



TECHNICAL SUPPORT DOCUMENT

**Air Discharge Permit 22-3525
Air Discharge Permit Application CL-3200**

Issued: July 18, 2022

Vancouver School District – Discovery Middle School

SWCAA ID – 1001

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ABBREVIATIONS

List of Acronyms

ADP	Air Discharge Permit	NESHAP	National Emission Standards for Hazardous Air Pollutants
AP-42	Compilation of Emission Factors, AP-42, 5th Edition, Volume 1, Stationary Point and Area Sources – published by EPA	NSPS	New Source Performance Standard
ASIL.....	Acceptable Source Impact Level	PSD	Prevention of Significant Deterioration
BACT.....	Best available control technology	RCW	Revised Code of Washington
CAM	Compliance Assurance Monitoring	SDS	Safety Data Sheet
CAS#.....	Chemical Abstracts Service registry number	SQER	Small Quantity Emission Rate listed in WAC 173-460
CFR.....	Code of Federal Regulations	Standard	Standard conditions at a temperature of 68°F (20°C) and a pressure of 29.92 in Hg (760 mm Hg)
EPA	U.S. Environmental Protection Agency	SWCAA	Southwest Clean Air Agency
EU	Emission Unit	T-BACT	Best Available Control Technology for toxic air pollutants
mfr.....	Manufacturer	WAC	Washington Administrative Code

List of Units and Measures

µg/m ³	Micrograms per cubic meter	MMBtu	Million British thermal unit
µm	Micrometer (10 ⁻⁶ meter)	MMcf	Million cubic feet
acfm	Actual cubic foot per minute	ppm	Parts per million
bhp	Brake horsepower	ppmv	Parts per million by volume
dscfm.....	Dry Standard cubic foot per minute	ppmvd.....	Parts per million by volume, dry
g/dscm.....	Grams per dry Standard cubic meter	ppmw	Parts per million by weight
gr/dscf	Grain per dry standard cubic foot	psig	Pounds per square inch, gauge
hp	Horsepower	rpm.....	Revolution per minute
hp-hr.....	Horsepower-hour	scfm	Standard cubic foot per minute
kW.....	Kilowatt	tph	Ton per hour
		tpy	Tons per year

List of Chemical Symbols, Formulas, and Pollutants

CO.....	Carbon monoxide	PM ₁₀	PM with an aerodynamic diameter 10 µm or less
CO ₂	Carbon dioxide		
CO _{2e}	Carbon dioxide equivalent	PM _{2.5}	PM with an aerodynamic diameter 2.5 µm or less
HAP	Hazardous air pollutant listed pursuant to Section 112 of the Federal Clean Air Act	SO ₂	Sulfur dioxide
NO ₂	Nitrogen dioxide	SO _x	Sulfur oxides
NO _x	Nitrogen oxides	TAP.....	Toxic air pollutant pursuant to Chapter 173-460 WAC
O ₂	Oxygen	VOC.....	Volatile organic compound
PM.....	Particulate Matter with an aerodynamic diameter 100 µm or less		

Terms not otherwise defined have the meaning assigned to them in the referenced regulations or the dictionary definition, as appropriate.

1. FACILITY IDENTIFICATION

Applicant Name: Vancouver School District #37
Applicant Address: 2901 Falk Road, Vancouver 98661

Facility Name: Discovery Middle School
Facility Address: 800 East 40th Street, Vancouver, WA 98663

SWCAA Identification: 1001

Contact Person: Jason Ackley

Primary Process: High School
SIC/NAICS Code: 8211: Educational Services
611110: Elementary and Secondary Schools

Facility Classification: Natural Minor

2. FACILITY DESCRIPTION

Vancouver School District is a public primary education provider for Clark County, Washington. This permitting action is for the existing Discovery Middle School. The school serves approximately 600 students.

