EARTHJUSTICE

June 28, 2024

Via electronic mail
Josef Simme
Sr. NEPA Environmental Specialist
United States Department of Agriculture
josef.simme@usda.gov

Re: Comments on Saratoga Biochar Environmental Assessment

Dear Mr. Simme,

Earthjustice, on behalf of Clean Air Action Network of Glens Falls, respectfully submits these Comments on the Environmental Assessment ("EA") of Saratoga Biochar Solutions LLC ("SBS").

Introduction

SBS has filed an application for funding from the United States Department of Agriculture's Rural Business-Cooperative Service ("RBS") for a proposed facility in an industrial park in the Town of Moreau, New York. RBS is required to comply with elements of the National Environmental Policy Act ("NEPA") prior to acting on this application. RBS has solicited comments on an EA prepared by SBS regarding the environmental impacts of the proposed SBS facility. Commenters note that there was very little time to comment on the EA, especially given the holidays and the lack of broad distribution of the notice.

Available science and information presented in SBS's permit application materials to DEC indicate that the facility will have a significant environmental impact for the purposes of NEPA. The enclosed Comments and Appendices point to problems with SBS's EA and explain at greater length why the SBS facility will have a significant environmental impact. The proposed facility: a) does not meet the purpose and need described in the EA because of questionable claimed greenhouse gas reductions as well as disproportionate pollution impacts on state-designated disadvantaged communities; b) will produce potentially contaminated biochar intended for agricultural purposes, with significant impact on the environment and human health; c) may pollute nearby waterbodies with PFAS-contaminated wastewater; d) will produce odors; and e) fails to include adequate worker safety protections. In addition, SBS failed to reach out to the Town of Moreau at an early stage of the EA process, and the EA fails to adequately consider reasonable alternatives to the facility as required.

<u>Background and Status of State Permitting Process</u>

The proposed facility would produce biochar through a process known as pyrolysis.[1] Once the pyrolysis facility is fully operational, SBS expects it to have "an annual throughput up to 235,200 wet tons of received biosolids"[2] which are sometimes colloquially referred to as "sewage sludge." The facility will also process up to "35,280 tons of wood waste."[3] This feedstock will be pyrolyzed—"cooked" at high heat in the absence of oxygen.[4] The finished product of pyrolysis is biochar.[5] "At full buildout, the Facility will produce up to approximately 23,520 tons of [biochar] per year."[6] SBS says it will market the biochar to be used as a fertilizer substitute and an agricultural product applied to soil.[7]

To Commenters' knowledge the proposed pyrolysis facility would be by far the largest facility for producing biosolids-derived biochar in the country. The application materials submitted by SBS to the New York State Department of Environmental Conservation ("DEC") indicate that the facility will most likely generate pollutants, including Per- and Polyfluorinated Substances ("PFAS") and lead.

DEC has not yet issued necessary permits and approvals for the project or confirmed that it would comply with state environmental laws. The agency has published draft permits for public notice-and-comment, but has stressed that "DEC has not made a tentative or final determination to issue any final permit for the Facility."[8] During its notice-and-comment process on these permits DEC received an enormous number of comments on the project, the majority of which opposed the facility or raised concerns about its impacts on the surrounding community.[9] The Agency is still reviewing and considering these comments. For its part, the Town of Moreau – where the facility is to be sited – has stated "any objective review of the numerous comments indicates that many of them raise objections and substantive and significant

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[1] *See, e.g.,* Sterling Env't Eng'g, P.C., Application for Air Facility Permit at 3 (Sept. 6, 2023) (hereinafter "Air Permit Application"); DEC, Draft Solid Waste Management Facility Permit, condition 12 at 3 (hereinafter "Draft Solid Waste Permit").

[2] *See* Air Permit Application at 1.

[3] *See id*.

[4] Hayleigh Colombo & Jana Decamilla, *Will it Work?: Saratoga Biochar Solutions Touts 'New technology' to Clean Biosolids*, Post Star (Dec. 14, 2022), https://poststar.com/news/local/will-it-work-saratoga-biochar-solutions-touts-new-technology-to-clean-biosolids/article_cd663e48-7522-11ed-90c4-4f89724ab909.html; Alex Portal, *Infographic: How Saratoga Biochar Solutions Says It Operates and Why People Are Concerned*, Post Star (Feb. 3, 2024), https://poststar.com/news/local/business/saratoga-biochar-how-it-works-why-people-are-skeptical/article_85b6e0d6-bc87-11ee-ad45-6bc8632718a8.html.

[5] Colombo, *Will it Work?, supra* note 4.

[6] *See* Sterling Env't Eng'g, P.C., Petition for Case-Specific Beneficial Use Determination at 4 (May 15, 2023) (hereinafter "BUD Petition").

[7] *See id.* at 8–9.

[8] DEC, Environmental Notice Bulletin – Town of Moreau – Saratoga Biochar Solutions LLC (Jan. 17, 2024), https://dec.ny.gov/news/environmental-notice-bulletin/2024-01-17/public-notice/town-of-moreau-saratoga-biochar-solutions-llc.

[9] *See, e.g.,* Alex Portal, *Common Roots Adds Their Objection to the Growing List of Voices Against Biochar*, Post Star (May 6, 2024), https://poststar.com/news/local/business/biochar-debate-saratoga-biochar-solutions/article_c9f17ec6-dafc-11ee-bf82-a7bd50644feb.html; Wendy Liberator, *Monreau Residents: "We Are Not Guinea Pigs",* Times Union (Feb. 9, 2024), https://www.timesunion.com/news/article/moreau-residents-we-not-guinea-pigs-18654117.php.

issues which should lead to permit denial or at least imposition of significant conditions on any permit issued."[10]

I. The Saratoga Biochar Facility Does Not Serve the "Purpose and Need" Identified in the Environmental Assessment.

As a part of its EA, SBS is required to identify a purpose and need for the project.[11] Moreover, as the proposal will result in the conversion of farmland of statewide importance,[12] RBS cannot "fund the proposal unless there is a demonstrated, significant need for the proposal."[13]

The "Purpose and Need" portion of Saratoga Biochar's Environmental Assessment suggests that the proposed facility is needed to meet the goals of New York's landmark Climate Leadership and Community Protection Act ("CLCPA"). This suggestion is highly misleading, as it is unclear whether the facility would actually reduce greenhouse gas ("GHG") emissions within the state. Even if it were to reduce statewide emissions, it would do so in a way that disproportionately burdens state-designated Disadvantaged Communities ("DACs") in violation of the CLCPA.

The state DEC is still analyzing whether the Saratoga Biochar project will be consistent with the CLCPA's emission reduction mandate. It has expressly stated that "DEC has yet to make such a determination regarding the Facility's consistency with the Climate Act."[14] Even if a facility would not increase GHG emissions in the state, or would reduce them, under the CLCPA the state must still ensure that actions taken to reduce GHGs do not disproportionately burden DACs. As the official state Scoping Plan for carrying out the CLCPA states: "it is of critical importance that climate change mitigation policies that seek to reduce overall greenhouse gas (GHG) emissions in New York do not inadvertently increase emissions of co-pollutants, particularly in Disadvantaged Communities (i.e., create hotspots)."[15] The Scoping Plan also specifically says that New York is required to "avoid localized pollution in Disadvantaged Communities" even as it promotes beneficial use of biosolids.[16]

Contrary to SBS's claim that the proposed facility advances the CLCPA's GHG mandate, the company has failed to demonstrate that its facility is GHG negative. Even if the facility would help reduce statewide GHG emissions, by siting this facility next to two DACs, SBS is undermining the CLCPA's mandate to protect these DACs from disproportionate burdens. Therefore, it does not meet the stated purpose in the EA, as set forth below.

A. SBS's GHG Analysis Is Flawed and Cannot Reliably Demonstrate Net Negative Emissions.

[10] *See* Appendix 1.
[11] *See* 7 CFR §§ 1970.5(b)(3)(ii), 1970.102(a)(1).
[12] *See* Environmental Assessment at 30.
[13] *See* 7 § CFR 1970.4(a).
[14] DEC, Environmental Notice Bulletin, *supra* note 8.
[15] *See* Scoping Plan at 97.
[16] *See Id*. at 330.

Although SBS touts the proposed facility as a means to fulfil the CLCPA's GHG emissions goals, its calculations of the facility's GHG impacts are based on inaccurate assumptions that artificially inflate the project's purported GHG benefits. RBS must consider SBS's indication that it plans to sell carbon credits out of state, which would mean that they could not claim any emission reductions associated with those credits for the purpose of CLCPA consistency and could contribute to out of state emissions leakage that the CLCPA specifically seeks to avoid.

The following subsections explain flaws in SBS's application of the CLCPA. A more technical discussion of the flaws in the GHG analysis included in SBS's Air State Facility Permit application is set forth in Appendix 2.[17]

1. SBS Cannot Claim Emissions Reductions in New York if It Sells Carbon Credits.

SBS's marketing and distribution plan, submitted as part of its petition for a Beneficial Use Determination, states that the company is actively seeking to sell carbon credits associated with claimed emission reductions from its facility.[18] Indeed, sale of carbon credits on the voluntary offset market appears to be a key part of SBS's business strategy and projected revenue.[19] If SBS sells credits associated with its claimed GHG reductions to other parties, that cancels out those reductions, as the credits would be used to offset those parties' continued GHG emissions. In addition, if SBS sells those credits to entities out of state, as is likely, it would lead to out-of-state emissions leakage contrary to the CLCPA's directives.

First, despite its life cycle analysis and projections of carbon credit sales of up to $2 million per year, SBS's project may not qualify for carbon credits out of state due to New York's unique CO2 equivalency accounting. New York, pursuant to the CLCPA, uses of a 20-year global warming potential to calculate CO2e intensity for methane, unlike the 100-year timeline used more generally by other states and entities.[20] Using the 100-year global warming potential, estimated GHG emissions associated with landfilling biosolids (which emits methane) become *lower* than SBS's own estimated carbon intensity, eliminating the company's ability to claim emission reductions from its operation.[21] This may jeopardize the company's ability to operate profitably and stay in business.

