Petition before the Massachusetts Energy Facilities Siting Board for

Analysis in Support of Approval of Holyoke Gas & Electric's Liquefied Natural Gas Infrastructure & Resiliency Project

EFSB 22-07

DECEMBER 7, 2022

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COMMONWEALTH OF MASSACHUSETTS

ENERGY FACILITIES SITING BOARD

HOLYOKE GAS & ELECTRIC DEPARTMENT

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1.0 EXECUTIVE SUMMARY

1.1 Introduction

The Holyoke Gas & Electric Department of the City of Holyoke, Massachusetts (HG&E), a municipal utility, submits this Analysis in support of its petition to the Massachusetts Energy Facilities Siting Board (Siting Board) for the approval of the construction of a proposed, new liquefied natural gas (LNG) storage tank (Project) at HG&E's existing peak-shaving facility in the City of Holyoke, Massachusetts (West Holyoke Facility).

HG&E receives firm gas supply (11,800 Dekatherms per day (Dth/d)) from the Tennessee Gas Pipeline Company LLC's (TGP) Northampton Lateral for delivery into its gas distribution system, which currently serves approximately 11,500 customers in the City of Holyoke (Holyoke or the City) and Town of Southampton (Southampton). This pipeline gas supply is supplemented during the winter/peak gas demand periods with vaporized LNG from the West Holyoke Facility. The Northampton Lateral is capacity-constrained (i.e., no new additional delivery capability may be secured by HG&E) and, as a result, in 2019 HG&E instituted a moratorium on adding new gas customers or incremental load to its system. HG&E relies heavily on the use of the West Holyoke Facility to meet peak gas demand needs for its existing customers, serving over 40% of its peak day demand with LNG. HG&E has limited on-site LNG storage and, assuming the West Holyoke Facility storage capacity is full at the onset of a period of cold weather, can only maintain reliable service to its existing customers for less than two days at or near peak or design conditions.

The existing West Holyoke Facility was originally constructed in 1971 with two 55,000-gallon LNG storage tanks, an LNG tanker truck unloading station and an LNG vaporization system. Major enhancements were made in 1974 with the installation of two additional 55,000-gallon LNG storage tanks (a planned fifth tank was not installed). In 1999 HG&E replaced the original, 20-year old direct-fired LNG vaporization system (which was at the end of its "useful life") with a new, modern remote-heated LNG vaporization system. The West Holyoke Facility has been operated safely by HG&E since its original construction in 1971.

The proposed Project consists of the installation of a fifth LNG storage tank with a nominal capacity of 70,000-gallons to increase on-site storage by 5,000 Dth to a total of 21,000 Dth. The key objective of the Project is to enable HG&E to continue to provide reliable service during cold weather periods by maintaining adequate, on-site storage capacity. The Project will also help maintain stable rates and reduce environmental impacts of the heating sector throughout the energy transition to net zero by 2050 by enabling HG&E to selectively add natural gas service with the aim to reduce consumption of higher emitting fuel when an electric alternative is not feasible. Such targeted gas service will also promote economic development. The proposed scope of work will be located completely within the existing footprint or fence line of the West Holyoke Facility. HG&E has identified certain complementary

improvements at the West Holyoke Facility that will be pursued on a coordinated basis with the Project to secure cost savings and reduce impacts.

Please refer to Figure 1-1 for a USGS map showing the West Holyoke Facility location and Figure 1-2 for an arial photograph of such site. Please also refer to Figures 1-3(a), 1-3(b), 1-3(c) and 1-3(d) for "bird's eye" view photographs of the Project Site (with aerial photographs to show perspective).

HG&E has recognized the need for an incremental resource to maintain reliable service on design days or during cold snaps for a number of years. Previously, HG&E sought to address this resource need pursuant to a displacement agreement (MOU) with Columbia Gas of Massachusetts (CMA) whereby CMA would construct new facilities to enable expanded TGP deliveries to HG&E from the TGP mainline while HG&E would, in turn, back off service on the Northampton Lateral, which capacity could be employed to serve other CMA customers to the north. HG&E and CMA executed an agreement describing the terms and conditions of such arrangement. Changing market conditions, however, resulted in differing priorities for CMA and the arrangement has been terminated; an alternative reliability project being pursued by Eversource (formerly CMA) is now before the Siting Board in the Springfield area, which project will not benefit HG&E.

