

Fruit*A*Syst

Crop*A*Syst for Fruit Producers



Fruit Crop*A*Syst assesses risks in the field or orchard to groundwater and surface water. It addresses nutrient, erosion, pest, irrigation and other management practices. It also identifies Right-to-Farm and environmental compliance issues. This assessment shows what is needed for Michigan Agriculture Environmental Assurance Program (MAEAP) Cropping System verification.



MICHIGAN STATE
UNIVERSITY

Extension

Cropping System Improvement Action Plan

Risk question	List high-risk practice(s) from Fruit*A*Syst as well as medium-risk practices that do not meet MAEAP requirements.	Required for MAEAP verification?	Alternative low-risk practice (include potential sources of technical and financial assistance).	Action plan	
				Planned completion date	Indicate date when completed
3.14	(Example) Pesticide spill clean-up kit not available in the orchard.	Yes	Acquire pesticide spill clean-up kit from water stewardship technician for pesticide application area.	April, 2013	(✓) Completed June 20, 2012

(continued after work sheets)

I understand that this cropping system assessment and corresponding Cropping System Improvement Action Plan were developed on the basis that I have disclosed, to the best of my knowledge, all information pertaining to my cropping operations.

Farmstead address:

Producer's signature _____ Date _____

Street _____

Crop*A*Syst conducted by:

City _____ MI, Zip code _____

Name _____

Watershed name: _____

Title _____ Date _____

Introduction

Fruit*A*Syst will assist you to develop and implement a management plan and site improvements that prevent contamination of groundwater and surface water and maintain economic crop production. Plans will be in conformance with Michigan Right-to-Farm guidelines as well as applicable state, federal and local environmental regulations.

Nutrients used in fruit production come from chemical fertilizers and naturally occurring sources such as manure, legumes and biosolids (sewage sludge). Synthetic or naturally occurring nutrients can become mixed with surface water or groundwater by natural processes such as runoff and leaching. Nitrate contamination of groundwater and phosphorus contamination of surface water are problems in some areas of Michigan. Fruit*A*Syst will assess your current nutrient management practices and identify alternative management practices to reduce nutrient losses to the environment.

Virtually all crops produced in Michigan may be threatened by serious pest problems — disease-producing organisms, insects and weeds. You are encouraged to adopt pest management practices that achieve the desired crop quality and yield while minimizing any adverse effects on non-target organisms, humans, and soil and water resources. Fruit*A*Syst will assess your current pest management practices and identify alternative management strategies to reduce negative impacts to the environment.

Fruit*A*Syst is designed to coordinate the pollution prevention efforts of the Michigan Water Stewardship Program and the Michigan Agriculture Environmental Assurance Program (MAEAP). Fruit*A*Syst focuses on management practices in the orchard/field, whereas Farm*A*Syst focuses on activities at the farm headquarters.

The Michigan Agriculture Environmental Assurance Program (MAEAP) is a comprehensive, proactive and voluntary agricultural pollution prevention program.

Producers who complete Fruit*A*Syst will be able to determine what structural, management practices or record-keeping changes (if any) that will be needed for their businesses to be environmentally assured through MAEAP. After you address the risks indicated by the Cropping System Improvement Action Plan, you can contact the Michigan Department of Agriculture and Rural Development (MDARD) to request Cropping System verification (www.maeap.org or 517-373-9797). An MDARD verifier will schedule a site visit.

P.A. 451, Part 82, ensures the confidentiality of the producer information provided to the MDARD during the verification process. Any information connected with the development, implementation or verification of a conservation plan or conservation practice is confidential.

As the owner of a MAEAP-verified cropping system, you will be eligible for various incentives and can enjoy “good-faith-effort” environmental liability protection if an agricultural pollution emergency ever occurs in your orchard/fields.

For a list of currently available incentives and information on how to get started, contact your local Conservation District, MSU Extension or NRCSS representative.

The Michigan Right-to-Farm Act, P.A. 93, was enacted in 1981 to provide farmers with protection from nuisance lawsuits. This state statute authorized the Michigan Commission of Agriculture to develop and adopt generally accepted agricultural and management practices (GAAMPs) for farms and farm operations in Michigan. These voluntary practices are based on available technology and scientific research to promote sound environmental stewardship and help maintain a farmer’s right to farm. The current Right-to-Farm GAAMPs are posted on the Michigan Department of Agriculture Web site: www.michigan.gov/mda.

Cover Photos: *Mirjana Bulatovic-Danilovich, Rufus Isaacs and Mark Longstroh.*

What is the Crop Assessment System for Fruit Producers?

The Crop*A*Syst for Fruit Producers (Fruit*A*Syst) is a series of risk questions that will help assess how effectively a producer's crop management practices protect groundwater and surface water resources. The risk questions are grouped in the following sections:

1	Nutrient Management Practices
2	Soil and Water Conservation Practices
3	Pest Management Practices
4	Water Use
5	Irrigation Management Practices
6	Other Environmental Risks in Cropping System
7	Cropping System Improvement Action Plan

Your answers to the risk questions indicate whether your management practices have a low, medium or high water contamination risk. You are generally recommended to adopt the low-risk management practice. Your Michigan water stewardship technician or your horticultural advisor can assist you to make the appropriate management changes.

Responses to risk questions that address management practices that are regulated by state or federal law indicate **illegal practices with black bold print**.

Responses to risk questions that address management practices covered by the Michigan Right-to-Farm Act indicate the **risk level required for protection from nuisance lawsuits with blue bold, italic print**.

A bold box indicates the management level(s) required for MAEAP verification.

MAEAP management requirements are aligned with state and federal environmental regulations, the Michigan Right-to-Farm Act and environmentally based horticultural management practices that are supported by research. The records and/or evidence that show the approved management practices have been implemented on the farm are listed in the far right column. This evidence will provide

the basis for awarding environmental assurance through MAEAP.

How does Fruit*A*Syst work?

- 1) Select all relevant sections for your fruit operation.
- 2) Answer the risk questions by selecting the answer that best describes management practices used on your operation. Indicate your risk level in the column to the right. Skip any questions that do not apply to your cropping system. Note: For MAEAP verification, complete the risk questions with a Fruit*A*Syst trained individual. You can locate your local water stewardship technician through your county Conservation District, MSU Extension, NRCS or MDARD office, or at www.michigan.gov/mda.
- 3) After completing each section of risk questions, list the practices that present a high risk of contaminating groundwater and surface water resources in the Cropping System Improvement Action Plan (printed inside the front cover of the bulletin). Also include any medium-risk practices that do not meet MAEAP verification requirements.
- 4) In the Cropping System Improvement Action Plan, list:
 - Management practices or site improvements that you plan to implement that will reduce the identified risk.
 - Sources of technical and financial assistance.
 - Target dates for accomplishing the changes.
 - Target date for MAEAP verification of your Cropping System.

