

NPDES Number: VTG910002

**STATE OF VERMONT**  
**AGENCY OF NATURAL RESOURCES**  
**DEPARTMENT OF ENVIRONMENTAL CONSERVATION**  
**NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)**  
**GENERAL PERMIT 3-9100**  
**FOR DISCHARGES FROM**  
**MEDIUM CONCENTRATED ANIMAL FEEDING OPERATIONS**

**Commented [DJ1]:** Nice work on strengthening VTDEC's previous 2013 medium CAFO GP.

In compliance with the provisions of the Vermont Water Pollution Control Act, 10 V.S.A. Chapter 47, the Vermont Water Pollution Control Rules, the Federal Clean Water Act, as amended (33 U.S.C. § 1251 et seq.), and implementing regulations, owners and operators of medium concentrated animal feeding operations (CAFOs) in Vermont, except those CAFOs excluded from coverage in Part I of this **p**Permit, are authorized by the Secretary, Vermont Agency of Natural Resources, Montpelier, Vermont, to discharge in accordance with the effluent limitations, monitoring requirements, and all other terms and conditions set forth herein.

A copy of this **p**Permit and any authorization to discharge must be kept by the permittee at the site of the permitted activity.

**This **p**Permit shall become effective on the date of signing.**

This **p**Permit shall expire five years after the date of signing.

By: \_\_\_\_\_ Date: \_\_\_\_\_

Peter Walke, Commissioner

Department of Environmental Conservation

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**Commented [DJ2]:** TOC page numbering is off. For example, the NMP reads "Page 14"; however, this actually begins on "Page 15". Another example is, Duty to Comply reads "Page 23"; however, this is actually on "Page 24". Maybe the table just needs to be updated.

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## PART I. PERMIT AREA AND COVERAGE UNDER THIS PERMIT

### A. Permit Area

This **P**ermit offers National Pollutant Discharge Elimination System (NPDES) permit coverage in the state of Vermont for discharges from operations eligible for coverage under Subpart I.B. of this **P**ermit.

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Commented [DJ3]: We suggest capitalizing when you are referring to this Permit, and lower case when you are referring to permits in general.

### B. Permit Coverage

This **P**ermit covers any operation which:

1. Is located within the permit areas as defined by Subpart I.A. of this **P**ermit;
2. Meets the definition of an Animal Feeding Operation (AFO), which means a lot or facility (other than an aquatic animal production facility) where the following conditions are met:
  - a) Animals (other than aquatic animals) have been, are, or will be stabled or confined and fed or maintained for a total of 45 days or more in any 12-month period; and
  - b) Crops, vegetation, forage growth, or post-harvest residues are not sustained in the normal growing season over any portion of the lot or facility;
3. Meets the definition of a Medium CAFO which includes any AFO with the type and number of animals that fall within any of the ranges listed below and which has been defined (or designated by the Secretary or the EPA Region 1 Regional Administrator pursuant to 40 CFR § 122.23(c)) as a CAFO. An AFO is defined as a Medium CAFO if the type and number of animals that it stables or confines falls within any one or more of the ranges in the Table below:

Animal Type	Number
Cattle other than mature dairy cows or veal calves (cattle includes but is not limited to heifers, steers, bulls, and cow/calf pairs)	300-999 Animals
Mature dairy cows (milked or dry)	200-699 Animals
Horses	150-499 Animals
Veal calves	300-999 Animals
Swine ≥ 55 pounds	750-2499 Animals
Swine < 55 pounds	3000-9999 Animals
Sheep and lambs	3000-9999 Animals
Ducks with liquid manure handling	1500-4999 Animals
Chickens (laying hens or broilers) if the AFO uses a liquid manure handling system	9000-29999 Animals

Ducks if the AFO uses other than a liquid manure handling system	10000-29999 Animals
Laying hens if the AFO uses other than a liquid manure handling system	25000-81999 Animals
Chickens (other than laying hens) if the AFO uses other than a liquid manure handling system	37500-124999 Animals
Turkeys	16500-54999 Animals

4. **Meets** either one of the following conditions:

- a) Pollutants are discharged into waters of the State through a man-made ditch, flushing system, or other similar man-made device; or
- b) Pollutants are discharged directly into waters of the State which originate outside of and pass over, across, or through the facility or otherwise come into direct contact with the animals confined in the operation; and

**Commented [UG4]:** Under the federal definition, an AFO would have to meet these conditions in addition to meeting the numbers in paragraph 3.

5. Is eligible for permit coverage as defined in Subpart I.C. of this **p**Permit.

Once an AFO meets the definition of Medium CAFO above, for at least one type of animal, the requirements of this **p**Permit apply with respect to all animals in confinement at the operation and to all manure, litter, and process wastewater generated by those animals or the production of those animals, regardless of the type of animal.

Two or more AFOs under common ownership are considered to be a single AFO for the purposes of determining the number of animals at an operation, if they adjoin each other or if they use a common area or system for the disposal of wastes.

### C. Eligibility for Coverage

Unless excluded from coverage in accordance with Subpart I.D. or Subpart I.E. of this **p**Permit, owners and operators of AFOs that are defined as Medium CAFOs, or designated as Medium CAFOs by the Secretary or the EPA Region I Regional Administrator, are eligible for coverage under this **p**Permit. Upon the submission of a Notice of Intent (NOI) to discharge and a site-specific Nutrient Management Plan (NMP) that meets the requirements of this **p**Permit, and subsequent authorization from the Secretary, eligible Medium CAFOs are authorized by the Secretary to discharge in accordance with the terms and conditions of this **g**General **p**Permit and the site-specific NMP incorporated by reference into this permit. Authorization under this **g**General **p**Permit only applies to discharges that occur after permit coverage is granted.

Owners or operators of a Medium CAFO that discharges to waters of the State choosing to seek coverage under this **g**General **p**Permit, as opposed to applying for an individual permit, must apply for coverage as soon as possible.

#### **D. Limitations of Coverage**

This permit does not authorize:

1. CAFOs that have been notified by the Secretary to apply for an individual NPDES permit in accordance with Subpart I.E. of this permit.
2. CAFOs that have been notified by the Secretary that they are ineligible for coverage under this ~~g~~General ~~p~~Permit due to a history of non-compliance.
3. Discharges that the Secretary, prior to authorization under this permit, determines will cause, have the reasonable potential to cause, or contribute to non-compliance with the Vermont Water Quality Standards. Where such a determination is made prior to authorization, the Secretary may determine that an individual NPDES permit application is necessary or the Secretary may authorize coverage under this permit for the discharge provided the applicant includes appropriate controls and implementation procedures in their NMP designed to ensure the discharge is in compliance with water quality standards.
4. CAFOs with discharges to an Outstanding Resource Water.

#### **E. Requiring an Individual Permit**

The Secretary may at any time require any person who files a NOI, or who already is authorized to discharge under this ~~g~~General ~~p~~Permit, to apply for an individual permit if:

1. The Medium CAFO does not qualify for coverage under this ~~g~~General ~~p~~Permit; or
2. The Secretary finds that an individual permit is required pursuant to 40 C.F.R. § 122.28(b)(3) or the Vermont Water Pollution Control Permit Regulations Chapter 13, § 13.12(D).

The Secretary will notify the owner/operator, in writing, that an application for an individual permit is required. Coverage under this ~~g~~General ~~p~~Permit is automatically terminated when the Secretary issues the individual permit. The Secretary may terminate a CAFO's coverage under this ~~g~~General ~~p~~Permit if the CAFO fails to submit an application for an individual permit within 60 days after being notified by the Secretary that such an application is required.

#### **F. Coverage under Existing Individual Permits**

Medium CAFOs that are covered under an existing individual permit issued by the Secretary are not required to obtain coverage under this permit during the permit term of the individual permit. However, a Medium CAFO must apply for coverage under this permit at least 90 days prior to the expiration date of its individual permit if it discharges to waters of the State and is eligible under Subpart I.C.

## **PART II. APPLICATION FOR COVERAGE**

### **A. Application - Notice of Intent Forms and Fee**

Application for coverage under this permit shall be made by filing a NOI with all necessary attachments on forms provided by the Secretary. The application shall include the information required under Subpart II.B. below as well as a copy of a proposed NMP consistent with Part IV. and Appendix A of this permit. The completed and signed NOI, including the proposed NMP, shall be filed with the Agency of Natural Resources (ANR), together with an administrative fee as established by 3 V.S.A. § 2822 by an electronic NOI system.

If an applicant does not have access to the internet, they should contact the Department at 802-828-1115 for alternative application submittal instructions.

### **B. Contents of the NOI**

The NOI submitted for coverage under this permit shall include, at a minimum, the following information:

1. Name(s) of the CAFO owner(s) and operator(s);
2. Facility location(s) and mailing address(es);
3. Physical address(es) and latitude and longitude of the production area(s);
4. Topographic map of the geographic area in which the CAFO is located, showing the specific location of the production area, land application area, irrigation and domestic wells, and the name(s) and location(s) of nearby surface waters;
5. A diagram of the production area(s) demarcating impervious surfaces of the production area draining to waste storage facilities as well as features, including but not limited to; waste storage facilities, raw material storage, animal housing, clean water diversions, subsurface tile drains (i.e. leak detection, groundwater drainage tile), and adjacent surface water(s);
6. Specific information about the number and type of animals (mature dairy cows, dairy heifers, veal calves, beef cattle, broilers, layers, swine weighing 55 pounds or more, swine weighing less than 55 pounds, sheep and lambs, horses, ducks, turkeys, other), whether in open confinement or housed under roof;
7. Type of containment and storage (anaerobic lagoon, roofed storage shed, storage ponds, underfloor pits, above ground storage tanks, concrete pad, other) and total capacity for manure, litter, and process wastewater (tons/gallons);
8. Total number of acres under control of the applicant available for land application of fertilizer, manure, litter, process wastewater;
9. Estimated amounts of manure, silage leachate, litter, production area runoff, and process wastewater generated per year (tons/gallons) and total collected per year (tons/gallons);

10. Estimated amounts of manure, litter, and process wastewater imported, exported, or transferred to other persons per year (tons/gallons); and

11. A proposed NMP that, at a minimum, satisfies the requirements specified in Part IV. of this permit.

### C. Additional Information

The Secretary may require an applicant to submit additional information that the Secretary considers necessary to make a decision on the issuance or denial of an authorization to discharge pursuant to this ~~g~~General ~~p~~Permit. The Secretary may deny coverage under this ~~g~~General ~~p~~Permit if the additional information requested is not provided to the Secretary within sixty (60) days of the Secretary's request or within a greater time period specified by the Secretary.

### D. Public Notice and Comment of NOI, NMP, and Other Attachments

Public notice and comment for the NOI, NMP, and all attachments shall comply with 40 CFR 122.23(h)(1) as well as the Type 4 public noticing requirements under 10 V.S.A. Chapter 170 and all rules adopted thereunder. Public notice of amendments shall also comply with the public noticing requirements for amendments under 10 V.S.A. Chapter 170 and the rules adopted thereunder.

### E. Authorization to Discharge

Any person who files a NOI, along with a NMP, that meets the requirements of this permit, shall be authorized to discharge under the terms of this permit upon the receipt of a written authorization to discharge from the Secretary. The approved NOI and the terms of the site-specific NMP shall be incorporated by reference and included in the terms and conditions of this permit. A permittee shall comply with all terms and conditions of this ~~g~~General ~~p~~Permit and all authorizations issued hereunder. Any permit noncompliance shall constitute a violation of 10 V.S.A. Chapter 47 and/or the federal Clean Water Act, and related regulations and may be cause for an enforcement action and/or revocation, modification, or suspension of the permittee's authorization to discharge under this ~~g~~General ~~p~~Permit.

### F. Failure to Obtain Authorization to Discharge

Dischargers who fail to receive from the Secretary either authorization of coverage under this ~~g~~General ~~p~~Permit or authorization to discharge under an individual permit, and who discharge to waters of the State without a permit, are in violation of 10 V.S.A. Chapter 47 and the federal Clean Water Act.

### G. Authorization to Discharge Expiration and Reapplication

An authorization to discharge shall expire at the same time as this ~~g~~General ~~p~~Permit. A permittee must reapply for permit coverage at least 180 days prior to the expiration date of its authorization to discharge under this permit. If a permittee makes a complete and timely reapplication for coverage prior to the expiration date of their authorization to discharge, the authorization remains in effect in accordance with the terms 3 V.S.A. 814 until the Secretary makes a final determination on the application.

**Commented [DJ5]:** I think this should read "waters of the US" throughout this permit (which would include waters of the state) in accordance with the CWA.

**Commented [UG6R5]:** I don't know about the applicability of the Vermont state requirements, but they would only be in violation of the CWA for discharges to waters of the US. If the Vermont code is applicable to discharges to waters of the state, you could simply state it both ways.



## **H. Request for Termination of Permit Coverage**

A permittee may request that coverage under this permit be terminated. Coverage may only be terminated if a permittee demonstrates to the Secretary's satisfaction that at least one of the following three conditions is met:

1. The facility has ceased all operations and all waste retention structures have been properly closed in accordance with the closure provisions contained in Subpart V.A. of this permit and with the December 2019 Vermont Natural Resources Conservation Service (NRCS) Conservation Practice Standard #360 or its official update and all other remaining stockpiles of manure, litter, or process wastewater not contained in a wastewater or manure storage structure are properly disposed of;
2. The facility is no longer a Medium CAFO that discharges manure, litter, or process wastewater to waters of the State, based on a demonstration that the circumstances that led to the discharges at the CAFO have been changed or corrected and fully and permanently remedied; or
3. Any and all discharges are permanently terminated by elimination of the flow or by connection to a publicly owned treatment works.

The permittee must submit a complete and signed Request for Termination of Coverage form to the Secretary documenting that at least one of the three conditions above has been met. Upon receipt of the required request form, the Secretary shall have the discretion to require from the permittee any additional information the Secretary deems necessary to support the request for termination.

Coverage under this permit shall be terminated upon receipt of a written determination by the Secretary that the Request for Termination of Coverage filing is complete and at least one of the conditions specified above has been satisfied.

