



Southwest Clean Air Agency

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www.swcleanair.org

April 28, 2015

Orell Ogwin
Downtown Redevelopment Authority
301 West 6th Street
Vancouver, WA 98660

Subject: Final Approval for Operation of Natural Gas Fired Pool and Spa Heaters

Dear Mr. Ogwin:

A final determination to issue Air Discharge Permit 15-3130 has been completed for Air Discharge Permit Application CL-2018 pursuant to Section 400-110(4) of the General Regulations for Air Pollution Sources of the Southwest Clean Air Agency (SWCAA). Public notice for Air Discharge Permit Application CL-2018 was published in the permit section of SWCAA's internet website on April 1, 2014. SWCAA did not receive a request for a public comment period in response to the public notice, and has concluded that significant public interest does not exist for this determination. Therefore, a public comment period will not be provided for this permitting action. Electronic copies of Air Discharge Permit 15-3130 and the associated Technical Support Document are available for public review in the permit section of SWCAA's internet website (www.swcleanair.org/permitsADPfinals.asp). Original copies are enclosed for your files.

This Air Discharge Permit may be appealed directly to the Pollution Control Hearings Board (PCHB) at P.O. Box 40903, Olympia, Washington 98504-0903 within 30 days of receipt as provided in RCW 43.21B.

If you have any comments, or desire additional information, please contact me or Clint Lamoreaux at (360) 574-3058, extension 131.

Sincerely,

Uri Papish
Executive Director

UP: cl
Attachment



SOUTHWEST CLEAN AIR AGENCY

**AIR DISCHARGE PERMIT
SWCAA 15-3130**

Issued: April 28, 2015

Facility Name: Vancouver Hilton Hotel and Vancouver Convention Center
Physical Location: 301 West 6th Street, Vancouver, WA 98660

SWCAA ID: 2252

REVIEWED BY: *Paul T. Mairose*
Paul T. Mairose, Chief Engineer



APPROVED BY: *Uri Papish* for
Uri Papish, Executive Director

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1. Equipment/Activity Identification

ID No.	Generating Equipment/Activity	# of Units	Control Measure/Equipment	# of Units
1	Emergency Generator Engine (823 hp Caterpillar)	1	None	N/A
2	Boiler B-1 (2.228 MMBtu/hr Buderus)	1	Low-emission burner, Low sulfur, low ash fuel (natural gas)	1
3	Boiler B-1 (2.228 MMBtu/hr Buderus)	1	Low-emission burner, Low sulfur, low ash fuel (natural gas)	1
4	Boiler B-3 (2.228 MMBtu/hr Buderus)	1	Low-emission burner, Low sulfur, low ash fuel (natural gas)	1
5	Gas Water Heater 1 (GWH-1) (1.999 MMBtu/hr Laars Pennant)	1	Low-emission burner, Low sulfur, low ash fuel (natural gas)	1
6	Gas Water Heater 2 (GWH-2) (1.999 MMBtu/hr Laars Pennant)	1	Low-emission burner, Low sulfur, low ash fuel (natural gas)	1
7	Gas Water Heater 5 (GWH-5) (0.3999 MMBtu/hr A O. Smith)	1	Low-emission burner, Low sulfur, low ash fuel (natural gas)	1
8	Gas Water Heater 6 (GWH-6) (0.3999 MMBtu/hr A.O. Smith)	1	Low-emission burner, Low sulfur, low ash fuel (natural gas)	1
9	Pool Heater (0.400 MMBtu/hr Pentair)	1	Low sulfur, low ash fuel (natural gas)	N/A
10	Spa Heater (0.400 MMBtu/hr Pentair)	1	Low sulfur, low ash fuel (natural gas)	N/A

2. Permit Terms and Conditions

The following tables detail the specific terms and conditions of this permit. In addition to the requirements listed below, equipment at this facility may be subject to additional federal, state, and local regulations. The permit term or requirement number is identified in the left hand column. The permit term or requirement is contained in the middle column. The emission unit, equipment, or activity to which the permit term or condition applies is listed in the right hand column.

Air Discharge Permit 05-2608 is superseded in its entirety by this Air Discharge Permit.