Upon the termination of the MOU with CMA, HG&E reevaluated its resource portfolio and peak demand requirements and confirmed a continuing need for an additional gas supply. HG&E next performed a comprehensive evaluation of potential alternative resources, including in response to changing market conditions subsequent to the execution of the MOU. See Section 4.0. HG&E determined that the Project was, by far, the superior resource alternative. Thereafter, HG&E sought to identify and evaluate a range of sites for additional LNG storage and determined that the expansion of the West Holyoke Facility will meet its identified resource need at the least cost and with minimum environmental impacts. See Section 5.0.

This Analysis demonstrates that the proposed Project reflects a proper balance between economic and reliability factors as well as environmental impact considerations, consistent with state, federal and regional energy policies and local community expectations. The Analysis further demonstrates that the Project was selected as a result of an appropriate site and technology design evaluation and that the environmental impact and costs of the Project are minimized. The Project contributes to a reliable, low cost and diverse regional energy supply with minimal environmental impacts.

The sections that follow will provide additional detail in support of HG&E's petition , including:

- Section 2.0 - provides a more detailed description of the design of the Project;
- Section 3.0 - outlines the need for the Project;
- Section 4.0 - summarizes the appropriate analysis of alternatives;
- Section 5.0 - details the site selection process for the proposed Project and the most viable alternative sites;
- Section 6.0 - presents detailed environmental analyses and mitigation proposals; and

- Section 7.0 - provides an overview of the Project's consistency with current health and environmental policies.

1.2 Project Development Schedule

HG&E is pursuing necessary requirements to place the Project in-service prior to the 2025/2026 winter heating season but, given the reliability benefits, will look to compress the Project's overall schedule, if practicable, in an attempt to move up the completion of the Project to a date prior to the 2024/2025 winter heating season. HG&E believes that this schedule is reasonable given the nature of the Project's review process; the Siting Board review is the only permit or approval required for the Project.

Pursuant to G.L. c. 164, § 69J, no Applicant shall commence construction of a "facility" unless a petition for approval of construction of that generating facility has been approved by the Siting Board. Pursuant to G.L. c. 164, § 69G, a jurisdictional "facility" is defined as: "a unit, including associated buildings and structures, designed for or capable of the manufacture or storage of gas, except such units below a minimum threshold size as established by regulation." The Project will include aggregate natural gas storage capacity above the threshold reflected in the Siting Board's regulations. HG&E therefore believes that the Project is subject to review by the Siting Board.

Notably, the use of the existing West Holyoke Facility site is exempt from any Holyoke filing or permit requirements (including pursuant to Holyoke's Zoning Ordinance) and is outside of one mile from the nearest Environmental Justice area and, therefore, Massachusetts Environmental Policy Act (MEPA) review requirements will not be triggered. HG&E conducted neighborhood door-to-door canvassing adjacent to the Project area, delivered overview materials to customers detailing the Project, its need and benefits as well as staged a public event in an Environmental Justice neighborhood in Holyoke to raise awareness not only of the Project but of HG&E programs on energy efficiency, clean energy and electric vehicles.

Additionally, the Project will not require any permits from the Massachusetts Department of Environmental Protection (MassDEP) or Holyoke Conservation Commission since there will be no impacts to wetlands, noise or air emissions. No permits or approvals are required for the complementary improvements at the West Holyoke Facility (e.g., berm and vaporizer work) to be completed in coordination with the Project to secure cost savings and reduce impacts.

1.3 Description of the Project

The Project consists of installing a new 70,000-gallon horizontal, shop-fabricated LNG storage tank at the West Holyoke Facility. As noted, four similar LNG storage tanks have been operating at that site for approximately 50 years.

The new tank will be installed within the footprint and perimeter fence line of the existing West Holyoke Facility. The existing components at the West Holyoke Facility, namely the four LNG storage tanks and their associated LNG spill impoundment "dikes," will largely remain unchanged from their current

design. The Project is described in further detail in Section 2.0 and Appendix B. The Project will meet or exceed all current and relevant regulatory, design and safety requirements. In addition, the Project's design, construction and operations will have very limited incremental impact on the environment and the community. See Section 6.0.

