UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5 77 WEST JACKSON BOULEVARD CHICAGO, IL 60604-3590

REPLY TO THE ATTENTION OF:

Robert Hodanbosi, Chief
Division of Air Pollution Control
Ohio Environmental Protection Agency
50 West Town Street, Suite 700
Columbus, Ohio 43215

via email to robert.hodanbosi@epa.ohio.gov

Dear Mr. Hodanbosi:

This letter is in regard to Ohio Environmental Protection Agency's (OEPA's) draft new source construction permit for SOBE Thermal Energy Systems, LLC (SOBE) – permit number P0132799. The permit would allow SOBE to construct and operate a 13.72 MMBtu/hr pyrolysis system capable of converting 88 tons per day of tire-derived chips (TDC) into synthetic gas (syngas) at 205 North Avenue, Youngstown, Ohio 44502 in Mahoning County. SOBE is also permitted to operate two 55 MMBtu/hr gas-fired boilers (B006 and B007) at this facility, which are included in this permit. The U.S. Environmental Protection Agency (EPA) reviewed the draft permit and associated permit files.

EPA is committed to advancing environmental justice and incorporating equity considerations into all aspects of our work. This commitment includes improving our assessment and consideration of the impacts of permits on communities already overburdened by pollution. EPA welcomes OEPA's partnership in this important effort.

EPA has determined that the draft permitting action raises potential environmental justice concerns. Data from EPA's environmental justice screening tool, EJScreen, illustrate the severity of pollution and health impacts facing the community living in proximity to the SOBE site.[1] The neighborhoods around the facility have some of the highest levels in the state for many environmental justice indexes reported by EJScreen. EJScreen is a useful first step in understanding communities that may have environmental justice concerns.

[1] EJScreen is a mapping and screening tool that provides EPA with a nationally consistent dataset and approach for combining and comparing environmental and demographic indicators.

The values for 10 of the 13 environmental justice indexes for the area surrounding the facility exceed the 80th percentile in the state. The environmental justice indexes include ozone, diesel particulate matter, air toxics cancer risk, traffic proximity, lead paint, Superfund site proximity,
Risk Management Program (RMP) facility proximity, hazardous waste proximity, underground storage tanks, and wastewater discharge. The population living in the area around the facility is significantly comprised of people of color, linguistically isolated households (Spanish language), those with low income, those with less than a high school education, and a high unemployment rate. [2]

EPA acknowledges the work OEPA has already undertaken on this permitting action, including providing enhanced opportunities for public participation by putting the draft minor source permit on public notice, holding a public hearing on August 10, 2023, and mailing informational postcards to residents of the affected community, among other outreach efforts, which are generally not required for this type of permit. EPA also acknowledges OEPA's willingness to engage in early, ongoing conversations with EPA about this project that will result in changes to the permit.

Our permit comments are included in the attachment to this letter, in which we note where our early conversations with OEPA will result in updated permit terms in the final permit. In consideration of environmental justice and equity concerns, we also provide the following recommendations:

- Given the industrial nature of the area, we recommend that OEPA conduct a more thorough environmental justice analysis of appropriate scope to inform the permitting decision. In addition to the EJScreen analysis already conducted, the analysis should include an evaluation of existing environmental, demographic, and public health data about the community. The analysis should evaluate the potential effects that the permitting action will have on the community, and the degree to which these effects will be disproportionate and adverse.

- We recommend that, if the proposed project is permitted, data generated by SOBE to comply with the permit, such as stack test results and records of monitoring, be made publicly available on an easily accessible website. The transparency of such data will promote public engagement and help build trust among all stakeholders.

[2] Data from an EJScreen Community Report for a 1-mile radius ring centered at 205 North Avenue, Youngstown, Ohio.

- We recommend that, if the initial testing of the pyrolysis system required by permit condition C.1.f)(4) and the boilers required by permit condition C.2.f)(2) show emissions that exceed or significantly differ from emissions described in the permit application, OEPA revisit the permit decision and consider additional requirements.

Finally, because of the environmental conditions already facing this community, and the potential for additional disproportionate and adverse impacts based on race, national origin, or other protected class, this permitting action may raise civil rights concerns. It is important, therefore, that OEPA assess its obligations under civil rights laws and policies.

Thank you again for the opportunity to work with you on this draft permit. EPA remains committed to working together with OEPA to address our shared environmental priorities, advance equity, and reduce potential environmental and health impacts on communities such as this one.

Sincerely,

Mooney, John Digitally signed by Mooney, John
Date: 2023.09.11 15:23:53 -05'00'

John Mooney
Director
Air and Radiation Division

Attachment

Attachment:
Permit Comments
SOBE Thermal Energy Systems, LLC
P0132799

1. Condition B.3. states sources at the facility are subject to 40 CFR part 63 subpart JJJJJJ. However, per 40 CFR 63.11195(e), gas-fired boilers as defined at § 63.11237 are not subject to this subpart. Since boilers B006 and B007 are permitted to only burn natural gas and syngas, which the application indicates is similar to process gas, these boilers would not be subject to this subpart. OEPA will remove this condition from the final permit.

