

PrimusGFS Audit

Indoor Agriculture

(Module 3) Guidelines

Used in conjunction with the PrimusGFS v3.0 Audit

PrimusGFS (owned by Azzule Systems, LLC)
3030 Industrial Parkway
Santa Maria, CA 93455

Index

Audit Execution	3
Audit Scoring	3
Automatic Failure	4
Documentation Requirements	5
Module 3: Indoor Agriculture	7
General	7
Site	8
Pest Control	13
General Chemicals	22
Production Facility	25
Inspection	36
Training	37
Worker Hygiene	39
Agronomic Inputs	49
Irrigation/Water Use	63
Pesticide Usage	78

This document is for guidance purposes only and in no way replaces any regulatory legislation or other legal guidance documentation or viewed as giving legal advice. PrimusGFS (the Scheme), owned by Azzule Systems LLC, accepts no liability for the contents of this document, nor how an individual chooses to apply this document. This document is owned by Azzule Systems, LLC and, as such, must not be copied in whole or in part for any other use. Under no circumstances can this document be copied by or to any person without Azzule Systems' expressed permission.

These guidelines help interpret/support the principles, requirements and expectations of the PrimusGFS v3.0 Modules **1, 2, 3, 4, 5, 6 and 7** as noted in the Scheme normative documents. These guidelines are neither exhaustive nor exclusive and detail minimum requirements only by means of statements related to audit questions and expectations. There will be variations in applicability to an operation based on the process(es) and commodities involved. Auditors and auditees should interpret the questions and criteria in different situations, with the food safety and risk minimization being the key concerns.

The operation's practices, policies and procedures should be pertinent to the situation at hand and be able to stand up to any challenge by an auditor or other relevant interested party (including law enforcement). Where laws, customer requirements and specifications, commodity specific guidelines and/or best practice recommendations exist and are derived from a reputable source, these practices and parameters should be followed if they present a higher level of compliance than those included in the audit scheme.

Website links shown in this document are there to aid understanding and provide assistance by way of example (link listings are not exhaustive). These links are not a sign of endorsement by Azzule. Furthermore, Azzule Systems accepts no liability for the content of these links.

Please be aware that there is additional information on the PrimusGFS website including the audit checklist templates. The PrimusGFS website also has access to the official PrimusGFS General Regulations, which explain the overall scheme scoring systems and other details of the scheme.

The following is a modified excerpt from the PrimusGFS General Regulations v3.0. It is provided here as an introduction to the audit notes. For full and current text please refer to the most recent version of the PrimusGFS General Regulations at <http://www.primusgfs.com/documents.aspx>.

Audit Execution

The audit should be performed using the most recent version of the PrimusGFS normative documents. The PrimusGFS Standard is divided into **seven** Modules:

- Module 1 - Food Safety Management System
- **Module 2 - Farm**
- **Module 3 – Indoor Agriculture**
- **Module 4 – Harvest Crew**
- **Module 5 – GMP**
- **Module 6 – HACCP**
- **Module 7 – Preventive Controls**

Each Module is divided into sections, related to the specific Module and each section includes questions that detail the requirements for the specific section.

Scoring System

For **all Modules**, the amount of deficiencies and the associated risks have to be considered to assign the severity of the finding, which can be Minor Deficiency, Major Deficiency and Non-Compliance. When no

deficiencies are found, a Total Compliance is given. The possible points for the questions in each Module are listed in the following table:

Scoring System for Questions				
Possible answer	Possible Points for the Question			
Total compliance	15 points	10 points	5 points	3 points
Minor deficiency	10 points	7 points	3 points	2 points
Major deficiency	5 points	3 points	1 points	1 points
Non-compliance	0 points	0 points	0 points	0 points
Not applicable	0 points	0 points	0 points	0 points

Detailed compliance requirements are noted for each question throughout this document, but some general statements are described below. These statements are superseded by the specific question compliance criteria and users should be aware that some questions do not follow the general statements below (e.g., automatic failure questions).

Compliance for Questions	
Answer	Criteria Used
Total compliance	To meet the question and/or compliance criteria in full.
Minor deficiency	To have minor deficiencies against the question and/or compliance criteria. To have single or isolated non-severe deficiencies (usually up to three) against the question and/or compliance criteria. To have covered most of the question compliance criteria, but not all.
Major deficiency	To have major deficiencies against the question and/or compliance criteria. To have numerous non-severe deficiencies (usually more than three) against the question and/or compliance criteria. To have single or isolated severe deficiencies against the question and/or compliance criteria. To have covered some of the question compliance criteria, but not most of it.
Non-compliance	To have not met the question and/or compliance criteria requirements at all. Having systematic deficiencies against the question and/or compliance criteria (severe or non-severe issues).
Not applicable	The requirement described in the question is not applicable for the operation being audited. Justification should be provided in the auditor's comments. Be aware that there are some questions that do not allow a non-applicable response.

Automatic Failure

There are some questions that if down scored will lead to an automatic failure and an overall score of 0% for the corresponding Module. On being immediately informed of the automatic failure by the auditor during the audit, the auditee has the option to have the auditor continue the audit or to have the audit halt at that point (all charges will apply).

Special Circumstances For Not Certifying

Please also note, that under special circumstances and upon finding serious food safety risks, a “not certified” decision can be given. The auditee should be immediately informed of the automatic failure by the auditor during the audit. The auditee has the option to have the auditor continue the audit or to have the audit halt at that point (all charges will apply).

There are other Special Circumstance that are not technical in nature. Examples of these include detection of deliberate illegal activities, such as deliberate mislabeling, discovery of falsified records, attempting to bribe an auditor/CB personnel, threatening behavior towards an auditor/CB personnel, etc. **Please refer to the General Regulations for further details.**

Audit Termination

Once an audit has been started, should the auditee wish to stop the audit for any reason, the auditor will complete the report for as many questions as they were able to verify. PrimusGFS audits cannot be converted into a pre-assessment audit once the audit has been started. If an audit is terminated early, questions that the auditor was unable to verify will be marked as a non-compliance and will receive a score of zero. For questions unable to be verified, the auditor will indicate that the audit was terminated at the request of the auditee before the auditor could verify whether or not the audit conformed to the compliance criteria of the question. A report will be created on the database and issued, and all charges will apply.

Documentation Requirements

Organization’s Food Safety Systems:

When an Organization and its associated Operations are being audited, the auditor is checking the systems (SOP’s, policies, etc.) and the implementation of these systems **throughout the visual inspection.**

While auditees often create and implement their own systems, they can also use systems that have been created by other entities, for example, their customers’ technical manager, their consultants, etc., or a combination of resources. The Organization can create their own SOPs, or in other instances, can utilize SOP templates provided by other entities. As long as the systems meet the requirements of the PrimusGFS questions and expectations and these systems are being implemented properly, the auditee should receive full points for their efforts. The auditee is responsible for ensuring that the systems they use are reviewed, maintained and up-to-date. If the auditor detects any inconsistency, it will result in a down score.

New **PrimusGFS** Auditees/First-Time **PrimusGFS** Auditees

- In operations **that operate for more than three consecutive months throughout the year** – auditee should have at least three months of documentation (**i.e. records of monitoring, training, meetings, etc.**) available for review. If the auditee has less than three months of most of their documentation available for review, a pre-assessment audit is strongly advised. If the auditee has less than three months of most of their documentation available for review and decides to have a regular **scheduled** audit, they should be aware that they **cannot receive full conformance for paperwork questions relating to monitoring and that the down score will be based on the amount of paperwork available.**
- In short season operations **that operate for less than three consecutive months throughout the year** - auditee should have at least three months of documentation (**i.e records of monitoring, training, meetings, etc.**) available for review (this may include last season’s documentation). Where an operation does not have three months of records available (e.g., **they are in operation for one month out of the year**), the auditee should have at least the previous season’s records available for

review. If the auditee has less than three months of most of their documentation available for review and decides to have a regular **scheduled** audit, they should be aware that they **may not receive full conformance for paperwork questions relating to monitoring and that the down score will be based on the amount of paperwork available.**

Existing **PrimusGFS** Auditees

- In operations **that operate for more than three consecutive months throughout the year** – auditee should have documentation available from the date of the prior audit.
- In **short season operations that operate for less than three consecutive months throughout the year** – auditee should have at least three months of documentation and documentation at least since the last audit (which includes the last season). Where an operation does not have three months of records available (e.g. **they are in operation for one month out of the year**), the auditee should have at least the previous season’s records available for review.

	Operates <three months/year	Operates >three months/year
New PrimusGFS Auditee	Three months of records (may include last season’s records).	Three months of records (may include last season’s records).
Existing PrimusGFS Auditee	Records at least since the last audit (or longer) to meet the minimum requirement of three consecutive months of records.	Records since the last audit.

Visual versus Verbal Confirmation

Visual confirmation is the default method of auditing, whether on the visual inspection portion or the paperwork section. Scores and comments are assumed to have been visually confirmed, unless stated otherwise. Verbal confirmation should be the exception to the rule and, if auditing properly, these should be rarely used. If a verbal confirmation is accepted, the auditor should write this in the comments section of the **report for that specific question.**

How to Use Point Assignment Guidelines

The following sections of this guidance manual are designed to help auditors choose the right score for each question, thereby helping to ensure consistency. This document does not cover all situations and is intended to be a guideline, as opposed to a rule. Auditors are expected to follow the guidelines as much as possible, but it is understood that there will be situations where an auditor should use their discretion. If an auditor does have to make a judgment call and/or tackle a situation not covered by this manual, then the auditor should note the circumstances in the audit report with full justifications. (The auditor should also forward these details to **their Certification Body and Azzule Systems, LLC** in a separate note, so that this can be **reviewed** for **future** versions of the manual.)

In order to be consistent with the voluntary nature of requesting a third-party audit, and in order not to seem to be a legal document, the requirements within the questions are written as “should” and can be scored against. In other questions that use the term “ideally”, these statements cannot be scored against, but give the auditee an opportunity for improvement.

Notes in “red” are where the questions and/or conformance criteria have changed significantly since the previous version. Many of the changes are to improve clarification, but some are changes to the actual requirements. Please read carefully to see if these changes impact your particular situation.

Module 3: Indoor Agriculture

General

3.01.01: Is there a designated person responsible for the operation's food safety program?

Total compliance (10 points): There should be a designated person/persons in charge of the operation's food safety program, including food safety document control and verification of sanitation activities. They should be trained accordingly (including to all state and federal requirements).

Minor deficiency (7 points) if:

- Single/isolated instance(s) of errors and omissions in the records showing person/persons in charge of the operation's food safety program training and/or their relevant experience in food safety.

Major deficiency (3 points) if:

- Numerous instance(s) of errors and omissions in the records showing person/persons in charge of the operation's food safety program training and/or their relevant experience in food safety.

Non-compliance (0 points) if:

- Systematic failure to document person/persons in charge of the operation's food safety program training and/or their relevant experience in food safety.
- No-one is in charge of the food safety programs, including food safety document control and verification of sanitation activities.

3.01.02: If the operation is growing under organic principles, is there written documentation of current certification by an accredited organic certification organization?

Total Compliance (0 points): Organic principles are defined as: a system that relies on ecosystem management rather than external agricultural inputs (<http://www.fao.org/docrep/003/ac116e/ac116e02.htm>). Current certification by an accredited organic certification agency following a governmental organic program should cover the audited crops, be on file, and available for the auditor to review. Where an inspection has recently taken place, but new certificate is not yet available, there should be documented proof of a recent inspection for the auditor to review. N/A if not growing under organic principles.

3.01.03: Does the operation have a written food safety hygiene and health policy covering at least worker and visitor hygiene and health, infants and toddlers, animal presence in growing and storage areas, fecal matter, dropped product, blood and bodily fluids?

Total compliance (15 points): There should be a written food safety policy regarding worker and visitor personal hygiene, GAPs, and health requirements. The policy should cover the rules related to hygiene and health (e.g., hand washing, eating/drinking, smoking, specific clothing rules, foreign material issues, cuts/wounds, illness rules, etc.), no infants and toddlers allowed in the growing area, what to do in the case of evidence of animals and/or fecal matter in the growing and/or storage areas, and what to do in the case of dropped product and if the product comes into contact with blood or other bodily fluids. All workers and visitors should be issued the policy rules in the relevant languages and confirm by signing that they understand and agree to abide. Training provided and associated records should meet all local and national regulations.

Minor deficiency (10 points) if:

- Single/isolated instance(s) of errors and omissions in the records or food safety hygiene and health policy.
- Up to three points missing off the worker and visitor personal hygiene, GAPs and health requirements listing.
- Training materials are not in the relevant language(s).
- Single/isolated instance(s) of workers and visitors not being trained or not signing a document stating that they will comply with the operations' personal hygiene and health policies.

Major deficiency (5 points) if:

- Numerous instances of errors and omissions in the records or food safety hygiene and health policy.
- Over three points missing off the visitor personal hygiene, GAPs and health requirements listing.
- Numerous cases of workers and visitors not signing a document stating that they will comply with the operations' personal hygiene and healthy policy.
- Training occurring after starting work, and within the first month.
- Numerous instances of workers not being trained.

Non-compliance (0 points) if:

- No records of training or workers are not being trained.
- No specific orientation given before starting work or within the first month.
- Failure to maintain records.
- The company does not have a document for workers and visitors to sign stating that they will comply with the operations' personal hygiene and health policies.
- Systematic failure of workers and visitors to sign a log stating that they will comply with the operations' personal hygiene and health policies.

Site

3.02.01: Is there a map that accurately shows all aspects of the operation, including water sources and fixtures used to deliver water used in the operation?

Total compliance (5 points): There is a map or similar document (photograph, drawing) that accurately shows the growing area(s), location of permanent water fixtures and the flow of the water system, including any holding tanks and water captured for re-use. Permanent fixtures include wells, gates, reservoirs, returns and other above ground features. Septic systems, effluent lagoons or ponds, surface water bodies are also identified. Document should enable location of the water sources and the production blocks they serve.

Minor deficiency (3 points) if:

- Single/isolated source/fixture missing from the map.

Major deficiency (1 points)

- Numerous water sources/fixtures are missing from the map.

Non-compliance (0 points) if:

- There is no map or similar document (photograph, drawing).
- The map provided does not represent the growing operations observed during the audit.

3.02.02: Are growing areas adequately identified or coded to enable trace back and trace forward in the event of a recall?

Total compliance (15 points): Coding details (e.g. location name or reference code, blocks of the growing area(s), indoor growing area/building code or number(s)) should be in sufficient detail to enable trace back and trace forward through the distribution system. There should be maps or other documentation available demonstrating the coding details. Coding should link to the record keeping system (e.g., pesticide, fertilizer records, microbiological testing reports, etc.).

Minor deficiency (10 points) if:

- Single/isolated instance of errors and omissions in the coding details and linkage to the record keeping system.

Major deficiency (5 points)

- Numerous instances of errors and omissions in the coding details and linkage to the record keeping system.

Non-compliance (0 points) if:

- There are no maps demonstrating the coding details.
- The coding details presented do not reflect the coding system used by the operation.

3.02.03: Has a documented risk assessment been conducted at least annually for the operation?

Total compliance (10 points): A risk assessment of the growing area and surrounding areas should be performed and documented annually, and when any changes are made to the growing area or adjacent land. This should detail known or reasonable foreseeable risks/hazards, specific microbial, chemical and physical risks and their severity and likelihood of occurring in the following areas: previous use of the growing area, adjacent land use, water sources (chemical hazards e.g. heavy metals, perchlorate, etc., and microbial hazards e.g. pathogenic *E. coli*), water use, fertilizers, crop protection chemicals, worker health and hygiene, equipment and tools used for harvest, storage, transportation and any other applicable areas.

A detailed risk assessment should have been conducted and documented.

One approach:

- Identify hazards.
- Determine who may be harmed and how
- Evaluate the risks and decide on actions to control the risks
- Document findings and implement actions
- Review and update assessment as necessary

http://www.fsc.go.jp/sonota/foodsafety_riskanalysis.pdf

<http://www.p2pays.org/ref%5C05/04874.pdf>

<http://water.epa.gov/infrastructure/watersecurity/>

<https://www.epa.gov/sustainable-water-infrastructure>

Minor deficiency (7 points) if:

- Single/isolated instance(s) of errors or omissions on the risk analysis.

Major deficiency (3 points) if:

- Numerous instance(s) of errors or omissions on the risk analysis.
- Last documented risk assessment was done over 12 months ago.

Non-compliance (0 points) if:

- Multiple systematic errors on the risk analysis.
- No documented risk analysis.

3.02.03a: If any risk is identified, have corrective actions and/or preventative measures been documented and implemented?

Total compliance (10 points): For any risks identified in the assessment, the operation should detail what practice is being done to minimize identified risk/hazard, how to measure/monitor the effectiveness of the practice, how often to measure, and how it is verified and recorded. There should be documented evidence that corrective actions and/or preventative measures have been taken when any risk was identified and were adequate for the specific situation. Auditor must detail any mitigation steps for identified risks.

Minor deficiency (7 points):

- Single/isolated instance(s) of corrective action and/or preventative measure records missing details or not being adequate.

Major deficiency (3 points):

- Numerous instances of corrective action and/or preventative measure records missing details or not being adequate.

Non-compliance (0 points):

- No corrective actions and/or preventative measures were performed or are inadequate to control risk(s).
- Corrective actions and/or preventative measures were not recorded.

3.02.04: Are the external areas and vulnerable points (i.e. those that are not permanently locked) surrounded by security fencing or otherwise protected? Where there is no external storage and doors are permanently locked, score as N/A.

Total compliance (5 points): Where there is external storage and/or vulnerable (not kept locked) entry points, the operation should be surrounded by a continuous security fence or otherwise protected (guards, cameras). These measures should be based on the risk(s) associated with the operation, as detailed in the food defense plan (1.08.02). Some high-risk areas could be water sources, storage areas for chemicals, equipment, packaging, utensils or other items used in the growing area, etc. Where there is no external storage and doors are permanently locked, score as N/A.

FDA Guidance for Industry,

<http://www.fda.gov/Food/GuidanceRegulation/GuidanceDocumentsRegulatoryInformation/FoodDefense/>

Minor deficiency (3 points) if:

- Single/isolated instance(s) is observed of an area lacking necessary food defense controls, based on the risks associated with the operation.
- Single/isolated instance(s) of damaged fencing observed.
- Single/isolated instance(s) of exposed external areas of the facility lacking fencing.
- Protection is not constant or continuous.

Major deficiency (1 point) if:

- Numerous instances are observed of areas lacking necessary food defense controls, based on the risks associated with the operation.
- Fence in place, but not a proper security fence (e.g., not high enough to prevent entry).
- Numerous instances of damaged fencing observed.
- Numerous instances of exposed external areas of the facility lacking fencing.

Non-compliance (0 points) if:

- Systematic non-conformance to implement necessary food defense controls, based on the risks associated with the operation.
- There is no security fencing, or any form of protection based on the risk(s) associated with the operation.

3.02.05: Is access to the facility controlled by locks, swipe cards, alarms or other devices?

Total compliance (5 points): The operation should have security systems in place to prevent intruders, deter intruders and ideally alert workers to the presence of intruders. These include swipe cards, key locks, pass codes on punch pads, biometrics like palm readers, other technologies and a combination of different systems. Security systems should be used correctly and part of the operation's discipline. The facility should be locked when not in use (e.g., overnight if there is no nightshift).

Minor deficiency (3 points) if:

- Single/isolated instance of the security system not being used correctly.

Major deficiency (1 point) if:

- Multiple instances of the security system not being used correctly.

Non-compliance (0 points) if:

- Access to the operation is not being controlled.

3.02.06: Are workers issued non-reproducible identification (e.g., badges, company ID cards, etc.)?

Total compliance (5 points): Workers should have personal identifications that link them to the company. The ID's should have the worker's number, photo and position within the organization. Time cards with photo identification are acceptable. The ID cards, if worn on the outer garments, should be firmly attached so as not to be a food safety hazard. If stored on one's person, this is also acceptable i.e. the ID card can be provided if challenged (if stored in pockets, etc., hand sanitation would be required after showing the ID card, prior to handling product). Control of the ID card, especially with respect to workers leaving the operation should be maintained. All workers should have ID's, including management and agency labor. Agency labor might have agency ID cards (which are checked on arrival). Companies with less than 20 workers are not expected to have an ID system.

Minor deficiency (3 points) if:

- ID's have been issued to all workers, but these do not include photo's.
- Single/isolated instance(s) of workers not having ID cards.

Major deficiency (1 point) if:

- Numerous instances of workers not having ID cards.
- Lack of controls over ID cards when workers leave the operation.

Non-compliance (0 points) if:

- Workers are not supplied identification cards.

3.02.07: Is the exterior area immediately outside the facility, including roads, yards and parking areas, free of litter, weeds and standing water?

Total compliance (5 points): Litter, waste, refuse, uncut weeds or grass and standing water within the immediate vicinity of the building may constitute an attractant or breeding place for rodents, insects or other pests, as well as microorganisms that may cause contamination. Weeds and grass should be maintained in order to help avoid pest harborage. There should be no excessive standing water and/or foul smelling odors. If there is a designated smoking area outside, then there should be a disposal can for cigarette butts – butts should not be found on the ground. Car parking areas should be free from litter, butts, etc., especially if workers are using their cars at break times. When locating a suitable designated smoking area, auditees should consider the need for hand washing prior to returning to the work place.

Minor deficiency (3 points) if:

- Single/isolated instance of an area not maintained properly.

Major deficiency (1 point) if:

- Numerous instances of areas not maintained properly.

Non-compliance (0 points) if:

- The exterior area immediately outside the growing area is not maintained.

3.02.08: Are control measures being implemented for the outside storage of equipment, pallets, tires etc. (i.e. out of the mud, stacked to prevent pest harborage, away from the building perimeter)?

Total compliance (5 points): Incorrectly stored pallets and equipment can provide areas for pest harborage and/or cross contamination. Equipment should be stored at least 4" (10 cm) off the ground. Workers should check the stored equipment (e.g., irrigation pipes) periodically to ensure that it has not become a pest harborage area or dirty due to rains. Inventory checks should occur in order to ensure that these storage areas do not become full of unnecessary items.

Minor deficiency (3 points) if:

- Single/isolated instance of equipment not stored properly.
- Excessive storage of old, obsolete equipment.

Major deficiency (1 point) if:

- Numerous instances of improper storage of equipment.

Non-compliance (0 points) if:

- No provisions are made to keep equipment from harboring pests.
- Evidence of pest infestation e.g. multiple occurrences of fecal contamination, nests and live pests.

3.02.09: Is the area around the dumpster/cull truck/trash area clean?

Total compliance (3 points): The dumpster/cull truck/trash area should be located away from facility entrances, where traffic flow may be a source of cross contamination. The area around the dumpster/cull truck/trash area should be maintained in a clean condition. There should not be any spillage on the ground. There should not be any standing water or liquid seepage around the dumpster/cull truck/trash area and there should not be any foul odor present. The dumpster/cull truck/trash area should be cleaned on a regular basis.

Minor deficiency (2 points) if:

- Minor amount of debris around the dumpster(s)/cull truck/trash area.

Major deficiency (1 point) if:

- Major amount of debris around the dumpster(s)/cull truck/trash area.
- Strong odor around dumpster/cull truck/trash area.
- Visible liquid leakage from the dumpster(s)/cull truck/trash area.

Non-compliance (0 points) if:

- Evidence of old trash and spillage around the dumpster/cull truck/trash area, indicating that spills are not cleaned up as they happen.
- Evidence of insects or other pests in or around dumpster/cull truck/trash area.

3.02.10: Are outside garbage receptacles and dumpsters kept covered or closed?

Total compliance (5 points): All dumpsters and garbage receptacles should have a cover and be kept covered to prevent the attraction of insects, rodents and other pests. Fine mesh lids are acceptable. Just having the lids is not acceptable i.e. when not in use, the dumpsters and garbage receptacles should be closed. Dumpsters that are only used for dry non-food waste (e.g., paper, cardboard, etc.) are exempt from this requirement.

Minor deficiency (3 points) if:

- Dumpster(s)/garbage receptacle(s) have covers, but they are not being used.

Major deficiency (1 point) if:

- In the case of operations with multiple dumpsters/garbage receptacles, the majority have covers and are covered, but some are lacking covers.

Non-compliance (0 points) if:

- In the case of operations with multiple dumpsters/garbage receptacles, the minority have covers and are covered, but majority are lacking covers.
- All garbage dumpsters/receptacles lacking covers.

3.02.11: Where soil, substrates or fertilizer (e.g., compost) are stored or handled, are measures in place to ensure seepage and runoff is collected or diverted and does not reach growing areas, product, or any of the water sources? ANY DOWN SCORE IN THIS QUESTION RESULTS IN AN AUTOMATIC FAILURE OF THE AUDIT.

Total compliance (15 points): Soil, substrates and fertilizer (e.g., compost) are stored in a covered area to protect from pests and prevent run-off. Where run-off exists, there are barriers, soil berms, pits or lagoons to divert or collect run-off. Any observation of runoff reaching the growing area is an automatic failure.

Automatic Failure (0 points) if:

- **There are no barriers to collect run-off.**
- **Runoff was observed entering the growing area during the audit.**

3.02.12: Where there are fill stations for fuel or pesticides, is it evident that the location and/or use is not a risk of contamination to the product, water sources, growing areas, equipment, packaging materials, etc.?

Total compliance (15 points): Fill station area is not a risk of contamination to the product, water sources, production areas, equipment, packaging materials, etc.

Minor deficiency (10 points) if:

- Single/isolated instance of the fill station(s) being a risk of contamination.

Major deficiency (5 points) if:

- Numerous instances of the fill station(s) being a risk of contamination.

Non-compliance (0 points) if:

- Systematic failure to prevent contamination.

Pest Control

3.03.01: Is there a written policy prohibiting animals in the facility, including the growing areas and any packaging or equipment storage areas?

Total compliance (10 points): Domestic and wild animals, including birds, are not permitted in the facility, including packaging and storage areas. There should be a written policy in place to affirm this.

Minor deficiency (7 points) if:

- Single/isolated instance of missing action items in the policy.

Major deficiency (3 points) if:

- Numerous instances of missing action items in the policy.

Non-compliance (0 points) if:

- There is no policy prohibiting animals in the operation.
- An animal is observed in the operation.

3.03.02: Is there an effective pest control program in place? ANY DOWN SCORE IN THIS QUESTION RESULTS IN AN AUTOMATIC FAILURE OF THE AUDIT.

Total compliance (15 points): There should be an effective, proactive pest control program (in-house or contracted) to control rodents (also insects, reptiles and birds where necessary) and prevent infestation.

