Waste Management Disposal Services of Maine, Inc.
Somerset County
Norridgewock, Maine
A-816-77-1-A

Departmental
Findings of Fact and Order
New Source Review
Amendment #1

After review of the air emissions license 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

FACILITY	Waste Management Disposal Services of Maine, Inc. (WMDSM)
LICENSE TYPE	06-096 CMR 115, Major Modification
NAICS CODES	562212
NATURE OF BUSINESS	Solid Waste Landfill
FACILITY LOCATION	Norridgewock, Maine
NSR AMENDMENT ISSUANCE DATE	July 11, 2008

B. Amendment Description

WMDSM operates a landfill gas collection system. The collected gases are currently controlled by two Landfill Gas Oxidation Units (flares). A third flare has been licensed but has not been installed.

WMDSM has proposed the installation of a landfill gas-to-energy (LFGTE) project (the "project"). The proposed project will divert landfill gas from the flares to three internal combustion reciprocating engine generator units. Engines #1 and #2 are each Caterpillar G3520C 1,600 kW engine-generator units and Engine #3 is a Caterpillar G3516 LE 820 kW engine-generator unit. Engines #1 and #2 are each rated at 17.6 MMBtu/hr and Engine #3 is rated at 10.0 MMBtu/hr firing landfill gas comprised of approximately 50% methane (CH_4).
Flare #2 has been permitted but will not be installed and Flares #1 and #3 will remain in place and will be used as backup landfill gas control devices or to operate simultaneously with the engines.

C. Application Classification

The application for WMDSM does not violate any applicable federal or state requirements and does not reduce monitoring, reporting, testing or record keeping. This application does seek to modify and establish a Best Available Control Technology (BACT) analysis performed per New Source Review.

Additionally, the modification of a major source is considered a major modification based on whether or not expected emissions increases exceed the "Significant Emission Increase Levels" as given in *Definitions Regulation*, 06-096 CMR 100 (last amended December 1, 2005).

The emission increases are determined by subtracting baseline emissions from the project from the maximum future license allowed emissions from the project. Since the project represents a new emission unit, the baseline emissions are assumed to be zero. Although there is some netting that could occur due to the reduction in future maximum potential emissions associated with the flares that will occur when the engines are in use, significance levels will still be exceeded and therefore the table below does not reflect a netting calculation.

Pollutant	Past Actuals (ton/year)	Future LFGTE (ton/year)	Net Change (ton/year)	Significance Level (ton/year)
PM	0	9.5	9.5	25
PM_{10}	0	9.5	9.5	15
SO_2	0	97.2	97.2	40
NO_x	0	48.1	48.1	40
CO	0	215.5	215.5	100
VOC	0	10.0	10.0	40

Based upon the emission increases listed above, this amendment was determined to be a major modification for SO_2, NO_x, and CO.

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 06-096 CMR 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 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. Landfill Gas-Fired Engines

The Landfill Gas-fired Engines are Caterpillar G3520C and G3516 LE engines. Engines #1 and #2 each have a maximum heat input of 17.6 MMBtu/hr and Engine #3 has a maximum heat input of 10.0 MMBtu/hr firing landfill gas comprised of 50% CH_4. WMDSM performed a detailed BACT analysis for the engines for PM, SO_2, NO_x, and CO.

1. SO_2

SO_2 is produced when sulfur compounds present in the landfill gas are oxidized during combustion. Control of SO_2 is often accomplished through limiting the amount of sulfur present in the fuel. For control of SO_2 WMDSM evaluated the following control technologies:

a. Limits on the concentration of Total Reduced Sulfur (TRS) compounds in the landfill gas (LFG) through the use of sulfur treatment systems in the LFG header pipe upstream of the proposed engines (three different systems);
b. Zeomatrix, LLC Alternative Daily Cover (ADC) tarp; and
c. Management of the waste stream.

The three sulfur treatment systems for the LFG considered were Lo-CAT®, SulfaTreat®, and Shell-Paques/Thiopaq® desulfurization process. The Shell-Paques/Thiopaq® process does not have a proven history and was therefore eliminated from consideration as not technically viable at this time. Lo-CAT® and SulfaTreat® were both determined to not be economically feasible for the TRS concentrations at this time.

