

**SOLID WASTE MANAGEMENT FACILITY  
 FULL CERTIFICATION  
 10 V.S.A. §6605**

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**PERMITTEE:** New England Waste Services of Maine, Inc. dba Casella Organics

**AUTHORIZED REPRESENTATIVE:** Jay Kilbourn, Regional Vice President

**SOLID WASTE I.D. NUMBER:** SW-265

**CERTIFICATION NUMBER:** F15XX

**PROJECT IDENTIFICATION (PIN) NUMBER:** WY09-0011

**CERTIFICATION PERIOD:** Date of signature through March 31, 2025

**FIELD DESIGNATIONS:** **MONITOR WELL DESIGNATIONS:**

**Whitcomb Farm (Essex Junction):**

Site #2	FES0201	MW-1	WES0201 (To be repaired/replaced)
Site #3	FES0202	MW-2	WES0202
		MW-3	WES0203 (To be repaired/replaced)
Site #5	FES0203	MW-4	WES0204
Site #	FES0204	MW-5	WES0205
		MW-6	WES0206
		MW-7	WES0207
		MW-8	WES0208
Site #10	FES0205	MW-9	WES0209
Site #11	FES0206	MW-10	WES0210
		MW-11	WES0211
Site #14	FES0207	MW-12	WES0212
		MW-13	WES0213 (To be repaired/replaced)
Site #16	FES0208	MW-14	WES0214
		MW-15	WES0215
		MW-16	WES0216

**Farr Farm (Richmond):**

Site #1	FRH0201	MW-1	WRH0206
		MW-2	WRH0207
Site #1A	FRH0202	MW-3	WRH0208 (To be repaired/replaced)

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**PURPOSE OF THE CERTIFICATION:** The purpose of this certification is to ensure that the solid waste management facilities for the land management of wastewater treatment sludge (biosolids) are operated in accordance with the conditions set forth herein to protect the public health and safety, and the environment.

**FACILITY DESCRIPTION & LOCATION:** This certification authorizes the land management of biosolids generated by the municipal wastewater treatment process at the Village of Essex Junction's Wastewater Treatment Facility (WWTF). The Permittee has contracted with landowners to utilize biosolids as a soil amendment. Anaerobically treated biosolids are land applied on a total of ten agricultural fields via surface application with a manure spreader, followed by incorporation into the soil or by injection. Eight fields are located in the Village of Essex Junction and two are located in the Town of Richmond. The facility and management strategy are identified and described in the submitted management plan entitled, "Casella Organics Vermont Biosolids Utilization Program Full Recertification Management Plan", dated September 2014.

**FACILITY OPERATION:** Prior to land applying biosolids, the biosolids must be treated to meet the requirements of a Process to Significantly Reduce Pathogens (PSRP) for pathogen reduction, and for vector attraction reduction. All biosolids generated at the wastewater treatment facility are treated in anaerobic digesters for pathogen reduction. Vector attraction reduction of the biosolids is achieved by volatile solids reduction. The biosolids are also tested for nutrient and metal concentrations to determine an appropriate application rate.

The Waste USA landfill, located in Coventry, VT or other appropriate locations owned and/or operated by Casella Organics, will serve as a contingency disposal option for the management of biosolids that fail to meet regulatory standards, or during periods of time the farm fields may not be accessible, or any other time that the WWTF chooses to use the contingency.

**APPLICATION REVIEW:** The Application for certification, dated September 2014, was reviewed in accordance with the Vermont Solid Waste Management Act, 10 V.S.A. §§6601 et. seq., and the Vermont Solid Waste Management Rules, revised March 15, 2012 (Rules). A written application is on file in the office of the Agency of Natural Resources (Agency), Department of Environmental Conservation (Department), Watershed Management Division in Montpelier, Vermont.

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**FINDINGS**

1. On October 2, 2014, the Department received an Application for full certification of biosolids management facilities from the Permittee. The application included a management plan, dated September 2014.
2. The Application was prepared by Anthony Drouin of Casella Organics and certified to be in conformance with the Rules by Anthony Barbagallo, a professional engineer licensed to practice in the State of Vermont.
3. The Permittee provided notice of the Application, in accordance with 10 V.S.A. §6605(f).
4. The Application was reviewed by the Department and determined to be administratively complete on October 22, 2014.
5. The Agency received notification on January 20, 2015, that the public notice required by §6-305 of the Rules had been conducted.
6. Personal history and business disclosure statements for New England Waste Services of Maine, Inc. dba Casella Organics were submitted and reviewed by the Department and by the Department of Public Safety pursuant to 10 V.S.A. §6605f. No disqualifying criteria were found by the review.
7. The application was reviewed by the Department on its technical merits and was determined to be technically complete on March 18, 2015.
8. A draft certification and fact sheet were prepared in accordance with Subchapter 3 of the Rules and were released for public comment. The public comment period was advertised in the *Burlington Free Press* and the *Seven Days*. The public comment period ran from \_\_\_\_\_ through \_\_\_\_\_.