Potentially useful website:

National Pest Management Standards, Pest Management Standards for Food Plants

<http://nmpapestworld.org/default/assets/File/2016%20Pest%20Management%20Standards%20for%20Food%20Processing-Electronic.pdf>

Automatic Failure (0 points) if:

- **The operation does not have an effective pest control program.**

3.03.03: Is there a documented pest control program, detailing the scope of the program, target pests and frequency of checks, including a copy of the contract with the extermination company (if used), Pest Control Operator license(s)/training (if baits are used), and insurance documents?

Total compliance (15 points): There should be a documented pest control program in place detailing the scope of the program, target pests and frequency of checks. If performed in-house, the pest-control operators or equivalent should be registered, licensed or have documented formal training (if regulation

does not require certification or registration). Note that the person's training and/or license should specify structural pest control or equivalent, or have documentation to show that the license includes structural pest control training if not specified on license. Any substitute operator's license credentials should also be on file. If the service is contracted, the pest control contract service/company should be licensed in structural pest control, insured and the contract should be documented (quoting the scope of the program, types of pests it covers and frequency of visits). When licensing legislation does not apply (e.g., in certain countries), there should be evidence of on-going training. Auditors should check documentation for expiry dates.

Minor deficiency (10 points) if:

- One piece of documentation is not in place or is not current.
- Single/isolated omission(s) in the written program.

Major deficiency (5 points) if:

- Two pieces of documentation are not in place or are not current, such as evidence of the training and/or license for one pest control operator.
- Numerous omissions in the written program,

Non-compliance (0 points) if:

- More than two pieces of documentation are not in place or are not current.
- There is no documented pest control program.
- Written program does not resemble what is happening in practice at all.
- There is no evidence of the training and/or license of the pest control operator(s).

3.03.04: Is there a schematic drawing/plan of the facility, showing numbered locations of all pest monitoring devices (e.g., rodent traps, bait stations, insect light traps, etc.) both inside and outside the facility?

Total compliance (10 points): A schematic drawing or trap map is on file, current and details internal and external traps. All devices (e.g., tin cats, Ketch-Alls, bait stations, glue boards, insect light traps, electronic fly killer units, etc.) should be numbered and clearly identified on the map. The numbers should match what is in the facility. The document should be accurate, dated and should show the type of device.

Minor deficiency (7 points) if:

- The location map does not distinguish between the different types of devices.
- Single/isolated instance(s) of trap(s) being missed off the plan.
- Single/isolated instance(s) of trap(s) numbering being incorrect.

Major deficiency (3 points) if:

- Numerous instances of traps being missed off the plan.
- Numerous instances of traps numbering being incorrect.

Non-compliance (0 points) if:

- No map available for review.
- Majority of traps are not included on the map.
- Map does not represent actual physical placement of traps at all.

3.03.05: Are service reports created for pest control checks detailing inspection records, application records, and corrective actions of issues noted (in-house and/or contract)?

Total compliance (10 points): Service reports from the contract pest control company should be available for review if pest control is contracted out. In-house inspection records should be available for review if pest control is conducted in-house. Records should include services performed, date of service, chemicals used (see below), signs of activity with corrective actions, and trend reports. Match Pest Control Operator (PCO) signature on service logs with licenses/certificates on file. Records should show when electric fly killing unit bulbs are changed. Where the contracted pest control has left their client details of an issue or a recommendation (e.g., excessive gap at the bottom of a door), then the client

should acknowledge the issue(s) and note corrective action completion(s) where relevant. Specimen labels and SDS sheets for chemicals used are scored under section 3.04.

Where chemicals are used, records should detail:

- Product name of materials applied
- The EPA or product registration number (as required by law)
- Target pest
- Rate of application (percent of concentration)
- Location or site of application
- Method of application (if applicable)
- Amount of pesticide used
- Date and time of application
- Signature of applicator
- Corrective actions
- Trend reports

National Pest Management Standards, Pest Management Standards for Food Plants

<http://nmpapestworld.org/default/assets/File/2016%20Pest%20Management%20Standards%20for%20Food%20Processing-Electronic.pdf>

Minor deficiency (7 points) if:

- Single/isolated instance(s) of missing or incomplete information/records e.g. pest activity, trap replacement etc.
- Single/isolated instance(s) where contracted pest operators action points have not been acknowledged and completed.
- Single/isolated instance(s) of not noting chemical use details.

Major deficiency (3 points) if:

- Numerous instances of missing or incomplete information/records e.g. pest activity, trap replacement, etc.
- Numerous instances where contracted pest operators action points have not been acknowledged and completed.
- Numerous instances of not noting chemical use details.

Non-compliance (0 points) if:

- No service reports.
- Systematic failure to maintain service reports.
- Systematic failure to record chemical use details.

3.03.06: Are all entry points to **growing areas, storage and packaging areas protected to prevent entry of rodents or birds?**

Total compliance (10 points): All doors, walls, vents, windows and screens to the outside should be designed and properly fitted out to prevent the ingress of rodents and insects into the facility. Doors should have no gaps greater than approximately 1/8 inch (3 mm). If doors have screens, the openings should be no greater than 1/8 inch (3 mm). Gaps are often at the bottom of doors and also at the top of roller doors. Air curtains are acceptable, provided they are operating properly. Worker doors to the outside should be loaded so that they close properly. As a guide, if you can see daylight gaps, then further investigation is required. If doors, walls, vents, windows and/or screens are maintained open during production with no protection (e.g., air curtain, screen, etc.), they cannot be considered pest proof (scored in 3.05.10). Special attention should be given to the maintenance of weather strips. Air curtains and self-closing devices where used, should be operating properly.

Minor deficiency (3 points) if:

- Single/isolated instance(s) of ~~a door~~ having there being a gap greater than 1/8 inch (3 mm).

- Single/isolated instance(s) of personnel doors not closing properly and improper mesh size (where screens are used).
- Single/isolated instance(s) of an air curtain not operating properly.

Major deficiency (1 point) if:

- Numerous instances of ~~doors having~~ there being gaps greater than 1/8 inch (3 mm).
- Numerous instances of personnel doors not closing properly and improper mesh size (where screens are used).
- Numerous instances of air curtains not operating properly.

Non-compliance (0 points) if:

- Systematic observations of ~~doors having~~ there being gaps with greater than 1/8 inch (3mm).
- Systematic observations of personnel doors not closing properly and improper mesh size (where screens are used).
- Systematic observations of air curtains not working properly.

3.03.07: Are the growing and storage areas free of pest activity, including rodents/birds/reptiles/mammals, or any evidence of them?

Total compliance (15 points): All areas are free of recurring/existing internal pest activity. Specifically, there should be:

- No recurring/existing rodent activity and/or bird nesting observed around the interior perimeter or the facility.
- No evidence of animals observed inside the operation such as cats, dogs, deer, etc., including tracks and animal damage.
- No evidence of feces/pellets.
- No evidence of pests including insects, spiders/webbing, rodents, lizards, ants or birds in the operation.
- No evidence of gnawed bags/sacs or rodents on stored stock or numerous excreta on the floor/shelves of any storage area.
- No decomposed rodent(s) or other animals (frogs, lizards, etc.) in traps. The interior traps should be checked often and the dead rodent(s) or other animals removed.

Any live insect activity is an issue and should be scored accordingly. Insects should be at a minimal level on glue boards. The facility should have additional glue boards for replacement/change out.

Pests of Homes, Structures, People, Pets - UC Pest Notes,

<http://www.ipm.ucdavis.edu/PMG/menu.house.html>

National Pest Management Standards, Pest Management Standards for Food Plants

<http://nmpapestworld.org/default/assets/File/2016%20Pest%20Management%20Standards%20for%20Food%20Processing-Electronic.pdf>

Minor deficiency (10 points) if:

- Single/isolated instance(s) of pest activity noted on the interior of the operation, which does not pose an immediate threat of product contamination.
- Single/isolated instance(s) of feces/pellets noted in the interior of the operation, which does not pose an immediate threat of product contamination.
- Single "fresh" rodent found in an internal trap.

Major deficiency (5 points) if:

- Numerous instances of pest activity (including feces/pellets) noted in the interior of the operation, which does not pose an immediate threat of product contamination.
- Pest activity (including fecal matter), which has the potential for contaminating product.
- Two to three instances of "fresh" rodents found in internal traps.

Non-compliance (0 points) if:

- One sighting (including feces/pellets) which has the potential for product contamination.

- Evidence of live animals observed inside the operation.
- Decomposed rodent(s) in trap(s).
- More than three “fresh” rodents found in internal traps.
- **Any observation of contaminated product or packaging contact. (This qualifies as an automatic failure under 3.03.01 and 3.03.02).**

3.03.08: Is the area outside the facility free of evidence of pest activity?

Total compliance (10 points): All areas should be free of recurring/existing external pest activity.

Specifically, there should be:

- No recurring/existing rodent or animal (e.g. dogs, birds, etc.) activity/spoors (significant burrows, trails, feces, tracks) in active areas within operation’s property perimeter e.g. storage (packaging, bone yards), outbuildings (e.g. shade structures), etc.
- No bird nesting/activity observed around the exterior perimeter of the operation or external storage/outbuildings e.g. pallets, trailers/containers, bone yards, etc.
- No decomposed rodent(s) or other animals (frogs, lizards, etc.) in bait stations or along perimeter.

There should be no down scores attributed to finding a few (three or less) “fresh” rodents and/or evidence of rodent feeding in the external traps.

Minor deficiency (7 points) if:

- Single/isolated instance(s) of recurring/existing rodent or animal (e.g. dogs, birds, etc.) activity/spoors (burrows, trails, feces, tracks, etc.)
- Single/isolated instance(s) of bird nesting observed around the exterior perimeter of the operation or external storage/outbuildings e.g. pallets, trailers/containers, bone yards, etc.

Major deficiency (3 point) if:

- Numerous instances of recurring/existing rodent or animal (e.g. dogs, birds, etc.) activity/spoors (burrows, trails, feces, tracks, etc.).
- Numerous instances of bird nesting observed around the exterior perimeter of the operation or external storage/outbuildings e.g. pallets, trailers/containers, bone yards, etc.
- Numerous (more than three) external traps inspected showing evidence of rodent activity.
- Single instance of a decomposed rodent or other animal (frog, lizard etc.) in external traps or along perimeter.

Non-compliance (0 points) if:

- Evidence of significant (infestation level) rodent activity (burrows, trails, feces, tracks, animal spoor)
- Significant bird activity in traffic zones.
- More than one decomposed rodent or other animals (frogs, lizards, etc.) in external traps or along perimeter.
- **Any observation of contaminated product or packaging contact qualifies as an automatic failure under 3.03.01 and 3.03.02.**

3.03.09: Are pest control devices located away from exposed raw materials (e.g., seeds, transplants, soil, media), finished goods and packaging, and poisonous rodent bait traps are not used within the facility?

Total compliance (10 points): Pest control devices should be located away from exposed food products, packaging materials or equipment to prevent any physical or microbial contamination. Poisonous rodent bait traps should not be located within the facility.

Care should be taken to place pest control devices in such a manner that they do not pose a threat of contaminating product, packaging or raw materials. This includes the following restrictions:

- Poisonous bait stations and other pesticides should only be used outside the facility.
- There should be no domestic fly sprays used within the production and storage areas.
- Block bait as opposed to grain and pellet bait should be used (except for the external use of National Organic Program approved materials).

- If used, insect light traps (ILTs), electrical fly killers (EFKs) or pheromone traps should be regularly cleaned out (kept free from a build-up of insects and debris). Sticky type ILTs should be monitored at least monthly and the sticky board replaced if ineffective. ILTs that use sticking as opposed to zapping methods (EFKs) are preferred.
- If used, insect light traps or electric fly killers should not be placed above or in close proximity (10 feet, 3 meters) to product, food contact surfaces, equipment, or packaging material. Electric fly killers or insect light traps should not be located above dock doors (due to potential forklift damage) or in front of doorways (so attracting insects into the facility). Hallways or dock areas where product passes through are exempt from these distances, as long as product does not stop or is not stored in hallway or dock.
- If used, insect light trap bulbs should be replaced at least every 12 months (this should be recorded), or as more frequently if directed by manufacturers.
- No fly swatters should be evident in production or storage areas.
- No bait should be found outside of bait stations.
- **If used, snap traps** should be placed inside a trap box and should not use allergen containing baits (e.g., peanut butter). **Any snap traps inside stations should be checked at least weekly and checks recorded (scored in 3.03.10)**. Any indoor use of chemicals e.g. knock down sprays should be done without contaminating food, packaging, and equipment (see the next bullet point regarding poisonous rodent baits). All applications should be recorded properly (**scored in 3.03.10**), detailing where and when the application occurred, and any special methods used to avoid contamination. All applications should be made by experienced, licensed operators following any and all legal requirements and best practices.
- The use of poisonous rodent bait within the facility should not occur. If this use is required, then the area that is being trapped should have all the product and packaging removed prior to the use of the poisonous baits.

Minor deficiency: (7 points) if:

- Single/isolated instance(s) of improperly positioning or maintaining electrical fly traps or insect light traps.
- Single/isolated instance(s) of a fly swatter found in production or storage area.
- Single/isolated instance(s) of grain or pellet baits being used in an outside bait station (external trap).
- Single can of fly spray (or other insecticide) found in the production/storage areas (including chemical/sanitation storage).
- Single/isolated instance (up to three snap traps) of snap traps being used outside a trap box (not presenting risk to product or packaging).
- Single/isolated instance(s) of any other issues noted on the compliance criteria.

Major deficiency (3 points) if:

- Numerous instances of improperly positioning or maintaining electrical fly traps or insect light traps.
- Numerous instances fly swatters found in production or storage area.
- Numerous instances of grain or pellet bait being used in an outside bait station (external trap).
- More than one can of fly spray (or other insecticide) found in the production/storage areas (including chemical/sanitation storage).
- Single instance of bait/poison inside the facility (inside of a trap).
- Single instance of bait/poison found outside of a trap, outside the facility.
- Numerous instances of snap traps being used outside a trap box.
- Snap traps using an allergenic bait.
- Numerous instance(s) of any other issues noted on the compliance criteria.

Non-compliance (0 points) if:

- More than one instance of bait/poison inside the facility (inside of a trap).
- Single instance of bait/poison inside the facility (outside of a trap).
- More than one instance of bait/poison found outside of a trap, outside the facility.
- More than one major deficiency.

- Systematic use of snap traps outside of trap boxes.
- **Any observation of contamination of product or product contact material (this qualifies for an automatic failure and applies under 3.03.01 and/or 3.03.02.**

3.03.10: Are pest control devices maintained in a **clean and intact condition and marked as monitored (or bar code scanned) on a regular basis?**

Total compliance (5 points): All pest control devices should be maintained clean, in working condition and replaced when damaged in order to accomplish their intended use. Date of inspections should be posted on the devices as well as kept on file (unless barcode scanned).

The following criteria are met:

- If non-toxic glue boards are used, they should be located inside a trap box or PVC piping, etc., and changed frequently ensuring that the surface has a shiny glaze with no build-up of dust or debris.
- If cardboard traps are used (interior and dry areas only) they should be in good repair and marked as monitored (see below).
- If mechanical wind-up traps are used, they should be wound. Winding is checked by triggering the spring device to operate the trap. The trap should be rewound after testing.
- Approximately 10% of the traps, glue boards and bait stations should be checked by the auditor.
- Record of service verification such as stickers, cards or bar codes should be on the inside of the station and on bottom of glue boards requiring the station to be opened to record data (date and initial of inspector) or to scan. External labeling is allowed on traps with a clear window on top.
- Bait and other poisons should be controlled and applied by a licensed applicator.
- Bait in bait stations should be secured inside the bait station on a rod above the floor of the station, or the bait station is designed so bait cannot be removed by a rodent or “float away” in a heavy rain. Bait stations should be tamper resistant. A key should be made available at the time of the audit.
- No bait stations should be missing entire bait.
- No old or moldy bait observed.
- Bait stations and traps should not be fouled with weeds, dirt, and other debris.
- External pest control devices should be checked at least monthly these checks to be recorded.
- Internal pest control devices should be checked at least weekly – these checks to be recorded.
- Any snap traps inside stations should be checked at least weekly – these checks to be recorded.

Local regulations may require exceptions/differences to above guidelines. At all times, local regulations should be met but if the audit system requirements are more stringent, these should also be adhered to. Some contractors use barcode systems that automatically check to see if all traps are monitored on a scheduled visit.

Minor deficiency (3 points) if:

- Single/isolated instance(s) of traps, bait stations and glue boards not working properly or adequately maintained (check cards, cleanliness, etc.)
- Single/isolated instance(s) of unsecured bait inside bait stations.
- Single/isolated instance(s) of bait stations having moldy bait.
- Single/isolated instance(s) of any other issues noted on the compliance criteria.

Major deficiency (1 point) if:

- Numerous instances of traps, bait stations or glue boards not working properly or adequately maintained (check cards, cleanliness, etc.)
- Numerous instances of unsecured bait inside bait station.
- Numerous instances of bait stations having moldy bait.
- Numerous instance(s) of any other issues noted on the compliance criteria.

Non-compliance (0 points) if:

- Systematic failure to maintain the pest control devices.
- Systematic failure to monitor the pest control devices.

3.03.11: Are interior and exterior building perimeter pest control devices adequate in number and location?

Total compliance (5 points): The distance between traps should be determined based on the activity and the needs of the operation. As a **guide** (i.e. not expecting the use of tape measures) to number and placement of traps and bait stations:

- Multiple catch traps or glue boards in stations or PVC pipes should be positioned between 20 to 40 feet (6 to 12 meters) intervals around the inside perimeter of all rooms. Spacing might be affected by the structure, storage and types activities occurring.
- Multiple-catch traps may be supplemented with snap traps in stations if necessary in certain areas (e.g., in areas with high dust levels (e.g., potatoes, onions)) or box mezzanines where large traps or glue boards are not practical.
- Inside the facility, traps should be placed within 6 feet (about 2 meters) of both sides of all outside exit/entry doors. This includes either side of the pedestrian doors. Effort should be made to avoid placing traps on curbing.
- Bait stations or multiple-catch traps should be positioned between 50-100 feet (15-30 meters) intervals around the exterior of the building perimeter and within 6 feet (about 2 meters) of both sides of all outside exit/entry doors, except where there is public access (public access is defined as access easily gained by the general public such as parking lots or sidewalks, school areas or areas of environmental concern). Trap placement might be affected by the structure, external storage and type of area (urban, rural etc.).
- Bait stations (where used) should be positioned within 1000 feet (30 m) of structures. This may impact fence line/property boundary baiting i.e. bait stations must be within 1000 feet (30 m) of buildings and at 50-100 feet (15-30 m) intervals. If an exterior fence line/property perimeter program is utilized at distances greater than 100 feet (30 m) from buildings, then non-bait traps (e.g. multiple-catch traps) should be positioned at 50-100 feet (15-30 m) intervals along perimeter. Auditor should check label for bait and ensure compliance to distance requirements on label.
- Outside packaging and any outside food storage should be protected by an adequate number of pest control devices.

<https://www.epa.gov/rodenticides/restrictions-rodenticide-products#types>

<http://nmpapestworld.org/default/assets/File/2016%20Pest%20Management%20Standards%20for%20Food%20Processing-Electronic.pdf>

Minor deficiency (3 points) if:

- Single/isolated instance(s) of traps positioned at longer intervals than mentioned above.
- Single/isolated instance(s) of traps missing or not within 6 feet (about 2 meters) of exit/entry doors.
- No bait stations along facility property fence line (auditor discretion on necessity for fence line trapping).
- Traps not located in a single area that should be trapped e.g. break area, etc.

Major deficiency (1 point) if:

- Numerous instances of bait stations positioned at longer intervals than mentioned above.
- Numerous instances of traps missing or not within 6 feet (about 2 meters) of exit/entry doors.
- Traps not located in more than one area that should be trapped e.g. building perimeters (see text above).
- No exterior traps.

Non-compliance (0 points) if:

- Trap positioning is such that the number of traps is nowhere near adequate in terms of spacing and coverage of entry points, e.g. one or two traps to cover a large production area.
- Traps not located in numerous areas that should be trapped.

3.03.12: Are all pest control devices identified by a number or other code (e.g. barcode)?

Total compliance (5 points): The devices are numbered and a coding system is in place to identify the type of device on a map. Auditor should check that the trap map numbering and trap positions, match reality. All internal traps should be located with a wall sign (that states the trap number and that it is a trap identifier), in case they are moved.

Minor deficiency (3 points) if:

- Single/isolated instance(s) pest control devices having no visible numbers on them or on the station location.
- Single/isolated instance(s) of missing wall signs.
- Wall signs are not unique i.e. not clear that they are trap identifiers e.g. just a number.

Major deficiency (1 point) if:

- The devices are marked on the map but the devices themselves are not numbered or the numbering sequence is incorrect.
- Numerous instances of pest control devices having no visible numbers on them or the station location
- Numerous instances of missing wall signs.

Non-compliance (0 points) if:

- None of the devices are numbered.

3.03.13: Are all pest control devices effective and bait traps secured?

Total compliance (5 points): All traps should be correctly orientated with openings parallel with and closest to wall. Bait stations should be secured to minimize movement of the device and be tamper resistant, and only block bait (no pellets) should be used. Bait stations should be secured with a ground rod, chain, cable or wire, or glued to the wall/ground, or secured with a patio stone (wall signs are required if using patio stones) to prevent the bait from being removed by shaking, washed away, etc. Bait stations should be tamper resistant through the use of screws, latches, locks, or by other effective means. Note – only traps containing bait are required to be secured. Live traps used indoors are not required to be secured to the ground; auditee may use metal “sleeves” or similar solutions to prevent displacement, crushing by forklifts, etc. Glue boards should be inside a device (e.g. trap box, PVC pipe, etc.) rather than loose on the floor. Auditor discretion applies to traps placed on curbing.

Minor deficiency (3 points) if:

- Single/isolated instance(s) of bait stations not being secured.
- Single/isolated instance(s) of devices “out of position”
- Lacking wall signs for external traps that are secured to a patio block.

Major deficiency (1 point) if:

- Numerous instances of bait stations not being secured.
- Numerous instances of devices “out of position”

Non-compliance (0 points) if:

- Systematic failure to secure bait stations.
- Systematic failure to properly position interior traps.

General Chemicals

3.04.01: Are there chemical inventory logs for chemicals, including pesticides, fertilizers and cleaning and sanitizing chemicals?

Total compliance (3 points): Chemical inventories should be on file. Chemicals within the scope of this question include pesticides, fertilizers, cleaners and sanitizers i.e. sanitation chemicals and food contact chemicals. Primary information in the product inventory includes: the product or chemical names, container volumes, number on hand, and location of containers. Inventory by storage area/type of chemical is optimal. The inventory should take into account the arrival of new stocks and any

discrepancies should be explained. Minimum frequency for inventory checks should be monthly and a copy should be maintained separate from the chemical storage location(s).

Minor deficiency (2 points) if:

- Single/isolated instance(s) of missing chemical usage logs and/or inventories.
- Single/isolated instance(s) of omission(s) or error(s) in the chemical usage logs and/or inventories.
- Single/isolated instance(s) of new deliveries not being accounted for.
- Single/isolated instance(s) of minimum inventory frequency not being maintained (if usage logs are not being utilized).

Major deficiency (1 point) if:

- Numerous instances of missing chemical usage logs/inventories.
- Numerous instances of omissions or errors in the chemical usage logs and/or inventories.
- Numerous instances of new deliveries not being accounted for.
- Numerous instances of minimum inventory frequency not being maintained (if usage logs are not being utilized).

Non-compliance (0 points) if:

- No chemical usage logs/inventories are on file.

3.04.02: Are copies of all Safety Data Sheets (detergents, sanitizers, pesticides, etc.) on file and fully accessible at all times with clear indexes?

Total compliance (5 points): Safety Data Sheets (SDS) should be available for all chemicals (e.g., pest control, cleaning, maintenance and sanitizing chemicals, etc.) used in the facility. When purchasing or selecting cleaning and maintenance materials that come into direct contact with product (including materials used on food contact surfaces), facility purchases or selects materials that are appropriate for their intended use. Choose a sample of at least three chemicals while on the facility tour to check against SDS file. SDS are accessible at all times and are stored in the appropriate departments. The filing system is organized, for quick access to information. Computer records e.g. SDS stored on memory stick, CD or computer are allowed if auditee can demonstrate they are readily accessible to workers. Only SDS for products which are used at the plant should be included in the "active" file. Ideally have copies of regulatory approvals (where available) on file for cleaners and chemicals that are used on items that come in direct contact with product.

CDMS Label / SDS Information, <http://www.cdms.net/manuf/manuf.asp>
SDS Databases, <http://info.nsf.org/USDA/Listings.asp?Company=N04391>

Minor deficiency (3 points) if:

- SDS are available but filing system is not organized e.g. tabulating, indexing etc., in manner that allows for easy navigation.
- Single/isolated instance(s) of missing SDS's for a chemical that is currently being used.
- Limited access to SDS's for workers using the chemicals.

Major deficiency (1 point) if:

- Numerous instances of missing SDS's for chemicals that are currently being used.

Non-compliance (0 points) if:

- No SDS are on file.
- The use of a chemical that is not regulatory approved for use on food contact surfaces.

3.04.03: Are all cleaning and maintenance chemicals (pesticides, sanitizers, detergents, lubricants, etc.) stored securely, safely and are they labeled correctly?

Total compliance (15 points): Chemicals are stored in a designated (with a sign), dedicated, secure (locked) area, away from food and packaging materials and separated from the growing areas. Access to

chemicals needs to be controlled, so that only workers who understand the risks involved and have been trained properly are allowed to access these chemicals.

All chemical containers should have legible labels of contents; this includes chemicals that have been decanted from master containers into smaller containers. Where chemicals are stored, adequate liquid containment (spill controls) techniques need to be employed (secondary containment, absorbent materials, angled sealed floors, spill kits etc.). Chemical storage should be designed to help contain spills and leaking containers. Empty containers should be stored and disposed of safely. Liquid should not be stored above powders.

Minor deficiency (10 points) if:

- Single/isolated instance(s) of chemicals not properly stored.
- Single/isolated instance(s) of improperly labeled or unlabeled chemical containers.
- Single/isolated instance(s) of empty containers either not being stored properly or disposed of properly
- The chemical storage area is not marked to indicate its use.
- Single isolated instance(s) of chemicals being used without proper attention to chemical spillage.

Major deficiency (5 points) if:

- Numerous instances of improperly stored chemicals.
- Numerous instances of improperly labeled or unlabeled chemical containers.
- Chemical storage is segregated in a designated area, but not locked.
- Chemical storage area(s) has inadequate liquid containment systems.
- Spilled chemicals found in the chemical storage areas (not cleaned up properly)
- Numerous instances of empty containers either not being properly stored or disposed of properly.
- Numerous chemicals being used without proper attention to chemical spillage.

