

SUBJECT

Local Approvals Requested from Village of Roberts, WI
for Nature Energy US Ventures 3, LLC Project

DATE

February 17, 2022

DEPARTMENT

Village of Robert Planning Department

COPIES TO

Louise Skott Kristensen, Nature Energy
William Derrick, Crane I Holdings, LLC

TO

Megan Dull – Village Clerk

OUR REF

Nature Energy – Roberts, WI

ARCADIS PROJECT NUMBER

30112313

NAME

John Berrigan
(612) 373-0221, John.Berrigan@arcadis.com

Nature Energy US Ventures 3, LLC, a Danish renewable natural gas company, is proposing to develop an anaerobic digester and nutrient recovery facility in Roberts, Wisconsin under the name “Nature Energy Roberts” (further: NER). The proposed facility would use anaerobic digestion to produce renewable natural gas, also referred to as biomethane, from turkey litter and dairy waste, food processing byproducts, and food waste. The renewable natural gas would be injected into the existing natural gas pipeline system. The anaerobic digester process results in nutrient-rich byproducts that would be recovered after digestion to produce three commercial fertilizer products: digestate directly from the anaerobic digester, nutrient water high in nutrients that are readily available for a growing crop, and a high-solids product rich in phosphorus and potassium. Attachment A shows the proposed Site Plan. Project contacts are listed below.

Applicant:	Nature Energy US Ventures 3, LLC Louise Skott Kristensen 2550 University Avenue #320s St. Paul, MN 55114	Engineer:	Arcadis U.S., Inc. John Berrigan 123 N 3 rd St #705 Minneapolis, MN 55401
Site Owner:	Crane I Holdings, LLC William M. Derrick 1505 Hwy 65, P.O. Box 445 New Richmond, WI 54017	Architect:	TBD
		Contractor:	TBD

NER is requesting a conditional use permit as described in Section 70-131.A(3)a/b, Municipal Code of the Village of Roberts. An application for the Planning Commission Appeals Review is included as Attachment B. A preliminary Erosion and Sediment Control Plan for construction is included as Attachment C and a photo log of existing conditions is included in Attachment D. NER is also requesting a variance for Building Height, as described in [Section 70-131.A\(5\)a](#), Municipal Code of the Village of Roberts. The Application for Variance is included as Attachment E. A summary of local approval requirements and the corresponding attachment is provided as Attachment F.

The proposed project site is described below.

- **Abbreviated Legal Description (metes and bounds):** Portions of SEC 22 T29N R18W SE NE EXC CSM 30-6798 ([Parcel No. 176-1070-30-001](#)) and SEC 22 T29N R18W PT NE SE N OF RR EZ-U-1406/207 EZ-U-1540/265 FKA 042-1062-95 ([Parcel No. 176-1070-40-000](#))
- **Subject Site Address:** TBD 130th Street, Roberts, WI 54023
- **Zoning district within which the subject site is located:** The NER site is currently zoned as M-7 Industrial Rail Park District ([Sec. 70-131.A](#)).
- **Abutting property owners of record within 300 feet:**
 - Northern States Power Company, 874 130th St Roberts, WI 54023
 - Ambassador Steel Corporation, 1342 S Grandstaff Dr Auburn, IN 46706
 - Crane I Holdings LLC, 1505 Hwy 65 New Richmond, WI 54017
 - Sharon M Rev Tr Stewart, 750 112th St Roberts, WI 54023
 - Mark D Hamlin, 203 E Graham St Roberts, WI 54023
 - Emily Viertel and Zach Hilgert, 826 130th St Roberts, WI 54023
 - Earl F Pechuman, 1310 Cty Rd Tt Roberts, WI 54023
 - Walter & Elsa Carpenter Family LMTD PT, 9011 High Point Cir Eden Prairie, MN 55347
- **Minimal flood hazard**, as determined by the Federal Emergency Management Agency (Attachment G).

Proposed Operations

The proposed use of the site is the production of renewable natural gas from locally sourced agricultural and food waste using anaerobic digestion. The general process is shown in Attachment H with a general layout illustrated in Attachment I. Details of anticipated operation is included below, and odor, noise, and traffic are discussed in subsequent sections.

- **Proposed Operation of Site:**
 - Continuous monitoring and operations 24 hours, 7 days a week
 - Deliveries occurring primarily Monday – Friday: 6 am to 6 pm; Saturday: 8 am – 2 pm
 - No deliveries on Sunday
- **Number of Employees:** 8-10 employees
- **Proposed structures** are shown in the Site Plan (Attachment A) and include a complete biogas plant with:
 - Administration Building
 - Workshop and storage of spare parts/chemicals
 - Pre-storage and pre-treatment systems
 - Feeding systems for different biomasses
 - Digestion system
 - Digestate separation, post storage tanks, and storage building for fiber fraction
 - Gas cleaning, gas quality check, and odorization
 - Pressurization/compressor station before grid connection
 - Two emergency anaerobic digestion flares
 - Complete odor treatment and ventilation system
 - Production of liquid CO₂
 - Natural gas-fired boiler for heat production
 - Emergency gensets for power backup
- **Anticipated biomass list and truck requirements:**

- Delivery of biomass to the site and transport of digestate and fiber away from the site will account for approximately 90-95 transport trucks per full working day and approximately 40-50 on Saturdays. No transport truck operation will occur on Sundays.
- Biomass will contain various sources including slurry (dairy cattle), deep litter turkeys, food waste, dissolved air floatation, and water.

Odor

Although the raw materials are known to have odor, NER manages these materials indoors and the collected air is treated by the following means:

- Odor from receiving biomass will be minimized by delivering the material into an enclosed loading hall. Buildings with odorous air, such as the loading hall, will be ventilated to keep a small under pressure inside. Fresh heated 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.
- Tanks that store the anaerobic digestion byproducts will be ventilated to maintain a small under pressure inside the tanks. The air from the tanks will be treated in 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 ammonia and hydrogen sulfide (H₂S) removal.
- Treated air from the biological treatment system will be lifted into a 60 m (196.85 ft) high stack (diameter approximately 2.8 m or 9.2 ft) to aid dispersion as it is released to the environment.

The project is not anticipated to generate significant odors during construction.

Noise

Beyond the construction of the proposed facility, NER anticipates that regular operating hours will range from six hours per day on weekends to 12 hours per day during the week, primarily during daytime hours. The process equipment will be enclosed within the biomass plant, with unloading and loading activities in an enclosed loading hall. The process equipment may create daily, sustained noise at steady and continuous low levels.

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 will remain undeveloped. The existing ambient sound is representative of typical sounds from light industrial and rail use.

During construction, noise levels would increase in the area immediately surrounding the proposed facility. The use of equipment will be limited to primarily during daytime hours for the construction of the proposed facility to limit the impact of additional noise.

During operation, the process equipment would be the primary source of facility noise. The noise contribution from the proposed facility is expected to be marginal, considering existing ambient sounds and the tree line between the site and closest noise-sensitive receptor and based on a study conducted by NIRAS A/S for Nature Energy A/S for a similar facility located in Denmark. This study, dated November 23, 2021, calculated the external

noise contributions to eight residential areas or calculation points ranging between 995 and 3,070 feet from the highest noise source within the facility (biofilter chimney, 198 feet high). The representative noise study is included in Attachment J.

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 originated primarily from traffic entering and exiting the sites. The maximum was 50 dB (A) at all calculation points.

Traffic

Locally sourced biomass inputs for the anaerobic digesters will be delivered to NER on tank trucks. NER anticipates that trucks delivering liquid biomasses (dairy slurry and food waste) to the site would also take digestate or nutrient water away from the facility. NER estimates that at full production of the facility there will be approximately 90-95 transport trucks per full working day and approximately 40-50 on Saturdays. Transport trucks will not be in operation on Sundays.

NER will work to optimize the truck traffic patterns throughout the design phase to prevent off-site transport truck cueing that may present local traffic issues. It is anticipated that the transport trucks would remain at the facility for approximately 20 minutes, at which point they would deliver biomass to the facility and fill the trucks up with digestate before leaving the site.

NER will be conducting a further traffic study to identify any potential traffic implications from the facilities required. The study will account for the existing traffic in this region as well as the need to upgrade 130th Street from the traffic circle to the facility entrance. NER will provide this to the Village for consideration when completed.

Enclosed

Attachment A – Site Plan

Attachment B – Planning Commission Appeals Review Application

Attachment C – Erosion and Sediment Control Plan

Attachment D – Photo Log

Attachment E – Zoning Board of Appeals Application for Variance

Attachment F – Local Approval Requirements

Attachment G – FEMA Map

Attachment H – General Process Flow Diagram

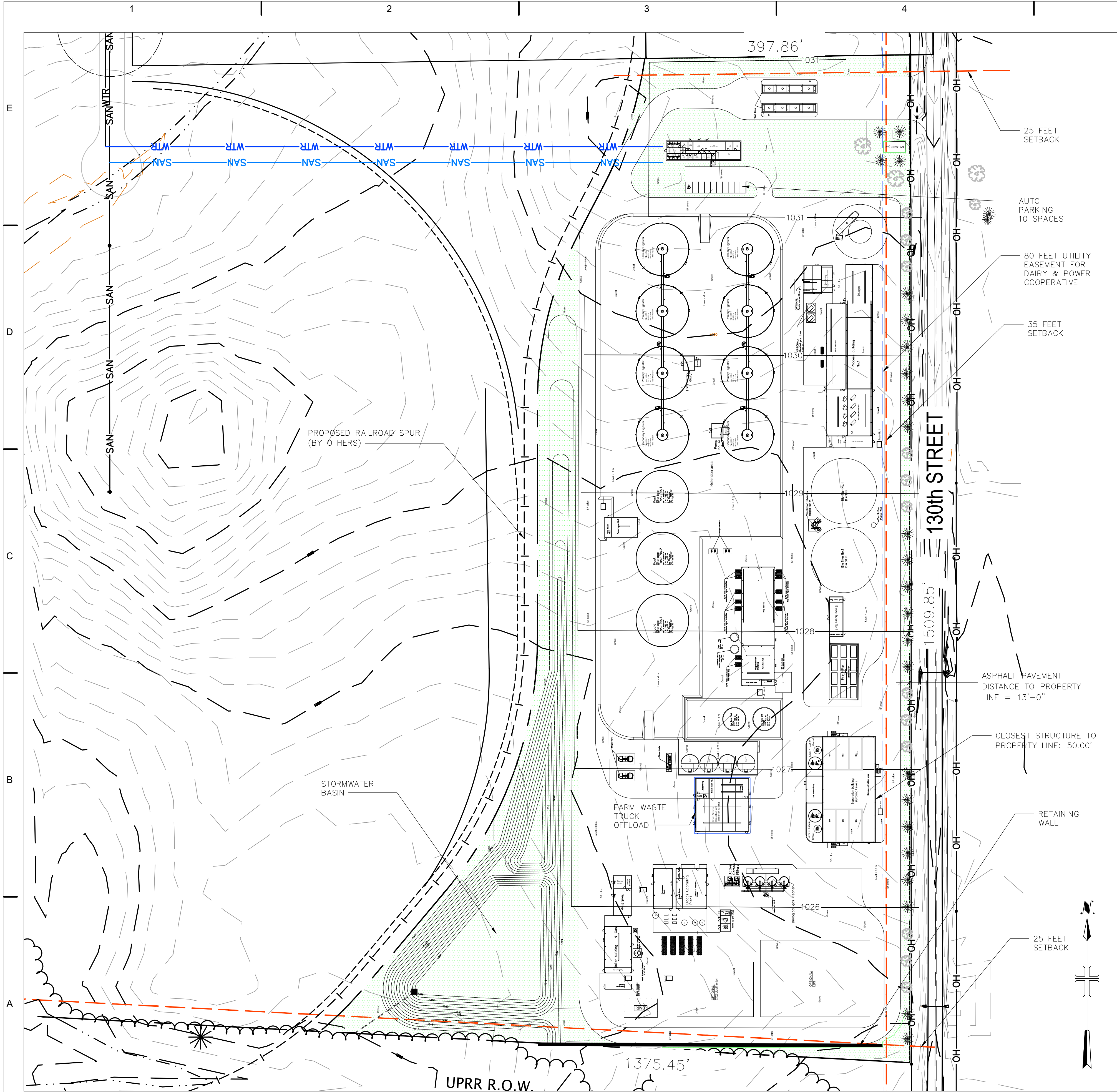
Attachment I – General Process Layout

Attachment J – Representative Noise Study

Attachment A

Site Plan

User:FRAMPS Spec:AUS-NC5MOD File:C:\PROJECT\130112313 NATURE ENERGY\ROBERTS\CIVIL\WORKING\ROBERTS C-100-6.DWG Scale:1:1 Saved:2/16/2022 Time:08:06 Plot Date:Ramps, Frank, 2/16/2022, 17:12, Layout:LAYOUT1



PROJECT NAME: NATURE ENERGY BIOGAS PRODUCTION FACILITY

LOCATION: 130TH STREET, BENSON, WI
LATITUDE 44.98 LONGITUDE -92.54

PROPERTY SIZE: 22.55 ACRES
PROPERTY ZONING: M-7 (INDUSTRIAL RAIL PARK DISTRICT)
ADJACENT ZONING: M-7
CURRENT PROPERTY USE: AGRICULTURAL
PROPOSED PROPERTY USE: INDUSTRIAL
TYPE OF STRUCTURE: PRIMARILY PROCESS TANKS & EQUIPMENT
NUMBER OF EMPLOYEES: 10 TOTAL
ZONING LIMITATIONS:

OFFSTREET PARKING	REQD 5	PROVIDED 10
LOADING	1	1
FRONT YARD	35 FT	35 FEET
SIDE/REAR YARD	25 FEET	25 FEET

SURFACE PAVEMENT: ASPHALT
BUILDING MATERIALS: STEEL TANKS AND PROCESS EQUIPMENT
OFFICE BUILDING - WOOD

STRUCTURE ELEVATIONS: VARIES FROM 10 FEET TO 35 FEET

UTILITIES:
WATER: AVAILABLE
SANITARY: AVAILABLE
STORMWATER: DETENTION BASIN - 60,000SF/300,000CF
FLOOD ZONE: ZONE X - AREA OF MINIMAL FLOOD HAZARD
SITE SOILS: S1B SATTRE SILT

SITE LIGHTING: POLE MOUNTED LED FIXTURES WITH DOWN LIGHT
FEATURES TO PREVENT LIGHT SPREAD OFF THE SITE.

APPLICANT:
NATURE ENERGY US VENTURES 3, LLC
2550 UNIVERSITY AVE. #320s
ST. PAUL, MN 55114
LOUISE SKOTT KRISTENSEN

OWNER/OPERATOR:
CRANE HOLDINGS LLC
1505 HWY 65, PO BOX 445
NEW RICHMOND, WI 54017
WILLIAM M. DERRICK

ENGINEER:
ARCADIS
123 NORTH THIRD STREET, SUITE 705
MINNEAPOLIS, MN 55401
JOHN BERRIGAN

ADJACENT PROPERTY OWNERS

AMBASSADOR STEEL CORPORATION
PIN 176107030100

NORTHERN STATES POWER COMPANY
PIN 176107030200

CRANE 1 HOLDINGS LLC
PIN 17610704000

WALTER & ELSA CARPENTER FAMILY LIMITED PT
PIN 042106495000

EARL PECHUMAN
PIN 042106530000

MARK HAMLIN
PIN 042106380000

EMILY VIERTEL
ZACH HILGUT
PIN 176107030200

LANDSCAPE BUFFER

RED MAPLE	ACER RUBRUM	2 EACH
WILD PLUM	PRUNUS AMERICANA	12 EACH
MOONGLOW JUNIPER	JUNIPERUS SCOPULORUM	12 EACH
BLUE ATLAS CEDAR	CEDRUS ATLANTICA	12 EACH

0' 100' 200' 300'

SCALE: 1"=80'



LEGAL ENTITY:
ARCADIS U.S., INC.

CONSULTANTS

SEALS

NOT FOR CONSTRUCTION

NATURE ENERGY US VENTURES 3, LLC



ROBERTS, WI FACILITY

ARCADIS PROJ. NO. 30111249

0	2-15-2022	CUP REVIEW	FR
NO.	DATE	ISSUED FOR	BY

COPYRIGHT: ARCADIS U.S., INC.
2018

DATE: FEBRUARY 2022

PROJECT NO.: 30112313

FILE NAME: ROBERTS C-100-6

DESIGNED BY: F. RAMPS

DRAWN BY:

CHECKED BY:

SHEET TITLE

SITE
LAYOUT
PLAN

SCALE:

C-100-6

SHEET _____ OF _____

Attachment B

Planning Commission Appeals Review Application



VILLAGE OF ROBERTS

Applicant's Name:	Nature Energy US, LLC Louise Skott Kristensen	Telephone No. (651) 319-2598 Fax No. NA
Address:	2550 University Avenue #160 St. Paul, MN 55114	
Property Owner:	Crane I Holdings, LLC William M. Derrick	Telephone No. Fax No.
Address:	1505 Hwy 65, P.O. Box 445 New Richmond, WI 54017	
**Request for: <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> Zoning District Change (\$75) Special Use Permit (\$75) X Conditional Use Permit (\$100) Above may include advertising costs. </div> <div style="width: 45%;"> Certified Survey Map Approval (\$75) X Board of Appeals (\$100) Other _____ </div> </div>		
Status of Applicant: <div style="display: flex; justify-content: space-around;"> Owner Agent X Buyer Other </div>		
Present Zoning: M-7 Industrial Rail Park District Zoning Requested: NA		
Uses Proposed:	Development and operation of an anaerobic digester and nutrient recover facility	
Acreage(s): 22.55 AC		
Location: TBD 130th Street, Roberts, WI 54023		
Parcel I.D. Number	Portions of Parcel No. 176-1070-30-001 and Parcel No. 176-1070-40-000	
Legal Description:	Portions of SEC 22 T29N R18W SE NE EXC CSM 30-6798 and SEC 22 T29N R18W PT NE SE N OF RR EZ-U-1406/207 EZ-U-1540/265 FKA 042-1062-95	
The undersigned applicant or representative, thereof, certifies that he/she is familiar with the State and local code applicable to this request, the procedural requirements of the Village and/or Township, and all other application Village ordinances.		
Signature of Applicant/Representative:		
(print) <u>LOUISE SKOTT KRISTENSEN</u>		Date <u>17.02.2022</u>
(signature) <u><i>L Skott</i></u>		Date <u>17.02.2022</u>
Application received by:		Date
Fees Paid and Date:		
Zoning District Change	\$ _____	Date _____
Special Use Permit	\$ _____	Date _____
Conditional Use Permit	\$ _____	Date _____
Board of Appeals	\$ _____	Date _____
Other	\$ _____	Date _____
2/17/22 **All fees listed above are subject to a \$500 down payment to cover other fees incurred with this request. This will cover any publishing, legal and engineering fees associated with this project. If needed refunds or invoices will be sent once final bills are submitted.		

Attachment C

Erosion and Sediment Control Plan

Nature Energy Biogas

Erosion and Sediment Control Plan

**Biogas Facility Project
Roberts, Wisconsin**

February 2022

Erosion and Sediment Control Plan

**Biogas Facility Project
Roberts, Wisconsin**

February 2022

Prepared By:

Arcadis U.S., Inc.
123 North Third Street, Suite 705
Minneapolis
Minnesota 55401
Phone: 612 339 9434
Fax: 612 336 4538

Prepared For:

Village of Roberts
107 E Maple Street
Roberts, WI 54023

Our Ref: 30112313

1 Project Description

Nature Energy Biogas US Ventures 3, LLC, a Danish bio-fermentation company, is proposing to develop an anaerobic digester and nutrient recovery facility in Roberts, Wisconsin under the name "Nature Energy Roberts" (further: NER). The proposed facility would use anaerobic digestion to produce renewable natural gas, also referred to as biomethane, from turkey litter and dairy waste, food processing byproducts, and food waste. The renewable natural gas would be injected into the existing natural gas pipeline system. The anaerobic digester process results in nutrient-rich byproducts that would be recovered after digestion to produce three commercial fertilizer products: digestate directly from the anaerobic digester, nutrient water high in nutrients that are readily available for a growing crop, and a high-solids product rich in phosphorus and potassium.

Part of the local approvals requirements to develop, construct, and operate this facility include the preparation of an erosion and sediment control plan. A detailed discussion of the site-specific applicable standards and erosion and sediment control best management practices are discussed below.

2 Performance Standards Applicable to Site

The outline for the organization of this Site Erosion and Sediment Control Plan follows the Wisconsin Department of Natural Resources (WDNR) requirements as described in NR 216.46 Erosion control plan requirements under subch. III of ch. NR 216, Wis. Adm. Code. A copy of the erosion control plan requirements is provided as an attachment (see Appendix A).

