Facility Information Summary	
AER Reporting Year	2016
Licence Register Number	W0081-04
Name of site	Kilcullen Landfill Ltd
Site Location	Brownstown, Kilcullen, Co Kildare.
NACE Code	
Class/Classes of Activity	1,5,11,13 & 3,4,9
National Grid Reference (6E, 6 N)	284865E, 211310N

A description of the activities/processes at the site for the reporting year. This should include information such as production increases or decreases on site, any infrastructural changes, environmental performance which was measured during the reporting year **and an overview of compliance with your licence** listing all exceedances of licence limits (where applicable) and what they relate to e.g. air, water, noise.	The current waste Licence Register Number for Kilcullen Landfill is W0081-04. In March 2014 the Waste Licence was transferred from KTK Landfill Ltd to Kilcullen Landfill Ltd. The facility is a fully engineered lined landfill. The facility ceased acceptance of waste material in December 2011. During 2012, the final capping works were brought to practical completion and the site entered its closure, restoration and aftercare phase. In 2015 final capping and topsoil/reseeding works were completed at the landfill and the facility is now managed in aftercare capacity.

Declaration:

All the data and information presented in this report has been checked and certified as being accurate. The quality of the information is assured to meet licence requirements.

Tom Kingston	28th March 2018
Signature Group/Facility manager (or nominated, suitably qualified and experienced deputy)	Date

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Answer all questions and complete all tables where relevant

			Additional information
1	Does your site have licensed air emissions? If yes please complete table A1 and A2 below for the current reporting year and answer further questions. If **you do not have** licenced emissions and **do not complete a solvent management plan** (table A4 and A5) you do not need to complete the tables	Yes	

Periodic/Non-Continuous Monitoring

2	Are there any results in breach of licence requirements? If yes please provide brief details in the comment section of TableA1 below	No	
3	Was all monitoring carried out in accordance with EPA guidance note AG2 and using the basic air monitoring checklist? Basic air monitoring checklist AGN2	Yes	

Table A1: Licensed Mass Emissions/Ambient data-periodic monitoring (non-continuous)

Emission reference no:	Parameter/ Substance	Frequency of Monitoring	ELV in licence or any revision therof	Licence Compliance criteria	Measured value	Unit of measurement	Compliant with licence limit	Method of analysis	Annual mass load (kg)	Comments - reason for change in % mass load from previous year if applicable
Flare 1	Carbon Monoxide (CO)	annual	150	No 30min mean can exceed the ELV	50.25	mg/m3	N/A	NCIR By Horiba PG-250	11.42	
Flare 1	Nitrogen Oxides (Nox/NO2)	annual	150	No 30min mean can exceed the ELV	81.68	mg/m3	yes	Chemiluminesence	18.57	
Flare 1	Sulphur oxides (Sox/SO2)	annual	-	No 30min mean can exceed the ELV	981.25	mg/m3	yes	NDIR Adsorption	223	
GE01	Nitrogen oxides (NOx)	annual	500	No 30min mean can exceed the ELV	440	mg/m3	yes	Chemiluminescence	2,174	
GE01	Carbon Monoxide (CO)	annual	1,400	No 30min mean can exceed the ELV	1284	mg/m3	yes	NCIR By Horiba PG-250	6,343	
GE01	TA Luft organic substances class 1	annual	75	No 30min mean can exceed the ELV	<0.11	mg/m3	yes	Thermal Desorption	<0.54	
GE01	Total Particulates	annual	-	No 30min mean can exceed the ELV	1.77	mg/m3	N/A	Gravimetric	8.74	
GE01	Volatile organic compounds (as TOC)	annual	1000	No 30min mean can exceed the ELV	844	mgC/m3	yes	Flame Ionisation Detection	4,169	
GE01	Sulphur dioxide (SO_x)	annual	-	No 30min mean can exceed the ELV	1113	mg/m3	yes	NDIR Absorption	5,498	
GE01	Volumetric Flow	annual	-	No 30min mean can exceed the ELV	2794	m3/hr	N/A	Pitot Tubes	4,940,070	