The layout of the West Holyoke Facility, including the process equipment and systems, will continue to be in accordance or compliance with all requisite setbacks and configuration requirements. Necessary structural concrete foundation components will be engineered and designed based on applicable design codes, generally accepted engineering practices and data developed in the field and from a geotechnical evaluation. The new tank will be contained within the existing perimeter security fence with an existing, automated vehicle gate that will continue to provide controlled access and egress to/from the West Holyoke Facility. The existing perimeter security and surveillance system will also continue to be employed to monitor the West Holyoke Facility for unauthorized entry. The Project will meet or exceed all state and federal siting requirements, thus minimizing any impact to the surrounding community.

In designing the Project, HG&E conducted a comprehensive evaluation of the West Holyoke Facility including existing structures and equipment. HG&E recognized that construction work for the Project would require a range of construction experts to be on-site. HG&E evaluated whether this presented an opportunity for any additional work or improvements to existing facilities on a least-cost, minimal impact basis. HG&E identified several tasks that it expects to complete on a coordinated basis: (i) civil work to enhance and restore an existing, but now 50-year old berm; (ii) the coordinated replacement of an older, single vaporizer with two new vaporizers; (iii) the installation of updated controls to enhance efficiency and reduce greenhouse gas (GHG) emissions; (iv) the installation of a new panel for the established fire safety system; and (v) the installation of an upgraded stand-by generator. These tasks, which will be completed regardless of the approval of the Project, will enhance reliability and safety and can be best completed on a coordinated basis in terms of cost and minimizing impacts.

1.4 Community Outreach

In order to ensure the community is engaged and informed throughout Project development, HG&E developed and applied a communication strategy that includes messaging themes, a proposed timeline and a list of action items associated with the Project. HG&E has strong, established relationships with key stakeholders throughout the community, which have and will continue to assist in efforts to move this Project forward and promote and maintain an open dialogue theme. HG&E is a community-owned municipal utility making decisions based on the needs of the local community. Every day, HG&E works to make the quality of life for residents better and more affordable, while assisting in business growth and economic development. In addition, the majority of HG&E employees live within the service territory, which makes the services offered more personal and outreach more impactful.

1.4.1 Community Engagement and Outreach

HG&E has been engaging various stakeholders to discuss the potential solutions for natural gas reliability concerns for many years. Beginning with the canceled CMA arrangement and now with this proposed Project, HG&E has sought to engage stakeholders in describing the merits of reliability projects with a goal of ensuring minimal impact on the surrounding community and that might also enable strategic customer additions. With the Project, HG&E began developing and implementing a communication strategy that includes key stakeholders, community organizations, the general public, employees, elected officials, neighbors/abutters and property owners near the West Holyoke Facility.

In July and August 2022, HG&E developed outreach materials for the Project (some of which are provided in Appendix A), including:

- Website – www.hged.com/LNGProject
- Email Address – LNGProject@hged.com
- Project Flyers (Spanish and English)
- Media Release
- Project Frequently Asked Questions

In late August 2022, HG&E representatives attended a meeting of the Southampton Select Board to discuss natural gas constraints. Similar to other stakeholder groups, the Southampton Select Board was concerned about system reliability but also interested in finding opportunities for additional natural gas capacity in order to avoid new oil and propane system installations that might advance economic development. During this meeting, HG&E's team referred to potential reliability improvements; there was not a specific conversation about the Project at that time as some analyses were ongoing. Subsequently, on October 18, 2022, HG&E provided summary information describing the Project to the Southampton Town Administrator.

On September 7, 2022, HG&E's Gas Superintendent and Director of Marketing & Communications began to canvass the neighborhood surrounding the West Holyoke Facility. The majority of the neighbors have an existing relationship with HG&E personnel and indicated that they were very comfortable with the installation of one additional LNG tank and the coordinated update of the vaporization system. Throughout the week of September 7, 2022, HG&E was able to discuss the Project with approximately three-quarters of the area residents (leaving materials and contact information for the remaining property owners). This focused public engagement was critical in ensuring the abutters would be aware of the Project and any questions or concerned related to the Project were answered immediately by HG&E officials. It was important to HG&E that these direct conversations were the first public engagement with neighbors related to the Project.

