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OPERATIONAL REPORT

ADVANCED ENVIRONMENTAL SOLUTIONS (IRELAND) LTD.

CAPPINCUR

TULLAMORE

COUNTY OFFALY

Prepared For: -

Advanced Environmental Solutions (Ireland) Ltd,
Bogtown,
Cappincur,
County Offaly

Prepared By: -

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January 2018

Project	Operational Report			
Client	Advanced Environmental Solutions (Ireland) Ltd.			
Report No	Date	Status	Prepared By	Reviewed By
1716702	07/01/2018	Draft	Martina Gleeson PhD	Jim O'Callaghan MSc, CEnv, MCIWM, IEMA
		Final		

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1. INTRODUCTION

Advanced Environmental Solutions (Ireland) Ltd (AES) is one of the largest waste management companies in the Eastern Midlands and Southern Waste Regions. It is part of the Bord na Mona group and operates waste management facilities at Lusk, Navan, Tullamore, Portlaoise, Nenagh and Rosslare.

The AES installation in Tullamore operates under an Industrial Emissions Licence (Reg. No 104-03) (EPA Licence) issued by the Environmental Protection Agency (Agency) which authorises the acceptance of 60,000 tonnes of non-hazardous waste annually. AES is applying to the Agency for a Licence Review to increase the amount of waste it can accept annually from 60,000 tonnes to 80,000.

This Operational Report has been prepared in support of the IE review application. 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 Layout

The installation encompasses 1.16 hectares and is accessed from the local Daingean Road via a gate at the north-west corner of the site. It comprises a Process Building (3,160m^2), Welfare Building (80m^2) a Site Office (244m^2) and open yards (8,182m^2), as shown on Drawing No. 1. The open yards are entirely paved and there is a perimeter kerb along the eastern site boundary. The installations is currently licensed to accept and process 60,000 tonnes of non-hazardous waste per annum.

2.2 Operational Hours

The licensed operational are 06.00 hrs to 00.00 hrs Monday to Saturday, inclusive. The waste processing hours are 07.00 hrs to 23.00 hrs Monday to Saturday.

2.3 Site Security

The entrance is secured by a steel roller gate, a 3m high concrete wall and palisade fencing, which extends around the entire boundary. A closed circuit television (CCTV) is used to monitor the site perimeter and yards.

2.4 Services

The electricity supply is a 38 kV line with a pole mounted transformer located in the south-west corner of the site. A diesel fuelled generator is used to power air compressors used in the sorting line inside the Process Building. The water supply is provided by a 1/2'' water main from the Ballinagar Group Water Scheme.

Sanitary wastewater from the Welfare Building is treated on-site in a Moving Bed Biological reactor (MBBR) wastewater treatment system. The treated effluent is pumped to a chamber (27m^3) in an above ground holding tank located at the north-east side of the Process Building.

ACCESS ROAD

N1

D1

STREAM

ACCESS ROAD

RG

CAR PARKING

GW1

SW02

RG

RG

CONCRETE DRAINAGE CHANNEL

RG

SW01

Existing Water Connection

RG

Wheel Wash Unit

Overhead Power Line

SW03

CAR PARKING

SKIP STORAGE

Wheel Wash
Water Supply

Foul PS

RG

CONCRETE DRAINAGE CHANNEL

50mmØ Rising Main

75mmØ Hydrodare Connection

RG

SW07

MH03

MH04

GW1

Existing MBBR Wastewater
Treatment Facility.

N

Existing Watermain

E.S.B. Pole

RG

ADMIN BUILDING

RG

MH02

CANTEEN

MH01

50mmØ Rising Main from MBBR Plant to Effluent Holding Tank

STREAM

ACCESS ROAD

Power Supply Ducting for Leachate Pump

RG

50mmØ Rising Main from Leachate Sump

Effluent Holding Tank Protected
by Type 2 Retaining Wall Units
Supplied by Shay Murtagh

