STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION
17 STATE HOUSE STATION AUGUSTA, MAINE 04333-0017

DEPARTMENT ORDER

ecomaine **Cumberland County** **Portland, Maine** **A-283-70-G-R/A**	**Departmental** **Findings of Fact and Order** **Part 70 Air Emission License** **Renewal / Amendment**

FINDINGS OF FACT

After review of the Part 70 License renewal application, staff investigation reports, and other documents in the applicant's file in the Bureau of Air Quality, pursuant to 38 Maine Revised Statutes (M.R.S.) § 344 and § 590, the Maine Department of Environmental Protection (Department) finds the following facts:

I. REGISTRATION

A. Introduction

FACILITY	ecomaine
LICENSE TYPE	Part 70 License Renewal Part 70 Minor License Modification
NAICS CODES	562213 Solid Waste Combustors and Incinerators
NATURE OF BUSINESS	Municipal Waste Combustion
FACILITY LOCATION	64 Blueberry Road, Portland, Maine

ecomaine is a waste disposal and recycling organization owned and operated by 20 municipalities. The waste-to-energy process converts solid waste into an ash residue, which minimizes landfill reliance in the State and produces electricity from the fuel value of the municipal waste.

This facility has the potential to emit more than 100 tons per year (TPY) of nitrogen oxides (NO_x) and carbon monoxide (CO); therefore, the source is a major source for these criteria air pollutants.

Based on the Department's Air Toxics Inventory Data, ecomaine does not have the potential to emit 10 TPY or more of a single hazardous air pollutant (HAP) or 25 TPY or more of combined HAP; therefore, the source is classified as an area source for HAP.

B. Emission Equipment

The following emission units are addressed by this Part 70 License:

Municipal Solid Waste Combustors

Municipal Waste Combustors (MWC)	Maximum Heat Input Capacity (each)	Max. Firing Rate (each)	Manuf. Date	Install. Date	Stack #
A-Boiler (Unit #1)	46.75 MMBtu/hr firing natural gas	45,835 scf/hr natural gas* (auxiliary burners)	1987	1988	1
B-Boiler (Unit #2)	122 MMBtu/hr firing waste	275 tons/day firing municipal solid waste			

* based on a heating value of 1,020 Btu/scf of natural gas

Emergency Engines

Equipment	Maximum Heat Input Capacity (MMBtu/hr)	Max. Firing Rate (gal/hr)	Output (kW)	Fuel Type, % sulfur	Mfr. Date	Install. Date	Stack #
Emergency Generator	5.25	37.5	544	Distillate Fuel, 0.0015	1988	1988	2
Diesel Fire Pump	1.43	10.2	139		1987	1988	--

Process Equipment

Equipment	Emissions Control Methods
Ash Handling System	Ash Conditioning
Lime and Carbon Silos	Fabric Filters

ecomaine utilizes a cold cleaning parts washer to clean various metal parts that are used in the operation and maintenance of their facility. This parts washer meets the definition of a cold cleaning machine as specified in *Solvent Cleaners,* 06-096 Code of Maine Rules (C.M.R.) ch. 130, (2)(F). However, because the solvent used in the parts washer contains less than 5% volatile organic compound (VOC) by weight, it is not subject to the requirements of ch. 130.

ecomaine has additional insignificant activities which do not need to be listed in the emission equipment tables above. The list of insignificant activities can be found in the Part 70 license application and in Appendix B of *Part 70 Air Emission License Regulations*, 06-096 C.M.R. ch. 140.

C. Acronyms and Units of Measure

ASTM	American Society for Testing and Materials
BACT	Best Available Control Technology
BPT	Best Practical Treatment
C.F.R.	Code of Federal Regulations
C.M.R.	Code of Maine Rules
CAM	Compliance Assurance Monitoring
CEMS	Continuous Emissions Monitoring System
CO	Carbon Monoxide
COMS	Continuous Opacity Monitoring System
EPA or US EPA	United States Environmental Protection Agency
ESP	Electrostatic Precipitator
gal/hr	gallon per hour
GHG	Greenhouse Gases
gr/dscf	grains per dry standard cubic feet
HAP	Hazardous Air Pollutants
HCl	Hydrogen Chloride or Hydrochloric Acid
Hg	Mercury
lb	pound
lb/hr	pounds per hour
lb/MMBtu	pounds per million British Thermal Units
lb/yr	pounds per year
mg/dscm	milligrams per dry standard cubic meter
M.R.S.	Maine Revised Statutes
MMBtu	Million British Thermal Units
MMBtu/hr	Million British Thermal Units per hour
NESHAP	National Emissions Standards for Hazardous Air Pollutants
ng/dscm	nanograms per dry standard cubic meter
NO_x	Nitrogen Oxides
NSPS	New Source Performance Standards
NSR	New Source Review

O_2	Oxygen
PM	Particulate Matter less than 100 microns in diameter
PM_{10}	Particulate Matter less than 10 microns in diameter
$PM_{2.5}$	Particulate Matter less than 2.5 microns in diameter
ppmdv	parts per million on a dry volume basis
RACT	Reasonably Available Control Technology
RICE	Reciprocating Internal Combustion Engine
SO_2	Sulfur Dioxide
tpy	ton per year
VOC	Volatile Organic Compounds
µg/dscm	micrograms per dry standard cubic meter

D. Definitions

Distillate Fuel means the following:

- Fuel oil that complies with the specifications for fuel oil numbers 1 or 2, as defined by the American Society for Testing and Materials (ASTM) in ASTM D396;
- Diesel fuel oil numbers 1 or 2, as defined in ASTM D975;
- Kerosene, as defined in ASTM D3699;
- Biodiesel, as defined in ASTM D6751; or
- Biodiesel blends, as defined in ASTM D7467.

E. Application Classification

All rules, regulations, or statutes referenced in this air emission license refer to the amended version in effect as of the issued date of this license.

The application submitted by ecomaine is for the renewal of their Part 70 Air Emission License. The application also requests the addition of one distillate fuel-fired emergency fire pump to the equipment roster at ecomaine. This pump is not a new installation but was previously mischaracterized as insignificant by definition based on erroneous equipment sizing information. This addition represents a minor modification to this Part 70 license.

A Part 70 Minor License Modification is for a license change that meets the following criteria:

- Does not violate any Applicable requirement;
- Does not involve a significant change to existing monitoring, reporting, or recordkeeping requirements in the license;
- Does not require or change a case-by-case determination of an emission limitation or other standard, or a source-specific determination for temporary sources of ambient impact or a visibility or increment analysis;

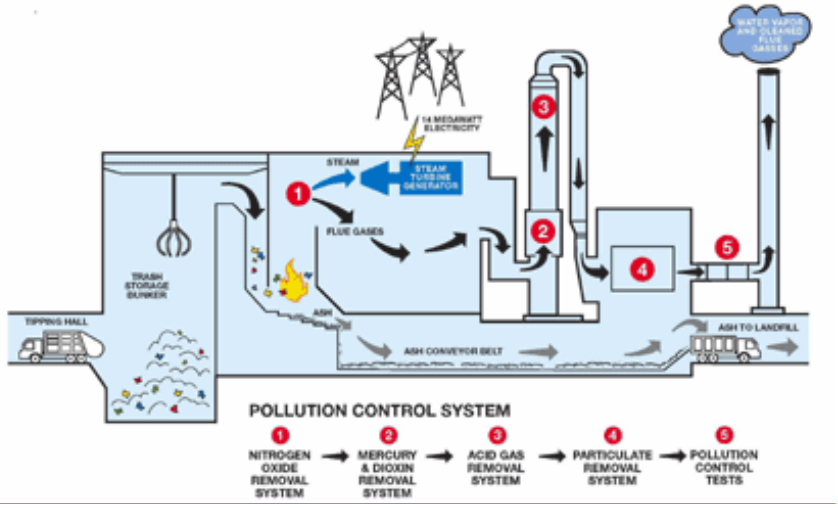
- Does not seek to establish or change a Part 70 license term or condition for which there is no corresponding underlying Applicable requirement, and that the source has assumed to avoid an Applicable requirement to which the source would otherwise be subject. Such terms and conditions include a federally enforceable emissions cap assumed to avoid classification as a Title I modification or a modification or reconstruction under any provision of Section 111, or 112 of the Clean Air Act (CAA); and an alternative emissions limit approved pursuant to regulations promulgated under Section 112(i)(5) of the CAA;
- Is not a Title I modification or a modification or reconstruction under any provision of Section 111 or 112 of the CAA; and
- Is not required by the Department to be processed under Part 70 Significant License Modification procedures.

The addition of the existing recharacterized emergency fire pump to ecomaine's air emission license meets the criteria listed above for a Part 70 Minor License Modification. Therefore, this license is considered to be a Part 70 Minor License Modification and a Part 70 License renewal, processed under 06-096 C.M.R. ch. 140.

F. Facility Description

ecomaine, a non-profit organization, operates a Waste-to-Energy (WTE) facility and a recycling facility on Blueberry Road in Portland, Maine. ecomaine completed construction and began operation of its WTE facility in 1988. A Recycling Center was added to ecomaine's operations in 1990, and single-stream recycling was added in 2007.

ecomaine's WTE facility is a mass burn, water wall design whose objective is twofold: first, to reduce the volume of waste to be landfilled by up to 90%; and second, to generate electricity. "Mass burn" refers to the minimal separation and segregation that is performed on the incoming solid waste prior to it being fed into the boilers. "Water wall" means that the facility's combustion units include integral boilers that convert the heat produced from the combustion of municipal solid waste (MSW) into steam that is used to generate electricity. The WTE facility has two identical process trains, each of which has the ability to process 275 tons per day (TPD) of MSW. When burned, this tonnage can produce up to 122 MMBtu/hr of heat input for each boiler. The WTE facility is scheduled to operate 24 hours a day, 7 days a week, and 365 days a year.



MSW is transported in trucks from residential and commercial participants to ecomaine's Scale House where the trucks are weighed both before and after they deliver the waste to the Tipping Floor. The resulting difference in weights of the truck is the basis used to determine the tipping fee.

The Tipping Hall attendant pushes the MSW from the Tipping Floor into the refuse bunker, which can hold up to 4,000 tons of waste. Two overhead cranes with grapples are located above the refuse bunker and are used by a Crane Cab operator to mix and place the processable waste into the boilers' refuse hoppers. Materials that cannot be processed through the boilers (appliances, gas bottles, etc.) are removed by the Crane Cab operator with the grapple and are placed on the bunker deck for recycling.

The two boilers are designed to operate by continuously feeding MSW into their respective refuse hoppers and fuel feed shafts. The MSW is fed into the boilers by hydraulic mechanical rams, or stokers, which are also used to control the MSW bed depth inside the furnaces. Additional bed depth adjustments can be made by altering the time between refuse feed cycles. Once the MSW is inside the boilers' furnaces, the waste is transported down a series of five inclined grate sections that act independently of each other. The grate sections utilize reciprocating grate bars to move the waste down the inclined grates.

Combustion air is supplied to each furnace in two general locations: beneath each of the grate sections (underfire, or primary air), and above the MSW bed (overfire, or secondary air). The primary air is preheated by steam coil air heaters before being directed into the boiler below the grates. Preheating of the primary air is necessary to assist in the combustion of wet MSW fuel. The total volume of primary air flow to the undergrate zones is controlled by adjusting the output of the Primary Air Fan. The secondary air is introduced above the MSW bed through nozzles located on the front and rear walls of the furnace. The secondary air provides oxygen to and creates turbulence within the combusting gases above the MSW bed which results in a more complete burn of the fuel.

Proper control of combustion gases and stoker firing equipment provides optimal temperatures and promotes complete combustion within the boiler. The uniform temperature of combustion gases and their even distribution within the boiler promotes longer combustion gas retention times which reduces emissions, minimizes slag formation, and diminishes particulate carry over.

The steps of the boiler grate bed design allow the waste to tumble or roll-over, which aids in the complete combustion of the waste. A by-product of the waste combustion process is bottom ash, which is the residue that remains on the grates after the MSW has been burned. Bottom ash can also contain other non-combustible materials such as glass and metal. As the MSW bed advances through the boiler during combustion, it pushes the bottom ash off the last grate section and into the wet ash drag and quench tank of the ash extractor. The ash quench tank is filled with waste water that has been recovered from other facility processes and is used to cool the ash. Once the ash is cool, it is drained and then deposited onto a vibrating conveyor for removal, to be transported to the landfill. Metal in the processed bottom ash is recovered for recycling by a rare earth magnet located over the conveyor system.

Combustion gases in the boilers are pulled through each boiler by negative pressure created by an induced draft fan located just prior to the stack. The combustion gases, which can reach temperatures up to 2000°F, are pulled from the furnace and pass through the superheater, evaporator and economizer sections of the boiler where thermal energy from the gases is transferred to the water inside the boiler tubes in these sections to make steam. This steam exits the boiler at a pressure of 600 psig and a temperature of 752°F and is piped to a turbine-generator set where it is used to drive a turbine. The turbine converts the thermal energy of the steam to a rotational mechanical energy that is used to turn an electrical generator capable of producing up to 14 megawatts (MW) of electricity every hour. Once the steam has passed through the turbine, it is exhausted into a water-cooled condenser where it is cooled and condenses back to water. The condensed water is then returned to the boiler feedwater system to be reused in the boilers to generate more steam. The heat extracted from the condensing steam by the water-cooled condenser is captured in the condenser cooling water, which is pumped to the cooling towers where fans are used to dissipate the heat through evaporation. City water may be added to the cooling tower basin to help maintain proper operating levels.

Emission Control Equipment

Each MWC has its own set of air pollution control devices to treat flue gases generated by the combustion process. These devices are used to remove oxides of nitrogen (NO_x), acid gases (primarily SO_2 and HCl), particulate matter (PM), heavy metals (mercury (Hg), cadmium (Cd), and lead (Pb)), dioxins and furans (polychlorinated dibenzodioxins (PCDD) and polychlorinated dibenzofurans (PCDF)).

ecomaine utilizes selective non-catalytic reduction (SNCR) in the boilers to control emissions of NO_x; powder activated carbon injection for control of Hg, PCDD, and PCDF;

and dry scrubbing and lime injection to neutralize acid flue gases such as SO_2 and HCl. Finally, electrostatic precipitators (ESPs) are employed to remove PM, including Cd and Pb. The cleaned flue gas exits the system through a 218-foot tall stack. Particulate removed by each ESP is called fly ash and is collected in the precipitator hoppers. An ash conveyor system carries the fly ash to a mixer conditioner where it is combined with water to stabilize it and reduce the potential for dust. The conditioned fly ash is then comingled with the bottom ash and is eventually transported to the landfill for disposal.

Continuous Emissions Monitoring Systems (CEMS)
Each MWC has its own set of monitoring systems installed in the breeching between the outlet of the ESP and the stack. The systems that are used to continuously monitor emissions include gaseous continuous emission monitoring systems (CEMS) and continuous opacity monitoring systems (COMS). The NO_x CEMS monitors NO_x to indicate the performance of the SNCR system, and to demonstrate compliance with the NO_x limit. SO_2 is measured both before and after the spray dryer absorber (scrubber) as an indicator of performance of the control equipment. The COMS monitors opacity to document compliance with the opacity limit and also provides an indication of the effectiveness of the ESPs in removing PM.

G. General Facility Requirements

ecomaine is subject to the state and federal regulations listed below in addition to the regulations listed for specific units as described further in this license.

Citation	Requirement Title
06-096 C.M.R. ch. 101	Visible Emissions Regulation
06-096 C.M.R. ch. 102	Open Burning
06-096 C.M.R. ch. 103	Fuel Burning Equipment Particulate Emission Standard
06-096 C.M.R. ch. 104	Incinerator Particulate Matter Standard
06-096 C.M.R. ch. 105	General Process Source Particulate Emission Standard
06-096 C.M.R. ch. 106	Low Sulfur Fuel Regulation
06-096 C.M.R. ch. 109	Emergency Episode Regulations
06-096 C.M.R. ch. 110	Ambient Air Quality Standards
06-096 C.M.R. ch. 114	Classification of Air Quality Control Regions
06-096 C.M.R. ch. 116	Prohibited Dispersion Techniques
06-096 C.M.R. ch. 117	Source Surveillance – Emissions Monitoring
06-096 C.M.R. ch. 121	Emission Limitations and Emission Testing of Resource Recovery Facilities
06-096 C.M.R. ch. 130	Solvent Cleaners
06-096 C.M.R. ch. 137	Emission Statements
06-096 C.M.R. ch. 138	Reasonably Available Control Technology for Facilities that Emit Nitrogen Oxides

Citation	Requirement Title
06-096 C.M.R. ch. 140	Part 70 Air Emission License Regulations
06-096 C.M.R. ch. 143	New Source Performance Standards
06-096 C.M.R. ch. 144	National Emission Standards for Hazardous Air Pollutants
40 C.F.R. Part 60, Subpart A	General Provisions
40 C.F.R. Part 60, Subpart Cb	Emissions Guidelines and Compliance Times for Large Municipal Waste Combustors that are Constructed on or Before September 20, 1994
40 C.F.R. Part 60, Subpart Db	Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units
40 C.F.R. Part 63, Subpart ZZZZ	National Emission Standard for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines
40 C.F.R. Part 64	Compliance Assurance Monitoring
40 C.F.R. Part 70	State Operating Permit Programs

II. BEST PRACTICAL TREATMENT (BPT) AND EMISSION STANDARDS

A. Introduction

In order to receive a license, the applicant must control emissions from each unit to a level considered by the Department to represent Best Practical Treatment (BPT), as defined in *Definitions Regulation*, 06-096 C.M.R. ch. 100. Separate control requirement categories exist for new and existing equipment as well as for those sources located in designated non-attainment areas.

BPT for existing emissions equipment means that method which controls or reduces emissions to the lowest possible level considering the existing state of technology, the effectiveness of available alternatives for reducing emission from the source being considered, and the economic feasibility for the type of establishment involved.