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**CONDITIONS AND REQUIREMENTS FOR OPERATION**

- A. On or before September 30, 2024, the Permittee shall either submit an application for renewal of the Facility's certification and the activities certified herein, or submit a plan for closure of the Facility if re-certification will not be sought.

- B. The Permittee shall perform all actions necessary for the proper management of biosolids in accordance with the Application, the Facility management plan, and the conditions of this certification.
- C. The Permittee shall comply with the provisions, requirements and standards set forth in 10 V.S.A. §§6601 et. seq. and the Rules, except as expressly provided herein.
- D. The sites identified in the Plan (eight sites on property owned by Lorenzo Whitcomb in Essex Junction, and two sites on property owned by Peggy Farr in Richmond), are the only authorized land application facilities. Use of other sites in the State of Vermont for biosolids management via land application without prior written approval from the Secretary shall constitute grounds for revocation of this certification.
- E. Biosolids generated at Essex Junction's WWTF are the only wastes authorized for management via land application. Management of other regulated solid wastes on the land application sites without prior written approval from the Secretary shall constitute grounds for revocation of this certification.
- F. The Permittee shall comply with all the provisions and requirements set forth in section 6-701 of the Rules including, but not limited to, the prevention and control of any nuisance odors, dust, vectors, or other emissions or discharges from the Facility.

**MATERIALS, SITE MANAGEMENT, AND MONITORING REQUIREMENTS**

- G. The Permittee shall comply with all the siting conditions including, but not limited to, isolation distances and separation to groundwater specified for diffuse disposal in Subchapter 5 of the Rules.
- H. The Permittee shall comply with all the facility operation standards, requirements and conditions specified in Subchapter 7 of the Rules including, but not limited to, the following:
  - (1) Application of solid wastes on frozen or snow covered ground is prohibited;
  - (2) Application of solid wastes is prohibited at times when saturated soil is within three feet of the bottom of the zone of incorporation; and
  - (3) All restrictions set forth in Section 6-702(a)(9) of the Rules.

- I. The Permittee shall restrict public access to the sites certified herein for the duration of any biosolids land application event and for a minimum period of twelve (12) months beyond the last disposal episode. The Permittee shall ensure the sites are properly posted for this purpose during these periods.
- J. The Permittee shall ensure that the following site and crop use restrictions are observed:
- (1) Provide for control of public access to the facility for a period of twelve (12) months following the last application of biosolids;
  - (2) Prohibit grazing of domestic food source animals for a period of six (6) months following the last application of biosolids;
  - (3) Prohibit production of crops for direct human consumption for a period of thirty-eight (38) months following the last application of biosolids;
  - (4) Prohibit the harvest of fiber and feed crops (including silage) for a period of five (5) weeks beyond the last disposal episode;
  - (5) Prohibit the harvest of turf for 12 months after the last disposal episode.
- K. The Permittee shall ensure and demonstrate that the biosolids are treated to reduce pathogen content prior to management via land application. Treatment shall be achieved by either anaerobic digestion or by lime stabilization, and shall be demonstrated as follows:
- (1) Adding sufficient hydrated lime,  $\text{Ca(OH)}_2$  or its equivalent, to raise the pH of the biosolids to greater than or equal to 12 standard units (S.U.) and to maintain at a pH greater than or equal to 12 S.U. for a period of two (2) hours without the addition of additional lime; or
  - (2) The biosolids shall be treated under anaerobic conditions for a specific mean cell residence time at a specific temperature. Values for the mean cell residence time and temperature shall be between 60 days at 20 degrees Celsius to 15 days at 35 degrees to 55 degrees Celsius, in accordance with the requirements in EPA document "Environmental Regulations and Technology - Control of Pathogens and Vector Attraction in Sewage Sludge", EPA/625/R-92/013 Revised July 2003.
- L. The Permittee shall ensure and demonstrate that the biosolids are treated to reduce the vector attraction potential prior to management via land application. Treatment shall be achieved and demonstrated by one of the following:

- (1) Adding sufficient hydrated lime,  $\text{Ca}(\text{OH})_2$ , or its equivalent, to raise the pH to greater than or equal to 11.5 or greater for a period of 22 hours without the addition of additional lime. This process shall be conducted immediately following the lime treatment for pathogen reduction as established in Condition K 1) above; or
  - (2) Injecting biosolids directly beneath the soil surface or by incorporation into the soil within 6 hours after the placement onto the land; or
  - (3) Demonstrating a reduction in the mass of volatile solids in the biosolids of 38% or greater across the anaerobic digester, in accordance with the requirements in EPA document "Environmental Regulations and Technology - Control of Pathogens and Vector Attraction in Sewage Sludge", EPA/625/R-92/013 Revised July 2003.
- M. If necessary, the Permittee shall implement a liming program to raise and maintain the soil pH of all land application sites to within the required range of 6.5 S.U. and 8.0 S.U. (aqueous). A site may not be used for land application of biosolids when the site's soil pH is not within the required range.
- N. The Permittee shall calculate and revise the allowable application rates prior to each land application event. The application rates shall be based upon the most recent biosolids analysis results and shall take into account the crop's nutrient requirements and contributions of nutrients from all other sources, and impacts to groundwater.
- O. The Permittee shall clearly delineate prohibited areas with flagging or other suitable markers prior to and during land application of biosolids.
- P. The Permittee shall either inject biosolids beneath the soil surface or, within 48 hours of application incorporate applied biosolids on all sites, due to floodplain restrictions and as to prevent nuisance odors.
- Q. The Permittee shall conduct sampling and analysis of the biosolids, soil, plant tissue, and groundwater in accordance with the parameters and frequencies set forth in Table 2 of this certification. Testing for metals in the biosolids shall be for the total form, and shall be reported in milligrams per kilogram (mg/kg), dry weight basis. Testing for metals in the soil and plant tissue shall be for the available form, and shall be reported in mg/kg, dry weight basis. Testing for metals in the groundwater shall be for the total dissolved form, and shall be reported in milligrams per liter.
- R. In February 2019, a TCLP analysis of the biosolids shall be conducted for all parameters regulated under § 7-208 of the Vermont Hazardous Waste

Management Regulations, effective October 15, 2006 (or the most recent subsequent revision). A mathematical demonstration of passing the TCLP criteria, based upon the most recent total metals analysis, is permitted for the regulated metals only. All other regulated parameters must be the subject of the full extraction and analysis procedure. Any metal which equals or exceeds the regulatory standard via the mathematical demonstration must be subjected to the full extraction and analysis procedure.

### **RECORD KEEPING AND REPORTING**

- S. The Permittee shall submit quarterly reports to the Department by the 15<sup>th</sup> day of the month following the end of each quarter (April 15, July 15, October 15, and January 15).
- T. All sampling and monitoring results and calculations for determining application rates shall be included with the appropriate quarterly submittal to the Department.
- U. If the results of any of the required biosolids monitoring shows an exceedence of a regulatory standard established in the Rules, the Permittee shall notify the Secretary in writing of this fact and reasons for the non-compliance within five (5) days of when the exceedence is detected, together with a proposed strategy for remediation of conditions resulting in the exceedence. If such an exceedence occurs, the Secretary reserves the right to require the Permittee to:
- (1) Conduct studies necessary to determine the source(s) and/or cause(s) of contamination;
  - (2) Take actions necessary to control or repair the cause of any impacts; and
  - (3) Take actions necessary to remediate any impacts.
- V. If the results of any of the required groundwater monitoring shows an exceedence of a trigger value specified in Table 1 of this certification, the Permittee shall notify the Secretary in writing of this fact and reasons for the non-compliance within ten (10) days of when the exceedence is detected, together with a proposed strategy for remediation of conditions resulting in the exceedence. If such an exceedence occurs, the Secretary reserves the right to require the Permittee to:
- (1) Install additional sampling locations and/or require expanded water quality analyses;

- (2) Conduct studies necessary to determine the source of contamination;
  - (3) Take actions necessary to control or repair the cause of any impacts;
  - (4) Take actions necessary to remediate any impacts; and
  - (5) Determine and specify the response(s) to be implemented, as authorized in Subchapter 7 of the Groundwater Rules.
- W. The Permittee shall hold a meeting with landowners and/or property managers in February or March of each year of the certification period for the purpose of discussing and refining fertilization plans for the upcoming growing season. After this meeting, but in no event after April 1 of each year of the certification period, the Permittee shall notify the Department of his or her intent regarding the volumes and times for spreading biosolids at the Facility.
- X. The Permittee shall notify the Department of any land application event at least seven (7) days in advance.
- Y. The Permittee shall keep all records regarding activities, management practices, complaints, and observations in a secure, dry place for the duration of this certification and a minimum period of five (5) years after expiration of this certification.
- Z. In the event of any discharge or emission from the Facility which poses a threat to public health and safety, a danger to the environment, or the creation of a nuisance, the event must be reported within twenty-four (24) hours, or on the next working day, to the Secretary, the local health officer, and the selectpersons of the affected municipalities. Thereafter, Permittee shall submit a written description of the incident to the Department within three (3) days of its occurrence.
- AA. Any and all complaints regarding odors from the Facility received by the Permittee shall be reported to the Department within twenty-four (24) hours of their receipt, or on the next working day, together with a report of the measures taken to resolve the complaint, if any response was necessary.