The following construction site erosion control plan meets the applicable performance standard in s. NR 151.11, Wis. Adm. Code for construction sites that are not transportation facilities.

2.1 Proposed Project Site Description

2.1.1 Site location

Nature Energy Roberts will be located within the Industrial Rail Park District in the Village of Roberts, WI. The site is bordered by 130th street on the east, Union Pacific Rail Road (UPRR) on the south, empty land on the west, and developed sites on the north. Approximate latitude and longitudes is 44.984607, -92.538955 respectively.

2.1.2 Total area of the site and total area of the construction site that is expected to be disturbed by construction activities.

A map showing the location of the proposed project site and the limits of land disturbance on a USGS 7.5-minute series topographical map can be found in Appendix B. The total area of the site is approximately 23 acres. Due to the size of the proposed parcel, most of the project site will be disturbed.

2.1.3 Surface Soil and Subsurface Soil Description

Soils characteristics were identified and retrieved using the U.S. Department of Agriculture, Natural Resource Conservation Service's (USDA NRCS's) [Web Soil Survey](http://www.nrcs.usda.gov/ce/np/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.

The proposed project site consists of six different mapped soil series, described below.

- The Arland series consists of moderately deep, well drained soils formed in 50 to 100 centimeters of till underlain by sandstone bedrock. These soils are on knolls, ridge tops, and side slopes of glaciated bedrock-controlled uplands. Slope ranges from 6 to 12%.
- The Jewett series consists of well drained soils that are moderately deep to a densic contact with till. These soils formed in a mantle of wind or water laid loamy deposits in the underlying reddish dense loamy glacial till on ground moraines. Permeability is moderate in the silty and loamy mantle, slow or moderately slow in the till subsoil, and slow in the substratum. Slopes range from 2 to 6%.
- The Nickin series consists of very deep, well drained soils that are moderately deep to siliceous sandy pedisegment or residuum. These soils formed in a mantle of wind or water-laid loamy deposits; in loamy till; and in the underlying siliceous sandy pedisegment or residuum on hills. Permeability is moderate in the loamy mantle and in the till; moderately rapid or rapid in the sandy part of the subsoil; and rapid or very rapid in the substratum. Slopes range from 2 to 6%.
- The Onamia-Antigo series consists of very deep, well drained soils formed in 50 to 100 centimeters of loess or silty alluvium and in loamy alluvium and in the underlying stratified sandy outwash. These soils are on outwash plains, stream terraces, eskers, kames, glacial lake plains, and moraines. Slope ranges from 6 to 12%.
- The Saprists and aquents series consists of very poorly drained soils consisting of organic material and drift as parent material. These soils are on depressions of flood plains, and drainageways on flood plains. Slope ranges from 0 to 2%.
- The Sattre series consists of very deep, well drained soils that formed in 50 to 100 centimeters of loamy alluvium and the underlying sandy and gravelly sediments. These soils are on outwash areas and on treads and risers on stream terraces in river valleys. Slope ranges from 2 to 6%.

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 range from approximately 1,020 feet to 1,040 feet.

2.1.4 Land Disturbance and Sequence of Construction Activities

The project will be completed in a manner that minimizes the potential for erosion and sedimentation during the proposed construction and allows for effective restoration of disturbed areas. A site map with property lines, disturbed limits, drainage patterns, and limits of land disturbance is included in Appendix C.

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

- **Clearing and Grading:** a contractor will be selected to complete the installation of stormwater best management practices prior to any ground disturbing activities. Construction will commence with removing obstacles if needed (large rocks, tree branches, brush, and logs) and grading the disturbance area to smooth any abrupt changes in ground contour as needed.
- **Excavation/Rip Rap Placement:** excavation of the trench to install pipelines, excavation to create the stormwater pond. This step will also involve the construction of the rip rap culvert pipe ditch check.

- **Construction of the Biogas Plant**
- **Backfilling and Grade Restoration:** repair and replacement of spoils within excavated trenches and removal of extra spoils from the workspaces.
- **Cleanup and Restoration:** disturbed areas will be graded, and debris will be properly disposed of.

Construction equipment will consist of standard construction equipment (e.g., backhoe) and local and commercially available construction materials (e.g., Wisconsin Department of Transportation (WDOT) sized heavy rip rap).

2.1.5 Name of immediate named receiving water from the United States geological service 7.5-minute series topographic maps

The nearest receiving water for the Roberts site is an Unnamed open water feature to the southwest of the site. The distance from the southwest corner of the site to the "unnamed open water feature" is approximately 1500 feet. The nearest named receiving water are the Twin Lakes, approximately 7250 feet southwest of the proposed project site.

2.2 Erosion and Sediment Control Plan

2.2.1 Erosion Control Plan Site Map

The Construction Site Erosion Control Plan Site Map, shown in Appendix C, includes the following:

- i. Existing topography and drainage patterns, roads and surface waters.
- ii. Boundaries of the construction site.
- iii. Drainage patterns and approximate slopes anticipated after major grading activities.
- iv. Areas of soil disturbance.
- v. Location of major structural and non-structural controls identified in the construction site erosion control plan.
- vi. Location of areas where stabilization practices will be employed.
- vii. Areas that will be vegetated following land disturbing construction activities.
- viii. Area and location of wetland acreage on the construction site and locations where storm water is discharged to a surface water or wetland within one-quarter mile downstream of the construction site.
- ix. Areas used for infiltration of post-construction storm water runoff.
- x. An alphanumeric or equivalent coordinate system for the entire construction site.

2.2.2 Erosion and Sediment Control Best Management Practices

The construction site erosion control plan includes descriptions below of appropriate erosion and sediment control BMPs that will be installed and maintained at the construction site to prevent pollutants from reaching waters of the State of Wisconsin. Erosion and sediment control BMPs will be implemented in accordance with s. NR 151.11, Wis. Adm. Code, for construction sites that are not transportation facilities.

Contractor shall install appropriate erosion control measures as the first construction activity and these measures shall include:

- Adjust or add silt fence as needed to prevent sediments from leaving the construction site.
- Install silt fence as needed around any temporary soil storage piles.
- Install a stone tracking pad to ensure vehicles that drive over exposed soil exit along the full length of the pad. Use hard, durable, angular stone or recycled concrete meeting the gradation in WI Standard Specification, Section 312, Select Crushed Material. Use material substantially free from dirt, debris, steel, vegetable matter, and other deleterious material.
- Remove and replace aggregates when voids become filled with sediment or if surface openings become plugged so that tracking area does not function.
- All waste and unused building material shall be removed from the site and disposed of and not allowed to be carried off by stormwater runoff.
- Stormwater pond may be used as sediment basin during construction. Any accumulated sediment shall be removed before final pond restoration. The entrance of the stormwater pond shall be protected from further sedimentation after the restoration of stormwater ponds has been completed.
- Riprap and ditch check shall be placed at discharge locations to serve as velocity dissipation devices and to provide a non-erosive flow from the structure to a watercourse.
- Install Inlet protection where they occur.
- Supply erosion control mat as per WI DOT Product Acceptability List (PAL) requirements. Install erosion control mat as per manufacturer's specifications.
- All disturbed areas left for more than 14 days shall be stabilized with seed and mulch for prevent erosion.
- Topsoil shall be supplied and installed in accordance with WI DOT standard specifications for highway and structure construction, section 625.
- Seed, mulch, and fertilize all disturbed areas over 5 inches of topsoil.
- Seeding shall be seed mixture No. 40 as per Wisconsin Department of Transportation (WI DOT) standard specifications for highway and structure construction, latest edition.
- Seed shall be sown in accordance with WI DOT standard specifications for highway and structure construction, section 630.3 either method A or B.
- Seed mulch shall be in accordance with WI DOT standard specifications for highway and structure construction, section 627.2.
- Seed mulch shall be applied in accordance with WI DOT standard specifications for highway and structure construction, section 627.3.2, method B or C.
- The contractor shall follow all practices as defined in the WI DNR Technical standards for Construction Site Erosion and Sediment Control Standards.

2.2.3 Inspections

Qualified inspectors will provide inspection to ensure compliance with the Erosion and Sediment Control Plan. Inspection will occur weekly, and within 24 hours following a rainfall of 0.5 inches or greater. Written documentation of each inspection will be maintained at the construction site and will include the time, date and location of inspection, the phase of land disturbance at the construction site, person conducting the inspection, assessment of control practices, and a description of any erosion or sediment control measure installation or maintenance performed in response to the inspection.

Appendix A

Wisconsin Department of Natural Resources, NR 216.46 Erosion control plan requirements

road shoulder grading, the activity is not regulated under this subchapter.

(8) ROUTINE MAINTENANCE. Routine maintenance for project sites that involve under 5 acres of land disturbance that is performed to maintain the original line and grade, hydraulic capacity, or original purpose of the facility is not regulated under this subchapter.

(10) OIL AND GAS INDUSTRY. Storm water discharges from construction sites that disturb from one to 5 acres of land and that are associated with construction activity at oil and gas exploration, production, processing or treatment operations or transmission facilities are exempt from this subchapter until March 10, 2005.

(11) QUARTER MILE SEPARATION. Where discrete construction projects within a larger common plan of development or sale are located at least 1/4 mile apart and the area between the projects is not being disturbed, each individual project may be treated as a separate plan of development or sale provided any interconnecting road, pipeline or utility project that is part of the same "common plan" is not concurrently being disturbed.

History: CR 03-028: cr. Register July 2004 No. 583, eff. 8-1-04; correction in (4), (9) made under s. 13.92 (4) (b) 6., 7., Stats., Register December 2011 No. 672; CR 19-053: r. (4), (5), (9) Register January 2020 No. 769, eff. 2-1-20.

NR 216.43 Notice of intent requirements. (1) **FORMS.** The landowner shall submit a notice of intent to the department on forms available from the department. Data submitted in the notice of intent forms shall be used as a basis for conferring coverage under a WPDES storm water permit.

Note: The notice of intent form is available from the department website at <http://dnr.wi.gov/topic/Stormwater/construction/forms.html> or by contacting the storm water program in the bureau of watershed management at (608) 267-7694.

(2) APPLICATION FEE. A storm water construction site application fee defined by Table 5 shall be submitted to the department with the notice of intent.

Table 5

Acres of Land Disturbance	Application Fee
Less than 5	\$140
5 or more and less than 25	\$235
25 or greater	\$350

(3) SIGNATURE REQUIREMENTS. The notice of intent form shall be signed by the landowner as follows:

(a) In the case of a corporation, by a principal executive officer of at least the level of vice president or by the officer's authorized representative having overall responsibility for the operation of the site for which a permit is sought.

(b) In the case of a limited liability company, by a member or manager.

(c) In the case of a partnership, by a general partner.

(d) In the case of a sole proprietorship, by the proprietor.

(e) For a unit of government, by a principal executive officer, ranking elected official or other duly authorized representative.

History: CR 03-028: cr. Register July 2004 No. 583, eff. 8-1-04.

NR 216.44 Notice of intent deadline. (1) Except as provided under sub. (3), a landowner required to obtain WPDES permit coverage for storm water discharges from a construction site shall submit a completed notice of intent, via certified or registered mail, in accordance with the requirements of this subchapter. The notice of intent shall be submitted so that it is received by the department at least 14 working days prior to the commencement of any land disturbing construction activities. Unless notified by the department to the contrary, a landowner who has submitted a notice of intent in accordance with the provisions of this subchapter is authorized to discharge storm water from a construction site under the terms and conditions of the general construction site storm water discharge permit 14 working days after the date that the department receives the notice of intent or upon receipt of notification from the department that the construction site is covered under the general construction site discharge permit. The landowner becomes the permittee once the construction site is authorized permit coverage.

(2) A site-specific erosion control and storm water management plan pursuant to ss. NR 216.46 and 216.47 shall be completed by the landowner prior to submitting the notice of intent to the department under sub. (1) and shall be updated as appropriate pursuant to s. NR 216.50. The erosion control and storm water management plans shall be submitted to the department upon request so that it may evaluate whether the plans comply with ss. NR 216.46 and 216.47. The department may withhold permit coverage as necessary until it verifies that the plans comply with ss. NR 216.46 and 216.47.

Note: The department encourages landowners and their representatives to consult with the department's regional storm water staff prior to local plan approval on the conceptual plans for erosion control and storm water management. Contact information for department regional storm water staff is available from the department website at <http://dnr.wi.gov/topic/stormwater/contacts.html> or by contacting the storm water program in the bureau of watershed management at (608) 267-7694.

(3) If the construction site is located in an area regulated by an authorized local program pursuant to s. NR 216.415, the landowner shall apply for storm water discharge approval to the authorized local program.

History: CR 03-028: cr. Register July 2004 No. 583, eff. 8-1-04.

NR 216.45 Incomplete notice of intent and time limit for department decision. (1) Within 14 working days after the date the department receives the notice of intent, the department may require an applicant to submit data that the department has identified as being necessary to complete any deficient notice of intent or may require the applicant to submit a complete new notice of intent when the deficiencies are extensive or the appropriate form has not been used.

(2) The department shall refund to the applicant the stormwater construction site storm water discharge permit application fee paid under s. NR 216.43 (2) if the department does not make a determination on the permit application within 45 business days of receipt of the information required under sub. (1). In this subsection, "business day" means any day except Saturday, Sunday and state holidays as designated in s. 230.35 (4) (a), Stats. This subsection does not apply to permit applications related to mining, as defined in s. 293.01 (9), Stats., prospecting, as defined in s. 293.01 (18), Stats., or nonmetallic mining, as defined in s. 295.11 (3), Stats.

History: CR 03-028: cr. Register July 2004 No. 583, eff. 8-1-04.

NR 216.455 Proof of permit coverage. (1) A copy of the notice of intent or other documentation that storm water discharges from the site are covered under a construction site storm water discharge permit shall be kept with building plans on the construction site and with the landowner.

(2) The permittee shall post a permit certificate in a conspicuous place on the construction site. The department shall make a permit certificate available. An authorized local program under s. NR 216.415 may make its own permit certificate or equivalent notice for posting.

History: CR 03-028: cr. Register July 2004 No. 583, eff. 8-1-04.

NR 216.456 Responsible parties. (1) The permittee or landowner required to submit a notice of intent under this subchapter is responsible for complying with this subchapter.

(2) An operator shall comply with this subchapter where the operator has a contract or other agreement with the landowner to meet the requirement.

Note: General contractors, landscape architects, project designers and inspectors are responsible for the particular services that they provide to a landowner to comply with the requirements of this subchapter.

History: CR 03-028: cr. Register July 2004 No. 583, eff. 8-1-04.

NR 216.46 Erosion control plan requirements.

(1) **SITE-SPECIFIC PLAN.** The permittee or landowner required to submit a notice of intent under this subchapter shall develop a

site-specific erosion control plan for each construction site regulated by this subchapter. The permittee or landowner required to submit a notice of intent under this subchapter, or their representative, shall implement and maintain as appropriate all best management practices specified in the erosion control plan from the start of land disturbing construction activities until final stabilization of the construction site.

(2) PERFORMANCE STANDARDS. The construction site erosion control plan shall meet the applicable performance standards in either s. NR 151.11 for construction sites that are not transportation facilities or s. NR 151.23 for transportation facility construction sites.

Note: Pursuant to s. NR 151.32 (2), the department maintains a list of technical standards that it has determined adequate and effective for designing best management practices to control erosion and sediment runoff. Contact the department storm water program in the Bureau of Watershed Management at (608) 267-7694 to obtain a copy of this list. Transportation facilities regulated under ch. Trans 401 generally have a 2-step plan development process of an erosion control plan (ECP) that contains design requirements and then development of an erosion control implementation plan (ECIP) that includes implementation details. This subchapter requires an erosion control plan that is equivalent to the ch. Trans 401 ECP and ECIP plans put together.

(3) PLAN COMPLETION. The erosion control plan shall be completed prior to the submittal of a notice of intent to the department and shall be updated as appropriate pursuant to s. NR 216.50.

(4) REQUIRED INFORMATION. The construction site erosion control plan shall include, at a minimum, the following items:

(a) Description of the construction site and the nature of the land disturbing construction activity, including representation of the limits of land disturbance on a USGS 7.5-minute series topographical map.

(b) Description of the intended sequence of major land disturbing construction activities for major portions of the construction site, such as grubbing, excavation or grading.

(c) Estimates of the total area of the construction site and the total area of the construction site that is expected to be disturbed by land disturbing construction activities.

(d) Available data describing the surface soil as well as subsoils.

(e) Wherever permanent infiltration devices will be employed or were evaluated, the depth to the nearest seasonal high ground-water elevation or top of bedrock shall be identified as outlined in s. NR 216.47 (3).

(f) Name of immediate named receiving water from the United States geological service 7.5-minute series topographic maps.

(5) SITE MAP REQUIREMENTS. Each construction site map shall include all of the following:

(a) Existing topography and drainage patterns, roads and surface waters.

(b) Boundaries of the construction site.

(c) Drainage patterns and approximate slopes anticipated after major grading activities.

(d) Areas of soil disturbance.

(e) Location of major structural and non-structural controls identified in the erosion control plan.

(f) Location of areas where stabilization practices will be employed.

(g) Areas that will be vegetated following land disturbing construction activities.

(h) Area and location of wetland acreage on the construction site and locations where storm water is discharged to a surface water or wetland within one-quarter mile downstream of the construction site.

(i) Areas used for infiltration of post-construction storm water runoff.

(j) An alphanumeric or equivalent grid overlying the entire construction site.

(6) EROSION AND SEDIMENT CONTROL BEST MANAGEMENT PRACTICES. The erosion control plan shall include a description of appropriate erosion and sediment control best management practices that will be installed and maintained at the construction site to prevent pollutants from reaching waters of the state. The erosion control plan shall clearly describe the appropriate erosion and sediment control best management practices for each major land disturbing construction activity and the timing during the period of land disturbing construction activity that the erosion and sediment control best management practices will be implemented. The description of erosion and sediment control best management practices shall include the following requirements:

(a) Description of any interim and permanent stabilization practices, including a schedule for implementing the practices. The erosion control plan shall ensure that existing vegetation is preserved where attainable and that disturbed portions of the construction site are stabilized.

(b) Description of any structural practices to divert flow away from exposed soils, store flows or otherwise limit runoff and the discharge of pollutants from the construction site. Unless otherwise specifically approved in writing, structural measures shall be installed on upland soils.

(c) Management of overland flow at all areas of the construction site, unless otherwise controlled by outfall controls.

(d) Trapping of sediment in channelized flow.

(e) Staging land disturbing construction activities to limit exposed soil areas subject to erosion.

(f) Protection of downslope drainage inlets where they occur.

(g) Minimization of tracking at all vehicle and equipment entry and exit locations of the construction site.

(h) Clean up of off-site sediment deposits.

(i) Proper disposal of building and waste material.

(j) Stabilization of drainage ways.

(k) Installation of permanent stabilization practices as soon as possible after final grading.

(L) Minimization of dust to the maximum extent practicable.

(7) MATERIAL. No solid materials, including building materials, may be discharged in violation of ch. 30 or 31, Stats., or 33 USC 1344 or an U.S. army corps of engineers section 404 permit issued under 33 USC 1344.

(8) NON-EROSIVE FLOW. Velocity dissipation devices shall be placed at discharge locations and along the length of any outfall channel as necessary to provide a non-erosive flow from the structure to a watercourse so that the natural physical and biological characteristics and functions are maintained and protected.

(9) INSPECTIONS. The landowner, or the landowner's representative, shall inspect erosion and sediment control practices weekly, and within 24 hours following a rainfall of 0.5 inches or greater. Written documentation of each inspection shall be maintained at the construction site and shall include the time, date and location of inspection, the phase of land disturbance at the construction site, person conducting the inspection, assessment of control practices, and a description of any erosion or sediment control measure installation or maintenance performed in response to the inspection.

History: CR 03-028: cr. Register July 2004 No. 583, eff. 8-1-04.