The Zeomatrix, LLC product is a biodegradable paper ADC which reduces odors by adsorbing Hydrogen Sulfide (H_2S) with an engineered zeolite additive. H_2S is the major constituent of TRS in this case. The Zeomatrix, LLC product is intended for use in treating emissions at landfill surfaces to reduce odors and is not applicable for control of TRS in a LFG stream.

The main source of TRS at landfills is gypsum wallboard. It is common for two waste types, construction and demolition debris (C&D) and C&D Fines, to contribute to elevated TRS concentrations. C&D Fines are made up of smaller pieces with a larger surface area that allows for increased biodegradation of the sulfur/sulfate containing compounds. They therefore contribute to higher TRS emissions when biological degradation occurs. WMDSM has not accepted C&D Fines. As a result, elevated TRS concentrations within the LFG are not expected. WMDSM proposes to control emissions of SO_2 by managing the acceptance of C&D and C&D Fines to limit TRS concentrations within the LFG to less than 1,500 ppmv at 50% methane on average. This limit is comparable to concentrations at other landfill facilities in Maine.

2. CO and NO_x

Since there is often a trade-off in emissions when either CO or NO_x is reduced, BACT for these two pollutants was considered together.

WMDSM evaluated the following control technologies for the control of CO and NO_x:

a. Good Combustion Practices;
b. Air/Fuel Ration (AFR) controllers;
c. Selective Catalytic Reduction (SCR); and
d. Selective Non-Catalytic Reduction (SNCR).

Impurities in the LFG quickly poison catalysts. Due to the very limited operational history of landfill gas-fired engines, no other add on control technology has been developed for this equipment. Therefore, SCR and SNCR were eliminated as not technically viable at this time.

WMDSM has proposed BACT for CO and NO_x for Engines #1 and #2 to be use of the integrated AFR controller and emission limits of 0.6 g/bhp-hr for NO_x and 4.2 g/bhp-hr for CO.

WMDSM has proposed BACT for CO and NO_x for Engine #3 to be good combustion practices and emission limits of 2.0 g/bhp-hr for NO_x and 3.1 g/bhp-hr for CO.

These emission limits are based on the engine specifications provided by the manufacturer and are comparable to other LFG fired engines in Maine.

3. PM
   WMDSM evaluated the following control technologies for the control of PM:

   a. Good Combustion Practices;
   b. Proper Engine Maintenance Practices; and
   c. Coalescing Filters.

   WMDSM has proposed BACT for PM to be the use of all three technologies mentioned above.

Streamlining

1. Opacity
   Visible Emissions Regulation, 06-096 CMR 101 (last amended April 27, 2003) Section (2)(B)(1)(d) contains the only applicable opacity standard. **No streamlining requested.**

2. PM
   a. *Fuel Burning Equipment Particulate Emission Standard,* 06-096 CMR 103 (last amended September 26, 1990) establishes an applicable PM lb/MMBtu emission limit.
   b. BACT established applicable PM lb/MMBtu emission limits.

   WMDSM accepts streamlining for the PM lb/MMBtu standard. The BACT limits are the most stringent and are therefore the only PM lb/MMBtu emission limits included in this license.

   c. BACT establishes the only applicable PM lb/hr emission limits.
      No streamlining requested.

3. PM_{10}
   BACT establishes the only applicable PM_{10} lb/hr emission limits.
   No streamlining requested.

4. SO_2
   BACT establishes the only applicable SO_2 lb/hr emission limits.
   No streamlining requested.

5. NO_x
   a. BACT establishes the only applicable NO_x lb/hr emission limits. **No streamlining requested.**
   b. BACT establishes the only applicable NO_x g/bhp-hr emission limits. **No streamlining requested.**

6. CO
   a. BACT establishes the only applicable CO lb/hr emission limits. **No streamlining requested.**
   b. BACT establishes the only applicable CO g/bhp-hr emission limits. **No streamlining requested.**

7. VOC
   BACT establishes the only applicable VOC lb/hr emission limits.
   No streamlining requested.

Periodic Monitoring

Periodic monitoring shall consist of record keeping which includes records of maintenance performed on each engine, monthly records of operating time for each engine, and gas flow to the flare and engines on a monthly basis.