Assuming SBS can sell carbon credits to out-of-state actors, SBS cannot then count the associated emission reductions as occurring in New York for the purpose of a CLCPA consistency analysis. Sale of carbon credits to another company allows that company to continue to emit the equivalent amount of GHGs. Because sale of credits allows an equivalent amount of GHG emissions to occur, SBS should not count any actual emission reductions in New York that are associated with credits sold to other parties. And in fact, sale of credits out of state is contrary to the intent of the CLCPA, which specifically seeks to avoid emissions leakage, defined as "a

[17] Appendix 2 is an expert declaration submitted to DEC in response to a request for comment on draft permits produced by the agency, it is being resubmitted here for RBS's review.
[18] BUD Petition, app. D.
[19] *Id*.
[20] *See* ECL § 75-0101(2).
[21] Appendix 2 at ¶ 11-12.

reduction in emissions of greenhouse gases within the state that is offset by an increase in emissions of greenhouse gases outside of the state."[22] By proposing to sell carbon credits to likely out-of-state actors, SBS would simply be transferring its avoided GHG emissions out of state.

2. The Life Cycle Analysis Contains Additional Flaws.

Under CLCPA Section 7(2), SBS's facility cannot be "inconsistent with, or… interfere with, the attainment of the statewide GHG emission limits" set by the statute.[23] To complete such an evaluation, applicants for air permits are required to submit full, detailed analyses of the project's projected potential and actual GHG emissions as set forth in DEC's internal program policy.[24] In its State Air Facility Permit Application, SBS attached as Attachment 7 its consultant's "Carbon Intensity Analysis," a life cycle analysis of GHG impacts of its proposed facility.[25] It also discusses that analysis, and its own determination that the project is consistent with the CLCPA, in Section 9 of the application.[26] In addition, SBS claims in its Solid Waste Management Facility Engineering Report that its facility process "potentially achieves a negative carbon footprint."[27] RBS should not rely on SBS's insufficiently detailed life cycle analysis for several reasons, discussed below.

As a preliminary matter, for the purpose of a CLCPA analysis, SBS should examine emissions related to New York state. Here, it claims to be reducing emissions that would otherwise result from management of biosolids. However, due to SBS's failure to identify the source of the biosolids it intends to process, and its vague description that it will source biosolids not only from New York wastewater treatment plants but also western Massachusetts and western Connecticut,[28] it is impossible to verify what portion of avoided emissions would even be from New York sources in the first place.

The analysis submitted by SBS is incomplete because it fails to account for a key segment of the life cycle of SBS's proposed product – the use of the biochar. The biochar is intended to be used in land application. However, as SBS's own analysts concede, the GHG implications of land application of biochar are highly uncertain.[29] Land application of biochar could actually increase GHG emissions associated with soils, depending on the feedstock of the biochar, characteristics of the soil, and other factors.[30] Without information on the impact from land application, it is impossible to have a full and accurate life cycle analysis for SBS's project.

SBS's analysis makes unjustified assumptions about the business-as-usual scenario for processing biosolids, inflating its estimate of GHG emissions from that scenario and therefore

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[22] ECL § 75-0101(12) (defining "leakage"); *see also id.* §§ 75-0103(13)(k) (directing the Climate Action Council to devise mechanisms to minimize leakage), 75-0109(3) (directing DEC to design regulations to minimize leakage).
[23] CLCPA § 7(2).
[24] *See* DEC, DAR-21 The Climate Leadership and Community Protection Act and Air Permit Applications (Dec. 14, 2022), https://extapps.dec.ny.gov/docs/air_pdf/dar21.pdf.
[25] *See* Air Permit Application, attach. 7.
[26] *See id.* § 9 at 33.
[27] Sterling Env't Eng'g, P.C., Engineering Report ¶ 2.5 at 3 (Mar. 31, 2022) (hereinafter "Engineering Report").
[28] BUD Petition at 4.
[29] Air Permit Application, attach. 7 at 3.
[30] Appendix 2, ¶ 14.

also inflating likely emission reductions associated with the SBS facility. SBS claims that biosolids in New York, in the absence of its facility, generate in-state emissions of 1.99 net MT of CO2e per dry ton from landfilling. However, this calculation fails to incorporate the fact that 21% of New York's biosolids are subject to alternative management practices that have significantly fewer methane emissions, like composting and anaerobic digestion, rather than landfilling.[31] The likely GHG intensity of the business-as-usual scenario is therefore likely to be less than the 1.99 net MT of CO2e per dry ton that SBS uses as a comparison for its own projected GHG intensity.[32]

SBS's life cycle analysis also fails to account for the portion of its feedstock that is made up of wood waste, which it intends to mix with biosolids for pyrolysis, when calculating the alternative "business-as-usual" scenario. Wood waste alternative management emissions are much lower than emissions from landfilling biosolids, and factoring in that portion of the feedstock would likely bring the GHG intensity of the business-as-usual scenario *below* SBS's estimate of its own GHG intensity.[33]

Additionally, SBS plans to power its facility in part by combusting the gas generated during the pyrolysis process, which it calls "syngas." Combustion of the syngas will generate various air pollutants, as described in the State Air Facility Permit Application. SBS characterizes the syngas, a "low-methane gas produced by the pyrolysis reaction,"[34] as "renewable energy"[35] and does not appear to include any GHG emissions from use of syngas in its emissions calculations.[36] However, characterization of syngas combustion in pyrolysis as carbon neutral is not in line with the CLCPA, which excludes any waste-to-energy projects, including pyrolysis, from qualifying under its offset program.[37] In other words, the CLCPA does not consider energy created from the burning of waste products – such as the syngas generated from pyrolysis of biosolids here – to qualify as "avoided emissions" or as carbon neutral. This indicates a clear disfavor of waste-to-energy, including pyrolysis, in the state climate law.

B. The SBS Project Will Have Significant Impacts Because the Project Will "Disproportionately Burden" New York State Disadvantaged Communities for the Purpose of the CLCPA.

In weighing whether the SBS project will have significant impacts RBS must consider the fact that "[s]ignificance varies with the setting of the proposed action. For instance, in the case of a site-specific action, significance would usually depend only upon the effects in the local area."[38] RBS must also consider whether the SBS project "would violate... State... law protecting the environment."[39] Since SBS is seeking to site this facility close to two DACs, both

[31] *Id*. ¶ 16.
[32] *Id*. ¶¶ 19–20.
[33] *See id.* ¶¶ 21–23.
[34] BUD Petition at 3.
[35] Air Permit Application at 5.
[36] *See Id*., attach. 7, tbl.2 at 4 (breaking down various parameters for calculation of facility's carbon intensity including natural gas but not syngas).
[37] *See* ECL § 75-0109(4)(g)(i).
[38] *See* 40 CFR § 1501.3(b)(1).
[39] *See id*. § 1501.3(b)(2)(iv).

considerations weigh in favor of finding that the SBS facility will have significant effects. In short, the DACs are uniquely vulnerable areas of the state and siting such a facility near the DACs would violate New York State environmental justice law.

It is important that RBS understands that New York State-designated DACs affected by the proposed action are not defined in the same manner as "EJ Populations" for the purposes of NEPA. DAC's are census tracts that have been identified as disadvantaged by the New York State Climate Justice Working Group ("CJWG").[40] The CJWG identified these census tracts by looking to 45 indicators of disadvantage.[41] Many of these indicators of disadvantage relate to pollution burdens and public health burdens experience in the census tracts.[42] For example, three indicators considered by the CJWG are proximity to municipal waste combustors, rates of asthma and COPD emergency department visits, and driving time to hospitals.[43] An interactive map illustrating how each DAC ranks compared to the rest of the state along each of the 45 indicators of disadvantage is available on a webpage created by the CJWG.[44]

CLCPA § 7(3) states that agencies considering issuing permits or other approvals "shall not disproportionately burden disadvantaged communities." RBS should note that the CLCPA § 7(3) "disproportionate burden" analysis is separate and distinct from the typical "disproportionately high and adverse effects" analysis typical of an EIS.

1. Projects that Lead to a Net Increase in Co-Pollutants in New York State Designated Disadvantaged Communities Violate the CLCPA.

The CLCPA does not provide an exhaustive list of every possible way a DAC might be "disproportionately burdened" by an agency decision, but a provision of CLCPA § 2 does provide one salient example.[45] This provision requires DEC to ensure that activities undertaken to comply with regulations implementing the CLCPA "do not result *in a net increase in co-pollutant emissions or otherwise disproportionately burden*" DACs.[46] Under CLCPA § 2 a net-increase of co-pollutants in a DAC is plainly a disproportionate burden.

It follows that under CLCPA § 7(3) an agency cannot issue a permit for an activity that results in a net increase of any co-pollutants in a DAC. To do so would impose a disproportionate burden on the DAC in question. This stringent 7(3) standard is the only textually faithful reading of the statute because, put simply, "disproportionately burden" must mean the same thing in both CLCPA § 2 and CLCPA § 7. It is, after all, a fundamental principle

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[40] See ECL § 75-0111; DEC, New York State's Disadvantaged Communities Criteria Factsheet at 1, https://climate.ny.gov/-/media/Project/Climate/Files/Disadvantaged-Communities-Criteria/LMI-daccriteria-fs-1-v2_acc.pdf (hereinafter "DAC Factsheet"). The CJWG is an interagency New York State governmental body comprised of officials from the state's DEC, Department of Health, NYSERDA, and Department of Labor, as well as representatives of community-based environmental justice organizations. *See* ECL § 75-0111(1).
[41] DAC Factsheet at 1.
[42] *Id*. at 1–2.
[43] *Id*.
[44] Climate Act, Disadvantaged Communities Criteria, https://climate.ny.gov/Resources/Disadvantaged-Communities-Criteria (last visited June 26, 2024).
[45] CLCPA § 2 is codified at ECL Article 75, and the referenced provision is ECL § 75-0109(3)(c).
[46] ECL § 75-0109(3)(c) (emphasis added).

of statutory construction that where "the same term is used in different parts of a statute, it is presumed to carry the same meaning throughout."[47]

The stringent CLCPA § 7(3) co-pollutant standard is also consistent with the Legislature's broader intent to ensure that DACs are protected from additional burdens during the statewide effort to meet the CLCPA's energy transition. Lawmakers understood that even small amounts of additional pollutants in some communities can be devastating, acknowledging at several points throughout the statute that DACs suffer from "cumulative" burdens.[48] In fact, the Legislature was so concerned about cumulative co-pollutants that lawmakers obligated New York "to *reduce* emissions of toxic air contaminants and criteria air pollutants" in any DAC with a "high cumulative exposure burden."[49] Thus, New York must either hold air pollution steady in a DAC pursuant to CLCPA § 7(3), or else take affirmative steps to reduce pollution in a DAC if the community already has a high pollution burden. But in no case may New York authorize a net increase of co-pollutant emissions in a DAC.