A few final words

The key to Fruit*A*Syst is that once you have identified the risks to groundwater and surface water resources, you implement your plan to reduce the risks. Some of the stewardship practices that will reduce risks may cost very little and take very little time to implement. Other practices may involve additional cost and may not be implemented for a few years. It is important, however, to have a plan to follow. Once you have developed a plan and have implemented changes to address the risks, you are ready for MAEAP verification of your cropping system.

Nutrient Management Practices

Risk question	Low risk – 3 (recommended)	Medium risk – 2 (potential hazard)	High risk – 1 (significant hazard)	Your risk	Records or evidence for MAEAP verification
1.01) How often are fields soil and tissue tested for nutrient levels (P, K, Ca, Mg) and pH?	All fields are sampled and tested (both tissue and soil) on a regular basis , at least every 4 years.	All fields are sampled and tested (either tissue or soil) every 4 years, or producer plans to bring tests up to date.	Fields have not been soil or tissue tested within the past 4 years.		Field names or map. Acres in the cropped portions of the field. Up-to-date soil test and tissue analysis reports, or schedule to bring all tests up to date.
1.02) Do soil sampling procedures adequately represent field conditions?	One composite sample is taken from uniform field areas of less than 40 acres. For tree fruit, samples are taken from under trees (weed sprayed, cultivated or mulched areas).		One composite sample taken from areas greater than 40 acres.		
1.03) Do you maintain the soil pH in the desirable range for the crop(s) being grown?	The pH is adjusted to desirable range before planting and maintained for current crop.	Soil pH is maintained and/or adjusted for current crop on the basis of soil analysis after planting.	Soil pH is not maintained in the desirable range.		
1.04) How are all sources of nutrients considered when making fertilization decisions?	Credit taken for nutrients supplied by organic matter, legumes and manure or other biological materials (biosolids). Fertilizer rates are reduced accordingly.	When organic matter, legumes, manure or other biological materials (biosolids) are used, fertilizer rates are sometimes reduced.	When organic matter, legumes, manure or other biological materials (biosolids) are used, fertilizer rates are not reduced.		Written records available, showing nutrient credits utilized.
1.05) How are fertilizer application rates determined?	Consistent with Michigan State University (MSU) recommendations. When MSU recommendations are not available, other land-grant university recommendations developed for the region may be used. (Based on site-specific, block-by-block soil and tissue analysis.)	Consistent with Michigan State University (MSU) recommendations, based on composite analysis representing the whole farm.	Fertilizer rates are not based on tissue or soil analysis.		Applications consistent with MSU recommendations (MSU soil test printout or calculated MSU recommendations on file). When MSU recommendations are not available, applications are consistent with industry standards.

A boxed risk level indicates the level required for environmental assurance (MAEAP) verification.

Bold print indicates a violation of state or federal regulation.

Bold italic blue print indicates conformance with Right-to-Farm guidelines.

Nutrient Management Practices (continued)

Risk question	Low risk – 3 (recommended)	Medium risk – 2 (potential hazard)	High risk – 1 (significant hazard)	Your risk	Records or evidence for MAEAP verification
1.06) How are nutrient management plans for each field annually developed and followed?	Annual nutrient plan is developed on a block-by-block basis to meet crop nutrient needs and minimize loss of nutrients to the environment.	A nutrient plan is developed each year for each crop species. Soil or tissue tests are up-to-date.	Nutrient plan is not developed, or the same plan is used for more than 4 years.		Annual nutrient plan by field or crop grown.
1.07) Is fertilizer application equipment checked for proper adjustment?	<i>Application equipment is checked for rate of application and placement.</i> Over- and underapplications are monitored and corrected.	Soil pH is maintained and/or adjusted for current crop on the basis of soil analysis after planting.	Application equipment is not checked.		Name of person responsible for fertilizer applicator adjustments and the dates of adjustments.
1.08) What nutrient management records are kept?	<i>Records of soil tests and tissue analysis reports and quantities of nutrients applied to individual fields or blocks are maintained.</i>	Partial nutrient management records are kept. Complete nutrient management records will be kept in the future, for review at time of reverification.	Minimal or no nutrient management records kept.		Three years of records – or 5 years, if applying manure – or plans to begin keeping records. Soil fertility tests and/or tissue analysis results. Date(s) of application(s). Nutrient composition of fertilizer or other material used. Amount of nutrient-supplying material applied per acre. Method of placement of applied nutrients.
1.09) When not in use, where are loaded planting and spray supply vehicles (trailers and trucks) parked to protect water resources from accidental fertilizer and pesticide spills and mischievous activities?	Supply vehicle is returned to a secure location when not in use. Fertilizer and pesticides are properly stored more than 150 feet down gradient from any well.		Fertilizer and pesticide supply vehicles are left in an unsecured location. Or, Fertilizer and pesticides are stored less than 150 feet from any well. ¹		Map showing where vehicle should not be parked adjacent to any well. No evidence vehicles left in an unsecured location.

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Nutrient Management Practices (continued)

Risk question	Low risk – 3 (recommended)	Medium risk – 2 (potential hazard)	High risk – 1 (significant hazard)	Your risk	Records or evidence for MAEAP verification
1.10) Are poly tanks used as intended?	Yes. Vertical (upright) tanks are used for fertilizer storage, and horizontal tanks with tie-down features for stationary storage and/or transportation applications.		Vertical tanks are used as mobile nurse tanks or other transportation applications. Vertical tanks are designed for temporary storage.		
1.11) How do you match N fertilizer applications to demand of the crop and the conditions of the soil?	N rates are based on tree/plant vigor, production quality, pruning practices and periodic tissue analysis, and do not exceed MSU recommendations.	Nitrogen rates are based on previous practices that match inputs with plant needs, but sometimes exceed MSU recommendations.	Nitrogen rates are not based on nitrogen monitoring or plant assessment and often exceed MSU recommendations.		
1.12) How are commercial phosphorus fertilization rates determined?	Based on soil tests or plant tissue analysis using MSU recommended rates. If the soil test exceeds 150 ppm Bray P1 (300 lb/A), phosphorus is discontinued.		Phosphorus fertilizer is applied without regard to soil or tissue analysis.		Commercial P management consistent with nutrient management GAAMPs.
Manure Management Practices (If you do not use manure, skip this section.)					
1.13) What manure management records are maintained?	Complete application records of manure analysis, soil test results and rates of manure application for individual fields are maintained.	Partial manure application records have been kept. Complete manure application records will be kept in the future, for review at the time of re-verification.	Minimal or no records maintained.		Additional nutrient management records that are needed if manure is used in the cropping system: <ul style="list-style-type: none"> - Date(s) of manure incorporation. - Weather conditions during application of manure (e.g. sunny, 70 degrees F). - Field conditions during application (wet, frozen, etc.). - Manure/wastewater quantities produced/utilized and nutrient analysis results.