## **I. Transfer of Ownership**

Any permittee may transfer the authorization to discharge under this permit by submittal of a complete and signed Transfer of Authorization to Discharge Form to the Secretary. The notice shall be submitted at least 30 days prior to the proposed date of transfer and shall include the following:

1. The name and address of the current permittee;
2. The name and address of the prospective permittee;
3. The proposed date of transfer; and
4. A statement signed by the prospective permittee, stating that:
  - a) The conditions of the facility operation that contribute to, or affect, the discharge will not be materially different under the new ownership;
  - b) They have read and are familiar with the terms of the permit and agree to comply

with all terms and conditions of the permit; and

- c) They have read and are familiar with the terms of the NMP and agree to comply with all the terms of the NMP;

The transfer shall become effective upon receipt of written confirmation from the Secretary that the permittee has complied with all of the requirements of this section of the ~~e~~General ~~p~~Permit.

### **PART III. EFFLUENT LIMITATIONS AND STANDARDS**

#### **A. Effluent Limitations and Standards Applicable to the Production Area**

1. The discharge of manure, litter, or process wastewater (e.g., silage leachate, milk house wastewater) from the production area into waters of the State is prohibited, except as provided below:
  - a) Whenever precipitation causes an overflow of manure, litter, or process wastewater, pollutants in the overflow may be discharged into waters of the State provided:
    - I. The production area is properly designed, constructed, operated, and maintained to contain all manure, litter, and process wastewater including the runoff and the direct precipitation from a 25-year, 24-hour storm event, as determined using NOAA Atlas 14 Point Precipitation Frequency Estimates for the location of the production area; and
    - II. The design storage volume is adequate to contain all manure, litter, and process wastewater accumulated during the storage period of 11/1 to 4/30, considering, at a minimum, the following:
      - i. The volume of manure, litter, process wastewater, and other wastes accumulated during the storage period;
      - ii. Normal precipitation during the storage period;
      - iii. Normal runoff during the storage period;
      - iv. The direct precipitation from the 25-year, 24-hour storm event;
      - v. The runoff from the 25-year, 24-hour storm event from the production area;
      - vi. Residual solids after liquid has been removed;
      - vii. Sediment load in the runoff from the production area;
      - viii. Estimates for precipitation for the 25-year, 24-hour storm event shall be determined using NOAA Atlas-14 Point Precipitation Frequency Estimates, or

its official update;

- ix. Estimates for precipitation and runoff for the storage period shall be in accordance with precipitation values in Appendix B, or values approved by the Secretary;
- x. Freeboard must be in compliance with the standards set forth in Vermont NRCS Conservation Practice Standard #313; and
- xi. A minimum treatment volume, in the case of treatment lagoons;

b) The permittee is in compliance with all the conditions in this ~~g~~General ~~p~~Permit.

- 2. The permittee shall ensure that its discharges are controlled as necessary to meet applicable water quality standards.
- 3. Discharges to Water Quality Impaired Waters:

In addition to the requirement to meet the terms and conditions of Subparts III.A.1. and A.2. above, the CAFO must also comply with the following:

- a) If the CAFO discharges to an impaired water with an EPA approved or established TMDL, the Secretary will inform the permittee if any additional limits or controls are necessary for the discharge to be consistent with the assumptions of any available wasteload allocation in the TMDL, or if coverage under an individual permit is necessary. Any additional limits or controls shall be included in the facility's NMP.
- b) If the CAFO discharges to an impaired water without an EPA approved or established TMDL, the Secretary will inform the permittee if any additional limits or controls are necessary to meet water quality standards, or if coverage under an individual permit is necessary. Any additional limits or controls shall be included in the permittee's NMP.
- c) If a CAFO's authorization for coverage under this permit relied on Subpart I.D. of this permit for a new discharge to an impaired water, the permittee must implement and maintain any control measures or conditions on its site necessary to ensure that the discharge will not cause or contribute to non-compliance with the Vermont Water Quality Standards pursuant to Subpart I.D. Any additional control measures or conditions shall be included in the permittee's NMP.
- d) If at any time the permittee becomes aware, or the Secretary determines, that a discharge to an impaired water has occurred and the requirements of Subpart III.A.3.a-c, above, have not been addressed, the permittee must take corrective action to fulfill the requirements of Subpart III.A.3.a-c above.
- e) Any changes to the NMP required to fulfill the requirements of Subpart III.A.3.a-c above, shall be made in accordance with Subpart IV.A.5. of this permit.

4. The discharges referred to in this Part III. of the ~~g~~General ~~p~~Permit are those discharges

that may occur despite compliance with all of the terms and conditions of this permit. Part III. of the ~~g~~General ~~p~~Permit is not in any way intended to authorize any discharge that results from noncompliance with any term or condition of this permit.

5. Other Requirements and Prohibitions Applicable to the Production Area:

- a) Once a CAFO facility has been closed pursuant to all applicable requirements, including those in Subpart V.A. below, any discharge to waters of the State from the CAFO's former production area containing bacteria in excess of water quality standards is prohibited.
- b) Discharges of pollutants from the production area to surface waters during dry weather conditions are prohibited.
- c) All wastes collected in liquid waste storage facilities shall be composed entirely of manure, litter, or process wastewater from the proper operation and maintenance of the CAFO, and the precipitation from the animal confinement, storage, and handling areas. The disposal of other materials (including mortalities and chemicals or other contaminants) into these liquid waste storage facilities is prohibited unless specifically designed to treat such additions.
- d) Animals confined at production areas of CAFOs shall not be allowed to come into direct contact with waters of the State.
- e) Liquid waste storage facilities shall contain a depth marker indicating the maximum operational level and emergency level based on the Vermont NRCS Conservation Practice Standard #313.
- f) The permittee shall manage and maintain access roads, parking areas, and other areas identified by the Secretary that do not drain to a Waste Storage Facility in order to prevent erosion and the discharge of agricultural wastes to surface waters.
- g) The permittee shall install and maintain a rain gauge that is properly maintained and located in the Production Area(s), in the proximity of the production area(s). Where two or more facilities are located within a 2.5-mile radius, only one rain gauge is required to ~~need~~ be installed and monitored. All rain events in excess of 0.5 inch shall be measured and recorded as: intensity, duration, and amount as part of the NMP recordkeeping.
- h) The permittee's rain gauge shall be kept free of debris, inspected for damages which may impair functionality, and secured tightly to a protected area of a building/structure which is inaccessible to wildlife as well as domestic animals. The permittee shall follow the manufacturer's instructions for securing to a building structure. The rainfall record does not need to be updated on any day absent of rainfall.
- ~~g~~i) In the event of a discharge, the permittee shall report the following information by the 15<sup>th</sup> of the following month using NetDMR: a) total precipitation for each day a discharge occurred; b) date on which the discharge occurred; c) time in which the discharge occurred; d) total duration of flow over the spillway for each day; e)

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untreated flow from the structure (gallons); and, f) treated flow from the structure (gallons)(if treated).

~~h~~)j) New CAFOs shall not be built in a water of the State.

~~h~~)k) CAFOs constructing new waste storage facilities or modifying existing waste storage facilities shall ensure that all waste storage facility design and construction will, at a minimum, be in accordance with the most recent technical standards developed by the Vermont NRCS or an equivalent standard certified by a professional engineer licensed in the State of Vermont.

~~h~~)l) Existing liquid waste storage facilities that do not have as-built drawings signed by a designer acceptable to the Secretary must be evaluated according to the VT WSF Evaluation Guide by a Professional Engineer licensed in the State of Vermont (PE). Any deficiencies and required improvements identified must be documented in the NMP. Documentation of the evaluation shall be maintained on-site by the CAFO and submitted to the Secretary at the time of application. The VT WSF Evaluation Guide is provided in Appendix C.

m) Waste Storage Facilities shall be managed and maintained consistent with the requirements of the Operation and Maintenance Plans for the structure as applicable.

n) Waste containment structures shall have a spillway in order to prevent collapsing of a storage containment structure in the event of an unanticipated overflow that is designed in accordance with NRCS Standards, and shall be located at the lowest point along the perimeter of the wastewater storage structure. Each structure shall provide freeboard that is designed to maintain the structural integrity of the process wastewater retention structure (i.e., freeboard cannot be included as part of the structure's storage capacity). The minimum freeboard distance shall be 12 inches.

~~h~~)o) The maximum length of time between emptying events for the Production Area process wastewater retention structure is the 30-day storage period used by the permittee to calculate the required design volume of the collection system.

~~h~~)p) The Secretary may require, on a case-by-case basis, that a waste storage facility that has overtopped be certified to comply with standards established by the United States Department of Agriculture (USDA) NRCS for waste storage facilities, or an equivalent standard certified by a professional engineer licensed in the State of Vermont.

~~m~~)q) The permittee shall notify the Department within 24-hrs of becoming aware that any waste storage facility under their control has exceeded the emergency level, as described in Subpart III.A.5.e and in Subpart VII.

~~n~~)r) Shop Drains are not authorized to discharge to surface water or to waste storage facilities under this ~~g~~General ~~p~~Permit.

**Commented [DJ7]:** Could VTDEC please explain the need and regulatory basis for this requirement?

I think this may be trying to deter the fill of wetlands? If so, maybe we should be more specific and cite the regulations.

**Commented [DJ8]:** Acronyms should be spelled out the first time they are used in a document.

## B. Effluent Limitations and Standards Applicable to the Land Application Area

1. There shall be no discharge of manure, litter, or process wastewater to ~~a~~ waters of the StateUS from a CAFO as a result of the application of manure, litter, or process wastewater to land areas under control of the CAFO, except where it is an agricultural stormwater discharge. Land application of all nutrients must correspond to rates specified in the NMP. When manure, litter, or process wastewater have been applied in accordance with the CAFO's approved site-specific NMP in a manner that ensures appropriate agricultural utilization of the nutrients in the manure, litter, or process wastewater, a precipitation related discharge of manure, litter, or process wastewater from land areas under the control of the CAFO is considered to be an agricultural storm water discharge.
2. Manure, compost, plant nutrients, milkhouse waste, washwater, leachate, used bedding, carcasses, barnyard runoff, process wastewater, or other wastes shall not be applied to land from December 15<sup>th</sup> through April 1<sup>st</sup> of each year or on frozen, snow covered, or saturated ground unless explicitly authorized by the Secretary of Agriculture pursuant to 6 V.S.A. § 4810 and approved on a case-by-case basis by the Secretary of Natural Resources. The Secretary of Natural Resources must find that the activity will be consistent with the terms and conditions of this ~~g~~General ~~p~~Permit and the site-specific NMP. Frozen ground is that that has a frozen soil layer two inches thick or thicker in the top 10 inches and saturated ground means that that has saturated soil conditions in the surface two inches.
3. Manure or other agricultural wastes shall not be applied to cropland, perennial grass land, small grain cropland, or hay land subject to frequent flooding from adjacent surface waters as described in the USDA Soil Survey Flooding Frequency Class after October 16 or before April 14. Manure spread on row cropland that is subject to frequent flooding from adjacent surface waters shall be incorporated within 48 hours. Manure incorporation is not required for no-till land or land planted to cover crops. If at the time of application, the USDA Soil Survey Flooding Frequency Class is claimed by the operator to be inaccurate, the operator may submit maps in the NMP adjusting, to the best of the operator's knowledge, the boundaries of frequently flooded areas for consideration by the Secretary.
4. Annual croplands subject to frequent flooding from adjacent surface waters, as described in the USDA Soil Survey Flooding Frequency Class or in accordance with an approved NMP following the procedure outlined in Part III(B)(3) on this ~~g~~General ~~p~~Permit, shall be required to be planted to cover crops. Broadcast seeding must be completed by October 1 of each year. Seed planted with drill seeders or otherwise incorporated shall be completed by October 15 of each year. The Secretary may, on a case-by-case basis, approve alternative planting dates due to unusual soil or weather conditions or other specific crop management needs and upon request of the owner or operator of a farm managing annual croplands subject to frequent flooding from adjacent surface waters, as described in the USDA Soil Survey Flooding Frequency Class. If annual crops cannot be harvested prior to October 15, then 30% crop residue, growing directly in the soil, must remain in order to limit soil loss.
5. There shall be no dry weather discharges from land application sites.

~~6.~~ Areas shall be identified that, due to topography, activities, or other factors, have a high potential for soil erosion. Where these areas have the potential to contribute pollutants to waters of the State, the permittee shall identify measures to limit land-based erosion and pollutant runoff.

~~7.~~<sup>6.</sup> The Secretary may require additional conservation practices be implemented to assure that there are no discharges of manure, litter, or process wastewater from the land application area to waters of the State which may include but are not limited to; perennially vegetated buffers, reduced tillage, conservation tillage, sod and legume rotations, the use of cover crops, grassed waterways, and filter strips.

~~8.~~<sup>7.</sup> Irrigation Control: Irrigation systems shall be managed in accordance with Vermont NRCS Conservation Practice Standard #449, so as to minimize the ponding of wastewater on land application fields, the contamination of ground and surface water, and the occurrence of nuisance conditions such as odor and flies.

### C. Compliance with Vermont Water Quality Standards and Anti-Degradation

The requirements of this permit reflect the goal of the federal Clean Water Act and Vermont law to achieve and maintain water quality standards. Federal regulations pertaining to the state anti-degradation policies are found at 40 C.F.R. § 131.12. Vermont's anti-degradation policy is set forth in Section 1-03 of the Vermont Water Quality Standards. The effluent limitations and requirements contained in this ~~g~~<sup>G</sup>eneral ~~p~~<sup>P</sup>ermit, including but not limited to the Secretary's approval of a site-specific NMP, are designed to ensure compliance with the Vermont Water Quality Standards, including Vermont's anti-degradation policy and Vermont's Interim Anti-degradation Implementation Procedure (dated October 12, 2010).

## PART IV. NUTRIENT MANAGEMENT PLAN

### A. Nutrient Management Plan

The permittee shall develop, sign, submit to the Secretary for approval, and implement and maintain a NMP that, at a minimum, specifically identifies and describes best management practices necessary to meet the requirements of Parts III. and IV. and Appendix A of this ~~g~~<sup>G</sup>eneral ~~p~~<sup>P</sup>ermit. Further, the NMP shall be developed in accordance with the Vermont NRCS Conservation Practice Standard Nutrient Management Code #590, in addition to any other applicable state law requirements. The permittee shall implement the NMP approved by the Secretary in accordance with the terms and conditions of the NMP which are incorporated by reference into this ~~g~~<sup>G</sup>eneral ~~p~~<sup>P</sup>ermit by the Secretary. If the NMP proves to be ineffective in preventing pollutants in discharges from the CAFO, the owner/operator shall make changes to the NMP to address the problem and shall submit the amended NMP to the Secretary for approval in accordance with Subsection IV.5 below.

