



STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION

JOHN ELIAS BALDACCI
GOVERNOR

BETH NAGUSKY
Acting COMMISSIONER

**Geneva Wood Fuels, LLC
Franklin County
Strong, Maine
A-342-71-S-A (SM)**

**Departmental
Findings of Fact and Order
Air Emission License
Amendment #5**

After review of the air emissions license minor amendment application, staff investigation reports and other documents in the applicant's file in the Bureau of Air Quality, pursuant to 38 M.R.S.A., §344 and §590, the Department finds the following facts:

I. REGISTRATION

A. Introduction

Geneva Wood Fuels LLC (Geneva Wood Fuels) is licensed to operate a wood pellet facility in Strong, Maine and has submitted an amendment to revise the emission limits for the replacement wood dryer and also to reduce the boiler's wood fuel use limit.

The facility was issued Air Emission License A-342-71-M-N on December 28, 2007. The license was subsequently amended as follows: A-342-71-N-M (April 23, 2008), A-342-71-P-T/A (September 17, 2008), A-342-71-Q-A (January 13, 2009), and A-342-71-R-M (March 17, 2010).

B. Emission Equipment

This air emission license amendment addresses emission and operating limits, as noted, from the following currently licensed equipment:

Dryer

<u>Equipment</u>	<u>Maximum Capacity (MMBtu/hr)</u>	<u>Maximum Firing Rate (gal/hr)</u>	<u>Fuel Type</u>	<u>Stack #</u>	<u>Control Device</u>
Dryer with wood burner chamber	40	9073 lb/hr (50% moisture)	Wood	1	multicyclone

AUGUSTA
17 STATE HOUSE STATION
AUGUSTA, MAINE 04333-0017
(207) 287-7688 FAX: (207) 287-7826
RAY BLDG., HOSPITAL ST.

BANGOR
106 HOGAN ROAD, SUITE 6
BANGOR, MAINE 04401
(207) 941-4570 FAX: (207) 941-4584

PORTLAND
312 CANCO ROAD
PORTLAND, MAINE 04103
(207) 822-6300 FAX: (207) 822-6303

PRESQUE ISLE
1235 CENTRAL DRIVE, SKYWAY PARK
PRESQUE ISLE, MAINE 04679-2094
(207) 764-0477 FAX: (207) 760-3143

This amendment addresses updating the new dryer's originally licensed PM, PM₁₀, NO_x, CO, and VOC emission limits from air emission license amendment A-342-71-R-M.

Boiler

<u>Equipment</u>	<u>Maximum Capacity (MMBtu/hr)</u>	<u>Maximum Firing Rate (lb/hr)</u>	<u>Fuel Type</u>	<u>Pollution Control Equipment</u>	<u>Stack #</u>
Boiler 1	33.7 ^o	9361 (3600 Btu/lb wet wood/bark)	Wood	multiclone	1

^o This amendment limits the wood fired boiler to a fuel restriction of 20 tons of fuel per day.

C. Application Classification

The modification of a minor source is considered a major modification based on whether or not expected emission increases exceed the "Significant Emission Levels" as defined in the Department's regulations. Geneva Wood Fuels is considered a minor source based on the proposed future license limits (note that the previous amendment had a CO tons per year limit above the major source level). The emission increases are determined by subtracting the current licensed emissions preceding the modification application (see licenses A-342-71-Q-A, addressing the boiler, and A-342-71-R-M, addressing the dryer) from the maximum future licensed allowed emissions, as follows:

<u>Pollutant</u>	<u>Current License (TPY)</u>	<u>Future License (TPY)</u>	<u>Net Change (TPY)</u>	<u>Sig. Level</u>
PM	76.1	43.3	-32.8	100
PM ₁₀	30.1	43.3	+13.2	100
SO ₂	11.1	8.9	-2.2	100
NO _x	55.5	52.9	-2.6	100
CO	119.6	71.3	-48.3	100
VOC	57.8	41.8	-16.0	50

This modification is determined to be a minor modification and has been processed as such through *Major and Minor Source Air Emission License Regulations*, 06-096 CMR 115 (last amended December 24, 2005). With the fuel and operating restrictions, Geneva Wood Fuels is below the major source thresholds and is considered to be a synthetic minor.

