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OPERATIONAL REPORT

ORMONDE ORGANICS LTD.

KILLOWEN

PORTLAW

COUNTY WATERFORD

Prepared For: -

Ormonde Organics,
Killowen,
Portlaw,
County Waterford

Prepared By: -

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Cork. T12 WR89

June 2021

Project	Operational Report			
Client	Ormonde Organics Ltd.			
Report No	Date	Status	Prepared By	Reviewed By
2113802	05/05/2021	Draft	Martina Gleeson PhD	Jim O'Callaghan MSc, CEnv, MCIWM, IEMA
		Final		

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1. INTRODUCTION

Ormonde Organics Ltd operates its Portlaw biological treatment plant, comprising composting and anaerobic digestion (AD) under an Industrial Emissions (IE) Licence (Reg No. W0287-01) granted by the Environmental Protection Agency (EPA) and an Animal By-Products Approval issued by the Department of Agriculture, Food and the Marine (DAFM).

The EPA licence limits the annual waste intake to 40,000 tonnes. It is intended to increase the annual waste intake to 80,000 tonnes. This will involve the provision of the following;

- A feedstock bunker building to the south of the anaerobic digestion intake building and the relocation of an existing liquid feed tank;
- An additional odour abatement unit;
- A maturation building and canopy;
- One new digester;
- One new digestate storage tank;
- Additional storm water attenuation capacity, and
- Widening of internal access road to Anaerobic Digestion facility and extension of existing bund wall and perimeter fence around the facility.

The proposed changes require a review of the IE licence and this Operational Report has been prepared in support of the review application. It is based on the Environmental Impact Assessment Report submitted with the application and it describes the existing and proposed layout, plant, methods, processes, ancillary processes, abatement, recovery and treatment systems, and operating procedures for the activity.

