



MAEAP Livestock System Verification Standards

A boxed risk level indicates the standard required for environmental assurance verification.

Bold print indicates a violation of state or federal regulation.

Bold Italic print indicates conformance with Right-to-Farm guidelines.

(Revised Date: 7/25/12)

RISK QUESTION	LOW RISK – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK - 1 (SIGNIFICANT HAZARD)	REFERENCE OR GUIDANCE DOCUMENT
Whole Farm Nutrient Balance				
1.02) Is there adequate land base for all nutrients used on the farm?	There is adequate land base or manure is sold off site.	Lacks adequate land base but fields test low (<i>< 75 PPM</i>) in phosphorus and manure can be balanced on nitrogen.	Lacks adequate land base.	<i>2011 RTF Manure Management and Utilization GAAMPs, Section V: Manure Application to Land, Manure Nutrient Loading, #33</i>
Farm Site Review				
2.01) Do rain, snow (including plowed snow) roof water or surface water come into contact with manure, compost, feed/silage, livestock lots or travel lanes resulting in contaminated runoff?	No contact or contaminated <i>runoff is collected or treated</i> and does not discharge directly to surface water.		Areas are exposed to rain/snow or surface water, and runoff is not collected or treated. Runoff discharges directly to surface water.	NREPA PA 451 of 1994, Part 31: Water Resource Protection Act <i>2011 RTF Manure Management and Utilization GAAMPs, Section II: Runoff Control and Wastewater Management, Outside Lots, #11</i>
2.02) If surface drains are present around the farmstead, what is going to them and where do they end up?	Surface drains do not capture polluted runoff or there are surface drains <i>but runoff is collected or treated</i> and does not discharge directly to surface water.		Surface drains collect contaminated runoff and discharge directly to surface water or run to low areas and pond.	NREPA PA 451 of 1994, Part 31: Water Resource Protection Act <i>2011 RTF Manure Management GAAMPs, Section II: Runoff Control and Wastewater Management, #2</i>
Milking center wastewater				
3.02) How is plate cooler water handled?	100% of plate cooler water is reused for livestock watering or other livestock-related use or permitted for discharge.	Less than 10,000 gal/day are discharged onto ground surface. Discharged water does not intercept surface water.	More than 10,000 gal/day are discharged onto ground surface or intercept surface water without a permit.	NREPA PA 451 of 1994, Part 31: Water Resource Protection Act

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Milking center wastewater (continued)				
3.03) What are the parlor cleanup practices?	Waste milk never poured down drain. Manure and excess feed removed from parlor before wash-down, or wastewater goes to manure storage.	Some milk poured down drain. Some manure and excess feed removed before wash-down.	All waste milk poured down drain. Manure and excess feed frequently washed down drain. Waste milk is discharged.	NREPA PA 451 of 1994, Part 31: Water Resource Protection Act
3.04) Is all wastewater collected and stored?	Wastewater is stored, used or hauled daily.	Wastewater passes through a properly functioning filtration system.	Wastewater is directly discharged to a lake, drainage ditch, stream or field.	NREPA PA 451 of 1994, Part 31: Water Resource Protection Act
3.05) Is rejected milk collected and stored?	Rejected milk is stored, hauled out or fed.		Milk is discharged , put into septic system or put into treatment strip.	NREPA PA 451 of 1994, Part 31: Water Resource Protection Act
Milking system septic systems. If this method is not used, skip to the next section.				
3.06) Is all milkhouse water treated by the septic system?	All milkhouse water is treated by septic system.		Some water is not treated or is discharged to tile, inlet or drainage ditch.	NREPA PA 451 of 1994, Part 31: Water Resource Protection Act
3.07) Is the septic system managed adequately to handle the volume of wastewater?	Septic system is managed in a manner to prevent pollution to waters of the state.		Septic system is not managed adequately and discharges directly to surface waters.	NREPA PA 451 of 1994, Part 31: Water Resource Protection Act <i>2011 RTF Manure Management and Utilization GAAMPs, Section II: Runoff Control and Wastewater Management, #3</i>

