

**AIR QUALITY
MANAGEMENT DISTRICT****AUTHORITY TO CONSTRUCT****A/C NO.:** 27781**ISSUED BY:***Brian J Krebs***DATE ISSUED:** AUGUST 30, 2024

BRIAN F. KREBS

DATE EXPIRES: AUGUST 30, 2026**ISSUED TO:** SACRAMENTO AREA SEWER DISTRICT**LOCATION:** 8521 LAGUNA STATION ROAD, ELK GROVE, CA 95758**DESCRIPTION:** BOILER, MAKE: SUPERIOR, MODEL: LAKOTA HTHWG, SERIAL NO.: TO BE DETERMINED, 19.95 MMBTU/HR, DIGESTER GAS FIRED WITH NATURAL GAS BACK-UP FUEL, NON-ATMOSPHERIC, USED FOR ANAEROBIC DIGESTER HEATING**AUTHORITY TO CONSTRUCT CONDITIONS****START-UP REQUIREMENTS**

S1. After completing the equipment installation authorized under this Authority to Construct (ATC), the permit holder must contact the Sacramento Metropolitan Air Quality Management District (SMAQMD) to arrange a start-up inspection. SMAQMD may be contacted at (279) 207-1122.

[Basis: SMAQMD Rule 201, Section 405]

S2. This Authority to Construct may serve as a temporary Permit to Operate provided that:

- A. The permit holder has notified SMAQMD that the equipment installation is complete and the facility is ready for a start-up inspection,
- B. The equipment installed matches the equipment authorized in this Authority to Construct,
- C. The equipment is operated in compliance with all conditions in this Authority to Construct, and
- D. The equipment and its operation complies with SMAQMD, state and federal laws and regulations.

[Basis: SMAQMD Rule 201, Sections 303.1 and 405]

S3. The permit holder agrees to indemnify and defend SMAQMD, its officers, agents, and employees if this permit, or the environmental review of the permit under the California Environmental Quality Act (CEQA) or the National Environmental Policy Act (NEPA), including any exemption determination, is challenged in state or federal court. This indemnification includes attorney fees awarded against SMAQMD, as well as attorney fees, court costs, legal fees, and other expenses incurred in defending the challenge. The District will provide written notice to the permit holder within 5 days if it receives a petition, complaint or other legal notice by a third party challenging this Authority to Construct (ATC) or the environmental review of the ATC. The permit holder may, within 10 days of notification, request cancellation of the ATC. If the permit holder requests cancellation, SMAQMD will cancel the permit within 5 days, and will notify the plaintiffs of the cancellation and request dismissal of the litigation.

[Basis: SMAQMD Rule 201, Section 405]

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GENERAL

1. The equipment must be properly maintained and operated in accordance with the information submitted with the application and the manufacturer's recommendations at all times.
[Basis: SMAQMD Rule 201, Section 405 and Rule 202, Section 408.1]
2. The Air Pollution Control Officer and/or authorized representatives must be permitted to do all of the following:
 - A. Enter the source premises or any location at which any records required by this ATC are kept.
 - B. Access and copy any records required by this ATC.
 - C. Inspect or review any equipment, operation, or method required under this ATC.
 - D. Sample emissions from the source or require samples to be taken.**[Basis: SMAQMD Rule 201, Section 405]**
3. This ATC does not authorize the emission of air contaminants in excess of those allowed by Division 26, Part 4, Chapter 3, of the California Health and Safety Code or the SMAQMD Rules and Regulations.
[Basis: SMAQMD Rule 201, Sections 303.1 and 405]
4. The facility may not discharge air contaminants or other materials that cause injury, detriment, nuisance or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property.
[Basis: SMAQMD Rule 402, Section 301]
5. A legible copy of this ATC must be maintained on the premises with the equipment.
[Basis: SMAQMD Rule 201, Section 401]

EMISSION LIMITATIONS

6. The boiler must not discharge into the atmosphere any visible air contaminant other than uncombined water vapor for a period or periods aggregating more than three minutes in any one hour if the discharge is as dark or darker than Ringelmann No. 1 or is equal to or greater than 20% opacity.
[Basis: SMAQMD Rule 401, Section 301]
7. The boiler must meet the following emission standards:
[Basis: SMAQMD Rule 202, Section 408.2a and Rule 411, Section 301]

Pollutant	Emission Standard and Work Practice
NOx	9 ppmvd corrected to 3% oxygen (A)
CO	400 ppmvd corrected to 3% oxygen (B)
PM10 and PM2.5	0.1 grain/scf at 12% CO ₂ (A)

(A) Based on SMAQMD BACT standard for this size category (BACT determination 359).

(B) Based on SMAQMD Rule 411 emission standards for boilers of this size category.