Non-compliance (0 points) if:

- There is no designated area for chemicals.
- There is a designated area for chemicals but it is not an enclosed or locked area.
- Visible chemical spills in the facility and surrounding grounds that have not been cleaned up.

3.04.04: Are "food grade" and "non-food grade" chemicals used appropriately, according to the label and stored in a controlled manner?

Total compliance (10 points): Food grade chemicals, including lubricants, greases, etc., are used in all product/packaging contact areas. All chemicals applied should be approved by the prevailing authority (e.g., US: EPA/FDA, Canada: CFIA/Environment Canada, Chile: SAG/Ministerio de Salud, Mexico: COFEPRIS) for their designated use and used according to label instructions. Only food grade lubricants should be used anywhere near product and packaging materials. Food grade chemicals should be stored apart from non-food grade items to eliminate confusion between types, and adequately labeled. Non-food grade chemicals also include cleaning chemicals and paint, for example use of domestic polishes which are not intended for food contact surfaces and have strong fragrances should not be used on food contact surfaces; office cleaning materials, restroom cleaning material should be stored separately from production cleaning materials. Grease guns and containers should indicate which are for food grade greases and which are for non-food grade use. Non-food grade material use, where required should not be used in food contact areas and be entrusted to workers who know how to use the chemicals to avoid contamination issues. Non-food grade materials should not be found in the growing/storage areas (unless stored securely, with access to entrusted workers only). Chemicals should be used according to label instructions e.g. following correct dilutions, H1 designation on lubricants, etc. Any chlorine bleach that is used for making a sanitizing solution, must be of sufficient purity to be categorized as a "food grade" substance. Some commercially available household chlorine bleaches contain fragrances, thickeners and/or other additives not approved for food use. These products are not suitable for making sanitizing solutions. If any chemicals are used to alter or buffer the pH of a sanitizing solution these should also be "food grade."

NSF International: Nonfood Compounds

<http://info.nsf.org/USDA/PSNCListings.asp>
http://www.ceecis.org/iodine/07_legislation/00_mainpage/codex_food_grade_salt.pdf
<http://pods.dasnr.okstate.edu/docushare/dsweb/Get/Document-963/FAPC-116web.pdf>

Minor deficiency (7 points) if:

- Single/isolated instance(s) of commingling of non-food grade with food grade chemicals.
- Single/isolated instance(s) of grease guns not being coded for food grade/non-food grade materials.
- Single/isolated instance(s) of non-food grade materials found/used in the production/storage areas.
- Single/isolated instance(s) of a chemical being used contrary to label.

Major deficiency (3 point) if:

- Numerous instances of commingling of non-food grade with food grade chemicals.
- Numerous instances of grease guns not coded for food grade/non-food grade materials.
- Numerous instances of non-food grade materials found/used in the production/storage areas.
- Numerous instances of a chemical(s) being used contrary to label.

Non-compliance (0 points) if:

- No attempt to split non-food grade from food grade materials.
- Systematic use of non-food grade materials found/used in the production/storage areas.
- Systematic used of a chemical(s) used contrary to label.
- **Evidence of the use of a non-food grade that has caused product contamination – revert to 3.05.11, automatic failure.**

3.04.05: Does the operation use the appropriate test strips, test kits or test probes for verifying the concentrations of anti-microbial chemicals (e.g., dip stations, etc.) being used, are they in operational condition and are they being used correctly?

Total compliance (15 points): The strength of anti-microbial chemicals (product and cleaning) should be checked using an appropriate method for the anti-microbial in use (e.g., chemical reaction-based test, test probe, ORP meter or as recommended by disinfectant supplier). Any water treatment at source (e.g., well, canal) should be monitored. Solutions that are too weak will be ineffective, while those too strong may be harmful to workers or product. Where necessary, pH of solutions should also be checked. Methods include dip sticks, test strip papers, conductivity meters, titration, color comparison methods e.g. tintometers, etc. All test solutions/strips should be within date code, appropriate for the concentrations used and stored correctly (especially light and temperature sensitive materials). If the ORP meter controls the pumps that are injecting the anti-microbial and/or buffer, there should be an independent calibrated ORP probe or other method (e.g., test trip papers, titration) in order to verify injector readings. Probe sensors need periodic cleaning and calibration and may become temporarily saturated by over-injection of anti-microbial or buffer. The auditor should have the auditee check the strength of anti-microbial chemicals while touring the facility.

Potentially useful websites:

<http://postharvest.ucdavis.edu/files/260798.pdf>
<http://anrcatalog.ucanr.edu/pdf/8149.pdf>
<http://ucfoodsafety.ucdavis.edu/files/26414.pdf>
<http://postharvest.tfrec.wsu.edu/pages/J411B>

Minor deficiency (10 points) if:

- Single/isolated instance(s) of a method not being used correctly.
- Single/isolated instance(s) of a testing procedure being used that is not appropriate for the concentration and/or sanitizer in use.
- Single/isolated instance(s) of out of date verifying chemicals being used.

Major deficiency (5 points) if:

- Numerous instances of a method not being used correctly.

- Numerous instances of a testing procedure being used that is not appropriate for the concentration and/or chemical in use.
- Numerous instances of out of date verifying chemicals being used.
- ORP meter used to control pumps injecting anti-microbial and or/buffer without an independent probe or other method to verify readings.

Non-compliance (0 points) if:

- Chemical concentrations are not monitored.
- Equipment to monitor anti-microbial chemical concentrations is not available or is not being used correctly.

Production Facility

3.05.01: Is there a written cleaning schedule (Master Sanitation Schedule) that shows what and where is to be cleaned and how often?

Total compliance (10 points): The company should have a master sanitation program that covers the entire area of the facility including equipment (food contact and non-food contact), pallet jacks, fork lifts, carts, floor scrubbers, cooling equipment (evaporators, cooling coils, drip pans, etc.), lift trucks and company owned trailers, etc. The schedule should state what is to be cleaned and when (how often). Areas should include where applicable, maintenance areas, waste areas, restrooms, storage areas, and break areas. Within these listings there should be details like floors, walls, light covers, pipes, ceilings, evaporators, cooling coils, drip pans, drains, drain lines and reservoirs, named equipment and equipment parts and surfaces; including internal transport vehicles (forklifts, Bobcats, floor cleaners, pallet jacks, etc.). In-house delivery and shuttle trucks should be included in sanitation schedules, have SSOPs and cleaning records.

Infrequent schedules i.e. weekly and above, are usually created for several reasons e.g. cleaning areas and equipment that are not cleaned daily, using a different cleaning technique/chemical than what is used on a daily schedule and/or doing a more "in depth" clean on equipment. Note that all cleaning mentioned on the schedule should be covered somewhere in the cleaning procedures and also on the sanitation logs. Schedule should be kept on file in an easily retrievable manner.

Master sanitation schedule should include what is to be cleaned and when, i.e.:

- List of areas, equipment, internal transport vehicles, in-house delivery trucks, etc.
- Frequency of cleaning (daily, weekly, monthly, quarterly, annually, etc.)

Minor deficiency (7 points) if:

- Single/isolated instance(s) of errors or omissions in the schedules i.e. missed areas/equipment (including internal transport vehicles, in-house delivery trucks) and/or no frequencies being set.

Major deficiency (3 points) if:

- Numerous instances of errors or omissions i.e. missed areas/equipment (including internal transport vehicles, in-house delivery trucks) and/or no frequencies being set.

Non-compliance (0 points) if:

- No schedules.
- Schedules exist but they are not reflecting what actually occurs.

3.05.02: Are there written cleaning and sanitation procedures (Sanitation Standard Operating Procedures) for the facility and all equipment?

Total compliance (10 points): There should be written cleaning and sanitation procedures for all equipment (food contact, non-food contact, cooling equipment, etc.), areas (floors, walls, overheads, etc.), internal transport vehicles and in-house owned trailers that should be cleaned and sanitized on a regularly scheduled basis, based on written Sanitation Standard Operating Procedures (SSOPs). There should be SSOPs covering the cleaning and sanitizing operations noted in the master sanitation schedule. SSOPs should also be created for dry cleaning operations (where applicable). This includes equipment (named equipment and equipment parts and surfaces), floors, walls, light covers, pipes,

ceilings, evaporators, cooling coils, drip pans, drains, drain lines and reservoirs, internal transport equipment (e.g. forklifts, pallet jacks, trolleys, floor cleaners, etc.). In-house delivery and shuttle trucks should be included in sanitation schedules, have SSOPs and cleaning records. A surface cannot be properly sanitized unless it is effectively cleaned. Use of a sanitizer is required unless there are justified exceptions that are fully documented. Procedures should respect the label (e.g. rinse/no-rinse, sanitizers, dwell time, etc.) and match operations noted on the master sanitation schedule (3.05.01). These procedures should include:

- Responsibility for cleaning with cleaning methods
- Item/area to be cleaned
- Frequency of cleaning
- Safety precautions (tag outs, personnel safety with respect to chemicals, etc.)
- Chemical (name, dilution and water temperature requirements) and utensils used).
- Specific preparation procedures regarding dilution (unless purchased as ready-to-use) for the specific chemicals or sanitizers being used and verification testing instructions and records (where appropriate)
- Detailed cleaning and sanitation methods, including solution temperature, water pressure, dwell times, any disassembly/reassembly instructions and cleaning verification procedures
- Following the standard order:
 1. Dry clean (note equipment used)
 2. Rinse (note equipment used)
 3. Clean (note equipment used)
 4. Rinse (note equipment used)
 5. Sanitize (note equipment used and dwell time)
 6. Rinse (if label requires)
- Special instructions with respect to cleaning
- Responsible person
- Logs/records of cleaning and responsibility for verification
- Verification procedures (visual, ATP, microbial) and acceptance criteria

http://www.extension.org/pages/27405/industry-guidelines-to-prevent-contamination-from-listeria-monocytogenes#General_plant_sanitation

Minor deficiency (7 points) if:

- Single/isolated instance(s) of errors and omissions within the SSOPs.
- Single/isolated instance(s) of omitted procedure(s) for a piece of equipment, internal transport vehicle or facility area.

Major deficiency (3 points) if:

- Numerous instances of errors and omissions within the SSOPs.
- Numerous instances of omitted procedures for a piece of equipment, internal transport vehicle or facility area.

Non-compliance (0 points) if:

- No written procedures have been developed.
- Procedures exist but they are not reflecting what actually occurs.

3.05.03: Are cleaning and sanitation logs on file that show what was done, when and by who?

Total compliance (10 points): The company has sanitation logs that cover all areas of the facility (e.g., production areas, storage areas, break areas, restrooms, maintenance, etc.), detailing walls, floors, overhead and all equipment (e.g., production equipment (food contact and non-food contact), pallet jacks, forklifts, carts, floor scrubbers, cooling equipment, lift trucks, company owned trailers, etc.). Logs are kept on file in an easily retrievable manner. The logs should be cross-checked against the master sanitation program (3.05.01). Logs of infrequent cleaning should be checked. Logs should include:

- Date
- List of areas/equipment that were cleaned and sanitized

- The individual accountable who signed-off for each task completed
- Verification of task completed
- Any deviations against the set SSOPs

Minor deficiency (7 points) if:

- Single/isolated instance(s) of incomplete records, discrepancies against the master sanitation schedule or other omissions.

Major deficiency (3 points) if:

- Numerous instances of incomplete records, discrepancies against the master sanitation schedule or other omissions.
- Missing infrequent cleaning logs.

Non-compliance (0 points) if:

- No sanitation logs.
- Sanitation logs exist but they are not reflecting what actually occurs.

3.05.04: Are there records showing filters in air conditioning, ventilation and air filtration units are regularly cleaned and replaced?

Total compliance (5 points). Records should be made available to verify that filters in air conditioning, ventilation and air filtration units are regularly cleaned and replaced. Records might include in-house sanitation records, maintenance records and/or contractor records/invoices.

Minor compliance (3 points) if:

- Single/isolated instance(s) of incomplete records or omissions.

Major compliance (1 point) if:

- Numerous instances of incomplete records or omissions.

Non-compliance (0 points) if:

- No records.
- Systematic failure to take records.

3.05.05: Are there records showing cooling units are maintenance serviced and cleaned at least every 12 months or more frequently as required?

Total compliance (10 points): Records should be available to verify that the cooling units are serviced and cleaned on a scheduled basis. Records might include in-house sanitation records, maintenance records and/or contractor records/invoices. Note contracts, invoices etc., must clearly state the services provided as per any other record. A cleaning and servicing at least once in the last 12 months is a minimum requirement, but usually frequency is higher, especially in high humidity and also with chiller units that are known to become dirty at a faster rate than others, e.g. next to open doors.

Minor Deficiency (7 points) if:

- Single/isolated instance(s) of omissions or incorrect data in the records.

Major Deficiency (3 points)

- Numerous instances of omissions or incorrect data in the records.

Non-compliance (0 points)

- No records.
- Failure to maintain records.

3.05.06: If fans or other blowing equipment are used, are they operated in a manner that minimizes the potential for contaminating product, equipment, or packaging materials?

Total compliance (5 points): All fan guards (cooling units and general ventilation) in the facility are clean. There is no build-up of dust or other materials on the fan guards.

Minor deficiency (3 points) if

- Single/isolated instance(s) of fan guards that are unclean and/or evidence of issues with the ceilings and pipe fittings in front of the chiller unit. Fan is not located above uncovered product or packaging.

Major deficiency (1 point) if:

- Numerous instances of fan guards that are unclean and/or evidence of issues with the ceilings and pipe fittings in front of the chiller units. Fans are not located above uncovered product or packaging.
- A single instance where cooling unit debris is noted above finished product and/or packaging, but there is no contamination of food materials or food contact packaging.

Non-compliance (0 points) if:

- Consistent failure to maintain clean fan guards and ceilings/pipe work in front of the fan guards.

3.05.07: Is there a documented glass and brittle plastic management procedure (including company glass and brittle plastic policy, glass breakage procedure and where necessary a glass register)?

Total compliance (10 points). There should be a written glass and brittle plastic policy and procedure, which should state:

- Where glass is prohibited and where glass is allowed.
- Policy should state how workers should report missing or broken spectacles or contact lenses and to whom they report the issue.
- If certain glass items are allowed, then a glass register should exist describing each item, location and quantity. The glass register should only list items that could not be replaced with a less dangerous material. The glass register should not be abused by allowing glass items on site that are usually viewed as poor GMP e.g. allowing glass drinking bottles into production areas, unprotected glass light bulbs. Glass register items should be checked on a routine basis (at least monthly) to ensure they are not damaged/cracked etc. Checks should be documented.
- Glass breakage procedure including requiring recording what happened, recording what happens to potentially affected product, recording future preventative actions and especially where to record the incident details e.g. in the NUOCA log.
- Clean-up procedure after glass breakage should indicate what equipment to use and include boot and tool checks/decontamination procedures to ensure broken glass is not unintentionally transported out of the area.
- A no glass policy in production, storage or maintenance areas should be the target.

Minor deficiency (7 points) if:

- Policy lacks an element listed above.
- Single/isolated instance(s) where glass breakage details have not been recorded properly.
- Single/isolated instance(s) of glass register items not being checked on a routine basis.

Major deficiency (3 points) if:

- Policy lacks more than one element noted above.
- Numerous instances where glass breakage details are not being recorded properly
- Numerous instances of glass register items not being checked on a routine basis.

Non-compliance (0 points) if:

- No policy exists
- There has been a glass breakage, but no records exist.
- Systematic failures to check glass register items on a routine basis.

3.05.08: Has the operation eliminated or adequately controlled any potential metal, glass or hard plastic contamination issues?

Total compliance (10 points): No metal, glass or plastic issues noted (excluding issues noted under specific questions already noted within this audit). This question is designed to allow the auditor to underline potential foreign material contaminants to the auditee that are not covered by other more specific questions within the audit. Examples include: pins in sign boards within the facility, using “snappable” blades instead of one-piece blades, noting broken and brittle plastic issues on re-useable totes and finding uncontrolled glass items like coffee pots, computer screens, clock faces, eye glasses, office window glass, hard plastic from any source, staples, etc. in production areas. Plastic coated shatterproof light bulbs are also acceptable without further protection. Auditors should take precaution not to bring glass items into the facility during inspections. If a glass item cannot be replaced immediately or glass is necessary, e.g. a high-pressure gauge, then use of a glass register might be considered, see question in 3.05.08.

Minor deficiency (7 points) if:

- Single/isolated instance(s) of potential foreign material contaminants observed.
- Single/isolated instance(s) of glass item noted in the production/storage areas, but is not accounted for on the glass register.

Major deficiency (3 points) if:

- Numerous instances of potential foreign material contaminants observed.
- Numerous glass items noted in the production/storage areas, but are not accounted for on the glass register.
- Single instance of a broken glass item found within the facility.

Non-compliance (0 points) if:

- Systematic failure to control potential foreign objects on site.
- More than one instance of a broken glass item found within the facility.
- **Any incident of direct product contamination with a foreign material like glass, metal or plastic constitutes a health hazard and is viewed as adulteration. Revert to Q 3.05.11.**

3.05.09: Are all lights in the facility that could potentially contaminate raw materials (e.g. seeds, transplants, soil, media), product, equipment or packaging shielded, coated or otherwise shatter resistant to protect product from contamination in the event of a breakage?

Total compliance (15 points): All glass lights in the facility that can potentially contaminate finished products, raw materials, equipment, or packaging should be shielded, coated or manufactured of shatter-resistant materials to protect from product contamination in the event of a breakage. This includes, but is not limited to items such as light bulbs, emergency lights, truck loading lights (dock lamps), insect light trap lights, forklift lights, lights in bathrooms or maintenance shops that open into the production area, etc. End piece fittings on tube lights should be secure. Precautions should be taken to prevent glass contamination in the event of glass breakage. Windows and computer monitors in production areas should be covered with a plastic film to prevent shatter. Inside light covers should be clean, free of algae, insects and excessive dirt.

Minor deficiency (10 points) if:

- Single/isolated instance(s) of unprotected glass in an area that could potentially contaminate finished product, raw materials, processing/packaging equipment, or packaging materials.
- Observed missing end piece tube light fittings.

Major deficiency (5 points) if:

- Numerous instances of unprotected glass in an area that could potentially contaminate finished product, raw materials, processing/packaging equipment, or packaging materials.
- Single instance of a broken light found within the facility.

Non-compliance (0 points) if:

- Majority of lights are not protected.
- More than one instance of broken lights found within the facility.

3.05.10: Is the facility fully enclosed?

Total compliance (15 points): Production areas should be enclosed (walls and roof) with doors either closed or pest protected in some (e.g., strip curtains, air curtains, speed doors, etc.). Walls can be solid, fine mesh or any other pest proof material, with openings that should be no greater than 1/8 inch (3 mm) or smaller. Dust and pest proof wall materials are required for processing operations. Growing areas should also be physically separated from storage areas. In some cases, a physical barrier between growing and storage areas might be required – this will depend on the type of product being produced and the items being stored.

Minor deficiency (10 points) if:

- Growing areas are not sufficiently separated from storage areas. There is not a threat of product or packaging contamination.
- Single incident of an open door being left open that is not meshed or fitted with air curtain.

Major deficiency (5 points) if:

- Growing areas are not sufficiently separated from storage areas. There may be a threat to product or packaging.
- Numerous incidents of open doors that are being left open and not meshed or fitted with air curtain.
- One or more open walls (with no proofing), but with a proper roof and floor.

Non-compliance (0 points): if one of the following:

- Growing area is outside or in an open sided building.
- Growing areas are sufficiently not separated from storage areas. There may be a threat to product or packaging from a serious food safety threatening contaminant.
- No roofing (either with or without open walls).

3.05.11: Are raw materials (e.g. seeds, transplants, soil, media), finished goods and food contact packaging within accepted tolerances for spoilage and free from adulteration? ANY DOWN SCORE IN THIS QUESTION RESULTS IN AN AUTOMATIC FAILURE OF THE AUDIT.

Total compliance (15 points): Raw materials (e.g. seeds, transplants, soil, media), finished goods, food contact packaging and food contact surfaces should be free from spoilage, adulteration and/or gross contamination (21 CFR 110.3g). If legislation exists, then the contamination should be viewed against this legislation (e.g., USDA Grading Standards often include decay tolerances). Spoilage and adulteration would include any physical, chemical or biological contamination including blood and bodily fluids. Measures should be taken to prevent any known or reasonably foreseeable hazard (e.g., *Clostridium botulinum* in mushrooms). This question is designed to allow an auditor to halt an audit when finding gross contamination issues (note pests are covered by 3.03.06). Examples might include glass, trash/litter, motor oil in products, etc. Where an issue is observed by an operator in the normal process, auditor should observe the actions of the operator before scoring. Auditors should use their discretion and decide whether the frequency of the contamination warrants an automatic failure.

Examples include pieces of glass, one piece of rodent bait, paint on product or packaging, flakes of rust, etc. Is the issue systematic or a one-off issue?

CPG Sec. 555.425 Foods, Adulteration Involving hard or Sharp Foreign Objects,

<https://www.fda.gov/ucm/groups/fdagov-public/@fdagov-afda-ice/documents/webcontent/ucm074554.pdf>

US FDA/CFSAN Defect Levels Handbook, The Food Defect Action Levels

<http://www.fda.gov/food/guidanceregulation/guidancedocumentsregulatoryinformation/sanitationtransportation/ucm056174.htm>

US EPA Water Quality Standards for Coastal and Great Lakes Recreation Waters

<https://www.epa.gov/beach-tech/final-water-quality-standards-bacteria-rule-coastal-and-great-lakes-recreation-waters>

Minor deficiency (10 points) if:

- There is no minor deficiency category for this question

Major deficiency (5 points) if:

- There is no major deficiency category for this question.

Automatic Failure (0 points) if:

- **Numerous incidences of spoilage or adulteration of product.**
- **There is a single gross incidence of evidence of unacceptable limits of spoilage or adulteration in raw materials, finished goods, or packaging.**

3.05.12: Are materials (commodities, processing aids, work in progress, etc.) properly marked with rotation codes (receipt dates, manufacture dates, etc.)?

Total compliance (5 points): All materials should be properly marked with receipt dates and/or tracking information (lot numbers, code dating) for traceability/recall and stock rotation purposes. Finished product coding should consider any specific customer requirements (e.g., as per customer specifications, customer expectation requirements). This coding should be understood by all workers, in order to ensure FIFO and effective traceback/recall procedures. Coding on raw and finished product should also consider any local or national laws where they exist.

Minor deficiency (3 points) if:

- Single/isolated instance(s) of missing receipt dates and/or tracking information on commodities, packaging, processing aids, work in progress, etc.
- Packaging missing receipt dates and/or tracking information.

Major deficiency (1 point) if:

- Numerous instances of missing receipt dates and/or tracking information on commodities, packaging, processing aids, work in progress, etc.

Non-compliance (0 points) if:

- There are no receipt dates and/or tracking information on commodities, packaging, processing aids, work in progress, etc.

3.05.13: Are materials (commodities, processing aids, work in progress, etc.) rotated using FIFO policy?

Total compliance (5 points): All materials should be rotated using FIFO (First In First Out) policy to ensure items are used in the correct order they are received and within their allocated shelf-life. Materials should be clearly marked or labeled with some kind of rotation coding that is understood by all workers, in order to ensure FIFO and effective traceback/recall procedures. Packaging rotation might be affected by market forces. Having a "Just In Time" ordering policy and thereby having very limited stock volumes, is acceptable as a replacement for FIFO if it can be proven e.g. the auditor can see that hardly any stock is maintained. "Just In Time" ordering policy does not replace the need to tag materials as per question 3.05.12.

Minor deficiency (3 points) if:

- Single/isolated instance(s) where commodities, packaging, ~~ingredients~~, processing aids, work in progress, etc. are not rotated using FIFO policy.

Major deficiency (1 point) if:

- Numerous instances where commodities, packaging, ~~ingredients~~, processing aids, work in progress, etc. are not rotated using FIFO policy.

Non-compliance (0 points) if:

- Systematic failure to use FIFO policy on commodities, packaging, ~~ingredients~~, processing aids, work in progress, etc.

3.05.14: Does the process flow, facility layout, worker control, utensil control, internal vehicle use, etc. ensure that finished goods are not contaminated by raw materials (e.g., seeds, transplants, soil, media)?

Total compliance (15 Points): Raw materials should not be a source of contamination to the growing area and/or finished goods. There should be plenty of space and separation to help avoid cross contamination issues. Workers who handle raw products should not then handle packaged products without first ensuring that they are free of raw material contaminants. This should include hand washing, glove change etc., but might also include changing into a new set of garments; ideally workers should be dedicated to handling raw or packaged goods, but not both within a shift. Utensils, cleaning implements, internal vehicles etc. should not be allowed to be vectors for cross contamination; ideally dedicated coded equipment should be provided for raw and processed goods. Failing this, there should be equipment sanitation steps between uses.

Minor deficiency (10 points) if:

- Single/isolated instance(s) of worker/utensil/internal vehicle cross contamination.
- Minor process issues where packaged materials come into the same area as raw materials, but the two products do not touch in any way, i.e. no potential risk of cross contamination.
- Some potential space issues where the process flow is being forced to bring packaged and raw materials into close proximity.

Major deficiency (5 points) if:

- Numerous instances of worker/utensil cross contamination.
- Serious process flow issues where raw material can potentially cross contaminate packaged goods.
- Numerous space issues where the process flow is being forced to bring packaged and raw materials into close proximity.

Non-compliance (0 points) if:

- Systematic instances/issues with worker and/or utensil cross contamination.
- Process flow issues are observed to result in product raw/packaged goods cross contamination.

3.05.15: Are all exposed materials (product, packaging, etc.) protected from overhead contamination (e.g. ladders, motors, condensation, lubricants, walkways, loose panels, degrading insulation, etc.)?

Total compliance (15 points): Ceilings and/or any overhead fixtures above storage are free from condensation or dust. Ladders or walkways (catwalks) above exposed product or packaging material have kick plates at least 3.5 inches high and are covered in some way that protects the product underneath. Drips or condensate (e.g., from roof, fixtures, ducts, pipes, etc.) should not contaminate food, food contact surfaces or packaging material. Adequate measures should be in place to protect from condensate.

OSHA: CFR 29 Part 1910k(1)(iii)

https://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=9721

Minor deficiency (10 points) if:

- Single/isolated instance(s) of possible overhead contamination.

Major deficiency (5 points) if:

- Numerous instances of possible overhead contamination

Non-compliance (0 points) if:

- No protective devices have been installed to eliminate potential contamination.
- **Any observation of direct contamination of raw materials, work in progress, finished product, or packaging materials. In this case the score reverts back to 3.05.11**

3.05.16: Does the facility layout ensure separation of raw materials (e.g. seeds, transplants, soil, media), products and packaging?

