
Final Environmental Assessment

**Manufacturing Deployment Office (MDO) in the Office of Critical
Minerals and Energy Innovation (CMEI)**

**Energy Grant Opportunity – Infrastructure Investment and Jobs Act (IIJA)
Battery Materials Processing and Battery Manufacturing
(DE-FOA-0002678)**

**DE-MS0000008 Infrastructure Investment and Jobs Act
(IIJA) Battery Grade PVDF Manufacturing Facility**

DOE/EA-2237

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TRC

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Acronyms and Abbreviations

Notation	Description
AJD	Approved Jurisdictional Determination
AOI	Area of Interest
APE	Area of Potential Effect
BLS	Bureau of Labor Statistics
BMP	Best Management Practice
CAA	Clean Air Act
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CH ₄	Methane
CO ₂	Carbon dioxide
CO ₂ e	Carbon dioxide equivalents
CWA	Clean Water Act
DNR	Department of Natural Resources
DOE	U.S. Department of Energy
EA	Environmental Assessment
EO	Executive Order
EPD	Environmental Protection Division
EV	Electric Vehicle
FOA	Funding Opportunity Announcement
FR	Federal Register
FTE	Full-Time Equivalent
GDOT	Georgia Department of Transportation
GIS	Geographic Information System
GNAHRGIS	Georgia Natural, Archaeological and Historic Resources GIS
HAP	Hazardous air pollutant
HSE	Health, Safety, and Environmental
IEA	International Energy Agency\
IJA	Infrastructure Investment and Jobs Act
IPaC	Information for Planning and Consultation
km	Kilometer(s)
MGD	Million Gallons Per Day
MOU	Memorandum of Understanding

Notation	Description
MSA	Metropolitan Statistical Area
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NO ₂	Nitrogen dioxide
NRCS	Natural Resources Conservation Service
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
NSA	Noise Sensitive Area
NSR	New Source Review
OCPSF	Organic Chemicals, Plastics and Synthetic Fibers
OMB	Office of Management and Budget
OSHA	Occupational Safety and Health Administration
PFAS	Per- and polyfluoroalkyl substances
PLC	Polymers of low concern
PM _{2.5}	Particulate matter smaller than 2.5 microns
PM ₁₀	Particulate matter smaller than 10 microns
Project	The proposed construction of a chemical manufacturing facility for the production of polyvinylidene fluoride for use in electric vehicle batteries
Project Site	An 81-acre parcel east of Clanton Road, south of Tobacco Road, in Augusta, Richmond County, Georgia
PSD	Prevention of Significant Deterioration
PVDF	Polyvinylidene Fluoride
RCRA	Resource Conservation and Recovery Act
<i>Sackett</i>	U.S. Supreme Court Case <i>Sackett v. EPA</i>
SHPO	State Historic Preservation Office
SO ₂	Sulfur dioxide
Syensqo	Solvay Specialty Polymers USA, LLC, a member of the Syensqo Group
SWPPP	Stormwater Pollution Prevention Plan
TAP	Toxic air pollutants
TMDL	Total Maximum Daily Load
U.S.C.	U.S. Code
UDP	Unanticipated Discovery Plan
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
VOCs	Volatile organic compounds
WOTUS	Waters of the United States

1.0 Introduction and Purpose and Need

1.1 Introduction

This Environmental Assessment (EA) was prepared by the U.S. Department of Energy (DOE) – National Energy Technology Laboratory pursuant to the National Environmental Policy Act of 1969 (NEPA; Title 42, Section 4321 et. Seq., U.S. Code [U.S.C.]) and DOE's NEPA implementing procedures (Chapter 10, Part 1021, Code of Federal Regulations [CFR]) to evaluate the potential environmental and social impacts of DOE's proposed action to provide funding to Solvay Specialty Polymers USA, LLC (a member of the Syensqo Group, "Syensqo" in this document)¹, Syensqo's proposed project, and the No-Action Alternative. The purpose of this EA is to provide the information needed to assess the potential environmental and social impacts associated with construction and operations of a proposed facility which would produce cathode battery materials at the factory scale in Augusta, Richmond County, Georgia. This EA provides site-specific details of the proposed action and addresses potential impacts of proposed construction and operations across 14 relevant resource areas.

1.2 Background

The Manufacturing Deployment Office (MDO) in the Office of Critical Minerals and Energy Innovation (CMEI), issued Funding Opportunity Announcement (FOA) DE-FOA-0002678, under which FOA-awarded projects will be funded, in whole or in part, with funds appropriated by the Infrastructure Investment and Jobs Act, IIJA (2021)

DOE prepared an environmental synopsis to evaluate and compare potential environmental impacts for each proposal it deemed to be within the competitive range from proposals received in response to the FOA. The Department used the synopsis to evaluate appreciable differences in potential environmental impacts from those proposals. The synopsis included

1. a brief description of background information for the Funding Opportunity area of interest,
2. a general description of the proposals DOE received in response to the Funding Opportunity Announcement and deemed to be within the competitive range,
3. a summary of the assessment approach DOE used in the initial environmental review to evaluate potential environmental impacts associated with the proposals, and
4. a summary of environmental impacts that focused on potential differences among the proposals.

Appendix A contains a copy of the environmental synopsis for this project developed for DE-FOA-0002678 proposal submissions.

DOE initially selected 21 projects under twelve topic areas of interest and allocated cost-shared funding for project definition activities; all of the projects' federal funding is subject to the completion of project-specific NEPA reviews. DE-FOA-0002678 supports new, retrofitted, and

¹ In December 2023, Solvay SA spun off its specialty activities to a new company, Syensqo SA. Syensqo SA is the ultimate parent company of Solvay Specialty Polymers USA, LLC.

expanded commercial-scale domestic facilities to produce battery materials, processing, and recycling and manufacturing demonstrations.

The applications reviewed under this FOA were selected for negotiations in October 2022. Twelve topic areas of interest (AOIs) were included in the FOA and each AOI outlined project objectives that were specific to that AOI. The twelve AOIs were separated according to the IIJA sections 40207(b)(3)(A) and 40207(c)(3)(A). AOIs 1–3 and 6–11 were directed to commercial-level projects. AOIs 4, 5, and 12 were directed to demonstration-level projects. The AOIs are detailed in Table 1.

Table 1. AOIs under DE-FOA-0002678

Areas of Interest	Title
Battery Material Processing Grants pursuant to Section 40207(b)(3)(A)	
1	Commercial-scale Production Plants for Domestic Separation of Critical Cathode Battery Materials from Domestic Feedstocks
2	Commercial-scale Domestic Production of Battery-Grade Graphite from Synthetic and Natural Feedstocks
3	Commercial-scale Domestic Separation and Production of Battery-grade Precursor Materials Open Topic
4	Demonstrations of Domestic Separation and Production of Battery-grade Materials from Unconventional Domestic Sources
5	Demonstrations of Innovative Separation Processing of Battery Materials Open Topic
Battery Component Manufacturing and Recycling Grants pursuant to Section 40207(c)(3)(A)	
6	Commercial-scale Domestic Battery Cell Manufacturing
7	Commercial-scale Domestic Battery Cathode Manufacturing
8	Commercial-scale Domestic Battery Separator Manufacturing
9	Commercial-scale Domestic Next Generation Silicon Anode Active Materials and Electrodes
10	Commercial-scale Domestic Battery Component Manufacturing Open Topic
11	Commercial-scale Domestic Battery Recycling and End-of-Life Infrastructure
12	Domestic Battery Cell and Component Manufacturing Demonstration Topic

DOE selected the project proposed by Syensqo under AOI-3 of DE-FOA-0002678 to support the development of a new battery materials manufacturing facility in Georgia (the proposed ‘Project’ or ‘Facility’). DOE’s proposed action is to award \$178,218,568 of the Project’s total award value of \$516,735,964 in a cost-shared arrangement.

1.3 Purpose and Need for Department of Energy Action

The overall purpose and need for DOE action – pursuant to the Manufacturing Deployment Office (MDO) in the Office of Critical Minerals and Energy Innovation (CMEI) program and the funding opportunity under the IIJA – is to accelerate the development of a resilient supply chain for high-capacity batteries by increasing investments in battery materials processing and battery manufacturing projects. IIJA investments in the battery supply chain will include five main steps including (1) raw material production, (2) materials processing including material refinement and processing, (3) battery material/component manufacturing and cell fabrication, (4) battery pack and end-use product manufacturing, and (5) battery end-of-life and recycling.

DOE considers Syensqo's proposed Project and location to be one that can meet the focus of the IIJA sections: a) creating and retaining good-paying jobs; b) supporting inclusive and supportive workforce development efforts to strengthen America's competitive advantage; c) ensuring that the United States has a viable battery materials processing industry to supply the North American battery supply chain; d) expanding the capabilities of the U.S. in advanced battery manufacturing; e) enhancing national security by reducing the reliance of the U.S. on foreign competitors for critical materials and technologies; f) enhancing the domestic processing capacity of minerals necessary for battery materials and advanced batteries; and g) ensuring that the U.S. has a viable domestic manufacturing and recycling capability to support and sustain a North American battery supply chain. The Project Site was selected due to its location in an existing industrial zone, its access to transportation infrastructure and public utilities, and its potential to have a positive economic impact on the regional and local community.

DOE intends to further this purpose and satisfy this need by providing financial assistance under cost-sharing arrangements to this and the other projects selected under DE-FOA-0002678. This Project would meet the objective of recruiting, training, and retaining a skilled workforce in communities that have lost jobs due to the displacements of fossil energy jobs. This Project would also meaningfully assist in the nation's economic recovery by creating manufacturing jobs in the U.S. in accordance with the objectives of the IIJA.

1.4 National Environmental Policy Act and Related Procedures

This EA was prepared in accordance with NEPA, as amended (42 U.S.C. 4321), the President's Council on Environmental Quality (CEQ) regulations for implementing NEPA (40 CFR 1500-1508, as of June 2024), and DOE's implementing procedures for compliance with NEPA (10 CFR 1021). DOE is aware that the Council on Environmental Quality (CEQ) issued a final rule to rescind its NEPA implementing regulations at 40 C.F.R. Parts 1500–1508, effective April 11, 2025, and DOE issued new NEPA Implementing Procedures in June 2025. To promote completion of its NEPA review in a timely manner and without delay, in this Final EA DOE is voluntarily relying on the CEQ's guidance and DOE's own procedures for implementing NEPA, to meet its obligations under NEPA, 42 U.S.C. §§ 4321 *et seq.* Although this document was prepared under the previous guidance, updates were made where practicable to align with more recent guidance. NEPA, as amended, and the implementing procedures require that DOE, as a federal agency:

- Assess the environmental impacts of its proposed action;
- Identify any adverse environmental effects that cannot be avoided, should the proposed action be implemented;
- Propose mitigation measures for adverse environmental effects, if appropriate;
- Evaluate alternatives to the proposed action, including a no-action alternative; and

-
- Describe the cumulative impacts of the Proposed Action together with other past, present, and reasonably foreseeable future actions.

These provisions must be addressed before a final decision is made to proceed with a proposed federal action that has the potential to cause impacts on the human environment, including providing federal funding to a project. This EA is intended to meet DOE's regulatory requirements under NEPA and provide DOE with the information needed to make an informed decision about providing financial assistance. In accordance with the above regulations, this EA allows for public input into the federal decision-making process; provides federal decision-makers with an understanding of the potential environmental effects of their decisions before making these decisions; and documents the NEPA process.

1.5 Relevant Laws and Regulations

The proposed Project requires no federal approvals or funding triggering NEPA review other than the proposed DOE funding award under DE-FOA-0002678. The following laws, regulations, and executive orders have been considered in preparing this EA:

-
- Bald and Golden Eagle Protection Act
- Clean Air Act
- Clean Water Act (CWA)
- Comprehensive Environmental Response, Compensation, and Liability Act
- Endangered Species Act
-
- Executive Order on America's Supply Chains (EO 14017)
- Floodplain Management (EO 11988)
- Migratory Bird Treaty Act
- Organic Chemicals, Plastics, and Synthetic Fibers (OCPSF) Effluent Guidelines and Standards (40 CFR Part 414)
- Pollution Prevention Act of 1990
- Protection of Wetlands (EO 11990)
- Resource Conservation and Recovery Act (RCRA)
- The Noise Control Act of 1972, as amended

1.6 Agency Consultation

DOE initiated consultation with the Georgia Historic Preservation Division, which serves as the State Historic Preservation Office (SHPO) under Section 106 of the National Historic Preservation Act (NHPA). The SHPO response letter is included in Appendix B. The SHPO determined that "the subject project, as proposed, will have no adverse effect to historic properties within its Area of Potential Effect (APE), as defined in 36 CFR Part 800.5(d)(1), due to the scope and location of the work, existing modern intrusions, and previous ground disturbance."

1.7 Consultation with Tribal Nations

DOE initiated consultations with the Muscogee (Creek) Nation, the Eastern Shawnee Tribe of Oklahoma, the Coushatta Tribe of Louisiana, the Catawba Nation, and the Alabama Quassarte Tribal Town, through each Tribal Nation's Tribal Historic Preservation Office. Response letters received are included in Appendix B of this EA.

1.8 Prior DOE Actions Within the Project Site

There have been no prior DOE actions within the Project Site.

2.0 Proposed Action and Alternatives

2.1 Department of Energy's Proposed Action

DOE proposes, through a grant awarded to Syensqo, to partially fund the construction of a chemical manufacturing facility for the production of polyvinylidene fluoride (PVDF) for use in electric vehicle (EV) batteries, adjacent to its existing industrial facility. The Project would support the anticipated growth of the EV and hybrid EV industries. DOE's proposed action is to award \$178,218,568 of the Project's total award value of \$516,735,964 in a cost-shared arrangement.

2.2 Syensqo's Proposed Project

Syensqo currently operates a polymer-manufacturing plant in Augusta, Richmond County, Georgia (visible in the top of Figure 2). The existing plant has been in operation since 1984 and has been operated by Syensqo's predecessor since 2001. It has undergone incremental expansions.

The proposed Project would involve the construction and operation of a chemical manufacturing facility for the production of PVDF through various chemical reactions and separations. PVDF is a highly non-reactive thermoplastic used in applications requiring the highest purity, as well as resistance to solvents, acids, and hydrocarbons. The new operations would provide material to be used by battery manufacturers to support the production of batteries for more than 5 million EV batteries per year at full capacity.

PVDF is a fluoropolymer that has been demonstrated to meet the "polymers of low concern" (PLC) criteria, and as such does not present notable concern for human health or the environment. PLC criteria were developed over time within regulatory frameworks around the world as an outcome of chemical hazard assessment processes, which identified physical-chemical properties of polymers that determine polymer bioavailability and thereby report a polymer's potential hazard. For example, many of the physicochemical properties, such as molecular weight, limit the ability of a polymer to cross the cell membrane and therefore limit its bioavailability (Korzeniowski et al., 2022; Kostal, 2016; Lipinski et al., 2001; U.S. Environmental Protection Agency [USEPA], 2012).

PVDF is part of the per- and polyfluoroalkyl substance (PFAS) family. PFAS are divided into two primary categories: non-polymers and polymers (Henry et al., 2018). Certain non-polymer PFAS substances, for example, short- and long-chain per- and polyfluoroalkyl carboxylic acids and sulfonic acids (fluorosurfactant processing aids), have received regulatory scrutiny recently due to their toxicity, as well as their persistence, potential to bioaccumulate, and/or mobility in the environment. Regulatory processes have been launched worldwide to address these concerns related to specific non-polymer PFAS.