3. CURRENT PERMITTING ACTION

This permitting action is in response to Air Discharge Permit (ADP) application number CL-3200 dated June 23, 2022. Vancouver Public Schools submitted ADP application CL-3200 requesting the following:

- Four new Lochinvar model FBN1001 (0.999 MMBtu/hr) natural gas-fired hot water boilers
- One new Lochinvar model AWH1250NPM (1.25 MMBtu/hr) natural gas-fired hot water heater

This is the initial permitting action for this facility.

4. PROCESS DESCRIPTION

4.a Boilers. Four Lochinvar natural gas fired boilers provide steam for heating.

4.b Water Heater. One Lochinvar natural gas fired water heater is used to provide domestic hot water.

5. EQUIPMENT/ACTIVITY IDENTIFICATION

- 5.a Boilers (B-1, B-2, B-3 and B-4). Four Lochinvar model FBN1001 natural gas fired boilers with a rated heat input of 0.999 MMBtu/hr each. Exhaust gases are discharged to ambient air through an 6" diameter stack at approximately 38' above ground level. The stacks exhaust approximately 3' above the roof.

Location: East end near the gym
 Boiler Manufacturer: Lochinvar
 Model Number: FBN1001
 Serial Numbers: 2218129375313
 2221129659457
 2218129375319
 2218129375314
 Heat Rate: 0.999 MMBtu/hr
 40 CFR 60 Subpart Dc: Not applicable
 40 CFR 63 Subpart JJJJJ: Not Applicable

- 5.b Water Heater (GWH-1). One Lochinvar model AWH1250NPM natural gas fired water heater with a rated heat input of 1.25 MMBtu/hr. Exhaust gases are discharged to ambient air through a 8" diameter stack at approximately 38' above ground level. The stack exhausts approximately 3' above the roof.

Location: East end near the gym
 Water Heater Manufacturer: Lochinvar
 Model Number: AWH1250NPM
 Heat Rate: 1.25 MMBtu/hr

- 5.c. Equipment/Activity Summary.

ID No.	Equipment/Activity	Control Equipment/Measure
1	Boiler 1 (Lochinvar model FBN 2001)	Low emission burner Ultralow Sulfur Fuel (Natural Gas)
2	Boiler 2 (Lochinvar model FBN 2001)	Low emission burner Ultralow Sulfur Fuel (Natural Gas)
3	Boiler 3 (Lochinvar model FBN 2001)	Low emission burner Ultralow Sulfur Fuel (Natural Gas)
4	Boiler 4 (Lochinvar model FBN 2001)	Low emission burner Ultralow Sulfur Fuel (Natural Gas)
5	Water Heater (Lochinvar model AWH1250NPM)	Low emission burner Ultralow Sulfur Fuel (Natural Gas)

6. EMISSIONS DETERMINATION

Unless otherwise specified by SWCAA, actual emissions must be determined using the specified input parameter listed for each emission unit and the following hierarchy of methodologies:

- Continuous emissions monitoring system (CEMS) data;
- Source emissions test data (EPA reference method). When source emissions test data conflicts with CEMS data for the time period of a source test, source test data must be used;
- Source emissions test data (other test method); and
- Emission factors or methodology provided in this TSD.

- 6.a. Boiler 1. Potential annual emissions (PTE) from the combustion of natural gas by this boiler were calculated with the assumption that the boiler could operate at full rated capacity for 8,760 hours per year.