Representative Patricia Duffy met with the Manager and Director of Marketing & Communications on September 9, 2022 to discuss a number of topics including the State's Clean Energy Roadmap, HG&E's energy supply and efficiency initiatives, as well as natural gas reliability and the moratorium. During the conversation, HG&E's team presented the Project as part of the ongoing energy transition strategy.

Representative Duffy indicated that she appreciated the need for additional capacity to maintain reliability in order to avoid continued use of high cost and high emission fuels such as oil and propane. In addition, Representative Duffy toured the West Holyoke Facility on Friday, September 30, 2022 along with Juan Anderson-Burgos, Legislative Aide and Holyoke City Councilor.

On September 12, 2022, the Manager, Gas Superintendent and Director of Marketing & Communications attended the Holyoke City Council Finance Committee Meeting to follow up on Councilor Kevin Jourdain's January 4, 2022 City Council Order (see Appendix A), which stated in part "The Holyoke Gas and Electric be requested to take all necessary steps to end the gas moratorium." Mayor Joshua Garcia was also present at the meeting. In addition, Mayor Garcia submitted a letter of support for the Project to the City Council on September 12, 2022 (see Appendix A). During the discussion, HG&E provided an overview of natural gas reliability challenges, the overall known moratorium impact, as well as details on the Project which included a tentative process timeline. Subsequent to this discussion, the City Council voted to note that its January order was complied with and on October 18, 2022 the City Council passed a resolution to support the Project (see Appendix A).

Internal communication is also a critical component in HG&E's strategic communication approach as employees are our biggest advocates. As mentioned previously, many employees live within our service territory and are HG&E customers. Each month HG&E distributes an employee update, which includes important internal information on projects and activities. In September, the employee update included details related to the Project along with an invitation to our annual community public utility celebration.

Elected officials, employees and the public were invited to an annual community event on October 5, 2022 at Veterans Park in Holyoke. Public Power & Public Natural Gas week takes place the first week of October each year, this annual weeklong celebration helps community-owned utilities throughout the country promote the benefits of local utility control. During the community event, participants learned about HG&E's energy efficiency and electrification incentives, air source heat pumps, fuel assistance, electric and natural gas safety, the local power supply portfolio, the Project and much more. In addition, there was music, pumpkin decorating and kids' activities, a food truck and ice cream truck. The community celebration featured many of HG&E's partner organizations, including:

- Marcotte Ford & Gary Rome Hyundai: Displaying electric vehicles and offering test drives and education
- Energy New England: Providing education on electric vehicles and HG&EV incentives The event is part of National Drive Electric Week, sign up for a test drive by visiting https://driveelectricweek.org/event?eventid=3577
- Massachusetts Municipal Wholesale Electric Company (MMWEC): Free residential energy audits and NextZero incentives
- Massachusetts Department of Energy Resources: State EV incentives and tree planting resources
- Valley Bike Share: Electric pedal assist bicycle service
- Holyoke Fire Department: Fire and carbon monoxide safety

- Holyoke Police Department: Community Policing
- One Holyoke CDC: Program information

Local media attended the event to highlight the important work HG&E is doing in the community. The media stories generated from this event are listed below (see also Appendix A):

- Holyoke G&E celebrates and educates on public power and gas (The Reminder Publication), https://www.thereminder.com/Localnews/holyoke/holyoke-ge-celebrates-and-educates-on-public-power/
- Holyoke Gas and Electric celebrates Public Power and Natural Gas Week at Veterans Park (Holyoke Media) https://holyokemedia.org/holyoke-gas-and-electric-celebrates-public-power-and-natural-gas-week-at-veterans-park/
- Holyoke Gas and Electric shares energy incentives with residents (22News – WWLP) https://www.wwlp.com/news/local-news/hampden-county/holyoke-gas-and-electric-shares-energy-incentives-with-residents/

In addition, throughout October 2022, all HG&E customers received Project-related information with their utility bill statement in the monthly edition of HG&E's Energy Insights newsletter (see Appendix A).

HG&E's team will remain in close contact with public officials and various stakeholders and will continue to update the website with the latest Project information and details. The following are some of the anticipated milestones HG&E is planning to communicate over the next few months:

- Siting Board Application Submittal
- Public notices being posted and distributed
- Siting Board EFSB Review Status
- Construction Schedule
- Continued Community Engagement Structured Based Upon Project Status and Process

1.5 Project Team

HG&E has assembled an expert team of developers, engineers, environmental scientists, attorneys, financiers and outreach specialists for the Project. The team's principal organizations are outlined below.