Total compliance (15 points): All raw materials, products and packaging should be stored off the ground (i.e. on racks, pallets, shelves, etc.). Materials should be properly protected during storage to prevent contamination (e.g., away from chemicals, battery chargers, etc.). Raw materials, finished product and packaging materials should be stored in separate areas to prevent cross contamination. When separate room storage is not possible, the auditor should assess the risks, especially with respect to cross contamination. Raw materials should not be able to contaminate packaged items. Packaging storage, especially dust from cardboard storage should not contaminate produce items.

Minor deficiency (10 points) if:

- Single/isolated instance(s) of products or packaging materials stored on the floor or not protected properly.
- Single instance of a pallet or boxes/bags of packaged product stored too close to raw product.

Major deficiency (5 points) if:

- Numerous instances of products or packaging materials not protected properly.
- Numerous instances of products or packaging materials stored directly on the ground.
- Isolated instances (no more than three) of raw product stored in the same room as packaged product where there is not adequate physical separation and demarcation within the room.

Non-compliance (0 points) if:

- Different food items being stored together in a way that poses a cross contamination risk.
- Systematic storage of product or packaging materials directly on the ground.
- Numerous instances of raw product and packaged product stored in the same room without adequate segregation.

3.05.17: Are all growing areas clean and well maintained; especially lights, ducts, fans, floor areas by walls and equipment, and other hard to reach areas?

Total compliance (10 points): All areas should be maintained in a clean and sanitary state. Auditors should check the ceilings, lights, corners, against walls and alongside equipment (look up, look down, look all around). This question is designed to capture any hygiene issues that are not covered by specific issues noted in other questions. Auditors should carefully note which areas are dirty when down scoring in this question.

Minor deficiency (7 points) if:

- Single/isolated instance(s) of floors, walls, ledges or other areas being unclean.
- Single/isolated instance(s) of dirty lights/light covers.

Major deficiency (3 points) if:

- Numerous instances of floors, walls, ledges or other areas being unclean.
- Numerous instances of dirty lights/light covers.

Non-compliance (0 points) if:

- Production areas very dirty – little or no evidence of cleaning occurring.
- Systematic failure to maintain lights/light covers in a clean condition.

3.05.18: Are single service containers used for their intended purpose only so that potential cross contamination is prevented?

Total compliance (5 points): Single service containers are used for their intended purpose only (food contact use, not to hold nuts, bolts, trash or other miscellaneous items) and should not be re-used. Returnable plastic containers (RPCs) (e.g., CHEP, IFCO) should be treated like single service container and only used for product. If a single service container is used for any other reason than the storage and distribution of food, it should be clearly differentiated as such (e.g., painted another color and labeled).

Minor deficiency (3 points) if:

- Single/isolated instance(s) of single service container used for other than intended purpose.

Major deficiency (1 point) if:

- Numerous instance(s) of single service container used for other than intended purpose.

Non-compliance (0 points) if:

- Systematic miss-use of single services container, used for other than intended purpose.

3.05.19: Are re-usable containers cleanable or used with a liner and clearly designated for the specific purpose (finished product, trash, etc.) such that cross contamination is prevented?

Total compliance (5 points): All re-usable containers should be able to be cleaned or used with a clean liner to protect against contamination. Cleaning type and frequency should be determined based on the products and processes involved. Bins, boxes, hoppers, barrels, baskets, etc. used for the storage of raw materials (e.g., seeds, transplants, soil, media), finished goods or packaging should be kept in a clean state. The storage of these items should ensure that they remain clean and uncontaminated (e.g., covered clean). In-house re-usable containers should be labeled or color-coded (visually or in the language understood by the workers) so that their designated purpose can be easily identified.

Returnable plastic containers (RPCs) (e.g., CHEP, IFCO) should be treated like single service containers and only used for product (score in 3.05.18). If the trash container is the only re-used container on site and is a specific and unique design, so that it cannot be mistaken for another use, then it should not be down scored.

Minor deficiency (3 points) if:

- Single/isolated instance(s) of a dirty product storage container (there is no direct product contamination).
- Single/isolated instance(s) product storage container is clean, but being stored in an area where it might be contaminated and then used.
- Single/isolated instance(s) of a re-usable container not labeled or color-coded.

Major deficiency (1 point) if:

- Numerous instances of dirty product storage containers (there is no direct product contamination).
- Numerous product storage containers, which are clean, but are being stored in an area where they might be contaminated and then used.
- Numerous instances of re-usable containers not properly labeled or color-coded.

Non-compliance (0 points) if:

- Systematic failure to not clean food storage containers.
- There is no cleaning program for the containers.
- Systematic lack of control with respect to storage of clean food storage containers.
- Re-usable containers are used for multiple purposes without the containers being labeled or color-coded.

3.05.20: Are all utensils, hoses, and other items not being used, stored clean and in a manner to prevent contamination?

Total compliance (10 points): All utensils, hoses and other items not being used are stored clean, and in a manner to prevent contamination (off ground, dedicated areas, etc.). Hoses should be stored coiled, off the floor and ideally used in such a manner that ground contact is avoided.

Minor deficiency (7 points) if:

- Single/isolated instance(s) of items not in use stored inappropriately. There is little potential hazard to product or packaging.

Major deficiency (3 points) if:

- Numerous instances of items not in use, stored inappropriately. There is little potential hazard to product or packaging.

Non-compliance (0 points) if:

- Any items not in use stored in a manner that may contaminate product or packaging.

3.05.21: Do floor drains flow in a manner that prevents contamination (e.g., from high to low risk areas, from high risk directly to drain system), are they covered, appear clean, free from odors and are well maintained?

Total compliance (5 points):

- All facility floor drains, including covers and internal channels are clean, and free of decayed/old material.
- All facility floor drains are free of odors.
- There is no overflow or excessive standing water in the floor drains.
- Drains should have smooth walls and bases that allow free flow of water without catching debris, and also aid in the cleaning of the drains.
- Water from refrigeration drip pans is drained and disposed of away from product and product contact surfaces.

Where possible, auditor should request floor drain covers to be removed for inspection. Use a flashlight to illuminate the bottom of deep drains.

Minor deficiency (3 points) if:

- Single/isolated instance(s) of a facility floor drain that is failing in one of the requirements listed above.

Major deficiency (1 point) if:

- Numerous instances of facility floor drains that are not maintained under acceptable sanitary conditions.
- Numerous instances of facility floor drains that are failing in one of the requirements listed above.

Non-compliance (0 points) if:

- Systematic failure to maintain the facility floor drains in a clean condition.

3.05.22: Are internal transport vehicles (e.g., forklifts, bobcats, pallet jacks, carts, floor cleaners, etc.), clean, do not emit toxic fumes and are being used in a sanitary manner?

Total compliance (5 points) if:

- Vehicles and equipment used for moving raw materials, packaged products, and packaging throughout and within the facility are clean, well maintained, and do not transport goods outside the facility (unless cleaned and sanitized before re-entering). Open dock areas are accepted as being within the facility in this instance.
- Internal transport vehicles (forklifts, bobcats (or similar type vehicle), pallet jacks, carts, floor cleaners, etc.) used to transport food are in a good state of repair, clean, odor free, free of rodents and insects.
- Internal transport vehicles (forklifts, bobcats (or similar type vehicle), pallet jacks, carts, floor cleaners, etc.) used in food areas should not be gasoline or diesel powered; propane (LPG) powered vehicles are permitted although electric powered are ideal. Trucks and forklifts should not be left idling in enclosed spaces or during loading or unloading of products to reduce health risk and possible tainting of foods.
- A sanitation program for internal transport vehicles is established to assure proper sanitation levels.
- Internal transport vehicles should not be mobile "break areas" i.e. food and drink should not be stored on the vehicles.
- Floor cleaners should be kept in good condition and cleaned in order to prevent cross contamination. Where relevant, the brushes and fixtures on the floor cleaner might need to be changed or cleaned when moving from one risk area to another.

Minor deficiency (3 points) if:

- Single/isolated instance(s) of finding the issues mentioned above.

Major deficiency (1 point) if:

- Numerous instances of finding the issues mentioned above.

Non-compliance (0 points) if:

- Systematic failure to maintain the transport vehicles in a clean and sanitary condition.
- Systematic use of gasoline or diesel-powered vehicles in food areas.
- Multiple instances of failure to maintain the transport vehicles in a sanitary condition that may lead to potential product contamination.
- **The auditor should consider whether the issue is adulteration and should be applied to Q 3.05.11 and scored as an automatic failure.**

Inspection

3.06.01: Is there documented evidence of the internal audits performed, detailing findings and corrective actions?

Total compliance (15 points): There should be records of the internal audits performed at each operation, with the frequency defined in the **internal audit** program. **Frequency depends on the type and size of the operation, but should be at least quarterly.** The records should include the date of the audit, name of the internal auditor, justification for the answers, detail any deficiencies found and the corrective action(s) taken. An audit checklist (**ideally PrimusGFS audit**) should be used that covers all areas of the PrimusGFS audit, including growing area, storage area, worker amenities, external areas, worker practices, etc. No down score if another audit checklist is used, as long as all areas are covered. See 1.04 regarding internal audit schedule.

Minor Deficiency (10 points) if:

- Single/isolated instance(s) of follow up/corrective actions not noted.
- Single/isolated instance(s) of incomplete or missing records.
- Single/isolated instance(s) of areas/issues missing on the inspection program.

Major Deficiency (5 points) if:

- Numerous instances of follow up/corrective actions not noted.
- Numerous instances of incomplete or missing records.
- Inspection frequency is not adequate relative to the type of business and the number of issues that require monitoring.
- Numerous instances of areas/issues missing on the inspection program.

Non-compliance (0 points) if:

- Systematic failure to maintain records.
- No documented internal audits have been performed.

3.06.02: Is there a daily inspection log, including but not limited to, checking worker hygiene, housekeeping of bathrooms, break area, growing area, and storage area?

Total compliance (10 points): Operations are inspected daily. This should be a start-up check of all potential issues.

The daily inspection should include:

- General housekeeping of storage areas, growing areas, break areas and bathrooms.
- Checking personnel meet the hygiene requirements
- Corrective actions in case of non-compliance.

Minor Deficiency (7 points) if:

- Single/isolated instance(s) of omissions or incorrect data in the records.

Major Deficiency (3 points) if:

- Numerous instances of omissions or incorrect data in the records.
- Persistent repetition of corrective action without long-term solution.

Non-compliance (0 points) if:

- No records.
- Failure to maintain records.

Training

3.07.01: Is there a food safety hygiene training program covering new and existing workers and are there records of these training events?

Total compliance (15 points): There should be a formal training program to inform all workers (including planting and weeding crews) of the current policies and requirements of the company regarding hygiene. Trainings should be in the language understood by the workers, and training type and intensity should reflect the risks associated with the products/processes. Frequency should be at the start of the season and then some topics covered at least quarterly, but ideally monthly. Full annual food safety refresher training sessions are encouraged but do not replace the ongoing more frequent training. Training material covering the content of the company policies and requirements regarding food safety and hygiene should be available. These trainings should cover food safety and hygiene, the importance of detecting food safety and/or hygiene issues with co-workers and visitors, and all food safety or hygiene issues in which they are responsible. Training logs should have a clearly defined topic(s) covered, trainer(s) and material(s) used/given. Food safety training should cover at least the basic topics such as toilet use, hand washing, protective clothing (where applicable), recognizing and reporting injury and illness, blood and other bodily fluids, jewelry, dropped product, animal intrusion, food consumption/taking breaks, foreign material requirements, food defense, etc. There should be records of workers who have attended each session.

Minor Deficiency (10 points) if:

- Single/isolated instance(s) of logs having errors or incomplete information e.g. missing one of the following: training topic, trainer or material information.
- Training has occurred but, on a few occasions, full attendance logs have not been kept and/or not all workers were covered.
- Training materials and/or company food safety policy are not in the relevant language(s).
- Training occurring, not before starting to work but within the first week.
- Single/isolated instance(s) of workers not being trained or not signing a document stating that they will comply with the operations' food safety hygiene program.

Major Deficiency (5 points) if:

- Numerous instances of logs having errors or incomplete information e.g. missing one of the following: training topic, trainer or material information.
- Training has occurred but, on many occasions, full attendance logs have not been maintained.
- Some key topics e.g. hand washing, have been omitted from the training.
- Only annual refresher training has occurred, and the operation runs for more than 3 months of the year.
- Numerous cases of workers not signing a document stating that they will comply with the operations' food safety hygiene program.
- Training occurring, not before starting to work but within the first month.
- Numerous instances of workers not being trained.

Non-compliance (0 points) if:

- Failure to maintain records. No records of training or workers not being trained.
- Many major topics have been omitted from the training program e.g. hand washing, eating/drinking rules, jewelry policy etc.

- No specific orientation given or given after the worker has been working for more than one month.
- The company does not have a document for workers to sign stating that they will comply with the operations' food safety hygiene program.
- Systematic failure of workers to sign a log stating that they will comply with the operations' food safety hygiene program.

3.07.02: Is there a documented training program with training logs for the sanitation workers, including best practices and chemical use details?

Total compliance (5 points): Sanitation training should ensure that the workers understand the importance of proper sanitation, cleaning efficacy, how to use the cleaning chemicals and how to understand Sanitation Standard Operating Procedures. Unless sanitation workers attend regular food safety trainings, sanitation training should also include elements of food safety training pertinent to sanitation operations (e.g., hand washing, restroom use, foreign material, etc.). Training logs should have a clearly defined topic(s) covered, trainer(s) and material(s) used/given. Training would also ideally include worker safety issues (e.g., use of personal protective equipment, accident prevention, what to do in case of an accident, procedures for avoiding electrical hazards when cleaning, etc.). Recorded training should occur at least on a 12-month basis.

Minor Deficiency (3 points) if:

- Single/isolated instance(s) of logs having errors or incomplete information e.g. missing one of the following: training topic, trainer or material information.
- Training has occurred, but on a few occasions full attendance logs have not been kept and/or not all workers were covered.

Major Deficiency (1 points) if:

- Numerous instances of logs having errors or incomplete information e.g. missing one of the following: training topic, trainer or material information.
- Training has occurred but, on many occasions, full attendance logs have not been maintained.

Non-compliance (0 points)

- No records or no training has occurred.
- Failure to maintain records.

3.07.03: Are there written and communicated procedures in place that require food handlers to report any cuts or grazes and/or if they are suffering any illnesses that might be a contamination risk to the products being produced, and return to work requirements? (In countries with health privacy/confidentiality laws, e.g. USA, auditors can check procedure/policy but not the actual records).

Total compliance (10 points): There should be documented procedures that are communicated (e.g., worker signature on a training log) to food handlers, requiring them to report any cuts, grazes and/or any illnesses that might be a food safety cross contamination risk. The procedures should indicate return to work requirements for affected workers: to whom the food handlers should report, how the issue is recorded and appropriate actions to be taken for a particular issue. Auditors should not request to review records where countries have laws covering privacy/confidentiality of health records, and therefore a verbal confirmation should be gained.

Minor deficiency (7 points) if:

- Single/isolated instance(s) of errors or omissions in procedure.

Major deficiency (3 points) if:

- Numerous instances of errors or omissions in the procedure.

Non-compliance (0 points) if:

- There is not a documented procedure in place.
- A procedure is in place, but it has not been communicated to food handlers.

3.07.04: Are there worker food safety non-conformance records and associated corrective actions (including retraining records)?

Total compliance (3 points): A worker non-conformance should be recorded when workers are found systematically not following food safety requirements. The auditee should have a record for worker non-compliance, corrective actions and evidence that retraining has occurred (where relevant). Auditee records might be viewed as confidential, and therefore, a verbal confirmation should be gained. There might be a tier system, which includes re-training, verbal and written disciplinary actions and allowance for immediate termination for gross misconduct.

Minor Deficiency (2 points) if:

- Option for minor down score exists but as present no known good examples exist.

Major Deficiency (1 point) if:

- Disciplinary system is not used for GAP violations.

Non-compliance (0 points)

- No records or no disciplinary system.

Worker Hygiene

3.08.01: Are toilet facilities adequate in number and location and are they adequately stocked (e.g., toilet paper, disposable towels, soap, etc.)?

Total compliance (15 points): Toilet facilities should be available to all workers and visitors, and are adequate in number and location:

- Toilet facilities should be located within a reasonable distance from the workers' workstation.
- Toilet facilities should be readily available to male and female workers. The number of facilities provided for each sex should be based on the number of workers of that sex.
- Where there are single-occupancy rooms, separate toilet rooms for each sex are not required (sufficient toilets available).
- There should be sufficient toilets for the workers. Please use this table as a guide:

Number of workers	Number of toilets
1-15	1
16-35	2
36-55	3
56-80	4
81-110	5
111-150	6
>150	1 additional toilet for each 40 workers

- Urinals for male workers should not make up more than 1/3 of the total male toilets provided.
- Each individual toilet facility should be able to be locked from inside.
- Each toilet facility should be maintained, well lighted and ventilated to outside air.
- In the toilet room, the floor and sidewalls should be watertight.
- The floors, walls, ceiling, partitions and doors of all toilet rooms should be made of a finish that can be cleaned easily.
- Doors should not open directly into areas where food is exposed to airborne contamination, i.e. storage, and growing areas. Use of double doors or having a positive airflow system is accepted. In older operations, where doors to restrooms were designed to open into the production areas, i.e. not located in the amenity area or office area, the doors should be kept closed at all times (e.g., use a spring-loaded door).
- Toilet paper should be available to each person and stored in such a way as to prevent contamination.
- Adequate trash disposal should be available within restrooms.

United States Department of Labor 29 CFR 1910.141(c)(1)(i): Toilet Facilities
http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=9790

Restrooms should have hand washing facilities with:

Unscented/non-perfumed, neutral or antiseptic soap; scent should rinse away with the foam leaving no lingering fragrance on hands

- An adequate supply of soap and paper towels.
- Proper drainage and warm water (> 100 °F, 38 °C) available for use.
- If hand washing stations within toilet facilities are the only stations provided, then requirements for 3.08.03a apply.
- Cleanliness of toilet facilities is scored in 3.08.01a.

Minor deficiency (10 points) if:

- One of the above criteria is not met.

Major deficiency (5 points) if:

- Two of the above criteria are not met.

Non-compliance (0 points) if:

- Failure to provide sufficient or adequate restroom facilities.
- Three of the above criteria are not met.

3.08.01a: Are toilet facilities and hand washing stations clean?

Total compliance (15 points): Servicing records (either contracted or in-house) should be available for review showing toilet cleaning, servicing and stocking is occurring regularly. Toilet facilities and hand-washing stations are maintained in a sanitary condition:

- Toilet facilities have a drainage installation that allows the waste to be flushed and disposed properly.
- Toilet facility (including hand washing stations) fixtures are in good operating condition and clean.
- Cleaning and sanitizing frequency is at least daily.
- No offensive odors are evident.
- No soiled toilet tissue either on the floor or in trash cans.
- Trash cans are available for hand wash paper towels.
- Hand washing stations are properly plumbed to drainage system.
- Hand washing stations are clean and not blocked.

Minor deficiency (10 points) if:

- Single/isolated instance(s) of non-compliance to above requirements.
- Single/isolated instance(s) of soiled toilet tissues being placed in trashcan.

Major deficiency (5 points) if:

- Numerous instances of non-compliance to the above requirements.
- Systematic observation of soiled toilet tissues being placed in trashcans.

Non-compliance (0 points) if:

- Failure to properly maintain areas.
- Single instance of soiled toilet tissues being left on the restroom floor.

3.08.02: Is hand washing signage posted appropriately?

Total compliance (5 points): Toilet facilities should have hand washing signs as a reminder to wash hands before and after eating, returning to work and after using the toilet. Signs need to be posted visibly and in the language of the workers (visual signs are allowed). The visuals or signs should be permanent and placed in key areas where workers can easily see them.

Minor deficiency (3 points) if:

- Single/isolated instance of signage not being permanent.
- Single/isolated instance of signage not being in the language of the workers.
- Single/isolated instance of signage not posted visibly.

Major deficiency (1 point) if:

- Numerous instances of signage not being permanent.
- Numerous instances of signage not being in the language of the workers.
- Numerous instances of signage not posted visibly.

Non-compliance (0 points) if:

- There is no signage.

3.08.03: Are hand washing stations adequate in number and appropriately located for worker access and monitoring usage?

Total compliance (15 points): An adequate number of hand washing stations, in working order, should be provided to ensure efficient worker flow (1 per 15 people on site), and be available to all workers and visitors. Hands free is an optimum system. Hand washing stations should be visible and located within close proximity of toilet facilities and lunchroom.

United States Department of Labor 29 CFR 1910.141(c)(1)(i): Toilet Facilities

http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=9790

Minor deficiency (10 points) if:

- Only about 75% of needed hand washing stations are present.
- There are no hand washing stations located in visible areas where the worker hand washing practices can be monitored.

Major deficiency (5 points) if:

- Only about 50% of needed hand washing stations are present.

Non-compliance (0 points) if:

- Hand washing stations are inadequate in both number and location (less than 25% of the needed hand washing stations are provided).

3.08.03a: Are hand washing stations in working order, have water of suitable temperature and pressure, adequately stocked (e.g., disposable towels, soap, etc.) and restricted to hand washing purposes only?

Total compliance (15 points): Hand washing facilities should be used only for hand washing (no storage, food handling, etc.). Hand washing stations should be properly stocked with liquid unscented/non-perfumed, neutral or antiseptic soap; scent should rinse away with the foam leaving no lingering fragrance on hands. Single use paper towels should be used, and units properly located. There should be an adequate stock of soap and paper towels. Hand washing stations should be maintained in good working order with proper drainage and warm water (> 100 °F, 38 °C) available for use. Discharge water from sinks should not run directly onto the floor. Care should be taken to ensure that hand wash water temperatures are not too hot when using pre-set mixer faucets (taps). Hands-free operations are an optimum system for food establishments. Cleanliness of hand wash stations is scored in 3.08.01a.

United States Department of Labor 29 CFR 1910.141(c)(1)(i): Toilet Facilities

http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=9790

Minor deficiency (10 points) if:

- Single/isolated instance(s) of hand washing stations not in working order.
- Only cold water is available at hand washing stations
- Single/isolated instance of water being too hot.
- Single/isolated instance(s) of water pressure not being adequate.

- Single/isolated instance(s) of soap with a lingering fragrance being used.

Major deficiency (5 points) if:

- Numerous instances of hand washing stations not in working order.
- Numerous instances of water pressure not being adequate.
- Numerous instances or systematic use of soap with a lingering fragrance being used.
- Using terry cloth re-useable towels or roller towels.
- No paper towels are provided.
- Numerous instances of hand washing stations without warm water available or where water is too hot.

Non-compliance (0 points) if:

- No soap is provided.
- There are no functioning hand wash stations.
- **Any observation of direct gross systematic contamination of product or packaging materials (revert back to Q 3.05.11, automatic failure).**

3.08.04: Are workers washing and sanitizing their hands before starting work each day, after using the restroom, after breaks, before putting on gloves and whenever hands may be contaminated?

Total compliance (15 points): Worker conformance to hand washing and sanitizing procedures should be assessed, as washing hands is the first step in avoiding food contamination. Workers should be observed washing their hands prior to beginning work, after breaks, after using the toilet, before putting on gloves, and whenever hands may have become a source of contamination (e.g., after eating, after using a handkerchief or tissue, smoking, drinking, etc.).

Auditors are expected to view hand washing disciplines – in operations where hand washing stations are not visible, this means watching worker movements after breaks (are they using the toilet facility hand wash stations); are there signs of soap and paper towel use? Hand washing is a critical part of the food suppliers' food safety program – this should be stressed to the auditee.

Potentially useful website:

A "Safe Hands" Hand Wash Program, <http://www.hi-tm.com/Documents/Handwash-FL99.html>

Minor deficiency (10 points) if:

- Single/isolated instance(s) of a worker who is not complying with the hand washing policy.

Major deficiency (5 points) if:

- Numerous instances of workers that are not complying with the hand washing policy.

Non-compliance (0 points) if:

- Majority of or systematic failure of workers to comply with hand washing policies.

3.08.05: Are secondary hand sanitation stations (e.g., touch-free dispensers) adequate in number and location, and are the stations properly maintained?

Total compliance (5 points): Secondary hand sanitation is required for items that may be "ready-to-eat" (e.g., herbs, stone fruit, tomatoes, citrus, edible flowers, etc.). Secondary hand sanitation (hand dips, gels or sprays) does not replace hand washing requirements (lack surfactant qualities). Secondary hand sanitation stations should be unscented/non-perfumed, have 60% to 95% ethanol or isopropanol and conveniently located in traffic zones but should not be obstructive. Hand dips (if used) should contain a USDA approved food grade sanitizer at a determined concentration. Refer to hand sanitizer manufacturer label for dilutions. Hand dips should be regularly monitored (recorded anti-microbial strength checks) to ensure their effectiveness with corrective actions recorded (e.g. dip solution replenishment and anti-microbial additions). Hand gel and spray stations should be well stocked with a sanitizer approved for direct hand to food contact (e.g. ~~USDA approved or national equivalent~~) and regularly monitored

(recorded checks) to ensure availability with corrective actions recorded (e.g. pack replenishment); use of a refill alert type dispenser is ideal practice. The auditor should check that gel pack type stations are stocked and have the auditee check the strength of anti-microbial chemicals in hand dips while touring the facility.

<http://www.qualityassurancemag.com/qa0612-proper-hand-sanitation-practices.aspx>

<https://www.cdc.gov/handwashing/index.html>

<https://nelsonjameson.com/learn/sanitation-maintenance/hand-hygiene/>

<http://www.hi-tm.com/Documents/Handwash-FL99.html>

<https://www.fda.gov/food/guidanceregulation/retailfoodprotection/industryandregulatoryassistanceandtrainingresources/ucm113827.htm>

Minor deficiency (3 points) if:

- Single/isolated instance(s) of secondary hand sanitation stations not in place or being empty.
- Single/isolated instance(s) of hand dips containing under-strength solutions.
- Single/isolated instance of dispensers not properly located (e.g., too close to the growing area, not conveniently located).

Major deficiency (1 point) if:

- Numerous instances of hand secondary hand sanitation stations not in place or being empty.
- Numerous instances of hand dips containing under-strength solutions.
- Numerous instances of dispensers not properly located (e.g., too close to the growing area, not conveniently located).
- Use of hand gel or spray sanitizer that is not approved for direct hand to food contact (e.g., USDA approved or national equivalent).

Non-compliance (0 points) if:

- There are no secondary hand sanitation stations where needed or all are empty.
- All hand dips checked found containing under-strength solutions.

3.08.06: Are foot baths, foamers or dry powdered sanitizing stations provided at entrances to growing areas (where appropriate), and are the stations maintained properly?