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Nutrient Management Practices (continued)

Risk question	Low risk – 3 (recommended)	Medium risk – 2 (potential hazard)	High risk – 1 (significant hazard)	Your risk	Records or evidence for MAEAP verification
Manure Management Practices (If you do not use manure, skip this section.)					
1.14) How is the nutrient content of manure determined?	Laboratory analysis for percent dry matter (solids), ammonium N, and total N, P and K.	Book values or standard nutrient content values used.	Manure nutrient content is unknown or not considered.		All manure analysis or book values on file.
1.15) How are desired manure application rates achieved?	Manure analysis (book value, manure test or mass balance and field application rates are known.		Manure application rate is not known.		Rate of manure applied known for all spreaders. Records indicate date of calibration.
1.16) How is manure generally applied to fields?	Manure is incorporated within 48 hours or injected into the soil, and/or conservation practices (residue management, rough tillage, cover crops, etc.) are used to protect against runoff and erosion losses to surface waters.	Manure is generally surface applied and conservation practices are employed to reduce the risk of runoff.	Manure is applied in a manner that results in ponding, soil erosion losses, or manure runoff to adjacent property, drainage ditches or discharges directly to surface water. ⁴		Manure application records.
1.17) How are streams, wetlands, farm ditches and other water bodies protected from manure runoff?	Manure is injected or immediately incorporated. Or, surface applications are not done within 150 feet of surface water. Or, filter strips, riparian buffer strips, grassed waterways and other conservation practices are maintained between fields and surface waters on the farm and around surface water inlets.	Conservation practices are maintained on some fields.	Manure is applied within 150 feet of surface waters and not incorporated without conservation practices. And/or manure occasionally reaches neighbor's property.		Field maps with setbacks identified. Records of manure incorporation.

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Nutrient Management Practices (continued)

Risk question	Low risk – 3 (recommended)	Medium risk – 2 (potential hazard)	High risk – 1 (significant hazard)	Your risk	Records or evidence for MAEAP verification
Manure Management Practices (If you do not use manure, skip this section.)					
1.18) How are manure nitrogen application rates managed?	<i>Manure and N fertilizer are applied at rates that do not exceed the N requirements of the crop</i> and are credited toward fertilizer needs.	Manure nitrogen credits are considered but not to their full extent.	Commercial nitrogen is not reduced to account for manure nitrogen credits.		Manure rates do not exceed crop N needs, consistent with GAAMPS.
1.19) How are manure phosphorus application rates managed?	<i>High testing fields (>150 ppm Bray P1) do not receive manure, and fields between 75 and 150 ppm P receive no more than 4 years' crop P removal per year, if one year application is impractical.</i>	High testing fields (>150 ppm Bray P1) removed from spreading plan, but crop removal rates are not followed.	Manure application rates are not based on soil tests and/or crop removal rates.		Manure rates do not exceed crop P needs. If developing a Crop Nutrient Management Plan (CNMP), refer to USDA-NRCS 590 Standard.
1.20) How is manure temporarily stacked in relation to surface water?	<i>Manure stockpiles are kept at least 150 feet from surface waters or areas subject to flooding unless conservation practices are used to protect against runoff and erosion losses to surface waters.</i>		Manure stockpiles closer than 150 feet to surface waters or areas subject to flooding, and conservation practices not used to protect against runoff and erosion losses to surface waters. ⁴		Appropriate temporary manure stocking management demonstrated.
1.21) What management practices are used to reduce odors and pests from manure stockpiled in the field?	<i>Stockpiled manure is at least 150 feet away from non-farm homes, and manure is covered with a tarp, straw or other materials or additives are used to reduce odors and pests.</i>	<i>Stockpiled manure is at least 150 feet away from non-farm homes.</i>	Stockpiled manure is closer than 150 feet to non-farm homes.		Appropriate temporary manure stacking management demonstrated.

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Nutrient Management Practices (continued)

Risk question	Low risk – 3 (recommended)	Medium risk – 2 (potential hazard)	High risk – 1 (significant hazard)	Your risk	Records or evidence for MAEAP verification
Manure Management Practices (If you do not use manure, skip this section.)					
1.22) How long is manure stockpiled in the field?	<i>Manure is spread as soon as field and weather conditions allow, and does not exceed six months, or twelve months if covered with an impermeable cover.</i>		Manure stockpiled for more than six months without a cover, or more than twelve months with an impermeable cover.		Appropriate temporary manure stacking management demonstrated.
1.23) How do you determine which fields to use for winter spreading?	No winter applications.	Manure application risks index (MARI) is completed for each field receiving winter manure application. Fields receiving winter manure applications have met MARI criteria for Low or Very Low and <i>no liquid manure is applied on slopes greater than 3%, and no solid manure is applied to slopes over 6%.</i>	Applications are made to fields where runoff to water resources may occur.		MARI completed for each field receiving winter manure application, or spreading plan does not include winter spreading.
1.24) How are field tiles managed to prevent manure discharge?	<i>Liquid manure is prevented from reaching tile lines.</i> Management practices are in place to prevent runoff to surface inlets. Tile line outlets are monitored.		Tile outlets are not monitored for manure discharge.		Tiled fields identified on map. Records of tile flow before and after application (flow, rate, color and odor).
1.25) How are manure applications managed to prevent any food safety risk?	Manure applied more than four months (120 days) before crop is harvested. Manure is composted or held in storage for 60 to 90 days before application.	Manure applied more than four months (120 days) before crop is harvested.	Manure applied less than four months (120 days) before crop is harvested.		

