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VIA E-MAIL EPA.STERIGENICS@ILLINOIS.GOV

Illinois Environmental Protection Agency

Re: Public Comment on behalf of the Village of Willowbrook and Village of Burr Ridge re: Illinois Environmental Protection Agency Draft Construction Permit to Sterigenics US, LLC Willowbrook I facility (Application No. 19060030)

Dear Illinois Environmental Protection Agency:

On behalf of the Village of Willowbrook and the Village of Burr Ridge (the "Villages")[1], we submit the following comments on the Illinois Environmental Protection Agency's ("IEPA" or the "Agency") draft Construction Permit, Application No. 19060030, issued for Sterigenics US, LLC's Willowbrook I facility (the "Facility") on June 25, 2019 (the "CP"). These comments were prepared with the assistance of GHD, which has assisted the Villages in evaluating the impact of EO emissions from the Facility.

While the Villages appreciate this opportunity to provide comment on the draft CP, the Villages strongly object to IEPA's issuance of the CP. On February 15, 2019, the Agency took the necessary and appropriate measure to prevent the continued release of harmful emissions of EO from the Facility. IEPA's decision to now permit the Facility to recommence operation undermines this critical action to protect public health and the environment. The CP is premature. Based on the deficiencies in the CP discussed below, the CP (and the information relied upon by IEPA to develop and substantiate issuance of the draft CP) is inadequate to ensure that the Facility will comply with Illinois EO legislation (415 ILCS 9.16) and ensure protection of human health and the environment. As such, Illinois EPA must not allow the Facility to reopen.

For the following reasons IEPA should not issue the draft CP. In the event the Agency does elect to issue the permit, then the following deficiencies in the draft CP must be addressed prior to issuance:

[1] The Village of Hinsdale and the City of Darien support these comments.

1. **Certification that Pollution Controls Use the Greatest Reduction in EO Emissions Available**

   i. Provision 1.c of the draft CP includes a conclusory and deficient statement that IEPA has determined that the Facility's pollution controls produce "the greatest reduction in [EO] emissions currently available."

   ii. Section 9.16(g) of the Illinois Environmental Protection Act (the "Act") prohibits the emission of EO until, among other requirements, IEPA has "certified" that the controls use the greatest reduction currently available.

      a. No such certification is provided with the draft CP, nor does the permit contain any condition verifying that such certification has occurred. The Agency has not shared how it certified that Sterigenics' proposed pollution controls represent the greatest reduction in EO emissions currently available, as the statute requires.

      b. The certification cannot be made until the Facility has demonstrated, through an emissions test, that the Facility is in compliance with the emission limits contained in the CP and under 415 ILCS 5/9.16. The CP application does not contain sufficient information for IEPA to certify that the Facility's emission control system uses technology that produces the greatest reduction in ethylene oxide emissions currently available.

      c. In addition, the Ambient Air Monitoring Plan (required under 415 ILCS 5/9.16(e)(1)) should be submitted and reviewed by the Agency and interested parties before the Agency can certify that the Facility's emission control system uses technology that produces the greatest reduction in ethylene oxide emissions currently available.

   iii. The public should have an opportunity to review the information supporting any such certification before the Agency issues the permit and before the Facility resumes operation. IEPA should create a publicly accessible database that contains all of this information (as well as all data, reports and submissions that the CP requires the Facility to submit).

2. **Supplier Certifications**

   Neither the CP application nor the draft CP provides any evidence that the Facility has obtained and provided to IEPA certifications from their customers that EO sterilization or fumigation is the "only available method to completely sterilize or fumigate the[ir] product" as required under 415 ILCS 5/9.16(g). In fact, in IEPA's August 5, 2019, response to a Freedom of

Information Request dated July 24, 2019 submitted to IEPA on behalf of the Villages (No. 109478) (the "FOIA"), IEPA identified no records of supplier certifications. IEPA should not issue the CP until and unless such certifications are provided.