Note 1: Volumetric flow shall be included as a reportable parameter

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Continuous Monitoring

4	Does your site carry out continuous air emissions monitoring?	Yes	
	If yes please review your continuous monitoring data and report the required fields below in Table A2 and compare it to its relevant Emission Limit Value (ELV)		
5	Did continuous monitoring equipment experience downtime? If yes please record downtime in table A2 below	No	
6	Do you have a proactive service agreement for each piece of continuous monitoring equipment?	Yes	
7	Did your site experience any abatement system bypasses? If yes please detail them in table A3 below	No	

Table A2: Summary of average emissions -continuous monitoring

Emission reference no:	Parameter/ Substance	ELV in licence or any revision therof	Averaging Period	Compliance Criteria	Units of measurement	Annual Emission	Annual maximum	Monitoring Equipment downtime (hours)	Number of ELV exceedences in current reporting year	Comments
Flare 1	Carbon monoxide (CO)	500	Annual	All 30-minutes averages < 2 x ELV	mg/m3	50.25				
GE01	Carbon monoxide (CO)	1,400	Annual	All 30-minutes averages < 2 x ELV	mg/m3	1,284				
	SELECT				SELECT					

note 1: Volumetric flow shall be included as a reportable parameter.

Table A3: Abatement system bypass reporting table Bypass protocol

Date*	Duration** (hours)	Location	Reason for bypass	Impact magnitude	Corrective action

* this should include all dates that an abatement system bypass occurred

** an accurate record of time bypass beginning and end should be logged on site and maintained for future Agency inspections please refer to bypass protocol link

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Solvent use and management on site

8 Do you have a total Emission Limit Value of direct and fugitive emissions on site? if yes please fill out tables A4 and A5

SELECT

Table A4: Solvent Management Plan Summary Total VOC Emission limit value

Solvent regulations — Please refer to linked solvent regulations to complete table 5 and 6

Reporting year	Total solvent input on site (kg)	Total VOC emissions to Air from entire site (direct and fugitive)	Total VOC emissions as %of solvent input	Total Emission Limit Value (ELV) in licence or any revision therof	Compliance
					SELECT
					SELECT

Table A5: Solvent Mass Balance summary

	(I) Inputs (kg)	(O) Outputs (kg)						
Solvent	(I) Inputs (kg)	Organic solvent emission in waste	Solvents lost in water (kg)	Collected waste solvent (kg)	Fugitive Organic Solvent (kg)	Solvent released in other ways e.g.	Solvents destroyed onsite through	Total emission of Solvent to air (kg)
							Total	

AER Monitoring returns summary template-WATER/WASTEWATER(SEWER) Lic No: W0081-04 Year 2016

			Additional information
1	Does your site have licensed emissions direct to surface water or direct to sewer? If yes please complete table W2 and W3 below for the current reporting year and answer further questions. If **you do not have** licenced emissions you only need to complete table W1 and or W2 for storm water analysis and visual inspections	Yes	Kilcullen Landfill operates two reverse osmosis treatment plants (RO-1 and RO-2) on-site which treat landfill leachate before discharging it to the Irish Water sewer. The treated leachate is referred to as permeate and the discharge limit is 150m3/day. Concentrate from the units is re-circulated within the waste mass, as per the agreement with the Agency. The Plant RO-2 was non-operational for the second round of monitoring completed in December 2016. 6,871 m3 discharged to the sewer in 2016.
2	Was it a requirement of your licence to carry out visual inspections on any surface water discharges or watercourses on or near your site? If yes please complete table W2 below summarising only any evidence of contamination noted during visual inspections	Yes	The surface water monitoring was conducted bi-annually at the four monitoring locations specified in the Licence and reported to the Agency on a bi-annual basis. The sampling was carried out in accordance with internationally accepted techniques and control procedures, the analyses were completed by a laboratory using standard and internationally accepted procedures. The 2016 results are generally consistent with previous years of monitoring.