Total compliance (3 points): Foot (boot) stations (foot dip mats, baths, sprays) should be located in areas when crossing into a “clean” zone from an area of potential contamination (e.g., from outside into the growing area, from growing areas into storage areas, from bathrooms into growing areas, etc.) for some crops (e.g., mushrooms, aeroponics). Foot dips should contain a food grade sanitizer at a determined concentration. Refer to sanitizer manufacturer label for dilutions. Foot dips should be regularly monitored for volume and concentration (recorded anti-microbial strength checks) and the dip solution regularly changed to ensure their effectiveness with corrective actions recorded (e.g. dip solution replenishment and anti-microbial additions). Dry products should be EPA registered and applied as per the label instructions (label dosage directions should be followed for EPA registered floor sanitizers) and regular renewal should be monitored. The auditor should have the auditee check the strength of anti-microbial chemicals while touring the facility. This question should be scored based on auditor discretion, considering the risk of the products/processes. N/A where there are no foot baths, foamers or dry powdered sanitizing stations when it is not a requirement for the operation.

<http://www.foodsafetymagazine.com/magazine-archive1/december-2004january-2005/the-dos-and-donts-of-food-plant-personal-hygiene-practices/>

<http://www.foodsafetymagazine.com/magazine-archive1/augustseptember-2011/sanitizers-and-disinfectants-the-chemicals-of-prevention/>

<http://www.foodqualityandsafety.com/article/dry-floor-products-wont-slip-up/2/>

21 CFR 178.1010: <https://www.accessdata.fda.gov/scripts/cdrh/cfdocs/cfcfr/CFRSearch.cfm?fr=178.1010>

Minor deficiency (2 points) if:

- Single/isolated instance(s) of foot dips not in place.

- Single/isolated instance(s) of the under-strength foot dips or volume not maintained.
- Single/isolated instance(s) of the workers not using the foot dips.

Major deficiency (1 point) if:

- Numerous instances of foot dips not in place.
- Numerous instances of the under-strength foot dips or volume not maintained.
- Numerous instance(s) of the workers not using the foot dip.

Non-compliance (0 points) if:

- No foot dip stations where needed.
- All foot dips checked being found to contain under strength solutions or volume not maintained.
- All workers avoiding using the foot dips.

3.08.07: Are workers' fingernails clean, short and free of nail polish?

Total compliance (5 points): Fingernails can harbor dirt and debris and can be a source of cross contamination. Therefore, nails should be clean and short to reduce the risk of cross contamination. Fingernail polish and false nails should not be worn, even when gloves are worn. Use of fingernail brushes might assist in nail cleaning, however care should be taken to ensure that these brushes are kept clean and regularly replaced or they might they become a cross contamination vector.

Potentially useful website:

Food Code (section 2-302.11)

<https://www.fda.gov/downloads/Food/GuidanceRegulation/RetailFoodProtection/FoodCode/UCM374510.pdf>

Minor deficiency (3 points) if:

- Single/isolated instance(s) of dirty and/or long fingernails.
- Single/isolated instance(s) of fingernail polish being worn.
- Single/isolated instance(s) of false fingernails being worn.

Major deficiency (1 point) if:

- Numerous instances of dirty and/or long fingernails.
- Numerous instances of fingernail polish being worn.
- Numerous instances of false fingernails being worn.

Non-compliance (0 points) if:

- Systematic failure to ensure that fingernails are short and clean.
- Systematic failure to ensure that fingernail polish and/or false fingernails are not worn.

3.08.08: Is there no sign of any worker with boils, sores, open wounds or exhibiting signs of foodborne illness working directly or indirectly with food?

Total compliance (10 points): Workers who have exposed boils, sores, exposed infected wounds, foodborne illness or any other source of abnormal microbial contamination should not be allowed to work in contact with the product, packaging or food contact surfaces. Workers should be requested to notify their supervisors if they have any concerning symptoms. All bandages should be covered with a non-porous covering such as non-latex or vinyl gloves.

Minor deficiency (7 points) if:

- (There is no minor deficiency for this question).

Major deficiency (3 points) if:

- (There is no major deficiency for this question).

Non-compliance (0 points) if:

- One or more workers are observed working in contact with food, food contact surfaces or packaging that has or have exposed boils, sores, infected wounds, showing signs of food borne illness or any other source of abnormal microbial contamination that is a hazard.

3.08.09: Is jewelry confined to a plain wedding band and watches are not worn?

Total compliance (5 points): Workers are not observed wearing jewelry (including earrings, ear gauges, necklaces, bracelets, rings with stones, rings or studs in nose, lip and eyebrow, watches) in the growing area. Plain wedding bands are the only exception. Other examples of foreign items that may be a source of foreign material contamination include studs, false eye lashes, eye lash extensions, etc.

Minor deficiency (3 points) if:

- Single/isolated instance(s) of a worker observed wearing jewelry or watches or any other personal item that may be a foreign contaminant.

Major deficiency (1 point) if:

- Numerous instances of workers observed wearing jewelry or watches or any other personal item that may be a foreign contaminant.

Non-compliance (0 points) if:

- Majority of workers wearing jewelry or watches or any other personal item that may be a foreign contaminant i.e. jewelry policy does not exist and/or jewelry policy exists but is not being implemented.

3.08.10: Are all workers wearing protective outer garments suitable for the operation (e.g. clean clothes, smocks, aprons, sleeves and non-latex gloves)?

Total compliance (5 points): An outer garment policy is established. The policy should consider the potential cross contamination and foreign material risks. The policy should also consider customer specific requirements as well as national and local legal requirements. Outer garments include where applicable: smocks, aprons, sleeves, gloves, etc. Suitable clothing is required for workers handling products that are potentially ready-to-eat (e.g., tomatoes, leafy greens, etc.). Items should be laundered in-house or by contract laundering agency. Individual workers should not take garments home for cleaning. Where items are laundered in-house the auditee should have documented SOP and GMP rules about how these garments are cleaned. Glove policy should be clear to workers – auditors will establish policy before making scoring decisions and note this policy for the audit report. Gloves are not allowed to replace hand-washing requirements. Gloves should be changed after break periods, using toilet facilities, any activity other than handling of food items or when gloves are soiled, torn or otherwise contaminated. If re-useable gloves are used, then they should be made of material that can be readily cleaned and sanitized, clean gloves should be issued at least daily and as needed throughout the day and stored properly in-between uses. Gloves should not be taken home for cleaning. Where gloves are used they should be non-latex (e.g. vinyl, nitrile, etc.). This includes gloves in first-aid kits. Where dedicated protective clothing is not required/worn, it must be clear that outer street clothes are clean and not a potential source of contamination. Workers should not wear personal clothes with sequins, pom-poms, fur, etc. No sleeveless tops without an over garment.

Minor deficiency (7 points) if:

- Single/isolated instance(s) of outer garments or gloves being taken home.
- Single/isolated instance(s) of gloves not being replaced when contaminated.
- Single/isolated instance(s) of protective garments not being worn where required.
- Single/isolated instance(s) of outer clothing not clean or being a potential source of contamination.

Major deficiency (3 point) if:

- Numerous instances of outer garments or gloves being taken home.
- Numerous instances of gloves not being replaced when contaminated.

- Numerous instances of protective garments not being worn where required.
- Numerous instance(s) of outer clothing not clean or being a potential source of contamination.

Non-compliance (0 points) if: (one of the following is found)

- An outer garment policy is **not** established.
- Systematic failure to replace gloves when contaminated.
- Systematic failure to wear protective garments where required.
- Systematic failure to wear clean outer clothing or of clothing being a potential source of contamination.
- Systematic non-compliance to the above and/or company policy.

3.08.10a: Do workers remove protective outer garments (e.g., smocks, aprons, sleeves, and gloves) when on break, before using the toilets and when going home at the end of their shift?

Total compliance (5 points): When worn, protective clothing (e.g., aprons, smocks, sleeves and gloves) are to be removed when workers leave the work area (e.g., when they go to the toilet facility, lunchroom, outside, smoking breaks, etc.). Workers cannot smoke, eat, go outside the building or use the restroom while wearing these garments.

Minor deficiency (3 points) if:

- Single/isolated instance(s) are observed of non-compliance to the above

Major deficiency (1 point) if:

- Numerous instances are observed of non-compliance to the above

Non-compliance (0 points) if:

- Systematic non-compliance to the above

3.08.10b: Is there a designated area for workers to leave protective outer garments (e.g., smocks, aprons, sleeves, and gloves) when on break and before using the toilets?

Total compliance (5 points): There should be a designated area for workers to leave protective clothing when they are worn (e.g., aprons, smocks, sleeves and gloves). Workers are observed using the designated area when they leave the work area (e.g., when they go to the toilet facility, lunchroom, outside, etc.). Workers should not leave protective outer garments on floors, work tables, equipment or packaging materials. Designated area should not be within the toilet facilities, inside the break room, next to worker clothing or any other area that might be a risk to the outer garments. Garments should not be left touching product, packaging or food contact surfaces.

Minor deficiency (3 points) if:

- Single/isolated instance(s) are observed of non-compliance to the above

Major deficiency (1 point) if:

- Numerous instances are observed of non-compliance to the above

Non-compliance (0 points) if:

- There is not a designated area for workers to leave aprons, sleeves and gloves when on a break.
- There is a designated area; however, no workers use this area.
- Any of the items are observed being placed on the floor.
- Systematic non-compliance to the above.

3.08.11: Worker personal items are not being stored in the growing area(s) or material storage area(s)?

Total compliance (5 points): Workers should have a designated area for storing personal items such as coats, shoes, purses, medication, phones, etc. Areas set aside for workers' personal items should be far enough away from stored growing area(s) and material storage area(s) to prevent contamination and

avoid food security risks. Lockers or cubbies are ideal if maintained properly, mounted off the floor and with sloping tops and located outside growing and storage areas. Wire, see-through lockers are ideal.

Minor deficiency (3 points) if:

- Single or isolated instance(s) of personal belongings, personal food, etc. being found in growing or storage areas.

Major deficiency (1 point) if:

- Numerous instances of personal belongings, personal food, etc. being found in growing or storage areas.

Non-compliance (0 points) if:

- Systematic failure to prevent personal belongings, personal food, etc. being taken into the growing area.

3.08.12: Is smoking, eating, chewing and drinking confined to designated areas, and spitting is prohibited in all areas?

Total compliance (5 points): Smoking, chewing tobacco, chewing gum, drinking and eating is permitted in designated areas that are away from growing and storage areas. Spitting should be prohibited in all areas. Smoking should not be permitted in eating and drinking areas. Potable water should be provided for drinking, following local and national laws. Portable drinking water dispensers should be designed, constructed and maintained in a sanitary condition, capable of being closed, and equipped with a tap. The water should be dispensed in single-use drinking cups or by fountains. Common drinking cups and other common utensils are prohibited. Drinking is not permitted near the growing area. Check work areas refuse containers and look in out of sight areas. If food consumption areas are designated within production offices or maintenance areas then the control of cross contamination, GAPs and access to hand washing facilities should be considered.

21 CFR Part 110.10 <http://www.accessdata.fda.gov/scripts/cdrh/cfdocs/cfcfr/CFRSearch.cfm?fr=110.10>
29 CFR Part 1910.41
http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=9790

Minor deficiency (3 points) if:

- Single/isolated instance(s) are observed of non-compliance to the above (includes evidence of smoking, eating, spitting, chewing gum, improper storage of break time food or drinking containers in interior refuse containers).
- Single/isolated instance(s) of designated area not meeting appropriate GMP standards.

Major deficiency (1 point) if:

- Numerous instances are observed of non-compliance to the above (includes evidence of smoking, eating, spitting, chewing gum, improper storage of break time food or drinking containers in interior refuse containers).
- No designated smoking area (unless the site has a non-smoking policy).
- Numerous instances of designated area not meeting appropriate GMP standards.

Non-compliance (0 points) if:

- Systematic consumption of food and beverages outside of designated areas.
- No temperature control storage of break time food.
- Systematic evidence of smoking outside the designated area.
- Systematic evidence of using chewing tobacco in growing and storage areas.
- Designated area lacks access to a hand wash station.
- Systematic non-compliance to the above criteria.

3.08.13: Is fresh potable drinking water readily accessible to workers?

Total compliance (10 points): Fresh potable water meeting the quality standards for drinking water should be **provided and placed in locations readily accessible to all** workers on-site to prevent dehydration. The term “potable” meaning that the water is of drinking water quality (e.g., the EPA Drinking Water Standard or equivalent). Auditors should verbally verify the source of the water at the time of the audit. If water containers are used, they should be maintained in a clean condition, free from residues and contamination to ensure workers are not adversely affected by contaminated water from unclean containers.

Minor deficiency (7 points) if:

- Single/isolated instance(s) of an unclean water container being used.

Major deficiency (3 points) if:

- Numerous instances of an unclean water containers being used.

Non-compliance (0 points) if:

- There is no water provided.
- The water provided is not potable.

3.08.13a: Are single use cups provided (unless a drinking fountain is used) and made available near the drinking water?

Total compliance (5 points): Single use cups should be provided so that cross contamination issues are avoided from person to person. Examples include single-use paper cups, drinking fountains, etc.

Minor deficiency (3 points) if:

- Single/isolated instance(s) of single-use cups missing from one of the water containers.

Major deficiency (1 point) if:

- Numerous instances of single-use cups missing from the water containers.
- A drinking fountain is being used, but is not in a sanitary condition.

Non-compliance (0 points) if:

- Single-use cups are not provided for the water containers.

3.08.14: Are all items removed from garment (shirt, blouse, etc.) top pockets, and unsecured items are not worn (e.g., pens, glasses on top of head, Bluetooth devices, etc.)?

Total compliance (3 points): There should be no items stored in workers' shirts, blouse and smock top pockets. Ideally top pockets are sewn up or non-existent. Special exception allowed for security identification tags as long as they are securely fastened to the person and/or below the belt.

Minor deficiency (2 points) if:

- Single/isolated instance(s) of items observed in shirt, blouse or smock top pocket.

Major deficiency (1 point) if:

- Numerous instances of items observed in shirt, blouse or smock top pockets.

Non-compliance (0 points) if:

- Systematic use of shirts, blouse or smock top pockets.

3.08.15: Are first aid kits adequately stocked and readily available?

Total compliance (5 points): First aid kit(s) should be adequately supplied to reflect the kinds of injuries that occur (including any chemicals stored on-site) and should be stored in an area where they are readily available for emergency access. Date-coded materials should be within dates of expiration. Bandages used should ideally be waterproof and blue in color for easy visual detection. Gloves should be worn over all band aids on hands. Auditors should verify by checking the first-aid kit(s).

Minor deficiency (3 points) if:

- Single/isolated instance(s) of first aid kit(s) not having adequate supplies, supplies out-of-date or kit not readily accessible.

Major deficiency (1 point) if:

- Numerous instances of first aid kit(s) not having adequate supplies, supplies out-of-date or kit not readily accessible.

Non-compliance (0 points) if:

- Systematic failure to provide first aid kit(s) with adequate supplies, supplies out-of-date or kit not readily accessible.

Agronomic Inputs

3.09.01: Is human sewage sludge (biosolids) used in the growing cycle?

Total points 0: Information gathering question. Human sewage sludge (biosolids), which are by-products of waste water treatment, should not to be used in the growing cycle for indoor growing operations, and also where specifically prohibited under best management practices (e.g., LGMA, T-GAPs).

https://toxics.usgs.gov/regional/emc/municipal_biosolids.html

Automatic Failure (0 points) if:

- There is a single incidence of sewage sludge (biosolids) being used in the growing cycle of indoor growing operations or where prohibited under best management practices.

3.09.01a: Is fertilizer being used where the country regulations/guidelines ban the use of such materials (e.g., Californian Leafy Green Commodity Specific Guidelines)? ANY DOWN SCORE IN THIS QUESTION RESULTS IN AN AUTOMATIC FAILURE OF THE AUDIT.

Total compliance (15 points): Only fertilizer approved for that specific crop should be used. Some commodity specific guidelines have rules regarding the use of specific fertilizer types, e.g. Californian Leafy Green Commodity Specific Guidelines bans the use of biosolids and untreated animal manure.

Automatic Failure (0 points) if:

- There is a single incidence of fertilizer being used where the country regulations/guidelines ban their use.

3.09.01b: Are there fertilizer use records available for each growing area, including application records?

Total compliance (15 points): Records should be legible and at least detail the date of application, type of fertilizer, amount, method of application (drip, bulk, etc.), where it was applied and operator name. There should be sufficient identification information in the records that would make it possible to trace an application back to the site if needed. There should be an interval between application and harvest of at least 45 days for non-synthetic crop treatments and compost, and an interval of at least 120 days (but ideally 9 months) for untreated animal manure. A shorter interval is possible if the fertilizer has been through a physical/chemical/biological process to inactivate human pathogens and the auditee has validation study documentation that shows that the material is safe. Validation studies must be applicable to the situation at hand and care should be taken not to over extrapolate. There should be confirmation that monitoring records of the validation study's key requirements are being kept and that these monitoring records are being verified.

Minor deficiency (10 points) if:

- Single/isolated instance(s) of missing records.

Major deficiency (5 points) if:

- Numerous instances of missing records.

Non-compliance (0 points) if:

- Systematic failure to maintain records.
- No records are available.
- The interval between application and harvest is not being respected, and there is no validation study to verify application timelines.

3.09.01c: Are applications incorporated into the soil prior to planting or bud burst for tree crops and not applied during the growing season?

Total compliance (10 points): If used, the applications should be incorporated into the soil prior to planting or bud burst for tree crops.

Minor deficiency (7 points) if:

- Single/isolated instance(s) of missing records to verify timelines.

Major deficiency (3 points) if:

- Numerous instances of missing records to verify timelines.

Non-compliance (0 points) if:

- Systematic failure to apply compost prior to planting or bud burst for tree crops.
- No records are available.

3.09.01d: Are there Certificate(s) of Analysis (CoA), specifications, product label or other documents available for review provided by the supplier stating the components of the material?

Total compliance (10 points): Certificate(s) of Analysis (CoA), letters of guarantee or other formal documentation from the fertilizer manufacturer's or supplier(s) should be current and state any inert or active ingredient substances used as "fillers" (e.g., clay pellets, granular limestone). Concerns are for heavy metals that may affect human health (e.g., Cadmium (Cd) Arsenic (As), Chromium (Cr), Lead (Pb), Mercury (Hg), Nickel (Ni), and Vanadium (V)). There should be sufficient identification information that would make it possible to trace back to the source if needed, therefore, only approved suppliers should be used limited to those firms demonstrating consistent compliance with prevailing national/local standards and guidelines.

<https://apps1.cdfa.ca.gov/fertilizerproducts/>

<http://www.health.state.mn.us/divs/eh/risk/studies/metals.html>

<http://library.state.or.us/repository/2007/200701251422434/index.pdf>

<https://agr.wa.gov/pestfert/fertilizers/productdatabase.aspx>

Minor deficiency (7 points) if:

- Documentation is available, but there is no reference to the inert material that is used.

Major deficiency (3 points) if:

- The documentation demonstrates that heavy metals that can affect human health are used as fillers without specific concentration information indicating standards.

Non-compliance (0 points) if:

- There is no documentation available detailing the components of the material.
- Documentation is provided, but is not in sufficient detail to be able to trace back to the source.

3.09.01e: Are there Certificate(s) of Analysis (CoA) from the supplier(s) that cover pathogen testing (plus any other legally/best practice required testing) and does the grower have relevant letters of guarantee regarding supplier SOPs and logs?

Total compliance (15 points): Certificates of analysis should be available for each lot (containing animal materials) used. As a minimum, microbial testing should include *Salmonella spp.*, *Listeria monocytogenes* and *E. coli* O157:H7 for non-synthetic crop treatments (e.g., compost teas, fish emulsions, fish meal, blood meal, "bio fertilizers") and for animal-based compost, using approved sampling and testing methods

(e.g., AOAC and an accredited laboratory). Where legally allowed, a reduced sampling rate is possible if the material is produced by the auditee (e.g. mushroom growing operations with in-house compost production) and has been through a physical/chemical/biological process to inactivate human pathogens and the auditee has validation study documentation that shows that the material is safe and proper process control records (e.g., time/temperature records and calibration records, such as, temperature probe) are maintained and available during the audit. Validation studies must be applicable to the situation at hand and care should be taken not to over extrapolate. All local and national legislation should also be followed. The grower should have proof that compost suppliers have cross contamination SOPs and temperature/turning logs.

Sampling Plan Options below may be used to determine the definition of a lot. There should be an indication from the supplier/producer of how lots are determined (i.e. from the information here or from another method). The sampling plans below are taken from current regulations in the state of California (related to bio-solids) and recognized manure-based compost guidelines included under the Leafy Greens Marketing Agreement.

Option 1	
Amount of Biosolids Compost Feedstock	
Metric Tons per 365-day Period	Frequency
Greater than zero but annually fewer than 290	Annually
Equal to or greater than 290 but fewer than 1,500	Quarterly
Equal to or greater than 1,500 but fewer than 15,000	Bimonthly (Every 2 months)
Equal to or greater than 15,000	Monthly
Source: State of California Regulations: Title 14, Natural Resources--Division 7, CIWMB Chapter 3.1. Composting Operations Regulatory Requirements	

Option 2
Testing Frequency: Each lot (post Phase II, before use with mushroom production). A lot is defined as a unit of production equal to or less than 5,000 cubic yards (3,823 cubic meters)
Source: Adapted from Composted Soil Amendments (containing animal manure or animal products included in the LGMA Commodity Specific Food Safety Guidelines for the Production and Harvest of Lettuce and Leafy Greens”.
Rationale: A “lot” of compost may vary depending upon the process implemented. The objective of the audit scheme is to provide a means of verifying the heat treatments systems applied to compost has been effective.

Refer to 21 CFR Part 112 Subpart F- Biological Soil Amendments of Animal Origin and Human Waste.,for details on treatment processes and microbial testing standards.

Minor deficiency (10 points) if:

- Single/isolated instance(s) of a missing test on an individual lot used.

Major deficiency (5 points) if:

- Numerous instances of missing tests on an individual lot used.
- Single/isolated instance(s) of the same missing test from multiple lots used.

Non-compliance (0 points) if:

- There are no CoAs for the material being used.
- Systematic failure to provide evidence for required tests performed on the lots used.

3.09.01f: Are there Certificate(s) of Analysis (CoA), letters of guarantee or other documents from the supplier(s) that cover heavy metal testing?

Total compliance (10 points): Certificate(s) of Analysis (CoA), letters of guarantee or some other documents from the compost supplier(s) that covers heavy metal testing should be available. Concerns are for heavy metals that may affect human health (e.g., Cadmium (Cd) Arsenic (As), Chromium (Cr), Lead (Pb), Mercury (Hg), Nickel (Ni), and Vanadium (V)). See Section 17868.2. Maximum Metal Concentrations for reference levels for an example of local State laws. All local and national legislation should also be followed. <http://www.calrecycle.ca.gov/laws/Regulations/Title14/ch31a5.htm>

Minor deficiency (7 points) if:

- Single/isolated instance(s) of a missing test on an individual lot used.

Major deficiency (3 points) if:

- Numerous instances of missing tests on an individual lot used.
- Single/isolated instance(s) of the same missing test from multiple lots used.

Non-compliance (0 points) if:

- There are no CoAs or other documentation available for the material being used.
- Systematic failure to provide evidence for required tests performed on the lots used.

3.09.02: Is compost produced from animal derived materials used by the grower?

Total points 0: Information gathering question. This question is specifically targeting compost produced from raw animal manures, as opposed to green waste.

3.09.02a: Is fertilizer being used where the country regulations/guidelines ban the use of such materials (e.g., Californian Leafy Green Commodity Specific Guidelines)? ANY DOWN SCORE IN THIS QUESTION RESULTS IN AN AUTOMATIC FAILURE OF THE AUDIT.

Total compliance (15 points): Only fertilizer approved for that specific crop should be used. Some commodity specific guidelines have rules regarding the use of specific fertilizer types, e.g. Californian Leafy Green Commodity Specific Guidelines bans the use of biosolids and untreated animal manure.

Automatic Failure (0 points) if:

- **There is a single incidence of fertilizer being used where the country regulations/guidelines ban their use.**

3.09.02b: Are there fertilizer use records available for each growing area, including application records?

Total compliance (15 points): Records should be legible and at least detail the date of application, type of fertilizer, amount, method of application (drip, bulk, etc.), where it was applied and operator name. There should be sufficient identification information in the records that would make it possible to trace an application back to the site if needed. There should be an interval between application and harvest of at least 45 days for non-synthetic crop treatments and compost, and an interval of at least 120 days (but ideally 9 months) for untreated animal manure. A shorter interval is possible if the fertilizer has been through a physical/chemical/biological process to inactivate human pathogens and the auditee has validation study documentation that shows that the material is safe. Validation studies must be applicable to the situation at hand and care should be taken not to over extrapolate. There should be confirmation that monitoring records of the validation study's key requirements are being kept and that these monitoring records are being verified.

Minor deficiency (10 points) if:

- Single/isolated instance(s) of missing records.

Major deficiency (5 points) if:

- Numerous instances of missing records.

Non-compliance (0 points) if:

- Systematic failure to maintain records.

- No records are available.
- The interval between application and harvest is not being respected, and there is no validation study to verify application timelines.

3.09.02c: Are applications incorporated into the soil prior to planting or bud burst for tree crops and not applied during the growing season?

Total compliance (10 points): If used, the applications should be incorporated into the soil prior to planting or bud burst for tree crops.

Minor deficiency (7 points) if:

- Single/isolated instance(s) of missing records to verify timelines.

Major deficiency (3 points) if:

- Numerous instances of missing records to verify timelines.

Non-compliance (0 points) if:

- Systematic failure to apply compost prior to planting or bud burst for tree crops.
- No records are available.

3.09.02d: Are there Certificate(s) of Analysis (CoA), specifications, product label or other documents available for review provided by the supplier stating the components of the material?

Total compliance (10 points): Certificate(s) of Analysis (CoA), letters of guarantee or other formal documentation from the fertilizer manufacturer's or supplier(s) should be current and state any inert or active ingredient substances used as "fillers" (e.g., clay pellets, granular limestone). Concerns are for heavy metals that may affect human health (e.g., Cadmium (Cd) Arsenic (As), Chromium (Cr), Lead (Pb), Mercury (Hg), Nickel (Ni), and Vanadium (V).). There should be sufficient identification information that would make it possible to trace back to the source if needed, therefore, only approved suppliers should be used limited to those firms demonstrating consistent compliance with prevailing national/local standards and guidelines.