2. OPERATIONS

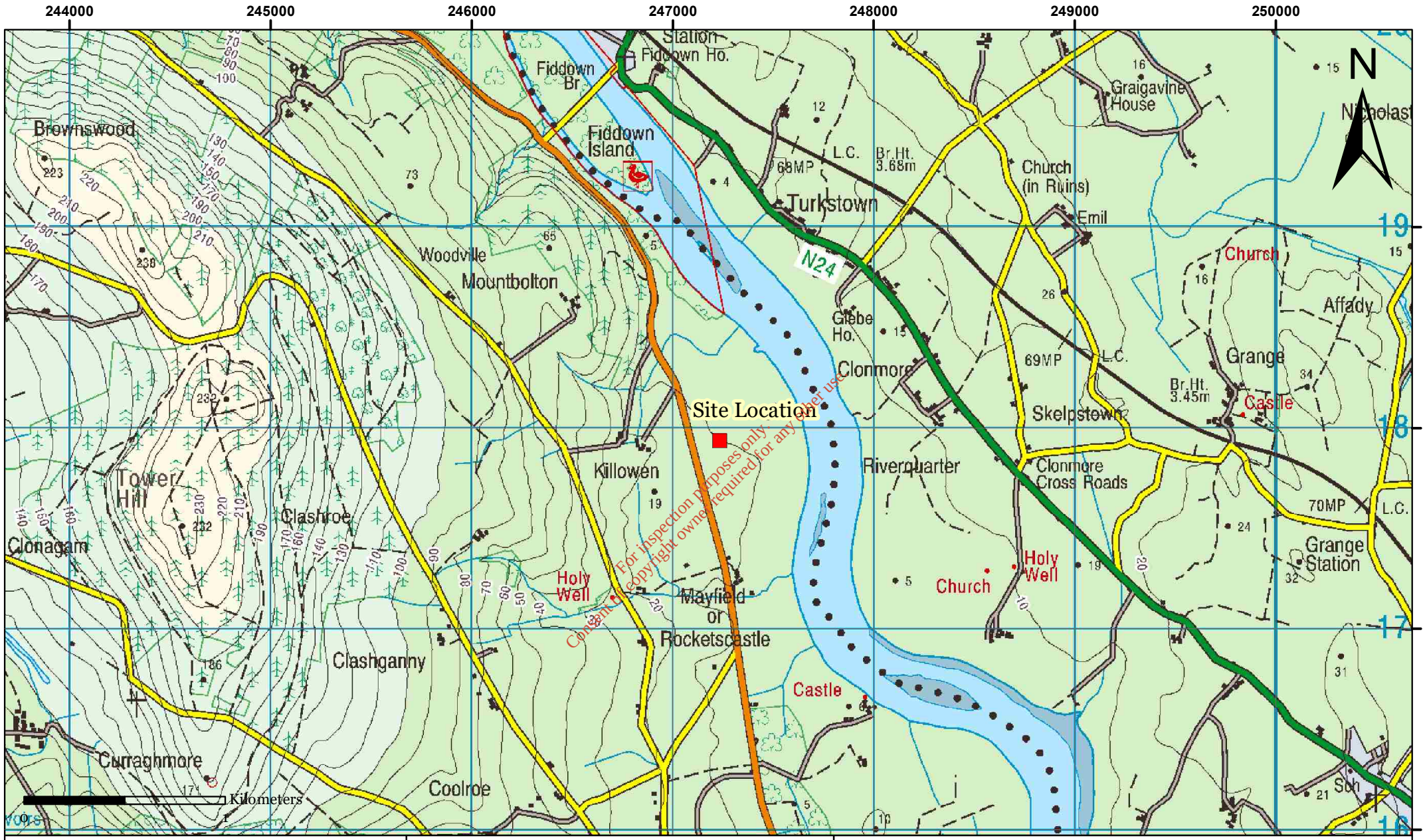
2.1 Site Location

The facility location is shown on Figure 2.1. It is, approximately 2.6 km north of Portlaw town centre. The River Suir is approximately 280 metres from the eastern site boundary. The regional route R680, which runs along the western site boundary, links Portlaw to Carrick-on-Suir to the north-west.

2.2 Site Layout

The site layout is shown on Drawing No. 20P1390-02-P. The site covers 6.43 ha and comprises:

- Building 1 Composting, housing a waste reception area, enclosed forced aeration composting bays, maturation bay and screening area. An annex houses staff welfare facilities, office and hot water header room
- Building 2 AD, housing a waste reception area, packaged food debagging plant, digester feed line and digestate pasteurisation tank.
- A maturation building and canopy to the south of Building 1;
- Machinery workshop and stores at north-eastern side of Building 1;
- A feedstock bunker building in the yard to the south of Building 2;
- 4 No. above ground fully enclosed AD digesters;
- 5 No fully enclosed tanks for storage of incoming liquid waste for the AD plant;
- Combined Heat and Power (CHP) plant comprising 2 No gas engines and back up gas flare.
- Tank farm comprising 13 No tanks of which 5 No. fully enclosed tanks are used to store digestate over the winter period; 2 No. fully enclosed tanks provide quarantine storage and 1 No. used to store firefighting water. A digestate storage tank in the south-east corner of the site.
- 2 No. odour abatement systems (1 No. LECA bio-filter and 1 No. woodchip filter) to the south-east of Building 1;
- 2 No. odour abatement systems (woodchip filter) to the east of Building 2;
- Carbon dioxide recovery unit and gas compressor;
- 2 No. weighbridges;
- Stock proof security fencing;
- Paved open yards provided with perimeter kerbs, stormwater attenuation system, landscaped areas and woodland.



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Environmental Management for Business

CLIENT
Ormonde Organics

TITLE
Site Location

Details:
Site Location

Figure 2.1

A1

LEGEND

- SITE BOUNDARY
- PROPOSED STORAGE TANK or RELOCATED STORAGE TANK
- PREVIOUSLY PERMITTED STORAGE TANK (ref.19296) AND NOW TO BE RELOCATED
- EXISTING COVERED STORAGE TANK/VESSEL
- PERMITTED ROOFED BUILDING NOT YET CONSTRUCTED
- PERMITTED CONCRETE PAVEMENT NOT YET CONSTRUCTED
- PERMITTED BIOGSA DELIVERY PIPES, NOT YET CONSTRUCTED
- EXISTING ROOFED BUILDING
- PROPOSED ROOFED BUILDING
- PROPOSED CONCRETE PAVEMENT
- EXISTING GRASSED AREA
- EXISTING HEDGING AND WOODLAND
- EXISTING METAL MESH PERIMETER FENCE
- PROPOSED METAL MESH PERIMETER FENCE (to match existing)

PROPOSED SITE PLAN

SCALE 1:500

SITE AREA

SITE AREA = 6.43 Hactare or 64,330 sqm

Note:
ITM (Irish Transverse Mercator)
Co-ordinate System Used
North Sign Refers to Grid North
Level Tied to Ordnance Datum (Malin Head)
O.S. Sheet No. 5562-B 5497-D

NOTES:

1. DO NOT SCALE, USE FIGURED DIMENSIONS ONLY.
2. NO PART OF THIS DRAWING MAY BE REPRODUCED OR TRANSMITTED IN ANY FORM OR STORED IN ANY RETRIEVAL SYSTEM OF ANY NATURE WITHOUT THE WRITTEN PERMISSION OF BOWE CONSULTING ENGINEERS AS COPYWRITE HOLDER EXCEPT AS AGREED FOR USE ON THE PROJECT FOR WHICH THE DOCUMENT WAS ORIGINALLY ISSUED.

Issue register

Rev.	Date	Description	Dwg.	Chkd.	Appvd.
P	21.07.20	PLANNING	AD	IB	

Revision change notes

Rev.	Date	Description	Dwn.	Chkd.	Appvd.