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Application of wastewater to designed infiltration system. If this method is not used, skip to next section.				
3.10) Does the system handle the capacity of milking center wastewater generated?	Infiltration area effectively treats the quantity of wastewater generated. <i>Treatment area is managed to prevent pollution to waters of the state.</i>	Infiltration area shows minor erosion, wastewater ponding or burned vegetation.	Infiltration area has excessive erosion, wastewater ponding or burned vegetation.	<i>2011 RTF Manure Management and Utilization GAAMPs, Section II: Runoff Control And Wastewater Management, #3</i>
3.11) How is the designed infiltration system maintained?	<i>Vegetation maintained and harvested at least once per year.</i> Accumulated solids removed, if needed.	Occasional maintenance.	No maintenance.	<i>2011 RTF Manure Management and Utilization GAAMPs, Section II: Runoff Control And Wastewater Management, Infiltration Areas, #7</i>
Direct discharge to surface water.				
3.12) Is wastewater directly discharged to a lake, drainage ditch or stream?	<i>Milk parlor and milkhouse wastewater are managed in a manner to prevent discharge into waters of the state.</i>		Milking center wastewater is discharged directly to surface water.	NREPA PA 451 of 1994, Part 31: Water Resource Protection Act <i>2011 RTF Manure Management and Utilization GAAMPs, Section II. Runoff Control And Wastewater Management, #3</i>
Manure storage (Includes all storage systems used for manure, wastewater or runoff containment).				
4.01) What is the storage capacity of manure systems?	There is 6 months or greater manure storage.	There is less than 6 months storage; adequate land base is available for winter and summer applications.	There is minimal or no manure storage on site. Adequate land base is not available.	NRCS 313, Waste Storage Facility

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Liquid manure storage systems				
<p>4.03) What design standards are utilized for liquid storage structures?</p>	<p>As-built documentation is available. <i>Construction design for manure storage and treatment facilities meets standards and specifications in accordance with MI NRCS-FOTG, Concrete Manure Storages Handbook (MWPS-36), Circular Concrete Manure Tanks publication TR-9 (Midwest Plan Service, 1998).</i> For steel: Manual of Steel Construction, American Institute of Steel Construction. For concrete: Building Code Requirements for Reinforced Concrete, ACI 318, American Concrete Institute. For earthen storage, the permeability of the earthen liner is known and the earthen storage meets NRCS standard 313: Waste Storage Facility. No evidence of overflow.</p>	<p>The storage was designed and built by professionals, but the as-built design standards are unknown. The storage structure meets the requirements as outlined in Extension Bulletin FAS 112S.</p>	<p>Storage was designed and built without engineering standards.</p>	<p>NRCS 313, Waste Storage Facility MSU Extension Bulletin FAS112S, Manure Storage Review Worksheets <i>2011 RTF Manure Management and Utilization GAAMPs, Section IV: Construction Design and Management for Manure Storage and Treatment Facilities, Construction Design, #26</i> Midwest Plan Service, 1998</p>

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Liquid manure storage systems (continued)				
4.04) Are structures properly maintained?	Structure is properly maintained and in good condition. No damage to the liner or breaches evident. No visible signs of issues with push-off ramps, load-out areas, pumps, piping, etc.	Structure appears to be in good condition.	Lining material integrity broken. Evidence of overflow. Coarse-textured soils, no clay liner. Evidence of extensive cracking, leaning, etc. Structure needs repair.	NRCS 313, Waste Storage Facility
4.05) Are areas adjacent to manure storage structures properly maintained?	Banks are mowed and inspected regularly for potential problems. No brush, trees or animal burrows present.	Banks are not mowed regularly. Woody plant material present.	Lack of maintenance around storage site and/or numerous areas in need of repair and/or burrows present.	NRCS 313, Waste Storage Facility
4.06) Is clean water (i.e. roof and surface runoff) diverted away from the manure storage facility?	Clean water is diverted away from manure storage.	Clean water is not diverted but storage is designed to accommodate the additional water while still maintaining the freeboard.	Potential exists for overflow of manure storage.	
4.07) How is freeboard maintained and overflow prevented in storage structures?	Minimum freeboard is known and observed. <i>A minimum freeboard of 12 inches (6 inches for fabricated structures) plus the additional storage volume necessary to contain the precipitation and runoff from a 25-year, 24-hour storm event.</i> Freeboard markers are in place.	No evidence of manure overflowing storage. Safe freeboard level is known but not visibly marked. Freeboard not always maintained.	Evidence that manure overflowed the storage structure. Freeboard level is unknown and unmarked.	NRCS 313, Waste Storage Facility <i>2011 RTF Manure Management and Utilization GAAMPs, Section IV: Construction Design and Management For Manure Storage and Treatment Facilities, Management, #28</i>