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Nutrient Management Practices (continued)

Risk question	Low risk – 3 (recommended)	Medium risk – 2 (potential hazard)	High risk – 1 (significant hazard)	Your risk	Records or evidence for MAEAP verification
Biosolids Management Practices (If you do not use biosolids, skip this section.)					
1.26) How are biosolids with pathogens prevented from contacting crops grown for human consumption?	Biosolids with pathogens present (Class B biosolids) are applied only to non-bearing trees and plant areas, or harvest restrictions are followed. (Class A biosolids are essentially pathogens-free with no restrictions for land application. Class B biosolids have low levels of pathogens and have restrictions and harvest intervals when land applied.)		Biosolids with pathogens present (Class B biosolids) are applied to active fruit production areas without regard to harvest restrictions. ⁴		Application records kept for biosolids applications and can be compared with fruit production records.
1.27) Has nutrient content information on the biosolids applied to your farm been received?	Received laboratory analysis for percent dry matter (solids), ammonium N (NH ₄ -N), and total N,P and K and utilize nutrient credits when planning nutrient program.		Have not received any biosolids analysis information.		Biosolids analyses on file.
1.28) How are the rates of biosolids (in gallons or dry tons per acre) and applied biosolids nutrients known?	Received actual application rated from the biosolids generator or its land application contractor. Nutrient rates are consistent with MSU recommendations.		Have not received any biosolids rate or nutrient application information.		Biosolids application rates on file.

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Soil and Water Conservation Practices

Risk question	Low risk – 3 (recommended)	Medium risk – 2 (potential hazard)	High risk – 1 (significant hazard)	Your risk	Records or evidence for MAEAP verification
<p>2.01) Have environmentally sensitive areas been identified (land near surface water, highly erodible land, soils with high leaching or runoff potentials, wells, surface drains and inlets) that require additional management when applying nutrients and pesticides?</p>	<p>Environmentally sensitive areas are identified. Family members, employees and contractors are aware of and understand the management practices to protect these areas.</p>	<p>Some environmentally sensitive areas are identified.</p>	<p>Environmentally sensitive areas are not considered.</p>		<p>Areas identified on field maps with appropriate management or setbacks.</p> <p>Areas:</p> <ul style="list-style-type: none"> - Next to surface waters. - Fields with shallow groundwater. - Fields with water wells. - Areas near surface water inlets. - Fields with highly erodible soils. - Fields with highly leachable soils. - Fields with high runoff potential. <p>Training/communications plan to inform workers and contractors of appropriate management or setbacks.</p>

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Soil and Water Conservation Practices (continued)

Risk question	Low risk – 3 (recommended)	Medium risk – 2 (potential hazard)	High risk – 1 (significant hazard)	Your risk	Records or evidence for MAEAP verification
2.02 Is soil erosion under control on the farm fields?	Soil erosion losses are within tolerances as documented by the revised universal soil loss equation (RUSLE2) and the wind erosion prediction system (WEPS). Minimal evidence of erosion and no evidence of concentrated water flows. Cover crop may be in place.	<p>RUSLE2 and WEPS are run on fields that are not:</p> <p>In pasture or hay ground, or no-till planting systems.</p> <p>Receiving fall tillage, with >30% residue on less than 12% slopes.</p> <p>Receiving more than one pass fall tillage that leaves fields rough with >40% residue and less than 8% slopes.</p> <p>And regardless of fall tillage, spring tillage leaves > 20% residue.</p> <p>And for all of the above there is no evidence of sheet, rill or gully erosion.</p>	Excessive soil erosion is occurring on the farm.		RUSLE2 and WEPS calculations completed and on file.
2.03 Do you protect all streams, wetlands, farm ditches and other water bodies on your farm from polluted runoff and sediment with conservation practices?	Filter strips, riparian buffer strips, grassed waterways and other conservation practices are maintained between fields and all surface waters on the farm.	Conservation practices are maintained on some fields.	No conservation practices are maintained. Farm is immediately next to surface waters and drainage ditches.		
2.04 Do you plant cover crops to prevent soil erosion, trap nutrients and pesticides, and improve soil quality?	Cover crops are included in the crop rotation to protect soil and water resources and control erosion.	Cover crops are used occasionally.	Cover crops are not used.		

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Soil and Water Conservation Practices (continued)

Risk question	Low risk – 3 (recommended)	Medium risk – 2 (potential hazard)	High risk – 1 (significant hazard)	Your risk	Records or evidence for MAEAP verification
2.05) Are soil quality indicators evaluated?	Soil quality indicators (e.g. water infiltration rates, soil compaction, percent plant and residue cover, earthworm populations, pH, cation exchange capacity [CEC] and percent organic matter) are evaluated on all fields.	Some soil quality indicators are evaluated.	No soil quality indicators evaluated.		
2.06) Are conservation and management practices routinely inspected and evaluated?	Owner or trained individual routinely inspects and evaluates conservation and management practices.	Conservation and management practices are informally evaluated during field operations.	Practices are not inspected nor evaluated.		

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Pest Management Practices

Risk question	Low risk – 3 (recommended)	Medium risk – 2 (potential hazard)	High risk – 1 (significant hazard)	Your risk	Records or evidence for MAEAP verification
<p>3.01 Do you use integrated pest management (IPM) on your farm?</p>	<p>Pest management decisions are based on:</p> <ul style="list-style-type: none"> - A weekly monitor program utilizing traps. - Visual scouting techniques. - Collection of weather data. - Economic thresholds and use of predictive models. <p>Reduced-risk spray application equipment used.</p> <p>Pesticide selection considers:</p> <ul style="list-style-type: none"> - Effects on beneficial organisms and inclusion of reduced-risk materials. - Prevention of pesticide resistance development by pests. <p>Cultural methods are utilized to reduce need for pesticide application:</p> <ul style="list-style-type: none"> - Timing of mowing for sanitation to reduce inoculum or pests. - Use of mulch or ground cover under plants to reduce leaching of nitrates into groundwater, suppress weeds, conserve water, etc. 	<p>Control decisions not based on routine, site-specific monitoring but on MSU or on-farm consultant recommendations using regional information.</p> <p>Reduced-risk pesticides are utilized.</p>	<p>Pesticides are utilized to control pests on a calendar basis only; little consideration is given to pest monitoring.</p> <p>Reduced-risk pesticides are not utilized.</p>		

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Pest Management Practices (continued)