PLANNING

Drawing Title: PROPOSED SITE PLAN		Client: ORMONDE ORGANICS	
		Job Description: PROPOSED EXTENSION TO EXISTING FACILITY, PORTLAW, CO.WATERFORD	
Date: 10/03/2020	Scale: 1:500	Project No: 20P1390	Drawing Ref: 02 / Rev: P
Drawn By: AD	Checked By: IB		

Bowe Consulting Engineers
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Carlow Gateway Business Centre, Athy Road, Carlow

2.3 Surrounding Land Use

The surrounding land use is shown on Figure 2.2. The site is in a rural area and dominant land use in the lands surrounding the site are agriculture and forestry. The nearest dwellings are along/off the R680, with the closest being approximately 260 metres from the western side of the compost building. There is a farm 290m to the west of the compost building and a commercial orchard approximately 430 m south of southern boundary of the operational area. The stretch of the River Suir to the east of the site is designated as a Special Area of Conservation (Lower Suir River SAC Site code 002137).

2.4 Operational Hours

Unless otherwise approved by the Agency, wastes are only accepted and compost/digestate dispatched from the installation between 07.00 and 19.00 Monday to Saturday inclusive. Except for the biological treatment processes, which operate continuously, the operational hours are 07.00 and 19.00 Monday to Saturday inclusive, with the exception of construction activities which cease by 17.00 on Saturdays.

2.5 Services

The site has connections to the main electricity supply and telecoms systems. Water is obtained from two on-site wells and harvested rainwater. There is no connection to the municipal foul sewer and no on-site proprietary sanitary wastewater treatment. Sanitary wastewater from the toilets is collected in an underground tank, the contents of which are regularly emptied, mixed with incoming wastes that are then fed to one of the AD digesters.

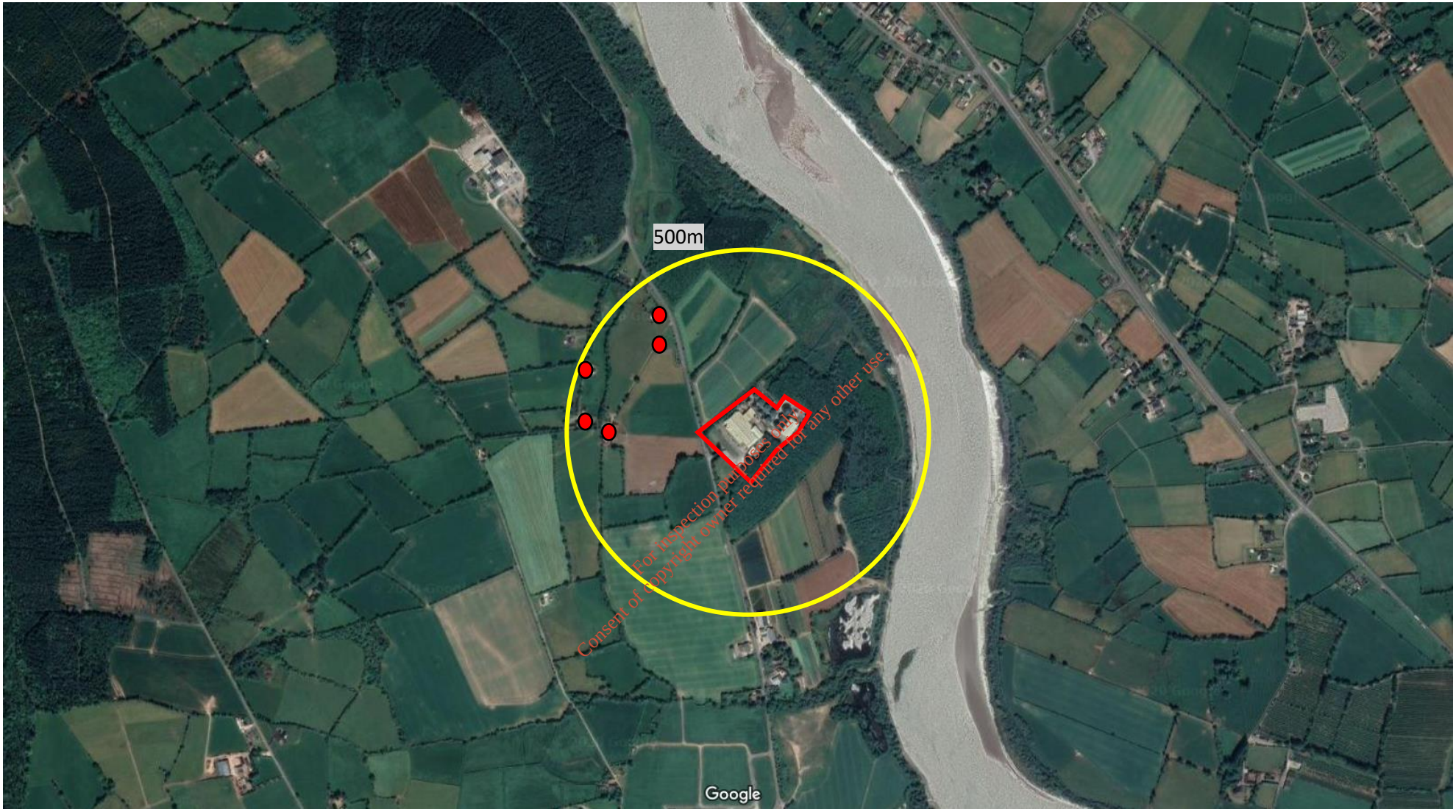
2.5.1 Foul Water

The composting and anaerobic digestion processes do not generate a wastewater that requires either on or off-site treatment. Leachate produced in the composting process is collected in underground holding tanks located inside the building and recirculated in the process to maintain optimum moisture content.