II. BEST PRACTICAL TREATMENT (BPT)

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 CMR 100 (last amended December 24, 2005). Separate control requirement categories exist for new and existing equipment as well as for those sources located in designated non-attainment areas.

BPT for new sources and modifications requires a demonstration that emissions are receiving Best Available Control Technology (BACT), as defined in 06-096 CMR 100. BACT is a top-down approach to selecting air emission controls considering economic, environmental and energy impacts.

B. Wood Dryer

A single pass recycle dryer with a flex-fuel 40 MMBtu/hr burner chamber manufactured by TSI, Inc was licensed in amendment A-342-71-R-M (March 17, 2010) to replace the original dryer which was taken out of service due to extensive damage. The dryer was installed in April of 2010. Geneva Wood Fuels requested changes to the licensed PM, PM₁₀, NO_x, CO, and VOC emission limits to reflect anticipated performance levels.

The replacement dryer system includes a wood fired burner chamber, the dryer, and a multiclone. The burner chamber has a maximum heat input capacity of 40 MMBtu/hr and fires wet and dry wood with 15-55% moisture content. The dryer has a maximum throughput of 29.8 tons/hr of green wood at approximately 45% moisture content (equivalent to 16.38 oven-dried tons per hour at 0% moisture). The dryer throughput is dried to approximately 10% moisture content. The dryer's burner chamber exhaust mixes with recycled exhaust gas to attain the desired gas temperature and then is vented directly into the dryer. After exiting the dryer, the exhaust gas and dried wood fines are conveyed to four process cyclones which separate the gas from the wood. A dryer air fan pulls the air through the dryer and collectors. A portion of the exhaust gas is recycled and mixed with the burner chamber exhaust prior to the dryer. The remaining dryer exhaust gas is sent to a multiclone and then up a 90 foot stack.

Controls include the use of the multiclone for the control of particulate matter, excess air in the combustion chamber to provide oxygen while minimizing NO_x, and a combustion temperature between 1600°F and 1850°F to minimize CO emissions (formed below 1600°F) and NO_x emissions (formed above 1850°F). The dryer and burner chamber shall have an operating limit of 8322 hours/year for the purpose of staying under the major source thresholds.

BACT

The following is a summary of the BACT analysis:

PM/PM₁₀ – The identified control options for particulate matter include a multiclone, which is integral to the process, and then an additional control device of a fabric filter, electrostatic precipitator (ESP), wet scrubber, or electrified gravel bed filter. Fabric filters are not feasible due to the potential fire hazard. ESPs, wet scrubbers, and electrified gravel bed filters were determined to be economically infeasible due to the dryer size and level of particulate emissions. A search of EPA's RACT/BACT/LAER Clearinghouse confirmed that there were no other pellet manufacturing facilities required by a regulatory agency to install particulate controls other than cyclones.

BACT for PM/PM₁₀ was determined to be the use of a high efficiency multiclone in addition to the process cyclones, and an 8.5 lb/hr emission limit for PM and 8.5 lb/hr PM₁₀ limit. The multiclone is expected to have a collection efficiency of 50-90% of the total dryer flow depending on the particle size.

The PM/PM₁₀ limit will replace the 12.25 lb/hr PM and 2.42 lb/hr PM₁₀ limits in the previous license.

SO₂ – The identified control options for sulfur dioxide include the addition of a dry reagent into the dryer or exhaust duct, and the use of aqueous-based reagents in a scrubber vessel. However, wood is an inherently low sulfur fuel. The add-on control technologies for reducing SO₂ are not cost effective and would not result in a significant environmental benefit.

BACT for SO₂ is the use of wood in the dryer burner and a 1.9 lb/hr emission limit, as currently licensed.

