Nature Energy Biogas Facility
Roberts, Wisconsin
Response to Comments

Response to Questions and Comments from August 4, 2022 Public Hearing

Comment	Response
Why site project in a community vs. agriculture and closer to source material?	The Roberts site is zoned for M-7 Industrial development. Previous experience has shown that it is most economical to keep contracts with farms that are located within approximately 20 miles of a Nature Energy facility. *See Environmental Summary Section 1.6 (End Use Digestate, Nutrient Water, and Fiber Fraction) for additional details.*
What is the plans for the projects in 5-10 years with potential for limited feedstock as farmland is turned in to development.	Long-term farming operations are in alignment with the St. Croix County Comprehensive Plans. *See Environmental Summary Section 2.9 (Land Use and Zoning) for additional details.*
How can the project provide a good solution for Twin Lakes?	Nature Energy requires water for operation of the facility, as discussed in the *Environmental Summary Section 2.1.2 (Water Quality)*. Nature Energy will work with the Village of Roberts to source the necessary water to operate the facility.
How much water is needed to operate the plant?	The operation of NE Roberts would require approximately 45,500 cubic meters per year (12 million gallons per year) of water to support the entire digestion process and other water needs. Nature Energy Roberts is evaluating alternative water supplies to support the facilities operations. *See Environmental Summary Section 2.1.2 (Water Quality; Operation; Water Usage) for additional details.*
Concern that NE doesn't have enough farmers on board in the vicinity of the project to make it viable?	Nature Energy has determined that there is sufficient feedstock available to support facility operations, and is in negotiation with local farmers to secure long-term agreements for the project.
How will Nature Energy handle any liability for spills at the facility and on roadways.	Nature Energy has not experienced any spills on roadways for any of their projects in Denmark. Additionally Nature Energy will have a spill response plan for their operations including their trucks. In the unlikely event that a spill occurs during transportation of the materials, Nature Energy will implement spill containment measures and would be responsible for all cleanup efforts, as needed. *See Environmental Summary Section 2.3 (Groundwater Resources) for additional details.*
No amount of conditions on the CUP can make this project successful and fully protect the water quality.	Nature Energy is willing to accept all reasonable conditions on the use of the property to ensure the community is fully protected from any adverse impacts associated with water quality, air emissions or safety issues, as discussed in the *Environmental Summary* and other technical and scientific documents provided and available on the *Nature Energy Roberts website*.
Town of Warren farmers are not interested in participating in the project.	Nature Energy will be securing long-term agreements with farmers that are interested in participating. Nature Energy has enough interested farmers to operate the facility in the 20-mile vicinity of the project.

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At what point in this process does Nature Energy's oversight of the handling of their by-products (nutrient solids and liquids) end? Will the nutrient solids be stacked along fields waiting for spreading….and possibly leach into ground and surface waters….and if the incorrect polymer or other substances are used, could cause fish kills in our prized trout streams (Rush, Kinnikinic, and Willow River)? Please explain the responsibilities each party in this process has and their liabilities in the event of a fish kill or other adverse outcome.	Nature Energy will only contract with farms with Nutrient Management Plans in place. Farmers will be responsible for the safe handling of the manure prior to pick up of the material and storage of the digestate after Nature Energy delivers back to the farmers. All Wisconsin farms, regardless of size, must comply with Wisconsin's agricultural standards and prohibitions, which govern headland stacking. Only Generally Recognized As Safe (GRAS) polymers will be used, if any are required.
130th Street Reconstruction needs - who is responsible for the costs/construction?	Nature Energy will work with the Village of Roberts in the development agreement and PILOT discussions to include the cost for any anticipated road improvements required for the project.
With all the traffic who is responsible for keeping up the roads over time?	Nature Energy will work with the Village of Roberts in the development agreement and PILOT discussions to include the cost for any anticipated road improvements required for the project.
Basic questions about how the facility operates - who operates trucks? Clarify truck routing system to correct misconceptions.	Nature Energy will contract with an existing trucking company to run Nature Energy's specifically designed trucks to haul materials to and from the facility. Nature Energy will manage the fleet of trucks using a specialized routing system to ensure efficiency and avoid any queueing at the facility. *See Environmental Summary Section 2.12.2 (Traffic and Transportation; Operation) for additional details.*
How many trucks are needed to operate the plant?	It is estimated that approximately 90-100 trucks will deliver biomass to the facility Monday through Friday (6 a.m. to 8 p.m.), while approximately 45 trucks will deliver biomass on Saturdays (6 a.m. to 3 p.m.).
How long are the trucks at the plant? Is there any queuing of trucks on roads?	Trucks will spend between 10 and 25 minutes within the loading hall of the respective building depending on the materials being delivered/exported. Based on the available area within the loading halls, the facility would be able to unload up to 23 trucks per hour. Additional truck holding areas will be immediately adjacent to the loading halls and on the truck entrance from 130th Street. The truck entrance will be able to accommodate a large number of trucks without impacting traffic on 130th Street.
Nutrient Management Plans are not sufficient to protect water.	Nutrient Management Plans (NMPs) are the state and county means for protecting surface and groundwater. Nature Energy will only contract with farmers that follow all federal, state and local regulations regarding nutrient management plans. The Wisconsin DNR states that "Implementation of a NMP helps prevent or minimize manure or other wastewater runoff from fields to surface waters or groundwater" (Wisconsin Department of Natural Resources, 2022). Additionally, the US EPA AgSTAR program states that implementing anaerobic digesters can help protect the local water resources by decreasing nitrate runoff and phosphorus buildup, and killing pathogens (Environmental Protection Agency, 2020).

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	See the Digestate Analysis document for additional details.
Who will monitor spread of digestate and liquid water on the fields?	Nature Energy will only contract with farmers that have Nutrient Management Plans (NMPs) in place. Farmers will be responsible for the spread of the manure/liquid water in compliance with their farm's NMP. All Wisconsin farms, regardless of size, must comply with Wisconsin's agricultural standards and prohibitions. *See the Digestate Analysis document for additional details.*
Clarify timeline for construction - website says starting in September 2022.	Nature Energy has updated their construction schedule based on obtaining all necessary permits and approvals to fall/winter 2022. Nature Energy will continue to post updates to the construction and operation schedule on the *project website.*
What is the safety record for the Nature Energy?	Twelve of Nature Energy's sixteen facilities (75 percent) have not recorded a lost time incident (LTI) during the latest 12-month rolling period, from June 2021 through June 2022. LTIs are incidents that require an employee to leave work due to an incident. During 2021, there were 2 LTIs and during 2022 there were 3 LTIs. These LTIs included such things as slips/falls, electric shock, and particulate matter in the eyes and a hand injury during maintenance activities. *See Environmental Summary Section 1.9 (Safety Summary) for additional details.*
What are the potential safety concerns for the project?	The storage and handling of biogas will be evaluated for potential hazards, explosion, and safety. Identified hazards will be mitigated to allow for safe operation of the facility. The facility will be operated in accordance with a site-specific Operation, Maintenance and Monitoring Plan and operators will be trained in accordance with the Operation, Maintenance and Monitoring Plan, Nature Energy standards/best management practices, and in accordance with State requirements.
Who is responsible for responding to any emergency situation? Does the fire department need additional training?	Nature Energy will work with the local emergency responders to develop an emergency response plan, which will include a tour of the facility, and all necessary training.
Has a biomethane plant ever blown up?	No, Nature Energy has not experienced any explosions at their facilities. Additionally the facility will be operated in accordance with a site-specific Operation, Maintenance and Monitoring Plan and operators will be trained in accordance with the Operation, Maintenance and Monitoring Plan, Nature Energy standards/best management practices, and in accordance with federal and state safety standards and requirements.
Concerns with lack of public outreach and availability of project information.	Nature Energy has developed a project website for the Roberts Project, which includes project details and is the repository of all documents related to the project. This website was first published in May and is continuously updated with all data and information submitted to the Village. The website is linked on the Village webpage. Additionally, presentations have been made to both the Plan Commission and Village Board in open session and are available on the project website.
Request for more time to evaluate the project as there was lack of communication about project.	The Nature Energy Roberts website includes an contact form for any comments and concerns to be sent directly to Nature Energy, which will be responded to in a timely manner. Additionally, Nature Energy has prepared and submitted an Environmental Study (submitted in May

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	2022 and available on the website) to be proactive and fully transparent on all aspects of operation.
Several comments that realtors are concerned that property values will be negatively impacted.	Property values of adjacent properties and the rural character of the neighborhood within and near the Industrial Rail Park District are not anticipated to be impacted by the proposed project. This is an industrial type use proposed for the Village Industrial Rail Park District. *See Environmental Summary Section 2.10.2 (Neighborhood Character and Aesthetics, Operation) for additional details.*
NE won't control the digestate/water after it leaves the facility.	Nature Energy will only contract with farmers that have Nutrient Management Plans (NMPs) in place. Farmers will be responsible for following the best management practices described in their NMPs, including the storage and application of digestate, nutrient water, or fiber fraction. *See the Digestate Analysis document for additional details.*
What happens when the project is at capacity - where does the excess feedstock go?	Nature Energy's business model will only take the amount of feedstock from participating farmers as dictated by the capacity of the facility. If the facility is at capacity, Nature Energy will not sign on new sources of feedstock to be brought to the facility. Therefore that feedstock will stay at the farm.
Who is responsible for the project if Nature Energy goes bankrupt, or the project is not successful?	In the unlikely event of a bankruptcy or other unforeseen issues, Nature Energy would either sell the assets to another entity with that entity being subject to all conditions and agreements, or the project would be decommissioned and restoring the site to its pre-construction conditions at Nature Energy's expense. *See Environmental Summary Section 1.10 (Facility End-of-Life Expectations) for additional details.*
This project is the same company that got their CUP denied in Pleasant Valley.	No. The proposed Nature Energy Roberts facility is the first one Nature Energy has proposed in Wisconsin, and is not associated with any previous biogas projects in the region.
Will the project have similar issue to other failed projects - i.e. Emerald City?	No. The proposed Nature Energy Roberts facility is the first one Nature Energy has proposed in Wisconsin, and is not associated with any previous biogas projects in the region.
Wellhead protection area prohibits animal waste and hazardous material storage, ordinance does not allow for village to grant exemptions.	No. Nature Energy has complied with all protective measures required in the Wellhead Protection Ordinance and will abide by all reasonable conditions that the Village of Roberts requires of Nature Energy. *See Attachment 3 of the Environmental Summary (Spill Containment Measures Memorandum) for additional details.*
Turkey Litter is bad for water quality	The US EPA AgSTAR program states that implementing anaerobic digesters can help protect the local water resources by decreasing nitrate runoff and phosphorus buildup, and killing pathogens (Environmental Protection Agency, 2020). *See the Digestate Analysis document for additional details.*

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Nitrates in water is rising throughout the county, will this project add to this issue?	No. The US EPA AgSTAR program states that implementing anaerobic digesters can help protect the local water resources by decreasing nitrate runoff and phosphorus buildup, and killing pathogens (Environmental Protection Agency, 2020). *See the Digestate Analysis document for additional details.*
Where does the pollution from the site go? How does the retention pond work?	Nature Energy Roberts would manage stormwater on site using a stormwater pond designed to hold the additional runoff volume generated as a result of the proposed site development. The pond would also provide runoff treatment and release rate control not to exceed the discharge rate of the pre-development conditions. *See Environmental Summary Section 2.1.2 (Water Quality) for additional details.*
Will the company operate like a co-op?	The proposed facility will collect borrowed organic waste from regional farms, transport to the biogas plant, and reduce to biomass, which will be anaerobically digested. The process will produce a residual digestate product, which will be returned to the local farmers from whom the organic waste was borrowed, as requested, and used as manure. *See Environmental Summary Section 1 (Nature Energy Biogas Facility Overview) for additional details.*
Clarify hours of operation - 6am-6pm or 6am-8pm.	It is estimated that biomass will be delivered to the facility Monday through Friday (6 a.m. to 8 p.m.), while biomass will be delivered on Saturdays (6 a.m. to 3 p.m.). No biomass will be delivered on Sundays. *See Environmental Summary Section 2.12.2 (Traffic and Transportation; Operation) for additional details.*
There are current issues with odor in the community. How will this project help/exacerbate the problem?	Livestock odor issues result from gases in manure, such as NH3 and H2S (MPCA, 2022). The Nature Energy process captures and treats these gases using an advanced odor treatment process. As a result, digestate, nutrient water, and fiber fraction have significantly less odor than untreated manure. *See Environmental Summary Section 2.7 (Air Quality and Odors) for additional details.*
If the liquid water/manure is sprayed, that will have a negative impact on odor.	Odor issues associated with field applications of raw manure are a result of gases in the manure, such as NH3 and H2S (MPCA, 2022). The Nature Energy process captures and treats these gases using an advanced odor treatment process. As a result, digestate, nutrient water, and fiber fraction have significantly less odor than untreated manure. *See Environmental Summary Section 2.7 (Air Quality and Odors) for additional details.*
How can Nature Energy say there is no odor but that the stack is used to reduce odor?	Nature Energy uses special biofilters to treat odor. Visitors to Nature Energy facilities have confirmed absence of odor. *This state-of-the-art treatment process is further described in Environmental Summary Section 2.7 (Air Quality and Odors) and a video discussing the experience of local officials at a facility in Denmark is on the project website.*

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Need to clarify how odor is handled at the plant.	Nature Energy uses special biofilters to treat odor. *This state-of-the-art treatment process is further described in Environmental Summary Section 2.7 (Air Quality and Odors).*
Noise concerns with respect to the trucks not addressed.	To alleviate traffic and noise concerns resulting from operational truck vehicle traffic, it is anticipated that the operational truck travel route to and from the site will be optimized to minimize nuisance noise within the Village of Roberts and/or near sensitive receptors (e.g., St. Croix Central Elementary School) to the extent practicable and/or during specific days or periods of the day. Specific conditions regarding the operational truck vehicle traffic routes are anticipated to be included as part of the CUP application approval process.
Nature Energy has tried to keep St. Croix county out of the process.	No. Nature Energy has followed the process specific to the Village of Roberts and its jurisdiction. Nature Energy will comply with all federal, state and local regulations for the construction and operation of their facility.
Future of Agriculture in St. Croix county could impact future use of the site with limited feedstock in coming years. St. Croix County didn't include Ag in their 2-year plan.	The St. Croix County, Wisconsin 2012-2035 Comprehensive Plan (adopted November 5, 2012, and amended December 5, 2017) states that its agricultural vision is for farms and agricultural enterprises to operate efficiently and effectively, and that the farmers are good stewards of the land, preserving it for future generations. Although the Nature Energy Roberts facility parcel is categorized by the Plan as a Farmland Preservation Area, the Plan's Policy 3.9 states that, "only commercial and industrial uses related to agricultural production should be allowed in the farmland preservation area…", and Policy 3.12 states, "the county will support and encourage commercial and industrial land uses that are agriculturally related and support local agriculture." *See Environmental Summary Section 2.9 (Land Use and Zoning) for additional details.*
How is waste water treated from truck washes?	Truck wash water will be collected and used as liquid raw material for the anaerobic digesters. It will not be discharged to the Village sewer system. *See Environmental Summary Section 2.1.2 (Water Quality) for additional details.*
Concerns with spill response on the facility and on roadways.	Incidents associated with spills on public roadways have not been recorded at any of Nature Energy's operating 15 facilities. *See Environmental Summary Section 1.9 (Safety Statistics) for additional details.*
Where does digestate go during the times that it can't be spread on the fields?	Participating farmers will use their existing raw manure or fertilizer storage structures to instead store the nutrients from Nature Energy. Digestate and nutrient water take up less space than raw manure, which helps to ensure that there will be enough on-farm storage. *See the Digestate Analysis document for additional details.*

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70% of feedstock will be imported from outside the county.	Incorrect. Nature Energy sources locally available turkey, dairy, and food-processing waste from farms and facilities within an approximate 20-mile radius. For Nature Energy Roberts, this 20-mile radius includes portions of St. Croix County, Polk County, and Pierce County. Less than 10% of the biomass inputs will be sourced from outside this radius. Nature Energy Roberts anticipates that biomass input composition will be approximately 84% dairy manure, 8% turkey litter, and 8% food and food-processing waste. Currently, 92% of the anticipated biomass inputs (including dairy manure and turkey litter) are utilized by local farmers for their crop fields. *See the Digestate Analysis document for additional details.*
Will nutrient water be liquid spread or injected?	Digestate and nutrient water are not viscous (thick and sticky) like raw manure, which can have a hard time mixing into the soil and getting to crop roots. The easy application of digestate and nutrient water allows farmers to use application methods that maintain no-till farming, a practice that increases soil health and decreases soil erosion. *See the Digestate Analysis document for additional details.*
How will the antibiotics impact the feedstock?	Farmers occasionally use antibiotics to treat sick animals; however, this practice is used sparingly due to regulatory limitations. Nature Energy does not expect antibiotics to impact the anaerobic digestion process because of their relative infrequency and the dilution provided by using multiple suppliers. *See the Digestate Analysis document for additional details.*
Will Nature Energy have signed agreements with landowners and renters?	Yes. Nature Energy will only sign agreements with farmers with Nutrient Management Plans (NMPs). The Wisconsin DNR says, "Implementation of an NMP helps prevent or minimize manure or other wastewater runoff from fields to surface waters or groundwater" (Wisconsin Department of Natural Resources, 2022). Farmers will be responsible for following the best management practices described in their NMPs, including the storage and application of digestate, nutrient water, or fiber fraction. *See the Digestate Analysis document for additional details.*
Will Nature Energy keep records of farmers, feedstock and digestate uses?	Yes. Nature Energy uses an advanced record-keeping system to track the biomass inputs and the digestate, nutrient water, and fiber fraction delivered to participating farms. This system also tracks the specific nutrient contents of the incoming and outgoing material. This record-keeping system ensures that farmers get the necessary nutrients for their operations. *See the Digestate Analysis document for additional details.*
The project will increase food security by allowing farmers to be more economically viable and continue generational farming.	Nature Energy negotiates with each participating farmer for long-term agreements that may include upgrades needed to their storage facilities. It is anticipated that farmers may realize decreasing the cost of fertilizer allowing for a 18-24 month payback on a new manure storage facility. *See the Community Benefits Overview for additional details.*

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Use of Digestate by local farmers will reduce the need for nitrogen by 60%, which is a significant financial benefit to farmers.	Nature Energy negotiates with each participating farmer for long-term agreements that may include upgrades needed to their storage facilities. It is anticipated that farmers may realize decreasing the cost of fertilizer allowing for a 18-24 month payback on a new manure storage facility. *See the Community Benefits Overview for additional details.*
Is there a cost for farmers to upgrade their storage facilities to provide/receive feedstock?	Nature Energy negotiates with each participating farmer for long-term agreements that may include upgrades needed to their storage facilities. It is anticipated that farmers may realize decreasing the cost of fertilizer allowing for a 18-24 month payback on a new manure storage facility. *See the Community Benefits Overview for additional details.*
Organic farms can use this digestate.	The digestate produced by the Nature Energy facility can be utilized on organic farms. *Further benefits are detailed in the Community Benefits Overview.*
Request for additional farmers to testify as to the benefits for farmers.	Several farmers testified at the Public Hearing. Dairy farmers Joe and Mary Holle, at Holle-Oaks Farm near Baldwin, Wisconsin said the following about working with Nature Energy: "The opportunity to get more from our manure excites us the most. We have been trapped in our current manure facility with no options to improve. The benefits from decreasing our purchase of fertilizer alone will give us a 18-24 month payback on a new storage facility. We feel it will help revive agriculture's public relations in western Wisconsin by improving our emissions and helping us be more productive on the same acreage." *Further benefits and testimonials are detailed in the Community Benefits Overview and project website.*
The project will allow for Wisconsin residents to become more energy independent with natural gas being produced right in the state.	Correct. Nature Energy Roberts facility will create renewable natural gas which will be provided directly to the regional interstate natural gas grid, which will off-set fossil fuel natural gas sources. According to the Energy Information Administration, in 2020 Wisconsin does not have any production of fossil fuel natural gas within their state (US EIA 2022), while renewable natural gas allows for Wisconsin to become less dependent on other countries or states to feed their energy needs. *See Environmental Summary Section 2.7.2 (Air Quality and Odors, Operations) and the Community Benefits Overview for additional details.*
How much natural gas is used for the facility operations will be the biogas produced?	Nature Energy will require natural gas service to provide the necessary back up, while providing natural gas directly to the interstate transmission grid. Nature Energy estimates that electricity and natural gas consumption to run the plant is approximately 21% of the total energy produced by the project, making the project energy net positive.
How much tax revenue will the village obtain for this project?	Nature Energy is currently negotiating a Payment in Lieu of Taxes Agreement (PILOT) to provide payment directly to the Village of Roberts. Upon the finalization of that agreement, additional details will be provided. It is anticipated that these payments will be utilized, at the

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	discretion of the Village, for community benefits projects within the Village.
How many jobs are being created – facility, trucking, & construction?	The Nature Energy Roberts facility requires approximately 12 to 16 full-time employees or subcontractors (or 24,000 to 32,000 manhours per year) to manage facility operations, including managers, operators and truck drivers. Nature Energy will contract with an existing trucking company to run Nature Energy's specifically designed trucks to haul materials to and from the facility. Local support services such as supplies and maintenance will also be needed for facility operation, including 65 to 75 full-time indirect positions (130,000 to 150,000 manhours per year) and the construction process will require numerous new construction jobs (approximately 650,000 manhours). *Further benefits are detailed in the Community Benefits Overview.*
Are there economic concerns with being sited so far away from feedstock, specifically with the feedstock transportation costs?	Nature Energy's business model and previous experience has shown that it is most economical to keep contracts with farms that are located within approximately 20 miles of a Nature Energy facility. *See Environmental Summary Section 1.6 (End Use Digestate, Nutrient Water, and Fiber Fraction) for additional details.*
How does the economics of the project work? Are there any incentive programs available?	Nature Energy has determined that the proposed Roberts facility will be profitable or else they would not proceed. The economic viability of the project includes all costs, including feedstock acquisition and transportation. The project will secure income primarily from biogas sales and environmental attributes (based on the positive impact the project makes on the environment). The project will secure long-term contracts for both the supply of feedstock and for its revenue streams. The US Government has recognized the important of biogas projects to the Nation with the inclusion of an investment tax credit in the new Inflation Reduction Act. In addition, the State of Wisconsin also recognizes the importance of the biogas industry through incentives such as the Renewable Energy Competitive Incentive Program.
This project is not bringing a new source of manure, as the raw manure that would be used at this facility is already going on fields in this community.	Farmers spread raw manure and poultry litter on their crop fields to provide nutrients for plant growth. Currently, approximately 90% of the anticipated NE Roberts biomass inputs (including dairy manure and turkey litter) are utilized by local farmers for their crop fields. *See the Digestate Analysis document for additional details.*
Efficient and effective handling of manure is key to keeping farms economically viable.	The Nature Energy Roberts facility is expected to process up to approximately 730,000 tons of raw waste material from farmers each year. Nature Energy will provide dairy and crop farmers with the nutrients they need to apply according to their nutrient management plans. *See the Community Benefits Overview for additional benefits.*

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What type of polymers will be used in the digestion process to produce the nutrient solids (fiber digestate) & liquids? Please explain this technical process as it is my understanding some of these polymers are commonly used in agriculture and water treatment because they are environmentally safe. Other polymers are not allowed to be used due to the harm they cause fish & other aquatic life if they find their way to surface water.	Nature Energy Roberts would use centrifuges to separate a part of the digestate into a liquid portion (nutrient water) and solid portion (fiber fraction). Additionally, Nature Energy Roberts would add Generally Recognized as Safe (GRAS) polymer to the digestate to get as much phosphorous in the fiber part as needed for receiving farmers. GRAS polymers are certified by the FDA for use in food processing. *See Environmental Summary Section 1.5 (Reclamation of Digestate and Nutrient Water and Solid Separation) for additional detail.*
What is the difference between the chemical makeup of the digestate vs the manure in the pits?	Nutrients needed for plant growth, like nitrogen and phosphorus, are chemically bound up in manure, which makes them difficult for plants to use. Anaerobic digesters break apart these chemical bonds into a form crops can easily use (digestate). Additionally, the anaerobic digestion process kills pathogens in manure that are harmful to the environment. *See the Digestate Analysis document for additional details.*
Should require a letter of credit $5M to ensure the community is supported in case of an emergency or the company leaves town.	Nature Energy will abide by all reasonable conditions of the Conditional Use Permit.
The project is near the St. Croix Central Elementary school. What measure are in place to protect the school?	Nature Energy has implemented measure to reduce impacts to air quality, noise, traffic and water quality, all of will be protective of the St. Croix Central Elementary School. *Addressed in Environmental Summary Section 2.7 (Air Quality and Odors), Section 2.11 (Noise), and Section 2.12 (Traffic and Transportation, and in Community Benefits Overview.*
Project will include many tall buildings that will change village aesthetic.	Nature Energy conducted an assessment of Neighborhood Character and Aesthetics which concluded that although the project would be visible within a 0.5-mile radius of the project, the project is sited within an industrial use zone which is consistent with the zoning designations and local comprehensive plans. *See Environmental Summary Section 2.10 (Neighborhood Character and Aesthetics) for additional details.*
Project will change the village's rural character that residents love.	Nature Energy conducted an assessment of Neighborhood Character and Aesthetics which concluded that although the project would be visible within a 0.5-mile radius of the project, the project is sited within an industrial use zone which is consistent with the zoning designations and local comprehensive plans. *See Environmental Summary Section 2.10 (Neighborhood Character and Aesthetics) for additional details.*

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What is the economic benefit to the community as a result of the project being building in the Village of Roberts?	The Nature Energy Roberts facility requires approximately 12 to 16 full-time employees or subcontractors (or 24,000 to 32,000 manhours per year) to manage facility operations, including managers, operators and truck drivers. Nature Energy will contract with an existing trucking company to run Nature Energy's specifically designed trucks to haul materials to and from the facility. Local support services such as supplies and maintenance will also be needed for facility operation, including 65 to 75 full-time indirect positions (130,000 to 150,000 manhours per year) and the construction process will require numerous new construction jobs (approximately 650,000 manhours). Nature Energy is also working with the Village of Roberts to negotiate an annual "Payment in Lieu of Taxes" (PILOT) for the project. *See the Community Benefits Overview for additional benefits.*
Could there be a possibility for the project to bring in Agritourism to the Village of Roberts?	Yes. Nature Energy has a reputation of being an outstanding corporate citizen who supports local communities where they operate facilities. We are eager to work with local organizations to create partnerships and opportunities for things like community composting and always use local workers when possible. We have encouraged tours at our facilities in Denmark and would do the same in Roberts allowing opportunities for agritourism, partnerships with schools, and hosting visitors to the facility to gain firsthand knowledge of this innovative technology. *See the Community Benefits Overview for additional benefits.*
Is there an opportunity for community composting inclusion in to this Project?	Yes. Nature Energy will work with the Village of Roberts to identify additional community benefits, including composting, as requested. *See the Community Benefits Overview for additional benefits.*
Will the biogas produced by this facility be available for the community use?	The renewable natural gas will be provided directly to the regional interstate natural gas grid, which will off-set fossil fuel natural gas sources. *See the Community Benefits Overview for additional benefits.*
How will the project increase quality of life for residents?	The Nature Energy Roberts facility will benefit the Roberts and surrounding community including benefits to farmers, access to renewable natural gas, improving the environment, economic benefits and quality of life. *See the Community Benefits Overview for additional benefits.*
Is there an opportunity to get nearby colleges involved in research and development for further development of biogas?	Yes. Nature Energy has a reputation of being an outstanding corporate citizen who supports local communities where they operate facilities. We are eager to work with local organizations to create partnerships and opportunities for things like community composting and always use local workers when possible. We have encouraged tours at our facilities in Denmark and would do the same in Roberts allowing opportunities for agritourism, partnerships with schools, and hosting visitors to the facility to gain firsthand knowledge of this innovative technology. *See the Community Benefits Overview for additional benefits.*

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What is the planned use of the future Railroad spur? Is it needed for this project?	The proposed rail spur is anticipated to support additional industrial development in the area and is not associated with Nature Energy's project.
What is the impact of energy use/air emissions associated with the trucks needed to spread manure accounted for in the project.	Nature Energy's operation model utilizes existing trucks and equipment owned by participating farmers to field spread the digestate in accordance with their existing Nutrient Management Plans (NMPs). The equipment associated with field spreading manure and storage is currently in use by the farmer(s) for their operations. As such, there are no changes to farmers' operations that will result in new sources of air emissions or other associated environmental impacts. Therefore, farm operations requiring the use of digestate are not addressed in the analysis of potential environmental impacts within this document. *See Environmental Summary Section 1.8 (Summary of Operations) for additional details.*
The project requires an air permit which is another approval needed prior to construction.	Correct. Nature Energy has conducted air modeling associated with the facility operations and will obtain a WNDR Type B Registration Permit for all air emissions released from the facility. *See Environmental Summary Section 2.7.2 (Air Quality and Odors; Operation) for additional details.*
What are the air emissions associated with the facility operations and truck emissions?	Nature Energy has conducted air modeling associated with the facility operations and will obtain a WNDR Type B Registration Permit for all air emissions released from the facility. Truck emissions are not regulated under any air permits, however Nature Energy implements technology to ensure efficient truck routes and to arrive at the facility at regular intervals to minimize idling emissions. *See Environmental Summary Section 2.7.2 (Air Quality and Odors; Operation) for additional details.*
Is there a net positive carbon reduction if including the emissions for trucking the biogas?	The Nature Energy Roberts Facility will be capturing methane gas that is usually emitted during normal manure decomposition and waste management practices and used in place of natural gas that is derived from fossil fuel sources. Thus, the proposed project will off-set the use of fossil fuel natural gas and allow communities to generate their natural gas from local sources. *See in Environmental Summary Section 2.7.2 (Air Quality and Odors; Operation) for additional details.*
How does the project mitigate for Ammonia and H2S air emissions?	Nature Energy implements a negative pressure system in all its buildings and treats all process air through biofilters before release to the atmosphere. Nature Energy will obtain a WNDR Type B Registration Permit for all air emissions released from the facility. *See Environmental Summary Section 2.7.2 (Air Quality and Odors; Operation) for additional details.*
How is the carbon dioxide handled?	The carbon dioxide is fed through a carbon bed system to remove any organics and odor compounds before discharge to the atmosphere. Nature Energy is also considering capture and sale of carbon dioxide, if feasible.

