E.1 Emissions to Atmoshpere

Point Emissions to Atmosphere

There are no point emissions to atmosphere at the installation.

Potential Fugitive Emissions

The potential emissions to air from the waste activities that are and will be carried out include dust and vehicle exhausts.

Dusts are associated with the location and type of waste processing and vehicle movements. The primary source of dust emissions will be the bagging of the APCR, which will be carried out inside the Warehouse Secondary sources are vehicle movements on the paved yards during dry periods.

The current Licence requires routine monitoring of dust deposition levels at four locations within the site boundary. The monitoring locations are shown on Figure 2.1 and the results of the monitoring carried out in 2016 and to date in 2017 are presented in the Table below, which also includes the deposition limits set in the current licence.

Table E.1

Monitoring Location	Units	April/May 2016	July/August 2016	September 2016	May 2017	Deposition Limit Value
D-1	mg/m^2/day	20.81	7.24	113	<10	350
D-2	mg/m^2/day	15.29	10.77	123	48	350
D-3	mg/m^2/day	33.27	4.99	1,591	281	350
D-4	mg/m^2/day	42.41	3.03	108	234	350

In September 2016 the result for D-3 (1,591 mg/m2/day) exceeded the dust deposition limit, however, the inorganic particulate faction of the sample which is representative of site activities was 191 mg/m2/day which is below the limit. The sample was impacted greatly by the presence of vegetative growth (leaves, algae, etc.), which was not derived from site based activities. The exceedance was reported to the Agency.

Vehicle exhausts contain a range of compounds that affect air quality, for example nitrous oxide, carbon monoxide, methane, carbon dioxide, benzene and particulates. 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.

Operations undertaken at the installation since 2004 have not led to any complaints relating to odour. The APCR is essentially odourless, and as a result there is little potential for increased odour from the proposed bagging activities.

E.2 Emissions to Surface Water

There are no emissions to surface water. There are two separate internal surface water drainage systems. The first collects the rainwater run-off from the building roof and this is directed to a 180m^3 on-site flow attenuation tank. The second collects rainwater run-off from paved areas and weighbridge and this is passed through a Class 1 oil interceptor before entering the attenuation tank.

The outflow from the attenuation tank is regulated by a'hydrobrake' and there is an electrically and manually activated shut-off valve between the 'hydrobrake' and the connection to the site's storm sewer. The storm sewer connects to the site's foul sewer and the combined flow enters the foul sewer that serves the Business Park sewer.

E.3 Emission to Sewer

Sanitary wastewater is discharged to the foul sewer that serves the Business Park. The warehouse is designed to collect floor wash downs in a 5m^3 sealed sump from where it can be pumped to the foul sewer that serves the industrial estate via FW-1. However, as putrescible wastes are not accepted at the facility, floor wash downs are not required and the sump is not used, therefore there is no requirement for monitoring to be carried out. There is a drain gate valve on the foul sewer that can be manually activated to stop the flow in the event of an incident inside the warehouse.

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There are three drain gate valves on the surface water network, one in the yard west of the office, one at the outlet from the attenuation tank and one in the loading docks. The valves in the yard and at the attenuation are activated remotely by the use of emergency stop buttons located in the Comms Room on the ground floor of the office and on the external wall of the warehouse. Both sets of buttons are emergency stop only. These valves can only be reset (i.e. opened again to allow liquid to flow) by manually using the hand wheel. The valve that drains the delivery dock area in the yard is a manually activated and works by sliding a flat gate into place.

Monitoring of the discharge to the foul sewer is carried out quarterly at one location (SW-1) which is an inspection chamber upstream of the connection to the foul sewer. The parameters are pH, electrical conductivity and Chemical Oxygen Demand (COD). There are no emission limit values (ELVs) set in the Licence, but trigger (warning and action) levels have been developed and the monitoring has confirmed that all of the parameters are below respective warning levels. The results of the monitoring carried out in 2016 and Q1 and Q2 of 2016 are in Table E.2.3

Table E.2.3 Discharge to Sewer Monitoring Results 2016 & 2017: SW1

Parameter	Units	Q1 2016	Q2 2016	Q3 2016	Q4 2016	Q1 2017	Q2 2017	Warning Level	Action Level
pH	pH units	7.51	6.83	7.5	6.47	6.68	8.15	8.78	9.34
Conductivity	mS/cm	344	134	125	283	168	493	573	715
COD	mg/l	24	25	17	19	<7	27	57	76

E 4 Emissions to Ground

Emissions

There are no existing direct or indirect emissions to ground and the proposed changes will not result in any new direct or indirect emissions to ground.