NO_x – The identified control options for nitrogen oxides include combustion controls (minimizing excess air at the burner and overfire air) and post combustion controls (selective non-catalytic reduction, SNCR, and selective catalytic combustion, SCR). SCR is not a technically feasible option because of the high particulate loading from solid fuel firing. SNCR is not an economically feasible option due to equipment costs and the potentially detrimental environmental impact due to the injected ammonia.

BACT for NO_x was determined to be good combustion practices and the use of low NO_x burners. The temperature is maintained at or around 1800°F and available oxygen is limited in the combustion air, both minimizing NO_x formation.

The NO_x limit is based on 0.66 lb/oven-dried ton (ODT). This results in a 10.8 lb/hr emission rate, which will replace the 6.75 lb/hr limit in the previous license.

CO – The identified control option for carbon monoxide is combustion controls (excess air at the burner and temperatures greater than 1600°F) and an add-on oxidation catalyst. The oxidation catalyst operates optimally in a clean exhaust environment with a temperature of 700°F to 1100°F. Due to the possibility of plugging and fouling of the catalyst material from wood combustion exhaust and the lower temperature range, the oxidation catalyst was not considered a viable option.

BACT for CO was determined to be good combustion practices and a CO limit based on 0.66 lb/oven-dried ton (ODT). This results in a 10.8 lb/hr emission rate, which will replace the 5.0 lb/hr limit in the previous license.

VOC - The identified control option for volatile organic compounds is combustion controls (recycled exhaust gas to aid in lowering temperatures within the dryer).

BACT for VOC was determined to be good combustion practices and a VOC limit based on 0.59 lb/oven-dried ton (ODT). This results in a 9.7 lb/hr emission rate, which will replace the 13.8 lb/hr limit in the previous license.

Opacity – the dryer shall continue to have a visible emission limit of 20% opacity on a 6-minute block average basis, except for no more than one (1) six (6) minute block average in a 1-hour period, based on *Visible Emissions Regulation* 06-096 CMR 101 (last amended May 18, 2003).

Monitoring, Testing, and Recordkeeping

Parameter Monitors - The following shall be monitored on a continuous basis for minimum of 95% of the time the rotary dryer is operating. The monitored parameters shall be recorded digitally at least four times an hour, including the date and time of each reading.

- Burner chamber exhaust temperature
- Burner chamber outlet oxygen
- Dryer recirculation value
- Dryer inlet and outlet temperatures
- Pressure differential across the cyclone

Six months after the signature of this license, Geneva Wood Fuels shall submit a report to the Department for approval that details set points or operating ranges for the above parameters to ensure the equipment is operating properly.

Dryer Operating Hours - The dryer use shall be limited to 8322 hours/year. An hour meter shall be installed and operated on the dryer and records shall be maintained daily, monthly, and on a 12 month rolling total.

Dryer Production - Product output records shall be kept on a monthly basis.

Dryer Burner Chamber - Wood fuel records shall be maintained for the dryer burner chamber on a daily, monthly, and 12 month rolling total. Within 6 months of the issuance of this license, Geneva Wood Fuels shall submit a plan to the Department for approval that defines the fuel measurement method for the facility.

Multiclone Records - A log detailing all routine and non-routine maintenance on the multiclone system shall be kept. The log shall include the date and nature of all multiclone system failures.

Start-up/Shutdown/Malfunction - Each startup, shutdown, and malfunction event of the dryer and multiclone shall be recorded and shall include start time, end time, duration, cause, and method utilized to minimize the duration of the event and/or to prevent a reoccurrence.

Stack Testing – PM, CO, and VOC stack tests shall be performed on the Dryer in accordance with the appropriate EPA test methods by November 1, 2010.

C. Wood Boiler Fuel Use

Boiler #1 was manufactured in 1980 with a maximum capacity of 33.7 MMBtu/hr. Geneva Wood Fuels has proposed to decrease the fuel limit on the boiler from 28,000 tons/year of wet wood to 7300 tons/year of wet wood on a 12 month rolling total. The wood use limit is based on 3600 Btu/lb (or equivalent). Geneva Wood Fuels has also requested a daily boiler fuel limit of 20 tons/day. With the annual fuel use limit, the facility remains under the major source thresholds and with the daily fuel limit, the facility meets the short-term Maine Ambient Air Quality Standards (24 hour PM₁₀ standard).

