2021 Annual Environmental Report (AER)

Company Name: Arthurstown Landfill

Licence Number: W0004-4

Address: Kill, Co Kildare

Class of Activity[1]: Class 11

[1] See Appendix I

Purpose of this Report

One of the functions of the Environmental Protection Agency (EPA) is to licence and regulate the activities[2] of large scale industrial (e.g. chemical, food processors, power plants) and waste facilities. Submitting an Annual Environmental Report (AER) is a requirement of all EPA licences.

An AER is a public document. To this end, this format has been developed for industrial and waste licence holders (other than the intensive agriculture sector) to use as a template. This is to assist any member of the public to interpret and understand the environmental performance of the licensed facility.

The AER is a **summary** of environmental information for a given year. It includes:

- Details of the licence holder's environmental goals achieved, goals to maintain compliance and/or improve their environmental performance;
- Answers to questions regarding their facility's activities;
- Tables of results from monitoring emissions such as air, water, noise, and odour; and
- Details of waste generated, accepted and treated.

An AER does **not** provide detailed technical data. Such information is available in three ways:

1) Contacting the licence holder directly. The Contact Us section of this template enables the licence holder to provide details of where a member of the public can obtain further information on topics reported in this document.
2) Some documents[3] are available on the EPA website via the licence details page for each individual licence. This can be found by browsing

[2] See Appendix I

[3] This includes EPA site inspection and compliance monitoring reports, licence holders' self-monitoring reports, AERs and special reports

either the http://www.epa.ie/licensing/ or http://www.epa.ie/enforcement/ pages of the EPA website.

3) All formal enforcement correspondence exchanged between the EPA and a licence holder during the regulatory process is available for public viewing by appointment at any EPA Office.

If you have a question or query about an AER or an individual EPA licensed facility see the EPA's website or contact the relevant EPA office. See http://www.epa.ie/about/contactus/ for contact details.

Contents

Glossary

Abatement Equipment	Technology used to reduce pollution
AER	Annual Environmental Report.
CRAMP	Closure, Restoration and Aftercare Management Plan.
ELRA	Environmental Liability Risk Assessment.
Emission Limit Value	Limits set for specified emissions, typically outlined in Schedule B of an EPA licence.
EMS	Environmental Management System.
Environmental Goal	An objective or target set by a licensee as part of an environmental management system (EMS).
Environmental Pollutant	Substance or material that due to its quantity and/or nature has a negative impact on the environment.
Facility	Any site or premises that holds an EPA industrial or waste licence.
FP	Financial Provision.
GJ	Giga joules, a unit of energy measurement.
Groundwater	All water which is below the surface of the ground in the saturation zone and in direct contact with the ground or subsoil.
Incident	As defined by an EPA industrial or waste licence.

Inert Waste	Is waste that will not undergo physical, chemical or biological change thereby, is unlikely to cause environmental pollution or harm human health.
List of Wastes (LoW)	A list of wastes drawn up by the European Commission and published as Commission Decision 2014/955/EU.
Noise Sensitive Location	Any dwelling house, hotel or hostel, health building, educational establishment, place of worship or entertainment, or any other installation or area of high amenity which for its proper enjoyment requires the absence of noise at nuisance levels.
Non-Renewable Resource	A resource of economic value that cannot be replaced at the same rate it is being consumed e.g. coal, peat, oil and natural gas.
Oil Separator	Separator system for light liquids (e.g. oil and petrol).
PRTR	Pollutant Release and Transfer Register.
Renewable Energy Sources	Wind, solar, aerothermal, geothermal, hydrothermal and ocean energy, hydropower, biomass, landfill gas, sewage treatment plant gas and biogases.
Sanitary Waste	Waste water from toilet, washroom and canteen facilities.
Storm Water	Rain water run-off from roof and non-process areas.

Surface Water	Lakes, rivers, streams, estuaries and coastal waters.
Trade Effluent	Treated or untreated effluent discharged from any trade or industrial facility but does not include domestic waste water or storm water.
Trigger Level	A value set for a specific parameter, the achievement or exceedance of which requires certain actions to be taken by the licence holder.
Volatile Organic Compounds	Gases produced from solids or liquids that evaporate readily in ambient conditions.
Waste	Any substance or object which the holder discards or intends or is required to discard.