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8. The emissions from the boiler, when fired on digester gas, must not exceed the following limits:
[Basis: SMAQMD Rule 201, Section 405 and Rule 202, Section 408.2]

Pollutant	Emission Factors (A) (lb/MMcf)	Emission Limits (B)					
		(lb/day)	1st Qtr (lb/qtr)	2nd Qtr (lb/qtr)	3rd Qtr (lb/qtr)	4th Qtr (lb/qtr)	(lb/year)
VOC	3.6	2.6	232	235	238	238	942
NOx	7.2	5.2	471	476	481	481	1,910
SOx	9.1	6.6	590	597	603	603	2,393
PM10	4.9	3.5	321	325	328	328	1,302
PM2.5	4.9	3.5	321	325	328	328	1,302
CO	195.6	141.5	12,734	12,875	13,017	13,017	51,642

(A) Emission factor for NOx is based on 9 ppm at 3% oxygen and an HHV of 662 Btu/scf. Emission factors for VOC and PM are from AP-42, Table 1.4-2 (7/98) and have been adjusted to an HHV of 662 Btu/scf. Emission factors for PM10 and PM2.5 are the PM factor since all particulate is expected to be less than 1.0 micrometer in diameter. Emission factor for SOx is from AP-42, Table 1.4-2 (7/98) and has been adjusted to a sulfur content of 40 ppm S in the fuel and an HHV of 662 Btu/scf. Emission factor for CO is BACT and is based on 400 ppm at 3% oxygen and an HHV of 662 Btu/scf.

(B) Emissions are based on 19.95 MMBtu/hr; 24 hours/day; 90 days, 91 days, 92 days, and 92 days for each sequential quarter; and 365 days/year.

9. The emissions from the boiler, when fired on natural gas, must not exceed the following limits:
[Basis: SMAQMD Rule 201, Section 405 and Rule 202, Section 408.2]

Pollutant	Emission Factors (A) (lb/MMcf)	Emission Limits (B)					
		(lb/day)	1st Qtr (lb/qtr)	2nd Qtr (lb/qtr)	3rd Qtr (lb/qtr)	4th Qtr (lb/qtr)	(lb/year)
VOC	5.4	2.6	232	235	238	238	942
NOx	10.9	5.2	471	476	481	481	1,910
SOx	0.6	0.3	25	26	26	26	103
PM10	7.5	3.6	321	325	328	328	1,302
PM2.5	7.5	3.6	321	325	328	328	1,302
CO	295.5	141.5	12,734	12,875	13,017	13,017	51,642

(A) Emission factor for NOx is based on 9 ppmvd at 3% oxygen and is BACT. Emission factors for VOC, SOx, and PM are from AP-42, Table 1.4-2 (07/98) and have been adjusted to a natural gas HHV of 1,000 Btu/scf. Emission factors for PM10 and PM2.5 are the PM factor since all particulate is expected to be less than 1.0 micrometer in diameter. Emission factor for CO is based on 400 ppmvd at 3% oxygen.

(B) Emissions are based on 19.95 MMBtu/hr; 24 hours/day; 90 days, 91 days, 92 days, and 92 days for each sequential quarter; and 365 days/year.

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10. Emissions from P/Os 12526, 24421, 24222, 24682, 26464, 26465, and 25901 must not exceed the following quarterly VOC limits. Emissions from 12526, 24426, 24682, 25403, 25901, 26464, 26465, 27781, 27782, 27783, 27784, and 27785 must not exceed the following quarterly PM10 emission limits and annual PM2.5 emission limits. The most recent version of Attachments C and E must be completed quarterly and annually respectively to demonstrate compliance with this condition.

[Basis: SMAQMD Rule 201, Section 405 and Rule 202, Section 302]

Emission Limits					
Quarterly VOC Limit (lb/quarter)				Quarterly PM10 Limit (lb/quarter)	Annual PM2.5 limit (tons/year)
1st Quarter	2nd Quarter	3rd Quarter	4th Quarter		
7,335	7,345	7,368	7,354	7,299	14.4

11. Emissions from all permitted emission units at the stationary source (Sacramento Regional Wastewater Treatment Plant) must not exceed the following annual emission limits. The most recent version of Attachment B must be completed annually to demonstrate compliance with this condition.

[Basis: SMAQMD Rule 201, Section 405 and Rule 202, Section 228]

Annual Emission Limits (ton/year)				
VOC	NOx	CO	Single Hazardous Air Pollutant	Combination of All Hazardous Air Pollutants
24.4	24.4	99.4	9.4 (A)	24.4 (A)

(A) HAP emission factor for sewage influent is 7.5885E-5 tons/MMgal (single HAP) and 1.5774E-4 tons/MMgal (combined HAPs). HAPs are defined as any air pollutant listed pursuant to Section 112(B) (42 U.S.C. Section 7412(B) of the Federal Clean Air Act). This limit includes permitted and non-permitted sources of HAPs.