Requirements of BPT specific to each emissions unit or area are included in this license.

B. NO_x RACT (Reasonably Available Control Technology)

Reasonably Available Control Technology for Facilities that Emit Nitrogen Oxides, 06-096 C.M.R. ch. 138 (NO_x RACT) is applicable to sources that have the potential to emit quantities of NO_x equal to or greater than 100 tons/year. The units MWC A and MWC B are both subject to the NO_x emission limit and NO_x monitoring as specified in 06-096 C.M.R. ch. 138 (3)(G)(1) and (2).

The Emergency Generator and Diesel Fire Pump are both limited to 100 hours per year of non-emergency operation on a 12-month rolling total basis, which keeps NO_x emissions under 10 tons per year each and renders these units as exempt per 06-096 C.M.R. ch. 138 (1)(B)(1).

C. VOC RACT (Reasonably Available Control Technology)

Reasonably Available Control Technology for Facilities that Emit Volatile Organic Compounds, 06-096 C.M.R. ch. 134 (VOC RACT) is applicable to sources that have the potential to emit quantities of VOC equal to or greater than 40 tons/year from non-exempt equipment but exempts VOC emissions which result from incomplete combustion. Because VOC emissions emitted from ecomaine result only from incomplete combustion, they are exempt from the requirements of VOC RACT. [06-096 C.M.R. ch. 134 (1)(C)(4)]

D. PSD Review

No Prevention of Significant Deterioration (PSD) licenses involving major modifications have been issued to the facility since the initial Part 70 license.

E. Compliance Assurance Monitoring (CAM)

Compliance Assurance Monitoring, 40 C.F.R. Part 64 is applicable to units at major sources if the unit has emission limits, a control device to meet the limits, and pre-control emissions greater than 100% of the major source threshold (50 tons/year for VOC and 100 tpy for any other pollutant).

This regulation's 40 C.F.R. § 64.2(b)(1)(vi) specifies the exemption from specific CAM requirements for any emission unit subject to emission limitations or standards for which a Part 70 air emission license specifies a continuous compliance determination method. Furthermore, 40 C.F.R. § 64.2(b)(1)(i) specifies the exemption from specific CAM requirements for any emission unit subject to emission limitations or standards in a NSPS or NESHAP regulation proposed by the Administrator after November 15, 1990. [40 C.F.R. Part 64 § 64.2(b)]

The following table lists all the specific pollutants for each unit meeting CAM applicability criteria and the determination of the applicability of CAM requirements for each.

40 C.F.R. Part 64 Applicability Table

Unit	Pollutant	CAM Required	Reason	Regulatory Authority
MWC A and MWC B	PM	No	Subject to standard in NSPS 40 C.F.R. Part 60, Subpart Db proposed after Nov. 15, 1990	40 C.F.R. § 64.2(b)(1)(i)
	SO_2	No	Operating a SO_2 CEMS	40 C.F.R. § 64.2(b)1(vi)
	NO_x	No	Subject to standard in NSPS 40 C.F.R. Part 60, Subpart Cb, proposed after November 15, 1990, and Operating a NO_x CEMS	40 C.F.R. § 64.2(b)1(vi)

Therefore, there are no combustor units at this facility subject to CAM requirements.

F. Fuel Sulfur Content Requirements

ecomaine is licensed to fire distillate fuel which, by definition, has a sulfur content of 0.5% or less by weight. Per 38 M.R.S. § 603-A(2)(A)(3), as of July 1, 2018, no person shall import, distribute, or offer for sale any distillate fuel with a sulfur content greater than 0.0015% by weight (15 ppm). Therefore, the distillate fuel purchased or otherwise obtained for use at this facility shall not exceed 0.0015% by weight (15 ppm).

G. MWC A and MWC B

1. Description

Municipal Waste Combustors A and B (MWC A and MWC B) are boiler units that were manufactured by L&C Steinmuller Engineering GmbH in 1987 and installed in 1988. Their role is to reduce the volume of MSW to be disposed of in the landfill by up to 90% by converting MSW to ash through combustion, while capturing heat generated during the combustion process to produce steam used to drive a turbine-generator set and make electricity. MWC A and MWC B are identical in size and configuration, including their add-on control systems. Each unit has an operating capacity of 275 tons of municipal solid waste per day, and is licensed to fire waste class types 0, 1, 2, 3, and 6 as defined in *Definitions Regulation*, 06-096 C.M.R. ch. 100. Biomedical and Resource Conservation and Recovery Act (RCRA) wastes are not permitted to be fired in the combustors. Each combustor also has an auxiliary burner capable of firing natural gas at a maximum design heat input rate of 46.75 MMBtu/hr. ecomaine limits the amount of natural gas fired in the units to an annual capacity factor of 10% or less; thus, the auxiliary burners are primarily used during startup events and to stabilize boiler operations as needed.

Emissions from the MWCs exhaust through separate control equipment to a common stack with two flues, each of which has an inside diameter of 48 inches and an above ground level (AGL) height of 218 feet.

2. Operating Specifications

a. Capacity

Each boiler train shall be limited to 275 tons of MSW/day, and the total facility shall not be operated at a rate greater than 550 tons of MSW/day. Compliance with the tons of MSW/day limits shall be demonstrated and documented daily using steam flow data, a boiler efficiency of 77%, the enthalpy of steam, and a higher heating value (HHV) of the MSW fuel of 5,311 Btu/lb. Although the HHV of MSW can vary depending on the quality of the fuel, this value correlates to the average HHV cited by the Solid Waste Association of North America (SWANA, the trade organization for WTE facilities). If ecomaine conducts future testing of MSW fuel heating values, or if SWANA updates the average HHV of MSW based on more recent test data which is representative of ecomaine's fuel, the HHV may be adjusted to reflect the most recently established value. [06-096 C.M.R. ch. 140, BPT]

b. MWC Operating Load Level

In accordance with the requirements of 06-096 C.M.R. ch. 121 and 40 C.F.R. Part 60, Subpart Cb, the operating practices requirements of 40 C.F.R. Part 60, Subpart Eb apply to all facilities with large municipal waste combustor units such as ecomaine's MWC A and MWC B. Thus, according to § 60.58b of Subpart Eb, the following requirements are applicable to this facility:

(1) The maximum demonstrated municipal waste combustor unit load shall be determined during each annual performance test, measured as steam flow or feed water flow, and shall not exceed the capacity limits (275 tons MSW/day per unit, 550 tons MSW/day for the facility) as identified in item 2(a) above. The maximum demonstrated municipal waste combustor unit load is the highest four-hour arithmetic average load achieved during four consecutive hours of the most recent emissions test during which compliance with the dioxin/furan emission limit was achieved.

(2) Over any four-hour block period, each MWC operating load level shall not exceed 110% of the maximum demonstrated MWC unit load level measured as steam flow or feedwater flow. This restriction shall not apply to the two weeks prior to and during PCDD/PCDF testing, or may be waived in writing by the Department for purposes of evaluating system performance, testing new technology or control technologies, diagnostic testing, or related activities for the purpose of improving facility performance or advancing the state of the art for controlling facility emissions. [06-096 C.M.R. ch. 121]

c. MWC Outage Procedure

(1) During periods when neither boiler is in operation, the doors to the tipping floor and bunker areas shall be closed so as to prevent odor emissions, unless the facility is receiving MSW. Alternatively, ecomaine may vent these areas to the stack via an induced draft fan.

(2) During times of prolonged facility outage or maintenance, ecomaine shall follow procedures for waste bypass in order to prevent potential environmental impacts of waste storage, as described in ecomaine's waste receiving procedure manual. There shall be no outside storage of waste.

d. Startup, Shutdown and Malfunction

ecomaine shall comply with the emission standards for MWC A and MWC B at all times except for during periods of startup, shutdown, or malfunction.

(1) Definitions

i. **Warm-Up -** For each MWC unit, the warm-up period shall be defined as the time before startup commences, when only natural gas is being fired in the unit.

ii. **Startup** – For each MWC, the startup period (for both cold and warm startup) begins when MSW is fed into the feed chute. Startup does not include any time when the MWC is in a warm-up period. The startup period ends when continuous burning begins in the MWC.

iii. **Continuous Burning** is defined as the continuous, semi-continuous, or batch feeding of MSW for purposes of waste disposal, energy production, or providing heat to the combustion system in preparation for solid waste disposal or energy production.

iv. **Routine Shutdown** – For each MWC, a routine shutdown occurs when MSW is no longer fed into the feed chute for that particular unit and the primary and secondary air fans continue to operate until all of the MSW in the boiler has been burned and discharged into the ash system.

v. **Emergency Shutdown** – For each MWC, an emergency shutdown occurs when MSW is no longer fed into the feed chute for that particular unit and the primary and secondary air fans for that boiler are shut off.

(2) Durations of Startup, Shutdown, or Malfunction Periods

i. Durations of startup, shutdown, or malfunction periods are limited to three hours per occurrence, except as additionally provided for CO emissions in the following paragraph. During periods of startup, shutdown, or

malfunction, monitoring data shall be dismissed or excluded from compliance calculations, but shall be recorded and reported in accordance with the provisions of 40 C.F.R. § 60.59b(d)(7). [40 C.F.R. §60.39b(a)]

ii. For the purpose of compliance with the CO emission limits, if the loss of boiler water level control (e.g., boiler waterwall tube failure) or a loss of combustion air control (e.g., loss of combustion air fan, induced draft fan, combustion grate bar failure) is determined to be a malfunction, the duration of the malfunction period is limited to 15 hours per occurrence. During such periods of malfunction, monitoring data shall be dismissed or excluded from compliance calculations, but shall be recorded and reported in accordance with the provisions of 40 C.F.R. § 60.59b(d)(7).

(3) Stack O_2 Levels During Warm-Up and/or Startup and Shutdown

Stack O_2 levels during MWC warm-up and /or startup and during shutdown that exceed 14.0% may be replaced with a value of 14.0%. In such instances, ecomaine is licensed to recalculate the hourly ppmdv averages for SO_2, NO_x, and CO for compliance purposes. [A-283-70-A-I (December 14, 2005), BPT]

(4) Monitoring During Startup/Shutdown

ecomaine shall maintain records of startups and shutdowns, including dates, times, durations, and the reason for the event, and shall make them available to the Department upon request.

3. Control Methods and Equipment Description

Emissions of air pollutants are controlled through the use of pollutant-specific control equipment. ecomaine shall maintain records of all pollution control equipment inspection and maintenance.

a. Particulate matter emissions (PM, PM_{10}), including heavy metals such as cadmium (Cd) and lead (Pb), are controlled from each MWC by a spray dryer absorber (scrubber) and other auxiliary equipment, followed by an ESP. Flue gas containing pollutants first enters a cyclone separator where larger particles of ash are removed. The flue gas leaves the cyclone separator, passes through the scrubber for acid gas removal, and then enters an ESP for particulate removal.

The ESP is an enclosure in the flue gas path containing grounded vertical plates and electric curtains formed by suspended discharge electrodes. As the flue gas passes through the electric curtains, the PM and heavy metals (Cd and Pb) in the gas stream become electrically charged. As the electrically charged PM and metal particles travel through the ESP, they are attracted to the grounded vertical plates which have an opposing electrical charge. The particles, collectively referred to as

fly ash, accumulate on the plates until they are knocked off by hammer rappers which strike the grounded vertical plates at timed intervals. The fly ash falls off from the plates and is collected in hoppers located at the bottom of the ESP. An ash conveyor system carries the fly ash from the hoppers to a mixer conditioner where it is combined with water to stabilize it and to reduce risk of dust. Lastly, the conditioned fly ash is combined with bottom ash for eventual disposal at the landfill.

b. Sulfur dioxide (SO_2) and acid gases (HCl, H_2SO_3, H_2SO_4 and other acids which form from SO_2) are controlled by the use of dry scrubber absorption and the ESP. In the spray dryer absorber (scrubber), four nozzles inject streams of atomized lime slurry into the boilers' flue gases where the slurry absorbs HCl and SO_2 from the flue gas, while the heat of the gas vaporizes the liquid from the slurry. The dry scrubbing process is effective in removing approximately 80% of the SO_2 and 95% of the HCl from the flue gas stream.

c. Nitrogen oxide (NO_x) emissions from each MWC are controlled through the use of selective non-catalytic reduction (SNCR) technology which was installed in 2000. SCNR utilizes urea injected into the boiler to react with the NO_x in the flue gas stream to reduce it to nitrogen (N_2) and water (H_2O).

d. Mercury (Hg) and polychlorinated dibenzo-dioxin (dioxins) / polychlorinated dibenzo-furans (furans) (PCDD/PCDF) are removed from the flue gas stream of the two MWCs through the use of a powdered activated carbon injection system, originally licensed in October of 2000. ecomaine commissioned a feasibility study in 2008 to explore alternative mercury control technology. Based on that analysis, the carbon injection system remains the most feasible and practicable control method and is confirmed to be BPT for mercury emissions.

4. Control Equipment Specifications

a. Carbon Injection Systems

(1) During Each PCDD/PCDF and Hg Performance Test

Because activated carbon injection is used to comply with both the mercury (Hg) emission limit and the dioxin/furan (PCDD/PCDF) emission limits, in accordance with 40 C.F.R. § 60.58b(m)(1) as referenced by 06-096 C.M.R. ch. 121, during each performance test conducted for PCDD/PCDF emissions and during each performance test conducted for Hg emissions, ecomaine shall determine the average carbon mass feed rate, in pounds per hour (lb/hr), based upon carbon injection system operating parameters such as the screw feeder speed, hopper volume, hopper refill frequency, or other parameters appropriate to the feed system being employed.

If ecomaine meets the applicable emissions criteria for PCDD/PCDF as established in 06-096 C.M.R. ch. 121(5)(D)(3), and ecomaine opts to follow the alternative dioxin/furan performance testing schedule described in 40 C.F.R. § 60.58b(g)(5)(iii) which allows testing of only one MWC at ecomaine for PCDD/PCDF per year, the facility may elect to apply the same estimated average carbon mass feed rate from the tested MWC for both MWC A and MWC B for that year. [40 C.F.R. § 60.58b(m)(1), as referenced by 06-096 C.M.R. ch. 121]

(2) During Carbon Injection System Operation

During operation of a MWC, the associated carbon injection system's operating parameter(s) that are the primary indicator(s) of the carbon mass feed rate (e.g. screw feeder setting) shall be averaged over an eight-hour block period, and the 8-hour block average must equal or exceed the level(s) documented during the most recently completed performance test showing compliance with the dioxin/furan emission limits and the most recently completed performance test showing compliance with the mercury emission limits, with the following exception:

During the annual dioxin/furan or mercury performance test and the two weeks preceding the annual dioxin/furan or mercury performance test, and with written permission from the Department, no limit is applicable for average mass carbon feed rate for the purpose of improving facility performance or advancing the state of the art for controlling facility emissions. [40 C.F.R. § 60.58b(m)(2), as referenced by 06-096 C.M.R. ch. 121]

(3) Carbon Usage Documentation per Calendar Quarter

ecomaine shall estimate the total carbon usage of the plant (in pounds) for each calendar quarter by the following two independent methods:

i. Document the weight of carbon delivered to the plant.

ii. Determine the sum of carbon use for both MWC A and MWC B using the average carbon mass feed rate in pounds per hour for each MWC based on the injection system operating parameters (such as the screw feeder speed, hopper volume, hopper refill frequency, or other parameters appropriate to the feed system being employed) and the total number of hours of operation during the calendar quarter for both MWCs.

[40 C.F.R. § 60.58b(m)(4), as referenced by 06-096 C.M.R. ch. 121]

(4) Instantaneous Carbon Injection System Operational Indicator

A carbon injection system operational indicator shall be used to provide additional verification of proper carbon injection system operation. The operational indicator shall provide an instantaneous visual and/or audible alarm to alert the operator of a potential interruption in the carbon feed that would not

normally be indicated by the direct monitoring of carbon mass reed rate (e.g., continuous weight loss feeder) or monitoring of the carbon system operating parameter(s) that are the indicator(s) of carbon mass feed rate (e.g., screw feeder speed). The instantaneous carbon injection system operational indicator used to provide additional verification of carbon injection system operation, including basis for selecting the indicator and operator response to the indicator alarm, shall be included in ecomaine's site-specific operating manual. [40 C.F.R. § 60.58b(m)(4), as referenced by 06-096 C.M.R. ch. 121]

b. Electrostatic Precipitator (ESP) Inlet Temperature

(1) During Each PCDD/PCDF Performance Test

During each PCDD/PCDF emissions performance test, ecomaine shall determine the maximum demonstrated ESP inlet temperature, which is the highest four-hour arithmetic average flue gas temperature measured at the ESP inlet during four consecutive hours of the test demonstrating compliance with the applicable limits for each MWC.

(2) During Regular MWC Operation

During regular operation of the MWCs, the flue gas temperature at the ESP inlet shall be monitored continuously and calculated in 4-hour block arithmetic averages, The calculated ESP inlet temperatures shall not exceed 17°C above the maximum demonstrated ESP inlet temperature established during the performance test in item (1) above, except as specified in the following paragraph:

During the annual dioxin/furan or mercury performance test and the two weeks preceding the test, no ESP inlet temperature limitations are applicable if the ESP inlet temperature limits are waived in writing by the Department for the purpose of evaluating the system performance, testing new technology or control technologies, diagnostic testing, or related activities for the purpose of improving facility performance or advancing the state of the art for controlling facility emissions.

[40 C.F.R. § 60.53b(c), as referenced by 06-096 C.M.R. ch. 121]

(3) During Periods of Natural Gas Firing Only

When either MWC is firing only natural gas, ecomaine may request an exemption to the ESP inlet temperature requirement for the associated ESP. The date, time, duration, and reason for the firing of only natural gas shall be included in the exemption request. [06-096 C.M.R. ch. 140, BPT]

5. New Source Performance Standards (NSPS)

   a. 40 C.F.R. Part 60, Subpart Cb, *Emissions Guidelines and Compliance Times for Large Municipal Waste Combustors that are Constructed on or Before September 20, 1994*, is applicable to the ecomaine facility. This subpart contains guidelines applicable to each MWC unit with a combustion capacity greater than 250 tons per day of MSW for which construction was commenced on or before September 20, 1994. Each of ecomaine's two combustors is a mass burn waterwall unit manufactured before this date and designed to combust up to 275 tons per day of MSW.