Disclaimer

These are **not** legal definitions. Legal definitions can be found in the corresponding legislation.

Declaration

I, John Smith, Facility Manager confirm that by ticking the box below, all information in this report is truthful and accurate to the best of my knowledge and belief.

In addition, I confirm that all monitoring and performance reporting required by our EPA licence and summarised herein is available for inspection by the EPA.

Tick here √

1) Introduction

See below a brief description of our facility and a summary of our environmental performance in 2021.

This AER covers the operational period of the landfill from 1st January to 31st December 2021. This is the 11th AER to cover the period of closure for the facility.

Environmental activities in 2021 focused on:

- quarterly licence compliance monitoring,
- progressing a long-term groundwater level monitoring programme to assess seasonal groundwater level with the objective of reducing pumping regime at the site.
- a feasibility assessment for import of leachate for treatment in the leachate treatment plant (SBR),
- feasibility of a low calorific engine set to produce electricity from low calorific gas.
- servicing 2 no. aerators and mixers in AER 2 leachate treatment plant.
- operation and maintenance of the aftercare phase of the facility in accordance with the conditions of the licence including operation of storm water system, leachate management system, groundwater control and landfill gas management system.

Contact us

If you have any questions or would like further information on any aspect of this report, please contact us directly.

See below details:

John Smith, Facility Manager, South Dublin County Council
arthurstownlandfill@eircom.net

2) How we Manage our Facility

Explanation
To ensure our facility's activities do not cause environmental pollution we are required to have detailed documentation systems in place to help us manage and track our environmental performance. These systems are referred to as Environmental Management Systems (EMS). We review our EMS every year and set up-to-date **environmental goals** to continually improve our environmental performance.

The information below sets out the environmental goals for our facility to help us prevent environmental pollution and reduce our impact on the environment. Target dates for completing each goal and progress towards achieving the goal are outlined in Table 1.

Table 1 Environmental Goals 2022 and 2023

Target	Environmental Goal	Target Date	Progress
1	Investigation and possible replacement of the leachate pumps in different cells.	2022	Ongoing Maintenance
2	Start decrease the pumping regime allowing groundwater levels Sump 1 and Sump 2 to return to natural levels. SEW approval granted by the EPA on 10th March 2021.	Q4 2023	Groundwater level loggers installed in downgradient wells in February 2022. Pumping regime setup to decrease ground water levels.

3	Setup SCADA to start reduction of level of ground water pumping from Sump 1 and 2.	2022-2024	SCADA setup in February 2022 for recording of groundwater levels.
4	Carry out landfill gas balancing for entire landfill gas field and replace and maintain a number of well heads, valves, knock out pots and manifold valves in the landfill gas management system.	Q2 2022	Landfill Gas Balance in Q2
5	Investigate feasibility of a low calorific engine set to produce electricity from low calorific gas.	2021 - 2022	Ongoing
6	Feasibility assessment for import of leachate for treatment in SBR and advertise expression of interest for same.	2020-2022	Ongoing
7	General maintenance tender of monitoring and operational equipment.	Q4 2022.	Prepared tender awaiting approval, expected IN 23
8	Licence compliance reporting. Bund and Integrity Testing.	2022	Scheduled for Q4
9	Update the met monitoring system software for weekly and monthly data.	2022	Ongoing
10	Update SCADA system.	2022	As above
11	Repair of opening mechanism for entrance gates.	Q3 2022	Advertised
12	Maintenance internal roads, boundary road and cap roads.	Ongoing	Ongoing

13	Maintain existing shockproof fencing and security fencing.	Ongoing	Ongoing
14	Clean out surface water retention pond.	Q1 2022	Completed Q1 2022
15	Service 2 no Aerators and Mixers in AER 2 Leachate Treatment Plant.	Q3 2022	Ongoing
16	Service 3 Actuators Valves to Leachate Treatment Plant.	Q3 2022	Q3 2022
17	General maintenance grass cutting, cleaning oil interceptors etc.	Ongoing	Ongoing
18	Start review of Licence W0004-04 in relation to leachate discharge emission limits and monitoring.	Q2 2021	Q2 2022 with Irish Water

3) Energy & Water

Energy

Explanation
Fossil fuels used to produce energy are a non-renewable resource. As a result, our EPA licence requires that we measure our energy use and set targets to improve the energy efficiency of our activities and reduce our overall use, where possible. For this report our energy use is split into two sources:

- renewable (wind, solar etc.)
- fossil fuel (oil, coal, gas etc.).