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Solid-bedded manure systems and composted manure systems				
5.01) Where is manure temporarily stacked at the farmstead?	<i>Manure can be temporarily stacked on an impermeable pad with sides.</i> Runoff does not reach surface water or pond in low areas.	<i>Manure stacked on the ground with appropriate management such as rotating locations, complete periodic removal of manure, records documenting timing of removal and location used and seeding of previous location.</i>	Stacked on coarse-textured soil or earthen livestock yard receiving limited hoof traffic without appropriate management to reduce runoff and leaching. Or manure is stacked in the same location every year. Evidence that manure-contaminated runoff flows to surface water or to adjacent property.	NREPA 451 of 1994, Part 31: Water Resource Protection Act <i>2011 RTF Manure Management and Utilization GAAMPs, Section III: Odor Management, Stacked Solid Manure, #15 (General Guidance)</i>
5.02) How long is manure temporarily stacked at the farmstead?	Less than 90 days. Stacked in different locations each time.	More than 90 days but <i>less than 365</i> . <i>Stacked in different locations each time.</i>	At least 365 days or more and/or stacked in same location each time.	<i>2011 RTF Manure Management and Utilization GAAMPs, Section III: Odor Management, Stacked Solid Manure, #15 (General Guidance)</i>
5.03) At the farmstead, where is manure temporarily stacked in relation to surface water?	<i>Manure stockpiles are in a location that does not allow for runoff to flow onto neighboring property or into surface waters.</i>		Manure stockpiles located within 50 feet of surface water. No means of runoff or leachate control. Slope is toward surface water. Runoff is directly discharged to surface water.	NREPA 451 of 1994, Part 31: Water Resource Protection Act <i>2011 RTF Manure Management and Utilization GAAMPs, Section III: Odor Management, Stacked Solid Manure, #15 (General Guidance)</i>
5.04) At the farmstead, what management practices are used to reduce odors and pests from outside manure stockpiles?	<i>Stockpiled manure is at least 50 feet away from property lines or 150 feet away from non-farm homes and stockpiled manure is covered with a tarp, fleece blanket, straw, woodchips or other materials or additives to reduce odors and pests.</i>	<i>Stockpiled manure is at least 50 feet away from property lines or 150 feet away from non-farm homes or stockpiled manure is covered with a tarp, fleece blanket, straw, woodchips or other materials or additives to reduce odors and pests.</i>	Stockpiled manure is closer than 50 feet to property lines or 150 feet to non-farm homes and stockpiled manure is not covered. No additives are used to reduce odors and pests.	<i>2011 RTF Manure Management and Utilization GAAMPs, Section III: Odor Management, Stacked Solid Manure, #15 (General Guidance)</i>

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Solid-bedded manure systems (continued)				
5.05) How are solid manure storage structures designed and constructed?	Constructed with a floor of impermeable material (concrete, compacted asphalt) and with walls that prevent leachate from entering surrounding soils. Roof or cover prevents rainfall from entering storage.	Constructed with floor of fine- or medium-textured soils. Leachate will have direct contact with earthen floor or side walls. Leachate and rainfall/snowmelt runoff discharged into a designed system.	Earthen floor constructed with coarse-textured soils. Rainfall and leachate will have direct contact with earthen floor or sidewalls. Runoff and leachate are uncontrolled and discharge directly to surface water.	NREPA 451 of 1994, Part 31: Water Resource Protection Act
5.06) How are buildings with bedded manure packs designed and constructed?	Constructed with a floor of impermeable material or fine-textured soil. Adequate bedding is provided to maintain solid nature of manure. No rainfall or runoff enters the manure area. No waterers in the building.	Medium- to fine-textured soils, limited bedding provided, some rainfall or runoff enters manure area. Waterers in the building.	Building has an earthen floor on coarse-textured soil. Contaminated runoff directly discharges to surface water.	NREPA 451 of 1994, Part 31: Water Resource Protection Act
5.07) Is runoff from manure storage area(s) directly discharging to surface water or groundwater?	<i>Provisions made to control and/or treat runoff from stored manure.</i> And/or a designed and maintained vegetative infiltration area or runoff storage basin effectively handles storage runoff.	Inadequate runoff control. Signs of manure runoff past perimeter of vegetated area or exceeding storage basin capacity.	Manure storage runoff discharges directly to surface water.	NREPA PA 451 of 1994, Part 31: Water Resource Protection Act <i>2011 RTF Manure Management and Utilization GAAMPs, Section II: Runoff Control and Wastewater Management, #4</i>
5.08) How is manure temporarily stacked in the field in relation to surface water?	<i>Manure stockpiles are kept a 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 are closer than 150 feet to surface waters or areas subject to flooding, and conservation practices are not used to protect against runoff and erosion losses to surface waters.	NREPA PA 451 of 1994, Part 31: Water Resource Protection Act <i>2011 RTF Manure Management and Utilization GAAMPs, Section III: Odor Management, Stacked Solid Manure, #15 (General Guidance)</i>

