

Notice of Construction (NOC) Worksheet



Applicant: King Co Ntrl Res Wastewater Treatment West Point	NOC Number: 10470
Project Location: 1400 Utah St W, Seattle WA 98199	Registration Number: 10088
Applicant Name and Phone: Chapin Brackett (206) 477-3347	NAICS: 221320
Engineer: Claude Williams/Carole Cenci	Inspector: Gerard Van Der Jagt

A. DESCRIPTION

For the Order of Approval:

Two Caterpillar G3612 Lean Burn Engine Generators rated at 3,221 hp at 100% load each and combusting digester gas. The engines are part of a 4.6 Megawatt cogeneration system that generates heat for the West Point facility and generates electricity for sale to Seattle City Light.

This Order approves the following:

Cancelling and superseding OA 8914 and changing the units on the engine exhaust emission limits from g/bhp-hr to ppm at 15% O₂. It also includes periodic monitoring and testing of the engines and compliance methods for the PSD synthetic minor limits that were originally included in OA 8914. OA 8914 contained the emission limits for NO_x and CO, but did not contain compliance methods.

Facility

The facility is a municipal wastewater treatment plant owned and operated by King County. This NOCOA does not approve any new equipment, but will modify the conditions in OA 8914 related to the emission limits and testing for the engines.

Permit History

Order of Approval No. 8914, dated August 3, 2004, will be cancelled and superseded by this Order 10470. **OA 8914** approved:

- Natural gas usage limits for the cogen engines. This condition has been removed in NOCOA 10470 as the facility no longer combusts natural gas.
- Facility-wide PSD synthetic minor limits for CO and NO_x. OA 10470 will include limits and add compliance methods for them. The limits in OA 8914 were each set at 249 tpy and OA 10470 has maintained these limits for each of the two pollutants. A calculation of facility-wide emissions of both CO and NO_x was performed by King County. Without this limit, the facility's PTE would be over 250 tpy of CO.
- NO_x and CO emission limits for the cogen engines in terms of g/BHP-hr. These will be converted to ppm with the issuance of NOCOA 10470 for ease of determining compliance
- Required initial testing of the engines for NO_x and CO. NOCOA 10470 adds ongoing stack tests every 5 years and hand-held monitoring to show ongoing continuous compliance with the emission limits on the engines.

- Banned the operation of three existing Waukesha VHP-9500 gas engines once the engines approved under OA 8914 were fully operational. These Waukesha engines are no longer at the facility and the condition in OA 8914 is obsolete.

B. DATABASE INFORMATION

New NSPS due to this NOCOA?	No	Applicable NSPS: None	Delegated? NA
New NESHAP due to this NOCOA?	No	Applicable NESHAP: Subpart ZZZZ (applicable prior to this NOCOA)	Delegated? Yes
New PSD Synthetic Minor due to this NOCOA?	No, the facility was already subject to PSD Synthetic Minor limits included in OA 8914		

C. NOC FEES AND ANNUAL REGISTRATION FEES

NOC Fees:

Fees have been assessed in accordance with the fee schedule in Regulation I, Section 6.04. All fees must be paid prior to issuance of the final Order of Approval.

Fee Description	Cost	Amount Received
Filing Fee	\$ 1,550	
Equipment	\$0	
SEPA (DNS)	\$0	
Filing fee received		\$1,550
Total Received		\$1,550

No further NOC fees were charged.

Annual Operating Permit Fees:

AOP source fees are assessed to the facility on an annual basis. Fees are assessed in accordance with Regulation I, Section 7.07.

D. STATE ENVIRONMENTAL POLICY ACT (SEPA) REVIEW

State Environmental Policy Act (SEPA) review was conducted in accordance with Regulation I, Article 2. The SEPA review is undertaken to identify and help government decision-makers, applicants, and the public to understand how a project will affect the environment. A review under SEPA is required for projects that are not categorically exempt in WAC 197-11-800 through WAC 197-11-890. A new source review action which requires a NOC application submittal to the Agency is not categorically exempt.

A new SEPA determination is not required because the potential impacts from the original project were reviewed under SEPA by King County Department of Natural Resources and Parks as the Lead Agency. A DNS was issued by Department of Natural Resources and Parks on December 4, 2003. This NOCOA does not authorize any additional emissions or impacts.