2.5.2 Surface Water

The surface water drainage system is shown on Drawing No 20P1390-10 P. The rainwater run-off from the building roofs that is not harvested and from impermeable areas is collected and directed via an oil interceptor into a storm water retention pond (400m^3 capacity). This is fitted with a flow restrictor at the outlet to limit the flow (10.9 litres/second) to a storm water sump located in the north-west corner of the tank farm. The sump is fitted with a shut-off valve that when closed contains storm water within the site. The sump discharges to a drain that flows north to join the River Suir.

Rainwater run-off from the newly paved areas and the roofs of the new buildings will connect to the existing storm water drainage system. A new retention pond (589m^3) will be installed to the east of and connected to the existing pond.



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Title:

Figure 2.2 Surrounding Landuse

Client:

Ormonde Organics

Legend

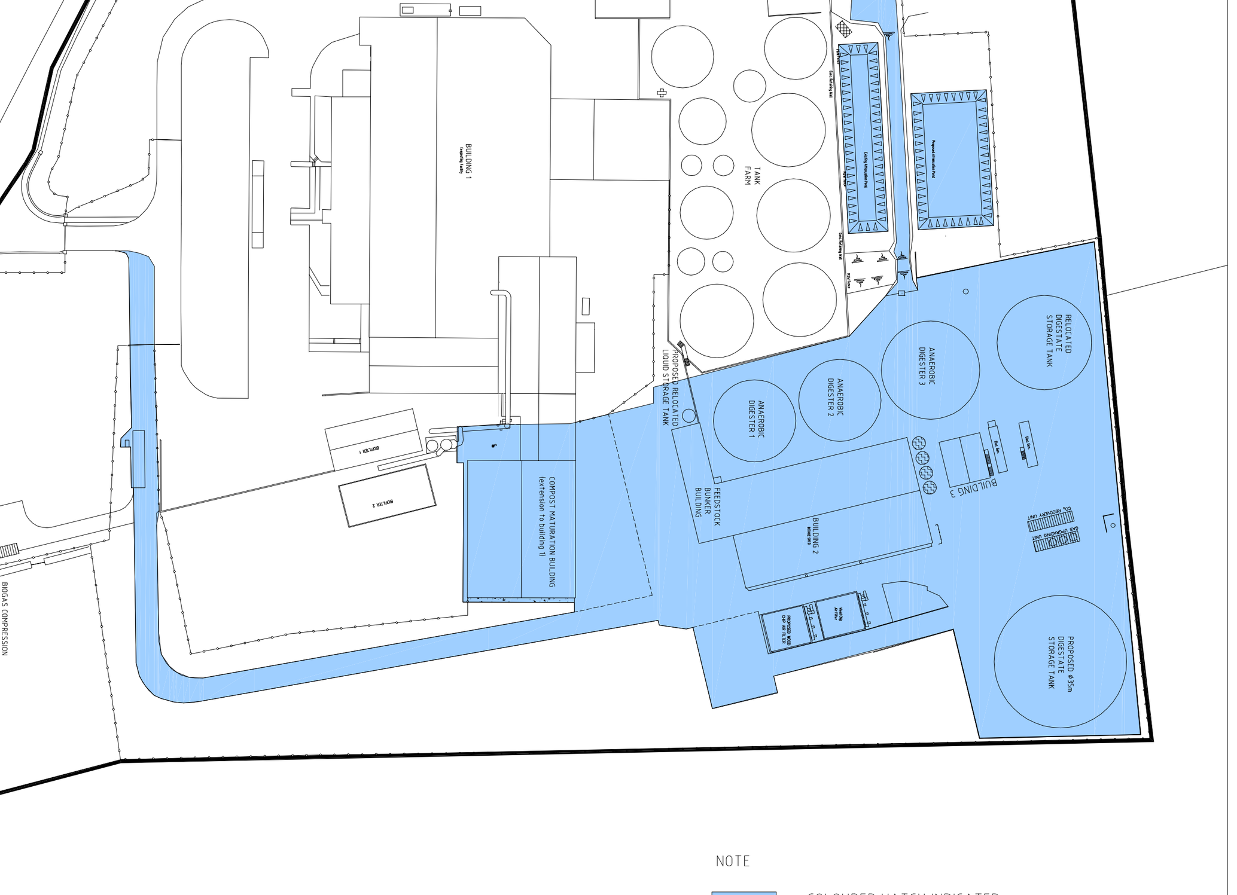
-Site Layout

-Properties

A1

SITE DRAINAGE PLAN

SCALE 1:500



PROPOSED CATCHMENT AREA FOR THE ATTENUATION PONDS

SCALE 1:2000

NOTE

COLOURED HATCH INDICATED THE AREAS HARDSTANDING INCLUDED WITHIN THE CATCHMENT DESIGN FOR THE EXISTING AND PROPOSED ATTENUATION PONDS TOTAL AREA OF 17800 m3