Periodic monitoring shall also include testing the H_2S concentration in the landfill gas once per business day utilizing either an in-line analyzer, laboratory analysis, or stain tubes. The frequency of H_2S monitoring shall be reduced to once weekly if the results of the daily testing are less than 1,000 ppm for 20 consecutives tests, and to once monthly if the results of the weekly testing are less than 500 ppm for eight consecutive tests If the frequency of H_2S monitoring is reduced, upon request the Department may require H_2S testing to increase to once per business day. If the results of the H_2S testing remain consistently below 250 ppm, the Department may eliminate the requirement for H_2S testing. Compliance with applicable SO_2 limits shall be based on periodic laboratory determination of TRS levels and not the H_2S testing required in this paragraph.

Periodic monitoring shall also include once monthly sampling of the landfill gas at the engine plant or flare inlet for TRS utilizing ASTM Method D5504, EPA Modified Method 16, or another method approved by the Department.

Based on manufacturer's assurances it is unlikely that the engines will exceed the emission limits listed in this license for PM, NO_x, CO and VOC. Therefore, periodic monitoring by the source for these pollutants is not required. However, neither the EPA nor the State is precluded from requesting WMDSM to perform testing and may take enforcement action for any violations discovered.

C. Annual Emissions

WMDSM shall be billed on the following general facility-wide annual emissions, based on a 12 month rolling total:

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

	PM	PM_{10}	SO_2	NO_x	CO	VOC	Total HAP
Flare #1	1.1	1.1	32.1	4.4	24.0	0.1	--
Flare #3	3.3	3.3	96.0	13.3	73.0	0.2	--
Engines #1 & #2	7.4	7.4	75.8	25.9	181.1	0.2	--
Engine #3	2.1	2.1	21.4	22.2	34.4	0.1	--
Fugitive	--	--	--	--	--	9.4	--
Total TPY	**13.9**	**13.9**	**225.3**	**65.8**	**312.5**	**10.0**	**9.9**

*** The emissions associated with individual units in this table do not constitute annual limits. The emissions associated with each unit were used to calculate the maximum facility wide annual emissions, but do not reflect the maximum emissions associated with operation of each unit at its rated capacity.**

III. Ambient Air Quality Analysis

A. Overview

A refined modeling analysis was performed to show that emissions from WMDSM, in conjunction with other sources, will not cause or contribute to violations of Maine Ambient Air Quality Standards (MAAQS) for SO_2, PM_{10}, NO_2 or CO or to Class II increments for SO_2, PM_{10} or NO_2. The modeling analysis is conservative in that it assumes the two flares and three engines are operating simultaneously at their respective maximum rated capacities. Actual emissions at any given time and annually will be less than the emissions resulting from the combined operation of the flares and engines at their maximum capacity.

Based upon the distance from WMDSM to the nearest Class I area (97 kilometers) and the magnitude of emissions increase, the affected Federal Land Managers (FLMs) and MEDEP-BAQ have determined that an assessment of Class I increment standards and 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 by MEDEP from procedures recommended by USEPA.

Point-source parameters, used in the modeling for WMDSM 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 NAD83 (km)	UTM Northing NAD83 (km)
CURRENT/PROPOSED						
WMDSM						
• Engine #1	80.50	13.72	16.00	0.41	432.999	4951.461
• Engine #2	80.50	13.72	16.00	0.41	432.999	4951.465
• Engine #3	80.50	13.72	16.00	0.41	432.998	4951.470
• Flare #1	80.00	16.64*	0.00	1.36*	433.424	4951.083
• Flare #3	80.10	15.97*	0.00	1.52*	432.457	4951.195
Madison Paper Industries						
• Main Stack - Flue A	76.20	76.20	76.20	1.45	429.961	4960.863
• Main Stack - Flue B	76.20	76.20	76.20	1.45	429.961	4960.863
SD Warren Paper Company						
• Stack #1	59.10	83.79	127.10	4.34	448.679	4950.250
• Stack #2	59.10	88.09	127.10	3.35	448.767	4950.235
1987 BASELINE						
WMDSM						
WMDSM had no emissions sources in the 1987 baseline year, no credit to be taken.						
1977 BASELINE						
WMDSM						
WMDSM had no emissions sources in the 1987 baseline year, no credit to be taken.						
Madison Paper Industries						
• Main Stack	76.20	76.20	76.20	1.61	429.961	4960.863
SD Warren Paper Company						
• Stack #1	59.10	83.79	127.10	4.34	448.679	4950.250