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	See Environmental Summary Section 2.7.2 (Air Quality and Odors; Operation) for additional details.
Town of Warren will have adjacent impacts for traffic and roads with no benefits from the project.	The Nature Energy Roberts facility will benefit the Roberts and surrounding community including benefits to farmers, the environment, economy and quality of life. Impact to the Town is mitigated by the truck routes required by the Village. *See the Community Benefits Overview and Environmental Summary Section 2.12 (Traffic and Transportation) for additional details.*
CUP application covers the Village of Roberts but does not assess impacts to adjacent rural portions of the community.	The Nature Energy Roberts facility will benefit the Roberts and surrounding community including benefits to farmers, access to renewable natural gas, improving the environment, economic benefits and quality of life. Reasonable conditions not only ensure the Village is protected but also ensure the health, safety, and welfare of the surrounding areas benefitted by the conditions. *See the Community Benefits Overview for additional benefits.*

Attachment 1

Environmental Summary

Nature Energy Biogas Facility Roberts, Wisconsin Environmental Summary

Revised August 2022

Bold Text indicates text added since May 2022 Version.

Table of Contents

Tables

Attachments

Acronyms and Abbreviations

°F	Fahrenheit
AHI	Architecture and History Inventory
APE	Area of Potential Effect
ARI	Archaeological Report Inventory
ASI	Archaeological Sites Inventory
ATCP	Agriculture, Trade, and Consumer Protection
BMP	Best Management Practices
cfs	cubic feet per second
CH_4	biomethane
CO	carbon monoxide
CO_2	carbon dioxide
CREC	controlled recognized environmental condition
CUP	Conditional Use Permit
CWA	Clean Water Act
DAF	Dissolved air floatation
dBA	A-weighted decibel
ECHO	Enforcement and Compliance History Online
ERR	Endangered Resources Review
ESA	Environmental Site Assessment
FERC	Federal Energy Regulatory Commission
fiber fraction	higher in phosphorus
gpm	gallons per minute
GRAS	Generally Recognized as Safe
H_2S	hydrogen sulfide
HAP	hazardous air pollutants
HREC	historical recognized environmental condition
HRT	hydraulic retention time
K	potassium
L_{max}	maximum noise contribution at night
LTI	lost time incident
LTIF	LTI Frequency
MW	megawatt
MGY	million gallons per year
N	nitrogen
NAAQS	National Ambient Air Quality Standards

NPDES	National Pollutant Discharge Elimination System
NE Roberts	Nature Energy Roberts
NH_3	ammonia
NHPA	National Historic Preservation Act
NH_4+	ammonium
Nm^3	normal cubic meters
NMP	nutrient management plan
NO_2	nitrogen dioxide
NO_x	oxides of nitrogen
NR	Natural Resources
NRCS SCS	Natural Resources Conservation Service Soil Conservation Service
NRHP	National Register of Historic Places
nutrient water	nitrogen-rich, but lower in phosphorus
P	phosphorus
PHMSA	Pipeline and Hazardous Materials Safety Administration
PM_{10}	particulate matter less than 10 microns in diameter
$PM_{2.5}$	particulate matter less than 2.5 microns in diameter
PSC	Public Service Commission
psi	per square inch
REC	recognized environmental condition
RFS	Renewable Fuel Standard
RIN	renewable identification number
RNG	renewable natural gas
S	sulfur
slurry	liquid biomass
SO_2	sulfur dioxide
SWPPP	Stormwater Pollution Prevention Plan
T&E	threatened and endangered
USDA	United States Department of Agriculture
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
VOC	volatile organic compounds
WDNR	Wisconsin Department of Natural Resources
WHPD	Wisconsin Historic Preservation Database
WisDOT	Wisconsin Department of Transportation

WISHPO	Wisconsin State Preservation Office
WPDES	Wisconsin Pollutant Discharge Elimination System

1. Nature Energy Biogas Facility Overview

Nature Energy is a Denmark-based renewable natural gas (RNG) company with significant experience in anaerobic digestion and the design, implementation, and operation of anaerobic digesters. Founded in 1979, Nature Energy (previously, Naturgas Fyn) is a leader in the transition to green energy. Currently, Nature Energy operates 14 innovative biogas facilities located in Denmark, France, and recently purchased an operating plant in the Netherlands. Nature Energy proposes to develop an anaerobic digester and nutrient recovery facility in Roberts, Wisconsin under the name "Nature Energy Roberts" (NE Roberts). Anaerobic digestion would produce biomethane (CH_4) from turkey, dairy, and food processing waste. Nature Energy is the largest producer of biomethane in Europe. The NE Roberts facility would upgrade the biomethane to RNG, which would be available for commercial sale, while the nutrient-rich byproducts would be provided back to farmers for use in their nutrient management plans (NMPs). The proposed project, NE Roberts, represents one of Nature Energy's first facilities in the United States.

The NE Roberts biogas facility would be located within the Village of Roberts, St. Croix County, Wisconsin. The proposed facility would collect borrowed organic waste from regional farms, transport to the biogas plant, and reduce to biomass, which would be anaerobically digested. The anaerobic digestion process would produce biogas, that contains carbon dioxide (CO_2) and CH_4. The produced biogas would be upgraded to RNG and sent to the existing natural gas transmission system. The process would capture CO_2, which would be refined to food grade quality. The process would produce a residual digestate product, which would be returned to the local farmers from whom the organic waste was borrowed, as requested, and used as manure. During operation, the NE Roberts facility would produce an average of 24.5 million normal cubic meters (Nm^3) of biomethane annually.

The NE Roberts biogas plant would include the following buildings on site:

- Anaerobic digestion process equipment would include eight anaerobic digester tanks, pre-storage, pre-treatment, a feeding system, and gas handling.
- Administration building.
- Workshop and storage of spare parts/chemicals.
- A complete odor treatment and ventilation system:
  - Each tank would be ventilated to maintain a small under pressure inside the tanks. The air from the tanks would be treated in a pre-filter before entering the main biological treatment filter. This pre-filter would contain seashells for ammonia and H_2S removal.
  - Buildings would be ventilated to ensure adequate air circulation. Heated ventilation air would be blown into the buildings and air would be extracted at the highest points. Extracted air would be directed to the biological treatment system (burned clay nuts), where it would be blended with pre-treated air from the tanks.
  - Treated air from the biological treatment system is directed into a 197 ft high stack (diameter approximately 9 ft) before being released to the environment.
- A natural gas-fired boiler (7.7 megawatt [MW]) for heat production.
- Two emergency gensets for emergency backup power.
- Biogas Metering and Regulation:
  - As part of the biogas upgrading system to RNG, the biogas plant would provide biogas metering and regulation. A gas monitoring station would be installed to sample and measure gas quality to ensure that the product gas complies with gas quality specifications. The gas monitoring station design is composed of components specifically designed for Federal Energy Regulatory Commission (FERC) Gas Tariff requirements.
  - The gas monitoring system would also be equipped with a product gas flow meter appropriate for revenue-grade metering and generation of renewable identification number (RIN) credits under the Renewable Fuel Standard (RFS). The type of meter would be determined in subsequent design phases based on pressure and line size of the final meter location as well as price and preference/familiarity from the natural gas pipeline entity.
  - When the product gas meets the RNG tariffs, the RNG would undergo pressure regulation, which would

manage the RNG product gas to the appropriate pressure for meeting the Minimum Federal Safety Standards (Pipeline and Hazardous Materials Safety Administration [PHMSA] Title 49) for the jurisdictional pipeline to the pipeline interconnection.

- Pipeline interconnect: A compression station would be installed at the location of the pipeline interconnection. The high-pressure compression system would increase the RNG pressure from the jurisdictional pipeline operating pressure to grid owner's maximum allowable operating pressure. The custodial transfer point should provide the point of delineation for assets requiring compliance with PHMSA Title 49.

The NE Roberts facility would operate with the following processes to facilitate the anerobic digestion and gas collection:

1. Collection and preparation of feedstocks,
2. Homogenization and buffering of the feedstock before feeding the anaerobic digesters,
3. Anaerobic digestion,
4. Gas conditioning,
5. Gas pressurization,
6. Reclamation of digestate and nutrient water, and
7. Solid separation.

These steps are illustrated on **Attachment 1**, General Facility Layout, and **Attachment 2**, Nature Energy Process Flow. Each step is described below.

1.1 Collection and Preparation of Feedstocks

NE Roberts would have the capacity to process up to 736,000 tons of biomass borrowed from locally sourced agricultural and food system waste, annually. Dedicated tanker trucks would collect and transport borrowed liquid manure (slurry) from the participating dairies to NE Roberts. Food waste sourced and pre-processed for the digester would be delivered in contracted tanker trucks. Dissolved air floatation (DAF) sludge would also be delivered in tanker trucks. Relative quantities of biomass inputs may vary based on availability; however, industrial biomass, including DAF, would not exceed approximately 10 percent of the annual input volume. **Table 1** summarizes the biomass input types and delivery methods.

Table 1 Wet and Dry Biomass Inputs by Type and Delivery Method

Biomass Input	Delivery Truck Type	Delivery Truck Capacity
Dairy Slurry	Tanker Truck	28 ton
Turkey Litter	End Dump Truck	40 cubic meters
Food Waste	Tanker Truck	22 ton
Dissolved Air Floatation	Tanker Truck	22 ton

Source: Nature Energy

Upon arrival at NE Roberts, biomass deliveries would be received in a fully enclosed building. Material handling would vary by input type:

- Dairy slurry would be pumped into reception tanks by pumps installed on the trucks. The same trucks would take away the liquid part of the digested biomass. From the reception tanks, the slurry would be pumped through a macerator to the pre-storage tank for liquid biomass.
- Turkey litter would be offloaded into a crane pit, where an automatic crane would move the biomass to the storage area in the crane pit. From the pit, the crane would feed the hoppers, from which the litter would be transported to the pre-mix machines.
- The food waste would be pumped into a dedicated tank by pumps installed on the trucks.

Before departure, all delivery trucks would be cleaned with pressurized water in the enclosed building. The cleaning of the trucks is necessary to remove any residue from the trucks to prevent any potential cross contamination to other farms. Water from the truck wash would be collected and sent to the anaerobic digesters. If water needs to be brought to the municipal wastewater system, it would be pre-treated onsite, and all applicable permits would be obtained prior to discharge.

1.2 Homogenizing and Buffering of the Feedstock

After leaving the initial storage areas, biomass inputs must be pre-processed before they can be sent to the digesters.

- The pre-mix machines would remove stones from the solid biomass and would pulp the biomass using recirculate from the digesters. The pulped biomass would then be pumped through macerators and into the digesters.
- If pasteurization is required for any of the biomass inputs, the plant would be prepared to implement this process and would macerate biomass to attain a maximum size (0.47 x 0.47 x 0.47 inch) before entering the pasteurization tanks.
- If required, pasteurization would occur at 158 degrees Fahrenheit (°F) for 1 hour.

The pasteurization tanks used for the processed liquid biomass and the food waste are insulated, cladded, equipped with a top-mounted agitator, and placed on weighing cells.

The proposed facility would integrate energy efficient technology throughout the digestion process. Fresh incoming liquid biomass (slurry) would be used to cool digestate pumped from the digesters in a bio/bio heat exchanger. The fresh liquid biomass would be further heated to process temperature in bio/water heat exchangers installed in series after the bio/bio heat exchangers.

1.3 Anaerobic Digestion

Anaerobic digestion is a natural, biological process in which the complex carbons in biomass are broken down by microbes in an anaerobic environment and then metabolized, producing biogas. During the first step, the pre-processed biomass inputs undergo hydrolysis, a process which breaks down the complex organic compounds into smaller molecules using water to split the chemical bonds. This step makes the biomass more soluble. In the second step, the soluble organic matter is converted to organic acids through acidogenesis and acetogenesis, or fermentation. In the last step, methanogenic bacteria convert the organic acids from the fermentation step into biomethane and CO_2.

Anaerobic digestion at NE Roberts would occur in two sets of tanks: the Primary Digesters and the Secondary Digesters. Both sets of digesters are bolted steel tanks with a top-hung agitator, gas flowmeter, pressure transmitters, temperature transmitters, and a maximum level switch. The dimensions for each tank are 78.4-foot diameter, 71.4-foot side height, and 86.9-foot total height, which may vary slighted based on the supplier of the tanks. The total hydraulic retention time (HRT) for the digesters would be approximately 30-60 days.

1.4 Gas Conditioning and Gas Pressurization

The gas produced in the digesters is transferred to gas storage located on top of the post-storage and pre-storage tanks. These gas storages would have a pressure of approximately 0.073 pound per square inch (psi). Each tank is connected via pipes to gas blowers, which raise the gas pressure from approximately 0.073 psi to approximately 1.74 psi. After the blowers, the gas goes directly to the gas upgrading system or emergency flares.

In the gas upgrading system, the gas would be pressurized to approximately 118 psi, and the biomethane would be separated from the gas. The remaining portion of gas is mainly CO_2 and hydrogen sulfide (H_2S) and CO_2 and would be transferred to the biological gas cleaner. The biological gas cleaner captures the H_2S, and the CO_2 is transferred to an active carbon filter. This filter polishes the CO_2 and releases it to the air via a 100-foot process stack (final height to be determined by air modeling) or transfers it to a separate liquefaction system for sale to industrial users.

The biomethane is dried and quality checked by a gas chromatograph. Based on the results, odorants are added if required by the grid owner, and the gas is sent towards the compressor station located near the grid connection. The gas compressor station would raise the pressure to the pressure demand from the grid owner. If the gas quality is poor and the specifications are not met, the gas would be rejected and led back to the gas storage tanks via pressure reduction/control valves.

In some instances, the biomethane that doesn't meet specifications that cannot be offloaded to the biomethane utility would be directed to the emergency gas flare. The gas flares would be low-temperature, closed flares with support gas burners to burn off gas, as necessary. The flares would operate during power cuts and service on the gas upgrading unit. Operational experience from existing Nature Energy plants indicates that the emergency flares are operated for less than 100 hours per year.

1.5 Reclamation of Digestate and Nutrient Water and Solid Separation

After the gas is extracted, the remaining slurry-like residual of solids and process water, called digestate, would be recovered. NE Roberts would use decanter centrifuges to separate a part of the digested biomass into a liquid portion and solid portion. After separation, the liquid part would contain less phosphorus than the solid, fibrous portion, as most of the phosphorus would be contained in the fibers. Additionally, NE Roberts would add Generally Recognized as Safe (GRAS) polymer to the digestate to get as much phosphorous in the fiber part as needed. The fiber would be stored in the separation building, which would have storage capacity for approximately three days if all digestate is separated. The liquid part would be pumped to one of the post-storage tanks. The part of the digestate that is not going to be separated would be stored in the other post-storage tank.

The separation process helps to ensure that the byproduct contains the correct amount of phosphorus when it goes back to the farmers. Not only does the digestion process optimize the nutrients in the byproduct, but the nitrogen in the byproduct is more readily available for crop uptake than nitrogen in manure.

1.6 End Use of Digestate, Nutrient Water, and Fiber Fraction

It is estimated that the proposed facility would have the capacity to produce up to 750,000 tons of digestate annually. When the digestate is separated, approximately 90 percent is nutrient water and 10 percent is fiber fraction.

The digestate exiting the digester would be tested by a certified laboratory[1] to determine its N, P, K, S and NH_4 content on a weekly basis. This testing would help NE Roberts verify that participating dairy farms are receiving the same amount of nitrogen as they supplied with manure (Nature Energy, 2022). Participating farmers would be responsible for field-applying the nutrients in accordance with their own nutrient management plans.

Depending on their specific nutrient needs, farmers, from whom the manure was originally borrowed, may use the digestate as produced or receive the fiber fraction or nutrient water separately. Additionally, the fiber fraction that results from separation of the digestate is a solid product, which could see a market for gardeners or composters (Nature Energy, 2022). NE Roberts would transport the digestate and derived products to receiving farms or third-party owned storage locations, where it can then be used. Previous experience has shown that it is most economical to keep contracts with farms that are located within approximately 20 miles of a Nature Energy facility.

Many nutrient management decisions and factors are involved in determining the amount of nutrients that should be applied to fields. These may include existing soil conditions, crop type and yield expected for the current growing season, crop type from the previous growing season, the use of irrigation and other management practices, the method for nutrient application, and the cost of nutrients. The farmers using the NE Roberts digestate or derived product will be the same farmers that supplied the manure to Nature Energy and will be responsible for ensuring that the nutrient management complies with their farms' specific manure storage requirements, application frequency and amounts, and stipulations for emergency wintertime applications.

Field application of digestate or derived product applications carry lower levels of unused nutrients than raw manure applications. Use of anaerobic digestion before manure application helps to reduce the potential for nitrogen leaching into groundwater, phosphorus building up in soils, or nutrient loss to surface water. The characteristics of anaerobically digested biomass offer long-term benefits for soils, crops, and the environment.

1.7 Summary of Construction

The proposed project is anticipated to begin construction end of 2022/early 2023. Construction duration is expected to be approximately 18 to 24 months with the facility in operation thereafter.

Construction would begin upon approval of the required permits, and construction is anticipated to consist of the following general sequence/activities:

- Clearing and grading;
- Excavation;
- Construction of the biogas plant;

[1]A list of certified manure testing laboratories is at www2.mda.state.mn.us/webapp/lis/manurelabs.jsp

- Backfilling and grade restoration;
- Cleanup and restoration.

During construction, the Principal Contractor would be responsible for:

- Fencing around the site;
- Security control during off-work hours;
- Preparation for temporary roads;
- Site establishment;
- Water and electricity;
- Shower and toilet facilities;
- Waste disposal;
- NE Roberts office container and storage facilities for NE Roberts's own use;
- Crane for NE Roberts's use during construction.

Construction equipment would consist of standard construction equipment and local and commercially available construction materials.

NE Roberts startup operations would include supervised cold tests and hot tests. NE Roberts would also require an operation and maintenance manual as well as record construction documentation of the biogas plant. NE Roberts staff would be trained on site during commissioning.

1.8 Summary of Operations

The NE Roberts biogas plant would be operated by NE Roberts staff Monday through Friday, 6:00 a.m. to 8:00 p.m., and on Saturdays and Sundays from **6:00 a.m. to 3:00 p.m.** Biomass transport to the biogas plant and byproduct transport away from the biogas plant would operate Monday through Friday, 6:00 a.m. to 8:00 p.m., and on Saturdays from **6:00 a.m. to 3:00 p.m.**

It is estimated that approximately 90-100 truckloads of biomass would be delivered daily to the facility Monday through Friday (6 a.m. to 8 p.m.), while approximately 45-50 would be delivered on Saturdays (**6 a.m. to 3 p.m.**). No biomass would be delivered on Sundays. Nature Energy trucks would run as efficiently as possible, and most arriving trucks would be full of biomass and would leave the facility full of the digestate or nutrient water, to the extent feasible. The byproduct produced by the facility is provided back to the local farmers, from whom the original manure was received, which would contain the correct amount of nutrients to apply to their fields.

NE Roberts anticipates that during operation of the facility there will be approximately twelve to sixteen permanent NE employees (or 24,000 to 32,000 manhours per year) required to manage the facility operations, including managers, operators, assistants, and truck drivers. NE Roberts will contract with an existing trucking company to run Nature Energy's specifically designed trucks to haul materials to and from the facility. The NE Roberts suppliers (e.g., farmers, maintenance teams, etc.) will be an additional 65-75 full-time indirect positions (130,000 to 150,000 manhours per year). It is anticipated that an additional positive gross national product of approximately $9,600,000 will be seen from the NE Roberts project.

Nature Energy's operation model utilizes existing trucks and equipment owned by participating farmers to field spread the digestate in accordance with their existing Nutrient Management Plans (NMPs). The equipment associated with field spreading manure and storage is currently in use by the farmer(s) for their operations. As such, there are no changes to farmers' operations that will result in new sources of air emissions or other associated environmental impacts. Therefore, farm operations requiring the use of digestate are not addressed in the analysis of potential environmental impacts within this document.

1.9 Safety Summary

The storage and handling of biogas will be evaluated for potential hazards, explosion, and safety. Identified hazards will be mitigated to allow for safe operation of the facility. The Facility will be operated in accordance with a site-specific Operation, Maintenance and Monitoring Plan and operators will be trained in accordance with this Plan, Nature Energy standards/best management practices, and in accordance with State requirements.

Sufficient diesel storage will be available to support the anticipated operating schedule of the generators. In the event excess biogas is produced it will be safely disposed of by means of an onsite flare.

As indicated above, Nature Energy operates 14 biogas facilities located in Denmark, France, and the Netherlands. Quarterly safety records associated with these facilities, along with logistics and gas fueling operations, are maintained for a total of 16 facilities. Incidents associated with spills on public roadways have not been recorded at any Nature Energy facility. Twelve of the sixteen facilities (75 percent) have not recorded a lost time incident (LTI) during the latest 12-month rolling period, from June 2021 through June 2022. LTIs are incidents that require an employee to leave work due to an incident. During 2021, there were 2 LTIs and during 2022 there were 3 LTIs. These LTIs included such things as slips/falls, electric shock, and particulate matter in the eyes and a hand injury during maintenance activities. The LTI Frequency (LTIF) identifies the number of lost time injuries that occurred per 1-million-man hours worked. The LTIF for thirteen of the sixteen facilities (approximately 81 percent) was zero. The remaining three facilities LTIFs ranged from 4.0 to 76.8, for an average of 9.6 LTIs per 1-million-man hours worked for the sixteen facilities.

1.10 Facility End-of-Life Expectations

The assumed financial life of the NE Roberts project is approximately 40 years. While unexpected, in the event the facility necessitates shut down and a return to the property's original conditions, the following steps would be taken:

- **Perform a demolition survey of the buildings/areas**
  - **Include the sampling of any wastes or areas of concern prior to demolition.**
  - **Identify areas that may need decontamination prior to demolition.**
  - **Prepare a report of findings to be used to receive bids for demolition.**
- **Prepare a specification to be utilized to obtain bids for decommissioning and demolition work to raze the buildings, backfill any pits or basement areas, and restore the site to pre-plant conditions.**
- **Manage the above grade and below grade demolition to remove all structures associated with the plant. All construction materials would be removed offsite and either recycled and/or disposed of at permitted landfills in accordance with local, state, and federal regulations and requirements.**
- **After the below grade demolition is completed and prior to backfilling, develop a sampling and analysis plan**
  - **Conduct sampling in accordance with prepared plan**
  - **Compare sampling results to pre-construction sampling results**
  - **Determine need for risk assessment implementation**
- **If adverse conditions are found in soils and/or groundwater, remediation may be required**
- **Backfill basements/pits with clean backfill**
- **Restore area – Seed and mulch to pre-construction conditions**

2. Environmental Impacts

The production of RNG is a clean process in a self-contained facility that transforms smelly, hard-to-handle manure and other wastes into a carbon friendly energy source and other products that are useful back on the farms from which the waste was collected. As proven in more than a dozen successful plants in Europe, Nature Energy is committed to actively managing the occurrence of nuisance odors, noise, light, and truck traffic from the plant, having developed several innovative engineering controls and reliable best practices that would help make the new plant serve as a good neighbor in the community. In addition, due-diligence environmental and resource research and studies have been conducted to determine any potential impacts associated with the construction and operation of the facility and permitting and/or mitigation measures that may be required.

2.1 Water Quality

The existing site is currently uncultivated farmland. The proposed NE Roberts plant would increase impermeable surface and would require the storage of manure on site. Specific measures in accordance with federal and state regulation would ensure water quality is protected during construction and operation of the facility.

2.1.1 Construction

After the construction of the facility, the site would be characterized by built up areas including buildings, storage tanks and their containment areas, driveways, a parking lot, grassy and gravel open spaces, and a grassy dry pond for stormwater management. The addition of impervious surfaces would increase non-contact surface runoff volume.

The construction of the proposed project would require a General Permit to Discharge Construction Site Storm Water Runoff - Wisconsin Pollutant Discharge Elimination System (WPDES) Permit No. WI-S067831-5. The permit must be obtained before commencing any land-disturbing activities (i.e., clearing, grading, filling, and excavating) at the site. In compliance with the general permit, NE Roberts would develop a Stormwater Pollution Prevention Plan (SWPPP) before commencement of operations. The SWPPP would identify all potential sources of stormwater contamination for the project. Best Management Practices (BMPs) would be identified and implemented along with a schedule and criteria for routine inspections.

2.1.2 Operation

Stormwater and wastewater during operation would be managed onsite at the proposed facility to mitigate impacts to the surrounding areas. The potential for site materials to infiltrate groundwater or runoff off-site would be mitigated through the use of a secondary containment area with impermeable lining that meets or exceeds state and industry practices.

Stormwater

NE Roberts would manage stormwater on site using a stormwater pond designed to hold the additional runoff volume generated as a result of the proposed site development. The pond would also provide runoff treatment and release rate control not to exceed the discharge rate of the pre-development conditions.

Stormwater runoff analysis was performed using the Natural Resources Conservation Service Soil Conservation Service (NRCS SCS) method as outlined in the Village of Roberts Storm Water Management Standards. A design storm of 100-year return period, 24-hour duration was the basis of these calculations. The peak discharge pre-development runoff flow rate was calculated to be 97.12 cubic feet per second (cfs), while the maximum post-development runoff flow rate was estimated to be 96.24 cfs.

The runoff volume difference between pre- and post-development conditions would be temporarily stored in a detention pond. The detention pond would serve as the primary treatment practice for stormwater and would include a forebay and a permanent pool in the pond for water quality treatment. A temporary pool volume would be provided to detain stormwater runoff and would route through an outlet control structure to serve as a means to control the stormwater runoff release rate.

The design of the retention pond is in alignment with the Village of Roberts wet pond design criteria, the Wisconsin Department of Natural Resources (WDNR) Wet Pond Technical Design Standard 1001, and U.S. Environmental Protection Agency (USEPA) recommendations. An operation and maintenance plan would be put in place to ensure the water quality features of the wet pond would function as designed in the future.

Wastewater & Sanitary Sewer

Water used in plant operations would be sent to the anaerobic digesters to become product. Any water that comes into contact with raw materials would be captured and used in the anaerobic digesters. Wash stations for rinsing delivery trucks would be located within the enclosed manure and dry material receiving areas. This wash water would be collected and used as liquid raw material for the anaerobic digesters. Water from the boiler system would also be included as a raw material used for the final product. If process water needs to be brought to the municipal wastewater system, it would be pre-treated onsite, and all applicable permits would be obtained prior to discharge.

NE Roberts would send sanitary wastewater to the local sewage treatment system. With anticipated staffing of 5-15 employees (operators & truck drivers), the estimated sanitary flow is less than 1,000 gallons per day including shower facilities.

Water Usage

The operation of NE Roberts would require approximately **45,500m^3 per year (12MGY)** of water to support the entire digestion process and other water needs. NE Roberts is evaluating alternative water supplies to support the facilities operations. NE Roberts is considering feasibility of obtaining water through the municipal service and/or local water sources such as Twin Lakes. All considerations for the sourcing of water supply would include the assessment of water quality to specifically determine the chemical content of a local water supply; the analysis should identify not only the presence of, but also the concentrations of, dissolved minerals that could potentially interfere with industrial processes. The Twin Lakes are listed as impaired waters due to total phosphorus eutrophication and pH levels, so a thorough evaluation of the water quality would be required prior to identifying this as a viable source of water. Nature Energy is currently discussing and assessing all options.

Regional Water Quality Benefits

Additionally, NE Roberts facility provides the village and county an opportunity to improve water quality in both groundwater and surface water. The products from the Nature Energy process at the Roberts plant would provide key nutrients such as nitrogen, phosphorus, and potassium in a form that allows for better uptake by crops. This is an important benefit and improvement over the raw manure that is currently being applied. NE Roberts would provide dairy and crop farmers with the fertilizer products they need to apply according to their local nutrient management plans. By providing a more precise volume of fertilizer, farmers are able to decrease excess nutrients, reducing the potential for runoff and improving regional water quality.