2. Hudson Falls and Glens Falls Already Have Very High Health and Pollution Burdens.

DACs in Hudson Falls and Glens Falls near the proposed facility exemplify why, as a policy matter, the Legislature created a stringent co-pollutant standard under CLCPA § 7(3). These communities have unique and severe vulnerabilities. For such communities, even incremental exposures to additional co-pollutants can impose significant burdens.[50] Commenters are especially concerned about the cumulative impacts of co-pollutants that bioaccumulate, like PFAS[51] and Mercury. Siting a massive biosolids pyrolysis facility near such communities is precisely the opposite of what the Legislature intended.

a. Hudson Falls and Glens Falls Experience High Health Burdens.

Census tract 36115080100 is a DAC located in Hudson Falls near the site of the proposed SBS facility. This DAC has unusually high public health burdens. According to the CJWG interactive DAC map,[52] the DAC's average annual age-adjusted emergency department visits for COPD – an inflammatory lung disease – are higher than those in 86% of all census tracts in the state. The CJWG map also shows that a higher percentage of people in this DAC have a disability than people in 92% of all census tracts in the state.[53] Finally, the CJWG map indicates

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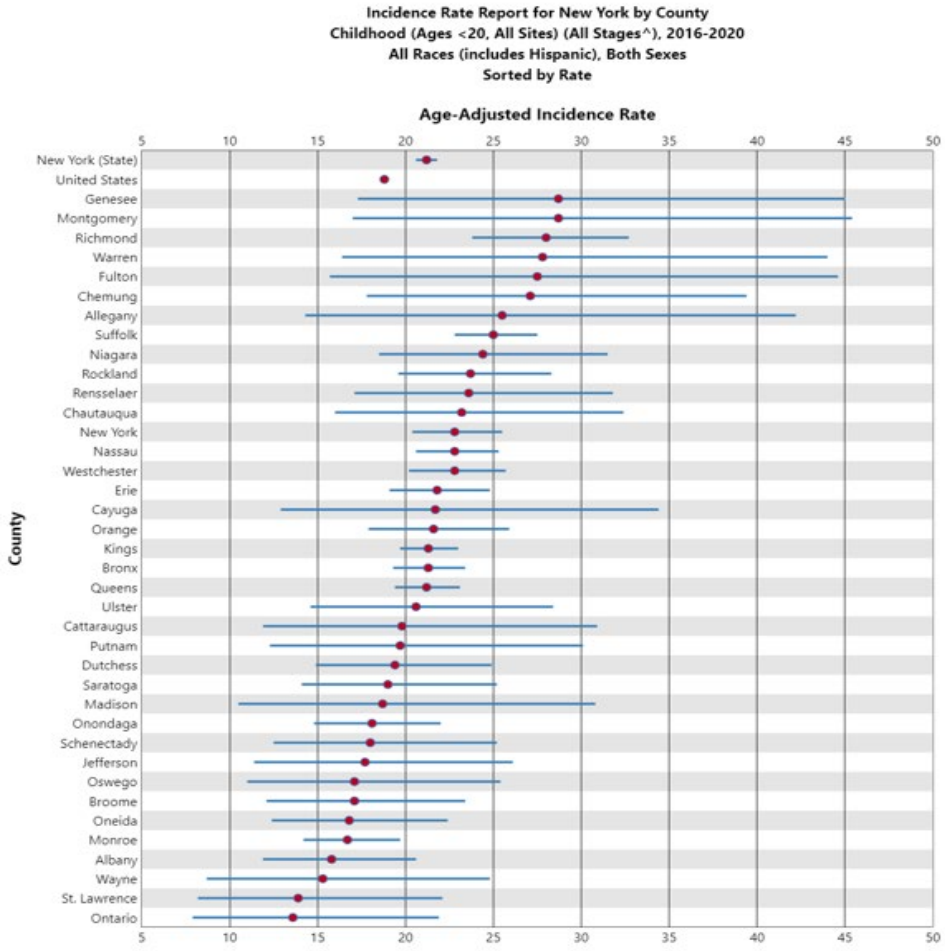
[47] *Petro, Inc. v. Serio*, 9 Misc. 3d 805, 810 (Sup. Ct. N.Y. Cnty. 2005); *see also Matter of Minichino v. Fox*, 81 Misc. 3d 405, 413 (Sup. Ct. Albany Cnty. 2023) ("the same words used across the statute are presumed to have the same meaning."), *aff'd*, 219 A.D.3d 1637 (3d Dep't. 2023), *denied*, 40 N.Y.3d 905 (2023).
[48] *See* CLCPA § 1(11); ECL §§ 75-0109(4)(l)(ii)–(iii), 75-0111(1)(c)(i), 75-0115(3).
[49] *See* ECL § 75-0115(3) (emphasis added).
[50] *See* Appendix 3 § D. Appendix 3 is an expert declaration submitted to DEC in response to a request for comment on draft permits produced by the agency, it is being resubmitted here for RBS's review.
[51] *See* Appendix 3 § C.
[52] *See* Climate Just. Working Grp., *Disadvantaged Communities Criteria Map*, Climate Act, https://climate.ny.gov/Resources/Disadvantaged-Communities-Criteria (last visited Mar. 14, 2024) (hereinafter "DAC Map").
[53] *See id*.

that a higher percentage of deaths in this DAC occur before the age of 65 than in the vast majority of census tracts throughout the state.[54]

The public health burdens on census tract 36113070500, a DAC located in Glens Falls near the site of the proposed SBS facility, are also unusually high. According to the CJWG interactive DAC map,[55] the DAC's average annual age-adjusted emergency department visits for COPD are higher than those in 96% of all census tracts in the state. The CJWG map also shows that the average annual age-adjusted hospitalizations for heart attacks in this DAC are higher than those in 93% of all census tracts in the state.[56] While the CJWG map does not include cancer statistics, it is notable that according to data collated by the CDC's National Cancer Institute, Warren County, where this DAC is situated, has the fourth highest incidence of cancer of all New York counties among individuals aged < 20. The data is illustrated in the table below.

[54] *See id*. To be more precise, data for premature deaths in the CJWG's DAC map is from the years 2015 through 2019, and places this DAC in the 70th percentile. *See id*.
[55] *See id*.
[56] *See id*.

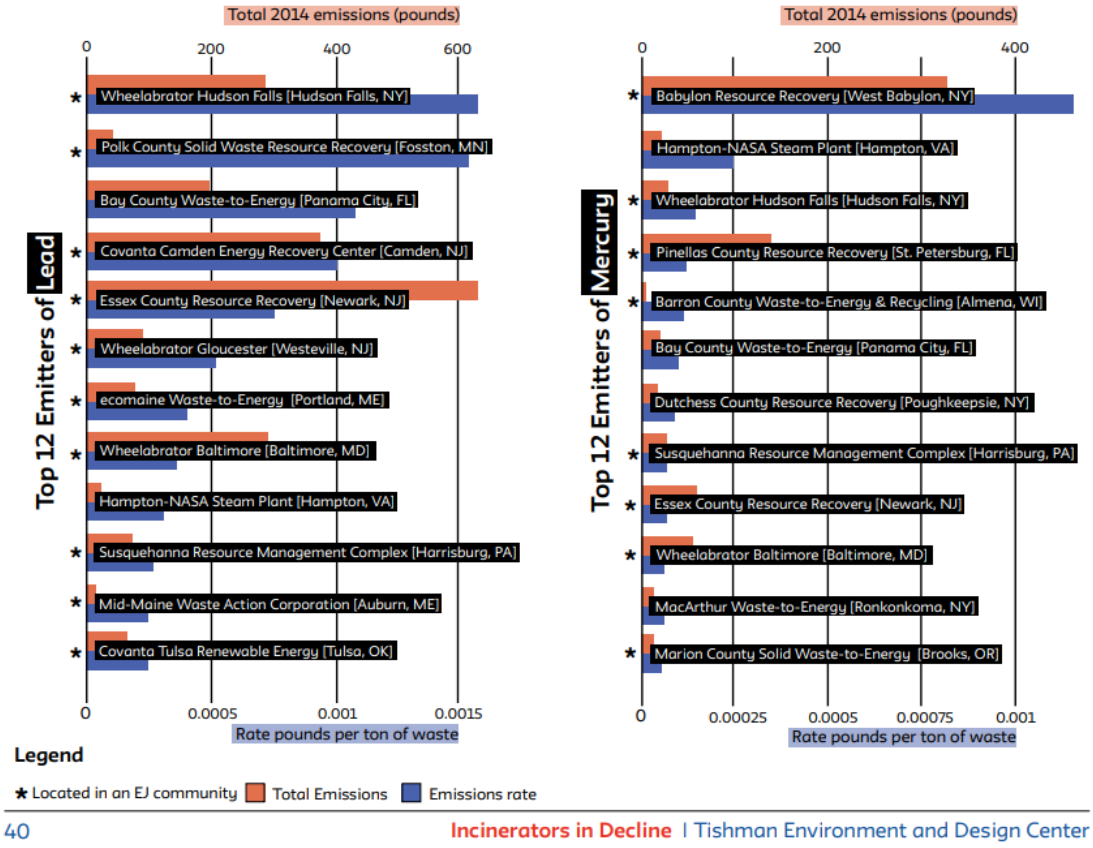


b. Hudson Falls and Glens Falls Are Subject to High Pollution Burdens.

