Lane Regional Air Protection Agency
Standard Air Contaminant Discharge Permit

REVIEW REPORT

PeaceHealth Sacred Heart Medical Center at Riverbend **Permit No. 207536**
3333 Riverbend Drive
Springfield, OR 97477
https://www.peacehealth.org/sacred-heart-riverbend

Source Information:

Primary SIC	8062
Secondary SIC	--
Primary NAICS	622110
Secondary NAICS	--
Source Categories (LRAPA title 37, Table 1)	Part B: 12 – Boilers and other fuel burning equipment over 10 MMBTU/hour heat input. Part C: 4 – All sources that request a PSEL equal to or greater than the SER for a regulated pollutant, except GHG, in a year.
Public Notice Category	III

Compliance and Emissions Monitoring Requirements:

Unassigned Emissions	N	Source Test [date(s)]	N
Emission Credits	N	COMS	N
Special Conditions	N	CEMS	N
Compliance Schedule	N	Ambient monitoring	N

Reporting Requirements

Annual Report (due date)	February 15	Quarterly Report (due date)	N
Semi-annual Report (due date)	August 15	Monthly Report (due dates)	N
SACC (due date)	N	Excess Emissions Report	Y
GHG Report (due date)	March 31	Other Reports (due date)	N

Air Programs

NSPS (list subparts)	A, Dc, IIII	Title V	N
NESHAP (list subparts)	N	Major FHAP Source	N
40 CFR part 64 Compliance Assurance Monitoring (CAM)	N	Federal Major Source	N
Regional Haze (RH)	N	Type A State New Source Review	N
TACT	N	Type B State New Source Review	N
40 CFR part 68 Risk Management	N	Prevention of Significant Deterioration (PSD)	N
Cleaner Air Oregon (CAO)	N	Nonattainment New Source Review (NNSR)	N
Synthetic Minor (SM)	N		
SM-80	N		

Permit Identification

1. Peace Health Sacred Heart Medical Center at Riverbend ('Peace Health' or 'the facility) operates a medical hospital at 3333 Riverbend Drive in Springfield, Oregon. The facility began operation in 2008.

2. The facility operates under the primary Standard Industrial Classification (SIC) code of 8062 - General Medical and Surgical Hospitals and the primary North American Industry Classification System (NAICS) code of 622110 - General Medical and Surgical Hospitals.

General Background

3. The facility operates a medical hospital. In support of its operations, the facility operates three (3) emergency generators and four (4) natural gas-fired boilers. The emergency generators (e-gens) are manufactured by Cummins Power Generation but are fired regularly for scheduled maintenance. The emergency generators are 2000 kW each and have fuel usage of 137.55 gallons per hour each. The natural gas-fired boilers burn primarily natural gas with diesel as a backup fuel. Boiler 1 manufactured by Mohican is rated at 12.6 MMBtu/hr. Boilers 2 and 3 manufactured by Mohican are rated at 33.6 MMBtu/hr each. Boiler 4 manufactured by Hurst is rated at 26.8 MMBtu/hr.

4. The facility operated an ethylene oxide sterilizer on site that was applicable to the National Emission Standards for Hazardous Air Pollutants subpart 6W but has been removed from the facility.

Reasons for Permit Action

5. This permit action is a renewal for an existing Standard Air Contaminant Discharge Permit (Standard ACDP) which was issued on April 9, 2019 and expired on April 9, 2024. As the facility submitted a timely renewal application on October 9, 2023, the current permit will remain in effect until final action has been taken on the renewal application. The renewed Standard ACDP will be valid for up to five (5) years.

6. Agency-initiated action: LRAPA revised some emissions factors for the boilers.

Attainment Status

7. Peace Health is located inside the Eugene-Springfield Air Quality Management Area. The facility is located in an area that has been designated attainment/unclassified for PM, $PM_{2.5}$, ozone (VOC), NO_X and SO_2, and a maintenance area for CO and PM_{10}. The facility is located within 100 kilometers of three Class I air quality protection areas: Diamond Peak, Three Sisters and Mount Washington Wilderness areas.

Permitting History

8. LRAPA has reviewed and issued the following permitting actions to this facility:

Date(s) Approved/Valid	Permit Action Type	Description
04/15/2008	Synthetic Minor ACDP	Initial permitting
05/12/2009	Standard ACDP	Change to Standard ACDP and fee basis
07/11/2013	Standard ACDP	Renewal
04/28/2014	Standard ACDP	Renewal
10/14/2018	Modification	Installation of one (1) 26.8 MMBtu/hr natural gas-fired boiler
04/09/2019	Standard ACDP	Renewal

Date(s) Approved/Valid	Permit Action Type	Description
01/03/2022	NC-207536-A22	Removal of ethylene oxide (EtO) sterilizer and PCD (EtO abator)
Upon Issuance	Standard ACDP	Renewal

Emission Unit Descriptions

9. The emission units regulated by this permit are the following:

Emission Unit ID	Description	Pollution Control Device (PCD ID)	Installed /Last Modified
EEG-1	Emergency Generator, diesel-fired Cummins Power Generation, 2000 kW, 135 gal/hr	None	2008
EEG-2	Emergency Generator, diesel-fired Cummins Power Generation, 2000 kW, 135 gal/hr	None	2008
EEG-3	Emergency Generator, diesel-fired Cummins Power Generation, 2000 kW, 135 gal/hr	None	2008
B-4	Mohican Boiler, natural gas with No. 2 diesel as backup fuel, 12.6 MMBtu/hr	None	2008
B-5	Mohican Boiler, natural gas with No. 2 diesel as backup fuel, 33.6 MMBtu/hr	None	2008
B-6	Mohican Boiler, natural gas with No. 2 diesel as backup fuel, 33.6 MMBtu/hr	None	2008
B-7	Hurst Boiler, natural gas with No. 2 diesel as backup fuel, 26.8 MMBtu/hr	None	2018

Nuisance, Deposition and Other Emission Limitations

10. Under LRAPA 49-010(1), the permittee must not cause or allow air contaminants from any source subject to regulation by LRAPA to cause a nuisance. Compliance is demonstrated through documentation of all complaints received by the facility from the general public and following procedures to notify LRAPA of receipt of these complaints.

11. Under LRAPA 32-055, the permittee must not cause or permit the emission of particulate matter which is larger than 250 microns in size at sufficient duration or quantity as to create an observable deposition upon the real property of another person. Compliance is demonstrated through documentation of all complaints received by the facility from the general public and following procedures to notify LRAPA of receipt of these complaints.

12. Under LRAPA 32-090(1), the permittee must not discharge from any source whatsoever such quantities of air contaminants which cause injury or damage to any persons, the public, business or property; such determination is to be made by LRAPA. Compliance is demonstrated through documentation of all complaints received by the facility from the general public and following procedures to notify LRAPA of receipt of these complaints.