*** = effective stack height/diameter, based upon total heat release data**

Emission parameters for WMDSM for MAAQS and increment modeling are listed in Table III-2. The emission parameters for WMDSM are based on the maximum rated capacity (worst-case) for the operation of three electrical generating engines and two flares. For the purposes of determining PM_{10} and NO_2 impacts, all PM and NO_x emissions were conservatively assumed to convert to PM_{10} and NO_2, respectively.

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							
WMDSM							
• Engine #1	All	1.09	0.11	0.37	2.61	753.15	43.06
• Engine #2	All	1.09	0.11	0.37	2.61	753.15	43.06
• Engine #3	All	0.62	0.06	0.64	0.99	725.92	21.57
• Flare #1	All	3.71	0.13	0.51	2.80	1273.15	20.00
• Flare #3	All	4.63	0.16	0.64	3.50	1273.15	20.00
Madison Paper Industries							
• Main Stack - Flue A	All	39.29				450.00	17.40
• Main Stack - Flue B	All	26.20				450.00	11.62
SD Warren Paper Company							
• Stack #1	All	495.05				464.26	28.53
• Stack #2	All	44.23				326.48	19.11
BASELINE – 1987							
WMDSM							
WMDSM had no emissions sources in the 1987 baseline year, no credit to be taken.							
BASELINE – 1977							
WMDSM							
WMDSM had no emissions sources in the 1977 baseline year, no credit to be taken.							
Madison Paper Industries							
• Main Stack	All	63.55				450.00	8.37
SD Warren Paper Company							
• Stack #1	All	291.56				432.59	15.72

C. Single Source Modeling Impacts

AERMOD-PRIME refined modeling, using 5 years of sequential meteorological data, was performed for the worst-case operating scenario, which accounts for the operation of all three electrical generating engines and two flares at their respective maximum rated capacity.

The modeling results for WMDSM alone, which were conservatively based upon high-first-high values, are shown in Tables 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 WMDSM Alone

Pollutant	Averaging Period	Max Impact ($\mu g/m^3$)	Receptor UTM E (km)	Receptor UTM N (km)	Receptor Elevation (m)	Class II Significance Level ($\mu g/m^3$)
SO_2	3-hour	**248.14**	432.969	4951.511	80.80	**25**
	24-hour	**116.51**	432.939	4951.521	79.15	**5**
	Annual	**8.48**	433.119	4951.441	79.82	**1**
PM_{10}	24-hour	**11.26**	432.939	4951.441	79.15	**5**
	Annual	0.82	433.119	4951.461	79.82	**1**
NO_2	Annual	**4.93**	433.089	4951.461	80.16	**1**
CO	1-hour	605.48	432.999	4951.501	81.52	**2000**
	8-hour	460.21	432.979	4951.511	81.21	**500**

D. Combined Source Modeling Impacts

For predicted modeled impacts from WMDSM 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 ($\mu g/m^3$)	Date
SO_2	3-hour	24	2003 [1]
	24-hour	13	
	Annual	5	
PM_{10}	24-hour	45	1994 [2]
NO_2	Annual	11	1995 [3]

Notes:
[1] Robinson Site, Easton
[2] Jewell Property, Jay
[3] TLSP Site, Cape Elizabeth

MEDEP examined other local sources whose impacts would be significant in or near WMDSM's significant impact area. Due to WMDSM's location, extent of the significant impact area and nearby source's emissions, MEDEP has determined that only two other sources would be considered for combined-source SO_2 MAAQS and increment modeling: Madison Paper Industries and SD Warren Paper Company.