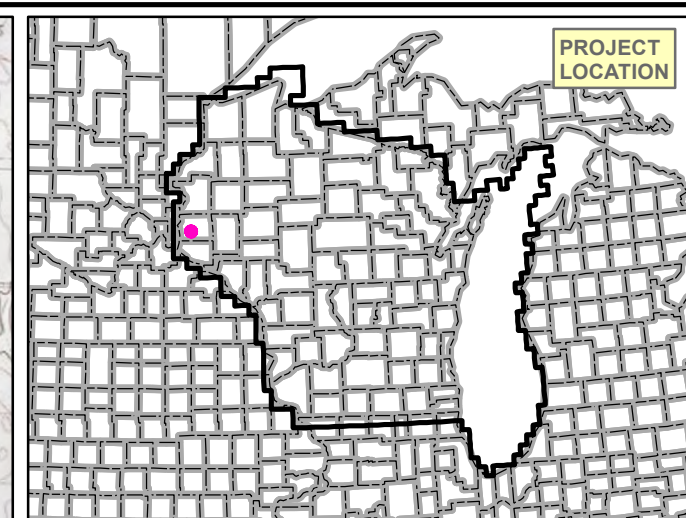
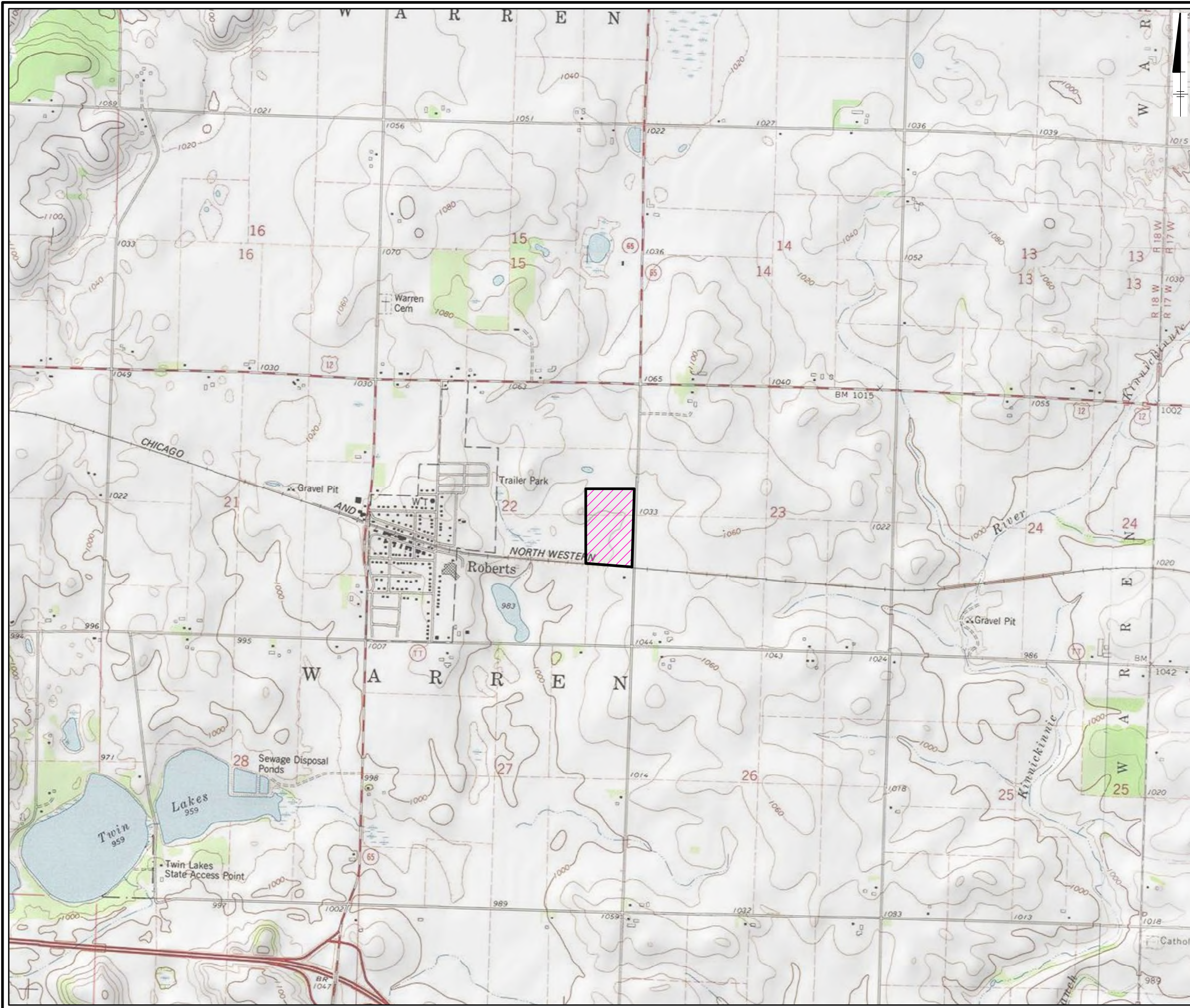
NR 216.47 Storm water management plan requirements. Pollution caused by storm water discharges from the construction site after construction is completed, including rooftops, parking lots, roadways and the maintenance of grassed areas, shall be addressed by a storm water management plan. A storm water management plan shall be developed prior to submitting a notice of intent to the department and shall comply with all of the following:

(1) PERFORMANCE STANDARDS. The storm water management plan shall meet the applicable performance standards in either s.

Appendix B

Project Location

City: CN Div/Group: EPP Created By: AGoodell Last Saved By: AGoodell
T:_ENV\NatureEnergy\Roberts\PDfs\Figure1_Topo_Location_Impact_Roberts.mxd 2/10/2022 4:53:31 PM



Legend
 Approximate Limits of Land Disturbance

0 1,000 2,000
 Feet
GRAPHIC SCALE

0 250 500
 Meters
GRAPHIC SCALE

NOTE:
1. 2013 NATIONAL GEOGRAPHIC SOCIETY

NATURE ENERGY BIOGAS US VENTURES 3, LLC
EROSION AND SEDIMENT CONTROL PLAN
ROBERTS, WISCONSIN

Project Location

ARCADIS

Attachment
B

Appendix C

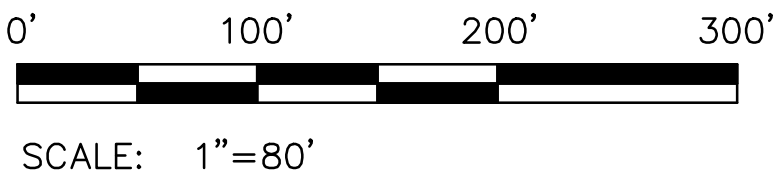
Site Plan

User:FRAMPS Spec:AUS-NC5MOD File:C:\PROJECT\30112313 NATURE ENERGY\ROBERTS\CIVIL\ES&SC\ROBERTS E&SC PLANDWG Scale:1:1 SavedDate:2/11/2022 Time:08:55 Plot Date:Ramps, Frank, 2/11/2022, 08:56 Layout:LAYOUT1



E&SC NOTES

1. CONTRACTOR TO INSTALL AGGREGATE TRACKING AREA AT THE NORTHEAST ENTRANCE TO THE SITE.
2. CONTRACTOR TO INSTALL SILT FENCE AROUND THE PERIMETER OF THE SITE PRIOR TO STARTING CONSTRUCTION ACTIVITIES.
3. CONTRACTOR TO INSTALL EROSION MATTING CLASS 1, TYPE B DOUBLE NET STRAW BLANKET OVER ALL SLOPES IN THE STORMWATER BASIN AND UPSTREAM SWALE.



LEGAL ENTITY:
ARCADIS U.S., INC.

CONSULTANTS

SEALS

NOT FOR CONSTRUCTION

NATURE ENERGY US VENTURES 2, LLC



ROBERTS, WI FACILITY

ARCADIS PROJ. NO. 30111249

0	2-14-2022	CUP REVIEW	FR
NO.	DATE	ISSUED FOR	BY

COPYRIGHT: ARCADIS U.S., INC.
2018

DATE: FEBRUARY 2022

PROJECT NO.: 30112313

FILE NAME: ROBERTS E&SC PLAN

DESIGNED BY: F. RAMPS

DRAWN BY:

CHECKED BY:

SHEET TITLE

SITE
SEDIMENT &
EROSION CONTROL
PLAN

SCALE:

ESCP

SHEET _____ OF _____

Arcadis U.S., Inc.
123 North Third Street, Suite 705
Minneapolis
Minnesota 55401
Phone: 612 339 9434
Fax: 612 336 4538
www.arcadis.com

Attachment D

Photo Log

Photograph Log

Nature Energy Roberts – Proposed Site



Photograph 1: Nature Energy Site Photo 2 2022 18 Jan



Photograph 2: Nature Energy Site Photo 2 2021 13 Sep



Photograph 3: Nature Energy Site Photo 1 2022 18 Jan



Photograph 4: Nature Energy Site Photo 1 2021 13 Sep

Attachment E

Zoning Board of Appeals Application for Variance

Date Draft Submitted _____
Date Application Submitted _____
Fee Paid _____

Application for Variance

Owner (must be the applicant) Nature Energy US Ventures 3, LLC, Louise Skott Kristensen

Parcel Address TBD 130th Street, Roberts, WI 54023

Parcel Number Portions of Parcel Nos. 176-1070-30-001 and 176-1070-40-000

Owner Address 2550 University Avenue #160, St. Paul, MN 55114 Daytime Phone (651) 319-2598

Present Use of the Property Vacant

Zoning Classification M-7 Industrial Park District

The following items must be submitted with each application. Additional site plan information as described in Section 70-325 may be required by the Zoning Administrator (Ordinance section referenced in this application are available upon request):

(1) **Map of the property showing the following:**

- Entire property
- All lot dimensions
- Existing structures with dimensions to property lines (buildings, fences, walls etc)
- Proposed structures with written dimensions to property lines
- Existing paved surfaces (driveways, walks, decks, etc)
- Proposed paved surfaces with dimensions to property lines
- Written dimensions to buildings on adjoining properties if setback variance is requested
- Zoning of adjacent parcels
- Street(s) which are adjacent to the parcel
- Graphic scale and north arrow
- Changes in land use intensity due to the variance (additional dwelling units, more customers, more parking, outside lighting, outside storage, etc)

(2) **Written description of proposed variance** answering the following questions:

Village of Roberts Ordinance Section #70-131.A cannot be entirely satisfied because:

Some operational components of the anaerobic digester and nutrient recovery facility, including some buildings, tanks, and stacks will exceed the maximum structure height identified within the M-7 Industrial Park District (35 feet) to efficiently operate and maintain compliance with state and federal air regulations. The stack heights will be designed at a height that will ensure that the facility meets National Ambient Air

Quality Standards (NAAQS) established in the Clean Air Act by the United States Environmental Protection Agency (USEPA) (40 CFR part 50) and contained in Chapter NR 404.04 (Ambient Air Quality) of the Wisconsin Administrative Code.

Additionally, the stack heights will also be designed to meet ambient concentrations for noncriteria pollutants criteria as referenced in Chapter NR 445, Wis. Adm. Code. In addition, industry standardized sizes associated with equipment within the buildings and the digesters themselves dictate the heights of said equipment and digesters.

In lieu of complying with the ordinance, the following alternative is proposed (please describe the proposal in detail):

Nature Energy is proposing to install the following items associated with the renewable natural gas production facility which exceed the 35-foot maximum structure height:

1. Five buildings with an anticipated maximum height ranging from approximately 36-feet to approximately 51-feet.
2. Six primary and two secondary digesters with an anticipated maximum height of approximately 85-feet.
3. Three storage tanks with an anticipated maximum height of approximately 47-feet.
4. Three process stacks with anticipated maximum heights of: approximately 66-100 feet (two stacks) and 197 feet (one stack). Actual stack heights are dependent upon air dispersion modeling which will be conducted during future design activities.

Please see Conditional Use Permit Attachment A, Site Plan, for additional information.

- (3) **Written justification of the requested variance** with reasons why the Applicant believes the proposed variance is appropriate. Before the Zoning Board of Appeals can grant a variance, they must find that the following criteria have been satisfied. Describe how your request meets the following criteria: (section 70-327)

What exceptional or extraordinary circumstances or special factors are present which apply only to the subject property? The response to this question shall clearly indicate how the subject property contains factors that are not present on other properties in the same zoning district.

The Village of Roberts currently does not have a renewable natural gas production facility within the Village limits. To allow for this facility to operate efficiently and in

accordance with applicable state and federal rules and regulations, select buildings, digesters, and stacks must exceed the zoning height restriction of 35 feet. The stack heights will be designed at a height that will ensure that the facility meets NAAQS for criteria pollutants established in the Clean Air Act by the USEPA (40 CFR part 50) and contained in Chapter NR 404.04 (Ambient Air Quality) of the Wisconsin Administrative Code. Additionally, the stack heights will also be designed to meet ambient concentrations for noncriteria pollutants criteria as referenced in Chapter NR 445, Wis. Adm. Code. In addition, industry standardized sizes associated with equipment within the buildings and the digesters themselves dictate the heights of said equipment and digesters.

- The hardship or difficulty shall be peculiar to the subject property and different from that of other properties and not one that affects all properties similarly. Such a hardship or difficulty shall have arisen because of the unusual shape of the original acreage parcel; unusual topography or elevation; or because the property was created before the passage of the current, applicable zoning regulations, or will not accommodate a structure of reasonable design for a permitted use if all area, yard, green space, and setback requirements are observed;
- Loss of profit or pecuniary hardship shall not, in and of itself, be grounds for a variance;
- Self-imposed hardship shall not be grounds for a variance. Reductions resulting from the sale of portions of a property reducing the remainder of said property below buildable size or cutting-off existing access to a public right-of-way or deed restrictions imposed by the owner's predecessor in title are considered to be such self-imposed hardships;
- Violations by, or variances granted to, neighboring properties shall not justify a variance;
- The alleged hardship shall not be one that would have existed in the absence of a zoning ordinance. (For example, if a lot were unbuildable because of topography in the absence of any or all setback requirements.)

In what manner do the factors identified in 1., above, prohibit the development of the subject property in a manner similar to that of other properties under the same zoning district? The response to this question shall clearly indicate how the requested variance is essential to make the subject property developable so that property rights enjoyed by the owners of similar properties can be enjoyed by the owners of the subject property.

To the Applicant's knowledge, several other properties including Harris Rebar and Northern States Power Company have been developed within the M-7 zoning district. To allow for the renewable natural gas production to operate efficiently and in accordance with applicable

state and federal rules and regulations, select buildings, digesters, and stacks must exceed the zoning height restriction of 35 feet. In addition, industry standardized sizes associated with equipment within the buildings and the digesters themselves dictate the heights of said equipment and digesters.

Would the granting of the proposed variance be of substantial detriment to adjacent properties? The response to this question shall clearly indicate how the proposed variance will have no substantial impact on adjacent properties.

The proposed variance would not be of substantial detriment to adjacent properties. 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 renewable natural gas production facility will 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 and on the west by 130th Street and across 130th Street by vacant/agricultural lands.

Would the granting of the proposed variance as depicted on the required site plan, result in a substantial or undue adverse impact on the character of the neighborhood, environmental factors, traffic factors, parking, public improvements, public property or rights-of-way, or other matters affecting the public health, safety, or general welfare, either as they now exist or as they may in the future be developed as a result of the implementation of the intent, provisions, and policies of this Chapter, the Master Plan, or any other plan, program, map, or ordinance adopted or under consideration pursuant to official notice by the Village or other governmental agency having jurisdiction to guide growth and development? The response to this question shall clearly indicate how the proposed variance will have no substantial impact on such long-range planning matters.

The proposed variance will have no substantial impact on the long-range planning matters identified above. The facility will operate in an area with other industrial activities and utilize similar truck routes as these facilities. Parking will be available onsite for visitors and employees. Details associated with odor, noise, and traffic are provided in the Conditional Use Permit memo, which this variance request was submitted as part of.

Have the factors causing the variance request been created by the act of the applicant or previous property owner or their agent (for example: previous development decisions such as building placement, floor plan, or orientation, lotting pattern, or grading) after the effective date of this Chapter. The response to this question shall clearly indicate that such factors existed prior to the effective date of this Chapter and were not created by action of the Applicant, a previous property owner, or their agent.

The factors causing the variance request are associated with the operation of a renewable natural gas production facility. Industry standardized sizes for equipment within buildings and the digesters themselves dictates the heights of said items. In turn, the equipment sizes dictate the building heights. As indicated above, state and federal rules and regulations dictate stacks sizes.

Does the proposed variance involve the regulations of Subsection 22.304 or the district use regulations in each zoning district of Section 22.700? The response to this question shall clearly indicate that the requested variance does not involve the provisions of this Subsection.

Verification by applicant: I, LOUISE SKOTT KRISTENSEN, owner for which relief is sought, certify that the application and the above information is truthful and accurate to the best of my ability.

Applicant Signature [Signature] Date 3/17/2022

Applicant Signature [Signature] Date 17.02.2022

Consideration for Approval:	Granted _____	Denied _____
		Date _____
Chairman, Village of Roberts Zoning Board of Appeals		

Attachment F

Local Approval Requirements

Roberts Local Approvals

This table includes the requirements for a Variance Application and Conditional Use Permit Application, as described in the [Municipal Code of the Village of Roberts](#). For convenience, the requirements of Site, Building, and Operations Plans are also listed. The final column describes the location of the information (Memo or Attachment), and notes if this information is preliminary or provided in a future submittal.

	Application for Variance	Conditional Use Permit	Site, Building and Operations Plan	Included in Memo or Attachment, and Notes
Planning Commission Appeals Review Application	X	X		Attachment B
Application for Variance	X			Attachment E
Legal Description		X		Memo
Project Name and Date of Plan Submittal			X	Memo
Names and addresses of the applicant, owner of the site, architect, professional engineer, and contractor		X	X	Memo
Lot, block, and recorded subdivision or by metes and bounds		X		Memo
Address of the subject site		X		Memo
Type of structure		X		Memo
Proposed operation or use of the structure or site		X		Memo
Number of employees		X		Memo
Zoning district within which the subject site is located		X		Memo
Map / Site Plan (Showing entire property with graphic scale and north arrow)	X	X	X	Attachment A
All lot dimensions	X	X	X	Attachment A
Existing structures with size, location, and spatial arrangement, and dimensions to property lines (buildings, fences, walls etc)	X	X		Attachment A

Proposed structures with size, location, and spatial arrangement, and written dimensions to property lines	X	X	X	Attachment A
Existing paved surfaces (driveways, walks, decks, etc)	X	X		Attachment A
Proposed paved surfaces with dimensions to property lines	X	X		Attachment A
Street(s) which are adjacent to the parcel	X	X		Attachment A
Written dimensions to buildings on adjoining properties if setback variance is requested	X			N/A
Zoning of adjacent parcels	X			Attachment A
Changes in land use intensity due to the variance (additional dwelling units, more customers, more parking, outside lighting, outside storage, etc)	X			Attachment E
Elevations or contours of the ground at two-foot intervals		X	X	Attachment A
Proposed changes in topography			X	Attachment A
Characteristics of soils related to contemplated uses			X	Attachment C
Fill or storage elevations		X		Attachment A
First-floor elevations of structures		X		Attachment A
Size, location, and spatial arrangement of all existing and proposed structures on the site		X		Attachment A
Location and elevation of streets, water supply, and sanitary facilities		X		Attachment A
Photographs showing existing land uses and vegetation upstream and downstream		X		Attachment D
Mean and historic high-water lines and floodlands on or within 40 feet of the subject premises and existing and proposed landscaping		X		Attachment G

Existing and proposed easements, streets, and other public ways	X		Attachment A
Existing and proposed off-street parking, loading areas, and driveways	X	X	Attachment A
Storage areas		X	Attachment A
Existing and proposed street, side, and rear yards	X		Attachment A
Locations, elevations, and uses of any abutting lands and their structures within 40 feet of the subject site	X		Memo & Attachment A
Erosion control and grading plan as may be required by state, county, or village regulation	X		Attachment C
Primary building materials used in construction of all structures		X	Attachment A
Height of building		X	Attachment A & Attachment E
Location and size of existing and proposed sanitary sewers, septic tanks and disposal fields, holding tanks, storm sewers, and water mains		X	Attachment A (Preliminary)
Location, size and capacity of proposed stormwater detention/retention areas		X	Attachment A (Preliminary)
Location of proposed solid waste (refuse) storage area.		X	Locations will be identified during Building Permit Process
Location of pedestrian sidewalks and walkways.		X	Locations will be identified during Building Permit Process
Existing and proposed public right-of-way widths.		X	Attachment A
Existing and proposed street names.		X	Attachment A
Location, type, height and intensity of proposed lighting.		X	Attachment A - Locations will be identified during

		Building Permit Process
Location of existing trees and extent, and type of proposed plantings including type and extent of erosion control.	X	Attachment A & Attachment C - Locations will be finalized during Building Permit Process
A graphic delineation of any planned development staging.	X	Staging will be identified during Building Permit Process
Architectural plans, elevations, and perspective drawings and sketches illustrating the design and character of proposed structures.	X	Attachment F
Any other site or use information, such as 100-year internal flood lines, which will assist the plan commission in making a determination and recommendation on the proposal.	X	Attachment G
Operational Plan	X	Formal plan will be identified during Building Permit Process
Specific use of site and buildings.	X	Memo
Hours of operations.	X	Memo
Number of full- and part-time employees.	X	Memo & Attachment A
Estimate of daily truck and auto trips to the site.	X	Memo
Type of materials and equipment to be stored on-site.	X	Memo
Method of handling solid and liquid waste disposal.	X	Method will be identified during Building Permit Process
Method of exterior maintenance (site and buildings).	X	Method will be identified during

		Building Permit Process
Method of site and building security other than local police.	X	Method will be identified during Building Permit Process
Copies of all special use permits issued by state or county agencies.	X	Copies will be provided when received

Attachment G

Federal Emergency Management Agency Map

drainage sources of small size. The community map repository address is provided for additional flood hazard information.