General Emission Limitations

13. The facility is subject to a limit of 20 percent opacity for each source emission point. The facility is subject to the grains per dry standard cubic foot limitations under LRAPA 32-015(2)(b)(B), 32-015(c) and LRAPA 32-030(1)(b). Visual survey (opacity readings) must be performed quarterly and must not exceed an average of 20 percent opacity for a period, or periods measured as a six-

minute block average using EPA Method 9. A survey log must be kept of all visual surveys conducted and any corrective actions taken.

14. For fuel burning equipment that burns fuels other than wood, the emission results are corrected to 50% excess air. Compliance with the emissions standards in section 32-030 is determined using DEQ Method 5, or an alternative method approved by LRAPA.

Typically Achievable Control Technology (TACT)

15. LRAPA 32-008(2) requires new units installed or existing emission units modified on or after January 1, 1994, meet TACT if the emission unit meets the following criteria: The emission unit is not subject to Major NSR in title 38, Type A State NSR in LRAPA title 38, an applicable Standard of Performance for New Stationary Sources in title 46, or any other standard applicable only to new or modified sources in title 32, title 33, or title 39 for the regulated pollutant emitted; the source is required to have a permit; if new, the emission unit has emissions of any criteria pollutant equal to or greater than one (1) ton per year of any criteria pollutant; if modified, the emission unit would have an increase in emissions of any criteria pollutant equal to or greater than one (1) ton per year of any criteria pollutant; and LRAPA determines that the proposed air pollution control devices and emission reduction processes do not represent TACT.

15.a. The boilers (EUs: B-4 through B-7) for CO and NO_X emission have the potential to exceed one (1) ton per year. While LRAPA has not performed a formal TACT determination for CO or NO_X from these emission unit, the development of an Operation and Maintenance Plan (O&M Plan) requiring that the boilers are operated according to the manufacturer's specifications with good combustion practices and annual boiler tune-ups would likely meet the TACT requirements.

15.b. The generators (EUs: EG-1 through EG-3) for NO_X emissions have the potential to exceed one (1) ton per year. While LRAPA has not performed a formal TACT determination for NO_X from these emission units, LRAPA has determined that operating according to the manufacturer's specifications would likely meet the TACT requirements.

New Source Performance Standards (NSPS)

16. 40 CFR part 60 subpart Dc – Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units is applicable to the boilers (EUs: B-4 through B-7) because the boilers were manufactured after June 9, 1989 and they each have maximum design heat input capacity of 29 megawatts (MW) (100 MMBtu/hr) or less, but greater than or equal to 2.9 MW (10 MMBtu/hr).

17. The facility has met the notification requirement of 40 CFR 60.48c(a) by submitting the design heat input capacity, identification of fuels to be combusted and the annual capacity factor for each fuel or mixture of fuels for all boilers (EUs: B-4 through B-7).

18. The 40 CFR part 60 subpart Dc requirements that are applicable to the boilers (EUs: B-4 through B-7) are identified in the following table:

40 CFR part 60 subpart Dc Citation	Description	Applicable to Source (Yes/No)	Comments	Permit Condition
60.40c	Applicability and delegation of authority	Yes	Each boiler has a maximum heat input capacity between 10 and 100 MMBtu per hour.	NA

40 CFR part 60 subpart Dc Citation	Description	Applicable to Source (Yes/No)	Comments	Permit Condition
60.41c	Definitions	Yes	Each boiler meets the definition of a *steam generating unit*.	NA
60.42c	Standards for sulfur dioxide (SO_2)	Yes	SO_2 emission limits are demonstrated through certification from the fuel supplier.	15-17
60.43c	Standard for particulate matter (PM)	Yes	PM emissions limits are demonstrated through certification from the fuel supplier.	18 & 19
60.44c	Compliance and performance test methods and procedures for sulfur dioxide	Yes	SO_2 emission limits are demonstrated through certification from the fuel supplier.	21
60.45c	Compliance and performance test methods and procedures for particulate matter	Yes	PM emission limits are demonstrated through performance testing, CEMS or certification from the fuel supplier.	20
60.46c	Emission monitoring for sulfur dioxide	Yes	SO_2 emission limits are demonstrated through CEMS.	NA
60.47c	Emission monitoring for particulate matter	Yes	The facility is required to perform visible emission testing on a schedule when combusting fuel oil.	22 & 23
60.48c	Reporting and recordkeeping requirements	Yes	Under the authority of 40 CFR 60.19(c), LRAPA has moved the postmark deadlines to align with the February 15 reporting.	24-30

19. 40 CFR part 60 subpart IIII – Standards of Performance for Stationary Compression Ignition Internal Combustion Engines is applicable to the 2000 kW diesel-fired Cummins emergency engines (EG-1 through EG-3) because the emergency engines were manufactured after April 1, 2006 and are not fire pump engines.

20. The 40 CFR part 60 subpart IIII requirements that are applicable to the emergency engines (EG-1 through EG-3) are identified in the following table:

40 CFR part 60 subpart IIII Citation	Description	Applicable to Source (Yes/No)	Comments	Permit Condition
60.4200	Subpart applicability	Yes	Informational.	NA
60.4201	Emission standards (non-emergency engines)	No	--	NA
60.4202	Emissions standards (emergency engine)	Yes	Applicable to (a) through 60.4205(b) reference.	15.a
60.4203	Emission standards (manufacturer)	No	--	NA

40 CFR part 60 subpart IIII Citation	Description	Applicable to Source (Yes/No)	Comments	Permit Condition
60.4204	Emission (non-emergency engine)	No	--	NA
60.4205	Emission standards (emergency engines)	Yes	Owners and operators of 2007 model year and later emergency stationary CI ICE with a displacement of less than 30 liters per cylinder that are not fire pump engines must comply with 60.4202.	15
60.4206	Emission standards	Yes	The emission standards are applicable for the life of the engine.	16
60.4207	Fuel requirements	Yes	Must use diesel fuel that meets the requirements of 40 CFR 1090.305 for nonroad diesel fuel.	15.b
60.4208	Requirements – deadlines for installing	No	--	NA
60.4209	Monitoring requirements	No	--	NA
60.4210	Compliance requirements (manufacturer)	No	--	NA
60.4211	Compliance requirements	Yes	--	17 - 20
60.4212	Testing requirements	No	--	NA
60.4213	Testing methods	No	--	NA
60.4214	Notification, reporting, and recordkeeping requirements	Yes	If engine does not meet the applicable emission standards, then the owner or operator must install a non-resettable hour meter.	21
60.4215	Special requirements	No	Engine is not located in the listed geographic areas.	NA
60.4216	Special requirements	No	Engine is not located in the listed geographic areas.	NA
60.4217	Special requirements	No	Engines do not use special fuel	NA
60.4218	General provisions	Yes	Informational	NA
60.4219	Definitions	Yes	--	NA

Hazardous Air Pollutants (HAPs) and National Emission Standards for Hazardous Air Pollutants (NESHAPs)

21. The emergency engines (EG-1 through EG-3) are subject to 40 CFR part 63 subpart ZZZZ – National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines because these emission units are considered new stationary RICE under this regulation. However, under 40 CFR 63.6590(c)(1), a new or reconstructed stationary RICE at an area source of federal HAP emissions must meet the requirements of 40 CFR part 63 subpart ZZZZ by meeting the requirements of 40 CFR part 60 subpart IIII. No further requirements apply for these engines under 40 CFR part 63 subpart ZZZZ

22. 40 CFR part 63 subpart JJJJJJ – National Emissions Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources is not applicable to the boilers (EUs: B-4 through B-7) because the boilers are gas-fired as defined by 40 CFR part 63 subpart JJJJJJ.