3. <u>Continuous Emissions Monitoring (CEMS)</u>

i. Neither the draft CP nor Sterigenics' CP application provides sufficient assurances or details, respectively, that the CEMS is capable of accurately measuring EO emissions to determine compliance with applicable permit limits. By law, IEPA cannot permit the Facility to operate unless the Facility can "demonstrate[] that it...reduces [EO] emissions to the atmosphere from each exhaust point...by at least 99.9%." 415 ILCS 5/9.16(b). While proposed Condition 7-1(d) requires the Facility to submit an Emissions Monitoring Plan that prescribe the CEMS operating parameters, that requirement does nothing to assure that the CEMS itself is capable of accurately measuring point source EO emissions. To our knowledge, apart from the recent construction permit issued to Medline Industries (Application No. 19020013) ("Medline Permit"), neither IEPA nor U.S. EPA have approved the use of a CEMS to monitor emissions of EO.[2]

ii. If IEPA does authorize use of a CEMS to measure EO, the CP should require the following:

   a. The CEMS are designed and operated to maintain a limit of quantification that is no greater than 10 parts per billion by volume (ppbv) (IEPA has included a similar requirement in the Medline Permit).

   b. The CEMS must comply with all applicable quality assurance and quality control requirements (i.e., reliability, calibration, linearity checks, and relative accuracy test audits (RATA)), and specifically those monitoring requirements found under 40 CFR 63.8 and 63.10 (monitoring and reporting requirements applicable to hazardous air pollutants) and 40 CFR Part 75.

   c. Electronic and field auditing of the CEMS must occur to verify the overall integrity of the emissions monitoring data, including, but not limited to: (i) semi-annual on-site audits to verify the Facility's CEMS performance and compliance with monitoring requirements; (ii) automatic screening of reported CEMS data with

[2] In a separate public comment submitted by P. Farber & Associates, LLC, Mr. Farber conducted a survey of manufacturers and distributors of emissions monitoring equipment that confirmed that no known, reliable, monitors are commercially available to continuously and accurately monitor emissions of EO. The Villages support the comments and deficiencies identified by Mr. Farber in his public comment.

electronic QA checks; and (iii) review and QA checks/audits of the reported CEMS data from the Facility.

iii. As further discussed below, the draft CP requires installation of a new stack, but does not specify the height or dimensions of the stack other than to authorize installation of an 87-foot stack if approved by the Village of Willowbrook. Neither the draft CP nor the CP application addresses or evaluates whether a change in stack parameters will affect the reliability of the CEMS and, therefore, the assurance that the required pollution controls are achieving the 99.9% reduction in EO emissions required by the CP and the Act (a process typically achieved through RATA). Because CEMS have not been demonstrated effective at measuring EO emissions, IEPA must perform additional evaluation of the CEMS to assure that the monitored data will be accurate and reliable based on the actual physical parameters of the Facility (including the to-be-constructed stack).

4. Annual Emission Testing

The draft CP proposed that all required emissions testing be conducted "under operating conditions that are representative of maximum emissions...." Condition 8-2.a. It is unclear what IEPA means by the phrase "representative of maximum emissions". Does IEPA mean maximum *potential* emissions from the Facility during which time all sterilization chambers are in operation? To clarify and ensure that "maximum emissions" are tested, the CP should require that any emissions test be performed when the Facility is operating at no less than 90% of maximum capacity (i.e., at least 13 sterilization chambers in operation).

5. Storage of EO

The CP should not allow Sterigenics to store new or used/spent drums of EO outside of the Facility. More specifically, at all times – including during delivery and removal – the new or spent drums should be maintained with a permanent total enclosure or other structure to reduce to the greatest extent possible the likelihood that emissions of EO can escape from the drums, including during an unforeseen emergency such as a spill. Absent total enclosure and monitoring of fugitive leaks from the drums, the CP does not provide any mechanism to ensure that harm emissions of EO are not being released into the atmosphere during outside storage.

