May 15, 2018

Mr. Henderson Brown, CEO & General Manager, Acting

District of Columbia Water and Sewer Authority

5000 Overlook Ave., SW

Washington, DC 20032

**RE: Permit (No.6472-C3) to Construct a Dewatered Sludge Loading Facility (DSLF) Packed-Bed Wet Air Scrubber at the Solids Processing Building, Blue Plains Wastewater Treatment Plant**

Dear Mr. Brown:

Pursuant to sections 200.1 and 200.2 of Title 20 of the District of Columbia Municipal Regulations (20 DCMR), a permit from the Department of Energy and Environment (“the Department”) shall be obtained before any person can construct or operate a stationary source in the District of Columbia. The application of the District of Columbia Water and Sewer Authority (“the Permittee”) to construct a Dewatered Sludge Loading Facility Odor Scrubber (“DSLFOS”), hereunder listed as an Indusco packed-bed tower wet air scrubber or equivalent (i.e., Packed Tower Odor Control Scrubber System) located in Washington, DC, has been reviewed:

|  |  |  |  |
| --- | --- | --- | --- |
| **Equipment Location** | **Address** | **Equipment Size** | **Type** |
| Blue Plains WWTP- Atop Solids Processing Building | 5000 Overlook Ave., SW  Washington, DC 20032 | 54,000 cfm | Indusco Packed Bed Tower Scrubber or equivalent |

Based on the written request for permit renewal dated January 24, 2018, continued construction of the DSLFOS is permitted, subject to the following conditions:

I. General Requirements:

a. The odor control scrubber system shall be constructed and upon receipt of a subsequent operating permit, operated, in accordance with the air pollution control requirements of 20 DCMR.

b. This permit to construct expires on May 14, 2021 [20 DCMR 200.4]. If construction has not been completed by this date, then the Permittee shall submit an application for renewal by February 14, 2021.

c. Construction of equipment under the authority of this permit shall be considered acceptance of its terms and conditions.

1. The Permittee shall allow authorized officials of the District, upon presentation of identification, to:

1. Enter upon the Permittee’s premises where a source or emission unit is located, an emissions related activity is conducted, or where records required by this permit are kept;

2. Have access to and copy, at reasonable times, any records that must be kept under the terms and conditions of this permit;

3. Inspect, at reasonable times, any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under this permit; and

4. Sample or monitor, at reasonable times, any substance or parameter for the purpose of assuring compliance with this permit or any applicable requirement.

1. This permit shall be kept on the premises and produced upon request.
2. Failure to comply with the provisions of this permit may be grounds for suspension or revocation. [20 DCMR 202.2]
3. Deviations from the limitations in Conditions II(c), and III(a) due to malfunction, planned maintenance, or force majeure relating to the physical inability to deliver chemicals to the equipment shall not be considered non-compliance, provided such deviations are reported to the Department in accordance with Condition VI(d).
4. The Permittee shall construct the odor scrubbing systems to meet the requirements of Conditions II(c), III(a)(5) and III(a)(6).

i. The Permittee shall, upon completion of the construction, request that the Department grant approval to operate.

1. A separate application to operate pursuant to 20 DCMR Chapter 2 does not need to be submitted to the Department for the equipment or process covered by this construction permit. Upon a satisfactory demonstration by an on-site inspection that the equipment or process complies with all of the terms and conditions of this permit, and any other applicable requirements, the Department will issue a Chapter 2 Operating Permit for this equipment or process.

2. The applicant shall notify the Department sufficiently in advance of the demonstration and shall obtain the Department’s prior concurrence of the operating factors, time period, and other pertinent details relating to the demonstration.

3. The provisions of 20 DCMR 200.2 shall not apply to the operation of equipment or processes for the purposes of initially demonstrating satisfactory performance to the Department following construction, installation, modification, or alteration of the equipment or processes.

j. If modifications to the equipment design as submitted in the permit application, or any revision thereof, are required, an amendment to this construction permit shall be obtained before making these design changes, unless the Department determines that no such amendment is required.

k. Any renovation or demolition activity that may occur as a part of this project must be performed in conformance with the requirements of 20 DCMR 800. If a permit is required under this section, a separate asbestos permit must be obtained. This construction permit does not replace any asbestos abatement permit that may be required.

