PUGET SOUND
Clean Air Agency

Puget Sound Clean Air Agency

Notice of Construction No. **11986**

HEREBY ISSUES AN ORDER OF APPROVAL
TO CONSTRUCT, INSTALL, OR ESTABLISH

Registration No. **21432**

Date APR 1 1 2024

The installation of a Shredder Emission Control System (ECS) that consists of an enclosure to route emissions to a drop out box, two wet venturi scrubbers, two regenerative thermal oxidizers (RTOs) with low NOx burners and two acid gas scrubbers designed to handle 3,000 tons per day of material fed to the shredder.

Facility-wide synthetic minor emission limit of VOC emissions.

OWNER	INSTALLATION ADDRESS
Schnitzer Steel Industries **PO Box 110636** **Portland, OR 97296-0047**	**Schnitzer Steel Industries** **1902 Marine View Dr** **Tacoma, WA 98422**

THIS ORDER IS ISSUED SUBJECT TO THE FOLLOWING RESTRICTIONS AND 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.

Facility-wide Conditions:

3. The owner or operator shall limit facility-wide emissions of volatile organic compounds (VOCs) to no more than 90 tons during any 12 consecutive rolling months. These limits will take effect after the completion of commissioning of the equipment authorized by of this Order of Approval.

Specific Conditions:

4. The shredder shall not process scrap metal without the exhaust going through the emission control system (ECS), consisting of two wet venturi scrubbers, two regenerative thermal oxidizers (RTOs), and two acid gas scrubbers.

5. The shredder may process no more than 3,000 tons per calendar day and no more than 730,000 tons in any 12-consecutive-month period. The owner or operator shall maintain throughput records, with the previous 12-month throughput calculated within 30 days of the end of each month. If processing in any 12-consecutive-month period exceeds 730,000 tons, the owner or operator shall notify the Agency within 30 days after the calculation is done.

Shredder Enclosure

6. The Permittee shall demonstrate that the pollutant capture system (PCS) has been constructed to minimize the enclosure's draft openings, and the extraction vent system operates at a

sufficient flow rate to promote air flow into the enclosure to sufficiently capture pollutants emanating from the shredder and ensure a minimum of 95% capture efficiency using principles of method 204. Compliance with EPA Method 204, Section 5.1 must be demonstrated by documenting that 1) the shredder is at least 1.5 equivalent opening diameters from any Natural Draft Opening (NDO); and 2) there are auxiliary hoods located adjacent to the shredder infeed conveyor NDO and discharge conveyor NDO discharge conveyor NDO and above the shredder; and 3) Owner or operator is maintaining a pressure inside the Enclosure of at least 0.007 inches of water less than the outside of the Enclosure, *as demonstrated by a face velocity of at least 200 feet per minute over all NDOs,* following completion of the EPA Method 204 testing, will be demonstrated using parametric monitoring of fan amperage. Compliance with EPA Method 204, Section 5.4 must be demonstrated using the procedures in EPA Method 204, Section 8.3. The parametric monitoring program shall be established in the facility's Operation and Maintenance Plan. The owner or operator shall notify the Agency any substantive changes of the Operation and Maintenance Plan.

Wet Venturi Scrubbers

7. The owner or operator shall install and maintain monitoring to measure the pressure drop across the wet venturi scrubbers and the recirculated water flow rates used at each wet venturi scrubber. The acceptable range for the gauge determined by the manufacturer shall be clearly marked on or nearby the gauge. A log shall be kept of when these parameters fall out of range and any corrective action needed. Operation should cease if this cannot be corrected *in a timely fashion.*

8. The exhaust gas shall not exceed a total particulate matter hourly average of 0.0048 gr/dscf per U.S. EPA Method 5 as modified by Puget Sound Clean Air Agency Board Resolution 540 dated August 11, 1983.

RTOs

9. The RTOs shall be operated at all times when the shredder is operating.

10. Each RTO shall achieve an hourly average of either a 98.0% or higher destruction efficiency, or 20 ppmdv VOC as methane or less at the RTO outlet, as determined by EPA Method 25A.