The technology used to produce PVDF for this purpose incorporates two advancements that avoid pitfalls present in other PVDF technologies. First, the project does not use a fluorosurfactant to facilitate the polymerization. Second, the polymerization is not conducted as an emulsion but rather is conducted as a suspension, and suspension technology does not require the use of a surfactant to produce the PVDF product. Because the proposed Project will not use fluorosurfactant processing aids for the manufacture of PVDF, these non-polymer PFAS

should not be present in the proposed Project's emissions and discharges.² Potential emissions and discharges of other non-polymer PFAS, if any, such as unintended by-products formed during manufacturing, will be evaluated during the design of the Project and controlled, as appropriate, through installation of permitted pollution control devices. Additionally, the Project will undergo a rigorous permitting process and has been designed to comply with relevant and applicable regulations, including the USEPA's Pretreatment Standards for New Sources under the OCPSF Effluent Guidelines. As these regulations, standards, and guidelines evolve, the Project will be updated as necessary to remain in compliance.

The proposed Facility would be located on an approximately 81-acre parcel located east of Clanton Road, south of Tobacco Road, in Augusta, Richmond County, Georgia, adjacent to and south of Syensqo's existing facility (Figure 1). Approximately 15 acres of the Project Site was previously developed for industrial use by Weylchem as a chemical manufacturing facility. Based on a review of historical aerial imagery of the Project Site (e.g., Google, 2023), this facility was constructed circa 1977-1981 and decommissioned circa 2007-2011. The majority of the onsite trees had been clearcut in approximately late-2010. Between 2011 and 2013, most of the aboveground structures were removed or demolished. By 2016, only the concrete building pads of aboveground structures remained, and much of the previously developed area was undergoing secondary vegetation succession. Currently, most of the Project Site is wooded with a mixture of young second-growth evergreen and deciduous tree species. The Project Site is zoned Heavy Industrial and contains an existing rail spur. The Project Site is served by existing natural gas, water, and electric utilities, which would be upgraded to serve the proposed Facility.

Syensqo would redevelop the Project Site to support the PVDF manufacturing process. The proposed Project will generally include a primary process furnace and raw material purification towers; one primary building enclosing the main PVDF manufacturing plant; a recycled vapor treatment system comprising compression, liquefaction, and purification towers, monomer building and refrigeration unit; cooling tower and air compressors; a wastewater treatment equipment area; rail sidings; a large storage/laydown yard; and a stormwater management system, including stormwater pond. Steam and nitrogen required for the manufacturing process will be extended from Syensqo's existing facility. In addition, employee parking will be provided by Syensqo's existing facility. These structures are shown in Figure 2.

2.3 Construction

Construction activities would begin with site preparation, including clearing and grading of approximately 76 acres of the parcel, including the previously developed area as well as a portion of the undeveloped area. Temporary construction facilities, such as unpaved access roads for construction equipment, staging and laydown areas, and construction-phase best management practices (BMPs) would be constructed first.

Early site preparation would be followed by civil engineering, including grading, fill placement and compaction, pouring of foundations, and installation of underground utilities (water and electric). This phase would be followed by the construction of the buildings/structures as listed

² The Project will receive process water from the City of Augusta Utilities Department. Fluorinated surfactant processing aids including perfluorooctanoic acid, perfluorooctane sulfonic acid, and perfluorohexane sulfonate have been detected in the City's water (Augusta Utilities, 2023; Greater Augusta Utility District, 2023). Non-polymer PFAS present in the City water could thus be introduced into the Project's emissions and water discharges.

above, followed by the installation of mechanical systems and process equipment. During this time, the existing railroad spur would be reconfigured to serve the Project. Construction activities once commenced are expected to take up to 24 months to complete. During the construction phase, the Project is expected to employ up to a peak of approximately 500 construction personnel. Approximately 15 truck trips and 35 light-vehicle trips per week are anticipated for construction deliveries.

2.4 Operations

Following construction, the Project's operational phase is anticipated to be approximately 30 years. During operations, the Project is expected to employ approximately 100 full-time equivalent (FTE) operations personnel, providing these personnel with benefits such as healthcare, workforce training, and other employer-funded benefits. Deliveries of feedstock and shipment of products would be by rail or truck. For those supplies that would be delivered by truck, Syensqo estimates that approximately 20 truck trips per week would be required. For outgoing product, Syensqo estimates that approximately 80 truck trips per week would be required. In addition, commuter vehicles would add approximately 1,000 light-vehicle trips per week. Railcars would also be used and would range from 10 to 15 railcars per week.

2.5 Project Benefits

The benefits of the proposed Project would include redevelopment and productive use of an unused industrial property as well as production of electrode binders, separator coatings, and electrolyte additives that help expand the performance and adoption of EV batteries. Electrification of mobile sources helps offset generation of greenhouse gases (GHG) from combustion of fossil fuels, particularly when the electricity is generated from non-fossil fuel sources such as wind, solar, nuclear, and hydroelectric. In addition to reduction of GHGs, criteria pollutant pollution (e.g., particulate matter, nitrogen oxides, and sulfur dioxide) would be reduced by electrification of mobile sources.

2.6 Interim Actions and Categorical Exclusions

On August 16, 2023, DOE issued a Memorandum of Understanding (MOU, Appendix C) describing the allowable interim actions for the Project. DOE issued a second MOU on July 30, 2024, describing additional interim actions for the Project. In accordance with criteria established by the CEQ in its then effective regulations implementing the procedural provisions of the NEPA (40 CFR Parts 1500-1508), DOE's NEPA implementing regulations (10 CFR Part 1021), which rely on those criteria, and DOE Order 451.1 B, *National Environmental Policy Act Compliance Program*, DOE has reviewed the *Environmental Questionnaire* submitted and found it acceptable to proceed with the following project tasks from Syensqo's Statement of Project Objectives (Table 2).

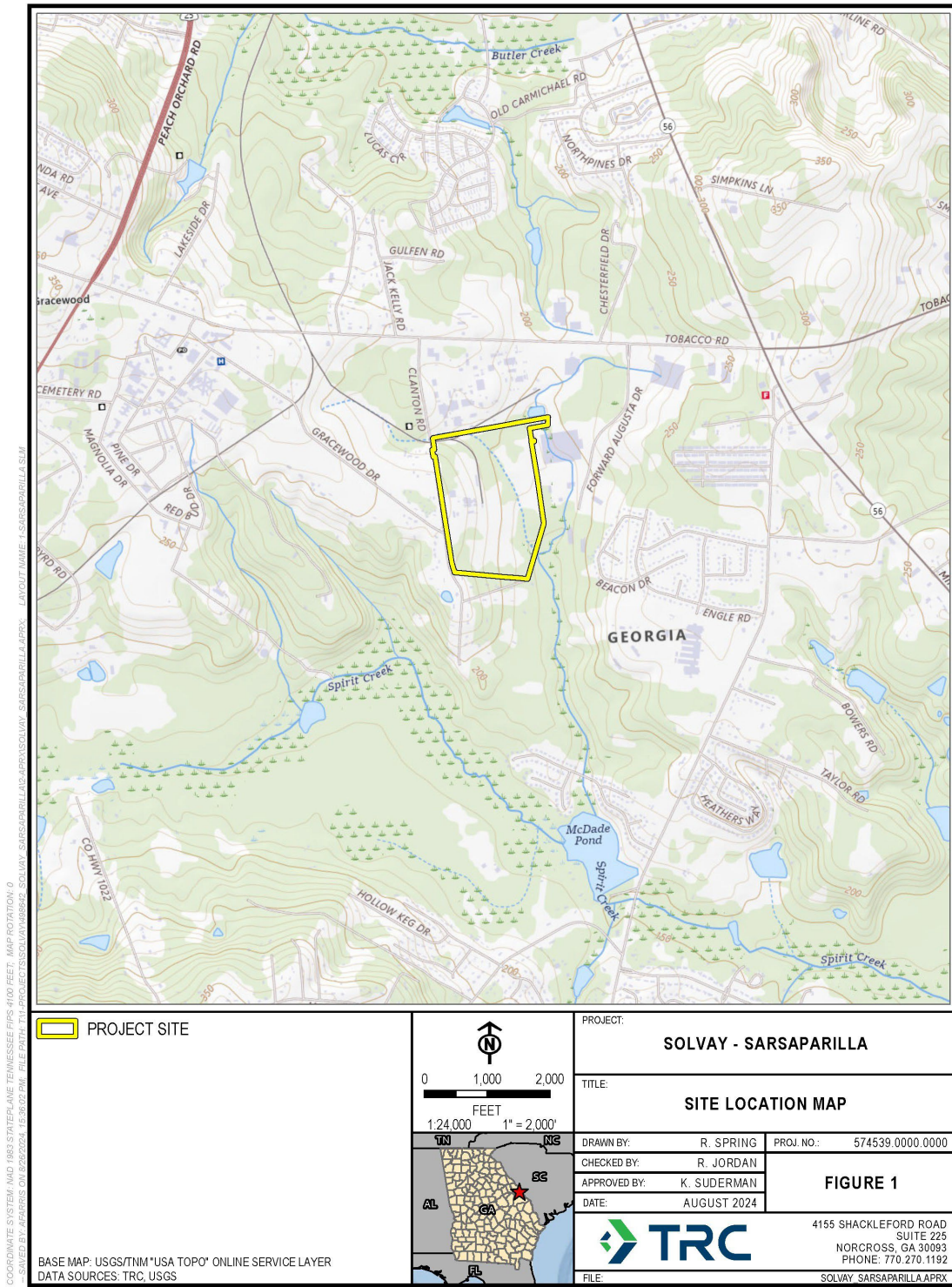


Figure 1. Site Location Map

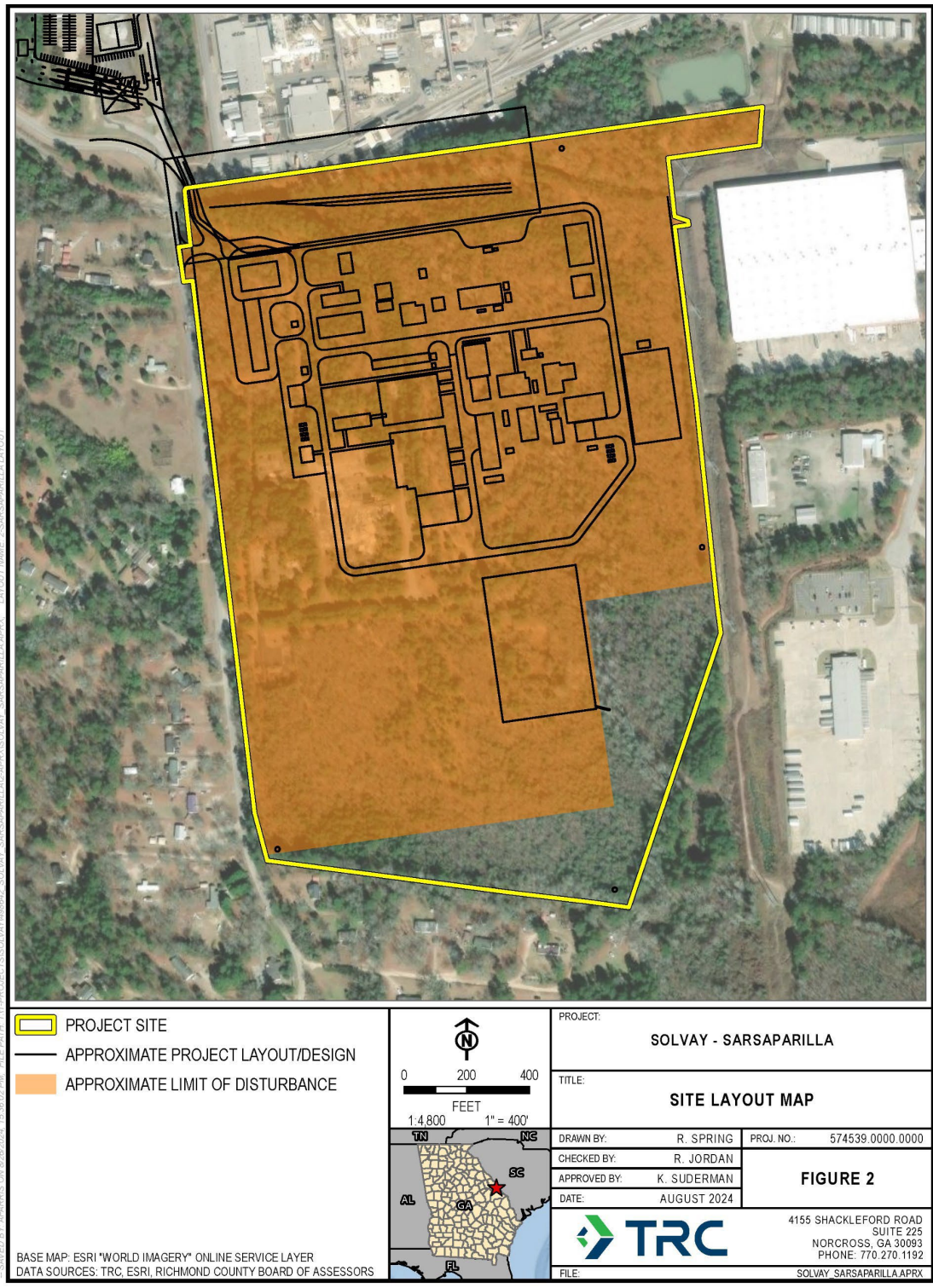


Figure 2. Site Layout Map

Table 2. Interim Actions

Task Number	Task Title	Nature of Task Activities
0.0	Project Management and Planning	• Develop and Maintain Project Management Plan
0.1	Kick-off Meeting	• Kick-off meeting with DOE within 30 days of project initiation
0.2	Project Controls	• Cost reporting/forecasting budget approved. • Progress measurement for Engineering, Procurement, and Construction phases
1.1	Front End Engineering and Design	• Complete Heat and Material Balance for design. Finalize P&IDs for design • Complete basis of Design report • Complete all Engineering
1.2	Risk Assessment	• Develop/Issue Environment Risk Assessment • Develop/Issue Process Risk Assessment
1.3	Baseline Cost and Schedule	• Develop/Issue Capital Cost Estimate • Definition for Project Controls
1.4	Engineering and Design Execution	• Conduct Design Reviews • Issue Front End Engineering Design • Design execution from GO status approval
1.5	Permitting Planning and Applications	• Air/Discharge Permit • Construction Building Permit Application • Other Environmental Permit Applications, if necessary
1.6	Critical Equipment Procurement	• Critical Equipment bids issued • Bid awards for Critical Equipment
2.1	Final Engineering & Design – Issued for Construction	• Subtask 2.1.1 – Civil, Structural, and Architectural IFC Drawings and Specifications • Subtask 2.1.2 – Mechanical IFC Drawings and Specifications • Subtask 2.1.3 – Electrical and Instrumentation IFC Drawings and Specifications • Subtask 2.1.4 – Fire Protection IFC Drawings and Specifications
2.2	Balance of Plant Equipment Procurement	• Subtask 2.2.1 – Balance of Plant Equipment Procurement • Subtask 2.2.2 – Electrical Gear Procurement • Subtask 2.2.3 – Instrumentation and Controls System Procurement

Task Number	Task Title	Nature of Task Activities
2.3	Field Construction Contractor Procurement	• Subtask 2.3.1 – Bid and Award Site Civil & Foundations Contract • Subtask 2.3.2 – Bid and Award Structural Steel Installation and Equipment Setting • Subtask 2.3.3 – Bid and Award Mechanical Piping Contract • Subtask 2.3.4 – Bid and Award Electrical & Instrumentation Contract • Subtask 2.3.5 – Bid and Award Fire Protection and Detection Contract

These tasks include administrative work, paper studies, analysis, permitting, planning, and laboratory-scale work at existing facilities. Construction, groundbreaking, land disturbances, or other related activities on the Project Site not noted above are not authorized under these interim action MOUs. Although the tasks discussed in Table 2 would take place prior to DOE's completion of the EA for the entire Project, DOE has determined that completing these tasks would not have an adverse environmental impact or limit the choice of reasonable alternatives for the Project.