Risk question	Low risk – 3 (recommended)	Medium risk – 2 (potential hazard)	High risk – 1 (significant hazard)	Your risk	Records or evidence for MAEAP verification
3.02) How do you control weeds on your farm?	Where appropriate, cultural and mechanical practices are used to suppress weeds and minimize weed seed survival (cultivation, crop rotation, certified seed, cover crops, mulch, etc.). Herbicide selection and rates are based on weed species present; scouting and thresholds are utilized.	Pre-emergence and post-emergence herbicides are selected based on past performance, weed species, weed history, cost or ease of application.	Herbicides are selected primarily on the basis of price or ease of application. Little consideration is given to weed species present.		
3.03) How do you control insects on your farm?	Treatment is always based on monitoring, predictive models and economic thresholds. Where available, reduced-risk and biological pesticides (e.g., Bt), pheromones, cultural methods (resistant varieties, field border management, etc.), selective insecticides and reduced-risk pesticide application methods are used.	Insecticide treatments are not based on site-specific monitoring but on MSU or off-farm consultant recommendations using regional information. Reduced-risk and biological pesticides are utilized.	Insecticides are used as insurance or on a calendar schedule regardless of insect pressure or treatment thresholds.		
3.04) How do you control plant diseases on your farm?	Diseases are managed through cultural methods where available (resistant varieties, field and equipment sanitation, inoculum reduction, etc.). Fungicide and bactericide use is based on disease prediction, weather forecasts and site-specific scouting information. Reduced-risk materials and reduced-risk pesticide application methods are utilized.	Fungicide and bactericide use is based on disease prediction, weather forecast and regional scouting information. Spraying is done at the first sign of disease.	Crop is not monitored for disease. Spraying is based on the stage of plant development or calendar date.		

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Pest Management Practices (continued)

Risk question	Low risk – 3 (recommended)	Medium risk – 2 (potential hazard)	High risk – 1 (significant hazard)	Your risk	Records or evidence for MAEAP verification
Pesticide Application					
3.05) Do you consider soil characteristics and field conditions when making pesticide applications?	Soil characteristics (texture and organic matter) and field conditions (wind speed and direction, slope and moisture) are assessed when deciding on pesticide application practices. Site-specific or variable-rate technology may be used.	Whole-field application rates are based on the most vulnerable soil type in the field and field conditions.	Pesticides are applied at full labeled rates without regard to vulnerable soil characteristics or field conditions.		
3.06) How are surface and groundwater protected in and near fields from pesticide contamination?	Pesticide labels with groundwater and surface water advisory statements are followed.		Labeled directions are not followed. ¹⁷ Spray is applied adjacent to or over the top of surface water, tile drain inlet or well. Other field restrictions are ignored.		Field maps indicating pesticide label setbacks and other restrictions are followed. Plan identifies sensitive areas and how they are treated. Drift management plan available.
3.07) Are leaching/runoff and toxicity potentials considered when making pesticide decisions?	Pesticides with the lowest potentials for leaching, runoff and non-target toxicity are always selected when appropriate for use in fields. Some spray applications delayed to non-rainy periods. Mulches and ground covers used under trees to prevent leaching.	Leaching/runoff and toxicity potentials are occasionally considered when selecting soil-applied pesticides.	Pesticide choice is not based on leaching/runoff and toxicity potentials. Only cost and effectiveness are considered.		
3.08) Are the purchasers and applicators of restricted-use pesticides (RUP) certified applicators?	<i>The purchaser and applicator of RUP comply with the certification requirements.</i>		Non-certified and unsupervised applicators use RUP. ⁶		RUP certification confirmed.

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Pest Management Practices (continued)

Risk question	Low risk – 3 (recommended)	Medium risk – 2 (potential hazard)	High risk – 1 (significant hazard)	Your risk	Records or evidence for MAEAP verification
Pesticide Application (continued)					
3.09) Do you protect workers and pesticide handlers from exposure to pesticides?	<i>Workers and handlers:</i> - <i>Follow specific label requirements.</i> - <i>Are provided decontamination supplies.</i> - <i>Are trained or certified applicators.</i> - <i>Are informed of pesticide applications.</i> - <i>Are provided personal protective equipment.</i> - <i>Are provided emergency assistance, if needed.</i> - <i>Follow preharvest interval and restricted-entry interval requirements.</i>	Worker Protection Standard requirements are partially met. ¹⁹	Worker Protection Standard requirements are ignored. ¹⁹		
3.10) If pesticides are mixed and loaded in the field, how are they handled?	A mixing and loading pad is used. Mixing and loading are done more than 150 feet from any well and more than 50 feet from surface waters.	Mixing and loading are done in different locations in the field, more than 150 feet from a private well, more than 800 feet from a public well* and more than 50 feet from surface waters. A mixing and loading pad is not used.	Pesticides are mixed and loaded at the same spot in the field year after year without a pad.		Proper pesticide mixing and loading demonstrated.
3.11) How are empty pesticide containers rinsed and disposed?	<i>Containers are triple-rinsed or power rinsed, punctured</i> and returned to dealer, recycled or taken to a licensed landfill. Bags are returned to dealer or taken to licensed landfill.	Disposal of empty containers and bags on the farm property. ^{8, 17}	Disposal of partially filled containers. Burning of containers on the farm property. ^{8, 17}		Evidence of containers being recycled.

* See groundwater technician for additional information on criteria for reduced isolation distances.

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Pest Management Practices (continued)

Risk question	Low risk – 3 (recommended)	Medium risk – 2 (potential hazard)	High risk – 1 (significant hazard)	Your risk	Records or evidence for MAEAP verification
Pesticide Application (continued)					
3.12) Do pesticide applicators read and follow the label instructions?	<i>Everyone using pesticides follows label and labeling instructions.</i>		Label and labeling instructions are not always followed. ¹⁷		Evidence that labels are followed.
3.13) What management practices are used to prevent the development of pest resistance to certain pesticides?	Pesticides with different modes of action are rotated (target successive pest generations with different pesticide classes) or used in tank mixes where permitted. Pesticides at highest risk of resistance are not used when alternatives are available. Full rates used for pesticides suspected of resistance development.	Some but not all pesticide modes of action are rotated or tank mixed. Pesticides at highest risk of resistance are used sparingly.	Pest resistance is not considered when selecting pesticides.		
3.14) Is a spill clean-up kit immediately available to pesticide applicators in the field?	<i>A spill clean-up kit</i> containing a shovel, absorbent material, PPE and a container <i>is immediately available.</i>		No spill clean-up kit is available, or no plan is in place to contain spills. ⁶		Adequate spill clean-up kit present.
3.15) How is excess spray mixture disposed?	<i>Spray mixture is applied to labeled site at or below labeled rate of application.</i>		Spray mixture dumped at farmstead or in nearby field or pond. ⁴		Satisfactory explanation of procedures for excess spray mixtures.
3.16) How is the sprayer system rinsed?	<i>Sprayer system rinsed on pad or in field. Rinse water applied to labeled site at or below labeled rate of application.</i>		Sprayer rinsed out at farmstead. Rinse water dumped at farmstead or in nearby field or pond. ⁴		Satisfactory explanation of procedures for rinsing sprayer system.