#### 1. NMP Content

The site-specific NMP at a minimum must include practices and procedures necessary to implement the applicable effluent limitations and standards contained in or referenced in this permit. In addition, the NMP and each CAFO covered by this permit must, to the extent applicable:

- a) Demonstrate adequate storage of manure, litter, and process wastewater, including procedures to ensure proper operation and maintenance of the storage facilities. Storage capacity must be sufficient to meet requirements specified in Subpart III.A.1.a.1-II. As-builts of existing liquid waste storage facilities shall be included in the NMP upon application. For existing waste storage facilities that do not have as-builts, applicants shall include an assessment in the NMP as referenced in subpart III.A.5.j.
- b) Prohibit the disposal of mortalities in any liquid manure, stormwater, or process wastewater storage or treatment system that is not specifically designed to handle animal mortalities, and provide that mortalities are handled in such a way as to prevent the discharge of pollutants to waters of the State. The disposal of animal mortalities shall be in compliance with all applicable state and local regulatory requirements.
- c) Demonstrate that clean water is diverted, as appropriate, from the production area. Clean water includes runoff from the roofs of facilities, runoff from adjacent land, or other sources provided that runoff from any of these sources has not comingled with agricultural wastes or process wastewater. Open lots and associated wastes shall be isolated, as appropriate, from run-on from outside surface drainage by ditches, dikes, berms, terraces, or other such structures designed to carry peak flows expected at times when a 25-year, 24-hour rainfall event occurs. Clean water and flood waters must be diverted, as appropriate, from contact with feedlots and holding pens, and manure and process wastewater storage systems. In cases where it is not feasible to divert clean water from the production area, the retention structures shall include adequate storage capacity for the additional clean water.
- d) Describe how access roads, parking areas, and other areas identified by the Secretary that do not drain to a Waste Storage Facility are managed and maintained in order to prevent erosion and the discharge of wastes to surface waters.
- e) Prevent direct contact of animals confined in the production area with waters of the State.
- f) In areas outside of the production area adequate vegetative cover shall be maintained on banks of surface waters by limiting livestock trampling and equipment damage to protect banks of surface waters and to minimize erosion. Crossings and watering areas need to be maintained so as to minimize erosion and be adequately protective of surface waters.
- g) Ensure that chemicals and other contaminants are not discharged to surface waters or disposed of in any manure, litter, process wastewater, or stormwater storage or treatment system, unless specifically designed to treat such chemicals or other contaminants.
- h) Identify appropriate site-specific conservation practices to be implemented, including buffers or equivalent practices to control runoff of pollutants to waters of the ~~State~~[US](#). These practices may include residue management, crop rotation, grassed waterways, buffers, reduced tillage, setbacks, and diversions. At a



minimum, such practices must be adequate to keep erosion levels in each field at or less than the soil loss tolerance (T) value specified in the NRCS Field Office Technical Guide.

i) At a minimum, all waters of the US shall be protected by a 100 foot nutrient application setback, or protected by a 35 linear foot vegetative buffer from nutrient application areas, in accordance with the Clean Water Act Section 402(a)(1) and 40 CFR Part 122.44(k) Best Professional Judgement regulations.

h) federal CAFO regulations.

k) Demonstrate that all fields have a soil test results that are less than two years old when developing the initial NMP. Soil samples shall be collected and prepared according to University of Vermont guidance “How to Take a Soil Sample” and shall use the Modified Morgan Extract for available phosphorus and aluminum.

l) Establish protocols to land apply manure, litter, and process wastewater in accordance with site-specific nutrient management practices that ensure appropriate agricultural utilization of the nutrients in the manure, litter, and process wastewater. The permittee’s site specific NMP shall document the calculation of land application rates of manure, litter, and process wastewater. Nutrient recommendations shall be made based on the University of Vermont “Nutrient Recommendations for Field Crops in Vermont” (and/or industry practice when recognized by the University or approved by DEC). Application rates may be expressed in NMPs consistent with one of the two approaches described in Appendix A.

m) Identify areas that, due to topography, activities, or other factors, have a high potential for runoff or soil erosion. Where these areas have the potential to contribute pollutants to waters of the US State, the NMP shall identify measures to limit erosion and pollutant runoff, either via surface or subsurface (e.g., tile) drainage pathways, the NMP shall identify measures to control or trap manure and nutrients before they can leave the field. limit erosion and pollutant runoff. In addition to field conservation practices, where necessary, such measures will also include installation of practices at the edge-of-field to eliminate the discharge of pollutants, and reduce downstream erosion along water conveyances between fields and waters of the US. For fields with subsurface tile drainage systems, such measures will also address the need to prevent the development of preferential flow pathways between the field surface and the tile drainage network.

n) \_\_\_\_\_

o) Ensure that a buffer zone of dense perennial vegetation is maintained between croplands and the top of the bank of adjoining surface waters, ditches, and conduits to surface water, including intermittent waterways that are determined to potentially transport waste or nutrients. The buffer zone must be consistent with (I) through (V) below, in order to enhance infiltration, enhance filtration of sediments, nutrients, pathogens, and agricultural chemicals and to protect the surface waters from erosion of streambanks due to excessive tillage.

**Commented [DJ9]:** Should incorporate this language from the VT NRCS #590 practice standard for clarity and enforceability.

- I. Surface waters, ditches, and conduits to surface waters that are situated downslope of manure, compost, process wastewater, or fertilizer applications must be buffered from croplands by at least ~~25~~<sup>35</sup>-ft. of dense perennial vegetation. If the buffer is heavily used, for example by vehicular traffic, it cannot count towards the ~~25~~<sup>35</sup>-ft. buffer requirement. ~~If the buffer is not heavily used and is adequately working as a grassed buffer according to NRCS technical standards then it can count towards the 25-ft. buffer.~~
- II. Surface waters, ditches, and conduits to surface waters that are situated upslope of manure, compost, process wastewater, or fertilizer applications shall be buffered in accordance with the Required Agricultural Practices.
- III. No manure, compost, process wastewater, other wastes, or fertilizer shall be applied within vegetative buffers.
- IV. Tillage shall not occur in a vegetative buffer except for the establishment or maintenance of the buffer.
- V. Harvesting the buffer as a perennial crop is allowed.

**Commented [DJ10]:** VTDEC, we recommend implementing a 35 linear foot setback requirement in accordance with Best Professional Judgement regulations. Unless there is a study that shows the 25-ft buffer is as protective for waters of the US. The wastewater will be the same; it only matters where the liquid wastewater is applied. Implementing a 25-ft buffer seems arbitrary without a study to support its application.

**Commented [DJ11]:** A grassed buffer is not adequate protection for receiving waters.

~~m~~<sup>p</sup>) \_\_\_\_\_ Ensure that private wells shall be protected by a 100 ft. nutrient application setback. Pasturing of livestock shall not occur within 50 ft. of a private well without permission from the well owner. These setbacks shall not apply to private water supplies that have been established inconsistent with the Department of Environmental Conservation Water Supply Rules existing at the time that the water supply was established.

~~n~~<sup>q</sup>) \_\_\_\_\_ Inspect periodically for leaks the equipment used for land application of manure, litter, or process wastewater.

~~o~~<sup>r</sup>) Identify specific records that shall be maintained to document the implementation and management of the minimum elements described in Subpart IV.A.1. a. through n. above.

1. NMP Recordkeeping Requirements

~~p~~<sup>s</sup>) \_\_\_\_\_ The permittee shall create and maintain a complete copy of the documentation required by this permit, including the documentation identified in Subpart IV.A.1. above and Table IV. A, on-site for a period of five years from the date they are created. Such records shall be made available to the Secretary upon request.

**Table IV. A. Recordkeeping and Monitoring Requirements**

Parameter	Units	Frequency
<i>Permit and NMP</i>		

CAFO must maintain on-site a copy of the current NPDES permit including the permit authorization notice	n/a	Maintain at all times
CAFO must maintain on-site a current site-specific NMP that reflects existing operational characteristics. The operation must also maintain on-site all necessary records to document that the NMP is being properly implemented with respect to manure and wastewater generation, storage and handling, land application, and other minimum practices described in subpart IV. A.1. a through m). Manure spreading records shall include: date of manure application; location of field receiving application; source of manure; method of application; field conditions; weather conditions at the time of application and for 24 hours prior to and following application; and the amount of manure applied.	n/a	Maintain at all times
A CAFO utilizing manure injection equipment shall keep nutrient application records using flow meters and data loggers or other means determined comparable by the Secretary, in order to confirm accurate application	n/a	As applicable
Analysis of each field stack and waste storage facility's contents to determine nitrogen and phosphorus content (according to VT NRCS #590 Standard and UVM Extension's 'How to Take a Manure Sample')	Pounds/ton or pounds/1,000 gallon	At least annually
Analysis of soil in all fields where nutrient land application activities are conducted to determine phosphorus, potassium, aluminum, and other macronutrient content according to VT NRCS #590 Standard and UVM Extension's 'How to Take a Soil Sample'	Ppm	At least every 3 years
Documentation of adequate storage capacity to meet permit requirements	n/a	Once in NMP
Documentation of animal mortality handling practices	n/a	Once in NMP unless revised
Documentation of any practices used to ensure clean water diversion as appropriate	n/a	Once in NMP unless revised
Documentation of waters of the State, if any, within animal confinement areas and measures implemented to prevent animal contact	n/a	Once in NMP unless revised
Document conservation practices used to control pollutant runoff, and implemented protocols and procedures to control pollutant runoff	n/a	Once in NMP unless revised
Documentation of all discharges from all manure and process wastewater storage structures including:		Within 24-hrs of discovery

• Date and time of discharge	m/d/yr	Per event
• Estimated volume of discharge	gallons	Per event
• Analysis of discharge for total nitrogen, ammonia nitrogen, total phosphorus, pH, Escherichia coli, 5-day biochemical oxygen demand (BOD5), and total suspended solids	Ppm, CFU/100 ml	Per event
Documentation of weekly inspections of all stormwater or clean water diversion devices, runoff diversion structures, and devices directing contaminated stormwater or process wastewater to waste storage facilities. Inspection will be documented on a form provided by the Secretary or developed by the permittee, provided it contains the same information as the form developed by the Secretary.	n/a	weekly
Documentation of the weekly inspection of waste storage facilities; the inspection will note the level of liquid in the waste storage facility as indicated by the depth marker. Inspection will be documented on a form provided by the Secretary or developed by the permittee, provided it contains the same information as the form developed by the Secretary.	Inches	weekly
Documentation of all rain events in excess of 0.5 inch	Inches	Per event
<b><i>Manure, litter, process wastewater and waste transfer, export, or import</i></b>		
For all manure, litter and process wastewater transfers the CAFO must maintain the following records:		
• Date of transfer	m/d/yr	As necessary
• Name, address, and signature of recipient	n/a	As necessary
• Approximate amount of manure, litter, or process wastewater transferred	Tons/gallons	As necessary
• Representative nutrient analysis	n/a	As necessary
• Reflect transfers, exports, and imports in NMP	Tons/gallons	As necessary

## 2. Annual Reporting Requirements

The permittee shall submit an annual report to the Secretary by April 30 of each year, which shall include information for the previous calendar year (i.e., January 1 through December 31 of the preceding calendar year), together with an annual operating fee as established by 3 V.S.A. § 2822 by an electronic Annual Reporting system.

The annual report shall include the following information:

(f) The maximum number of each type of animal, whether in open confinement or housed under roof (beef cattle, mature dairy cows, dairy heifers, veal calves, sheep, lamb, swine, horses, laying hens, broilers, ducks, turkeys, other) in the previous calendar year;

(u) Estimated amount of total manure, litter, process wastewater, and other wastes

generated and imported by the CAFO in the previous calendar year (tons/gallons);

- ~~v~~) Estimated amount of total manure, litter, and process wastewater transferred to other persons by the CAFO in the previous calendar year (tons/gallons);
- ~~w~~) Total number of acres for land application covered by the NMP approved by the Secretary;
- ~~x~~) Total number of acres under control of the CAFO that were used for land application of manure, litter, or process wastewater in the previous calendar year;
- ~~y~~) Summary of all manure, litter, and process wastewater discharges from the production area that have occurred in the previous calendar year, including date, time, discharge analysis, and approximate volume;
- ~~z~~) A statement indicating the certified planner or operator who developed the NMP or documentation that the plan was approved by a certified planner; and
- ~~aa~~) The reconciled p-index, the actual crop(s) planted and actual yield(s) for each field, the actual nitrogen and phosphorus content of the manure, litter, and process wastewater, the results of calculations conducted in accordance with Appendix A paragraph 2.d. of this permit, and the amount of manure, litter, and process wastewater applied to each field during the previous calendar year; and, for any CAFO that implements a NMP that addresses rates of application in accordance with Appendix A paragraph 2 of this permit, the results of any soil testing taken during the preceding calendar year, the data used in calculations conducted in accordance with Appendix A paragraph 2.d. of this permit, and the amount of any supplemental fertilizer applied during the previous calendar year.

### 3. Terms of the Nutrient Management Plan

The permittee shall comply with the terms of the CAFO's site-specific NMP approved and incorporated by reference into this ~~g~~General ~~p~~Permit by the Secretary. The terms of the NMP are the information, protocols, best management practices, and other conditions in the NMP determined by the Secretary to be necessary to meet the requirements of Parts III. and IV.A. and Appendix A of this ~~g~~General ~~p~~Permit. The terms of the NMP, with respect to protocols for land application of manure, litter, or process wastewater required by Part IV.A.1. k, must include the fields available for land application; field-specific rates of application properly developed in accordance with, and limited to the options contained in Appendix A of this ~~g~~General ~~p~~Permit to ensure appropriate agricultural utilization of the nutrients in the manure, litter, or process wastewater; and any timing limitations identified in the NMP concerning land application on the fields available for land application. The terms must address rates of application as specified in Appendix A in accordance with 40 C.F.R. § 122.42(e)(5) and VT NRCS Conservation Practice Standard Nutrient Management Code #590.

### 4. Changes to a NMP

These procedures shall apply when a CAFO owner or operator makes changes to the CAFO's NMP previously submitted to and approved by the Secretary. The NMP shall be

modified as necessary to reflect best management practices, operation and maintenance procedures, and infrastructure improvements implemented by the facility to fulfill the requirements of this ~~g~~General ~~p~~Permit.