2.7 Alternatives

DOE's alternatives to this Project consist of the numerous technically acceptable applications received in response to FOA DE-FOA-0002678. Before selection, DOE made preliminary determinations about the level of review under NEPA based on potentially significant impacts it identified during a review of technically acceptable applications. DOE conducted these preliminary reviews pursuant to 10 CFR 1021.216 and prepared a synopsis for projects under the FOA. These preliminary NEPA determinations and environmental reviews were provided to the selection official, who considered them during the selection process.

Because DOE's Proposed Action is limited to providing financial assistance in cost-sharing arrangements to projects submitted by applicants in response to a competitive funding opportunity, DOE's decision is limited to either accepting or rejecting a project as proposed by the proponent, including its proposed technology and selected site. DOE's consideration of reasonable alternatives is therefore limited to the technically acceptable application and a no-action alternative for each selected project.

2.8 No-Action Alternative

Under the No-Action Alternative, DOE would not provide funds for the proposed Project. Without DOE funding for the Project to be completed as proposed, the applicant would need to identify, obtain, and use an alternative source of funds equal to the amount of funding that the applicant would have received from DOE under the above-listed funding opportunity. The No-Action Alternative would therefore result in the Project being de-scoped or delayed while the applicant seeks other funding sources and would likely lead to cancellation of the Project, if sufficient funding is not obtained. The No-Action Alternative could result in the proposed Facility not being built. The impact would be a delay in bringing the polymer product to market. This delay would potentially result in the delay of battery production and the release of more vehicle emissions into the atmosphere from non-EVs during the delay. Further, this PVDF technology is

an improvement over other production technologies that use fluorosurfactant process aids. Substitutes for PVDF may be available but are currently less resilient, untested, and involve similar production processes. DOE's ability to achieve its objectives under IIJA would be reduced.

To allow a comparison between the potential impacts of the Project as implemented and the impacts of not proceeding with the Project, for purposes of this environmental analysis, DOE assumes that the proposed Project would not likely proceed without DOE assistance. The baseline of potential impacts under the No-Action Alternative would be based on an assumption that the Project Site would not be developed. Despite that conservative approach for purposes of this EA, DOE recognizes that this Project might proceed if DOE decides not to provide financial assistance. If the Project does proceed without DOE's financial assistance, the potential impacts of the No-Action Alternative would be similar to those under DOE's proposed action (i.e., providing financial assistance that allows the Project to proceed), and incremental impacts associated with the proposed action would be reduced below the proposed action's effects presented in this EA.

2.9 Alternatives Considered by Syensqo

The Project Site was chosen as it is adjacent to Syensqo's existing, operating Augusta, Georgia, facility; is zoned Heavy Industry; and is in an area with rail, road, and utilities access. This site is bordered on the west and south by land that is zone R-MH, Residential, and Manufactured Home use. The southeastern corner of the site abuts an area zoned as R-1, One-Family Residential. The Augusta Richmond County Zoning Ordinance requires a minimum 50' setback of industrial activity from an R-Zone boundary. This requirement would be satisfied during facility design and local government approval.

An alternative location was considered, prior to the selection of the Project Site. The alternative location is adjacent to and west of Syensqo's existing, operating Augusta, Georgia, facility; zoned Heavy Industry; and in an area with rail, road, and utilities access. This alternative location had poorer rail access and less acreage, which presented challenges with construction logistics and potential for future expansion, if necessary. The existing environmental, cultural, and socioeconomic conditions at this alternative site were similar to those at the proposed site, and selection of the alternative site would not provide a significant environmental, cultural, or socioeconomic advantage to Syensqo's proposed site; therefore, it was not evaluated further.

2.10 Summary of Environmental Consequences

Table 3 provides a summary of the environmental, cultural, and socioeconomic impacts of the No-Action Alternative and the proposed action.

Table 3. Summary of Environmental, Cultural, and Socioeconomic Impacts

Impact Area	No-Action Alternative		Proposed Action	
	Construction	Operations	Construction	Operations
Community Services	Negligible	Negligible	Negligible	Negligible
Parks and Recreation	Negligible	Negligible	Negligible	Negligible
Aesthetics and Visual Resources	Negligible	Negligible	Negligible	Negligible
Land Use	Negligible	Negligible	Negligible	Negligible
Socioeconomics	Negligible	Negligible	Minor (beneficial)	Minor (beneficial)
Wetlands and Floodplains	Negligible	Negligible	Minor to Moderate	Negligible
Cultural Resources	Negligible	Negligible	Negligible	Negligible
Air Quality ¹	Negligible	Negligible	Minor	Minor
Greenhouse Gases ¹	Negligible	Negligible	Minor (beneficial)	Minor (beneficial)
Noise and Vibration	Negligible	Negligible	Negligible	Negligible
Geology, Topography, and Soils	Negligible	Negligible	Negligible	Negligible
Surface Water and Groundwater	Negligible	Negligible	Minor to Moderate	Low
Vegetation and Wildlife	Negligible	Negligible	Negligible	Negligible
Regulated Wastes (Solid and Hazardous Wastes)	Negligible	Negligible	Negligible	Negligible
Utilities and Energy Use	Negligible	Negligible	Negligible	Negligible
Transportation and Traffic	Negligible	Negligible	Minor	Minor
Public and Occupational Health and Safety	Negligible	Negligible	Negligible	Negligible

¹ The polymer production process is key to supporting the goals of vehicle power expansion. Without this plant, the number of EVs produced and cost would be adversely affected, ultimately resulting in higher air emissions, criteria pollutants, and toxic air pollutants (TAPs).

3.0 Affected Environment and Environmental Consequences

Chapter 3 provides a description of the affected environment (existing conditions) at the site and a discussion of the environmental consequences of the No-Action Alternative and the proposed Project. Additionally, proposed best management practices are discussed where appropriate. A discussion of the potential for cumulative impacts is provided in Section 3.20, Cumulative Impacts. The methodology used to identify existing conditions and to evaluate potential impacts on the physical and human environment involved the following: review of the Environmental Questionnaires and Environmental Information Volume prepared by Syensqo, review of documentation provided by Syensqo; searches of various environmental databases; and agency consultation.

In the context of this EA, potential effects have been characterized according to their extent, duration, and magnitude according to the following definitions.

The potential extent of the Project impacts includes three levels:

- **Local** – Effects to resources in a proposed Project’s immediate vicinity or surrounding area.
- **Regional** – Effects extending beyond a proposed Project’s local level to resources in areas broadly defined by natural criteria, such as watersheds and ecosystems, or human activity, such as urban or rural population areas, or at a scale that could have interstate consequences.
- **National** – Effects extending beyond a proposed Project’s regional level to resources on a nationwide scale or at a scale that could have cross-regional ecosystem, multi-state, or nationwide consequences.

The potential duration of the Project impacts includes four levels:

- **Temporary** – Effects occurring only during construction of the Project.
- **Short-term** – Effects likely to continue beyond the temporary timeframe but not likely to last more than several months.
- **Long-term** – Effects likely to continue beyond the short term, but not indefinitely.
- **Permanent** – Effects likely to last indefinitely or for the life of the Project.

The potential magnitude of Project impacts includes four levels:

- **Negligible** – Effects with minimal impact on a resource; any change that might occur would be barely perceptible and would not be easily measurable.
- **Minor** – Effects that would produce a detectable change to a resource but that would be unlikely to substantially alter its appearance or condition.
- **Moderate** – Effects that would produce a noticeable change to a resource and that may substantially alter its appearance or condition, but the integrity of the resource would remain intact.
- **Major** – Effects that would produce a highly noticeable and easily defined substantial impact or change to a resource that would measurably alter its appearance or condition, and potentially threaten the integrity of the resource.

3.1 No-Action Alternative—Environmental Consequences

As discussed above, to allow a conservative comparison between the potential impacts of the Project as implemented and the impacts of not proceeding with the Project, for purposes of this environmental analysis, DOE assumes that the proposed Project would not likely proceed without DOE assistance. The baseline of potential impacts under the No-Action Alternative, presented in Table 4, are based on an assumption that the Project Site would not be developed.

Table 4. Resource Impacts Under the No-Action Alternative

Resource Categories	Resource Impacts
Socioeconomics	There would be no socioeconomic changes, new employment opportunities, or impacts on local businesses.
Community Services	There would be no effect on community services.
Wetlands and Floodplains	No impacts would occur to the Project Site or nearby floodplains or wetlands.
Cultural Resources	There would be no impacts on cultural and/or paleontological resources or land uses.
Air Quality ¹	There would be no air emissions associated with proposed Project construction and no effect on existing air emissions.
Air Emissions ¹	There would be no air emissions associated with proposed Project construction and no effect on the existing air emissions from operations.
Noise and Vibration	There would be no changes to background noise levels or the creation of new sources of noise.
Geology, Topography, and Soils	There would be no changes to the Project Site, nearby soils, or underlying geologic formations.
Surface Water and Groundwater	No impacts would occur to the Project Site or nearby surface waters and groundwater.
Vegetation and Wildlife	There would be no changes to the Project Site or nearby aquatic, wildlife, or vegetative resources.
Regulated Waste	There would be no increase in the generation of solid waste or hazardous waste from the site.
Utilities and Energy Use	Construction of utility infrastructure would not occur, and there would be no increase in consumption of water or electricity at the site. Additionally, there would be no increase in wastewater generation and supplemental wastewater treatment would not occur.
Transportation and Traffic	There would be no change in traffic or effects on transportation.
Public and Occupational Health and Safety	There would be no increased potential for adverse impacts on public or employee health and safety from proposed Project construction, operation, or decommissioning.
Parks and Recreation	There would be no effect on parks or recreation.
Land Use	No impacts would occur to the Project Site or nearby land use.
Visual and Aesthetic Resources	No impacts would occur to the Project Site or nearby visual resources.

¹ The polymer production process is key to supporting the goals of vehicle power expansion. Without this plant, the number of EVs produced and/or cost would be adversely affected, ultimately resulting in higher air emissions, criteria pollutants, and TAPs.

3.2 Socioeconomics

3.2.1 Affected Environment

The proposed Project would be located in Augusta-Richmond County, Georgia, a consolidated city-county on the Georgia-South Carolina border. The City of Augusta, Georgia, and Richmond County are together considered a census-designated city-county because of their consolidated government. The principal city of Augusta anchors the Augusta-Richmond County, GA-SC Metropolitan Statistical Area (MSA), ³which is referred to as the “Socioeconomic Study Area” in this section. As defined by the Federal Office of Management and Budget, the MSA includes the counties presented in Table 5.

Table 5. Population in Augusta-Richmond County, GA-SC MSA

County	2022 Population
Georgia Counties	
Augusta-Richmond County	205,772
Colombia County	154,274
Burke County	24,231
McDuffie County	21,727
Lincoln County	7,686
South Carolina Counties	
Aiken County	168,045
Edgefield County	25,938
Total MSA Population	607,673

Source: U.S. Census Bureau, 2023

The total populations of the seven-county MSA, as shown in Table 6, are estimated for 2022, the most recent year for which data are available. The population of the MSA constitutes a large labor pool from which qualified workers may be drawn.

The MSA’s labor force and additional information from the U.S. Bureau of Labor Statistics (BLS) Local Area Unemployment Statistics Program are presented in Table 6.

³ An MSA consists of one or more counties that contain a city with a population of 50,000 or more. Counties containing the principal concentration of population- the largest city and surrounding densely settled area- are components of the MSA. Additional counties qualify to be included by meeting a specified level of commuting to the counties containing the population concentration and by meeting certain other requirements of metropolitan character.

Table 6. Labor Force in Augusta-Richmond County and County MSA

Civilian Labor Force August 2022	Augusta-Richmond County	Augusta-Richmond County MSA
Labor Force	82,037	261,467
Employment	78,230	251,351
Unemployment	3,807	10,116
Unemployment Rate	4.6%	3.9%

Source: BLS (2023a), Local Area Unemployment Statistics

Note: The civilian labor force data presented includes residents with wage and salary jobs, business owners, the self-employed, private household workers, and unpaid family workers.

The BLS Quarterly Census of Employment and Wages Program compiles industry-level detail on the wage and salary workers in the region (Table 7). These data do not include business owners, the self-employed, private household workers, or unpaid family workers. Thus, totals from this Program cannot be directly compared with the labor data presented in Table 6.

Table 7. Augusta-Richmond County and County MSA Labor Industries

High-Level Industry, Employees, 2022 Annual	Augusta-Richmond County	Augusta-Richmond County MSA
Total Covered Workers		
Goods-producing		
1011 Natural resources and mining	116	1,833
1012 Construction	3,243	16,124
1013 Manufacturing	8,255	24,590
Total, Goods-Producing	11,671	42,547
Service-producing		
1021 Trade, transportation, and utilities	16,733	40,004
1022 Information	1,144	1,845
1023 Financial activities	2,953	6,181
1024 Professional and business services	13,471	31,576
1025 Education and health services	20,464	34,545
1026 Leisure and hospitality	12,021	26,286
1027 Other services	2,497	5,869
1029 Unclassified	166	258
<i>Total, Service-Producing</i>	<i>69,449</i>	<i>146,784</i>
<i>Total, Private Industry</i>	<i>81,120</i>	<i>189,331</i>
<i>Non-Private (Local, State, Federal) Industry</i>	<i>22,475</i>	<i>40,047</i>
Total Industry	103,595	229,378

Source: BLS (2023b), Quarterly Census of Employment and Wages.

Notes: Columns may not sum totals shown because of the suppression of data.

Excludes business owners, the self-employed, unpaid family workers, and private household workers.

MSA-level occupational employment data are available from BLS through the Occupational Employment and Wage Statistics Program. Data by major occupational groups are presented in Table 8.

Table 8. Augusta-Richmond MSA Occupational Employment

Occupation Code	Occupation	Employment, May 2021
11-0000	Management	11,970
13-0000	Business and Financial Operations	10,730
15-0000	Computer and Mathematical	3,980
17-0000	Architecture and Engineering	5,380
19-0000	Life, Physical, and Social Science	2,260
21-0000	Community and Social Service	2,520
23-0000	Legal	1,070
25-0000	Educational Institution and Library	13,710
27-0000	Arts, Design, Entertainment, Sports, and Media	1,900
29-0000	Healthcare Practitioners and Technical	19,180
31-0000	Healthcare Support	9,130
33-0000	Protective Service	6,770
35-0000	Food Preparation and Service Related	20,730
37-0000	Building and Grounds Cleaning and Maintenance	6,530
39-0000	Personal Care and Service	3,660
41-0000	Sales and Related	20,100
43-0000	Office and Administrative Support	26,320
45-0000	Farming, Fishing, and Forestry	430
47-0000	Construction and Extraction	11,690
49-0000	Installation, Maintenance, and Repair	10,440
51-0000	Production	18,200
53-0000	Transportation and Material Moving	19,990
00-0000	All Occupations	226,670

Source: BLS (2023c), Occupational Employment and Wage Statistics.