To obtain more detailed information in areas where **Base Flood Elevations (BFEs)** and/or **floodways** have been determined, users are encouraged to consult the Flood Profiles and Floodway Data and/or Summary of Stillwater Elevations tables contained within the Flood Insurance Study (FIS) report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS report should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

Coastal Base Flood Elevations shown on this map apply only landward of 0.0 North American Vertical Datum of 1988 (NAVD 88). Users of this FIRM should be aware that coastal flood elevations are also provided in the Summary of Stillwater Elevations table in the Flood Insurance Study report for this jurisdiction. Elevations shown in the Summary of Stillwater Elevations table should be used for construction and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.

Boundaries of the **floodways** were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by flood control structures. Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study report for information on flood control structures for this jurisdiction.

The projection used in the preparation of this map was Universal Transverse Mercator (UTM) zone 15. The horizontal datum was NAD83, GRS1980 spheroid. Differences in datum, spheroid, projection or UTM zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.

Flood elevations on this map are referenced to the North American Vertical Datum of 1988. These flood elevations must be compared to structure and ground elevations (referenced to the same vertical datum). For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at <http://www.ngs.noaa.gov/> or contact the National Geodetic Survey at the following address:

NGS Information Services
NOAA, NNGS12
National Geodetic Survey
SSMNC-3, #9202
1315 East-West Highway
Silver Spring, MD 20910-3282

To obtain current elevation, description, and/or location information for **bench marks** shown on this map, please contact the Information Services Branch of the National Geodetic Survey at (301) 713-3242, or visit its website at <http://www.ngs.noaa.gov/>.

Base map information shown on this FIRM was derived from the National Agriculture Imagery Program's (NAIP) digital orthoimagery produced by the USDA, Farm Service Agency at a resolution of 1 meter and collected during the summer of 2005.

This map reflects more detailed and up-to-date **stream channel configurations** than those shown on the previous FIRM for this jurisdiction. The floodplains and floodways that were transferred from the previous FIRM may have been adjusted to conform to these new stream channel configurations. As a result, the Flood Profiles and Floodway Data tables in the Flood Insurance Study report (which contains authoritative hydraulic data) may reflect stream channel distances that differ from what is shown on this map.

Corporate limits shown on this map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limit locations.

Please refer to the separately printed **Map Index** for an overview map of the county showing the layout of map panels, community map repository addresses, and a Listing of Communities table containing National Flood Insurance Program dates for each community as well as a listing of the panels on which each community is located.

Contact the **FEMA Map Service Center** at 1-800-358-9616 for information on available products associated with this FIRM. Available products may include previously issued Letters of Map Change, a Flood Insurance Study report, and/or digital versions of this map. The FEMA Map Service Center may also be reached by Fax at 1-800-358-9620 and its website at <http://www.msc.fema.gov/>.

If you have **questions about this map** or questions concerning the National Flood Insurance Program in general, please call 1-877-FEMA-MAP (1-877-336-2627) or visit the FEMA website at <http://www.fema.gov/>.

ST. CROIX COUNTY
UNINCORPORATED AREAS
555578

VILLAGE OF ROBERTS
550078
ST. CROIX COUNTY
UNINCORPORATED AREAS
555578

NOTE: MAP AREA SHOWN ON THIS PANEL IS LOCATED
WITHIN TOWNSHIP 28 NORTH, RANGE 18 WEST AND
TOWNSHIP 29 NORTH, RANGE 18 WEST.

ST. CROIX COUNTY
UNINCORPORATED AREAS
555578

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zone A, AE, AH, AD, AR, A99, V and VE. The base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

ZONE A No Base Flood Elevations determined.
ZONE AE Base Flood Elevations determined.
ZONE AH Flood depths of 1 to 3 feet (usually areas of pending); Base Flood Elevations determined.
ZONE AD Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
ZONE AR Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently determined to be ineffective. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
ZONE A99 Area to be protected from 1% annual chance flood by a federal flood protection system under construction; no Base Flood Elevations determined.
ZONE V Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
ZONE VE Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE X Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

ZONE X Areas determined to be outside the 0.2% annual chance floodplain.
ZONE D Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

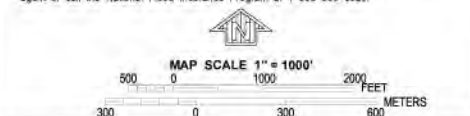
1% annual chance floodplain boundary
0.2% annual chance floodplain boundary
Floodway boundary
Zone D boundary
CBRS and OPA boundary
Boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities
Base Flood Elevation line and value; elevation in feet
Base Flood Elevation value where uniform within zone; elevation in feet

* Referenced to the North American Vertical Datum of 1988 (NAVD 88)

A **A** Cross section line
23 **23** Transect line
97°10'30", 32°22'30" Geographic coordinates referenced to the North American Datum of 1983 (NAD 83)
1000-meter Universal Transverse Mercator grid ticks, zone 15
5000-foot grid ticks: Wisconsin State Plane coordinate system, central zone (FIPSZONE 4802), Lambert Conformal Conic
DX5510 Bench mark (see explanation in Notes to Users section of the FIRM panel)
M1.5 River Mile
MAP REPOSITORIES
Refer to Map Repositories list on Map Index
EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP
March 16, 2006
EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-836-9620.



NFIP PANEL 0360E

FIRM
FLOOD INSURANCE RATE MAP
ST. CROIX COUNTY,
WISCONSIN
AND INCORPORATED AREAS

PANEL 360 OF 595
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
ST. CROIX COUNTY	555578	0360	E
ROBERTS VILLAGE OF	550078	0360	E

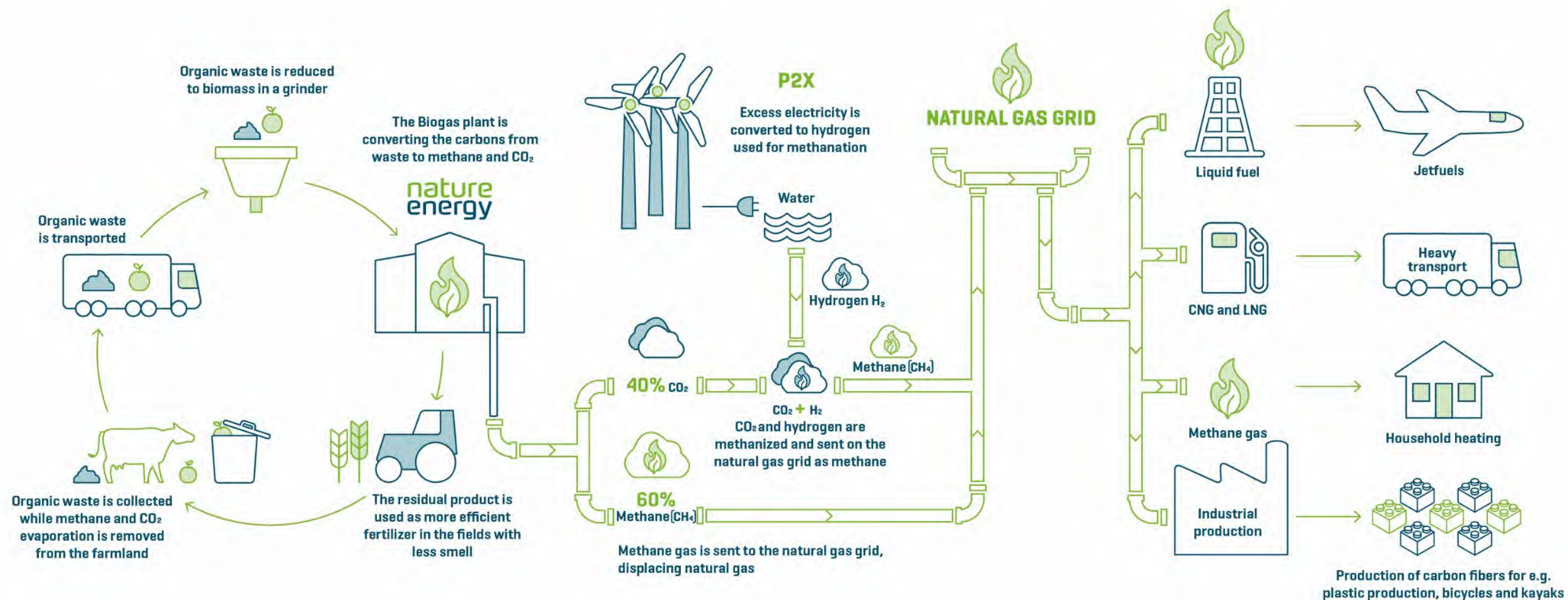
Notice to User: The Map Number shown below should be used when placing map orders. The Community Number shown above should be used on insurance applications for the subject community.

MAP NUMBER
55109C0360E
EFFECTIVE DATE
JANUARY 18, 2006

Attachment H

General Process Flow Diagram

Nature Energy General Process Flow Diagram



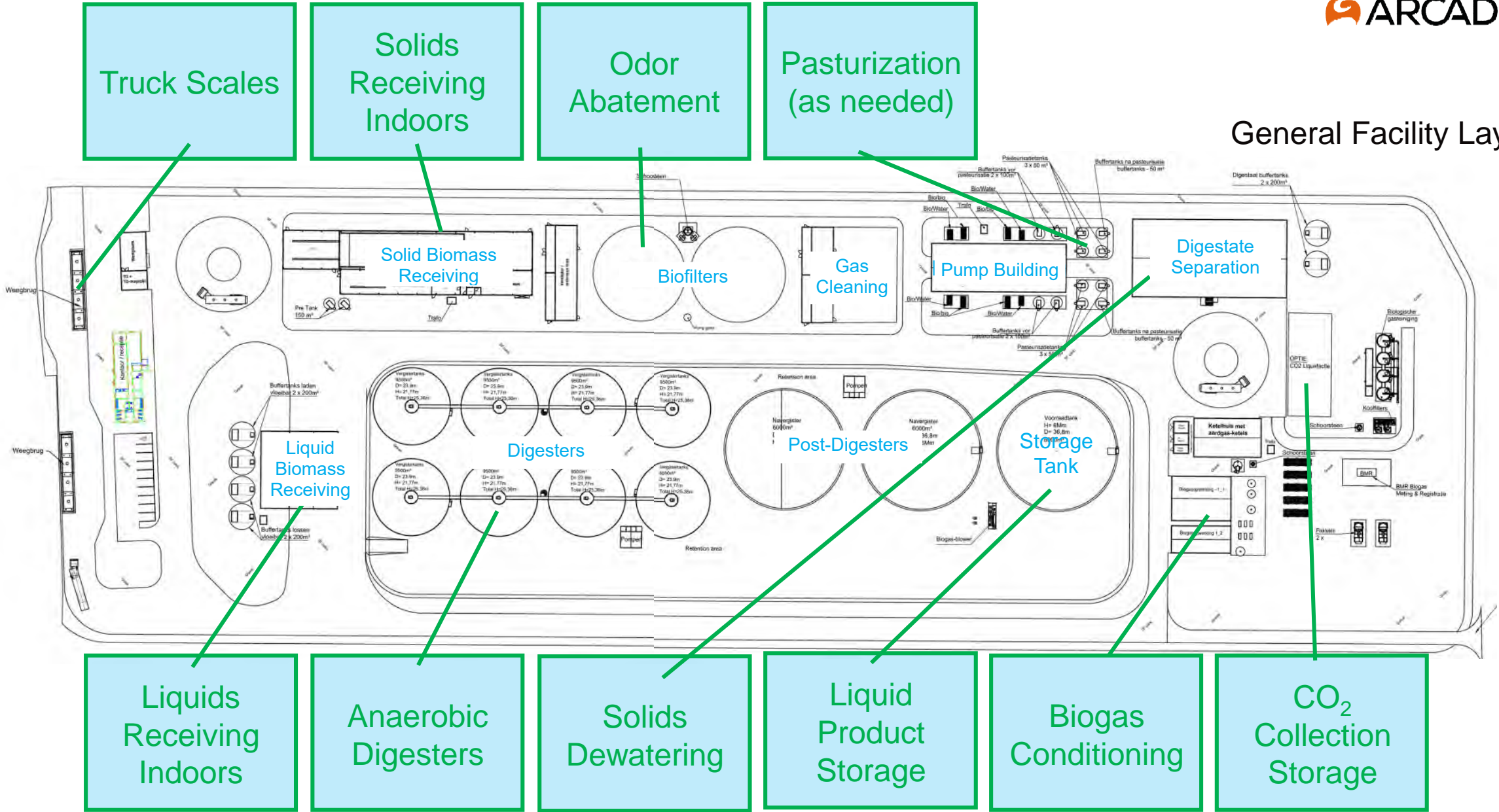
Attachment I

General Process Layout

Nature Energy – General Process Overview



General Facility Layout



Attachment J

Noise Study



Environmental measurement

External noise

Report no. 21.74
Nature Energy Kværs

NATURE ENERGY CRUSH

NOVEMBER 23, 2021

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Summary

Client

Nature Energy A / S
Ørbækvej 260
5220 Odense SØ

Measurement site

Nature Energy Kværs A / S
Felstedvej 35C
Cross
6300 Gråsten

Measuring company

NIRAS A / S
Ceres Allé 3
8000 Aarhus C

Report Date: December 6, 2021

Report No. 21.74

Result summary

Nature Energy A / S has asked NIRAS to calculate the external noise contribution from a new biogas plant south of Kværs.

This report deals with updated calculations for the operational phase. In relation to report no. 21.59 of 6 June 2021, adjustments have been made to the course of the access road as well as adjustments to the traffic during the night period.

The main results, expressed by the resulting equivalent corrected sound pressure level L_r [dB (A) re. 20 μ Pa], is intended for (compared to the noise conditions in the company's environmental approval):

Table 1.1: Calculated noise contribution L_r in dB (A). The maximum noise contribution in the night period is indicated in parentheses and the noise limit for this in the night period.

Calculation point	Address	Resulting Noise contribution, Lr			Terms	Expand it	
		[dB (A)]					uncertainty
		Day	Evening Night (Lmax) Day / Evening / Night (Lmax)				
1	Avntoftvej 2	38	38	37 (39) 55/45/40 (55)		3/3/3	
2	Limbækvej 1	29	28	27 (34)	55/45/40 (55)		
3	Avntoftvej 9	40	39	38 (47)	55/45/40 (55)		
4	Avntoftvej 5	33	33	30 (39)	55/45/40 (55)		
5	Avntoftvej 3	35	34	31 (40)	55/45/40 (55)		
6	Avntoftvej 1	34	33	30 (36)	55/45/40 (55)		
7	Felstedvej 35	41	40	36 (50)	55/45/40 (55)		
8	Snurom 26	40	39	35 (50)	45/40/35 (50)		

The uncertainty of the calculations is estimated at 3 dB.

However, the uncertainty has not been used in the assessments of whether the noise limits can be complied with, as this is a planning situation, and it is normal practice in such situations that the noise limits must be complied with without the uncertainty being deducted.

No noise contribution is stated for Saturdays, as well as Sundays and public holidays.

The noise contribution during the weekend period is less than the noise contribution on weekdays, as the same amount of driving does not occur. Saturday until 14 there may be the same amount of driving as on weekdays. As the noise contribution in the day period on weekdays is less than the noise limit value for the day period in the weekend (45 dB (A)), the noise limits can therefore also be complied with in the weekend.

The maximum noise contribution at night (L_{max}) originates primarily from traffic and is calculated net to max. 50 dB (A) at all calculation points. The noise limit for maximum contribution during the night period of 50 or 55 dB (A) is thus complied with. The maximum noise contribution comes from the truck, as it enters the site via the access road.

Conclusion

The company complies with the noise limits at all calculation points.

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 Tel: 27 61 88 49

Project no. : 10403522

Version 1.0

Revision 2

Prepared by AES / HKD

Controlled by HKD

Approved by LWE

1. Introduction

This report is an update of report no. 21.59 of 6 June 2021 and deals with the noise contribution from the operation of the biogas plant Nature Energy Kværs. The calculation must document compliance with the noise limit values at neighbors at maximum operation at the detailed projected system.

In relation to report 21.59, there have been adjustments to the alignment of the access road in relation to what was previously planned. The access road was basically located within the boundaries of the local plan area with a alignment distributed on the 2 possible land registers. As part of a possible expropriation, it has been investigated whether it is possible to obtain a voluntary agreement on the transfer of land to the access road. This investigation has resulted in owner-A, who owns the southern cadastre, having entered into an agreement to cede land for the location of the access road, where owner-B, who owns the northern cadastre, has not wanted to sell area for the access road.

As it has not been possible to reach a voluntary agreement with both owners, a new detailed design of the access road has been made, so that this is exclusively located on the area belonging to owner-A. The detailed design shows that it is possible to place the access road so that it is kept on the southern land register and within the boundaries of the local plan area. It is therefore not a necessity to expropriate parts of the northern equal cadastre belonging to owner-B.

This report thus deals with the calculation of the external noise contribution from operation of the company after the plant is completed with the new detailed design of the access road, ie. where the line source for noise from transport on the access road is changed. In addition, an adjustment has been made to the number of vehicles during the night period, cf. section 5.1.

The changed access route is shown in **Appendix 1: Situation plan** and **Appendix 2: Situation plan for model**.

2 Noise conditions

The noise condition is cf. the company's environmental approval of 30 September 2021:

6. STØJ

- 6.1. Virksomhedens eksterne støjbelastning må ikke overstige nedenstående værdier. De angivne værdier for støjbelastningen er de ækvivalente, korrigerede lydniveauer i dB(A).

- I. Ved enkeltboliger i det åbne land.
II. Ved boligområde i Kværs (kommuneplanens rammeområde 7.4.011B), samt ved beboelse uden landbrugspligt i Snur-Om.

	Kl.	Reference-tidsrum (timer)	I dB(A)	II dB(A)
Mandag-fredag	07-18	8	55	45
Lørdag	07-14	7	55	45
Lørdag	14-18	4	45	40
Søn- og helligdage	07-18	8	45	40
Alle dage	18-22	1	45	40
Alle dage	22-07	0,5	40	35
Spidsværdi	22-07	-	55	50

I landzone skal støjgrænserne overholdes ved boligen eller på udenørs opholdsarealer i op til 15 meters afstand fra boligen. Hvor skelgrænsen er nærmere end 15 meter fra boligen, skal støjgrænserne overholdes i skel.

8 calculation points have been selected, which represent the most noisy points on the surrounding properties (housing in the open country and Snur-Om).

Calculation point	Address	Area type	Terms dB (A) Day / evening / night
1	Avntoftvej 2	3	55/45/40
2	Limbækvej 1	3	55/45/40
3	Avntoftvej 9	3	55/45/40
4	Avntoftvej 5	3	55/45/40
5	Avntoftvej 3	3	55/45/40
6	Avntoftvej 1	3	55/45/40
7	Felstedvej 35	3	55/45/40
8	Snurum 26	5	45/40/35

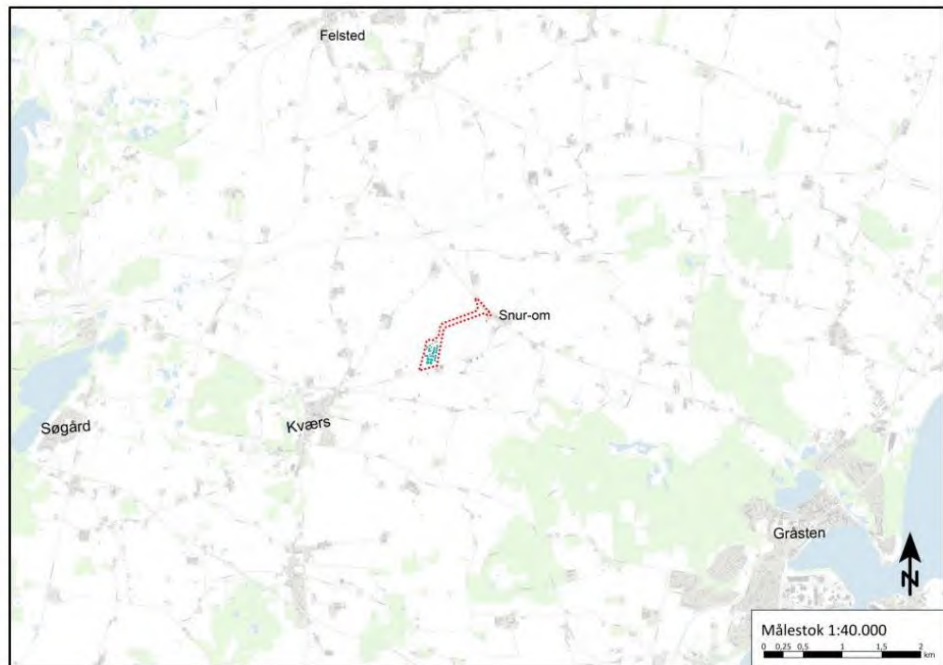
The points are located 1.5 m above ground in outdoor living areas. The location of the selected reference points is shown in **Appendix 2: Situation plan for model**.