Storm water services

PIPE SIZES AND GRADIENTS FOR STORM PIPE RUNS

MANHOLE	PIPEØ	GRAD.	SPEC	CLASS
S1.0–S1.1	400	200	uPVC	B
S1.1–S1.2	400	200	uPVC	B
S1.2–S1.3	400	200	uPVC	B
S1.3–S1.4	400	200	uPVC	B
S1.3–MHG2	400	200	uPVC	B
S2.0–S2.1	150	45	uPVC	B
S2.1–S2.2	150	45	uPVC	B
S2.2–S2.3	225	45	uPVC	B
S2.3–S2.4	225	45	uPVC	B
S3.0–S3.1	150	50	uPVC	B
S3.1–S2.4	150	50	uPVC	B
S4.0–S4.1	225	30	uPVC	B
S5.0–S4.1	225	30	uPVC	B

MANHOLE DATA FOR STORM DRAINAGE

MANHOLE	CL	IL
S1.0	7.480	5.483
S1.1	7.500	5.442
S1.2	7.200	5.352
S1.3	7.200	5.214
S2.0	10.04	9.21
S2.1	10.04	8.40
S2.2	10.04	8.10
S2.3	10.04	7.74
S2.4	9.79	7.41
S3.0	10.04	7.62
S3.1	9.79	7.41
S4.0	9.375	7.434
S4.1	9.44	6.961
S5.0	9.50	7.466

DRAINAGE NOTES:

DRAWING TO BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT ARCHITECTS AND ENGINEERS DRAWINGS AND SPECIFICATIONS.

DO NOT SCALE, USE FIGURED DIMENSIONS ONLY.

REFER TO ARCHITECTS DRAWINGS FOR SETTING OUT.
ALL COVER LEVELS ARE INDICATIVE AND THE FINAL COVER LEVELS TO MATCH FINISHED PATH/ROAD LEVELS.

THE CONNECTION OF THE BRANCH DRAINS TO MAIN DRAINS SHOULD BE MADE AT A MANHOLE WHERE POSSIBLE OR BY USING AN OBLIQUE TYPE SADDLE. SADDLES SHOULD NOT BE USED ON PIPES OF 100mm DIAMETER, NOR TO CONNECT PIPES OF THE SAME DIAMETER.

ALL PIPES SHOULD HAVE FLEXIBLE JOINTS FORMED BY A METHOD RECOMMENDED BY THE PIPE MANUFACTURER. ELECTROMETRIC SEALING RINGS, COMPLYING WITH THE REQUIREMENTS OF BS 2494, TYPE D, SHOULD BE USED.
MANHOLE COVERS AND FRAMES (TO COMPLY WITH THE REQUIREMENTS OF IS EN 124):

CLASS	LOCATION
D 400	ROADWAYS, HARDSHOULDERS, VEHICULAR ACCESSES
B 125	FOOTWAYS, GRASS VERGES
A 15	AREAS INACCESSIBLE TO MOTOR VEHICLES

GULLIES SHALL BE PRECAST CONCRETE COMPLYING WITH THE REQUIREMENTS OF BS 5911: PART 230, OR MAY CONSIST OF A CHAMBER CONSTRUCTED OF 100mm SOLID BLOCKWORK AND HAVING A 150mm IN SITU CONCRETE FLOOR, WITH INTERNAL DIMENSIONS OF 450mm x 300mm x 750mm. THE OUTLET FROM THE GULLY SHOULD BE 150mm DIAMETER, SET A MINIMUM OF 375mm ABOVE THE FLOOR OF THE CHAMBER.

GULLY GRATINGS IN ROADS SHOULD BE SET WITH THE DIRECTION OF THE OPENINGS AT RIGHT ANGLES TO THE DIRECTION OF TRAFFIC.

DRAINS SHALL BE ACCESSIBLE FOR MAINTENANCE AND REPAIR. ACCESS SHALL GENERALLY BE PROVIDED BY MEANS OF A MANHOLE BUT, SUBJECT TO APPROVAL, A PROPRIETARY ACCESS JUNCTION MAY BE USED IN LIEU OF A MANHOLE, ON A DRAIN WHERE THE DEPTH TO INVERT IS LESS THAN 600mm.

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PLANNING

Issue register

Rev.	Date	Description	Dwg.	Chkd.	Appvd.
P	21.07.20	PLANNING	AD	IB	

Revision change notes

Rev.	Date	Description	Dwn.	Chkd.	Appvd.

Drawing Title: PROPOSED DRAINAGE PLAN	Client: ORMONDE ORGANICS	Bowe Consulting Engineers
Date: 10/03/2020 — Scale: 1:500	Job Description: PROPOSED EXTENSION TO EXISTING FACILITY, PORTLAW, CO.WATERFORD	(059) 9137422 — www.bce.ie — E-mail info@bce.ie
Drawn By: AD — Checked By: IB	Project No: 20P1390 — Drawing Ref: 10 — Rev: P	Carlow Gateway Business Centre, Athy Road, Carlow

The outflow rate from the existing pond will remain the same and, as the level in this pond rises in response to the increased run-off from the development, the water will overflow into the new pond. After a rainfall event the level in the existing pond will drop allowing the water in the new pond to flow back into it and enter the sump.