Note: Excludes business owners, the self-employed, unpaid family workers, and private household workers.

3.2.2 Environmental Consequences

3.2.2.1 Construction

Syensqo expects to employ up to 500 individuals during the construction stage. Under the proposed Project, local construction workers may be employed full time and taxes would continue to be paid on the property; therefore, no adverse economic impacts would occur. Construction workers employed for the construction period may be hired from the local population or from surrounding areas. Increased sales transactions for the purchase of materials and supplies would generate additional tax revenues for local and state governments, which would have a minor beneficial impact in Augusta-Richmond County. Secondary jobs related to increased economic activity stimulated by the proposed Project may be created, including additional retail and business employment, which may through a multiplier effect yield additional sales and income tax revenues for local and state governments, thereby also generating a minor beneficial impact.

3.2.2.2 Operations

The proposed Project would initially create approximately 100 new FTE jobs. Labor requirements for the Facility are not expected to change drastically as most jobs would be in advanced manufacturing operations, which is already represented in this region. No substantial influx in population is expected; therefore, the impacts on housing demand and population would be expected to be negligible.

3.2.3 Proposed Best Management Practices

No adverse impacts on socioeconomics are anticipated from the Project, so no mitigation is required or proposed.

3.3 Community Services

3.3.1 Affected Environment

Community services pertinent to the proposed Project include schools, police, fire, and emergency medical support, all of which are provided for in Augusta:

- The nearest law enforcement headquarters is the Richmond County Sheriff's Office South Precinct, located approximately 1.8 miles from the site (Richmond County Sheriff's Office 2023).
- The closest fire station is the Augusta Fire Department Station 17, located approximately 0.7 mile east of the site (City of Augusta 2023a).
- The nearest emergency medical service provider is the Piedmont Prompt Care at Butler Creek, located approximately 1.5 miles northwest of the site (Piedmont Prompt Care 2023).

The Richmond County School System has twenty-six public elementary schools, eight public middle schools, eight public high schools, and fourteen alternative schools (Richmond County School System 2023). The nearest public schools include Cross Creek High School and Gracewood Elementary School (as shown in Table 11, above). Gracewood Elementary School is accessed from Gracewood Drive, and Cross Creek High School is accessed from Old Waynesboro Road. Cross Creek High School is separated from the proposed Facility by existing industrial development. The City of Augusta supports four higher education institutions. The nearest of these is Augusta Technical College, located approximately 3.7 miles northwest of the proposed Facility (www.augustatech.edu).

3.3.2 Environmental Consequences

Construction crews, as well as permanent new employees, are expected to be drawn from local and regional residents and not constitute a notable permanent migration of workers and their families to the region. The additional construction staff and operational staff are not anticipated to exert an undue burden on existing community services. In addition, road closures or other impacts that would restrict or impede the movement of emergency personnel or other traffic through the region are not anticipated as part of construction and operations activities associated with the proposed Project (see Section 3.15, Transportation and Traffic, for a discussion of transportation and traffic-related impacts).

The increased burden on existing police, fire, emergency medical, and other community services during construction and operations of the proposed Project is expected to be negligible.

Impacts to schools from construction or operation are not anticipated to be significant due to existing buildings/development or distance buffers separating the proposed Facility from the nearest school facilities. Both schools use roads that would not be directly affected by construction or operation of the proposed Facility. Noise from construction may be noticeable during the construction period at Cross Creek High School, but distance from the site, existing forest, and existing industrial development between the proposed Facility and the school are expected to help buffer noise impacts to acceptable levels (see Section 3.9, Noise and Vibration).

3.3.3 Proposed Best Management Practices

No significant or permanent adverse impacts on community services are anticipated, so no mitigation is required or proposed.

3.4 Wetlands and Floodplains

3.4.1 Affected Environment

3.4.1.1 Wetlands

A wetland and waterbody delineation of the Project Site was performed on November 30-December 1, 2023, to identify jurisdictional waters of the United States (WOTUS). This delineation was conducted in accordance with the guidelines of the *Corps of Engineers Wetland Delineation Manual* (Environmental Laboratory 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region, Version 2.0* (U.S. Army Corps of Engineers [USACE], 2010). The National Wetland Indicator status and taxonomic nomenclature for onsite plant species are referenced from the *2020 National Wetland Plant List Version 3.5* (USACE, 2020). The National Wetland Indicator status is based on the Atlantic and Gulf Coastal Plain, sub-region. Indicators of hydric soil are based on *Field Indicators of Hydric Soils in the U.S. Version 8.2* (U.S. Department of Agriculture [USDA] Natural Resources Conservation Service [NRCS] 2018). DOE classified wetlands and waterbodies based on the applicable 'pre-2015' regulatory regime. On September 8, 2023, USACE and the USEPA issued revised definitions for WOTUS to conform with the Supreme Court's decision in *Sackett v. EPA* ("Sackett"), decided on May 25, 2023. The decision in *Sackett* made certain provisions of the recent 2023 waters rule (88 Federal Register 3004) invalid. Due to ongoing litigation, the USACE Savannah district still operates under the pre-2015 framework. DOE collected field indicator information on all potential WOTUS features to support the analysis of the jurisdictional status of these features using the pre-2015 definition, as modified by *Sackett*.

The USACE issued an Approved Jurisdictional Determination (AJD) under project number SAS-2024-00200 on June 5, 2024. Figure 3 depicts the aquatic resources (i.e., wetlands and surface waters) within the Project Site, along with their USACE/USEPA-jurisdictional status. Table 12 below summarizes the wetland features identified within the Project Site. Surface waters are discussed in Section 3.11, Surface Water and Groundwater.

Table 12. Summary of Delineated Wetland Features

Feature ID	Feature Type	USACE/USEPA Jurisdictional (per AJD)?
Wetland 1	PFO/PSS	Yes
Wetland 2	PFO	No
Wetland 3	PFO	Yes
Wetland 4	PFO	Yes

PSS = Palustrine Scrub-Shrub Wetland
PFO = Palustrine Forested Wetland

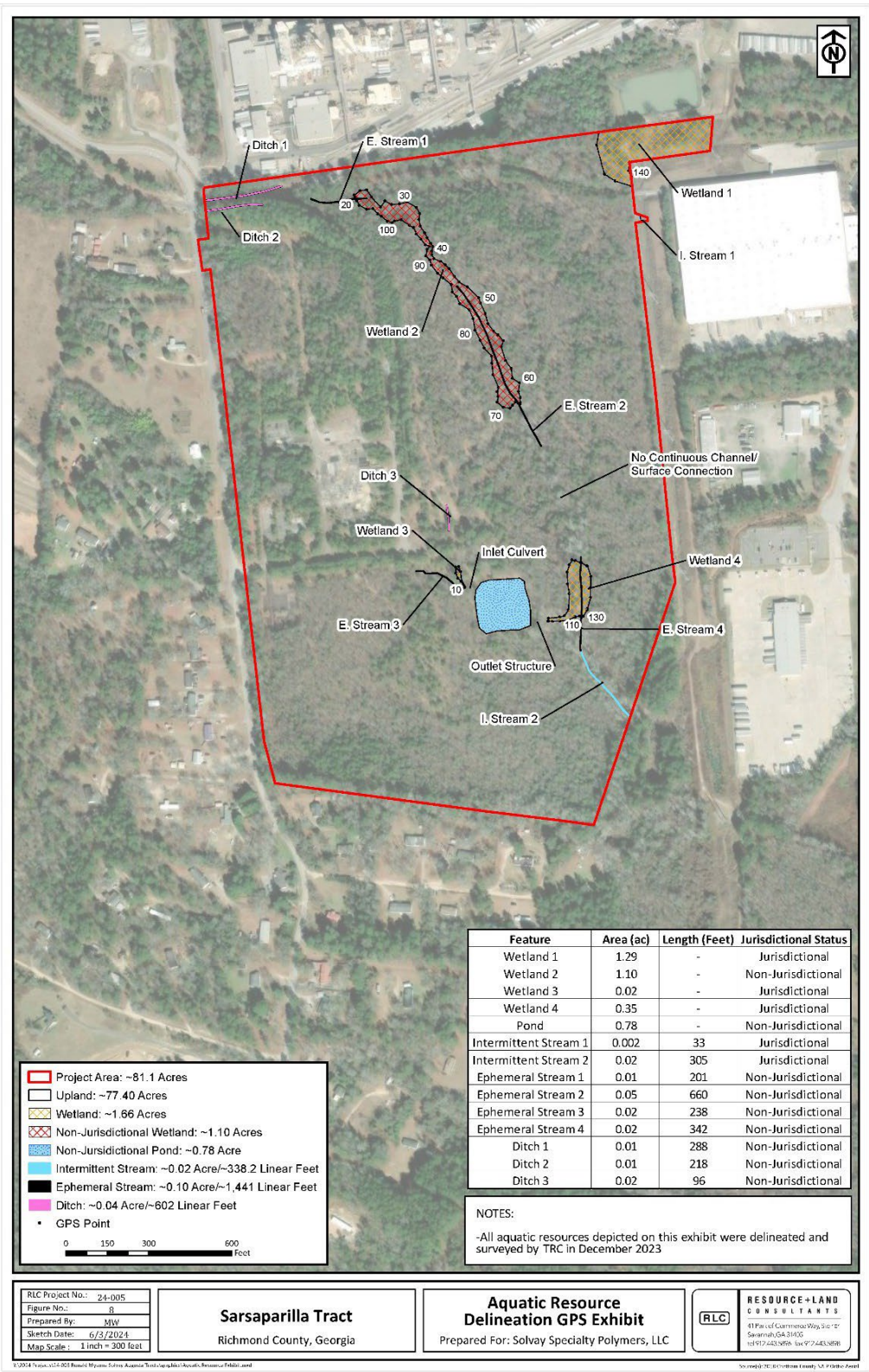


Figure 3. Aquatic Resource Delineation.

3.4.1.2 Floodplains

The Federal Emergency Management Agency Flood Hazard Map panel 13245C0210G (effective 11/15/2019) indicates that the entire Project Site is outside the 100-year floodplain.

3.4.2 Environmental Consequences

3.4.2.1 Wetlands

Construction

Impacts on wetlands from proposed Project construction are anticipated to be local, permanent, and minor. Construction would include the permanent fill of wetlands within the limits of development and the temporary localized fill and/or disturbance of wetlands within construction areas. However, the wetlands within the Project Site are similar to the extensive acreage of wetlands within this ecoregion, and the permanent and temporary impacts would be minor. The USACE has evaluated the Project and determined that the proposed activity is authorized under Nationwide Permit No. 39 (NWP-39) for expansion of an industrial development. Documentation of the USACE authorization (dated December 13, 2024) is included in Appendix B.

Operations

Operations of the proposed Project are not anticipated to create additional impacts on wetlands.

3.4.2.2 Floodplains

The Project lies outside the 100-year floodplain.

3.4.3 Proposed Best Management Practices

The USACE has determined that no compensatory wetland mitigation is required for the minor wetland impacts associated with the Project.

3.5 Cultural Resources

3.5.1 Affected Environment

For the purposes of the cultural resources evaluation, the study area is defined as all areas where ground disturbance might occur, as well as areas within a 1.0-kilometer (km) radius of the Project Site within which the Project would be visible, where visual effects on above-ground resources could occur. An examination of the Georgia Natural, Archaeological and Historic Resources Geographic Information System (GNAHRGIS) database (2023) was conducted to identify archaeological and historic resources that have previously been recorded and that are listed or eligible or may be eligible for the National Register of Historic Places (NRHP). Background research indicated there are no previously recorded archaeological sites within the boundaries of the Project Site and none within a 1-km radius.

Background review identified six historic structures within a 1-km radius of the Project Site (Table 13). All six structures are associated with the Gracewood State School and Hospital, now

known as East Central Regional Hospital, Gracewood Campus. The Gracewood Campus was formed in 1919 as a training school for individuals with mental disorders. The campus expanded in the 1920s by purchasing an adjacent orphanage. The campus expanded again in the 1950s to include surrounding farmland.

Most of the historic structures associated with the Gracewood Campus have been recorded, including the six identified in the table below. However, there has been no formal evaluation of the individual structures or the campus as a historic district. Three of the structures within 1 km of the Project Site were recorded as having characteristics that appear to meet the eligibility criteria for inclusion in the NRHP.

Table 13. Cultural Resources within a 1.0-km radius of the Project Site.

Resource No.	Description	Date	Nation Register Eligibility
55891	House/Georgian Cottage	1850	Appears to meet NRHP criteria
55892	House/Vernacular	1874	Unassessed
55893	House/Folk Victorian	1890	Appears to meet NRHP criteria
55894	House/Craftsman	1919	Appears to meet NRHP criteria
56068	Hay Barn	1955	Unassessed
56070	Storage Building	1945	Unassessed

In addition to GNAHRGIS, DOE examined the online property search maintained by the Augusta-Richmond County Board of Assessors to determine if there were any structures within or adjacent to the Project Site that are 50 years old or older. The search identified at least four homes within the vicinity of the Project that meet this threshold. These homes meet the age criterion for the NRHP but have not been evaluated as to their eligibility.

The proposed Project thus has the potential to affect resources that are eligible for the NRHP. A request was submitted to the Georgia Historic Preservation Division, which serves as the SHPO, to concur in the APE for Cultural Resources and recommended level of effort for a cultural resources survey that would satisfy the requirements detailed in the *Georgia Standards and Guidelines for Archaeological Investigations* (Georgia Council of Professional Archaeologists, 2019) and the *Georgia Historic Resources Survey Manual* (Georgia Department of Community Affairs, 2023).

3.5.1.1 SHPO Consultation

DOE initiated consultations with the SHPO under Section 106 of the NHPA. Response letters are included in Appendix B.

In a letter dated January 3, 2024 concurred with DOE's assessment that historic properties may be present within the Project's APE, however the SHPO has determined that "the subject project, as proposed, will have **no adverse effect** to historic properties within its APE, as defined in 36 CFR Part 800.5(d)(1), due to the scope and location of the work, existing modern intrusions, and previous ground disturbance."

SHPO indicates that any changes to the Project as proposed may require additional consultation. SHPO's response letter evidences compliance with Section 106 of the NHPA.

3.5.1.2 Fieldwork

SHPO's determination that there will be no adverse effects on historic properties within the APE indicates that neither an Archaeological Survey nor a Historic Structures Survey is required prior to the proposed undertaking.

3.5.2 Environmental Consequences

Based on consultation with the Georgia SHPO, the proposed Project would have no adverse effect on cultural resources.

3.5.3 Proposed Best Management Practices

To ensure that previously unrecorded archaeological resources would not be adversely affected by the construction of the proposed Project, Syensqo would implement a project-specific Unanticipated Discovery Plan (UDP). The UDP would identify the process to be followed in the event of a discovery of previously unknown cultural resources, such as human remains or deposits of archaeological artifacts, and would include roles and responsibilities during construction; reporting processes; stop-work requirements and authority; and directions for notification of company representatives, DOE representatives, local law enforcement, and tribal representatives, as appropriate. The UDP addresses the recommendations received from the Catawba Nation (December 9, 2024; Appendix B). The UDP is attached as Appendix D.

3.6 Air Quality

Emissions associated with the proposed Project would be subject to federal and state regulatory requirements under the Clean Air Act (CAA) and Georgia Air Quality Rule 391-3-1. In addition to the federal regulations promulgated under the CAA, the Georgia Environmental Protection Division (EPD) regulates emissions at both the Facility level and unit levels. Georgia state regulations include requirements to obtain construction and operating permits for installation and operation of potential emissions sources. They also contain provisions for toxics air quality modeling. Syensqo intends to comply with all applicable regulations of the CAA and Georgia Rules for Air Quality Control.