These two DACs also experience unusually high pollution burdens when compared to census tracts throughout the state. For example, the CJWG's interactive DAC map indicates that a higher percentage of the Hudson Falls DAC's land area is within 500 meters of a trash incinerator than that of 96% of other census tracts in the state.[57] The Wheelabrator incinerator in

[57] *See Id.*

Hudson falls is especially burdensome. For example, it is the number one emitter of lead per ton of waste in the entire United States according to a report released in 2019, using data from 2014.[58] The report also states that the facility is one of the top ten emitters of mercury per ton of waste burned of all trash incinerators in the country.[59]



The interactive DAC map indicates that the Hudson Falls DAC is in the 96th percentile for proximity to Regulated Management Plan sites.[60] The Glens Falls map fares even worse along this metric. That DAC is in the *100th percentile* among census tracts in New York state for proximity to Regulated Management Plan sites.[61]

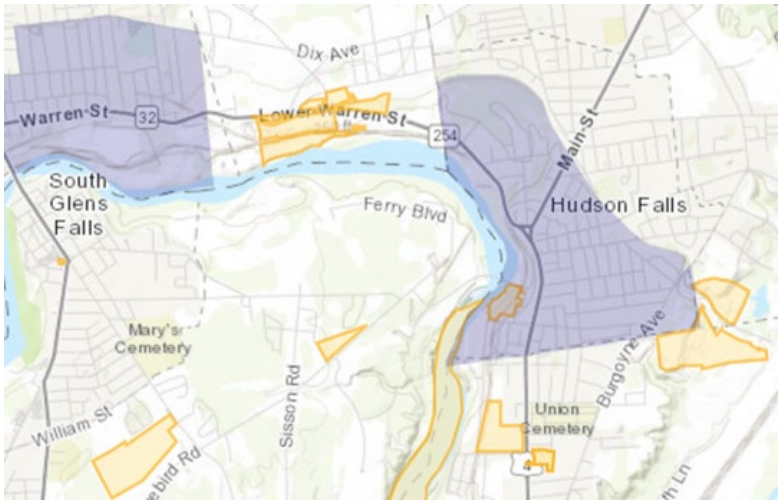
According to the CJWG Regulated Management Plan "facilities are those that are required by the Clean Air Act section 112(r) to file risk management plans. The regulations established a list of 72 substances because of their high acute toxicity and 60 because of their

[58] Gwendolyn Craig, *Report: Hudson Falls Trash Plant Among Country's 'Dirty Dozen' Incinerators*, Post Star (May 22, 2019), https://poststar.com/news/local/report-hudson-falls-trash-plant-among-countrys-dirty-dozen-incinerators/article_233446f9-c4a7-54ca-b371-4ca9c24da9c0.html; Ana Isabel Baptista & Adrienne Perovich, Tishman Env't & Design Ctr. *U.S. Municipal Solid Waste Incinerators: An Industry in Decline,* at 40-41 (May 2019), https://www.no-burn.org/wp-content/uploads/2021/03/CR_GaiaReportFinal_05.21-1.pdf.
[59] Baptista, *supra* note 58 at 40.
[60] *See* DAC Map.
[61] *See id* (emphasis added).

flammable or explosive potential, along with thresholds quantities for each substance."[62] The CJWG explained its rationale for tracking census tracts' proximity to these facilities as such:

> The primary concerns with [Regulated Management Plan] facilities are the accidental release of substances and fires or explosions. The sudden release of relatively large quantities of acutely toxic substances can cause serious health effects. Additionally, as with many types of industrial facilities, there may be routine releases to the air and water of the residuals after pollution control devices remove what is generally a large fraction of the waste stream. Thus, people may be exposed to some substances directly through inhalation or indirectly through water routes or via ingestion of food.[63]

In addition to being close to Regulated Management Plan facilities, the DACs in Hudson Falls and Glens Falls are nearby to a high number of superfund sites. While the interactive DAC map only tracks remediation sites *within* DACs, the DECinfo Locator tool allows members of the public to generate their own maps illustrating remediation sites *surrounding* DACs.[64] The map below depicts the superfund sites close to the Glens Falls and Hudson Falls DACs. The DACs are shaded in purple and the superfund sites are shaded in orange:



3. SBS's Air Permit Application Concedes that the Proposed Facility Will Increase Co-Pollutants in DACs in Hudson Falls and Glens Falls.

Attachments 5A through 5Q of SBS's Air Permit Application confirm that the company acknowledges the proposed facility may release co-pollutants in these two DACs in Hudson Falls and Glens Falls. These co-pollutants include, but are not limited to: PFAS, Naphthalene,

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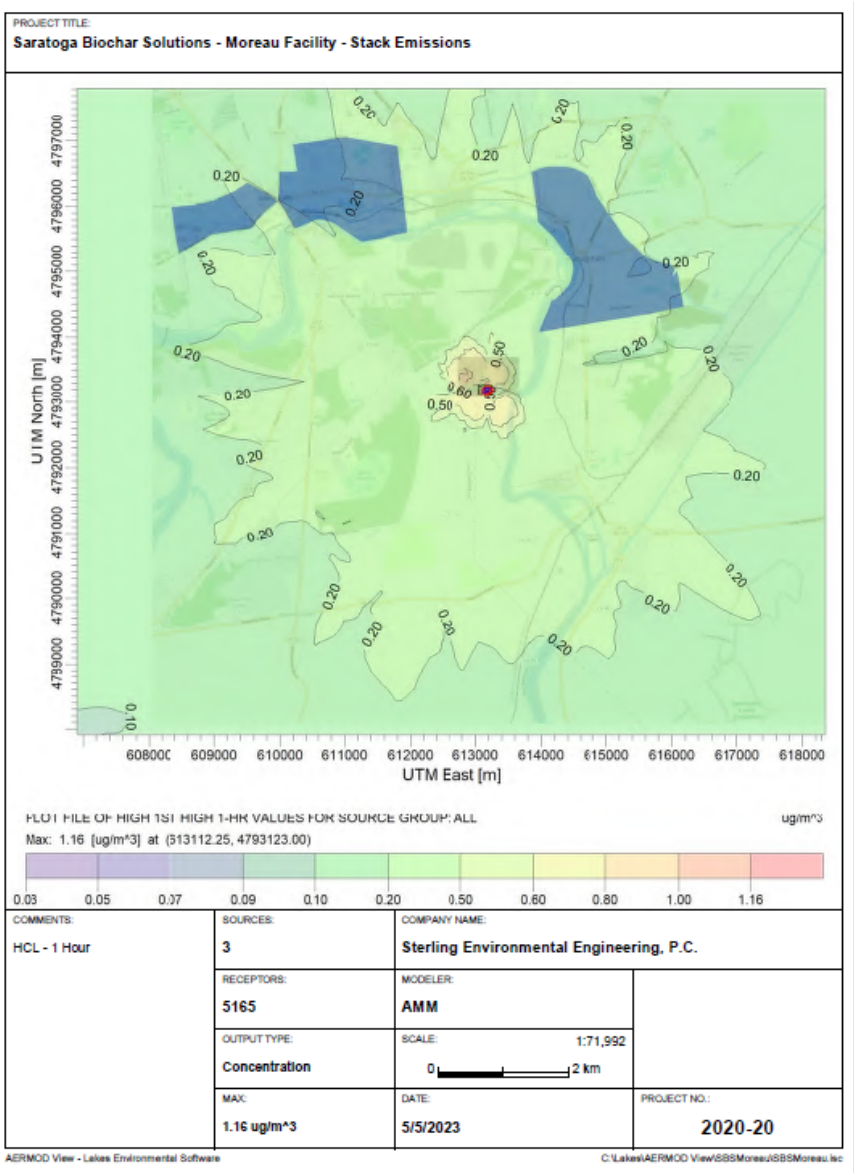
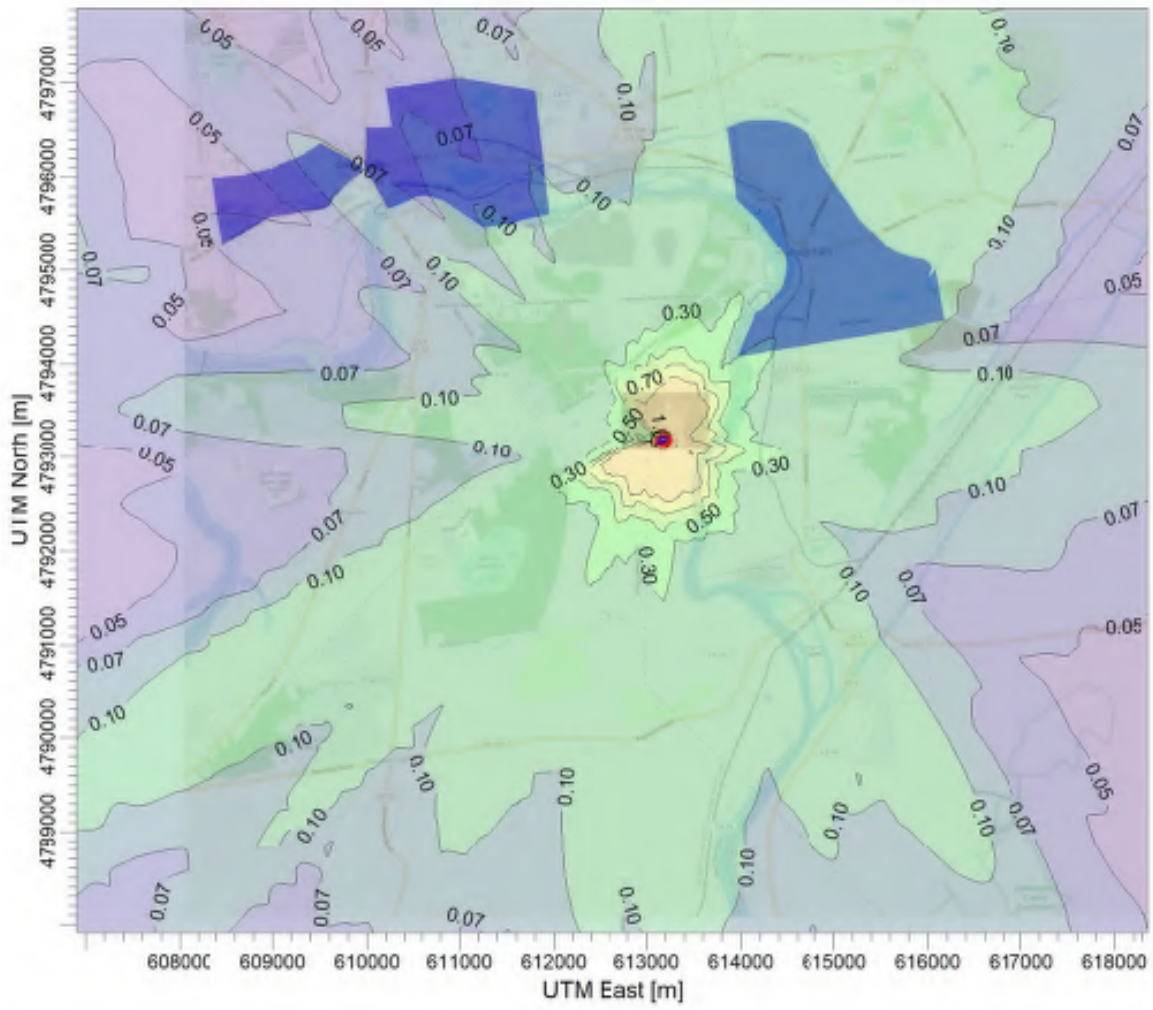
[62] *See* N.Y. Climate Just. Working Grp., Draft Disadvantaged Communities Criteria and List Technical Documentation at 33 (Mar. 9, 2022), https://climate.ny.gov/-/media/Project/Climate/Files/Disadvantaged-Communities-Criteria/Technical-Documentation-on-Disadvantaged-Community-Criteria.pdf.
[63] *Id*.
[64] *See* DEC, *DECinfo Locator*, https://gisservices.dec.ny.gov/gis/dil/.