Plant Site Emission Limits (PSELs)

23. Provided below is a summary of the baseline emission rate, netting basis and PSELs for this facility.

Pollutant	Baseline Emission Rate (TPY)	Netting Basis		Plant Site Emission Limit (PSEL)		PSEL Increase Over Netting Basis (TPY)	Significant Emission Rate (TPY)
		Previous (TPY)	Proposed (TPY)	Previous PSEL (TPY)	Proposed PSEL (TPY)		
PM	NA	0	0	24	2.0	2.0	25
PM_{10}	NA	0	0	14	2.0	2.0	15
$PM_{2.5}$	NA	0	0	9	2.0	2.0	10
CO	NA	0	0	99	41	41	100
NO_X	NA	0	0	39	39	39	40
SO_2	NA	0	0	39	2.6	2.6	40
VOC	NA	0	0	39	3.5	3.5	40
GHG (CO_2e)	NA	0	0	74000	54,383	54,383	75,000
Individual HAP	NA	NA	NA	NA	NA	NA	NA
Aggregate HAPs	NA	NA	NA	NA	NA	NA	NA

23.a. The facility does not have a baseline emission rate (BER) because the facility was not in operation during the 1977-1978 baseline years.

23.b. BER for $PM_{2.5}$ was not established in accordance with LRAPA 42-0048(3).

23.c. The facility did not request a BER for GHG for the 2008-2010 years the facility operated. Therefore, a BER for GHG was not established in accordance with LRAPA 42-0048(b).

23.d. A netting basis was not established for this permitting action because a modification of the netting basis was not triggered in accordance with LRAPA 42-0046.

23.e. For all pollutants, the netting basis is zero because the facility was constructed after the 1978 baseline year.

23.f. Proposed PSELs are set at the facility's potential to emit in accordance with LRAPA 42-0041(3), except NO_X, which is set below the SER.

Unassigned Emissions and Emission Reduction Credits

24. The facility has zero (0) unassigned emissions. Unassigned emissions are equal to the netting basis minus the source's current PTE, minus any banked emission reduction credits. The facility has zero (0) tons of emission reduction credits.

New Source Review (NSR) and Prevention of Significant Deterioration (PSD)

25. This source is located in an area that is designated attainment or unclassified for all regulated pollutants other than CO and PM_{10}. For pollutants other than CO and PM_{10}, the proposed PSELs are less than the federal major source threshold for non-listed sources of 250 TPY per regulated pollutant and are not subject to Major NSR. For CO and PM_{10}, the source is located in a

maintenance area. The proposed PSELs for CO and PM_{10} are less than the 100 TPY threshold that determines the applicability of Major NSR in a maintenance area.

Federal Hazardous Air Pollutants/Toxic Air Contaminants

26. Potential annual federal hazardous air pollutant emissions (FHAP) are based on the potential to emit of the facility operating under permit limitations. Formaldehyde has the highest single FHAP emissions at approximately 0.07 tons per year. The potential total FHAP emissions are 0.16 tons per year. A major source of FHAPs is defined as having potential FHAP emissions of at least 10 tons per year of any single HAP and 25 tons per year of the aggregate of all FHAPs. This facility does not have potential FHAP emissions exceeding these thresholds and is considered a minor or area source of FHAPs.

27. Under the Cleaner Air Oregon program, only existing sources that have been notified by LRAPA and new sources are required to perform risk assessments. This source has not been notified by LRAPA and, therefore, is not yet required to perform a risk assessment or report annual emissions of toxic air contaminants. LRAPA required reporting of approximately 600 toxic air contaminants in 2016 and regulates approximately 260 toxic air contaminants (TAC) that have Risk Based Concentrations established in rule. All FHAPs are on the list of approximately 600 TACs. The FHAPs and TACs listed below are based upon safety data sheets and standard emission factors for the types of emission units at this facility. After the source is notified by LRAPA, they must update their inventory and perform a risk assessment to see if they must reduce risk from their TACs. Until then, this source will be required to report TAC emissions triennially.

28. The table below represents the potential emissions of federal HAPs/TACs from this facility assuming operation at the permit allowable limitations:

CAS/DEQ Number	Pollutant	PTE (TPY)	FHAP	CAO TAC
106-99-0	1,3-Butadiene	4.76E-03	Yes	Yes
91-57-6	2-Methyl naphthalene	2.54E-04	No	Yes
83-32-9	Acenaphthene	1.52E-05	Yes	Yes
208-96-8	Acenaphthylene	1.67E-05	Yes	Yes
75-07-0	Acetaldehyde	2.41E-02	Yes	Yes
107-02-8	Acrolein	8.42E-03	Yes	Yes
7664-41-7	Ammonia	1.52E+00	No	Yes
120-12-7	Anthracene	9.32E-06	Yes	Yes
7440-36-0	Antimony	6.56E-06	No	Yes
7440-38-2	Arsenic	1.26E-04	Yes	Yes
7440-39-3	Barium	2.00E-03	No	Yes
56-55-3	Benzo[a]anthracene	1.00E-06	Yes	Yes
71-43-2	Benzene	6.55E-03	Yes	Yes
50-32-8	Benzo[a]pyrene	1.49E-06	Yes	Yes
205-99-2	Benzo[b]fluoranthene	9.15E-07	Yes	Yes
192-97-2	Benzo[e]pyrene	6.78E-07	Yes	Yes
191-24-2	Benzo[g,h,i]perylene	4.51E-07	Yes	Yes
207-08-9	Benzo[k]fluoranthene	2.69E-07	Yes	Yes
7440-41-7	Beryllium	5.53E-06	Yes	Yes
7440-43-9	Cadmium	5.27E-04	Yes	Yes
18540-29-9	Chromium, Hexavalent	6.43E-04	Yes	Yes
218-01-9	Chrysene	1.38E-06	Yes	Yes
7440-48-4	Cobalt	3.83E-05	Yes	Yes