EQUIPMENT OPERATION

12. The boiler must be fired only on digester gas or pipeline-quality natural gas. Natural gas may only be used as back-up fuel.

[Basis: SMAQMD Rule 202, Section 408.1]

13. The boiler must be equipped with non-resettable fuel meters in the digester gas fuel line and the natural gas fuel line that measure the volume of each gas that is burned in the boiler.

[Basis: SMAQMD Rule 202, Section 408.1]

14. The digester gas used in the boiler must have a sulfur content that does not exceed 40 ppm hydrogen sulfide.

[Basis: SMAQMD Rule 201, Section 405]

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15. The hydrogen sulfide (H_2S) concentration of the digester gas must be tested at least once per day whenever the boiler is fired on digester gas. All measurements must be made in a vent in the fuel line at a location after the digester gas conditioning system. The hydrogen sulfide portable analyzer must be suitable for measurement and calibrated according to manufacturer's specifications within the previous 12 month period.
[Basis: SMAQMD Rule 201, Section 405]

16. The boiler may only be fired on natural gas under the following conditions:

- A. The digester gas conditioning system encounters an unexpected failure; digester gas can not be properly conditioned for use in the fuel cell (A/C 27780), the boiler (A/C 27781), and the digester engines (A/Cs 27782, 27783, 27784, 27785); and the anaerobic digesters require heat to maintain proper operation; or
- B. An event where the fuel cell (A/C 27780) and the digester engines (A/Cs 27782, 27783, 27784, 27785) can not be operated due to an event that is beyond the facility's reasonable control; the boiler is unable to operate on digester gas due to an event that is beyond the facility's reasonable control; and the anaerobic digesters (P/O 24424) require heat to maintain proper operation; or
- C. Operation of the boiler to verify compliance with applicable rules and regulations as required by the SMAQMD or testing to ensure the integrity of the natural gas fuel back-up system.

[Basis: SMAQMD Rule 202, Section 408.1]

EMISSION REDUCTION CREDITS

17. Sacramento Area Sewer District must provide sufficient Emission Reduction Credits (ERCs) to the Air Pollution Control Officer to fully offset the following amount of emissions:
[Basis: SMAQMD Rule 202, Section 302.1]

Pollutant	Emissions to be Offset (A) (lb/quarter)			
	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
VOC	232	235	238	238
NOx	471	476	481	481

(A) Emission offset ratios required by Rule 202, Section 303 have not been applied to the VOC emissions.

18. Prior to commencing operation, the Sacramento Area Sewer District must provide sufficient Emission Reduction Credits (ERCs) to the Air Pollution Control Officer as indicated below:
[Basis: SMAQMD Rule 202, Section 302.1]

Emission Reduction Credits	Pollutant	Emission Offsets Provided (lb/quarter)			
		1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
SMAQMD ERC Essential Public Services Account (A)	VOC	232	235	238	238
	NOx	471	476	481	481

(A) These credits are returned to the Essential Public Services Account if the permit is surrendered, revoked, not renewed or ownership is transferred.

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19. The emission reduction credits specified in Condition No. 18 that are borrowed from the Essential Public Services Account are valid only if the facility operates in a manner consistent with the requirements of Rule 205 – COMMUNITY BANK AND PRIORITY RESERVE BANK and the facts, including the information provided in the application, that were presented to the Board of Directors

[Basis: SMAQMD Rule 205, Section 307.7]

20. In order for ownership of this process to be transferred, the new owner must provide replacement credits for those Essential Public Services Account credits that were returned pursuant to Condition No. 18.

[Basis: SAMQD Rule 205, Section 315]

21. **This permit will expire on September 30, 2054 unless replacement credits have been provided.** To replace the Essential Public Services Account credits specified in Condition No. 18, the facility must submit an application to modify the current permit six months prior to September 30, 2054. Failure to provide replacement credits by October 1, 2054, will require the facility to reapply for a permit and the emission unit will be subject to Rule 202 – NEW SOURCE REVIEW at the time of re-permitting.

[Basis: SMAQMD Rule 205, Section 307 and Section 312]

EMISSIONS TESTING

22. Emissions of oxides of nitrogen, carbon monoxide, particulate matter, oxygen, and carbon dioxide while firing on digester gas must be tested within 60 days of start-up and once every second calendar year thereafter to verify compliance with Condition No. 7. Testing for PM is only required for the initial test.

- A. Submit a source test plan to the Air Pollution Control Officer for approval at least 30 days before the test is to be performed.
- B. Notify the Air Pollution Control Officer at least 7 days prior to the source test date of the exact date and time of test if the date has changed from that approved in the source test plan.
- C. During source testing, the boiler must be operated at a firing rate that is as close as practicable to the rated capacity.
- D. Submit the source test report to the Air Pollution Control Officer within 60 days from the completion of the test(s).