Boiler 1						
Heat Rate =		0.999 MMBtu/hr				
Natural Gas Heat Value =		1,020 Btu/scf for AP-42 emission factors				
Natural Gas Heat Value =		1,026 Btu/scf for 40 CFR 98 GHG emission factors				
Fuel Consumption =		8.580 MMscf/yr				
Pollutant	ppmvd @ 3% O ₂	Emission Factor		lb/hr	tpy	Emission Factor Source
NO _x	30	0.0364	37.1	0.036	0.16	BACT
CO	50	0.0370	37.7	0.037	0.16	BACT
VOC		0.0054	5.5	0.0054	0.024	AP-42 Sec. 1.4 (7/98)
SO _x as SO ₂		0.00059	0.6	0.00059	0.0026	AP-42 Sec. 1.4 (7/98)
PM		0.0075	7.6	0.0074	0.033	AP-42 Sec. 1.4 (7/98)
PM ₁₀		0.0075	7.6	0.0074	0.033	AP-42 Sec. 1.4 (7/98)
PM _{2.5}		0.0075	7.6	0.0074	0.033	AP-42 Sec. 1.4 (7/98)
Benzene		2.06E-06	0.0021	2.1E-06	9.0E-06	AP-42 Sec. 1.4 (7/98)
Formaldehyde		7.35E-05	0.075	7.3E-05	3.2E-04	AP-42 Sec. 1.4 (7/98)
Greenhouse Gases			CO ₂ e	CO ₂ e		
	kg/MMBtu	GWP	lb/MMBtu	lb/MMscf	tpy, CO ₂ e	Emission Factor Source
CO ₂	53.06	1	116.98	120,019	511.8	40 CFR 98
CH ₄	0.001	25	0.055	56.55	0.2	40 CFR 98
N ₂ O	0.0001	298	0.066	67.41	0.3	40 CFR 98
Total GHG - CO ₂ e			117.098	120,143	512.4	

Emissions must be calculated by multiplying the fuel usage by the emission factors above unless new emission factors are developed through source emissions testing, or an alternative methodology is specified or approved by SWCAA.

- 6.b. Boiler 2. Potential annual emissions (PTE) from the combustion of natural gas by this boiler were calculated with the assumption that the boiler could operate at full rated capacity for 8,760 hours per year.

Boiler 2						
Heat Rate =	0.999 MMBtu/hr					
Natural Gas Heat Value =	1,020 Btu/scf for AP-42 emission factors					
Natural Gas Heat Value =	1,026 Btu/scf for 40 CFR 98 GHG emission factors					
Fuel Consumption =	8.580 MMscf/yr					
Pollutant	ppmvd @ 3% O ₂	Emission Factor		lb/hr	tpy	Emission Factor Source
		lb/MMBtu	lb/MMscf			
NO _x	30	0.0364	37.1	0.036	0.16	BACT
CO	50	0.0370	37.7	0.037	0.16	BACT
VOC		0.0054	5.5	0.0054	0.024	AP-42 Sec. 1.4 (7/98)
SO _x as SO ₂		0.00059	0.6	0.00059	0.0026	AP-42 Sec. 1.4 (7/98)
PM		0.0075	7.6	0.0074	0.033	AP-42 Sec. 1.4 (7/98)
PM ₁₀		0.0075	7.6	0.0074	0.033	AP-42 Sec. 1.4 (7/98)
PM _{2.5}		0.0075	7.6	0.0074	0.033	AP-42 Sec. 1.4 (7/98)
Benzene		2.06E-06	0.0021	2.1E-06	9.0E-06	AP-42 Sec. 1.4 (7/98)
Formaldehyde		7.35E-05	0.075	7.3E-05	3.2E-04	AP-42 Sec. 1.4 (7/98)
Greenhouse Gases	kg/MMBtu	GWP	CO ₂ e lb/MMBtu	CO ₂ e lb/MMscf	tpy, CO ₂ e	Emission Factor Source
CO ₂	53.06	1	116.98	120,019	511.8	40 CFR 98
CH ₄	0.001	25	0.055	56.55	0.2	40 CFR 98
N ₂ O	0.0001	298	0.066	67.41	0.3	40 CFR 98
Total GHG - CO ₂ e			117.098	120,143	512.4	

Emissions must be calculated by multiplying the fuel usage by the emission factors above unless new emission factors are developed through source emissions testing, or an alternative methodology is specified or approved by SWCAA.

- 6.c. Boiler 3. Potential annual emissions (PTE) from the combustion of natural gas by this boiler were calculated with the assumption that the boiler could operate at full rated capacity for 8,760 hours per year.