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Pest Management Practices (continued)

Risk question	Low risk – 3 (recommended)	Medium risk – 2 (potential hazard)	High risk – 1 (significant hazard)	Your risk	Records or evidence for MAEAP verification
Pesticide Application (continued)					
3.17) How is the proper and safe operation of pesticide application equipment ensured?	<i>Equipment is correctly calibrated at least annually, and leaks are minimized to apply intended rate and distribution pattern.</i>		Pesticide application equipment is not properly calibrated.⁶		Date of annual equipment calibration recorded.
3.18) How are pesticide applications assured to remain on-target and minimize off-target pesticide spray drift?	<i>A written drift management plan is utilized that minimizes off-target drift.</i>	Pesticide applications follow labeled instructions for target pests, but no drift management plan is utilized.	Spraying operations are completed regardless of weather conditions or forecast, and regardless of the potential for off-target drift.⁷		Written drift management plan on file.
3.19) How do you minimize pesticide spray drift when using an air blast sprayer?	Do not spray when the wind speed is greater than 10 mph. Do not spray during thermal inversions. Cut off spray for missing trees in the row.		Drift minimization is not considered when using an air blast sprayer.		

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Pest Management Practices (continued)

Risk question	Low risk – 3 (recommended)	Medium risk – 2 (potential hazard)	High risk – 1 (significant hazard)	Your risk	Records or evidence for MAEAP verification
Pesticide Application (continued)					
3.20) What pesticide application records are kept?	<p><i>Accurate records are maintained of all agricultural crop pesticide applications for at least three years.</i></p>	<p>Partial pesticide records are kept. Complete pesticide application records will be kept in the future, for review at the time of reverification.</p>	<p>No pesticide records kept. Chemicals used are known by memory or invoices only.</p>		<p>Pesticide records for the past 3 years on file (or plans to maintain records).</p> <ul style="list-style-type: none"> - Date of application. - Time of application. - Pesticide brand/product name. - Pesticide formulation. - EPA registration number. - Active ingredient(s). - Restricted-entry interval (REI). - Rate per acre or unit. - Crop, commodity, stored product or site that received the application. - Total amount of pesticide applied. - Size of area treated. - Applicator's name. - Applicator's certification number. - Location of the application. - Method of application. - Target pest. - Carrier volume per acre. <p>Additional optional records:</p> <ul style="list-style-type: none"> - Full or alternate-row application. - Weather conditions. - Pest monitoring records and predictive model timing used. - Follow-up evaluation of action taken.

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Pest Management Practices (continued)

Risk question	Low risk – 3 (recommended)	Medium risk – 2 (potential hazard)	High risk – 1 (significant hazard)	Your risk	Records or evidence for MAEAP verification
Pesticide Application (continued)					
3.21) Do you consider the effects of insecticide use on beneficial insect populations?	Use reduced-risk insecticides and delay timing of insecticide application to allow natural enemy (NE) population to build.	Reduced-risk materials used, timing of insecticide application delayed to allow NE populations to build, and targeted “hot spot” spray applications used.	Beneficial insect management is not considered.		
3.22) Do you provide habitat to enhance populations of natural enemies, pollinators and beneficial organisms?	Ground cover plantings/ mulches used under plants and in drive rows for alternative nutrient management and beneficials. Flowering plants provide for season-long nectar and pollen, and habitat provided to enhance pollinator and natural enemy populations.	Ground covers/mulches used under plants.	Management of beneficial organism is not considered.		
3.23) Do you manage cultural practices to enhance populations of beneficial natural enemies (NE)?	Use alternate-row mowing method for insect control, NE enhancement and pollinator preservation. Maintain mow-free strips around planting perimeter for natural enemy and pollinator preservation.	Maintain mow-free strips around planting perimeter for natural enemy and pollinator preservation.	Beneficial insect management is not considered.		
3.24) How are agricultural pollution emergencies handled?	Call 911, sheriff, fire or emergency services department for personal safety issues. <i>All uncontained spills or releases should be reported to the MDARD Agriculture Pollution Emergency Hotline: 1-800-405-0101</i> , or the MDEQ Pollution Emergency Alerting System: 1-800-292-4706.		No contact to state or local authorities. Spill discharges directly to surface water.⁴		Farm emergency plan on file, or local emergency telephone numbers immediately available.

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Water Use

Risk question	Low risk – 3 (recommended)	Medium risk – 2 (potential hazard)	High risk – 1 (significant hazard)	Your risk	Records or evidence for MAEAP verification
4.01) If the ground-water and surface water pumps have a combined capacity to pump more than 70 gallons per minute (100,000 gallons per day) for agricultural purposes, have you registered and reported water use to the State of Michigan?	Pump capacity is less than 100,000 gallons per day (70 gallons per minute). Or, Register and report annual water use to Michigan Department of Agriculture and Rural Development.		Pump capacity is greater than 100,000 gallons per day (70 gallons per minute) and water use is not reported to the State of Michigan.¹³		Farm records indicate compliance.
4.02) Have you registered new or increases large quantity water withdrawals (capacity greater than 70 gpm or 100,000 gallons per day) for systems established after February 27, 2006?	Yes.		No.¹³		
4.03) Is there an unused well located in the cropping area?	No unused well, or all abandoned wells were properly sealed.		Unused, unsealed well in cropping area.¹		Unused well(s) properly sealed.

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Irrigation Management Practices (If you do not use irrigation, skip this section.)