2.2 Aquatic Resources

An WDNR professionally assured wetland delineator conducted an aquatic resources field survey at the location of the proposed facility on April 26, 2022. No wetlands or waterbodies were observed. The results of this survey will be submitted to WDNR, per the requirements of the professionally assured delineator program.

2.2.1 Construction

As no wetland or waterbody resources were identified on site, the construction of the NE Roberts facility would not result in any impacts to aquatic resources. Additionally, Nature Energy would implement a SWPPP to prevent offsite migration of sediments into off site aquatic resources and would obtain a WDNR Construction Stormwater Permit as detailed in **Table 5**.

2.2.2 Operation

No impacts to wetland or waterbody resources would occur based on the operation of the facility. Nature Energy would implement a SWPPP and appropriate secondary containment designs to prevent any impacts to off-site aquatic resources during operation of the facility. Nature Energy would obtain a WDNR Industrial Stormwater Permit as detailed in **Table 5**.

2.3 Groundwater Resources

The proposed project site is located within the Kinnickinnic River Watershed. Aquifers in the area are identified as the Sand and Gravel unconfined aquifer and the Sandstone and Dolomite, and the Crystalline Bedrock (both confined) aquifers. Shallow groundwater flow direction is estimated to be northwest to southwest in the area. Groundwater velocity varies in the area due to the underlying St. Peter Sandstone overlaying the unpredictable karst Prairie Du Chien Group.

Groundwater depth in the proposed project site is estimated to range from 7.4 feet below surface to >50 feet below surface. Wells local to the Village of Roberts record depth to groundwater as deep as 114 feet below surface.

The WDNR reports no wells on the site. Three wells are located adjacent to the site and include domestic Well #8CN098 estimated at 20 gallons per minute (gpm) (4-hour pump test 20 gpm), Well #8EY201 estimated at 10 gpm (2-hour pump test 10 gpm), and the Village of Roberts-owned Well BG860, which was rehabilitated in 1991 and tested at 837 gpm for 7 hours. The Roberts site is adjacent to the Village of Roberts Village water supply well and within the sewer service area.

2.3.1 Construction

Construction of the facility is not anticipated to affect groundwater. Soil disturbance would be minimized to the extent possible by using best management practices throughout construction. Slope grading would be accomplished using cat-tracking (equipment would drive up and down the slope such that cleat marks are parallel to slope) to retard water flow that could cause erosion and increased runoff.

2.3.2 Operation

During operation of the facility, the potential for infiltration of the digestate and manure into the ground and/or off site would be mitigated through the implementation of a containment area with a compacted sub-base and monitoring system. Consistent with state and industry practices, the containment area would be capable of holding the full volume of the largest tank plus 25%. This prevents any leaks or spills from affecting surrounding soils or groundwater. The NE Roberts facility would be designed in accordance with the codes, standards, regulations, and ordinances that may apply to the design of the storage tanks and containment area include:

- U.S. Department of Agriculture (USDA) NRCS Code 313
- USDA NRCS Code 634
- USDA NRCS Code 366
- Wisconsin Department of Agriculture, Trade, and Consumer Protection (ATCP) § ATCP 33, § ATCP 50, and § ATCP 51
- Wisconsin Department of Natural Resources (NR) § NR 115, § NR 116, § NR 151, and § NR 243
- St. Croix County Code of Ordinances Land Use and Development Chapter 11 – St. Croix County Animal
- Waste Storage Facilities

Refer to Attachment 3 for a summary of the Spill Containment Measures that will be implemented during operation of the facility.

No wells are located on the proposed facility site, and the construction of new wells is not proposed as part of the planned facility.

2.4 Soils and Geology

Soils characteristics were identified and retrieved using the NRCS's Web Soil Survey. This is an online resource providing soil data and information produced by the National Cooperative Soil Survey. Additionally, the most recent published soils surveys by the USDA NRCS for St. Croix County, Wisconsin were consulted.

A review of the U.S. Geological Survey (USGS) Mineral Resource Online Spatial Data identified that the Project is located on a carbonate karst as part of the Ancell Group from the Ordovician period. Topographically, elevations above mean sea level across the project site ranges from approximately 1,020 feet to 1,040 feet.

2.4.1 Construction

To construct the facility there would be earth moving and grading work associated with industrial construction practices. The site would be designed to avoid erosion potential, stabilize soils, reduce steep slopes, and reduce permeable soils.

NE Roberts would follow Wisconsin erosion prevention and sediment control requirements that include temporary stabilization techniques during construction, in accordance with the SWPPP and would obtain coverage under the WPDES Permit for Authorization to Discharge Stormwater, permit number WI-S067831-6, Associated with Construction Activity. NE Roberts would permanently stabilize disturbed soils after construction through the use of vegetation.

Structural stabilization measures may include sediment barriers, mulch, erosion control blankets, temporary seeding, tackifiers, poly sheeting, or functional equivalents, where necessary. Stabilization measures would be initiated as soon as practicable, but no later than 7 days in any portion of the site where construction activities have temporarily or permanently ceased as required by the Land Disturbing Construction Activity Permit.

To contain sediment within the project area, sediment barriers, such as silt fence or straw wattles, would be installed as perimeter controls, at the base of all slopes adjacent to ditches and drainage channels, and on the downslope side of all excavations. Material would be placed for sediment flow into the excavation in the event a storm occurs. Spoil piles would not impede any existing drainage, including ditches, swales, culverts, storm drains, or drain tile inlets. Sediment controls would be placed around any stormwater conveyance system that could receive runoff from areas of ground disturbance. Redundant BMPs would be implemented wherever deemed necessary to reduce or prevent sediment-laden runoff from entering any surface water or storm water conveyance system. NE Roberts would monitor the effectiveness of all controls. Inadequate controls would be repaired or replaced as soon as possible within 24 hours, not to exceed the end of the next business day.

2.4.2 Operation

Post construction, the proposed project is not expected to change or have any significant effects on the underlying geology of the site area.

2.5 Threatened and Endangered Species

In 2021, a preliminary review of federally listed threatened and endangered (T&E) species was performed using the U.S. Fish and Wildlife Service (USFWS) Information for Planning and Consultation website. The website indicates that the following T&E species protected under the Endangered Species Act are known to occur or have the potential to occur at the Project: Northern long-eared bat (*Myotis septentrionalis*), Karner blue butterfly (*Lycaeides melissa samuelis*), and Prairie Bush-clover (*Lespedeza leptostachya*).

In order to avoid potential impacts to the northern long-eared bat, Nature Energy would schedule construction to avoid tree clearing during restricted USFWS timeframes (anticipated April 1 through September 30) in compliance with the northern long-eared bat final 4(d) rule (USFWS 2016). The Karner blue butterfly depends on wild lupine, its host plant; if that plant species is present, then the butterfly is assumed to be present as well. However, due to the location of the proposed facilities, the presence of wild lupine is not likely. Additionally, the Project is not located within Wisconsin's mapped high potential range for this species. Therefore, affects to this species are not anticipated.

An Endangered Resources Review (ERR) was completed through the WDNR's Bureau of Natural Heritage Conservation (**Attachment 3**; confidential). The ERR process utilizes previous survey data to identify state-listed species that may occur within or near the project and identifies legal requirements and/or recommendations to mitigate impacts to state-listed resources, such as rare plants, animals, and natural communities.

2.5.1 Construction

No anticipated impacts on listed species were identified; however, further consultation with the USFWS and WDNR is required to confirm the presence or potential impact to listed species. If additional species are identified, consultation with these agencies would further identify if any species-specific surveys would be required and any mitigation measures that may need to be implemented.

2.5.2 Operation

No impacts to listed species are anticipated during the operation of the facility.

2.6 Cultural Resources

A cultural resources desktop assessment was conducted for the NE Roberts project area. For the cultural resources' desktop review, a much larger survey area including a 111-acre parcel where the biogas facility would be situated was reviewed (**Attachment 4**). It is anticipated that the project footprint for the biogas facility (defined as the Area of Potential Effect [APE]) would be much smaller and encompassed within this larger survey area.

The desktop assessment included a review of the Wisconsin Historic Preservation Database (WHPD). The purpose of the background research was to identify previously recorded cultural resources within or adjacent to the Project. Information collected included data from the Archaeological Report Inventory (ARI), Archaeological Sites Inventory (ASI), and the

Architecture and History Inventory (AHI) within a 0.5-mile radius of the survey area. The National Register of Historic Places (NRHP) database was also reviewed.

As a result of the background records check, seven historical and architectural resources and four archaeological surveys were identified within a 0.5-mile radius of the survey area. Of these known historical and architectural resources, none are directly within the survey area or the direct APE. Of the historical and architectural resources, one (AHI # 23694) is south of Roberts, one (AHI # 135204) is southeast of Roberts and five (AHI #s 26167-26171) are located to the west of the Project within Roberts. None of these resources have been assessed for listing in the NRHP. The four surveys (09-1125, 10-1105, 16-0018, and 19-0026) produced negative results. These surveys were conducted on behalf of various utility and transportation projects.

As a result of the cultural resources background records check, no known cultural resources or surveys are located within the survey area (or the direct APE). The negative results from the previous survey work coupled with the absence of known archaeological sites within 0.5-mile of the survey area suggest a low probability of identifying cultural resources within the survey area or the direct APE. In addition, the survey area is situated within an agricultural field that does not appear to be visibly disturbed. Portions of the survey area contain eroded or muck soils, which could reduce the chances of identifying NRHP-eligible deposits within the parcel.

Under Section 106 of the National Historic Preservation Act (NHPA), due to the federal permits required for authorization of the proposed project, the lead agency must consider potential effects of the Project on historic properties. As part of this consideration, the lead federal agency would consult with the Wisconsin State Preservation Office (WISHPO). To facilitate this consultation, a Request for SHPO Comment and Consultation on a Federal Undertaking Form was submitted to the WISHPO on February 25, 2022 (**Attachment 5**), summarizing the project and the background research. The WISHPO responded on March 16, 2022 (**Attachment 6**), that they “would not provide comment on projects for which a lead agency has not yet been defined. The project must be submitted to us directly from that agency unless you have been formally designated to act on their behalf.” Even though the WISHPO will not comment until the lead federal agency is involved, the cultural resources surveys (both archaeology and architectural history) are currently being conducted as planned. The results of the survey will be provided upon completion. The cultural resources survey work will guide both construction and operational activities.

2.6.1 Construction

NE Roberts completed a field based archeological and historical resource survey May 2, 2022. NE Roberts is still evaluating the findings of this survey and will consult with WISHPO based on the findings of the survey to determine potential impacts to cultural resources associated with construction activities. This will be completed prior to receiving any federal authorizations for the project in accordance with Section 106 of the NHPA.

2.6.2 Operation

NE Roberts completed a field based archeological and historical resource survey May 2, 2022. NE Roberts is still evaluating the findings of this survey and will consult with SHPO based on the findings of the survey to determine potential impacts to cultural resources associated with construction activities. This will be completed prior to receiving any federal authorizations for the project in accordance with Section 106 of the NHPA.

2.7 Air Quality and Odors

As the site is currently used for agricultural purposes only there are no permitted stationary sources of air emissions currently at the site. The current agricultural use of the site has odors associated with active agricultural activities, including the use of manure to fertilize crops.

2.7.1 Construction

Minor greenhouse gas air emissions would be associated with construction activities from the use of diesel-powered construction equipment and worker vehicles. No construction air permits would be required for these emission sources.

During the construction phase of this project, dust would be generated from construction activities. These activities would include grading and the addition of fill dirt to the site. Construction equipment traffic and building activities would also generate dust. Dust emissions would be generated mostly during daylight hours while construction is ongoing. Where needed, the facility would apply water or sweeping to clean up dusty material or to minimize dust emissions from grading activities and vehicle traffic during construction.

Diesel emissions from construction activities are expected to consistent with other construction activities. These emissions will contain particulates, nitrogen oxides and carbon monoxide. The USEPA has emission standards for diesel engines depending on the model year of the vehicle and the type of equipment it is. It is expected that equipment used during the construction will meet these prescribed emission standards.

2.7.2 Operation

During operation the sources of air emissions from the facility would include manure handling and storage equipment and tanks, digestors for converting manure to biomethane and CO_2, a gas cleaning system to remove CO_2 and other contaminants from the RNG, a boiler used to keep temperature in the digestor, an emergency diesel generator, and an enclosed thermal oxidizer to burn off-spec gas. Once the site becomes operational, dust emissions would be minimized by having traffic confined mostly to paved roads and good housekeeping practices that would keep feed material from being tracked out for the buildings by truck traffic. Therefore, vehicular traffic would not be expected to result in nuisance air emissions.

Equipment for liquid and solid material handling and storage includes conveyors, pumps, silos, tanks, and enclosed loading/unloading areas. Trucks would enter the enclosed area of a building and the doors would close before unloading incoming material or loading outbound fertilizer. This handling equipment is expected to generate emissions of volatile organic compounds (VOCs), H_2S, ammonia (NH_3) and a small amount of CH_4. All the enclosed areas would have a ventilation system to keep the buildings under negative pressure and route collected vapors to the biofilter for odor control. Storage tank silos and other equipment would vent directly to the biofilter collection system. It is expected that a small amount of fugitive emissions would occur when doors are opened to the areas under negative pressure, especially as trucks transition in and out of the enclosed buildings. The biofilters remove VOCs, H_2S, and NH_3 from the steam before exhausting the treated air to the atmosphere. The biofilter is expected to remove more than 90 percent of VOCs, H_2S, and NH_3 emissions.

After material is temporarily stored in silos and tanks, it would be routed through the enclosed system into digesters which generate the biogas. Gas generated from the digester goes through a system to separate the biomethane from the CO_2. The CO_2 is fed through a carbon bed system to remove any organics and odor compounds before discharge to the atmosphere. Separated biomethane from the digestor gas would be routed to the electric compressor for feeding into the underground natural gas infrastructure. Finally, spent digestor material would be transferred to tanks or storage silos before being loaded onto trucks and returned to farms for use as fertilizer. In rare cases, the digestor gas produced would not be made in sufficient quantities or quality for injection into the natural gas infrastructure; therefore, the facility would have an enclosed thermal combustion flare for combusting the biomethane from the digestors. The flare would be enclosed, and no flame would be visible from outside of the unit. The flare would burn raw digestor gas and would generate oxides of nitrogen (NO_x), sulfur dioxide, carbon monoxide, particulates, and VOCs. The expected control of VOCs, H_2S, and hazardous air pollutants (HAPs) in the flare would be more than 98 percent. Based on Nature Energy's experience the flare is expected to be used no more than 100 hours annually.

In support of the operations at the facility, a small natural gas boiler would be located on site. In addition, an emergency diesel generator would be located on site to provide electricity for essential processes when power from the grid is not available. The generator would be certified to meet USEPA Tier 3 emission standards for diesel generators and would be utilized in case of an emergency only. The generator would not be utilized during normal operations.

The facility anticipates receiving a Type B Registration air permit. This permit type will limit the facility's actual emissions to below half of major source thresholds for criteria pollutant emissions in compliance with the National Ambient Air Quality Standards (NAAQS) for nitrogen dioxide (NO_2), sulfur dioxide (SO_2), carbon monoxide (CO), particulate matter less than 10 microns in diameter (PM_{10}), and particulate matter less than 2.5 microns in diameter ($PM_{2.5}$).This permit will also require an air quality dispersion modeling analysis to ensure there are no significant impacts to the local air quality. NE Roberts anticipates submitting the Type B registration air permit application to the WDNR for review in August 2022, with approval within 30 to 60 days of submittal.

As required by the WDNR Type B Registration Permit, NE Roberts completed air dispersion modeling for criteria pollutants to identify the maximum ambient air impacts that would be experienced at or near the fence line of the facility. As part of NE Roberts' air permit application to WDNR, Nature Energy completed air dispersion modeling for SO_2, NO_x and CO. The modelling showed that each of these air pollutants would be less than 50% of the ambient air quality standard at the fence line of the facility. Additionally, NE Roberts evaluated potential air

impacts at the St. Croix Central Elementary, located west of the project. The air dispersion modeling indicated that SO_2 would be present significantly below the ambient air quality standard, at 12% of the standard.

Truck traffic into the facility would be approximately 90-100 trucks per day. Trucks would mostly be driven on paved roads so a minimum of dust emissions from vehicle traffic should be observed. While on-site, trucks would go in and out of buildings or shelters for loading and unloading operations. Trucks would also arrive at regular intervals which would minimize idling emissions while trucks wait for open bays to load or off-load.

Biomass that is transported to and from the facility is expected to mostly come from within 20 miles of the facility. Emissions from truck traffic will consist of normal emissions from diesel engine use including particulates, nitrogen oxides and carbon monoxide. Nature Energy implements technology to ensure efficient truck routes and to arrive at the facility at regular intervals to minimize idling emissions. Additionally, the trucks will have approved route that avoids passage through the Village of Roberts and/or near sensitive receptors (e.g., St. Croix Central Elementary School).

The trucks and equipment involved in the Nature Energy plant are specifically designed to keep the materials enclosed during processing and transport in clean, well-maintained trucks to and from the plant. Inside the plant, waste materials would be managed indoors, in structures that have negative pressure applied, meaning fresh air would be brought in and treated through filters before being released. In addition, inside the state-of-the-art facility, Nature Energy would continuously monitor conditions and maintain air quality equipment and controls.

Livestock odor is generally the result of the decomposition of organic matter, such as manure, which releases gases containing chemicals such as NH_3 and H_2S that create odors (MPCA, 2022). The biogas contains five main constituents: CH_4, CO_2, H_2S, NH_3, and water vapor (USEPA, 2022). The gas produced in the digesters will be collected and transferred to gas storage located on top of the post-storage and pre-storage tanks. From the tanks, the collected gas is transferred to the gas upgrading system or emergency flares (which are sparingly used throughout the year) using blowers. In the gas upgrading system, the CH_4 will be separated from the remaining gas. The remaining portion of gas will mainly consist of CO_2 and H_2S and other organics, and the CO_2 will be transferred to the biological gas cleaner. The biological gas cleaner captures the H_2S and organics and transfers the CO_2 to an active carbon filter. This filter polishes the CO_2 and releases it to the air via a 100-foot process stack or transfers it to a separate liquefaction system for sale to industrial users (Nature Energy, 2022a). Buildings with odorous air, including tanks that store the anaerobic digestion byproducts, will be ventilated to maintain a small negative pressure inside the buildings. Fresh conditioned ventilation air will be blown into the buildings in strategically chosen areas, and polluted air will be extracted at the highest points in the buildings. Collected air will be treated with a biological biofilter treatment system. The air from the tanks will be treated with a pre-filter before entering the main biological treatment filter, where it will be blended with air extracted from the odorous buildings. This pre-filter will contain seashells for NH_3 and H_2S removal (Arcadis, 2022).Therefore, at the end of the process, the resulting digestate output would have significantly less odor than untreated manure and negligible odors are anticipated to emanate from the facility as a result of the various points for odor mitigation and elimination throughout the operational processes.

The environmental benefits to using RNG over fossil fuel natural gas is that methane gas that is usually emitted during normal manure decomposition and waste management practices is captured and used in place of natural gas that is derived from fossil fuel sources. Thus, the proposed project will off-set the use of fossil fuel natural gas and allow communities to generate their natural gas from local sources. The use of RNG is both a means of reducing the speed of climate change and achieving GHG reduction goals and allowing regions to become more energy independent. According to the Energy Information Administration, in 2020 Wisconsin does not have any production of fossil fuel natural gas within their state (US EIA 2022), while RNG allows for Wisconsin to become less dependent on other countries or states to feed their energy needs.

2.8 Hazardous Materials

During the Feasibility Study phase searches of the USEPA's Facility Registry Service for federally regulated sites within 1,320 feet or 0.25 mile of the site were performed. In addition, the WDNR RR Sites Map system to find state regulated contaminated sites within 0.25 mile of the Site were searched.

One federally regulated contaminated site was identified within 0.25 mile of the Roberts facility site. Ambassador Steel Fabrication, LLC, is located approximately 1,100 feet northwest of the Site, along Grupe Street. The Ambassador Steel Fabrication facility is listed on the National Pollutant Discharge Elimination System (NPDES) as a minor facility that is covered under the general permit, with an expiration date of June 2, 2025. The NPDES permit program addresses water pollution by regulating point sources that discharge pollutants to waters of the United States. According to the USEPA's Enforcement and Compliance History Online (ECHO) page, no violations were identified in the last 5 years at this property. Based on the information above, and the regulatory nature of this listing, this property is not considered an environmental concern for the project.

No state regulated contaminated sites are located within 0.25 miles of the Site. The closest property of concern listed on the WDNR RR Sites Map system is the Kane Transport, Inc. spill site, located 2,700 feet west-southwest of the Site. This property is a closed leak site. To obtain closure, a leak site must be restored to conditions that are protective of human health and the environment. Based on the distance from the Site, and the closed status of the leak, this property is not considered an environmental concern for the project.

In order to provide for a comprehensive investigation into the potential for hazardous materials on or near the Roberts site, a Phase I Environmental Site Assessment (ESA) was conducted in accordance with the ASTM International Standard E1527-13, *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process* (ASTME1527-13). The findings of the Phase I ESA determined no recognized environmental conditions (RECs) or vapor encroachment conditions were identified on the property, no controlled recognized environmental conditions (CRECs) were identified in connection with the property, and no historical recognized environmental conditions (HRECs) were identified in connection with the property.

2.8.1 Construction

No hazardous materials would be used or stored at the plant during construction of the facility. During construction, any non-hazardous solid waste would be disposed of through an off-site contracted waste hauler, with construction debris being taken to an appropriate permitted landfill for construction debris.

2.8.2 Operation

In the event that potentially hazardous materials are required to be used during the operation of the facility associated with the amine scrubber for the gas treatment process to remove H_2S and CO_2, these materials would be transported in accordance with all applicable regulations and stored in accordance with their Material Safety Data Sheets. Secondary containment would be implemented if quantities of these potentially hazardous materials exceed the Spill Prevention, Control and Countermeasures, 40 CFR Part 112 federal standards. No hazardous wastes would be produced as part of the facility operation.

2.9 Land Use and Zoning

According to the Zoning Map of Roberts, Wisconsin dated December 2013, the Roberts site is zoned for M-7 Industrial development. The current property land use is Agricultural, and the Future Land Use map (August 2021 Revisions) from the Joint Comprehensive Plan for the Village of Roberts/Town of Warren indicates that the Roberts site has an expected Industrial land use in the future. According to the Roberts Zoning Ordinance Sec. 70-129. – M3 General Industrial District, subsection (3) indicates waste disposal and recovery uses are allowed by condition. In accordance with the Roberts Zoning Ordinance subsection (9) – Special Regulations, in order to encourage an industrial use environment that is compatible with the residential character of the village, a Conditional Use Permit (CUP) application has been submitted (Arcadis 2022) by Nature Energy to the Village of Roberts. The CUP application included a preliminary Erosion and Sediment Control Plan for construction, a photo log of existing conditions, an Application for Variance (building height), and a summary of local approval requirements.

The St. Croix County, Wisconsin 2012-2035 Comprehensive Plan (adopted November 5, 2012, and amended December 5, 2017) states that its agricultural vision is for farms and agricultural enterprises to operate efficiently and effectively, and that the farmers are good stewards of the land, preserving it for future generations. The Plan recognizes that the County's agricultural industry includes farms of various types and sizes, supported by a variety of economic and land use techniques (St. Croix County, 2017). According to the Comprehensive Plan, dairy is the county's major agricultural commodity, although there has been a considerable decrease in the number of dairy farms and cows, and the Plan recognizes that farm succession to the next generation has been challenging (St. Croix County, 2017).

It is anticipated that NE Roberts would serve to help St. Croix County achieve several goals and objectives for Agriculture/Farmland Preservation, as detailed in the Plan, including, but not limited to:

- **Goal 2: Promote agricultural development to support St. Croix County producers, businesses, and communities**
    - **Objective 2.1 – Maintain and strengthen a farm operator's right to farm using accepted practices that do not threaten public health or safety**
    - **Objective 2.3 – Support efforts which increase the viability and diversity of agriculture throughout the county**
    - **Objective 2.5 – Maintain and strengthen the county farm economy**
    - **Objective 2.6 – Identify, develop, and maintain agricultural infrastructure to support agricultural operations**
    - **Objective 2.7 – Provide technical assistance to farmers seeking to innovate or modernize their operations**
- **Goal 4: Conserve availability and quality of natural resources for agriculture**
    - **Objective 4.1 – Encourage the conservation of groundwater and surface water quality and quantity**
    - **Objective 4.3 – Maintain soil productivity through appropriate agricultural practices**

In addition, in accordance with the Plan's Policies to Support and Promote Agriculture, NE Roberts would support:

- **Policy 2.10 – "Agricultural uses should include a broad range of activities such as livestock and crop production, plant nurseries, tree farms, orchards, community-supported agriculture… bio-energy production and all current alternatives."**
- **Policy 2.15 – "The county will encourage bio-energy production to diversify energy resources and therefore enhance the agricultural economy."**

Although the NE Roberts facility parcel is categorized by the Plan as a Farmland Preservation Area, the Plan's Policy 3.9 states that, "only commercial and industrial uses related to agricultural production should be allowed in the farmland preservation area…", and Policy 3.12 states, "the county will support and encourage commercial and industrial land uses that are agriculturally related and support local agriculture." (St. Croix County, 2017)

Based on the Phase I Environmental Site Assessment (Arcadis, 2022a) performed for the NE Roberts site parcel, it was determined that the site is adjoined to the north by ACI Asphalt & Concrete, Inc., Harris Rebar, Xcel Energy substation, and Packer Drive, with additional commercial properties and Iron Bridgade Memorial Highway located in proximity; to the east by 130th Street and agricultural properties, to the south by the Union Pacific Railroad; to the southwest by a wetland area and pond, followed by the Union Pacific Railroad, and St. Croix Central Elementary School; and to the west by a wooded area. Existing land uses in the surrounding area consist of industrial, agricultural, and residential properties (Arcadis, 2022a). Therefore, it is anticipated that the proposed use for the NE Roberts property would not conflict with local existing land uses, zoning designations, or with local comprehensive plans.

2.9.1 Construction

Construction of the proposed project would not allow for the continued agricultural use of the property. Construction roads would initially be constructed along with temporary parking spaces. Adjacent land uses would not be impacted by the proposed project.

2.9.2 Operation

During operational activities, agricultural activities at the site would cease and the site would be utilized for industrial purposes as a biogas facility. Adjacent land uses would not be impacted by the proposed project.

2.10 Neighborhood Character and Aesthetics

NE Roberts would be located within the Industrial Rail Park District in the Village of Roberts. The proposed site is bordered by 130th street on the east, Union Pacific Railroad on the south, vacant land on the west, and developed sites on the north, including Harris Rebar located in the Roberts Business Park.

The 23-acre site is currently zoned for M-7 Industrial Development. Some of the proposed buildings, tanks, and stacks would exceed the 35-foot maximum allowable structure height of this zone district. NE Roberts has submitted a Conditional Use Permit (CUP) application and Application for Variance to the Village of Roberts for installation of the several structures that exceed the structure height limit for this zone district.

The Roberts site is currently used for agricultural purposes and the Joint Comprehensive Plan for the Village of Roberts/Town of Warren indicates that the site has an expected industrial land use in the future. The surrounding properties are also used for agricultural purposes, light industrial uses, and railroad operations. The CUP application (Appendix D) includes a photo log of existing conditions. There is an existing tree line buffer on the south side along both sides of the railroad right-of-way.

The nearest residence is located south of the Union Pacific Railroad and approximately 300 feet south of the property line for the proposed site. Additional residences are located west of the proposed facility at distances exceeding 1,000 feet.

2.10.1 Construction

The sights and sounds during construction, including the equipment delivery trucks, contractor and employee vehicles, and general equipment, and associated dust would impact the visual quality and aesthetics of the natural landscape within a 0.5-mile radius of the site. These activities would appear similar to existing and ongoing agricultural and industrial operations in the vicinity of the site. The sights and sounds associated with construction would occur during daytime hours Monday through Friday for 12 to 24 months. During construction, sights and sounds and other aesthetic effects would be temporary and would represent minor changes to the neighborhood character.

2.10.2 Operation

The existing rural character of the neighborhood and regional viewshed would be modified by the introduction of the new aboveground structures. Some of the proposed buildings would be taller that the other structures in the immediate vicinity. The proposed aboveground structures would be visible to the surrounding properties within a 0.5-mile radius of the site and would be visible to vehicle occupants traveling on 130th Street.

The taller equipment will most likely be visible from all directions. The existing tree line between the site and the closest residence would partially screen views of the proposed structures from the south. In addition, the structures in the existing developed sites on the north in the Roberts Business Park would partially screen views of the proposed aboveground structures from the north. Under certain atmospheric conditions, there will be a visible water vapor plume from the exhaust stacks characteristic of typical industrial processes. These plumes will be relatively small and will dissipate within approximately 200 feet from the facility. Emergency flares are typically operated for less than 100 hours per year and are not expected to significantly impact visual effects.