The previously licensed lb/hr emission limits for the boiler shall be lowered based on the following:

PM and PM₁₀ emissions were calculated to reflect the 20 ton/day fuel limit per the equation below:

$$(20 \text{ tons wood/day}) * (2000 \text{ lb wood/tons wood}) * (\text{day}/24 \text{ hrs}) * (0.3 \text{ lb/MMBtu PM}) * (0.003600 \text{ MMBtu/lb wood}) = 1.8 \text{ lb/hr}$$

SO₂, NO_x, CO, and VOC emissions were calculated based on a 2.25 tons wood/hr firing rate. This is historically, the average hourly bucket load fired in the boiler (equates to 16.2 MMBtu/hr).

The lb/hr limits listed below were used in the modeling analysis:

- PM: 0.3 lb/MMBtu; 1.8 lb/hr
- PM₁₀: 0.3 lb/MMBtu; 1.8 lb/hr
- SO₂: 0.04 lb/MMBtu; 0.65 lb/hr
- NO_x: 0.3 lb/MMBtu; 4.86 lb/hr
- CO: 1.0 lb/MMBtu; 16.20 lb/hr
- VOC: 0.06 lb/MMBtu; 0.97 lb/hr
- Opacity: Visible emissions from Boiler #1 shall not exceed 30% opacity on a six (6) minute block average, except for no more than two (2) six (6) minute block averages in a continuous 3-hour period.

D. Annual Emissions

Geneva Wood Fuels shall be limited to the following annual emissions, based on a 12 month rolling total and calculated from an annual boiler fuel limit of 7300 tons/year wood waste (55% moisture or equivalent) and an annual operating limit on the dryer and burner chamber of 8322 hrs/yr at the production rate of 16.38 oven dried tons/hour:

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

	PM	PM₁₀	SO₂	NO_x	CO	VOC
Boiler	7.9	7.9	1.1	7.9	26.3	1.6
Dryer	35.4	35.4	7.8	45.0	45.0	40.2
Total TPY	43.3	43.3	8.9	52.9	71.3	41.8

III. AMBIENT AIR QUALITY ANALYSIS

A. Overview

A refined modeling analysis was performed to show that emissions from Geneva Wood Fuels, in conjunction with other sources, will not cause or contribute to violations of Maine Ambient Air Quality Standards (MAAQS) for SO₂, PM₁₀, NO₂ or CO or to Class II increments for SO₂, PM₁₀ or NO₂.

Since the current licensing action for Geneva Wood Fuels represents a minor modification to an existing minor source, it has been determined by MEDEP-

BAQ that an assessment of Class I Air Quality Related Values (AQRVs) is not required.

B. Model Inputs

The AERMOD-PRIME refined model was used to address standards and increments in all areas. The modeling analysis accounted for the potential of building wake and cavity effects on emissions from all modeled stacks that are below their calculated formula GEP stack heights.

All modeling was performed in accordance with all applicable requirements of the Maine Department of Environmental Protection, Bureau of Air Quality (MEDEP-BAQ) and the United States Environmental Protection Agency (USEPA).

A valid 5-year hourly off-site meteorological database was used in the AERMOD-PRIME refined modeling analysis. Five years of wind data was collected at heights of 10 and 70 meters at the Madison Paper Industries meteorological monitoring site from 1991-1995. Surface data collected at the Augusta State Airport FAA site were substituted for missing surface data. All other missing data were interpolated or coded as missing, per USEPA guidance.

The surface meteorological data was combined with concurrent hourly cloud cover and upper-air data obtained from the Caribou National Weather Service (NWS). Missing cloud cover and/or upper-air data values were interpolated or coded as missing, per USEPA guidance.

All necessary representative micrometeorological surface variables for inclusion into AERMET (surface roughness, Bowen ratio and albedo) were calculated using AERSURFACE from procedures recommended by USEPA.