2.1 Emission Limits

No.	Emission Limits	Equipment/ Activity
1.	Emissions of nitrogen oxides from the emergency generator engine must not exceed 1.38 tons per year. Annual emissions must be calculated using the emission factor presented in the Technical Support Document for this Air Discharge Permit unless unit specific source test data has been collected.	1

No.	Emission Limits	Equipment/ Activity																																			
2.	<p>Emissions from the boilers must not exceed any of the following:</p> <table border="1"> <thead> <tr> <th>Unit</th> <th colspan="2">tons per year</th> <th colspan="2">ppmvd @ 3% O₂ (1-hour average)</th> </tr> <tr> <th></th> <th>NO_x</th> <th>CO</th> <th>NO_x</th> <th>CO</th> </tr> </thead> <tbody> <tr> <td>B-1</td> <td>0.36</td> <td>0.14</td> <td>30</td> <td>20</td> </tr> <tr> <td>B-2</td> <td>0.36</td> <td>0.14</td> <td>30</td> <td>20</td> </tr> <tr> <td>B-3</td> <td>0.36</td> <td>0.14</td> <td>30</td> <td>20</td> </tr> <tr> <td>GWH-1</td> <td>0.32</td> <td>0.49</td> <td>30</td> <td>75</td> </tr> <tr> <td>GWH-2</td> <td>0.32</td> <td>0.49</td> <td>30</td> <td>75</td> </tr> </tbody> </table> <p>Annual emissions must be calculated using the emission factors presented in the Technical Support Document for this Air Discharge Permit unless more recent source test data has been collected.</p>	Unit	tons per year		ppmvd @ 3% O ₂ (1-hour average)			NO _x	CO	NO _x	CO	B-1	0.36	0.14	30	20	B-2	0.36	0.14	30	20	B-3	0.36	0.14	30	20	GWH-1	0.32	0.49	30	75	GWH-2	0.32	0.49	30	75	2 - 6
Unit	tons per year		ppmvd @ 3% O ₂ (1-hour average)																																		
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3.	<p>Visible emissions from the emergency generator engine must not exceed five percent opacity for more than 3 minutes in any one hour period as determined in accordance with SWCAA Method 9 (See Appendix A of SWCAA 400) except during startup. For the purposes of this requirement, the startup period ends when the earlier of the following operating events occurs:</p> <ul style="list-style-type: none"> (a) The engine has reached normal operating temperature; or (b) The engine has been operating for 15 minutes. 	1																																			
4.	<p>Visible emissions from the natural gas fired equipment must not exceed zero percent opacity for more than 3 minutes in any one hour period as determined in accordance with SWCAA Method 9 (See Appendix A of SWCAA 400).</p>	2 - 10																																			

2.2 Operating Limits and Requirements

No.	Operating Limits and Requirements	Equipment/ Activity
5.	<p>Exhaust from the emergency generator engine and Boilers B-1, B-2, and B-3 must be exhausted vertically. Any rain cap that interferes with vertical dispersion is prohibited.</p>	1 - 4
6.	<p>The emergency generator engine must only be fired on #2 diesel or better. The sulfur content of the fuel fired in the generator engine must not exceed 0.0015% by weight. A fuel certification from the fuel supplier may be used to demonstrate compliance with this requirement.</p>	1
7.	<p>Operation of the emergency generator engine for maintenance checks and readiness testing must not exceed 100 hours per year. A nonresettable time totalizer must be maintained and used to measure hours of operation.</p>	1
8.	<p>Operation of the emergency generator engine must be limited to maintenance checks, readiness testing, and as necessary to provide emergency power</p>	1

