



<i>Environmental Guideline</i> <b>Heating, Ventilation and Air Conditioning (HVAC) Operations</b>	
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<i>Controlled Copy Location:</i>	Not applicable.

<b>Activity Description</b>
The City and County of Denver operates various HVAC systems at City facilities. The purpose of these systems is to provide hot and cold water and heated and cooled air. Generally, the boilers operate on natural gas and may use diesel fuel as a backup. The mechanical systems utilize refrigerants regulated by Federal and State laws.

<b>Potential Environmental Risks</b>
<p>The following environmental concerns are associated with this activity:</p> <ul style="list-style-type: none"><li>• Air pollution</li><li>• Fuel spills</li><li>• Improper management of used refrigerant</li><li>• Improper management of used oil</li><li>• Discharge of air conditioner condensate to the ground</li><li>• Discharge of boiler blow down to the ground.</li><li>• Discharge of raw water treatment chemicals to the sanitary sewer.</li></ul> <p>Potential consequences from performing the activity incorrectly:</p> <ul style="list-style-type: none"><li>• Property damage, personal injury, damage to the environment.</li><li>• Possible regulatory non-compliance, Notice of Violation and related [financial &amp; non-financial] penalties.</li></ul>

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**Critical Operating Requirements**

<b>A. General Requirements</b>	
<b>Prohibited Activities</b>	<ul style="list-style-type: none"> <li>Intentional venting of refrigerants is illegal.</li> <li>Spills of any kind shall not be washed into the storm sewer system or waterway, or on to any soils.</li> </ul>
<b>General Considerations</b>	Each operator conducting HVAC activities is responsible for understanding the applicable regulations and/or permits and managing his activities accordingly; this Environmental Guideline is meant as guidance only and does not supersede any regulations.
<b>Training Requirements</b>	<ul style="list-style-type: none"> <li>All operators or contractors (technicians) working on mechanical air conditioning systems or refrigeration systems shall be trained and certified through a Section 608 approved certification program.</li> </ul>
<b>Storage &amp; Material Handling Requirements</b>	<ul style="list-style-type: none"> <li>HVAC operators should manage used oil in accordance with Federal and State used oil regulations.</li> <li>HVAC operators should manage used refrigerant in accordance with Federal and State CFC regulations.</li> <li>Used oils contaminated with refrigerants are not hazardous waste on the condition that:             <ul style="list-style-type: none"> <li>They are not mixed with other waste;</li> <li>They are subjected to CFC recycling or reclamation; and</li> <li>They are not mixed with used oils from other sources.</li> </ul> </li> </ul>

<b>B. Planning Requirements</b>	<i>Responsible: &lt;responsible party&gt;</i>
B1. Environmental Quality staff works collaboratively with facility staff to ensure compliance and to evaluate whether Air Pollution Emission Notices (APENs) and/or Applications for Air Pollution Permits shall be filed with the State Air Pollution Control Division for new boilers or modification to existing boilers. Environmental Quality staff provides technical assistance as needed.	<ul style="list-style-type: none"> <li>Necessary APENs shall be filed every 5 years, 30 days prior to their expiration dates.</li> </ul>
B2. Operators of stationary mechanical air conditioning systems or refrigeration systems shall evaluate whether registration with and/or notification to the State Air Pollution Control Division is necessary for equipment and/or technicians.	
B3. Have appropriate Personal Protective Equipment (PPE) on hand	

<b>C. Critical Tasks</b>	<i>Responsible: &lt;responsible party&gt;</i>
C1. CCOD operators will conduct HVAC operations, monitoring, and recordkeeping in accordance State Air Pollution Permits, Federal and State CFC regulations, and Federal and State used oil regulations.	
C2. Use PPE where appropriate	

<b>D. Emergency Response</b>	<i>Responsible: &lt;responsible party&gt;</i>
D1. If a spill occurs, refer to Environmental Guideline Spill Response.	<ul style="list-style-type: none"> <li><b>Call 311 immediately (during normal business hours) or at 303-206-0001 after normal business hours for all spills.</b></li> </ul>
D2. Control spills to minimize property damage and eliminate imminent risk to human health and the	

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<b>D. Emergency Response</b>	<i>Responsible: &lt;responsible party&gt;</i>
environment.	
D3. Control spills to minimize property damage and eliminate imminent risk to human health and the environment.	
D4. Containerize all collected wastes and evaluate for labeling, storage and disposal.	
D5. Boiler operators shall notify the State Air Pollution Control Division of any upset conditions.	

<b>E. Inspection &amp; Maintenance Requirements</b>	<i>Responsible: &lt;responsible party&gt;</i>
E1. CCOD operators will conduct HVAC inspections and maintenance in accordance with State Air Pollution Permits, Federal and State CFC regulations and Federal and State used oil regulations.	

<b>Expected Records / Outputs</b>	
<u>Record / Output</u>	<u>Instructions</u>
1. Startup/shutdown/malfunction records for boilers.	Records are maintained on site.
2. Natural gas usage for boilers.	Document natural gas usage (this is done per building by General Services Utilities Division and records posted on Sharepoint under Monitoring section of the EMS).
3. Other records required by any Air Pollution Permit specific to the facility, i.e. emissions calculations.	Document emissions calculations and any other information required by Permits.
3. CFC technician certifications.	Maintain CFC technician certifications at the Webb Municipal Building.
4. Equipment service records and refrigerant records.	Service records must be kept on site. Maintain service records and document refrigerant additions.

<b>References</b>
Phone Numbers
<ul style="list-style-type: none"> <li>• <b>311 (for Spill Reporting during normal business hours).....3-1-1</b></li> <li>• DEH DEQ Emergency Response (after normal business hours)..... (303) 206-0001</li> <li>• Supervisor (DEQ Environmental Scientist Supervisor) ..... Future Hire</li> <li>• Amy Wiley (DEH DEQ)..... (720) 865-5440</li> </ul>

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## **References**

### Guidance Materials (list not limited to the following)

- Manufacturer's operating and maintenance manual for all boilers.
- Manufacturer's operating and maintenance manual for mechanical air conditioning systems and refrigeration systems.

### Training Materials (list not limited to the following)

- None identified

### Related Environmental Guidelines (list not limited to the following)

- Spill Response

### Applicable Regulations (list not limited to the following)

- 40 CFR Part 60, Subpart Dc, Federal Boiler regulations
- 40 CFR Part 82 Subpart F, Federal regulations for refrigerants in stationary equipment.
- State Air Quality Regulations
- 40 CFR Part 279, Subpart C, Federal used oil regulations
- CCoD Ordinances
- Denver Wastewater Management Division Rules & Regulations
- Metro Wastewater Reclamation District Rules & Regulations

### Other Documents

- State Air Pollution Permit specific to the facility
- Air Pollution Emission Notification (APEN) forms
- Compliance Bulletins
- CCoD Executive Orders