      Subpart Cb includes requirements for emissions of metals, acid gases, organics, and NO_x (§ 60.33b); combustor operating practices (§ 60.34b); operator training and certification (§ 60.35b); fugitive ash emissions (§ 60.36b); compliance and performance testing (§ 60.38b); and reporting and recordkeeping (§ 60.39b). These NSPS requirements are addressed in this air emission license.

   b. 40 C.F.R. Part 60, Subpart Db, *Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units*, applies to steam generating units that commenced construction after June 19, 1984 and have a heat input capacity of more than 100 MMBtu/hr. MWC A and MWC B are each subject to the requirements of Subpart Db because of their steam generating capabilities and their construction dates.

      Subpart Db includes requirements for emissions of PM, which are addressed in this license. The emission requirements for NO_x in this standard are not applicable to MWC A and MWC B due to their combined natural gas annual capacity factor being limited to 10% or less by conditions in this license that are federally enforceable. [40 C.F.R. § 60.44b(d)]

      In accordance with Subpart Db, ecomaine shall record and maintain records of the amount of natural gas and municipal-type solid waste combusted during each day and calculate the annual capacity factor individually for each unit and for each fuel for the reporting period. The annual capacity factor is determined on a 12-month rolling average basis with a new annual capacity factor calculated at the end of each calendar month. [40 C.F.R. Part 60, Subpart Db, § 60.49b(d)]

   c. 40 C.F.R. Part 60, Subpart E, *Standards of Performance for Incinerators*, is not applicable to the units at ecomaine as the facility is covered by the requirements of Subpart Cb. [40 C.F.R. § 60.50(c)]

6. National Emissions Standards for Hazardous Air Pollutants (NESHAP)

   There are no NESHAP applicable to MWC A or MWC B.

7. 06-096 C.M.R. ch. 121 *Emission Limitations and Emission Testing of Resource Recovery Facilities* is applicable to MWC A and MWC B at ecomaine, and the requirements of this rule are addressed and included in this air emission license.

8. Emission Limits and Streamlining

   a. Table of Emission Limits and Streamlining

   ecomaine accepts streamlining for applicable emission standards for PM, NO_x, dioxins/furans, and Hg from MWC A and MWC B. A listing of potentially applicable emission standards, the origin and authority of the standards, and the applicable emission limits and associated averaging periods after streamlining, as appropriate, can be found below. The origin and authority of the most stringent limit upon which the streamlined emission limit is based is presented in **bold** type. Limits are on a 1-hour block average basis unless otherwise stated.

Pollutant	Applicable Emission Standards	Origin and Authority	Licensed Emission Limits
PM	0.08 gr/dscf @ 12% CO_2, 2-hr sampling period (~183 mg/dscm)	06-096 C.M.R. ch. 104 (2)(C) as referenced by 06-096 C.M.R. ch. 103 (2)(A)(4)	24 mg/dscm @ 7% O_2, 3-run average basis
	25 mg/dscm @ 7% O_2	06-096 C.M.R. ch. 121 (5)(A)(1); and 40 C.F.R. Part 60, Subpart Cb, § 60.33b(a)(1)(i)	
	24 mg/dscm @ 7% O_2	**A-283-71-J-M (October 10, 2000), BPT**	
	0.20 lb/MMBtu (~ up to 33.4 lb/hr)*	06-096 C.M.R. ch. 103, § (2)(B)(2)(b)	3.43 lb/hr
	0.10 lb/MMBtu (~ up to 16.7 lb/hr)*	40 C.F.R. Part 60, Subpart Db, § 60.43b(d)(1)(ii)	
	3.43 lb/hr	**A-283-70-A-I (December 14, 2005), BPT**	
PM_{10}	3.43 lb/hr	A-283-70-A-I (December 14, 2005), BPT	3.43 lb/hr

Pollutant	Applicable Emission Standards	Origin and Authority	Licensed Emission Limits
SO_2	29 ppmdv @ 7% O_2, or 80% reduction by weight or volume, whichever is less stringent	**06-096 C.M.R. ch. 121 (5)(A)(5) and A-283-71-J-M (October 10, 2000)**	29 ppmdv @ 7% O_2, or 80% reduction by weight or volume;** 24-hr daily geometric mean
	29 ppmdv @ 7% O_2, or 75% reduction by weight or volume, whichever is less stringent	40 C.F.R. Part 60, Subpart Cb, § 60.33b(b)(3)(i)	
	11.04 lb/hr	A-283-70-A-I (December 14, 2005), BPT	11.04 lb/hr, 24-hour basis
NO_x	205 ppmdv @ 7% O_2	06-096 C.M.R. ch. 121 (5)(A)(8) and 40 C.F.R. Part 60, Subpart Cb, § 60.33b(d)	180 ppmdv @ 7% O_2, 24-hour daily arithmetic average
	200 ppmdv @ 7% O_2	06-096 C.M.R. ch. 138, § (3)(G)(1), NO_x RACT	
	180 ppmdv @ 7% O_2	**A-283-72-C-M (February 3, 1995), BPT**	
	49.22 lb/hr	A-283-70-A-I (December 14, 2005), BPT	49.22 lb/hr, 24-hour basis
CO	100 ppmdv @ 7% O_2	40 C.F.R. Part 60, Subpart Cb, § 60.34b(a) and Table 3; 06-096 C.M.R. ch. 121 (5)(A)(9); and A-283-71-J-M (October 10, 2000), BPT	100 ppmdv @ 7% O_2, 4-hr block average
	16.65 lb/hr	A-283-70-A-I (December 14, 2005), BPT	16.65 lb/hr, 4-hr block average basis
VOC	0.027 lb/MMBtu	A-283-71-J-M (October 10, 2000), BPT	0.027 lb/MMBtu
	1.5 lb/hr	A-283-70-A-I (December 14, 2005), BPT	1.5 lb/hr

Pollutant	Applicable Emission Standards	Origin and Authority	Licensed Emission Limits
Visible Emissions	10% opacity on a six-minute block average basis	06-096 C.M.R. ch. 121 (5)(A)(2); 40 C.F.R. Part 60, Subpart Cb, § 60.33b(a)(1)(iii); and A-283-71-A-N (February 12, 1986), BACT	10% opacity on a six-minute block average basis
Hydrogen Chloride (HCl)	29 ppmdv @ 7% O_2, or 95% reduction by weight or volume, whichever is less stringent	06-096 C.M.R. ch. 121 (5)(A)(6); 40 C.F.R. Part 60, Subpart Cb, § 60.33b(b)(3)(ii); and A-283-70-J-M (October 10, 2000), BPT	29 ppmdv @ 7% O_2, or 95% reduction by weight or volume, whichever is less stringent, 3-run average basis
Dioxins/Furans (PCDD/PCDF) total mass basis	60 ng/dscm @ 7% O_2	A-283-71-J-M (October 10, 2000), BPT	25 ng/dscm @ 7% O_2, 3-run average basis, minimum run duration of 4 hours
	35 ng/dscm @ 7% O_2	40 C.F.R. Part 60, Subpart Cb, § 60.33b(c)(1)(ii)	
	25 ng/dscm @ 7% O_2	**06-096 C.M.R. ch. 121 (5)(A)(7)**	
Cadmium (Cd)	0.04 mg/dscm @ 7% O_2	A-283-71-J-M (October 10, 2000), BPT	35 µg/dscm (0.035mg/dscm) @ 7% O_2, 3-run average basis
	35 µg/dscm (0.035mg/dscm) @ 7% O_2	**06-096 C.M.R. ch. 121 (5)(A)(3) and 40 C.F.R. Part 60, Subpart Cb, § 60.33b(a)(2)(i)**	
Mercury (Hg)	50 µg/dscm @ 7% O_2, or 85% reduction by weight, whichever is less stringent	40 C.F.R. Part 60, Subpart Cb, § 60.33b(a)(3)	28 µg/dscm (0.028 mg/dscm) @ 7% O_2, or 85% reduction by weight, whichever is less stringent, 3-run average basis
	28 µg/dscm @ 7% O_2, or 85% reduction by weight, whichever is less stringent	**06-096 C.M.R. ch. 121 (5)(A)(4)**	
	25 lb/yr limit or 90% reduction by weight	38 M.R.S. § 585B sub-§5	25 lb/yr or 90% reduction by weight
Lead (Pb)	400 µg/dscm (0.40 mg/dscm) @ 7% O_2	06-096 C.M.R. ch. 121 (5)(A)(3); 40 C.F.R. Part 60, Subpart Cb, § 60.33b(a)(4); and A-283-70-J-M (October 10, 2000), BPT	400 µg/dscm (0.40 mg/dscm) @ 7% O_2, 3-run average basis
Ammonia	10 ppmdv @ 7% O_2	A-283-71-J-M (October 10, 2000)	10 ppmdv @ 7% O_2, 3-run average basis

Pollutant	Applicable Emission Standards	Origin and Authority	Licensed Emission Limits
Arsenic (As), Beryllium (Be), Chromium (Cr), and Nickel (Ni)	0.0452 lb/hr	06-096 C.M.R. ch. 140, BPT	0.0452 lb/hr

* lb/hr rate calculated using combined heat input from natural gas and MWC

** ecomaine shall limit the use of the 80% reduction of SO_2 compliance demonstration method to no more than ten days per year, on a 12-month rolling total basis. [A--283-70-A-I (December 14, 2005), BPT]

b. Arsenic (As), Nickel (Ni), Chromium (Cr), and Beryllium (Be)

Specific condition (14)(E) from A-283-70-F-R/A (May 22, 2015) required ecomaine to include a proposed numerical emission limit for arsenic (As), nickel (Ni), chromium (Cr), and beryllium (Be), either individually or combined, in their application for a Part 70 air emission license renewal. The limit(s) were to be based on historical test data and additional data from testing conducted subsequent to the issuance of the current license.

ecomaine began conducting emissions testing for As, Ni, Cr, and Be from MWC A and MWC B in 2006, and pursuant to the requirements of 06-096 C.M.R. ch. 121 has continued testing for these metals at three-year intervals beginning in 2008. Testing was performed in accordance with 40 C.F.R. Part 60, Appendix A, Method 29.

ecomaine also investigated various references to seek established guidelines for threshold limits for the subject metals with which to compare their collected data. References included 06-096 C.M.R. ch. 115 and 140 (Appendix C – *Insignificant HAP Thresholds*); Hazardous Waste Regulations (40 C.F.R. § 63.1216(a)(4)); and an AP-42 Refuse Combustion document dated October 1996. None of the references evaluated addressed all four metals or fit WTE units specifically. ecomaine reviewed the limits found in the current Title V air emission license for Mid-Maine Waste Action Corporation (MWAC), a WTE facility located in Auburn, ME, and found those limits to be in line with ecomaine's test data and therefore appropriate as limits for ecomaine's boilers as well. Therefore, ecomaine proposed a combined value for As-Be-Cr-Ni of 0.0452 lb/hr per boiler for their emission limit which the Department accepted and incorporated into this air emission license. Ecomaine shall demonstrate compliance with this lb/hr limit by performing stack testing for these pollutants when requested by the Department.

9. Emission Limit Compliance Methods

Compliance with the emission limits associated with MWC A and MWC B shall be demonstrated in accordance with the methods and frequencies indicated in the table below or other methods or frequencies as approved by the Department.

Pollutant	Applicable Emission Limit	Compliance Method	Frequency
PM	mg/dscm @ 7% O_2	40 C.F.R. Part 60, App. A, Method 5	Annually*
	lb/hr		
PM_{10}	lb/hr	40 C.F.R. Part 60, App. A, Method 5 or EPA Method 201 or 201A	As requested
SO_2	ppmdv @ 7% O_2, (based on outlet concentration data) or 80% reduction (by weight or volume, based on inlet and outlet concentration data)	SO_2 CEMS on a 24-hour block average basis, geometric mean; midnight to midnight	Continuously (in accordance with 40 C.F.R. Part 60, Appendix B)
	lb/hr		As requested
NO_X	ppmdv @ 7% O_2	NO_x CEMS on a 24-hour block average basis; midnight to midnight	Continuously (in accordance with 40 C.F.R. Part 60, Appendix B)
	lb/hr		As requested
CO	ppmdv @ 7% O_2	CO CEMS on a four-hour block average basis	Continuously (in accordance with 40 C.F.R. Part 60, Appendix B)
	lb/hr		As requested
VOC	lb/MMBtu and lb/hr	40 C.F.R. Part 60, Appendix A, Method 25 or Method 25A	As requested
Hydrogen Chloride (HCl)	ppmdv @ 7% O_2	40 C.F.R. Part 60, Appendix A, Method 26 or Method 26A	Annually*
Dioxins/Furans (PCDD/PCDF) total mass basis	ng/dscm @ 7% O_2	40 C.F.R. Part 60, Appendix A, Method 23	Annually**
Cadmium (Cd)	µg/dscm @ 7% O_2	40 C.F.R. Part 60, Appendix A, Method 29	Annually*
Mercury (Hg)	µg/dscm @ 7% O_2 and lb/year	40 C.F.R. Part 60, Appendix A, Method 29	Annually*
Lead (Pb)	µg/dscm @ 7% O_2	40 C.F.R. Part 60, Appendix A, Method 29	Annually*

Pollutant	Applicable Emission Limit	Compliance Method	Frequency
Ammonia (NH_3)	ppmdv @ 7% O_2	40 C.F.R. Part 60, Appendix A	Annually*
Visible Emissions	% opacity of emissions	COMS on a 6-minute block average basis	Continuously (in accordance with 40 C.F.R. Part 60, Appendix B)
Arsenic (As), Beryllium (Be), Chromium (Cr), and Nickel (Ni)	lb/hr	40 C.F.R. Part 60, Appendix A, Method 29	As requested

* Federal regulation 40 C.F.R. § 60.58b(c)(9), as incorporated in state rule 06-096 C.M.R. ch. 121, *Emission Limitations and Emission Testing of Resource Recovery Facilities*, requires ecomaine to conduct a performance test for particulate matter every calendar year, with each subsequent test conducted no less than nine calendar months and no later than 15 calendar months following the previous performance test. Five performance tests shall be conducted by ecomaine within each 5-year calendar period.

** An alternative test schedule may apply in accordance with 06-096 C.M.R. ch. 121(5)(D)(3), which references 40 C.F.R. § 60.58b(g)(5)(iii): Where all performance tests over a two-year period indicate that dioxin/furan emissions are less than or equal to 15 ng/dscm total mass at 7% O_2 for all affected facilities (units) located within the facility, ecomaine may elect to conduct annual performance tests for one of the units per year. At a minimum, a performance test for dioxin/furan emissions shall be conducted on a calendar year basis (no less than nine months and no more than 15 months following the previous performance test) for one of the two units at ecomaine. Under the alternative test schedule, a different unit shall be tested each year. If each annual performance test continues to indicate a dioxin/furan emission level less than or equal to 15 ng/dscm total mass at 7% O_2, ecomaine may continue conducting a performance test on only one unit per calendar year. If any annual performance test indicates a dioxin/furan emissions level greater than 15 ng/dscm total mass at 7% O_2, performance tests shall thereafter be conducted annually on both units at the facility until and unless all annual performance tests for both units over a two-year period indicate a dioxin/furan emission level less than or equal to 15 ng/dscm total mass at 7% O_2. [40 C.F.R. § 60.38b(b)]

10. Compliance Assurance Monitoring

CAM is not applicable to either MWC A or MWC B.

11. Periodic Monitoring

a. ecomaine shall monitor and record data and maintain records for the following periodic monitoring values for MWC A and MWC B and their associated air pollution control equipment as indicated in the following table whenever the equipment is operating.

MWC A and MWC B (each)				
Parameter	**Units of Measure**	**Monitoring Tool/Method**	**Frequency**	
			Monitor	**Record**
MSW Charging Rate	Tons	Scalehouse Tonnage Reports	Weekly and annually (calendar year basis)	
Steam flow and/or feedwater flow	Pounds/hour or gallons/hr	Flow Meter	Continuously	Hourly and 4-hour block
Operating Time	Hours	Boiler Distributed Control System (DCS)	Daily, monthly, and annually (calendar year basis)	
Inspection of cyclone, ESP	--	Visual	Weekly	
Natural Gas Use	scf and/or MMBtu	Natural Gas Meter (supplier)	Daily, monthly, 12-month rolling total (to calculate and document annual capacity factor)	

[A-283-70-A-I (December 14, 2005) and 06-096 C.M.R. ch. 140, BPT; 40 C.F.R. Part 60, Subpart Db, § 60.49b(d) for natural gas]

b. All signal conversion elements associated with the steam or feedwater measurements shall be calibrated according to the manufacturer's instructions before each dioxin/furan performance test, such that calibration is conducted at least once per year. [40 C.F.R. Part 60, Subpart Eb, § 60.58b(i)(6)(iv) as referenced by 06-096 C.M.R. ch. 121]

12. Parameter Monitors

During all operating times, ecomaine shall operate the following parametric monitors. ecomaine shall also record data and maintain records from the monitors individually for both MWC A and MWC B along with their associated air pollution control equipment as indicated in the following table whenever the equipment is operating. [A-283-70-A-I (December 14, 2005); 06-096 C.M.R. ch. 121; 40 C.F.R. § 70.6; and 06-096 C.M.R. ch. 140, BPT]

Parameter	Unit of Measure	Monitoring Tool/Method	Frequency	
			Monitor	Record
Powdered activated carbon injection feed rate	lb/hour	Screw feeder speed	Continuously	Hourly and 8-hour block
Urea injection system use	Dates operated	Manual record	As operated	
Urea usage	Gallons per Hour	Flow Meter	Daily, monthly and annually	
ESP primary voltage	Volts or kV	Volt Meter	Continuously	Daily
ESP secondary voltage	Volts or kV	Volt Meter		
ESP primary current	Amps	Amp Meter		
ESP secondary current	Amps	Amp Meter		
ESP inlet gas temperature	° F	Thermocouple		4-hour block

13. Continuous Emissions Monitoring (CEMS and COMS)

For MWC A and MWC B, the table below lists the continuous emission monitoring systems (CEMS) and the continuous opacity monitoring systems (COMS) required *for each unit*.