Lighting will be designed to comply to deflect light away from any adjoining non-industrial properties and/or from the public street, if feasible. Lighting will be low-level lighting for access and security. No strobe light or lighting on the stacks are anticipated. Glare will be minimized to the extent practicable.

A photo simulation of the proposed aboveground facilities is provided as an attachment to this document (Attachment 1 – General Facility Layout). The new aboveground structures may result in visual changes to the viewshed within a 0.5-mile radius of the site. The above ground facilities would appear similar to existing local water towers and tall agricultural facilities, such as the Harvestore Silo facility (approximately 85 to 100 feet in height). Landscaping, including additional trees along the borders of the site, will be installed around all operation and storage facilities in order to minimize visual impacts from roadways and neighboring properties. Overall, the visual changes to the viewshed associated with the proposed aboveground facilities will be minor during operations.

Based on the Joint Comprehensive Plan for the Village of Roberts/Town of Warren, the Roberts site has an expected Industrial land use in the future; therefore, the proposed project would not impact long-range planning by the Village. The 1,000-foot buffer between the western edge of the proposed facility and the residences is anticipated to remain undeveloped.

Property values of adjacent properties and the rural character of the neighborhood within and near the Industrial Rail Park District are not anticipated to be impacted by the proposed project. Properties to the north are zoned M-7 and M-3, Industrial, and are of a similar industrial nature as the proposed site activities. Adjacent properties to the northwest are zoned RM-2, Multiple-Family Residential, and P-1, Park and Recreation; however, the western half of the property for the proposed facility would be vacant and provide a buffer between sites activities and these properties. The adjacent property to the southwest is currently vacant and contains a waterbody. The site is bordered on the south by a Union Pacific Railroad right-of-way, on the west by 130th Street, and across 130th Street by undeveloped agricultural lands. The land use change from vacant/agricultural land to an operational industrial facility would represent a permanent change; however, changes to the neighborhood character and aesthetics would be similar to other development within the Industrial Rail Park District, would be consistent with zoning designations and local comprehensive plans, and are anticipated to be assessed as part of the CUP application approval process.

2.11 Noise

The proposed facility's location is directly north of the Union Pacific Railroad and directly south of Harris Rebar, located in the Roberts Business Park. The closest noise-sensitive receptor (residence) to the proposed facility is located south of the Union Pacific Railroad, approximately 300 feet south of the proposed property line. There is an existing tree line buffer along both sides of the railroad. Additional residents are located west of the proposed facility at distances exceeding 1,000 feet. It is anticipated that the 1,000-foot distance between the western edge of the proposed facility and the residences would remain undeveloped. As the site is currently used for agricultural purposes, limited and seasonal noise associated with agricultural operations are experienced. Additional existing ambient sound is representative of typical sounds from light industrial and rail use.

2.11.1 Construction

During construction, noise levels would increase in the area immediately surrounding the proposed project. Noises would be consistent with normal construction sounds associated with earth-moving equipment, building construction, and heavy machinery. The use of equipment during the construction would be primarily during daylight hours and based on Village of Roberts noise ordinances to limit the impact of additional noise. **To alleviate noise concerns resulting from construction vehicle traffic, it is anticipated that the approved construction vehicle route to and from the site would be required to avoid passage through the Village of Roberts and/or near sensitive receptors (e.g., St. Croix Central Elementary School). Specific conditions regarding the construction vehicle traffic routes are anticipated to be included as part of the CUP application approval process.** Therefore, adverse impacts as a result of these activities are not anticipated. The noise levels present after construction would be consistent with other operations in the area.

2.11.2 Operation

Beyond the construction of the proposed facility, NE Roberts facility will operate 24 hours a day with truck traffic to and from the site limited to regular hours ranging from **9** hours per day on weekends to 14 hours per day during the week, primarily during daytime hours. **It is anticipated that operational traffic would include both trucks hauling biomass and personnel vehicles to and from the facility site. Regular personnel commuter vehicles are anticipated to travel to and from the site in accordance with the commuter routes required for the individual personnel, based on situational requirements. These personnel vehicles are not anticipated to create noise levels beyond regular commuter vehicle noise that exists currently. However, to alleviate traffic and noise concerns resulting from operational truck vehicle traffic, it is anticipated that the operational truck travel route to and from the site would be optimized to minimize nuisance noise within the Village of Roberts and/or near sensitive receptors (e.g., St. Croix Central Elementary School) to the extent practicable and/or during specific days or periods of the day. Specific conditions regarding the operational truck vehicle traffic routes are anticipated to be included as part of the CUP application approval process.**

In addition, the process equipment would be enclosed within the biomass plant, with unloading and loading taking place in a closed loading hall. The process equipment may create daily sustained noise at steady and continuous low levels.

During operation, the process equipment would be the primary source of facility noise. The noise contribution from the proposed facility is not expected to detrimental to the surrounding area based on a study conducted by NIRAS on November 23, 2021 (NIRAS 2021). This study calculated the external noise contributions from eight residential areas or calculation points ranging between 995 and 3,070 feet from the highest noise source within the facility (biofilter stack, 198 feet high). Results from the study are summarized in **Table 2**.

Table 2 Calculated Noise Contribution in A-weighted Decibel (dBA)

Calculation Point (Residential Areas)	Distance and Direction from 198 Feet-high Biofilter Stack	Resulting Noise Contribution (dBA)		
		Day	Evening	Night (L_{max})
1	1,320 southwest	38	38	37 (39)
2	2,100 feet south	29	28	27 (34)
3	995 feet south-southwest	40	39	38 (47)
4	1,710 feet southwest	33	33	30 (39)
5	1,750 feet east-southeast	35	34	31 (40)
6	2,180 feet east	34	33	30 (36)
7	2,800 feet northeast	41	40	36 (50)
8	3,070 feet northeast	40	39	35 (50)

Notes:
The maximum noise contribution in the night period (L_{max}) is indicated in parentheses, and the noise limit is the night period.
Source: NIRAS 2021

In the facilities, noise was generated primarily due to mechanical equipment operations and trucks. The highest noise levels were from the facility's refrigeration system, biofilter stack, gas upgrading system, and the process tank stirrer. Minor noise sources at the facility included pumps, fans, and air intakes. These sources are typically a lower source strength, placed at a low level and often shielded from the surroundings. Therefore, these sources are not considered significant to the total noise contribution. The maximum noise contribution at night (L_{max}) originated primarily from traffic entering and exiting the sites. Calculation Points 7 and 8 were the closest residential areas to the traffic entering and exiting the site (within 235 feet); however, both calculation points are farthest from the stationary sources at the facility. The maximum was 50 dBA at all calculation points, which is comparable to a quiet suburb, conversations at home, or a large electrical transformer at 100 feet.

2.12 Traffic and Transportation

The site is currently accessed via 130th Street, and as the site is currently used for agricultural purposes no significant traffic is currently accessing this site.

2.12.1 Construction

Construction of the proposed project would require equipment delivery trucks, contractor and employee vehicles, and general equipment, accounting for approximately 25 trucks per day on average. Construction would occur during daytime hours and in accordance with Village of Roberts ordinances, Monday through Friday, and last 12 to 24 months. Due to the parcel being currently undeveloped, construction roads would be initially constructed along with temporary parking spaces. Vehicles would use existing roads, constructed roads, and other areas designed for temporary parking (including unpaved areas) to access certain construction areas. **To alleviate traffic and noise concerns resulting from construction vehicles, it is anticipated that the construction vehicle route to and from the site would be optimized to minimize traffic and nuisance noise within the Village of Roberts and/or near sensitive receptors (e.g., St. Croix Central Elementary School) to the extent practicable and/or during specific days or periods of the day. Specific conditions regarding the construction vehicle traffic routes are anticipated to be included as part of the CUP application approval process.**

We are committed to maintaining a clean operation and clean equipment. Trucks that haul dairy manure are fully enclosed and would be washed after each load is delivered to the plant.

2.12.2 Operation

As provided on **Attachment 1**, General Facility, the site includes off-street parking areas for facility employees and visitors. Under the Village of Roberts Code of Ordinances Section 70-191, there would be a minimum of "one space for each two employees in a 12-hour period" (Arcadis 2022). It is anticipated that the proposed project would require up to 10 employees and, based on the expected number of main-shift employees, the employee parking area would contain up to 10 spaces and would accommodate use by handicapped vehicle operators. Based on the large site area, additional areas would be available on site to accommodate vehicle parking, for example, during major equipment overhaul or construction.

Trucks delivering biomass to the facility will be subcontracted directly with Nature Energy. It is estimated that approximately 90-100 trucks would deliver biomass to the facility Monday through Friday (6 a.m. to 8 p.m.), while approximately 45 trucks would deliver biomass on Saturdays (**6 a.m. to 3 p.m.**). No biomass would be delivered on Sundays. **Table 3** provides information related to the proposed truck traffic at the facility. Upon arrival at the facility, delivery trucks would proceed to the scale. After weighing and communication with the site receipt personnel, trucks would proceed to the appropriate loading hall associated with the biomass contained within the truck. Trucks would then drive into the enclosed loading hall and discharge the biomass into to the associated receiving tanks or crane pit (deep turkey litter only). Because these unloading areas would be within an enclosed building, such unloading areas would not encroach upon a fire lane, driving aisle/lane, or parking space. Upon unloading, trucks would return to the truck scale and washing area.

While a large number of trucks would arrive daily, the facility design provides for uploading areas during peak delivery periods. Trucks would spend between 10 and 25 minutes within the loading hall of the respective building depending on the materials being delivered/exported. Based on the available area within the loading halls, the facility would be able to unload up to 23 trucks per hour. Additional truck holding areas would be immediately adjacent to the loading halls and on the truck entrance from 130th Street. The truck entrance would be able to accommodate a large number of trucks without impacting traffic on 130th Street.

Table 3 Proposed Truck Traffic (Typical)

Truck Contents (Biomass)	Proposed Average Number of Trucks Per Day	Proposed Schedule (Typical)
Slurry/Digestate (2 lines)	54 27	M-F, 6 a.m. to 8 p.m. Saturday, 6 a.m. to 3 p.m.
Deep Litter (2 lines)	14 7	M-F, 6 a.m. to 8 p.m. Saturday, 6 a.m. to 3 p.m.
Industrial Biomass (1 line)	9 4	M-F, 6 a.m. to 8 p.m. Saturday, 6 a.m. to 3 p.m.
Fiber (1 line)	13 7	M-F, 6 a.m. to 8 p.m. Saturday, 6 a.m. to 3 p.m.
Totals	90 45	M-F, 6 a.m. to 8 p.m. Saturday, 6 a.m. to 3 p.m.

Source: Nature Energy

Facility roads and parking areas would be paved and equipped with the necessary road markings, traffic signs, lighting, and stormwater drainage features. Traffic signs would not obstruct or interfere with operations along 130th Street. Site lighting would be designed to reduce off-site impacts associated with glare.

The facility's one-way truck routing, separate entrance and exit, and multiple receiving and loadout locations would maximize truck flow efficiency. During peak truck traffic, drivers would be instructed to line up on the facility's internal paved roads. Nature Energy believes there is adequate capacity for peak truck queuing within the proposed project facility, and the facility would not have trucks line up on 130th Street.

It is anticipated that operational traffic would include both trucks hauling biomass and personnel vehicles to and from the facility site. Regular personnel commuter vehicles are anticipated to travel to and from the site in accordance with the commuter routes required for the individual personnel, based on situational requirements. These personnel vehicles are not anticipated to create a noticeable increase in traffic beyond that which exists currently. However, to alleviate traffic and noise concerns resulting from operational truck vehicle traffic, it is

anticipated that the operational truck travel route to and from the site would be optimized to minimize nuisance noise within the Village of Roberts and/or near sensitive receptors (e.g. St. Croix Central Elementary School) to the extent practicable and/or during specific days or periods of the day. Specific conditions regarding the operational truck vehicle traffic routes are anticipated to be included as part of the CUP application approval process.

NE Roberts completed a Traffic Analysis (**Attachment 7**) to assess the potential traffic impact during operation of the facility to the region. The results of the study identified the NE Roberts would have the appropriate access to the site and to the surrounding roadway network. The traffic operational analysis indicates there is available capacity on the roadways surrounding the site and at site access driveway intersection to accommodate site-generated traffic. Construction of dedicated turn lanes on 130th Street at the proposed site access is not needed based on acceptable traffic operations and Wisconsin Department of Transportation (WisDOT) design standards. Therefore, the project would not have a significant impact to traffic based on the operation of the facility.

3. Permitting Considerations

NE Roberts is required to obtain all federal, state, and local permits and approvals prior to constructing and operating the facility. **Table 4** details all the permits and approvals that are required and their status.

Table 4 Environmental Permits and Approvals

Agency	Permit/Clearance Name	Status
Federal		
U.S. Army Corps of Engineers, St. Paul District (Minnesota and Wisconsin)	Clean Water Act (CWA) Section 404, Nationwide Permit, or Individual Permit	NA – No wetland or waterbody disturbance anticipated.
U.S. Fish and Wildlife Service, Minnesota-Wisconsin Ecological Services Field Office	Section 7 of the Endangered Species Act - Threatened and Endangered Species Consultation Migratory Bird Treaty Act Compliance	Formal consultation with the U.S. Fish and Wildlife Service is not anticipated to be required. Due diligence will be conducted to mitigate effects to protected species. The project is not anticipated to affect species protected under the Migratory Bird Treaty Act.
State		
WDNR	General Permit for Commercial, Residential, and Industrial Activities - Permit No. WDNR-GP1-2017	NA – No wetland or waterbody disturbance anticipated.
	Chapter 30 Waterway Permit	NA – No navigable waters disturbance anticipated.
	CWA Section 401 Water Quality Certification (Joint Permit Application with Section 404 Nationwide Permit)	NA – No navigable waters disturbance anticipated.
	General Permit for Industrial Storm Water Discharge - WPDES Permit No. WI-S067857-5	To be submitted at least 14 business days prior to initiating land disturbing construction activities, if required.
	General Permit to Discharge Construction Site Storm Water Runoff - WPDES Permit No. WI-S067831-5	To be submitted at least 14 business days prior to initiating land disturbing construction activities.
	General Permit to Discharge under WPDES, Dewatering Operations - Permit No. WI-0049344-05	NA – discharges to be appropriately covered by a Construction Site Storm Water Runoff Permit.
WDNR	Construction Air Permit	Application to be submitted July 2022. Registration permit will be in place prior to initiating land disturbing construction activities.
Wisconsin Public Service Commission (PSC)	Pipeline Safety Compliance	NA - No permit is required. Design and specifications will be submitted for review to ensure compliance with federal and state pipeline safety regulations.
WDNR - Bureau of Natural Heritage Conservation	Wisconsin's Endangered Species Law	Application to be submitted as required for associated permit applications, such as General Permit to Discharge Construction Site Storm Water Runoff.
Wisconsin Historical Society, State Historic Preservation Office	Section 106 of the National Historic Preservation Act - Cultural Resources Consultation	Cultural resources surveys completed May 2, 2022. Consultation with SHPO is ongoing.
Local		
Village of Roberts	Building Permit	Application to be submitted a minimum of 60 days before initiation of construction.
Village of Roberts	Erosion and Sediment Control Plan	Preliminary plan submitted to the Village of Roberts February 17, 2022. Final plan to be

Table 4 Environmental Permits and Approvals

Agency	Permit/Clearance Name	Status
		submitted and approved prior to land disturbing activities.
Village of Roberts	Site Plan Approval and Conditional Use Application	Conditional Use Application submitted to the Village of Roberts February 17, 2022. Site Plan to be submitted with the Building Permit Application.

4. References

Arcadis U.S., Inc. (Arcadis). 2022. Local Approvals Requested from the Village of Roberts, WI for Nature Energy US Ventures 3, LLC Project. February 17, 2022. 71 pages.

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5. Glossary

Acetogenesis - Is a process through which acetate is produced either by the reduction of CO_2 or by the reduction of organic acids, rather than by the oxidative breakdown of carbohydrates or ethanol.

Acidogenesis - Is the fermentation stage where the products of hydrolysis (soluble organic monomers of sugars and amino acids) are degraded by acidogenic bacteria to produce alcohols, aldehydes, and volatile fatty acids (VFAs) and acetate together with hydrogen (H_2) and CO_2.

Ambient - The environment as it exists at the point of measurement, and against which changes or impacts are measured.

Anaerobic Digestion - A natural, biological process in which the complex carbons in biomass are broken down by microbes in an anaerobic environment and then metabolized, producing biogas.

Best Management Practices (BMPs) - Established and effective environmental protection practices. Also innovative, dynamic, and improved environmental protection practices applied to industrial projects to help ensure that development is conducted in an environmentally responsible manner.

Biomass - Biomass is renewable organic material that comes from plants and animals.

Calcareous Fens - A unique wetland area that has the potential to support multiple rare species.

Digestate - Is the material remaining after the anaerobic digestion (decomposition under low oxygen conditions) of a biodegradable feedstock. Anaerobic digestion produces two main products: digestate and biogas. Digestate can be further separated into two separate products, nutrient water, and fiber fraction.

Digester - A container in which substances are treated with heat, - in order to promote decomposition or extract essential components.

Dissolved Air Floatation (DAF) - Animal byproduct containing bits of flesh, offal and fat that is separated from washdown waters by floating and skimming these materials from the water surface.

Endangered Species - Any plant or animal species in danger of extinction throughout all or a significant portion of its range. Plant or animal species identified by the Secretary of the Interior as endangered in accordance with the 1973 Endangered Species Act.

Fermentation - The chemical breakdown of a substance by bacteria, yeasts, or other microorganisms, typically involving effervescence and the giving off of heat.

Fiber Fraction - Digestate product that is high in solids and produced from a mechanical conditioning process using a screw separator and/or a centrifuge to separate the nutrients. Specific nutrient and solid concentrations can be altered based on each specific farmer's nutrient management requirements.

Food Waste - Excess food that was manufactured or prepared for human consumption.

Generally Recognized as Safe (GRAS) Polymers - A term used by the Food and Drug Administration (FDA). The FDA, as part of its product approval process for additives used in food processing for both edible (human) and inedibles (animal), has developed procedures under which certain additives will be able to claim GRAS certification.

Greenhouse Gas - Greenhouse gases are gases, including but not limited to CO_2, CH_4 and N_2O, that trap heat in the atmosphere and can contribute to climate change.

Groundwater - All subsurface water, especially that as distinct from surface water in the zone of saturation.

Hydrolysis - The chemical breakdown of a compound due to reaction with water.

Litter - Excrement from concentrated poultry or egg production. Typically dry, and often from turkey operations.

Manure - Excrement from cattle or a mixture of excreta with feed, bedding, precipitation, or other materials. Typically conveyed by washdown of concentrated dairy cow feeding and milking operations and held in storage in tanks.

Methanogenic Bacteria - Are anaerobic organisms that convert CO_2 to CH_4 via a sequence of reactions that utilizes several unusual cofactors.

Microbe - Is an organism of microscopic size, which may exist in its single-celled form or as a colony of cells.

Mitigate, Mitigation - To cause an impact to become less severe or harmful. To reduce impacts. Actions to avoid, minimize, rectify, reduce, eliminate, and compensate for impacts to environmental resources.

Nutrient Water - Digestate product that is low in solids and produced from a mechanical conditioning process using a screw separator and/or a centrifuge to separate the nutrients. Specific nutrient and solid concentrations can be altered based on each specific farmer's nutrient management requirements.

Raw Material - Manure, litter, agricultural waste, DAF waste, or food waste collected for processing by digestion.

Renewable Natural Gas - Is a term used to describe biogas that has been upgraded for use in place of fossil natural gas. The biogas used to produce RNG comes from a variety of sources, including municipal solid waste landfills, digesters at water resource recovery facilities (wastewater treatment plants), livestock farms, food production facilities and organic waste management operations.

Attachment 1 – General Facility Layout

1 Offloading Shed: 54-foot tall, 17,500 square foot building where trucks tip their loads of deep litter directly into an interior pit. The biomass is shredded before being sent on into the system.

2 Agriculture and Food Industry Waste Receiving: 35-foot-tall building where agriculture and food waste is received.

3 Offloading Shed: 48-foot-tall building where tankers offload slurry and are loaded again with degassed slurry.

4 Liquid Storage Tank: The 46-foot tall, 1.5-million-gallon tank provides raw material liquid storage.

5 Digesters: Eight 82-foot-tall digesters contain 2.5 million gallons of biomass each. An agitator ensures that the mixture is consistent.

6 Post-Production & Gas Tanks: Two 46-foot tall, 1.5-million-gallon tanks ensure degassed slurry returns to farmers with same quantity of nitrogen as the fresh slurry delivered to the plant.

7 Bio Filters and Ventilation Exhaust Stack: The 197-foot-tall exhaust stack for two bio-filters which collect odorous substances for biological treatment.

8 Separation Building: 52-foot-tall building where trucks are loaded with solid biomass. Process equipment is on second floor level.

9 Enclosed Biogas Flares: Two enclosed flares (main emergency & backup) are 33 feet tall.

10 Biogas Up-grading Plant: 42-foot-tall building where CO_2 in the biogas is removed. After, the gas consists of 99% methane, the same content as in natural gas.

11 Biogas Upgrading Plant Stack: The 100-foot-tall stack exhausts CO_2 separated from natural gas during the digestion process.

12 Biogas Liquification Building: 33-foot-tall building to liquify gas for use in gas powered vehicles or mobile power generators.

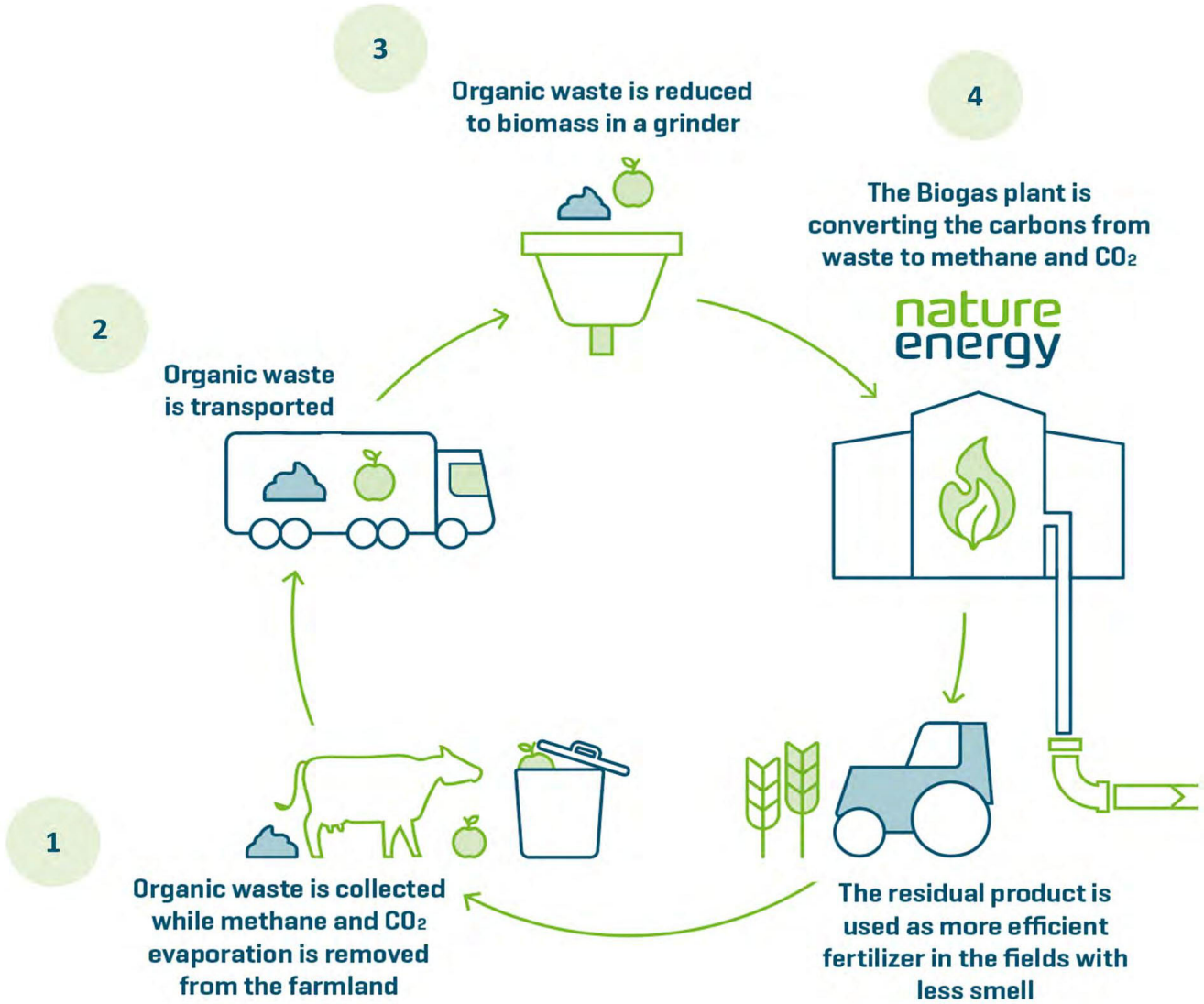
13 CO_2 Liquification: 33-foot-tall building where carbon dioxide is condensed for commercial use (e.g., carbonation for beverages).

14 Boiler Building & Stack: 25-foot-tall building, exhaust from the boiler is discharged from this 100-foot-tall stack.

15 Emergency Diesel Generator & Stack: Exhaust from the10-foot-tall emergency generator building is discharged from this <35-foot-tall stack.

16 Admin Building: 16-foot-tall building containing offices, lunch/ meeting rooms, showers, changing facilities.

Attachment 2 – Nature Energy Process Flow



NOTE:
1.PROCCESS FLOW PROVIDED BY NATURE ENERGY, LLC

NATURE ENERGY ROBERTS, LLC
ENVIRONMENTAL SUMMARY
ST. CROIX COUNTY, WISCONSIN

Nature Energy Process Flow

ARCADIS

ATTACHMENT 2

Attachment 3 – Spill Containment Measures Memorandum

Memo

SUBJECT
Spill Containment Measures
for Nature Energy US Ventures 3, LLC Project

TO
Angi Goodwin – Village Engineer

DATE
July 21, 2022

OUR REF
Nature Energy – Roberts, WI

DEPARTMENT
Village of Robert Planning Department

ARCADIS PROJECT NUMBER
30112313

COPIES TO
Louise Skott Kristensen, Nature Energy
Ben Hach, Nature Energy
Rachel Smith, Arcadis

NAME
Jeff Parris, Arcadis
(423) 954-8716, Jeff.Parris@arcadis.com

As noted in the memo "*Nature Energy – Concept Site Plan and Environmental Summary*," dated June 9, 2022, the site of the proposed Nature Energy facility in Roberts, Wisconsin is located within the Village's wellhead protection area. This memo outlines the spill containment and monitoring systems that will prevent impact to groundwater quality as a result of operations of the proposed biogas facility.

Nature Energy is committed to protecting local resources, including the groundwater and surface water in the area. The Nature Energy Roberts design includes spill containment measures and continuous monitoring systems in accordance with the Village of Roberts Code, Sec. 70-391 Wellhead Protection Ordinance, which requires spill containment and monitoring for facilities within the wellhead protection area. As described below, these meet or exceed the containment and safety measures described in Wisconsin Administrative Code § NR 243.15(5) and NRCS Practice Standard Code 313.

Spill Containment Measures

For the proposed Nature Energy facility, biomass materials will be loaded/unloaded, stored, and processed indoors. As such, all material storage and process areas will be covered and enclosed. Nature Energy storage and processing tanks are fully covered and enclosed in a manner that provides greater environmental protection than typical lagoon-style manure storage. The design of the proposed facility exceeds the requirements and recommendations of NRCS Practice Standard Code 313.

The proposed facility will include spill containment areas, also called retention areas, for liquid manure and digestate storage. The retention area, schematically shown in Attachment A, is designed to have storage capacity equal to the volume of the largest tank in the area plus 25% of its total capacity. This capacity exceeds the industry standard of the capacity of the largest tank plus 10%. Additionally, in the unlikely event of a catastrophic failure of the retention area containment system, the entire facility will be surrounded by an earthen berm providing further protection to surface water resources from potential overland flows of spilled materials.

The retention area utilizes a compacted subbase in conjunction with a monitoring system, further described below. Inclusion of the retention area and monitoring system is in accordance with NR 243.15(5), which describes design of digesters for biogas production.

Spill Detection and Monitoring

Nature Energy implements a spill detection system throughout the key components of the biogas processes, as detailed in Attachment A. This system includes a series of drainpipes below the retention area that connect to sumps (called sampling wells in Attachment A). If liquid is identified in the drainage system, it will be automatically

sampled for potential contamination. This provides an added measure of protection and advanced notice to empty, inspect, and stop any leak immediately. Other smaller liquid storage tanks, such as those for buffer solutions and condensate, include similar drainage and sampling systems. All Nature Energy facilities have programs for regular routine manual sampling and record keeping.

The proposed storage and processing tanks are aboveground, allowing for visual inspection. Additionally, Nature Energy tanks are continuously monitored by the Nature Energy control system (SCADA) for a change in liquid level. If a change is detected when there is not a planned emptying sequence in progress, an alarm is raised, and Nature Energy staff respond accordingly.