Table W1 Storm water monitoring

Location reference	Location relative to site activities	PRTR Parameter	Licenced Parameter	Monitoring date	ELV or trigger level in licence or any revision thereof*	Licence Compliance criteria	Measured value	Unit of measurement	Compliant with licence	Comments
SW7	onsite	SELECT	Boron	2017 Round 1	N/A	N/A	29	ug/l	N/A	
SW7	onsite	SELECT	Cadmium	2017 Round 1	N/A	N/A	<0.5	ug/l	N/A	
SW7	onsite	SELECT	Calcium	2017 Round 1	N/A	N/A	139.3	mg/l	N/A	
SW7	onsite	SELECT	Copper	2017 Round 1	N/A	N/A	<7	ug/l	N/A	
SW7	onsite	SELECT	Iron	2017 Round 1	N/A	N/A	<20	ug/l	N/A	
SW7	onsite	SELECT	Lead	2017 Round 1	N/A	N/A	<5	ug/l	N/A	
SW7	onsite	SELECT	Magnesium	2017 Round 1	N/A	N/A	9.6	mg/l	N/A	
SW7	onsite	SELECT	Manganese	2017 Round 1	N/A	N/A	51	ug/l	N/A	
SW7	onsite	SELECT	Mercury	2017 Round 1	N/A	N/A	<1	ug/l	N/A	
SW7	onsite	SELECT	Nickel	2017 Round 1	N/A	N/A	<2	ug/l	N/A	
SW7	onsite	SELECT	Potassium	2017 Round 1	N/A	N/A	1.9	mg/l	N/A	
SW7	onsite	SELECT	Sodium	2017 Round 1	N/A	N/A	18.6	mg/l	N/A	
SW7	onsite	SELECT	Zinc	2017 Round 1	N/A	N/A	4	ug/l	N/A	
SW7	onsite	SELECT	Dissolved Phosphorus	2017 Round 1	N/A	N/A	8	ug/l	N/A	
SW7	onsite	SELECT	Total Chromium	2017 Round 1	N/A	N/A	<1.5	ug/l	N/A	
SW7	onsite	SELECT	Chloride	2017 Round 1	N/A	N/A	23.2	mg/l	N/A	
SW7	onsite	SELECT	Nitrate (NO3)	2017 Round 1	N/A	N/A	7.3	mg/l	N/A	
SW7	onsite	SELECT	Nitrite (NO2)	2017 Round 1	N/A	N/A	<0.02	mg/l	N/A	
SW7	onsite	SELECT	Ortho Phosphate	2017 Round 1	N/A	N/A	<0.06	mg/l	N/A	
SW7	onsite	SELECT	Ammoniacal Nitrogen	2017 Round 1	N/A	N/A	0.09	mg/l	N/A	
SW7	onsite	SELECT	Total Alkalinity	2017 Round 1	N/A	N/A	340	mg/l	N/A	
SW7	onsite	SELECT	BOD	2017 Round 1	N/A	N/A	<1	mg/l	N/A	
SW7	onsite	SELECT	COD	2017 Round 1	N/A	N/A	15	mg/l	N/A	
SW7	onsite	SELECT	Electrical Conductivity	2017 Round 1	N/A	N/A	731	µS/cm	N/A	
SW7	onsite	SELECT	pH	2017 Round 1	N/A	N/A	8.07	pH units	N/A	
SW7	onsite	SELECT	TOC	2017 Round 1	N/A	N/A	<2	mg/l	N/A	
SW7	onsite	SELECT	Total Suspended Solids	2017 Round 1	N/A	N/A	<10	mg/l	N/A	
SW7	onsite	SELECT	Boron	2017 Round 2	N/A	N/A	<12	ug/l	N/A	
SW7	onsite	SELECT	Cadmium	2017 Round 2	N/A	N/A	<0.5	ug/l	N/A	
SW7	onsite	SELECT	Calcium	2017 Round 2	N/A	N/A	81.8	mg/l	N/A	
SW7	onsite	SELECT	Copper	2017 Round 2	N/A	N/A	<7	ug/l	N/A	
SW7	onsite	SELECT	Iron	2017 Round 2	N/A	N/A	28	ug/l	N/A	
SW7	onsite	SELECT	Lead	2017 Round 2	N/A	N/A	<5	ug/l	N/A	
SW7	onsite	SELECT	Magnesium	2017 Round 2	N/A	N/A	6.3	mg/l	N/A	
SW7	onsite	SELECT	Manganese	2017 Round 2	N/A	N/A	40	ug/l	N/A	
SW7	onsite	SELECT	Mercury	2017 Round 2	N/A	N/A	<1	ug/l	N/A	