Arsenic, Cadmium, Lead, Mercury, Hydrogen Fluoride, and Particulate Matter. AERMOD maps in Attachment 5 clearly illustrate the expected dispersion of co-pollutants from the proposed facility in and around three DACs. The DACs are shaded in dark blue. The DAC on the right-hand side of the maps is census tract 36115080100, which is located in Hudson falls. The DAC in the center of the maps is census tract 36113070500, located in Glens Falls. For the convenience of the reader, Commenters are incorporating into the text of this Comment a sample of three maps illustrating expected emissions of Hydrogen Chloride, PM-10, and PFOA below:



PROJECT TITLE:

Saratoga Biochar Solutions - Moreau Facility - Stack Emissions



PLOT FILE OF HIGH 1ST HIGH 24-HR VALUES FOR SOURCE GROUP: ALL ug/m^3

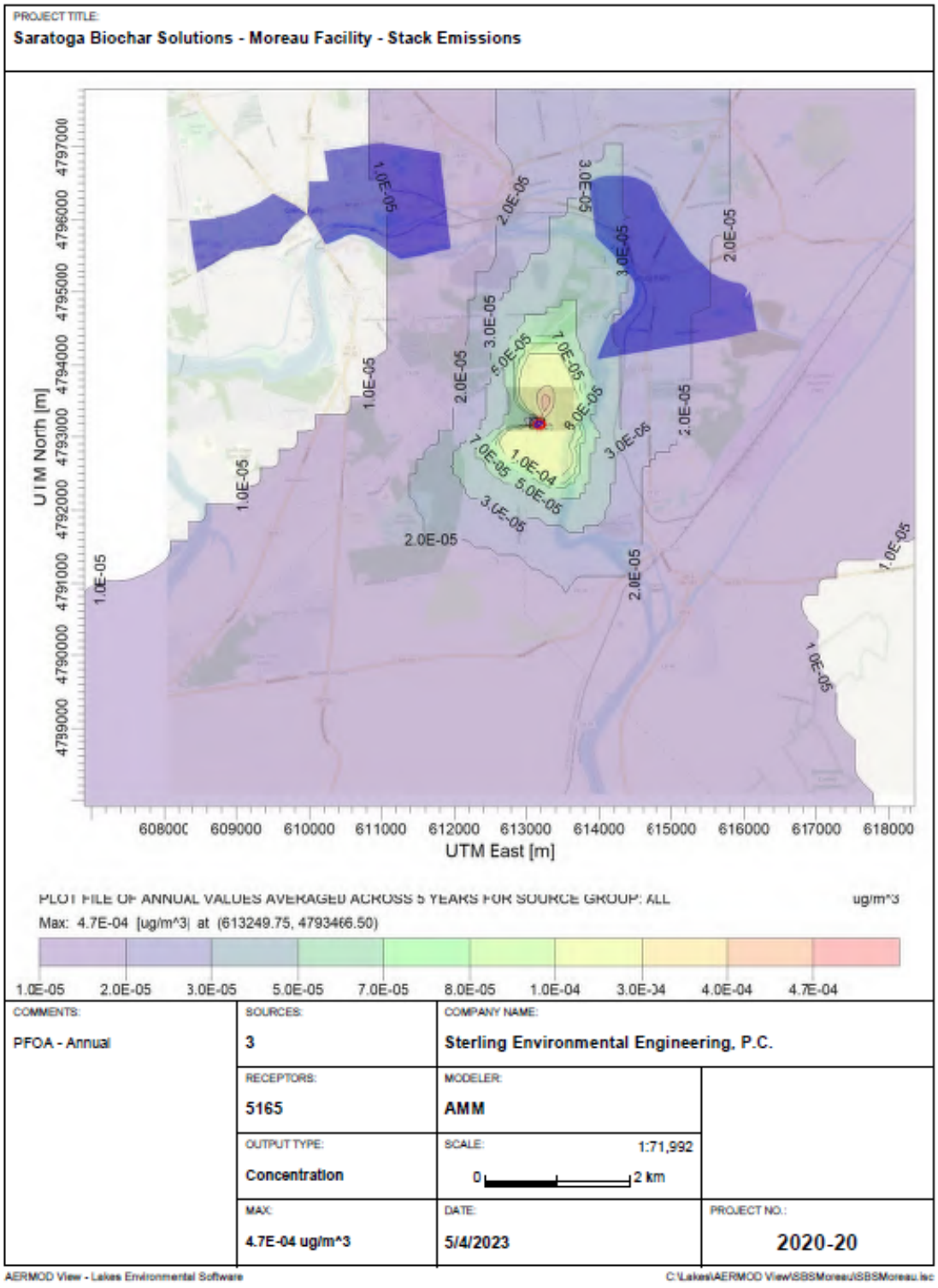
Max: 3.53 [ug/m^3] at (513112.25, 4793123.00)

0.04 0.05 0.07 0.10 0.30 0.50 0.70 1.00 3.00 3.53

COMMENTS: PM-10 - 24 Hour	SOURCES: 3	COMPANY NAME: Sterling Environmental Engineering, P.C.	
	RECEPTORS: 5165	MODELER: AMM	
	OUTPUT TYPE: Concentration	SCALE: 1:71,992 (0 — 2 km)	
	MAX: 3.53 ug/m^3	DATE: 5/8/2023	PROJECT NO.: 2020-20

AERMOD View - Lakes Environmental Software

C:\Lakes\AERMOD View\SBSMoreau\SBSMoreau.isc



In summary, SBS's own modeling suggests that the facility will result in a disproportionate burden in two DACs and thereby undermine the goals of the CLCPA.

4. SBS's AERMOD Underestimates the Magnitude of the Co-Pollutant Burden the Proposed Facility Will Create in DACs in Glens Falls and Hudson Falls.

As noted above, a plain reading of the CLCPA indicates that a net increase of co-pollutants in a DAC is a disproportionate burden, regardless of the amount of pollutants at issue. While SBS may claim the co-pollutant impacts in their modeling are low, that does not eliminate the imposition of a disproportionate burden. And indeed, there is a possibility that the co-pollutant emissions from the facility will be higher in magnitude than the AERMOD modeling suggests.[65] Such models are only as good as their inputs. As discussed further below, SBS has not yet sampled feedstock from any specific WWTP sending biosolids to the facility. Instead, the model uses unidentified WWTPs in Casella's operating footprint as a surrogate. SBS claims that these WWTPs are representative, but, in fact, the specific WWTPs transporting biosolids to the SBS facility might be more laden with contaminants, like Mercury and PFAS than the selection chosen by SBS.[66] If the pollutants in the feedstock are higher than assumed, the resultant co-pollutant emissions may also be higher.[67]

In addition, SBS's modeling of its thermal oxidizer's ability to destroy PFAS and Products of Incomplete Combustion present in syngas before they are released into the atmosphere is too rosy for several reasons.[68] Two are worth highlighting here, and the rest can be found in the Declaration of Denise Trabbic-Pointer.[69] First, SBS has not provided DEC with speciated emissions modeling for PFAS. For example, there is no specific AERMOD modeling provided for PFOS, which is known to be present in biosolids in WWTP's located in Casella's operating footprint. Instead of specifically providing AERMOD modeling for PFOS, SBS aggregates all PFAS expected to be present in incoming biosolids and models them as PFOA. This is problematic because SBS's own data suggests that PFOS is more heat resistant than PFOA. To put it plainly, if SBS instead used PFOS as a surrogate instead of PFOA, the expected PFAS emissions might be higher. PFOS is a more reasonable surrogate to use than PFOA because SBS's biosolids data suggests that incoming biosolids will be more contaminated with PFOS than PFOA.[70]

Second, SBS engages in similar fallacious reasoning to avoid modeling emissions for PFAS products of incomplete combustion ("PICs"). PICs are smaller PFAS compounds that are often produced when PFAS are heated at high temperatures.[71] SBS appears to assume, without real evidence, that its thermal oxidizer will destroy all PICs.[72] SBS's only support for this assumption is a study in which one PIC, CF4, was no longer detectable after PFAS was treated in a thermal oxidizer at 1490 degrees Fahrenheit.[73] However, reliance on this finding is problematic

[65] *See* Appendix 3 § E.
[66] *See id.* § A.a–A.b..
[67] *See id.* § E.
[68] *See id.* § B.
[69] *See id*.
[70] *See id.* § A.b.
[71] *See id* § B.a.
[72] *See* Air Permit Application at 31–32.
[73] *See id.*; *see also id.* attach. 8, tbl. 3 at E.

because not all PICs are equally vulnerable to thermal treatment. Some survive at much higher temperatures. The same study states that scientists were not able to completely destroy at least six PICs even at the study's maximum thermal treatment temperature of 2156 degrees Fahrenheit.[74]

The study authors also cast doubt on their findings regarding CF4 destruction. They note that reporting limits for CF4 in the study were high and that "current efforts are focused on lowering these limits of quantitation."[75] In other words, CF4 may have been present in emissions even though it was not detected by the relatively insensitive methods used in the study. It is notable that the single study contradicts EPA findings that a temperature of greater than 2,500 degrees Fahrenheit is necessary for CF4 destruction[76] – a temperature that the SBS thermal oxidizer will not reach.

5. In Light of Hudson Falls' and Glens Falls' Already Very High Health and Pollution Burdens, the Magnitude of the Co-Pollutant Burden Resulting from SBS's Facility Will Be Substantial.

Commenters also wish to draw attention to the fact that the magnitude of the burdens created by SBS may exacerbate pre-existing and cumulative burdens the Hudson Falls and Glens Falls DACs have already accrued, such as high rates of COPD and heart disease. For example, as noted in the expert analysis presented in Appendix 3, "[t]he majority of the pollutants modeled by SBS have the potential to do harm to the respiratory systems of residents in the DACs."[77] Similarly, the CJWG observes that "[n]umerous scientific studies have linked cardiopulmonary diseases, including [heart attacks], to exposure to fine particulate matter (PM)" and also adds that "there may be cardiac health co-benefits associated with reducing... combustion pollutants."[78]

The analysis in Appendix 3 states that pre-existing health and pollution burdens can make what otherwise would be safe amounts of pollutants unsafe, noting that:

> The impacts of [the proposed facility's] pollutants on the respiratory system will be cumulative with hazards from various other sources of pollution (industry, workplace, automobiles) and routes of exposure (inhalation, dermal and ingestion) … people with existing respiratory issues and illnesses like COPD, asthma or emphysema, would likely be adversely affected [by lower pollutant exposures].[79]

The analysis in Appendix 3 concludes that the increase of co-pollutants modeled by SBS is "too high to be safe for communities already overburdened with health and pollution problems."[80] Although it is not necessary to demonstrate harm to public health caused by co-

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[74] *Id*. attach. 8.
[75] *See id.* attach. 8 at E.
[76] *See* Appendix 3 § B.a (citing DEC, Notice of Incomplete Application at question 1 (July 11, 2023)).
[77] *See id.* § D.
[78] *See* Draft Disadvantaged Communities Criteria and List Technical Documentation, *supra* note 62 at 48.
[79] *See* Appendix 3 § D.
[80] *See id.*

pollutants under CLCPA § 7(3)'s standard, drawing attention to the cumulative nature of the burdens faced by the Hudson and Glens Falls DACs underscores the potential significant impacts of the project on DACs.