The CAA requires that the USEPA promulgate National Ambient Air Quality Standards (NAAQS) for pollutants considered harmful to public health and the environment. Primary standards provide public health protection, including protecting the health of "sensitive" populations such as asthmatics, children, and the elderly. Secondary standards provide public welfare protection, including protection against decreased visibility and damage to animals, crops, vegetation, and buildings. The USEPA has established NAAQS for the following criteria pollutants: ozone (O₃), carbon monoxide (CO), nitrogen dioxide (NO₂), particulate matter smaller than 10 microns (PM₁₀), particulate matter smaller than 2.5 microns (PM_{2.5}), sulfur dioxide (SO₂), and lead (Pb). See Table 14.

Table 14. USEPA National Ambient Air Quality Standards

Pollutant	Primary/ Secondary	Averaging Time	Level	Form
Carbon Monoxide (CO)	primary	8 hours	9 ppm	Not to be exceeded more than once per year
		1 hour	35 ppm	
Lead (Pb)	primary and secondary	Rolling 3- month average	0.15 µg/m ³ ⁽¹⁾	Not to be exceeded
Nitrogen Dioxide (NO ₂)	primary	1 hour	100 ppb	98 th percentile of 1-hour daily maximum concentrations, averaged over 3 years
	primary and secondary	1 year	53 ppb ⁽²⁾	Annual Mean
Ozone (O ₃)	primary and secondary	8 hours	0.070 ppm ⁽³⁾	Annual fourth-highest daily maximum 8-hour concentration, averaged over 3 years
Particle Pollution (PM) PM _{2.5}	primary	1 year	12.0 µg/m ³	Annual mean, averaged over 3 years
	secondary	1 year	15.0 µg/m ³	Annual mean, averaged over 3 years
PM ₁₀	primary and secondary	24 hours	35 µg/m ³	98 th percentile, averaged over 3 years
	primary and secondary	24 hours	150 µg/m ³	Not to be exceeded more than once per year on average over 3 years
Sulfur Dioxide (SO ₂)	primary	1 hour	75 ppb ⁽⁴⁾	99 th percentile of 1-hour daily maximum concentrations, averaged over 3 years
	secondary	3 hours	0.5 ppm	Not to be exceeded more than once per year

Source: <https://www.epa.gov/criteria-air-pollutants/naaqs-table>

Note: ppm = parts per million; µg/m³ = micrograms per cubic meter

¹In areas designated nonattainment for the Pb standards prior to the promulgation of the current (2008) standards, and for which implementation plans to attain or maintain the current (2008) standards have not been submitted and approved, the previous standards (1.5 µg/m³ as a calendar quarter average) also remain in effect.

²The level of the annual NO₂ standard is 0.053 ppm. It is shown here in terms of ppb for the purposes of clearer comparison to the 1-hour standard level.

³Final rule signed October 1, 2015, and effective December 28, 2015. The previous (2008) O₃ standards are not revoked and remain in effect for designated areas. Additionally, some areas may have certain continuing implementation obligations under the prior revoked 1-hour (1979) and 8-hour (1997) O₃ standards.

⁴The previous SO₂ standards (0.14 ppm 24-hour and 0.03 ppm annual) will additionally remain in effect in certain areas: (1) any area for which it is not yet 1 year since the effective date of designation under the current (2010) standards, and (2) any area for which an implementation plan providing for attainment of the current (2010) standard has not been submitted and approved and which is designated nonattainment under the previous SO₂ standards or is not meeting the requirements of a State Implementation Plan (SIP) call under the previous SO₂ standards (40 CFR 50.4(3)). A SIP call is a USEPA action requiring a state to resubmit all or part of its State Implementation Plan to demonstrate attainment of the required NAAQS.

O₃ is rarely emitted directly to the ambient air but is formed in the atmosphere by a photochemical reaction involving sunlight and precursor compounds. Emissions of nitrogen oxides (NO_x) and volatile organic compounds (VOCs) are regulated because they are O₃ precursors. Richmond County has been designated by the USEPA as in Attainment or the equivalent for all NAAQS.

3.6.1 Affected Environment

Syensqo currently manufactures chemicals and high-performance polymers at the existing facility located in Augusta, Richmond County, Georgia. The Project would be situated immediately adjacent to the existing facility. The surrounding area is wooded with a mixture of evergreen and deciduous species. The nearest sensitive receptors (sources of human populations) include a church, several scattered residences, Cross Creek High School, and nearby residential areas, including the Butler Mobile Home Community, residences west of Clanton Road, and the Covington neighborhood.

The existing facility is currently a major source of air emissions with respect to the federal Title V permitting program because facility-wide potential emissions hazardous air pollutants (HAPs) exceed the applicable major source thresholds. However, the existing facility is a minor source under the federal New Source Review (NSR) program. The existing facility currently operates under Air Quality Part 70 Permit No. 2821-245-0126-V-06-0.

3.6.2 Environmental Consequences

Construction

Minor, temporary, and intermittent air emissions are anticipated during the anticipated up to 24-month Project construction period. These emissions could have a minor, short-term adverse impact on local air quality. The USEPA has explained (43 Federal Register [FR] 26395, June 19, 1978):

Temporary sources are also exempt from full PSD review, since their ambient air impacts are short-lived. Temporary emissions include, but are not limited to, those from a pilot plant, portable facility, construction or exploration. Emissions occurring for less than 2 years at one location would generally be considered temporary. Emissions for longer periods of time might also be considered to be temporary (such as the emissions related to the construction of power plants or other large sources) but should be dealt with on a case-by-case basis.

Tailpipe emissions are anticipated from the equipment used to construct the proposed facilities, including during site grading and leveling, during construction, and through delivery of construction materials and supplies by road. This equipment would intermittently emit CO, NO_x, SO₂, PM₁₀, PM_{2.5}, VOC, and HAPs. As such, in addition to tailpipe emissions, surface soil disturbances during excavation and grading could result in generation of fugitive dust. Fugitive dust could potentially affect both public health and the environment. The severity of its effects on health depends on the size and composition of the particulate matter. Typical potential effects of prolonged exposure to high levels of fugitive dust are persistent coughs, respiratory distress, eye irritation, and asthma. Syensqo's construction contractor would implement best management practices to minimize generation of dust during construction activities.

Operations

The Syensqo Augusta facility operates under the USEPA Title V Air Permit. Syensqo has applied for a State Implementation Program permit and modification to its Title V permit to incorporate the Project. Table 15 summarizes the potential emissions of the current facility, the Project, and the current facility plus the Project. The site-wide emissions would be capped by permit such that the site would remain a minor source under NSR.

Table 15. Operating Emissions

Scenario	Potential Emissions (tons per year)					
	PM ₁₀	PM _{2.5}	SO ₂	CO	NO _x	VOC
Current Facility	23.4	23.4	<100 ⁽¹⁾	<100 ⁽¹⁾	<100 ⁽¹⁾	<100 ⁽¹⁾
Project	5.5	5.5	10.1	30.3	28.8	15.1
Current Facility + Project	28.9	28.9	<100 ⁽¹⁾	<100 ⁽¹⁾	<100 ⁽¹⁾	<100 ⁽¹⁾
NSR Major Source Threshold	100	100	100	100	100	100

¹Site-wide emissions of SO₂, NO_x, CO, and VOC are capped at less than 100 tons per year.

PM₁₀/PM_{2.5} = particulate matter less than 10 microns and 2.5 microns, respectively; SO₂ = sulfur dioxide CO = carbon monoxide; NO_x = nitrogen oxides; VOC = Volatile Organic Compounds

As part of the permitting process, air toxics modeling was performed to demonstrate that the Project emissions would not endanger public health. The Georgia EPD maintains a list of nearly 500 compounds that are considered TAPs that would require a demonstration that the emissions of the compounds will not cause adverse ambient air impacts. Syensqo showed that the emissions of TAPs are either at levels that are so low on an annual basis that no further demonstration is required or prepared and submitted for review an air dispersion modeling analysis that predicts the maximum concentrations of TAPs on short- and long-term averages. These predicted concentrations are required to be less than the maximum allowable ambient concentrations developed by Georgia EPD. A facility may not receive a permit unless the Georgia EPD determines that the ambient air impacts are acceptable. The TAPs emitted from this Project and subject to air dispersion modeling include hydrogen chloride, hydrogen fluoride, chlorine, and fluorine. No modeled air pollutant had a predicted, worst-case impact of greater than 30% of the allowable standard and most were less than 5% of the allowable standard.

Furthermore, the USEPA has reviewed the risk of the chemical category to the surrounding communities and promulgated standards to protect health in August 2020 and published a reconsideration of this rule on April 4, 2024, with additional requirements. Syensqo's new and existing processes will be required to demonstrate compliance with these rules which establish that human health around these facilities will be protected with an ample margin of safety considering their site-specific operations.

3.6.3 Proposed Best Management Practices

Numerous best management practices related to air quality would be employed during construction and operation of the proposed Project. These include using dust suppressants and best management to minimize fugitive dust, using only low-sulfur fuels in construction

equipment to minimize the emissions of SO₂ and PM_{2.5} precursors, and minimizing equipment idling during construction. These best management practices address the recommendations provided by the USEPA in their comments (December 10, 2024; Appendix B). Project operations would be conducted in accordance with Air Quality Part 70 Permit No. 2821-245-0126-V-06-1 (modified to reflect proposed operations), which incorporates requirements of the Clean Air Act and state regulations related to operations and specific processes, installation of air pollution control equipment, emissions testing requirements, and monitoring and reporting protocols.

3.7 Air Emissions

The USEPA regulates the emissions of the following air pollutants: carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), sulfur hexafluoride (SF₆), and several fluorinated gases. The Project would include a boiler and furnaces that would combust fossil fuels and emit CO₂ as well as small amounts of CH₄ and N₂O. The chemical manufacturing process unit is subject to Federal regulation 40 CFR 63 Subpart FFFF which requires control of organic HAPs as well as hydrogen halide and halogen HAP. Syensqo will utilize thermal oxidizer and scrubber systems to comply with the requirements of this rule. The thermal oxidizer will be designed and operated to destroy 99% or greater of organic HAPs and hydrogen halide and halogen HAP. The thermal oxidizer and scrubber system will also destroy 99% of the fluorinated gases routed to it.

3.7.1 Affected Environment

See Section 3.6 for a complete discussion of regional air quality. Because air emissions do not remain confined to a localized area, this section describes the contribution of this project to overall air emissions in the U.S. The USEPA (2023) states that in 2021, total gross U.S. air pollutant emissions were 6,340.2 million metric tons of CO₂ equivalent (CO₂e). Of that total amount, 1,757 million metric tons of CO₂e were from the transportation sector (see Figure ES-6).

3.7.2 Environmental Consequences

Construction

Construction of the proposed Project would result in temporary emissions from sources including vehicle transportation of equipment and materials, use of construction machinery, and curing of concrete. Use of electricity during construction may indirectly increase emissions depending on electric generation sources/methods employed by local utilities serving the site. The Construction Carbon Calculator (BuildCarbonNeutral.org, 2007) approximates the net embodied carbon of a project's structures and site using the following basic input parameters: building size, stories above/below ground, primary structural material to be used, ecoregion

⁴ CO₂e is a measure of the number of metric tons of CO₂ emissions with the same long-term impact as one metric ton of a given pollutant.

within the U.S., predominant existing vegetation, predominant landscape vegetation to be installed, and the area of vegetation disturbed and installed. Estimates are given as net embodied carbon from construction activities, where "embodied carbon" includes emissions from raw material extraction, transportation of materials, materials wasted, building operations

and maintenance, and the emissions a building continues to produce after it is no longer in use. The online tool indicates an accuracy of about plus or minus 25 percent. The Construction Carbon Calculator estimates that construction, including development of 62 acres of ground currently occupied by “forest,” would produce net emissions of 6,000 to 9,000 metric tons of embedded carbon (2023).

Operations

The Project would entail installation of new process equipment, a boiler, and furnaces, with 73,668 metric tons of estimated potential CO₂ emission per year.

At full capacity, the proposed Project would provide material to be used by battery manufacturers sufficient to support the production of batteries for more than 5 million EV batteries per year, thus contributing to a reduction of CO₂ emissions. The DOE (2022) provides estimates of annual CO₂ equivalent (CO₂e) emissions per vehicle (see pop-up labels on bar chart) for the following categories:

- All Electric: 1.237 metric tons per year of CO₂e⁴;
- Plug-in Hybrid: 2.160 metric tons per year of CO₂e;
- Hybrid: 3.129 metric tons per year of CO₂e; and
- Gasoline: 5.713 metric tons per year of CO₂e.

The displacement of conventional gasoline vehicles by EVs powered by the batteries produced using materials provided by the proposed Project would be anticipated to result in reductions of CO₂e emissions far exceeding those generated by the proposed Project.

Based on the assumptions that:

- Five million gasoline-powered vehicles would be replaced by 5 million all-electric vehicles; and
- Each replaced gasoline-power vehicle would reduce the amount of GHG emitted per year by $5.713 - 1.237 = 4.476$ metric tons per year of CO₂e;

Then the total amount of vehicle air pollutants emitted per year would be 22.4 million metric tons per year of CO₂e, which is equal to 0.35 percent of the estimated total gross U.S. emissions in 2021.

Based on the additional assumptions that:

-
- Each EV battery would have an operational lifespan of five years; and
 - New EVs would be added to those from previous years;

Then, by year five, 25 million gasoline-powered vehicles would be replaced by 25 million all-electric vehicles, eliminating 112 million metric tons per year of vehicular CO₂e, which is equal to 1.77 percent of the estimated total gross U.S. CO₂e emissions in 2021.

The U.S. auto industry sold a total of 13.75 million light vehicles (i.e., cars and light trucks) in 2022 (Statista, 2023b), of which 1.0 million were full electric vehicles (International Energy Agency [IEA], 2023; see pop-up labels on bar chart). Although estimates of CO₂e emission reduction based on the number of gasoline-powered cars replaced by all-electric vehicles are indicative of the potential benefits of the Project, it is likely that the polymer produced by the Project would be used for various other applications. Calculation of potential emissions reductions under these varied applications is beyond the scope of this analysis.

3.7.3 Proposed Best Management Practices

The Project would use thermally efficient equipment to minimize fuel consumption and the attendant air emissions. Syensqo would periodically assess the use of alternative fuels such as renewable natural gas as these alternatives become available.

The Project would result in a net reduction of CO₂e; therefore, the impact on air emissions is long-term and beneficial. Accordingly, no additional mitigation measures are required or proposed.

3.8 Noise and Vibration

3.8.1 Affected Environment

The proposed Project Site is in an industrial park area, adjacent to Syensqo's existing industrial facility. The entirety of the Project Site and the site of Syensqo's existing facility are zoned Heavy Industrial (see Section 3.18, Land Use). Zoning designations for adjacent properties include one-family residential, manufactured home residential, general business, agricultural, and neighborhood business.

Potential Noise Sensitive Areas (NSAs) north of the Project Site would be separated from the Project by the existing industrial facility and were not assessed. The nearest NSAs to the east of the Project are single-family residences approximately 0.2 mile from the site boundary, separated from the Project by an existing trucking company and logistics center. The nearest NSAs to the south and west of the Project are residences approximately 0.1 mile from the nearest proposed structure, separated by forested areas that would be maintained as a visual and noise buffer during operation. In addition, the nearest occupied buildings of Cross Creek High School and Gracewood Elementary School are located within one mile of the proposed Project Site (see Table 11).