RG

B

B

WASTE
PROCESSING

ELECTRICAL
CABINET

RG

TRAILER
STORAGE

RG

WASTE
RECEPTION
&STORAGE

BALE STORAGE

RG

BALE STORAGE

RECYCLED
BALE STORAGE

GW3

SW04

FH

STREAM

ACCESS ROAD

Existing Surface Water Sewer

Quarantine
Area

RG

RG

CONCRETE DRAINAGE CHANNEL

RG

SW06

SW05

1800mmØ Manhole
to Incorporate pump

Flow Splitting Chamber
to Intercept Existing
Surface Water Sewer

1200mmØ Manhole to
Incorporate non-return valve

1200mmØ Manhole to
Incorporate magnetic flow meter

RG

SW08

STORAGE BAYS FOR
BALED WASTE

Discharge to Existing 600mmØ
Surface Water Sewer

250mmØ uPVC Rising Main

A

CINDER

CINDER

CINDER

CINDER

A

200mm deep Concrete
Slab Over Oil Interceptors

Existing Surface
Water Manhole

SW1

CULVERT

Kiosk on 100mm concrete
plinth to house Pump Control
Panel, PH and temperature
monitoring equipment.

N3

SKIP/MATERIAL STORAGE

GW2

D3

DOG
POUND

COMMUNAL FIRE
WATER TANK

NOTES

1. All levels refer to Ordnance Survey Datum, Malin Head.
2. All dimensions in millimeters unless noted otherwise.
3. All Trenches shall be opened and back-filled in accordance with Department of Environment and Local Government publication 'Guidelines for the Opening, Backfilling and Reinstatement of Trenches in Public Roads (April 2002)'.

	REVISION	By	Date	Chk'd

Project: AES Tullamore
Materials Recovery Facility

Title: Waste Storage
Plan

Dimensions in.	mm	
Scale.	1:250	
Drawn By.	M.G.	31/03/17
Checked By.		
Approved By.		

BORD NA MÓNA
BORD NA MONA ENERGY LIMITED
LEABEG, TULLAMORE CO. OFFALY
Tel. 057 9345900. Fax. 057 9345160

Drawing No.	Revision.	Sheet
1	A	1 of 1

A sump inside the Process Building collects floor wash water and the contents are pumped to a second chamber ($3m^3$) in the holding tank.

The tank is fitted with a high level alarm and the contents are sent for treatment at the Irish Water wastewater treatment plant serving Tullamore. The wastewater is subject to regular testing to confirm it is suitable for treatment in the Irish Water plant.

Fire water is stored in two above ground tanks outside the south-west corner of the site, and which serve as communal tanks for the Industrial Estate. Each tank has a capacity of $53m^3$ and there is a gravity feed to a fire hydrant at the south-eastern corner of the Process Building.

2.5 Facility Management

Employee numbers vary seasonally from between thirty and seventy, including management, administration, general operatives, drivers and maintenance staff. The Facility Manager has overall responsibility for operations, with designated responsibilities for performance and compliance support assigned to an Environmental Officer.

AES has a NSAI accredited Integrated Management System incorporating Environmental (ISO 14001:2004), Health & Safety (OHSAS 18001) and Quality (ISO9001:2007). These management systems are audited annually.

The key elements of the Environmental Management System comprise identifying environmental aspects associated with site activities; the determination of suitable operational controls (engineering and administrative); the identification of pertinent legal requirements; definition and implementation of objectives and targets; ongoing monitoring of performance and compliance; emergency planning, and regular management review of performance.

2.6 Waste Types & Quantities

2.6.1 *Current Waste Types and Quantities*

The current planning permission and EPA Licence authorise the acceptance of 60,000 tonnes of waste annually comprising:

- Municipal Solid Waste 27,200 tonnes,
- Commercial and Industrial 28,000 tonnes,
- Construction & Demolition (C&D) 4,800 tonnes.

2.6.2 *Proposed Waste Types and Quantities*

It is proposed to increase the waste quantities from 60,000 tonnes per annum to 80,000 tonnes per annum.

2.7 Waste Acceptance Procedure

All incoming waste is subject to documented waste acceptance procedures that have been approved by the EPA. Only waste delivered by haulers that have up to date Waste Collection Permits is accepted. When a delivery vehicle arrives it is weighed at the weighbridge, the vehicle registration number recorded and a weight docket is printed.

After weighing, the vehicles drive to the Process Building where the waste is off-loaded and visually inspected. Unsuitable wastes are moved to a designated Quarantine Area where it is stored before being sent to appropriately licensed disposal/recovery facilities.

2.8 Waste Processes

The residual waste is typically delivered in rear end loaders. It is off-loaded onto the building floor and then re-loaded into articulated trailers and sent off sent off-site for treatment. The construction and demolition wastes are typically delivered in skips. These are tipped on the floor and the waste is then segregated to remove wood and metal from the rubble, with the segregated materials sent off-site for further treatment.