Continuous Monitor	Unit of Measurement	Origin and Authority
SO_2 CEMS (both before and after the scrubber, for each MWC unit)	ppmdv	06-096 C.M.R. ch. 117
NO_x CEMS	ppmdv	06-096 C.M.R. ch. 117 and 06-096 C.M.R. ch. 138(3)(G)(2)
CO CEMS	ppmdv	06-096 C.M.R. ch. 117 and 121
O_2 CEMS and/or CO_2 CEMS*	%	
Opacity COMS (in each flue)	% opacity	

* at each location where SO_2, NO_x or CO emissions are monitored

During a malfunction period consisting of the loss of boiler water level control or loss of combustion air control, a diluent cap of 14% for oxygen for 5% for carbon dioxide may be used in the emissions calculations for SO_2 and NO_x. [40 C.F.R. § 60.58b(b)(8), as referenced by 06-096 C.M.R. ch. 121]

ecomaine has provided data showing a positive correlation between the outputs of CEMS analyzers when using CO_2 corrected to 12% as a diluent gas as compared to O_2 corrected to 7% as a diluent gas. Therefore, ecomaine may choose to use CO_2 corrected to 12% as a diluent gas for any period when the analyzer for O_2 is out of control, provided the CO_2 analyzers are in compliance with the requirements of 40 C.F.R. Part 60, Subpart Eb, *Standards of Performance for Large Municipal Waste Combustors for Which Construction is Commenced After September 20, 1994 or for Which Modification or Reconstruction is Commenced After June 19, 1996.*

At a minimum, valid CEMS hourly averages shall be obtained for 90% of the operating hours per calendar quarter and 95% of the operating days per calendar year that the affected facility is combusting MSW. All valid CEMS data shall be used in calculating average emission concentrations and percent reductions even if these minimum CEMS data requirements are not met. [40 C.F.R. § 60.58b(e), as referenced by 06-096 C.M.R. ch. 121]

The four-hour block (CO) and 24-hour daily arithmetic averages (NO_x) specified in this license shall be calculated from one-hour arithmetic averages expressed in parts per million by volume corrected to 7% oxygen (dry basis). The one-hour arithmetic averages shall be calculated using the data points generated by the CEMS. At least two data points shall be used to calculate each one-hour arithmetic average. [40 C.F.R. § 60.58b(h), as referenced by 06-096 C.M.R. ch. 121]

14. Operator Training and Certification

In accordance with the requirements of 06-096 C.M.R. ch. 121 and 40 C.F.R. Part 60, Subpart Cb, the operator training and certification requirements of 40 C.R.F. Part 60, Subpart Eb apply to all facilities with large municipal waste combustor units such as MWC A and MWC B. Thus, according to § 60.54b of Subpart Eb, the following requirements are applicable to this facility. ecomaine shall comply with the following and maintain records thereof.

a. Each chief facility officer and shift supervisor shall obtain and maintain a current operator certification from either the American Society of Mechanical Engineers [QRO-1-1994][1] or an equivalent, State-approved certification program.

[1] The QRO Certification Program is based on the American Society of Mechanical Engineers (ASME) QRO-1 Standard for the Qualification and Certification of Resource Recovery Facility Operators.

b. ecomaine shall not operate the facility at any time unless either a fully certified chief facility operator or a fully certified shift supervisor is on duty and at the facility.

c. If both the certified chief facility operator and the certified shift supervisor are unavailable, a provisionally certified control room operator on-site at the MWC unit may fulfill the certified operator requirement. Depending on the length of time that a certified chief facility operator and certified shift supervisor are away, ecomaine must comply with differing requirements. For the durations specified in the table below when the certified chief facility operator and the certified shift supervisor are both off-site **and** no other certified operator is on-site, ecomaine shall comply with the corresponding requirement(s), as specified. In each case, the provisionally certified control room operator may perform the duties of the certified chief facility operator or certified shift supervisor.

Duration	
12 hours or less	The provisionally certified control room operator may perform the duties of the certified chief facility operator or certified shift supervisor. No additional requirements are applicable.
More than 12 hours but not more than two weeks	The provisionally certified control room operator may fulfill the certified operator requirement with no required notice to, or approval from the Department. **However**, ecomaine must record the period(s) when the certified chief facility operator and certified shift supervisor are off-site and include that information in the annual report.
More than 2 weeks	The provisionally certified control room operator may fulfill the certified operator requirement with no required approval from the Department. **However**, ecomaine must fulfill the following requirements|: (1) Notify the Department in writing, stating what caused the absence and what actions are being taken by ecomaine to ensure that a certified chief facility operator or certified shift supervisor is on-site as expeditiously as practicable. (2) Submit a status report and corrective action summary to the Department every four weeks following the initial notification. If the Department provides notice that the status report or corrective action summary is disapproved, the MWC unit may continue operation for 90 days, but then must cease operation. If corrective actions are taken in the 90-day period such that the Department withdraws the disapproval, the MWC unit may continue operation.

d. A provisionally certified operator who is newly promoted or recently transferred to a shift supervisor position or a chief facility operator position at the facility may perform the duties of the certified chief facility operator or certified shift supervisor without notice to or approval by the Department for up to six months before taking the ASME QRO certification exam.

e. ecomaine shall maintain their site-specific operating manual which, at a minimum, addresses the following elements of MWC unit operation listed below. ecomaine shall review this manual and update it at least annually, incorporating any changes made to the manual topics adopted by ecomaine during the previous year.

(1) A summary of the applicable air emission license standards;
(2) A description of basic combustion theory applicable to a MWC unit;
(3) Procedures for receiving, handling, and feeding municipal solid waste;
(4) MWC unit startup, shutdown, and malfunction procedures;
(5) Procedures for maintaining proper combustion air supply levels;
(6) Procedures for operating the MWC unit within the air emission license standards;
(7) Procedures for responding to periodic upset or off-specification conditions;
(8) Procedures for minimizing particulate matter carryover;
(9) Procedures for handling ash;
(10) Procedures for monitoring MWC unit emissions; and
(11) Reporting and recordkeeping procedures.

f. ecomaine shall continue their training program which includes review of the operating manual with each person who has responsibilities affecting the operation of the unit, including but not limited to chief facility operators, shift supervisors, control room operators, ash handlers, maintenance personnel, and crane/load handlers, by the date prior to the day the person assumes such responsibilities and then annually thereafter.

g. The operating manual shall be kept in a readily accessible location for all persons required to undergo training. The operating manual and records of training shall be available for inspection by the EPA or its delegated enforcement agency upon request.

15. Recordkeeping

ecomaine shall maintain records of the following information for a period of at least six years. These records shall be readily available for submittal to the Department or for review on site by an inspector.

a. The calendar date of each record;

b. Emission and Parameters Data [40 C.F.R. § 60.59b(d)]

(1) The emission concentrations and parameters using continuous monitoring system specified in this license as follows:

i. All six-minute average opacity values from the COMS;
ii. All one-hour average SO_2, NO_x, and CO emissions concentrations (ppm) from the CEMS;

iii. All MSW unit load measurements (steam flow); and
iv. All PM control device inlet temperatures (ESP temperature);

(2) The average concentrations and percent reductions, as applicable, as specified in the following paragraphs shall be computed, recorded, and available for submittal to the Department or for review on site by an inspector;

i. All 24-hour daily geometric average SO_2 emission concentrations and all 24-hour daily geometric average percent reductions in SO_2 emissions;
ii. All 24-hour daily arithmetic average NOx emission concentrations;
iii. All 4-hour block average CO emission concentrations; and
iv. All 4-hour block average arithmetic average MWC unit load levels and ESP inlet temperatures.

(3) Identification of the calendar dates and times (hours) for which valid hourly data as required have not been obtained, or required continuous automated sampling systems were not operated, including reasons for not obtaining the data and a description of corrective actions taken, for the following:

i. SO_2 emissions data;
ii. NO_x emissions data;
iii. CO emissions data;
iv. MWC unit load data; and
v. ESP inlet temperature data.

(4) Identification of each occurrence that SO_2 emissions data, NO_x emissions data, or operational data (i.e., CO emissions, unit load, and ESP inlet temperature) have been excluded from the calculation of average emission concentrations or parameters, and the reasons for excluding the data.

(5) The results of daily drift tests and quarterly accuracy determinations for SO_2, NO_x and CO CEMS.

(6) Identification of the calendar dates when any emission concentrations, percent reductions, opacities, or operating parameters were above the applicable limits, with reasons for such exceedances and descriptions of corrective actions taken.

c. Powdered Activated Carbon Injection System [40 C.F.R. § 60.59b(d)]

For the activated carbon systems, the following records shall be maintained:

(1) The average carbon mass feed rate (lb/hr) determined during annual dioxin/furan performance tests and during annual mercury performance tests, with supporting calculations.

(2) The average carbon mass feed rate (lb/hr) determined on an eight-hour block average basis during operation, with supporting calculations.

(3) The total carbon usage for each calendar quarter, with supporting calculations.

(4) Carbon injection system operating parameter data for the parameter(s) that are the primary indicator(s) of carbon feed rate (e.g., screw feeder speed).

(5) Identification of the calendar dates when the recorded average carbon mass feed rates were less than either of the hourly carbon feed rates estimated during performance tests for mercury or dioxin/furan emissions, with reasons for such feed rates and a description of corrective actions taken.

(6) Identification of the calendar dates when the recorded carbon injection system operating parameter(s) that are the primary indicator(s) of carbon mass feed rate were below the level(s) determined during the performance tests, with reasons for such occurrences and a description of corrective actions taken.

H. Ash Handling System

The ash handling system consists of quench tanks, ash conveyors, conditioners, and the load-out area utilized to collect ash from the combustion process (both bottom ash and fly ash) and prepare it for disposal. All fly ash conveyors are enclosed. Bottom ash and fly ash are each conditioned with water to render the product dustless prior to discharge onto open conveyors and into open containers. All ash from the MWCs shall be transported in covered containers so as to prevent fugitive emissions.

1. New Source Performance Standards (NSPS)

   Visible emissions from the Ash Handling System are regulated by the NSPS requirements of 40 C.F.R. Part 60, Subpart Cb, *Emissions Guidelines and Compliance Times for Large Municipal Waste Combustors that are Constructed On or Before September 20, 1994*.

2. Emission Limits and Streamlining

   ecomaine accepts streamlining of fugitive ash visible emissions requirements. Regulations 40 C.F.R. Part 60, Subpart Cb; 06-096 C.M.R. ch. 101; and 06-096 C.M.R ch. 121 contain visible emissions limits. The Subpart Cb and 06-096 C.M.R. ch. 121 visible emission limit is more stringent; therefore, compliance with this limit shall be determined as compliance with all applicable visible emissions limits.

Applicable Standard	Origin and Authority	Licensed Limit
≤ 5% of observation period (i.e., nine minutes per three-hour period) determined per EPA Method 22	**40 C.F.R. Part 60, Subpart Cb, § 60.36b and 06-096 C.M.R. ch. 121 (5)(A)(10)**	No visible emissions for more than 5% of the observation period (i.e., nine minutes in any three-hour period)
≤ 20%, on a five-minute block average basis.	06-096 C.M.R. ch. 101 (3)(C)	

Fugitive ash emission limitations do not cover visible emissions discharged inside buildings or enclosures of ash conveying systems, or visible emissions discharged to the atmosphere from buildings or enclosures of ash conveying systems, and do not apply during times maintenance and/or repairs are being performed on ash conveying systems. [40 C.F.R. Part 60, Subpart Eb, § 60.55b (b) and (c), as referenced by 40 C.F.R. Part 60, Subpart Cb, § 60.36b]

3. Emission Limit Compliance Methods

Compliance with the visible emission limit for the Ash Handling System shall be demonstrated annually by ecomaine using EPA Reference Method 22 as found in 40 C.F.R. Part 60, Appendix A. The minimum observation time shall be a series of three one-hour observations. The observation period shall include times when the facility is transferring ash from the MWCs to the area where ash is stored or loaded into containers or trucks. The average duration of visible emissions per hour shall be calculated from the three one-hour observations. The average shall be used to determine compliance with the fugitive ash limit. [40 C.F.R. Part 60, Subpart Eb, § 60.58b (k), as referenced by 06-096 C.M.R. ch. 121 (5)(D)]

Ash from each MWC and all ash and non-combustible materials culled from the ash handling system shall be sufficiently conditioned with water to render it dust-free or shall be stored in covered containers or in a leak tight enclosure so as to prevent fugitive emissions. [06-096 C.M.R. ch. 140, BPT]

I. Lime Silo and Carbon Silo

Lime is delivered by truck to ecomaine for use in the spray dryer absorber scrubber emissions control system. A high pressure blower on the truck conveys lime through a hose to the upper level of a vertical lime storage silo. A bin vent fabric filter at the top of the silo separates lime dust from the air used to convey it. Emissions are estimated to be less than 1 ton/year from the fabric filter**.**

Powdered activated carbon (PAC) is used by ecomaine to control emissions of mercury (Hg) and chlorinated dioxins and furans (PCDD/PCDF) from each of the MWC units by its controlled injection into the boilers' flue gas exhaust streams. The PAC is delivered to

the facility via truck and offloaded into a silo using a pneumatic conveying system that is mounted on the delivery truck. The air that is used to convey the PAC from the truck to the storage silo exits the vessel through a silo vent filter baghouse, where the particulate is contained while the air is released to atmosphere.

1. Emission Limits and Streamlining

ecomaine accepts streamlining of visible emissions requirements applicable to the silos, as identified in the following table. Therefore, only the most stringent BPT visible emissions limit for the Lime Silo Vent Filter and the Carbon Silo Vent Filter is included in this license.

Applicable Standard	Origin and Authority	Licensed Limit
10% opacity, on a six-minute block average basis	**A-283-71-J-M (October 10, 2000), BPT**	10% opacity, on a six-minute block average basis The facility shall take corrective action if visible emissions from the baghouses exceed 5% opacity on a six-minute block average basis.
10% opacity, on a six-minute block average basis. The facility shall take corrective action if visible emissions from the baghouses exceed 5% opacity on a six-minute block average basis.	06-096 C.M.R. ch. 101 (3)(B)(3)	

2. Monitoring and Operational Practices

ecomaine shall maintain and operate a fabric filter to control emissions during lime silo filling operations and a fabric filter to control emissions during carbon silo filling and shall not conduct filling operations without the proper use of the respective fabric filter for each silo. ecomaine shall maintain monthly records of the quantity of lime and carbon loaded to each silo and of maintenance conducted on each fabric filter.

J. Emergency Generator and Fire Pump

ecomaine operates one Emergency Generator consisting of a distillate fuel-fired engine and an electrical generator. The engine has a maximum heat input rating of 5.25 MMBtu/hr and was manufactured in 1988**.** The generator has a maximum rated output of 544 kW.

ecomaine also operates one emergency Fire Pump driven by an engine that fires distillate fuel. The Fire Pump engine is rated at 1.4 MMBtu/hr and was manufactured in 1987.

1. New Source Performance Standards (NSPS)

   Due to the dates of their manufacture, the engines for the emergency generator and the fire pump are not subject to federal regulation 40 C.F.R. Part 60, Subpart IIII, *Standards of Performance for Stationary Compression Ignition Internal Combustion Engines (CI ICE),* which is applicable to units ordered after July 11, 2005, and manufactured after April 1, 2006.

2. National Emissions Standards for Hazardous Air Pollutants (NESHAP)

   The federal regulation 40 C.F.R. Part 63, Subpart ZZZZ, *National Emission Standards for Hazardous Air Pollutants (NESHAP) for Stationary Reciprocating Internal Combustion Engines* is applicable to ecomaine's emergency generator and fire pump. The units are considered existing, emergency stationary reciprocating internal combustion engines (RICE) at an area HAP source and are not subject to NSPS regulations. EPA's August 9, 2010 memo (*Guidance Regarding Definition of Residential, Commercial, and Institutional Emergency Stationary RICE in the NESHAP for Stationary RICE*) specifically does not exempt this unit from the federal requirements.

   a. Emergency Engine Designation and Operating Criteria

      Under Subpart ZZZZ, a stationary reciprocating internal combustion engine (RICE) is considered an **emergency** stationary RICE (emergency engine) as long as the engine is operated in accordance with the following criteria. Operation of an engine outside of the criteria specified below may cause the engine to no longer be considered an emergency engine under Subpart ZZZZ, resulting in the engine being subject to requirements applicable to **non-emergency** engines.

      (1) Emergency Situation Operation (On-Site)

      There is no operating time limit on the use of an emergency engine to provide electrical power or mechanical work during an emergency situation. Examples of use of an emergency engine during emergency situations include the following:

      - Use of an engine to produce power for critical networks or equipment (including power supplied to portions of a facility) because of failure or interruption of electric power from the local utility (or the normal power source, if the facility runs on its own power production);
      - Use of an engine to mitigate an on-site disaster or equipment failure;
      - Use of an engine to pump water in the case of fire, flood, natural disaster, or severe weather conditions; and
      - Similar instances.

Additionally, because ecomaine normally runs on power produced by its facility, shutdowns of its turbine for maintenance and/or safety reasons require the use of the Emergency Generator during the transition from self-generation to grid-supplied electricity. Such occurrences are considered emergency situations and are not in conflict with this definition of emergency stationary RICE. Subsequently, the operating times for the Emergency Generator when running during these instances are not to be included when calculating and tracking the generator's non-emergency situation operation times.