Where we have the means and technology on-site to generate energy, this is also captured in this report.

The information below summarises the heat and electrical energy we used in 2020.

Table 2 Energy Used (Heat and Electricity) in 2021

Energy Used	Quantity (GJ)	% Increase/ decrease on previous year
Fossil Fuels		
Renewable Energy		
Total Energy Used	1432.15	7.1% increase

Comment

1330.08 Gigajoules of energy used in 2020

The information below summarises the heat and/or electrical energy we generated on our site in 2021.

Table 3 Energy Generated (Heat and Electricity) in 2021

Energy Produced	Quantity (GJ)	% Increase/ decrease on previous year
Fossil Fuel		
Renewable Energy	64,720.8	8.1% decrease
Total Energy Produced	64,720.8	8.1% decrease

Comment

Total energy produced in 2020 was 70,373 gigajoules.

Water

Explanation
Water is a natural resource and we are required by our EPA licence to identify ways to reduce our use where possible. Water used in industry can be extracted from groundwater, rivers and lakes (surface water), taken from public water supplies (Irish Water), recycled from the facility's processes or harvested from rainwater.

The information below summarises and compares the quantity of water used in 2021 compared to the previous year.

Table 4 Water Used in 2021

Source of Water Used	Quantity (m^3/year)	% Increase/ decrease on previous year
Groundwater	--	
Surface Water	--	
Public Supply	2,500	0% change
Recycled Water	--	
Rainwater	--	
Total Water Used	2,500	0% change

Comment

2,500 m^3 of public supply water used in 2020.

4) Environmental Complaints

Explanation
Our EPA licence requires that activities do not cause environmental nuisance such as odour, dust or noise. Our licence also requires that we have procedures in place to record, investigate and respond to environmental complaints if or when they arise.
We have an environmental complaints procedure in place where you can contact us[4] directly. You can also contact the EPA[5] if you wish to make an environmental complaint about us.

See the information below for a summary of **all** the environmental complaints about our activities made directly to us or to the EPA in 2021.

Table 5 Summary of All Environmental Complaints Received in 2021

Type of Complaint	Number of Complaints Received	Number Closed in 2021
Odour / Smells	0	n/a
Noise	0	n/a
Dust	0	n/a
Water Quality	0	n/a
Air Quality	0	n/a
Waste	0	n/a
Litter	0	n/a
Vermin/Flies/Birds	0	n/a
Soil Contamination	0	n/a
Vibration	0	n/a
Other	0	n/a

[4] See Section 1, Introduction – Contact Us

[5] If you wish to contact the EPA to make an environmental complaint about an EPA licenced facility, please go to https://lema.epa.ie/complaints

Comment

There were no complaints made in 2021 nor were any complaints recorded in 2021.

5) Environmental Incidents

Explanation
It is our responsibility as an EPA licensed facility to ensure we have systems in place to prevent incidents that have the potential to cause environmental pollution. If an incident occurs, we are required to report it to the EPA, investigate the cause and fix the problem.

The EPA classify environmental incidents into 5 categories based on the potential impact on the environment:

- Minor
- Limited
- Serious
- Very Serious
- Catastrophic

See Table 6 for the number of the environmental incidents we reported to the EPA in 2021.