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Solid-bedded manure systems				
5.09) 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 stockpiled 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.	<i>2011 RTF Manure Management and Utilization GAAMPs, Section III: Odor Management, Stacked Solid Manure, #15 (General Guidance)</i>
5.10) 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 if covered with an impermeable cover, twelve months.</i>		Manure stockpiled for more than six months without a cover, or more than 12 months with an impermeable cover.	<i>2011 RTF Manure Management and Utilization GAAMPs, Section III: Odor Management, Stacked Solid Manure, #15 (General Guidance)</i>
Outside livestock lot management				
6.01) How far is the livestock lot from surface water?	Livestock lot is more than 300 feet from surface water and <i>runoff control protects neighboring land areas and prevents direct discharge to surface waters or groundwater.</i>	Livestock lot is less than 300 feet from surface water and <i>runoff control protects neighboring land areas and prevents direct discharge to surface waters or groundwater.</i>	Evidence that manure-contaminated runoff flows from lot and discharges directly to surface water or to adjacent property.	NREPA PA 451 of 1994, Part 31: Water Resource Protection Act <i>2011 RTF Manure Management and Utilization GAAMPs, Section II: Runoff Control and Wastewater Management, Outside Lots, #11</i>
6.02) What efforts are made to divert unwanted drainage from upslope watersheds and roof water from becoming contaminated with manure?	<i>Provisions are made to collect, store, utilize and/or treat manure accumulations and contaminated runoff from outside open lots used for raising livestock.</i> Clean runoff is diverted away from the livestock lot.	Most roof water and upslope watershed drainage are diverted around livestock lot. Water that contacts manure is treated or contained and applied to cropland.	No clean water system in place. Most roof water and upslope watershed drainage runs through lot.	<i>2011 RTF Manure Management and Utilization GAAMPs, Section II: Runoff Control and Wastewater Management, #2 and Outside Lots, #11</i>

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Outside livestock lot management (continued)				
<p>6.03) How is livestock lot runoff managed to protect surface water, groundwater and/or neighboring properties?</p>	<p>All lot runoff is directed to a properly designed and maintained runoff storage basin, or runoff is directed to a designed settling basin and vegetated infiltration area where vegetation is annually harvested. No evidence of runoff to surface water, groundwater and/or neighboring properties, or ponding in low areas.</p>	<p>No evidence of runoff flow to surface water or ponding in low areas. Vegetation or cropland that is annually harvested exists between lot and surface water.</p>	<p>Evidence of runoff flow discharging directly to surface water or intermittent waterway.</p>	<p>NREPA PA 451 of 1994, Part 31: Water Resource Protection Act</p> <p>2011 RTF Manure Management and Utilization GAAMPs, Section II: Runoff Control and Wastewater Management, #2</p>
<p>6.04) How often is manure scraped and removed from livestock lots?</p>	<p>Manure is scraped and removed periodically from livestock lot or other heavy use areas.</p>		<p>Manure is seldom scraped and removed from lot and feeding and watering areas.</p>	<p>2011 RTF Manure Management and Utilization GAAMPs, Section II: Runoff Control And Wastewater Management, Outside Lots, #11 (General Guidance)</p>
<p>6.05) What type of floor or base does the livestock lot have?</p>	<p>Properly maintained concrete or compacted asphalt.</p>	<p>Continuous-use, compacted dirt or compacted gravel. Minimal plant material growing.</p>	<p>Poorly compacted dirt or gravel layer as indicated by plant growth.</p>	

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Pasture management				
<p>7.01) Are there current soil tests on the pastures?</p>	<p><i>All fields are sampled and tested on a regular basis</i>, at least every 1 to 4 years, depending on crops being grown and the cropping system.</p>	<p>Most fields are sampled and tested every 1 to 4 years. Producer plans to bring all field soil tests up-to-date within the next 3 years. (See also 10.01)</p>	<p>Fields have not been tested within the past 4 years.</p>	<p>MSU Bulletin E498S: Sampling soils for fertilizer and lime recommendations, frequency of soil sampling</p> <p><i>2011 RTF Nutrient Utilization GAAMPs, Section III: Fertilization Practices for Land Application, Soil Fertility Testing and Tissue Analysis, #7</i></p>
<p>7.02) What is the condition of pasture vegetation?</p>	<p>Pasture is well-managed with all areas vegetated. <i>Runoff from pasture feeding and watering areas travels through a vegetated filter area to protect surface and groundwater.</i> Or no contaminated runoff is noted.</p>	<p>Pasture is well-managed and vegetated except in small feeding and watering areas, which are scraped. <i>Runoff from pasture feeding and watering areas travels through a vegetated filter area to protect surface and groundwater.</i> Or, no contaminated runoff is noted.</p>	<p>Pasture is overgrazed with bare spots and weedy areas. Erosion may be present. Runoff from pastures is carrying sediment and nutrients to surface waters or neighboring property.</p>	<p>NREPA PA 451 of 1994, Part 31: Water Resource Protection Act</p> <p><i>2011 RTF Manure Management and Utilization GAAMPs, Section II: Runoff Control And Wastewater Management, Pasture Systems, #10</i></p>
<p>7.03) How is the pasture managed to protect surface water?</p>	<p><i>Livestock are excluded from actual contact with streams or watercourses except for controlled crossings and accesses</i> or pasture management measures are in place to protect neighboring land areas and prevent direct discharges to surface water or groundwater.</p>		<p>Runoff results in direct discharge to surface waters. Livestock have free access to streams or watercourses, causing erosion.</p>	<p>NREPA PA 451 of 1994, Part 31: Water Resource Protection Act</p> <p><i>2011 RTF Manure Management and Utilization GAAMPs, Section II: Runoff Control And Wastewater Management, Pasture Systems, #9</i></p> <p>NRCS Prescribed Grazing (528)</p> <p>MSU Extension Bulletin, Acceptable Practices for Managing Livestock Along Lakes Streams and Wetlands (E3066)</p>