Risk question	Low risk – 3 (recommended)	Medium risk – 2 (potential hazard)	High risk – 1 (significant hazard)	Your risk	Records or evidence for MAEAP verification
System Management					
5.01) Are all sprinkler systems operated to minimize drift and off-target application?	All sprinkler systems are operated to minimize drift and off-target application. No off-target irrigation application present.	Most sprinkler systems operated to minimize drift and off-target application. Few off-target irrigation applications occur.	Sprinkler systems are often operated under windy conditions. Water is sprayed over roads, adjacent property or structures.		No field evidence of off-target applications.
5.02) Is noise control provided when needed?	Noise control is provided when needed.	In most areas of concern, noise control is provided when needed.	Noise control is not provided when needed.		
Record Keeping					
5.03) Are proper irrigation system management records collected and retained for use in decision making and for reference in case of complaints?	Irrigation system management records are collected and retained, including: - Crop type and location. - Source of the water used. - Date, method and amount of each irrigation water application. - All system inspections and repairs that influence uniformity and leaks. - Calibration of fertigation and chemigation equipment, if used. - Records on system uniformity evaluation.	Most of irrigation system management records are collected and retained. Plan to maintain complete irrigation records.	Few or no irrigation system management records are collected and retained.		Irrigation records on file, or plans to maintain records.

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Irrigation Management Practices (continued)

Risk question	Low risk – 3 (recommended)	Medium risk – 2 (potential hazard)	High risk – 1 (significant hazard)	Your risk	Records or evidence for MAEAP verification
Irrigation Scheduling					
5.04) How is irrigation scheduling used to determine when it is necessary to irrigate and how much water should be applied during each irrigation event?	Irrigation water is scheduled on the basis of: <ul style="list-style-type: none"> - Available soil water for each unit scheduled. - Depth of rooting for each crop irrigated. - Container capacity for container-grown nursery crops. - Allowable soil moisture depletion at each stage of crop growth. - Measured, estimated or published evapotranspiration data to determine crop water use. - Measured rainfall in each field or block irrigated. 	Irrigation water is scheduled on the basis of observed soil moisture content and/or daily water crop usage.	Irrigation water is applied at a set rate per week if no precipitation is received.		Scheduling system evident by records.
Application practices to avoid runoff and leaching (most applicable to strawberry and small fruit production)					
5.05) Is there a rain gauge in every irrigated field?	Every field being managed for irrigation has a rain gauge in the field.	Most fields have a rain gauge; plan to have a rain gauge in all fields.	No rain gauges.		Rain gauges in all irrigated fields, or plan to maintain in all fields.
5.06) Is irrigation water runoff and ponding minimized?	Sprinkler application rates are below the soil infiltration rate. Nutrient leaching is minimized.	Most sprinkler application rates are below the soil infiltration rate. Some runoff and ponding is present.	Sprinkler application rates exceed the soil infiltration rate. Runoff and ponding is commonly visible.		No indication of significant runoff or ponding in irrigated fields.
5.07) Have all irrigation systems been evaluated for application uniformity?	All irrigation systems have been evaluated for uniformity. Corrections are made to the system to improve uniformity.	Some irrigation systems have been evaluated for uniformity. Remainder of systems scheduled to be evaluated.	Irrigation system uniformity has not been evaluated.		Uniformity tests on file. Schedule for evaluating systems that have not been evaluated.

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Irrigation Management Practices (continued)

Risk question	Low risk – 3 (recommended)	Medium risk – 2 (potential hazard)	High risk – 1 (significant hazard)	Your risk	Records or evidence for MAEAP verification
Application practices to avoid runoff and leaching (most applicable to strawberry and small fruit production) continued					
5.08) How is the amount of irrigation water accurately determined?	<i>All water applications are accurately determined-</i> - by knowing actual flow delivered (GPM) and time of application. - or, by using a flow meter. - or, by average output caught with system evaluation.	Water applications are estimated.	Water application amounts not determined. Excess application occurs.		Irrigation water delivered by irrigation system is accurately determined.
5.09) Are split applications of nitrogen fertilizer used when nitrogen is applied in an irrigated field?	<i>Split applications of nitrogen fertilizer are made when nitrogen is used in an irrigated field.</i> N application does not exceed MSU recommendation.		Nitrogen fertilizers are applied through irrigation on the basis of visual crop symptoms. Total N applied exceeds MSU recommendation.		
5.10) Are backflow prevention devices in place and properly maintained if fertigation or chemigation is used?	<i>Appropriate backflow prevention safety devices are used</i> and properly maintained if fertigation or chemigation is used.	Backflow prevention devices are almost always used and/or properly maintained.	Backflow prevention devices are not used and/or properly maintained.		Operational backflow devices field confirmed.
5.11) Is excess irrigation avoided?	<i>Irrigation water applications in excess of the quantity of water needed to replace the soil/ substrate moisture deficit are avoided.</i>	Excess irrigation water applications may occur occasionally.	Excess irrigation water applications are common.		

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Irrigation Management Practices (continued)

Risk question	Low risk – 3 (recommended)	Medium risk – 2 (potential hazard)	High risk – 1 (significant hazard)	Your risk	Records or evidence for MAEAP verification
Wellhead Protection and/or Surface Water Protection					
5.12) Is the irrigation well adequately protected from contamination from pesticides and fertilizers?	<i>Anti-backflow device is installed</i> , and agricultural chemical/fertilizer storage and preparation areas are at least 150 feet from the well.	<i>Anti-backflow device is installed</i> , agricultural chemical/fertilizer storage and preparation areas have secondary containment, but storage and preparation areas are less than 150 feet from the well. ¹	No anti-backflow device ¹ , no secondary containment and less than 150 feet isolation distance from irrigation well. ¹		Isolation distances field confirmed.
5.13) How far is your irrigation fuel tank from a storm drain, surface water or designated wetland?	Tank is more than 50 feet away or has some other engineering control present that would control or divert a spill from reaching a storm drain, surface water or designated wetland.		Tank is 50 feet or less. ¹⁶		Appropriate fuel storage isolation distance from surface water. Engineering control, such as double-walled tank or dike.

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Other Considerations for the Cropping System

Risk question	Low risk – 3 (recommended)	Medium risk – 2 (potential hazard)	High risk – 1 (significant hazard)	Your risk	Records or evidence for MAEAP verification
6.01) Does the farm business have a food safety program that is followed to reduce the risk of food-borne illness?	A written food safety manual exists and is being implemented.	Food safety practices are generally followed, but not documented in a written plan.	A food safety program is not available.		Note: This is a GAP (Good Agricultural Practices) requirement. USDA will not certify the farm without a documented food safety program.
6.02) Does the farm business have a person designated to implement and oversee a food safety program?	The designated food safety person is documented in the food safety manual.		There is no designated food safety person.		Note: This is a GAP (Good Agricultural Practices) requirement. USDA will not certify the farm without a food safety designee.
6.03) Are there other activities, products, processes/ equipment, services, by-products and/or wastes in the cropping areas that pose contamination risks to groundwater or surface water?	No risk(s) identified.	Risk(s) identified and plan to mitigate the contamination risk(s).	No plan to mitigate contamination risk(s).		No other environmental risks found in cropping areas.