Point-source parameters, used in the modeling for Geneva Wood Fuels are listed in Table III-1.

TABLE III-1: Point Source Stack Parameters

Facility/Stack	Stack Base Elevation (m)	Stack Height (m)	GEP Stack Height (m)	Stack Diameter (m)	UTM Easting NAD27 (km)	UTM Northing NAD27 (km)
CURRENT/PROPOSED						
IV. Geneva Wood Fuels						
• Boiler Stack	161.54	27.43	30.48	1.37	403.621	4961.937
• Dryer Stack	161.54	27.43	30.44	1.12	403.604	4961.918
1987 BASELINE						
Geneva Wood Fuels						
• Geneva Wood Fuels conservatively assumed no credit for sources existing in the 1987 baseline year.						

1977 BASELINE						
Geneva Wood Fuels						
• Boiler Stack	161.54	27.43	30.48	1.37	403.621	4961.937

Emission parameters for Geneva Wood Fuels for MAAQS and increment modeling are listed in Table III-2. The emission parameters for Geneva Wood Fuels are based on the maximum license allowed (worst-case) operating configuration. For the purposes of determining PM₁₀, all PM emissions were conservatively assumed to convert to PM₁₀. For the purposes of determining NO₂ impacts, the Ambient Ratio Method (ARM) was applied. The ARM is the second-tier screening approach for calculating NO_x emissions and assumes that 75 percent of NO_x is converted to NO₂. USEPA has established a national default ARM value of 0.75.

TABLE III-2: Stack Emission Parameters

Facility/Stack	Averaging Periods	SO ₂ (g/s)	PM ₁₀ (g/s)	NO ₂ (g/s)	CO (g/s)	Stack Temp (K)	Stack Velocity (m/s)
MAXIMUM LICENSE ALLOWED							
Geneva Wood Fuels – Scenario 1							
• Boiler Stack (100%)	All	0.08	0.23	0.61	2.04	455.37	1.98
• Dryer Stack (100%)	All	0.24	1.07	1.36	1.36	422.04	18.23
Geneva Wood Fuels – Scenario 2							
• Boiler Stack (100%)	All	0.08	0.23	0.61	2.04	455.37	1.98
• Dryer Stack (67%)	All	0.16	0.72	0.91	0.91	422.04	12.21
Geneva Wood Fuels – Scenario 3							
• Boiler Stack (80%)	All	0.07	0.18	0.50	1.63	455.37	1.59
• Dryer Stack (67%)	All	0.16	0.72	0.91	0.91	422.04	12.21
Geneva Wood Fuels – Scenario 4							
• Boiler Stack (60%)	All	0.05	0.14	0.37	1.22	455.37	1.19
• Dryer Stack (33%)	All	0.08	0.36	0.45	0.45	422.04	6.02
BASELINE – 1987							
Geneva Wood Fuels							
• Geneva Wood Fuels conservatively assumed no credit for sources existing in the 1987 baseline year.							
BASELINE – 1977							
Geneva Wood Fuels							
• Boiler Stack	All	0.14	1.06			455.37	3.43

C. Single Source Modeling Impacts

Refined modeling was performed for a total of nine operating scenarios that represented a range of maximum, typical and minimum operations.

The AERMOD-PRIME model results for Geneva Wood Fuels alone are shown in Table III-3. Maximum predicted impacts that exceed their respective significance

level are indicated in boldface type. No further modeling was required for pollutant/terrain combinations that did not exceed their respective significance levels.