<https://apps1.cdfa.ca.gov/fertilizerproducts/>
<http://www.health.state.mn.us/divs/eh/risk/studies/metals.html>
<http://library.state.or.us/repository/2007/200701251422434/index.pdf>
<https://agr.wa.gov/pestfert/fertilizers/productdatabase.aspx>

Minor deficiency (7 points) if:

- Documentation is available, but there is no reference to the inert material that is used.

Major deficiency (3 points) if:

- The documentation demonstrates that heavy metals that can affect human health are used as fillers without specific concentration information indicating standards.

Non-compliance (0 points) if:

- There is no documentation available detailing the components of the material.
- Documentation is provided, but is not in sufficient detail to be able to trace back to the source.

3.09.02e: Are there Certificate(s) of Analysis (CoA) from the supplier(s) that cover pathogen testing (plus any other legally/best practice required testing) and does the grower have relevant letters of guarantee regarding supplier SOPs and logs?

Total compliance (15 points): Certificates of analysis should be available for each lot (containing animal materials) used. As a minimum, microbial testing should include *Salmonella spp.*, *Listeria monocytogenes* and *E. coli* O157:H7 for non-synthetic crop treatments (e.g., compost teas, fish emulsions, fish meal, blood meal, "bio fertilizers") and for animal-based compost, using approved sampling and testing methods (e.g., AOAC and an accredited laboratory). Where legally allowed, a reduced sampling rate is possible if

the material is produced by the auditee (e.g. mushroom growing operations with in-house compost production) and has been through a physical/chemical/biological process to inactivate human pathogens and the auditee has validation study documentation that shows that the material is safe and proper process control records (e.g., time/temperature records and calibration records, such as, temperature probe) are maintained and available during the audit. Validation studies must be applicable to the situation at hand and care should be taken not to over extrapolate. All local and national legislation should also be followed. The grower should have proof that compost suppliers have cross contamination SOPs and temperature/turning logs.

Sampling Plan Options below may be used to determine the definition of a lot. There should be an indication from the supplier/producer of how lots are determined (i.e. from the information here or from another method). The sampling plans below are taken from current regulations in the state of California (related to bio-solids) and recognized manure-based compost guidelines included under the Leafy Greens Marketing Agreement.

Option 1	
Amount of Biosolids Compost Feedstock	
Metric Tons per 365-day Period	Frequency
Greater than zero but annually fewer than 290	Annually
Equal to or greater than 290 but fewer than 1,500	Quarterly
Equal to or greater than 1,500 but fewer than 15,000	Bimonthly (Every 2 months)
Equal to or greater than 15,000	Monthly
Source: State of California Regulations: Title 14, Natural Resources--Division 7, CIWMB Chapter 3.1. Composting Operations Regulatory Requirements	

Option 2
Testing Frequency: Each lot (post Phase II, before use with mushroom production). A lot is defined as a unit of production equal to or less than 5,000 cubic yards (3,823 cubic meters)
Source: Adapted from Composted Soil Amendments (containing animal manure or animal products included in the LGMA Commodity Specific Food Safety Guidelines for the Production and Harvest of Lettuce and Leafy Greens”.
Rationale: A “lot” of compost may vary depending upon the process implemented. The objective of the audit scheme is to provide a means of verifying the heat treatments systems applied to compost has been effective.

Refer to 21 CFR Part 112 Subpart F- Biological Soil Amendments of Animal Origin and Human Waste.,for details on treatment processes and microbial testing standards.

Minor deficiency (10 points) if:

- Single/isolated instance(s) of a missing test on an individual lot used.

Major deficiency (5 points) if:

- Numerous instances of missing tests on an individual lot used.
- Single/isolated instance(s) of the same missing test from multiple lots used.

Non-compliance (0 points) if:

- There are no CoAs for the material being used.
- Systematic failure to provide evidence for required tests performed on the lots used.

3.09.02f: Are there Certificate(s) of Analysis (CoA), letters of guarantee or other documents from the supplier(s) that cover heavy metal testing?

Total compliance (10 points): Certificate(s) of Analysis (CoA), letters of guarantee or some other documents from the supplier(s) that covers heavy metal testing should be available. Concerns are for heavy metals that may affect human health (e.g., Cadmium (Cd) Arsenic (As), Chromium (Cr), Lead (Pb),

Mercury (Hg), Nickel (Ni), and Vanadium (V).). See Section 17868.2. Maximum Metal Concentrations for reference levels for an example of local State laws. All local and national legislation should also be followed. <http://www.calrecycle.ca.gov/laws/Regulations/Title14/ch31a5.htm>

Minor deficiency (7 points) if:

- Single/isolated instance(s) of a missing test on an individual lot used.

Major deficiency (3 points) if:

- Numerous instances of missing tests on an individual lot used.
- Single/isolated instance(s) of the same missing test from multiple lots used.

Non-compliance (0 points) if:

- There are no CoAs or other documentation available for the material being used.
- Systematic failure to provide evidence for required tests performed on the lots used.

3.09.02g: Does the fertilizer/crop nutrition material go through a physical/chemical/biological process to inactivate human pathogens and the auditee has validation study documentation that shows that the material is safe and at least meets the following microbial parameters: no detectable *L. monocytogenes*, *Salmonella*, or *E. coli* O157:H7 and less than 1000 MPN fecal coliforms/gram of total solids?

Total compliance (15 points): There should be validation study documentation on file demonstrating that the material contains no detectable *L. monocytogenes*, *Salmonella*, or *E. coli* O157:H7 and less than 1000 MPN fecal coliforms/gram of total solids. These requirements are required for indoor farming operations (e.g., mushroom growing).

Minor deficiency (10 points) if:

- Single/isolated instance(s) of a missing test.

Major deficiency (5 points) if:

- Numerous instances of missing tests.

Non-compliance (0 points) if:

- Systematic failure to demonstrate that the material used meets the specified microbial parameters.
- No validation study documentation is available.

3.09.03: Is untreated animal manure used?

Total compliance (0 points): **Information gathering question.** Untreated animal manure refers to manure that is raw and has not gone through a treatment process. **Examples include raw manure and/or uncomposted, incompletely composted animal manure and/or green waste or non-thermally treated animal manure.** Untreated animal manure should not be used in indoor growing operations or where prohibited under best management practices.

Automatic Failure (0 points) if:

- **There is a single incidence of untreated animal manure being used in the growing cycle of indoor growing operations or where prohibited under best management practices.**

3.09.03a: Is fertilizer being used where the country regulations/guidelines ban the use of such materials (e.g., Californian Leafy Green Commodity Specific Guidelines)? ANY DOWN SCORE IN THIS QUESTION RESULTS IN AN AUTOMATIC FAILURE OF THE AUDIT.

Total compliance (15 points): **Only fertilizer approved for that specific crop should be used.** Some commodity specific guidelines have rules regarding use of specific fertilizer types, e.g. Californian Leafy Green Commodity Specific Guidelines ban the use of **biosolids and untreated animal manure.**

Automatic Failure (0 points) if:

- There is a single incidence of fertilizer being used where the country regulations/guidelines ban their use.

3.09.03b: Are there fertilizer use records available for each growing area, including application records?

Total compliance (15 points): Records should be legible and at least detail the date of application, type of fertilizer, amount, method of application (drip, bulk, etc.), where it was applied and operator name. There should be sufficient identification information in the records that would make it possible to trace an application back to the site if needed. There should be an interval between application and harvest of at least 45 days for non-synthetic crop treatments and compost, and an interval of at least 120 days (but ideally 9 months) for untreated animal manure. A shorter interval is possible if the fertilizer has been through a physical/chemical/biological process to inactivate human pathogens and the auditee has validation study documentation that shows that the material is safe. Validation studies must be applicable to the situation at hand and care should be taken not to over extrapolate. There should be confirmation that monitoring records of the validation study's key requirements are being kept and that these monitoring records are being verified.

Minor deficiency (10 points) if:

- Single/isolated instance(s) of missing records.

Major deficiency (5 points) if:

- Numerous instances of missing records.

Non-compliance (0 points) if:

- Systematic failure to maintain records.
- No records are available.
- The interval between application and harvest is not being respected, and there is no validation study to verify application timelines.

3.09.03c: Are applications incorporated into the soil prior to planting or bud burst for tree crops and not applied during the growing season?

Total compliance (10 points): If used, the applications should be incorporated into the soil prior to planting or bud burst for tree crops.

Minor deficiency (7 points) if:

- Single/isolated instance(s) of missing records to verify timelines.

Major deficiency (3 points) if:

- Numerous instances of missing records to verify timelines.

Non-compliance (0 points) if:

- Systematic failure to apply manure prior to planting or bud burst for tree crops.
- No records are available.

3.09.03d: Are there Certificate(s) of Analysis (CoA), specifications, product label or other documents available for review provided by the supplier stating the components of the material?

Total compliance (10 points): Certificate(s) of Analysis (CoA), letters of guarantee or other formal documentation from the fertilizer manufacturer's or supplier(s) should be current and state any inert or active ingredient substances used as "fillers" (e.g., clay pellets, granular limestone). Concerns are for heavy metals that may affect human health (e.g., Cadmium (Cd) Arsenic (As), Chromium (Cr), Lead (Pb), Mercury (Hg), Nickel (Ni), and Vanadium (V)). There should be sufficient identification information that would make it possible to trace back to the source if needed, therefore, only approved suppliers should

be used limited to those firms demonstrating consistent compliance with prevailing national/local standards and guidelines.

- <https://apps1.cdfa.ca.gov/fertilizerproducts/>
- <http://www.health.state.mn.us/divs/eh/risk/studies/metals.html>
- <http://library.state.or.us/repository/2007/200701251422434/index.pdf>
- <https://agr.wa.gov/pestfert/fertilizers/productdatabase.aspx>

Minor deficiency (7 points) if:

- Documentation is available, but there is no reference to the inert material that is used.

Major deficiency (3 points) if:

- The documentation demonstrates that heavy metals that can affect human health are used as fillers without specific concentration information indicating standards.

Non-compliance (0 points) if:

- There is no documentation available detailing the components of the material.
- Documentation is provided, but is not in sufficient detail to be able to trace back to the source.

3.09.03e: Are there Certificate(s) of Analysis (CoA) from the supplier(s) that cover pathogen testing (plus any other legally/best practice required testing) and does the grower have relevant letters of guarantee regarding supplier SOPs and logs?

Total compliance (15 points): Certificates of analysis should be available for each lot (containing animal materials) used. As a minimum, microbial testing should include *Salmonella spp.*, *Listeria monocytogenes* and *E. coli* O157:H7 for non-synthetic crop treatments (e.g., compost teas, fish emulsions, fish meal, blood meal, “bio fertilizers”) and for animal-based compost, using approved sampling and testing methods (e.g., AOAC and an accredited laboratory). Where legally allowed, a reduced sampling rate is possible if the material is produced by the auditee (e.g. mushroom growing operations with in-house compost production) and has been through a physical/chemical/biological process to inactivate human pathogens and the auditee has validation study documentation that shows that the material is safe and proper process control records (e.g., time/temperature records and calibration records, such as, temperature probe) are maintained and available during the audit. Validation studies must be applicable to the situation at hand and care should be taken not to over extrapolate. All local and national legislation should also be followed. The grower should have proof that compost suppliers have cross contamination SOPs and temperature/turning logs.

Sampling Plan Options below may be used to determine the definition of a lot. There should be an indication from the supplier/producer of how lots are determined (i.e. from the information here or from another method). The sampling plans below are taken from current regulations in the state of California (related to bio-solids) and recognized manure-based compost guidelines included under the Leafy Greens Marketing Agreement.

Option 1	
Amount of Biosolids Compost Feedstock	
Metric Tons per 365-day Period	Frequency
Greater than zero but annually fewer than 290	Annually
Equal to or greater than 290 but fewer than 1,500	Quarterly
Equal to or greater than 1,500 but fewer than 15,000	Bimonthly (Every 2 months)
Equal to or greater than 15,000	Monthly
Source: State of California Regulations: Title 14, Natural Resources--Division 7, CIWMB Chapter 3.1. Composting Operations Regulatory Requirements	

Option 2
Testing Frequency: Each lot (post Phase II, before use with mushroom production). A lot is defined as a unit of production equal to or less than 5,000 cubic yards (3,823 cubic meters)

Source: Adapted from Composted Soil Amendments (containing animal manure or animal products included in the LGMA Commodity Specific Food Safety Guidelines for the Production and Harvest of Lettuce and Leafy Greens”.

Rationale: A “lot” of compost may vary depending upon the process implemented. The objective of the audit scheme is to provide a means of verifying the heat treatments systems applied to compost has been effective.

Refer to 21 CFR Part 112 Subpart F- Biological Soil Amendments of Animal Origin and Human Waste, for details on treatment processes and microbial testing standards.

Minor deficiency (10 points) if:

- Single/isolated instance(s) of a missing test on an individual lot used.

Major deficiency (5 points) if:

- Numerous instances of missing tests on an individual lot used.
- Single/isolated instance(s) of the same missing test from multiple lots used.

Non-compliance (0 points) if:

- There are no CoAs for the material being used.
- Systematic failure to provide evidence for required tests performed on the lots used.

3.09.03f: Are there Certificate(s) of Analysis (CoA), letters of guarantee or other documents from the supplier(s) that cover heavy metal testing?

Total compliance (10 points): Certificate(s) of Analysis (CoA), letters of guarantee or some other documents from the supplier(s) that covers heavy metal testing should be available. Concerns are for heavy metals that may affect human health (e.g., Cadmium (Cd) Arsenic (As), Chromium (Cr), Lead (Pb), Mercury (Hg), Nickel (Ni), and Vanadium (V).). See Section 17868.2. Maximum Metal Concentrations for reference levels for an example of local State laws. All local and national legislation should also be followed. <http://www.calrecycle.ca.gov/laws/Regulations/Title14/ch31a5.htm>

Minor deficiency (7 points) if:

- Single/isolated instance(s) of a missing test on an individual lot used.

Major deficiency (3 points) if:

- Numerous instances of missing tests on an individual lot used.
- Single/isolated instance(s) of the same missing test from multiple lots used.

Non-compliance (0 points) if:

- There are no CoAs or other documentation available for the material being used.
- Systematic failure to provide evidence for required tests performed on the lots used.

3.09.04: Are other non-synthetic crop treatments used (e.g. compost teas, fish emulsions, fish meal, blood meal, "bio fertilizers")?

Total points 0: Information gathering question. Examples include but are not limited to compost teas (also known as agricultural teas), fish emulsions, fish meal, blood meal, inoculants (beneficial microbes), and "bio fertilizers" that are produced from animal materials.

3.09.04a: Is fertilizer being used where the country regulations/guidelines ban the use of such materials (e.g., Californian Leafy Green Commodity Specific Guidelines)? ANY DOWN SCORE IN THIS QUESTION RESULTS IN AN AUTOMATIC FAILURE OF THE AUDIT.

Total compliance (15 points): Only fertilizer approved for that specific crop should be used. Some commodity specific guidelines have rules regarding the use of specific fertilizer types, e.g. Californian Leafy Green Commodity Specific Guidelines bans the use of biosolids and untreated animal manure.

Automatic Failure (0 points) if:

- **There is a single incidence of fertilizer being used where the country regulations/guidelines ban their use.**

3.09.04b: Are there fertilizer use records available for each growing area, including application records?

Total compliance (15 points): Records should be legible and at least detail the date of application, type of fertilizer, amount, method of application (drip, bulk, etc.), where it was applied and operator name. There should be sufficient identification information in the records that would make it possible to trace an application back to the site if needed. There should be an interval between application and harvest of at least 45 days for non-synthetic crop treatments and compost, and an interval of at least 120 days (but ideally 9 months) for untreated animal manure. A shorter interval is possible, if the fertilizer has been through a physical/chemical/biological process to inactivate human pathogens and the auditee has validation study documentation that shows that the material is safe. Validation studies must be applicable to the situation at hand and care should be taken not to over extrapolate. There should be confirmation that monitoring records of the validation study's key requirements are being kept and that these monitoring records are being verified.

Minor deficiency (10 points) if:

- Single/isolated instance(s) of missing records.

Major deficiency (5 points) if:

- Numerous instances of missing records.

Non-compliance (0 points) if:

- Systematic failure to maintain records.
- No records are available.
- The interval between application and harvest is not being respected, and there is no validation study to verify application timelines.

3.09.04c: Is the material applied in a manner that does not contact the edible portions of the crop?

Total compliance (15 points): Non-synthetic treatments that contain animal products or animal manures should not be applied to the edible portions of crops.

Minor deficiency (10 points) if:

- Single/isolated instance(s) of missing records to verify the application method.

Major deficiency (5 points) if:

- Numerous instances of missing records to verify the application method.

Non-compliance (0 points) if:

- Fertilizer is systematically applied to the edible portion of the crop.
- There are no records to verify the application method.
- **Any incident of direct product contamination constitutes as a health hazard and is viewed as adulteration. Revert to Q 3.05.11.**

3.09.04d: Are there Certificate(s) of Analysis (CoA), specifications, product label or other documents available for review provided by the supplier stating the components of the material?

Total compliance (10 points): Certificate(s) of Analysis (CoA), letters of guarantee or other formal documentation from the fertilizer manufacturer's or supplier(s) should be current and state any inert or active ingredient substances used as "fillers" (e.g., clay pellets, granular limestone). Concerns are for heavy metals that may affect human health (e.g., Cadmium (Cd) Arsenic (As), Chromium (Cr), Lead (Pb), Mercury (Hg), Nickel (Ni), and Vanadium (V)). There should be sufficient identification information that would make it possible to trace back to the source if needed, therefore, only approved suppliers should

be used limited to those firms demonstrating consistent compliance with prevailing national/local standards and guidelines.

- <https://apps1.cdfa.ca.gov/fertilizerproducts/>
- <http://www.health.state.mn.us/divs/eh/risk/studies/metals.html>
- <http://library.state.or.us/repository/2007/200701251422434/index.pdf>
- <https://agr.wa.gov/pestfert/fertilizers/productdatabase.aspx>

Minor deficiency (7 points) if:

- Documentation is available, but there is no reference to the inert material that is used.

Major deficiency (3 points) if:

- The documentation demonstrates that heavy metals that can affect human health are used as fillers without specific concentration information indicating standards.

Non-compliance (0 points) if:

- There is no documentation available detailing the components of the material.
- Documentation is provided, but is not in sufficient detail to be able to trace back to the source.

3.09.04e: Are there Certificate(s) of Analysis (CoA) from the supplier(s) that cover pathogen testing (plus any other legally/best practice required testing) and does the grower have relevant letters of guarantee regarding supplier SOPs and logs?

Total compliance (15 points): Certificates of analysis should be available for each lot (containing animal materials) used. As a minimum, microbial testing should include *Salmonella spp.*, *Listeria monocytogenes* and *E. coli* O157:H7 for non-synthetic crop treatments (e.g., compost teas, fish emulsions, fish meal, blood meal, “bio fertilizers”) and for animal-based compost, using approved sampling and testing methods (e.g., AOAC and an accredited laboratory). Where legally allowed, a reduced sampling rate is possible if the material is produced by the auditee (e.g. mushroom growing operations with in-house compost production) and has been through a physical/chemical/biological process to inactivate human pathogens and the auditee has validation study documentation that shows that the material is safe and proper process control records (e.g., time/temperature records and calibration records, such as, temperature probe) are maintained and available during the audit. Validation studies must be applicable to the situation at hand and care should be taken not to over extrapolate. All local and national legislation should also be followed. The grower should have proof that compost suppliers have cross contamination SOPs and temperature/turning logs.

Sampling Plan Options below may be used to determine the definition of a lot. There should be an indication from the supplier/producer of how lots are determined (i.e. from the information here or from another method). The sampling plans below are taken from current regulations in the state of California (related to bio-solids) and recognized manure-based compost guidelines included under the Leafy Greens Marketing Agreement.

Option 1	
Amount of Biosolids Compost Feedstock	
Metric Tons per 365-day Period	Frequency
Greater than zero but annually fewer than 290	Annually
Equal to or greater than 290 but fewer than 1,500	Quarterly
Equal to or greater than 1,500 but fewer than 15,000	Bimonthly (Every 2 months)
Equal to or greater than 15,000	Monthly
Source: State of California Regulations: Title 14, Natural Resources--Division 7, CIWMB Chapter 3.1. Composting Operations Regulatory Requirements	

Option 2

Testing Frequency: Each lot (post Phase II, before use with mushroom production). A lot is defined as a unit of production equal to or less than 5,000 cubic yards (3,823 cubic meters)

Source: Adapted from Composted Soil Amendments (containing animal manure or animal products included in the LGMA Commodity Specific Food Safety Guidelines for the Production and Harvest of Lettuce and Leafy Greens”.

Rationale: A “lot” of compost may vary depending upon the process implemented. The objective of the audit scheme is to provide a means of verifying the heat treatments systems applied to compost has been effective.
--

Refer to 21 CFR Part 112 Subpart F- Biological Soil Amendments of Animal Origin and Human Waste, for details on treatment processes and microbial testing standards.

Minor deficiency (10 points) if:

- Single/isolated instance(s) of a missing test on an individual lot used.

Major deficiency (5 points) if:

- Numerous instances of missing tests on an individual lot used.
- Single/isolated instance(s) of the same missing test from multiple lots used.

Non-compliance (0 points) if:

- There are no CoAs for the material being used.
- Systematic failure to provide evidence for required tests performed on the lots used.

3.09.04f: Are there Certificate(s) of Analysis (CoA), letters of guarantee or other documents from the supplier(s) that cover heavy metal testing?

Total compliance (10 points): Certificate(s) of Analysis (CoA), letters of guarantee or some other documents from the non-synthetic crop treatment supplier(s) that covers heavy metal testing should be available. Concerns are for heavy metals that may affect human health (e.g., Cadmium (Cd) Arsenic (As), Chromium (Cr), Lead (Pb), Mercury (Hg), Nickel (Ni), and Vanadium (V).). See Section 17868.2. Maximum Metal Concentrations for reference levels for an example of local State laws. All local and national legislation should also be followed.

<http://www.calrecycle.ca.gov/laws/Regulations/Title14/ch31a5.htm>

Minor deficiency (7 points) if:

- Single/isolated instance(s) of a missing test on an individual lot used.

Major deficiency (3 points) if:

- Numerous instances of missing tests on an individual lot used.
- Single/isolated instance(s) of the same missing test from multiple lots used.

Non-compliance (0 points) if:

- There are no CoAs or other documentation available for the material being used.
- Systematic failure to provide evidence for required tests performed on the lots used.

3.09.04g: Does the fertilizer/crop nutrition material go through a physical/chemical/biological process to inactivate human pathogens and the auditee has validation study documentation that shows that the material is safe and at least meets the following microbial parameters: no detectable *L. monocytogenes*, *Salmonella*, or *E. coli* O157:H7 and less than 1000 MPN fecal coliforms/gram of total solids?

Total compliance (15 points): There should be validation study documentation on file demonstrating that the material contains no detectable *L. monocytogenes*, *Salmonella*, or *E. coli* O157:H7 and less than 1000 MPN fecal coliforms/gram of total solids. These requirements are required for indoor farming operations (e.g., mushroom growing).

Minor deficiency (10 points) if:

- Single/isolated instance(s) of a missing test.

Major deficiency (5 points) if:

- Numerous instances of missing tests.

Non-compliance (0 points) if:

- Systematic failure to demonstrate that the material used meets the specified microbial parameters.
- No validation study documentation is available.

3.09.05: Are any soil or substrate amendments (except inorganic nutrients/fertilizers) used that do not contain animal products and/or animal manures?

Total points 0: **Information gathering question.** This refers to soil or substrate amendments (except inorganic nutrients/fertilizers) used that do not contain animal products and/or animal manures. Examples include but are not limited to plant by-products (e.g., coir), humates (e.g., peat), seaweed, conditioners (e.g., vermiculite), etc.

3.09.05a: Is fertilizer being used where the country regulations/guidelines ban the use of such materials (e.g., Californian Leafy Green Commodity Specific Guidelines)? ANY DOWN SCORE IN THIS QUESTION RESULTS IN AN AUTOMATIC FAILURE OF THE AUDIT.

Total compliance (15 points): Only fertilizer approved for that specific crop should be used. Some commodity specific guidelines have rules regarding the use of specific fertilizer types, e.g. Californian Leafy Green Commodity Specific Guidelines bans the use of biosolids and untreated animal manure.

Automatic Failure (0 points) if:

- **There is a single incidence of fertilizer being used where the country regulations/guidelines ban their use.**

3.09.05b: Are there fertilizer use records available for each growing area, including application records?

Total compliance (15 points): Records should be legible and at least detail the date of application, type of fertilizer, amount, method of application (drip, bulk, etc.), where it was applied and operator name. There should be sufficient identification information in the records that would make it possible to trace an application back to the site if needed. There should be an interval between application and harvest of at least 45 days for non-synthetic crop treatments and compost, and an interval of at least 120 days (but ideally 9 months) for untreated animal manure. A shorter interval is possible if the fertilizer has been through a physical/chemical/biological process to inactivate human pathogens and the auditee has validation study documentation that shows that the material is safe. Validation studies must be applicable to the situation at hand and care should be taken not to over extrapolate. There should be confirmation that monitoring records of the validation study's key requirements are being kept and that these monitoring records are being verified.

Minor deficiency (10 points) if:

- Single/isolated instance(s) of missing records.

Major deficiency (5 points) if:

- Numerous instances of missing records.

Non-compliance (0 points) if:

- Systematic failure to maintain records.
- No records are available.
- The interval between application and harvest is not being respected, and there is no validation study to verify application timelines.

3.09.05c: Are there Certificate(s) of Analysis (CoA), specifications, product label or other documents available for review provided by the supplier stating the components of the material?

Total compliance (10 points): Certificate(s) of Analysis (CoA), letters of guarantee or other formal documentation from the fertilizer manufacturer's or supplier(s) should be current and state any inert or active ingredient substances used as "fillers" (e.g., clay pellets, granular limestone). Concerns are for heavy metals that may affect human health (e.g., Cadmium (Cd) Arsenic (As), Chromium (Cr), Lead (Pb), Mercury (Hg), Nickel (Ni), and Vanadium (V).). There should be sufficient identification information that would make it possible to trace back to the source if needed, therefore, only approved suppliers should be used limited to those firms demonstrating consistent compliance with prevailing national/local standards and guidelines.

<https://apps1.cdffa.ca.gov/fertilizerproducts/>
<http://www.health.state.mn.us/divs/eh/risk/studies/metals.html>
<http://library.state.or.us/repository/2007/200701251422434/index.pdf>
<https://agr.wa.gov/pestfert/fertilizers/productdatabase.aspx>

Minor deficiency (7 points) if:

- Documentation is available, but there is no reference to the inert material that is used.

Major deficiency (3 points) if:

- The documentation demonstrates that heavy metals that can affect human health are used as fillers without specific concentration information indicating standards.