[Basis: SMAQMD Rule 201, Section 303.2 and Rule 411, Section 404.1]

23. Emission testing must be performed in accordance with the following test methods:

- A. Oxides of Nitrogen – ARB Method 100 or EPA Method 7E.
- B. Carbon Monoxide – ARB Method 100 or EPA Method 10.
- C. Stack Gas Oxygen – ARB Method 100 or EPA Method 3A.
- D. Carbon Dioxide – ARB Method 100 or EPA Method 3A.
- E. PM – EPA Method Method 5

[Basis: SMAQMD Rule 411, Section 501]

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RECORD KEEPING

24. The following records must be continuously maintained on-site for the most recent five-year period and must be made available to the Air Pollution Control Officer upon request. Quarterly and annual records must be made available for inspection within 30 days of the end of the reporting period.

[Basis: SMAQMD Rule 201, Section 405]

Frequency	Information to be Recorded
Whenever Natural Gas is Used in the Boiler	A. The date and time that natural gas is used in the boiler. B. Records that indicate why the use of natural gas is necessary.
Daily	C. The amount of natural gas that was burned in the boiler (scf/day). D. Concentration of hydrogen sulfide (H ₂ S) in the fuel line (ppm).
Quarterly	E. The amount of digester gas that is burned in the boiler (scf/quarter). F. The amount of natural gas that is burned in the boiler (scf/quarter). G. Most recent version of Attachment E or approved equivalent.
Annually	H. The amount of digester gas that is burned in the boiler (scf/year). I. The amount of natural gas that is burned in the boiler (scf/year). J. Most recent version of Attachment B or approved equivalent.

25. Calibration reports for the portable analyzer that is used for test in Condition No. 15 must be maintained on-site for the most recent 5-year period and made available to the Air Pollution Control Officer upon request.

[Basis: SMAQMD Rule 201, Section 405]

26. Emission test reports must be maintained on-site for the most recent 5-year period and made available to the Air Pollution Control Officer upon request.

[Basis: SMAQMD Rule 411, Section 502]

REPORTING

27. The following reports must be submitted to the Air Pollution Control Officer:

[Basis: SMAQMD Rule 201, Section 405]

Frequency	Reports to be Submitted
Submit by 60 days after the end of each calendar quarter.	A. Most recent completed version of Attachment E (An equivalent report may be submitted by SacSewer upon written approval from the Air Pollution Control Officer).
Submit by 90 days after the end of each calendar year.	B. Annual volume of digester gas and volume of natural gas that was used in the boiler (MMscf/year) C. VOC, NOx, CO, and HAPs emissions (in tons/year) for the entire facility to comply with Condition No. 11. D. A truth and accuracy certification signed by the facility's responsible official

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ANNUAL REPORTING

28. Unless otherwise directed by SMAQMD, the permit holder must submit their applicable Annual Report to the District by March 15th of every calendar year. The Annual Report forms can be found at www.airquality.org/AnnualReporting. SMAQMD may require the permit holder to supply additional information under the Air Toxics "Hot Spots" Information and Assessment Act (California Health and Safety Code Section 44300 et seq.) and CARB's Criteria Pollutant and Toxics Emissions Reporting (California Code of Regulations, Title 17, Division 3, Chapter 1, Subchapter 7.7). If additional information is required, the SMAQMD will notify the permit holder.

[Basis: SMAQMD Rule 201, Section 303.1 and 405]

Your application for this air quality Authority to Construct was evaluated for compliance with Sacramento Metropolitan Air Quality Management District (SMAQMD), state and federal air quality rules. The following list identifies the rules that most commonly apply to the operation of your equipment. Other rules may also be applicable.

<u>SMAQMD RULE NO.</u>	<u>RULE TITLE</u>
201	GENERAL PERMIT REQUIREMENTS (08-24-06)
202	NEW SOURCE REVIEW (08-23-12)
217	PUBLIC NOTICE REQUIREMENTS FOR PERMITS (8-23-12)
401	RINGELMANN CHART (04-19-83)
402	NUISANCE (08-03-77)
406	SPECIFIC CONTAMINANTS (12-06-78)
411	NOx FROM BOILERS, PROCESS HEATERS, STEAM GENERATORS (08-23-07)
420	SULFUR CONTENT OF FUELS (08-13-81)

The conditions on this Authority to Construct reflect some, but not all, of the requirements of these rules. Because other rule requirements may apply to the operation, the owner/operator should be familiar with all of the rules and related requirements. In addition, because future changes in prohibitory rules may establish more stringent requirements that may supersede the conditions listed here, the owner/operator should monitor proposed rules and rule adoption actions at SMAQMD.

For further information please consult your SMAQMD rulebook or contact the SMAQMD for assistance.