Table 6 Number of Environmental Incidents in 2021

Incident Category	Minor	Limited	Serious	Very Serious	Catastrophic
Abatement Equipment Offline	0	0	0	0	0
Breach of Ambient ELV	0	0	0	0	0
Breach of Emission Limit	7	0	0	0	0
Explosion	0	0	0	0	0
Fire	0	0	0	0	0
Monitoring Equipment Failure	0	0	0	0	0
Odour	0	0	0	0	0
Spillage	0	0	0	0	0
Breach of trigger Level	3	0	0	0	0
Uncontrolled Release	0	0	0	0	0

Incident Category	Minor	Limited	Serious	Very Serious	Catastrophic
Other	8	0	0	0	0

Comment

Other Incidents: please note where exceedances of legislative limits occurred in 2021 (e.g. groundwater GTVs and surface water EQS) the licensee filed these under the 'Other' incident category. Two incident numbers (INCI021280 and INCI021523) detailed below refer to exceedances of ELVs and should have been logged as breaches of emission limits.

INCI020712: 26/03/2021

Exceedance of GTV parameters electrical conductivity and chloride at MW20 and MW3 during Q1.

INCI020785: 12/04/2021

BOD at SW1 (3 mg/L), SW2 (3 mg/L) and SW5 (2 mg/L) exceeded the EQS (1.5 mg/L) during the Q1 2021 quarterly surface water monitoring.

INCI020935: 06/05/2021

Exceedance of ammonia during the weekly surface water monitoring event SW2. The ammonia concentration was 0.14 mg/L relative to the EQS 0.065 mg/L.

INCI021181: 21/06/2021

Ammonia concentration (0.12 mg/L) exceeded the EQS threshold (0.065 mg/L) during weekly surface water sampling at SW2.

INCI021280: 07/07/2021

The concentration of COD (987 mg/L) and TOC (354 mg/L) exceeded their respective ELVs from Balance Tank to Sewer.

INCI021523: 16/08/2021

The concentration of COD (858 mg/L) exceeded the ELV from Balance Tank to Sewer.

INCI021925: 27/10/2021

Ammonia concentration (0.07 mg/L) exceeded the EQS threshold (0.065 mg/L) during weekly surface water sampling at SW2 (Week 42).

INCI022007: 09/11/2021

Ammonia concentration exceeded the EQS threshold (0.065 mg/L) during weekly surface water sampling at SW2 during Week 44 at 0.07 mg/l and Week 47 at 0.14 mg/l.

6) Our Environmental Emissions

Explanation

We are required to ensure the emissions from our activities do not cause environmental pollution.

We are required to monitor any of the following emissions that we make:

- Storm water
- Waste water
- Air
- Groundwater
- Noise

We regularly test any such emissions for specific pollutants and materials to ensure they do not contain levels of pollution that exceed emission limit values (ELVs) or cause environmental pollution. If monitoring of an emission indicates an ELV is exceeded, we are required to report this to the EPA[6].

The next sub-sections of this report summarise our compliance with any ELVs set in our EPA licence. Some emissions monitored do not have specific ELVs, but we still carry out monitoring and report all incidents that may give rise to environmental pollution.

[6] See section 5, Incidents

Storm Water

Explanation
Storm water is rain water run-off from roof and non-process areas of a facility, e.g. carparks, and generally shall not contain any pollution.
Storm water is usually released into a local water body after a basic form of treatment. Our EPA licence requires that we manage storm water to ensure no polluting substances or materials are released into the environment.

The information below summarises how the storm water from our facility is treated, where it is released and the results of monitoring in 2021.

1. **Storm water from our facility is managed prior to release by;**

Stormwater run-off from the landfill cap, site roads and hardstanding areas enters a dedicated stormwater drainage system which flows via a Class 1 oil interceptor to a constructed stormwater lagoon before discharge to the Hartwell River. The discharge is limited to a maximum flow of 1000 l/s.

2. **Storm water from our facility is released into the following water bodies:**

- Hartwell River (Rathmore Stream IE_EA_09R020300) flowing into the Liffey IE_EA_09L011700

Table 7 Summary of Storm Water Monitoring in 2021

Parameter measured	No. of Samples	% Compliant[7]	Comment
Flow	--	100	Continuously monitored at SW2
pH	69		No ELV or trigger level applicable. EQS limits applicable at SW2.
Ammonia as N	69		No ELV or trigger level applicable. EQS limits applicable at SW2.
Suspended Solids	69		No ELV or trigger level applicable. EQS limits applicable at SW2.
Conductivity	69		No ELV or trigger level applicable. EQS limits applicable at SW2.
BOD	20		No ELV or trigger level applicable. EQS limits applicable at SW2.
COD	20		No ELV or trigger level applicable. EQS limits applicable at SW2.
Chloride	20		No ELV or trigger level applicable. EQS limits applicable at SW2.
Orthophosphate as P	5		No ELV or trigger level applicable
Zinc	5		No ELV or trigger level applicable

[7] % compliant = [(number of samples compliant) / (number of samples taken)] x 100. Compliance could refer to emission limit values or trigger levels. The EPA commonly use trigger levels on stormwater discharges.