11. Two RTOs combined shall not emit more 4.96 lbs of NO_x as NO_2 per hour as measured by U.S. EPA Methods 1-4 and 7E.

12. The RTO shall operate at a combustion zone temperature of no less than 1,600 degrees F on an hourly average until completion of the performance test required in Condition 16. After completion of the performance test, the Owner and/or Operator shall maintain the RTO combustion zone temperature at no less than the "baseline" temperature, taken on an hourly average. The "baseline" temperature shall by the average operating temperature that was observed in the most recent VOC performance test meeting the emission limits under Condition 10. The baseline temperature for each RTO shall be defined separately. The baseline temperature shall be clearly marked on or near the RTO temperature display.

13. The owner or operator shall install, operate, calibrate and maintain a monitoring device to

monitor and record operations of each RTO to ensure that the minimum required combustion chamber temperature defined by condition 12 is achieved prior to feeding material into the shredder and ensure this minimum temperature is maintained at all times while material is being fed into and processed by the shredder. Both audible and visual alarms shall be used to indicate the need to initiate corrective actions and/or discontinue operation of the shredder infeed conveyor. A log of alarm incidents and corrective actions shall be kept onsite.

ACID GAS SCRUBBERS

14. The Permittee shall install, operate, calibrate and maintain a monitoring device to continuously monitor pH, and to ensure that each acid gas scrubber solution is recirculating at all times the unit(s) is/are in operation. The scrubbing solution flow monitors shall be connected to a visible and audible alarm to alert operator if scrubber solution flow is out of range.

15. Emissions from the acid gas scrubbers may exceed neither an hourly average of 0.40 lb/hr of HCl nor 0.47 lb/hr of HF as measured by EPA method 26, EPA Method 26A, EPA method 321 or other agency approved method.

16. Performance Testing:

a. The Owner and/or Operator shall conduct performance tests on the following equipment within 60 days after completion of commissioning of the applicable equipment. The testing deadline may be extended for good cause if preapproval is obtained in writing by the Agency, but in no case shall the testing deadline extend beyond 180 days after completion of commissioning of the new applicable equipment.
   i. Permanent enclosure
   ii. Wet Venturi Scrubbers
   iii. RTOs
   iv. Acid Gas Scrubbers

b. The Owner and/or Operator shall conduct a performance test of the equipment listed above while operating the shredder and ECS as close to normal operation as possible.

c. Emission Control System:
   i. The Owner and/or Operator shall measure the concentrations of PM, VOC, NOX and HCl and HF in the exhaust stream.
   ii. If showing destruction efficiency, the inlet to the RTO shall be measured for VOC, and determined on a lb/hr basis.
   iii. A capture efficiency evaluation shall be performed on the enclosure.

d. Test Frequency: Following the initial performance test for this permit, The Owner and/or Operator shall conduct a performance test every year (within 15 months) from the last respective test. Testing shall measure the concentrations of PM, NOx, VOC, HCl, and HF in the exhaust stream.

e. Testing Criteria: Testing of sources for compliance with emission standards shall be performed in accordance with Regulation 1, Article 3, Section 3.07. The Owner and/or Operator shall notify the Agency in writing at least 21 days in advance of the actual date and time of each performance test as required by Regulation 1, Section 3.07(b). The Owner and/or Operator shall complete and submit a separate test report for each performance test to the Department within 60 days after the completion of testing in accordance with the requirements specified in Regulation 1, Section 3.07(c).

f. Test Methods: Sampling sites and velocity traverse points shall be selected in accordance with EPA Test Method 1 or 1A. Adequate and safe access to the test

ports must be provided. The gas volumetric flow rate shall be measured in accordance with EPA Test Method 2. The dry molecular weight shall be determined in accordance with EPA Test Method 3 or 3A. The stack gas moisture shall be determined in accordance with EPA Test Method 4. These methods must be performed, as applicable, during each test run.

i. PM testing shall be conducted in accordance with PSCAA Method 5.
ii. VOC testing shall be conducted in accordance with US EPA Test Method 25A. Testing to quantify exempt compounds, such as methane, shall be conducted in accordance with US EPA Test Method 18.
iii. NOX testing shall be conducted in accordance with US EPA Test Method 7E.
iv. HCl and HF shall be measured using US EPA Method 26, 26A or 321.
v. Test methods listed above may be modified if approved by the Agency ahead of performance testing.