Non-compliance (0 points) if:

- There is no documentation available detailing the components of the material.
- Documentation is provided, but is not in sufficient detail to be able to trace back to the source.

3.09.05d: Are there Certificate(s) of Analysis (CoA) and/or letters of guarantee stating that the materials used are free from animal products and/or animal manures?

Total compliance (15 points): There should be Certificate(s) of Analysis (CoA) and/or letters of guarantee from the fertilizer supplier, stating that the materials they are supplying are free from animal products and/or animal manures. A statement of ingredients or letter from suppliers attesting this fact is acceptable. Auditor should match the names of the materials being used with the CoA's and/or letters of guarantee.

Minor deficiency (10 points) if:

- Single/isolated instance(s) of missing records.

Major deficiency (5 points) if:

- Numerous instances of missing records.

Non-compliance (0 points) if:

- Systematic failure to maintain records.
- No records are available.

3.09.05e: Does the fertilizer/crop nutrition material go through a physical/chemical/biological process to inactivate human pathogens and the auditee has validation study documentation that shows that the material is safe and at least meets the following microbial parameters: no detectable *L. monocytogenes*, *Salmonella*, or *E. coli* O157:H7 and less than 1000 MPN fecal coliforms/gram of total solids?

Total compliance (15 points): There should be validation study documentation on file demonstrating that the material contains no detectable *L. monocytogenes*, *Salmonella*, or *E. coli* O157:H7 and less than 1000 MPN fecal coliforms/gram of total solids. These requirements are required for indoor farming operations (e.g., mushroom growing).

Minor deficiency (10 points) if:

- Single/isolated instance(s) of a missing test.

Major deficiency (5 points) if:

- Numerous instances of missing tests.

Non-compliance (0 points) if:

- Systematic failure to demonstrate that the material used meets the specified microbial parameters.
- No validation study documentation is available.

3.09.06: Are inorganic fertilizers used?

Total points 0: **Information gathering question.** Examples of manufactured inorganic fertilizers include ammonium nitrate, ammonium sulfate, chemically synthesized urea, etc. These are sometimes called synthetic fertilizers.

3.09.06a: Is fertilizer being used where the country regulations/guidelines ban the use of such materials (e.g., Californian Leafy Green Commodity Specific Guidelines)? ANY DOWN SCORE IN THIS QUESTION RESULTS IN AN AUTOMATIC FAILURE OF THE AUDIT.

Total compliance (15 points): Only fertilizer approved for that specific crop should be used. Some commodity specific guidelines have rules regarding the use of specific fertilizer types, e.g. Californian Leafy Green Commodity Specific Guidelines bans the use of biosolids and untreated animal manure.

Automatic Failure (0 points) if:

- **There is a single incidence of fertilizer being used where the country regulations/guidelines ban their use.**

3.09.06b: Are there fertilizer use records available for each growing area, including application records?

Total compliance (15 points): **Records should be legible and at least detail the date of application, type of fertilizer, amount, method of application (drip, bulk, etc.), where it was applied and operator name.** There should be sufficient identification information in the records that would make it possible to trace an application back to the site if needed.

Minor deficiency (10 points) if:

- Single/isolated instance(s) of missing records.

Major deficiency (5 points) if:

- Numerous instances of missing records.

Non-compliance (0 points) if:

- Systematic failure to maintain records.
- No records are available.
- The interval between application and harvest is not being respected, and there is no validation study to verify application timelines.

3.09.06c: Are there Certificate(s) of Analysis (CoA), specifications, product label or other documents available for review by the supplier stating the components of the material?

Total compliance (10 points): Certificate(s) of Analysis (CoA), letters of guarantee or other formal documentation from the fertilizer manufacturer's or supplier(s) should be current and state any inert or active ingredient substances used as "fillers" (e.g., clay pellets, granular limestone). Concerns are for heavy metals that may affect human health (e.g. Cadmium (Cd) Arsenic (As), Chromium (Cr), Lead (Pb), Mercury (Hg), Nickel (Ni), and Vanadium (V).). **There should be sufficient identification information that would make it possible to trace back to the source if needed, therefore, only approved suppliers should be used limited to those firms demonstrating consistent compliance with prevailing national/local standards and guidelines.**

<https://apps1.cdfa.ca.gov/fertilizerproducts/>

<http://www.health.state.mn.us/divs/eh/risk/studies/metals.html>
<http://library.state.or.us/repository/2007/200701251422434/index.pdf>
<https://agr.wa.gov/pestfert/fertilizers/productdatabase.aspx>

Minor deficiency (7 points) if:

- Documentation is available, but there is no reference to the inert material that is used.

Major deficiency (3 points) if:

- The documentation demonstrates that heavy metals that can affect human health are used as fillers, without specific concentration information indicating standards.

Non-compliance (0 points) if:

- There is no documentation available detailing the components of the material.
- Documentation is provided, but is not in sufficient detail to be able to trace back to the source.

3.09.06d: Does the fertilizer/crop nutrition material go through a physical/chemical/biological process to inactivate human pathogens and the auditee has validation study documentation that shows that the material is safe and at least meets the following microbial parameters: no detectable *L. monocytogenes*, *Salmonella*, or *E. coli* O157:H7 and less than 1000 MPN fecal coliforms/gram of total solids?

Total compliance (15 points): There should be validation study documentation on file demonstrating that the material contains no detectable *L. monocytogenes*, *Salmonella*, or *E. coli* O157:H7 and less than 1000 MPN fecal coliforms/gram of total solids. These requirements are required for indoor farming operations (e.g., mushroom growing).

Minor deficiency (10 points) if:

- Single/isolated instance(s) of a missing test.

Major deficiency (5 points) if:

- Numerous instances of missing tests.

Non-compliance (0 points) if:

- Systematic failure to demonstrate that the material used meets the specified microbial parameters.
- No validation study documentation is available.

Irrigation/Water Use

3.10.01: Is the water used for the growing operation sourced from municipal or district water pipeline systems? What is this water source used for (e.g., irrigation, crop protection sprays, fertigation, frost/freeze protection, cooling, dust abatement, etc.)? What type of irrigation methods are used (e.g., micro-irrigation, drip, overhead, flood irrigation, furrow irrigation, seepage irrigation, hydroponic (specify type))? Does the water come into contact with the edible portion of the crop?

Total points 0: Information gathering question.

3.10.01a: Are generic *E. coli* tests conducted on the water (taken from the closest practical source of use) at the required and/or expected frequency?

Total compliance (15 points): Microbial water testing, including generic *E. coli*, should occur for all water sources used for any growing activities like crop protection/fertilizer and frost or freeze prevention programs. Water samples should be taken from as close to the point of use as is practical. At least one sample per distribution system is required. If there are multiple sampling points in a distribution system, then samples should be taken from a different location each test (randomize or rotate locations).

For farm and indoor growing operations, one sample per water source should be collected and tested prior to use if >60 days since the last test of the water source. Additional samples should be taken at least

monthly during use of the water source. For farm operations, if supported by a valid risk assessment, less frequent testing is acceptable although there should be at least one water test per season. Where there are more stringent federal, national or local requirements, these requirements should be followed.

Minor deficiency (10 points) if:

- Single/isolated instance(s) of water testing not occurring at the right frequency.

Major deficiency (5 points) if:

- Numerous instances of water testing not occurring at the right frequency.

Non-compliance (0 points) if:

- No microbiological test results are available.
- A water test has not been performed within the past 12 months.

3.10.01b: Do written procedures (SOPs) exist covering proper sampling protocols which include where samples should be taken and how samples should be identified?

Total compliance (10 points): There should be documented procedures in place detailing how water samples are taken in the field, including stating how samples should be identified i.e. clearly naming the location that the sample was taken, the water source and the date (this is important in order to be able to calculate geometric means). Samples should be taken at a point as close to the point of use as possible where water contacts the crop, so as to test both the water source and the water distribution system.

Minor deficiency (7 points) if:

- Single/isolated instance(s) of errors or omissions in the SOP.

Major deficiency (3 points) if:

- Numerous instances of errors or omissions in the SOP.

Non-compliance (0 points) if:

- There are no sampling SOPs.

3.10.01c: Do written procedures (SOPs) exist covering corrective measures for unsuitable or abnormal water testing results?

Total compliance (10 points): Written procedures (SOPs) should exist covering corrective measures not only for the discovery of unsuitable or abnormal water test results but also as a preparation on how to handle such findings.

Minor deficiency (7 points) if:

- Single/isolated instance(s) of errors or omissions in the SOP.

Major deficiency (3 points) if:

- Numerous instances of errors or omissions in the SOP.

Non-compliance (0 points) if:

- There are no sampling SOPs.
- The written SOPs were not followed when unsuitable or abnormal water testing results were recorded in the last 12 months.

3.10.01d: If unsuitable or abnormal results have been detected, have documented corrective measures been performed?

Total compliance (15 points): For generic *E. coli* (unless more stringent guidelines/laws in existence) <126MPN (or CFU)/100mL (rolling geometric mean n=5) and <235MPN (or CFU)/100mL for any single sample. Where thresholds have been exceeded, there should be recorded corrective actions, including investigations, water retests and crop testing (*E. coli* O157:H7 and Salmonella - zero tolerance). **Failure**

to take corrective actions when there is evidence of high levels or an upward trend of *E. coli* may result in an automatic failure of the audit. Auditor must detail corrective actions and preventative measures taken.

Minor deficiency (10 points) if:

- Single/isolated instance(s) of water sources being used without corrective actions being performed upon receipt of unsuitable or abnormal water test results showing >235 MPN for any single sample or >126 MPN for a geometric mean.

Major deficiency (5 points) if:

- Numerous instances of water sources being used without corrective actions being performed after receipt of unsuitable or abnormal water test results showing >235 MPN for any single sample or >126 MPN for a geometric mean.

Non-compliance (0 points) if:

- No corrective measures have been performed.
- Retests were performed greater than one month after receiving the unsuitable or abnormal water test results.
- **Contaminated water is being consistently used for product contact use without evidence of corrective actions being implemented. (This qualifies as an automatic failure and should be scored under 3.05.11.)**

3.10.01e: Are there records of any anti-microbial water treatment (e.g. chlorination, U.V., ozone, etc.), and is testing current and available?

Total compliance (15 points): Any water treatment performed at the source (e.g., well, canal, holding tank) should be monitored. The strength of anti-microbial chemicals should be checked using an appropriate method for the anti-microbial in use (e.g., chemical reaction-based test, test probe, ORP meter or as recommended by the disinfectant supplier).

Minor deficiency (10 points) if:

- Single/isolated instance(s) of an error or omission in the records.

Major deficiency (5 points) if:

- Multiple instances of errors or omissions in the records.

Non-compliance (0 points) if:

- There are no available testing records.

3.10.01f: Are records kept for periodic visual inspection and disinfection (if occurring) of the water source and available for review?

Total compliance (5 points): "Records" may include calendar books with commentary regarding what was checked, the condition, unusual occurrences, and any action taken. If using a disinfection injection system (e.g. chlorination), there should be monitoring logs completed on at least a daily basis. The appropriate support documentation should be available for review.

Minor deficiency (3 points) if:

- Single/isolated instance(s) of an error or omission in the records.

Major deficiency (1 point) if:

- Multiple instances of errors or omissions in the records.

Non-compliance (0 points) if:

- There are no available records.

3.10.02: Is the water used in the growing operation sourced from wells? What is this water source used for (e.g., irrigation, crop protection sprays, fertigation, frost/freeze protection, cooling, dust abatement, etc.)? What type of irrigation methods are used (e.g., micro-irrigation, drip, overhead, flood irrigation, furrow irrigation, seepage irrigation, hydroponic (specify type))? Does the water come into contact with the edible portion of the crop?

Total points 0: Information gathering question.

3.10.02a: Are generic *E. coli* tests conducted on the water (taken from the closest practical source of use) at the required and/or expected frequency?

Total compliance (15 points): Microbial water testing, including generic *E. coli*, should occur for all water sources used for any growing activities like crop protection/fertilizer and frost or freeze prevention programs. Water samples should be taken from as close to the point of use as is practical. At least one sample per distribution system is required. If there are multiple sampling points in a distribution system, then samples should be taken from a different location each test (randomize or rotate locations).

For farm and indoor growing operations, one sample per water source should be collected and tested prior to use if >60 days since the last test of the water source. Additional samples should be taken at least monthly during use of the water source. For farm operations, if supported by a valid risk assessment, less frequent testing is acceptable although there should be at least one water test per season. Where there are more stringent federal, national or local requirements, these requirements should be followed.

Minor deficiency (10 points) if:

- Single/isolated instance(s) of water testing not occurring at the right frequency.

Major deficiency (5 points) if:

- Numerous instances of water testing not occurring at the right frequency.

Non-compliance (0 points) if:

- No microbiological test results are available.
- A water test has not been performed within the past 12 months.

3.10.02b: Do written procedures (SOPs) exist covering proper sampling protocols which include where samples should be taken and how samples should be identified?

Total compliance (10 points): There should be documented procedures in place detailing how water samples are taken in the field, including stating how samples should be identified i.e. clearly naming the location that the sample was taken, the water source and the date (this is important in order to be able to calculate geometric means). Samples should be taken at a point as close to the point of use as possible where water contacts the crop, so as to test both the water source and the water distribution system.

Minor deficiency (7 points) if:

- Single/isolated instance(s) of errors or omissions in the SOP.

Major deficiency (3 points) if:

- Numerous instances of errors or omissions in the SOP.

Non-compliance (0 points) if:

- There are no sampling SOPs.

3.10.02c: Do written procedures (SOPs) exist covering corrective measures for unsuitable or abnormal water testing results?

Total compliance (10 points): Written procedures (SOPs) should exist covering corrective measures not only for the discovery of unsuitable or abnormal water test results but also as a preparation on how to handle such findings.

Minor deficiency (7 points) if:

- Single/isolated instance(s) of errors or omissions in the SOP.

Major deficiency (3 points) if:

- Numerous instances of errors or omissions in the SOP.

Non-compliance (0 points) if:

- There are no sampling SOPs.
- The written SOPs were not followed when unsuitable or abnormal water testing results were recorded in the last 12 months.

3.10.02d: If unsuitable or abnormal results have been detected, have documented corrective measures been performed?

Total compliance (15 points): For generic *E. coli* (unless more stringent guidelines/laws in existence) <126MPN (or CFU)/100mL (rolling geometric mean n=5) and <235MPN (or CFU)/100mL for any single sample. Where thresholds have been exceeded, there should be recorded corrective actions, including investigations, water retests and crop testing (*E. coli* O157:H7 and Salmonella - zero tolerance). **Failure to take corrective actions when there is evidence of high levels or an upward trend of *E. coli* may result in an automatic failure of the audit. Auditor must detail corrective actions and preventative measures taken.**

Minor deficiency (10 points) if:

- Single/isolated instance(s) of water sources being used without corrective actions being performed upon receipt of unsuitable or abnormal water test results showing >235 MPN for any single sample or >126 MPN for a geometric mean.

Major deficiency (5 points) if:

- Numerous instances of water sources being used without corrective actions being performed one week after receipt of unsuitable or abnormal water test results showing >235 MPN for any single sample or >126 MPN for a geometric mean.

Non-compliance (0 points) if:

- No corrective measures have been performed.
- Retests were performed greater than one month after receiving the unsuitable or abnormal water test results.
- **Contaminated water is being consistently used for product contact use without evidence of corrective actions being implemented. (This qualifies as an automatic failure and should be scored under 3.05.11.)**

3.10.02e: Are there records of any anti-microbial water treatment (e.g. chlorination, U.V., ozone, etc.), and is testing current and available?

Total compliance (15 points): Any water treatment performed at the source (e.g., well, canal, holding tank) should be monitored. The strength of anti-microbial chemicals should be checked using an appropriate method for the anti-microbial in use (e.g., chemical reaction-based test, test probe, ORP meter or as recommended by disinfectant supplier).

Minor deficiency (10 points) if:

- Single/isolated instance(s) of an error or omission in the records.

Major deficiency (5 points) if:

- Multiple instances of errors or omissions in the records.

Non-compliance (0 points) if:

- There are no available testing records.

3.10.02f: Are records kept for periodic visual inspection and disinfection (if occurring) of the water source and available for review?

Total compliance (5 points): "Records" may include calendar books with commentary regarding what was checked, the condition, unusual occurrences, and any action taken. If using a disinfection injection system (e.g. chlorination), there should be monitoring logs completed on at least a daily basis. The appropriate support documentation should be available for review.

Minor deficiency (3 points) if:

- Single/isolated instance(s) of an error or omission in the records.

Major deficiency (1 point) if:

- Multiple instances of errors or omissions in the records.

Non-compliance (0 points) if:

- There are no available records.

3.10.03: Is the water used in the growing operation sourced from non-flowing surface water (e.g., ponds, reservoirs, watersheds, etc.)? What is this water source used for (e.g., irrigation, crop protection sprays, fertigation, frost/freeze protection, cooling, dust abatement, etc.)? What type of irrigation methods are used (e.g., micro-irrigation, drip, overhead, flood irrigation, furrow irrigation, seepage irrigation, hydroponic (specify type))? Does the water come into contact with the edible portion of the crop?

Total points 0: **Information gathering question.** Water sourced from ponds, reservoirs, watersheds or other non-flowing surface water systems may carry more of a risk for contamination than closed water sources. For surface waters, consider the impact of storm events on irrigation practices. Bacterial loads in surface water are generally much higher than normal, and caution should be exercised when using these waters for irrigation.

3.10.03a: Are generic *E. coli* tests conducted on the water (taken from the closest practical source of use) at the required and/or expected frequency?

Total compliance (15 points): Microbial water testing, including generic *E. coli*, should occur for all water sources used for any growing activities like crop protection/fertilizer and frost or freeze prevention programs. Water samples should be taken from as close to the point of use as is practical. At least one sample per distribution system is required. If there are multiple sampling points in a distribution system, then samples should be taken from a different location each test (randomize or rotate locations).

For farm and indoor growing operations, one sample per water source should be collected and tested prior to use if >60 days since the last test of the water source. Additional samples should be taken at least monthly during use of the water source. For farm operations, if supported by a valid risk assessment, less frequent testing is acceptable although there should be at least one water test per season. Where there are more stringent federal, national or local requirements, these requirements should be followed.

Minor deficiency (10 points) if:

- Single/isolated instance(s) of water testing not occurring at the right frequency.

Major deficiency (5 points) if:

- Numerous instances of water testing not occurring at the right frequency.

Non-compliance (0 points) if:

- No microbiological test results are available.
- A water test has not been performed within the past 12 months.

3.10.03b: Do written procedures (SOPs) exist covering proper sampling protocols which include where samples should be taken and how samples should be identified?

Total compliance (10 points): There should be documented procedures in place detailing how water samples are taken in the field, including stating how samples should be identified i.e. clearly naming the location that the sample was taken, the water source and the date (this is important in order to be able to

calculate geometric means). Samples should be taken at a point as close to the point of use as possible where water contacts the crop, so as to test both the water source and the water distribution system.

Minor deficiency (7 points) if:

- Single/isolated instance(s) of errors or omissions in the SOP.

Major deficiency (3 points) if:

- Numerous instances of errors or omissions in the SOP.

Non-compliance (0 points) if:

- There are no sampling SOPs.

3.10.03c: Do written procedures (SOPs) exist covering corrective measures for unsuitable or abnormal water testing results?

Total compliance (10 points): Written procedures (SOPs) should exist covering corrective measures not only for the discovery of unsuitable or abnormal water test results but also as a preparation on how to handle such findings.

Minor deficiency (7 points) if:

- Single/isolated instance(s) of errors or omissions in the SOP.

Major deficiency (3 points) if:

- Numerous instances of errors or omissions in the SOP.

Non-compliance (0 points) if:

- There are no sampling SOPs.
- The written SOPs were not followed when unsuitable or abnormal water testing results were recorded in the last 12 months.

3.10.03d: If unsuitable or abnormal results have been detected, have documented corrective measures been performed?

Total compliance (15 points): For generic *E. coli* (unless more stringent guidelines/laws in existence) <126MPN (or CFU)/100mL (rolling geometric mean n=5) and <235MPN (or CFU)/100mL for any single sample. Where thresholds have been exceeded, there should be recorded corrective actions, including investigations, water retests and crop testing (*E. coli* O157:H7 and Salmonella - zero tolerance). **Failure to take corrective actions when evidence of high levels or an upward trend of *E. coli* may result in an automatic failure of the audit. Auditor must detail corrective actions and preventative measures taken.**

Minor deficiency (10 points) if:

- Single/isolated instance(s) of water sources being used without corrective actions being performed upon receipt of unsuitable or abnormal water test results showing >235 MPN for any single sample or >126 MPN for a geometric mean.

Major deficiency (5 points) if:

- Numerous instances of water sources being used without corrective actions being performed one week after receipt of unsuitable or abnormal water test results showing >235 MPN for any single sample or >126 MPN for a geometric mean.

Non-compliance (0 points) if:

- No corrective measures have been performed.
- Retests were performed greater than one month after receiving the unsuitable or abnormal water test results.
- **Contaminated water is being consistently used for product contact use without evidence of corrective actions being implemented. (This qualifies as an automatic failure and should be scored under 3.05.11.)**

3.10.03e: Are there records of any anti-microbial water treatment (e.g. chlorination, U.V., ozone, etc.), and is testing current and available?

Total compliance (15 points): Any water treatment performed at the source (e.g., well, canal, holding tank) should be monitored. The strength of anti-microbial chemicals should be checked using an appropriate method for the anti-microbial in use (e.g., chemical reaction-based test, test probe, ORP meter or as recommended by disinfectant supplier).

Minor deficiency (10 points) if:

- Single/isolated instance(s) of an error or omission in the records.

Major deficiency (5 points) if:

- Multiple instances of errors or omissions in the records.

Non-compliance (0 points) if:

- There are no available testing records.

3.10.03f: Are records kept for periodic visual inspection and disinfection (if occurring) of the water source and available for review?

Total compliance (5 points): "Records" may include calendar books with commentary regarding what was checked, the condition, unusual occurrences, and any action taken. If using a disinfection injection system (e.g. chlorination), there should be monitoring logs completed on at least a daily basis. The appropriate support documentation should be available for review.

Minor deficiency (3 points) if:

- Single/isolated instance(s) of an error or omission in the records.

Major deficiency (1 point) if:

- Multiple instances of errors or omissions in the records.

Non-compliance (0 points) if:

- There are no available records.

3.10.04: Is the water used in the growing operation sourced from open flowing surface water (e.g., rivers, canals, ditches, etc.)? What is this water source used for (e.g., irrigation, crop protection sprays, fertigation, frost/freeze protection, cooling, dust abatement, etc.)? What type of irrigation methods are used (e.g., micro-irrigation, drip, overhead, flood irrigation, furrow irrigation, seepage irrigation, hydroponic (specify type))? Does the water come into contact with the edible portion of the crop?

Total points 0: **Information gathering question.** Water sourced from canals, rivers, ditches or other open flowing surface water systems may carry more of a risk for contamination than closed water sources. For surface waters, consider the impact of storm events on irrigation practices. Bacterial loads in surface water are generally much higher than normal, and caution should be exercised when using these waters for irrigation.

3.10.04a: Are generic *E. coli* tests conducted on the water (taken from the closest practical source of use) at the required and/or expected frequency?

Total compliance (15 points): Microbial water testing, including generic *E. coli*, should occur for all water sources used for any growing activities like crop protection/fertilizer and frost or freeze prevention programs. **Water samples should be taken from as close to the point of use as is practical. At least one sample per distribution system is required.** If there are multiple sampling points in a distribution system, then samples should be taken from a different location each test (randomize or rotate locations).

For farm and indoor growing operations, one sample per water source should be collected and tested prior to use if >60 days since the last test of the water source. Additional samples should be taken at least monthly during use of the water source. For farm operations, if supported by a valid risk assessment, less

frequent testing is acceptable although there should be at least one water test per season, unless there are more stringent federal requirements.

Minor deficiency (10 points) if:

- Single/isolated instance(s) of water testing not occurring at the right frequency.

Major deficiency (5 points) if:

- Numerous instances of water testing not occurring at the right frequency.

Non-compliance (0 points) if:

- No microbiological test results are available.
- A water test has not been performed within the past 12 months.

3.10.04b: Do written procedures (SOPs) exist covering proper sampling protocols which include where samples should be taken and how samples should be identified?

Total compliance (10 points): There should be documented procedures in place detailing how water samples are taken in the field, including stating how samples should be identified i.e. clearly naming the location that the sample was taken, the water source and the date (this is important in order to be able to calculate geometric means). Samples should be taken at a point as close to the point of use as possible where water contacts the crop, so as to test both the water source and the water distribution system.

Minor deficiency (7 points) if:

- Single/isolated instance(s) of errors or omissions in the SOP.

Major deficiency (3 points) if:

- Numerous instances of errors or omissions in the SOP.

Non-compliance (0 points) if:

- There are no sampling SOPs.

3.10.04c: Do written procedures (SOPs) exist covering corrective measures for unsuitable or abnormal water testing results?

Total compliance (10 points): Written procedures (SOPs) should exist covering corrective measures not only for the discovery of unsuitable or abnormal water test results but also as a preparation on how to handle such findings.

Minor deficiency (7 points) if:

- Single/isolated instance(s) of errors or omissions in the SOP.

Major deficiency (3 points) if:

- Numerous instances of errors or omissions in the SOP.

Non-compliance (0 points) if:

- There are no sampling SOPs.
- The written SOPs were not followed when unsuitable or abnormal water testing results were recorded in the last 12 months.

3.10.04d: If unsuitable or abnormal results have been detected, have documented corrective measures been performed?

Total compliance (15 points): For generic *E. coli* (unless more stringent guidelines/laws in existence) <126MPN (or CFU)/100mL (rolling geometric mean n=5) and <235MPN (or CFU)/100mL for any single sample. Where thresholds have been exceeded, there should be recorded corrective actions, including investigations, water retests and crop testing (*E. coli* O157:H7 and Salmonella - zero tolerance). **Failure to take corrective actions when evidence of high levels or an upward trend of *E. coli* may result in an automatic failure of the audit. Auditor must detail corrective actions and preventative measures.**

Minor deficiency (10 points) if:

- Single/isolated instance(s) of water sources being used without corrective actions being performed upon receipt of unsuitable or abnormal water test results showing >235 MPN for any single sample or >126 MPN for a geometric mean. **(This qualifies as an automatic failure and should be scored under 3.05.11.)**

Major deficiency (5 points) if:

- Numerous instances of water sources being used without corrective actions being performed one week after receipt of unsuitable or abnormal water test results showing >235 MPN for any single sample or >126 MPN for a geometric mean.