6. Fugitive Emissions and Leak Detection

i. The permanent total enclosure ("PTE") proposed under Provision 7-2 of the draft CP is insufficient to ensure that all fugitive EO emissions at the Facility are captured and controlled to ensure compliance with Sections 9.16(b) and (g) of the Act. While the proposed PTE does satisfy the requirement under Section 9.16(j) of the Act (to install a PTE), it does not ensure that *all* sources of EO emission from the Facility are captured. The

Act is unambiguous - the Facility must "demonstrate[] that it captures, *100% of all* [EO] emissions." *See* 415 ILCS 5/9.16(b). *All* EO emissions from the Facility must be captured, as contrasted with the Act's requirement that EO emissions specifically from exhaust points be reduced by 99.9%.

a. Further, IEPA has not provided (and, most likely, no information has been provided by Sterigenics to the Agency) information regarding the ability of the proposed PTE to effectively and reliably prevent the release of fugitive EO emissions from the Facility. IEPA acknowledged that no records were available regarding the PTE system in the Agency's August 5, 2019 response to the FOIA request (No. 109478).

ii. In order to ensure that the Facility captures 100% of all EO emissions, the CP must address the following deficiencies:

a. Ensure that no new or spent drum containing EO is stored outside the facility. More specifically, the CP must ensure that both new (sealed) drums of EO and spent drums of EO are stored inside the boundaries of the PTE (provision 3.b.iii of the draft CP, for example, only requires that the Facility ensure that drums of EO be kept sealed and that no release of EO from these drums occurs - the permit makes no mention of *how* the Facility will prevent such a release and does not specify how spent/used EO drums are to be handled).

b. Require the Facility to implement a leak detection and repair ("LDAR") program to more readily prevent, detect and repair potential sources of EO from connection points (e.g., valves and connectors) throughout the Facility. The installation and maintenance of a PTE cannot adequately prevent or remedy the release of EO from such connection points. The CP should specify action limits for the LDAR program to require that the Facility immediately repair any identified leaks or shut-down the Facility.

c. Require the Facility to maintain the PTE at all times that EO may be present, which includes periods when the Facility is not operating. Provision 7-2(a) of the draft CP only requires operation of the PTE "whenever the facility is in operation." The CP does not define what constitutes "operation" of the Facility. EO emissions may be (and, in fact, are likely) present in the Facility for a period of time after the Facility has shut-down (for example, following a temporary shutdown to performance maintenance). Further, per our previous comments, EO emissions from storage drums or leaking components occur regardless of whether the Facility is operating.

d. Specify how doors and windows are continuously monitored to ensure they remain closed to preserve the required pressure differential in the PTE.

e. Require the Facility to submit pressure monitoring system measurements to IEPA for review on a monthly basis (the draft CP only requires that the Facility record and maintain such records under provisions 7-2(a)(ii) and (b)).

f. IEPA (or Sterigenics) must evaluate possible EO fugitive releases that can escape the building enclosure and, based on a toxicological analysis, determine action levels that would trigger a shutdown of the Facility. These action levels should be based on a specific time-based pressure drop duration that would warrant a facility shutdown to protect public health.

g. The draft CP does not require or provide any means to alert Facility personnel that a pressure drop below 0.007 inches of water has occurred. The CP should.

h. Specify the minimum design specifications for the pressure monitoring devices, which should include a requirement that all such devices are able to measure pressure differential to at least the nearest 0.001 inches of water.

7. Malfunction and Continuous Operation of Pollution Controls

The CP must - but does not - prevent the Facility from operating when the pollution control equipment is not operating, when elevated ambient air impacts are observed, when the Facility is not capturing 100% of EO emissions, or when the pollution controls are not achieving a 99.9% reduction in EO emissions from the Facility. The CP should contain such minimum requirements that preclude the Facility from operating at *any* time the pollution control equipment is not operating or malfunctions, and/or when there is a pressure drop or other event indicating that emissions are not being contained by the Facility's PTE.