Boiler 3						
Heat Rate =	0.999 MMBtu/hr					
Natural Gas Heat Value =	1,020 Btu/scf for AP-42 emission factors					
Natural Gas Heat Value =	1,026 Btu/scf for 40 CFR 98 GHG emission factors					
Fuel Consumption =	8.580 MMscf/yr					
Pollutant	ppmvd @ 3% O ₂	Emission Factor		lb/hr	tpy	Emission Factor Source
NO _x	30	0.0364	37.1	0.036	0.16	BACT
CO	50	0.0370	37.7	0.037	0.16	BACT
VOC		0.0054	5.5	0.0054	0.024	AP-42 Sec. 1.4 (7/98)
SO _x as SO ₂		0.00059	0.6	0.00059	0.0026	AP-42 Sec. 1.4 (7/98)
PM		0.0075	7.6	0.0074	0.033	AP-42 Sec. 1.4 (7/98)
PM ₁₀		0.0075	7.6	0.0074	0.033	AP-42 Sec. 1.4 (7/98)
PM _{2.5}		0.0075	7.6	0.0074	0.033	AP-42 Sec. 1.4 (7/98)
Benzene		2.06E-06	0.0021	2.1E-06	9.0E-06	AP-42 Sec. 1.4 (7/98)
Formaldehyde		7.35E-05	0.075	7.3E-05	3.2E-04	AP-42 Sec. 1.4 (7/98)
Greenhouse Gases	kg/MMBtu	GWP	CO ₂ e lb/MMBtu	CO ₂ e lb/MMscf	tpy, CO ₂ e	Emission Factor Source
CO ₂	53.06	1	116.98	120,019	511.8	40 CFR 98
CH ₄	0.001	25	0.055	56.55	0.2	40 CFR 98
N ₂ O	0.0001	298	0.066	67.41	0.3	40 CFR 98
Total GHG - CO ₂ e			117.098	120,143	512.4	

Emissions must be calculated by multiplying the fuel usage by the emission factors above unless new emission factors are developed through source emissions testing, or an alternative methodology is specified or approved by SWCAA.

- 6.d. Boiler 4. Potential annual emissions (PTE) from the combustion of natural gas by this boiler were calculated with the assumption that the boiler could operate at full rated capacity for 8,760 hours per year.

Boiler 4						
Heat Rate =	0.999 MMBtu/hr					
Natural Gas Heat Value =	1,020 Btu/scf for AP-42 emission factors					
Natural Gas Heat Value =	1,026 Btu/scf for 40 CFR 98 GHG emission factors					
Fuel Consumption =	8.580 MMscf/yr					
Pollutant	ppmvd @ 3% O ₂	Emission Factor		lb/hr	tpy	Emission Factor Source
NO _x	30	0.0364	37.1	0.036	0.16	BACT
CO	50	0.0370	37.7	0.037	0.16	BACT
VOC		0.0054	5.5	0.0054	0.024	AP-42 Sec. 1.4 (7/98)
SO _x as SO ₂		0.00059	0.6	0.00059	0.0026	AP-42 Sec. 1.4 (7/98)
PM		0.0075	7.6	0.0074	0.033	AP-42 Sec. 1.4 (7/98)
PM ₁₀		0.0075	7.6	0.0074	0.033	AP-42 Sec. 1.4 (7/98)
PM _{2.5}		0.0075	7.6	0.0074	0.033	AP-42 Sec. 1.4 (7/98)
Benzene		2.06E-06	0.0021	2.1E-06	9.0E-06	AP-42 Sec. 1.4 (7/98)
Formaldehyde		7.35E-05	0.075	7.3E-05	3.2E-04	AP-42 Sec. 1.4 (7/98)
Greenhouse Gases	kg/MMBtu	GWP	CO ₂ e lb/MMBtu	CO ₂ e lb/MMscf	tpy, CO ₂ e	Emission Factor Source
CO ₂	53.06	1	116.98	120,019	511.8	40 CFR 98
CH ₄	0.001	25	0.055	56.55	0.2	40 CFR 98
N ₂ O	0.0001	298	0.066	67.41	0.3	40 CFR 98
Total GHG - CO ₂ e			117.098	120,143	512.4	

Emissions must be calculated by multiplying the fuel usage by the emission factors above unless new emission factors are developed through source emissions testing, or an alternative methodology is specified or approved by SWCAA.