3 Existing conditions

3.1 The company

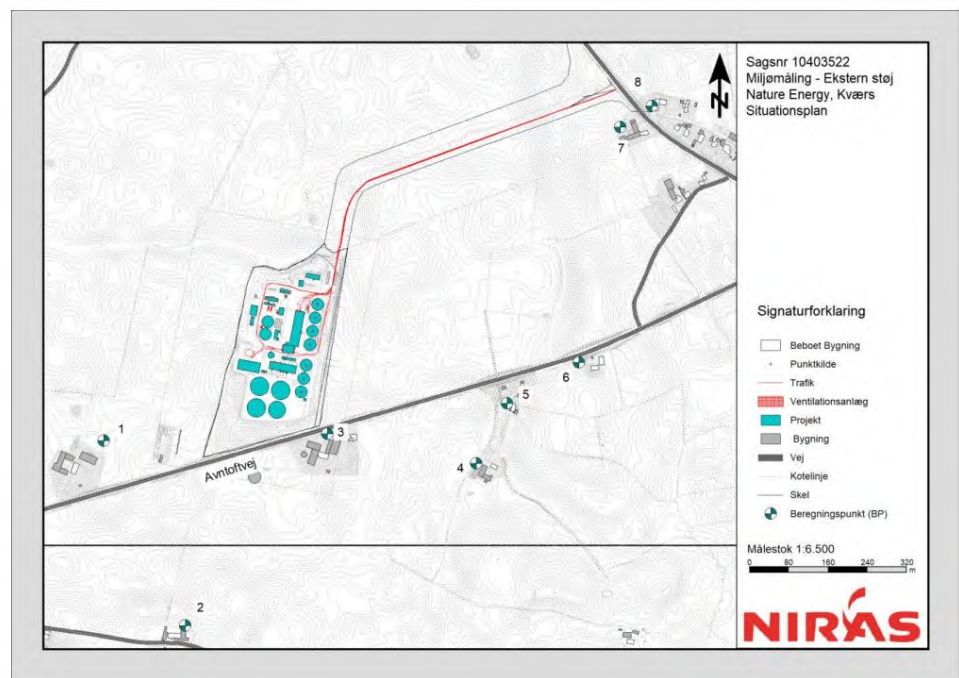
The project area is located approx. 1,250 m east of Kværs and approx. 850 m southwest of the village Snur-Om, in the southeastern part of Southern Jutland (**Figure 3.1**).

Figure 3.1: Shows the location of the planned facility (red dotted line) in the local area.



There is currently no completed facility on the site (**Figure 3.2**). The final location of the road access is shown in **Figure 3.3**.

Figure 3.2: Shows the cadastre with the project area, indicated by a red dotted line.



Page 8 of 25

A situation plan of the planned facility can be seen in **Figure 5.1** and **Appendix 1: Situation plan**.

Liquid raw materials in the form of manure are received by tankers and unloaded in a closed loading hall. Delivery of degassed biomass takes place at the same place, and takes place in the same process as well as to the same tanker as used for the delivery of manure. Thus, as a general rule, empty driving with own tankers is avoided.

The solid biomass and the liquid industrial biomass are fed into vehicles that cannot be used to export degassed biomass. There is therefore a need for extra clay with the delivery of degassed biomass. These will be as empty runs.

Definition: 1 transport = 1 exit and 1 entrance.

From a computational point of view, one transport (route) may well have been divided into several sub-sources (sub-routes). In these calculations, the delivery of manure is thus divided into two separate ones sources, which overall represent a transport route on the site's area - ie one for the entrance to the loading hall and one from the loading hall for the exit. Where the other transport routes are gathered in one source starting from driveway to exit.

In addition, there will be an average transport of 10 passenger cars per day. day.

3.2 Calculation points

8 points have been selected for the nearest neighboring dwellings in the open country and for the nearest dwelling in Snur-Om, where the noise contribution has been calculated. The location of the calculation points is shown in the overview plan in **Appendix 2: Situation plan for model**, numbered 1-8. The points are located 1.5 m above local terrain and 15 m from facades when living in dwellings in open country, cf. normal practice and at boundaries for dwellings in Snur.

About.

3.3 Existing noise conditions

Noise sources in open rural areas mainly include traffic, including transport to and from agricultural properties and the associated application areas. The operation of agricultural properties can also give rise to noise of a local nature in connection with the daily work and driving on the individual property.

4 Certification

NIRAS A / S is approved by the Danish Environmental Protection Agency to perform "ENVIRONMENTAL MEASUREMENT - EXTERNAL NOISE".

Measurements and calculations have been carried out in accordance with the Danish Environmental Protection Agency's guideline no. 5/1984 on external noise from companies and no. 5/1993 on calculation of external noise from companies.

When interpreting whether noise conditions have been complied with, the point calculations must be used, as the noise maps are only informative and used in connection with the location of the reference points. Noise maps are not covered by the certified measurement, as they have been obtained by interpolation between calculation points in a grid of 5 * 5 m.

5 Operating phase

5.1 Noise sources

The calculations are based on noise measurements on noise sources made at other of Nature Energy's plants as well as experience figures from similar plants. Source strengths from these measurements have been used in the calculations of the expected noise from the planned plant, as these are the same noise sources / components used on the various biogas plants belonging to Nature Energy.

Figure 5.1 shows the situation plan for the planned facility.

Figure 5.1: Situation plan for facility

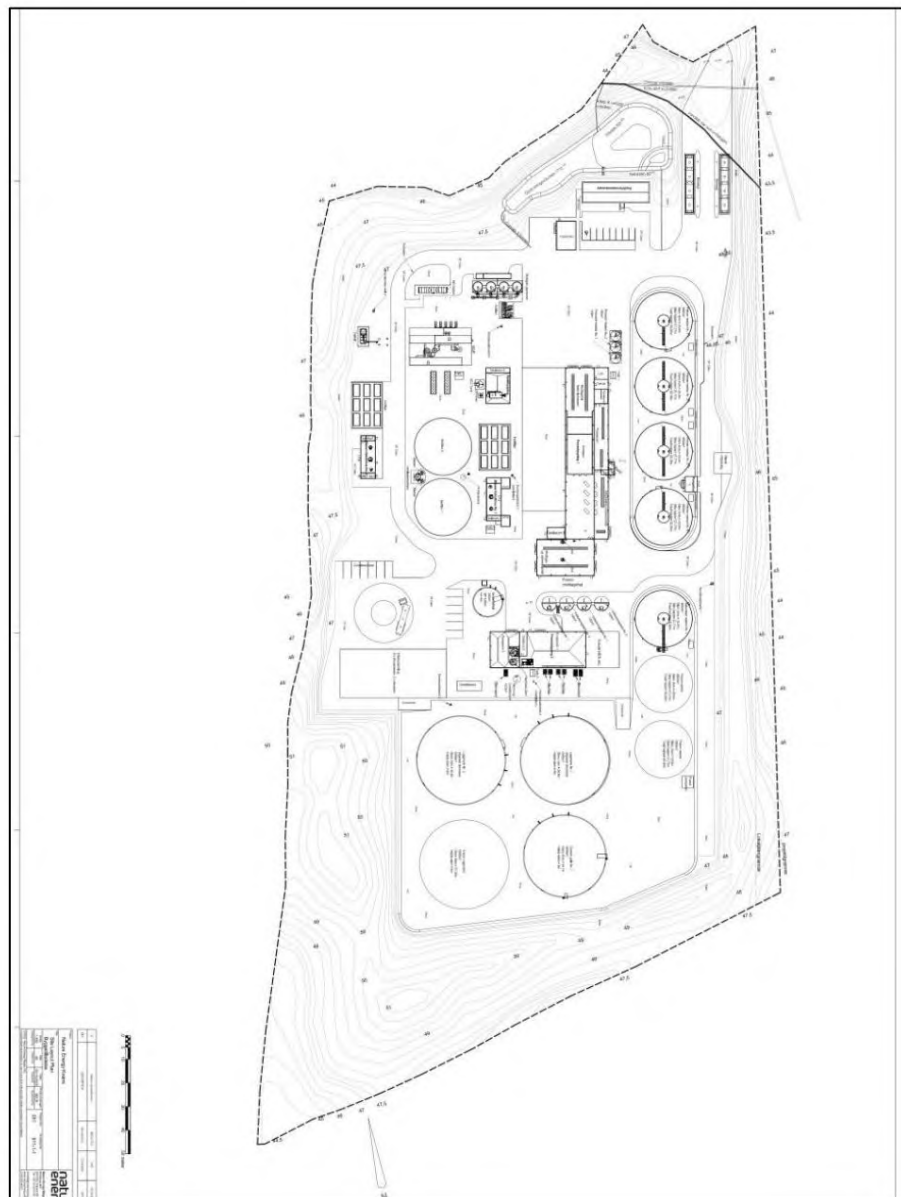
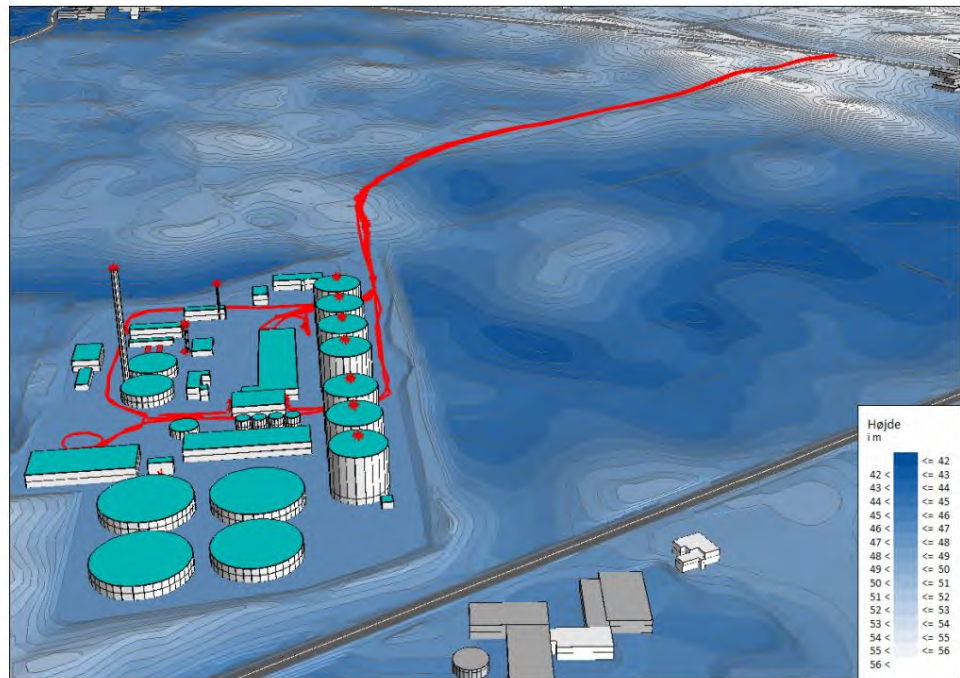


Figure 5.2 shows the model of the planned system, seen from the south, as it looks in SoundPLAN. Noise sources are indicated by red stars, lines and surfaces.

Figure 5.2: Shows the SoundPLAN model above the system, including sources marked in red stars, surface areas and lines for point sources, area sources (ventilation) and drive seals with trucks (lines), respectively.



The following source strengths have been used in the calculations:

Table 5.1: Source strengths station near noise sources

Noise source	Source strength LWA [dB (A)]	Height [m]
Closed gates - unloading / technical installations etc. (8 pcs.)	81.6	3.0
Stirrer, process tanks (7 pcs.)	83.7	25.5
Gas upgrade system (3 pcs.)	85.7 / 78.2 / 78.2	2.5 / 3.0 / 3.0
Chimney biofilter (1 pc.)	90.0	60.5 (top of Shoe stone + 0.5 m)
Chimney gas upgrade (1 pc.)	90.0	20.5 (top of Shoe stone + 0.5 m)
Boiler chimney (1 pc.)	80.0	16.5 (top of Shoe stone + 0.5 m)
Fan before the boiler chimney (1 pc.)	83.1	1.5
Fan before biofilter (2 pcs.)	80.6	0.5
Refrigeration system (2 pcs.)	97.0	1.5
Gas blower	80.9	0.5

All stationary noise sources can be in operation around the clock.

There will also be a number of minor noise sources on the plant (pumps, fans, air intakes, etc.). These sources typically have a lower source strength, place is quite low and often shielded from the surroundings. These sources are therefore considered to be of no significance for the total noise contribution.

The location of the noise sources is shown in **Figure 5.2** and **Appendix 2: Situation plan for mo share.**

For the associated traffic, standard truck data from the Noise Data Port has been used. The following source strengths have been used:

Table 5.2: Source forces drive clothing

Source	Source strength LWA [dB (A)]	Source type	Kildedi opinions	Corrected source strength L'W [dB (A)]	Remark
Truck, idle - bridge weight	90.8	Point	REACH	REACH	Truck, Noise Data Book
Reading, outdoors	95.8				Truck forced empty aisle, Noise data book
Driving with a carriage	100.7	Line	Delivery of slurry - 900 m	74.8 (ind), 73.6 (out)	Truck, Noise Data Book Manure delivery has two corrected source strengths as it is divided into two separate line sources, in and out. All Trucks run with 4 m / s (approx. 15 km / h)
			Delivery of Plantebio lot - 1.366 m	69.3	

There will be most traffic during the day on weekdays, but there will also be activity in the evening and night and on weekends. Here the intensity will be less, cf. below.

There will be an average traffic of approx. 96 vehicles per days at full expansion of the plant, corresponding to approx. 7 pr. hour on average in the normal opening hours from kl. 6 - 20. (1 transport equals 1 approach and 1 exit). The transport varies over the year and around the clock, to and from the facility. The noise calculations have therefore been made on the basis of a worst case situation, where several vehicles may arrive in a few days or periods.

To ensure a certain degree of spaciousness, including variations in traffic from day to day, the following traffic on weekdays has been taken into account in the calculations:

Route	Number of transports per hour		
	Day (07-18)	Evening (18-22)	Night (22-07)
Delivery of slurry	7-8	8	3 *
Delivery of pumpable outdoors	1	0	0
Delivery of non-pumpable	3	0	0
Pickup from screw press	1	0	0
Total	12-13	8	3

* Adjusted from 6 to 3 pcs. transporter. (3 transports provide space for 3 entrances and 3 exits every hour = 6 exits on the access road).

The following remarks must be made to the above:

During the day period (7-18) there can be up to approx. 100 (8 * 12-13) transports within a reference period for the day period of 8 hours, 8 per. hour. Within the reference period of 1 hour in the evening period (18-22) and 3 transports per. hour during the night period corresponding to 1.5 transports (3 runs on the access road) in the reference time space of ½ hour during the night period (22-07), provided that the 3 transports comes evenly distributed over 1 hour. Please note that each transport counts for both an inbound and outbound journey so that the number of journeys on the access road is double the number of transports.

All cars can idle on the bridge weight for 1 minute. Both entry and exit have been taken into account.

Delivery of manure is recorded as 2 routes per. transport. One for drive to port (full), and one subsequent drive out of port (empty). Delivery of pumpable outdoors and non-pumpable indoors is calculated as the entire route, ie from entrance to exit (approach and exit = 1 transport). The figures for bridge weight indicate the total number of entrances and exits (weigh-in and weigh-out). Unloading of pumpable biomass outdoors takes approx. 30 minutes per. lorry.

The number of cars with slurry is adjusted from 6 pcs. for 3 pcs. transports in the night period per. hour compared to the previous calculation.

1 Transport = 1 driveway + 1 exit.

When, for example, there are 3 transports per. hour, this means that there can be 3 entrances and 3 exits per. hour, but it can also be 6 entrances or 6 exits, it simply means that the number of exits on the access road regardless of direction must be a maximum of 6 per hour. hour.

Noise during the night period is calculated as an average over ½ hour, which is why the specified number of transports per. hour at night must be evenly distributed so that eg 3 transports per. hour, which is 6 runs on the access road must be distributed with 3 runs per. ½ time.

The company's operations can be adapted to the conditions used for driving during the night period, where there is a maximum of 6 journeys on the access road, trucks leave every morning after filling, after which it takes a relatively long time before they return, which is why 6 runs on the access road per. hour in the noise calculation is considered to be adequate for maximum traffic during the night period.

Traffic with passenger cars is assessed to be of no significance in relation to the external noise contribution.

5.2 Measurement and calculation methods

The calculations performed have been performed in accordance with the Danish Environmental Protection Agency's guideline 5/93 using the General Prediction Method 2019.

The program SoundPLAN v. 8.2 has been used for the calculations. Update: 22-03-2021, where maps with scale conditions, buildings, screens, reflective objects, terrain, reference points and source data are entered / digitized, after which SoundPLAN calculates the noise in the selected points in accordance with the common Nordic calculation method for industrial noise.

Elevation conditions etc. for the area are retrieved in digital form, from Kortforsyningen's home page, and included in SoundPLAN.

The elevation conditions have been adjusted around the plant to reflect the future elevations for the plant.

5.3 Sound propagation conditions

The project area is primarily acoustically hard.

The area outside the project area is primarily acoustically porous.

Buildings will to a certain extent act as noise shielding for certain noise sources in the various calculation points.

5.4 Tones and impulses

No clearly audible tones or impulses are expected from any of the noise sources (subjective assessment based on experience from similar systems). Thus, no basis is considered for providing surcharges for either impulses or clearly audible tones in the noise.

5.5 Results

The following equivalent corrected noise contribution from the plant has been calculated [dB (A)]. Lmax is indicated in parentheses, which is the maximum noise contribution during the night period (not corrected for operating time) and the noise limit for this during the night period:

Table 5.3: Calculated noise contribution Lr in dB (A)

Calculation point	Address	Resulting Noise contribution, Lr			Terms	Extended uncertainty
		[dB (A)]				
		Day	Of ten	Nat (Lmax)	Day / Evening / Night (Lmax)	
1	Avntoftvej 2	38	38	37 (39) 55/45/40 (55)		3/3/3
2	Limbækvej 1	29	28	27 (34) 55/45/40 (55)		
3	Avntoftvej 9	40	39	38 (47) 55/45/40 (55)		
4	Avntoftvej 5	33	33	30 (39) 55/45/40 (55)		
5	Avntoftvej 3	35	34	31 (40) 55/45/40 (55)		
6	Avntoftvej 1	34	33	30 (36) 55/45/40 (55)		
7	Felstedvej 35	41	40	36 (50) 55/45/40 (55)		
8	Snurom 26	40	39	35 (50) 45/40/35 (50)		

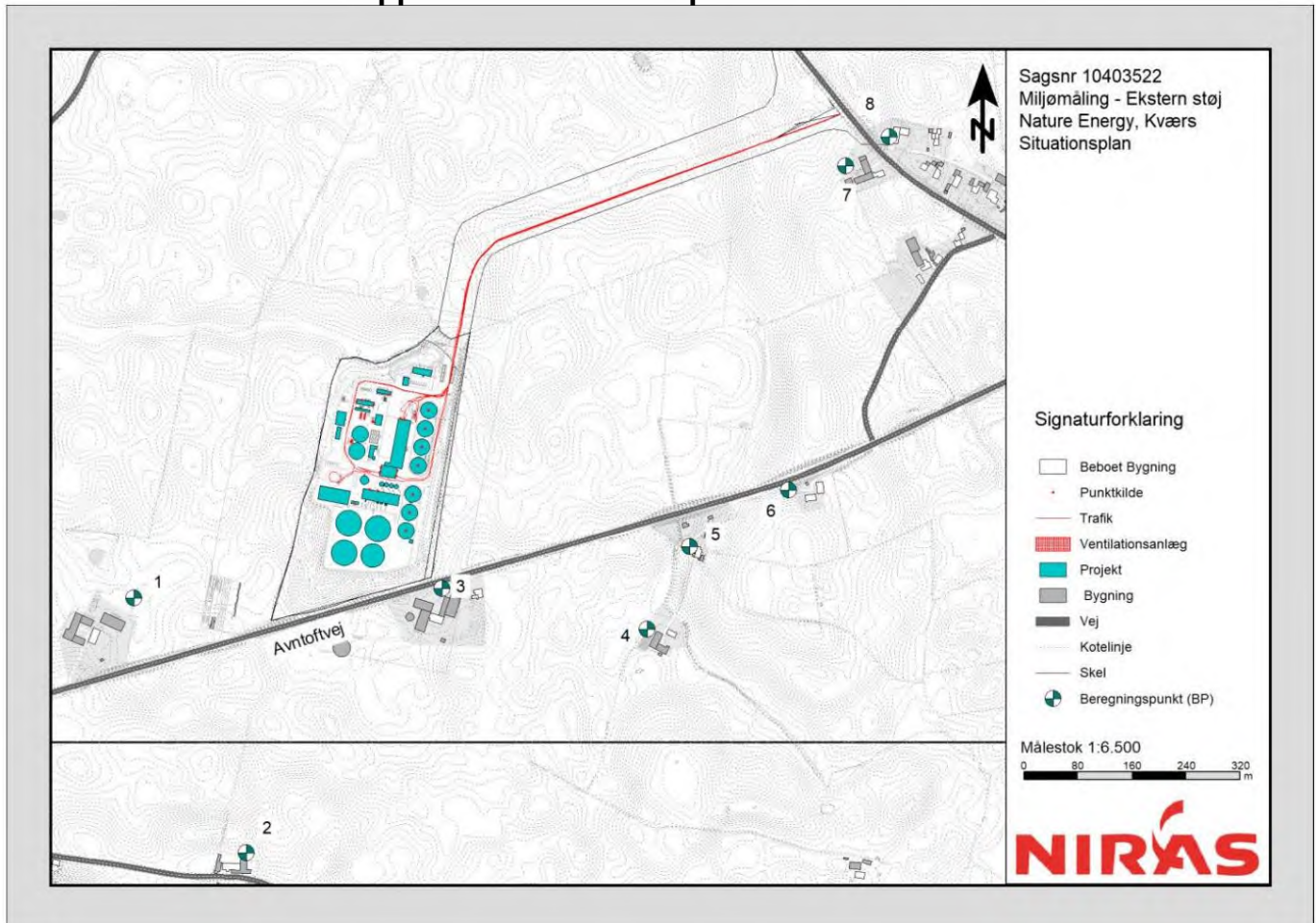
Noise maps for the operating phase during the day, evening and night period can be seen in Appendix 3: External noise - operation during the day period, Appendix 4: External noise - operation during the evening period and Appendix 5: External noise - operation during the night period. The noise maps are not covered by the certified measurement, as they were obtained by interpolation by point calculations in a grid of 5 * 5 m.