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Pasture management				
<p>7.05) What is being done to reduce manure concentration around watering tanks/feeders in pasture areas?</p>	<p>Water tank/feeding areas are rotated to different areas of pasture. Or, watering/feeding areas are permanent, but manure is removed frequently to prevent concentration of nutrients.</p> <p><i>Runoff from pasture feeding and watering areas travels through a vegetated filter area to protect surface water and groundwater.</i></p>	<p>Watering/feeding areas are permanent, but manure is removed periodically to prevent concentration of nutrients.</p> <p><i>Runoff from pasture feeding and watering areas travels through a vegetated filter area to protect surface water and groundwater.</i></p>	<p>Watering/feeding areas are permanent with infrequent or no manure removal.</p> <p>There is evidence of direct discharge to surface water or ponding in low areas.</p>	<p>NREPA PA 451 of 1994, Part 31: Water Resource Protection Act</p> <p><i>2011 Manure Management and Utilization GAAMPs, Section II: Runoff Control and Wastewater Management, Pasture Systems, #10</i></p>
General silage storage				
<p>8.01) Does untreated silage leachate or polluted runoff run to a low area and pond?</p>	<p><i>Provisions are made to control and/or treat leachate to protect groundwater and surface water.</i></p>		<p>Silage leachate ponding and/or runoff evident.</p>	<p><i>2011 RTF Manure Management and Utilization GAAMPs, Section II: Runoff Control And Wastewater Management, #4</i></p>
<p>8.03) Are silage leachate and polluted runoff collected and/or treated?</p>	<p><i>Provisions are made to control and/or treat leachate to protect groundwater and surface water</i> from a direct discharge. (Includes capturing of leachate from drains.) Designed system or management controls are in place.</p>	<p>Designed system in place but not maintained.</p>	<p>No system in place or lack of appropriate management or direct discharge to surface water or groundwater.</p>	<p>NREPA PA 451 of 1994, Part 31: Water Resource Protection Act</p> <p><i>2011 RTF Manure Management and Utilization GAAMPs, Section II: Runoff Control And Wastewater Management, #4</i></p>

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General silage storage (continued)				
8.05) Does an emergency plan exist for times when leachate production exceeds current management controls?	An up-to-date written plan is available and understood by all farm employees.	Emergency action plan is incomplete or out-of-date.	No emergency action plan that covers excess leachate.	
8.08) In the case of a tire fire, does the farm have an up-to-date emergency farm plan?	The farm has an up-to-date emergency farm plan that is understood by employees.	More than one-year-old plan or an incomplete plan is available.	No emergency farm plan when more than 3,000 whole scrap tires are stored on the farm.	NREPA PA 451 of 1994, Part 169: Michigan Scrap Tire Regulation
Bunker silos				
8.09) What type of floor does the silage storage have?	Concrete or compacted asphalt. No excessive cracking (cracks that a finger can fit into or spider webs) or cracks are repaired.	Earthen floor with fine-textured soils (clay, clay loam, silty clay loam, sand clay, sandy clay loam and silty clay).	Earthen floor has permeable soils. Or, concrete, asphalt or lined surface contains many cracks.	
Upright silos				
8.13) If there is a floor drain, is leachate collected, treated and/or stored, and applied at agronomic rates?	All leachate is collected, treated, and/or stored and applied at agronomic rates.		Leachate is not collected and/or directly discharges to surface water.	NREPA PA 451 of 1994, Part 31: Water Resource Protection Act
Manure Spreading Plan				
10.01) How often are fields tested for nutrient levels (P, K, Ca, Mg) and pH? ?	All fields are sampled and tested on a regular basis , at least every 1 to 4 years, depending on crops being grown and the cropping system.	Most fields are sampled and tested every 1 to 4 years. Manure is not applied to fields without a current soil test. Producer plans to bring all field soil tests up-to-date.	Fields have not been tested within the past 4 years.	MSU Bulletin E498S, Sampling soils for fertilizer and lime recommendations, frequency of soil sampling 2011 Manure Management and Utilization GAAMPs, Section V: Manure Application to Land, Soil Fertility Testing, #29 2011 RTF Nutrient Utilization GAAMPs, Section III: Fertilization Practices for Land Application, Soil Fertility Testing and Tissue Analysis, #7