Sodium	5		No ELV or trigger level applicable
Potassium	5		No ELV or trigger level applicable
Nickel	5		No ELV or trigger level applicable
Manganese	5		No ELV or trigger level applicable
Magnesium	5		No ELV or trigger level applicable
Lead	5		No ELV or trigger level applicable
Iron	5		No ELV or trigger level applicable
Copper	5		No ELV or trigger level applicable
Total Chromium	5		No ELV or trigger level applicable
Calcium	5		No ELV or trigger level applicable
Cadmium	5		No ELV or trigger level applicable
Boron	5		No ELV or trigger level applicable
Mercury	5		No ELV or trigger level applicable
Sulphate	5		No ELV or trigger level applicable
Total Alkalinity	5		No ELV or trigger level applicable
Phosphorus Total	5		No ELV or trigger level applicable
Total Oxidised Nitrogen	5		No ELV or trigger level applicable

Comment

All stormwater monitoring was completed in accordance with licence conditions throughout 2021. Surface water samples were assessed against the European Communities Environmental Objectives (Surface Waters) Regulations, 2009 (S.I. No. 272 of 2009) (as amended) Ecological Quality Standards (EQS).

The concentration of ammonia at the retention pond outfall (SW2) exceeded the good status EQS mean threshold (0.065 mg/L) on four occasions during week 4 (0.08 mg/L), week 42 (0.07 mg/l), week 44 (0.07 mg/l) and week 47 (0.14 mg/l) throughout 2021. Following this, the retention pond (SW-2) and upstream (SW-1) and downstream (SW-3) locations on the Hartwell River were sampled on the following week and concentrations of ammonia at all three locations were below the good status EQS mean threshold limit.

Other EQS limit breaches were reported throughout 2021 for BOD at SW1 upstream on Hartwell River, retention pond outlet (SW2) and retention pond inlet (SW5) during Q1 2021.

Despite the above EQS exceedances, quarterly monitoring data indicates that the facility is not impacting the downstream water quality of the Hartwell River and Kill River.

Results are presented and discussed in more detail in the quarterly monitoring reports submitted to the EPA previously.

Waste Water

Explanation
There are two types of waste water that can be produced:

- Process waste water produced from the activities and;
- Sanitary waste water from toilets, washrooms and canteens.

Our EPA licence requires us to manage our waste water and ensure that it does not cause environmental pollution when discharged into the environment.

The information below summarises how we treat the wastewater produced from our activities, where it is released and the results of monitoring in 2021.

1. **Wastewater produced by our activities is treated as follows before discharge to a receiving waterbody**;

Leachate is generated on site from cells 1 through 15 (LC1-LC15) and is treated in an on-site leachate treatment plant, a sequencing batch reactor (SBR). Leachate is pumped from the lined cells to leachate storage tank (LST) prior to treatment in leachate aeration tank 2 (LT2). From LT2, the treated leachate discharges to the leachate balancing tank (LBAL) where it is stored prior to discharge to rising main from Arthurstown Landfill to Kill Village where it discharges to sewer and flows to Osberstown WWTP.

Sanitary wastewater from the facility is discharged to sewer and conveyed to Osberstown WWTP for treatment.

2. **Treated wastewater from our facility is released into the following water bodies:**

Osberstown WWTP (D0002-01) discharges under licence to the Upper River Liffey (IE_EA_09L011300).