(2) Non-Emergency Situation Operation

An emergency engine may be operated up to a maximum of 100 hours per calendar year for maintenance checks, readiness testing, and other non-emergency situations as described below.

(i) An emergency engine may be operated for a maximum of 100 hours per calendar year for maintenance checks and readiness testing, provided that the tests are recommended by federal, state, or local government; the manufacturer; the vendor; the regional transmission organization or equivalent balancing authority and transmission operator; or the insurance company associated with the engine. ecomaine may petition the Administrator for approval of additional hours to be used for maintenance checks and readiness testing, but a petition is not required if the owner or operator maintains records indicating that federal, state, or local standards require maintenance and testing of emergency RICE more than 100 hours per calendar year.

(ii) An emergency engine may be operated for up to 50 hours per calendar year for other non-emergency situations. **However, these operating hours are counted as part of the 100 hours per calendar year operating limit described in paragraph (2) and (2) (i) above.**

The 50 hours per calendar year operating limit for other non-emergency situations cannot be used for peak shaving, demand response, or to generate income for a facility by providing power to an electric grid or otherwise supply power as part of a financial arrangement with another entity.

The Emergency Generator and the Fire Pump shall be limited to the usage outlined in 40 C.F.R. § 63.6640(f) and therefore may be classified as existing emergency stationary RICE as defined in 40 C.F.R. Part 63, Subpart ZZZZ. Failure to comply with all of the requirements listed in 40 C.F.R. § 63.6640(f) may cause these engines to not be considered emergency engines and therefore subject to all applicable requirements for non-emergency engines.

b. 40 C.F.R. Part 63, Subpart ZZZZ Requirements

(1) Operation and Maintenance Requirements
(40 C.F.R. § 63.6603(a) and Table 2(d))

Unit	Operating Limitations
Emergency Generator and Fire Pump	- Change oil and filter every 500 hours of operation or annually, whichever comes first; - Inspect the air cleaner every 1000 hours of operation or annually, whichever comes first, and replace as necessary; and - Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary.

The engines shall be operated and maintained according to the manufacturer's emission-related written instructions, or ecomaine shall develop a maintenance plan which must provide to the extent practicable for the maintenance and operation of the engines in a manner consistent with good air pollution control practice for minimizing emissions. [40 C.F.R. § 63.6625(e)]

(2) Optional Oil Analysis Program
ecomaine has the option of utilizing an oil analysis program which complies with the requirements of § 63.6625(i) in order to extend the specified oil change requirement. If this option is used, ecomaine must keep records of the parameters that are analyzed as part of the program, the results of the analysis, and the oil changes for each engine. The analysis program must be part of the maintenance plan for each engine. [40 C.F.R.§ 63.6625(i)]

(3) Non-Resettable Hour Meter Requirement
A non-resettable hour meter shall be installed and operated on each engine. [40 C.F.R. § 63.6625(f)]

(4) Startup Idle and Startup Time Minimization Requirements
During periods of startup the facility must minimize the engine's time spent at idle and minimize the engine's startup time to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes**.** [40 C.F.R. § 63.6625(h) and 40 C.F.R. Part 63, Subpart ZZZZ Table 2d]

(5) Annual Time Limit for Maintenance and Testing
As emergency engines, the units shall each be limited to 100 hours/year for maintenance checks and readiness testing. Up to 50 hours/year of the 100 hours/year may be used in non-emergency situations (this does not include peak shaving, demand response, or to generate income for a facility by providing power to an electric grid or otherwise supply power as part of a financial arrangement with another entity). [40 C.F.R. § 63.6640(f)]

(6) Recordkeeping

Ecomaine shall keep records that include maintenance conducted on the engines and the hours of operation of each engine recorded through the non-resettable hour meter. Documentation shall include the number of hours each unit operated for emergency purposes, the number of hours each unit operated for non-emergency purposes, and the reason each engine was in operation during each time. [40 C.F.R. § 63.6655(f)]

3. BPT Emission Limits

The BPT emission limits for the emergency engines are based on the following:

Emergency Generator

Pollutant	Emission Factor and Source
PM / PM_{10}	0.12 lb/MMBtu, 06-096 C.M.R. ch. 103 (2)(B)(1)(a)
SO_2	0.00151 MMBtu/hr, mass balance calculation based on combustion of distillate fuel with a maximum sulfur content of 15 ppm (0.0015% by weight)
NO_x	3.2 MMBtu/hr, from AP-42, Table 3.4-1, dated 10/96
CO	0.85 MMBtu/hr, from AP-42, Table 3.4-1, dated 10/96
VOC	0.09 MMBtu/hr, from AP-42, Table 3.4-1, dated 10/96

Fire Pump

Pollutant	Emission Factor and Source
PM / PM_{10}	0.12 lb/MMBtu, 06-096 C.M.R. ch. 103 (2)(B)(1)(a)
SO_2	0.00151 MMBtu/hr, mass balance calculation based on combustion of distillate fuel with a maximum sulfur content of 15 ppm (0.0015% by weight)
NO_x	4.41 MMBtu/hr, from AP-42, Table 3.3-1, dated 10/96
CO	0.95 MMBtu/hr, from AP-42, Table 3.3-1, dated 10/96
VOC	0.36 MMBtu/hr, from AP-42, Table 3.3-1, dated 10/96

The BPT emission limits for the Emergency Generator and the Fire Pump are the following:

Unit	PM / PM_{10} (lb/hr)	SO_2 (lb/hr)	NO_x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Emergency Generator Distillate Fuel 5.25. MMBtu/hr	0.63	0.008	16.80	4.46	0.47
Fire Pump Distillate Fuel 1.4 MMBtu/hr	0.17	0.002	6.17	1.33	0.50

4. Visible Emissions

Visible emissions from each of the emergency engines shall not exceed 20% opacity on a six-minute block average basis except for periods of startup during which time ecomaine may comply with the following work practice standards in lieu of the numerical visible emissions standard. [06-096 C.M.R. ch. 101, § 3(A)(4)(a)]

a. ecomaine shall maintain a log (written or electronic) of the date, time, and duration of all generator startups.

b. The engines shall be operated in accordance with the manufacturer's emission-related operating instructions.

c. ecomaine shall minimize the engine's time spent at idle during startup and minimize the engine's startup time to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes, after which time the non-startup emission limitations shall apply.

d. The emergency engines, including any associated air pollution control equipment, shall be operated at all times in a manner consistent with safety and good air pollution control practices for minimizing emissions. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Department that may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the unit.

5. Emission Limit Compliance Methods

Compliance with the emission limits associated with the Emergency Generator and the Fire Pump shall be demonstrated in accordance with the appropriate test methods upon request of the Department.

6. Compliance Assurance Monitoring

CAM is not applicable to the emergency generator or the fire pump.

7. Periodic Monitoring

ecomaine shall record data and maintain records for the following periodic monitoring values for both the emergency generator and the fire pump as indicated in the following table whenever the equipment is operating.

Parameter	Units of Measure	Monitoring Tool/Method	Frequency
Fuel oil sulfur content	Percent, by weight	Fuel receipts from supplier	As fuel is purchased
Operating time	Hours	Hour Meter	Monthly and 12-month rolling total
Type of Operation (emergency, maintenance, etc.)	N/A	Recorded electronically, or in a logbook or similar documentation	As it occurs

8. Parameter Monitors

There are no parameter monitors required for the two emergency engines.

9. CEMS and COMS

There are no CEMS or COMS required for the two emergency engines.

K. Parts Washer

The parts washer at ecomaine is a cold cleaning machine using a solvent with less than 5% VOC content by weight. Therefore, the parts washer is exempt from the requirements of 06-096 C.M.R. ch. 130, *Solvent Degreasers*.

L. Emission Statements

ecomaine is subject to emissions inventory requirements contained in *Emission Statements*, 06-096 C.M.R. ch. 137. ecomaine shall maintain the following records in order to comply with this rule:

1. The amount of municipal solid waste (MSW) fired in each MWC unit on a monthly basis:
2. The amount of natural gas fired in each MWC unit on a monthly basis;
3. The amount of distillate fuel fired in the Emergency Generator and the Fire Pump (each) on a monthly basis;

4. The sulfur content of the distillate fuel fired in the Emergency Generator and the Fire Pump;
5. Hours each emission unit was operating on a monthly basis.

Beginning with reporting year 2020 and every third year thereafter, ecomaine shall report to the Department emissions of hazardous air pollutants as required by 06-096 C.M.R. ch. 137, § (3)(C). The Department will use these reports to calculate and invoice for the applicable annual air quality surcharge for the subsequent three billing periods. ecomaine shall pay the annual air quality surcharge, calculated by the Department based on these reported emissions of hazardous air pollutants, by the date required in Title 38 M.R.S. § 353-A(3). [38 M.R.S. § 353-A(1-A)]

M. Facility Annual Emissions

The table below provides an estimate of facility-wide annual emissions for the purposes of calculating the facility's annual air license fee. Only licensed equipment is included, i.e., emissions from insignificant activities are excluded. Similarly, unquantifiable fugitive particulate matter emissions are not included. Maximum potential emissions were calculated based on the following assumptions:

- Operation of each of the MWC units at rated capacity for 8,760 hours/year; and
- Operating the Emergency Generator and the Fire Pump for 100 hrs/yr each.

Please note, this information provides the basis for fee calculation only and should not be construed to represent a comprehensive list of license restrictions or permissions. That information is provided in the Order section of this license.

Total Licensed Annual Emissions for the Facility
Tons/year
(used to calculate the annual license fee)

	PM	PM_{10}	SO_2	NO_x	CO	VOC
MWC A and B, combined total	30.04	30.04	96.8	431.2	145.8	13.14
Emergency Generator	0.03	0.03	negl.	0.8	0.2	0.02
Fire Pump	0.01	0.01	negl.	0.3	0.1	0.03
Total TPY	**30.1**	**30.1**	**96.8**	**432.3**	**146.1**	**13.2**

Pollutant	Tons/year
Single HAP	9.9
Total HAP	24.9

III. AMBIENT AIR QUALITY ANALYSIS

ecomaine previously submitted an ambient air quality analysis demonstrating that emissions from the facility, in conjunction with all other sources, do not violate ambient air quality standards (see license A-283-70-A-I issued on December 14, 2005). An additional ambient air quality analysis is not required for this Part 70 License.

ORDER

Based on the above Findings and subject to conditions listed below, the Department concludes that emissions from this source:

- will receive Best Practical Treatment;
- will not violate applicable emissions standards; and
- will not violate applicable ambient air quality standards in conjunction with emissions from other sources.

The Department hereby grants the Part 70 License A-283-70-G-R/A pursuant to 06-096 C.M.R. ch. 140 and the preconstruction permitting requirements of 06-096 C.M.R. ch. 115 and subject to the standard and specific conditions below.

All federally enforceable and State-only enforceable conditions in existing air licenses previously issued to ecomaine pursuant to the Department's preconstruction permitting requirements have been incorporated into this Part 70 license, except for such conditions that the Department has determined are obsolete, extraneous, or otherwise environmentally insignificant, as explained in the Findings of Fact accompanying this Order. As such, the conditions in this license supersede all previously issued air license conditions.

Federally enforceable conditions in this Part 70 license must be changed pursuant to the applicable requirements in *Major and Minor Source Air Emission License Regulations*, 06-096 C.M.R. ch. 115 for making such changes and pursuant to the applicable requirements in 06-096 C.M.R. ch. 140.

For each standard and specific condition which is state enforceable only, state-only enforceability is designated with the following statement: **Enforceable by State-only**.

Severability. The invalidity or unenforceability of any provision of this License or part thereof shall not affect the remainder of the provision or any other provisions. This License shall be construed and enforced in all respects as if such invalid or unenforceable provision or part thereof had been omitted.

STANDARD STATEMENTS

(1) Approval to construct shall become invalid if the source has not commenced construction within eighteen (18) months after receipt of such approval or if construction is discontinued for a period of eighteen (18) months or more. The Department may extend this time period upon a satisfactory showing that an extension is justified, but may condition such extension upon a review of either the control technology analysis or the ambient air quality standards analysis, or both. [06-096 C.M.R. ch. 140]

(2) The Part 70 license does not convey any property rights of any sort, or any exclusive privilege. [06-096 C.M.R. ch. 140]

(3) All terms and conditions are enforceable by EPA and citizens under the CAA unless specifically designated as state enforceable. [06-096 C.M.R. ch. 140]

(4) The licensee may not use as a defense in an enforcement action that the disruption, cessation, or reduction of licensed operations would have been necessary in order to maintain compliance with the conditions of the air emission license.
[06-096 C.M.R. ch. 140]

(5) Notwithstanding any other provision in the State Implementation Plan approved by the EPA or Section 114(a) of the CAA, any credible evidence may be used for the purpose of establishing whether a person has violated or is in violation of any statute, regulation, or Part 70 license requirement. [06-096 C.M.R. ch. 140]

(6) Compliance with the conditions of this Part 70 license shall be deemed compliance with any Applicable requirement as of the date of license issuance and is deemed a permit shield, provided that:

A. Such Applicable and state requirements are included and are specifically identified in the Part 70 license, except where the Part 70 license term or condition is specifically identified as not having a permit shield; or

B. The Department, in acting on the Part 70 license application or revision, determines in writing that other requirements specifically identified are not applicable to the source, and the Part 70 license includes the determination or a concise summary, thereof.
Nothing in this section or any Part 70 license shall alter or affect the provisions of Section 303 of the CAA (emergency orders), including the authority of EPA under Section 303; the liability of an owner or operator of a source for any violation of Applicable requirements prior to or at the time of permit issuance; or the ability of EPA to obtain information from a source pursuant to Section 114 of the CAA.

The following requirements have been specifically identified as not applicable based upon information submitted by the licensee in an application dated November 19, 2019.

Permit Shield Table

Source	Citation	Description	Basis for Determination
Petroleum Tanks	06-096 C.M.R. ch. 111	Petroleum Liquid Storage Vapor Control	All petroleum storage tanks at ecomaine are less than 39,000 gallons in volume.
MWC A and B	06-096 C.M.R. ch. 134	Reasonably Available Control Technology for Facilities that Emit Volatile Organic Compounds (VOC RACT)	Source of VOC at facility is from combustion, which is exempt per 06-096 C.M.R. ch. 134 (1)(C)(4).
MWC A and B	06-096 C.M.R. ch. 145	NO_x Control Program	Each of the MWCs are below the applicability threshold input capacity of 250 MMBtu/hr.
MWC A and B	40 C.F.R. Part 60, Subparts E, Ea, and Eb	Standards of Performance for Incinerators	The units are subject to 40 C.F.R. 60, Subpart Cb and therefore not subject to these subparts. [40 C.F.R. § 60.32b (n)]
Facility	40 C.F.R. Part 61	National Emission Standards for Hazardous Air Pollutants	There are no applicable requirements under this Part.
MWC A and B	40 C.F.R. Part 63	National Emission Standards for Hazardous Air Pollutants for Source Categories	There are no applicable requirements under this Part.
Storage Tanks	40 C.F.R. Part 68	Accidental Release Prevention	Chemicals stored on-site are stored at quantities less than threshold quantities.
Facility	40 C.F.R. Part 72-78	Federal Acid Rain Provisions	Facility is not subject to the provisions and does not choose to 'opt in' at this time.

[06-096 C.M.R. ch. 140]

(7) The Part 70 license shall be reopened for cause by the Department or EPA, prior to the expiration of the Part 70 license, if:

A. Additional Applicable requirements under the CAA become applicable to a Part 70 major source with a remaining Part 70 license term of three or more years. However, no opening is required if the effective date of the requirement is later than the date on which the Part 70 license is due to expire, unless the original Part 70 license or any of its terms and conditions has been extended pursuant to 06-096 C.M.R. ch. 140;

B. Additional requirements (including excess emissions requirements) become applicable to a Title IV source under the acid rain program. Upon approval by EPA, excess emissions offset plans shall be deemed to be incorporated into the Part 70 license;

C. The Department or EPA determines that the Part 70 license contains a material mistake or that inaccurate statements were made in establishing the emissions standards or other terms or conditions of the Part 70 license; or

D. The Department or EPA determines that the Part 70 license must be revised or revoked to assure compliance with the Applicable requirements.

The licensee shall furnish to the Department within a reasonable time any information that the Department may request in writing to determine whether cause exists for modifying, revoking and reissuing, or terminating the Part 70 license or to determine compliance with the Part 70 license.

[06-096 C.M.R. ch. 140]

(8) No license revision or amendment shall be required, under any approved economic incentives, marketable licenses, emissions trading, and other similar programs or processes for changes that are provided for in the Part 70 license. [06-096 C.M.R. ch. 140]

STANDARD CONDITIONS

(1) Employees and authorized representatives of the Department shall be allowed access to the licensee's premises during business hours, or any time during which any emissions units are in operation, and at such other times as the Department deems necessary for the purpose of performing tests, collecting samples, conducting inspections, or examining and copying records relating to emissions and this license (38 M.R.S. § 347-C).

(2) The licensee shall acquire a new or amended air emission license prior to commencing construction of a modification, unless specifically provided for in 06-096 C.M.R. ch. 140. [06-096 C.M.R. ch. 140]

(3) The licensee shall establish and maintain a continuing program of best management practices for suppression of fugitive particulate matter during any period of construction, reconstruction, or operation which may result in fugitive dust, and shall submit a description of the program to the Department upon request. [06-096 C.M.R. ch. 140] **Enforceable by State-only**

(4) The licensee shall pay the annual air emission license fee to the Department, calculated pursuant to 38 M.R.S. § 353-A.