- 6.e. Water Heater 1. Potential annual emissions (PTE) from the combustion of natural gas by this water heater were calculated with the assumption that the water heater could operate at full rated capacity for 8,760 hours per year.

Water Heater 1						
Heat Rate =	1.250 MMBtu/hr					
Natural Gas Heat Value =	1,020 Btu/scf for AP-42 emission factors					
Natural Gas Heat Value =	1,026 Btu/scf for 40 CFR 98 GHG emission factors					
Fuel Consumption =	10.735 MMscf/yr					
Pollutant	ppmvd @ 3% O ₂	Emission Factor		lb/hr	tpy	Emission Factor Source
NO _x	30	0.0364	37.1	0.046	0.199	BACT
CO	50	0.0370	37.7	0.046	0.20	BACT
VOC		0.0054	5.5	0.0067	0.0295	AP-42 Sec. 1.4 (7/98)
SO _x as SO ₂		0.00059	0.6	0.00074	0.0032	AP-42 Sec. 1.4 (7/98)
PM		0.0075	7.6	0.0093	0.041	AP-42 Sec. 1.4 (7/98)
PM ₁₀		0.0075	7.6	0.0093	0.041	AP-42 Sec. 1.4 (7/98)
PM _{2.5}		0.0075	7.6	0.0093	0.041	AP-42 Sec. 1.4 (7/98)
Benzene		2.06E-06	0.0021	2.6E-06	1.1E-05	AP-42 Sec. 1.4 (7/98)
Formaldehyde		7.35E-05	0.075	9.2E-05	4.0E-04	AP-42 Sec. 1.4 (7/98)
Greenhouse Gases	kg/MMBtu	GWP	CO ₂ e lb/MMBtu	CO ₂ e lb/MMscf	tpy, CO ₂ e	Emission Factor Source
CO ₂	53.06	1	116.98	120,019	640.5	40 CFR 98
CH ₄	0.001	25	0.055	56.55	0.3	40 CFR 98
N ₂ O	0.0001	298	0.066	67.41	0.4	40 CFR 98
Total GHG - CO ₂ e			117.098	120,143	641.1	

Emissions must be calculated by multiplying the fuel usage by the emission factors above unless new emission factors are developed through source emissions testing, or an alternative methodology is specified or approved by SWCAA.

6.f. Emissions Summary

Air Pollutant	Potential to Emit (tpy)
NO _x	0.84
CO	0.85
VOC	0.15
SO ₂	0.02
PM	0.17
PM ₁₀	0.17
PM _{2.5}	0.17
CO ₂ /CO _{2e}	2,691

7. REGULATIONS AND EMISSION STANDARDS

Regulations have been established for the control of emissions of air pollutants to the ambient air. Regulations applicable to the proposed facility that have been used to evaluate the acceptability of the proposed facility and establish emission limits and control requirements include, but are not limited to, the following regulations, codes, or requirements. These items establish maximum emissions limits that could be allowed and are not to be exceeded for new or existing facilities. More stringent limits are established in this Permit consistent with implementation of Best Available Control Technology (BACT):

7.a. 40 CFR 60 Subpart Dc "Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units" applies to any steam generating unit with a heat input greater than or equal to 10 MMBtu/hr, but less than or equal to 100 MMBtu/hr constructed, modified, or reconstructed after June 9, 1989. All steam generating units on site have a heat input less than 10 MMBtu/hr, therefore this regulation does not apply.

7.b. 40 CFR 63 Subpart JJJJJ [§63.11193 et seq] "National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources" establishes national emission limitations and operating limitations for HAP emitted from boilers fired on specific fuels at area sources.

The facility is an area source of HAP and all of the boilers are classified as gas boilers, therefore this regulation does not apply.