~~y~~bb) The CAFO owner or operator must submit to the Secretary an updated version of the CAFO's NMP as well as a detailed list of any changes from the previously approved version of the NMP, except the result of calculations made in accordance with the requirements of Subpart IV.A. and Appendix A of this ~~p~~Permit are not subject to the requirements included in this section.

~~z~~cc) The Secretary must review the changes to ensure that it meets the requirements of this section and applicable effluent limitations and standards, and must determine whether the changes to the NMP are substantial. The Secretary will determine whether such changes are substantial changes as described in Subpart 5.c below.

- I. If the Secretary determines that the changes to the NMP are not substantial, the Secretary will make the revised NMP publicly available and include it in the record, incorporate the revised NMP into the permit, and notify the owner or operator and inform the public of any changes to the NMP.
- II. If the Secretary determines that the changes to the NMP are substantial, the Secretary will notify the public and make the proposed changes and the information submitted by the CAFO owner or operator available for public review and comment. The process for public comments, hearing requests, notices of hearings, and a hearing, if a hearing is held, will follow the procedures referenced in Part II.D. of this ~~g~~General ~~p~~Permit. In order to approve the review of the NMP incorporated into the permit, the Secretary will respond to all significant comments received during the public comment period and require the CAFO owner or operator to further revise the NMP if necessary. Once the Secretary incorporates the revised NMP into the ~~p~~Permit, the Secretary will notify the owner or operator and inform the public of the final decision concerning revisions to the terms and conditions of the ~~p~~Permit.

~~aa~~dd) Substantial changes to a NMP include:

- I. Addition of new land application areas not previously included in the CAFO's NMP. An exception would be a land application area that is already covered by terms of a NMP incorporated into an existing NPDES permit in accordance with the requirements contained in Subpart IV.D. and Appendix A of this ~~p~~Permit, and the CAFO owner or operator applies manure, litter, or process wastewater on the newly added land application area in accordance with the existing field-specific permit terms applicable to the newly added land application area. Such addition of new land would be a change to the new CAFO owner or operator's NMP but not a substantial change for purposes of this section;
- II. Any changes to the field-specific maximum annual rates for land application, as set forth in Subpart IV.A. and in accordance with the Linear Approach

described in Appendix A of this ~~p~~Permit, and to the maximum amounts of nitrogen and phosphorus derived from all sources for each crop, as set forth in Subpart IV.A. and the Narrative Rate Approach described in Appendix A of this permit;

- III. Addition of any crop or other uses not included in the terms of the CAFO's NMP and corresponding field-specific rates of application expressed in accordance with Part IV.A. and Appendix A of this ~~p~~Permit; and
- IV. Changes to site-specific components of the CAFO's NMP, where such changes are likely to increase the risk of nitrogen and phosphorus transport to waters of the ~~US, State.~~

5. Certified Planners to develop NMPs

The NMP required by this ~~p~~Permit shall be developed or approved by a certified nutrient management planner in accordance with the VT NRCS Conservation Practice Standard Nutrient Management Code #590. The certified planner must be certified through the USDA/NRCS or an equivalent certification program sanctioned by the Secretary. The CAFO owner/operator remains solely responsible for assuring the NMP is properly developed and implemented and complies with all applicable permit conditions. The owner/operator and the certified planner shall certify that the NMP has been prepared in accordance with all applicable NRCS Conservation Practice Standards and this ~~g~~General ~~p~~Permit.

## PART V. SPECIAL CONDITIONS

### A. Facility Closure

The following conditions shall apply to the closure of waste storage facilities including lagoons and other earthen or synthetic lined basins and other manure, litter, or process wastewater storage and handling structures:

1. Closure of Lagoons and Other Surface Impoundments
  - a) No lagoon or other earthen or synthetic lined basin shall be permanently abandoned.
  - b) Lagoons and other earthen or synthetic lined basins shall be maintained at all times until closed in compliance with this section.
  - c) All closure of lagoons and other earthen or synthetic lined basins shall be consistent with the December 2019 Vermont NRCS Conservation Practice Standard #360. Consistent with this standard the permittee shall remove all waste materials to the maximum extent practicable and dispose of them in accordance with the permittee's NMP, unless otherwise authorized by the Secretary.
  - d) Unless otherwise authorized by the Secretary, completion of closure for lagoons and other earthen or synthetic lined basins shall occur as promptly as practicable

after the permittee ceases to operate or, if the permittee has not ceased operations, 12 months from the date on which the use of the structure ceased, unless the lagoons or basins are being maintained for possible future use in accordance with the requirements above.

6. Closure Procedures for Other Manure, Litter, or Process Wastewater Storage and Handling Structures

No other manure, litter, or process wastewater storage and handling structure shall be abandoned. Closure of all such structures shall occur as promptly as practicable after the permittee has ceased to operate, or, if the permittee has not ceased to operate, within 12 months after the date on which the use of the structure ceased. To close a manure, litter, or process wastewater storage and handling structure, the permittee shall remove all manure, litter, or process wastewater and dispose of it in accordance with the permittee's NMP, or document its transfer or export from the permitted facility in accordance with off-site transfer or export requirements specified in this permit, unless otherwise authorized by the Secretary.

**B. Requirements for the Transfer or Export of Manure, Litter, and Process Wastewater to Other Persons**

In cases where CAFO-generated manure, litter, or process wastewater is sold or given away the permittee must comply with the following conditions:

1. Maintain records showing the date and amount of manure, litter, and/or process wastewater that leaves the permitted operation. Total quantity exported shall be reported in the NMP and each Annual Report;
7. Record the name, address, and signature of the recipient;
8. Provide the recipient(s) with representative information on the nutrient content of the manure, litter, and/or process wastewater; and
9. Retain the records on-site, for a period of five years, and submit the records to the Secretary, upon request.

**C. Limitations on Other Discharges**

Discharges to waters of the State that are not addressed under this permit remain subject to applicable state and federal law.

**PART VI. STANDARD PERMIT CONDITIONS**

**A. Records Retention**

The permittee shall retain records of all monitoring information, copies of all reports required by this permit, a copy of the permittee's authorization under this permit, and records of all data and information used to complete the application for permit coverage for a period of at least five (5) years from the date of the sample, measurement, report, or application. This information shall be submitted to the Secretary upon request. This period shall be extended



during the course of any unresolved litigation or enforcement action regarding the discharge of pollutants or when requested by the Secretary at any time.

**B. Duty to Comply**

The permittee shall comply with all terms and conditions of this permit, including the terms of the CAFO’s site-specific NMP incorporated by the Secretary into their authorization to discharge. Any permit noncompliance constitutes a violation of 10 V.S.A. Chapter 47 and the federal Clean Water Act and is grounds for an enforcement action, for permit coverage termination, revocation and reissuance of the authorization for permit coverage, modification of permit coverage, or denial of a permit coverage renewal application.

**C. Penalty for Permit Violation**

The federal Clean Water Act provides for penalties for permit violations as specified in 40 C.F.R. § 122.41(a).

10 V.S.A. § 1275(a) provides that:

“Any person who violates any provision of this subchapter or who fails, neglects or refuses to obey or comply with any order or the terms of any permit issued in accordance with this subchapter, shall be fined not more than \$25,000.00 or be imprisoned not more than six months, or both. Each violation may be a separate offense and, in the case of a continuing violation, each day’s continuance may be deemed a separate offense.”

10 V.S.A. § 8010(c) provides that:

“A penalty of not more than \$42,500.00 may be assessed for each determination of a separate violation. In addition, if the Secretary determines that a violation is continuing the Secretary may assess a penalty of not more than \$17,000.00 for each day the violation continues. The maximum amount of penalty assessed under this subsection shall not exceed \$170,000.00.”

**D. Penalty for False Statement or for Falsifying, Tampering with, or Rendering Inaccurate any Monitoring Device or Method**

The federal Clean Water Act provides in 40 C.F.R. § 122.41(k) that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or non-compliance shall, upon conviction, be punished by a fine of not more than \$10,000.00 per violation, or by imprisonment for not more than six months per violation, or by both.

The federal Clean Water Act provides in 40 C.F.R. § 122.41(j)(5) that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this permit shall, upon conviction, be punishable by a fine of not more than \$10,000.00, or by imprisonment for not more than two years, or both. If a conviction of a person is for a violation committed after a first conviction of such person under this paragraph, punishment is a fine or not more than \$20,000.00 per day of violation, or by imprisonment of not more than four years, or both.

10 V.S.A. § 1275(b) provides that:

“Any person who knowingly makes any false statement, representation or certification in any application, record, report, plan, or other document filed or required to be maintained under this subchapter, or by any permit, rule, regulation or order issued under this subchapter, or who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this subchapter or by any permit, rule, regulation, or order issued under this subchapter, shall upon conviction, be punished by a fine of not more than \$10,000.00 or by imprisonment for not more than six months, or by both.”

**E. Need to Halt or Reduce Activity not a Defense**

It shall not be a defense for the permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this ~~p~~Permit.

**F. Duty to Mitigate**

The permittee shall take all reasonable steps to minimize or prevent any adverse impact to waters of the ~~US~~State resulting from noncompliance with this ~~p~~Permit, including conducting accelerated or additional monitoring as necessary to determine the nature and impact of the non-complying discharge.

**G. Noncompliance Notification**

In the event the permittee is unable to, or fails to, comply with any of the conditions of this permit due, among other reasons, to:

1. The breakdown or maintenance of waste treatment equipment (biological and physical-chemical systems including all pipes, transfer pumps, compressors, collection ponds or tanks for the segregation of treated or untreated wastes);
10. Accidents caused by human error or negligence; or
11. Other causes such as acts of nature.

The permittee shall notify the Secretary within 24 hours of becoming aware of such condition or by the next business day and shall provide the Secretary with the following information, in writing, within five days:

- a) The cause(s) of non-compliance;
- b) A description of the non-complying discharge including: its impact upon the receiving water and the exact dates and times of the non-compliance;
- c) The anticipated time the condition of non-compliance is expected to continue to or, if such condition has been corrected, the duration of the period of non-compliance;
- d) The steps taken by the permittee to reduce and eliminate the non-complying discharge; and

- e) The steps taken or to be taken by the permittee to reduce, eliminate, and prevent recurrence of the non-compliance.

#### **H. Proper Operation and Maintenance**

The permittee shall, at all times, properly operate and maintain all facilities and systems for treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this [pP](#)ermit. Proper operation and maintenance also includes appropriate quality assurance procedures.

#### **I. Inspection, Monitoring, and Recordkeeping**

The permittee shall inspect, monitor, and record the results of such inspection and monitoring in accordance with Table IV.A. and this Subpart.

1. Samples and measurements must be representative of the volume and nature of the monitored discharge.
2. Monitoring must be conducted according to test procedures approved under 40 C.F.R. § 136, unless other test procedures have been specified in this [pP](#)ermit or approved by EPA as an alternate test procedure under 40 C.F.R. § 136.5.
3. Records of monitoring information shall include:
  - a) The date, exact place, and time of sampling or measurement;
  - b) The individual(s) who performed the sampling or measurement;
  - c) The date(s) analyses were performed;
  - d) The individual(s) who performed the analyses;
  - e) The analytical techniques or methods used; and
  - f) The results of such analyses.

#### **J. Duty to Provide Information**

The permittee shall furnish to the Secretary, within a reasonable time, any information which the Secretary may request to determine whether cause exists for modifying, revoking and reissuing, or terminating an authorization for coverage under this [pP](#)ermit or to determine compliance with this [pP](#)ermit. The permittee shall also furnish to the Secretary upon request, copies of records required to be kept by this [pP](#)ermit.

1. Notification of discharges of manure, litter, or process wastewater as a result of storage, handling, on-site transport, application, or overflows of any process wastewater retention structures:

If for any reason there is a discharge of pollutants to waters of the [USState](#), the permittee is required to [provide](#):

- a) A description of the discharge and its cause, including a description of the flow path to the receiving waterbody and an estimate of the flow and volume discharged.
- b) The period of discharge, including exact dates and times, the anticipated time it is expected to continue, and steps taken or planned to reduce, eliminate, and prevent recurrence of the discharge.

12. Monitoring Requirements for All Discharges from Retention Structures:

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In the event of any overflow or other discharge of pollutants from a manure and/or wastewater storage or retention structure, whether or not authorized by this ~~p~~Permit, the following actions shall be taken:

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c) The permittee shall take all reasonable efforts to minimize, reduce, eliminate and prevent the overflow or discharge from reaching waters of the United States.

**Commented [DJ13]:** I think this should restart at "a) " ?

d) The discharge from any containment structure shall be minimized and controlled by implementation of the nutrient management terms and conditions specified in this Permit.

e) The discharge shall not cause a violation of the water quality standards of the receiving water.