Spill Response Plan

In the unlikely event of a spill, Nature Energy has well-defined strategies to address the cause of the release to stop the flow of material, and for collection and management of the material which will be contained within the retention area. At all Nature Energy facilities, inspection of wells and system monitoring is a part of the daily operation and maintenance manual.

The containment and safety measures described in this memo are graphically shown in Attachment B.

Enclosed

Attachment A – Nature Energy Memorandum (July 2022)

Attachment B – Nature Energy Spill Measures, Monitoring and Response Overview

Memo, Containment Philosophy.

Author:	TDJ
QA by:	BHJ
Issued:	05.07.2022
Version:	02

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Revisions List:				
Date	**Version**	**Made by**	**QA**	**Description**
30.06.2022	01	TDJ	BHJ	Initial Version
05.07.2022	02	TDJ	BHJ	Ver 02

Contents

1 Introduction

1.1 Containment areas

Nature Energy integrates in all plant layouts, a retention area, always called the Tank Yard for collection of any spillage occurred. On some sites, the Tank Yard can consist of more Tank Yards.
The volume of the Tank Yard is always larger than the volume of the largest tank installed, so if any unattended leak or accident causes the tank to be emptied in once, the content is contained/cached in the Tank Yard and will be relatively easy to collect.
Following removal of the biomass, the area which has to be cleaned, are also well defined.
Nature Energy has, for each plant, a strategy prepared for this.

1.2 Tank and Well surveillance

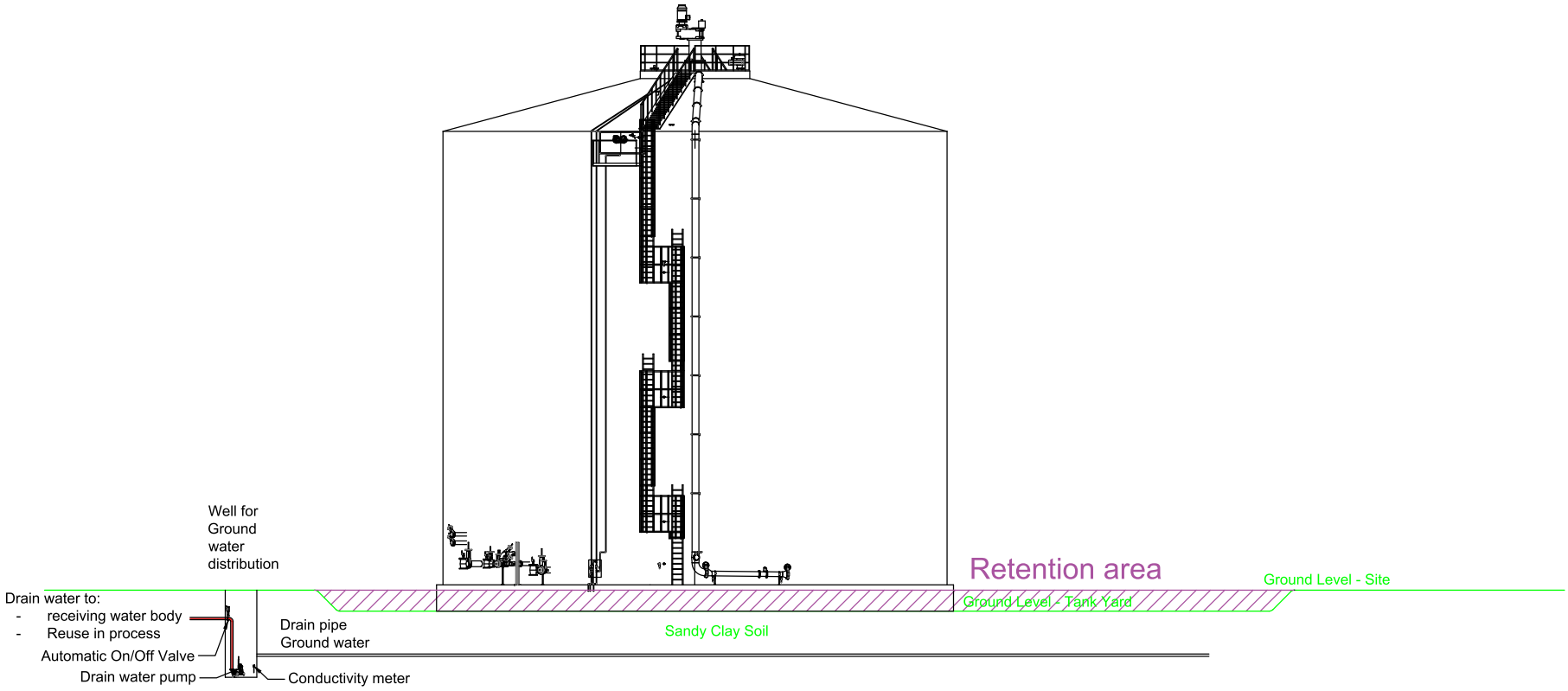
On all Nature Energy sites there will be a number of wells for the different medias such as, drain water, biomass drains, condensate wells and minor storage/buffer tanks.
Due to these wells and tanks strategically placement for an optimal process, they cannot all be placed inside the tank yard, which means Nature Energy has a surveillance strategy/system for these.
Beneath each well and tank a gravel layer is established. In the gravel layer a drainpipe is placed along the tank or well perimeter. The drainpipe is connected with a number of drainpipes, depending on the tank diameter/size, below the bottom.
From the perimeter drainpipe a sample well is led to ground level, in which it is possible to take a sample of the water, if any, present in the drain system. The sample will show any contamination and an initiative to empty, inspect, and stop any leak right away will be taken.

1.3 General

Some Nature Energy tanks, not placed inside a retention area, are monitored by the Nature Energy control system (SCADA), i.e., if any fall in liquid level is detected with no emptying sequence is in progress an alarm is raised and the staff will investigate.
On all Nature Energy Biogas Plants, a program for manual sampling from drains is established and logged.
An emergency plan for spillage is always a part of the daily operation and maintenance manual.

2 Enclosures

- Nature Energy-Containment Philosophy-Tank Yard_Rev
- Nature Energy-Containment Philosophy-Tank_Rev
- Nature Energy-Containment Philosophy-Process Well_Rev
- Nature Energy-Containment Philosophy-Drain Water Well_Rev



Project: Nature Energy					
Title: Containment Philosophy - Tank Yard Sketch					
Scale	Size: A3	Date: 29.06.2022	Project manager	Project No.	Drawing No.
Designed by	Drawn by: TDJ	Checked	Approved by		

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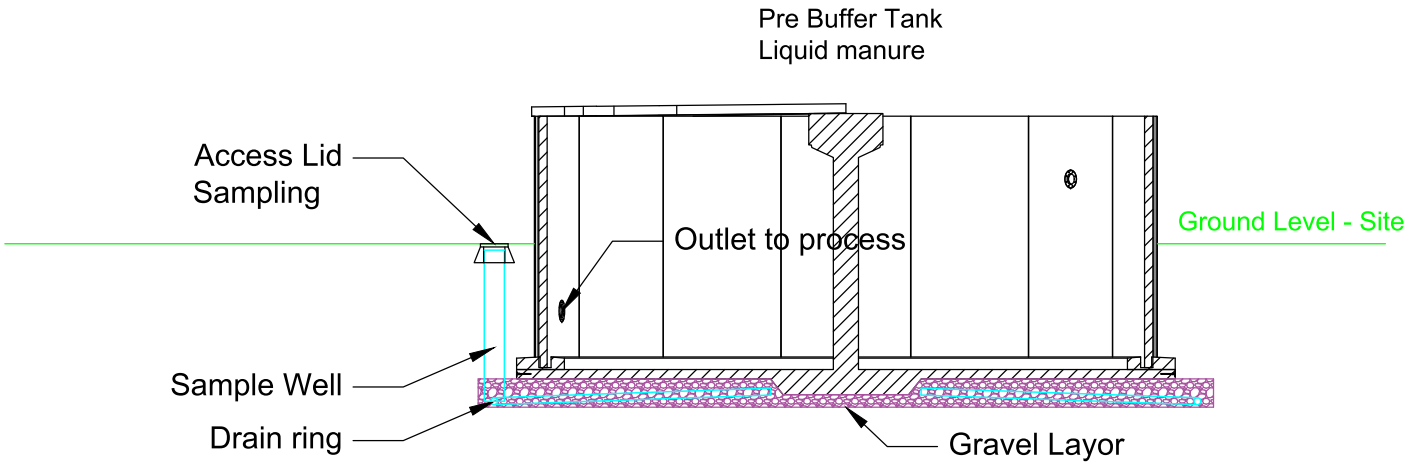

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Title: Containment Philosophy - Wells and Tanks Sketch - Tank					
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Designed by	Drawn by: TDJ	Checked	Approved by		

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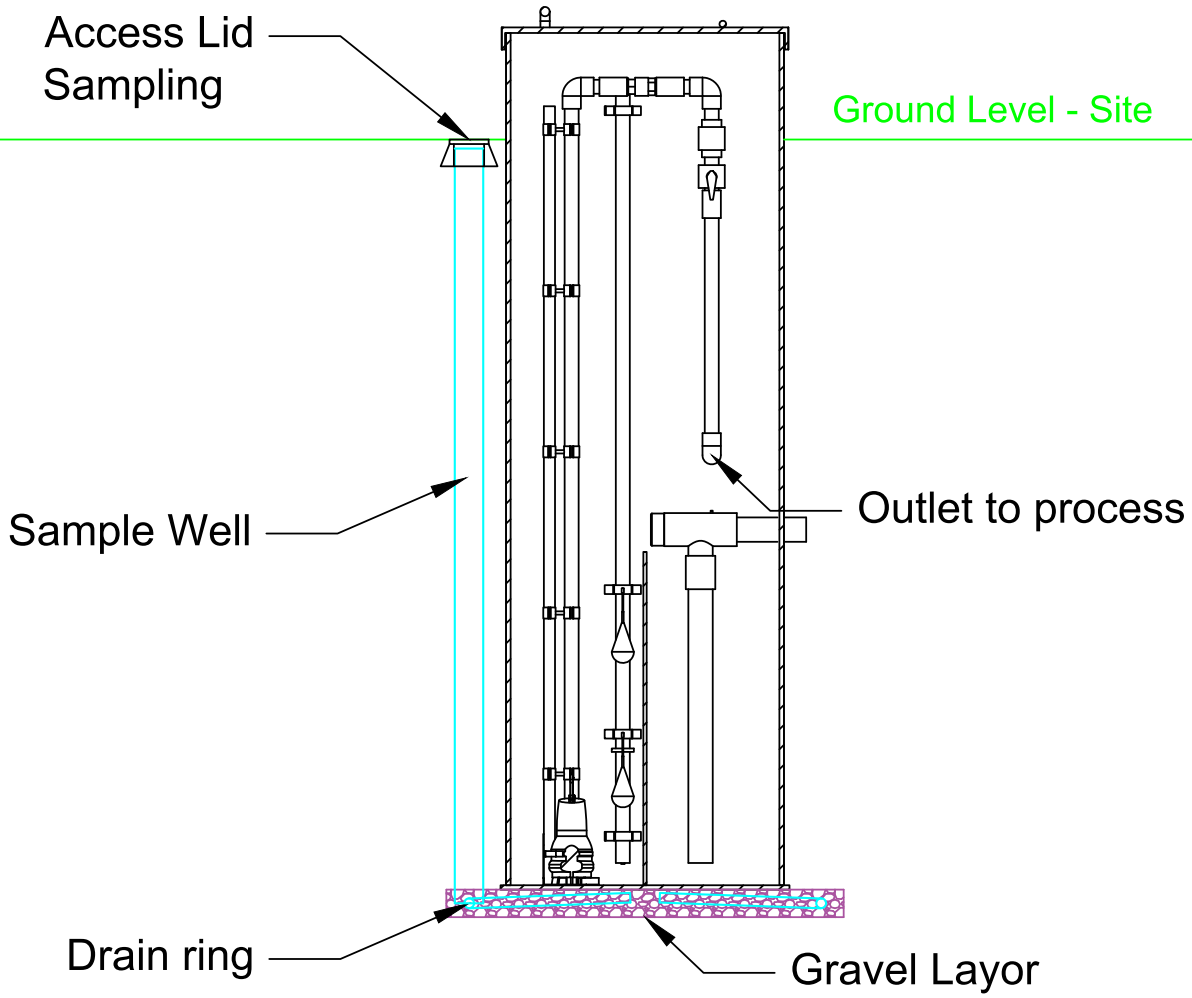
Condensate Well
Biogas



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Title: Containment Philosophy - Wells and Tanks Sketch - Process Well					
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Designed by	Drawn by: TDJ	Checked	Approved by		

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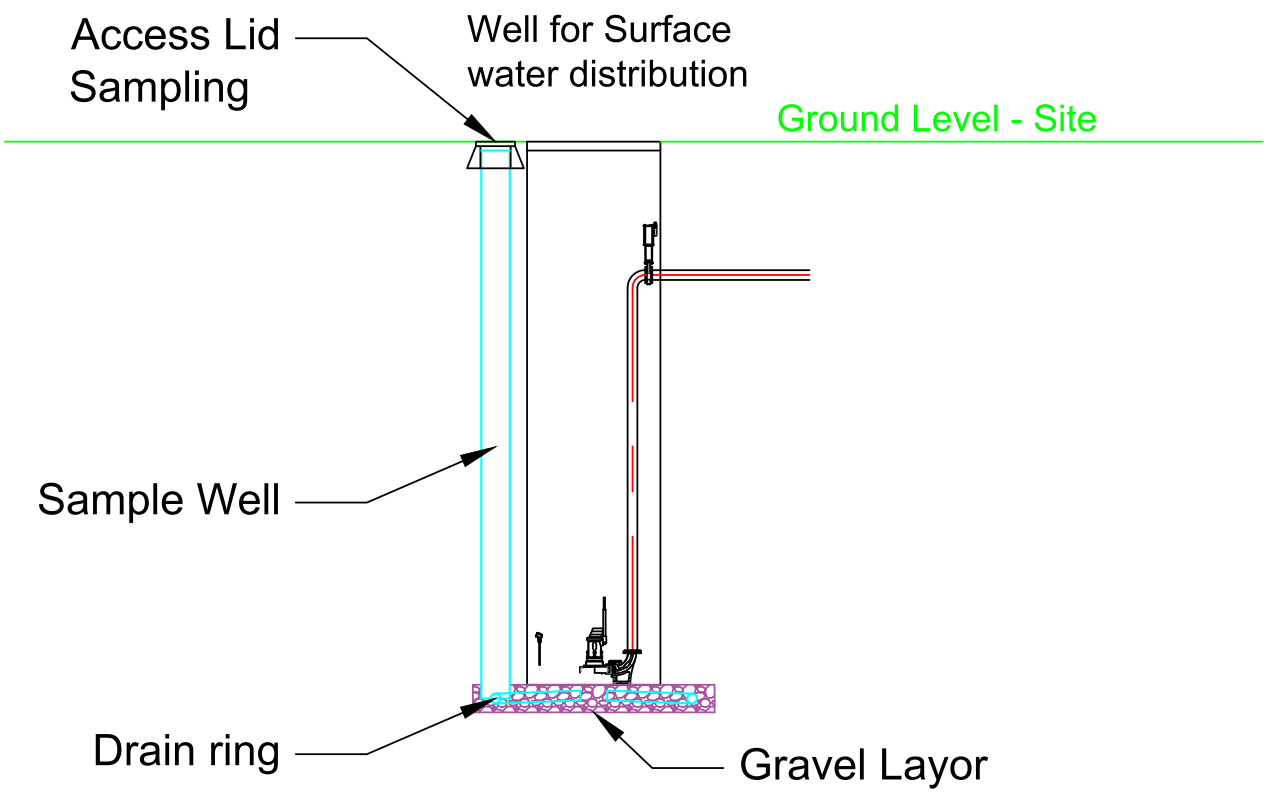

Project

Nature Energy

Title

Containment Philosophy - Wells and Tanks
Sketch - Drain Water Well

Scale	Size	Date	Project manager	Project No.	Drawing No.
	A4	30.09.2022			
Designed by	Drawn by	Checked	Approved by		
	TDJ				

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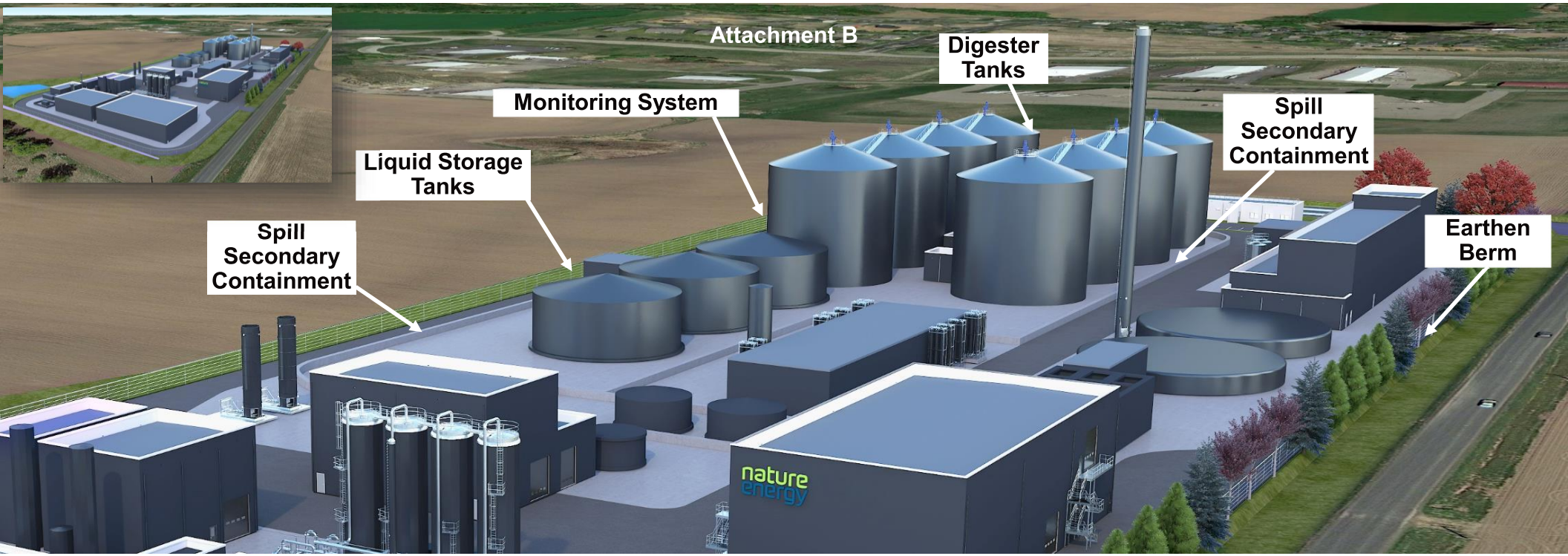
CVR 34614091



Nature Energy Spill Measures, Monitoring and Response Overview

Spill Containment Measures:

- Nature Energy integrates spill secondary containment areas, also called retention areas, into all facility designs.
- The volume of these areas exceed the volume of the largest tank within the containment area plus 25%.
- An earthen berm surrounds the proposed site, providing a tertiary barrier that would further protect surface water resources.

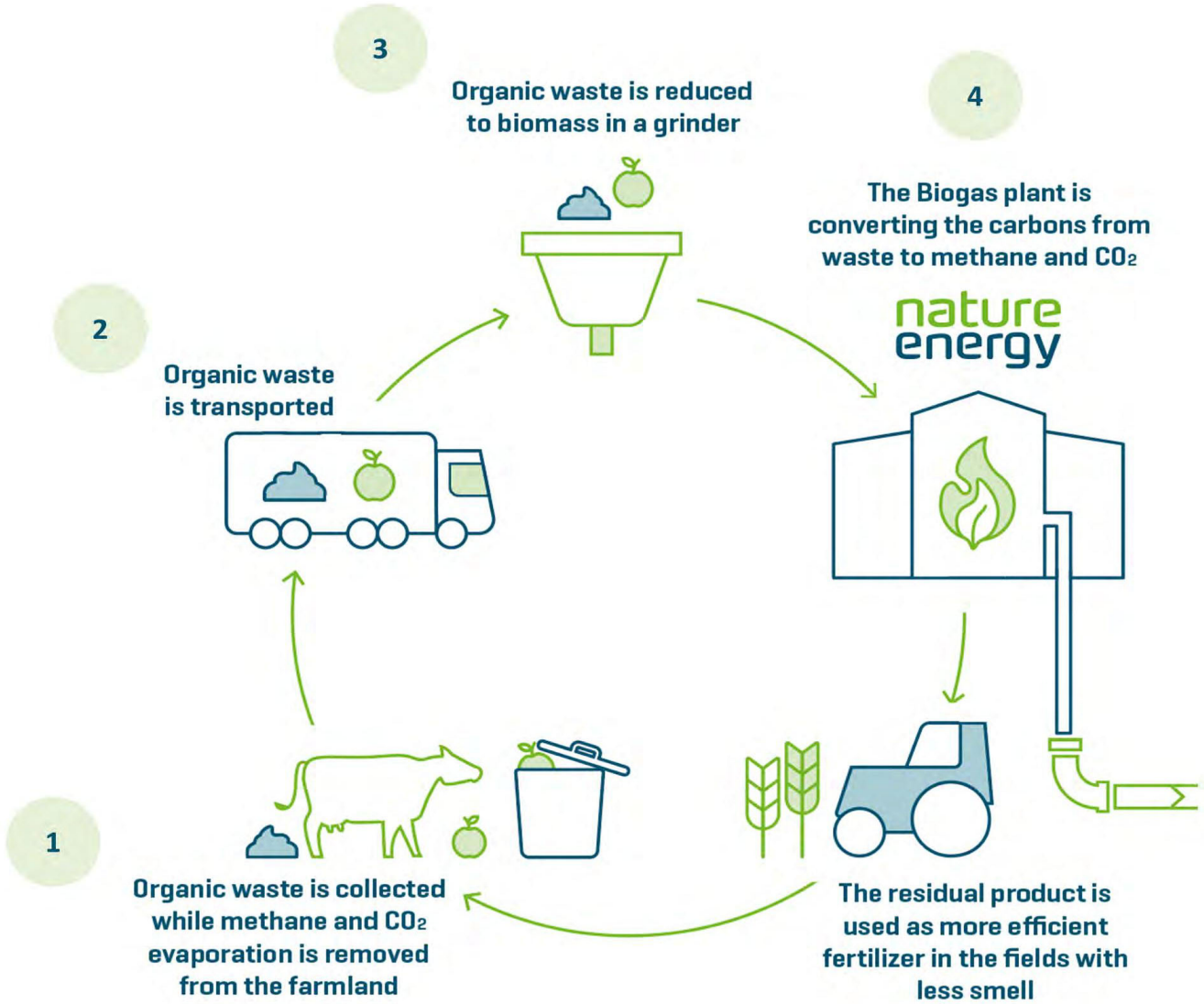
Spill Detection and Monitoring:

- In conjunction with the containment area, a liquid monitoring and sampling system is implemented throughout the system to detect any potential leaks.
- All tanks are aboveground and can be visually inspected. Liquid levels in the tanks are also continuously monitored using the Nature Energy control system (SCADA), which alarms when there is an unexpected drop in liquid levels.

Spill Response Plan:

- In the unlikely event of a spill, Nature Energy has well-defined strategies that include stopping flow of material, and collection and management of the material contained within the containment area.

Nature Energy facilities meet or exceed the criteria described by the Village of Roberts Wellhead Protection Ordinance, Wisconsin Code, and NRCS Practice Standards.



NOTE:
1.PROCCESS FLOW PROVIDED BY NATURE ENERGY, LLC

NATURE ENERGY ROBERTS, LLC
ENVIRONMENTAL SUMMARY
ST. CROIX COUNTY, WISCONSIN

Nature Energy Process Flow

ARCADIS

ATTACHMENT 2

Attachment 4 – Cultural Resources Desktop Assessment

TECHNICAL MEMORANDUM

Nature Energy Biogas A/S – Roberts Biogas Facility Cultural Resources Desktop Assessment

PREPARED FOR: Nature Energy Biogas A/s

PREPARED BY: Christopher Galantich, Arcadis U.S., Inc.

DATE: February 1, 2022

On behalf of Nature Energy Biogas A/S (NE), Arcadis U.S., Inc. (Arcadis), conducted a cultural resources desktop assessment of the NE – Roberts Biogas Facility Project (Project) in St. Croix County, Wisconsin. If the Project ends up having a federal nexus (e.g., funding, permit, jurisdiction), consideration of potential effects on historic properties is required under Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended, for any undertakings by a federal agency. The implementing regulations for the NHPA are contained in 36 Code of Federal Regulations Part 800 and are outlined by the Advisory Council on Historic Preservation. It is anticipated that the Project will require United States Army Corps of Engineers permits and/or a National Pollutant Discharge Elimination System permit.

The purpose of this technical memorandum is to summarize the results of the cultural resources desktop assessment in order to evaluate potential Project effects to historic properties in the event that the Project triggers a Section 106 review. If Section 106 is triggered, further cultural resources survey and evaluations may be required.

Project Description and Area of Potential Effect (APE)

The Project is located between Roberts and Hammond in St. Croix County, Wisconsin. NE is proposing to construct a facility that will occupy approximately 16.5 acres and will receive waste food, digestible agricultural waste, poultry litter, and/or liquid manure. These products will go through an anaerobic digestion process to produce renewable natural gas, carbon dioxide, liquid fertilizer, and solid soil amendments. There will also be a 7.0-mile long, 50-foot-wide interconnect pipeline that will be constructed within existing road right of way (ROW). This pipeline may be installed via open trench excavation and/or horizontal directional drilling. Although still in the design phases, the Project footprint will total approximately 49.4 acres in size.

For the purposes of this cultural resources desktop review, Arcadis reviewed a much larger survey area including a 111-acre parcel where the biogas facility will be situated along with the proposed pipeline corridor totaling 153.4 acres. The smaller 49.4-acre Project footprint (defined as the Area of Potential Effect [APE]) will be encompassed within this larger survey area.

Background Research

Arcadis conducted background research for the Project using the Wisconsin Historic Preservation Database (WHPD). The purpose of the background research was to identify previously recorded cultural resources within or adjacent to the Project. Information collected include data from the Archaeological Report Inventory (ARI), Archaeological Sites Inventory (ASI), and the Architecture and History Inventory (AHI) within a 0.5-mile radius of the survey area. The National Register of Historic Places (NRHP) database was also reviewed.

As a result of the background records check, seven historical and architectural resources and five archaeological surveys were identified within a 0.5-mile radius of the survey area. Of these known historical and architectural resources, none are directly within the survey area or the APE. The closest resource, AHI # 23694, is located approximately 500 feet to the south of the proposed pipeline, east of Roberts. It is a Front-Gabled style, clapboard wall residence, and it has not been assessed for NRHP

listing. Of the remaining historical and architectural resources, one (AHI # 135204) is southeast of Roberts and five (AHI #s 26167-26171) are located to the west of the Project within Roberts. None of these resources have been assessed for listing in the NRHP.

One previous archaeological survey is located within portions of the Project footprint. Survey ARI # 07-0881 covers approximately 0.35 mile of the proposed pipeline ROW on County Highway J south of Hammond and west of Ridgeway Street. This survey was for an Army Reserve Development; it did not identify any cultural resources within the Project footprint. The other four surveys (09-1125, 10-1105, 16-0018 and 19-0026) also produced negative results. These surveys were conducted on behalf of various utility and transportation projects.

Summary

As a result of the cultural resources background records check, no known cultural resources are located within the survey area and one previous cultural resources survey covers a portion of the proposed pipeline corridor. This survey along with the other previous cultural resources surveys within 0.5 mile all produced negative survey results. These negative survey results coupled with the absence of known archaeological sites within 0.5-mile of the survey area suggests a low probability of identifying cultural resources within the survey area or the APE. If the proposed pipeline corridor remains within road ROW, this previous disturbance would also reduce the chances of identifying NRHP-eligible cultural resources, along with the presence of muck and eroded soils within portions of the 111-acre facility parcel.

Even though the probability of identifying cultural resources within the survey area or the APE is considered low, a majority of the survey area has not been surveyed for cultural resources. As a result, if Section 106 is triggered for the Project, the Wisconsin State Historic Preservation Office (SHPO) or the lead agency may request Phase I archaeological survey in undisturbed and not previously surveyed areas of the APE. As a new facility is proposed, this new above ground component could create visual impacts to the viewshed, specifically to those seven known historical and architectural resources located within and around Roberts. As a result, an architectural history survey may be needed in order to evaluate the indirect impacts of the Project.

Prior to fieldwork (if needed), it is recommended that an initial consultation letter should be submitted to the SHPO or the lead federal agency. This letter would describe the Project, define the APE, summarize the results of this desktop study and describe the scope of work for field investigation. Involving the SHPO or lead federal agency early in the Section 106 process is recommended as it often identifies potential cultural resources issues early in a project, rather than later when they can impact cost and scheduling.