Table 8 Summary of Waste Water Monitoring in 2021

Parameter measured	No. of Samples	% Compliant	Comment
Flow	--	100	Continuously Monitored
Total Organic Carbon	11	100	ELV - Schedule C.6 of the licence
COD	11	75	ELV - Schedule C.6 of the licence
BOD	11	100	ELV - Schedule C.6 of the licence
Suspended Solids	11	100	ELV - Schedule C.6 of the licence
Ammonia (as N)	11	83	ELV - Schedule C.6 of the licence
Orthophosphate (as P)	3	100	ELV - Schedule C.6 of the licence
Nitrate	3	100	ELV - Schedule C.6 of the licence
Chloride	3	100	ELV - Schedule C.6 of the licence
Sulphate	3		No ELV or trigger level applicable
Cyanide	3		No ELV or trigger level applicable
Metals			No ELV or trigger level applicable
Aluminium	1		
Barium	1		
Beryllium	1		
Boron	1		
Cadmium	1		
Chromium	1		
Cobalt	1		

Copper	1		
Fluoride	1		
Iron	1		
Lead	1		
Manganese	1		
Magnesium	1		
Mercury	1		
Nickel	1		
Silver	1		
Tin	1		
Zinc	1		

Comment

Exceedance of the ELV for parameters COD and Ammonia for sewer discharge. The ELV for COD was exceeded in January, July and November. The ELV for Ammonia was exceeded in November and December. All leachate discharged from Arthurstown Landfill is conveyed via rising main to Osberstown WWTP for treatment. These issues were resolved through INCI021181 and INCI021280 and closed on 16th August 2021 following a reduction of leachate intake to treatment plant and re-sampling the leachate balance tank.

Air

Explanation
Generally, three types of air emissions are monitored from industry in Ireland: gases, dust (particulates) and odour. Our EPA licence requires us to ensure that any air emissions from our activities do not cause air pollution or create an odour nuisance.

The information below details the number of air emission points we monitor, the results from testing the air emissions and any odour assessments carried out by us and the EPA in 2021.

1. We monitor air emissions from the following number of emission points at our facility.

Four stack emission locations – F1 (flare), AR06, AR07 and AR08 (landfill gas engines)

Table 9 Summary of Air Emissions Monitoring in 2021

Parameter measured	No. of Samples	% Compliant	Comment
CO	4	100	ELV – Schedule C.5 of the licence
NOx	4	100	ELV – Schedule C.5 of the licence
TVOC	4	100	ELV – Schedule C.5 of the licence
HCL	4	100	ELV – Schedule C.5 of the licence
HF	4	100	ELV – Schedule C.5 of the licence
SO_2	4	100	No ELV or trigger level applicable

Oxygen	4	100	No ELV or trigger level applicable
CO2	4	100	No ELV or trigger level applicable

Comment

In 2021, there were 4 no. operational engines on site. The 4 engines do not run continuously, generally 3 of the 4 engines run full time with 1 engine undergoing maintenance. Therefore, stack emissions testing was carried out on the one flare and 3 no. engines that were operational on the day of sampling.

Table 10 Summary of Odour Assessments Carried Out in 2021

Assessment Conducted By	No. of Odour Assessments	% Compliant[8]	Comment
Licence Holder	4	100	
EPA			

Comment

Four odour assessments were carried out on site. They took place on: Q1 – 9th March 2021 Q2 – 22nd April 2021 Q3 – 21st September 2021 Q4 – 10th December 2021

[8] A compliant odour assessment is based on EPA Odour Impact Assessment Guidance available at http://www.epa.ie/pubs/advice/air/emissions/ag5-odourassessment.html

During the survey on 9th March, there were four surface emission zones greater than or equal to 500 ppm. These emissions were detected at discrete features on the permanent capped landfill in the vicinity of vertical well infrastructure. The emissions points identified during the survey were remediated on the same day of the survey.

During the survey on 21st September, there were two surface emission zones greater than or equal to 500 ppm. These emissions were detected at discrete features on the permanent capped landfill in the vicinity of vertical well infrastructure. The emissions points identified during the survey were remediated on the same day of the survey.
No VOC surface emissions were detected during the Q2 and Q4 surveys. No odours were identified during the sniff odour assessments during each quarterly event in 2021.