2.6 Installation Management

Staff include a Facility Manager, Deputy Manager, general operatives and office staff. The facility management and staff have the requisite qualifications and experience. Ormonde Organics has, in accordance with the requirements of the current licence, prepared a documented Environmental Management System that serves as a guidance document for facility staff and describes operational control and management practices. All operatives are provided with the appropriate training to complete their assigned tasks.

2.7 Waste Types & Quantities

The installation has the capacity to accept and process 80,000 tonnes of biological waste annually. The wastes include municipal wastewater treatment sludge, off specification food and beverage waste, expired packaged food waste non-hazardous industrial and water treatment sludge and other biodegradable waste, including household and commercial brown bin waste.

2.8 Waste Acceptance Procedures

Ormonde Organics has prepared a documented waste acceptance procedure to ensure only suitable wastes are accepted. The incoming wastes are weighed at the weighbridge and the accompanying documentation is checked. Any waste not deemed suitable is not accepted and the vehicle driver is instructed to return the waste to the producer. The following information is recorded:

- Description of the waste including waste types (e.g. industrial wastewater treatment sludge)., and relevant List of Waste Codes (LoW) codes[1];
- The origin of the waste, including all customer details;
- Haulier details;
- Vehicle Registration,
- Weight of the waste load.

2.9 Waste Processes

Composting

Wastes intended for composting are off-loaded from the delivery vehicles inside Building 1. The waste is inspected and any non-conforming materials e.g. large pieces of timber and plastic are removed. The wastes are then mixed with woodchip and loaded into one of nine dedicated concrete walled forced aeration compost bays, where they stay for a minimum of two weeks.

[1] This waste classification system applies across all EU Member States.

The materials are then removed from the bay and mechanically screened, with the oversize sent back to the reception area for reuse. The screened material is then placed in a maturation tunnel and temperature probes inserted into the stock pile.

The probes are monitored to confirm that a temperature of at least 70°C has been achieved for a minimum of 1 hour[2]. The pasteurised material is removed from the tunnel and moved either to one of two maturation bays, or a quarantine bay.

The materials in the quarantine bay are sampled and tested to confirm compliance with the compost quality specification set in the licence. The materials in the maturation bays are stored before being sent off-site for land application.

Anaerobic Digestion

Liquid wastes are stored in above ground, fully enclosed storage tanks located at the northern side (4 No.) and southern side (1 No.) of Building 2, from where the contents are pumped to the digesters. Packaged food wastes are debagged inside Building 2 using liquid feedstocks to facilitate pumping to the digesters. Prior to pumping to the digesters this liquid depackaged material is stored in two tanks adjacent to the southern side of the building.

The contents of the digesters are continuously agitated and maintained at an optimum temperature of 37 to 40°C. Retention time in the digesters for the feedstocks is approximately 60 days and the end products are biogas and digestate. After approximately 60 days retention the digestate is transferred to a pasteurisation tank where the temperature is raised to 70°C for a minimum of one 1 hour. The biogas is drawn off and sent to either the CHP plant or the Biogas Upgrade Unit.

The biogas consists of predominantly methane and carbon dioxide, but also contains very small amounts of hydrogen sulphide, nitrogen and trace amounts of oxygen. The biogas is treated by carbon filters to reduce the levels of hydrogen sulphide before it is used as a fuel in the two gas engines in CHP plant. A gas flare is provided as a back–up for periods such as servicing.

The Biogas Upgrade Unit in the south-east corner of the site also uses carbon filters to remove the hydrogen sulphide and volatile organic compounds following which the carbon dioxide is removed from biogas using membrane filtration. The methane, following compression, can be exported to the national gas grid. Pending securing a connection to the grid the compressed methane is transferred to bulk road tankers and sent off-site for use as a renewable fuel.

The digestate has a significant nutrient and soil enhancement value and after pasteurisation, depending on the time of the year, is either immediately sent off site for application to agricultural lands, or stored in dedicated storage tanks on site until the Good Agricultural Practice Regulations allow land application.

Liquid wastes are stored in above ground, fully enclosed storage tanks located at the northern side (4 No.) and southern side (1 No.) of Building 2, from where the contents are pumped to the digesters. Packaged solid food wastes are debagged inside Building 2 and the contents mixed with water/liquid waste to facilitate transfer to the digesters. The liquid waste/water used in the process is stored in two tanks adjacent to the southern side of the building.

[2] This is the pasteurisation specification defined by DAFM

The contents of the digesters are continuously agitated and maintained at an optimum temperature of 37 to 40°C. It takes approximately 60 days for each batch to complete the digestion and post digestion stages and the end products are biogas and digestate. The biogas is drawn off and sent to the CHP plant or the carbon dioxide recovery unit. The digestate is transferred to a pasteurisation tank where the temperature is raised to 70°C for a minimum of one 1 hour.