**TABLE III-3:
 Maximum AERMOD-PRIME Impacts from Geneva Wood Fuels Alone**

Pollutant	Averaging Period	Max Impact ($\mu\text{g}/\text{m}^3$)	Receptor UTM E (km)	Receptor UTM N (km)	Receptor Elevation (m)	Max Impact Scenario	Class II Significance Level ($\mu\text{g}/\text{m}^3$)
SO ₂	3-hour	26.52	403.589	4961.827	157.97	1	25
	24-hour	22.36	403.613	4961.856	160.68	1	5
	Annual	2.44	403.613	4961.856	160.68	2	1
PM ₁₀	24-hour	87.67	403.612	4961.857	160.61	1	5
	Annual	9.11	403.613	4961.856	160.68	2	1
NO ₂	1-hour	119.27	403.613	4961.856	160.68	1	10 ¹
	Annual	15.82	403.613	4961.856	160.68	2	1
CO	1-hour	640.67	403.629	4961.847	161.57	3	2000
	8-hour	343.30	403.619	4961.849	160.82	2	500

Notes: ¹ Interim Significant Impact Level (SIL) adopted by NESCAUM states

D. Combined Source Modeling Impacts

For predicted modeled impacts from Geneva Wood Fuels alone that exceeded significance levels, as indicated in boldface type in Table III-3, other sources not explicitly included in the modeling analysis must be accounted for by using representative background concentrations for the area.

Background concentrations, listed in Table III-4, are derived from representative rural background data for use in the Central Maine region.

TABLE III-4: Background Concentrations

Pollutant	Averaging Period	Background Concentration ($\mu\text{g}/\text{m}^3$)	Date
SO ₂	3-hour	24	2003 ¹
	24-hour	13	
	Annual	5	
PM ₁₀	24-hour	45	2002 – 2003 ²
	Annual	14	
NO ₂	1-hour	47	2007 – 2009 ³
	Annual	11	

Notes: ¹ Robinson Site, Easton

² Jewell Property Site, Jay

³ MicMac Site - Presque Isle

MEDEP examined other nearby sources to determine if any impacts would be significant in or near Geneva Wood Fuels significant impact area. Due to the Geneva Wood Fuels location, extent of the predicted significant impact area and other nearby source's emissions, MEDEP has determined that no other sources would be considered for combined source modeling.

For pollutant averaging periods that exceeded significance levels, the maximum modeled impacts from the model predicting the highest concentrations were added with conservative rural background concentrations to demonstrate compliance with MAAQS, as shown in Table III-5. Because all pollutant/averaging period impacts using this method meet MAAQS, no further MAAQS modeling analyses need to be performed.

TABLE III-5: Maximum Combined Sources Impacts

Pollutant	Averaging Period	Max Impact ($\mu\text{g}/\text{m}^3$)	Back-Ground ($\mu\text{g}/\text{m}^3$)	Max Total Impact ($\mu\text{g}/\text{m}^3$)	MAAQS ($\mu\text{g}/\text{m}^3$)
SO ₂	3-hour	26.52	24	50.52	1150
	24-hour	22.36	13	35.36	230
	Annual	2.44	5	7.44	57
PM ₁₀	24-hour	87.67	45	132.67	150
	Annual	9.11	14	23.11	40
NO ₂	1-hour	119.27	47	166.27	188
	Annual	15.82	11	26.82	100

E. Increment

The AERMOD-PRIME refined model was used to predict maximum Class II increment impacts in all areas.

Results of the Class II increment analysis are shown in Tables III-6. All modeled maximum increment impacts were below all increment standards. Because all predicted increment impacts meet increment standards, no further Class II SO₂, PM₁₀ and NO₂ increment modeling needed to be performed.

TABLE III-6: Class II Increment Consumption

Pollutant	Averaging Period	Max Impact ($\mu\text{g}/\text{m}^3$)	Receptor UTM E (km)	Receptor UTM N (km)	Receptor Elevation (m)	Max Impact Scenario	Class II Increment ($\mu\text{g}/\text{m}^3$)
SO ₂	3-hour	20.40	403.589	4961.827	157.97	1	512
	24-hour	16.52	403.612	4961.856	160.61	1	91
	Annual	0.81	403.599	4961.867	159.64	2	20
PM ₁₀	24-hour	29.32	403.612	4961.856	160.61	1	30
	Annual	1.15	403.619	4961.977	163.71	4	17
NO ₂	Annual	15.82	403.613	4961.856	160.68	2	25

Federal regulations and 06-096 CMR 140 require that any major new source or major source undergoing a major modification provide additional analyses of impacts that would occur as a direct result of the general, commercial, residential, industrial and mobile-source growth associated with the construction and operation of that source. Since this licensing action represents a minor modification to an existing minor source, no additional analyses were required.