1. Within 12 months of the issuance of a permit to operate the equipment covered by this permit, the Permittee shall apply for an amendment to an existing Chapter 3 operating permit or shall amend any pending Chapter 3 operating permit application to include the requirements of this permit. [20 DCMR 301.1(a)(2)]
2. This permit supersedes permit number 6472-C2 dated April 29, 2016.

II. Emission Limitations:

a. Visible emissions shall not be emitted into the outdoor atmosphere from the equipment covered by this permit. Where the presence of uncombined water is the only reason for failure of an emission to meet the requirements of this condition, this condition shall not be applicable. [20 DCMR 201]

b. An emission into the atmosphere of odorous or other air pollutants from any source in any quantity and of any characteristic, and duration which is, or is likely to be injurious to the public health or welfare, or which interferes with the reasonable enjoyment of life or property is prohibited. [20 DCMR 903.1]

c. Permittee shall ensure that after an operating permit has been issued, the dewatered sludge loading facility (DSLF) odor scrubber, is properly operated to achieve the following removal efficiencies or rates [20 DCMR 201]:

1. Removal of a minimum of 99 percent of ammonia from the DSLF air stream or a maximum outlet concentration of 0.20 ppm ammonia, whichever results in a higher outlet emission rate;

2. Removal of a minimum of 80 percent of total reduced sulfur compounds from the DSLF air stream or a maximum outlet concentration of 0.20 ppm of these compounds, whichever results in a higher outlet emission rate; and

3. Removal of a minimum of 99 percent of hydrogen sulfide from the DSLF air stream or a maximum outlet concentration of 0.1 ppm of hydrogen sulfide, whichever results in a higher outlet emission rate.

III. Operational Limitations:

a. The two-staged scrubber system shall remain operative or effective (unless the fan inlet air temperature is at or below 34 deg. F), and shall not be removed except as specified in Condition VI(c) [20 DCMR 107.1]. In order to ensure that this occurs, the following steps shall be implemented:

1. The odor scrubber system shall be operated as designed and detailed in the permit application and the manufacturer’s recommendations on scrubber operation, and as necessary to maintain the pollutant removal efficiencies or outlet concentrations listed in Condition II(c);
2. The chemical storage tanks, including the sodium hypochlorite tanks and other auxiliary equipment shall be maintained in accordance with manufacturer’s recommendations to minimize fugitive emissions of ammonia, H2S and other malodorous compounds;
3. Except when the odor scrubber operation is temporarily halted due to a fan inlet air temperature of 34 deg. F or below, scrubbing liquid must be recirculated continuously as determined by the operational status of the constant speed pump (designed to recirculate at a rate of 1000 gallons per minute), so as to minimize chemical and water usage;

4. Chemical handling and utilization shall be done in a manner consistent with good engineering practice.

5. The scrubber solution pH shall be maintained within +/- 0.5 pH units from the set points of 2.0 and 9.5, at the first and second stages of the odor scrubbing system, respectively. Permit deviations occur when the system triggers an alarm at a pH of 5 for stage 1 and pH of 7 for stage 2. These set points may change based on the results of performance testing. Any such change must be approved in writing by the Department. Deviation levels may be changed by the Department if it is shown that the established levels do not ensure continuous compliance with the emissions limits established in Condition II of this permit.

6. The scrubber solution oxidation reduction potential (ORP) shall be maintained within +/-20 mV from the set point of +600 mV in the second stage of the odor scrubbing system. Permit deviations occur when the system triggers an alarm at ORP +400 mV. The ORP set point may be changed based on the results of performance testing. Any such change must be approved in writing by the Department. Deviation levels may be changed by the Department if it is shown that the established levels do not ensure continuous compliance with the emissions limits established in Condition II of this permit

IV. Monitoring and Testing Requirements:

a. The Permittee shall monitor the status and level of repair of the odor scrubber and all other process equipment at the facility to ensure compliance with Condition III (a) of this permit.

b. The Permittee shall monitor the facility to ensure that odor, and other nuisance air pollutants are not emitted in such quantities as to create a violation of Condition II (b) of this permit.

c. Unless a reduced frequency is justified based on manufacturer’s specifications, approved by the Department, and reflected in an amendment to this permit or modified language in the subsequent operating permit, the Permittee shall inspect the chemical storage tanks, scrubbers, and auxiliary equipment on as-needed basis, but no less frequently than twice a year to ensure they are in good operational condition, and that they are maintained to minimize leakage of odorous air.