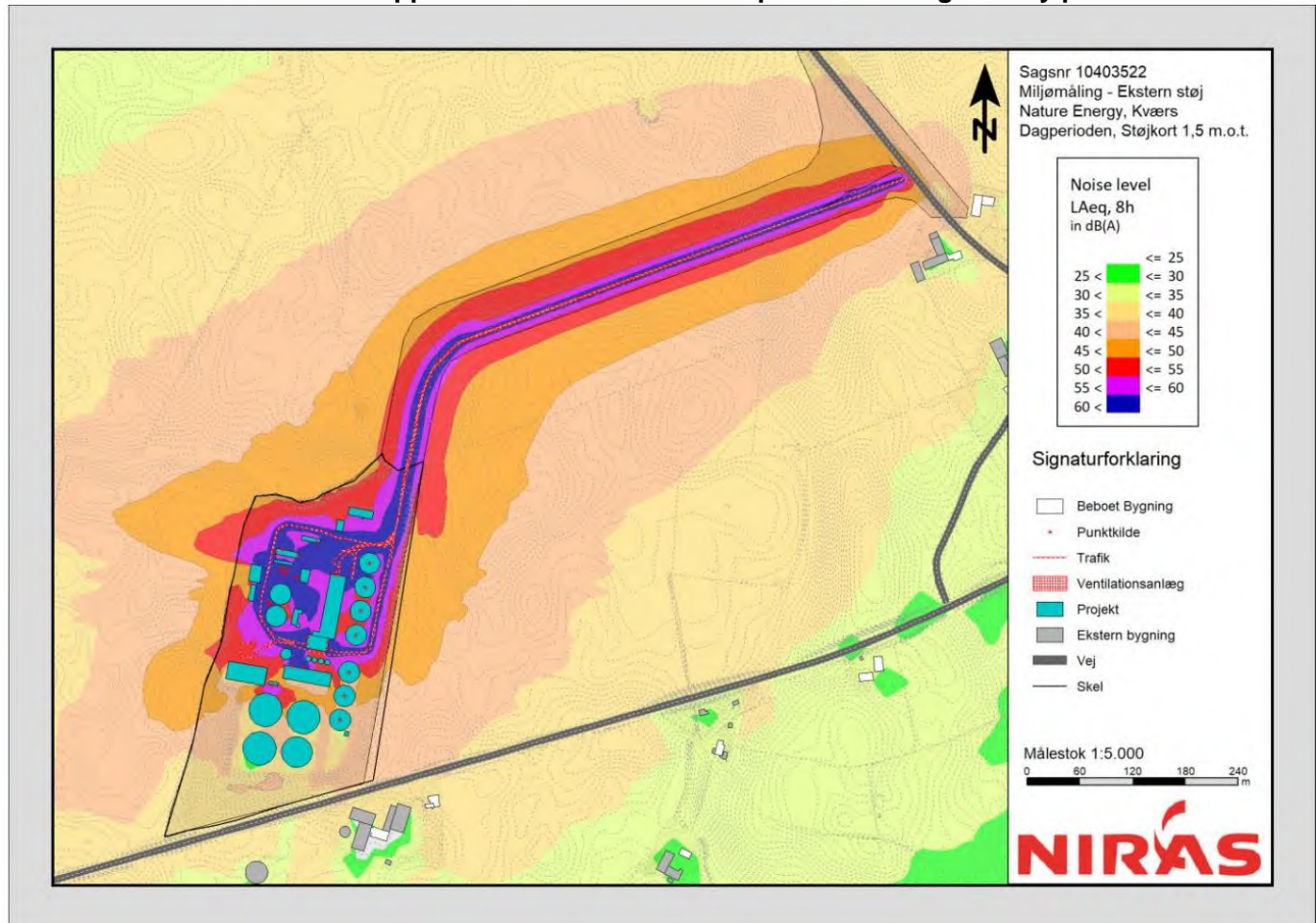
The maximum noise contribution at night (L_{max}) originates primarily from traffic and is calculated net to max. 50 dB (A) at all calculation points. The noise limit for maximum contribution of 50 - or 55 dB (A) is thus complied with. The maximum noise contribution comes primarily from truck, as it enters the plot along the access road at the homes closest to the driveway. In other points, it also originates primarily from driving on the plot at the point that is closest to the individual home.

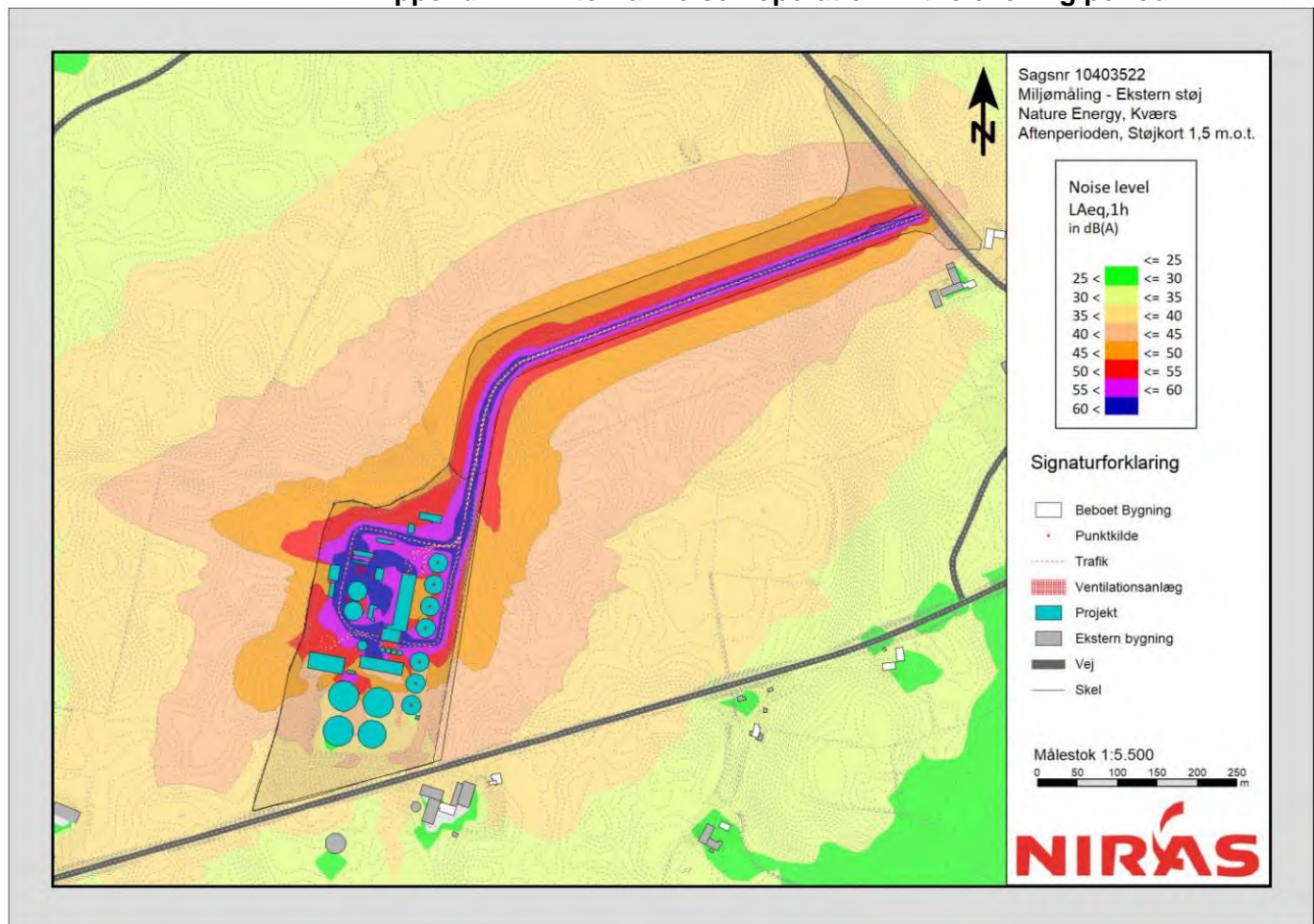
6 Conclusion

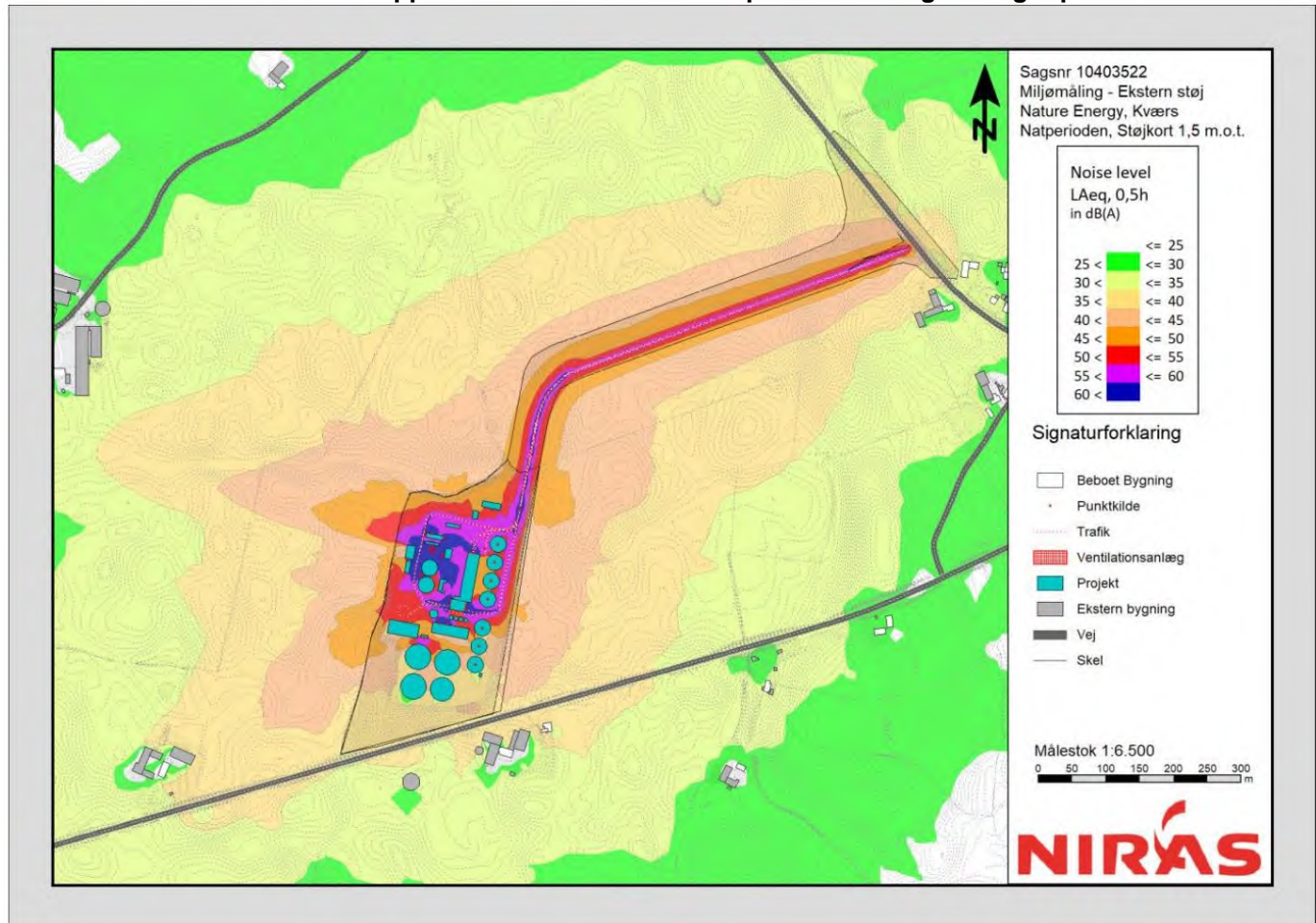
The company complies with the Danish Environmental Protection Agency's indicative noise limits in all calculation points for the applied design and operation.

The uncertainty is not included in the assessments, as it is normal for the company to be able to comply with the noise limits in planning situations without deducting the uncertainty. Appendix 6 contains calculation results from SoundPLAN, where the individual noise source's noise contribution i.a. appears.

Appendix 2: Situation plan for model

Appendix 3: External noise - operation during the day period

Appendix 4: External noise - operation in the evening period

Appendix 5: External noise - operation during the night period

Appendix 6: SoundPLAN printout

Kilde	Kildetype	Lw dB(A)	Lw pr. m,m² dB(A)	Kilde str. m,m²	Åfstand til modtager m	Åfstandskorr. dB	Terrænkorr. dB	Skærmvirkning dB	Luftabsorp. dB	Refleksionsbidrag dB	Støjbidrag (Ls) dB(A)	L _{Aeq} , 8h dB(A)	L _{Aeq} , 1h dB(A)	L _{Aeq} , 0,5h dB(A)
Receiver BP01 - Avntoftevej 2 L _{Aeq} , 8h 38,0 dB(A) L _{Aeq} , 1h 37,8 dB(A) L _{Aeq} , 0,5h 37,4 dB(A) L _{max} 39,0 dB(A)														
Afhentning af gyle fra Skruapresse	Line	100,7	67,2	2195,5	615,7	-66,8	0,1	-3,7	-3,0	1,0	28,3	11,3	17,4	11,5
Brovægt	Point	90,8	90,8		572,3	-66,1	1,1	0,0	-2,7	0,0	23,1	18,7	17,4	11,5
Gasblæser	Point	80,9	80,9		354,2	-62,0	0,4	-9,4	-1,4	0,0	11,5	11,5	11,5	11,5
Gasopgradering	Point	78,2	78,2		438,6	-63,8	-0,9	-18,4	-1,4	6,2	2,8	2,8	2,8	2,8
Gasopgradering	Point	78,2	78,2		455,4	-64,2	-0,4	-14,9	-0,9	10,7	11,5	11,5	11,5	11,5
Gasopgradering - Åben port	Point	85,7	85,7		448,1	-64,0	0,0	-19,6	-2,6	0,0	2,4	2,4	2,4	2,4
Gasrenser - Afkast	Point	80,0	80,0		482,0	-64,7	-0,2	0,0	-5,3	0,0	9,8	9,8	9,8	9,8
Indpumpning	Point	95,8	95,8		496,0	-64,9	0,8	-15,5	-1,4	7,2	22,1	19,1	19,1	19,1
Kedelskorsten	Point	90,0	90,0		439,5	-63,9	-0,4	0,0	-4,9	0,0	20,8	20,8	20,8	20,8
Kaleanlæg	Area	97,0	83,3	23,3	430,2	-63,7	0,3	-0,3	-2,0	1,9	33,1	33,1	33,1	33,1
Kaleanlæg	Area	97,0	83,3	23,3	433,4	-63,7	0,3	-0,2	-2,0	2,5	33,9	33,9	33,9	33,9
levering af gyle - ind	Line	100,7	70,1	1126,0	611,5	-66,7	0,0	-3,0	-2,9	1,1	29,1	26,8	27,0	21,2
levering af gyle - ud	Line	100,7	70,8	959,6	709,2	-68,0	0,3	-3,6	-3,6	0,3	26,0	23,0	23,2	20,3
Levering af ikke-pumpbart udendørs	Line	100,7	68,3	1740,2	759,9	-68,6	0,0	-2,1	-3,5	0,4	26,8	21,6		
Levering af pumpbart - udendørs	Line	100,7	68,2	1744,0	760,4	-68,6	0,0	-2,1	-3,6	0,8	27,2	18,0		
Omrører	Point	83,7	83,7		440,2	-63,9	0,1	0,0	-4,2	0,0	15,8	15,8	15,8	15,8
Omrører	Point	83,7	83,7		427,0	-63,6	0,1	0,0	-4,1	0,0	16,2	16,2	16,2	16,2
Omrører	Point	83,7	83,7		414,8	-63,3	0,1	0,0	-4,0	0,0	16,5	16,5	16,5	16,5
Omrører	Point	83,7	83,7		480,6	-64,6	0,2	0,0	-4,5	0,0	14,9	14,9	14,9	14,9
Omrører	Point	83,7	83,7		516,5	-65,3	0,2	0,0	-4,8	0,0	14,0	14,0	14,0	14,0
Omrører	Point	83,7	83,7		498,2	-64,9	0,3	0,0	-4,6	0,0	14,4	14,4	14,4	14,4
Omrører	Point	83,7	83,7		463,9	-64,3	0,1	0,0	-4,4	0,0	15,2	15,2	15,2	15,2
Port	Point	81,6	81,6		478,9	-64,6	0,0	-19,7	-2,8	16,7	14,2	14,2	14,2	14,2
Port	Point	81,6	81,6		431,6	-63,7	-0,1	-19,7	-2,6	6,9	5,4	5,4	5,4	5,4
Port	Point	81,6	81,6		383,5	-62,7	-0,7	-19,5	-2,3	0,0	-3,5	-3,5	-3,5	-3,5
Port	Point	81,6	81,6		393,4	-62,9	-0,4	-19,5	-2,3	0,0	-3,5	-3,5	-3,5	-3,5
Port	Point	81,6	81,6		427,3	-63,6	-0,2	-19,7	-2,6	0,0	-1,4	-1,4	-1,4	-1,4
Port	Point	81,6	81,6		408,0	-63,2	-0,1	-8,7	-1,9	0,2	10,9	10,9	10,9	10,9
Port	Point	81,6	81,6		474,8	-64,5	-0,1	-19,7	-2,8	13,8	11,3	11,3	11,3	11,3
Port	Point	81,6	81,6		412,8	-63,3	-0,1	-6,1	-2,4	0,0	12,7	12,7	12,7	12,7
Ventilationsafkast	Point	90,0	90,0		400,6	-63,0	-0,5	0,0	-4,6	0,0	21,9	21,9	21,9	21,9
Ventilator for kedelskorsten	Point	83,1	83,1		438,5	-63,8	1,1	-18,8	-3,3	16,2	14,5	14,5	14,5	14,5
Ventilator for biofilter	Point	80,6	80,6		395,3	-62,9	0,4	0,0	-3,0	2,1	17,3	17,3	17,3	17,3