The mixed dry recyclables, including newspapers, plastics, cardboard, etc. are deposited on the floor of building and then loaded onto a conveyor that feeds a picking line where the different types are separated and then baled. The bales are stored in the yard to the west and south-west of the Process Building pending consignment to recycling plants.

2.9 Plant and Equipment

The following mobile and stationary processing plant and equipment are used:

1 No. Cherry Picker

1 No. Road Sweeper

2 No. Bobcats

3 No. Forktrucks

1 No. Baler

1 No. Shredder (Paper)

1 No. Shunter

1 No. Processing Line comprising conveyors, manual picking line, magnets and eddy current separators.

1 No. Generator

2 No. Compressors

1 No. Wheelwash

2.10 Waste Storage

Wastes are stored in accordance with the Waste Storage Plan, a copy of which is in Appendix 1.

2.11 Oil and Chemical Storage and Handling

Operations involve the storage and handling of diesel, hydraulic and lubricating oils. Diesel for the waste collection vehicles is stored in a 44,000 litre above ground double skinned steel tank. The associated dispensing unit is fitted with a spill collection tray. Diesel for the site plant is stored in a double skinned above ground plastic tank (2,500 litres) located beside the 44,000 litre tank.

Diesel for the on-site generator, which is located to the rear of the offices at the western side of the Process Building, is stored in an integral 1000 litre tank. Ad Blu for the road vehicles is stored in a double skinned above ground plastic tank (2,500 litres) located beside the site plant diesel tank.

The storage tanks were installed in 2012 are subject to regular integrity assessments and the most recent, which were completed in 2016, confirmed they are fit for purposes.

2.12 Safety and Hazard Control

AES has prepared an Accident Prevention Policy (APP) and Emergency Response Procedure (ERP) and copies are in Appendix 1. The APP specified the measures in place to minimise the risk of accidents and the ERP specifies response actions to deal quickly and efficiently with all foreseeable major incidents.

All facility personnel and visitors are obliged to comply with AES's safety 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.

2.13 Emissions

Potential and actual emissions associated with the waste activities include, rainwater run-off, sanitary and process wastewater, contaminated run-off, dust, noise and odours.

2.13.1 *Air*

There are no point emission sources associated with the waste processing activities. Potential fugitive emissions include dust and vehicle exhausts in the operational stage. Vehicle exhausts contain a range of compounds that affect air quality, for example nitrous oxide, carbon monoxide, methane, carbon dioxide, benzene and particulates.

2.13.2 *Surface Water*

Rainwater run-off from the building roof is harvested for use on site, with the remaining run-off discharged to a drain at the south-west corner of the site via a series of Class 1 full retention interceptors to an open man-made drain at the south-west boundary. The drain joins the Tullamore River approximately 750 m to the south of the facility.

2.13.3 *Ground / Groundwater*

There are no direct or indirect emissions to ground and groundwater. The building floors and the operational yards are paved with concrete.

2.13.4 *Noise*

The noise sources include waste offloading, waste sorting, baling and vehicle loading. The waste transport vehicles, the fixed and mobile waste transport plant are sources of noise emissions. Emissions occur during the waste acceptance and processing periods.

2.14 **Abatement Controls and Treatment**

All waste processing is carried out inside the Process Building to minimise the impacts of potential nuisances such as noise, dust and odours. The entrances to the building are provided with doors and dust curtains.

Only baled dry recyclables are stored in the open yards. These measures effectively mitigate noise and dust emissions and assist in the control of odour emissions. The processing does not generate any wastewater and the paved building floors are regularly cleaned.

AES implements the nuisance control measures specified in the licence to mitigate the impacts of noise, dust, litter and odours so as to minimise the risk of site activities being a source of nuisance to neighbours and members of the general public.

AES has contracted a specialist vermin control company to carry out pest control at the facility. The contractor provides and maintains external bait boxes and also carries out insect control measures as required. Site staff carry out daily nuisance and litter inspections and daily litter picks.

2.15 **Emergencies**

An emergency is an accident/incident that has the potential to result in environmental pollution and harm to human health & safety. The licence requires AES to ensure that a documented Accident Prevention Procedure is in place that addresses the hazards on-site, particularly in relation to the prevention of accidents that have a possible impact on the environment. The licence also requires AES to ensure that an Emergency Response Procedure is in place that addresses any emergency that may originate on-site.