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Manure Spreading Plan (continued)				
10.02) Do soil sampling procedures adequately represent field conditions?	One composite sample is taken from uniform field areas of 15 to 20 acres or from uniform management areas on grid or zone sampling procedures.	One composite sample is taken from uniform field areas of 20 to 40 acres.	One composite sample is taken from areas of greater than 40 acres.	MSU Bulletin E498, Sampling soils for fertilizer and lime recommendations
10.03) How is the nutrient content of manure determined?	Laboratory analysis for percent dry matter (solids), ammonium, and total N, P and K.	Book values or standard nutrient content values used.	Manure nutrient content is unknown or not considered.	2011 Manure Management and Utilization GAAMPs, Section V: Manure Application to Land, Manure Analysis, #31
10.04) How are desired application rates achieved?	Manure analysis (book value, manure test, or mass balance) and field application rates are known.		Application rate is not known.	2011 Manure Management and Utilization GAAMPs, Section V: Manure Application to Land, Method of Manure Application, #34
10.05) How is the soils ability to hold water and nutrients considered when calibrating for manure application?	Rates are at or below a level that manure does not run off or escape via tile drains. Tile outlets inspected after application. Manure is prevented from reaching the tile lines.		Manure application rates may be above the soil's ability to hold the water and nutrients. Manure reaches the tile lines and/or directly discharges to surface water.	NREPA PA 451 of 1994, Part 31: Water Resource Protection Act 2011 Manure Management and Utilization GAAMPs, Section V: Manure Application to Land, Method of Manure Application, #36
10.06) How are fertilizer application rates determined?	Consistent with Michigan State University recommendations and manure nutrients are credited. When MSU recommendations are not available other land grant university recommendations developed for the region may be used.	Fertilizer rates are based on soil testing lab recommendations but not consistent with MSU recommendations.	Fertilizer is not based on soil testing.	2011 RTF Nutrient Utilization GAAMPs, Section III: Fertilization Practices for Land Application, Fertilizer Recommendations, #8 MSU E2904 Nutrient Recommendations for Field Crops in Michigan, E2934 Nutrient Recommendations for Vegetable Crops in Michigan, E852 Fertilizing Fruit Crops or other land grant university recommendations.

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Manure Spreading Plan (continued)				
10.07) What manure management records are maintained?	Complete application <i>records of manure analysis, soil test results and rates of manure application for individual fields are maintained.</i>	A minimum of one season of manure application records, or partial manure application records have been kept. Complete manure application records will be kept immediately and will be available for review at the time of re-verification.	Minimal or no records maintained.	<i>2011 RTF Manure Management and Utilization GAAMPs, Section V: Manure Application to Land, Management of Manure Applications to Land, #40</i> Additional records required are: -Dates(s) of manure incorporation -Weather conditions during application of manure -Field conditions during application of manure -Manure/wastewater quantities produced and nutrient analysis results -Records of rental or other agreements for application of manure/wastewater on land not owned by the producer -Records of manure/wastewater sold or given away to other landowners
10.08) Are weather forecasts monitored when making decisions about field applications of manure?	Weather forecasts are monitored before field application decisions. Manure applications are delayed if excessive precipitation is predicted. Manure is not applied if greater than 70% probability of more than .5 inches of precipitation is forecasted.	The weather forecasts are monitored but manure applications are based on when the storage is full or timing is convenient. Application may be made when excessive precipitation is predicted	The weather forecasts are not monitored. Manure applications made regardless of weather forecasts.	PA 102
10.09) How are manure nitrogen application rates managed?	<i>Manure nitrogen rates do not exceed requirements of the crop</i> and are credited toward fertilizer needs. Pre-sidedress nitrate test (PSNT) may be part of the program.	Manure nitrogen credits are considered but not to their full extent.	Commercial nitrogen is not reduced to account for manure nitrogen credits.	MSU Bulletin E2904: Nutrient Recommendations for Field Crops in Michigan <i>2011 RTF Nutrient Utilization GAAMPs, Fertilization Practices for land Application, Nitrogen Management Practices, #10a</i> <i>2011 RTF Manure Management and Utilization GAAMPs, Section V: Manure Application to Land, Manure Nutrient Loadings, #32</i>