7.c. Revised Code of Washington (RCW) 70A.15.2040 empowers any activated air pollution control authority to prepare and develop a comprehensive plan or plans for the prevention, abatement and control of air pollution within its jurisdiction. An air pollution control authority may issue such orders as may be necessary to effectuate the purposes of the Washington Clean Air Act (RCW 70A.15) and enforce the same by all appropriate

administrative and judicial proceedings subject to the rights of appeal as provided in Chapter 62, Laws of 1970 ex. sess.

- 7.d. RCW 70A.15.2210 provides for the inclusion of conditions of operation as are reasonably necessary to assure the maintenance of compliance with the applicable ordinances, resolutions, rules and regulations when issuing an ADP for installation and establishment of an air contaminant source.
- 7.e. WAC 173-460 "Controls for New Sources of Toxic Air Pollutants" requires BACT for toxic air pollutants (T-BACT), identification and quantification of emissions of toxic air pollutants and demonstration of protection of human health and safety.

The facility emits TAPs; therefore, this regulation applies to the facility.

- 7.f. WAC 173-476 "Ambient Air Quality Standards" establishes ambient air quality standards for PM₁₀, PM_{2.5}, lead, SO₂, NO_x, ozone, and CO in the ambient air, which must not be exceeded. The facility emits PM₁₀, PM_{2.5}, SO_x, NO_x, and CO; therefore, certain sections of this regulation apply. The facility does not emit lead; therefore, the lead regulation section does not apply.
- 7.g. SWCAA 400-040 "General Standards for Maximum Emissions" requires all new and existing sources and emission units to meet certain performance standards with respect to Reasonably Available Control Technology (RACT), visible emissions, fallout, fugitive emissions, odors, emissions detrimental to persons or property, SO₂, concealment and masking, and fugitive dust. This regulation applies to the facility.
- 7.h. SWCAA 400-040(1) "Visible Emissions" requires that emissions of an air contaminant from any emissions unit must not exceed twenty percent opacity for more than three minutes in any one hour at the emission point, or within a reasonable distance of the emission point. This regulation applies to the facility.
- 7.i. SWCAA 400-040(3) "Fugitive Emissions" requires that reasonable precautions be taken to prevent the fugitive release of air contaminants to the atmosphere. This regulation applies to the facility.
- 7.j. SWCAA 400-040(4) "Odors" requires any source which generates odors that may unreasonably interfere with any other property owner's use and enjoyment of their property to use recognized good practice and procedures to reduce these odors to a reasonable minimum. This source must be managed properly to maintain compliance with this regulation. This regulation applies to the facility.
- 7.k. SWCAA 400-040(6) "Sulfur Dioxide" requires that no person is allowed to emit a gas containing in excess of 1,000 ppm of SO₂, corrected to 7% O₂ or 12% CO₂ as required by the applicable emission standard for combustion sources.

The facility emits SO₂; therefore, this regulation applies to the facility.

- 7.l. SWCAA 400-050 "Emission Standards for Combustion and Incineration Units" requires that all provisions of SWCAA 400-040 be met and that no person is allowed to cause or permit the emission of PM from any combustion or incineration unit in excess of 0.23 g/Nm³_{dry} (0.1 gr/dscf) of exhaust gas at standard conditions.

The facility has combustion units; therefore, this regulation applies to the facility.

- 7.m. SWCAA 400-060 "Emission Standards for General Process Units" requires that all new and existing general process units do not emit PM in excess of 0.23 g/Nm³_{dry} (0.1 gr/dscf) of exhaust gas. The facility has general process units; therefore, this regulation applies to the facility.

- 7.n. SWCAA 400-070(13) "General Requirements for Certain Source Categories: Natural Gas-Fired Water Heaters."

- (a) Applicability. The requirements of this section apply to all natural gas-fired water heaters with a rated heat input less than 400,000 Btu/hr. For the purposes of this subsection, the term "water heater" means a closed vessel in which water is heated by combustion of gaseous fuel and is withdrawn for use external to the vessel at pressures not exceeding 160 psig, including the apparatus by which heat is generated and all controls and devices necessary to prevent water temperatures from exceeding 210°F.
- (b) Requirements.
- (i) On or after January 1, 2010, no person shall offer for sale, or install, a water heater that emits NO_x at levels in excess of 55 ppmv at 3% O₂, dry (0.067 lb per million Btu of heat input).
- (ii) On or after January 1, 2013, no person shall offer for sale, or install, a water heater that emits NO_x at levels in excess of 20 ppmv at 3% O₂, dry (0.024 lb per million Btu of heat input).