F. Class I Impacts

Since the current licensing action for Geneva Wood Fuels represents a minor modification to an existing minor source, it has been determined by MEDEP-BAQ that an assessment of Class I Air Quality Related Values (AQRVs) is not required.

G. Summary

In summary, it has been demonstrated that Geneva Wood Fuels in its proposed configuration will not cause or contribute to a violation of any SO₂, PM₁₀, NO₂ or CO averaging period MAAQS or any SO₂, PM₁₀ or NO₂ averaging period Class II increment standards.

ORDER

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

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

The Department hereby grants Air Emission License A-342-71-S-A subject to the conditions found in Air Emission License A-342-71-M-N, in amendments A-342-71-N-M, A-342-71-P-T/A, A-342-71-Q-A, and A-342-71-R-M and in the following conditions.

Severability. The invalidity or unenforceability of any provision, or part thereof, of this License 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.

SPECIFIC CONDITIONS

The following shall replace condition (16) in air emission license A-342-71-M-N, as amended in air emission license amendment #2, A-342-71-P-T/A and amendment #3, A-342-71-Q-A:

(16) Boiler #1 (33.7 MMBtu/hr – wood fired)

A. Emissions from Boiler #1 shall not exceed the following:

Pollutant	lb/MMBtu	Origin and Authority
PM	0.3	06-096 CMR 103(2)(B)(4)(a)
NO _x	0.3	06-096 CMR 115, BACT

B. Emissions from Boiler #1 shall not exceed the following [06-096 CMR 115, BACT]:

PM (lb/hr)	PM ₁₀ (lb/hr)	SO ₂ (lb/hr)	NO _x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
1.8	1.8	0.65	4.86	16.20	0.97

C. Visible emissions from Boiler #1 shall not exceed 30% opacity on a six (6) minute block average, except for no more than two (2) six (6) minute block averages in a continuous 3-hour period. [06-096 CMR 101]

D. Boiler Fuel Use

1. Daily fuel use shall not exceed 20 tons/day wood waste (3600 Btu/lb, 55% moisture), or equivalent. [06-096 CMR 115, Ambient Air Quality Modeling Requirement for PM₁₀]
2. Fuel use in the boiler shall not exceed 7300 tons/yr wood waste (3600 Btu/lb, 55% moisture), or equivalent, on a 12 month rolling total. [06-096 CMR 115, BACT]
3. Compliance with the daily and annual boiler fuel use limits shall be documented by daily recordkeeping in a fuel use log, based on bucket loads of fuel. The log shall include the estimation of the amount of fuel in a bucket load. Fuel use records shall be maintained on a daily, monthly, and 12 month rolling total. This may be revised based on the plan required to be submitted to the Department for the dryer combustion fuel use. [06-096 CMR 115, BACT]

E. Geneva Wood Fuels may mix specification waste oil with the wood waste residue fired in the wood fired boiler. The specification waste oil use shall not

exceed 60 gallons/month. Records shall be maintained documenting the gallons of specification waste oil fired each month.

Geneva Wood Fuels may mix oily rags with the wood waste residue fired in the wood fired boiler. The oily rags must originate from the facility and the permeated oil must meet the requirements of specification waste oil. Geneva Wood Fuels shall maintain records of the amount of oily rags burned each month (ie – a full 55 gallon drum, ½ drum, etc).