3.8.2 Environmental Consequences

Construction

The loudest sources of noise during construction of the Project are expected to be associated with land clearing and mass grading. Heavy construction equipment, such as bulldozers, generates approximately 104 to 108 A-weighted decibels of sound (Spencer and Kovalchik 2007), which is an expression of the relative loudness of sounds as perceived by the human ear⁵. A-weighting gives more value to frequencies in the middle of human hearing and less value to frequencies at the edges as compared to a flat audio decibel measurement. A-weighting is the standard for determining hearing damage and noise pollution.

Based on the nearest NSAs being within 0.1 mile of the Project Site, it is anticipated that construction noise would be clearly audible during the months of construction; however, land clearing and mass grading are anticipated to take only a few months and be conducted only during daytime hours (i.e., between 7 a.m. and 10 p.m.). Noise of construction would likely be audible at Cross Creek High School and might be audible at Gracewood Elementary School. Syensqo would require construction equipment to be outfitted with appropriate mufflers. In addition, the buffer areas between the construction site and the nearest NSAs would not be cleared, and the distance and forest vegetation are anticipated to reduce the noise experienced at the NSAs. Accordingly, the impact of noise during construction would be minor, intermittent, and short-term.

Operation of construction equipment causes ground vibration that spreads through the ground and diminishes in strength with distance. However, vibrations due to heavy equipment operation, e.g., pile driving, cannot be perceived by humans farther than 500 feet away (Maekawa, 1994).

Operations

The primary noise sources during operation are associated with equipment such as pumps, compressors, fans, and vehicles. The pumps and compressors would generally be housed within structures, which would reduce the noise emitted to the surrounding area, with a maximum noise level of 82 dBA near the source. The noise of commuter vehicles would likely be audible at NSAs, but the buffer areas between the Project Site and the nearest NSAs would not be cleared, and the distance and forest vegetation are anticipated to reduce the noise experienced at the NSAs. Accordingly, the impact of noise during operation would be permanent but negligible.

3.8.3 Proposed Best Management Practices

Potential noise impacts would be reduced by the restriction of major construction to daytime hours, use of mufflers on construction equipment, and forested buffers between the Project Site and the NSAs. The anticipated noise impacts would be minor, and no mitigation is necessary or proposed.

⁵ <https://www.techtarget.com/whatis/definition/A-weighted-decibels-dBA-or-dBa-or-dBa>.

3.9 Geology, Topography, and Soils

3.9.1 Affected Environment

The proposed Project Site is near the Belair fault zone and is located near Augusta, Georgia, with faults being mapped predominantly in the crystalline rocks of the Piedmont physiographic province. This fault zone is not particularly active (e.g., Prowell and O'Connor 1978), and the U.S. Geological Survey (USGS) considers the Augusta area to be of low risk for slight or damaging earthquake activity (USGS 2014).

The USDA NRCS maps the following soil types on the proposed Project Site (Table 16).

Table 16. Soil Types Present on the Project Site

Soil Code	Soil Name	Farmland Classification	Drainage Classification	Hydric Rating	Acres	Percent
AgC	Ailey loamy sand, 5 to 8 percent slopes	Not prime farmland	Well drained	0	1.7	2.1%
DgA	Dogue fine sandy loam, 0 to 3 percent slopes	All areas are prime farmland	Moderately well drained	0	14.7	18.1%
DoB	Dothan loamy sand, 2 to 5 percent slopes	All areas are prime farmland	Well drained	0	3.3	4.0%
FsB	Fuquay loamy sand, 1 to 5 percent slopes	Farmland of statewide importance	Well drained	0	27.0	33.3%
Ra	Rains loamy sand	Not prime farmland	Poorly drained	100	8.9	11.0%
TwB	Troup fine sand, 1 to 5 percent slopes	Not prime farmland	Somewhat excessively drained	0	25.6	31.5%
Totals					81.3 ac	100.0%

Source: USDA NRCS 2023

Note: Values are rounded for presentation, and totals may not equal the sum of the addends.

Rains loamy sand is considered a hydric soil. Dogue fine sandy loam and Dothan loamy sand are areas of prime farmland and Fuquay loamy sand is farmland of statewide importance.

The NRCS rates these soils as having a slight to moderate erosion potential.

Desktop and field site investigations (i.e., Phase I and limited Phase II Environmental Site Assessments) were conducted in advance of the proposed Project to characterize the potential for hazardous constituents of concern in the soils. Based on these investigations, a small amount of residual material was remediated and properly disposed of prior to the selection of the Project Site for this purpose. Based upon these previous investigations, it is anticipated that the potential for encountering constituents of concern in the soils has been addressed.

3.9.2 Environmental Consequences

Construction

The Project Site is in an area with low seismic activity, and Syensqo would base the design of foundations on the results of a geotechnical survey and compliance with local building codes. Therefore, there is negligible risk to the Project from seismic activity.

Syensqo would employ erosion and sediment control measures to minimize the potential for mobilization of soils by stormwater during construction. Syensqo would develop a Stormwater Pollution Prevention Plan (SWPPP) to define the placement of these BMPs. The BMPs would be installed immediately following land clearing and mass grading and would be maintained until soils were stabilized through structures, pavement, and/or permanent revegetation. The Georgia National Pollutant Discharge Elimination System (NPDES) Construction Stormwater General Permit for Standalone Projects (GAR100001) requires that permanent vegetation achieve at least 80 percent coverage before BMPs can be removed. Based on these measures, erosion by stormwater would not have adverse effects.

Operations

Following construction, risk from seismic activity would be negligible for the projected operational life of the Project. No disturbance of soils would be anticipated, so erosion and sedimentation would not be anticipated.

3.9.3 Proposed Best Management Practices

Adherence to local building codes and compliance with the NPDES Construction Stormwater General Permit would ensure risks from seismic activity and from erosion and sedimentation are minimal. No adverse impacts are anticipated, and no mitigation measures are required or proposed.

3.10 Surface Water and Groundwater

3.10.1 Affected Environment

Surface Water

The proposed Project lies wholly within the Lower Spirit Creek subwatershed. The U.S. Geological Survey (USGS) identifies this subwatershed as 12-digit Hydrologic Unit Code 030601060303. The Lower Spirit Creek watershed drains an area of approximately 29 square miles and discharges directly into the Savannah River. This watershed includes Spirit Creek and its tributaries, excluding Little Spirit Creek. Surface water on-site generally flows north to south and ultimately flows into Spirit Creek, south of the Project Site. The onsite surface waters are described along with wetlands in Section 3.5, Wetlands and Floodplains.

Section 305(b) of the Clean Water Act (CWA) requires states to assess water quality every two years, and Section 303(d) of the CWA requires states to submit a list of all waters not meeting their designated uses. Spirit Creek from McDade Pond to the Savannah River is listed as an impaired water failing to meet fecal coliform standards and not supporting an indigenous fish community (impaired Bio F) attributed to elevated thallium (Georgia EPD 2022). Two Total Maximum Daily Load (TMDL) Evaluations have been prepared for this segment of Spirit Creek.

The Georgia EPD (2005) issued one TMDL Evaluation of 32 tributaries to the Savannah River, focusing on fecal coliform. In 2016, the Georgia EPD published a TMDL Evaluation of seven tributaries to the Savannah River, including Spirit Creek (Georgia EPD, 2016). The 2016 TMDL Evaluation determined that an approach for addressing the biological impairment to Spirit Creek would require reducing sediment loading and recommended several management practices applicable to both point source and non-point source discharges.

The proposed Project would not produce fecal coliform or mobilize it from existing sources; therefore, it is not anticipated to adversely affect the receiving waterbodies. Erosion and sedimentation during construction would be managed through the implementation of a SWPPP and BMPs described below. Stormwater discharge during operation would be managed by an onsite system and monitored on a monthly basis for the life of the Project to ensure that discharges meet the NPDES permit criteria.

The WOTUS delineation (November 30-December 1, 2023) identified the surface waters within the Project Site as summarized in Table 17. Each jurisdictional feature as determined in the AJD issued on June 5, 2024, is also included in Table 17. The Georgia EPD defines a stream buffer on intermittent and perennial streams, extending 25 feet from the line of wretched vegetation. The Georgia EPD does not define a buffer on ephemeral streams.

Table 17. Summary of Delineated Surface Water Features

Feature ID	Feature Type	USACE/USEPA Jurisdictional (per AJD)?	25-Foot Georgia EPD Buffer?
Streams			
Intermittent Stream 1	Intermittent Stream	Yes	Yes
Intermittent Stream 2	Intermittent Stream	Yes	Yes
Ephemeral Stream 1	Ephemeral Stream	No	No
Ephemeral Stream 2	Ephemeral Stream	No	No
Ephemeral Stream 3	Ephemeral Stream	No	No
Ephemeral Stream 4	Ephemeral Stream	No	No
Non-Jurisdictional Upland Drainages			
Ditch 2	Non-Jurisdictional Upland Drainage	No	No
Ditch 1	Non-Jurisdictional Upland Drainage	No	No
Ditch 3	Non-Jurisdictional Upland Drainage	No	No
Pond	Stormwater Detention Basin	No	No

Groundwater

The predominant aquifer underlying the Project site is the Southeastern Coastal Plain Aquifer System (USGS Publication HA 730_G). The site is near the northern limits of this aquifer system, making this area likely a zone of recharge. Depth to the aquifer system ranges from 50 to 100 feet below ground surface in the vicinity of the site. Augusta Utilities, which supplies

potable water to the City of Augusta and the surrounding area, has a water supply well field, Well Field No. 2, located approximately 1.5 miles east of the Project location. According to a groundwater conditions and studies report for Richmond County published by the USGS in 2011 (Gonthier et al.), the Project location is hydrologically upgradient from the drinking water well field. The proposed Project would obtain process and potable water from the City of Augusta and would not affect groundwater availability to Augusta Utilities' Well Field Number 2.

3.10.2 Environmental Consequences

Surface Water

Construction

Impacts on surface waters from proposed Project construction are anticipated to be local, permanent, and minor. Construction would include the permanent fill of surface waters within the limits of development and the rerouting of water flow into existing surface waters to maintain site hydrology. It would also include the disturbance of surface waters within construction areas. However, there are many similar surface waters within this ecoregion, and the permanent and temporary impacts would be minor. The USACE has evaluated the Project and determined that the proposed activity is authorized under NWP-39 for expansion of an industrial development. Documentation of the USACE authorization (dated December 13, 2024) is included in Appendix B.

Construction of the proposed Project has the potential to cause minor, temporary, indirect impacts on surface waters, due to erosion and sedimentation during rain events. Potential impacts on surface waters from direct runoff would be minimized through the implementation of a SWPPP and BMPs required by the Georgia EPD General Permit for Stormwater Discharges Associated with Construction Activities (Permit number GAR100001). Syensqo would submit a Notice of Intent for coverage prior to ground disturbance activities associated with construction. Additionally, Syensqo would request approval from the City of Augusta for an erosion and sediment control plan detailed in the Augusta Stormwater Design Manual, as required for site plan approval by the City of Augusta, further minimizing impacts on surface waters from runoff.

Operations

Operations of the proposed Project would produce stormwater, which is subject to NPDES permitting, rules, and guidelines. Syensqo would obtain an NPDES multi-sector general permit for stormwater discharges associated with industrial activity from the Georgia EPD, prior to discharge. Discharged stormwater from the proposed Project would be captured in a stormwater retention pond and then discharged at a limited rate into an unnamed, intermittent tributary that flows generally southeast before discharging into McDade Pond, an impoundment of Spirit Creek.

During the operational phase, chemicals would be stored in aboveground tanks with secondary containment. Accumulated material in the secondary containment such as stormwater would be tested and either diverted back to the process or sent offsite for treatment. If the accumulated stormwater meets applicable standards, it may be discharged through the permitted stormwater outfall. Storage piles, leachates, and wastewater discharges would not be directed to groundwater or surface water in the vicinity of the Facility.

Groundwater

Construction

The proposed Project would obtain process and potable water from the City of Augusta and would not affect groundwater availability to Augusta Utilities' Well Field Number 2.

The potential for spills of oil and diesel, hazardous chemicals, paint and solvent, hydraulic fluid, greases, diesel exhaust fluid, or coolant during construction or operation would be minimized by engineering controls to reduce spillage risk, secondary containment structures, maintaining and restocking spill kits, and establishing a timely spill response protocol. In the event that a spill occurs, migration to groundwater would be avoided by rapid cleanup, as would be described in the SWPPP.

No impacts on groundwater from construction are anticipated.

Operation

The proposed Project would obtain process and potable water from the City of Augusta and would not affect groundwater availability.

3.10.3 Proposed Best Management Practices

The USACE has determined that no compensatory stream mitigation is required for the minor stream impacts associated with the Project.

3.11 Vegetation and Wildlife

3.11.1 Affected Environment

3.11.1.1 Vegetation

The Project Site is in the Sand Hills Level IV ecoregion, which is a component of the Southeastern Plains Level III ecoregion. Native vegetation in the Sand Hills depends on its position in the landscape, soils, and water availability. On higher, dry sites, drought-tolerant vegetation, such as turkey oak (*Quercus laevis*), longleaf pine (*Pinus palustris*), and wiregrass (*Aristida stricta*) dominate an undisturbed landscape. Oak and loblolly pine forest is native to more mesic uplands. Stream valleys and seepage slopes are dominated by trees such as black gum (*Nyssa sylvatica*), red maple, and sweetgum.

A field survey of vegetation and wildlife habitat on the Project Site was performed on November 30-December 1, 2023. Vegetation within the proposed site is predominantly composed of a mixture of evergreen species, such as loblolly pine, and deciduous hardwood. A review of historical aerial imagery (Google, 2023) identified that the site trees had been clearcut by a prior owner in approximately late-2010 and that the current vegetation is nearly all young second-growth forest since that time.

The survey identified the following list of vegetation types:

- Loblolly pine;
- Water oak;
- Sweetgum;
- American elm (*Ulmus americana*);
- Chinese privet;
- Eastern red cedar (*Juniperus virginiana*);
- Greenbrier (*Smilax rotundifolia*); and
- Ebony spleenwort (*Asplenium platyneuron*).

The loblolly pines are typically young saplings estimated at less than 3 inches in diameter-at-breast height or mature trees between 6- and 8-inches diameter at breast height on average. Eastern red cedar saplings are common near the banks of the creek channel that runs north to south through the center of the site. The greenbrier and ebony spleenwort form a thin herbaceous layer.

3.11.1.2 Wildlife

For federally listed species, the desktop analysis used the U. S. Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC) system. For state-listed species, the Georgia Department of Natural Resources (DNR) biodiversity portal (Georgia DNR 2023a) was queried to identify state-protected plants and animals that may inhabit the Project Site. Listed species identified by the IPaC and Georgia DNR databases are summarized and presented below in Table 18. For the protected species potentially present, a summary of suitable habitat, and an initial determination of whether each species is likely to be present is included. No critical habitats were identified within the site boundary (USFWS 2023). None of the species were observed in the Project Site.

Typical wildlife species found in upland pine-oak forests include white-tailed deer (*Odocoileus virginianus*), raccoon (*Procyon lotor lotor*), gray squirrel (*Sciurus carolinensis*), eastern cottontail (*Sylvilagus floridanus*), black racer (*Coluber constrictor*), eastern box turtle (*Terrapene carolina carolina*), pileated woodpecker (*Dryocopus pileatus*), and several species of passerine birds such as Carolina chickadee (*Poecile carolinensis*) and white-breasted nuthatch (*Sitta carolinensis*). Common bat species such as the eastern red bat (*Lasiurus cinereus*) and big brown bat (*Eptesicus fuscus*) may use forests as roosting and foraging areas during the active season (generally March-October).