Kilde	Kildetype	Lw dB(A)	Lw pr. m,m² dB(A)	Kilde str. m,m²	Åfstand til modtager m	Åfstandskorr. dB	Terrænkorr. dB	Skærmvirkning dB	Luftabsorp. dB	Refleksionsbidrag dB	Støjbidrag (Ls) dB(A)	L _{Aeq} , 8h dB(A)	L _{Aeq} , 1h dB(A)	L _{Aeq} , 0,5h dB(A)
Ventilator for biofilter														
Receiver BP02 - Limbøvej 1 L _{Aeq} , 8h 29,3 dB(A) L _{Aeq} , 1h 28,2 dB(A) L _{Aeq} , 0,5h 27,0 dB(A) L _{max} 33,7 dB(A)														
Afhentning af gyle fra Skruapresse	Line	100,7	67,2	2195,5	853,5	-69,6	0,7	-5,4	-4,0	1,0	23,3	6,3		
Brovægt	Point	90,8	90,8		767,8	-68,7	1,5	-18,0	-2,0	0,0	3,6	-0,7	-2,1	-8,0
Gasblæser	Point	80,9	80,9		539,3	-65,6	0,5	-19,0	-2,1	1,0	-1,3	-1,3	-1,3	-1,3
Gasopgradering	Point	78,2	78,2		688,3	-67,7	0,5	-18,1	-1,8	0,2	-5,8	-5,8	-5,8	-5,8
Gasopgradering	Point	78,2	78,2		688,6	-67,8	0,8	-17,5	-1,8	0,0	-4,8	-4,8	-4,8	-4,8
Gasopgradering - Åben port	Point	85,7	85,7		690,3	-67,8	1,8	-23,7	-2,8	0,0	-3,8	-3,8	-3,8	-3,8
Gasrenser - Afkast	Point	80,0	80,0		709,0	-68,0	0,3	0,0	-7,2	0,0	5,2	5,2	5,2	5,2
Indpumpning	Point	95,8	95,8		693,6	-67,8	1,0	-11,3	-2,0	8,4	24,0	21,0		
Kedelskorsten	Point	90,0	90,0		663,8	-67,4	1,6	0,0	-6,8	1,4	18,7	18,7	18,7	18,7
Kaleanlæg	Area	97,0	83,3	23,3	667,5	-67,5	0,9	-15,1	-1,6	5,3	19,1	19,1	19,1	19,1
Kaleanlæg	Area	97,0	83,3	23,3	667,8	-67,5	0,9	-15,5	-1,6	6,2	19,6	19,6	19,6	19,6
levering af gyle - ind	Line	100,7	70,1	1126,0	858,2	-69,7	0,7	-4,8	-3,9	1,2	24,5	22,2	22,4	16,5
levering af gyle - ud	Line	100,7	70,8	959,6	914,7	-70,2	0,7	-5,8	-4,5	0,2	21,0	18,0	18,3	15,4
Levering af ikke-pumpbart udendørs	Line	100,7	68,3	1740,2	979,7	-70,8	0,6	-4,6	-4,5	1,4	22,7	17,4		
Levering af pumpbart - udendørs	Line	100,7	68,2	1744,0	979,0	-70,8	0,6	-4,7	-4,5	1,6	22,8	13,6		
Omrører	Point	83,7	83,7		583,9	-66,3	0,0	0,0	-5,2	0,0	12,2	12,2	12,2	12,2
Omrører	Point	83,7	83,7		557,9	-65,9	-0,1	0,0	-5,0	0,0	12,7	12,7	12,7	12,7
Omrører	Point	83,7	83,7		531,0	-65,5	-0,1	0,0	-4,8	0,0	13,3	13,3	13,3	13,3
Omrører	Point	83,7	83,7		852,9	-67,3	0,1	0,0	-5,7	0,0	10,9	10,9	10,9	10,9
Omrører	Point	83,7	83,7		706,8	-68,0	0,2	0,0	-6,0	0,0	10,0	10,0	10,0	10,0
Omrører	Point	83,7	83,7		679,8	-67,6	0,2	0,0	-5,8	0,0	10,5	10,5	10,5	10,5
Omrører	Point	83,7	83,7		825,8	-66,9	0,1	0,0	-5,5	0,0	11,4	11,4	11,4	11,4
Port	Point	81,6	81,6		681,3	-67,7	0,2	-19,3	-3,3	0,0	-5,4	-5,4	-5,4	-5,4
Port	Point	81,6	81,6		606,5	-66,6	0,0	-19,3	-3,0	0,0	-4,3	-4,3	-4,3	-4,3
Port	Point	81,6	81,6		566,9	-66,1	-0,1	-19,3	-2,9	16,3	9,5	9,5	9,5	9,5
Port	Point	81,6	81,6		568,8	-66,1	-0,1	-19,3	-2,9	4,2	-2,7	-2,7	-2,7	-2,7
Port	Point	81,6	81,6		599,3	-66,5	0,0	-19,3	-3,0	0,0	-4,2	-4,2	-4,2	-4,2
Port	Point	81,6	81,6		595,4	-66,5	0,1	-10,8	-2,2	0,0	5,2	5,2	5,2	5,2
Port	Point	81,6	81,6		680,5	-67,6	0,2	-19,2	-3,2	0,0	-5,1	-5,1	-5,1	-5,1
Port	Point	81,6	81,6		603,0	-66,6	0,1	-8,6	-2,6	0,1	7,1	7,1	7,1	7,1
Ventilationsafkast	Point	90,0	90,0		629,3	-67,0	-0,3	0,0	-6,6	0,0	16,2	16,2	16,2	16,2
Ventilator for kedelskorsten	Point	83,1	83,1		863,8	-67,4	1,7	-14,0	-3,7	0,2	0,0	0,0	0,0	0,0

Kilde	Kildetype	Lw dB(A)	Lw pr. m,m² dB(A)	Kilde str. m,m²	Afstand til modtager m	Afstandskorr. dB	Terrænkorr. dB	Skærmvirkning dB	Luftabsorp. dB	Refleksionsbidrag dB	Støjbidrag (Ls) dB(A)	L _{Aeq} 8h dB(A)	L _{Aeq} 1h dB(A)	L _{Aeq} 0,5h dB(A)
Ventilator for biofilter	Point	80,6	80,6		625,8	-86,9	0,9	-19,7	-3,9	3,0	-6,1	-6,1	-6,1	-6,1
Ventilator for biofilter	Point	80,6	80,6		629,2	-87,0	0,7	-20,0	-4,1	2,0	-7,7	-7,7	-7,7	-7,7
Receiver BP03 - Avntoftevej 9 L _{Aeq} 8h 39,6 dB(A) L _{Aeq} 1h 39,2 dB(A) L _{Aeq} 0,5h 38,0 dB(A) L _{max} 48,6 dB(A)														
Afhentning af gyle fra Skruapresse	Line	100,7	67,2	2195,5	354,3	-82,0	0,5	-4,0	-1,7	0,8	34,2	17,2		
Brovægt	Point	90,8	90,8		315,6	-81,0	0,2	0,0	-1,6	2,1	30,6	26,2	24,9	19,0
Gasblæser	Point	80,9	80,9		179,0	-56,1	0,9	-16,5	-0,6	2,7	14,3	14,3	14,3	14,3
Gasopgradering	Point	78,2	78,2		303,6	-60,6	1,5	-22,5	-0,7	0,0	-1,2	-1,2	-1,2	-1,2
Gasopgradering	Point	78,2	78,2		289,6	-60,2	1,5	-17,2	-0,5	0,0	4,8	4,8	4,8	4,8
Gasopgradering - Åben port	Point	85,7	85,7		302,3	-60,6	1,5	-25,0	-1,8	0,0	2,8	2,8	2,8	2,8
Gasrenser - Afkast	Point	80,0	80,0		297,8	-60,5	0,9	-14,9	-1,3	0,0	4,1	4,1	4,1	4,1
Indpumpning	Point	95,8	95,8		259,5	-59,3	1,1	-23,0	-0,7	0,0	13,9	10,9		
Kedelskorsten	Point	90,0	90,0		266,5	-59,5	1,0	-16,4	-1,3	0,0	13,8	13,8	13,8	13,8
Køleanlæg	Area	97,0	83,3	23,3	281,8	-60,0	1,5	-22,6	-0,9	4,0	19,1	19,1	19,1	19,1
Køleanlæg	Area	97,0	83,3	23,6	278,5	-59,9	1,5	-21,1	-0,8	1,6	18,3	18,3	18,3	18,3
levering af gyle - ind	Line	100,7	70,1	1126,0	378,4	-62,6	0,8	-5,6	-2,2	0,6	31,7	29,4	29,6	23,8
levering af gyle - ud	Line	100,7	70,8	959,6	365,6	-62,3	-0,2	-1,0	-1,6	1,0	36,6	33,6	33,8	30,9
Levering af ikke-pumpbart udendørs	Line	100,7	68,3	1740,2	471,2	-64,5	-0,2	-1,8	-2,2	0,5	32,5	27,2		
Levering af pumpbart - udendørs	Line	100,7	68,2	1744,0	468,9	-64,4	-0,2	-1,8	-2,2	0,6	32,5	27,2		
Omrører	Point	83,7	83,7		147,1	-54,3	0,2	0,0	-1,8	0,0	27,8	27,8	27,8	27,8
Omrører	Point	83,7	83,7		124,4	-52,9	0,2	0,0	-1,5	0,0	29,5	29,5	29,5	29,5
Omrører	Point	83,7	83,7		102,7	-51,2	0,2	0,0	-1,3	0,0	31,4	31,4	31,4	31,4
Omrører	Point	83,7	83,7		211,9	-57,5	0,2	0,0	-2,4	0,0	24,1	24,1	24,1	24,1
Omrører	Point	83,7	83,7		264,6	-59,4	0,3	0,0	-2,9	0,0	21,7	21,7	21,7	21,7
Omrører	Point	83,7	83,7		238,1	-58,5	0,3	0,0	-2,6	0,0	22,8	22,8	22,8	22,8
Omrører	Point	83,7	83,7		186,0	-56,4	0,2	0,0	-2,2	0,0	25,4	25,4	25,4	25,4
Port	Point	81,6	81,6		255,4	-59,1	1,0	-24,8	-1,3	1,9	2,3	2,3	2,3	2,3
Port	Point	81,6	81,6		185,8	-56,4	1,5	-22,7	-0,6	1,4	7,8	7,8	7,8	7,8
Port	Point	81,6	81,6		180,8	-56,1	1,5	-25,0	-1,0	3,2	4,2	4,2	4,2	4,2
Port	Point	81,6	81,6		172,4	-55,7	1,5	-25,0	-0,9	0,3	1,8	1,8	1,8	1,8
Port	Point	81,6	81,6		179,6	-56,1	1,5	-18,6	-0,4	0,0	11,0	11,0	11,0	11,0
Port	Point	81,6	81,6		193,9	-56,7	1,5	-25,0	-1,0	0,0	3,3	3,3	3,3	3,3
Port	Point	81,6	81,6		257,7	-59,2	1,4	-24,8	-1,3	0,0	0,7	0,7	0,7	0,7
Port	Point	81,6	81,6		200,0	-57,0	1,5	-25,0	-1,1	0,0	3,0	3,0	3,0	3,0
Ventilationsafkast	Point	90,0	90,0		261,7	-59,3	0,6	-0,1	-3,2	0,0	27,9	27,9	27,9	27,9

Kilde	Kildetype	Lw dB(A)	Lw pr. m,m² dB(A)	Kilde str. m,m²	Afstand til modtager m	Afstandskorr. dB	Terrænkorr. dB	Skærmvirkning dB	Luftabsorp. dB	Refleksionsbidrag dB	Støjbidrag (Ls) dB(A)	L _{Aeq} 8h dB(A)	L _{Aeq} 1h dB(A)	L _{Aeq} 0,5h dB(A)
Ventilator for kedelskorsten	Point	83,1	83,1		266,7	-59,5	1,5	-22,4	-2,2	0,0	0,5	0,5	0,5	0,5
Ventilator for biofilter	Point	80,6	80,6		253,3	-59,1	1,5	-25,0	-1,6	2,4	-1,2	-1,2	-1,2	-1,2
Ventilator for biofilter	Point	80,6	80,6		255,7	-59,1	1,5	-25,0	-1,7	1,7	-2,0	-2,0	-2,0	-2,0
Receiver BP04 - Avntoftevej 5 L _{Aeq} 8h 33,3 dB(A) L _{Aeq} 1h 32,5 dB(A) L _{Aeq} 0,5h 30,2 dB(A) L _{max} 38,7 dB(A)														
Afhentning af gyle fra Skruapresse	Line	100,7	67,2	2195,5	565,8	-86,0	-0,5	-2,2	-2,8	0,7	29,8	12,8		
Brovægt	Point	90,8	90,8		474,5	-84,5	-1,4	0,0	-2,4	0,0	22,5	18,2	16,9	11,0
Gasblæser	Point	80,9	80,9		470,0	-84,4	1,3	-20,1	-1,9	1,4	0,2	0,2	0,2	0,2
Gasopgradering	Point	78,2	78,2		545,5	-85,7	1,4	-21,6	-1,3	0,0	-5,9	-5,9	-5,9	-5,9
Gasopgradering	Point	78,2	78,2		522,6	-85,4	1,3	-19,2	-1,8	0,0	-3,9	-3,9	-3,9	-3,9
Gasopgradering - Åben port	Point	85,7	85,7		540,5	-85,6	1,6	-24,9	-2,9	0,0	-3,1	-3,1	-3,1	-3,1
Gasrenser - Afkast	Point	80,0	80,0		516,3	-85,3	-0,3	-8,6	-4,2	0,0	1,7	1,7	1,7	1,7
Indpumpning	Point	95,8	95,8		466,4	-84,4	0,8	-20,1	-2,0	0,0	10,1	7,0		
Kedelskorsten	Point	90,0	90,0		507,7	-85,1	0,1	-5,3	-4,7	0,2	15,3	15,3	15,3	15,3
Køleanlæg	Area	97,0	83,3	23,3	527,7	-85,4	1,3	-19,9	-1,8	5,1	16,3	16,3	16,3	16,3
Køleanlæg	Area	97,0	83,3	23,6	522,4	-85,4	1,3	-18,4	-1,7	3,4	16,3	16,3	16,3	16,3
levering af gyle - ind	Line	100,7	70,1	1126,0	577,8	-86,2	-0,2	-3,1	-3,0	0,5	28,6	26,4	26,6	20,7
levering af gyle - ud	Line	100,7	70,8	959,6	561,9	-86,0	-1,4	-0,2	-2,8	1,1	31,5	28,5	28,7	25,8
Levering af ikke-pumpbart udendørs	Line	100,7	68,3	1740,2	599,5	-86,5	-1,1	-0,8	-3,0	0,4	29,6	24,3		
Levering af pumpbart - udendørs	Line	100,7	68,2	1744,0	597,9	-86,5	-1,1	-0,9	-3,0	0,3	29,5	20,3		
Omrører	Point	83,7	83,7		400,1	-83,0	-0,2	0,0	-3,9	0,0	16,6	16,6	16,6	16,6
Omrører	Point	83,7	83,7		392,2	-82,9	-0,2	0,0	-3,9	0,0	16,8	16,8	16,8	16,8
Omrører	Point	83,7	83,7		385,5	-82,7	-0,2	0,0	-3,8	0,0	17,0	17,0	17,0	17,0
Omrører	Point	83,7	83,7		428,7	-83,6	-0,2	0,0	-4,1	0,0	15,8	15,8	15,8	15,8
Omrører	Point	83,7	83,7		457,4	-84,2	-0,2	0,0	-4,3	0,0	15,0	15,0	15,0	15,0
Omrører	Point	83,7	83,7		442,4	-83,9	-0,2	0,0	-4,2	0,0	15,4	15,4	15,4	15,4
Omrører	Point	83,7	83,7		416,3	-83,4	-0,2	0,0	-4,0	0,0	16,1	16,1	16,1	16,1
Port	Point	81,6	81,6		473,5	-84,5	0,3	-22,2	-2,4	8,0	-4,2	-4,2	-4,2	-4,2
Port	Point	81,6	81,6		437,3	-83,8	-0,9	0,0	-3,0	0,0	17,0	17,0	17,0	17,0
Port	Point	81,6	81,6		459,8	-84,2	1,0	-24,0	-1,9	0,0	-7,5	-7,5	-7,5	-7,5
Port	Point	81,6	81,6		447,4	-84,0	0,7	-23,3	-1,9	1,9	-5,0	-5,0	-5,0	-5,0
Port	Point	81,6	81,6		434,7	-83,8	0,4	-20,1	-2,3	0,0	-1,2	-1,2	-1,2	-1,2
Port	Point	81,6	81,6		457,4	-84,2	0,8	-24,2	-2,1	3,1	-2,0	-2,0	-2,0	-2,0
Port	Point	81,6	81,6		478,5	-84,6	0,7	-24,2	-2,1	0,0	-5,6	-5,6	-5,6	-5,6
Port	Point	81,6	81,6		460,1	-84,2	0,9	-24,5	-2,1	0,0	-5,3	-5,3	-5,3	-5,3

Kilde	Kildetype	Lw dB(A)	Lw pr. m,m² dB(A)	Kilde str. m,m²	Afstand til modtager m	Afstandskorr. dB	Terrænkorr. dB	Skærmvirkning dB	Luftabsorp. dB	Refleksionsbidrag dB	Støjbidrag (Ls) dB(A)	L _{Aeq} 8h dB(A)	L _{Aeq} 1h dB(A)	L _{Aeq} 0,5f dB(A)
Ventilationsafkast	Point	90,0	90,0		521,2	-65,3	-0,2	0,0	-5,7	0,0	18,8	18,8	18,8	18,8
Ventilatorer for kedelskorsten	Point	83,1	83,1		508,4	-65,1	1,4	-24,9	-4,7	2,2	-8,1	-8,1	-8,1	-8,1
Ventilator for biofilter	Point	80,6	80,6		516,2	-65,2	1,0	-20,0	-3,5	0,0	-7,1	-7,1	-7,1	-7,1
Ventilator for biofilter	Point	80,6	80,6		517,3	-65,3	1,0	-19,8	-3,4	1,9	-5,0	-5,0	-5,0	-5,0
Receiver BP05 - Avntoftevej 3 L _{Aeq} 8h 35,2 dB(A) L _{Aeq} 1h 33,8 dB(A) L _{Aeq} 0,5h 31,0 dB(A) L _{max} 40,1 dB(A)														
Afhentning af gyle fra Skruapresse	Line	100,7	67,2	2195,5	511,6	-65,2	-0,8	-1,2	-2,5	0,6	31,7	14,7		
Brovægt	Point	90,8	90,8		434,5	-63,8	-1,2	0,0	-2,1	2,3	26,1	21,7	20,4	14,5
Gasblæser	Point	80,9	80,9		498,7	-64,9	1,5	-24,9	-2,0	6,1	-0,4	-0,4	-0,4	-0,4
Gasopgradering	Point	78,2	78,2		536,7	-65,6	1,3	-19,0	-1,8	0,0	-3,8	-3,8	-3,8	-3,8
Gasopgradering	Point	78,2	78,2		511,3	-65,2	1,1	-19,3	-1,8	0,0	-4,0	-4,0	-4,0	-4,0
Gasopgradering - Åben port	Point	85,7	85,7		530,2	-65,5	1,6	-24,9	-2,8	0,0	-3,0	-3,0	-3,0	-3,0
Gasrenser - Afkast	Point	80,0	80,0		498,6	-64,9	-0,3	-8,5	-3,9	0,0	2,4	2,4	2,4	2,4
Indpumpning	Point	95,8	95,8		449,5	-64,0	-1,1	0,0	-2,2	0,0	28,8	25,6		
Kedelskorsten	Point	90,0	90,0		502,4	-65,0	-0,1	-11,6	-2,8	0,0	10,6	10,6	10,6	10,6
Køleanlæg	Area	97,0	83,3	23,3	522,8	-65,4	1,2	-16,3	-1,7	1,1	16,0	16,0	16,0	16,0
Køleanlæg	Area	97,0	83,3	23,6	517,0	-65,3	1,2	-15,5	-1,6	1,1	16,9	16,9	16,9	16,9
levering af gyle - ind	Line	100,7	70,1	1126,0	521,0	-65,3	-0,6	-2,1	-2,6	0,5	30,6	28,3	28,5	22,6
levering af gyle - ud	Line	100,7	70,8	959,6	500,0	-65,0	-1,4	-0,1	-2,5	1,1	32,8	29,8	30,0	27,1
Levering af ikke-pumpbart udendørs	Line	100,7	68,3	1740,2	520,7	-65,3	-1,2	-0,6	-2,6	0,3	31,3	26,1		
Levering af pumpbart - udendørs	Line	100,7	68,2	1744,0	519,6	-65,3	-1,2	-0,6	-2,6	0,4	31,4	22,2		
Omrører	Point	83,7	83,7		416,7	-63,4	-0,2	0,0	-4,0	0,0	18,1	16,1	16,1	16,1
Omrører	Point	83,7	83,7		417,6	-63,4	-0,2	0,0	-4,0	0,0	18,1	16,1	16,1	16,1
Omrører	Point	83,7	83,7		420,1	-63,5	-0,2	0,0	-4,1	0,0	18,0	16,0	16,0	16,0
Omrører	Point	83,7	83,7		422,6	-63,5	-0,2	0,0	-4,1	0,0	18,0	16,0	16,0	16,0
Omrører	Point	83,7	83,7		435,4	-63,8	-0,2	0,0	-4,2	0,0	15,6	15,6	15,6	15,6
Omrører	Point	83,7	83,7		428,2	-63,6	-0,2	0,0	-4,1	0,0	15,8	15,6	15,6	15,6
Omrører	Point	83,7	83,7		418,9	-63,4	-0,2	0,0	-4,0	0,0	16,0	16,0	16,0	16,0
Port	Point	81,6	81,6		460,8	-64,3	0,0	-21,9	-2,4	0,0	-3,9	-3,9	-3,9	-3,9
Port	Point	81,6	81,6		446,4	-64,0	-0,9	0,0	-3,0	0,0	16,7	16,7	16,7	16,7
Port	Point	81,6	81,6		479,9	-64,6	1,1	-20,0	-2,4	0,0	-4,3	-4,3	-4,3	-4,3
Port	Point	81,6	81,6		467,9	-64,4	0,0	-20,1	-2,4	4,2	-1,1	-1,1	-1,1	-1,1
Port	Point	81,6	81,6		446,0	-64,0	-0,9	0,0	-3,0	0,0	16,7	16,7	16,7	16,7
Port	Point	81,6	81,6		470,1	-64,4	-0,5	-19,6	-2,8	0,0	-2,7	-2,7	-2,7	-2,7
Port	Point	81,6	81,6		466,4	-64,4	0,2	-22,4	-2,3	0,0	-4,3	-4,3	-4,3	-4,3

