Part 1 — Farm Review

All questions covered in the General Questions Section are applicable to this section. If the farming operation does not pass the General Questions Section then the farm does not meet the minimum requirements for a Farm Review or any other part of the audit and cannot pass it.

Water Usage

1-1 What is the source of irrigation water? (Pond, Stream, Well, Municipal, Other) Please specify:_____

1-2 How are crops irrigated? (Flood, Drip, Sprinkler, Other). Please specify:_____

This section describes the sources of water used for irrigation, applications of pesticides and fertilizers, cooling and frost protection and how each source is applied. The method of application and the type of crop can have an effect on the potential for microbial contamination and the spread of individual pathogens. List all the sources and methods used in the different operations.

1-3 A water quality assessment has been performed to determine the quality of water used for irrigation purpose on the crop(s) being applied.

Document required

1-4 A water quality assessment has been performed to determine the quality of water use for chemical application or fertigation method.

Document required

Several pathogens can be transported in water including *E. coli, Salmonella* species, *Shigella* species, *Giardia, Cyclospora*, etc. Any of these can cause serious food borne

illnesses if the produce becomes contaminated. In addition, once the produce is contaminated it is difficult, if not impossible, to completely remove the pathogen.
If municipal water is used, an annual report from the locality that identifies the presence and levels of organisms should be obtained. Ground water (wells) should be tested at least once each year. If the water source is from surface water, tests should be carried out three times during the growing season – at planting, at peak use and near harvest. All water must be tested for genetic *E. coli* with a count of the number of *E. coli* units not just a presence or absence. The report from the testing laboratory is sufficient for documentation. The laboratory must use Environmental Protection Agency (EPA) accepted methods for the analyses, eg. EPA1603, Colilert, etc. for *E. coli*. Spray and fertigation water must meet the same microbial standards as irrigation water. Acceptable levels for generic E. coli present is less than 126 colony forming unit or most probable number (cfu or mpn)/100 ml of water for a sample. If the water source does not meet the acceptable criteria, corrective procedures must be employed and outlined in the Grower Food Safety Plan. The action could be changing the water source, using a sanitizer or retesting the source.

1-5 If necessary, steps are taken to protect irrigation water from potential direct and non-point source contamination.

Auditor Observation

No matter what the source---if it is well maintained, wildlife and livestock excluded and manure storages isolated from the recharge and pumping area---the risk of contamination is reduced. All sources should be protected from potential direct and indirect contamination. This could include fencing, reshaping around the well or building a berm to redirect possible contaminated water.

Sewage Treatment

1-6 The farm sewage treatment system/septic system is functioning properly and there is no evidence of leaking or runoff.

Auditors Observation

Indicate what type of sewage system the farm uses. If a septic tank is used, identify the location of the tank and drain field and whether there is a sewage treatment facility adjacent to the farm. Including a map of the system will speed up the audit process. The auditor may ask to be shown the drainage field.

1-7 There is no municipal/commercial sewage treatment facility or waste material landfill adjacent to the farm.

Auditors Observation

Adjacent means approximately ¼ mile or closer.

Animals/Wildlife/Livestock

It is not possible to exclude all wildlife from production fields, but every effort should be made to reduce or exclude the population when possible. This can include fencing, mechanical scaring, chasing, hunting, etc. Domestic animals should be excluded from production fields during the growing season unless part of the production system. This includes pet dogs and cats! Domestic animal waste from adjacent fields or storage areas must be excluded. This has been the source of several food borne illness outbreaks.

1-8 Crop production areas are not located near or adjacent to dairy, livestock or fowl production facilities unless adequate barriers exist.

Auditors Observation

Indicate whether the crops are located near dairy or poultry operations that could pose a contamination risk. If a cropping area is closer than 1 mile from an animal production area and no natural barrier exists, the auditor may say it is too close and those points will be lost.

1-9 Manure lagoons located near or adjacent to crop production areas are maintained to prevent leaking/overflowing, or measures have been taken to stop runoff from contaminating the crop production area.

Auditors Observation

Lagoons located near or adjacent to fields could leak or overflow and cause runoff into the fields. If there is a lagoon on the farm or adjacent, crops should be grown at a high elevation or a barrier must be established.

1-10 Manure stored near or adjacent to crop production areas is contained to prevent contamination of crops.

Auditors Observation

Any stored manure should be contained to prevent crop contamination. This is especially important if manure is stored during the production season.

1-11 Measures are taken to restrict access of livestock to the source or delivery system of crop irrigation water.

Auditors Observation

Measures should be taken to assure that livestock do not have access to ponds or streams used for irrigation. The animals should stay approximately 200 feet from the water source. There is no documentation needed for these questions, but the auditor will observe if efforts are being taken in this area.

1-12 Crop production areas are monitored for the presence or signs of wild or domestic animals entering the land.