(5) The licensee shall maintain and operate all emission units and air pollution control systems required by the air emission license in a manner consistent with good air pollution control practice for minimizing emissions. [06-096 C.M.R. ch. 140]
Enforceable by State-only

(6) The licensee shall maintain sufficient records to accurately document compliance with emission standards and license conditions and shall maintain such records for a minimum of six (6) years. In addition, the licensee shall retain records of all required monitoring data and support information for a period of at least six (6) years from the date of the monitoring sample, measurement, report, or application. Support information includes all calibration and maintenance records and all original strip-chart recordings for continuous monitoring instrumentation, and copies of all reports required by the Part 70 license. The records shall be submitted to the Department upon written request or in accordance with other provisions of this license. [06-096 C.M.R. ch. 140]

(7) The licensee shall comply with all terms and conditions of the air emission license. The submission of notice of intent to reopen for cause by the Department, the filing of an appeal by the licensee, the notification of planned changes or anticipated noncompliance by the licensee, or the filing of an application by the licensee for the renewal of a Part 70 license or amendment shall not stay any condition of the Part 70 license. [06-096 C.M.R. ch. 140]

(8) In accordance with the Department's air emission compliance test protocol and 40 C.F.R. Part 60 or other method approved or required by the Department, the licensee shall:

A. Perform stack testing under circumstances representative of the facility's normal process and operating conditions:

1. Within sixty (60) calendar days of receipt of a notification to test from the Department or EPA, if visible emissions, equipment operating parameters, staff inspection, air monitoring, or other cause indicate to the Department that equipment may be operating out of compliance with emission standards or license conditions;

2. To demonstrate compliance with the applicable emission standards; or

3. Pursuant to any other requirement of this license to perform stack testing.

B. Install or make provisions to install test ports that meet the criteria of 40 C.F.R. Part 60, Appendix A, and test platforms, if necessary, and other accommodations necessary to allow emission testing; and

C. Submit a written report to the Department within thirty (30) days from date of test completion.

[06-096 C.M.R. ch. 140] **Enforceable by State-only**

(9) If the results of a stack test performed under circumstances representative of the facility's normal process and operating conditions indicates emissions in excess of the applicable standards, then:

A. Within thirty (30) days following receipt of such test results, the licensee shall re-test the non-complying emission source under circumstances representative of the facility's normal process and operating conditions and in accordance with the Department's air emission compliance test protocol and 40 C.F.R. Part 60 or other method approved or required by the Department; and

B. The days of violation shall be presumed to include the date of stack test and each and every day of operation thereafter until compliance is demonstrated under normal and representative process and operating conditions, except to the extent that the facility can prove to the satisfaction of the Department that there were intervening days during which no violation occurred or that the violation was not continuing in nature; and

C. The licensee may, upon the approval of the Department following the successful demonstration of compliance at alternative load conditions, operate under such alternative load conditions on an interim basis prior to a demonstration of compliance under normal and representative process and operating conditions.

[06-096 C.M.R. ch. 140] **Enforceable by State-only**

(10) The licensee shall maintain records of all deviations from license requirements. Such deviations shall include, but are not limited to malfunctions, failures, downtime, and any other similar change in operation of air pollution control systems or the emission unit itself that is not consistent with the terms and conditions of the air emission license.

A. The licensee shall notify the Commissioner within 48 hours of a violation of any emission standard and/or a malfunction or breakdown in any component part that causes a violation of any emission standard, and shall report the probable cause, corrective action, and any excess emissions in the units of the applicable emission limitation;

B. The licensee shall submit a report to the Department on a quarterly basis if a malfunction or breakdown in any component part causes a violation of any emission standard, together with any exemption requests.

Pursuant to 38 M.R.S. § 349(9), the Commissioner may exempt from civil penalty an air emission in excess of license limitations if the emission occurs during start-up or shutdown or results exclusively from an unavoidable malfunction entirely beyond the control of the licensee and the licensee has taken all reasonable steps to minimize or prevent any emission and takes corrective action as soon as possible. There may be no exemption if the malfunction is caused, entirely or in part, by poor maintenance, careless operation, poor design, or any other reasonably preventable condition or

preventable equipment breakdown. The burden of proof is on the licensee seeking the exemption under this subsection.

C. All other deviations shall be reported to the Department in the facility's semiannual report.

[06-096 C.M.R. ch. 140]

(11) Upon the written request of the Department, the licensee shall establish and maintain such records; make such reports; install, use, and maintain such monitoring equipment; sample such emissions in accordance with such methods, at such locations, at such intervals, and in such manner as the Department shall prescribe; and provide other information as the Department may reasonably require to determine the licensee's compliance status. [06-096 C.M.R. ch. 140]

(12) The licensee shall submit semiannual reports of any required periodic monitoring by January 31 and July 31 of each year, or on an equivalent schedule specified in the license. All instances of deviations from Part 70 license requirements must be clearly identified in such reports. All required reports must be certified by a responsible official. [06-096 C.M.R. ch. 140]

(13) The licensee shall submit a compliance certification to the Department and EPA annually by January 31 of each year, or more frequently if specified in the applicable requirement or by the Department. The compliance certification shall include the following:

A. The identification of each term or condition of the Part 70 license that is the basis of the certification;
B. The compliance status;
C. Whether compliance was continuous or intermittent;
D. The method(s) used for determining the compliance status of the source, currently and over the reporting period; and
E. Such other facts as the Department may require to determine the compliance status of the source.

[06-096 C.M.R. ch. 140]

SPECIFIC CONDITIONS

(14) **MWC Units A and B Limits**

A. Determination of Allowable Fuels / Waste

1. Each MWC is licensed to fire municipal solid waste (MSW) and supplemental wastes including tires; non-veterinary, non-agricultural, small, dead animal remains; non-recoverable oily wastes; waste wood and wood chips. ecomaine is licensed to fire waste types 0, 1, 2, 3, and 6 as defined in 06-096 C.M.R. ch. 100. Auxiliary fuel use shall be limited to natural gas. [A-283-70-A-I, (December 14, 2005)]

2. The non-veterinary, non-agricultural, small, dead animal remains that are licensed to be disposed of at ecomaine shall be:
   a. Delivered to ecomaine in accordance with the section in ecomaine's WTE Operations Manual entitled "Unusual Waste Handling Procedure".
   b. Documented in a log maintained by ecomaine that details the time at which the remains are introduced into either MWC A or B, and the estimated quantity of the remains disposed of in either unit. [A-283-71-G-M (March 27, 1997)]

3. The following are unacceptable wastes and shall not be combusted in the MWCs:
   a. Waste classified as Resource Conservation and Recovery Act (RCRA) hazardous waste;
   b. Low level radioactive waste; and
   c. Red bag medical waste.

   [A-283-70-A-I, (December 14, 2005)]

B. Natural Gas

1. ecomaine shall limit natural gas use in MWC A Boiler and MWC B Boiler during a calendar year to a combined annual capacity factor of 10% or less. [40 C.F.R. Part 60, Subpart Db and A-283-71-A-I (February 18, 1999)]

2. ecomaine shall record and maintain records of the amounts of each fuel combusted during each day and calculate the annual capacity factor individually for natural gas and municipal-type solid waste for the reporting period. The annual capacity factor is determined on a 12-month rolling average basis with a new annual capacity factor calculated at the end of each calendar month. [40 C.F.R. § 60.49b (d)]

C. Emission Limits

Emissions from each of the units MWC A and MWC B shall not exceed the following limits:

Pollutant	Licensed Emission Limits for each Unit	Origin and Authority
PM	24 mg/dscm @ 7% O_2, 3-run average basis	A-283-71-J-M (October 10, 2000), BPT
	3.43 lb/hr	A-283-70-A-I (December 14, 2005), BPT
PM_{10}	3.43 lb/hr	A-283-70-A-I (December 14, 2005), BPT
SO_2	29 ppmdv @ 7% O_2, or 80% reduction by weight or volume;[1] 24-hr daily geometric mean [2]	06-096 C.M.R. ch. 121 (5)(A)(5) and A-283-71-J-M (October 10, 2000)
	11.04 lb/hr, 24-hr basis	A-283-70-A-I (December 14, 2005), BPT
NO_x	180 ppmdv @ 7% O_2, 24-hr daily arithmetic average [2]	A-283-72-C-M (February 3, 1995), BPT
	49.22 lb/hr, 24-hr basis	A-283-70-A-I (December 14, 2005), BPT
CO	100 ppmdv @ 7% O_2, 4-hr block average [2]	40 C.F.R. Part 60, Subpart Cb, § 60.34b(a) and Table 3; 06-096 C.M.R. ch. 121 (5)(A)(9); and A 283-71-J-M (October 10, 2000), BPT
	16.65 lb/hr, 4-hr average basis	A-283-70-A-I (December 14, 2005), BPT
VOC	0.027 lb/MMBtu	A-283-71-J-M (October 10, 2000), BPT
	1.5 lb/hr	A-283-70-A-I (December 14, 2005), BPT
Visible Emissions	10% opacity on a six-minute block average basis	06-096 C.M.R. ch. 121 (5)(A)(2); 40 C.F.R. Part 60, Subpart Cb, § 60.33b(a)(1)(iii); and A-283-71 A-N (February 12, 1986), BACT

Hydrogen Chloride (HCl)	29 ppmdv @ 7% O_2, or 95% reduction by weight or volume, whichever is less stringent; 3-run average basis	06-096 C.M.R. ch. 121 (5)(A)(6); 40 C.F.R. Part 60, Subpart Cb, § 60.33b(b)(3)(ii); and A-283 70 J-M (October 10, 2000), BPT
Dioxins / Furans (PCCD / PCDF) total mass basis	25 ng/dscm @ 7% O_2, 3-run average basis, min. run duration of 4 hours	06-096 C.M.R. ch. 121 (5)(A)(7)
Cadmium (Cd)	35 µg/dscm (0.035mg/dscm) @ 7% O_2, 3-run average basis	06-096 C.M.R. ch. 121 (5)(A)(3) and 40 C.F.R. Part 60, Subpart Cb, § 60.33b(a)(2)(i)
Mercury (Hg)	28 µg/dscm @ 7% O_2, 3-run average basis or 85% reduction by weight, whichever is less stringent	06-096 C.M.R. ch. 121 (5)(A)(4)
	25 lb/yr limit or 90% reduction by weight	38 M.R.S. § 585B sub-§5
Lead (Pb)	400 µg/dscm (0.40 mg/dscm) @ 7% O_2, 3-run average basis	06-096 C.M.R. ch. 121 (5)(A)(3); 40 C.F.R. Part 60, Subpart Cb, § 60.33b(a)(4); and A-283-70-J-M (October 10, 2000), BPT
Ammonia (NH_3)	10 ppmdv @ 7% O_2, 3-run average basis	A-283-71-J-M (October 10, 2000)
Arsenic (As), Beryllium (Be), Chromium (Cr), and Nickel (Ni)	0.00452 lb/hr	06-096 C.M.R. ch. 140, BPT

[1] ecomaine shall limit the use of the 80% reduction of SO_2 compliance demonstration method to no more than ten days per year, on a 12-month rolling total basis. [A--283-70-A-I (December 14, 2005), BPT]

[2] Emission limits apply at all times except for ppmdv limits for SO_2, NO_x, and CO during startup and shutdown. [06-096 C.M.R. ch. 121 and 140, BPT]

D. Mercury Limits [A-283-77-3-M (February 4, 2010)]

ecomaine shall comply with the mercury emission requirements set forth in 38 M.R.S. § 585-B sub-§5 (25 lb/year limit or 90% reduction by weight).

Compliance with the statutory mercury emission limitation shall be based on calculations using the annual EPA Method 29 mercury stack test results. The outlet stack test results, the average flow rate of the flue gas during the stack test, conversion constants, and actual MWC operating hours shall be used to determine the lb/year

emissions. Inlet and outlet stack test results shall be used to determine removal efficiency. Prior approval from the Department is required if different compliance demonstration methods are to be used.

E. Arsenic (As), Nickel (Ni), Chromium (Cr), and Beryllium (Be)

ecomaine shall conduct emissions testing at least once every three calendar years for As, Ni, Cr, and Be, in accordance with 40 C.F.R. Part 60, Appendix A, Method 29 or an alternate method approved by the Department. The most recent testing was completed in October of 2020. The next testing is to be completed before the end of calendar year 2023. [06-096 C.M.R. ch. 121 (5)(D)(5)(a)]

F. Compliance Methods

Compliance with emission limits associated with MWC A and MWC B shall be demonstrated in accordance with the methods and frequencies indicated in the table below or other methods or frequencies as approved by the Department.

Although Standard Condition (8) requires submission of "…a written report to the Department within thirty (30) days from the date of the test completion", a different (longer) timeframe is allowed under 06-096 C.M.R. ch. 121 and applicable federal NSPS regulations. As specified in 06-096 C.M.R. ch. 121 and 40 C.F.R. Part 60, Subpart Eb, a written report shall be submitted within sixty (60) days from the date of test completion. The test completion date shall be considered the date upon which sampling of stack gases associated with the specific emissions test is concluded.

Pollutant	**Units of Limit**	**Compliance Method**	**Frequency**
PM	mg/dscm @ 7% O_2 lb/hr	40 C.F.R. Part 60, Appendix A, Method 5	Annually [1]
PM_{10}	lb/hr	40 C.F.R. Part 60, Appendix A, Method 5 or Method 201 or 201A	As requested
SO_2	ppmdv @ 7% O_2 (based on outlet concentration data) or 80% reduction (based on inlet and outlet concentration data)	SO_2 CEMS; 24-hour block average basis, geometric mean; midnight to midnight	Continuously (in accordance with 40 C.F.R. Part 60, Appendix B)
	lb/hr	40 C.F.R. Part 60, Appendix A, Method 19 or 6C	As requested

NO_x	ppmdv @ 7% O_2	NO_x CEMS; 24-hour block average basis; midnight to midnight	Continuously (in accordance with 40 C.F.R. Part 60, Appendix B)
	lb/hr	40 C.F.R. Part 60, Appendix A, Method 7 of 7E	As requested
CO	ppmdv @ 7% O_2	CO CEMS; four-hour block average basis	Continuously (in accordance with 40 C.F.R. Part 60, Appendix B)
	lb/hr	40 C.F.R. Part 60, Appendix A, Method 10	As requested
VOC	lb/MMBtu and lb/hr	40 C.F.R. Part 60, Appendix A, Method 25 or 25A	As requested
Hydrogen Chloride (HCl)	ppmdv @ 7% O_2	40 C.F.R. Part 60, Appendix A, Method 26 or 26A	Annually [1]
Dioxins / Furans (PCDD / PCDF) total mass basis	ng/dscm @ 7% O_2	40 C.F.R. Part 60, Appendix A, Method 23	Annually [2]
Cadmium (Cd)	µg/dscm @ 7% O_2	40 C.F.R. Part 60, Appendix A, Method 29	Annually
Mercury (Hg)	µg/dscm @ 7% O_2 lb/yr	40 C.F.R. Part 60, Appendix A, Method 29	Annually [1]
Lead (Pb)	µg/dscm @ 7% O_2	40 C.F.R. Part 60, Appendix A, Method 29	Annually [1]
Ammonia (NH_3)	ppmdv @ 7% O_2	40 C.F.R. Part 60, Appendix A	Annually [1]
Visible Emissions [3]	% opacity of emissions	COMS on a six-minute block average basis; monitored continuously in accordance with 40 C.F.R. Part 60, Appendix B	

[1] no less than nine and no more than 15 calendar months following the previous performance test; must complete five performance tests in each five-calendar-year period [40 C.F.R. § 60.58b (g)(5)(i), as referenced by 06-096 C.M.R. ch. 121]

[2] An alternative test schedule for dioxins/furans may apply in accordance with 06-096 C.M.R. ch. 121 (5)(D)(3), which references 40 C.F.R. § 60.58b (g)(5)(iii): Where all performance tests over a two-year period indicate that dioxin/furan emissions are less than or equal to 15 ng/dscm total mass @ 7% O_2 for all affected units located within the facility, ecomaine may elect to conduct annual performance tests for one of the units per year. At a minimum, a performance test for dioxin/furan emissions shall be conducted on a calendar year basis (no less than nine calendar months and no more than 15 months following the previous performance test) for one of the two units at ecomaine. Each year, a different unit shall be tested. If each annual

performance test continues to indicate a dioxin/furan emission level less than or equal to 15 ng/dscm total mass at 7% O_2, ecomaine may continue conducting a performance test on only one unit per calendar year. If any annual performance test indicates either a dioxin/furan emission level greater than 15 ng/dscm total mass at 7% O_2, performance tests shall thereafter be conducted annually on both units at the plant until and unless all annual performance tests for both units over a two-year period indicate a dioxin/furan emission level less than or equal to 15 ng/dscm total mass @ 7% O_2.

[3] ecomaine shall conduct a performance test for opacity on an annual basis (no later than 12 calendar months following the previous performance test) using EPA Reference Method 9, except as provided under 40 C.F.R. Part 60, Subpart A (Section 60.11(e)). If electing to use the methods in § 60.11(e), ecomaine shall use COMS opacity data collected during the annual performance test for particulate matter to demonstrate compliance with the opacity standards, and therefore Method 9 observations would not be required. [06-096 C.M.R. ch. 121 and A-283-70-A-I (December 14, 2005), BPT]

G. Control Equipment

1. PM, PM_{10} Control
ecomaine shall control particulate matter (PM, PM_{10}) emissions from each MWC by the operation and maintenance of a scrubber spray dryer absorber system which includes a cyclone followed by an electrostatic precipitator (ESP). [A-283-71-A-N (February 12, 1986), BACT and 06-096 C.M.R. ch. 140, BPT]

The following shall apply to the inlet temperatures of flue gases for the ESPs associated with MWC A and MWC B. [40 C.F.R. §60.53b(c), as referenced by 06-096 C.M.R. ch. 121]

a. *During Each PCDD/PCDF Performance Test*
During each PCDD/PCDF emissions performance test, ecomaine shall determine maximum demonstrated ESP inlet temperature, which is the highest four-hour arithmetic average flue gas temperature measured at the ESP inlet during four consecutive hours of the test demonstrating compliance with the applicable limits for each MWC.

b. *During Regular MWC Operation*
During regular operation of the MWCs, the temperature at the ESP inlet shall not exceed 17°C above the maximum demonstrated ESP inlet temperature, except as specified in the following paragraph.