Table 18. State and Federally Protected Species with Potential to Occur on or Near the Project Site

Common Name (Scientific Name)	Status*		Preferred Habitat	Potential to Occur on Project Site
	State	Federal		
Amphibians/Reptiles				
Gopher Tortoise (<i>Gopherus polyphemus</i>)	T	-	Sandhills, longleaf pine-turkey oak woods, and old fields	None; No suitable habitat on site
Spotted Turtle (<i>Clemmys guttata</i>)	U	-	Heavily vegetated swamps, marshes, bogs, small ponds, and tidally influenced freshwater wetlands; nest and possibly hibernate in surrounding uplands	None; No suitable habitat on site
Southern Hognose Snake (<i>Heterodon simus</i>)	T	-	Sandhills, fallow fields, longleaf pine-turkey oak	None; No suitable habitat on site
Gopher Frog (<i>Lithobates capito</i>)	R	-	Sandhills; dry pine flatwoods; breed in isolated wetlands	None; No suitable habitat on site
Birds				
Red-cockaded Woodpecker (<i>Dryobates borealis</i>)	E	E	Open pine woods; pine savannas	None; No suitable habitat on site. Does not appear on IPaC. The IPaC is limited to the Project Site and has a narrower focus than the county-wide WRD list.
Bald Eagle (<i>Haliaeetus leucocephalus</i>)	T	-	Edges of lakes and large rivers; seacoasts	Low; site is within a few miles of a large perennial stream.

Common Name (Scientific Name)	Status*		Preferred Habitat	Potential to Occur on Project Site
	State	Federal		
Fish				
Atlantic Sturgeon (<i>Acipenser oxyrinchus oxyrinchus</i>)	E	E	Estuaries; lower end of large rivers in deep pools with soft substrates; spawn as far inland	None; No suitable habitat on site. Does not appear on IPaC. The IPaC is limited to the Project Site and has a narrower focus than the county-wide WRD list.
Shortnose Sturgeon (<i>Acipenser brevirostrum</i>)	E	E	Estuaries; lower end of large rivers in deep pools with soft substrates	None; No suitable habitat on site. Does not appear on IPaC. The IPaC is limited to the Project Site and has a narrower focus than the county-wide WRD list.
Bluebarred Pygmy Sunfish (<i>Elassoma okatie</i>)	E	-	Temporary ponds and stream backwaters with dense aquatic vegetation	None; No suitable habitat on site
Robust Redhorse (<i>Moxostoma robustum</i>)	E	-	Medium to large rivers, shallow riffles to deep flowing water; swift current	None; No suitable habitat on site
Mammals				
Southeastern Pocket Gopher (<i>Geomys pinetis</i>)	T	-	Sandy well-drained soils in open pine woodlands with herbaceous groundcover; fields and grassy roadsides	None; No suitable habitat on site
Rafinesque's Big-eared Bat (<i>Corynorhinus rafinesquii</i>)	R	-	Pine forests; hardwood forests; caves; abandoned buildings; bottomland hardwood forests and cypress-gum swamps	Low; roost trees or structures were not observed on site, but foraging habitat is present.
Tri-Colored Bat (<i>Perimyotis subflavus</i>)	-	PE	Suitable roost trees include both live and dead trees with live and dead leaf clusters, large live pines with clusters of dead pine needles, and trees containing Spanish moss.	May be present; suitable habitat occurs on site. See below for discussion.

Common Name (Scientific Name)	Status*		Preferred Habitat	Potential to Occur on Project Site
	State	Federal		
Mussels/ Clams				
Delicate Spike (<i>Elliptio arctata</i>)	E	-	Creeks and rivers with moderate current; mainly in crevices and under large rocks in silt deposits	None; No suitable habitat on site
Atlantic Pigtoe (<i>Fusconaia masoni</i>)	E	T	Medium-sized streams to large rivers, coarse sand and gravel at edge of riffles; fast flowing and well-oxygenated water	None; No suitable habitat on site. Does not appear on IPaC. The IPaC is limited to the Project Site and has a narrower focus than the county-wide WRD list.
Savannah Lilliput (<i>Toxolasma pullus</i>)	T	-	Large rivers to small creeks, oxbows, and sloughs; found in silty sand and sand in shallow water along, streams, and big rivers	None; No suitable habitat on site
Insects				
Monarch Butterfly (<i>Danaus plexippus</i>)	C	-	Prairies, meadows, and grasslands with milkweed	None; No suitable habitat on site
Plants				
Ocmulgee Skullcap (<i>Scutellaria ocmulgee</i>)	T	PT	Moist hardwood forests on stream terraces, slopes, and bluffs. Also found on riverbanks and nearby ravine slopes.	Low; potentially suitable habitat is present, but site was previously clearcut (now second-growth).
Relict Trillium (<i>Trillium reliquum</i>)	E	E	Mesic hardwood forests on ravine slopes or on bottomlands and floodplains. Underlying bedrock is typically calcium rich.	Low; potentially suitable habitat is present, but site was previously clearcut (now second-growth).

*C = Candidate, E = Endangered, PE = Proposed Endangered, PT = Proposed Threatened, T = Threatened, R = Rare, U = Unusual
WRD = Wildlife Resources Division of the Georgia Department of Natural Resources

Due to the historical use of the Project Site for agricultural purposes, the more recent development for industrial purposes, the relatively recent (2010) clearcutting of the site, and the current pine-dominated cover, it is unlikely that the proposed Project Site contains federally or state-protected species, except for the tri-colored bat.

Tri-Colored Bat

The Project Site contains forested areas with pine trees of 6-to-8-inch diameter, which are considered suitable roosting habitat for the tri-colored bat. The tri-colored bat is proposed to be listed as endangered under the Endangered Species Act (ESA), as discussed by USFWS in their comments (November 13, 2024; Appendix B). The timing of such listing is unknown, but it may occur during the course of Project construction. If this species is listed prior to clearing of the forested areas of the site, Syensqo proposes to avoid potential adverse effects on this species by adopting restrictions on the timing of tree-clearing in forested areas with pine trees over 6 inches diameter. These restrictions are:

- No tree clearing during the summer non-volant (i.e., unable to fly) pup season from May 1 through July 15; and
- No tree clearing during the winter torpor (i.e., semi-hibernation) season from December 15 through February 15.

Based on these restrictions on the timing of tree-clearing, we find that the Project is ***Not Likely to Adversely Affect*** the tri-colored bat.

Migratory Bird Treaty Act

The IPaC report also identified the following birds protected under the Migratory Bird Treaty Act. For each species, Table 19 provides the species' preferred nesting habitat, typical breeding period, and an initial determination of whether each species is likely to be present.

Table 19. Migratory Birds that may Breed on the Project Site

Common Name (Scientific Name)	Preferred Nesting/Breeding Habitat	Breeding Time of Year	Potential to Occur Onsite
Bald Eagle (<i>Haliaeetus leucocephalus</i>)	Large trees in forested areas adjacent to large bodies of water	Sep 1 st to Jul 31 st	Not likely
American Kestrel (<i>Falco sparverius Paulus</i>)	Tall dead trees or utility poles generally with an unobstructed view of surroundings. Prefers sandhill habitats but also flatwood settings	Apr 1 st to Jul 31 st	Not likely
Brown-headed Nuthatch (<i>Sitta pusilla</i>)	Nests in cavities in dead wood, especially longleaf pine; requires soft wood for primary excavation	Mar 1 st to Jul 15 th	Not likely
Chimney Swift (<i>Chaetura pelagica</i>)	Anthropogenic structures as well as the interior of hollow tree trunks and branches, Pileated Woodpecker cavities, and rock shelters	Mar 15 th to Aug 25 th	Not likely

Common Name (Scientific Name)	Preferred Nesting/Breeding Habitat	Breeding Time of Year	Potential to Occur Onsite
Eastern Whip-poor-will (<i>Antrostomus vociferus</i>)	Mixed woodland conifer hardwood forests	May 1 st to Aug 20 th	Possible
Kentucky Warbler (<i>Oporornis formosus</i>)	Medium-aged hardwood and woodland forests, swamps, shrubland, with well-developed ground cover	Apr 20 th to Aug 20 th	Not likely
Painted Bunting (<i>Passerina ciris</i>)	Scattered brush, riparian trees, weedy and shrubby areas, woodland edges	Apr 25 th to Aug 15 th	Not likely
Prairie Warbler (<i>Dendroica discolor</i>)	Dry scrub, low pine-juniper, barrens, burned-over areas, sprout lands. Small patches of habitat may be suitable for breeding	May 1 st to Jul 31 st	Not likely
Prothonotary Warbler (<i>Protonotaria citrea</i>)	Primary habitats are almost always near standing water, mature deciduous floodplain, river, and swamp forests	Apr 1 st to Jul 31 st	Not likely
Red-headed Woodpecker (<i>Melanerpes erythrocephalus</i>)	Open woodland, especially with beech or oak, parks, cultivated areas. Nests in cavities in live trees, dead snags, utility poles, or fenceposts	May 10 th to Sep 10 th	Likely
Rusty Blackbird (<i>Euphagus carolinus</i>)	Breeding habitat includes moist woodland (primarily coniferous), bushy bogs and wooded edges of watercourses	Apr to May	Not likely
Swallow-tailed Kite (<i>Elanoides forficatus</i>)	Species occupies diverse vegetation types, primarily swamps	Mar 10 th to Jun 30 th	Not likely

Most of the migratory bird species do not have suitable breeding habitat in the Project Site. With the exception of the bald eagle, which does not appear to have suitable habitat onsite, the breeding period for most species ends in August and does not restart until April, therefore, tree-clearing during the late fall and winter months (October to February) would not impact breeding of migratory birds.

3.11.2 Environmental Consequences

3.11.2.1 Vegetation

Construction

Impacts on vegetation from proposed Project construction are anticipated to be direct and long-term. Construction would include the permanent removal of vegetation within the limits of development and the temporary localized removal of topsoil and vegetation within construction

areas. However, the vegetation within the Project Site is similar to the extensive acreage of upland pine-oak forest within this ecoregion, and the permanent and temporary impacts would be minor.

Operations

Operations of the proposed Project are not anticipated to create additional impacts on vegetation.

3.11.2.2 Wildlife

Construction

Impacts on potentially suitable wildlife habitat from proposed Project construction are anticipated to be direct and long-term. Construction would include the permanent removal of potentially suitable wildlife habitat within the limits of development and temporary removal of potentially suitable wildlife habitat within temporary construction areas. However, the potentially suitable wildlife habitat within the Project Site is similar to the extensive acreage of upland pine-oak forest within this ecoregion, and the permanent and temporary impacts would be minor.

Based on the DOE's review of the IPaC report, federally protected species are not likely to be present within the Project Site, and no impacts are expected on these species. Accordingly, the DOE has determined that the Project would have **No Effect** on species listed under the Endangered Species Act, except for the tri-colored bat, which the Project is **Not Likely to Adversely Affect**. In addition, because no critical habitat is present, no impacts on critical habitat would occur.

Operations

Operations of the proposed Project are not anticipated to create additional impacts on wildlife or their habitat.

3.11.2.3 Proposed Best Management Practices

Because no significant impacts are anticipated, no mitigation is required or proposed.

3.12 Regulated Waste

3.12.1 Affected Environment

Syensqo's adjacent, existing facility currently manages regulated waste streams. These waste streams are disposed of off-site in permitted industrial or municipal solid waste disposal facilities, in accordance with state and federal solid waste management regulations.

3.12.2 Environmental Consequences

Construction

Construction is not anticipated to generate regulated wastes.

Operations

The proposed Facility would generate hazardous and non-hazardous regulated waste, which would be disposed of in the same manner as those at the existing facility.

Syensqo has corporate environmental policies on design to address the risk from the storage of chemicals including requirements for design of equipment, secondary containment, fire protection, worker safety, and protection of the environment. Syensqo also has the following environmental plans:

- Spill Prevention Control and Countermeasures Plan;
- Stormwater Pollution Prevention Plan (SWPPP); and
- Risk Management Plan.

3.12.3 Proposed Best Management Practices

Regulated waste would be responsibly managed in accordance with RCRA regulations, in the same manner as those at the existing Syensqo facility (USEPA ID: GAD107525503), and no additional measures are required or proposed.

3.13 Utilities and Energy Use

3.13.1 Affected Environment

The existing Syensqo facility and the proposed Project Site are served by existing utilities (City of Augusta 2023b). As discussed below, providing utility service to the proposed Project is part of the normal course of business for these utilities.

Water and sewer service is provided by the Augusta Utilities Department. The Augusta Utilities Department currently provides water and sewer to a service area of 230 square miles and a population of over 160,000. The distribution system consists of approximately 1,200 miles of water mains. The Department includes three water treatment plants, one drawing surface water from the Savannah River and two drawing groundwater from wellfields. The surface water treatment plant has a design capacity of 60 million gallons per day (MGD) and daily flows of approximately 24 MGD. The two groundwater treatment plants have design capacities of 10 MGD each and a combined daily flow of approximately 15 MGD (City of Augusta 2023b).

Electrical service is provided by Georgia Power. Georgia Power's 2022 territorial sales were 86 billion kilowatt-hours (Georgia Power, 2023a). Georgia Power continues to add renewable energy to its energy mix, which includes 7 percent renewables and 2 percent hydropower in 2022 (Georgia Power, 2023b).

Natural gas is provided by Atlanta Gas Light (Atlanta Gas Light 2015). Atlanta Gas Light provides natural gas delivery service to more than 1.6 million customers in Georgia. Atlanta Gas Light operates and maintains the infrastructure that delivers the gas to customers of certified natural gas marketers (Atlanta Gas Light 2023).

Trash Pickup, Solid Waste, and Recycling Services are provided by local vendors through contracts with the City of Augusta's Environmental Services Department.

3.13.2 Environmental Consequences

Construction

Syensqo would use portable generators, temporary power supply, water tanks, and portable restrooms during construction to provide these services until new permanent connections with the existing utilities have been constructed. Accordingly, there would be no impacts on the utilities during construction.

Operations

The existing, adjacent Syensqo facility and the proposed Project Site are served by existing utilities (City of Augusta, 2023c). Each of these utilities has current and projected excess capacity far beyond the requirements of the proposed Project, and these services would be provided to the proposed Project as part of the normal course of business for these utilities (utility confirmation letters in Appendix E). Water and sewer services will be provided by Syensqo's existing facility with utility tie-ins constructed within the footprint of the proposed Project Site. Steam and nitrogen required for the manufacturing process will be extended from Syensqo's existing, adjacent facility.

The proposed Project would produce process wastewater, which is subject to the USEPA's new source, effluent guidelines for the OCPSF category (40 CFR Part 414). Process wastewater would be pretreated onsite to meet or exceed the federal effluent guidelines, prior to discharge to the Augusta Utilities Department wastewater collection system for treatment in the Publicly Owned Treatment Works. Syensqo would contract with the Augusta Utilities Department for this service.

3.13.3 Proposed Best Management Practices

Syensqo's existing facility and proposed Project would be served by existing utilities as a normal course of business. Collocating the proposed Project with Syensqo's existing, adjacent facility within an existing industrial area takes advantage of existing utility infrastructure to minimize the need for additional utility infrastructure. No adverse effects are anticipated, and no mitigation is required or proposed.