d. The Permittee shall monitor all performance metrics as detailed in the manufacturer’s operational manual to ensure that the scrubber operates as designed at all times, unless a fan air inlet temperature of 34 deg. F or below precludes the monitoring activity. In the case of a fan air inlet temperature of 34 deg. F or below, the air inlet temperature shall be closely monitored to ensure that the equipment can be restarted promptly when the temperature increases above 34 deg. F.

e. The Permittee shall monitor the recirculation pump status (on/off), scrubber solution pH in both odor scrubber stages, the scrubber ORP in the second stage and the differential pressure across the packed section of the scrubber system to ensure compliance with Condition III (a)(3), (a)(5) and (a)(6) respectively.

f. The Permittee shall ensure that the pH, and ORP systems are calibrated in accordance with their manufacturer’s specifications.

g. Unless an alternate monitoring and inspection methodology is approved by the Department based on manufacturer’s specifications and performance testing of the unit, and such methodology is reflected in a revision of this permit or the subsequent operating permit, whenever the differential pressure across the scrubber exceeds twice the normal operating level, the scrubber packing shall be inspected and cleaned in accordance with the manufacturer’s recommendations. The scrubber packing shall be inspected and, if necessary, cleaned, at least once each year.

h. Unless an alternate monitoring and inspection methodology is approved by the Department, based on manufacturer’s specifications, and such methodology is reflected in a revision of this permit or the subsequent operating permit, the Permittee shall implement the following monitoring and inspection methodology:

1. Inspect the demister within each scrubber and clean, if necessary, at least once each calendar quarter for the first year of operation after issuance of this permit;

2. The Permittee shall document the condition of the demister at the time of each inspection. If minimal cleaning is necessary, the Permittee may submit documentation to the Department requesting a less frequent inspection and cleaning frequency.

If justified, the Department may allow a reduced frequency of inspection and cleaning, but the frequency shall be no less frequent than semi-annually. If the documentation does not justify a less frequent schedule of inspection and cleaning, the Permittee shall maintain the quarterly inspection and cleaning frequency for the duration of the permit.

i. Within twelve (12) months of issuance of an operating permit for this equipment, during normal operations of the odor scrubber and feeding equipment, the Permittee shall conduct testing, using methods determined to be acceptable to the Department, to document compliance with the emission limits of Condition II(c). The testing shall be performed in accordance with the following requirements:

1. One (1) original and one (1) copy of the test protocol shall be submitted to the following address a minimum of thirty (30) days in advance of the proposed test date. The test shall be conducted in accordance with Federal and District requirements.

Chief, Compliance and Enforcement Branch

Air Quality Division

1200 First Street NE

5th Floor

Washington, DC 20002

2. The test protocol shall be approved by the District prior to initiating any testing. Upon approval of the test protocol, the Company shall finalize the test date with the assigned inspector in the Compliance and Enforcement Branch. The District must have the opportunity to observe the test for the results to be considered for acceptance.

3. The final results of the testing shall be submitted to the District within sixty (60) days of the test completion. One (1) original and one (1) copy of the test report shall be submitted to the address in Condition IV(i)(1) above.

4. The final report of the results shall include the emissions test report (including raw data from the test) as well as a summary of the test results and a statement of compliance or non-compliance with permit conditions to be considered valid. The summary of results and statement of compliance or non-compliance shall contain the following information:

A. A statement that the Permittee has reviewed the report from the emissions testing firm and agrees with the findings.

B. Permit number(s) and condition(s) which are the basis for the compliance evaluation.

C. Summary of results with respect to each permit condition.

D. Statement of compliance or non-compliance with each permit condition.

5. The results must demonstrate to the District’s satisfaction that the emission unit is operating in compliance with the applicable regulations and conditions of this permit; if the final report of the test results shows non-compliance the Permittee shall propose corrective action(s). Failure to demonstrate compliance through the test may result in enforcement action.

j. In addition to the testing required pursuant to Condition IV(i), the Permittee shall conduct and allow the Department access to conduct tests of air pollution emissions from any source as requested. [20 DCMR 502.1].