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f) All discharges shall be sampled at the point of discharge (preferably at a spillway) prior to mixing with a receiving water and analyzed. Samples must, at a minimum, be analyzed for the following parameters: total nitrogen, nitrate nitrogen, ammonia nitrogen, total phosphorus, E. coli, five-day biochemical oxygen demand (BOD5), total suspended solids, pH, and temperature. The discharge must be analyzed in accordance with approved EPA methods for water analysis listed in 40 C.F.R. § 136;

e)g) In accordance with 40 C.F.R. § 122.44(i)(1)(iv), the permittee shall use sufficiently sensitive test procedures (i.e., methods) approved under 40 C.F.R. Part 136 or required under 40 C.F.R. Chapter I, Subchapter N or O, for the analysis of pollutants or pollutant parameters limited in this permit. A method is considered "sufficiently sensitive" when either (1) The method's minimum level (ML) is at or below the level of the effluent limit established in this permit for the measured pollutant or pollutant parameter; or (2) The method has the lowest ML of the analytical methods approved under 40 C.F.R. Part 136 or required under 40 C.F.R. Chapter I, Subchapter N or O for the measured pollutant or pollutant parameter. The ML is not the minimum level of detection, but rather the lowest level at which the test equipment produces a recognizable signal and acceptable calibration point for a pollutant or pollutant parameter, representative of the lowest concentration at which a pollutant or pollutant parameter can be measured with a known level of confidence. For the purposes of this permit, the detection limit is the lowest concentration that can be reliably measured within specified limits of precision and accuracy for a specific laboratory analytical method during routine laboratory operating conditions (i.e., the level above which an actual value is reported for an analyte, and the level below which an analyte is reported as non-detect).

h) The discharge shall be adequately treated to ensure that the surface water remains free from pollutants in concentrations or combinations that settle to form harmful deposits, float as foam, debris, scum or other visible pollutants. It shall be adequately treated to ensure that the surface waters remain free from pollutants which produce odor, color, taste or turbidity in the receiving waters which is not naturally occurring and would render it unsuitable for its designated uses.

h)i) The permittee shall record an estimate of the volume of the release and the date and time;

h)j) Samples shall consist of grab samples collected from the spillway point of overflow or discharge from the waste impoundment or production area. A minimum of one sample shall be collected within 30 minutes or as soon as possible following the detection of the overflow or discharge and the sample(s) of the overflow or discharge must be collected and analyzed in accordance with EPA approved methods for water analysis listed in 40 C.F.R. § 136. The sample(s) collected from the overflow or discharge must be representative of the overflow or discharge;

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h)k) If conditions are not safe for sampling, the permittee must provide documentation of why samples could not be collected and analyzed. For example, the permittee may be unable to collect samples during dangerous weather conditions (such as local flooding, high winds, hurricane, tornadoes, electrical storms, etc.). However, once dangerous conditions have passed, the permittee shall collect a sample from the retention structure (pond or lagoon) from which the discharge occurred; and

h)l) The analytical results of the representative sample(s) taken from the overflow or discharge must be submitted to the Secretary within 30 days of the overflow or discharge.

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#### **K. Bypass**

The intentional diversion of waste streams from any portion of a treatment facility is prohibited unless allowed by 40 C.F.R. § 122.41(m).

#### **L. Upset**

An upset constitutes an affirmative defense to an action brought for noncompliance with technology-based permit limitations in accordance with 40 C.F.R. § 122.41(n).

#### **M. Signatory Requirements**

All applications, reports, and information submitted to the Secretary shall be signed and certified:

1. In the case of corporations, by a responsible corporate officer.
13. In the case of a partnership, by a general partner.
14. In the case of a sole proprietorship, by the proprietor.

15. In the case of a municipal, state, or other public facility, by either a principal executive officer, ranking elected official, or other duly authorized employee.
16. In the case of limited liability companies (LLCs), by the LLC manager or authorized member.

#### **N. Right of Inspection and Entry**

The permittee shall allow the Secretary or their authorized representative (including an authorized contractor acting as a representative of the Secretary), upon presentation of credentials to:

1. Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this **p**Permit;
17. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this **p**Permit;
18. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this **p**Permit; and
19. Sample or monitor at reasonable times, for purposes of assuring permit compliance or as otherwise authorized by the Clean Water Act, any substances or parameters at any location.

#### **O. Property Rights**

Issuance of this **p**Permit does not convey any property rights in either real or personal property, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights.

#### **P. Federal, State, and Local Laws**

Issuance of this **p**Permit does not authorize any infringement of federal, state, or local laws or regulations. This permit does not convey authorization to conduct any activity within wetlands including: clearing, grading, excavation, placement of temporary or permanent erosion and sediment control structures, or any other activity required by this permit. Any such activity within a wetland may require a wetlands permit pursuant 10 V.S.A. § 905(b) and/or a permit pursuant to Section 404 of the federal Clean Water Act or both.

This **p**Permit does not authorize any discharge or activity which could adversely affect threatened or endangered species protected under the federal Endangered Species Act, which could constitute the taking of threatened or endangered species pursuant to 10 V.S.A. Chapter 123, or which could jeopardize conservation programs established by the Secretary in accordance with 10 V.S.A. Chapter 123.

#### **Q. Revocation or Modification of Authorization to Discharge**

The Secretary may revoke and reissue, modify, suspend, or terminate for cause, in whole or in part, authorization to discharge under this permit in accord with the Vermont Water Pollution

Control Permit Regulations Chapter 13, § 13.12 C.6. The filing of a request by a permittee for a modification, revocation and reissuance, or termination of its authorization to discharge under this **pP**ermit, or a notification of planned changes or anticipated noncompliance does not stay any permit condition.

#### **R. Modification of General Permit**

After notice and opportunity for public hearing, this permit may be modified in accordance with the Vermont Water Pollution Control Permit Regulations Chapter 13, § 13.12 C.7. The incorporation of the terms of a CAFO's NMP into the terms and conditions of this **pP**ermit when a CAFO obtains coverage under this **gG**eneral **pP**ermit is not a cause for modification of this **gG**eneral **pP**ermit under this Subpart.

#### **S. Oil and Hazardous Substance Liability**

Nothing in this **pP**ermit shall be construed to preclude the institution of legal action or relieve the permittee from any responsibilities, liabilities, or penalties to which the permittee is or may be subject to under 10 V.S.A. § 1281.

#### **T. Toxic Pollutants**

The permittee must comply with effluent standards or prohibitions established under Section 307(a) of the federal Clean Water Act for toxic pollutants within the time provided in the regulations that establish those standards or prohibitions, even if the permit has not been modified to incorporate the requirement.

#### **U. Planned Changes**

The permittee must give written notice to the Secretary as soon as possible when a new facility is added to the permitted operation. The permittee must give written notice to the Secretary as soon as possible of any planned physical alterations or additions to the permitted facility whenever:

1. The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source as determined in 40 C.F.R. § 122.29(b);  
or
20. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants that are subject neither to effluent limitations in the **pP**ermit, nor to notification requirements under Subpart V.I.T. ("Toxic Substances").

#### **V. Anticipated Noncompliance**

The permittee shall give written advance notice to the Secretary of any planned changes in the permitted facility or activity that may result in noncompliance with this **pP**ermit.

#### **W. Twenty-four Hour Reporting**

The permittee shall report any noncompliance which may endanger health or the environment

in accordance with 40 CFR § 122.41(l)(6) which states that any information shall be provided orally within 24 hours from the time the permittee becomes aware of the circumstances. A written submission shall also be provided within five (5) days of the time the permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

21. The following shall be included as information which must be reported within 24 hours under this paragraph.

- a) Any unanticipated bypass which exceeds any effluent limitation in the pPermit.
- b) Any upset which exceeds any effluent limitation in the pPermit.
- c) Violation of a maximum daily discharge limitation for any of the pollutants listed by the Secretary in the pPermit to be reported within 24 hours. (See 40 C.F.R. § 122.44(g))

22. The Secretary may waive the written report on a case-by-case basis for reports under this section if the oral report has been received within 24 hours.

#### **X. Other Information**

If the permittee becomes aware that it failed to submit any relevant facts in its application, or submitted incorrect information in its application or other reports, it must promptly submit such facts or information.

#### **Y. Authority**

This pPermit is issued under authority of 10 V.S.A. Chapter 47 and Section 402 of the federal Clean Water Act.

### **PART VII. DEFINITIONS**

**AFO** means Animal Feeding Operation. A lot or facility (other than an aquatic animal production facility) where the following conditions are met:

- 1. Animals (other than aquatic animals) have been, are, or will be stabled or confined and fed or maintained for a total of 45 days or more in any 12-month period, and
- 23. ~~Crops, vegetation, forage growth, or post-harvest residues are not sustained in the normal growing season over any portion of the lot or facility.~~

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**ANR** means the Vermont Agency of Natural Resources.

**Barnyard or feedlot** means an area, either earthen or improved, where animals are confined by fences, other structures, or topography, are primarily sustained by supplemental feed and where vegetative cover is sparse.



**CAFO** means concentrated animal feeding operation. For the purposes of this permit, this is an AFO that is defined as a Medium CAFO in 40 C.F.R. § 122.23(b)(6), or that is designated as a CAFO pursuant to 40 C.F.R. § 122.23(c).

**Certified Nutrient Management Planner** means an individual certified through the completion of the USDA/NRCS nutrient management certification process (or approved equivalent) who creates, reviews, and modifies NMPs.

**Conduit** means any channel that conveys liquid, whether open or closed. Examples of conduits include gullies, surface inlets, and ditches.

**Conservation Practice** means a specific treatment used to address specific natural resources needs and can be structural, vegetative, or land management.

**Cropland** means land devoted to row crop, perennial production, or pasture production.

**Depth marker** means a marker which clearly indicates the maximum operating level and emergency level required for a liquid waste storage facility.

**Discharge** means the “discharge of a pollutant”.

**Discharge of a pollutant** means any addition of any “pollutant” or combination of pollutants to “waters of the State” from any “point source”.

**Emergency level** means the elevation in a waste storage facility that corresponds to the reserve storage required for the 25-year, 24-hour precipitation on the surface of the liquid or slurry storage facility and the runoff from the 25-year, 24-hour precipitation event from the waste storage facility's drainage area.

**Grab sample** means a sample that is taken from a wastestream on a one-time basis without consideration of the flow rate of the wastestream and without consideration of time.

**General Permit Rules** means the *Amendment to the Vermont Water Pollution Control Regulations*, Chapter 13, effective October 7, 1991.

**Impervious Surface** means those manmade surfaces, including paved and unpaved roads, parking areas, roofs, driveways, and walkways, from which precipitation runs off rather than infiltrates.

**Land application** means the application of manure, litter, or process wastewater onto or incorporated into the soil.

**Land application area** means land under control of an AFO owner or operator, whether it is owned, rented, or leased, to which manure, litter, or process wastewater from the production area is or may be applied.

**Liquid manure handling system** means a system that collects and transports or moves waste material with the use of water, such as in washing of pens and flushing of confinement facilities. This would include the use of water impoundments for manure and/or wastewater treatment.

**Manure** is defined to include manure, litter, bedding, compost, and raw materials or other materials commingled with manure or set aside for land application, other use, or for disposal.

**Maximum operating level** means the elevation in a waste storage facility designed to contain the manure, wastewater, bedding, precipitation, runoff, solids accumulation and other wastes accumulated during the storage period in accordance with the VT NRCS Conservation Practice Standard #313.

**Medium concentrated animal feeding operation (“Medium CAFO”)** means any AFO with the type and number of animals that fall within any of the ranges listed below and which has been defined or designated as a CAFO. An AFO is defined as a Medium CAFO if the type and number of animals that it stables or confines falls within any of the following ranges:

200 to 699 mature dairy cows, whether milked or dry; 300 to 999 veal calves; 300 to 999 cattle other than mature dairy cows or veal calves. Cattle includes but is not limited to heifers, steers, bulls and cow/calf pairs; 750 to 2,499 swine each weighing 55 pounds or more; 3,000 to 9,999 swine each weighing less than 55 pounds; 150 to 499 horses; 3,000 to 9,999 sheep or lambs; 16,500 to 54,999 turkeys; 9,000 to 29,999 laying hens or broilers, if the AFO uses a liquid manure handling system; 37,500 to 124,999 chickens (other than laying hens), if the AFO uses other than a liquid manure handling system; 25,000 to 81,999 laying hens, if the AFO uses other than a liquid manure handling system; 10,000 to 29,999 ducks if the AFO uses other than a liquid manure handling system; or 1,500 to 4,999 ducks if the AFO uses a liquid manure handling system; **and**

Either one of the following conditions are met:

1. Pollutants are discharged into waters of the State through a man-made ditch, flushing system, or other similar man-made device; or
24. Pollutants are discharged directly into waters of the State which originate outside of and pass over, across, or through the facility or otherwise come into direct contact with the animals confined in the operation.

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**Notice of Intent (NOI)** is a form submitted by the owner/operator applying for coverage under this ~~e~~General ~~p~~Permit. It requires the applicant to submit the information necessary for adequate program implementation as indicated at 40 CFR § 122.28(b)(2)(ii).

**NRCS** means United States Department of Agriculture (USDA) Natural Resources Conservation Service.

**Nutrient Management Plan** means the system by which animal waste generation, storage, and use is handled for the purpose of obtaining optimum forage and crop yields including the related management aspects of fertilizer nutrients, conservation practices, animal mortalities, clean water, chemical handling, waste and soil testing, and record keeping.

**NMP** means nutrient management plan.

**Overflow** means the discharge of manure or process wastewater resulting from the filling of wastewater or manure storage structures beyond the point at which no more manure, process wastewater, or stormwater can be contained by the structure.

**Permittee** means a person or business that has received coverage under this ~~g~~General ~~p~~Permit.

**Point Source** means any discernible, confined, and discrete conveyance, including but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, landfill leachate collection system, vessel or other floating craft from which pollutants are or may be discharged. This term does not include return flows from irrigated agriculture or agricultural storm water runoff.

**Process wastewater** means water directly or indirectly used in the operation of the AFO for any or all of the following: spillage or overflow from animal or poultry watering systems; washing, cleaning, or flushing pens, barns, manure pits, or other AFO facilities; direct contact swimming, washing, or spray cooling of animals; or dust control. Process wastewater also includes any water which comes into contact with any raw materials, products, or byproducts including manure, litter, feed, milk, eggs, or bedding.

**Production Area** means that part of an AFO that includes any and all animal confinement areas, the manure storage areas, the raw materials storage areas, and the waste containment areas. The animal confinement area includes any and all open lots, housed lots, feedlots, confinement houses, stall barns, free stall barns, milkrooms, milking centers, cowyards, barnyards, medication pens, walkers, animal walkways, and stables. The manure storage areas include any and all lagoons, runoff ponds, storage sheds, stockpiles, under house or pit storages, liquid impoundments, static piles, and composting piles. The raw materials storage areas include any and all feed silos, silage bunkers, and bedding materials. The waste containment area includes settling basins, and areas within berms and diversions which separate uncontaminated storm water. Also included in the definition of production area is any egg washing or egg processing facility, and any area used in the storage, handling, treatment, or disposal of mortalities.

**Secretary** means the Secretary of the Agency of Natural Resources or the Secretary's duly authorized representative.

**25-year, 24-hour storm event** means a precipitation event with a probable recurrence interval of once in 25 years as defined by the National Weather Service in the National Oceanic and Atmospheric Administration Atlas 14 Point Precipitation Frequency Estimates, or its official update.

**Vegetated Buffer** means a permanent strip of dense perennial vegetation established parallel to the contours of and perpendicular to the dominant slope of the field for the purposes of slowing water runoff, enhancing water infiltration, and minimizing risk of any potential nutrients or pollutants from leaving the field and reaching surface waters.