3.14 Transportation and Traffic

3.14.1 Affected Environment

The proposed Project Site is in an industrial park area east of Clanton Road, south of Tobacco Road, approximately 1 mile west of U.S. Highway 25, 1.5 miles east of Georgia State Route 56, and roughly 2.3 miles south of Interstate Highway 520 (I-520). The Project Site is served by an existing rail spur, which will be reconfigured within the Project Site to serve the Project. Augusta Regional Airport (AGS) is located approximately 2.2 miles east of the Project Site. The nearest public bus is approximately 2 linear road miles from the Project Site (Augusta Georgia Transit, 2023).

Tobacco Road is classified as a principal arterial (rural). It shows an eastbound peak in volume of approximately 210 vehicle per hour at 7:00 a.m. and a westbound peak in volume of 299

vehicle per hour at 5:00 p.m. The annual average daily traffic of Tobacco Road has decreased from 5,990 in 2013 to 4,700 in 2022 ([Georgia Department of Transportation [GDOT], 2023).

The current daily traffic to and from the Project Site reflects the commute trips and truck deliveries of spent production material and processing chemicals from Syensqo's adjacent, existing facility.

3.14.2 Environmental Consequences

Construction

Construction activities are expected to take approximately 18 months to complete. During the construction phase, the Project is expected to employ up to a peak of approximately 500 construction personnel. Approximations of construction traffic are provided in Section 2.3.

The additional road traffic would be anticipated to create short-term, minor adverse impacts on the level of service of the existing roads; however, several alternate routes are available, which minimizes the potential impact. Reconfiguration of the railroad spur will be entirely within the Project Site and will not affect other users.

Operations

During operations, the Project is expected to employ approximately 100 FTE operations personnel. Employee parking will be provided by Syensqo's existing, adjacent facility. Deliveries of feedstock and shipment of products will be by rail, as will various supplies. For those supplies that will be delivered by truck, Syensqo estimates that approximately 20 truck trips per week will be required. For outgoing product, Syensqo estimates that approximately 80 truck trips per week would be required. In addition, commuter vehicles will add approximately 1,000 light-vehicle trips per week. Railcars will also be used and will range from 10 to 15 railcars per week.

The additional road traffic would represent a small proportion of the current traffic on Tobacco Road. It would be anticipated to have negligible, short-term impacts on the level of service of the existing roads. As during construction, several alternate routes are available, which minimizes the potential impact. Use of the rail spur would not adversely affect other rail users and would reduce the number of additional truck trips needed to operate the Project, minimizing potential impacts on road traffic.

3.14.3 Proposed Best Management Practices

No mitigation measures would be required for transportation and traffic.

3.15 Public and Occupational Health and Safety

3.15.1 Affected Environment

The existing Syensqo facility manages public and occupational health and safety through Syensqo's Health, Safety, and Environmental (HSE) program. The HSE program includes training and monitoring of the following topics: confined spaces, lockout/tagout, fire prevention, hazard assessment, personal protective equipment, hearing conservation, fall protection, and

medical surveillance. Syensqo's employees are required to participate in the HSE program, including training and monitoring.

Sensitive receptors are areas and facilities where the occupants are more susceptible to the adverse effects of exposure to toxic chemicals, pesticides, and other pollutants. Sensitive receptors include, but are not limited to, hospitals, schools, daycare facilities, parks and playgrounds, elderly housing, and convalescent facilities. Impacts to sensitive receptors would be dependent on their proximity to the Facility and/or Facility access routes. Typically, sensitive receptors located further from the Site would experience less effects than those located closer to the Site. Sensitive receptors and their approximate distance from the Project Site are included in Table 11.

Table 11. Sensitive Receptors

Facility Type	Facility Name	Approximate Distance from Site
Schools	Cross Creek High School	0.4 mile
	Gracewood Elementary School	0.7 mile
Hospitals	East Central Regional Hospital	0.6 mile
Houses of Worship	Butlers Creek Church	0.3 mile
	World Outreach Evangelistic Church	0.5 mile
	Santidham Temple of Augusta	0.5 mile

Notes: Sensitive-receptor identification is based on preliminary desktop analysis within a 1.0-mile buffer.

No parks, elder care, senior facilities, convalescence facilities, daycares, subsidized housing, or public housing have been identified within 1 mile of the facility.

3.15.2 Environmental Consequences

Construction

Syensqo would ensure that construction is managed in accordance with Occupational Safety and Health Administration (OSHA) requirements and that the construction site is secured to prevent risk to members of the public. In addition, Project construction will be conducted under a detailed safety plan that includes the learnings from previous Syensqo/Solvay capital projects and input from the engineering contractor. The plan is based on Syensqo/Solvay's Life-Saving Rules and safety principles, which hold that safety is both a right and a responsibility. The Life-Saving Rules initiative was launched in 2015 to prevent fatal accidents and accelerate the continuous progress curve. Eight rules have been defined, for the eight main dangerous activities (e.g., working at height, on powered systems, traffic, etc.). The initiative requires strict compliance by everybody and full enforcement by management.

Operations

Although employees working at the proposed Facility could be exposed to a variety of situations, Syensqo would manage the potential for exposure through the HSE program. Syensqo would update its existing Emergency Action Contingency Plan to incorporate operations at the proposed Facility. This plan addresses unanticipated events (e.g., natural disaster, weather events) and provides procedures for the protection of the site's personnel,

environment, and infrastructure. This plan would also address the highly unlikely potential for intentional destructive acts. In addition, the proposed Facility would be secured to prevent access by members of the public.

In addition, Syensqo is a member of OSHA's Voluntary Protection Programs which recognize employers and workers in the private industry and federal agencies who have implemented effective safety and health management systems and maintain injury and illness rates below national BLS averages for their respective industries. In Voluntary Protection Programs, management, labor, and OSHA work cooperatively and proactively to prevent fatalities, injuries, and illnesses through a system focused on hazard prevention and control, worksite analysis, training, and management commitment and worker involvement.

3.15.3 Proposed Best Management Practices

Syensqo's existing HSE program addresses public and occupational health and safety. No mitigation is required or proposed. Syensqo will update the training and documentation based on the proposed Facility and operations.

3.16 Parks and Recreation

3.16.1 Affected Environment

The City of Augusta maintains more than 60 parks of diverse sizes, as well as greenspaces, athletic fields, walking trails, playgrounds, boating and fishing areas, dog parks, and cemeteries (City of Augusta 2023d). One State of Georgia-owned wildlife management area, Spirit Creek Forest Wildlife Management Area, is located 0.25 mile from the Project Site (Georgia DNR 2023b). This facility is open to the public for hunting, bird watching, bike riding, and other passive recreation. Access to the entrance of Spirit Creek Forest Wildlife Management Area is from Smokey Road which would not be impacted significantly by construction or operation traffic from the proposed Facility. Additionally, the Phinizy Swamp Wildlife Management Area (Georgia DNR 2023c) is more than three miles from the proposed Project Site and would not be affected. No other areas having special designation, such as federal and state-designated wilderness areas, national parks, national natural landmarks (National Park Service 2023), wild and scenic rivers (ArcGIS 2023), state and federal wildlife refuges (Georgia DNR 2023a), or marine sanctuaries (National Oceanic and Atmospheric Administration 2023) were identified within 3 miles of the Project Site. The nearest publicly owned recreation areas to the Project Site are summarized in Table 20, along with the distance to the recreation areas.

Table 20. Recreation Areas Near the Project Site

Recreation Area	Address	Distance/Direction from Project Site
Spirit Creek Forest Wildlife Management Area	4052 Smokey Road	0.25 mile southwest
Butler Park	1812 Phinizy Road	1.1 miles north, northeast
Gracewood Community Center	2309 Tobacco Road	1.5 miles west, northwest
Apple Valley Park	1725 Marvin Griffin Road	1.9 miles north, northeast
Phinizy Swamp	1750 Gravel Pit Road	3 miles northwest

3.16.2 Environmental Consequences

The impact on parks and recreation from the proposed Project is anticipated to be negligible. The proposed Facility does not involve or affect any local/municipal parks and recreation facilities.

3.16.3 Proposed Best Management Practices

No impacts on this resource are anticipated, so no mitigation is required or proposed.

3.17 Land Use

3.17.1 Affected Environment

The Richmond County online GIS database (City of Augusta 2023e) was examined for information regarding land use and parcel information in the Project Site. The entirety of the Project Site and the site of Syensqo's existing facility are zoned Heavy Industrial based on a review of the Richmond County GIS website (City of Augusta 2023e) and local zoning codes. Zoning designations for adjacent properties include one-family residential, manufactured home residential, general business, agricultural, and neighborhood business. Existing utilities are

discussed in Section 3.14, Utilities and Energy Use, and parks and recreational areas near the Project Site are discussed in Section 3.17, Parks and Recreation.

3.17.2 Environmental Consequences

Syensqo proposes to construct and operate an industrial facility on the Project Site. The proposed Project is consistent with local zoning, historical land use on the Project Site, and nearby land uses; therefore, the effects of the Project are anticipated to be negligible.

3.17.3 Proposed Best Management Practices

No impacts on land use are anticipated, so no mitigation is required or proposed.

3.18 Visual and Aesthetic Resources

3.18.1 Affected Environment

The proposed Project Site is currently undeveloped, and most of the Project Site is wooded with a mixture of young evergreen and deciduous tree species. It is primarily vegetated with secondary-growth upland forest. The Project Site contains the remaining concrete building pads of the recently demolished Weylchem chemical manufacturing facility, which existed as an industrial visual element from circa 1977 to circa 2016. A modern cellular communications tower, constructed between 1993 and 1999, is present approximately 750 feet west of the Project Site.

The Project Site lies to the south of the adjacent to the existing Syensqo facility. USACE is within the viewshed of residential areas to the east, south, and west; however, there are forested areas that would act as visual buffers on the adjacent parcels to the east and south. The potential viewshed from historic properties is discussed in Section 3.6, Cultural Resources.

3.18.2 Environmental Consequences

The proposed Project would add an industrial element to the currently undeveloped Project Site; however, the Project Site is already in an industrial area, zoned Heavy Industrial (see Section 3.18, Land Use) and occupied by the Weylchem chemical manufacturing facility from circa 1977 to circa 2016. Accordingly, the addition of this industrial element would be consistent with the site's appearance since the 1970s and not be considered out of character.

The existing Syensqo facility north of the Project Site would screen the proposed Project from visual receptors to the north. The existing forested areas to the east, south, and west would provide visual buffers from visual receptors in those respective directions. In addition, Syensqo would maintain a minimum of a 50-foot natural vegetative buffer on the south property line and a minimum 25-foot buffer from jurisdictional wetlands, which would further reduce the visual impacts of the Project.

The proposed Project would include several tall structures (e.g., stacks, communications towers), which would be visible above the forest vegetation. The maximum height of these structures would be approximately 175 feet. These structures would be similar in visual character to those at the existing adjacent Syensqo facility and the cellular communications tower west of the Project Site.

Based on the proposed use of the Project Site being similar in visual character to the historical use of the Project Site, and the offsite and onsite visual buffers, the impact on visual resources would be negligible.

3.18.3 Proposed Best Management Practices

No visual or aesthetic impacts are anticipated, so no mitigation is required or proposed.

3.19 Cumulative Impacts

The proposed Project is in a heavy industrial zone with neighbors who may potentially expand their industrial or commercial operations. Syensqo is not aware of other planned industrial or commercial development in the vicinity of the proposed Project, and no reasonably foreseeable future actions have been identified that would interact with the proposed Project to generate cumulative adverse impacts. Additional detail regarding specific resource categories is provided in Table 21.

Table 21. Cumulative Impacts

Resource Categories	Cumulative Impacts under the Proposed Project
Socioeconomics	There is currently no forecast for a population influx to Augusta-Richmond County from the proposed Project or from future industrial expansion within the industrial district, though expansion of neighboring industrial facilities could theoretically result in a local population shift. Despite the potential for additional industrial development in the vicinity of the site, no reasonably foreseeable future actions have been identified that would interact with the proposed Project to generate cumulative adverse impacts on socioeconomic conditions in Augusta-Richmond County.
Community Services	Construction crews, as well as permanent new employees, are expected to be drawn from local and regional residents and not constitute a notable permanent migration of workers and their families to the region. The increased burden on existing police, fire, emergency medical, and other community services during construction and operations of the proposed Project is expected to be negligible.
Wetlands and Floodplains	Syensqo is not aware of other planned development in the vicinity of the Project, but if impacts on wetlands would occur, they would be permitted and mitigated through the USACE process under §404 of the CWA. The USACE considers compensatory wetland mitigation at the watershed level to avoid/minimize the potential for a project to contribute to cumulative adverse impacts on wetlands.
Cultural Resources	No impacts are anticipated so no contribution to cumulative impacts is anticipated.

Resource Categories	Cumulative Impacts under the Proposed Project
Air Quality	The proposed Project is in a heavy industrial zone with neighbors who may potentially expand their industrial or commercial operations. Syensqo is not aware of other planned industrial or commercial development in the vicinity of the proposed Project, and no reasonably foreseeable actions have been identified that would interact with the proposed Project to generate cumulative adverse impacts on air quality.
Air Emissions	The Project would result in a net reduction of air emissions; therefore, the impact on air emissions is long-term and beneficial. No contribution to adverse cumulative impacts is anticipated.
Noise and Vibration	The proposed Project is in a heavy industrial zone with neighbors who may potentially expand their industrial or commercial operations. Syensqo is not aware of other planned industrial or commercial development in the vicinity of the proposed Project, and no reasonably foreseeable actions have been identified that would interact with the proposed Project to generate cumulative noise and vibration impacts.
Geology, Topography, and Soils	Syensqo's erosion and sediment control measures, including the BMPs, would confine impacts on soils to the footprint of the Project, minimizing the potential of the Project to contribute to cumulative adverse impacts.
Surface Water and Groundwater	Syensqo is not aware of other planned development in the vicinity of the Project, but if impacts on surface waters would occur, they would be permitted and mitigated through the USACE process under §404 of the CWA. The USACE considers compensatory stream mitigation at the watershed level to avoid/minimize the potential for a Project to contribute to cumulative adverse impacts on streams.
Vegetation and Wildlife	The vegetation and wildlife habitat within the Project Site are similar to the extensive acreage of upland pine-oak forest within this ecoregion, and no cumulative adverse impacts are anticipated.
Regulated Waste	Regulated waste would be responsibly managed in accordance with RCRA regulations, in the same manner as those at the existing Syensqo facility. No contribution to cumulative impacts is anticipated.
Utilities and Energy Use	Syensqo's existing facility and proposed Project would be served by existing utilities as normal course of business. No contribution to cumulative adverse impact is anticipated.
Transportation and Traffic	The existing roadways are sufficient to accommodate the anticipated increase in traffic without an overall cumulative impact.
Public and Occupational Health and Safety	Syensqo's existing HSE program addresses public and occupational health and safety. No contribution to cumulative impacts is anticipated.
Parks and Recreation	No impacts are anticipated so no contribution to cumulative impacts is anticipated.
Land Use	No impacts are anticipated so no contribution to cumulative impacts is anticipated.
Visual and Aesthetic Resources	No impacts are anticipated so no contribution to cumulative impacts is anticipated.

DOE certifies that it has considered the factors mandated by NEPA, and the environmental assessment represents DOE's good-faith effort to prioritize documentation of the most important considerations required by the statute within the Congressionally mandated page limits. This prioritization reflects DOE's expert judgment; and that any considerations addressed briefly or left unaddressed were, in DOE's judgment, comparatively not of a substantive nature that meaningfully informed the consideration of environmental effects and the resulting decision.

4.0 References

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