CAS/DEQ Number	Pollutant	PTE (TPY)	FHAP	CAO TAC
7440-50-8	Copper	4.71E-04	No	Yes
53-07-3	Dibenzo[a,h]anthracene	2.14E-08	Yes	Yes
200	DPM (Filt+Cond)	3.50E-01	No	Yes
100-41-4	Ethyl Benzene	3.35E-03	Yes	Yes
206-44-0	Fluoranthene	7.63E-06	Yes	Yes
86-73-7	Fluorene	4.51E-05	Yes	Yes
50-00-0	Formaldehyde	6.80E-02	Yes	Yes
110-54-3	Hexane	2.70E-03	Yes	Yes
7647-01-0	Hydrochloric acid	7.30E-03	Yes	Yes
193-39-5	Indeno[1,2,3-cd]pyrene	2.21E-07	Yes	Yes
7439-92-1	Lead Compounds	3.88E-04	Yes	Yes
7439-96-5	Manganese	2.38E-04	Yes	Yes
7439-97-6	Mercury	1.55E-04	Yes	Yes
1313-27-5	Molybdenum Trioxide (5)	7.47E-04	No	Yes
91-20-3	Naphthalene	7.78E-04	Yes	Yes
365	Nickel	1.03E-03	Yes	Yes
198-55-0	Perylene	2.43E-08	Yes	Yes
85-01-8	Phenanthrene	9.37E-05	Yes	Yes
504	Phosphorus	1.73E-04	No	Yes
7782-49-2	Selenium	5.94E-05	Yes	Yes
7440-22-4	Silver	9.90E-07	No	Yes
7440-28-0	Thallium	4.95E-06	No	Yes
108-88-3	Toluene	1.42E-02	Yes	Yes
401	Total PAHs (exc. Nap.)	8.70E-04	Yes	Yes
7440-62-2	Vanadium	1.04E-03	No	Yes
1330-20-7	Xylene(s)	1.40E-02	Yes	Yes
7440-66-6	Zinc	1.32E-02	No	Yes
Total HAPs and TACs (tpy)			**0.16**	**2.05**

Toxic Release Inventory

29. The Toxics Release Inventory (TRI) is a federal program that tracks the management of certain toxic chemicals that may pose a threat to human health and the environment. It is a resource for learning about toxic chemical releases and pollution prevention activities reported by certain industrial facilities. Section 313 of the Emergency Planning and Community Right-to-Know Act (EPCRA) created the TRI Program. In general, chemicals covered by the TRI Program are those that cause:

    - Cancer or other chronic human health effects;
    - Significant adverse acute human health effects; or
    - Significant adverse environmental effects.

    There are currently over 650 chemicals covered by the TRI Program. Facilities that manufacture, process or otherwise use these chemicals in amounts above established levels must submit annual TRI reports on each chemical. NOTE: The TRI Program is a federal program over which LRAPA has no regulatory authority. LRAPA does not guarantee the accuracy of any information copied from EPA's TRI website.

    In order to report emissions to the TRI program, a facility must operate under a reportable NAICS code, meet a minimum employee threshold, and manufacture, process, or otherwise use chemicals

in excess of the applicable reporting threshold for the chemical. The facility's NAICS code 622110 - General Medical and Surgical Hospitals is not a reportable NAICS code therefore, the facility does not have to report to the TRI program.

Compliance History

30. This facility has been inspected by LRAPA. The following table indicates the inspection history of this facility since 2008.

Type of Inspection	Date	Results
LRAPA - Full Compliance Evaluation	08/08/2019	No areas of non-compliance discovered
LRAPA - Full Compliance Evaluation	10/18/2023	Not in compliance

31. LRAPA has issued the following violation notices and/or taken the following enforcement action against this facility since the facility began operation:

31.a. On October 8, 2023, during an LRAPA inspection, it was discovered that the facility had not retained the required EPA Method 22 observation forms for the minimum of two (2) years as required in Condition 23.e. The facility reported having combusted fuel oil in B-2 and B-3 Mohican Boilers rated at 33.6 MMBtu/hr on three (3) separate occasions within the last two (2) years, but only maintained Method 22 records for one (1) of those instances. A Notice of Non-Compliance (NON 23-3896) was issued on December 8, 2023 for a deviation of condition 23.e. This NON was subsequently closed with no further action taken.

Source Testing History

32. Visible emission surveys have been conducted using EPA Method 9 for Boilers B-5 and B-6 when combusting #2 diesel in accordance with 40 CFR part 60 subpart Dc and Condition 21. The initial performance test was conducted on April 29, 2019, and subsequent testing on September 19, 2019.

Recordkeeping Requirements

33. To ensure compliance with the annual PSELs, the facility is required to keep a record of the following information for a period of two (2) years.

Activity	Units	Minimum Recording Frequency
PSEL Recordkeeping		
PSEL pollutant emissions as calculated according to Condition 5, including the supporting process information	Tons	Monthly
Natural gas combusted by each boiler	Therms or MMscf	Monthly
No. 2 diesel combusted by each boiler	Gallons	Monthly
40 CFR part 60 subpart Dc Recordkeeping		
Natural gas combusted by each boiler	Therms or MMscf	Monthly
No. 2 diesel combusted by each boiler	Gallons	Monthly
Fuel oil supplier certifications of sulfur content of diesel fuel oil for boilers	Weight percent	Each Delivery

Activity	Units	Minimum Recording Frequency
Visible emission survey logs for EUs: B-5 and B-6 according to Condition 21	percent	Monthly
40 CFR part 60 subpart JJJJJJ Recordkeeping		
Total monthly and calendar year hours that each EUs: B-4 through B-7 combusted No. 2 diesel	Hours	Monthly
The date that the No. 2 diesel was combusted by each boiler (EUs: B-4 through B-7)	Date	Monthly
Emergency Generators Recordkeeping		
Documentation of maintenance performed on each engine	NA	Each occurrence
Visible emission survey logs for generators (EG-1 through EG-3)	percent	Monthly
Hours of maintenance and readiness checking operation of each generator	Hours	Monthly
General Recordkeeping		
Log of each nuisance complaint and the resolution	NA	Upon receipt of complaint
Operation and Maintenance Plan	NA	Maintain current version on-site
Excess emissions log of all planned and unplanned excess emissions	See Condition G16	Per occurrence

Reporting Requirements

34. The facility must submit to LRAPA the following reports by no later than the dates indicated in the table below.

Report	Reporting Period	Due Date
Excess emission reports as required by 40 CFR part 60 subpart Dc for EUs: B-5 and B-6 in accordance with Condition 37 of the permit	Semiannual	Postmarked by February 15, August 15
Semiannual fuel oil report as required by 40 CFR part 60 subpart Dc for EUs: B-5 and B-6	Semiannual	Postmarked by February 15, August 15
PSEL pollutant emissions as calculated according to Condition 5 of the permit, including supporting calculations.	Annual	February 15
Natural gas combusted by each boiler.	Annual	February 15
No. 2 diesel combusted by each boiler.	Annual	February 15
A summary of nuisance complaints from the public and the resolution, as applicable.	Annual	February 15
The upset log information required by Condition G14, if required by Condition G14.	Annual	February 15
GHG Report, as required by Condition 7 of the permit.	Annual	March 31

Public Notice

35. Issuance of a renewal Simple Air Contaminant Discharge Permit requires notice in accordance with LRAPA 31-0030(3)(c), which requires LRAPA to provide notice of the proposed permit action and a minimum of 35 days for interested persons to submit written comments.

The proposed permit was on public notice from July 31, 2024, to September 6, 2024. Comments were received during the comment period. No public hearing was requested by ten (10) or more individuals or an individual representing a group of more than ten (10) individuals. After the comment period, LRAPA reviewed the comments but did not make any changes to the permit.