- 7.o. SWCAA 400-111 "Requirements for Sources in a Maintenance Plan Area" requires that no approval to construct or alter an air contaminant source will be granted unless it is evidenced that:

- (1) The equipment or technology is designed and will be installed to operate without causing a violation of the applicable emission standards;
- (2) Emissions will be minimized to the extent that the new source will not exceed emission levels or other requirements provided in the maintenance plan;
- (3) BACT will be employed for all air contaminants to be emitted by the proposed equipment;
- (4) The proposed equipment will not cause any ambient air quality standard to be exceeded; and
- (5) If the proposed equipment or facility will emit any toxic air pollutant regulated under WAC 173-460, the proposed equipment and control measures will meet all the requirements of that Chapter.

The facility is located in a maintenance plan area; therefore, this regulation applies to the facility.

8. BACT/CAM DETERMINATIONS

The proposed equipment and control systems incorporate BACT for the types and amounts of air contaminants emitted by the processes as described below:

- 8.a. BACT Determination – Boilers and Water Heater. The proposed use of low-sulfur fuel (natural gas), proper combustion controls, and limiting NO_x and CO emissions to 30 ppmvd @ 3% O₂, and 50 ppmvd @ 3% O₂ respectively has been determined to meet the requirements of BACT for the types and quantities of emissions from boilers B-1, B-2, B-3, and B-4 and the Water Heater.
- 8.b. Prevention of Significant Deterioration (PSD) Applicability Determination. This permitting action will not result in a potential increase in emissions equal to or greater than the PSD thresholds. Therefore, PSD review is not applicable to this action.
- 8.c. Compliance Assurance Monitoring (CAM) Applicability Determination. CAM is not applicable to any emission unit at this facility because it is not a major source and is not required to obtain a Part 70 (Title V) permit.

9. AMBIENT IMPACT ANALYSIS

- 9.a. Criteria Air Pollutant Review. Emissions of NO_x, CO, PM, VOC (as a precursor to O₃), and SO₂ are emitted at levels where no adverse ambient air quality impact is anticipated.
- 9.b. Toxic Air Pollutant Review.
The existing equipment proposed in ADP application CL-3200 will not affect the type or quantity of TAP emissions.

Conclusions

- 9.c. Operation of Discovery Middle School and associated combustion equipment, as proposed in ADP application CL-3200, will not cause the ambient air quality requirements of 40 CFR 50 "National Primary and Secondary Ambient Air Quality Standards" to be violated.
- 9.d. Operation of Discovery Middle School and associated combustion equipment, as proposed in ADP application CL-3200, will not cause the requirements of WAC 173-460 "Controls for New Sources of Toxic Air Pollutants" or WAC 173-476 "Ambient Air Quality Standards" to be violated.
- 9.e. Operation of Discovery Middle School and associated combustion equipment, as proposed in ADP application CL-3200, will not violate emission standards for sources as established under SWCAA General Regulations Sections 400-040 "General Standards for Maximum Emissions," 400-050 "Emission Standards for Combustion and Incineration Units," and 400-060 "Emission Standards for General Process Units."

10. DISCUSSION OF APPROVAL CONDITIONS

SWCAA has made a determination to issue ADP 22-3525 in response to ADP application CL-3200. ADP 22-3525 contains approval requirements deemed necessary to assure compliance with applicable regulations and emission standards as discussed below.

10.a. Supersession of Previous Permits.

This is the initial permitting action for the facility.

10.b. Emission Limits. Emission limits for the boilers and water heater are based on previous BACT determinations for boilers of similar size and use.

10.c. Operational Limits and Requirements.