Fugitive Solvent Emissions

Are you are required to monitor fugitive solvent air emissions from your facility?

Yes [ ] No [×]

Explanation
The use of solvents is regulated under Irish and European Union (EU) Regulations[9]. Solvents are chemicals that, by their nature, are volatile (evaporate readily under ambient conditions). Solvents can be found in many inks, glues and cleaning agents. Due to the volatility of solvents some emissions may be released into the atmosphere during our activities before being captured in our air treatment system. This type of emission is called a **fugitive solvent emission**.

The information below summarises the quantity of solvents used in 2021, the percentage of fugitive solvent emissions (% of total quantity used) and whether the percentage complied with the targets set in the EU Regulations.

Table 11 Summary of Fugitive Solvent Emissions in 2021

Quantity of Solvents Used (Kg)	% Fugitive Solvent Emissions	Compliant

Comment

N/A

[9] See Annex VII of the Industrial Emissions Directive
https://ec.europa.eu/environment/industry/stationary/ied/legislation.htm

Groundwater

Explanation
Groundwater is an important and sensitive resource in Ireland. Our EPA licence requires that we monitor groundwater to ensure our activities do not cause groundwater pollution.
Understanding how groundwater flows through soil and rock layers and eventually into surface and coastal waters is a complex science. Sometimes groundwater pollution that occurred in the past can take years and even decades to disappear. Therefore, it is important that experts help us monitor and interpret results from groundwater monitoring and testing.

The information below is a basic summary of the condition of the groundwater in 2021.

1. **Do you have a groundwater monitoring programme in place?**

   Yes [×] No [ ]

2. **Have the groundwater monitoring results over the last 5 years indicated the presence of groundwater pollution?**

   Yes [ ] No [×]

Table 12 List of Groundwater Pollutants Identified

Pollutants

Comment

Monitoring results over the past 5 years indicated exceedances of the EPA's Guideline Threshold Values (GTVs) or Interim Guideline Values (IGVs) for select parameters at up-gradient monitoring well (MW-6, MW-8 and MW-20) and cross gradient monitoring well (MW-3). Manganese and total coliforms were the only parameters detected above the IGV limit at down-gradient monitoring wells MW-2 and MW-16 in 2021.

Monitoring data for the past 5 years at downgradient monitoring well MW-16 showed exceedances of the GTV for annual parameter manganese, although this is part of the natural groundwater hydrochemistry of the area. The concentration of total coliforms at down-gradient monitoring well MW- 2 exceeded the IGV threshold during the annual monitoring round in 2021.

The data from the up-gradient and cross-gradient monitoring wells indicate that there are off-site sources with concentrations higher than IGV and GTV limits. It is considered likely that the detections in the down-gradient monitoring wells reflect the concentrations in the up-gradient monitoring wells are from an offsite source and are not contributed by the facility.

3. Give details of the investigations and subsequent actions taken, where applicable, to manage the groundwater pollution.

Noise

Explanation
Our EPA licence requires that we monitor noise emissions from our facility. Noise monitoring can be conducted at the boundary of our facility and/or at locations beyond the boundary referred to as "noise sensitive locations". Noise monitoring requires the use of special noise monitoring equipment. Our EPA licence requires that noise produced by our facility shall not exceed the noise limit values and/or give rise to nuisance.

The information below gives a summary of when and where we conducted noise monitoring in 2021 and if results complied with our EPA licence limits.

1. **We conducted noise monitoring on the following dates in 2021:**

Daytime and night-time monitoring was conducted on the following dates:

- 22nd – 23rd February 2021 (Q1)
- 7th – 8th October 2021 (Q4)

2. **Was the noise monitoring carried out at:**
   - i. **the boundary of our facility,**
   - ii. **noise sensitive locations off-site, or**
   - iii. **both?**

Seven internal boundary points were monitored at the facility.

3. **Were measured noise levels compliant with your EPA licence limits?**

Yes [×] No [ ]

If No, we took the following actions to address the noise level exceedances?

Comment

7) Waste

Waste Generated

Explanation
Our EPA licence requires us to manage the waste we generate in a manner that does not cause environmental pollution.
We manage and record all outgoing hazardous, non-hazardous and inert waste. We ensure that waste transported off-site for treatment is carried out in accordance with the relevant waste Regulations.