Table III-5 summarizes maximum combined source impacts. The maximum modeled combined source impacts, based upon high-second-high values, were added with the 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 AERMOD-PRIME Combined Sources Impacts

Pollutant	Averaging Period	Max Impact ($\mu g/m^3$)	Receptor UTM E (km)	Receptor UTM N (km)	Receptor Elevation (m)	Back-Ground ($\mu g/m^3$)	Max Total Impact ($\mu g/m^3$)	MAAQS ($\mu g/m^3$)
SO_2	3-hour	**520.48**	423.998	4949.469	60.85	**24**	**544.48**	**1150**
	24-hour	**147.21**	448.998	4963.469	118.29	**13**	**160.21**	**230**
	Annual	**12.07**	448.998	4949.469	60.85	**5**	**17.07**	**57**
PM_{10}	24-hour	**8.88***	432.969	4951.511	80.80	**45**	**53.88**	**150**
NO_2	Annual	**4.93***	433.089	4951.461	80.16	**11**	**15.93**	**100**

*** = PM_{10} and NO_2 maximum predicted impacts were from WMDSM alone**

E. Increment

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

Results of the single and combined source increment analyses (which are based upon high-second high values) are shown in Tables III-6 and III-7, respectively. All modeled maximum increment impacts were below all increment standards. Because all predicted increment impacts meet increment standards, no further Class II SO_2, PM_{10} and NO_2 increment modeling for WMDSM needed to be performed.

TABLE III-6 : Class II Increment Consumption – WMDSM Alone

Pollutant	Averaging Period	Max Impact ($\mu g/m^3$)	Receptor UTM E (km)	Receptor UTM N (km)	Receptor Elevation (m)	Class II Increment ($\mu g/m^3$)
SO_2	3-hour	**233.76**	432.969	4951.511	80.80	**512**
	24-hour	**90.10**	432.969	4951.511	80.80	**91**
	Annual	**8.48**	433.119	4951.441	79.82	**20**
PM_{10}	24-hour	**8.88**	432.969	4951.511	80.80	**30**
	Annual	**0.82**	433.119	4951.441	79.82	**17**
NO_2	Annual	**4.93**	433.089	4951.461	80.16	**25**

TABLE III-7 : Class II Increment Consumption – Combined Sources

Pollutant	Averaging Period	Max Impact ($\mu g/m^3$)	Receptor UTM E (km)	Receptor UTM N (km)	Receptor Elevation (m)	Class II Increment ($\mu g/m^3$)
SO_2	3-hour	**233.77**	432.969	4951.511	80.80	**512**
	24-hour	**90.11**	432.969	4951.511	80.80	**91**
	Annual	**8.61**	433.119	4951.441	79.82	**20**

Federal guidance and 06-096 CMR 115 require that any 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.

GENERAL GROWTH: Very minimal increases in local emissions due to construction related activities are expected to occur, as the proposed modification will involve relatively minor and short-lived general construction. Increases in potential emissions of NO_x due to increased traffic to the facility will be minimal, as there will be an insignificant increase in truck traffic in and out of the landfill area. Fugitive PM emissions (if any) will be minimized by the use of "Best Management Practices".

RESIDENTIAL, COMMERCIAL AND INDUSTRIAL GROWTH: Population growth in the impact area of a proposed source can be used as a surrogate factor for the growth in emissions from combustion sources. Since the population in Somerset County has increased approximately 5% since the minor source baseline date was established and the modification is not expected to create any new jobs, no new significant residential, commercial and industrial growth will likely follow from the modification associated with this source.

MOBILE SOURCE AND AREA SOURCE GROWTH: Since area and mobile sources are considered minor sources of NO_2, their contribution to increment has to be evaluated. Technical guidance from USEPA points out that screening procedures can be used to determine whether additional detailed analyses of minor source emissions are required. Compiling a minor source inventory may not be required if it can be shown that little or no growth has taken place in the impact area of the proposed source since the baseline date (February 8, 1988) was established. Emissions during the calendar year 1987 are used to determine baseline emissions. As stated previously, the population in Somerset County has increased approximately 5% since the minor source baseline date was established; therefore, no further assessment of additional area source growth of NO_2 increment is needed.