Kilde	Kildetype	Lw dB(A)	Lw pr. m,m² dB(A)	Kilde str. m,m²	Afstand til modtager m	Afstandskorr. dB	Terrænkorr. dB	Skærmvirkning dB	Luftabsorp. dB	Refleksionsbidrag dB	Støjbidrag (Ls) dB(A)	L _{Aeq} 8h dB(A)	L _{Aeq} 1h dB(A)	L _{Aeq} 0,5f dB(A)
Port	Point	81,6	81,6		470,5	-64,4	-0,5	-19,6	-2,8	1,0	-1,7	-1,7	-1,7	-1,7
Ventilationsafkast	Point	90,0	90,0		526,6	-65,4	-0,2	0,0	-5,7	0,0	18,7	18,7	18,7	18,7
Ventilatorer for kedelskorsten	Point	83,1	83,1		503,2	-65,0	1,3	-24,9	-4,6	0,0	-10,0	-10,0	-10,0	-10,0
Ventilator for biofilter	Point	80,6	80,6		522,2	-65,3	1,8	-25,0	-3,0	0,9	-10,0	-10,0	-10,0	-10,0
Ventilator for biofilter	Point	80,6	80,6		522,4	-65,4	1,5	-20,0	-3,0	0,9	-5,4	-5,4	-5,4	-5,4
Receiver BP06 - Avntoftevej 1 L _{Aeq} 8h 33,9 dB(A) L _{Aeq} 1h 32,9 dB(A) L _{Aeq} 0,5h 29,8 dB(A) L _{max} 36,4 dB(A)														
Afhentning af gyle fra Skruapresse	Line	100,7	67,2	2195,5	543,6	-65,7	-1,0	-0,6	-2,6	0,5	31,2	14,2		
Brovægt	Point	90,8	90,8		527,2	-65,4	-1,3	0,0	-2,5	2,0	23,7	19,3	18,0	12,1
Gasblæser	Point	80,9	80,9		641,0	-67,1	0,4	-13,3	-2,1	0,1	1,8	1,8	1,8	1,8
Gasopgradering	Point	78,2	78,2		651,4	-67,3	1,2	-8,9	-1,8	0,0	4,5	4,5	4,5	4,5
Gasopgradering	Point	78,2	78,2		625,3	-66,9	0,0	-10,4	-1,5	0,0	2,4	2,4	2,4	2,4
Gasopgradering - Åben port	Point	85,7	85,7		644,0	-67,2	1,5	-22,6	-2,1	0,0	-1,7	-1,7	-1,7	-1,7
Gasrenser - Afkast	Point	80,0	80,0		607,6	-66,7	-0,4	-0,1	-6,6	0,0	6,3	6,3	6,3	6,3
Indpumpning	Point	95,8	95,8		562,3	-66,0	-0,4	-10,3	-1,7	0,0	17,4	14,4		
Kedelskorsten	Point	90,0	90,0		621,5	-66,9	-0,2	-14,5	-3,0	2,0	7,4	7,4	7,4	7,4
Køleanlæg	Area	97,0	83,3	23,3	641,2	-67,1	1,3	-13,3	-1,5	0,6	17,0	17,0	17,0	17,0
Køleanlæg	Area	97,0	83,3	23,6	635,4	-67,1	1,3	-13,5	-1,5	2,7	19,0	19,0	19,0	19,0
levering af gyle - ind	Line	100,7	70,1	1126,0	549,6	-65,8	-0,7	-1,1	-2,6	0,2	30,7	28,4	28,6	22,7
levering af gyle - ud	Line	100,7	70,8	959,6	526,5	-65,4	-1,4	0,0	-2,6	0,7	31,8	28,8	29,1	26,1
Levering af ikke-pumpbart udendørs	Line	100,7	68,3	1740,2	528,9	-65,5	-1,3	-0,4	-2,6	0,2	31,2	25,9		
Levering af pumpbart - udendørs	Line	100,7	68,2	1744,0	528,5	-65,5	-1,3	-0,3	-2,6	0,2	31,3	22,1		
Omrører	Point	83,7	83,7		555,1	-65,9	-0,3	0,0	-5,0	0,0	12,6	12,6	12,6	12,6
Omrører	Point	83,7	83,7		561,0	-66,0	-0,3	0,0	-5,0	0,0	12,5	12,5	12,5	12,5
Omrører	Point	83,7	83,7		568,2	-66,1	-0,3	0,0	-5,1	0,0	12,3	12,3	12,3	12,3
Omrører	Point	83,7	83,7		545,7	-65,7	-0,2	0,0	-4,9	0,0	12,8	12,8	12,8	12,8
Omrører	Point	83,7	83,7		544,8	-65,7	-0,2	0,0	-4,9	0,0	12,9	12,9	12,9	12,9
Omrører	Point	83,7	83,7		544,5	-65,7	-0,2	0,0	-4,9	0,0	12,9	12,9	12,9	12,9
Omrører	Point	83,7	83,7		548,3	-65,8	-0,2	0,0	-5,0	0,0	12,8	12,8	12,8	12,8
Port	Point	81,6	81,6		576,4	-66,2	-0,6	-14,0	-1,5	0,0	2,2	2,2	2,2	2,2
Port	Point	81,6	81,6		578,8	-66,2	-0,7	-11,1	-1,7	0,0	4,9	4,9	4,9	4,9
Port	Point	81,6	81,6		618,3	-66,8	0,9	-12,9	-1,6	0,7	2,0	2,0	2,0	2,0
Port	Point	81,6	81,6		606,5	-66,6	-0,4	-15,1	-1,5	1,0	-1,1	-1,1	-1,1	-1,1
Port	Point	81,6	81,6		579,9	-66,3	-1,6	0,0	-3,7	0,0	13,1	13,1	13,1	13,1
Port	Point	81,6	81,6		603,7	-66,6	-1,6	-19,2	-3,0	0,0	-5,8	-5,8	-5,8	-5,8

Kilde	Kildetype	Lw dB(A)	Lw pr. m,m² dB(A)	Kilde str. m,m²	Afstand til modtager m	Afstandskorr. dB	Terrænkorr. dB	Skaermvirkning dB	Luftabsorp. dB	Refleksionsbidrag dB	Støjbidrag (Ls) dB(A)	L _{Aeq} 8h dB(A)	L _{Aeq} 1h dB(A)	L _{Aeq} 0,5h dB(A)
Port	Point	81,6	81,6		582,2	-66,3	-0,6	-13,4	-1,5	0,0	2,9	2,9	2,9	2,9
Port	Point	81,6	81,6		602,7	-66,6	-0,4	-22,4	-2,1	2,0	-4,9	-4,9	-4,9	-4,9
Ventilationsafkast	Point	90,0	90,0		651,9	-67,3	-0,3	0,0	-6,7	0,0	15,7	15,7	15,7	15,7
Ventilator for kedelskorsten	Point	83,1	83,1		622,4	-66,9	1,3	-24,1	-4,5	0,0	-11,0	-11,0	-11,0	-11,0
Ventilator for biofilter	Point	80,6	80,6		648,9	-67,2	1,8	-23,8	-2,8	2,5	-9,0	-9,0	-9,0	-9,0
Ventilator for biofilter	Point	80,6	80,6		648,4	-67,2	1,8	-24,5	-3,1	0,0	-12,4	-12,4	-12,4	-12,4
Receiver BP07 - Felstedvej 35 L _{Aeq} 8h 41,4 dB(A) L _{Aeq} 1h 40,0 dB(A) L _{Aeq} 0,5h 36,2 dB(A) L _{max} 50,0 dB(A)														
Afhentning af gyle fra Skruapresse	Line	100,7	67,2	2195,5	214,5	-57,6	-1,5	-1,9	-0,8	0,0	38,9	21,9		
Brovægt	Point	90,8	90,8		659,1	-67,4	-1,4	0,0	-3,2	0,0	18,9	14,6	13,2	7,4
Gasblæser	Point	80,9	80,9		879,8	-69,9	1,5	-24,7	-3,2	0,0	-12,4	-12,4	-12,4	-12,4
Gasopgradering	Point	78,2	78,2		801,1	-69,1	0,5	-13,9	-1,7	0,0	-2,9	-2,9	-2,9	-2,9
Gasopgradering	Point	78,2	78,2		779,9	-68,8	0,4	0,0	-3,6	0,4	9,6	9,6	9,6	9,6
Gasopgradering - Åben port	Point	85,7	85,7		792,9	-69,0	0,8	-14,1	-3,1	0,0	3,3	3,3	3,3	3,3
Gasrenser - Afkast	Point	80,0	80,0		754,1	-68,5	0,8	0,0	-7,5	0,0	4,7	4,7	4,7	4,7
Indpumpning	Point	95,8	95,8		733,4	-68,3	0,7	-20,0	-3,1	0,0	5,1	2,1		
Kedelskorsten	Point	90,0	90,0		792,6	-69,0	1,3	0,0	-7,7	0,0	14,6	14,6	14,6	14,6
Køleanlæg	Area	97,0	83,3	23,3	804,9	-69,1	0,6	-4,6	-3,2	1,9	22,6	22,6	22,6	22,6
Køleanlæg	Area	97,0	83,3	23,6	800,4	-69,1	0,6	-1,1	-3,3	0,0	24,0	24,0	24,0	24,0
levering af gyle - ind	Line	100,7	70,1	1126,0	216,7	-57,7	-1,5	-1,9	-0,8	0,0	38,8	26,5	36,7	30,8
levering af gyle - ud	Line	100,7	70,8	959,6	200,9	-57,1	-1,5	-1,8	-0,8	0,0	39,5	36,5	36,8	33,8
Levering af ikke-pumpbart udendørs	Line	100,7	68,3	1740,2	191,7	-56,6	-1,5	-1,8	-0,8	0,0	39,9	34,6		
Levering af pumpbart - udendørs	Line	100,7	68,2	1744,0	192,5	-56,7	-1,5	-1,8	-0,8	0,0	39,9	30,7		
Områder	Point	83,7	83,7		802,0	-69,1	-0,2	0,0	-6,6	0,0	7,9	7,9	7,9	7,9
Områder	Point	83,7	83,7		822,1	-69,3	-0,2	0,0	-6,7	0,0	7,5	7,5	7,5	7,5
Områder	Point	83,7	83,7		843,3	-69,5	-0,2	0,0	-6,8	0,0	7,2	7,2	7,2	7,2
Områder	Point	83,7	83,7		750,8	-68,5	-0,2	0,0	-6,3	0,0	8,7	8,7	8,7	8,7
Områder	Point	83,7	83,7		713,5	-68,1	-0,2	0,0	-6,0	0,0	9,4	9,4	9,4	9,4
Områder	Point	83,7	83,7		731,9	-68,3	-0,2	0,0	-6,1	0,0	9,1	9,1	9,1	9,1
Områder	Point	83,7	83,7		770,5	-68,7	-0,2	0,0	-6,4	0,0	8,4	8,4	8,4	8,4
Port	Point	81,6	81,6		750,6	-68,5	0,5	-20,0	-3,7	0,0	-7,1	-7,1	-7,1	-7,1
Port	Point	81,6	81,6		800,4	-69,1	0,3	-20,0	-3,9	0,0	-8,0	-8,0	-8,0	-8,0
Port	Point	81,6	81,6		849,0	-69,6	0,9	-19,5	-3,4	2,5	-7,5	-7,5	-7,5	-7,5
Port	Point	81,6	81,6		840,5	-69,5	0,8	-19,7	-3,6	2,5	-7,8	-7,8	-7,8	-7,8
Port	Point	81,6	81,6		805,6	-69,1	0,4	-20,0	-3,9	0,0	-8,0	-8,0	-8,0	-8,0

Kilde	Kildetype	Lw dB(A)	Lw pr. m,m² dB(A)	Kilde str. m,m²	Afstand til modtager m	Afstandskorr. dB	Terrænkorr. dB	Skaermvirkning dB	Luftabsorp. dB	Refleksionsbidrag dB	Støjbidrag (Ls) dB(A)	L _{Aeq} 8h dB(A)	L _{Aeq} 1h dB(A)	L _{Aeq} 0,5h dB(A)
Port	Point	81,6	81,6		622,6	-69,3	0,9	-23,8	-2,9	2,3	-8,2	-8,2	-8,2	-8,2
Port	Point	81,6	81,6		755,0	-68,6	0,6	-20,0	-3,7	0,0	-6,9	-6,9	-6,9	-6,9
Port	Point	81,6	81,6		817,3	-69,2	0,7	-22,9	-3,1	0,0	-9,9	-9,9	-9,9	-9,9
Ventilationsafkast	Point	90,0	90,0		836,7	-69,4	-0,3	0,0	-8,0	0,0	12,2	12,2	12,2	12,2
Ventilator for kedelskorsten	Point	83,1	83,1		793,3	-69,0	1,2	-16,9	-3,8	0,0	-5,3	-5,3	-5,3	-5,3
Ventilator for biofilter	Point	80,6	80,6		835,2	-69,4	1,0	-19,9	-5,1	0,0	-12,8	-12,8	-12,8	-12,8
Ventilator for biofilter	Point	80,6	80,6		832,9	-69,4	0,8	-20,0	-5,2	18,6	5,4	5,4	5,4	5,4
Receiver BP08 - Snurum 26 L _{Aeq} 8h 40,0 dB(A) L _{Aeq} 1h 38,8 dB(A) L _{Aeq} 0,5h 34,8 dB(A) L _{max} 49,9 dB(A)														
Afhentning af gyle fra Skruapresse	Line	100,7	67,2	2195,5	288,5	-60,2	-1,3	-0,6	-1,0	0,0	37,5	20,5		
Brovægt	Point	90,8	90,8		736,8	-68,3	-1,4	0,0	-3,5	0,0	17,7	13,3	12,0	6,1
Gasblæser	Point	80,9	80,9		957,8	-70,6	1,5	-24,5	-3,4	0,0	-13,2	-13,2	-13,2	-13,2
Gasopgradering	Point	78,2	78,2		878,4	-69,9	0,5	-13,9	-1,8	0,0	-3,9	-3,9	-3,9	-3,9
Gasopgradering	Point	78,2	78,2		857,4	-69,7	0,4	0,0	-3,9	0,0	8,0	8,0	8,0	8,0
Gasopgradering - Åben port	Point	85,7	85,7		870,2	-69,8	0,8	-14,0	-3,4	0,0	2,3	2,3	2,3	2,3
Gasrenser - Afkast	Point	80,0	80,0		831,5	-69,4	-0,3	0,0	-8,0	0,0	2,3	2,3	2,3	2,3
Indpumpning	Point	95,8	95,8		811,2	-69,2	0,7	-20,0	-3,4	0,0	3,9	0,9		
Kedelskorsten	Point	90,0	90,0		870,3	-69,8	-0,2	0,0	-8,2	0,0	11,8	11,8	11,8	11,8
Køleanlæg	Area	97,0	83,3	23,3	882,4	-69,9	0,5	-4,8	-3,4	2,2	21,6	21,6	21,6	21,6
Køleanlæg	Area	97,0	83,3	23,6	878,0	-69,9	0,5	-1,2	-3,6	0,0	22,9	22,9	22,9	22,9
levering af gyle - ind	Line	100,7	70,1	1126,0	291,6	-60,3	-1,3	-0,7	-1,0	0,0	37,4	35,1	35,3	29,4
levering af gyle - ud	Line	100,7	70,8	959,6	270,8	-59,6	-1,4	-0,6	-1,0	0,0	38,1	35,1	35,3	32,4
Levering af ikke-pumpbart udendørs	Line	100,7	68,3	1740,2	259,1	-59,3	-1,4	-0,6	-1,0	0,0	38,5	33,2		
Levering af pumpbart - udendørs	Line	100,7	68,2	1744,0	260,2	-59,3	-1,4	-0,5	-1,0	0,0	38,5	29,3		
Områder	Point	83,7	83,7		879,8	-69,9	-0,3	0,0	-7,1	0,0	6,5	6,5	6,5	6,5
Områder	Point	83,7	83,7		899,7	-70,1	-0,3	0,0	-7,3	0,0	6,1	6,1	6,1	6,1
Områder	Point	83,7	83,7		920,9	-70,3	-0,3	0,0	-7,4	0,0	5,8	5,8	5,8	5,8
Områder	Point	83,7	83,7		828,8	-69,4	-0,3	0,0	-6,7	0,0	7,4	7,4	7,4	7,4
Områder	Point	83,7	83,7		791,4	-69,0	-0,2	0,0	-6,5	0,0	8,0	8,0	8,0	8,0
Områder	Point	83,7	83,7		809,8	-69,2	-0,2	0,0	-6,6	0,0	7,7	7,7	7,7	7,7
Områder	Point	83,7	83,7		848,4	-69,6	-0,2	0,0	-6,8	0,0	7,1	7,1	7,1	7,1
Port	Point	81,6	81,6		828,4	-69,4	0,4	-20,0	-4,0	0,0	-8,3	-8,3	-8,3	-8,3
Port	Point	81,6	81,6		876,4	-69,9	-0,1	-20,0	-4,2	0,0	-9,6	-9,6	-9,6	-9,6
Port	Point	81,6	81,6		927,1	-70,3	0,8	-19,5	-3,6	2,5	-8,5	-8,5	-8,5	-8,5
Port	Point	81,6	81,6		918,5	-70,3	0,8	-19,7	-3,8	2,5	-8,8	-8,8	-8,8	-8,8

Kilde	Kildetype	Lw dB(A)	Lw pr. m,m² dB(A)	Kilde str. m,m²	Afstand til modtager m	Afstandskorr. dB	Terrænkorr. dB	Skærmvirkning dB	Luftabsorp. dB	Refleksionsbidrag dB	Støjbidrag (Ls) dB(A)	LAeq, 8h dB(A)	LAeq, 1h dB(A)	LAeq, 0,5h dB(A)
Port	Point	81,6	81,6		883,6	-69,9	0,4	-20,0	-4,2	0,0	-9,1	-9,1	-9,1	-9,1
Port	Point	81,6	81,6		900,6	-70,1	0,8	-23,5	-3,1	0,6	-10,7	-10,7	-10,7	-10,7
Port	Point	81,6	81,6		832,8	-69,4	0,6	-19,9	-4,0	0,0	-8,1	-8,1	-8,1	-8,1
Port	Point	81,6	81,6		895,3	-70,0	0,7	-22,6	-3,4	0,0	-10,7	-10,7	-10,7	-10,7
Ventilationsafkast	Point	90,0	90,0		914,2	-70,2	-0,3	0,0	-8,5	0,0	11,0	11,0	11,0	11,0
Ventilatoer før kedelskorsten	Point	83,1	83,1		871,0	-69,6	1,2	-16,6	-4,1	0,0	-6,3	-6,3	-6,3	-6,3
Ventilator før biofilter	Point	80,6	80,6		913,1	-70,2	0,8	-19,9	-5,5	0,3	-13,6	-13,6	-13,6	-13,6
Ventilator før biofilter	Point	80,6	80,6		910,7	-70,2	0,8	-20,0	-5,6	16,5	4,2	4,2	4,2	4,2

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