Attachment 5 – Request for Wisconsin State Historic Preservation Office Comment and Consultation

For SHPO Use Only. Case # _____

REQUEST FOR SHPO COMMENT AND CONSULTATION ON A FEDERAL UNDERTAKING

Submit one copy with each undertaking for which our comment is requested. Please print or type. Return to:
Wisconsin Historical Society, State Historic Preservation Office, 816 State Street, Madison, WI 53706

Please Check All Boxes and Include All of the Following Information, as Applicable.

I. GENERAL INFORMATION

☑ **This is a new submittal.**
☐ **This is supplemental information relating to Case #:**_____**, and title:**_____
☐ **This project is being undertaken pursuant to the terms and conditions of a programmatic or other interagency agreement. The title of the agreement is** _____

a. Federal Agency Jurisdiction (Agency providing funds, assistance, license, permit): TBD: USACE and/or NPDES

b. Federal Agency Contact Person: NA Phone: NA

c. Project Contact Person: Crista M. Haag Phone: 513-985-8012

d. Return Address: 4665 Cornell Road, Suite 200 City: Cincinnati, Ohio Zip Code: 45241

e. Email Address: crista.haag@arcadis.com

f. Project Name: Nature Energy - Roberts Biogas Facility Project

g. Project Street Address: West of 130th Street

h. County: St. Croix City: Roberts Zip Code: 54023

i. Project Location: Township 29N, Range 18, East ☐ or West ■, Section 22, Quarter Sections NE, SI

j. Project Narrative Description—Attach Information as Necessary.

k. Area of Potential Effect (APE). Attach Copy of U.S.G.S. 7.5 Minute Topographic Quadrangle showing APE.

II. IDENTIFICATION OF HISTORIC PROPERTIES

☐ Historic Properties are located within the project APE per 36 CFR 800.4. Attach supporting materials, per 36 CFR 800.11.
☐ Historic Properties are not located within the project APE per 36 CFR 800.4. Attach supporting materials, per CFR 800.11.

III. FINDINGS

Arcadis, on behalf of NE, would like to solicit initial comments from the SHPO on the Project including the proposed Area of Potential Effect and the cultural resources scope of work. Please see Attachments 1 and 2.

☐ No historic properties will be affected (i.e., none is present or there are historic properties present but the project will have no effect upon them). Attach necessary documentation, as described at 36 CFR 800.11.
☐ The proposed undertaking will have no adverse effect on one or more historic properties located within the project APE under 36 CFR 800.5. Attach necessary documentation, as described at 36 CFR 800.11.
☐ The proposed undertaking will result in an adverse effect to one or more historic properties and the applicant, or other federally authorized representative, will consult with the SHPO and other consulting parties to resolve the adverse effect per 36 CFR 800.6. Attach supporting documentation as described at 36 CFR 800.11.

Authorized Signature: Crista Haag Digitally signed by: Crista Haag DN: CN = Crista Haag email = crista.haag@arcadis.com C = AD O = Arcadis, US Inc Date: 2022.02.24 15:42:19 -05'00' Date: February 24, 2022

Type or print name: Crista M. Haag

IV. STATE HISTORIC PRESERVATION OFFICE COMMENTS

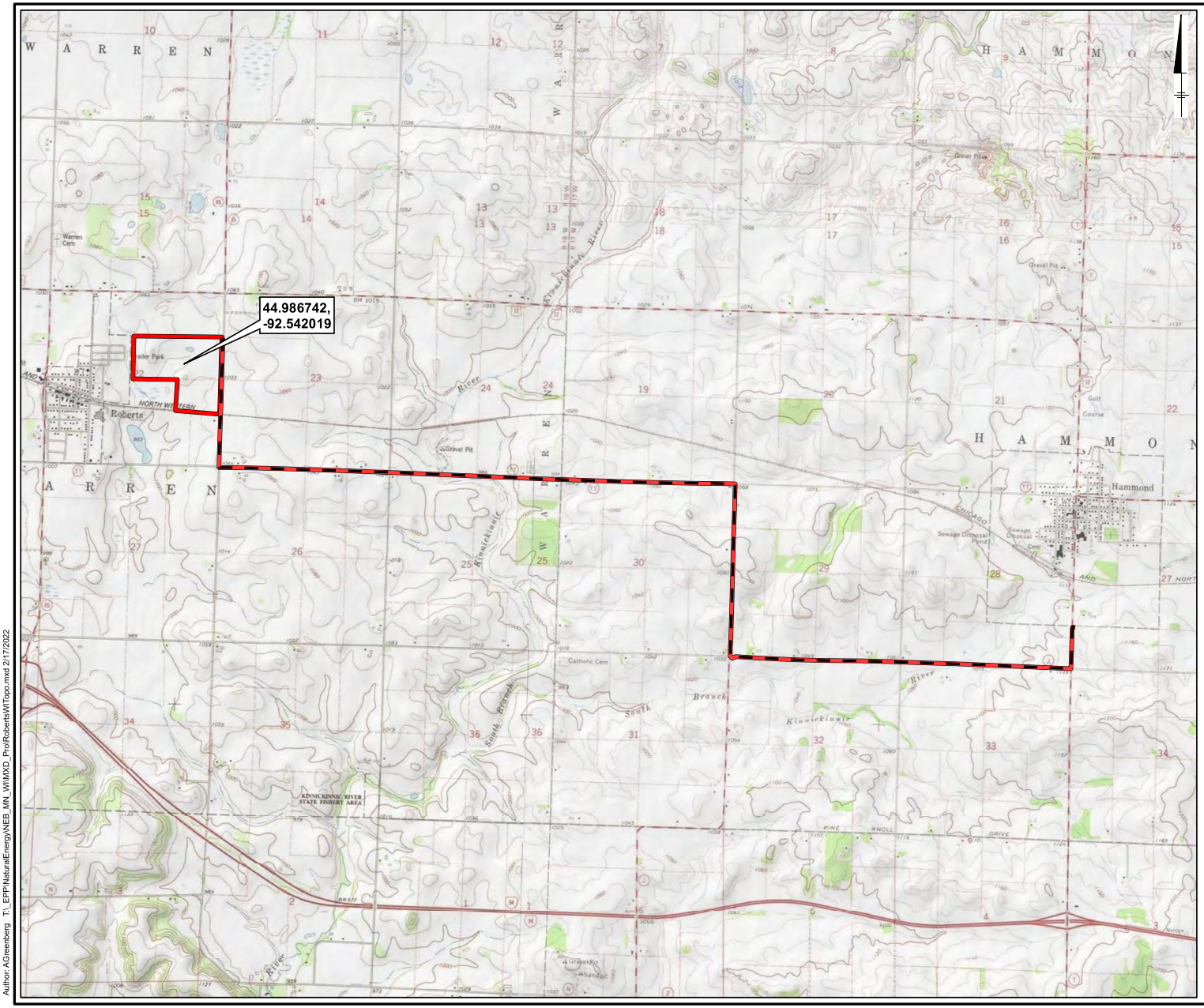
☐ Agree with the finding in section III above.
☐ Object to the finding for reasons indicated in attached letter.
☐ Cannot review until information is sent as follows: _____

Authorized Signature: _____ Date: _____

ARCADIS Design & Consultancy for natural and built assets

Attachment 1- Project Mapping

Not for Public Disclosure



Legend

- Proposed Pipeline
- Roberts Project

0 3,000 6,000 Feet

0 900 1,800 Meters

GRAPHIC SCALE

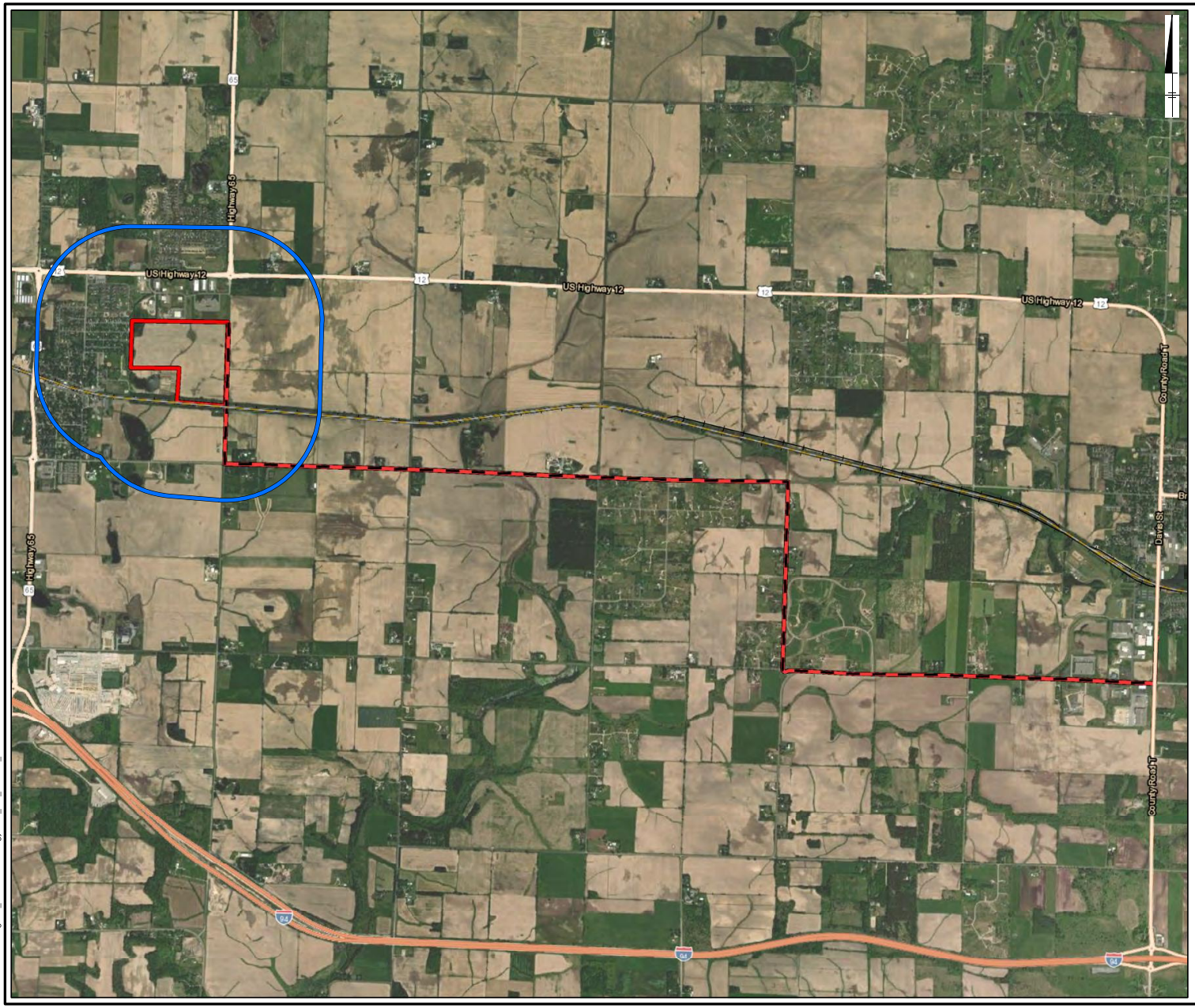
BASE MAP SOURCE:
1. USGS 7.5' TOPOGRAPHIC QUADRANGLES: BALDWIN WEST, WI (1977) AND ROBERTS, WI (1977) AND ESRI NATGEO WORLD LAYER (INSET). OBTAINED FROM ESRI IMAGE SERVICE.

NATURAL ENERGY BIOGAS
ROBERTS PROJECT CULTURAL RESOURCES DESKTOP ASSESSMENT
ST CROIX COUNTY, WISCONSIN

PROJECT OVERVIEW

ARCADIS | FIGURE 1

Author: AGreenberg T:_EPP\NaturalEnergy\NEB_MN_WI\MXD_Pro\RobertsWITopo.mxd 2/17/2022



Legend

- Railroad
- Proposed Pipeline
- Roberts Project
- Indirect APE

0 3,000 6,000 Feet

0 900 1,800 Meters

GRAPHIC SCALE

BASE MAP SOURCE:
1. ESRI WORLD IMAGERY LAYER (5/30/2020) AND ESRI NATGEO WORLD LAYER (INSET). OBTAINED FROM ESRI IMAGE SERVICE.

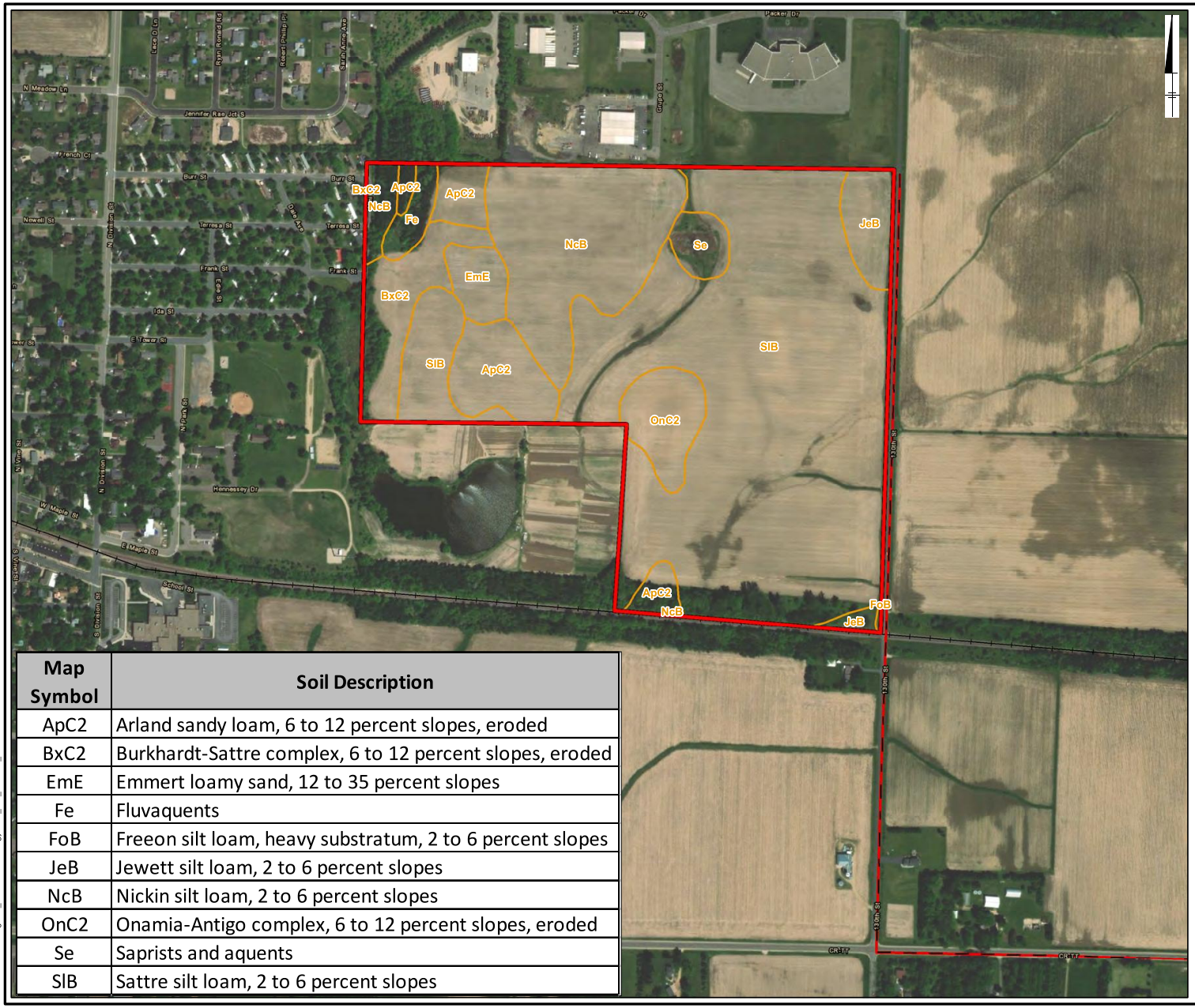
NATURAL ENERGY BIOGAS
ROBERTS PROJECT CULTURAL RESOURCES DESKTOP ASSESSMENT
ST CROIX COUNTY, WISCONSIN

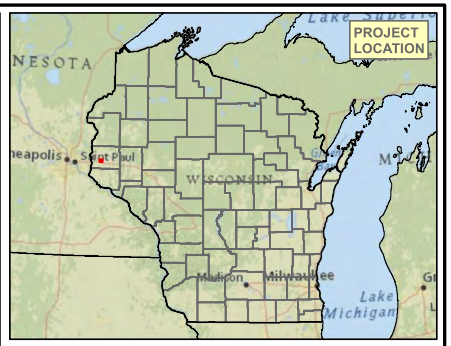
PROJECT APE

ARCADIS

FIGURE 2

Author: AGreenberg T:_EPP\NaturalEnergy\NEB_MN_WI\MXD_Pro\RobertsWIAPE.mxd 2/21/2022





Legend

- Railroad
- Proposed Pipeline
- Roberts Project
- Soil Series Boundary

Map Symbol	Soil Description
ApC2	Arland sandy loam, 6 to 12 percent slopes, eroded
BxC2	Burkhardt-Sattre complex, 6 to 12 percent slopes, eroded
EmE	Emmert loamy sand, 12 to 35 percent slopes
Fe	Fluvaquents
FoB	Freeon silt loam, heavy substratum, 2 to 6 percent slopes
JeB	Jewett silt loam, 2 to 6 percent slopes
NcB	Nickin silt loam, 2 to 6 percent slopes
OnC2	Onamia-Antigo complex, 6 to 12 percent slopes, eroded
Se	Saprists and aquents
SlB	Sattre silt loam, 2 to 6 percent slopes

0 500 1,000 Feet

0 150 300 Meters

GRAPHIC SCALE

BASE MAP SOURCE:
1. ESRI WORLD IMAGERY LAYER (5/30/2020) AND ESRI NATGEO WORLD LAYER (INSET). OBTAINED FROM ESRI IMAGE SERVICE.

NATURAL ENERGY BIOGAS
ROBERTS PROJECT CULTURAL RESOURCES
DESKTOP ASSESSMENT
ST CROIX COUNTY, WISCONSIN

PROJECT SOILS

ARCADIS

FIGURE 3

Author: AGreenberg T:_EPP\NaturalEnergy\NEB_MN_WI\MXD_Pro\RobertsWISoils.mxd 2/22/2022

Attachment 2- Additional Text

Project Description

Nature Energy Biogas A/S (NE)'s Roberts Biogas Facility Project (Project) is located between Roberts and Hammond in St. Croix County, Wisconsin (Attachment 1, Figure 1). NE is proposing to construct a facility that will occupy approximately 16.5 acres and will receive waste food, digestible agricultural waste, poultry litter, and/or liquid manure. These products will go through an anaerobic digestion process to produce renewable natural gas, carbon dioxide, liquid fertilizer, and solid soil amendments. There will also be a 7.0-mile long, 50-foot-wide interconnect pipeline that will be constructed within existing road right of way (ROW). This pipeline may be installed via open trench excavation and/or horizontal directional drilling. The Project footprint will total approximately 49.4 acres in size.

Permitting for the Project is still being determined. However, it is anticipated that the Project will likely require a United States Army Corps of Engineers (USACE) permit and/or a National Pollutant Discharge Elimination System permit. These permits would trigger a Section 106 review by the lead federal agency and the Wisconsin State Historic Preservation Office (SHPO). Although the Project is still within the planning stages, given the Project schedule, Arcadis U.S., Inc. (Arcadis), on behalf of NE, would like to solicit initial comments from the SHPO on the Project including the proposed Area of Potential Effect (APE) and the cultural resources scope of work.

Area of Potential Effect

The proposed direct APE includes all land requirements proposed for ground disturbance associated with the Project. This includes areas required for the construction of the biogas facility and its associated pipeline totaling 49.4 acres. Please note, the exact location of the biogas facility has not been determined. For the purposes of this cultural resources consultation, Arcadis reviewed a much larger survey area including the 111-acre parcel where the biogas facility will be situated along with the proposed pipeline corridor totaling 153.4 acres. The smaller 49.4-acre Project footprint (defined as the direct APE) will be encompassed within this larger survey area.

Because the biogas facility is a new above-ground facility that will potentially introduce new visual impacts to the surrounding setting, a viewshed (indirect) APE is also considered. According to the present Project design, the biogas facility will comprise several structures, most of which range between 36 and 85 feet in height, with the tallest element approximately 200 feet in height. As such, for the purpose of this initial desktop review, Arcadis defined the indirect (viewshed) APE as an initial 0.5-mile radial buffer from the above-ground elements of the facility.

Figure 2 (Attachment 1) illustrates the overall Project APE (both direct and indirect).

Identification of Historic Properties

In order to identify historic properties within the Project APE and the larger survey area, Arcadis conducted background research for the Project using the Wisconsin Historic Preservation Database (WHPD). The purpose of the background research was to identify previously recorded cultural resources within or adjacent to the Project. Information collected include data from the Archaeological Report Inventory (ARI), Archaeological Sites Inventory (ASI), and the Architecture and History Inventory (AHI) within a 0.5-mile radius of the survey area. The National Register of Historic Places (NRHP) database was also reviewed.

As a result of the background records check, seven historical and architectural resources and five archaeological surveys were identified within a 0.5-mile radius of the survey area. Of these known historical and architectural resources, none are directly within the survey area or the direct APE. The closest resource, AHI # 23694, is located approximately 500 feet to the south of the proposed pipeline, east of Roberts. It is a Front-Gabled style, clapboard wall residence, and it has not been assessed for NRHP listing. Of the remaining historical and architectural resources, one (AHI # 135204) is southeast of Roberts and five (AHI #s 26167-26171) are located to the west of the Project within Roberts. None of these resources have been assessed for listing in the NRHP.

One previous archaeological survey is located within portions of the Project footprint. Survey ARI # 07-0881 covers approximately 0.35 mile of the proposed pipeline ROW on County Highway J south of Hammond and west of Ridgeway Street. This survey was for an Army Reserve Development; it did not identify any cultural resources within the Project footprint. The other four surveys (09-1125, 10-1105, 16-0018 and 19-0026) also produced negative results. These surveys were conducted on behalf of various utility and transportation projects.

Summary and Recommendations

As a result of the cultural resources background records check, no known cultural resources are located within the survey area (or the direct APE) and one previous cultural resources survey covers a portion of the proposed pipeline corridor. This survey along with the other previous cultural resources surveys within 0.5 mile all produced negative survey results. These negative survey results coupled with the absence of known archaeological sites within 0.5-mile of the survey area suggests a low probability of identifying cultural resources within the survey area or the direct APE. If the proposed pipeline corridor remains within road ROW, this previous disturbance would also reduce the chances of identifying NRHP-eligible cultural resources, along with the presence of muck and eroded soils within portions of the 111-acre facility parcel (Attachment 1, Figure 3).

Even though the probability of identifying cultural resources within the survey area or the direct APE is considered low, a majority of the survey area has not been surveyed

for cultural resources. As a result, if Section 106 is triggered for the Project, Arcadis recommends Phase I archaeological survey in undisturbed and not previously surveyed areas of the direct APE. This investigation should focus on the 16.5-acre biogas facility footprint and any portions of the proposed pipeline ROW that would extend outside of previously disturbed road ROW. The Phase I archaeology survey should follow current SHPO guidelines (Dudzik et al. 2012).

As a result of background research, seven previously recorded architectural resources were identified within the Project's initial 0.5-mile indirect APE. Because the new biogas facility is a new above-ground facility, it could potentially introduce new visual impacts to these known as well as other unknown historic and architectural resources. Therefore, Arcadis recommends an architectural history survey of the indirect APE in order to identify potential historic resources and to assess the indirect impacts of the Project on historic and architectural resources.

References

Dudzik, Mark J., Joseph A. Tiffany and Katherine P. Stevenson. 2012. *Guide for Public Archaeology in Wisconsin*. Wisconsin Archaeological Survey.

Attachment 6 – Response from Wisconsin State Historic Preservation Office

From: leslie.eisenberg@wisconsinhistory.org
To: Haag, Crista
Subject: 22-0323/SC - Nature Energy- Roberts Biogas Facility Project
Date: Wednesday, March 16, 2022 10:45:52 AM

Good morning, Ms. Haag,

Thank you for your informal submittal, however, we do not provide comment on projects for which a lead agency has not yet been defined. The project must be submitted to us directly from that agency unless you have been formally designated to act on their behalf.

If you have any questions, please contact me directly.

Thank you,

Leslie

Leslie Eisenberg
State Historic Preservation Office

Wisconsin Historical Society
816 State Street, Madison, WI 53706
608.264.6507
leslie.eisenberg@wisconsinhistory.org

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Attachment 7 – Final Traffic Analysis Memorandum

SSTS
S² TRAFFIC SOLUTIONS

May 17th, 2022

To: **John Berrigan, On Behalf of Nature Energy**

From: **Vernon Swing, PE**

Re: **Traffic Analysis Memorandum – Nature Energy Development, Roberts, WI**

Executive Summary

A traffic analysis has been conducted for a natural fertilizer and biogas production plant in Roberts, St. Croix County, WI. The study documents the existing conditions, the anticipated development site generated traffic from trucks and employees and its distribution, and reviews the traffic operations at the site access and adjacent intersections for year 2025. Detailed study information can be found in subsequent sections of this memo.

The following provides a summary of the study, traffic operations and recommendations:

- AM and PM peak hour traffic operations were analyzed for year 2025 conditions without and with the proposed development.
- An estimated 90 trucks a day visit the plant consistently throughout a 10-hour operating period and 15 employees will work at the plant. Truck traffic is consistent throughout the day, trucks are given appointment times and they are not allowed to come outside the appointment time. This eliminates truck queuing and idling on-site and on adjacent roadways. The proposed project is estimated to generate 225 total trips per day (total of entering and exiting trips), with 33 trips during the weekday AM peak hour and 33 trips during the weekday PM peak hour.
- Results of the traffic analysis for year 2025 without the proposed development indicate acceptable operations with minimal vehicle delay and back-ups at adjacent intersections.
- Results of the traffic analysis for year 2025 with the proposed development indicate acceptable operations with minimal vehicle delay and back-ups. No mitigation measures at adjacent intersections are recommended.
- Construction of dedicated turn lanes on 130th St at the site access is not needed based on acceptable traffic operations without the dedicated lanes and review of WisDOT design standards. It is recommended the access geometry be designed to accommodate the turning movements for trucks and follow local agency intersection design standards.

Per your request, S^2 Traffic Solutions has conducted a traffic analysis for the proposed Nature Energy Development (termed "Proposed Project" in this memo) in Roberts, St. Croix County, WI. The Proposed Project will develop a 22.55-acre site which will convert livestock excrement to organic fertilizer and biogas. The Proposed Project is located on the south side of US Highway 12 and on the west side 130th Street. Full access to the Proposed Project is proposed on 130th St. (See **Figure 1, Vicinity Map,** and **Figure 2, Site Plan**).

This memorandum documents the existing conditions, the anticipated site-generated traffic (trucks and employees) from the Proposed Project and its distribution, and reviews the traffic operations at the following intersections for the year after completion of the development, year 2025:

- State Highway 65 & County Highway TT (E Graham St)
- State Highway 65 & US Highway 12
- US Highway 12 & 130th Street
- 130th St & E County Highway TT (E Graham St)
- 130th St & Proposed Site Access

Existing Conditions

The existing conditions of the roadways and intersection providing direct access to the Proposed Project were documented and are noted in **Table 1**. Additionally, **Figure 3** shows the existing lane geometry and traffic control at the study intersections.

Table 1. Study Roadway Characteristics

Roadway	Functional Class	Typical Section	Posted Speed	AADT (Year)*
State Highway 65	Minor Arterial	2-Lane Undivided Rural	50 mph	7,100 (2018) (WisDOT)
US Highway 12	Minor Arterial	2-Lane Undivided Rural	45 mph	8,700 (2018) (WisDOT)
County Highway TT (E Graham St)	Major Collector	2-Lane Undivided Urban 2-Lane Undivided Rural	25 mph 55 mph	3,700 (2009) (WisDOT)
130th St	Local Road	2-Lane Undivided Rural	45 mph	950 (2022) (PM)

*AADT Sources: (WisDOT) from WisDOT's Traffic Count Map
(PM Count) interpolated from existing PM peak hour traffic counts from 2022

Existing Traffic Volumes

AM and PM peak hour turning movement counts were conducted at all study area intersections on Tuesday, March 22nd, 2022. The AM peak traffic hour was found to occur from 7:00 - 8:00 AM and the PM peak traffic hour was found to occur from 4:00 - 5:00 PM (See **Figure 4**, Existing Traffic Volumes).

Future Conditions

To quantify the impacts of the Proposed Project on the surrounding roadway system, it is necessary to first analyze traffic conditions that would be present on the roadway system without the inclusion of the Proposed Project. The anticipated construction completion date for the Proposed Project is 2024, thus year 2025 was selected for analysis so as to compare traffic conditions after initial traffic patterns to and from the site have become established. To determine the future traffic conditions a review of historical daily traffic counts from WisDOT AADT Data[1] was undertaken revealing varying increases and decreases

[1] WisDOT Traffic Counts map - https://wisdot.maps.arcgis.com/home/index.html

in daily traffic from years 2009, 2015 and 2018. To remain conservative and project an increase in traffic, a 1.0% annual growth rate was assumed and applied to existing 2022 volumes to "grow" them to year 2025 No-Build Conditions. **Figure 5** illustrates the 2025 No-Build traffic conditions that accounts for this annual growth rate applied to existing traffic on all study area roadways.