During the annual dioxin/furan or mercury performance test, as applicable, and the two weeks preceding the test, no ESP inlet temperature limitations are applicable if the ESP inlet temperature limits are waived in writing by the Department for the purpose of evaluating system performance, testing new

technology or control technologies, diagnostic testing, or related activities for the purpose of improving facility performance or advancing the state of the art for controlling facility emissions.

c. *During Periods of Natural Gas Firing Only*
When either MWC is firing only natural gas, ecomaine may request an exemption to the ESP inlet temperature requirement for the associated ESP. The date, time, duration, and reason for the firing of only natural gas shall be included in the exemption request. [06-096 C.M.R. ch. 140, BPT]

2. SO_2 Control
ecomaine shall control SO_2 emissions from each MWC by spray dryer absorption with lime slurry injection, followed by an electrostatic precipitator. [A-283-71-A-N (February 12, 1986), BACT and 06-096 C.M.R. ch, 140, BPT]

3. NO_x Control
ecomaine shall control NO_x emissions from each MWC by operating the SNCR control system. [A-283-70-A-I (December 14, 2005) and 06-096 C.M.R. ch. 140, BPT]

4. Mercury and Dioxin/Furan Control
ecomaine shall control mercury and dioxin/furan emissions from each MWC by operating a powdered activated carbon injection system for each unit. [A-283-70-A-I (December 14, 2005) and 06-096 C.M.R. ch. 140, BPT]

The following shall apply to the carbon injection systems on MWC A and MWC B:

a. *During Each PCDD/PCDF and Hg Performance Test*
During each performance test conducted for PCDD/PCDF emissions and each performance test conducted for Hg emissions, ecomaine shall determine the average carbon mass feed rate, in pounds per hour, based on carbon injection system operating parameters such as the screw feeder speed, hopper volume, hopper refill frequency, or other parameters appropriate to the feed system being employed. If a dioxin/furan performance test is being performed on only one MWC at the facility, ecomaine may elect to apply the same estimated average carbon mass feed rate from the tested MWC for both MWC units at the facility. [40 C.F.R. §60.58b (m)(1), as referenced by 06-096 C.M.R. ch. 121]

b. *During Carbon Injection System Operation*
During operation of a MWC, the associated carbon injection system's operating parameter(s) that are the primary indicator(s) of the carbon mass feed rate (e.g., screw feeder setting) shall be averaged over an 8-hour block period, and the 8-hour block average must equal or exceed the level(s) documented during the most recently completed performance test showing compliance with the dioxin/furan emission limits and the most recently completed performance test

showing compliance with the mercury emission limits, with the following exception:

During the annual dioxin/furan or mercury performance test and the two weeks preceding the annual dioxin/furan or mercury performance test **and** with written permission from the Department, no limit is applicable for average mass carbon feed rate for the purpose of evaluating system performance, testing new technology or control technologies, diagnostic testing, or related activities for the purpose of improving facility performance or advancing the state of the art for controlling facility emissions. [40 C.F.R. §60.58b (m)(2), as referenced by 06-096 C.M.R. ch. 121]

c. *Carbon Usage Documentation per Calendar Quarter*
ecomaine shall estimate the total carbon usage of the plant (in pounds) for each calendar quarter by the following two independent methods:
(1) Document the weight of carbon delivered to the plant.
(2) Determine the sum of carbon use for both MWC A and MWC B using the average carbon mass feed rate in pounds per hour for each MWC based on the injection system operating parameters (such as the screw feeder speed, hopper volume, hopper refill frequency, or other parameters appropriate to the feed system being employed) and the total number of hours of operation during the calendar quarter for both MWCs.

[40 C.F.R. §60.58b (m)(3), as referenced by 06-096 C.M.R. ch. 121]

d. *Instantaneous Carbon Injection System Operational Indicator*
A carbon injection system operational indicator shall be used to provide additional verification of proper carbon injection system operation. The operational indicator shall provide an instantaneous visual and/or audible alarm to alert the operator of a potential interruption in the carbon feed that would not normally be indicated by direct monitoring of carbon mass feed rate (e.g., continuous weight loss feeder) or monitoring of the carbon system operating parameter(s) that are the indicator(s) of carbon mass feed rate (e.g., screw feeder speed). The carbon injection system operational indicator used to provide additional verification of carbon injection system operation, including basis for selecting the indicator and operator response to the indicator alarm, shall be included in ecomaine's site-specific operating manual. [40 C.F.R. § 60.58b (m)(4), as referenced by 06-096 C.M.R. ch. 121]

5. Records shall be maintained detailing all routine and non-routine maintenance on each cyclone, ESP, spray dryer, powdered activated carbon injection system, and SNCR equipment. ecomaine shall document the location, date, and nature of all pollution control equipment failures. [A-283-70-A-I (December 14, 2005) and 06-096 C.M.R. ch. 140, BPT]

H. Operating Specifications

1. MWC Outage Procedure [A-283-70-A-I (December 14, 2005), BPT]

   a. During periods when neither boiler is in operation, doors to the tipping floor and bunker areas shall be closed so as to prevent odor emissions, unless the facility is receiving MSW. Alternatively, ecomaine may vent these areas via an induced draft fan to the stack.

   b. During times of prolonged facility outage or maintenance, ecomaine shall follow procedures for waste bypass in order to prevent potential environmental impacts of waste storage, as described in ecomaine's waste receiving procedure manual. There shall be no outside storage of waste.

2. Startup, Shutdown, and Malfunction [40 C.F.R. §60.58b(a), as referenced by 06-096 C.M.R. ch. 121, and A-283-70-A-I (December 14, 2005), BPT]

   Emission standards for MWC A and MWC B apply at all times except during periods of startup, shutdown, and malfunction.

   a. *MWC warm-up* for each MWC unit shall be defined as the period before startup commences, when only fossil fuel (natural gas) is being fired in the unit.

   b. The *startup period* (for both cold and warm startup) for each MWC unit begins when MSW is fed into the feed chute, and does not include any warm-up period when the unit is combusting natural gas with no MSW being fed to the combustor. The startup period ends when continuous burning begins.

   c. *Continuous burning* is the continuous, semi-continuous, or batch feeding of MSW for purposes of waste disposal, energy production, or providing heat to the combustion system in preparation for waste disposal or energy production. The use of MSW solely to provide thermal protection of the grate or hearth during the startup period when MSW is not being fed to the grate shall not be considered continuous burning.

   d. *Emergency shutdown* of a MWC unit begins when MSW is no longer fed into the feed chute for that particular boiler and combustion flows to the primary and secondary air fans of that boiler are shut off.

   e. Durations of Startup, Shutdown, or Malfunction Periods

      (1) Durations of startup, shutdown, or malfunction periods are limited to three hours per occurrence, except as additionally provided for CO emissions in the following paragraph. During periods of startup, shutdown, or malfunction, monitoring data shall be dismissed or excluded from

compliance calculations, but shall be recorded and reported in accordance with the provisions of 40 C.F.R. § 60.59b (d)(7).

(2) For the purpose of compliance with CO emission limits, if a loss of boiler water level control (e.g., boiler waterwall tube failure) or a loss of combustion air control (e.g., loss of combustion air fan, induced draft fan, combustion grate bar failure) is determined to be a malfunction, the duration of the malfunction period is limited to 15 hours per occurrence. During such periods of malfunction, monitoring data shall be dismissed or excluded from compliance calculations, but shall be recorded and reported in accordance with the provisions of 40 C.F.R. § 60.59b (d)(7).

f. *Routine shutdown* of a MWC unit begins when MSW is no longer fed into the feed chute for that particular boiler and continues until all MSW is burned and has been discharged to the ash system.

3. Stack O_2 Levels During Warm-up and/or Startup and Shutdown

The stack O_2 levels during MWC warm-up and/or startup and during shutdown that exceed 14.0% may be replaced with a value of 14.0%. In such instances, ecomaine is licensed to recalculate the hourly ppmdv averages for SO_2, NO_x, and CO for compliance purposes. [A-283-70-A-I (December 14, 2005), BPT]

4. Capacity

ecomaine shall ensure that neither boiler train is operated at a rate greater than 275 tons MSW/day and that the total facility is not operated at a rate greater than 550 tons MSW/day. [A-283-71-A-N (February 12, 1986)]

Compliance with the tons MSW/day limits shall be demonstrated and documented daily using steam flow data, a boiler efficiency of 77%, the enthalpy of steam, and a higher heating value (HHV) of the solid waste fuel of 5,311 Btu/lb. [06-096 C.M.R. ch. 140, BPT]

If ecomaine conducts testing in the future of fuel heating values, or if the Solid Waste Association of North America (SWANA) updates the average HHV of MSW based on more recent test data which is representative of ecomaine's fuel, the HHV may be adjusted to reflect the most recently established value. [06-096 C.M.R. ch. 140, BPT]

5. MWC Operating Load Level

The maximum demonstrated municipal waste combustor unit load shall be determined during each annual performance test, measured as steam flow or feed water flow, and shall not exceed the capacity limits (275 tons MSW/day per unit, 550 tons MSW/day for the facility). The maximum demonstrated municipal waste

combustor unit load is the highest four-hour arithmetic average load achieved during four consecutive hours of the most recent emissions test during which compliance with the dioxin/furan emission limit was achieved. [06-096 C.M.R. ch. 121 and ch. 140, BPT]

Over any four-hour block period, each MWC operating load level shall not exceed 110% of the maximum demonstrated MWC unit load level measured as steam flow or feedwater flow. This restriction shall not apply to the two weeks prior to and during PCDD/PCDF testing, or may be waived in writing by the Department for purposes of evaluating system performance, testing new technology or control technologies, diagnostic testing, or related activities for the purpose of improving facility performance or advancing the state of the art for controlling facility emissions. [06-096 C.M.R. ch. 121]

I. Continuous Emission Monitoring System (CEMS and COMS)

1. ecomaine shall operate on each MWC unit the continuous emission monitoring systems as specified in the following table:

Continuous Monitor	Unit of Measurement	Origin and Authority
SO_2 CEMS (both before and after the spray dryer)	ppmdv	06-096 C.M.R. ch. 117
NO_x CEMS	ppmdv	06-096 C.M.R. ch. 117 and 06-096 C.M.R. ch. 138 (3)(G) (2)
CO CEMS	ppmdv	06-096 C.M.R. ch. 117 and ch. 121
O_2 and/or CO_2 CEMS*	percent	
COMS	% opacity	

* at each location where SO_2, NO_x, or CO emissions are monitored

2. During a malfunction period consisting of the loss of boiler water level control or loss of combustion air control, a diluent cap of 14% for oxygen or 5% for carbon dioxide may be used in the emissions calculations for SO_2 and NO_x. [40 C.F.R. §60.58b (b)(8), as referenced by 06-096 C.M.R. ch. 121]

3. ecomaine may use CO_2 corrected to 12% as a diluent gas for any period when the analyzer for O_2 is out of control, provided the CO_2 analyzers are in compliance with the requirements of 40 C.F.R. Part 60, Subpart Eb. [06-096 C.M.R. ch. 121 (7)(D)(3)]

4. At a minimum, valid CEMS hourly averages shall be obtained for 90% of the operating hours per calendar quarter and 95% of the operating days per calendar year that the affected facility is combusting MSW. All valid CEMS data shall be used in calculating average emission concentrations and percent reductions even if these minimum CEMS data requirements are not met. [40 C.F.R. § 60.58b (e), as referenced by 06-096 C.M.R. ch. 121]

5. The four-hour block, 24-hour daily arithmetic averages, and 24-hour daily geometric mean specified in this license shall be calculated from one-hour arithmetic averages expressed in parts per million by volume corrected to 7% oxygen (dry basis). The one-hour arithmetic averages shall be calculated using the data points generated by the CEMS. At least two data points shall be used to calculate each one-hour arithmetic average. [40 C.F.R. § 60.58b (h), as referenced by 06-096 C.M.R. ch. 121]

6. CEMS Recordkeeping [06-096 C.M.R. ch. 140]
Enforceable by State-only

   a. ecomaine shall maintain records documenting that all CEMS and COMS are continuously accurate, reliable, and operated in accordance with 06-096 C.M.R. ch. 117 (as amended), 40 C.F.R. Part 51, Appendix P, and 40 C.F.R. Part 60, Appendices B and F.

   b. ecomaine shall maintain records of all measurements, performance evaluations, calibration checks, and maintenance or adjustments for each CEMS and COMS as required by 40 C.F.R. Part 51, Appendix P.

   c. ecomaine shall maintain records of other data indicative of compliance with the applicable emission standards for those periods when any required CEMS or COMS was not in operation or produced invalid data. In the event the Department does not concur with ecomaine's compliance determination, ecomaine shall, upon the Department's request, provide additional data and shall have the burden of demonstrating that the data is indicative of compliance with the applicable standard.

J. Periodic Monitoring [A-283-70-A-I (December 14, 2005) and 06-096 C.M.R. 140, BPT; 40 C.F.R. § 60.49b(d) for natural gas use]

ecomaine shall monitor and record values for MWC A and MWC B and their associated air pollution control equipment as indicated in the following table whenever the equipment is operating.

MWC A and MWC B (*each*)				
Value	**Units of Measure**	**Monitoring Tool/Method**	**Frequency**	
			Monitor	**Record**
MSW Charging Rates	Tons	Tipping Floor Records	Daily (calculated from weekly data) and Annually	
Steam Flow and/or Feedwater Flow	Pounds per hour	Flow Meter	Continuously	Hourly and 4-hour block
Operating Time	Hours	Boiler Control System	Daily, monthly, and annually (calendar year basis)	
Inspection of Cyclone and ESP	--	Visual	Weekly	
Natural Gas Use	scf and/or MMBtu	Natural Gas Meter (supplier)	Daily, Monthly, 12-month rolling total (to calculate and document annual capacity factor)	

K. Parameter Monitoring

1. ecomaine shall monitor and record parameters for MWC A and MWC B and their associated air pollution control equipment as indicated in the following table whenever the equipment is operating. [A-283-70-A-I (December 14, 2005); 06-096 C.M.R. ch. 121; 40 C.F.R. §70.6; and 06-096 C.M.R. ch. 140, BPT]

Parameter	**Units of Measure**	**Monitoring Tool/Method**	**Frequency**	
			Monitor	**Record**
MWC A and MWC B (*each*)				
Powdered activated carbon injection feed rate	lb/hr	Screw feeder speed	Continuously	Hourly and 8-hour block
Urea injection system use	Dates operated	Manual record	As operated	
Urea usage	Gallons per Hour	Flow meter	Daily, monthly, and annually	
ESP Primary voltage	Volts or kV	Volt meter	Continuously	Daily
ESP Secondary voltage	Volts or kV	Volt meter		
ESP Primary current	Amps	Amp meter		
ESP Secondary current	Amps	Amp meter		
ESP inlet gas temperature	ºF	Thermocouple		4-hour block

2. All signal conversion elements associated with steam or feedwater measurements shall be calibrated according to the manufacturer's instructions before each dioxin/furan performance test, such that calibration is conducted at least once per year. [40 C.F.R. Part 60, Subpart Eb, §60.58b (i)(6)(iv) as referenced by 06-096 C.M.R. 121]

L. Parameter Monitor General Requirements [06-096 C.M.R. ch. 140 and ch. 117] **Enforceable by State-only**

1. Parameter monitors required by this license shall be installed, operated, maintained, and calibrated in accordance with manufacturer recommendations or as otherwise required by the Department.

2. Parameter monitors required by this license shall continuously monitor data at all times the associated emissions unit is in operation. "Continuously" with respect to the operation of parameter monitors required by this license means providing equally spaced data points with at least one valid data point in each successive 15-minute period. A minimum of three valid 15-minute periods constitutes a valid hour.

3. Each parameter monitor must record accurate and reliable data. If the parameter monitor is recording accurate and reliable data less than 98% of the associated emissions unit operating time within any quarter of the calendar year, the Department may initiate enforcement action and may include in that enforcement action any period of time that the parameter monitor was not recording accurate and reliable data during that quarter unless ecomaine can demonstrate to the satisfaction of the Department that the failure of the system to record accurate and reliable data was due to the performance of established quality assurance and quality control procedures or unavoidable malfunctions.

M. Operator Training and Certification [40 C.F.R. § 60.54b of Subpart Eb]

ecomaine shall comply with the following operator training and certification requirements according to 40 C.F.R. § 60.54b of Subpart Eb and maintain records thereof:

1. Each chief facility operator and shift supervisor shall obtain and maintain a current operator certification from either the American Society of Mechanical Engineers [QRO-1-1994] or an equivalent State-approved certification program.

2. ecomaine shall not operate the facility at any time unless either a fully certified chief facility operator or a fully certified shift supervisor is on duty and at the facility.

3. If both the certified chief facility operator and certified shift supervisor are unavailable, a provisionally certified control room operator on-site at the municipal waste combustion unit may fulfill the certified operator requirement. Depending on the length of time that a certified chief facility operator and certified shift supervisor are away, ecomaine must comply with differing requirements. For the durations specified in the table below when the certified chief facility operator and certified shift supervisor are both off-site and no other certified operator is on-site, ecomaine shall comply with the corresponding requirement(s), as specified. In each case, the provisionally certified control room operator may

perform the duties of the certified chief facility operator or certified shift supervisor.

Duration	**Then…**
12 hours or less	The provisionally certified control room operator may perform the duties of the certified chief facility operator or certified shift supervisor. No additional requirements are applicable.
more than 12 hours but not more than two weeks	The provisionally certified control room operator may fulfill the certified operator requirement with no required notice to or approval from the Department. **However**, ecomaine must record the period(s) when the certified chief facility operator and certified shift supervisor are off-site and include that information in the annual report.
more than two weeks	The provisionally certified control room operator may fulfill the certified operator requirement with no required approval from the Department. **However**, ecomaine must fulfill the following requirements: (1) Notify the Department in writing, stating what caused the absence and what actions are being taken by ecomaine to ensure that a certified chief facility operator or certified shift supervisor is on-site as expeditiously as practicable. (2) Submit a status report and corrective action summary to the Department every four weeks following the initial notification. If the Department provides notice that the status report or corrective action summary is disapproved, the MWC unit may continue operation for 90 days, but then must cease operation. If corrective actions are taken in the 90-day period such that the Department withdraws the disapproval, the MWC unit may continue operation.