6. Under CLCPA § 7(3) Air Emissions can Disproportionately Burden DACs even if they comply with NAAQs.

RBS should know that a project proponents' adherence to NAAQs and other Clean Air Act limits is insufficient to satisfy the CLCPA § 7(3) standard. By enacting CLCPA § 7(3), the Legislature sought to impose additional duties on DEC and other agencies beyond those already present preexisting statutes and regulations to protect New York's most vulnerable residents from disproportionate burdens throughout the climate transition. To read the section otherwise would render its language superfluous.[81] SBS argues that the AERMOD model for Naphthalene emissions shows "negligible impact on the DACs" and therefore no co-pollutants from the proposed facility will disproportionately burden DACs.[82] As noted above, under CLCPA § 7(3) a net-increase of a co-pollutant like Naphthalene in a DAC is impermissible regardless of the magnitude of the increase. Moreover, in light of the cumulative health and pollution burdens faced by residents of Glens Falls and Hudson Falls, it is clear that the additional pollutants released by the facility will impose significant burdens on DACs.[83]

7. SBS Misunderstands CLCPA § 7(3)'s Mandate to Avoid Net Increases of Emissions in DACs.

SBS appears to believe that CLCPA § 7(3) allows a project proponent to offset a disproportionate burden in one DAC by reducing GHG and co-pollutant emissions in other areas of the state. But, even assuming *in arguendo*, that the purported statewide emissions reduction benefits of the proposed facility are real, the Legislature enacted CLCPA § 7(3) precisely to ensure that no individual DAC would be thrown under the bus as statewide GHG emissions decrease. The CLCPA Scoping Plan confirms as much stating that the implementation of the statute "should help to prevent the formation or existence of emission 'hotspots' that occur when certain sources maintain or increase higher levels of co-pollutant emissions despite a reduction in emissions statewide."[84] The Scoping Plan goes on to describe a hotspot as "high concentrations of pollutants in a given location."[85]

Thus, the CLCPA does not countenance a net increase in co-pollutants in any given DAC. Concentrating the State's pollution in one DAC leads to a net increase of pollution in a DAC. This net increase of co-pollutants in said DAC can be offset. But the offset must be implemented *within* the affected DAC. Otherwise, the DAC is liable to become a hotspot.

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[81] *Matter of Lemma v. Nassau County Police Officer Indem.n Bd.*, 31 N.Y.3d 523, 528 (Ct. App. 2018) ("[S]tatutory language should be harmonized, giving effect to each component and avoiding a construction that treats a word or phrase as superfluous.").
[82] *See id*.
[83] *See* Appendix 3 §§ C, D, E.
[84] *See* Scoping Plan at 63.
[85] *See id*.

In conclusion, SBS has not demonstrated that its net increase of co-pollutants in Hudson Falls and Glens Falls will be offset by a corresponding decrease in co-pollutants in the same two DACs. Thus, the facility will impose disproportionate co-pollutant burdens on DACs in Hudson Falls and Glens Falls, undermining the goals of the CLCPA in contravention of the project's stated purpose.

II. Use of SBS's Biosolids-Derived Biochar as an Agricultural Product May Result in Significant Impacts Due to Likely Contaminants in its Biochar Product.

As explained in Appendix 3 of these comments at greater length, applying biosolids-derived biochar to land presents risks, and data provided by SBS to DEC does not address Commenters' scientifically-supported concerns about the product's safety.[86] Available data suggests that sewage-sludge derived biochar is likely to be contaminated with a number of dangerous pollutants, including: heavy metals; emerging contaminants, like PFAS; and organic contaminants, like polyaromatic hydrocarbons ("PAH").[87] This contamination is in part the result of the fact that "[b]iosolids contain a broader range of emerging contaminants than any other pyrolysis feedstock."[88] The application of contaminated biochar to agricultural land should be of particular concern to the USDA.

SBS's own data demonstrates that biosolids-derived biochar subject to pyrolysis still contains PFAS.[89] SBS is likely to respond to this point by arguing that the finished biochar contains lower levels of PFAS and other contaminants than the raw biosolids feedstock. There are at least three problems with this argument. First, there remains a degree of scientific uncertainty regarding the ability of pyrolysis to remove a significant or sufficient amount of PFAS and other contaminants, like nonylphenol, chlorinated aromatic fractions and specific veterinary antibiotics, from finished biochar.[90] Second, research suggests that at least some toxic heavy metals become *more* concentrated in finished biochar than they were in feedstock.[91] Third, pyrolysis has the potential to create *new* contaminants in biochar, like carcinogenic PAH's.[92] SBS fails to adequately address the potential impacts that these biochar-laden contaminants may have on soil.

The concern about PAH is worth underscoring once more as it arose during email correspondence between Earthjustice and Dr. Andrea Beste, an agricultural scientist and member of the European Commission's Expert Group for Technical Advice on Organic Production. In the correspondence, attached for DEC's benefit as Appendix 4, Dr. Beste writes:

> In pyrolysis technology, organic material is carbonized at temperatures > 350°C and oxygen contents of< 2%. The higher the temperatures, the more stable the char. During

[86] *See* Appendix 3 § A.
[87] *See id.*
[88] *See id.* § A.a.
[89] *See id.* § A.b.
[90] *See id*. § A.c.
[91] *See id.* § A.d. Even Myles Gray, Program Director at the United States Biochar Initiative, a group that promotes the biochar industry, conceded that "[i]t is true that some heavy metals… remain in the biochar" during a legislative hearing on the SBS facility. *See* DEC, Public Hearing Transcript February 7, 2024.
[92] *See* Appendix 3 § A.e.

> this process of pyrolysis, a variety of aromatic organic substances are always formed, *regardless of the starting materials*. These include a number of pollutants that are difficult to break down, such as polycyclic aromatic hydrocarbons (PAHs) in particular, which are carcinogenic and mutagenic. These pollutants cannot be removed because they are too strongly bound to the material. For the same reason, measuring methods do not detect them or do not detect them sufficiently, which is why measured values and certificates have little informative value about the actual pollutant load.[93]

In 2021, the European Commission, a legislative-regulatory body of the European Union, made a finding specific to the safety and risks inherent to sewage-sludge derived biochar. The regulator determined that "it is, for the moment, unclear whether contaminants of emerging concern, such as pharmaceuticals… are completely eliminated [from sewage sludge-derived biochar] following the processing methods for pyrolysis."[94] Based on this finding that insufficient "information exists on the possible risks and safety parameters to be checked for"[95] biochar derived from sewage sludge, the Commission promulgated a regulation that prohibits the sale of sewage sludge-derived biochar as an "EU fertilising product." The relevant portion of the regulation states: "An EU fertilising product may contain pyrolysis… materials obtained through the thermochemical conversion under oxygen-limiting conditions of exclusively one or more of the following input materials… except… sewage sludge."[96] Thus, on safety grounds the EU denied its imprimatur to sewage sludge-derived biochar, requiring sellers to instead seek authorization from regulators in individual nation states in Europe to sell this product.

Commenters, once again, underscore that SBS is not seeking to establish a small-scale pilot project. Commenters' concerns are heightened by the fact SBS intends to introduce an especially large amount of sewage sludge-derived biochar into the stream of commerce. SBS plans to produce up to 23,520 tons of sewage sludge-derived biochar per year.[97] Without full assurance that the company's biochar product does not contain PFAS or other contaminants RBS should find that the project has a significant environmental impact.

III. The Pyrolysis Facility Risks Polluting a Nearby Aquifer.

Commenters note that the project site is also near an aquifer, and that they have concerns that said aquifer may be affected by leaks and other pollution from the facility thereby resulting in a significant impact.[98] This issue is discussed further in Appendix 3.

IV. The Facility May Not Have Adequate Safeguards to Protect Workers.

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[93] *See* Appendix 4, E-mail chain between Michael Youhana, Sr. Assoc. Att'y, Earthjustice, to Andrea Beste, Agricultural Scientist, Inst. for Soil Conservation and Sustainable Agriculture (emphasis added) (Correspondence has been partially redacted to protect the privacy of the individual who referred Earthjustice to Dr. Beste, as well as remove Dr. Beste's contact information); *see also* Jose M. De la Rosa et al., *Effect of Pyrolysis Conditions on the Total Contents of Polycyclic Aromatic Hydrocarbons in Biochars Produced From Organic Residues: Assessment of Their Hazard Potential*, 667 Science Total Env't 578 (2019).

[94] *See* Appendix 5, Exhibit 2, Explanatory Memorandum for Commission Delegated Regulation 2021/2088 at 2.

[95] *Id*.

[96] *See* Appendix 5, Exhibit 1, Commission Delegated Regulation, 2021 O.J. (L 427), at Annex 1, CMC 14 § 1(a).

[97] *See* BUD Petition at 4.

[98] *See* Appendix 3 §§ A, C, G; *see also* N.Y. Const. art. I, § 19.

Commenters are also concerned that the application materials do not describe sufficient safeguards to ensure the protection of workers from environmental and other harm.[99] These concerns are further elaborated upon in Appendix 3. Workers at industrial facilities, like SBS, are a potentially exposed or susceptible subpopulation. Thus, the SBS proposal may have significant effects on these workers.

V. Odors and Emissions from the Facility Could Violate the Constitutional Environmental Rights of New Yorkers and Thereby Have Significant Effects.

Commenters note that odors from waste management facilities may also prejudice the constitutional Environmental Rights of persons in New York.[100] Notwithstanding SBS's arguments to the contrary, and as discussed in Appendix 3 there is "a high likelihood" that odors from SBS's facility would unreasonably interfere with the comfort and enjoyment of life of the communities surrounding the proposed project given the low odor thresholds of the proposed facility's assessed emissions.[101] Similarly, there are residences in Moreau extraordinarily close to the facility – for example within a 1000 foot radius – that would face particularly severe exposure to odors and other emissions.[102] The facility's potential violation of state constitutional environmental rights of nearby residents[103] should be considered a significant impact for the purpose of NEPA.