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Manure Spreading Plan (continued)				
10.10) 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 P205 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.	<i>2011 RTF Nutrient Utilization GAAMPs, Section VIII: Land Application of Conditionally-Exempted Organic By-Products, Composted Organic By-Products, and By-Product Liming Materials, #27</i> <i>2011 RTF Manure Management and Utilization GAAMPs, Section V: Manure Application to Land, Manure Nutrient Loadings, #33</i>
10.11) Are odor reduction and nutrient retention practices utilized when manure is land applied?	<i>Manure is incorporated within 48 hours or injected into the soil, and/or conservation practices (residue management, cover crops, perennial crops etc.) are used to protect against runoff and erosion losses to surface waters.</i>	Manure is generally incorporated within 7 days.	All manures are surface applied and may not be incorporated until field is covered or until spring tillage.	<i>2011 RTF Manure Management and Utilization GAAMPs, Section V: Manure Application to Land, Method of Manure Application, #35</i>
Conservation Practices for Fields used for Manure Application				
11.01) Are manure applications managed to avoid ponding, soil erosion and/or runoff?	<i>Liquid manure applications are being managed in a manner to optimize nutrient utilization and do not result in ponding, soil erosion losses, or manure runoff to adjacent property, drainage ditches or surface water.</i>	Some consideration is given to ponding, soil erosion and/or runoff.	Ponding, soil erosion and/or runoff are not considered. Manure directly discharges to surface water.	NREPA PA 451 of 1994, Part 31: Water Resource Protection Act <i>2011 RTF Manure Management and Utilization GAAMPs, Section V: Manure Application to Land, Method of Manure Application, #36</i>

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Conservation Practices for Fields used for Manure Application (continued)				
11.02) Have environmentally sensitive areas been identified (land near surface water, highly erodible land, soils with high leaching or runoff potentials, wells and surface inlets) that require additional management when applying nutrients (manure and fertilizers)?	Environmentally sensitive areas are identified. Family members, employees and contractors are aware of and understand the management practices to protect these areas.	Some environmentally sensitive areas are identified.	Environmentally sensitive areas are not considered.	
11.03) How are fields selected for spreading on frozen and snow-covered ground?	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 <i>and 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.	NRCS MARI <i>2011 RTF Manure Management and Utilization GAAMPs, Section V: Manure Application to Land, Timing of Manure Application, #39</i>

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Conservation Practices for Fields used for Manure Application (continued)				
<p>11.04) Is soil erosion under control on the farm fields?</p>	<p>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>	<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>	<p>Excessive soil erosion is occurring on the farm.</p>	<p>NRCS RUSLE2 NRCS WEPS</p>
<p>11.05) How is manure generally applied to fields?</p>	<p><i>Manure is incorporated within 48 hours or injected into the soil, and/or conservation practices</i> (residue management, cover crops, perennial crops, etc.) <i>are used to protect against runoff and erosion losses to surface waters.</i></p>	<p>Manure is generally surface-applied, and conservation practices are employed to reduce the risk of runoff.</p>	<p>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.</p>	<p>NREPA PA 451 of 1994, Part 31: Water Resource Protection Act</p> <p><i>2011 RTF Manure Management and Utilization GAAMPs, Section V: Manure Application to Land, Method of Manure Application, #35</i></p>

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Conservation Practices for Fields used for Manure Application (continued)				
11.06) How are streams, wetlands, farm ditches and other water bodies protected from manure runoff?	<i>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.</i>	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.	<i>2011 RTF Manure Management and Utilization GAAMPs, Section V: Manure Application to Land, Method of Manure Application, #35</i>
11.07) How are field tiles managed to prevent manure discharge to surface water?	<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.	<i>2011 RTF Manure Management and Utilization GAAMPs, Section V: Manure Application to Land, Method of Manure Application, #36</i>
Irrigation management on manured fields				
11.08) If liquid manure is applied through an irrigation system, is care taken to assure that application rates do not exceed soil infiltration rates?	<i>Application rates do not exceed soil infiltration rates.</i>		Application rates exceed soil infiltration rates, and/or runoff occurs.	<i>2011 RTF Manure Management and Utilization GAAMPs, Section III: Odor Management, Manure Application to Land, #19 - #25 (General Guidance)</i>

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Conservation Practices for Fields used for Manure Application (continued)				
11.09) Are appropriate backflow prevention devices in place and properly maintained when applying liquid manure through irrigation?	<i>Backflow prevention safety devices are used</i> and properly maintained when irrigating with liquid manure.	Backflow prevention devices are almost always used and/or properly maintained.	Backflow prevention devices are not used and/or properly maintained.	Public Health Code Water Supply & Sewer Systems <i>2011 RTF Irrigation Water Use GAAMPs: Section II: Generally Accepted Agricultural and Management Practices for Irrigation Water Use: Application Practices, #22</i>
11.10) Is care taken to assure that irrigated manure does not flow into subsurface drains?	Field conditions are monitored before, during and after irrigation, and liquid manure is prevented from reaching tile lines. Appropriate measures are taken to avoid surface water discharges.		No care is taken to monitor field conditions, tile drains, etc., when irrigating liquid manure. Direct discharge to surface water.	NREPA PA 451 of 1994, Part 31: Water Resource Protection Act
11.11) If there are instances where diluted wastewater (≤ 1 percent solids) is applied to fields testing over 150 ppm P soil test, can the farmer document appropriate conditions for application?	<ul style="list-style-type: none"> - <i>Growing plants in the application area.</i> - <i>Wastewater application rate supplies less than 75% P crop removal.</i> - <i>Annual sampling of wastewater P content.</i> - <i>Soil P tests levels decline over time.</i> - <i>No other P applied to field.</i> - <i>Tile drain fields monitored for manure flow.</i> 	Appropriate conditions are partially met.	Appropriate conditions for dilute wastewater application are not present.	<i>2011 RTF Manure Management and Utilization GAAMPs, Section II: Runoff Control and Wastewater Management, Land Application of Runoff, #6</i>