1.5.1 Holyoke Gas & Electric Department

HG&E is a municipal utility owned by the community it serves. Unlike private utilities, it does not answer to shareholders thousands of miles away. Instead, HG&E answers to and serves the best interest of local residents and neighbors. HG&E offers an electric portfolio that in 2021 was 95% carbon-free and is committed to the substantial deployment of clean energy.

HG&E's mission is to provide competitive rates, innovative and sustainable energy solutions, reliable service, excellent customer care and substantial employment of "green energy."

- Established in 1902;
- Provide electric, gas and telecommunication services to 18,000 customers;
- Municipal utility established per G.L. Chapter 164;
- Vertically-integrated, meaning that it owns generation, distribution and transmission;
- 50 MW of hydro-generation capacity;
- 18 MW of installed solar capacity;
- 8 MW/16 Mwh of installed battery energy storage systems;
- Massachusetts designated Green Community since 2010; and
- Thorough energy efficiency and electrification programs (see Section 4.0).

1.5.2 Epsilon Associates, Inc. (Environmental Consultant)

Epsilon Associates is an approximately 70-person engineering and environmental consulting firm based in Maynard, Massachusetts. Epsilon's engineers, scientists, planners and regulatory specialists are engaged in environmental analyses, modeling, licensing and permitting for energy infrastructure projects throughout the northeast. In recent years, Epsilon has worked with clients to complete the permitting for the Northeast Energy Center LNG facility project, Colonial Gas Company d/b/a National Grid Mid-Cape Main Replacement project and the Exelon West Medway II Combustion Turbine Generator project.

1.5.3 Sanborn Head & Associates, Inc. (Engineering Design Consultant)

Sanborn Head is a 160-person, multidisciplinary engineering consulting firm with a resource pool of over 120 technical staff in the areas of process mechanical, electrical, site civil, geotechnical and environmental engineering. They have offices throughout New England and in Pennsylvania and Colorado from which they serve a diverse set of natural gas utility, industrial and commercial clients.

A primary focus of the firm's energy practice is the natural gas industry, serving natural gas utilities and natural gas end users. They also serve clients interested in utilizing non-conventional forms of fuel such as hydrogen, landfill gas and anaerobic digester gas. With focus on the energy sector, Sanborn Head provides technical expertise in core areas such as:

- Natural Gas M&R Facilities Design – Transmission and Distribution
- Code Compliance & Regulatory Services
- LNG/LPG Design & Owner's Engineering Services
- LNG Fire Studies and Code Compliance Audits
- Mechanical/Process Engineering
- Site Civil and Pipeline Engineering
- Electrical, Instrumentation and Controls Engineering

1.5.4 AWCO Engineering & Technical Services, LLC (Owner's Engineer)

AWCO Engineering & Technical Services, LLC (AWCO ETS) specializes in providing engineering and consulting services on natural gas and LNG projects. Building off the founding members' diverse engineering and design, fabrication, construction and operations experience in the natural gas and energy industries, AWCO ETS was formed to provide value added and cost-effective professional services to gas distribution, gas pipeline and project development clients. The co-founder and principal engineer of the company has 30-years of diverse operations, project management, engineering and design and construction experience in the natural gas industry including the permitting, engineering and design and construction of numerous LNG projects in the Northeast and Southeast. He was responsible for successfully executing the engineering, procurement and construction (EPC) services for The Berkshire Gas Company's LNG peak-shaving facility project in Whately, Massachusetts and more recently has been providing Owner's Engineer services on the Northeast Energy Center LNG facility project in Charlton, Massachusetts.

1.5.5 Pierce Atwood LLP (Regulatory and Siting Counsel)

Pierce Atwood LLP is a full-service law firm based in New England. Pierce Atwood attorneys represent a broad range of utilities, developers, aggregators and other stakeholders before the Department and the Siting Board. Pierce Atwood clients include: solar, wind, biomass and other renewable energy firms; developers of natural gas-fired generation facilities; electric and natural gas utilities; wireless telecommunications carriers; and hospitals, government agencies and industrial facilities.