The information in table 13 is a summary of waste we generated in 2021 and the percentage increase or decrease on the previous year.

Table 13 Waste Generated in 2021

Type	Quantity (Tonnes)	% Increase/ decrease on previous year
Hazardous		
Non-Hazardous	14,337	12.4% increase
Inert		
Total Tonnes	14,337	12.4% increase

Comment

The total quantity of leachate discharged to sewer in 2020 was 12,756 m^3 (12,563 tonnes).

Waste Accepted

Did you accept waste onto your facility for storage, treatment, recovery or disposal in 2021?

Yes [ ] No [×]

Explanation
We manage the waste we accept in a manner that does not cause environmental pollution.
We manage and record all incoming and outgoing hazardous, non-hazardous and inert waste. The waste we accept may be treated, recovered, disposed or stored at our facility depending on our licence requirements.

The information in Table 14 provides a summary of waste we accepted in 2021 and the percentage increase or decrease on the previous year. It also details the tonnes of this waste accepted that was for disposal or recovery.

Table 14 Waste Accepted in 2021

Type	Quantity (Tonnes)	% Increase/ decrease on previous year	Waste Disposed	Waste Recovered
Hazardous				
Non-Hazardous				
Inert				
Total Tonnes				

NOTE:
See Appendix II for detailed figures of waste accepted in 2021.

Comment

No waste accepted in 2021.

8) Financial Provision

Explanation
We are required to assess the risk our activities pose to the environment if we cease our activities or if an incident occurred. If we are identified as a high risk facility[10] by the EPA, we are required to put provision in place such as a financial bond or insurance to cover the cost of restoring our site to a satisfactory condition. This financial provision can then be used to cover the cost of managing the restoration or clean up should such an event occur.

1. Are you required to have an agreed financial provision in place?

Yes [×] No [ ]

2. What year was your Closure, Restoration and Aftercare Management Plan (CRAMP) last agreed by the Agency?

2019

3. What year was your Environmental Liability Assessment Report (ELRA) agreed by the Agency?

Revised ELRA submitted in 2019, approved by EPA 2020.

4. Has there been any significant changes on your site since the last agreements?

Yes [ ] No [×]

If yes, have you submitted details to the EPA?

Yes [ ] No [ ] N/A [×]

[10] See Appendix III

Appendix I

Class of Activity

Industrial and waste facilities are classed into different sectors depending on the nature of their activity and its potential impact on the environment. The EPA Act 1992 as amended, outlines these as follows:

Class 1	Minerals and other materials
Class 2	Energy
Class 3	Metals
Class 4	Mineral fibres and glass
Class 5	Chemicals
Class 6	Intensive Agriculture[11]
Class 7	Food and drink
Class 8	Wood, paper, textiles and leather
Class 9	Fossil fuels
Class 10	Cement, lime and magnesium oxide
Class 11	Waste
Class 12	Surface Coatings
Class 13	Other Activities

[11] This reporting template is not applicable to the **intensive agriculture sector**. Their annual environmental reporting template is different and can be found at http://www.epa.ie/pubs/advice/aerprtr/aerguid/

Appendix II

Waste Accepted Data

Table 15 Waste Accepted On-Site in 2021

List of Waste Code	Quantity (Tonnes)	Waste Description	Disposal or Recovery

Appendix III

High Environmental Risk Categories

If an industrial or waste licence falls into one of these categories it is deemed, by the EPA, as a high environmental risk. As a result, the licence holder is required to have financial provision in place. See section 8, Financial Provision.

1. Landfills
2. Non-Hazardous Waste Transfer Station
3. Incineration and Co-Incineration Waste Facilities
4. Category A – Extractive Waste Facilities
5. Upper and Lower Tier Seveso Facilities
6. Hazardous Waste Transfer Stations
7. High Risk Contaminated Land
8. Exceptional Circumstances

NOTE:

This list is subject to change.

See the link below for further information.

http://www.epa.ie/pubs/advice/licensee/fp/epaapproachtoenvironmentalliabilitiesandfinancialprovision.html