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Emergency Plan and Employee Training				
<p>12.01) Is there an emergency plan in place in the event of a manure spill?</p>	<p>Up-to-date written plan available and understood by all farm employees. <i>All uncontained spills or releases should be reported to the MDARD Agriculture Pollution Emergency Hotline: 1-800-405-0101, or the MDEQ Pollution Emergency Alerting System: 1-800-292-4706</i></p>	<p>Incomplete or out-of-date action plan available.</p>	<p>No emergency action plan that deals with manure spills.</p>	
Mortality Management and Veterinary Waste Disposal				
<p>13.01) How are animal mortalities handled?</p>	<p>Animals are buried, incinerated (requires permit), land filled, placed in a compost pile or picked up by a rendering service within 24 hours of death or stored for a maximum of 7 days at 40 degrees F or a maximum of 30 days at 0 degrees F before proper disposal of the carcass.</p>		<p>Animals are not buried, incinerated, land filled, placed in a compost pile or picked up by a rendering service within 24 hours of death. Or, stored for more than 7 days at 40 degrees F or more than 30 days at 0 degrees F before disposal of the carcass.</p>	<p>Completion of BODA supplement (FAS 112S) supports that the disposal of dead animal bodies is done in accordance with the Bodies of Dead Animals Act (BODA), as amended in 2007</p> <p>Bodies of Dead Animals Act, Public Act 239 of 1982, as amended</p>
Mortality composting				
<p>13.02) If mortality composting is used, what are the isolation distances for the composting site?</p>	<p>Static pile site is located at least 200 feet from waters of the state, 200 feet from any well, 200 feet from nearest non-farm residence and 2 feet above seasonal high water table.</p>		<p>Site is located less than 200 feet from waters of the state, 200 feet from any well, 200 feet from nearest non-farm residence, and 2 feet above seasonal high water table.</p>	<p>Completion of BODA supplement supports that the disposal of dead animal bodies is done in accordance with the Bodies of Dead Animals Act (BODA), as amended in 2007</p> <p>Bodies of Dead Animals Act, Public Act 239 of 1982, as amended</p>

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Mortality composting (continued)				
13.03) Does the composting process follow standards identified in the Bodies of Dead Animals Act, (BODA), as amended in 2007?	Current BODA standards followed.		BODA standards not followed.	Completion of BODA supplement supports that the disposal of dead animal bodies is done in accordance with the Bodies of Dead Animals Act (BODA), as amended in 2007 Bodies of Dead Animals Act, Public Act 239 of 1982, as amended
13.04) How are animal health care needles and syringes disposed?	Sharps are put into a puncture-resistant container, labeled and taken to licensed landfill.		Disposal at landfill without protective containment, or disposed of on the farm.	Public Health Code PA 368 of 1978, Part 138: Medical Waste Regulatory Act
Odor Management				
14.01) Were the Michigan Right-to-Farm Site Selection and Odor Control GAAMPs used to site a new or expanding livestock production facility (after August 1, 2003)?	Has MDARD verification, MDARD verification is not required, or not applicable.	Followed Siting GAAMP recommendations. Have not been verified by MDARD.	Did not follow Siting GAAMPs.	2011 RTF Site Selection and Odor Control for New and Expanding Livestock Production Facilities GAAMPs
14.03) Does the farm have an odor management plan?	An odor management plan has been developed and implemented. Farm is managed to minimize odor impacts upon neighbors.	A partial odor management plan has been developed and implemented.	No odor management plan has been developed.	2011 RTF Manure Management and Utilization GAAMPs, Section III. Odor Management, #12
Other Environmental Risks in the Livestock System				
15.01) Are there other activities, products, processes/equipment, services, byproducts, and/or wastes at this farm that pose contamination risks to groundwater or surface water?	No additional contamination risk(s) are identified.	Plan to mitigate the identified contamination risk(s).	No plan to mitigate identified contamination risk(s).	