#### **CLOSURE AND POST-CLOSURE REQUIREMENTS**

- BB. Upon a determination by the Secretary that no further land application will be conducted at the Facility, or upon the Permittee's notice that site use is no longer occurring, the Permittee shall comply with the following post-closure requirements:



- (1) Provide for control of public access to the facility for a period of twelve (12) months following the last application of biosolids;
- (2) Prohibit grazing of domestic food source animals for a period of six (6) months following the last application of biosolids;
- (3) Prohibit production of crops for direct human consumption for a period of thirty-eight (38) months following the last application of biosolids;
- (4) Prohibit the harvest of fiber and feed crops (including silage) for a period of five (5) weeks beyond the last disposal episode;
- (5) Prohibit the harvest of turf for 12 months after the last disposal episode;
- (6) Test the groundwater annually, in the spring after the thaw, for minimum of two years if the site has received seventy-five percent (75%) of the maximum allowable cumulative level based on soil type for any of the metals monitored, or if the Secretary determines a need. The required parameters are listed in this Certification in Table 2. The results shall be submitted to the Department; and,
- (7) Test the soils biannually for a minimum of two years if the site has received seventy-five percent (75%) of the maximum allowable cumulative level based on soil type for any of the metals monitored, or if the Secretary determines a need. The required parameters are listed in this Certification in Table 2. The results shall be submitted to the Department.

### **GENERAL CONDITIONS**

- CC. The Permittee shall comply with all existing federal and state laws, rules and regulations that apply to wastewater treatment biosolids use and management practices and with the technical standards set forth in Section 405(d) of the federal Clean Water Act. If an applicable management practice or numerical limitation for pollutants in biosolids more stringent than existing federal and state regulations is promulgated under Section 405(d) of the federal Clean Water Act, this certification shall be modified or revoked and reissued to conform to the promulgated regulations. Permittee shall comply with the limitations no later than the compliance date specified in the applicable regulations as required by Section 405(d) of the federal Clean Water Act.
- DD. This certification does not convey any property rights of any sort or any exclusive privilege nor does it authorize any injury to private property or any invasion of

personal rights.

- EE. This certification is not alienable, assignable, or transferable without prior written approval from the Secretary. The request for such approval shall include an application for reissuance under the new name and a written agreement which specifies the date of transfer and includes the signatures of the authorized representatives.
- FF. If the Permittee anticipates that any compliance date or operating condition will not be met, Permittee shall notify the Secretary in writing of this fact and reasons for the anticipated non-compliance at least five (5) days prior to the compliance date or conditions in question.
- GG. The Permittee shall report to the Department, all significant changes in the design plans or operation of the Facility at least five (5) working days prior to implementing such modification for review and approval. If the Department determines that an amendment to this certification is a precondition to such changes, those changes may not be implemented until this certification is amended under the Rules.
- HH. This certification may be modified during its term for cause with the written approval of the Secretary. If the Secretary determines that modification is appropriate, only the conditions subject to modifications are reopened. Until a modification is granted, all conditions set forth in this certification remain in full force and effect, pursuant to Section 6-307(a) of the Rules.
- II. This certification may be revoked, in whole or in part, during its term in accordance with the Rules.
- JJ. The Permittee agrees to allow Agency personnel access to the Facility during normal business hours to perform such inspections or other activities pursuant to 10 V.S.A. §8005 as may be required to ensure compliance with this certification, with all applicable statutes, and with the Rules.
- KK. The Secretary retains the right to require Permittee to perform any other action he or she deems necessary in accordance with 10 V.S.A. §6610a.