No.	Operating Limits and Requirements	Equipment/ Activity																								
9.	<p>If the test results from any performance monitoring event indicate that emission concentrations may exceed the relevant concentrations identified below, the permittee must either perform 60 minutes of additional monitoring to more accurately quantify CO and NO_x emissions, or initiate corrective action. Additional testing or corrective action must be initiated as soon as practical but no later than three days after the potential exceedance is identified. Corrective action includes tuning, maintenance by service personnel, limitation of boiler load, or other action taken to assure emissions do not exceed the concentrations indicated below. Monitoring of unit emissions must be conducted within three days following completion of any corrective action to confirm that the corrective action has been effective. Corrective action must be pursued until observed emission concentrations no longer exceed the relevant concentrations indicated below on a 1-hour average basis.</p> <table border="1"> <thead> <tr> <th><u>Boiler/Water Heater</u></th> <th><u>NO_x (ppmvd @ 3% O₂)</u></th> <th><u>CO (ppmvd @ 3% O₂)</u></th> </tr> </thead> <tbody> <tr> <td>B-1</td> <td>30</td> <td>20</td> </tr> <tr> <td>B-2</td> <td>30</td> <td>20</td> </tr> <tr> <td>B-3</td> <td>30</td> <td>20</td> </tr> <tr> <td>GWH-1</td> <td>30</td> <td>75</td> </tr> <tr> <td>GWH-2</td> <td>30</td> <td>75</td> </tr> <tr> <td>Pool Heater</td> <td>140</td> <td>70</td> </tr> <tr> <td>Spa Heater</td> <td>140</td> <td>70</td> </tr> </tbody> </table>	<u>Boiler/Water Heater</u>	<u>NO_x (ppmvd @ 3% O₂)</u>	<u>CO (ppmvd @ 3% O₂)</u>	B-1	30	20	B-2	30	20	B-3	30	20	GWH-1	30	75	GWH-2	30	75	Pool Heater	140	70	Spa Heater	140	70	2 – 6, 9, 10
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10.	Operations that cause or contribute to odors that unreasonably interfere with any other property owner's use and enjoyment of their property must use recognized good practice and procedures to reduce those odors to a reasonable minimum.	Facilitywide																								
11.	Emission units identified in this Permit must be maintained and operated in total and continuous conformity with the conditions identified in this Permit. SWCAA reserves the right to take any and all appropriate action to maintain the conditions of this Permit, including directing the facility to cease operations until corrective action can be completed.	Facilitywide																								

2.3 Monitoring and Recordkeeping Requirements

No.	Monitoring and Recordkeeping Requirements	Equipment/ Activity
12.	<p>The following information must be collected, recorded at the intervals specified below, and readily available on-site for inspection:</p> <ul style="list-style-type: none"> (a) The number of hours the emergency generator engine is operated must be recorded for each calendar year; (b) The total amount of natural gas consumed by the facility must be recorded for each calendar year; (c) Maintenance activities that may affect emissions from permitted equipment must be logged for each occurrence. This includes, but is not limited to, adjustments or tuning activities; (d) Upset conditions that cause excess emissions must be recorded for each occurrence; and (e) All air quality related complaints, including odor complaints, received by the permittee and the results of any subsequent investigation or corrective action must be recorded for each occurrence. 	Facilitywide
13.	With the exception of data logged by a computerized data acquisition system, each record required by this Air Discharge Permit must include the date and the name of the person making the record entry.	Facilitywide
14.	All records required by this Air Discharge Permit must be available on site or easily retrievable for a minimum period of no less than three years and must be available for inspection by SWCAA representatives.	Facilitywide

2.4 Emission Monitoring and Testing Requirements

No.	Emission Monitoring and Testing Requirements	Equipment/ Activity
15.	Performance monitoring of Boilers B-1, B-2 and B-3, Gas Water Heaters GWH-1, and GWH-2, the Pool Heater and the Spa Heater must be conducted no later than the end of March each year as described in Appendix A of this Permit unless an alternative schedule has been approved by SWCAA in writing. If a unit is not operated in a month during which performance monitoring is due, performance monitoring of that unit must be conducted no later than the end of the calendar month in which it is next operated.	2 – 6, 9, 10

2.5 Reporting Requirements

No.	Reporting Requirements	Equipment/ Activity
16.	The results of all performance monitoring conducted in accordance with Appendix A must be reported to SWCAA within 15 days of test completion.	2 – 6, 9, 10