1.6 Conclusion

The Project will provide much needed additional gas storage capacity to enable HG&E to maintain reliable service to its customers during periods of peak demand, particularly during periods of extended cold weather. The Project will also provide an advantage to the community by allowing for some limited and strategic customer additions that will help facilitate HG&E's transition to a net zero future. The need for the Project was determined after the completion of a comprehensive resource evaluation that considered HG&E's existing and forecasted demand and available resources. Once a resource need was confirmed, HG&E identified all resources that might address such need including energy efficiency and a range of facility alternatives. The Project team thereafter conducted a rigorous review of the practical alternatives applying well-accepted screening and evaluation principles and practices. The addition of an LNG tank was determined to be the alternative that addressed reliability at the least-cost and with minimum impacts. Finally, a site analysis was performed applying similarly sophisticated techniques. The preferred Project Site was identified as the existing West Holyoke Facility due to its substantial cost savings, limited impacts and ready compliance with applicable LNG regulations.

The Project will be installed within the existing fence line and footprint of the West Holyoke Facility and was determined to meet all state and federal siting requirements with very limited impacts to the neighboring community. Because the Project is far superior to the other non-pipeline alternatives

analyzed, HG&E has determined that no alternative project sites be included in the notice. The Project will be designed, constructed and operated in a manner that meets or exceeds all relevant regulatory requirements. As such, the Project fully meets the criteria for Siting Board approval.

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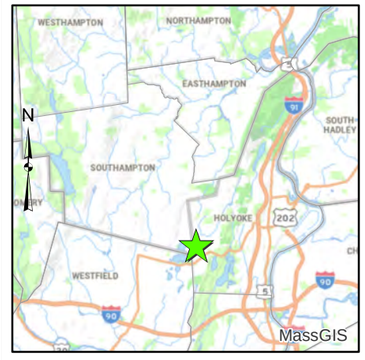
HG&E LNG Infrastructure & Resiliency Project

Parcel Overlay
USGS Topographic
Map

- West Holyoke LNG Facility
- HG&E Owned Property
- Federal/State Owned Land



The information depicted on this map is for planning purposes only. It is not suitable for engineering applications or site work nor should the data be used to determine absolute location of utilities. Please use this information as a guide and field verify all locations before instituting any plan or policy.

1 inch = 1,000 feet

0 500 1,000 2,000 Feet

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FIGURE 1-1 (USGS)

N

SCHOENFELDT LANE
COUNTY ROAD
ROCK VALLEY ROAD
BLUEMER ROAD
CAMP JAHN ROAD
MUELLER ROAD
APREMONT HIGHWAY
FREYER ROAD
BECCARI LANE
COUTURE ROAD
AIMEE AVENUE
HOLLY MEADOW ROAD
BELANGER ROAD
DUPUIS ROAD
WESTFIELD ROAD

FIGURE 1-2 (Aerial)

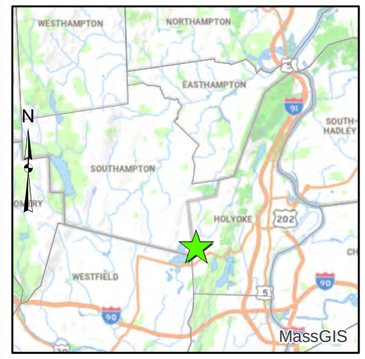
HOLYOKE GAS & ELECTRIC

HG&E LNG Infrastructure & Resiliency Project

Parcel Overlay
Aerial Imagery

West Holyoke LNG Facility

HG&E Owned Property



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1 inch = 400 feet

0 200 400 800 Feet

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Aerial photography captured from SW of West Holyoke facility facing northeast with DJI Air 2S drone camera

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Figure 1-3(a)
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FIGURE 1-3(a)(Photo from SW direction)

Aerial photography captured from SE of West Holyoke facility facing northwest with DJI Air 2S drone camera

FIGURE 1-3(b)(Photo from SE direction)

Aerial photography captured from NE of West Holyoke facility facing southwest with DJI Air 2S drone camera

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Figure 1-3(c)
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FIGURE 1-3(c)(Photo from NE direction)

Aerial photography captured from N of West Holyoke facility facing south with DJI Air 2S drone camera

FIGURE 1-3(d)(Photo from N direction)