The biogas consists of predominantly methane and carbon dioxide, but also contains a small amount of hydrogen sulphide and ammonia, as well as traces of other gases. The biogas is treated to reduce the levels of ammonia and hydrogen sulphide before it is used as a fuel in the two gas engines in CHP plant. A gas flare is provided as a back–up for when the gas engines are shut down for routine servicing.

A carbon dioxide recovery unit in the south-east corner of the site reduces the levels of carbon dioxide in the biogas to a point where the methane, following compression, can be exported to the national gas grid. Pending securing a connection to the grid the compressed methane is transferred to bulk road tankers and sent off-site for use as a renewable fuel.

The digestate has a significant nutrient and soil enhancement value and after pasteurisation, depending on the time of the year, is either immediately sent off site for application to agricultural lands, or stored in the tank farm tanks until ground/weather conditions and the Good Agricultural Practice Regulations allow land application.

Schedule E of the current licence specifies the range of tests that must be completed on the compost and digestate to confirm they are suitable for land application. Ormonde Organics maintains records of the tests for inspection by the Office of Environmental Enforcement (OEE).

2.10 Plant & Equipment

The plant and equipment include:

- Front loading shovels
- Forklifts
- Air compressors
- Depackaging unit
- Air extraction fans and ducting
- Odour abatement units.
- CHP gas engines and back-up flare
- Carbon dioxide recovery unit and methane gas compressor

The mobile and fixed plant items have the capacity to accommodate the increased annual waste intake. An additional odour abatement unit will be installed to treat odorous air from the anaerobic digestion feedstock building.

2.11 Oil & Chemical Storage

The machinery workshop at the north-eastern side of Building 1 is used to service the mobile plant and repair damaged equipment. Diesel for the mobile plant is stored in 1,500 litre above ground bunded storage tank located beneath a canopy adjoining the workshop and in a 1,000 litre bunded tank inside Building 2. There is a second oil storage tank in a bund on the western side of Building 1, but this is empty and not in use.

Lubricating and hydraulic oils and coolants used in plant maintenance are stored at the rear of Building 1. Sulphuric acid used in the wet scrubber in the odour control system is stored in a bunded storage tank adjacent to the biofilters.

2.12 Materials & Waste Storage Plan

Ormonde Organics has, in accordance with Condition 8.6 of the current licence, prepared a Materials & Waste Storage Plan for all waste, other feedstocks, compost, digestate, other materials and waste water stored and held at the installation. This is a dynamic document that is subject to regular revision. A copy of the current Plan is maintained on site for inspection by the OEE.

2.13 Waste Generation

The welfare facilities and office generate small amounts of food waste, plastic and paper. These are collected and sent of site for treatment. The expired food debagging plant generates waste packaging. The composting of the 'brown bin' waste generates residual wastes, primarily plastic that are inadvertently placed in the 'brown bins' by householders. All non-biodegradable wastes are sent off-site for treatment.

2.14 Emissions

Emissions associated with the waste activities include, rainwater run-off, contaminated run-off, dust, noise, odours and exhaust gases from the CHP engines.

2.14.1 Air

The incoming wastes, the composting and anaerobic digestion processes and the four biofilters are a source of odours. The composting process is also a source of bioaerosols. The two CHP gas engines and gas flare are point emission sources that contain the biogas combustion products. Potential dust sources include vehicle movement over the concrete yards during dry periods and compost screening.

2.14.2 Storm Water

Rainwater run-off from the paved areas and building roofs is collected and directed to an attenuation system via an oil interceptor. The water from the attenuation system outflows to the River Suir at a regulated rate (10.9 litres/second). The current licence specifies emission limit values for the emission and also the monitoring requirements.

2.14.3 Ground / Groundwater

There are not and will not be any direct or indirect emissions to ground and groundwater.

2.14.4 Noise

Noise emission sources include the waste and finished product transport vehicles, the mobile plant, air compressors, the aeration and air extraction fans and the CHP plant.

2.15 Emission Controls

2.15.1 Surface Water

Rainwater run-off from the building roofs and impermeable areas enters the existing 400m^3 capacity retention ponds via an oil interceptor. Additional retention capacity (589m^3) will be provided to accommodate the increase in the paved areas. The water will continue to discharge from the site via the existing pond which is fitted with a flow restrictor that limits the flow to the River Suir to 10.9 litres/second. In the event of an incident that has the potential to contaminate the run-off a shut off valve can be closed to prevent an emission to the river.

The digesters, intake feed tanks and digestate storage tanks are located in appropriately sized and constructed bunds that prevent any accidental spills or leaks from entering the surface water drainage system.

2.15.2 Noise

All waste reception, processing and storage is and will continue to be carried out inside the buildings. Noise monitoring has established that noise levels from the plant and equipment comply with the limits set in the licence and that additional control measures are not required.

2.15.3 Air

Waste processing is and will continue to be located inside the buildings. During extended periods of dry weather the paved yards can be damped down to minimise the risk of dust generation by vehicle movements.

The diesel fuelled heavy goods vehicles based at the facility are fitted with Selective Catalytic Reduction (SCR) systems. A diesel fuel additive (AdBlue) is used in the SCR to reduce the nitrous oxide levels in the exhaust gases. The exhaust gases from the CHP plant must comply with the emission limit values specified in the licence.