No.	Reporting Requirements	Equipment/ Activity
17.	<p>Excess emissions must be reported to SWCAA as follows:</p> <ul style="list-style-type: none"> (a) As soon as possible, but no later than 12 hours after discovery for emissions that represent a potential threat to human health or safety; (b) As soon as possible, but no later than 48 hours after discovery for emissions which the permittee wishes to claim as unavoidable pursuant to SWCAA 400-107(1); and (c) No later than 30 days after the end of the month of discovery for all other excess emissions. 	Facilitywide
18.	Deviations from permit conditions must be reported no later than 30 days after the end of the month during which the deviation is discovered.	Facilitywide
19.	<p>The following emission-related information must be reported to SWCAA by March 15th for the previous calendar year:</p> <ul style="list-style-type: none"> (a) The number of hours the Emergency Generator Engine was operated; (b) The total amount of natural gas consumed by the facility; and (c) Air emissions of criteria air pollutants, volatile organic compounds, toxic air pollutants (TAPs), and hazardous air pollutants (HAPs). 	Facilitywide

3. General Provisions

No.	General Provisions
A.	Emission units identified in this Permit shall be maintained and operated in total and continuous conformity with the conditions identified in this Permit. SWCAA reserves the right to take any and all appropriate action to maintain the conditions of this Permit, including directing the facility to cease operations until corrective action can be completed.
B.	For the purpose of ensuring compliance with this Permit, duly authorized representatives of the Southwest Clean Air Agency shall be permitted access to the permittee's premises and the facilities being constructed, owned, operated and/or maintained by the permittee for the purpose of inspecting said facilities. These inspections are required to determine the status of compliance with this Permit and applicable regulations and to perform or require such tests as may be deemed necessary.
C.	The provisions, terms and conditions of this Permit shall be deemed to bind the permittee, its officers, directors, agents, servants, employees, successors and assigns, and all persons, firms, and corporations acting under or for the permittee.
D.	The requirements of this Permit shall survive any transfer of ownership of the source or any portion thereof.
E.	This Permit shall be posted conspicuously at or be readily available near the source.
F.	Approval to construct or modify specific pollution generating equipment shall become invalid if construction is not commenced within eighteen months after the date of issuance of this Permit, if construction is discontinued for a period of eighteen months or more, or if construction is not completed within a reasonable time.
G.	This Permit does not supersede requirements of other Agencies with jurisdiction and further, this Permit does not relieve the permittee of any requirements of any other governmental Agency. In addition to this Permit, the permittee may be required to obtain permits or approvals from other agencies with jurisdiction.

No.	General Provisions
H.	Compliance with the terms of this Permit does not relieve the permittee from the responsibility of compliance with SWCAA General Regulations for Air Pollution Sources, previously issued Regulatory Orders, RCW 70.94, Title 173 WAC or any other applicable emission control requirements, nor from the resulting liabilities and/or legal remedies for failure to comply.
I.	If any provision of this Permit is held to be invalid, all unaffected provisions of the Permit shall remain in effect and be enforceable.
J.	No change in this Permit shall be made or be effective except as may be specifically set forth by written order of the Southwest Clean Air Agency upon written application by the permittee for the relief sought.
K.	The permittee shall have the burden of proof regarding unavoidable conditions that lead to excess emissions in accordance with SWCAA 400-107 "Excess Emissions." Excess emissions shall be reported to SWCAA as soon as possible. The permittee shall call in the upset condition via telephone as initial notification to SWCAA; a message may be left on the answering machine for conditions outside of normal business hours. The permittee shall record the upset conditions in the operations log for periodic inspection by SWCAA. A full report may be required by SWCAA if determined to be necessary.
L.	The Southwest Clean Air Agency may, in accordance with RCW 70.94 impose such conditions as are reasonably necessary to assure the maintenance of compliance with the terms of this Permit, the Washington Clean Air Act, and the applicable rules and regulations adopted under the Washington Clean Air Act.

Performance Monitoring Requirements**Boilers B-1, B-2, B-3, Gas Water Heaters GWH-1, GWH-2, Pool Heater, Spa Heater****1. Introduction:**

- a. The purpose of periodically monitoring the exhaust of each unit is to minimize emissions and provide a reasonable assurance that the unit is operating properly.
- b. Periodic monitoring may be conducted with an electrochemical cell combustion analyzer, analyzers used for reference method testing, or other analyzers pre-approved by SWCAA.