**Vermont Water Quality Standards** means the standards and criteria adopted by the Vermont Water Resources Board, pursuant to 10 V.S.A. Chapter 47, § 1252(e).

**Waste or Agricultural Waste** for the purposes of this permit includes spoiled feed, manure, milk house waste, washwater, leachate, used bedding, carcasses, barnyard runoff, process wastewater, other dirty water, and imports to a manure storage or for direct land application.

**Waste Management System** means an on-farm waste management program and conservation practices which include a combination of:

1. An adequately sized waste storage facility, field stacking, composting, leachate control system, and milkhouse waste system;
25. Contracts which transfer the ownership of wastes generated at a production area to another party for management in a manner determined by the Secretary; and/or
26. A NMP for all wastes to be applied in compliance with this permit.

**Commented [DJ16]:** Should be "2." and "3."  
(instead of 25./26.)

**Waste storage facility** means a facility constructed for the purpose of storing agricultural waste by means including constructing an embankment, excavating a pit or dugout, fabricating an in-ground or above-ground structure, or any combination thereof.

**Waters of the United States** means all rivers, streams, creeks, brooks, wetlands, reservoirs, ponds, lakes, springs and all bodies of surface waters, artificial or natural, which are contained within, flow through or border upon the State of Vermont or any portion of it.

## APPENDIX A

### Terms of the Nutrient Management Plan

Rates of application shall be determined by using one of the following two approaches:

1. **Linear approach.** An approach that expresses rates of application as pounds of nitrogen and phosphorus, according to the following specifications:

The terms include maximum application rates from manure, litter, and process wastewater for each year of permit coverage, for each crop identified in the NMP, in chemical forms determined to be acceptable to the Secretary, in pounds per acre, per year, for each field to be used for land application, and certain factors necessary to determine such rates. The maximum application rates from manure, litter, and process wastewater must be calculated based on representative samples as described in 2.II below and the VT NRCS 590 standard. At a minimum, the factors that are terms must include: the outcome of the field-specific assessment of the potential for nitrogen and phosphorus transport from each field; the crops to be planted in each field or any other uses of a field such as pasture or fallow fields; the realistic yield goal for each crop or use identified for each field; the nitrogen and phosphorus recommendations from sources specified by the Secretary for each crop or use identified for each field; credits for all nitrogen in the field that will be plant available; and accounting for all

other additions of plant available nitrogen and phosphorus to the field. In addition, the terms include the form and source of manure, litter, and process wastewater to be land-applied; the timing and method of land application; and the methodology by which the NMP accounts for the amount of nitrogen and phosphorus in the manure, litter, and process wastewater to be applied; or

27. **Narrative rate approach.** An approach that expresses rates of application as a narrative rate of application that results in the amount, in tons or gallons, of manure, litter, and process wastewater to be land applied, according to the following specifications:
- a) The terms include maximum amounts of nitrogen and phosphorus derived from all sources of nutrients, for each crop identified in the NMP, in chemical forms determined to be acceptable to the Secretary, in pounds per acre, for each field, and certain factors necessary to determine such amounts. At a minimum, the factors that are terms must include: the outcome of the field-specific assessment of the potential for nitrogen and phosphorus transport from each field; the crops to be planted in each field or any other uses such as pasture or fallow fields (including alternative crops identified in accordance with paragraph b. below); the realistic yield goal for each crop or use identified for each field; and the nitrogen and phosphorus recommendations from sources specified by the Secretary for each crop or use identified for each field. In addition, the terms include the methodology by which the NMP accounts for the following factors when calculating the amounts of manure, litter, and process wastewater to be land applied: results of soil tests conducted in accordance with protocols identified in the NMP, as required by Part IV.A.1 of the permit; credits for all nitrogen in the field that will be plant available; the amount of nitrogen and phosphorus in the manure, litter, and process wastewater to be applied; accounting for all other additions of plant available nitrogen and phosphorus to the field; the form and source of manure, litter, and process wastewater; the timing and method of land application; and volatilization of nitrogen and mineralization of organic nitrogen.
  - b) The terms of the NMP include alternative crops identified in the CAFO's NMP that are not in the planned crop rotation. Where a CAFO includes alternative crops in its NMP, the crops must be listed by field, in addition to the crops identified in the planned crop rotation for that field, and the NMP must include realistic crop yield goals and the nitrogen and phosphorus recommendations from sources specified by the Secretary for each crop. Maximum amounts of nitrogen and phosphorus from all sources of nutrients and the amounts of manure, litter, and process wastewater to be applied must be determined in accordance with the methodology described in paragraph a) above.
  - c) For CAFOs using this approach, the following projections must be included in the NMP submitted to the Secretary, but are not terms of the NMP: the CAFO's planned crop rotations for each field for the period of permit coverage; the projected amount of manure, litter, or process wastewater to be applied; projected credits for all nitrogen in the field that will be plant available; accounting for all other additions of plant available nitrogen and phosphorus to the field; and the predicted form, source, and method of application of manure, litter, and process

wastewater for each crop. Timing of application for each field, insofar as it concerns the calculation of rates of application, is not a term of the NMP.

d) CAFOs that use this approach must calculate maximum amounts of manure, litter, and process wastewater to be land applied at least once each year using the methodology required in paragraph 2.a) above before land applying manure, litter, and process wastewater and must rely on the following data:

- I. A field-specific determination of soil levels of phosphorus, including the results of the most recent soil test conducted in accordance with soil testing requirements approved by the Secretary; and
- II. The results of most recent representative manure, litter, and process wastewater tests for nitrogen and phosphorus taken within 12 months of the date of land application, in order to determine the amount of nitrogen and phosphorus in the manure, litter, and process wastewater to be applied. A representative sample means a sample taken according to University of Vermont guidance “Taking a Manure Sample”. Each waste storage facility and field stack must be sampled and utilized in the NMP based on the VT NRCS 590 Standard.

Terms of the NMP Summary Table

NMP Components	Enforceable Permit Term – Linear Approach	Enforceable Permit Term – Narrative Rate Approach
Part IV (A)(1)(a-o) of the GP	X	X
Total herd size	X	X
Fields available for land application	X	X
Outcome of the P-Index and Nitrogen Leaching Index	X	X
Planned crops	X	X
Realistic crop yield goals	X	X
Total N and P recommendations per crop	X	X
Credits for plant available N	X	
Accounting for all other additions of plant available N and P	X	

Method and timing of land application	X	
Form and source of manure, litter, and process wastewater	X	
Maximum pounds of N and P from manure, litter, and process wastewater	X	
Methodology to account for the amount of N and P in manure to be applied	X	
Crop rotation	X	
Maximum amount of N and P from all sources		X
Alternative crops		X
Methodology to account for: - Soil test results - Credits for plant available N - Amount of N and P in manure, litter, and process wastewater to be applied - Accounting for all other additions of plant available N and P to the field - Form, source of manure, litter, and process wastewater - Timing and method of land application - Volatilization of N and mineralization of organic N		X

**APPENDIX B**

**PRISM Climate Data 80th Percentile Exceedance Probability Rainfall Data by Town**

<b>Monthly 80th percentile Ppt (in.):</b>	<b>Jan</b>	<b>Feb</b>	<b>Mar</b>	<b>Apr</b>	<b>May</b>	<b>Jun</b>	<b>Jul</b>	<b>Aug</b>	<b>Sep</b>	<b>Oct</b>	<b>Nov</b>	<b>Dec</b>
Addison	3.28	2.67	3.16	4.33	4.58	6.27	4.78	4.44	3.69	5.57	3.67	4.12
Albany	3.86	3.51	3.87	4.53	5.52	6.96	7.12	6.30	4.84	7.44	4.92	4.95
Alburgh	3.07	2.77	3.17	4.46	4.91	5.87	5.24	4.86	4.67	6.08	4.22	4.00
Andover	5.29	4.04	5.26	5.79	5.57	6.20	5.55	5.79	5.64	6.80	5.10	5.58
Arlington	5.62	4.30	4.91	5.66	6.09	6.55	6.53	6.39	5.31	6.88	5.22	6.13
Athens	5.15	3.93	4.93	5.43	5.34	6.14	6.07	5.56	5.41	6.61	4.89	5.47
Averill	4.22	3.32	4.13	5.02	6.69	7.83	6.56	8.01	5.47	6.85	5.66	4.76
Averys Gore	4.28	3.60	4.54	4.66	6.30	8.18	6.68	7.63	5.78	6.90	5.34	5.07
Bakersfield	3.74	3.28	3.88	4.81	5.42	6.78	5.96	6.02	5.14	6.82	4.62	4.83
Baltimore	4.75	3.36	4.64	5.30	4.87	5.78	5.78	5.26	5.01	6.22	4.59	4.94
Barnard	4.74	3.46	4.54	4.74	5.60	5.67	5.32	5.92	5.08	6.73	4.56	5.13
Barnet	3.16	3.04	3.19	3.97	5.14	6.85	5.85	5.88	4.57	6.07	4.05	4.30
Barre City	3.29	2.69	3.33	4.24	4.86	6.83	5.80	5.24	4.42	5.53	3.84	4.58
Barre Town	3.35	2.83	3.52	4.56	5.05	6.87	6.14	5.45	4.60	5.78	3.92	4.59
Barton	3.81	3.25	3.65	4.29	5.56	6.23	6.19	6.14	4.87	6.87	4.39	4.79
Belvidere	4.81	4.15	4.62	5.43	6.33	8.06	6.72	7.06	6.01	8.04	5.75	5.85
Bennington	4.44	3.58	4.00	4.97	5.80	6.31	6.08	6.54	5.46	5.66	4.78	5.19
Benson	3.55	2.94	3.57	4.39	5.09	5.57	5.67	4.68	4.37	6.00	3.74	4.14
Berkshire	3.77	3.26	3.86	5.10	5.38	5.78	6.08	5.64	5.59	6.66	4.54	4.73
Berlin	3.44	2.85	3.72	4.69	5.01	7.13	5.66	5.33	4.39	5.70	3.86	4.75
Bethel	4.56	3.55	4.26	5.02	5.75	6.58	5.36	5.42	4.56	6.37	4.40	5.13
Bloomfield	3.61	2.87	3.09	4.53	5.67	7.34	6.09	7.12	4.80	6.77	4.75	4.17
Bolton	4.18	3.82	4.72	6.07	6.46	7.75	6.29	6.58	5.76	7.87	5.50	5.72
Bradford	3.37	3.03	3.14	4.21	5.17	5.90	6.00	5.46	4.60	6.03	4.15	4.23



Braintree	4.42	3.61	4.28	5.20	5.56	6.84	5.80	5.98	4.74	6.63	4.33	5.25
Brandon	3.46	2.98	3.21	4.38	5.32	6.55	6.04	4.92	4.56	6.31	4.19	4.29
Brattleboro	5.05	4.21	5.22	5.69	5.78	6.84	5.48	5.97	6.18	6.99	4.82	5.68
Bridgewater	4.81	3.65	4.63	4.97	5.51	5.54	5.42	5.95	5.15	6.44	4.97	5.23
Bridport	3.26	2.64	3.04	4.43	4.75	6.28	4.94	5.02	3.65	5.64	3.37	3.96
Brighton	4.05	3.16	3.72	4.13	5.63	6.13	6.10	6.22	5.60	7.18	4.51	4.33
Bristol	3.65	2.93	3.69	4.90	5.91	6.88	5.62	5.60	4.71	7.09	4.42	4.55
Brookfield	3.99	3.32	3.78	5.07	5.38	6.83	6.20	5.89	4.58	5.82	4.08	4.55
Brookline	4.95	4.12	4.87	5.46	5.30	6.36	5.64	5.84	5.60	6.85	4.84	5.58
Brownington	3.74	3.21	3.60	4.23	5.45	6.27	5.96	6.15	4.86	6.69	4.26	4.62
Brunswick	3.70	2.86	3.23	4.23	5.36	6.59	5.68	6.48	4.71	6.63	4.32	4.31
Buels Gore	4.84	3.72	4.83	6.07	7.44	8.74	6.79	7.29	5.57	8.95	5.48	5.61
Burke	3.76	3.15	3.67	4.28	5.74	7.01	6.36	6.61	5.04	7.35	4.36	4.64
Burlington	2.61	2.49	3.00	3.93	4.80	5.51	5.24	4.64	4.56	5.72	3.88	3.84
Cabot	3.63	3.31	3.63	4.59	5.41	6.32	6.83	6.01	4.63	6.96	4.60	4.86
Calais	3.47	3.05	3.45	4.51	5.40	6.58	6.45	5.64	4.47	5.94	4.06	4.67
Cambridge	3.96	3.15	4.16	5.29	5.96	7.36	6.05	5.94	5.72	7.63	5.27	5.17
Canaan	3.75	2.91	3.65	4.63	5.73	6.67	5.53	7.33	5.01	6.05	4.76	4.11
Castleton	3.93	3.31	3.61	4.26	5.41	5.63	6.04	5.31	4.48	6.04	4.37	4.70
Cavendish	4.80	3.46	4.75	5.31	5.02	5.62	5.81	5.61	5.27	6.32	4.68	5.09
Charleston	3.88	3.26	3.65	4.16	5.48	5.81	5.80	6.37	5.22	6.83	4.35	4.52
Charlotte	3.04	2.76	2.98	4.01	5.02	6.00	5.11	4.86	4.05	5.75	3.83	4.11
Chelsea	3.55	2.79	3.46	4.33	5.04	6.11	5.68	5.74	4.55	5.73	3.96	4.33
Chester	4.89	3.48	4.75	5.39	5.07	5.85	5.46	5.65	5.21	6.36	4.69	5.08
Chittenden	5.11	3.71	4.91	5.71	6.58	6.94	6.90	6.22	5.84	7.43	5.21	5.92
Clarendon	4.32	3.33	4.08	4.39	5.49	5.72	5.78	5.57	4.37	5.64	4.50	4.90
Colchester	2.59	2.30	3.01	4.11	4.91	5.72	5.29	4.58	4.69	5.81	3.86	3.76
Concord	3.34	2.95	3.11	4.13	5.34	6.28	5.61	5.85	4.35	5.71	3.93	4.03
Corinth	3.86	3.09	3.48	4.81	5.44	6.09	6.23	5.62	4.45	6.09	4.17	4.67
Cornwall	3.15	2.84	2.94	4.42	5.11	6.75	5.07	5.29	3.74	6.01	3.36	3.94