Public Comments Summary and LRAPA Responses

[All public comments that were received for this action are a public record and are retained with the public permit review files. Public comments that are not related to the review report or proposed permit, such as those comments that are statements of fact or express an opinion, are not presented in this document, and do not require a response from LRAPA.]

***Comment 1*:** Condition 3, page 2: The Plant Site Emission Limits (PSELs) are significantly reduced from the 2019 permit, however, no compliance issues are anticipated for the RiverBend facility.

Response 1: The PSELs have been amended from the 2019 Permit to reflect the revisions to LRAPA Regulations on April 11, 2024. The PSELs were amend in accordance with LRAPA 42-0041(3): *For source subject to a Standard ACDP or an LRAPA Title V Operating Permit, a PSEL will be set equal to the source's potential to emit, netting basis or level requested by the applicant, whichever is less, except as provided in subsections (4) or (5)*. The PSELs were changed to reflect the source's potential to emit instead of generic PSELs.

Comment 2: Condition 6., Page 3-4: Some of the emission factors for pollutants form natural gas and diesel emissions from the Boilers and Emergency Generators have changed from the 2019 permit. Also, the units of lbs/1000 gals for boiler diesel GHGs appears to be wrong, should be lb/MMBtu.

Response 2: The emission factors for PM_{10} and $PM_{2.5}$ for a boiler using distillate oil #2, were corrected from the 2019 permit in accordance with DEQ Emission Factors Oil Fired Boilers, AQ-EF04, revised 08/01/11. The SO_2 emission factor was corrected to the long-term emission factor for natural gas in accordance with DEQ Emission Factors Oil Fired Boilers, AQ-EF05, revised 08/01/11. GHG emission factors are based on lbs/MMCF and lbs/1000 gals depending on the fuel used.

Comment 3: Condition 9, page 4: For the boilers B-4 through B-6, 'installed, constructed or modified "after" April 16, 2015, should be "before".

Response 3: The proposed permit was corrected to read, "sources (EUs: B-4 through B-6) installed, constructed, or modified after June 1, 1970, but prior to April 16, 2015" as it is stated is LRAPA 32-030(1)(b).

Comment 4: Condition 13, pages 4-5: The proposed permit includes a requirement for performing a quarterly Method 22 visible emissions survey of the facility to demonstrate compliance with opacity limits and particulate emissions limits in Condition 8-11. This requirement is new from the 2019 permit, and it is not clear how to complete this visible emission survey, and how it compares to the visible emissions monitoring for Boiler B-5 and B-6 when burning diesel fuel.

Response 4: A quarterly visible emission survey is required to be performed for each emission unit during normal operation or during maintenance or testing, as applicable, to demonstrate

compliance with the emission standards. Boilers B-5 and B-6 are also required to perform an EPA Method 22 every time diesel fuel is combusted or to perform an EPA Method 9 annually while combusting diesel fuel.

Comment 5: Condition 14, page 5: The proposed permit includes a requirement for prepare and update an Operation and Maintenance Plan (O&M Plan) to demonstrate compliance with the boiler particulate emission limits in Condition 9 and 10. This requirement is new from the 2019 permit and the expectations are not clear.

Response 5: The O&M Plan is a new requirement for this proposed permit. This will help ensure better compliance when operating the boilers. The O&M Plan must be prepared and updated to demonstrate that the boilers are being maintained to meet the applicable emission standard, such as annual tune-ups. The facility can utilize existing facility procedures and management systems in place at the facility but must submit a copy to LRAPA.

Comment 6: Conditions 15-21, pages 5-8: The proposed permit has a different set of requirements for the emergency generators than the 2019 permit. The permit requirements are lengthy and difficult to understand. In Condition 15.a, second line – 'non-emergency' should be changed to 'emergency.

Response 6: The emergency generators were installed at the facility in 2008. The 2019 permit incorrectly referenced 40 CFR part 63 subpart ZZZZ which is not applicable to emergency generators at an area source for which construction commenced on or after June 12, 2006. The emergency generators are subject to 40 CFR part 60 subpart IIII because they were manufactured after April 1, 2006 and are not fire pump engines. LRAPA is willing to assist the facility in understanding and complying with these federal requirements. The word 'non-emergency' was corrected to 'emergency' per 40 CFR 60.4202(a).

Comment 7: Condition 25 and 29, pages 8-10: Daily 10-minute Method 22 visible emissions monitoring of the large B-5 and B-6 boilers is required whenever the boilers are operating on diesel fuel. Most years diesel is only burned once for readiness testing. The infrequent requirement has been challenging to understand and includes additional monitoring triggered if opacity is 5% or higher.

Response 7: The facility is required to perform an EPA Method 22 any day that diesel fuel is combusted in B-5 and B-6. If the facility fails to conduct an EPA Method 22 while combusting diesel, they must perform a Method 9 the next time diesel fuel is combusted in B-5 and B-6.

If the maximum 6-minute opacity is less than ten (10) percent during the most recent Method 9 of appendix A–4 of 40 CFR part 60 performance test, the permittee may, as an alternative to performing subsequent Method 9 of appendix A–4 of 40 CFR part 60 performance tests, elect to perform subsequent monitoring using Method 22 of appendix A–7 of 40 CFR part 60 according to the procedures specified in Conditions 29.b.i and 29.b.ii. [40 CFR 60.47c(a)(2).

The permittee must conduct ten (10) minute observations (during normal operation) each operating day the affected facility fires fuel for which an opacity standard is applicable using Method 22 of appendix A–7 of 40 CFR part 60 and demonstrate that the sum of the occurrences of any visible emissions is not in excess of five (5) percent of the observation period (i.e., 30 seconds per ten (10) minute period). If the sum of the occurrence of any visible emissions is greater than 30 seconds during the initial ten (10) minute observation, immediately conduct a 30 minute observation. If the sum of the occurrence of visible emissions is greater than five (5) percent of the observation period (i.e., 90 seconds per 30 minute period), the permittee must either document and adjust the operation of the facility and demonstrate within 24 hours that the sum of the occurrence of visible emissions is equal to or less than five (5) percent during a 30 minute observation (i.e., 90 seconds) or conduct a new Method 9 of appendix A–4 of 40 CFR part 60 performance test using the

procedures in Condition 28 within 45 calendar days according to the requirements in Condition 26. [40 CFR 60.47c(a)(2)(i) and LRAPA 46-535(3)(e)]

Comment 8: Condition 32, page 8-10: The requirement to record natural gas and diesel fuel combusted by each boiler is a new requirement from the 2019 permit. Currently total fuel is metered, it will be necessary for PeaceHealth to determine the data sources to calculate diesel and natural gas consumption for each boiler.

Response 8: Condition 32 has been updated in the permit to reflect that the facility can, as an alternative, maintain records of the total amount of each fuel combusted during each calendar month. Condition 32 was edited to reflect this alternative requirement.

Comment 9: Condition 38 and 39. Page 12: Combusting diesel in the boilers for testing, maintenance and training is limited to 48 hours/year for each boiler B-4-B-7. It will be necessary for PeaceHealth to determine the data sources to monitor and record diesel operation dates and hours for each boiler.

