. Feral animals or other livestock in direct contact with farm animals
- 4. Improper downtime from either staff, visitor or contractor that enters the farm
- 5. Any crossing of the clean-dirty line without a decontamination step
  - a. Failure to shower in (does not include when water is not available <u>if the emergency</u> <u>entry protocol is followed</u> with HAV/HTV involvement)
  - b. Dirty shoes crossing the boot bench
  - c. Improper/failure to disinfect or decontaminate any supply or item that enters the farm
  - d. Improper bagged feed or bulk supplies entry
  - e. Truck driver entering or farm staff exiting across the CDL when transporting animals
  - f. Improper mortality removal
  - g. Improper semen entry
- 6. Suspect or contaminated water supply
- 7. Suspect contaminated semen in farm semen cooler or used for insemination
- 8. Un-authorized mixing of flows
- 9. Visitors that enter the farm without a valid PIC Passport or authorization
- 10. Excessive number (50% or greater) of un-locked doors
- 11. Robbery or break-in
- 12. Un-authorized feed ingredients
- 13. Dynamic Biosecurity pyramid not followed or acute change that the flow was put at risk
- 14. Feed spills placed back into the farm bins







- 15. Driver or non-biosecure feed contact
- 16. Un-authorized transport event
- 17. Improper rig decontamination OR a rig that fails inspection still manages to drive on the farm compound
- 18. Dirty or un-authorized market/cull rigs that enter the farm compound
- 19. Animal manages to re-enter the main barn after being on the loading trailer
- 20. Employees re-enter main barn for no valid reason after contact with quarantine or mortality disposal
- 21. Catastrophic mortality clean-up
- 22. External mortality or quarantine equipment that is brought in the main barn
- 23. Un-approved rendering
- 24. Non-disclosure or unapproved manure recirculation system
- 25. Suspected or contaminated manure equipment enters the compound
- 26. Excessive manure spill(s)

## Biosecurity Monitoring Parameters that Constitute an Immediate Health Hold

- 1. Out of date risk assessment for the following:
  - a. Location
  - b. Biosecurity
  - c. Transport
  - d. Feed Mill
  - e. Truck Wash
- 2. Quarterly location scores overdue 30 days or more
- 3. Monthly Biosecurity Checklist Assessment overdue by 14 days

Health Concerns or Diagnostic Testing that Constitutes an Immediate Health Hold Always consult your HTV or HAV for health-related concerns

- 1. 2x the normal clinical concerns for:
  - a. Mortality
  - b. Abortion rate
  - c. Off-feed rate
- 2. Catastrophic mortality
- 3. Un-expected diagnostic results from:
  - a. Semen or boar testing
  - b. Quarantine testing
  - c. Routine farm monitoring or diagnostic testing
- 4. Significant change in overall health or clinical signs that require veterinary oversight/farm visit

\*This is not a comprehensive list, biosecurity concerns or situations not listed may arise that constitute a health hold.



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