Coventry	3.80	3.23	3.59	4.34	5.29	6.37	5.67	6.30	4.79	6.32	4.48	4.76
Craftsbury	3.78	3.46	3.90	4.53	5.64	6.90	6.75	6.02	4.77	7.32	4.82	4.90
Danby	5.22	4.19	5.20	5.64	5.94	6.25	6.48	5.90	5.13	6.56	5.43	6.34
Danville	3.49	3.21	3.47	4.18	5.17	6.03	6.10	5.99	4.35	6.93	4.28	4.97
Derby	3.82	3.29	3.64	4.32	5.36	6.63	6.01	6.26	4.71	6.24	4.45	4.68
Dorset	5.45	4.40	5.33	5.55	6.23	7.16	6.88	6.57	5.45	6.90	5.65	6.64
Dover	6.75	4.65	6.35	6.24	5.83	6.73	5.56	6.36	6.18	7.39	5.96	6.70
Dummerston	4.89	4.01	4.82	5.37	5.49	6.31	5.64	5.87	5.73	6.73	4.72	5.50
Duxbury	4.45	3.55	4.55	5.94	6.12	7.77	6.52	6.31	5.35	7.70	5.18	5.58
East Haven	4.48	3.62	4.38	4.87	6.22	7.80	7.60	7.49	5.57	8.19	5.42	5.33
East Montpelier	3.51	2.92	3.55	4.49	5.15	6.84	5.70	5.66	4.50	5.72	4.00	4.50
Eden	4.13	3.76	4.14	4.94	5.62	7.70	6.59	6.56	5.07	7.38	5.29	5.19
Elmore	3.81	3.47	3.99	4.99	5.63	7.26	6.23	6.20	4.87	7.05	4.71	4.97
Enosburg	3.68	3.07	3.72	4.53	5.27	6.00	5.96	5.70	5.33	6.85	4.37	4.58
Essex	3.17	2.80	3.46	4.43	5.43	6.18	5.42	5.51	4.83	6.24	4.17	4.36
Fair Haven	4.22	3.27	3.89	4.72	5.19	5.88	5.90	5.55	4.54	6.00	4.31	4.36
Fairfax	3.28	2.91	3.32	4.62	5.18	6.21	5.58	5.45	4.86	6.39	4.24	4.37
Fairfield	3.32	2.79	3.51	4.73	5.16	6.08	5.51	5.62	5.12	6.52	4.30	4.47
Fairlee	3.43	2.94	3.24	3.94	4.89	5.66	5.57	4.74	4.52	5.93	3.89	4.03
Fayston	5.17	3.93	5.07	6.32	7.24	8.24	7.13	6.87	5.47	8.45	5.66	5.97
Ferdinand	4.21	3.18	3.95	4.37	5.81	7.14	6.29	6.58	5.13	7.49	4.81	4.84
Ferrisburg	3.12	2.74	2.87	3.99	5.15	5.89	4.88	4.42	4.19	5.63	4.11	3.77
Fletcher	3.60	2.98	3.70	4.89	5.54	6.68	5.52	5.79	5.11	6.77	4.74	4.80
Franklin	3.40	2.88	3.47	4.81	4.91	5.52	5.34	5.06	5.56	6.23	4.21	4.30
Georgia	2.70	2.78	2.99	4.48	4.95	5.78	5.33	5.02	4.76	6.17	4.14	4.11
Glastenbury	6.80	5.32	6.30	6.72	7.12	7.37	6.86	7.01	7.12	7.80	6.46	7.08
Glover	3.85	3.38	3.59	4.48	5.58	6.57	6.28	6.26	5.14	7.44	4.66	4.87
Goshen	4.68	3.59	4.58	5.52	6.61	7.39	7.01	6.77	5.38	7.74	5.25	5.64
Grafton	5.19	3.94	4.88	5.53	5.11	5.86	5.87	5.66	5.49	6.66	4.83	5.39
Granby	4.34	3.57	4.20	4.92	6.14	7.20	5.91	6.91	5.14	7.75	5.20	5.18

Grand Isle	2.43	2.54	2.80	3.99	4.83	5.75	4.79	4.67	4.20	5.70	3.88	3.68
Granville	4.83	3.79	4.54	5.23	6.30	7.46	6.62	6.27	4.89	7.52	4.80	5.85
Greensboro	3.74	3.34	3.76	4.59	5.60	6.27	6.30	6.56	5.01	7.21	4.67	4.75
Groton	3.69	3.23	3.59	4.46	5.57	6.34	5.95	6.30	4.76	6.62	4.34	4.74
Guildhall	3.60	3.05	3.27	4.84	6.05	6.44	5.28	6.07	4.78	6.48	4.25	4.25
Guilford	5.20	4.24	5.69	5.84	6.08	6.77	6.04	6.58	6.53	7.21	5.18	5.46
Halifax	5.65	4.64	6.14	6.14	6.79	7.05	6.18	6.12	6.92	7.59	5.55	5.91
Hancock	5.08	3.79	4.96	5.78	6.54	7.48	6.79	6.76	5.36	7.72	5.14	6.14
Hardwick	3.51	3.13	3.52	4.33	5.42	6.18	6.22	5.40	4.67	6.71	4.32	4.51
Hartford	4.32	3.25	4.14	4.37	4.68	4.48	5.53	4.50	4.20	5.85	4.00	4.34
Hartland	4.55	3.31	4.13	4.72	4.87	4.68	5.22	4.50	4.40	6.18	4.02	4.61
Highgate	3.40	2.85	3.30	4.79	5.30	6.33	5.19	5.17	4.86	6.48	4.33	4.17
Hinesburg	3.56	2.87	3.52	4.44	5.69	6.75	5.36	5.54	4.91	6.44	4.22	4.40
Holland	3.97	3.50	3.99	4.36	5.50	7.62	6.44	7.17	4.99	6.33	4.47	4.97
Hubbardton	3.85	3.35	3.72	4.50	5.57	6.02	6.08	5.63	4.63	6.37	4.47	4.68
Huntington	4.13	3.21	4.44	5.68	6.82	8.12	6.04	6.72	5.56	8.25	5.16	5.15
Hyde Park	3.44	3.28	3.74	4.81	5.48	7.03	6.15	5.98	4.63	6.93	4.51	4.62
Ira	4.67	3.64	4.65	5.01	5.86	6.05	6.18	5.85	4.73	6.10	4.82	5.42
Irasburg	3.83	3.36	3.77	4.43	5.38	6.55	6.27	6.09	4.86	6.76	4.65	4.90
Isle La Motte	2.78	2.54	2.92	4.08	5.06	5.75	4.96	5.37	4.53	5.64	4.09	3.85
Jamaica	5.38	4.26	5.22	5.96	5.55	6.07	5.97	5.44	5.32	6.86	5.04	6.08
Jay	5.03	4.87	5.04	5.08	6.00	7.14	6.81	7.27	5.81	8.18	5.51	6.50
Jericho	3.43	2.88	3.63	4.72	5.58	6.29	5.59	5.54	5.25	6.51	4.57	4.80
Johnson	3.81	3.32	4.15	5.23	5.81	7.49	6.18	6.00	5.28	7.44	5.12	5.06
Killington	5.10	4.05	5.33	5.57	5.93	6.02	6.34	6.32	5.64	7.04	5.40	5.66
Kirby	3.63	3.20	3.70	4.41	5.62	6.59	6.28	6.70	4.78	6.96	4.38	4.63
Landgrove	5.26	4.23	5.24	5.86	5.96	6.67	6.04	6.26	5.58	6.82	5.43	5.85
Leicester	3.46	2.77	3.26	4.46	5.43	6.58	6.30	5.08	4.26	6.42	4.21	4.18
Lemington	3.56	2.75	3.40	5.53	6.53	7.24	6.00	8.83	5.14	6.83	5.38	4.11
Lewis	4.05	2.97	3.68	4.14	5.75	7.26	6.17	6.93	5.32	6.92	4.75	4.40

Lincoln	4.16	3.37	4.52	5.02	6.49	7.63	6.72	6.70	5.02	8.61	5.05	5.04
Londonderry	5.24	4.29	4.94	5.79	5.28	6.39	5.55	5.39	5.47	6.70	4.81	5.78
Lowell	4.41	4.12	4.28	4.83	5.75	7.25	6.67	6.35	5.28	7.67	5.26	5.69
Ludlow	5.11	3.94	4.97	5.54	5.59	5.69	5.77	5.71	5.61	6.39	4.88	5.36
Lunenburg	3.33	2.97	3.16	4.32	5.36	6.07	5.42	5.98	4.40	5.94	4.01	4.10
Lyndon	3.39	3.05	3.24	3.89	5.30	6.35	5.64	5.90	4.59	6.56	3.89	4.47
Maidstone	3.72	3.01	3.20	4.44	5.75	6.13	5.38	6.28	4.47	6.97	4.37	4.31
Manchester	5.59	4.81	5.59	6.04	5.95	6.85	7.24	6.85	5.45	7.06	5.83	6.67
Marlboro	5.73	4.58	5.94	5.94	6.10	6.77	5.76	5.70	6.28	7.21	5.37	6.02
Marshfield	3.41	3.05	3.45	4.53	5.27	6.37	6.50	5.84	4.73	6.50	4.10	4.41
Mendon	5.00	3.92	4.94	5.70	5.90	6.24	6.48	6.60	5.63	7.01	5.46	5.93
Middlebury	3.27	2.79	3.15	4.37	5.40	7.20	5.35	5.20	4.14	6.45	4.06	4.12
Middlesex	4.06	3.32	4.06	5.15	5.79	7.00	5.95	6.06	4.52	6.19	4.27	5.10
Middletown Springs	4.70	3.61	4.79	5.03	5.88	6.41	5.88	5.64	4.62	6.00	4.87	5.45
Milton	2.76	2.57	2.98	4.35	5.03	6.02	5.38	4.72	4.59	6.01	3.98	3.99
Monkton	3.59	2.91	3.36	4.58	5.78	6.58	4.93	5.28	4.77	6.41	3.97	4.18
Montgomery	4.82	4.50	4.51	5.06	5.81	7.62	6.37	6.46	5.63	7.82	5.28	5.82
Montpelier	3.31	2.83	3.61	4.51	4.89	7.12	5.40	5.27	4.40	5.61	3.92	4.57
Moretown	3.81	3.08	3.84	5.11	5.50	7.26	5.62	5.74	4.72	6.51	4.14	5.06
Morgan	3.84	3.36	3.78	4.25	5.47	6.45	6.07	5.95	5.37	6.75	4.37	4.53
Morristown	3.82	3.50	3.99	4.95	5.69	7.18	6.17	5.71	5.07	7.20	4.83	4.99
Mount Holly	5.18	4.23	5.13	5.83	5.98	5.99	5.56	5.92	5.61	6.50	5.39	5.81
Mount Tabor	5.59	4.67	5.67	6.48	6.73	6.72	6.13	6.57	5.96	6.95	6.14	6.53
New Haven	3.15	2.88	3.21	4.34	5.20	6.64	4.97	5.17	4.10	6.11	4.10	4.09
Newark	3.89	3.34	3.73	4.22	5.94	6.97	6.48	6.69	5.57	7.25	4.47	4.85
Newbury	3.21	2.92	3.07	4.01	5.36	6.35	5.79	5.33	4.50	6.00	4.09	4.09
Newfane	5.26	4.35	5.21	5.75	5.43	6.21	5.52	5.94	6.00	7.02	5.12	5.72
Newport City	3.56	3.02	3.43	4.11	5.22	6.15	5.60	6.38	4.71	5.97	4.27	4.43
Newport Town	3.93	3.37	3.68	4.51	5.38	6.45	5.87	6.45	4.98	6.23	4.62	4.90

North Hero	2.73	2.53	2.93	4.13	5.25	6.08	4.87	5.64	4.65	5.83	4.19	3.92
Northfield	4.13	3.13	4.17	5.20	5.59	7.37	5.72	5.82	4.54	6.45	4.19	5.28
Norton	4.04	3.56	4.34	4.20	5.97	8.54	6.23	8.12	5.05	6.57	4.64	5.11
Norwich	4.01	3.08	3.83	4.15	4.81	4.71	5.65	4.92	4.25	5.84	3.93	4.34
Orange	3.72	3.23	3.76	5.19	5.62	7.10	6.06	6.39	4.90	6.65	4.55	4.89
Orwell	3.40	2.72	3.15	4.31	4.79	5.79	5.42	4.23	4.11	5.80	3.57	3.95
Panton	3.14	2.67	3.01	4.11	4.80	5.91	4.62	4.31	3.77	5.48	3.95	3.91
Pawlet	4.65	3.58	4.49	4.83	5.77	6.37	6.20	5.48	4.43	5.95	4.84	5.30
Peacham	3.60	3.24	3.65	4.27	5.26	6.52	6.35	6.34	4.65	6.76	4.44	4.89
Peru	5.39	4.80	5.56	6.38	6.40	7.61	6.46	6.94	5.84	7.52	5.80	6.32
Pittsfield	4.85	3.76	4.82	5.45	6.04	7.12	5.92	5.92	5.46	7.18	4.67	5.46
Pittsford	3.64	3.27	3.68	4.35	5.48	5.74	6.05	5.44	4.56	6.24	4.20	4.52
Plainfield	3.50	3.04	3.51	4.80	5.32	6.73	6.24	6.23	4.97	6.39	4.06	4.71
Plymouth	5.11	3.96	5.04	5.82	5.68	5.65	5.78	6.28	5.62	6.65	5.46	5.84
Pomfret	4.77	3.57	4.23	4.81	5.04	4.88	5.18	4.97	4.80	6.64	4.38	4.85
Poultney	4.47	3.33	4.05	4.42	5.49	5.77	5.89	5.25	4.56	5.96	4.63	4.90
Pownal	4.36	3.63	4.30	4.56	5.92	6.33	6.25	6.79	5.51	5.83	4.77	4.91
Proctor	3.61	3.20	3.38	3.92	5.10	5.23	5.70	5.24	4.65	5.80	4.03	4.52
Putney	4.77	3.84	4.72	5.38	5.20	6.37	5.96	6.24	5.87	6.69	4.59	5.28
Randolph	4.22	3.23	3.97	5.10	5.32	6.47	5.63	5.58	4.31	5.88	4.22	4.70
Reading	4.75	3.42	4.47	4.83	4.93	5.52	5.43	5.67	5.39	6.43	4.52	5.03
Readsboro	6.22	4.81	6.35	6.10	6.44	8.15	6.02	7.00	6.89	7.48	5.98	6.54
Richford	4.68	4.16	4.44	5.04	5.62	6.70	6.69	6.53	5.67	7.29	5.04	5.64
Richmond	3.45	2.76	3.60	4.63	5.59	6.40	5.46	5.59	4.94	6.50	4.27	4.60
Ripton	4.33	3.48	4.43	5.20	6.56	7.84	6.70	6.89	5.15	8.23	4.98	5.29
Rochester	5.02	3.83	4.96	5.69	6.47	7.37	6.17	6.18	5.62	7.30	4.98	6.04
Rockingham	4.52	3.45	4.31	4.67	4.69	5.65	6.13	5.40	5.44	6.27	4.21	4.75
Roxbury	4.37	3.60	4.34	5.09	5.52	7.06	6.32	5.91	4.71	6.68	4.36	5.37
Royalton	4.28	3.12	3.82	4.67	5.24	5.59	5.25	5.41	4.23	6.08	4.05	4.70
Rupert	5.12	4.07	5.00	5.20	5.85	6.44	6.17	5.71	4.62	6.53	5.14	6.20