All waste acceptance and processing is carried out inside the buildings. Doors are kept closed and only opened to allow vehicles to enter and leave the buildings. The existing odour abatement controls comprise air extraction fans that draw odorous air from inside the composting and the anaerobic digestion intake building and the feedstock bunker to the biofilters.

2.16 Nuisance Control

Ormonde Organics implements the nuisance control measures specified in the licence to mitigate the impacts of noise, dust, litter and odours and minimise the risk of site activities being a source of nuisance outside the facility boundary.

2.17 Emission Monitoring

Condition 6.2 and Schedule C of the current licence requires the monitoring of the CHP gas engine stacks, the biofilters, surface water, groundwater, dust, noise and air at defined monitoring locations, as shown on Figure 2.3. Following the grant of the revised licence Figure 2.3 will be amended to show the new emission monitoring points.

2.18 Safety and Hazard Control

Ormonde Organics have adopted an Accident Prevention Policy and prepared a Safety Statement that identifies and evaluates the major on-site potential hazards and describes the control measures in place. All site staff receive the appropriate training for their particular roles. All personnel and visitors are obliged to comply with site guidelines regarding access to and from the facility and on-site traffic movement. All site personnel are provided with and are obliged to wear, personal protective equipment (PPE) appropriate for their particular functions. PPE includes facemasks, gloves, safety glasses, steel-toed footwear, overalls, reflective jackets and helmets.

2.19 Accidents & Emergencies

An emergency is an accident/incident that has the potential to result in environmental pollution and/or harm to human health. The current licence requires Ormonde Organics to ensure that an Emergency Response Procedure (ERP) that addresses any emergency/incident that may occur and makes provisions for minimising the effects on the environment, has been prepared and communicated to all staff members.

The facility is not subject to the requirements of the Chemicals Act (Control of Major Accident Hazards involving Dangerous Substances) Regulations 2015 (S.I. No. 209 of 2015) (the "COMAH Regulations"); however recent amendments to Directive 2014/52/EU on the effects of certain public and private projects on the environment (EIA Directive) requires an EIA of a proposed development to take into consideration the effects of a major accident. Ormonde Organics completed an assessment of the likely effects of major accidents, which identified that the most likely major accident is a fire.

2.20 Fire Prevention, Detection and Suppression Measures

2.20.1 Fire Prevention Measures

Storage of Combustible and Flammable Materials

The amount of combustible solid material on site at any one time is kept to a minimum. This comprises the plastic packaging removed from the incoming food stuffs and is stored inside the anaerobic digestion intake building.

There is a 1,500 litre double skinned diesel storage tank located adjacent to the entrance to the machinery workshop and a 1,000 litre bunded storage tank inside the anaerobic intake building. Approximately 500 litres of virgin and waste oils are stored in drums in the workshop.

The following principles are applied to the storage of combustible materials and flammable liquids.

- Good housekeeping and prompt transfer of wastes to prevent the build-up of combustible materials.

- The method of storage is generally consistent with the recommendations in 'Reducing Fire Risk at Waste Management Sites' (Waste Industry Safety and Health Forum 2014) and is based on the site characteristics, and

- Regular inspection of plant and equipment for leaks and damage to prevent spillage of flammable liquids.

Control of Sources of Ignition

The potential sources of ignition include:

- arson/vandalism;

- naked flames/smoking;

- incidents related to welding and cutting;

- electrical faults/heating faults/equipment failures;

- self-heating of waste that has been stockpiled for too long.

The controls measures applied to minimise ignition sources include:

- Security fencing to prevent unauthorised entry.

- No smoking policy.

- All welding carried out inside the maintenance workshop.

- Hot Work Permit System in place.

- A preventative inspection and maintenance schedule is in place for all plant and equipment including all electrical plant.

- Only authorised personnel are permitted within the processing areas, and

- Minimising the amount of combustible waste stockpiled at the facility.

Safety Audits

Internal safety audits are carried out monthly. An external Health and Safety consultant also carries out safety audits.

2.20.2 Fire Detection

The fire detection/alarm procedure comprises following:

- Site staff or security officer, who will alert other staff members in the event of a fire,

- The Facility Manager and Deputy Manager are the designated Site Incident Controllers, with responsibility for assessing the scale of an incident and, alerting the fire service.

2.20.3 Fire Response

The responsibilities are detailed in the Emergency Response Plan, which covers all potential emergencies and describes the response actions in the event of a fire. All employees are provided relevant training in:

- Fire control, including the proper use of suppression equipment
- Fire protection equipment handling
- First aid
- Evacuation control
- Closure of the shut off valve on the surface water drainage system to prevent firewater discharging from site to the River Suir.

2.20.4 Fire Suppression

The on-site fire abatement equipment includes:

- Fire extinguishers located at strategic points around the facility,
- Firewater reservoir tank in the tank farm.

In the event of an emergency call out Waterford Fire Service tenders will bring additional water to the site. If additional water is required it can be obtained from the on-site wells or the River Suir.