AES has prepared an Accident Prevention Policy (APP) and Emergency Response Procedure (ERP). The APP specified the measures in place to minimise the risk of accidents and the ERP specifies response actions to deal quickly and efficiently with all foreseeable major incidents.

All facility personnel and visitors are obliged to comply with AES's safety 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.

In the event of a breakdown of equipment or any other occurrence which results in the closure of the facility, any waste arriving at or already present will be transferred directly to an appropriate waste management facility until such time as the AES installation is returned to a fully operational status.

AES has completed an assessment of the environmental effects of any accidents that may occur. Based on the types of waste that are and will be accepted and the activities carried out, the only accidents that present a significant risk of environmental pollution is a fire.

2.16 **Waste Generation**

Waste generated includes office and canteen waste, waste oils and spent batteries. AES implements waste prevention, minimisation and segregation procedures to minimise the amounts of wastes arising and ensure that as much as possible is recycled and recovered. Waste oils and spent batteries are sent for treatment at authorised facilities.

2.17 **Nuisance Control**

AES implements the nuisance control measures specified in the EPA Licence to mitigate the impacts of noise, dust, litter and odours so as to minimise the risk of site activities being a source of nuisance to neighbours and members of the general public.

The Licence requires the establishment and maintenance of an odour management system for the Process Building and, if considered necessary by the EPA, the installation of an appropriate negative air pressure system and odour abatement system. The EPA has not required the installation of this system.

AES has contracted a specialist vermin control company to carry out pest control at the facility. The contractor provides and maintains external bait boxes and also carries out insect control measures as required. Site staff carry out daily nuisance and litter inspections and daily litter picks.

APPENDIX 1

WASTE STORAGE PLAN

TOPIC:	SITE LOCATION:
WASTE STORAGE PLAN	**AES Tullamore**

	Waste Storage			
Communication by:				
SUBJECT TYPE:	√ H&S	√ Environmental	☐ Quality	☐ Other

INTRODUCTION

1.0 Plan Overview

1.1 Purpose

The purpose of this plan is to achieve and maintain compliance with Condition 8.17 of W0104-03.

1.2 Scope

The Plan applies to all waste storage activities at AES Tullamore.

1.3 Responsibility

It is the responsibility of the Facility Manager to ensure that Plan is up to date and is communicated to the relevant nominated personnel and implemented on site

It is the responsibility of the nominated supervisors to ensure that this plan is adhered to fully.

2.0 References

Conditions 8.11.2, 8.11.3, 8.111.4 and 8.17 of W0104-03.

Fire Risk Assessment 2017.

The EPA Guidance Note: Fire Safety at Non-Hazardous Waste Transfer Stations, 2013.

The EPA Guidance on Fire Risk Assessment for Non-Hazardous Waste Facilities, 2016

Firewater Risk Assessment 2017.

3.0 Terminology

For consistency, the following terms are used

- Stockpiles - stored accumulations of all forms of stored wastes, whether baled, open or otherwise stored;
- Enclosed stockpiles – wastes (either loose or baled etc) stored in a bay or enclosure, such as a three-sided bay, where the walls of the enclosure are of an appropriate construction resulting in an effective fire shield
- Open stockpiles – wastes (loose or baled etc) which are not stored in bays/ enclosures, such as an open stack of paper bales or open stack of loose wood
- Loose – wastes which have not been baled/wrapped, such as stockpiles of loose wood, tyres, plastic bottles etc. Such loose waste can either be in bays or in the open (such as an open pile of loose wood)
- Baled/wrapped – wastes which have been baled and/or wrapped, or similar, as discrete packages/items. Such baled/wrapped wastes can be either in bays or open stockpiles.

4.0. Site Layout

The facility occupies 1.16 hectares and comprises a Process Building (3,160m^2), Welfare Building (80m^2) a Site Office (244m^2) and open yards (8,182m^2).

5.0 Waste Activities

AES accepts residual household and commercial waste, and construction and demolition (C&D) waste and mixed dry recyclables (MDR). All waste processing is carried out inside the Process Building. The residual waste is off-loaded from the waste collection vehicles and then loaded into articulated trailers and sent off-site for treatment. The C&D wastes are tipped on the floor manually segregated to remove wood and metal, with the segregated materials then sent off-site for further treatment. The MDR are separated and then baled.