VI. The Environmental Assessment Fails to Sufficiently Consider Reasonable Alternatives to the SBS Proposal.

NEPA's requirement to consider alternatives is "an independent requirement of an EA, separate from its function to provide evidence that there is no significant impact."[104] Specifically, RBS has "an obligation under NEPA to 'give full and meaningful consideration to all reasonable alternatives.'"[105] "Reasonable alternatives means a reasonable range of alternatives that are technically and economically feasible, and meet the purpose and need for the proposed action."[106] The explanation of alternatives is especially important to explore here as RBS cannot "fund the proposal unless … no practicable alternative exists to the proposed conversion" of farmland entailed in the proposal.[107]

The SBS alternatives analysis considers three alternatives to the project: 1) no action, 2) modification of the proposed plant size, and 3) modification of the proposed plant equipment.[108] The alternatives analysis provided by SBS in its EA does not suffice to discharge this obligation

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[99] *See* Appendix 3 § F.
[100] *See Fresh Air for the Eastside, Inc. v. State*, 2022 WL 18141022, *10 (Sup. Ct. Monroe Cnty. Dec. 20, 2022).
[101] *See* Appendix 3 § H.
[102] *See* DEC, Public Hearing Transcript February 7, 2024 (stating that one resident's home is "[n]ine hundred and sixty-five point three one feet to 24 be exact"). Perplexingly, these residences are not included in Air Permit Application Figure 3.
[103] *See* 6 NYCRR § 211.1; N.Y. Const. art. I, § 19.
[104] *Pub. Emps. for Env't Resp. v. United States Fish & Wildlife Serv.*, 177 F. Supp. 3d 146, 157 (D.D.C. 2016).
[105] *Env't Def. Ctr. v. Bureau of Ocean Energy Mgmt.*, 36 F.4th 850, 877 (9th Cir. 2022) (citation omitted), *cert. denied sub nom. Am. Petroleum Inst. v. Env't Def. Ctr.*, 143 S. Ct. 2582, 216 L. Ed. 2d 1192 (2023).
[106] *See* 40 CFR § 1508.1(z).
[107] *See* 7 § CFR 1970.4(a).
[108] *See* Environmental Assessment at 6.

because it fails to give meaningful consideration to reasonable alternatives that might better serve the specified purpose and need for the project: reducing GHG emissions associated with the landfilling of biosolids to comply with New York's CLCPA.

A. No Action Alternative

Two short paragraphs are devoted to the No Action Alternative. SBS acknowledges that "other management practices may grow to achieve the goal of landfill diversion," but only considers the drawbacks of three alternative management practices that can achieve landfill diversion: composting, direct land application, and incineration of biosolids.[109] The analysis fails to consider and compare the proposal with other known and possible biosolids management alternatives such as anaerobic digestion, gasification, and supercritical water oxidation.

The No Action Alternative analysis also fails to compare the environmental impacts of the proposal with the impacts of improved environmental management practices that could be adopted by New York State for biosolids that end up at landfills in the coming years. For example, the CLCPA Scoping Plan recommends capturing and utilizing unavoidable emissions at landfills,[110] while the Sierra Club-Atlantic Chapter has argued that the least-bad option for managing PFAS from landfilled biosolids in the short term involves the incorporation of protective lining systems and robust pretreatment for leachate at these disposal sites.[111]

B. Modified Size Alternative

As mentioned above, at full build out the SBS facility will process up to 235,200 wet tons of biosolids a year and produce up to 23,520 tons of biosolids-derived biochar. SBS's exploration of alternatives to the proposed facility's size is insubstantial. SBS merely writes:

> The proposed capacity is based on a combination of pilot scale testing and the known local and regional biosolids market. These factors have resulted in an optimal design that can be constructed in phases.[112]

Oddly the evaluation of this particular alternative contains no discussion whatsoever of "the environmental impacts of the proposed… alternative[]" as required by NEPA.[113] The EA should at least consider what seems obvious: a smaller facility will have smaller localized environmental impacts. While the localized impacts of such a large plant are apparent, the benefits are less clear.

Although SBS asserts that the large size of the proposed facility is "optimal" based, in part, on an existing market for biosolids, an end-use marketing plan submitted by SBS in a May 2023 application to DEC identifies only two distributors interested in the company's biochar

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[109] *See id*.
[110] *See* Scoping Plan at 333, 335.
[111] *See* Sierra Club, Report: Sewage Sludge 'Fertilizer' Contaminates Farms With Toxic PFAS at 29, https://www.sierraclub.org/atlantic/report-sewage-sludge-fertilizer-contaminates-farms-toxic-pfas (last visited June 26, 2024).
[112] *See* Environmental Assessment at 6.
[113] *See* 40 CFR § 1501.5(c)(2).

product.[114] These two distributors have made non-binding commitments to purchase only 2,000 tons of biochar a year.[115] Needless to say this demand could be satisfied through the construction of a plant with a much smaller biosolids throughput.

Assuming, *in arguendo*, that a market for 23,520 tons per year of biosolids-derived biochar exists, SBS has failed to demonstrate that producing all of this biochar in a single, pollution burdened location is the optimal means for serving the stated purpose and need for the project. A satisfactory alternatives analysis would, at minimum, consider whether an equal number of New York's biosolids could be diverted from landfills to multiple, smaller biochar production facilities throughout New York. A more satisfactory alternatives analysis would compare this distributed biochar production alternative with SBS's concentrated-hotspot proposal.

A smaller facility alternative deserves a thorough analysis. Substantially reducing the size of the proposed facility might allow SBS to avoid generating a net increase in co-pollutants in the Hudson Falls and Glens Falls DACs. For example, co-pollutant emissions in the DACs would likely be net-zero if the SBS facility pyrolyzed *only* the 8,000 tons of biosolids a year that are already sent from the Glens Falls WWTP to the Hudson Falls Wheelabrator Incinerator. Commenters know it is possible to commercially operate a biochar production facility on this smaller scale. The Silicon Valley Clean Water biochar production facility, for example, processes a maximum of 7,000 tons of biosolids and produces only 700 tons of biochar a year. By contrast, Commenters are unaware of a pyrolysis facility in the US or the world that produces anywhere near 23,520 tons of biosolids-derived biochar a year.

C. Modification of Plant Equipment Alternative

SBS does not explain whether it can operate its thermal oxidizer at a higher temperature and whether that would reduce likely environmental impacts. SBS also does not explore an alternative whereby its proposed facility incorporates equipment to pretreat wastewater before it is discharged into the Glens Falls wastewater treatment plant.

D. Alternatives to the Proposed Location

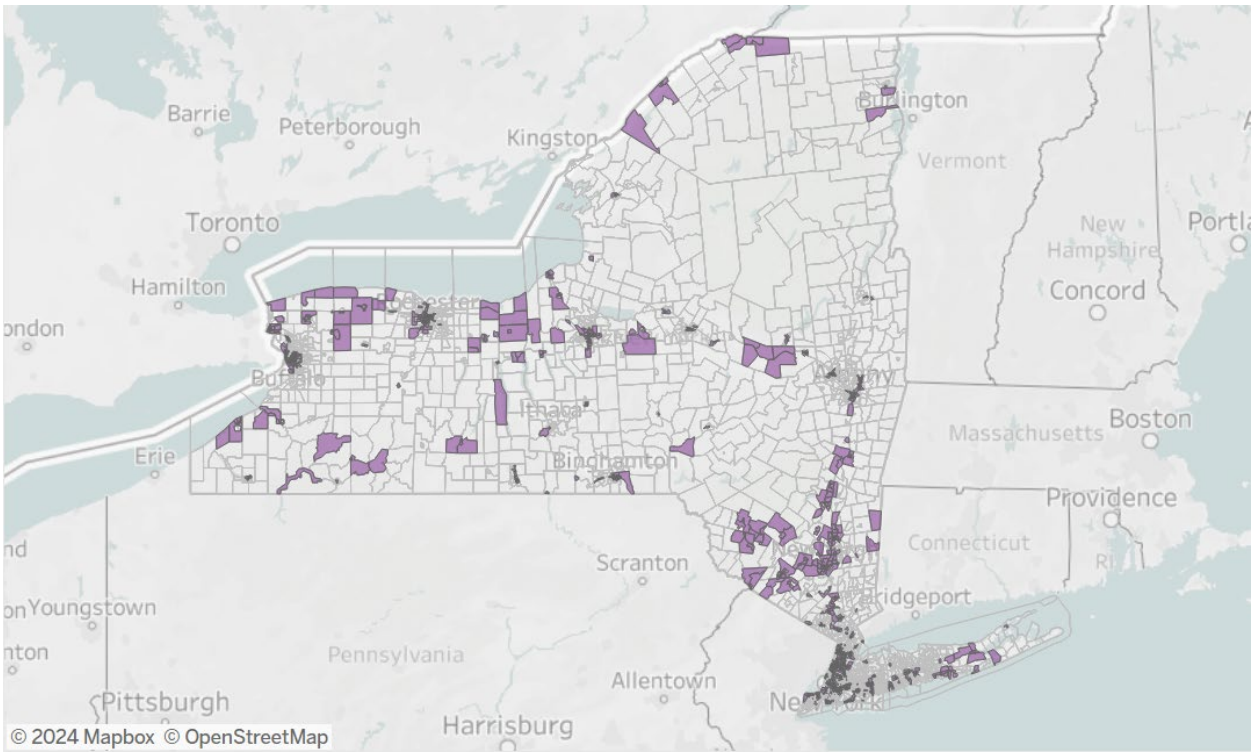
SBS's EA fails to consider alternative locations for the proposed facility. There is no reason to believe siting the proposal in a different location, far away from a DAC would be less technically or economically feasible. In fact, less than two months ago SBS's CEO stated:

From the negative publicity and all the noise of Moreau, the doors have been opened in other municipalities in upstate New York… We're engaging with other municipalities who have

[114] *See* Saratoga Biochar Solutions, Carbon Fertilizer Marketing & Distribution Plan at 4 (May 15, 2023), https://saratogabiochar.com/wp-content/uploads/2024/01/O_Petition-for-Case-Specific-BUD-May-15-2023.pdf (hereinafter "End-Use Marketing Plan").
[115] *See* AgroShield Letter of Intent at 2 (Mar. 15, 2022); BioEnergy Innovations Glob., Inc., Letter of Intent at 2 (Mar. 18, 2022), https://saratogabiochar.com/wp-content/uploads/2024/01/O_Petition-for-Case-Specific-BUD-May-15-2023.pdf.