Response 9: Commenter is stating a fact, and this does not require a response.

Comment 10: Condition 40, pages 12-13: Recordkeeping requirements are listed in a table format in the proposed permit. This includes the new requirements to measure and record the natural gas quantity combusted by each boiler and the diesel quantity, dates and hours for each boiler. In addition, the visible emissions survey for the emergency generators, and the additional visible emissions monitoring for boilers B-5 and B-6 are identified, however, the quarterly visible emissions survey for the boilers is not listed in the recordkeeping table.

Response 10: LRAPA inserted the visible emission survey logs requirement for boilers B-4 through B-7 while combusting natural gas every quarter to the recordkeeping requirements.

Comment 11: Condition 41, page 13: The semi-annual reporting for diesel fuel oil and any excess emission for boilers B-5 and B-6 is due on February 15 and July 30. The 8/30/24 (proposed) permit review report has been revised to an August 15 due date to provide 45 days. This change should also be made in the revised proposed permit.

Response 11: The proposed permit was corrected to reflect the August 15 date for semi-annual reporting.

Public Comment Receipt Log

Written comments were received from:

Roni Dersham	rdersham@peacehealth.org

QL/BE/aa
09/16/2024

Emission Details

PLANT SITE EMISSION LIMITS										
Emission Units	**PM**	**PM_{10}**	**$PM_{2.5}$**	**CO**	**NO_X**	**SO_2**	**VOC**	**Single HAP (2)**	**Aggregate HAP**	**GHG**
	tpy	**tpy**	**tpy**	**tpy**	**tpy**	**tpy**	**tpy**	**tpy**	**tpy**	**tpy**
3 Emergency Generators (EG-1, EG-2 & EG-3)	0.88	0.88	0.88	2.68	12.46	0.82	1.02	0.06	0.50	65
4 Boilers (B-4, B-5, B-6 & B-7)	1.16	1.15	1.15	38.06	45.44	1.81	2.49	0.01	1.55	54318
Potential to Emit (PTE)	2.04	2.03	2.02	40.74	57.89	2.63	3.51	0.07	2.05	54,383
PSELs (1)	**2.0**	**2.0**	**2.0**	**41**	**39**	**2.6**	**3.5**	**0.07**	**2.05**	**54,383**

(1) The PSELs are set equal to the source's potential to emit in accordance with LRAPA 42-0041(3)

(1)NOX PSEL is set below the SER on the facility's request.

(1) PSELs were rounded to the 0.45. If PSEL was below the 0.45, it was rounded down and if above the PSEL was rounded up.

(2) This is the single highest HAP for each type of emission unit.

Baseline Emission Rate and Netting Basis									
Pollutant	Baseline (1)	Netting Basis (2)		Plant Site Emission Limit (PSEL) (3)		PSEL Increase	PTE Emissions	Increase over Netting Basis	SER
		Previous	Proposed	Previous PSEL	Proposed PSEL				
	tpy	tpy	tpy	tpy	tpy	tpy	tpy	tpy	tpy
PM	NA	0.0	0.0	24	2.0	-22	2.04	2.0	25
PM_{10}	NA	0.0	0.0	14	2.0	-12	2.03	2.0	15
$PM_{2.5}$	NA	0.0	0.0	9.0	2.0	-7.0	2.02	2.0	10
CO	NA	0.0	0.0	99	41	-58	40.74	41	99
NO_X	NA	0.0	0.0	39	39	0	57.89	39	39
SO_2	NA	0.0	0.0	39	2.6	-36	2.63	2.6	39
VOC	NA	0.0	0.0	39	3.5	-35.5	3.51	3.5	39
GHG (3)	0.0	0.0	0.0	74,000	54,383	-19,617	54,383	54,383	74,000

(1) Baseline emission rates (BERs) have been set at zero (0) for all criteria pollutants because the facility was not in operation during the 1978 baseline years.

(1) BER for $PM_{2.5}$ was not established in accordance with LRAPA 42-0048(3).

(1) BER for GHG was not established in accordance with LRAPA 42-0048(b).

(2) Netting was not established for this permitting action because netting was not tirggered in accordance with LRAPA 42-0046.

(2) For all pollutants the netting is zero because the facility was constructed after the 1978 baseline year.

(3) PSELs are set at the source's potential to emit in accordance with LRAPA 42-0041(3).

Boilers Calculations

Detail Sheet: Boilers		
	Maximum heat input rating	**Unit**
EU: BL-1 - Mohican Boiler	12.6	MMBtu/hr
EU: BL-2 - Mohican Boiler	33.6	MMBtu/hr
EU: BL-3 - Mohican Boiler	33.6	MMBtu/hr
EU: BL-4 - Hurst Boiler	26.8	MMBtu/hr
Total	**106.6**	**MMBtu/hr**

All Combustion Boilers Specifications		
Max Heat Input	106.6	MMBtu/hr
Heat Value - Natural Gas	1026	MMBtu/MMCF
Heat Value - Diesel	138	MMBtu/1000gal
Max NG Hrs Operation	8,712	hr/yr
Mohican Boiler	90	gal/hr
Hurst Boiler	100	gal/hr
Max Diesel Hrs Operation	48	hr/yr

Pollutant	**NG Total Potential Annual Total Emissions (TPY)**	**Diesel Potential Annual Total Emissions (TPY)**	**Potential Annual Total Emissions (TPY)**
PM	1.13	0.03	**1.16**
PM_{10}	1.13	0.02	**1.15**
$PM_{2.5}$	1.13	0.01	**1.15**
Carbon Monoxide	38.02	0.04	**38.06**
Nitrogen Oxides	45.26	0.18	**45.44**
Sulfur Dioxide	1.18	0.63	**1.81**
VOC	2.49	0.00	**2.49**
GHGs (CO_2 equiv.)	54,260	58	**54,318**

GHG-Related Emission Factors			
	Natural Gas	**Diesel**	
Pollutant	**(kg/MMBtu)**	**(kg/MMBtu)**	**GWP**
Carbon Dioxide (CO_2)	53.06	73.96	1
Methane (CH_4)	1.0E-03	3.0E-03	25
Nitrous Oxide (N_2O)	1.0E-04	6.0E-04	298
Note: GHG emissions are based on 40 CFR 98, Tables C-1 and C-2			

GHG Emission Factor Conversion Calculations		
Distillate Fuel	138,700	Btu/gallon
	0.1387	MMBtu/gallon
GHG Emission Factor	163.61	lb/MMBtu
GHG Emission Factor	22.69	lb/gallon