Any emissions associated with the minimal increases in vehicle miles traveled have been likely more than offset by decreases in NO_x emissions in terms of reduced

average grams-per-vehicle-mile emission rates since the minor source baseline date was established. Therefore, no increase in actual NO_x emissions from mobile sources is expected. No further detailed analyses of mobile NO_2 emissions are needed.

F. Class I Impacts

Based upon the distance from WMDSM to the nearest Class I area (97 kilometers) and the magnitude of emissions increase, the affected Federal Land Managers (FLMs) and MEDEP-BAQ have determined that an assessment of Class I increment standards and Air Quality Related Values (AQRVs) is not required.

G. Summary

In summary, it has been demonstrated that WMDSM in its proposed configuration will not cause or contribute to a violation of any SO_2, PM_{10}, NO_2 or CO averaging period MAAQS or any SO_2, PM_{10} or NO_2 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-816-77-1-A pursuant to the preconstruction licensing requirements of 06-096 CMR 115 and subject to the standard and special conditions below.

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.

Conditions (16) through (29) of Air Emission Licenses A-816-71-A-N, A-816-71-B-A, A-816-71-C-A, and A-816-71-D-M are deleted.

The following are new NSR Conditions:

(1) WMDSM shall not exceed an emission limit of 9.9 tons per year for any individual HAP and 24.9 tons per year for all HAPs combined based on a 12-month rolling total. HAP emissions shall be calculated based on EPA's AP-42, "Compilation of Air Pollutant Emission Factors" for landfill gas emissions, other industry accepted factors or EPA published factors if approved by the Department, or site-specific test data, the monthly totalized volume of landfill gas extracted, and the destruction efficiency of the oxidizer unit.
[06-096 CMR 115, BACT]

(2) Flares

A. WMDSM shall operate and maintain a landfill gas collection and control system except for periods of construction, maintenance or malfunctions of the system. [06-096 CMR 115, BACT]

B. Visible emissions from each flare shall not exceed an opacity of 20% on a six (6) minute block average basis, except for no more than one (1) six (6) minute block average in a 3-hour period. [06-096 CMR 115, BACT]

C. WMDSM shall operate each flare within the equipment parameter boundaries established under 40 CFR 60.18. [06-096 CMR 115, BACT]

(3) Visible emissions from fugitive emission sources (including stockpiles and roadways) shall not exceed an opacity of 20%, except for no more than five (5) minutes in any 1-hour period. Compliance is determined by an aggregate of the individual fifteen (15)-second opacity observations which exceed 20% in any one (1) hour. [06-096 CMR 101]

(4) Landfill Gas-Fired Engines

A. WMDSM shall fire only landfill gas, natural gas, or propane in the engines. [06-096 CMR 115, BACT]

B. Emissions from Engines #1 and #2 shall each not exceed the following limits:

Pollutant	lb/MMBtu	Origin and Authority	Enforceability
PM	0.05	06-096 CMR 115, BACT	**Federally Enforceable**

Pollutant	g/bhp-hr	Origin and Authority	Enforceability
NO_x	0.6	06-096 CMR 115, BACT	**Federally Enforceable**
CO	4.2	06-096 CMR 115, BACT	**Federally Enforceable**

Pollutant	lb/hr	Origin and Authority	Enforceability
PM	0.85	06-096 CMR 115, BACT	**Federally Enforceable**
PM_{10}	0.85	06-096 CMR 115, BACT	**Federally Enforceable**
SO_2	8.65	06-096 CMR 115, BACT	**Federally Enforceable**
NO_X	2.95	06-096 CMR 115, BACT	**Federally Enforceable**
CO	20.70	06-096 CMR 115, BACT	**Federally Enforceable**
VOC	0.02	06-096 CMR 115, BACT	**Federally Enforceable**