Rutland	3.77	3.22	3.49	4.19	5.19	5.25	5.43	5.51	4.29	5.77	4.24	4.44
Rutland City	3.72	3.11	3.58	3.92	5.07	5.37	5.36	5.46	4.41	5.73	4.19	4.29
Ryegate	3.24	3.16	3.25	4.29	5.24	6.66	5.83	6.23	5.20	6.33	4.18	4.34
Salisbury	3.53	2.82	3.32	4.51	5.57	6.72	5.98	5.59	4.73	6.62	4.25	4.24
Sandgate	5.59	4.41	5.42	5.82	6.02	6.46	7.11	6.10	5.07	6.97	5.29	6.50
Searsburg	6.44	5.02	6.04	6.57	6.36	7.55	6.34	7.38	7.05	7.96	6.33	6.92
Shaftsbury	5.38	3.87	4.34	5.41	6.07	6.46	5.76	6.55	5.30	6.40	5.09	5.67
Sharon	4.24	3.04	3.76	4.41	5.01	5.06	5.37	5.11	4.48	6.17	4.11	4.54
Sheffield	3.80	3.46	3.66	4.49	5.76	6.71	6.27	6.47	5.08	7.44	4.57	5.09
Shelburne	2.88	2.64	2.92	4.02	4.93	5.85	5.31	4.53	4.23	5.57	3.86	4.08
Sheldon	3.28	2.74	3.51	4.61	5.33	5.76	5.53	5.46	5.23	6.23	4.21	4.17
Shoreham	3.29	2.63	3.07	4.38	4.79	5.94	4.92	4.63	3.73	5.78	3.42	3.95
Shrewsbury	4.80	3.92	4.99	5.55	5.79	5.73	6.14	6.46	5.52	6.46	5.39	6.01
Somerset	7.02	4.92	6.10	6.29	6.04	7.20	6.10	6.65	6.31	7.33	5.93	6.82
South Burlington	2.64	2.51	3.00	4.02	4.95	5.68	5.26	4.59	4.35	5.75	3.91	4.01
South Hero	2.34	2.44	2.77	4.03	4.75	6.28	5.06	4.95	4.05	5.43	3.69	3.59
Springfield	4.46	3.21	4.35	4.94	4.65	5.46	5.74	5.61	4.98	5.87	4.26	4.67
St. Albans City	2.74	2.77	3.02	4.36	4.97	5.96	5.18	5.15	5.36	5.71	4.12	4.10
St. Albans Town	2.65	2.74	2.87	4.33	5.10	5.98	5.16	4.89	5.06	5.92	4.16	3.93
St. George	3.51	3.03	3.44	4.43	5.45	6.30	5.57	5.34	4.78	6.30	4.47	4.48
St. Johnsbury	3.45	3.02	3.25	4.09	5.08	5.97	5.58	5.71	4.30	5.92	3.97	4.62
Stamford	5.36	4.25	5.62	5.48	6.33	7.48	6.72	7.69	6.47	7.11	5.78	5.75
Stannard	3.79	3.35	3.83	4.71	5.62	6.54	6.71	6.33	5.06	7.11	4.59	4.68
Starksboro	3.88	3.15	4.23	5.35	6.72	7.77	6.06	6.45	5.34	7.83	4.81	4.92
Stockbridge	4.62	3.56	4.45	5.03	5.68	6.53	5.69	5.69	4.73	6.35	4.41	5.22
Stowe	4.46	3.88	4.53	5.93	6.36	7.31	6.67	6.16	5.46	7.52	5.55	5.85
Strafford	4.04	2.95	3.64	4.30	5.07	5.62	5.87	5.47	4.47	6.15	4.07	4.57
Stratton	6.92	5.24	6.86	6.79	6.25	6.95	6.01	7.11	6.79	7.46	6.40	7.01
Sudbury	3.27	2.89	3.25	4.42	5.04	5.96	6.15	4.84	4.32	6.15	3.81	4.07

Sunderland	6.48	5.27	5.96	6.61	6.86	7.33	7.15	6.53	5.97	7.26	6.21	7.11
Sutton	3.82	3.42	3.63	4.38	5.73	6.41	6.14	6.22	5.04	7.21	4.44	4.98
Swanton	2.99	2.58	3.13	4.57	5.27	6.27	5.15	5.00	5.05	6.12	4.27	4.07
Thetford	3.74	2.90	3.43	4.18	5.07	5.42	5.87	4.80	4.26	5.90	3.78	4.15
Tinmouth	5.08	3.98	5.20	5.40	5.83	6.43	5.83	5.95	4.97	6.16	5.16	6.03
Topsham	3.87	3.22	3.61	4.69	5.59	6.88	5.79	6.34	4.46	6.55	4.45	4.98
Townshend	5.20	4.18	5.07	5.66	5.23	6.16	5.48	5.58	5.35	6.84	4.91	5.65
Troy	3.92	3.38	3.71	4.74	5.26	6.09	5.95	6.22	4.77	6.03	4.53	4.86
Tunbridge	3.67	2.79	3.41	4.60	4.99	6.06	5.44	5.69	4.20	5.85	3.95	4.21
Underhill	4.26	3.72	4.60	5.62	6.49	7.67	6.21	6.24	6.04	8.00	5.33	5.67
Vergennes	3.17	2.84	2.85	4.10	5.25	5.57	4.65	4.57	4.08	5.87	4.03	3.81
Vernon	4.87	3.85	4.94	5.44	5.55	6.58	6.14	6.80	6.64	6.63	4.64	5.09
Vershire	4.17	3.03	3.69	4.54	5.10	5.59	5.75	6.10	4.66	6.13	4.24	4.68
Victory	3.74	3.23	3.89	4.56	5.80	6.85	6.01	6.94	4.77	7.20	4.58	4.66
Waitsfield	3.94	3.30	4.20	5.58	5.78	7.61	6.44	6.06	4.70	7.01	4.60	5.52
Walden	3.98	3.47	3.89	4.76	5.67	6.51	6.93	6.36	4.84	7.15	4.81	4.75
Wallingford	4.95	4.00	4.97	5.46	6.02	5.79	5.71	5.50	5.06	6.14	5.11	5.95
Waltham	3.13	2.82	2.97	4.26	5.14	6.49	5.13	4.86	3.91	5.91	4.04	3.92
Wardsboro	6.08	4.49	5.88	6.09	5.87	6.44	5.45	6.17	5.70	7.09	5.77	6.19
Warners Grant	3.97	3.42	3.93	4.37	5.63	7.18	6.41	6.65	5.56	6.85	4.51	4.65
Warren	4.92	3.59	4.85	5.63	6.38	7.74	7.05	6.46	5.36	8.30	5.24	5.72
Warren Gore	3.98	3.44	4.09	4.37	5.69	7.45	6.21	6.86	5.36	6.68	4.54	4.73
Washington	3.77	2.96	3.60	4.97	5.33	6.77	6.86	6.34	4.77	6.17	4.30	4.70
Waterbury	3.87	3.19	3.92	5.27	5.63	6.68	5.80	5.47	4.77	6.75	4.64	5.01
Waterford	3.45	3.10	3.29	4.19	5.42	6.51	5.86	5.95	4.37	5.72	4.03	4.37
Waterville	3.95	3.20	4.12	5.12	5.83	7.47	5.94	6.42	5.40	7.23	5.14	5.02
Weathersfield	4.55	3.09	4.37	4.93	4.63	5.57	5.87	5.31	4.86	6.24	4.31	4.74
Wells	4.50	3.43	4.28	4.74	5.62	6.35	5.59	5.17	4.47	5.86	4.72	5.02
West Fairlee	3.79	3.09	3.51	4.50	5.03	5.65	5.48	5.12	4.54	6.09	4.11	4.46
West Haven	4.32	3.31	3.94	4.71	4.96	5.93	5.97	5.26	4.52	6.07	4.20	4.32

West Rutland	4.05	3.49	3.78	4.32	5.34	5.57	5.89	5.66	4.53	5.86	4.46	4.95
West Windsor	4.64	3.24	4.27	4.76	4.57	5.29	5.64	5.16	4.93	6.24	4.25	4.67
Westfield	4.78	4.61	4.63	5.15	5.79	7.57	6.56	7.10	5.57	7.47	5.18	6.28
Westford	3.44	2.96	3.67	4.77	5.75	7.04	5.49	5.41	5.24	6.62	4.48	4.68
Westminster	4.72	3.58	4.54	5.20	4.97	6.25	5.69	5.86	5.64	6.31	4.44	5.04
Westmore	4.01	3.50	3.89	4.58	5.94	6.34	6.05	6.53	5.50	7.12	4.57	4.97
Weston	5.40	4.27	5.24	5.95	5.82	6.28	5.59	6.03	5.52	6.62	5.43	5.85
Weybridge	3.16	2.73	2.94	4.36	5.07	6.65	4.73	5.14	3.80	5.83	3.67	3.99
Wheelock	3.74	3.30	3.72	4.53	5.61	6.77	6.28	6.53	4.78	7.36	4.47	5.07
Whiting	3.27	2.75	3.09	4.32	4.94	6.09	5.36	4.68	3.81	5.92	3.61	4.00
Whitingham	5.68	4.59	6.13	6.00	6.52	7.39	5.98	5.74	6.91	6.90	5.41	6.11
Williamstown	3.59	2.95	3.76	4.70	5.29	6.71	6.22	5.78	4.71	5.85	3.94	4.58
Williston	3.26	2.93	3.34	4.41	5.53	6.14	5.59	5.33	5.00	6.20	4.34	4.39
Wilmington	6.39	4.83	6.25	6.12	6.10	7.17	5.99	6.72	6.57	7.57	5.88	6.44
Windham	5.70	4.42	5.60	6.11	5.69	6.50	5.79	5.66	5.57	6.97	5.48	5.97
Windsor	4.41	3.10	4.11	4.69	4.27	4.75	5.54	4.94	4.63	6.08	4.02	4.41
Winhall	5.95	4.93	6.16	6.77	6.12	7.28	6.79	6.77	5.86	7.36	6.22	6.61
Winooski	2.78	2.66	3.08	4.08	5.03	5.75	5.43	4.96	4.87	5.84	4.02	3.94
Wolcott	3.60	3.23	3.66	4.56	5.54	6.67	6.40	5.92	4.64	6.96	4.55	4.63
Woodbury	3.55	3.32	3.71	4.67	5.50	6.73	6.59	5.82	4.79	6.49	4.42	4.69
Woodford	6.00	4.58	5.82	6.03	6.45	7.61	6.13	7.42	6.87	7.87	6.12	6.25
Woodstock	4.68	3.43	4.27	4.65	4.94	5.04	5.27	4.78	4.72	6.33	4.28	4.79
Worcester	4.09	3.64	4.35	5.37	6.00	7.08	6.50	6.89	4.79	6.40	4.89	5.30



## APPENDIX C

### VT Waste Storage Facility Evaluation Guide

Introduction: Some Waste Storage Facilities on farms have not been designed or installed under the direction of an engineer or NRCS employee. This guide describes the required evaluation process to help determine if a waste storage facility that has no records of being designed or has no as-built documentation substantially meets the standards in the Medium CAFO GP. This guide does not apply to new practices installed under a CAFO permit. Per the Medium CAFO GP, this evaluation is to be completed by a Professional Engineer licensed in the State of Vermont. The completed documentation is to be maintained on site by the farm, and any deficiencies found are to be documented in the farm's NMP.

Inventory and Evaluation: In consultation with the farm operator, technical service provider, or NRCS personnel as needed, the PE shall do the following:

- Evaluate the type of farming operation, waste management and runoff handling system, and the producer management level.
- Determine the type of animals, herd size, average animal weight, average weight gain/milk production (if applicable), source, quantity and consistency of waste stored, bedding material, and volume of wastewater (including any silage leachate, milkhouse waste, and other process wastewater or contaminated water or liquids that will be directed into the structure).
- Evaluate the existing storage site location for feasibility, giving consideration to manure transfer systems for the loading and unloading, existing buildings, future expansion, access routes, traffic patterns, drainage, utilities, equipment capabilities, safety, neighbors, possible odor problems, and siting. Utilize current soil survey information to evaluate map units and potential inclusions for project compatibility on the site.
- Evaluate other appurtenances of the waste storage facility such as manure transfer components, piping, drainage features, soil erosion control features, runoff control practices, push off walls, access ramps, safety features, fencing, etc.
- Determine the waste storage volume needed using the 180-day storage period. Also determine the length, width, depth and actual storage volume capacity of the existing structure, as well as depth of accumulated solids. Determine maximum operational volume and emergency volume. Determine operational and emergency elevations and compare to existing depth marker, if present, or establish them for a new depth marker.
- Collect design and construction data. Determine when the storage was built, and who the contractor was. Determine what types of construction equipment and methods were used. Determine the site conditions during construction and the types of soils encountered. Determine that the side slopes are appropriate and stable, and that there are not any signs of sliding, cracking, or poor maintenance. Determine if the dike top width is adequate. Determine the history of use for the storage. Determine if the embankment meets the criteria of the Waste Storage Facility Standard.

Based on this initial inventory and evaluation determine the need for additional investigations.