Non-compliance (0 points) if:

- No corrective measures have been performed.
- Retests were performed greater than one month after receiving the unsuitable or abnormal water test results.
- **Contaminated water is being consistently used for product contact use without evidence of corrective actions being implemented. (This qualifies as an automatic failure.)**

3.10.04e: Are there records of any anti-microbial water treatment (e.g. chlorination, U.V., ozone, etc.), and is testing current and available?

Total compliance (15 points): Any water treatment performed at the source (e.g., well, canal, holding tank) should be monitored. The strength of anti-microbial chemicals should be checked using an appropriate method for the anti-microbial in use (e.g., chemical reaction-based test, test probe, ORP meter or as recommended by disinfectant supplier).

Minor deficiency (10 points) if:

- Single/isolated instance(s) of an error or omission in the records.

Major deficiency (5 points) if:

- Multiple instances of errors or omissions in the records.

Non-compliance (0 points) if:

- There are no available testing records.

3.10.04f: Are records kept for periodic visual inspection and disinfection (if occurring) of the water source and available for review?

Total compliance (5 points): "Records" may include calendar books with commentary regarding what was checked, the condition, unusual occurrences, and any action taken. If using a disinfection injection system (e.g. chlorination), there should be monitoring logs completed on at least a daily basis. The appropriate support documentation should be available for review.

Minor deficiency (3 points) if:

- Single/isolated instance(s) of an error or omission in the records.

Major deficiency (1 point) if:

- Multiple instances of errors or omissions in the records.

Non-compliance (0 points) if:

- There are no available records.

3.10.05: Is reclaimed water used in the growing operation? NOTE: This refers to wastewater that has gone through a treatment process. What is this water source used for (e.g., irrigation, crop protection sprays, fertigation, frost/freeze protection, cooling, dust abatement, etc.)? What type of irrigation methods are used (e.g., micro-irrigation, drip, overhead, flood irrigation, furrow

irrigation, seepage irrigation, hydroponic (specify type)? Does the water come into contact with the edible portion of the crop?

Total points 0: Information gathering question. Reclaimed water should be treated with adequate disinfection systems and tested frequently, ideally under the direction of a water reclamation authority or other management body. Reclaimed water should be subject to applicable local and national regulations and standards. Prior to using this water for agricultural purposes, growers should check with regulatory bodies to determine the appropriate parameters and tolerances to be used.

3.10.05a: Are generic *E. coli* tests conducted on the water (taken from the closest practical source of use) at the required and/or expected frequency?

Total compliance (15 points): Microbial water testing, including generic *E. coli*, should occur for all water sources used for any growing activities like crop protection/fertilizer and frost or freeze prevention programs. Water samples should be taken from as close to the point of use as is practical. At least one sample per distribution system is required. If there are multiple sampling points in a distribution system, then samples should be taken from a different location each test (randomize or rotate locations).

For farm and indoor growing operations, one sample per water source should be collected and tested prior to use if >60 days since the last test of the water source. Additional samples should be taken at least monthly during use of the water source. For farm operations, if supported by a valid risk assessment, less frequent testing is acceptable although there should be at least one water test per season. Where there are more stringent federal, national or local requirements, these requirements should be followed.

Minor deficiency (10 points) if:

- Single/isolated instance(s) of water testing not occurring at the right frequency.

Major deficiency (5 points) if:

- Numerous instances of water testing not occurring at the right frequency.

Non-compliance (0 points) if:

- No microbiological test results are available.
- A water test has not been performed within the past 12 months.

3.10.05b: Do written procedures (SOPs) exist covering proper sampling protocols which include where samples should be taken and how samples should be identified?

Total compliance (10 points): There should be documented procedures in place detailing how water samples are taken in the field, including stating how samples should be identified i.e. clearly naming the location that the sample was taken, the water source and the date (this is important in order to be able to calculate geometric means). Samples should be taken at a point as close to the point of use as possible where water contacts the crop, so as to test both the water source and the water distribution system.

Minor deficiency (7 points) if:

- Single/isolated instance(s) of errors or omissions in the SOP.

Major deficiency (3 points) if:

- Numerous instances of errors or omissions in the SOP.

Non-compliance (0 points) if:

- There are no sampling SOPs.

3.10.05c: Do written procedures (SOPs) exist covering corrective measures for unsuitable or abnormal water testing results?

Total compliance (10 points): Written procedures (SOPs) should exist covering corrective measures not only for the discovery of unsuitable or abnormal water test results but also as a preparation on how to handle such findings.

Minor deficiency (7 points) if:

- Single/isolated instance(s) of errors or omissions in the SOP.

Major deficiency (3 points) if:

- Numerous instances of errors or omissions in the SOP.

Non-compliance (0 points) if:

- There are no sampling SOPs.
- The written SOPs were not followed when unsuitable or abnormal water testing results were recorded in the last 12 months.

3.10.05d: If unsuitable or abnormal results have been detected, have documented corrective measures been performed?

Total compliance (15 points): For generic *E. coli* (unless more stringent guidelines/laws in existence) <126MPN (or CFU)/100mL (rolling geometric mean n=5) and <235MPN (or CFU)/100mL for any single sample. Where thresholds have been exceeded, there should be recorded corrective actions, including investigations, water retests and crop testing (*E. coli* O157:H7 and Salmonella - zero tolerance). **Failure to take corrective actions when evidence of high levels or an upward trend of *E. coli* may result in an automatic failure of the audit. Auditor must detail corrective actions and preventative measures taken.**

Minor deficiency (10 points) if:

- Single/isolated instance(s) of water sources being used without corrective actions being performed upon receipt of unsuitable or abnormal water test results showing >235 MPN for any single sample or >126 MPN for a geometric mean.

Major deficiency (5 points) if:

- Numerous instances of water sources still being used without corrective actions being performed one week after receipt of unsuitable or abnormal water test results showing >235 MPN for any single sample or >126 MPN for a geometric mean.

Non-compliance (0 points) if:

- No corrective measures have been performed.
- Retests were performed greater than one month after receiving the unsuitable or abnormal water test results. **Contaminated water is being consistently used for product contact use without evidence of corrective actions being implemented. (This qualifies as an automatic failure and should be scored under 3.05.11.)**

3.10.05e: Are there records of any anti-microbial water treatment (e.g. chlorination, U.V., ozone, etc.), and is testing current and available?

Total compliance (15 points): Any water treatment performed at the source (e.g., well, canal, holding tank) should be monitored. The strength of anti-microbial chemicals should be checked using an appropriate method for the anti-microbial in use (e.g., chemical reaction-based test, test probe, ORP meter or as recommended by disinfectant supplier).

Minor deficiency (10 points) if:

- Single/isolated instance(s) of an error or omission in the records.

Major deficiency (5 points) if:

- Multiple instances of errors or omissions in the records.

Non-compliance (0 points) if:

- There are no available testing records.

3.10.05f: Are records kept for periodic visual inspection and disinfection (if occurring) of the water source and available for review?

Total compliance (5 points): "Records" may include calendar books with commentary regarding what was checked, the condition, unusual occurrences, and any action taken. If using a disinfection injection system (e.g. chlorination), there should be monitoring logs completed on at least a daily basis. The appropriate support documentation should be available for review.

Minor deficiency (3 points) if:

- Single/isolated instance(s) of an error or omission in the records.

Major deficiency (1 point) if:

- Multiple instances of errors or omissions in the records.

Non-compliance (0 points) if:

- There are no available records.

3.10.06: Are tail water (run off water) systems, including hydroponics, used in the growing operation? What is this water source used for (e.g., irrigation, crop protection sprays, fertigation, frost/freeze protection, cooling, dust abatement, etc.)? What type of irrigation methods are used (e.g., micro-irrigation, drip, overhead, flood irrigation, furrow irrigation, seepage irrigation, hydroponic (specify type))? Does the water come into contact with the edible portion of the crop?

Total points 0: Information gathering question. Tail water return systems, including hydroponics, catch spilled or runoff water and pump the water back to the top of the field.

3.10.06a: Are generic *E. coli* tests conducted on the water (taken from the closest practical source of use) at the required and/or expected frequency?

Total compliance (15 points): Microbial water testing, including generic *E. coli*, should occur for all water sources used for any growing activities like crop protection/fertilizer and frost or freeze prevention programs. Water samples should be taken from as close to the point of use as is practical. At least one sample per distribution system is required. If there are multiple sampling points in a distribution system, then samples should be taken from a different location each test (randomize or rotate locations).

For farm and indoor growing operations, one sample per water source should be collected and tested prior to use if >60 days since the last test of the water source. Additional samples should be taken at least monthly during use of the water source. For farm operations, if supported by a valid risk assessment, less frequent testing is acceptable although there should be at least one water test per season. Where there are more stringent federal, national or local requirements, these requirements should be followed.

Minor deficiency (10 points) if:

- Single/isolated instance(s) of water testing not occurring at the right frequency.

Major deficiency (5 points) if:

- Numerous instances of water testing not occurring at the right frequency.

Non-compliance (0 points) if:

- No microbiological test results are available.
- A water test has not been performed within the past 12 months.

3.10.06b: Do written procedures (SOPs) exist covering proper sampling protocols which include where samples should be taken and how samples should be identified?

Total compliance (10 points): There should be documented procedures in place detailing how water samples are taken in the field, including stating how samples should be identified i.e. clearly naming the location that the sample was taken, the water source and the date (this is important in order to be able to calculate geometric means). Samples should be taken at a point as close to the point of use as possible where water contacts the crop, so as to test both the water source and the water distribution system.

Minor deficiency (7 points) if:

- Single/isolated instance(s) of errors or omissions in the SOP.

Major deficiency (3 points) if:

- Numerous instances of errors or omissions in the SOP.

Non-compliance (0 points) if:

- There are no sampling SOPs.

3.10.06c: Do written procedures (SOPs) exist covering corrective measures for unsuitable or abnormal water testing results?

Total compliance (10 points): Written procedures (SOPs) should exist covering corrective measures not only for the discovery of unsuitable or abnormal water test results but also as a preparation on how to handle such findings.

Minor deficiency (7 points) if:

- Single/isolated instance(s) of errors or omissions in the SOP.

Major deficiency (3 points) if:

- Numerous instances of errors or omissions in the SOP.

Non-compliance (0 points) if:

- There are no sampling SOPs.
- The written SOPs were not followed when unsuitable or abnormal water testing results were recorded in the last 12 months.

3.10.06d: If unsuitable or abnormal results have been detected, have documented corrective measures been performed?

Total compliance (15 points): For generic *E. coli* (unless more stringent guidelines/laws in existence) <126MPN (or CFU)/100mL (rolling geometric mean n=5) and <235MPN (or CFU)/100mL for any single sample. Where thresholds have been exceeded, there should be recorded corrective actions, including investigations, water retests and crop testing (*E. coli* O157:H7 and Salmonella - zero tolerance). **Failure to take corrective actions when evidence of high levels or an upward trend of *E. coli* may result in an automatic failure of the audit. Auditor must detail corrective actions and preventative measures.**

Minor deficiency (10 points) if:

- Single/isolated instance(s) of water sources being used without corrective actions being performed upon receipt of unsuitable or abnormal water test results showing >235 MPN for any single sample or >126 MPN for a geometric mean.

Major deficiency (5 points) if:

- Single/isolated instance(s) of water sources being used without corrective actions being performed one week after receipt of unsuitable or abnormal water test results showing >235 MPN for any single sample or >126 MPN for a geometric mean.

Non-compliance (0 points) if:

- No corrective measures have been performed.
- Retests were performed greater than one month after receiving the unsuitable or abnormal water test results.
- **Contaminated water is being consistently used for product contact use without evidence of corrective actions being implemented. (This qualifies as an automatic failure and should be scored under 3.05.11.)**

3.10.06e: Are there records of any anti-microbial water treatment (e.g. chlorination, U.V., ozone, etc.), and is testing current and available?

Total compliance (15 points): Any water treatment performed at the source (e.g., well, canal, holding tank) should be monitored. The strength of anti-microbial chemicals should be checked using an appropriate method for the anti-microbial in use (e.g., chemical reaction-based test, test probe, ORP meter or as recommended by disinfectant supplier).

Minor deficiency (10 points) if:

- Single/isolated instance(s) of an error or omission in the records.

Major deficiency (5 points) if:

- Multiple instances of errors or omissions in the records.

Non-compliance (0 points) if:

- There are no available testing records.

3.10.06f: Are records kept for periodic visual inspection and disinfection (if occurring) of the water source and available for review?

Total compliance (5 points): "Records" may include calendar books with commentary regarding what was checked, the condition, unusual occurrences, and any action taken. If using a disinfection injection system (e.g. chlorination), there should be monitoring logs completed on at least a daily basis. The appropriate support documentation should be available for review.

Minor deficiency (3 points) if:

- Single/isolated instance(s) of an error or omission in the records.

Major deficiency (1 point) if:

- Multiple instances of errors or omissions in the records.

Non-compliance (0 points) if:

- There are no available records.

3.10.07: Is there a documented assessment for each water source covering animal access, upstream contamination/runoff, proper well condition, water treatment, backflow, maintenance, cross contamination from leaching, recirculating water systems, etc., as applicable?

Total compliance (15 points): There should be a documented assessment for each water source used in the growing area. Prior to the first seasonal planting and at least annually and when any changes are made to the system, there should be a documented risk assessment for each water source covering potential physical, chemical and biological hazards from animal access, upstream contamination/runoff, proper well condition, water treatment, water capture, backflow, maintenance, cross contamination from leaching, cross connections, recirculating water systems, etc. If flood or furrow irrigation is used, there needs to be examples of how the operation is minimizing the risk.

Minor deficiency (10 points) if:

- Single/isolated instance(s) of a risk assessment missing a physical, chemical and biological hazard.

Major deficiency (5 points) if:

- Numerous instances of physical, chemical and biological hazards missing from the risk assessments.
- A single water source is not included in the risk assessment when multiple water sources are being used in the growing area.

Non-compliance (0 points) if:

- Systematic failure to include physical, chemical and biological hazards on the risk assessments.
- Numerous water sources used in the growing area are missing risk assessments.
- No risk assessments have been performed.

3.10.08: Are there backflow prevention devices on all main lines, including where chemical, fertilizer and pesticide applications are made?

Total compliance (10 points): Water systems should be fitted with backflow prevention devices to prevent contamination of the water supply. Irrigation systems should utilize effective devices which can minimize the potential risk of accidentally allowing any injected chemical/fertilizer to flow back into the irrigation well, surface water source, or to discharge onto the land where not intended. Main water lines should be fitted with back-flow protection for the incoming water (no matter what the source). Individual water lines should be fitted with backflow protection where practical.

Minor deficiency (7 points) if:

- Single/isolated instance(s) of a minor water line that is not protected in some way e.g. hose pipe, lacking an air gap for a dump tank inlet.

Major deficiency (3 points) if:

- Numerous instances of minor water lines that are not protected in some way e.g. hose pipe, lacking an air gap for a dump tank inlet.

Non-compliance (0 points) if:

- There is no backflow protection on primary main water line(s).

3.10.09: If the operation stores water (tank, cistern, container), is the storage container well maintained?

Total compliance (15 points): Container should be structurally sound with no evidence of damage or rust, no vegetation growing on or in the container. The base of the container should be free from debris and weeds. Access lids are properly secured and any vents, overflow and drains are screened. Air gaps are present and should be at least twice the diameter of the water supply inlet and not be less than 25 mm (1 inch).

Minor deficiency (10 points) if:

- Single/isolated instance(s) of debris, weeds or other potential contaminants.

Major deficiency (5 points) if:

- Multiple instances of debris, weeds or other potential contaminants.

Non-compliance (0 points) if:

- The storage container(s) are not well maintained.

Pesticide Usage

3.11.01: Are there up-to-date records of all pesticides applied during the growing cycle? A ZERO POINT (NON-COMPLIANCE) DOWNSCORE IN THIS QUESTION RESULTS IN AUTOMATIC FAILURE OF THIS AUDIT.

Total compliance (15 points): The growing operation should follow a pesticide application record keeping program that at least includes the following: date and time of application, crop name, treated area **size and location** (must be traceable), **brand/product** name, EPA (**or equivalent**) registration information, active ingredient, amount applied (rate/dosage), applicator name, pre-harvest interval, **restricted entry interval**, **type of equipment used and target pests**. Records should include biopesticides (<http://www2.epa.gov/pesticides/biopesticides>). Information may be recorded on separate documents providing all information is available and consistent.

Minor deficiency (10 points) if:

- Single/isolated instance(s) of missing required information (e.g., a target pest that can be clearly linked to other documented information).

Major deficiency (5 points) if:

- Numerous instances of missing required information (e.g., a target pest that can be clearly linked to other documented information).

Automatic Failure (0 points) if:

- Any failure to record critical required information.
- Systematic failure to record required information.

3.11.02: Do records show that pesticides and their use are in compliance with all requirements of label direction, national (e.g., EPA) registration and any federal, state or local regulations and guidelines? ANY DOWN SCORE IN THIS QUESTION RESULTS IN AN AUTOMATIC FAILURE OF THE AUDIT.

Total compliance (15 points): All pesticides must be registered for such use, as required by prevailing regulation, and used in accordance with label directions, including application rates, worker protection standards, personal protection equipment, container storage and disposal. Records of use are maintained. N/A is allowed only when registration/authorization information does not exist for pesticides to be used on target crops in the country of production.

Automatic Failure (0 points) if:

- There is a single incidence of pesticides being used without complying with or following regulatory or label requirements.

3.11.03: Where products are destined for export, do records show that only pesticides approved for use in destination market(s) are used and are in compliance with all requirements of label direction, national (e.g., EPA) registration and any federal, state or local regulations and guidelines? ANY DOWN SCORE IN THIS QUESTION RESULTS IN AN AUTOMATIC FAILURE OF THE AUDIT.

Total compliance (15 points): All pesticides must be registered for such use in the destination market, as required by prevailing regulation, and used in accordance with label directions, including application rates, worker protection standards, personal protection equipment, container storage and disposal.

The grower should provide documented evidence that they are complying with the expectations regarding crop protection products of the country of origin and proof of what those expectations are. That evidence may be in the form of: chemical records, application methods, rates and dosage, compliance with pre-harvest intervals, compliance with MRL tolerances or any other relevant information. This question is Not Applicable if the product is sold only in the country of production (domestic market). If this question is answered No, automatic failure of this audit will result.

Automatic Failure (0 points) if:

- There is a single incidence of pesticides not being used in accordance with the country of destination regulatory or label requirements.

3.11.04: For those pesticides that are registered and/or authorized by a government agency for use on the target crops in the country of production or are not registered for use on the target crops in the country of production, if the country does not have or has a partial legislative framework to cover pesticides, can the grower show that they have registration information, label information, MRL tolerances, etc. for the country of destination? ANY DOWN SCORE IN THIS QUESTION RESULTS IN AN AUTOMATIC FAILURE OF THE AUDIT.

Total compliance (15 points): Grower should be aware of the crop protection products registered and/or authorized by a government agency for use in the target crops in the country of production. Where the country of production does not have or has partial legislation covering pesticides, and if the use of pesticides that are registered for the target crop in another country (extrapolation) is not prohibited, the grower must have information for the pesticides in the country(ies) of destination. The information must show: registration for the specific crop, product labels, Maximum Residue Limit (MRL) tolerances and may also include banned chemical lists, and any other relevant guidelines or legislation. If there is no

information available for pesticides used that are not registered in the country of production, or its use based on registration, label and other legislation of the destination country, extrapolation is prohibited by the country of production, and an automatic failure will be scored.

Automatic Failure (0 points) if:

- There is a single incidence of missing documentation for the pesticides used for the country of destination.

3.11.05: Where products are destined for export, are there records showing that pre-harvest intervals and application rates are sufficient to meet MRL entry requirements of the country of export? Records show any non-compliant product is diverted to a market where it meets requirements. ANY DOWN SCORE IN THIS QUESTION RESULTS IN AN AUTOMATIC FAILURE OF THE AUDIT.

Total compliance (15 points): There are records showing that pre-harvest intervals and application rates are sufficient to meet MRL entry requirements for the country of export. MRL tests should be performed and the auditor should review those to verify the PHIs and application rates. Records show that any non-compliant product is diverted to a market where it meets their requirements.

Any records of pesticide chemical residue testing results show residues on products do not exceed the published Maximum Residue Limits (MRL) in the destination market(s) and if so, corrective actions have been taken and documented.

Automatic Failure (0 points) if:

- There is a single incidence of pesticide application records not complying with the pre-harvest intervals and application rates.
- There is a single incidence of MRL testing that exceeds the country of destination requirements without corrective actions being taken.

3.11.06: Where harvesting is restricted by pre-harvest intervals, are required pre-harvest intervals on product labels, national (e.g., EPA) registration and any federal, state or local regulations and guidelines being adhered to? ANY DOWN SCORE IN THIS QUESTION RESULTS IN AN AUTOMATIC FAILURE OF THE AUDIT.

Total compliance (15 points): Application and harvest records show pre-harvest intervals on product labels, national (e.g., EPA) registration and any federal, state or local regulations and guidelines are being adhered to. If this is not followed, an automatic failure will be scored.

Automatic Failure (0 points) if:

- There is a single incidence of pre-harvest intervals not being followed.

3.11.07: Is there a documented procedure for the mixing/loading of pesticides?

Total compliance (5 points): There should be a documented procedure describing how to mix and load pesticides (e.g., insecticides, fungicides, herbicides, plant growth regulators, etc.). The procedure should include adhering to the product label and include: requiring activity to be in a well-ventilated, well-lit area away from unprotected people, food and other items that might be contaminated. Water used to dilute pesticides should meet the criteria noted in the Irrigation/Water Use section. This also applies to any mixes that occur off site when using contracted spraying services.

Minor deficiency (3 points) if:

- Single/isolated instance(s) of an error or omission in the procedure.

Major deficiency (1 point) if:

- Numerous instances of an error or omission in the procedure.

Non-compliance (0 points) if:

- Systematic errors or omissions in the procedure.

- There is no procedure.

3.11.08: Is there a documented procedure for the application of pesticides?

Total compliance (5 points): There should be a documented procedure describing how to apply pesticides (e.g., insecticides, fungicides, herbicides, plant growth regulators, etc.). The procedure should include adhering to the pesticide label and include the use of Personal Protective Equipment (PPE), re-entry intervals, excessive winds, posting of treated areas, etc.

Minor deficiency (3 points) if:

- Single/isolated instance(s) of an error or omission in the procedure.

Major deficiency (1 point) if:

- Numerous instances of an error or omission in the procedure.

Non-compliance (0 points) if:

- Systematic errors or omissions in the procedure.
- There is no procedure.

3.11.09: Is there a documented procedure for the rinsing and cleaning of pesticide equipment?

Total compliance (5 points): There should be a documented procedure describing how to rinse and clean pesticide equipment. Pesticide equipment includes measuring containers and devices, mixing containers, application equipment, rinseable pesticide containers, etc. The procedure should include adhering to the product label, to country, federal, state or local laws and regulations, and should include: rinsing empty equipment immediately to prevent residues from drying and becoming difficult to remove, and adding a rinsate (water from rinsing containers or equipment) to spray tanks as part of the pesticide mixing process.

Minor deficiency (3 points) if:

- Single/isolated instance(s) of an error or omission in the procedure.

Major deficiency (1 point) if:

- Numerous instances of an error or omission in the procedure.

Non-compliance (0 points) if:

- Systematic errors or omissions in the procedure.
- There is no procedure.

3.11.10: Is there documentation that shows the individual(s) making decisions for pesticide applications are competent?

Total compliance (15 points): Current valid certificates, licenses, another form of proof of training recognized by prevailing national/local standards and guidelines should be available for the individual(s) making decisions on pesticide applications (e.g., choice of pesticides, application timings, rates, etc.).

Minor deficiency (10 points) if:

- Single/isolated instance(s) of missing documentation.

Major deficiency (5 points) if:

- Single/isolated instance of a proof of training/certificate/license being out of date.
- Numerous instances of missing documentation.

Non-compliance (0 points) if:

- There is no documentation for the individual(s) making the decision.

3.11.11: Is there documentation that shows that individuals who handle pesticide materials are trained and are under the supervision of a trained person?

Total compliance (15 points): Current valid certificates, licenses, or another form of proof of training recognized by prevailing national/local standards and guidelines should be available for **individuals** handling, mixing/loading/and applying **pesticide materials**.

Minor deficiency (10 points) if:

- Single/isolated instance(s) of missing training documentation.

Major deficiency (5 points) if:

- Numerous instances of missing training documentation.

Non-compliance (0 points) if:

- There is no documentation showing training for individuals handling pesticide materials.
- There is no documentation for the supervising person.

3.11.12: Are pesticides stored without risk of contamination, in a locked, dedicated area with legible labels, and are empty pesticide containers held and disposed of according to their label and/or regulatory instructions?

Total compliance (10 points): Pesticide containers should be stored securely: **away from other materials**, locked, signs posted, away from water source, off floor, well-ventilated, and inventory kept.

Empty pesticide containers should be kept in a secured storage area until they can be recycled or disposed of properly. If containers cannot be refilled, reconditioned, recycled or returned to the manufacturer, they should be crushed, broken or punctured to make them unusable. Containers should be disposed of in accordance with label directions and with federal and state or local laws and regulations. Pesticide containers designed to be returned and refilled should not be reused or tampered with.

Minor deficiency (7 points) if:

- Single/isolated instance(s) of pesticides stored improperly.

Major deficiency (3 points) if:

- Numerous instances of pesticides stored improperly.

Non-compliance (0 points) if:

- Systematic failure to store pesticides properly.

3.11.13: Is it evident that the equipment used for pesticide applications is in good working order?

Total compliance (10 points): All equipment used in **pesticide** applications should be in good working order so that correct applications can be made, thus reducing potential crop contamination or drift issues.

Minor deficiency (7 points) if:

- Single/isolated instance(s) of equipment not in good working order.

Major deficiency (3 points) if:

- Numerous instances of equipment not in good working order.

Non-compliance (0 points) if:

- Systematic failure to maintain equipment in good working order.

3.11.14: Are restricted entry interval (REI) signs posted in the area(s) where pesticide applications occur?

Total compliance (10 points): All agricultural pesticide labeling provides a specific REI. Some regulations provide REIs for certain pesticide/crop combinations. Whenever there is a labeling REI and a regulatory REI for an application, the longer REI must be followed.

Warning signs should be posted before an application when required by the pesticide label, regulations or restricted material permit. Auditors should view signage used to post and posting areas.

All indoor applications require warning signs.

Minor deficiency (7 points) if:

- Single/isolated instance(s) of REI signs not being posted.

Major deficiency (3 points) if:

- Numerous instances of REI signs not being posted.

Non-compliance (0 points) if:

- Systematic failure to post REI signs.
- Signage is required but is not available.