Natural Gas Criteria Pollutants for Boilers								
Pollutant	**NG Emission Factor**	**Natural Gas Emission Factor Units**	**Mohican Boiler (EU: B4)**	**Mohican Boiler (EU: B5)**	**Mohican Boiler (EU: B6)**	**Hurst Boiler (EU: B7)**	**Total Potential Hourly Total Emissions**	**Total Potential Annual Total Emissions**
			(lbs/hr)	**(lbs/hr)**	**(lbs/hr)**	**(lbs/hr)**	**(lbs/hr)**	**(TPY)**
$PM/PM_{10}/PM_{2.5}$	2.5	lbs/MMCF	0.03	0.08	0.08	0.07	0.26	**1.13**
Carbon Monoxide	84	lbs/MMCF	1.03	2.75	2.75	2.19	8.73	**38.02**
Nitrogen Oxides	100	lbs/MMCF	1.23	3.27	3.27	2.61	10.39	**45.26**
Sulfur Dioxide	2.6	lbs/MMCF	0.03	0.09	0.09	0.07	0.27	**1.18**
VOC	5.5	lbs/MMCF	0.07	0.18	0.18	0.14	0.57	**2.49**
GHGs (CO_2 equiv.)	119,891	lbs/MMCF	1472.34	3926.25	3926.25	3131.65	12,456	**54,260**
Notes:								
1. Emission Factors are based on DEQ Emission Factors Gas Fired Boilers (AQ-EF05), Revised 08/01/11								
2. GHG emissions are based on 40 CFR 98, Tables C-1 and C-2								

Diesel Criteria Pollutants for Boilers								
Pollutant	**Diesel Emission Factor**	**Diesel Fuel Emission Factor Units**	**Mohican Boiler 1 (lbs/hr)**	**Mohican Boiler 2 (lbs/hr)**	**Mohican Boiler 3 (lbs/hr)**	**Hurst Boiler 4 (lbs/hr)**	**Potential Hourly Total Emissions (lbs/hr)**	**Potential Annual Total Emissions (TPY)**
PM	3.3	lbs/1000 gals	0.297	0.297	0.297	0.330	1.22	**0.03**
PM_{10}	2.3	lbs/1000 gals	0.207	0.207	0.207	0.230	0.85	**0.02**
$PM_{2.5}$	1.6	lbs/1000 gals	0.144	0.144	0.144	0.160	0.59	**0.01**
Carbon Monoxide	5	lbs/1000 gals	0.450	0.450	0.450	0.500	1.85	**0.04**
Nitrogen Oxides	20	lbs/1000 gals	1.800	1.800	1.800	2.000	7.40	**0.18**
Sulfur Dioxide	71.0	lbs/1000 gals	6.390	6.390	6.390	7.100	26.27	**0.63**
VOC	0.2	lbs/1000 gals	0.018	0.018	0.018	0.020	0.07	**0.00**
GHGs (CO_2 equiv.)	22.7	lbs/1000 gals	286	762	762	608	2,419	**58**
Notes:								
1. Emission Factors are based on DEQ Emission Factors Gas Fired Boilers (AQ-EF05), Revised 08/01/11								
2. GHG emissions are based on 40 CFR 98, Tables C-1 and C-2								

HAP Emissions for Boilers								
Pollutant Organics	**NG Emission Factor (lb/MMCF)**	**NG Emission lbs/hr**	**Diesel Emission Factor (lb/k gal)**	**Diesel emissions lbs/hr**	**Total Emissions lbs/hr**	**Annual Emissions (TPY)**	**Federal HAP**	**CAO Air Toxic**
1,3-Butadiene			1.48E-02	1.1E-02	1.1E-02	2.74E-04	Yes	Yes
Acetaldehyde	3.10E-03	3.2E-04	3.51E-01	2.7E-01	2.7E-01	7.90E-03	Yes	Yes
Acrolein	2.70E-03	2.8E-04	3.51E-01	2.7E-01	2.7E-01	7.72E-03	Yes	Yes
Benzene	5.80E-03	6.0E-04	4.40E-03	3.4E-03	4.0E-03	2.71E-03	Yes	Yes
Benzo[a]pyrene	1.20E-06	1.2E-07	3.52E-05	2.7E-05	2.7E-05	1.20E-06	Yes	Yes
Ethyl Benzene	6.90E-03	7.2E-04	2.00E-04	1.5E-04	8.7E-04	3.13E-03	Yes	Yes
Formaldehyde	1.23E-02	1.3E-03	3.51E-01	2.7E-01	2.7E-01	1.21E-02	Yes	Yes
Hexane	4.60E-03	4.8E-04	3.50E-03	2.7E-03	3.2E-03	2.15E-03	Yes	Yes
Hydrochloric Acid			1.86E-01	1.4E-01	1.4E-01	3.45E-03		
Naphthalene	3.00E-04	3.1E-05	5.30E-03	4.1E-03	4.1E-03	2.34E-04	Yes	Yes
Total PAHs (exc. Nap.)	1.00E-04	1.0E-05	4.45E-02	3.4E-02	3.4E-02	8.70E-04	Yes	Yes
Toluene	2.65E-02	2.8E-03	4.40E-03	3.4E-03	6.2E-03	1.21E-02	Yes	Yes
Xylenes	2.90E-02	3.0E-03	1.60E-03	1.2E-03	4.2E-03	1.32E-02	Yes	Yes
Inorganic Gases								
Ammonia	3.20E+00	3.3E-01	8.00E-01	6.2E-01	9.5E-01	1.46E+00	No	Yes
Metals [2]								
Arsenic	2.0E-04	2.1E-05	1.60E-03	1.2E-03	1.3E-03	1.20E-04	Yes	Yes
Barium	4.4E-03	4.6E-04			4.6E-04	1.99E-03	No	Yes
Beryllium	1.2E-05	1.2E-06			1.2E-06	5.43E-06	Yes	Yes
Cadmium	1.1E-03	1.1E-04	1.50E-03	1.2E-03	1.3E-03	5.26E-04	Yes	Yes
Chromium, Hexavalent [3]	1.4E-03	1.5E-04	1.00E-04	7.7E-05	2.2E-04	6.35E-04	Yes	Yes
Cobalt	8.4E-05	8.7E-06			8.7E-06	3.80E-05	Yes	Yes
Copper	8.5E-04	8.8E-05	4.10E-03	3.2E-03	3.3E-03	4.61E-04	No	Yes
Lead [4]	5.0E-04	5.2E-05	8.30E-03	6.4E-03	6.5E-03	3.80E-04	Yes	Yes
Manganese	3.8E-04	3.9E-05	3.10E-03	2.4E-03	2.4E-03	2.29E-04	Yes	Yes
Mercury	2.6E-04	2.7E-05	2.00E-03	1.5E-03	1.6E-03	1.55E-04	Yes	Yes
Molybdenum Trioxide [5]	1.7E-03	1.7E-04			1.7E-04	7.47E-04	No	Yes
Nickel	2.1E-03	2.2E-04	3.90E-03	3.0E-03	3.2E-03	1.02E-03	Yes	Yes
Selenium	2.4E-05	2.5E-06	2.20E-03	1.7E-03	1.7E-03	5.16E-05	Yes	Yes
Vanadium	2.3E-03	2.4E-04			2.4E-04	1.04E-03	No	Yes
Zinc	2.9E-02	3.0E-03			3.0E-03	1.31E-02	No	Yes
						Total (TPY) =	**0.07**	**1.55**
						Max Federal HAP (tpy)	**1.3E-02**	