2. Monitoring Requirements:

- a. Monitoring to determine emission concentrations of the following constituents shall be conducted for each unit no later than the end of March during each calendar year. The use of an alternative test schedule must be pre-approved by SWCAA in writing. If a unit is not operated in a month during which performance monitoring is due, performance monitoring of that unit must be conducted no later than the end of the calendar month in which it is next operated.

Constituents to be Measured

Carbon Monoxide (CO)

Nitrogen Oxides (NO_x)Oxygen (O₂)

Temperature

- b. Source operation during monitoring must be representative of maximum intended operating conditions during that year.
- c. Alternative monitoring methodologies must be pre-approved by SWCAA.

3. Minimum Quality Assurance/Quality Control Measures:

- a. The analyzer(s) response to span (calibration) gas of a known concentration (reference) shall be determined before and after testing. No more than 12 hours may elapse between response checks. The test results are invalid if the analyzer zero or span drift exceeds 10% of the span value. The test may not be started until the calibration error (the difference between the reference concentration and the analyzer response) is no more than 10% of the span value.
- b. The CO and NO_x span gas concentrations shall be no less than 50% and no more than 200% of the emission concentration corresponding to the permitted emission limit. A lower concentration span gas may be used if it is more representative of measured concentrations. Ambient air may be used to zero the CO and NO_x cells/analyzer(s) and span the oxygen cell/analyzer.

Performance Monitoring Requirements**Boilers B-1, B-2, B-3, Gas Water Heaters GWH-1, GWH-2, Pool Heater, Spa Heater****3. Minimum Quality Assurance/Quality Control Measures (continued):**

- c. Sampling shall consist of at least 1 test consisting of at least 5 minutes of data collection. Data shall not be collected until after analyzer readings have stabilized (less than 5% per minute change in emission concentration). Emission concentrations shall be recorded at least once every 30 seconds during the data collection phase for a minimum of 10 readings. All test data collected after the analyzer readings have stabilized shall be reported to SWCAA in the format designated by SWCAA. Alternative testing methods may be utilized provided pre-approval is obtained from SWCAA.

If the test results from any performance monitoring event indicate that emission concentrations may exceed the relevant concentrations identified below, the permittee shall either perform 60 minutes of additional monitoring to more accurately quantify CO and NO_x emissions, or initiate corrective action. Additional testing or corrective action shall be initiated as soon as practical but no later than three days after the potential exceedance is identified. Corrective action includes tuning, maintenance by service personnel, limitation of boiler load, or other action taken to assure emissions do not exceed the concentrations indicated below. Monitoring of unit emissions must be conducted within three days following completion of any corrective action to confirm that the corrective action has been effective. Corrective action shall be pursued until observed emission concentrations no longer exceed the relevant concentrations indicated below on a 1-hour average basis.

Boiler/Water Heater	NO _x (ppmvd @ 3% O ₂)	CO (ppmvd @ 3% O ₂)
B-1	30	20
B-2	30	20
B-3	30	20
GWH-1	30	75
GWH-2	30	75
Pool Heater	140	70
Spa Heater	140	70

4. Reporting:

- a. All monitoring results shall be recorded at the facility and reported to SWCAA in writing using a format designated by the Agency. Results shall be reported within 15 calendar days of completion. The following information shall be included in the report:
- (1) Time and date of the emissions evaluation;
 - (2) Identification of the personnel involved;
 - (3) Identification of the affected unit;
 - (4) A summary of results (NO_x, CO, O₂, etc.), reported in units consistent with the applicable emission standard(s) or limit(s);
 - (5) A summary of equipment operating conditions (e.g., firing rate, fuel flow, stack temperature, etc.);
 - (6) A description of the evaluation methods or procedures used including all field data, quality assurance/quality control procedures and documentation; and
 - (7) Analyzer response check and calibration error documentation.
- b. Individual monitoring results shall be reported as read. Final average monitoring results shall be corrected to 3% O₂ in the exhaust gas and adjusted to reflect analyzer response to zero and span gases.