C. Emissions from Engine #3 shall not exceed the following limits:

Pollutant	lb/MMBtu	Origin and Authority	Enforceability
PM	0.05	06-096 CMR 115, BACT	**Federally Enforceable**

Pollutant	g/bhp-hr	Origin and Authority	Enforceability
NO_x	2.0	06-096 CMR 115, BACT	**Federally Enforceable**
CO	3.1	06-096 CMR 115, BACT	**Federally Enforceable**

Pollutant	lb/hr	Origin and Authority	Enforceability
PM	0.50	06-096 CMR 115, BACT	**Federally Enforceable**
PM_{10}	0.50	06-096 CMR 115, BACT	**Federally Enforceable**
SO_2	4.92	06-096 CMR 115, BACT	**Federally Enforceable**
NO_X	5.10	06-096 CMR 115, BACT	**Federally Enforceable**
CO	7.80	06-096 CMR 115, BACT	**Federally Enforceable**
VOC	0.01	06-096 CMR 115, BACT	**Federally Enforceable**

D. WMDSM shall operate the engines such that the visible emissions from each stack does not exceed 20% opacity on a six (6) minute block average basis, for more than two (2) six (6) minute block averages in a 3-hour period. [06-096 CMR 115, BACT]

E. Compliance with the CO and NO_x g/bhp-hr emission limits shall be demonstrated by stack testing performed within 180 days of startup. Additional testing will be performed upon the request of the Department. [06-096 CMR 115, BACT]

F. WMDSM shall stack test for PM within 180 days of startup. Additional testing will be performed upon the request of the Department. [06-096 CMR 115, BACT]

G. WMDSM shall operate and maintain the coalescing filters on the landfill gas-fired engines in good working order. [06-096 CMR 115, BACT]

H. WMDSM shall sample landfill gas at the engine plant or flare inlet for TRS utilizing ASTM Method D5504, EPA Modified Method 16, or another method approved by the Department. If the monthly average of TRS in the landfill gas exceeds 1,250 ppm at 50% methane for two (2) consecutive months, WMDSM shall reassess BACT for SO_2 emissions from the landfill and submit the revised BACT analysis to the Department within 90 days. [06-096 CMR 115, BACT]

(5) Monitoring Requirements

The following are identified as Periodic Monitors [06-096 CMR 115, BACT]:

A. Maintenance performed on each engine (including coalescing filters);
B. Monthly operating time for each engine;
C. Monthly gas flow to the flares;
D. Monthly gas flow to the engines;
E. Purchase records for the auxiliary propane for the flares indicating quantity of propane purchased;
F. H_2S concentration of the landfill gas recorded once per business day or less frequently in accordance with the schedule set forth below.

Testing the H_2S concentration in the landfill gas once per business day utilizing either an in-line analyzer, laboratory analysis, or stain tubes. The frequency of H_2S monitoring shall be reduced to once weekly if the results of the daily testing are less than 1,000 ppm for 20 consecutives tests, and to once monthly if the results of the weekly testing are less than 500 ppm for eight consecutive tests If the frequency of H_2S monitoring is reduced, upon request the Department may require H_2S testing to increase to once per business day. If the results of the H_2S testing remain consistently below 250 ppm, the Department may eliminate the requirement for H_2S testing. Compliance with

applicable SO_2 limits shall be based on periodic laboratory determination of TRS levels and not the H_2S testing required in this paragraph.

G. Monthly sampling of the TRS concentration of the LFG.

(6) Facility Wide Emission Limits

WMDSM shall not exceed the following emission limits on a 12 month rolling total basis [06-096 CMR 115, BACT]:

Pollutant	Ton/year
PM	13.9
PM_{10}	13.9
SO_2	225.3
NO_x	65.8
CO	312.5
VOC	10.0

DONE AND DATED IN AUGUSTA, MAINE THIS DAY OF 2008.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY:_____
DAVID P. LITTELL, COMMISSIONER

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application: 1/18/08
Date of application acceptance: 2/5/08

Date filed with the Board of Environmental Protection: _____

This Order prepared by Lynn Ross, Bureau of Air Quality.