Trip Generation and Distribution

Estimates of vehicle trips generated by the Proposed Project during weekday AM and PM peak hours of adjacent street traffic were determined using data provided Nature Energy. Nature Energy operates similar sites throughout the United States and Europe and has detailed truck and employee projections for the Proposed Project. The following data was used:

- **Truck Traffic** – 90 trucks are estimated to visit the site per day. Site operations run from 7:00 AM to 5:00 PM (10 hours) and truck traffic is continuous throughout the day. For seamless and consistent operations, trucks are given appointment times and they are not allowed to come outside the appointment time. This eliminates truck queuing and idling on-site and on adjacent roadways. It is assumed that 9 trucks will visit the site each hour, which equates to 18 hourly truck trips (9 entering and 9 exiting). Trucks travel patterns were determined from potential participating farm locations in the area, which have been provided by Nature Energy.
- **Employee Traffic** – The Proposed Project will have 15 employees that will work 7:00 AM to 5:00 PM. Employees typically enter the site in the morning and exit in the evening. Approximately half of the employees will leave for lunch or a mid-day errand. Employee travel patterns will to/from residential areas and vary from the truck travel patterns.

Using this data, the proposed project is estimated to generate 225 total trips per day (total of entering and exiting trips), with 33 trips during the weekday AM peak hour and 33 trips during the weekday PM peak hour. Table 2 summarizes the proposed site trip generation estimates.

Table 2. Trip Generation

Traffic Generator	Quantity	Trips Generated:				
		AM peak		PM Peak		Weekday
		Enter	Exit	Enter	Exit	ADT
Trucks	90 per day	9	9	9	9	180
Employees	15 per day	15	0	0	15	45
Totals		**24**	**9**	**9**	**24**	**225**
		33		**33**		

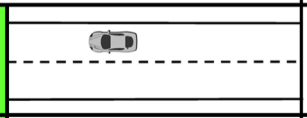
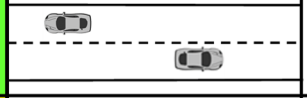
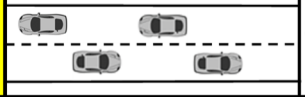
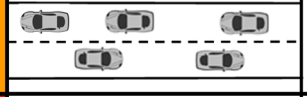
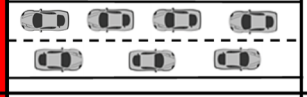
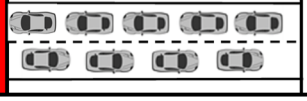
* Truck and employee data provided by Nature Energy.

The new trips have been assigned to the surrounding roadways. Travel patterns for trucks are to/from participating farms in the influence area for the proposed project. Travel patterns for the employees are based on existing traffic patterns and are to/from residential areas. **Figure 6** illustrates the trip assignment total trips (employees + trucks) and **Figure 7** illustrates the 2025 Build conditions by combining the 2025 No-Build traffic (from Figure 5 with the trip assignment on Figure 6).

Traffic Operations

The operating conditions of transportation facilities, such as roadways, traffic signals, roundabouts and stop-controlled intersections, are evaluated based on the relationship of the theoretical capacity of a facility to the actual traffic volume on that facility. Various factors affect capacity including travel speed, roadway geometry, grade, number of travel lanes, and intersection control. The current standards for

evaluating capacity and operating conditions are contained in ***Highway Capacity Manual***[2]. The procedures describe operating conditions in terms of driver delay represented as a Level of Service (LOS). Operations are given letter designations with "A" representing the best operating conditions and "F" representing the worst. Generally, level of service "D" represents the threshold for acceptable overall intersection operating conditions during a peak hour. The Chart on the following page summarizes the level of service and delay criteria for signalized and unsignalized intersections.

Level of Service		Description	Delay (sec)	
			Signalized	Unsignalized/ Roundabout
A		Primarily free-flow operation.	0-10	0-10
B		Reasonably unimpeded operation.	>10-20	>10-15
C		Stable operation. The ability to maneuver is more restricted than LOS B.	>20-35	>15-25
D		Less stable operation. Small increases in flow may cause large increases in delay and reduced speeds.	>35-55	>25-35
E		Unstable operation. Low speeds and considerable delay.	>55-80	>35-50
F		Congested operation. High delay and extensive queuing.	>80	>50

For side street stop-controlled intersections special emphasis is given to providing an estimate for the level of service of the minor approaches. Traffic operations at an unsignalized intersection with side street stop-control can be described two ways. First, consideration is given to the overall intersection level of service. This takes into account the total number of vehicles entering the intersection and the capability of the intersection to support these volumes. Second, it is important to consider the delay on the minor approaches, since the mainline does not have to stop. It is common for intersections with higher mainline traffic volumes to experience increased levels of delay and poor level of service on the side streets.

A final fundamental component of operational analyses is a study of vehicular queuing, or the line of vehicles waiting to pass through an intersection. An intersection can operate with an acceptable Level of Service, but if queues from the intersection extend back to block entrances to turn lanes or accesses to adjacent land uses, unsafe operating conditions could result. In this report, the Industry Design Standard 95th percentile queue length is used. The 95th Percentile Queue Length refers to that length of vehicle queue that has only a five-percent probability of occurring during an analysis hour.

[2] Highway Capacity Manual (HCM), Transportation Research Board, 6th Edition

This study has utilized the industry current Synchro/SimTraffic software package (11th Edition) to analyze the 2025 No-Build and Build conditions for both the AM and PM peak hours. It is noted, the reported results are from the aggregate of 10 SimTraffic simulations which use a random number generator to seed the network with vehicles. These results reflect dynamic conditions and are more accurate than the results of the static analysis reported by Synchro. Due to the random number generator results can sometimes show slightly better operations on minor movements under higher traffic conditions when the intersections are operating well. This can be seen when delays and queues noted in the Build Scenario are slightly less than the No-Build Scenario.

Tables 3 summarizes the results of the 2025 No-Build conditions (assumes 1% annual growth in traffic from existing conditions).

Table 3. 2025 No-Build Peak Hour Operations

Intersection	Measure of Effectiveness (Delay in Sec and Queue in Ft)		
	Criteria	AM Peak Hour	PM Peak Hour
State Highway 65 & County Highway TT (E Graham St) (Roundabout)	*Overall LOS & Delay*	A 6.1	A 7.1
	Worst Movement LOS & Delay	B 10.6 (WBL)	A 9.3 (NBT)
	95th Percentile Queue	WBLTR - 75'	WBLTR - 76'
State Highway 65 & US Highway 12 (Roundabout)	*Overall LOS & Delay*	A 5.4	A 4.0
	Worst Movement LOS & Delay	A 8.8 (WBT)	A 5.9 (WBT)
	95th Percentile Queue	WBL - 64'	EBLTR - 42'
US Highway 12 & 130th St (Roundabout)	*Overall LOS & Delay*	A 4.7	A 6.1
	Worst Movement LOS & Delay	A 7.7 (EBT)	A 9.5 (EBR)
	95th Percentile Queue	WBLTR - 49'	EBLTR - 61'
County Highway TT (E Graham St) & 130th St (Side-Street Stop-Controlled)	*Overall LOS & Delay*	A 3.5	A 4.1
	Worst Movement LOS & Delay	A 9.2 (NBT)	A 8.8 (SBT)
	95th Percentile Queue	SBLTR - 43'	NBLTR - 46'

- Level of Service reported from an average delay from 10 SimTraffic simulations for overall intersection and worst movement.
- 95th percentile queues are a result from an average of 10 SimTraffic simulations and the longest queue per intersection is reported.

The results shown in Table 3 indicate the 2025 No-Build operations of the study area intersections are acceptable in terms of delay and queuing for all intersections. Overall LOS for all intersections is LOS A with individual movements operating at LOS B or better. No improvements are recommended for 2025 No-Build Conditions.

As mentioned earlier, the estimated trip generation associated with the Proposed Project has been added to the 2025 No-Build traffic conditions to create the 2025 Build scenario. The results of the 2025 Build scenario are summarized in Table 4. The site access intersection is highlighted in the last row and is assume to have no dedicated right/left turn lanes on 130th St for the analysis.

Table 4. 2025 Build Peak Hour Operations

Intersection	Measure of Effectiveness (Delay in Sec and Queue in Ft)		
	Criteria	AM Peak Hour	PM Peak Hour
State Highway 65 & County Highway TT (E Graham St) (Roundabout)	*Overall LOS & Delay*	A 6.1	A 7.2
	Worst Movement LOS & Delay	B 10.1 (WBL)	B 10.3 (WBT)
	95th Percentile Queue	WBLTR - 73'	WBLTR - 73'
State Highway 65 & US Highway 12 (Roundabout)	*Overall LOS & Delay*	A 5.3	A 4.1
	Worst Movement LOS & Delay	A 9.3 (WBT)	A 6 (WBT)
	95th Percentile Queue	WBL - 62'	EBLTR - 45'
US Highway 12 & 130th St (Roundabout)	*Overall LOS & Delay*	A 4.8	A 5.9
	Worst Movement LOS & Delay	A 8 (EBT)	A 8.8 (EBR)
	95th Percentile Queue	WBLTR - 50'	EBLTR - 60'
County Highway TT (E Graham St) & 130th St (Side-Street Stop-Controlled)	*Overall LOS & Delay*	A 3.4	A 4.2
	Worst Movement LOS & Delay	A 8.7 (NBT)	A 8.7 (NBT)
	95th Percentile Queue	SBLTR - 42'	NBLTR - 46'
130th St & Proposed Access (Side-Street Stop-Controlled)	*Overall LOS & Delay*	A 1.1	A 1.9
	Worst Movement LOS & Delay	A 4.6 (EBL)	A 4.8 (EBL)
	95th Percentile Queue	EBL - 53'	EBL - 64'

- Level of Service reported from an average delay from 10 SimTraffic simulations for overall intersection and worst movement.
- 95th percentile queues are a result from an average of 10 SimTraffic simulations and the longest queue per intersection is reported.

The results shown in Table 4 indicate the 2025 Build overall operations and travel lane operations of the study area intersections and site access are acceptable with LOS A for overall operations and LOS B or better for individual movement operations, with manageable vehicle queuing. The addition of site-generated traffic slightly increases delay and queuing but not above unacceptable levels as the existing roadway network has available capacity.

Turn Lane Review

The need for dedicated right and left turn lanes on 130th St at the proposed site access was investigated and installation is not necessarily needed for the following reasons:

- Peak hour trips to the site are low, existing traffic volumes and 130th St are low and traffic operations/queuing are acceptable without turn lanes on 130th St.
- WisDOT's Facilities Development Manual (FDM)[3] includes volume thresholds for when turn lanes are warranted at rural intersections. Review of indicates turn lanes are not needed and the intersection should be designed as a Type C or D intersection, which includes adequate geometry to accommodate the truck turning envelopes. 130th is a local road and local design practices govern, but WisDOT design principles are likely referenced.

Conclusion

In conclusion, the proposed development has appropriate access to the site and to the surrounding roadway network. The traffic operational analysis indicates there is available capacity on the roadways surrounding the site and at site access driveway intersection to accommodate site-generated traffic. Construction of dedicated turn lanes on 130th St at the proposed site access is not needed based on acceptable traffic operations and WisDOT design standards. It is recommended the access geometry be

[3] https://wisconsindot.gov/rdwy/fdm/fd-11-25.pdf Manual describing WisDOT's standard roadway design principles.

designed to accommodate the turning movements and follow local agency intersection design standards.

Please contact Vernon Swing at vswingtraffic@gmail.com with any questions.

Attachments: Figures 1-7
(Appendices with Traffic Counts and Synchro/Simtraffic Worksheets are available upon request.)

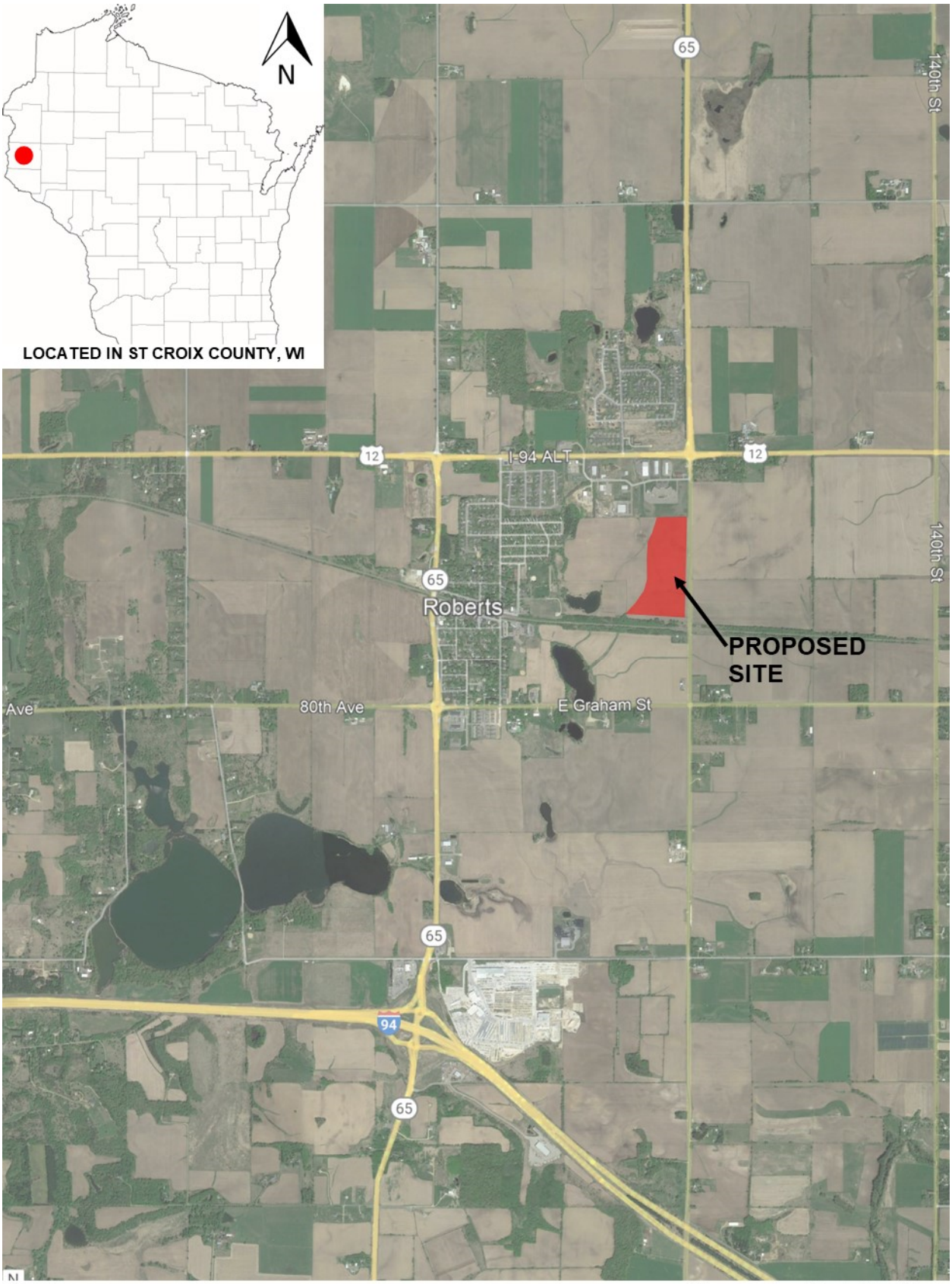


Figure 1 - Vicinity Map

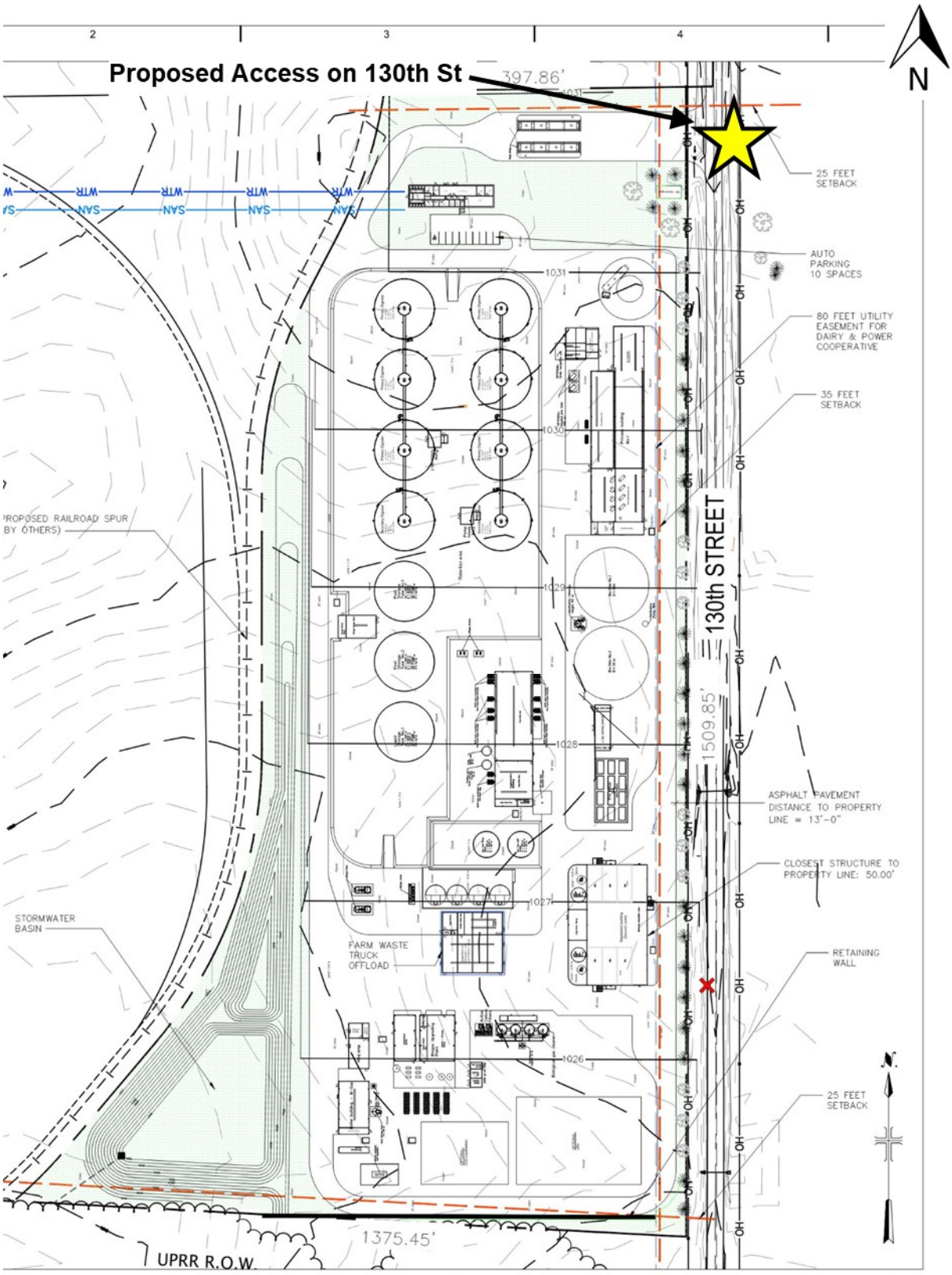


Figure 2 - Conceptual Site Plan (From Others)