8. Stack Height

i. Provision 4.a.ii of the draft CP grants Sterigenics the permission, subject to approval by the Village of Willowbrook, to extend the height of the newly constructed stack to 87 feet above-ground. Provision 4.a.ii is inappropriate. If the Agency has determined through dispersion modeling or other methods that an 87 foot stack is necessary to protect, or beneficial to, public health, it cannot and should not allow the Facility to recommence operation until such time as the higher stack is constructed. The underlying intent of the Act (415 ILCS 5/9.16) and this draft CP is to ensure that public and environmental impact from EO emissions are minimized to the greatest extent possible. If IEPA or Sterigenics have determined that a taller 87-foot stack will provide for greater reductions in EO emission impacts to human health and the environment, it cannot issue the CP without making such stack height a requirement.

ii. IEPA has no legal basis to provide Sterigenics the option to install a higher stack because of the Agency's concerns regarding whether the Village of Willowbrook would grant such a stack height under the village's zoning ordinances. To the extent that is a concern, IEPA and Sterigenics must work to resolve any zoning issues *prior* to issuance of this CP. Indeed, just recently, the planning and zoning council for the City of Waukegan rejected the request by Medline Industries for authorization to install a taller stack that was permitted under IEPA's Medline Permit.

9. <u>Air Dispersion Modeling</u>

i. IEPA must perform air dispersion modeling that evaluates all potential stack heights authorized by the CP. The ambient air modeling submitted in support of the June 2019 CP application to IEPA (and obtained from IEPA via the July 24, 2019 FOIA) *only* evaluated the impact from an 87-foot stack. Modeling scenarios with shorter stack heights were not present (and, presumably, not evaluated by IEPA). As noted above, the draft CP does not *require* that the Facility install an 87-foot stack; nor is there any guarantee that the Village of Willowbrook will authorize the construction of an 87-foot stack under its municipal ordinances. Moreover, the Act explicitly prohibits operation of the Facility unless air dispersion modeling uses actual "emissions and stack parameter data" from the EO source emissions test conducted pursuant to the Act. *See* 415 ILCS 9.16(f)(1)(B). IEPA cannot issue this CP on the basis of ambient modeling data that does not reflect actual, required, stack parameter metrics.

   a. To that end, IEPA should determine, through modeling, the minimum stack height required to provide the greatest reduction in EO emissions impact to human health and the environment.

ii. On behalf of the Villages,[3] GHD reviewed Sterigenics' aforementioned air dispersion modeling evaluation for the Facility. GHD provides the following observations and critiques of this modeling:

   a. Sterigenics also operates the Willowbrook II (WB2) facility located about 400 ft. northwest from the Willowbrook I (WB1) facility. While WB2 is not currently operational, that facility may recommence operation in the future. The potential emissions of EO from WB2 were not accounted for in the air dispersion modeling.

[3] P. Farber & Associates, LLC submitted separate public comments regarding the air dispersion modeling relied upon by IEPA. Many of Mr. Farber's critiques were also identified by GHD and are discussed in this comment. As above, the Villages support the comments of Mr. Farber.

Given the close proximity of the two facilities and the potential for WB2 to operate in the foreseeable future, potential emissions of EO from WB2 must be accounted for (i) before IEPA issues the CP to the Facility to recommence operation of WB1, and (ii) as part of future ambient air dispersion modeling for the Facility as required under the Section 9.16(f) of the Act.

b. It appears that only the building structures from WB1 and WB2 were included in the building downwash evaluation with the Building Profile Input Program ("BPIP") pre-processor. Whereas the surrounding buildings seem to be shorter than the WB1 building, the neighboring building structures should also be included in the downwash evaluation with BPIP.

c. The base elevation of the main meteorological tower (PROFBASE) used in the input file is 188.4 meters. Based on the location of the Argonne National Laboratory surface station, the base elevation should be approximately 230 meters.