expressed an interest, who have literally said, 'Hey, if Moreau doesn't want your project, we're interested.[116]

Here, it is worth noting that the vast majority of census tracts in New York are not state-designated DACs with high pre-existing health and pollution burdens. A map of the locations of state-designated DACs throughout New York is illustrative.[117]

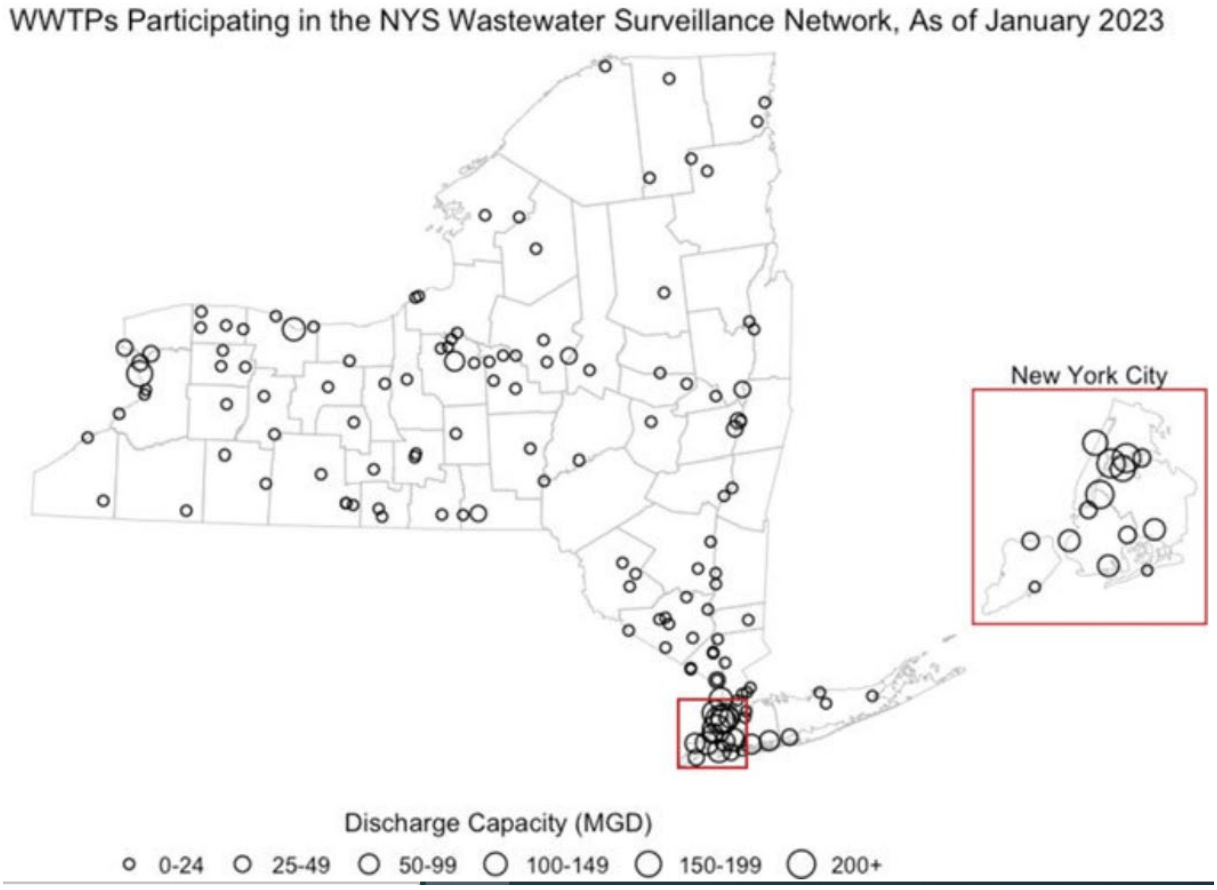


Only those census tracts shaded in purple are DACs. The white census tracts are non-DACs. A complete alternatives evaluation would consider the impacts and relative benefits of siting this project within a census tract far away from any DAC.

Another location-based alternative that the EA should consider – and mentioned briefly above – is distributing smaller biosolids processing facilities in multiple strategic locations throughout New York. Assuming, *in arguendo*, that these facilities really are GHG-negative, the distributed biochar production alternative might achieve SBS's stated purpose and need in a more effective manner. Rather than concentrating the processing of 75,000-235,200 annual tons of biosolids in a single location, this distributed alternative would rely on smaller scale pyrolysis facilities (e.g. facilities with an annual throughput of 3,000-15,000 tons of biosolids). The smaller-scale facilities would be distributed more evenly throughout the state to avoid the

[116] Alex Portal, *Saratoga Biochar Speaks to Fulton County Officials About a Move from Moreau, Threatens Lawsuit*, Post Star (May 1, 2024), https://poststar.com/news/local/business/development/saratoga-biochar-speaks-to-fulton-county-officials-about-a-move-from-moreau-threatens-lawsuit/article_d05e5fe8-07d1-11ef-838a-6bf97325eb33.html.
[117] DAC Map.

creation of a single pollution hot-spot. It is also possible that a multiplicity of small pyrolysis facilities across a wide geographic portion of New York could reduce truck miles traveled to and from the equally widely distributed WWTP's throughout New York—thereby reducing transportation emissions.[118]



In aggregate, these smaller scale facilities could manage 235,200 tons of biosolids annually, but the localized and aggregate environmental impacts of the miniature facilities might be less significant than those of SBS's concentrated-hotspot proposal. While Commenters are not endorsing this distributed biochar production alternative, it merits consideration in an alternatives analysis.

E. Alternatives to the Proposed Agricultural Use for SBS's Biochar Product

SBS plans to market the biochar produced at the facility as an agricultural amendment or "Carbon Fertilizer™" As noted above, the European Commission has determined that insufficient "information exists on the possible risks" of using sewage sludge-derived biochar as a fertilizer as "it is, for the moment, unclear whether contaminants of emerging concern, such as pharmaceuticals… are completely eliminated [from the biochar] following the processing

[118] Research Gate, WWTPs Participating in the NYS Wastewater Surveillance Network, As of January 2023, https://www.researchgate.net/figure/Map-of-Wastewater-Treatment-Plants-Participating-in-the-New-York-State-Wastewater_fig2_373075659.

methods for pyrolysis." [119] Alternatives to using SBS's biochar could reduce the risk of entry of such contaminants into the food system and the resultant exposure of human beings to said contaminants. A complete alternatives analysis must therefore consider the environmental impacts of alternative disposal pathways or end-uses for biochar.

One possible alternative for the biochar would be disposal at a lined landfill with robust leachate pre-treatment systems. For sewage sludge, Sierra Club-Atlantic Chapter has determined that, at least in the short term, this disposal option is less risky to human health than use of PFAS-laden sludge in agriculture.[120] The same underlying assumptions may or may not hold true for biochar and should at least be considered in the alternatives analysis—even if they are ultimately rejected. Simple disposal of the biochar in this manner might be technically and economically beneficial for SBS. The company's end-use marketing plan states "we are in an advantageous situation whereby we can attribute some profit to Carbon Fertilizer™ even when the product is disposed of."[121]

A possibly preferable end-use for biochar is its incorporation into certain construction materials, like concrete. Using biochar in this manner may reduce the risk of entry of PFAS and other contaminants into the food system. A complete alternatives analysis would consider whether incorporation of SBS's biochar into construction materials rather than into soil would reduce the risk of human exposure to contaminants. Here, it is worth noting that New York has determined that "reducing the embodied carbon of concrete... is a critical front in the collective global effort to preserve the climate."[122] Use of biosolids-derived biochar in concrete is not a novel idea. Another company, Aries, is seeking to build a biosolids-derived biochar production plant in Taunton, Massachusetts, and hopes to sell its finished biochar as a binding agent mixed with concrete. This end-use is not without risks. Contaminants can leach from concrete as the construction material breaks down. Concrete used in a building probably breaks down more slowly and leaches less readily into water supplies than concrete used for a bridge or sidewalk.[123] The comparative contaminant-leach-rates of various biochar-derived concrete end-uses would need to be studied in a complete alternatives analysis.[124]

F. Alternatives to Project Elements Identified by SBS that Have the Potential to Affect a Resource

According to applicable regulations "if a specific project element is likely to adversely affect a resource, at least one alternative to that project element" must be included in the EA.[125] Several specific project elements are identified by SBS as having "potential impacts" on "environmental resources."[126] To comply with the law, SBS must analyze at least one alternative

[119] *See* Appendix 5, Exhibit 2, Explanatory Memorandum for Commission Delegated Regulation 2021/2088 at 2.
[120] *See* Sierra Club, Report, *supra* note 111 at 29.
[121] *See* End-Use Marketing Plan at 3.
[122] New York State Senate, Senate Bill S542A, https://www.nysenate.gov/legislation/bills/2021/S542.
[123] Susannah Sudborough, What Do Scientist Say About Taunton Gasification Plant? Is It Safe? Can We Know?, Taunton Gazette (Apr. 27, 2021), https://www.tauntongazette.com/story/news/environment/2021/04/27/taunton-aries-gasification-pollution-pfas-scientists/7346043002/.
[124] *Id*.
[125] *See* 7 CFR § 1970.102(a)(3).
[126] *See* Environmental Assessment at 30.

to each project element identified on this list as having a potential effect on an identified resource. For example, the list of project elements indicates that the storage of sulfuric acid within an aboveground tank system has a potential effect on the resource of "human health & safety." The EA must therefore examine at least one alternative to the storage of this chemical in aboveground tanks.

VII. To Commenters' Knowledge, Local Governments Were Not Involved in the Environmental Review Process at an Early Stage.

RBS and SBS are required by regulation to "involve… state and local governments… early in the Agency's environmental review process to the fullest extent practicable."[127] The EA suggests that RBS and SBS have not complied with this regulatory requirement. The municipality where the facility is planned to be sited, the Town of Moreau, is not included on SBS's the list of governmental authorities consulted during the EA process.[128]

For its part, the Town of Moreau administers local environmental and public health laws that govern the construction and operation of the facility. The Town is well positioned to advise RBS as to whether the SBS proposal "would violate... local law protecting the environment."[129]

VIII. Conclusion

For the reasons stated above RBS must find that significant impacts will result from the SBS project and must ensure that a more thorough and comprehensive NEPA analysis of the project is conducted.

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[127] *See* 7 § 1970.4(c).
[128] *See* Environmental Assessment at 32.
[129] *See* 40 CFR § 1501.3(b)(2)(iv).