Record required

Crop areas should be monitored for the presence or signs of wild or domestic animals in the field. This does not need to be done daily, but on a regular schedule determined by

the grower. This is especially important just prior to harvest. Walk through the fields at least the day prior to harvest or the morning of harvest and note signs of animals that have passed through or fed in fields *(See Animal monitoring log).* Determine if area of the field cannot be harvested because of animal activity and block off the area with flags or other means.

1-13 Measures are taken to reduce the opportunity for wild and/or domestic animals from entering crop production areas.

Record required

Not all wildlife can be eliminated from fields. The best a grower can do is reduce the entry into crop production areas. This can be accomplished by many means such as noise cannons, fencing, hunting, scare balloons, etc.

Manure and Municipal Biosolids

Please choose one of the following options as it relates to the farm operations:

_____Option A: Raw manure or a combination of raw and composted manure is used as a soil amendment.

_____Option B: Only composted manure/treated municipal biosolids are used as soil amendments.

_____Option C: No manure or municipal biosolids of any kind are used as soil amendments.

<u>Only answer the following manure questions (questions 1-14 to 1-22) that are assigned to the Option chosen above.</u> DO NOT answer the questions from the other two options. The points from the manure and municipal biosolids are worth 35 of a total 190 points, and answering questions from the other two options will cause the points to calculate incorrectly.

If no manure or municipal biosolids are applied, indicate that fact in the food safety plan. Manures can represent a significant source of human pathogens if not handled properly. In New Jersey, municipal biosolids are not recommended for use on small fruit,

vegetable crops or bearing fruit trees. This is especially important if the crop is grown close to the soil. If no manure or municipal biosolids are used, choose option C.

OPTION A
1-14 When raw manure is applied, it is incorporated at least 2 weeks prior to planting or a minimum of 120 days prior to harvest.

Record required

OPTION A
1-15 Raw manure is not used on commodities that are harvested within 120 days of planting.

Record required

If raw manure (uncomposted) is used, apply and incorporate it in the fall preferably when the soil is warm. Raw manure must be applied and incorporated at least two weeks prior to planting and at a minimum of 120 days prior to harvest. If the 120-day waiting period is not feasible, apply only properly composted manure. Application of manure or biosolids must be documented in the Grower Food Safety Plan. Record the rate, dates and location of applications. *(See Manure application log)*

OPTION A
1-16 If both raw and treated manure are used, the treated manure is properly treated, composted or exposed to reduce the expected levels of pathogens.

Record required

Properly composted manure lowers the level of pathogens. Describe how the manure is composted in detail. This includes the type of composting (passive or active), composting time, temperature of pile (if active), how many times the pile was turned and microbial testing reports for active treatment.

OPTION A
1-17 Manure is properly stored prior to use.

Auditors Observation

If storing manure prior to application, growers must use some type of containment to reduce the chance of runoff, leaching, wind spread or recontamination. Do not store raw and treated manure in the same location.

OPTION B
1-18 Only composted manure and/or treated biosolids are used as a soil amendment.

Record required

Records must show that only composted manure is used. If any raw manure is used then it is all considered raw and a grower must use Option A.

OPTION B
1-19 Composted manure and/or treated biosolids are properly treated, composted or exposed to environmental conditions that would lower the expected level of pathogens.

Document requried

OPTION B
1-20 Composted manure and/or treated biosolids are properly stored and are protected to minimize recontamination.

Auditors Observation

Properly composted manure lowers the level of pathogens. Describe how the manure is composted in detail. This includes the type of composting (passive or active), composting time, temperature of pile (if active), how many times the pile was turned and microbial testing reports for active treatment.

OPTION B
1-21 Analysis reports are available for composted manure/treated biosolids.

Record required

If composted manure or treated biosolids are purchased, documentation of analysis reports must be maintained for each shipment and made available for review. These reports must include the amount of fecal coliform and E. coli present.

OPTION C
1-22 No animal manure or municipal biosolids are used.

Policy required

State in the Food Safety Plan that no manure or biosolids are used in the farming operation.

Soils

1-23 A previous land use risk assessment has been performed.

Record required

Include a short narrative history of the farm or farms in the Grower Food Safety Plan and describe what the land was used for previously.

1-24 When previous land use history indicates a possibility of contamination, preventative measures have been taken to mitigate the known risks and soils have been tested for contaminants and the land use is commensurate with test results.

Record required

If the land history indicates a recent possible source of contaminants from dairy, feedlots, other waste or flooding, the soil should be tested for microbial contaminants. The results must be available for review and any corrective action taken to prevent product contamination must be documented.

1-25 Crop production areas that have been subjected to flooding are tested for potential microbial hazards.

Record required

Flooding should be addressed in the food safety plan. If flooding occurs along stream beds, swamps, etc. the soil would need to be tested for harmful pathogens. Flooding does not include standing water after heavy rains.

Traceability

1-25 Each production area is identified or coded to enable traceability in the event of a recall.

Record required

Develop a map showing all farm fields, greenhouses and tunnels, then identify them by number or symbol. This can be used if a recall occurs to pin point production areas.