An analysis of a representative waste oil sample shall be kept on site. If there are changes in the process or if there are changes in the maintenance garage that may effect the composition of the waste oil collected, a new representative sample shall be tested. These test results shall be kept on-site and a copy shall be submitted to the Bureau of Air Quality. [06-096 CMR 115, BACT and 06-096 CMR 860]

- F. Geneva Wood Fuels shall maintain a log detailing all routine and non-routine maintenance on the boiler multiclone. The log shall include the date and nature of all multiclone failures. [06-096 CMR 115, BACT]
- G. Geneva Wood Fuels shall establish an O₂/boiler load curve and shall operate within the curve to maximize boiler efficiency and minimize air emissions. [06-096 CMR 115, BACT]

The following shall replace condition (17) in air emission license A-342-71-M-N, as amended in air emission license amendment #1, A-342-71-N-M, amendment #2, A-342-71-P-T/A, and amendment #3, A-342-71-Q-A:

(17) Dryer #1

- A. Emissions from the Dryer Process (including the 40 MMBtu/hr burner chamber) shall not exceed the following: [06-096 CMR 115, BACT]

PM (lb/hr)	PM ₁₀ (lb/hr)	SO ₂ (lb/hr)	NO _x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
8.5	8.5	1.9	10.8	10.8	9.7

- B. Visible emissions from the dryer stack shall not exceed 20% opacity on a 6-minute block average basis, except for no more than one (1) six (6) minute block average in a 1-hour period. [06-096 CMR 101]
- C. The following shall be monitored on a continuous basis for minimum of 95% of the time the rotary dryer is operating. The monitored parameters shall be

recorded digitally at least four times an hour, including the date and time of each reading.

1. Burner chamber exhaust temperature
2. Burner chamber outlet oxygen
3. Dryer recirculation value
4. Dryer inlet and outlet temperatures
5. Pressure differential across the cyclone

Six months after the signature of this license, Geneva Wood Fuels shall submit a report to the Department for approval that details set points or operating ranges for the above parameters to ensure the equipment is operating properly.

- D. Geneva Wood Fuels shall limit the dryer use to 8322 hours/year. An hour meter shall be installed and operated on the dryer and records shall be maintained daily, monthly, and on a 12 month rolling total. [06-096 CMR 115, BACT]
- E. Geneva Wood Fuels shall maintain wood fuel records for the dryer burner on a daily, monthly, and 12 month rolling total. Within 6 months of the issuance of this license, Geneva Wood Fuels shall submit a plan to the Department for approval that defines the fuel measurement method for the facility. [06-096 CMR 115, BACT]
- F. Geneva Wood Fuels shall keep records on the amount of product output on a monthly basis. [06-096 CMR 115, BACT]
- G. Geneva Wood Fuels shall maintain a log detailing all routine and non-routine maintenance on the multiclone system. The log shall include the date and nature of all multiclone system failures. [06-096 CMR 115, BACT]
- H. Geneva Wood Fuels shall record each startup, shutdown, and malfunction event of the dryer and multiclone including start time, end time, duration, cause, and method utilized to minimize the duration of the event and/or to prevent a reoccurrence. [06-096 CMR 115, BACT]
- I. Geneva Wood Fuels shall perform PM, CO, and VOC stack tests on Dryer #1 in accordance with the appropriate EPA test methods by November 1, 2010. [06-096 CMR 115, BACT]
- J. The dryer shall exhaust through a 90 foot stack. [06-096 CMR 115, BACT]

Condition (24) in air emission license amendment #3, A-342-71-Q-A, regarding applying for a Part 70 license, shall be removed (with the current limits, the facility is a synthetic minor source).

Geneva Wood Fuels, LLC
Franklin County
Strong, Maine
A-342-71-S-A (SM)

16

Departmental
Findings of Fact and Order
Air Emission License
Amendment #5

Condition (25) in air emission license amendment #4, A-342-71-R-M, regarding the replacement dryer requirements shall be removed and is now incorporated in the new Condition (17) above.

DONE AND DATED IN AUGUSTA, MAINE THIS *26th* DAY OF *October*, 2010.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY: *James P. Brophy*
BETH NAGUSKY, ACTING COMMISSIONER

The term of this amendment shall be concurrent with the term of Air Emission License A-342-71-M-N.

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application: June 1, 2010

Date of application acceptance: June 2, 2010

Date filed with the Board of Environmental Protection:

This Order prepared by Kathleen E. Tarbuck, Bureau of Air Quality.