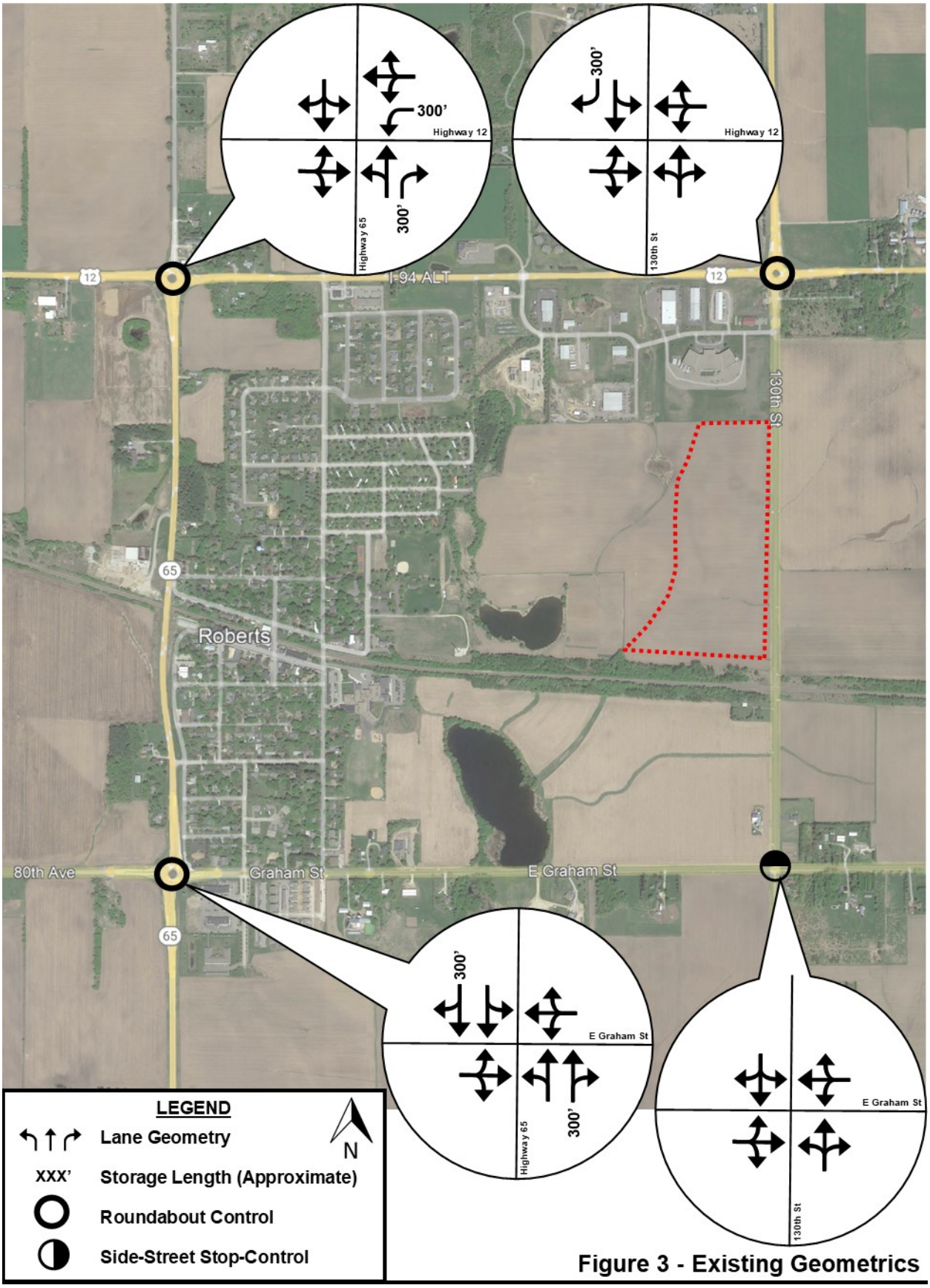


Figure 3 - Existing Geometrics

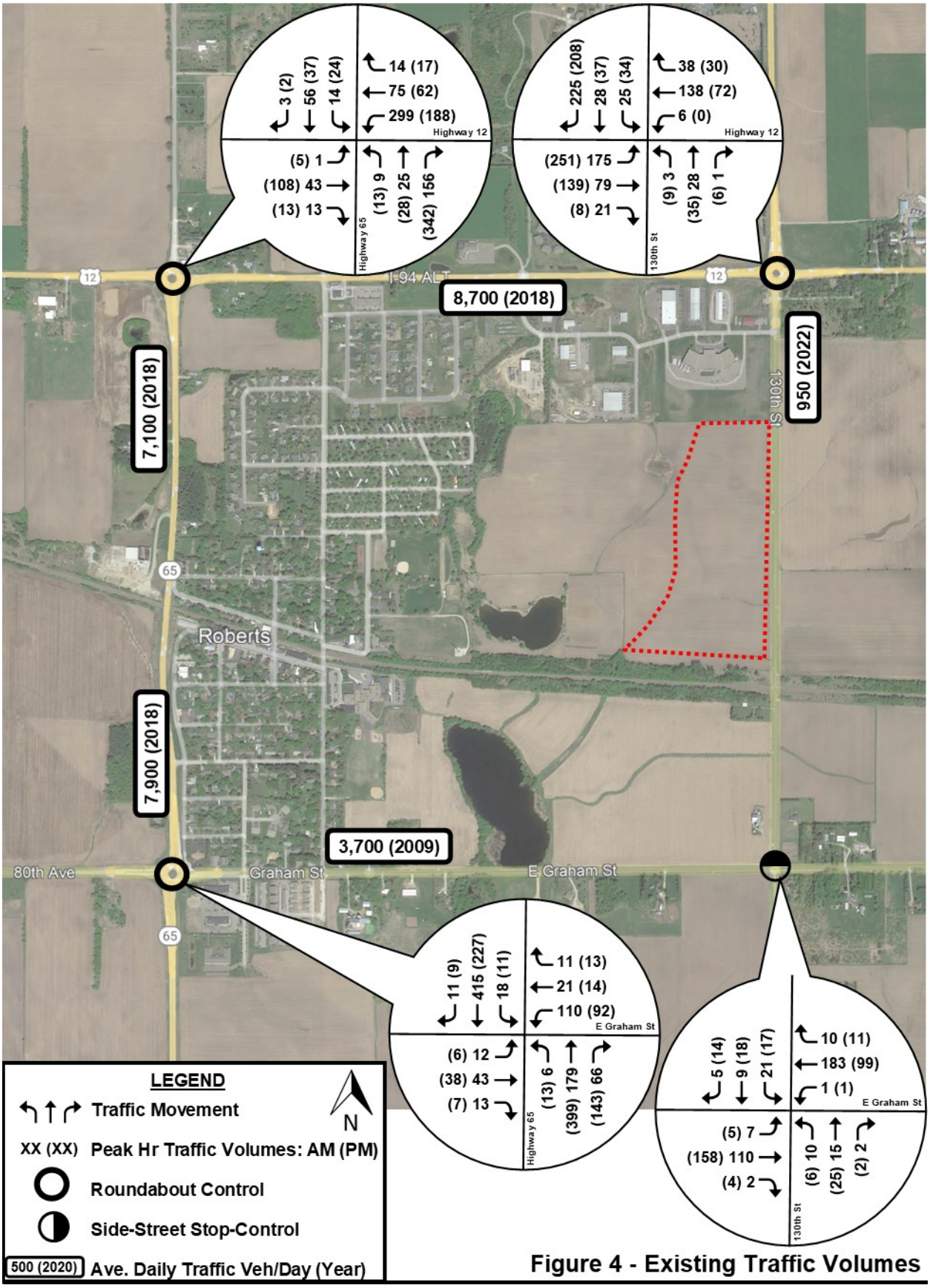


Figure 4 - Existing Traffic Volumes

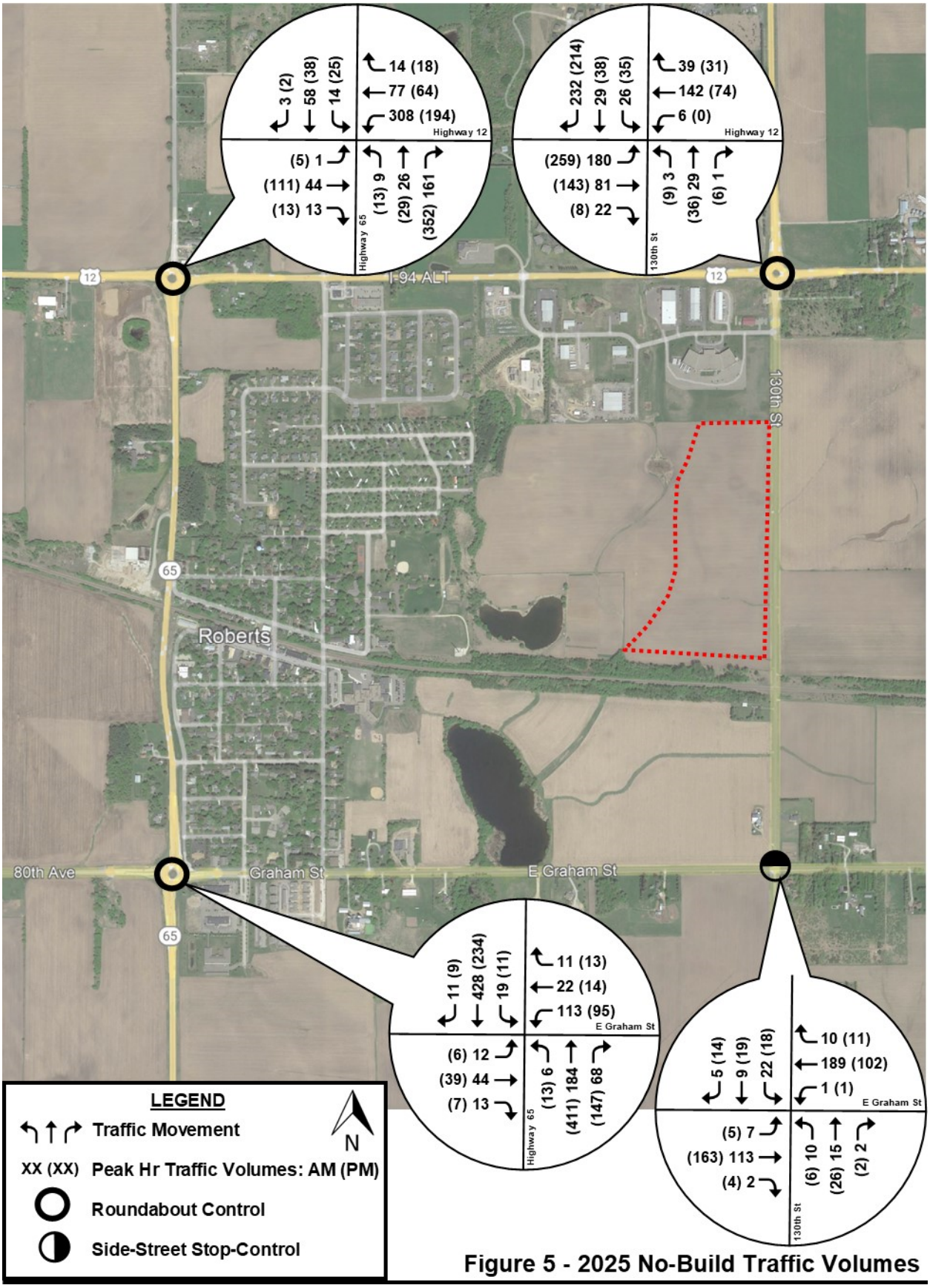


Figure 5 - 2025 No-Build Traffic Volumes

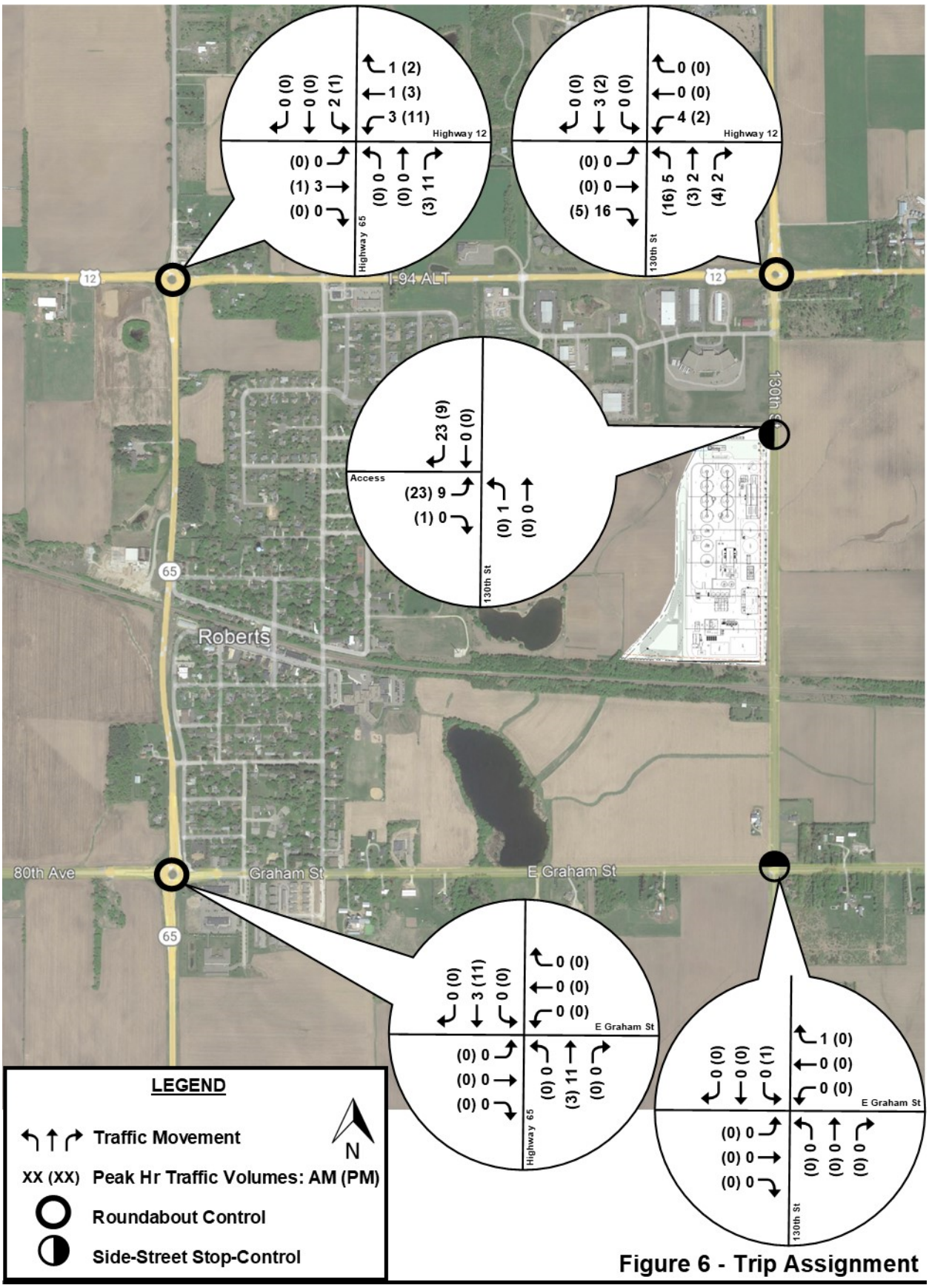


Figure 6 - Trip Assignment

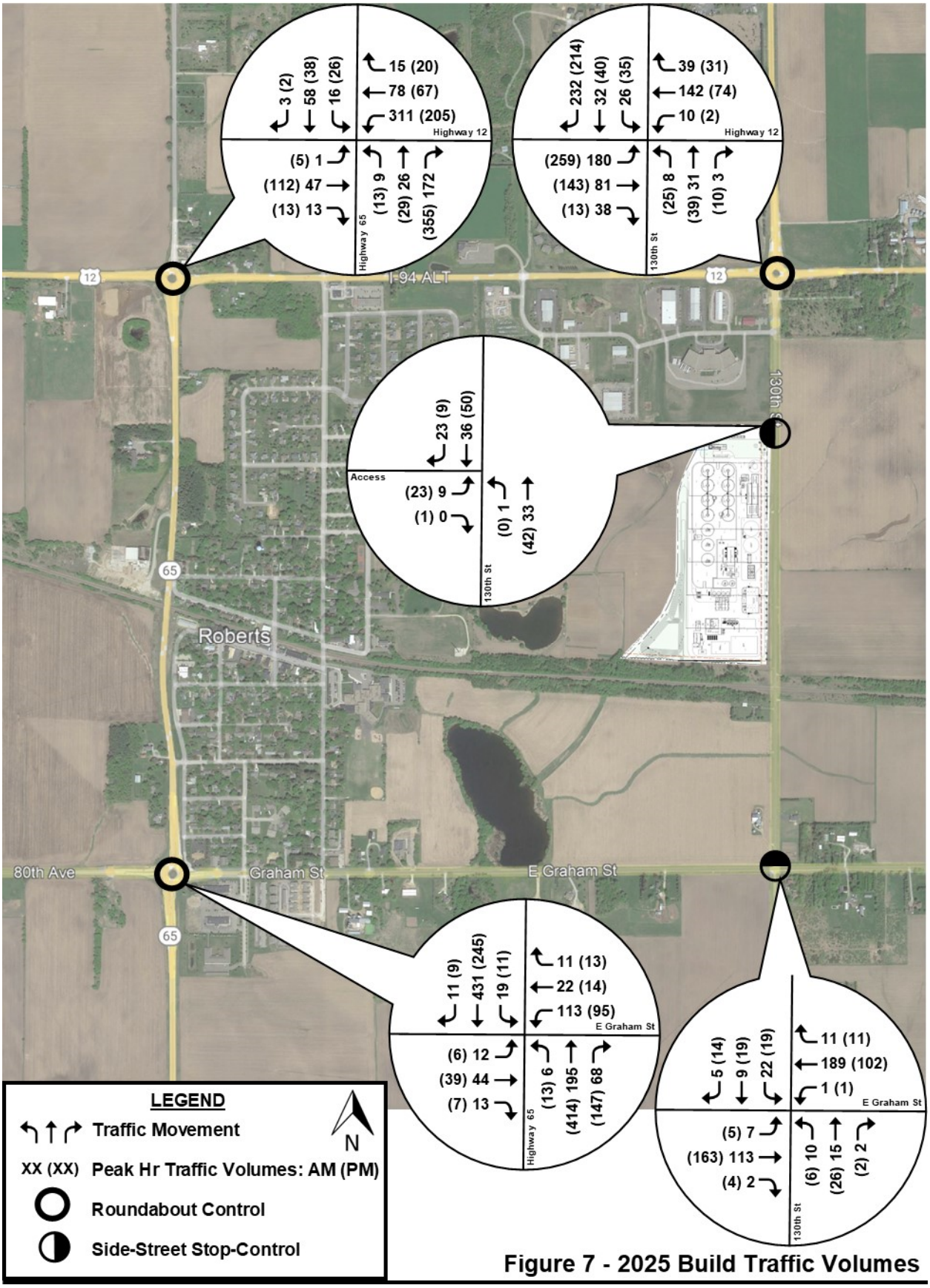


Figure 7 - 2025 Build Traffic Volumes

From: leslie.eisenberg@wisconsinhistory.org
To: Haag, Crista
Subject: 22-0323/SC - Nature Energy- Roberts Biogas Facility Project
Date: Wednesday, March 16, 2022 10:45:52 AM

Good morning, Ms. Haag,

Thank you for your informal submittal, however, we do not provide comment on projects for which a lead agency has not yet been defined. The project must be submitted to us directly from that agency unless you have been formally designated to act on their behalf.

If you have any questions, please contact me directly.

Thank you,

Leslie

Leslie Eisenberg
State Historic Preservation Office

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Wisconsin Historical Society
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Attachment 2

Digestate and Digestate Products

#

Nature Energy Biogas Facility
Roberts, Wisconsin
Digestate and Digestate Products

Revised August 2022

Bold Text indicates text added since June 2022 Version.

Nature Energy is a Denmark-based renewable natural gas (RNG) company with significant experience in anaerobic digestion and the design, implementation, and operation of anaerobic digesters. Founded in 1979, Nature Energy (previously, Naturgas Fyn) is a leader in the transition to green energy. Currently, Nature Energy operates 14 innovative biogas facilities located in Denmark, France, and recently purchased an operating plant in the Netherlands. Nature Energy proposes to develop an anaerobic digester and nutrient recovery facility in Roberts, Wisconsin under the name "Nature Energy Roberts" (NE Roberts). Anaerobic digestion would produce biomethane (CH_4) from turkey, dairy, and food processing waste. During operation, the NE Roberts facility would produce an average of 24.5 million normal cubic meters (Nm^3) of biomethane annually. The NE Roberts facility would upgrade the biomethane to RNG, which would be available for commercial sale, while the nutrient-rich byproducts would be provided back to farmers for use in their nutrient management plans (NMPs).

Feedstock Sourcing

Nature Energy sources locally available turkey, dairy, and food-processing waste from farms and facilities within an approximate 20-mile radius. For NE Roberts, this 20-mile radius includes portions of St. Croix County, Polk County, and Pierce County. Less than 10% of the biomass inputs would be sourced from outside this radius. NE Roberts anticipates that biomass input composition will be approximately 84% dairy manure, 8% turkey litter, and 8% food and food-processing waste. Currently, 92% of the anticipated biomass inputs (including dairy manure and turkey litter) are utilized by local farmers for their crop fields.

Record Keeping

Nature Energy uses an advanced record-keeping system to track the biomass inputs received from farmers and the digestate, nutrient water, and fiber fraction delivered to participating farms. This system also tracks the specific nutrient contents of the incoming and outgoing material. This record-keeping system ensures that farmers get the necessary nutrients for their operations.

Antibiotics in Feedstock

Anaerobic digestion uses microbial communities to convert organic materials like manure into biogas and digestate. Occasionally, farmers use antibiotics to treat sick animals; however, this practice is used sparingly due to regulatory limitations. Nature Energy does not expect antibiotics to impact the anaerobic digestion process because of their relative infrequency and the dilution provided by using multiple suppliers.

Digestate vs. Manure

Farmers spread manure on their crop fields because it has nutrients needed for plant growth, like nitrogen and phosphorus. However, these nutrients are chemically bound up in manure, which makes them difficult for plants to use. Anaerobic digesters break apart these chemical bonds using controlled microbial communities. The nutrients in the broken-down manure (digestate) are in a form that crops can easily use. Additionally, the anaerobic digestion process kills pathogens in manure that are harmful to the environment.

The proposed facility would have the capacity to produce up to **approximately 750,000 tons of digestate annually. When the digestate is separated, approximately 90 percent is nutrient water and 10 percent is fiber fraction**. Table 1 lists the anticipated nutrients for each output. The values presented are averages determined by Nature Energy's existing operating facilities; the exact nutrient concentrations may vary by up to +/-25% depending on the biomass inputs.

Table 1 Digester Outputs Nutrient Content

	lb N/ton	lb P_2O_5/ton	lb K_2O/ton
Digestate	11.4 +/-25%	6.5 +/-25%	7.5 +/-25%
Nutrient water	10.2 +/-25%	4.2 +/-25%	7.4 +/-25%
Fiber fraction	21.1 +/-25%	26.5 +/-25%	9.0 +/-25%

Notes:
N = nitrogen
P_2O_5 = diphosphorus pentoxide
K_2O = potassium oxide, or potash
The phosphorus and potassium content are provided as P_2O_5 and K_2O equivalents, which are the traditional way of expressing phosphorus and potassium content for their crop nutrient value.

Table 1 Digester Outputs Nutrient Content

	lb N/ton	lb P_2O_5/ton	lb K_2O/ton

Exact concentrations may vary by +/-25% depending on biomass input composition.

Source: Nature Energy

NE Roberts will transport the digestate and derived products to receiving farms or third-party owned storage locations, where it can then be used. Participating farmers will be responsible for field-applying the nutrients in accordance with their own nutrient management plans. Depending on their specific nutrient needs, farmers may use the digestate as produced or receive the fiber fraction (higher in phosphorus) or nutrient water (nitrogen-rich, but lower in phosphorus) separately. Many nutrient management decisions and factors are involved in determining the amount of nutrients that should be applied to fields. These may include existing soil conditions, crop type and yield expected for the current growing season, crop type from the previous growing season, the use of irrigation and other management practices, the method for nutrient application, and the cost of nutrients. The farmer using the NE Roberts digestate or derived product will be responsible for ensuring that the nutrient management complies with their farm's manure storage requirements, application frequency and amounts, and stipulations for emergency wintertime applications.

Farmer Agreements and Nutrient Management Plans

Nature Energy will only sign agreements with farmers with Nutrient Management Plans (NMPs); the Wisconsin DNR says that "*Implementation of a NMP helps prevent or minimize manure or other wastewater runoff from fields to surface waters or groundwater*" (Wisconsin Department of Natural Resources, 2022). Farmers will be responsible for safely managing the raw manure before pick-up and the appropriate storage of the digestate, nutrient water, or fiber fraction after Nature Energy delivers it back to the farmers. Additionally, farmers will be responsible for following the best management practices described in their NMPs, including the application of digestate, nutrient water, or fiber fraction. All Wisconsin farms, regardless of size, must comply with Wisconsin's agricultural standards and prohibitions.

Digestate Storage

Nutrients from NE Roberts will replace farmers' current nutrients, which typically come from raw manure or fossil fuel-based fertilizers. Farmers participating with NE Roberts would instead use their existing raw manure or fertilizer storage structures to store the nutrients from Nature Energy. Digestate and nutrient water take up less space than raw manure, which helps to ensure that there will be enough on-farm storage. All participating farms will have NMPs and will be responsible for storage practices that align with all local, state, and federal requirements and the requirements in their NMPs.

Nutrient Water Application

Digestate and nutrient water are not viscous (thick and sticky) like raw manure, which can have a hard time mixing into the soil and getting to crop roots. The easy application of digestate and nutrient water allows farmers to use application methods that maintain no-till farming, a practice that increases soil health and decreases soil erosion.

Soil fertility specialists in several Midwestern states, including Wisconsin, have agreed upon a uniform approach to developing nitrogen rate guidelines for corn, called the maximum return to nitrogen value (MRTN) method. Although the MRTN method emerged from a regional effort, the Wisconsin MRTN method guidelines in Table 2 are based entirely on experiments conducted on numerous Wisconsin soils. Table 2 shows the recommended application rate for different scenarios using a conservative MRTN value of 0.15, as presented in a guidance document by the University of Wisconsin-Extension, *Nutrient application guidelines for field, vegetable, and fruit crops in Wisconsin (A2809)* (University of Wisconsin-Extension 2012). Based on the MRTN guidelines, the annual production of digestate could supplement the nitrogen need for approximately **40,000 – 74,000 acres of corn following corn rotation or 57,000 – 100,000 acres of corn following soy rotation**. For sands and loam sands soils, the annual digestate production could supplement the nitrogen need for approximately **32,000 to 46,000 or 50,000 to 71,000 acres** of irrigated or non-irrigated crops, respectively.

Table 2 Suggested nitrogen (N) application rates for corn for MRTN (lb N/acre) for N price/Crop value ratio of 0.15

Condition	MRTN	Range
Loamy: high yield potential soil		
Previous crop: Corn, forage legumes, legume vegetables, green manures	150	140 – 160
Previous crop: Soybean, small grains	105	95 – 115
Loamy: medium yield potential soil		
Previous crop: Corn, forage legumes, legume vegetables, green manures	115	105 – 125
Previous crop: Soybean, small grains	85	70 – 95
Sands/loam sands		
Irrigated – all crops	185	175 – 195
Non-irrigated – all crops	120	110 – 130

Source: University of Wisconsin-Extension 2012

Previous experience has shown that it is most economical to keep contracts to farms that are within approximately 20 miles of a Nature Energy facility. For the proposed NE Roberts site, there are approximately 155,000 acres of corn and 89,000 acres of soybeans within a 20-mile radius (U.S. Department of Agriculture's [USDA] National Agricultural Statistics Service [NASS] 2021a). NE Roberts would therefore be able to offset N fertilizer needs **for approximately 26 percent to 64 percent** of local corn production.

The use of digestate also represents an advantage over the use of raw manure, which can over supply phosphorus when applied to meet nitrogen needs. Based on the nutrient requirements, NE Roberts digestate should be well-matched with corn nutrient needs. For example, for corn harvested for grain, the digestate supplies less phosphorus than what is removed by the grain harvested. This deficit can help to reduce soil phosphorus levels (Wisconsin-Extension 2012).

Existing Manure Spreading Practices

The US EPA AgSTAR program states that implementing anaerobic digesters can help protect the local water resources by decreasing nitrate runoff and phosphorus buildup, and killing pathogens (Environmental Protection Agency, 2020). Anaerobic digestion increases the availability of nutrients like nitrogen and phosphorus to crops. Currently, farmers spread raw manure and poultry litter on their crop fields to provide nutrients needed for plant growth. Because the nutrients are chemically bound-up in the manure and litter, farmers have to over-apply to ensure that the crops obtain the nutrients they require. This over-application often results in excess nitrates that can runoff into surface water or leach into groundwater and excess phosphorus that builds up in soils. By using digestate, farmers can apply the correct amount of nutrients, which lowers the chances for excess nutrient runoff or buildup. The anaerobic digestion process also kills pathogens in manure and poultry litter that are harmful to the environment. Additionally, anaerobically digested manure takes up less space than raw manure, so farmers have more on-farm storage capacity. This additional capacity results in less emergency wintertime applications than undigested manure, further improving current practices.

Many farmers use removal-based management for phosphorus and potassium. Table 3 shows nutrient removal rates for corn and soybeans in pounds per bushel harvested (University of Wisconsin-Extension 2012). In 2020, St. Croix County averaged yields of 182.7 and 52.4 bushels per acre for corn and soy, respectively (NASS 2021b; NASS 2021c). Based on the removal rates, yields, and local crop acreage, approximately 14.5 million pounds of phosphorus are removed from local fields annually with the corn grain and soybeans. Similarly, approximately 14.8 million pounds of potassium are removed each year. **The digestate from NE Roberts is projected to contain 3.5 – 4.9 million pounds of phosphorus and 4.0 – 5.6 million pounds of potassium annually.**

Table 3 Removal-based management of P and K

Crop	Crop Nutrient Removal (lb per bushel)	
	P_2O_5	K_2O
Corn (grain at 15.5% moisture)	0.38	0.29
Soybean (grain at 13% moisture)	0.8	1.4

Source: University of Wisconsin-Extension 2012

Table 3 Removal-based management of P and K

Crop	Crop Nutrient Removal (lb per bushel)	
	P_2O_5	K_2O

There are additional benefits to digestate beyond application rates. Numerous studies have demonstrated the advantages of applying digestate to crop fields compared to manure. Anaerobic digestion mineralizes the organically bound nitrogen in the manure and other biomass inputs. The resulting mineral form of nitrogen, or inorganic nitrogen, is more available to the crop compared to raw manure (Sørensen et al. 2017). Field application of this substrate results in less organic nitrogen in the soil compared to raw manure, subsequently resulting in less nitrogen leaching (Olesen et al. 2021). A study done by the Danish Center for Food and Agriculture and Aarhus University researchers modeled that anaerobically digested manure reduced leaching by 0.5 lb N/metric ton, compared to raw manure (Olesen et al. 2021). Field experiments by Sørensen & Børgesen (2015) demonstrated a reduction in nitrogen leaching of 22 lb/220 lb biomass (Sørensen & Børgesen 2015).

Similarly, the increase of inorganic nitrogen helps offset the need for additional fertilizer. Field experiments corroborated by laboratory experiments showed that the nitrogen fertilizer replacement value can be increased by 40 percent when using digestate compared to manure (Fontaine et al. 2020). A reduction in additional fertilizer has more than just economic benefits. Chojnacka et al. (2019) calculated that a reduction of 0.1 lb N/kg treated N results in reduced CO_2 emissions of 12.3 lb CO_2/lb N.

Further, multiple studies have demonstrated the positive impacts of digestate on soil biodiversity (Coelho et al. 2019; Koblenz et al. 2015; Garcia-Sánchez et al. 2015; Barłóg et al. 2020). Digestate has been shown to stimulate an increase in soil microbial biomass (Garcia-Sánchez et al. 2015). This positively impacts soil functionality, diversity, and structure, leading to long-term soil and crop benefits (Garcia-Sánchez et al. 2015).

Finally, the additional manure storage for the NE Roberts digestate would allow farmers to align application timing better to crop needs. Applying digestate at the right time for crop growth reduces the risk of nutrient losses to the environment. The additional storage and ability to better time applications also help farmers to align fall applications with planting cover crops.

In summary, field application of digestate or derived product applications carry lower levels of unused nutrients than raw manure applications. As demonstrated, the nutrients contained in the digestate can be utilized on existing cropland within 20 miles of the proposed facility. The use of anaerobic digestion before manure application helps to reduce the potential for nitrogen leaching into groundwater, phosphorus building up in soils, or nutrient loss to surface water. The characteristics of anaerobically digested biomass offer long-term benefits for soils, crops, and the environment.

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Attachment 3

Community Benefits

Nature Energy Facility - Roberts, Wisconsin
Community Benefits

Nature Energy is proposing a new biogas production facility in Roberts. Biogas is a renewable source of natural gas created from renewable waste streams like dairy manure, turkey litter, and food processing waste. Nature Energy provides a manure management solution for local farmers that reduces greenhouse gas emissions, soil compaction, fossil fuel use, and the overall carbon footprint. The Nature Energy process transforms nutrients into a form that better feeds crops and has a lower application rate, reducing the risk of nutrient runoff and helping protect our waterways. Read more about these and the other benefits of a Nature Energy facility in Roberts.

Farmer Support: The Nature Energy Roberts facility is expected to process up to approximately 730,000 tons of raw waste material from farmers each year. Nature Energy is committed to working with dairy farms located within an approximate 20-mile radius of the Roberts location that have 60 or more cows. Nature Energy has experience and expertise in working with farms of all sizes, particularly small farms like those in Denmark. A significant benefit of a Nature Energy project is how it gives small farms access to this advanced technology that is otherwise not available to them. Once the raw material is processed and biogas is produced, the material is transported back to participating local farms for use as natural manure and soil amendments that provide key nutrients such as nitrogen, phosphorus, and potassium in a form that allows better uptake by crops. This is an important benefit and improvement over raw manure and synthetic fertilizer that is currently being applied ineffectively. Nature Energy will provide dairy and crop farmers with the nutrients they need to apply according to their nutrient management plans. Further, the anaerobic digestion process kills pathogens and weed seeds.

Dairy farmers Joe and Mary Holle, at Holle-Oaks Farm near Baldwin, Wisconsin said the following about working with Nature Energy: *"The opportunity to get more from our manure excites us the most. We have been trapped in our current manure facility with no options to improve. The benefits from decreasing our purchase of fertilizer alone will give us a 18-24 month payback on a new storage facility. We feel it will help revive agriculture's public relations in western Wisconsin by improving our emissions and helping us be more productive on the same acreage."*

Environmental Improvement: The Nature Energy process converts raw material in the form of organic waste products into biogas, which is considered a renewable resource because it is made from a constant supply of renewable waste streams. Once the raw material has been digested to produce biogas, the digestate is returned to farmers as a natural manure for use on their fields. This natural manure has a lower application rate equaling less risk of leaching into groundwater, less soil compaction and less fossil fuels used when fertilizing crops. Removing methane from the raw material reduces methane pollution that is typical of unprocessed manure and reduces greenhouse gases released into the atmosphere. The facility provides the Village and County an opportunity to improve water quality in both groundwater and surface water by producing a more precise volume and type of nutrients for farmers, which decreases excess nitrogen and phosphorus and reduces the potential for runoff and improving regional water quality

Economic Development: The Nature Energy Roberts facility requires approximately 12 to 16 full-time employees or subcontractors (or 24,000 to 32,000 manhours per year) to manage facility operations, including managers, operators and truck drivers. Nature Energy will contract with an existing trucking company to run Nature Energy's specifically designed trucks to haul materials to and from the facility. Local support services such as supplies and maintenance will also be needed for facility operation, including 65 to 75 full-time indirect positions (130,000 to 150,000 manhours per year) and the construction process will require numerous new construction jobs (approximately 650,000 manhours). Nature Energy is also working with the Village of Roberts to negotiate an annual "Payment in Lieu of Taxes" (PILOT) for the project.

Quality of Life: The biogas produced by the Roberts facility will be available for community use providing a local, renewable, and reliable source of energy. The Nature Energy Roberts facility will be a self-contained facility that transforms smelly, hard-to-handle manure and other wastes into renewable natural gas and other products that are useful to the farms from which the waste was collected. The digestate produced at the end of the process and precisely applied to the soil and to growing crops will have significantly less odor than the incoming manure, sourced from local farms. This will improve quality of life by reducing the odor from current manure use in the area. Nature Energy is committed to actively managing the occurrence of nuisance odors, noise, light, and truck traffic from the facility and use reliable best practices that will help make the new plant serve as a good neighbor in the community. Most homes in Roberts will be more than 1,000 feet from the plant, which will greatly reduce the amount of light and noise seen and heard from the plant. Additionally, Nature Energy will plant trees along the boundary of the facility to further address noise and visual concerns. Nature Energy will make improvements to 130th Street where the facility will be located. All trucks will be kept clean and well maintained, and each truck will be washed after being unloaded at the Nature Energy plant.

Nature Energy has a reputation of being an outstanding corporate citizen who supports local communities where they operate facilities. We are eager to work with local organizations to create partnerships and opportunities for things like community composting and always use local workers when possible. We have encouraged tours at our facilities in Denmark and would do the same in Roberts allowing opportunities for agritourism, partnerships with schools, and hosting visitors to the facility to gain firsthand knowledge of this innovative technology.

Why Roberts: Roberts is an ideal location providing access to a quality workforce, reliable infrastructure, access to a gas pipeline interconnect, and the proximity to local farms to supply manure. The Nature Energy Roberts facility will promote and support agriculture and businesses in St. Croix County while helping protect water quality. The proposed location on 130th Street north of the Union Pacific railroad and south of Roberts Business Park in an existing industrial area.(Note: The proposed rail spur is to support additional industrial development in the area and not associated with Nature Energy's project.)

How can I learn more?

We want everyone in the community to appreciate the benefits of the new plant, understand how it will work and blend into the local economy, and to have any questions or concerns addressed.

To learn more about Nature Energy and the project or to submit questions, please visit the project website at roberts.nature-energy.com.