g. The Owner and/or Operator shall submit a separate test protocol for each performance test to the Department for Review at least 21 days prior to each performance test.
h. Minimum Testing Requirements: Each performance test shall consist of three separate test runs with each test run being at least one hour in duration unless otherwise specified in the applicable standard or test method. The same test methods shall be conducted for both the inlet and outlet measurements, if applicable and technically feasible, which must be conducted simultaneously. Emissions rates, concentrations, grain loadings, and/or efficiencies shall be determined as the arithmetic average of the values determined for each individual test run. Performance tests may only be stopped for good cause, which includes forced shutdown, failure of an irreplaceable portion of the sample train, extreme meteorological conditions, or other circumstances beyond the Owner and/or Operator's control. Termination of a performance test without good cause after the first test run has commenced shall constitute a failure of the performance test.
i. The total enclosure efficiency shall meet the requirements of EPA Method 204, Section 5.4 must be demonstrated using the procedures in EPA Method 204, Section 8.3. and validated once per year.
j. During the compliance testing, the following shall be measured and recorded:
   a. Production rate through the shredder
   b. Fan speed and amperage of the exhaust fans.
   c. The operational temperature of the RTO
   d. pH of the acid gas scrubber liquid.
   e. Pressure difference across the wet venturi scrubbers
   f. recirculated water flow rate of the wet venturi scrubbers.

General Reporting and Recordkeeping

17. Records to be maintained by this Order of Approval shall be kept onsite for at least two years from the date of generation and made available to Puget Sound Clean Air Agency personnel upon request.

18. Within 90 days after commissioning of the emission control system, the owner and/or Operator shall send a Maintenance and Operation plan to the agency for the Permanent Total Enclosure, RTO's, Venturi Scrubber and Acid Gas Scrubber.

19. Within 30 days of the end of each month after completion of commissioning of the emission control system, the owner or operator shall calculate the facility-wide VOC emissions for the

previous 12 months using the emission factor in pounds per ton shredder feed derived from the last source test.

20. Within 30 days of the end of each month after completion of commissioning of the emission control system, the owner or operator shall calculate the facility-wide emissions of HCl, HF, and organic HAPs for the previous 12 months. Total VOCs may be used as a surrogate for organic HAPs. This shall be done using emission factor in pounds per ton shredder feed derived from the most recent source tests for HCl, HF, and VOC, and appropriate emissions factors for emissions, including fugitives, based on appropriate emissions factors of these pollutants.

21. The Owner and/or Operator shall notify the Agency, in writing, within 30 days after the end of any 12-month period in which combined emissions of HCl, HF, and organic HAPs exceeded 24 tons, or emissions of VOCs exceeded 90 tons. Total VOCs may be used as a surrogate for organic HAPs. The report shall include emissions data for the time period for which these thresholds were exceeded. If combined emissions of HCl, HF, and organic HAPs exceed 24 tons, the Agency may require additional testing for emissions of organic HAP to determine whether emissions of any individual HAP or combined HAPs exceeded the major source threshold.

22. The Owner and/or Operator shall calculate the emissions of PM, NOx, and CO from the shredder using the arithmetic average of emission factors from the three most recent stack tests or using emission factors from AP-42 or other references if stack test information is not available.

23. The owner and/or operator shall notify the Agency, in writing, within 30 days of discovering an exceedance of any limitations identified in Conditions #6, #8, #10, and #11.

APPEAL RIGHTS

Pursuant to Puget Sound Clean Air Agency's Regulation I, Section 3.17 and RCW 43.21B.310, this Order may be appealed to the Pollution Control Hearings Board (PCHB). To appeal to the PCHB, a written notice of appeal must be filed with the PCHB and a copy served upon Puget Sound Clean Air Agency within 30 days of the date the applicant receives this Order.

Carl Slimp
Reviewing Engineer

John Dawson PE
John Dawson
Engineering Manager