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Table 1. Federal, state and local environmental requirements for operation of this farm business.

This table contains the typical requirements for a farm business. There may be additional environmental requirements due to the type of operation and location. Contact the local or state permitting agencies for further information: MDEQ Environmental Assistance Hotline — 1-800-622-9278, and MDARD Information — 1-800-292-3939.

Environmental regulatory requirements	Description	Frequency	Administering Agency	Your expiration date
Air use permit	Permit to install and operate equipment or processes which may emit air contaminants (incinerators for burning animal carcasses or manure, and biodigesters and associated equipment are examples).	Before construction	MDEQ/Air	N.A.
Farm motor vehicle fuel storage tanks greater than 1,100 gallon capacity (above- and below-ground tanks)	Fuel storage tanks have to be certified (aboveground) or registered (underground); a site plan has to have been submitted to the DEQ before the installation is placed into service. Smaller tanks have other requirements to be met.	Annual	MDEQ/Waste and Hazardous Materials Division	
Groundwater discharge permit	Any discharge of waste or waste effluent into or onto the ground (e.g., egg wash water and milk cooling water [over 10,000 gallons/day] that is discharged) and any livestock facility over 5,000 animal units.	5 years	MDEQ/Groundwater Division	
Land and water interface construction permits	Construction activities (dredging, filling, draining, construction, structure placement) in, across, under water.	Before construction	MDEQ/Water Resources Division	N.A.
Pesticide safety training for pesticide workers	The federal Worker Protection Standard for agricultural pesticides requires employers of pesticide handlers and workers to train employees on pesticide safety. Agricultural employers must be able to verify compliance.	Each employee must be trained every 5 years	MDARD/Pesticide and Plant Pest Management Division (PPPM)	
Private pesticide applicator certification	Any persons using or supervising the use of restricted-use pesticides (RUP) in the production of an agricultural commodity on their own or their employer's land must be a certified pesticide applicator.	3 years	MDARD/PPPM	
Septic permit (house and farm operation)	The first step in the process of determining if a piece of land that does not have municipal wastewater services available can be considered for an on-site septic system.	Before construction	Local health department	N.A.
Soil erosion and sedimentation control permit	Earth change activities within 500 feet of a lake or a stream, or that will disturb an area greater than 1 acre in size.	Before construction	County soil erosion permitting agency	
Water use reporting	Agricultural water users with the capacity to withdraw surface or ground-water that exceeds 100,000 gallons per day (70 gallons per minute) are required to report actual water withdrawals annually.	Annual	MDARD	

(continued on next page)

Table 1. Federal, state and local environmental requirements for operation of this farm business (continued).

Environmental regulatory requirements	Description	Frequency	Administering Agency	Your expiration date
Well – new large or increased capacity	If installing a new or increased quantity well with total capacity over 70 gallons per minute (100,000 gallons/day), must use online water withdrawal tool to determine if it will cause adverse resource impact. If no impact, submit registration.	Before installation	MDEQ/Water Bureau	Installation registration valid for 18 months
Well permit	A person who installs a well, pump or pumping equipment shall comply with applicable laws, regulation, ordinances and codes.	Before construction	Local health department	
Environmental guidelines	Description	Frequency	Administering agency	Your expiration date
Cranberry production	The Michigan Right-to-Farm Act (Act 93 of 1981) requires the establishment of generally accepted agricultural and management practices (GAAMPs). Agricultural producers who voluntarily follow these practices are provided protection from public or private nuisance litigation. The GAAMPs are reviewed annually. The latest GAAMPs can be accessed at: www.michigan.gov/mda .	Guidelines reviewed annually	MDARD	N.A.
Irrigation water use				
Farm market				
Manure management and utilization				
Nutrient utilization				
Pesticide utilization and pest control				
Site selection and odor control for new and expanding livestock production facilities	MAEAP systems information and requests for verification available at www.maeap.org or 517-373-9797 .	3 years	MDARD	
MAEAP verification: livestock, farmstead, and cropping systems				

Table 2. Legal citations for environmental risks in Crop*A*Syst for Orchards and Fruit Producers

Footnote	Michigan Law	Description
1	Public Health Code, Public Act 368 of 1978	Part 127: Water Supply and Sewer Systems
2		Part 138 Medical Waste Regulatory Act
3	Safe Drinking Water Act, Public Act 399 of 1976	
4	Natural Resources and Environmental Protection Act, Act 451 of 1994	Part 31: Water Resources Protection
5		Part 55: Air Pollution Control
6		Part 83: Pesticide Control
7		Part 111: Hazardous Waste Management
8		Part 115: Solid Waste Management
9		Part 117: Septic Waste Servicers
10		Part 121: Liquid Industrial Waste
11		Part 169: Scrap Tires
12		Part 201: Environmental Response
13		Part 327: Great Lakes Preservation
14	Bodies of Dead Animals Act, Public Act 239 of 1982 as amended	
15	Fire Prevention Code Public Act 207 of 1941	Storage and Handling of Flammable and Combustible Liquids
16	Grade A Milk Law, Public Act 266 of 2001	
Federal Law		
17	Federal Insecticide, Fungicide and Rodenticide Act (FIFRA)	
18	Title III of the Superfund Amendments and Reauthorization Act of 1986, also know as the Emergency Planning and Community Right-to-Know Act	
19	Worker Protection Standard for Agricultural Pesticides	
20	Clean Water Act	

Cropping System Improvement Action Plan (continued)

Risk question	List high-risk practice(s) from Fruit*A*Syst as well as medium-risk practices that do not meet MAEAP requirements.	Required for MAEAP verification?	Alternative low-risk practice (include potential sources of technical and financial assistance).	Action plan	
				Planned completion date	Indicate date when completed

MAEAP Verification - Contact MAEAP Office at the Michigan Department of Agriculture and Rural Development: 517-373-9797

MAEAP Verification Action Plan	Date
Target date for MAEAP verification of Farmstead System	
Target date for MAEAP verification of Cropping System	
Target date for MAEAP verification of Livestock System	

Notes:

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