Boilers and Water Heater. Approval conditions for the boilers and water heater listed in this application incorporate expected operational performance and the operating schemes proposed by the permit applicant at the time of installation. All of the proposed boilers and the water heater are low emission models. Emission concentrations of NO_x and CO have been limited to those levels guaranteed by the manufacturer. Visible emissions from the boilers are limited to 0% opacity consistent with proper operation. Annual emission monitoring requirements have been established to assure proper operation on an ongoing basis.

10.d. Monitoring and Recordkeeping Requirements. ADP 22-3525 establishes monitoring and recordkeeping requirements sufficient to document compliance with applicable emission limits, ensure proper operation of approved equipment and provide for compliance with generally applicable requirements.

10.e. Monitoring, Recordkeeping, and Reporting Requirements. Sufficient reporting and recordkeeping was established to document compliance with the established emission limits, provide for general requirements (upset reporting, annual emission inventory submission), and assist in the compliance assessment during on-site inspections. Records of maintenance activities and the results of periodic inspections conducted by facility personnel are required because they are valuable tools for regulatory inspectors and plant personnel. In addition, these records can be used to determine appropriate operating and maintenance requirements in a future permitting action.

10.f. Reporting Requirements. ADP 22-3525 establishes general reporting requirements for annual air emissions, upset conditions and excess emissions. Specific reporting requirements are established for fuel consumption. Reports are to be submitted on an annual basis.

11. START-UP AND SHUTDOWN/ALTERNATIVE OPERATING SCENARIOS/POLLUTION PREVENTION

- 11.a. Start-up and Shutdown Provisions. Pursuant to SWCAA 400-081 "Start-up and Shutdown", technology-based emission standards and control technology determinations must take into consideration the physical and operational ability of a source to comply with the applicable standards during start-up or shutdown. Where it is determined that a source is not capable of achieving continuous compliance with an emission standard during start-up or shutdown, SWCAA will include appropriate emission limitations, operating parameters, or other criteria to regulate performance of the source during start-up or shutdown.

To SWCAA's knowledge, this facility can comply with all applicable standards during startup and shutdown.

- 11.b. Alternate Operating Scenarios. SWCAA conducted a review of alternate operating scenarios applicable to equipment affected by this permitting action. The permittee did not propose or identify any applicable alternate operating scenarios. Therefore, none were included in the approval conditions.
- 11.c. Pollution Prevention Measures. SWCAA conducted a review of possible pollution prevention measures for the facility. No pollution prevention measures were identified by either the permittee or SWCAA separate or in addition to those measures required under BACT considerations. Therefore, none were included in the approval conditions.

12. EMISSION MONITORING

- 12.a. Emission Monitoring Requirements – Boiler and Water Heater. The boiler and water heater are required to be monitored annually to verify compliance with the emission limits specified in the ADP. Corrective action is required to be taken if the boiler or water heater is found to not be meeting the emission limit.

13. FACILITY HISTORY

- 13.a. General History. The facility has not been permitted in the past.
- 13.b. Previous Permitting Actions. The following past permitting actions have been taken by SWCAA for this facility:

There are no previously issued ADPs for this facility.

- 13.c. Compliance History. A search of source records on file at SWCAA did not identify any previous or outstanding compliance issues over the past five (5) years for this school.

14. PUBLIC INVOLVEMENT OPPORTUNITY

- 14.a. Public Notice for ADP Application. Public notice for ADP application CL-3200 was published on the SWCAA website for a minimum of fifteen (15) days beginning on June 30, 2022.
- 14.b. Public/Applicant Comment for ADP Application CL-3200. SWCAA did not receive specific comments, a comment period request, or any other inquiry from the public or the applicant regarding ADP application CL-3200. Therefore, no public comment period was provided for this permitting action.
- 14.c. State Environmental Policy Act. This project is exempt from SEPA requirements pursuant to WAC 197-11-800(3) since it only involves repair and/or maintenance of existing structures, equipment or facilities, and will not involve material expansions or changes in use. SWCAA issued a Determination of SEPA Exempt (SWCAA 22-017) concurrent with issuance of ADP 22-3525.