2. Condition C.1.b)(2)b. requires a device to "continuously monitor the flare when the EU is in operation" but does not specify the parameter(s) to be monitored. Condition C.1.c)(3)b. suggests the temperature must be monitored to determine if the flare is on or off. We recommend specifying which parameter(s) must be monitored in condition C.1.b)(2)b.

3. Condition C.1.c)(2) requires non-passenger TDC to make up no more than 10% of the pyrolyzer feed stock, but the basis of this limit is not clarified in the permit record. OEPA will add a lime addition requirement to the final permit to ensure adequate control of sulfur emissions.

4. Section C.1.d) should include recordkeeping requirement to verify TDC meets the legitimacy criteria of 40 CFR 241.3(d) and is not considered solid waste. See the nonhazardous secondary material (NHSM) fact sheet (page 9) for documentation and recordkeeping requirements for NHSM fuels. OEPA will add this recordkeeping requirement to the final permit.

5. Conditions C.1.d)(3) and C.2.d)(2) require the facility to record if visible emissions (VE) are "representative of normal operations" if observed during daily VE checks and whether any corrective actions were taken to eliminate "abnormal" VE. Since the unit has an opacity limit of 20% for any six-minute average, we recommend requiring the facility to define what opacity is representative of "normal operations" as part of their recordkeeping after some operating period (i.e., within the first three months of operation) and to initiate corrective action if this opacity is exceeded. Abnormal VE could also trigger a Method 9 visible emissions observation to ensure the unit is not exceeding its opacity limit. A similar requirement is also listed in Condition C.2.d)(2) for the boilers. These changes would make this requirement more indicative of compliance with the underlying opacity limit. In lieu of defining a "normal" opacity, the threshold

for corrective action could be changed to the presence of any visible emissions, especially if little to no opacity would be expected from this process during normal operation.

6. Several of the testing requirements in section C.1.f)(1) list U.S. EPA test methods but do not specify that they are found in 40 CFR part 60 appendix A.

7. Condition C.1.f)(4)b. states: "The emission testing shall be conducted to demonstrate compliance with the permit cited limitations and to confirm claims of constituents not present in the emissions or exhaust gas streams. (see g)(1) below)."

   Condition C.1.g)(1) states: "The permittee has submitted sampling data from a similar EU that processed used tires the testing requirements above are meant to confirm the results of the test."

   Since there are multiple emissions limits as well as emissions factors based on the submitted sampling data, we recommend that the constituents and values to be verified during the initial stack test be specified in the permit, so it is clear what emissions rates the test is meant to confirm.

8. We recommend clarifying in the permit what the facility will be required to do if the results of the initial stack test do not confirm the results of the submitted sampling data.

9. Condition C.1.f)(4)c. lists test methods for each pollutant to be used by the facility during initial testing. Specifically, it lists Method 15 for determination of sulfides (specified as hydrogen sulfide (H_2S), carbonyl sulfide (COS), and carbon disulfide (CS_2) in the method description). The permit application shows an emission factor for SO_2 for syngas combustion in the Thermolyzer, which appears to be based on the total sulfur concentration of 30.1 mg/m^3 for the fuel and an assumption that all sulfur is converted to SO_2 during combustion. Method 6 or 6C (or a related method) would be more appropriate to measure SO_2 emissions from the Thermolyzer burner egress points, while Method 15 would be more appropriate to confirm 100% conversion of sulfur to SO_2 (see comment #7 above). Condition C.2.f)(2)c. also requires Method 15 for testing sulfur emissions from the boiler egress points. OEPA will remove Method 15 and add Method 6 as the required test method for sulfur emissions in the final permit.

10. Condition C.1.f)(4)c. lists the test method for PM as Method 5, which measures filterable PM (PMfilt). However, the TRC report indicates the emissions factor used for PM_{10} for the Thermolyzer burners and flare (0.0154 lb/MMBtu) includes both filterable and condensable PM (PMcon). Therefore, Method 202 for PMcon should also be required, along with Method 5, to ensure both types of PM are measured. Otherwise,

the facility should assume a 3:1 ratio of PMcon to PMfilt based on the results of the Method 5, as is done in the TRC report. OEPA will add Method 202, in addition to Method 5, to measure both condensable and filterable particulate emissions in the final permit.

11. The application states $PM_{2.5}$ was calculated as 95% of PM_{10}. However, the TRC report shows the same emissions factor, 0.0154 lb/MMBtu, for both PM_{10} and $PM_{2.5}$. OEPA

will require testing for both PM_{10} and $PM_{2.5}$ in the final permit to ensure emissions of each type of PM are verified.

12. The TRC report shows the $PM_{10/2.5}$ emissions factor for NG combustion in the Thermolyzer as 0.0075 lb/MMBtu, but the emissions calculation spreadsheet in the application uses 0.005 lb/MMBtu (and cites the TRC report as the basis for the emissions factor). OEPA agreed this was a mistake, and 0.0075 lb/MMBtu is the correct emissions factor for the Thermolyzer.