V. Record Keeping Requirements: [20 DCMR 200.7]

a. The Permittee shall maintain all records, including records of visual inspection, necessary for determining compliance with this permit in a readily accessible location for five (5) years and shall make these records available to the Department upon written or verbal request.

b. At a minimum, the following information shall be recorded and maintained in accordance with Condition V(a) of this permit. All such records must be either initialed or signed by the person recording the information or maintained in a verifiable electronic system whose information can be certified as to its accuracy:

1. At least once daily records of:
2. Recirculation Pump status;
3. Differential pressure readings across the packed section of the scrubber system;
4. pH readings for the first and second stages of the scrubber system; and
5. ORP readings in the second stage of the odor scrubbing system.
6. Records of all routine and non-routine maintenance performed on the scrubber system. These records shall include a description of the problems being corrected, the maintenance activity, and a statement indicating whether or not the problem was corrected;
7. Records of any unpermitted releases from the scrubber system or deviations from any of the conditions of this permit;
8. Records of any equipment shutdowns related to improper operation of a control device and records of any control device malfunctions; and
9. Records of the training of the operators and maintenance staff to minimize the production of emissions during operation shall be maintained.
10. Records of fan inlet air temperature.

c. The Permittee shall maintain a record of the following required preventive maintenance activities in order to demonstrate compliance with Conditions II(c), III(a)(1), IV(g), and IV(h):

1. Quarterly Maintenance [or per a modified schedule as specified in Condition IV(h)]:

Documentation that the demister within each scrubber was inspected and cleaned (when necessary), as well as documentation of the condition of the demister at the time of inspection;

2. Annual Maintenance [or other frequency approved pursuant to Condition IV(g)]:

The inspection, cleaning and repairs of the scrubber packing, demisters and scrubber sumps shall be documented in accordance with Condition IV(g).

d. Material Safety Data Sheets for all chemicals to be used in the scrubber system shall be kept at the chemical storage room at all times and be available to inspectors.

VI. Reporting Requirements:[20 DCMR 200.7]

a. The Permittee shall notify the Department in writing prior to the initial scrubber start-up to schedule an inspection of the equipment pursuant to Condition I(i) of this permit to demonstrate proper construction of the equipment.

b. The facility shall, within 60 days of start-up, submit a representative value for the initial differential pressure across the media. If such information is not available by that date, the facility shall submit to the Department a proposal for determining a value for this initial differential pressure value. Such a value must be established within six months of the date of this permit and submitted to the Department. Thereafter, the value shall be used as a basis for determining the need to clean the media pursuant to Condition IV(g).

c. Whenever it is necessary to shut down part of the odor control scrubber system without shutting down the rest of the process, except when the fan inlet air temperature is at or below 34 deg. F, the Permittee must report the planned shutdown to the District at least 48 hours prior to shutdown by a method that will allow the Department to review the proposal prior to the shutdown. The prior notice must include, but is not limited to the following [20 DCMR 107.2]:

1. Identification of the specific facility to be taken out of service, as well as its location and permit number;
2. The expected length of time that the air pollution control equipment will be out of service;
3. The nature and quantity of emissions of air pollutants likely to occur during the shutdown period;
4. Measures that will be taken to minimize the length of shutdown period; and
5. The reasons that it would be impossible or impractical to shut down the source operation during the maintenance period.

Unless the Department objects, an automatic approval of the shutdown process is deemed to exist.

d. The Permittee shall notify the Department orally within 24 hours of the time the Permittee learns of any deviation from the requirements of Section II and III. The Permittee shall provide a written report of such deviations within five (5) days to the Department. Each such written report shall include an explanation for the cause of the deviation to the best knowledge of the Permittee.

e. Whenever the scrubber fan is shut down due to the fan inlet air temperature dropping to or below 34 deg. F, the Permittee shall notify the Department of the shutdown within 48 hours after the shutdown has occurred. The Permittee shall also notify the Department within 48 hours after the equipment has been restarted. These reports may be made as a single, combined report, where appropriate, and shall document the duration of the period of shutdown.

f. Following completion of selection of a specific manufacturer’s type of equipment, and at least 15 days prior to requesting approval to operate the unit pursuant to Condition I(i), the Permittee shall submit a copy of the manufacturer’s specifications and maintenance guide (or equivalent documentation) for the selected unit.

g. All reports required pursuant to this permit shall be submitted to:

Chief, Compliance and Enforcement Branch

Air Quality Division

1200 First Street NE

5th Floor

Washington, DC 20002

If you have any questions, please call me at (202) 535-1747 or John Nwoke at (202) 724-7778.

Sincerely,

Stephen S. Ours, P.E.

Chief, Permitting Branch

SSO:JCN