4. A provisionally certified operator who is newly promoted or recently transferred to a shift supervisor position or a chief facility operator position at the municipal waste combustion unit may perform the duties of the certified chief facility operator or certified shift supervisor without notice to, or approval by, the Department for up to six months before taking the ASME QRO certification exam.

5. ecomaine shall develop and update at least yearly a site-specific operating manual that shall, at a minimum, address the following elements of MWC unit operation:
    a. A summary of the applicable air emission license standards;
    b. A description of basic combustion theory applicable to a MWC unit;
    c. Procedures for receiving, handling, and feeding municipal solid waste;
    d. MWC unit startup, shutdown, and malfunction procedures;
    e. Procedures for maintaining proper combustion air supply levels;
    f. Procedures for operating the MWC unit within air emission license standards;
    g. Procedures for responding to periodic upset or off-specification conditions;
    h. Procedures for minimizing particulate matter carryover;
    i. Procedures for handling ash;
    j. Procedures for monitoring MWC unit emissions; and
    k. Reporting and recordkeeping procedures.

ecomaine shall continue their training program which includes review of the operating manual with each person who has responsibilities affecting the operation of the unit, including but not limited to chief facility operators, shift supervisors, control room operators, ash handlers, maintenance personnel, and crane/load handlers, by the date prior to the day the person assumes such responsibilities and then annually thereafter.

6. The operating manual shall be kept in a readily accessible location for all persons required to undergo training. The operating manual and records of training shall be available for inspection by the EPA or its delegated enforcement agency upon request.

N. Recordkeeping [40 C.F.R. Part 60, Subpart Eb, § 60.59b, as referenced by 40 C.F.R. Part 60, Subpart Cb and 06-096 C.M.R. ch. 121]

ecomaine shall maintain records of the following information for a period of at least six years. These records shall be readily available for submittal to the Department or review on site by an inspector.

1. The calendar date of each record.

2. Emissions and Parameters Data:
   a. The emission concentrations and parameters using continuous monitoring systems specified in this license and as follows:
      (1) All six-minute average opacity values from the COMS;
      (2) All one-hour average SO_2, NO_x, and CO emission concentrations (ppm) from the CEMS;
      (3) All MSW unit load measurements (steam flow);
      (4) All PM control device inlet temperatures ESP temperature).

   b. The average concentrations and percent reductions, as applicable, specified in the following paragraphs shall be computed, recorded, and available for submittal to the Department or review on-site by an inspector:
      (1) All 24-hour daily geometric average SO_2 emission concentrations and all 24-hour daily geometric average percent reductions in SO_2 emissions;
      (2) All 24-hour daily arithmetic average NO_x emission concentrations;
      (3) All 4-hour block average CO emission concentrations;
      (4) All 4-hour block arithmetic average MWC unit load levels; and
      (5) All 4-hour block arithmetic average ESP inlet temperatures.

c. Identification of the calendar dates and times (hours) for which valid hourly data as required have not been obtained, or required continuous automated sampling systems were not operated, including reasons for not obtaining the data and a description of corrective actions taken, for the following:
   (1) SO_2 emissions data;
   (2) NO_x emissions data;
   (3) CO emissions data;
   (4) MWC unit load data;
   (5) ESP inlet temperature data.

d. Identification of each occurrence that SO_2 emissions data, NO_x emissions data, or operational data (*i.e.*, CO emissions, unit load, and ESP inlet temperature) have been excluded from the calculation of average emission concentrations or parameters, and the reasons for excluding the data.

e. The results of daily drift tests and quarterly accuracy determinations for SO_2, NO_x, and CO CEMS.

f. Identification of the calendar dates when any of the emission concentrations, percent reductions, opacities, or operating parameters were above the applicable limits, with reasons for such exceedances and a description of corrective actions taken.

3. Powdered Activated Carbon Injection System

For the activated carbon systems, the following records shall be maintained:

a. The average carbon mass feed rate (lb/hr) determined during annual dioxin/furan performance tests and mercury tests, with supporting calculations.

b. The average carbon mass feed rate (lb/hr) determined on an eight-hour block average basis during operation, with supporting calculations.

c. The total carbon usage for each calendar quarter, with supporting calculations.

d. Carbon injection system operating parameter data for the parameter(s) that are the primary indicator(s) of carbon feed rate (e.g., screw feeder speed).

e. Identification of the calendar dates when the average carbon mass feed rates recorded were less than either of the hourly carbon feed rates estimated during performance tests for mercury or dioxin/furan emissions, with reasons for such feed rates and a description of corrective actions taken.

f. Identification of the calendar dates when the powdered activated carbon injection system operating parameter(s) that are the primary indicator(s) of carbon mass feed rate (e.g., screw feeder speed) recorded were below the level(s) determined during the performance tests, with reasons for such occurrences and a description of corrective action taken.

(15) **Ash Handling System**

A. There shall be no visible emissions from the Ash Handling System for more than 5% of the observation period (i.e., nine minutes in any three-hour period). [40 C.F.R. § 60.36b and 06-096 C.M.R. ch. 121 (5)(A)(10)]

B. Compliance with the visible emission limit for the Ash Handling System shall be demonstrated annually in accordance with EPA Reference Method 22 in 40 C.F.R. Part 60, Appendix A.

The minimum observation time shall be a series of three one-hour observations. The observation period shall include times when the facility is transferring ash from the MWCs to the area where ash is stored or loaded into containers or trucks. The average duration of visible emissions per hour shall be calculated from the three one-hour observations. The average shall be used to determine compliance with the fugitive ash limit. [06-096 C.M.R. ch. 121]

C. Ash from each MWC and all ash and non-combustible materials culled from the ash handling system shall be sufficiently conditioned with water to render it dust-free, or shall be stored in covered containers or in a leak tight enclosure so as to prevent fugitive emissions. [06-096 C.M.R. ch. 140, BPT]

(16) **Lime and Carbon Silos**

A. Visible emissions from either the lime silo or the carbon silo shall not exceed 10% opacity on a six-minute block average basis. The facility shall take corrective action if visible emissions from the baghouses exceed 5% opacity on a six-minute block average basis. [06-096 C.M.R. ch. 121 (3)(B)(3)]

B. ecomaine shall maintain and operate a fabric filter to control emissions during lime silo filling operations. Filling operations shall not be conducted without the proper use of the fabric filter. [06-096 C.M.R. ch. 140, BPT]

C. ecomaine shall maintain and operate a fabric filter to control emissions during carbon silo filling operations. Filling operations shall not be conducted without the proper use of the fabric filter. [06-096 C.M.R. ch. 140, BPT]

D. ecomaine shall maintain a log documenting all fabric filter malfunctions, maintenance, and repairs for both the lime and carbon silos. [06-096 C.M.R. ch. 140, BPT]

(17) **Emergency Generator and Fire Pump**

A. Allowable Operation and Fuels

1. The Emergency Generator and the Fire Pump are each licensed to fire distillate fuel. [06-096 C.M.R. ch. 140, BPT]

2. The Emergency Generator and the Fire Pump each shall be limited to 100 hours of operation per calendar year, excluding operating hours during emergency situations. [06-096 C.M.R. ch. 140, BPT]

B. Fuel Sulfur Content

1. The fuel oil sulfur content for the Emergency Generator and the Fire Pump shall be limited to 0.0015% sulfur by weight. [06-096 C.M.R. ch. 140, BPT]

2. Fuel sulfur content compliance shall be demonstrated by fuel delivery receipts from the supplier, fuel supplier certification, certificate of analysis, or testing of the tank containing the fuel to be fired. [06-096 C.M.R. ch. 140, BPT]

C. Emissions shall not exceed the following limits [06-096 C.M.R. ch. 140, BPT]:

Unit	PM (lb/hr)	PM_{10} (lb/hr)	SO_2 (lb/hr)	NO_x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Emergency Generator	0.63	0.63	0.01	16.80	4.46	0.47
Fire Pump	0.17	0.17	0.01	6.17	1.33	0.50

D. Visible Emissions

Visible emissions from the Emergency Generator and the Fire Pump shall not exceed 20% opacity on a six-minute block average basis except for periods of startup during which time ecomaine may comply with the following work practice standards in lieu of the numerical visible emissions standard. [06-096 C.M.R. ch. 101, § 3(A)(4)]

1. Maintain a log (written or electronic) of the date, time, and duration of all Emergency Generator and Fire Pump startups.

2. Operate the Emergency Generator and Fire Pump in accordance with the manufacturers' emission-related operating instructions.

3. Minimize the engines' time spent at idle during startups and minimize the engines' startup time to a period needed for appropriate and safe loading of the engines, not to exceed 30 minutes, after which time the non-startup emission limitations shall apply.

4. Operate the Emergency Generator and the Fire Pump, including any associated air pollution control equipment, at all times in a manner consistent with safety and good air pollution control practices for minimizing emissions. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Department that may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the unit.

E. The Emergency Generator and the Fire Pump shall meet the applicable requirements of 40 C.F.R. Part 63, Subpart ZZZZ, including the following:

1. ecomoaine shall meet the following operational limitations for each of the compression ignition emergency engines (Emergency Generator and the Fire Pump):

   a. Change the oil and filter every 500 hours of operation or annually, whichever comes first;
   b. Inspect the air cleaner every 1,000 hours of operation or annually, whichever comes first, and replace as necessary; and
   c. Inspect the hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary.

   Records shall be maintained documenting compliance with the operational limitations.

   [40 C.F.R. § 63.6603(a) and Table 2(d) and 06-096 C.M.R. ch. 140, BPT]

2. Oil Analysis Program Option
   ecomaine has the option of utilizing an oil analysis program which complies with the requirements of § 63.6625(i) in order to extend the specified oil change requirement. If this option is used, ecomaine must keep records of the parameters that are analyzed as part of the program, the results of the analysis, and the oil changes for the engine. The analysis program must be part of the maintenance plan for the engine. [40 C.F.R. § 63.6625(i)]

3. Non-Resettable Hour Meter
   A non-resettable hour meter shall be installed and operated on each engine. [40 C.F.R. § 63.6625(f)]

4. Maintenance, Testing, and Non-Emergency Operating Situations

   a. The engines shall each be limited to 100 hours/year for maintenance checks and readiness testing. Up to 50 hours/year of the 100 hours/year may be used in non-emergency situations (this does not include peak shaving, demand response, or to generate income for a facility by providing power to an electric

grid or otherwise supply power as part of a financial arrangement with another entity). These limits are based on a calendar year. Compliance shall be demonstrated by records (electronic or written logs) of all engine operating hours. [40 C.F.R. § 63.6640(f) and 06-096 C.M.R. ch. 140, BPT]

b. ecomaine shall keep records that include maintenance conducted on the engines and the hours of operation of each engine recorded through the non-resettable hour meter. Documentation shall include the number of hours each unit operated for emergency purposes, the number of hours each unit operated for non-emergency purposes, and the reason each engine was in operation during each time. [40 C.F.R. §§ 63.6655(e) and (f)]

5. Operation and Maintenance

The engines shall be operated and maintained according to the manufacturers' emission-related written instructions, or ecomaine shall develop a maintenance plan which must provide to the extent practicable for the maintenance and operation of the engines in a manner consistent with good air pollution control practice for minimizing emissions. [40 C.F.R. § 63.6625(e)]

6. Startup Idle and Startup Time Minimization

During periods of startup the facility must minimize the engines' time spent at idle and minimize the engines' startup time to a period needed for appropriate and safe loading of the engines, not to exceed 30 minutes, after which time the non-startup emission limitations apply. [40 C.F.R. § 63.6625(h) & 40 C.F.R. Part 63, Subpart ZZZZ Table 2d]

(18) **Fugitive Emissions**

Visible emissions from a fugitive emission source (including stockpiles and roadways) shall not exceed 20% opacity on a 5-minute block average basis.
[06-096 C.M.R. ch. 101, § 3(C)]

(19) **General Process Sources**

Visible emissions from any general process source shall not exceed 20% on a six-minute block average basis. [06-096 C.M.R. ch. 101, § 3(B)(4)]

(20) **Quarterly Reporting**

The licensee shall submit a Quarterly Report to the Bureau of Air Quality within 30 days after the end of each calendar quarter, detailing the following for the control equipment, parameter monitors, Continuous Emission Monitoring Systems (CEMS), and Continuous Opacity Monitoring Systems (COMS) required by this license. [06-096 C.M.R. ch. 117]

A. All control equipment downtimes and malfunctions;
B. All CEMS or COMS downtimes and malfunctions;
C. All parameter monitor downtimes and malfunctions;
D. All events in excess of emission and operational limitations set by this Order, Statute, state regulations, or federal regulations, as applicable. The following information shall be reported for each excess event;
    1. Standard exceeded;
    2. Date, time, and duration of excess event;
    3. Amount of air contaminant emitted in excess of the applicable emission standard, expressed in the units of the standard;
    4. A description of what caused the excess event;
    5. The strategy employed to minimize the excess event; and
    6. The strategy employed to prevent reoccurrence.
E. A report certifying there were no excess emissions, if that is the case.

(21) **Semiannual Reporting** [06-096 C.M.R. ch. 140]

A. The licensee shall submit to the Bureau of Air Quality semiannual reports which are due on **January 31st** and **July 31st** of each year. The facility's designated responsible official must sign this report.
B. The semiannual report shall be considered on-time if the postmark of the submittal is on or before the due date or if the report is received by the Department within seven calendar days of the due date.
C. Each semiannual report shall include a summary of the periodic monitoring required by this license.
D. Each semiannual report shall include the annual capacity factor of MWC A and MWC B for each fuel.
E. All instances of deviations from license requirements and the corrective action taken must be clearly identified and provided to the Department in summary form for each six-month interval.

(22) **Annual Compliance Certification**

ecomaine shall submit an annual compliance certification to the Department and EPA in accordance with Standard Condition (13) of this license. The annual compliance certification is due **January 31st** of each year. The facility's designated responsible official must sign this report.

The annual compliance certification shall be considered on-time if the postmark of the submittal is on or before the due date or if the report is received by the Department within seven calendar days of the due date. Certification of compliance is to be based on the stack testing or monitoring data required by this license. Where the license does not require such data, or the license requires such data upon request of the Department and the Department has not requested the testing or monitoring, compliance may be certified based upon other reasonably available information such as the design of the equipment or applicable emission factors. [06-096 C.M.R. ch. 140]

(23) **Annual Emission Statement**

A. In accordance with *Emission Statements*, 06-096 C.M.R. ch. 137, ecomaine shall annually report to the Department, in a format prescribed by the Department, the information necessary to accurately update the State's emission inventory. The emission statement shall be submitted as specified by the date in 06-096 C.M.R. ch. 137.

B. ecomaine shall keep the following records in order to comply with 06-096 C.M.R. ch. 137:

1. The amount of distillate fuel fired in the Emergency Generator and the Fire Pump (each) on a monthly basis;
2. The sulfur content of the distillate fuel fired in the Emergency Generator and the Fire Pump; and
3. Hours each emission unit was operating on a monthly basis. [06-096 C.M.R. ch. 137]

C. In reporting year 2020 and every third year thereafter, ecomaine shall report to the Department emissions of hazardous air pollutants as required by 06-096 C.M.R. ch. 137, § (3)(C). ecomaine shall pay the annual air quality surcharge, calculated by the Department based on these reported emissions of hazardous air pollutants, by the date required in Title 38 M.R.S. § 353-A(3). [38 M.R.S. § 353-A(1-A)]

(24) **General Applicable State Regulations**

The licensee is subject to the State regulations listed below.

Origin and Authority	Requirement Summary	Enforceability
06-096 C.M.R. ch. 102	Open Burning	-
06-096 C.M.R. ch. 109	Emergency Episode Regulations	-
06-096 C.M.R. ch. 110	Ambient Air Quality Standards	-
06-096 C.M.R. ch. 116	Prohibited Dispersion Techniques	-
38 M.R.S. § 585-B, §§5	Mercury Emission Limit	Enforceable by State-only

(25) **Expiration of a Part 70 license**

A. ecomaine shall submit a complete Part 70 renewal application at least six but no more than 18 months prior to the expiration of this air license.

B. Pursuant to Title 5 M.R.S. §10002, and 06-096 C.M.R. ch. 140, the Part 70 license shall not expire and all terms and conditions shall remain in effect until the Department takes final action on the renewal application of the Part 70 license. An existing source submitting a complete renewal application under 06-096 C.M.R. ch. 140 prior to the expiration of the Part 70 license will not be in violation of operating without a Part 70 license. **Enforceable by State-only**

(26) **New Source Review**

ecomaine is subject to all previous New Source Review (NSR) requirements summarized in this Part 70 air emission license, and the NSR requirements remain in effect even if this 06-096 C.M.R. ch. 140 Air Emissions License, A-283-70-G-R/A, expires.

DONE AND DATED IN AUGUSTA, MAINE THIS 11th DAY OF JANUARY, 2021.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY: _____ for _____
MELANIE LOYZIM, ACTING COMMISSIONER

The term of this license shall be five (5) years from the signature date above.

[Note: If a complete renewal application, as determined by the Department, is submitted at least six but no more than 18 months prior to expiration of the facility's Part 70 license, then pursuant to Title 5 M.R.S. §10002, all terms and conditions of the Part 70 license shall remain in effect until the Department takes final action on the Part 70 license renewal application.]

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application: November 21, 2019
Date of application acceptance: November 21, 2019

Date filed with the Board of Environmental Protection:

This Order prepared by Patric J. Sherman, Bureau of Air Quality.

FILED

JAN 11, 2021

State of Maine
Board of Environmental Protection