E. TRIBAL CONSULTATION

On November 21, 2019, the Agency's Interim Tribal Consultation Policy was adopted by the Board. Criteria requiring tribal consultation are listed in Section II.A of the policy and include establishment of a new air operating permit source, establishment of a new emission reporting source, modification of an existing emission reporting source to increase production capacity, or establishment or modification of certain equipment or activities. In addition, if the Agency receives an NOC application that does not meet the criteria in Section II.A but may represent similar types and quantities of emissions, the Agency has the discretion to provide additional consultation opportunities.

This project does not meet any of the criteria for consultation listed in Section II.A of the Agency's Interim Tribal Consultation Policy.

F. BEST AVAILABLE CONTROL TECHNOLOGY (BACT) REVIEW

Best Available Control Technology (BACT)

New stationary sources of air pollution are required to use BACT to control all pollutants not previously emitted, or those for which emissions would increase as a result of the new source or modification. BACT is defined in WAC 173-400-030 as, "an emission limitation based on the maximum degree of reduction for each air pollutant subject to regulation under Chapter 70.94 RCW emitted from or which results from any new or modified stationary source, which the permitting authority, on a case-by-case basis, taking into account energy, environmental, and economic impacts and other costs, determines is achievable for such source or modification through application of production processes and available methods, systems, and techniques, including fuel cleaning, clean fuels, or treatment or innovative fuel combustion techniques for control of each pollutant."

This NOCOA does not authorize emissions which were not previously emitted nor is there an emission increase associated with this NOCOA.

Best Available Control Technology for Toxics (tBACT)

New or modified sources are required to use tBACT for emissions control for TAP. Best available control technology for toxics (tBACT) is defined in WAC 173-460-020 as, "the term defined in WAC 173-400-030, as applied to TAP." This NOCOA is not for a new or modified source. It only changes the units in which the emissions are measured and reported, but there is no increase in emissions and a new BACT determination is not required.

G. EMISSION ESTIMATES

Proposed Project and Facility-Wide Emissions

This Order of Approval will not change the facility-wide emissions.

Facility-wide PTE of CO and NO_x was limited to 249 tons per year for each pollutant in OA 8914. This limit will be updated and carried over to this OA 10470. Methods of determining compliance with these limits have also been added to this OA.

H. OPERATING PERMIT OR PSD

The Title V Air Operating Permit (AOP) program applicability for the entire source has been reviewed.

The facility is a Title V air operating permit source and conditions of this Order will be incorporated into the AOP during the renewal of the AOP.

The facility is not a PSD source due to synthetic minor limits for CO and NO_x that were initially put in place by OA 8914 and are carried over to this OA. Emissions of other criteria pollutants (VOC, PM, SO_x) were determined to be below the PSD thresholds based on the actual emissions and the type and size of emission units at the facility.

I. AMBIENT TOXICS IMPACT ANALYSIS

There is no change in emissions authorized by this NOCOA and an ambient toxic impact analysis is not required.

J. PUBLIC NOTICE

This Order of Approval was public noticed with the renewal of the Air Operating Permit. The notice period started on [fill in date of public notice start] and ended on [fill in date of public notice end]

[Add in any comments received during the public comment period and responses in Section L]

K. RECOMMENDED APPROVAL CONDITIONS

Standard Conditions:

1. Approval is hereby granted as provided in Article 6 of Regulation I of the Puget Sound Clean Air Agency to the applicant to install or establish the equipment, device or process described hereon at the installation address in accordance with the plans and specifications on file in the Engineering Division of the Puget Sound Clean Air Agency.
2. This approval does not relieve the applicant or owner of any requirement of any other governmental agency.

Specific Conditions:

3. King Country DNR Wastewater Treatment Division shall not exceed the following one-hour average limits from each of the two Caterpillar G3612 Lean Burn engines.
 - a. NO_x: 54 PPM @ 15% O₂
 - b. CO: 363 PPM @ 15% O₂
4. The owner or operator shall perform periodic monitoring and performance testing to demonstrate compliance with the emission limits in condition 3 for each of the two Caterpillar G3612 Lean Burn engines while burning digester gas as described in this condition:
 - a. The periodic monitoring shall measure CO, NO_x and O₂ concentrations at the outlet of each engine and be performed at least every 600 hours of operation for each engine. The initial periodic monitoring required by this Order of Approval must be conducted within 120 days of the issuance of this Order of Approval.
 - b. All periodic monitoring shall be performed with a portable electrochemical analyzer and follow Appendix A to 40 CFR 63 Subpart ZZZZ or other methods approved by the Agency.
 - c. At least once every 60 months, and at any other time required by the Agency, the owner or operator shall conduct a performance test to show compliance with the emission limits in condition 4 using EPA methods 7E, 10, 3A, and/or other test methods required by the Agency. The initial test shall be performed no more than six months after the issuance of this Order of Approval. Each test shall include three identical 60-minute runs performed on each engine.
 - d. During each test and monitoring event, the engine output (in kW), the amount of fuel used, and any activities or non-typical operation shall be recorded. The Agency may require additional parameters to be recorded.
 - e. The engines must be operating at least at 1000 kW minimum during all monitoring and testing.
 - f. Within 21 days of completion each periodic monitoring event required by condition 4.a., a periodic monitoring report shall be submitted to the Agency for the monitoring event. The report must include all results of the monitoring, values of all parameters required to be recorded under condition 4.d. of this Order of Approval, all corrective action taken and maintenance performed associated with the monitoring, and all other relevant report.

- g. Within 60 days of completion of each performance test required by condition 4.c., a test report shall be submitted to the Agency. The report must include all results of the testing values of all parameters required to be recorded under condition 4.d. of this Order of Approval, all corrective action taken and maintenance performed associated with the performance test and all other relevant information.
 - h. All performance tests must comply with Regulation I, Article 3.07.
 - i. Periodic monitoring does not need to comply with Regulation I, Article 3.07 unless otherwise required by the Agency.
5. The two Caterpillar G3612 Lean Burn engines shall only be fired on digester gas.
6. PSD Synthetic Minor Limit. The permittee shall limit facility-wide emissions of oxides of nitrogen (NOx) and carbon monoxide (CO) during each consecutive 12-month period to the following amounts:
- a. 249 tons per year of oxides of nitrogen (NOx)
 - b. 249 tons per year of carbon monoxide (CO)
7. PSD Synthetic Minor Limit Compliance: Within 30 days of the end of each calendar month the permittee shall calculate and record the NOx and CO emissions for the previous calendar month (for example, the emissions for March must be calculated by April 30). Within 30 days of the end of each 12-month rolling period the permittee shall calculate and record the NOx and CO emissions for the previous 12-month rolling period. These calculations must be completed as described in condition 8 of this Order of Approval.
8. PSD Synthetic Minor Limit Compliance Calculations: The NOx and CO calculations must include emissions from all sources of NOx and CO at the facility. However, fugitive emissions [as defined in 40 CFR 52.21(b)(20)], mobile source emissions, and emissions from nonroad engines do not need to be included in the calculations. The permittee shall use the following methods and approved emission factors:
- a. Source specific emission tests results for individual external combustion units (e.g., boilers and heaters) if the test is conducted using EPA Reference Test Methods and results are approved by the Agency;
 - b. Emission factors reviewed for new or modified emission sources at the facility through the Notice of Construction review process in Regulation I, Article 6, including any emission limits in the final Order of Approval;
 - c. Alternative emission factors can be used if the Agency has preapproved each factor in writing.
 - d. If none of the emission calculation methods listed in sections i., ii., and iii. of this condition are available, the permittee may use EPA's AP-42: Compilation of Air Emission Pollutant Factors
9. PSD Synthetic Minor Limit Compliance Notification: The owner or operator shall provide notification to the Puget Sound Clean Air Agency in writing, within 60 days after the end of any 12-month period if, during that period, facility-wide emissions of NOx or CO exceeded 200 tons. The report shall include a summary of the total 12-month emissions and a list of the emission factors used for each

source of NO_x and CO. Upon request by the Agency, the owner or operator shall provide the supporting emission calculations for the reported emission totals.

10. This Order of Approval cancels and supersedes Order of Approval No. 8914, dated August 3, 2004.

L. PUBLIC COMMENTS AND RESPONSES

<Will be added after public comment period>

M. REVIEWS

Reviews	Name	Date
Engineer:	Carole Cenci	6/21/23
Inspector:	Gerard Van der Jagt	6/27/23
Second Review:	John Dawson	6/28/2023
Applicant Name:	Chapin Brackett/Eugene Sugita	7/26/2023