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**TABLE 1**

**RESPONSE TRIGGER VALUES FOR CONCENTRATIONS  
OF COMPOUNDS IN GROUNDWATER**

<u>PARAMETER</u>	<u>GROUNDWATER</u>
Arsenic	5.0 µg/l
Barium	1000 µg/l
Cadmium	2.5 µg/l
Chloride	125.0 mg/l
Chromium	50.0 µg/l
Copper	650 µg/l
Lead	5.0 µg/l
Mercury	1.0 µg/l
Molybdenum	20.0 µg/l
Nickel	50.0 µg/l
Selenium	25.0 µg/l
Silver	50.0 µg/l
Sulfate	125.0 mg/l
Zinc	5.0 mg/l
Polychlorinated Biphenyls (PCBs)	0.25 µg/l
Nitrate Nitrogen	5000 µg/l

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NOTES: Concentration levels of other parameters are of concern for determining groundwater impacts upon the sites used for biosolids management. A requirement to analyze for other parameters will be evaluated on a case by case basis.

**Table 2**  
**MINIMUM REQUIRED SAMPLING AND TESTING FREQUENCIES**

<u>PARAMETER</u>	<u>BIOSOLIDS</u>	<u>SOIL</u>	<u>GROUNDWATER</u>	<u>PLANT TISSUE<sup>1</sup></u>
Arsenic	Biannual	EOC	Annual	EOC
Barium	None	EOC	Annual	None
Cadmium	Biannual	EOC	Annual	EOC
Chromium	Biannual	EOC	Annual	EOC
Copper	Biannual	EOC	Annual	EOC
Lead	Biannual	EOC	Annual	EOC
Mercury	Biannual	EOC	Annual	EOC
Molybdenum	Biannual	EOC	Annual	EOC
Nickel	Biannual	EOC	Annual	EOC
Selenium	Biannual	EOC	Annual	EOC
Silver	None	None	Annual	None
Zinc	Biannual	EOC	Annual	EOC
Sulfate	None	None	Annual	None
Total Kjeldahl Nitrogen	Biannual	Biannual	None	None
Ammonia Nitrogen	Biannual	Biannual	Biannual	None
Nitrate Nitrogen	Biannual	Biannual	Biannual	None
Total Phosphorus	Biannual	Biannual	None	EOC
Total Potassium	Biannual	None	None	EOC
Total Nitrogen	None	None	None	EOC
Chloride	None	None	Biannual	None
Total Organic Carbon	None	None	Biannual	None
Percent Total Dissolved Solids	None	None	Biannual	None
Polychlorinated Biphenyls (PCBs)	Annual	EOC	EOC	None
Percent Solids	Biannual	None	None	None
pH <sup>2</sup>	****	Biannual	Biannual	None
Liming Requirement	None	Biannual	None	None
Available Potassium	None	Biannual	None	None
Available Magnesium	None	Biannual	None	None
Available Phosphorus	Biannual	Biannual	None	None
Extractable Phosphorous	Biannual	None	None	None
Reactive Aluminum	None	Annual	None	None
TCLP <sup>3</sup>	****	None	None	None

NOTES:

- 1: Plant Tissue sampling is required prior to the end of the certification, the results to be submitted in the application for full certification required in the Compliance Schedule of this certification.
  - 2: pH testing of biosolids must be conducted only if lime stabilization is employed for pathogen and/or vector attraction reduction in accordance with Conditions L and M.
  - 3: TCLP testing of biosolids is required in accordance with Condition R, at a frequency of five (5) years from the date of the last TCLP analysis, unless the results of total metals analyses or a change in the WWTF's collection system indicate a need for an increased frequency.
- Biannual (Biosolids):** Twice per year such that current analytical results are available prior to land applying biosolids so that current application rates may be calculated.
- Biannual (Soil):** Once in the spring and once in the fall.
- Biannual (Groundwater):** Once in the spring after the thaw and once in the fall.
- Annual (Groundwater):** Once in the spring after the thaw.
- EOC:** Sampling prior to the end of the certification, the results to be submitted in the application required in the Compliance Schedule.
- None:** No sampling or testing is required for that parameter in the specific media.

The Department's issuance of this Solid Waste Management Facility Certification relies upon the data, judgment, and other information supplied by the Facility operator, hired professional consultants, and other experts who have participated in the preparation of the application.

The Department makes no assurances that the system certified herein will meet performance objectives of the Permittee, and no warranties or guarantees are given or implied.

The Department staff has reviewed the above project application and finds it to conform to current technical standards. It is recommended that the foregoing findings be made and the Solid Waste Management Facility Certification be issued.

I do affirmatively make the findings as recommended by the staff and approve this Certification.

Dated this \_\_\_\_\_ day of \_\_\_\_\_, 2015, at Waterbury, Vermont.

AGENCY OF NATURAL RESOURCES

David K. Mears Commissioner  
Department of Environmental Conservation

BY: \_\_\_\_\_

Ernest F. Kelley, Program Manager  
Wastewater Management Program  
Department of Environmental Conservation