Groundwater Protection Measures

The concrete floors inside the buildings, in the bunded areas and paved open yards used by vehicles comply with design specified in the current. All the bunds, tanks and the underground drainage pipes are subject to routine inspection and integrity testing to confirm they are fit for purpose. The most recent integrity testing was completed in 2016.

Groundwater Quality

There are two groundwater monitoring wells on site (GW-1 and GW-2). GW-1 is in the southern section of the site and is upgradient of GW-2, which is in the northern end of the site. Monitoring is carried out quarterly. The parameters analysed quarterly are pH, electrical conductivity, temperature, dissolved oxygen, chloride, sulphate, Total Organic Carbon. In addition to the quarterly parameters monitoring of List I/II Organic Substances and dissolved metals are carried out annually.

The results of the monitoring carried out in 2016 and to date in 2017 are in Tables E4.1 to E4.6. RITLA has prepared warning and trigger action levels based on the monitoring data from 2010 to 2015 and submitted these to the OEE. As the trigger levels have not yet been approved, the Tables include the EPA Interim Guideline Values (IGVs) on groundwater quality and the Groundwater Regulation Threshold Values (TV) for comparative purposes.

The IGVs are not statutory guidelines but have been prepared by the EPA to assist in the assessment of impacts on groundwater quality in the context of the implementation of the Water Framework Directive. The TVs were introduced in 2010 (S.I. 9 of 2010) on foot of requirements from the Water Framework Directive and have evolved from the IGVs.

The IGV represent typical background or unpolluted conditions; however levels higher than the IGV may occur naturally depending on the local geological and hydrogeological conditions.

While the TVs are more appropriate for large scale abstraction wells used for potable supply, they can be used to assess the significance of contamination where present in non-potable groundwater supplies. Because not all parameters monitored have been assigned a TV, the relevant IGV continues to be used for comparative purposes.

Table E.4.1 Q2 2-16 Groundwater Monitoring Results (Annual Parameters)

Parameter	Unit	GW-1 Up Gradient	GW-2 Down Gradient	IGV	TV
Boron	µg/l	18	20	**1,000**	**750**
Cadmium	µg/l	<0.5	<0.5	**5**	**3.75**
Calcium	mg/l	124.9	181	**200**	**-**
Copper	µg/l	<7	<7	**30**	**1,500**
Iron	µg/l	<20	<20	**200**	**-**
Lead	µg/l	<5	<5	**10**	**18.75**
Magnesium	mg/l	8.9	14	**50**	**-**
Manganese	µg/l	511	40	**50**	**-**
Nickel	µg/l	3	<2	**20**	**15**
Potassium	mg/l	0.9	2.1	**5**	**-**
Zinc	µg/l	<3	<3	**100**	**-**
Sulphate	mg/l	96.81	185.52	**200**	**187.5**
Chloride	mg/l	17.5	48.4	**30**	**187.5**
Dissolved Oxygen	mg/l	6	7	**NAC**	**-**
Electrical Conductivity	µS/cm	673	1,118	**1,000**	**875 – 1,875**
pH	pH units	7.10	7.16	**6.5-9.5**	**-**
Total Organic Carbon	mg/l	<2	<2	**NAC**	**-**
VOC	µg/l	ND	ND	**-**	**-**
sVOC	µg/l	ND	ND	**-**	**-**

Table E.4.2 Q2 2016 Groundwater Monitoring Results

Parameter	Unit	GW-1 Up Gradient	GW-2 Down Gradient	IGV	TV
pH	pH Units	7.59	7.54	**6.5-9.5**	**-**
EC	µS/cm	761	642	**1,000**	**875 – 1,875**
Dissolved Oxygen	mg/l	7	7	**NAC**	**-**
Chloride	mg/l	19.6	15.1	**30**	**187.5**
Sulphate	mg/l	106.69	67.69	**200**	**187.5**
Total Organic Carbon	mg/l	<2	<2	**NAC**	**-**