Notes:

1. All emission factors were based from DEQ AQ104B Toxics Reporting & Air Toxics Emission Inventory (ATEI) - Combustion Emission Factor Search Tool, 03/01/2024

Emergency Generators Calculations

3 Emergency Generators installed prior to April 1, 2006		
Maximum Hours per year	100	hours
Each Engine rated	2000	kW/each
Heat Value for diesel	138	MMBtu/1000 gal
Maximum Fuel Consumption in total per each Generator	137.5	gal/hour
3 Generators	413	gal/hour for 3 generators

Fuel Oil (Diesel) calculations for Boilers

Pollutant	Max Fuel Consumption (gals/hr)	Emission Factors		Hourly Emission Rate (lbs/hr)	Annual Emissions (tpy)
		Factors [(1)]	Units		
PM	412.50	42.50	lb/1000 gal	17.53	**0.88**
PM_{10}	412.50	42.50	lb/1000 gal	17.53	**0.88**
$PM_{2.5}$	412.50	42.50	lb/1000 gal	17.53	**0.88**
SO_2	412.50	39.70	lb/1000 gal	16.38	**0.82**
NO_X	412.50	604.00	lb/1000 gal	249.15	**12.46**
CO	412.50	130.00	lb/1000 gal	53.63	**2.68**
VOC	412.50	49.30	lb/1000 gal	20.34	**1.02**
GHG	412.50	22.7	lb/MMBtu	1292	**65**

(1) Emission factors are from Oregon DEQ AQ-EF07 - Emission Factors - Power (Electric) Generators (08/01/2011)

2.20462 is the conversion from kilograms to pound

GHG-Related Emission Factors		
	Diesel	
Pollutant	(kg/MMBtu)	GWP
Carbon Dioxide	73.96	1
Methane	3.0E-03	25
Nitrous Oxide	6.0E-04	298

GHG Emission Factor Conversion Calculations		
Distillate Fuel	138,700	Btu/gallon
	0.1387	MMBtu/gallon
GHG Emission Factor	163.61	lb/MMBtu
GHG Emission Factor	22.69	lb/gallon

FHAP and CAO TAC for Generators						
Polluant Name (Chemical Compound)	CAS/DEQ Number	Emission Factor lb/M gal	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Federal HAP	CAO TAC
1,3-Butadiene	106-99-0	0.2174	0.0897	4.48E-03	Yes	Yes
2-Methyl naphthalene	91-57-6	1.23E-02	0.0051	2.54E-04	No	Yes
Acenaphthene	83-32-9	7.35E-04	0.0003	1.52E-05	Yes	Yes
Acenaphthylene	208-96-8	8.10E-04	0.0003	1.67E-05	Yes	Yes
Acetaldehyde	75-07-0	0.7833	0.3231	1.62E-02	Yes	Yes
Acrolein	107-02-8	0.0339	0.0140	6.99E-04	Yes	Yes
Ammonia	7664-41-7	2.9	1.1963	5.98E-02	No	Yes
Anthracene	120-12-7	4.52E-04	0.0002	9.32E-06	Yes	Yes
Antimony	7440-36-0	3.18E-04	0.0001	6.56E-06	No	Yes
Arsenic	7440-38-2	2.77E-04	0.0001	5.71E-06	Yes	Yes
Barium	7440-39-3	3.74E-04	0.0002	7.71E-06	No	Yes
Benzo[a]anthracene	56-55-3	4.85E-05	0.0000	1.00E-06	Yes	Yes
Benzene	71-43-2	0.1863	0.0768	3.84E-03	Yes	Yes
Benzo[a]pyrene	50-32-8	1.44E-05	0.0000	2.97E-07	Yes	Yes
Benzo[b]fluoranthene	205-99-2	4.44E-05	0.0000	9.15E-07	Yes	Yes
Benzo[e]pyrene	192-97-2	3.29E-05	0.0000	6.78E-07	Yes	Yes
Benzo[g,h,i]perylene	191-24-2	2.19E-05	0.0000	4.51E-07	Yes	Yes
Benzo[k]fluoranthene	207-08-9	1.31E-05	0.0000	2.69E-07	Yes	Yes
Beryllium	7440-41-7	4.77E-06	0.0000	9.84E-08	Yes	Yes
Cadmium	7440-43-9	8.08E-05	0.0000	1.67E-06	Yes	Yes
Chromium, Hexavalent	18540-29-9	3.51E-04	0.0001	7.24E-06	Yes	Yes
Chrysene	218-01-9	6.70E-05	0.0000	1.38E-06	Yes	Yes
Cobalt	7440-48-4	1.58E-05	0.0000	3.25E-07	Yes	Yes
Copper	7440-50-8	5.02E-04	0.0002	1.04E-05	No	Yes
Dibenzo[a,h]anthracene	53-07-3	1.04E-06	0.0000	2.14E-08	Yes	Yes
DPM (Filt+Cond)	200	16.98	7.0023	3.50E-01	No	Yes
Ethyl Benzene	100-41-4	0.0109	0.0045	2.25E-04	Yes	Yes
Fluoranthene	206-44-0	3.70E-04	0.0002	7.63E-06	Yes	Yes
Fluorene	86-73-7	2.18E-03	0.0009	4.51E-05	Yes	Yes
Formaldehyde	50-00-0	2.71	1.1191	5.60E-02	Yes	Yes
Hexane	110-54-3	0.0269	0.0111	5.55E-04	Yes	Yes
Hydrochloric acid	7647-01-0	0.19	0.0768	3.84E-03	Yes	Yes
Indeno[1,2,3-cd]pyrene	193-39-5	1.07E-05	0.0000	2.21E-07	Yes	Yes
Lead Compounds	7439-92-1	3.64E-04	0.0002	7.50E-06	Yes	Yes
Manganese	7439-96-5	4.20E-04	0.0002	8.66E-06	Yes	Yes
Mercury	7439-97-6	1.51E-05	0.0000	3.12E-07	Yes	Yes
Naphthalene	91-20-3	2.64E-02	0.0109	5.44E-04	Yes	Yes
Nickel	365	1.82E-04	0.0001	3.76E-06	Yes	Yes
Perylene	198-55-0	1.18E-06	0.0000	2.43E-08	Yes	Yes
Phenanthrene	85-01-8	4.54E-03	0.0019	9.37E-05	Yes	Yes
Phosphorus	504	8.40E-03	0.0035	1.73E-04	No	Yes
Selenium	7782-49-2	3.76E-04	0.0002	7.76E-06	Yes	Yes
Silver	7440-22-4	4.80E-05	0.0000	9.90E-07	No	Yes
Thallium	7440-28-0	2.40E-04	0.0001	4.95E-06	No	Yes
Toluene	108-88-3	0.11	0.0435	2.17E-03	Yes	Yes
Xylene(s)	1330-20-7	0.04	0.0175	8.75E-04	Yes	Yes
Zinc	7440-66-6	5.23E-03	0.0022	1.08E-04	No	Yes
				TOTALS (typ)	0.09	0.50
				Max Federal HAP (tpy)	0.06	