6.0 Waste Storage Areas

Wastes are stored in designated areas inside the Process Building and externally in the yards, as shown on Drawing No.1

6.1 Process Building

Loose residual household and commercial wastes are temporarily stored in stockpiles on the floor in the north-east of the building pending bulk transfer.

Loose segregated C&D wastes are temporarily stored in stockpiles adjacent to the processing area pending transfer.

Baled recyclables are stockpiled in a bay in the south and south-east corner of the process building.

6.2 External Yards

Baled cardboard, plastic and metal containers are stored in an open stockpile beneath the canopy outside southern elevation of the Process Building. Baled plastic and cardboard is stored in open stockpiles in the yard to the south and east of the Process Building.

6.0 Storage Procedures

To minimise the risk of odour nuisance the maximum storage time for residual household and commercial waste shall be 48 hours.

To minimise the risk of self-combustion the maximum storage time for combustible materials shall be four weeks.

The loose stockpiles inside the building shall not exceed 350m^3 and shall not be more than 4m high.

Adequate freeboard shall be maintained within any bays or containers to prevent overtopping of wastes

The baled dry recyclables stockpiles inside and outside the Process Building shall be limited to three bales high.

7.0 Waste Amount

The maximum amount of waste on-site at any one time shall be 886 tonnes, comprising approximately 400 tonnes of loose and baled dry recyclables and 486 tonnes of residual waste and C&D waste.

8.0 Quarantine Area

A fire quarantine area has been designated to the south of the Process Building. This can accommodate 50% of the largest stockpile on-site, has a separation distance in excess of 6m from the building, and does not obstruct any exit routes.

In the event of a fire the mobile plant will be used to isolate the affected materials and/or containers provided it is safe to do so, and if possible drag the materials/container to the quarantine area using the tracked 360° excavator.

ACCESS ROAD

N1

D1

STREAM

ACCESS ROAD

RG

CAR PARKING

GW1

SW02

RG

RG

CONCRETE DRAINAGE CHANNEL

RG

SW01

Existing Water Connection

RG

Wheel Wash Unit

Overhead Power Line

SW03

CAR PARKING

SKIP STORAGE

Wheel Wash
Water Supply

Foul PS

RG

CONCRETE DRAINAGE CHANNEL

50mmØ Rising Main

75mmØ Hydrodare Connection

RG

SW07

MH03

MH04

GW1

Existing MBBR Wastewater
Treatment Facility.

N

Existing Watermain

E.S.B. Pole

RG

ADMIN BUILDING

RG

MH02

CANTEEN

MH01

50mmØ Rising Main from MBBR Plant to Effluent Holding Tank

STREAM

ACCESS ROAD

Power Supply Ducting for Leachate Pump

RG

50mmØ Rising Main from Leachate Sump

Effluent Holding Tank Protected
by Type 2 Retaining Wall Units
Supplied by Shay Murtagh

RG

B

B

WASTE
PROCESSING

ELECTRICAL
CABINET

RG

TRAILER
STORAGE

RG

WASTE
RECEPTION
&STORAGE

BALE STORAGE

RG

BALE STORAGE

RECYCLED
BALE STORAGE

GW3

SW04

FH

STREAM

ACCESS ROAD

Existing Surface Water Sewer

Quarantine
Area

RG

RG

CONCRETE DRAINAGE CHANNEL

RG

SW06

SW05

1800mmØ Manhole
to Incorporate pump

Flow Splitting Chamber
to Intercept Existing
Surface Water Sewer

1200mmØ Manhole to
Incorporate non-return valve

1200mmØ Manhole to
Incorporate magnetic flow meter

RG

SW08

STORAGE BAYS FOR
BALED WASTE

Discharge to Existing 600mmØ
Surface Water Sewer

250mmØ uPVC Rising Main

A

CINDER

CINDER

CINDER

CINDER

A

200mm deep Concrete
Slab Over Oil Interceptors

Existing Surface
Water Manhole

SW1

CULVERT

Kiosk on 100mm concrete
plinth to house Pump Control
Panel, PH and temperature
monitoring equipment.

N3

SKIP/MATERIAL STORAGE

GW2

D3

DOG
POUND

COMMUNAL FIRE
WATER TANK

NOTES

1. All levels refer to Ordnance Survey Datum, Malin Head.
2. All dimensions in millimeters unless noted otherwise.
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Materials Recovery Facility

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Plan

Dimensions in.	mm	
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BORD NA MÓNA
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Drawing No.	Revision.	Sheet
1	A	1 of 1