Table E.4.3 Q3 2016 Groundwater Monitoring Results

Parameter	Unit	GW-1 Up Gradient	GW-2 Down Gradient	IGV	TV
pH	pH Units	7.52	7.98	**6.5-9.5**	**-**
EC	µS/cm	626	401	**1,000**	**875 – 1,875**
Dissolved Oxygen	mg/l	7	5	**NAC**	**-**
Chloride	mg/l	18.5	19.7	**30**	**187.5**
Sulphate	mg/l	19.61	54.08	**200**	**187.5**
Total Organic Carbon	mg/l	<2	3	**NAC**	**-**

NAC – no abnormal change

Table E.4 Q4 Groundwater Monitoring Results

Parameter	Unit	GW-1 Up Gradient	GW-2 Down Gradient	IGV	TV
pH	pH Units	7.46	7.46	**6.5-9.5**	**-**
EC	µS/cm	700	525	**1,000**	**875 – 1,875**
Dissolved Oxygen	mg/l	8	8	**NAC**	**-**
Chloride	mg/l	17.4	8.3	**30**	**187.5**
Sulphate	mg/l	87.7	52.7	**200**	**187.5**
Total Organic Carbon	mg/l	<2	2	**NAC**	**-**

NAC – no abnormal change

Table E.4.5 Q1 2017 Groundwater Monitoring Results

Parameter	Unit	GW-1 Up Gradient	GW-2 Down Gradient	IGV	TV
pH	pH Units	7.47	7.36	**6.5-9.5**	**-**
EC	µS/cm	685	698	**1,000**	**875 – 1,875**
DO	mg/l	7	7	**NAC**	**-**
Chloride	mg/l	18.8	13.6	**30**	**187.5**
Sulphate	mg/l	97.6	61.3	**200**	**187.5**
TOC	mg/l	<2	<2	**NAC**	**-**

Table E.4.6 Q2 2017 Groundwater Monitoring Results

Parameter	Unit	GW-1 Up Gradient	GW-2 Down Gradient	IGV	TV
pH	pH Units	7.54	7.43	**6.5-9.5**	**-**
EC	µS/cm	638	598	**1,000**	**875 – 1,875**
DO	mg/l	4	5	**NAC**	**-**
Chloride	mg/l	17.2	14.6	**30**	**187.5**
Sulphate	mg/l	82.3	61.4	**200**	**187.5**
TOC	mg/l	<2	<2	**NAC**	**-**

In Q1 of 2016 there was a slight exceedance of the IGV for manganese in GW-1. There was exceedances of the IGV for chloride and electrical conductivity in GW-2 but the GTVs were not exceeded. There were no further exceedances of the IGV or TVs throughout 2016 and 2017. There was no significant change in water quality between the upgradient and downgradient wells.

E5. Noise Emissions

Installation activities involve the use of plant and equipment that are sources of noise emissions. The sources of noise are the 2 No. diesel fuelled forklifts, which are refuelled at the RILTA facility at Block 402.

An annual noise survey is carried out and the results of the most recent survey (August 2016) are in Table E5. Daytime noise monitoring was carried out at noise monitoring locations specified in the licence Site operations were not audible at any of the stations and were therefore lower than the 55dB daytime limit as specified in the licence.

Table E5 Day-time Noise Survey Results

Station	N1	N2	N3
Period	Daytime	Daytime	Daytime
Ambient $L_{Aeq\ 30\ min}$ (dB)	62	64	54
Facility specific $L_{Aeq\ 30\ min}$ (dB)	<52	<51	<<49
Tone objectively detected	x	x	x
Tone attributable to facility	x	x	x
Facility audibly tonal	x	x	x
Facility audibly impulsive	x	x	x
Facility rated $L_{Req\ 30\ min}$ (dB)	<52	<51	<<49
Limit (dB)	55	55	55
Compliance	✓	✓	✓

The proposed APCR bagging plant will be a source of noise emissions associated with the air compressor use in the transfer to the APCR from the bulk tankers to the silos and the reverse jet air filters fitted to each silo.

Point Code	Point Type	Easting	Northing	Verified	Pollutant
Provide label ID's assigned in section E		6E-digit GPS Irish National Grid Reference	6N-digit GPS Irish National Grid Reference	Y = GPS used	e.g. SO_2, HCl, NH_3
				N = GPS not used	
SW1	Surface Water	301555	228769	No	Rainwater Runoff
FW-1	Foul sewer	301554	228797	No	No emission