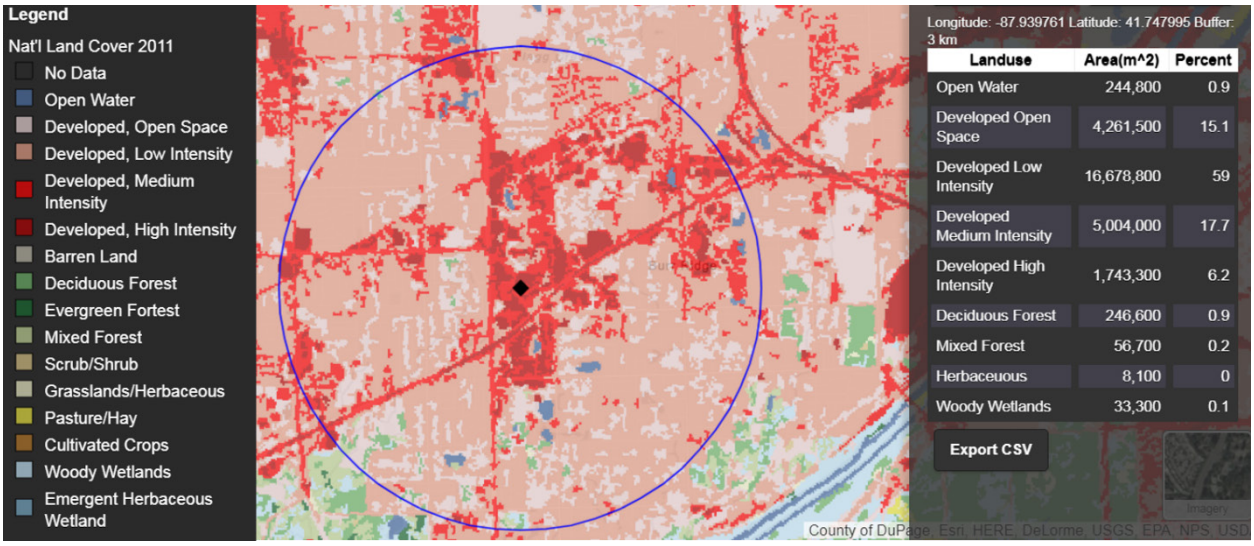
d. The modeling was based on the Facility's annual permitted emission limit of 84.8 lb/year (0.0097 lb/hr annualized). However, the Facility is permitted to emit EO on a monthly limit of 8.5 lb/month (0.0118 lb/hr annualized). IEPA should consider accounting for potential higher periods of EO emissions allowed under the higher monthly limit. The Agency should consider the potential higher emissions of EO happening on a shorter time basis and compare them to applicable health limits (e.g., Occupational Safety and Health Administration permissible exposure limits.

e. The modeling relies upon a stack velocity of 96.1 ft/s. It is unclear the basis for this higher stack velocity as more typical velocities for this type of stack generally fall in the range of 50-70 ft/s. Either the modeling should be performed with more representative stack velocities or IEPA should include as a permit condition that the Facility maintain a stack velocity of no less than 96.1 ft/s during all times the Facility is operating.

f. The air dispersion modeling used the urban option. Use of the urban option is not clearly justified. According to the National Land Cover 2011 map (below), the developed high intensity and medium intensity classifications account for only about 23.9% of the 3km radius area around the Facility. Based on the Auer method, because less than 50% of the area can be classified as urban, a rural classification is a more suitable modeling option for this evaluation. *See* Appendix W, Section 7.2.1.1 b.i (https://www3.epa.gov/ttn/scram/guidance/guide/appw_17.pdf) (providing the Auer Land Use Procedure to determine rural or urban classification); *see also* Appendix W, Section 7.2.1.1 b.ii (under an alternative method known as

Population Density Procedure, GHD estimates that the density inside the 3km radius of the Facility is approximately 90 people/km2, far less than the 750 people/km2 needed to classify an area as urban).

2011 National Land Cover Map



Thank you again for the opportunity to submit these comments. We hope and expect that the Agency takes the required steps to protect the public from any additional harm that will result from the operation of Sterigenics' Facility.

Sincerely,

/s/ Renee Cipriano

Renee Cipriano