SW7	onsite	SELECT	Nickel	2017 Round 2	N/A	N/A	<2	ug/l	N/A	
SW7	onsite	SELECT	Potassium	2017 Round 2	N/A	N/A	2.2	mg/l	N/A	
SW7	onsite	SELECT	Sodium	2017 Round 2	N/A	N/A	12	mg/l	N/A	
SW7	onsite	SELECT	Zinc	2017 Round 2	N/A	N/A	11	ug/l	N/A	
SW7	onsite	SELECT	Dissolved Phosphorus	2017 Round 2	N/A	N/A	53	ug/l	N/A	
SW7	onsite	SELECT	Total Chromium	2017 Round 2	N/A	N/A	<1.5	ug/l	N/A	
SW7	onsite	SELECT	Chloride	2017 Round 2	N/A	N/A	15	mg/l	N/A	
SW7	onsite	SELECT	Nitrate (NO3)	2017 Round 2	N/A	N/A	2.2	mg/l	N/A	
SW7	onsite	SELECT	Nitrite (NO2)	2017 Round 2	N/A	N/A	<0.02	mg/l	N/A	
SW7	onsite	SELECT	Ortho Phosphate	2017 Round 2	N/A	N/A	<0.06	mg/l	N/A	
SW7	onsite	SELECT	Ammoniacal Nitrogen	2017 Round 2	N/A	N/A	0.21	mg/l	N/A	
SW7	onsite	SELECT	Total Alkalinity	2017 Round 2	N/A	N/A	204	mg/l	N/A	
SW7	onsite	SELECT	BOD	2017 Round 2	N/A	N/A	1	mg/l	N/A	
SW7	onsite	SELECT	COD	2017 Round 2	N/A	N/A	9	mg/l	N/A	
SW7	onsite	SELECT	Electrical Conductivity	2017 Round 2	N/A	N/A	473	µS/cm	N/A	
SW7	onsite	SELECT	pH	2017 Round 2	N/A	N/A	7.55	pH units	N/A	
SW7	onsite	SELECT	TOC	2017 Round 2	N/A	N/A	<2	mg/l	N/A	
SW7	onsite	SELECT	Total Suspended Solids	2017 Round 2	N/A	N/A	12	mg/l	N/A	
SW7	onsite	SELECT	Sulphate	2017 Round 2	N/A	N/A	30	mg/l	N/A	
SW7	onsite	SELECT	Dissolved Oxygen	2017 Round 2	N/A	N/A	7	mg/l	N/A	
SW7	onsite	SELECT	SVOCs except....	2017 Round 2	N/A	N/A	N.D	µg/l	N/A	
SW7	onsite	SELECT	4-Methylphenol	2017 Round 2	N/A	N/A	<1	µg/l	N/A	
SW7	onsite	SELECT	Phenol	2017 Round 2	N/A	N/A	<1	µg/l	N/A	
SW7	onsite	SELECT	VOC's	2017 Round 2	N/A	N/A	N.D	µg/l	N/A	
SW7	onsite	SELECT	Total Coliforms	2017 Round 2	N/A	N/A	0	cfu/100ml	N/A	
SW7	onsite	SELECT	E-Coli	2017 Round 2	N/A	N/A	0	cfu/100ml	N/A	

*trigger values may be agreed by the Agency outside of licence conditions

AER Monitoring returns summary template-WATER/WASTEWATER(SEWER) Lic No: W0081-04 Year 2016

Table W2 Visual inspections-Please only enter details where contamination was observed.

Location Reference	Date of inspection	Description of contamination	Source of contamination	Corrective action	Comments
SW7	Weekly	None Identified	N/A	N/A	
			SELECT		

Licensed Emissions to water and /or wastewater(sewer)-periodic monitoring (non-continuous)

3	Was there any result in breach of licence requirements? If yes please provide brief details in the comment section of Table W3 below		No	Additional information
4	Was all monitoring carried out in accordance with EPA guidance and checklists for Quality of Aqueous Monitoring Data Reported to the EPA? If no please detail what areas require improvement in additional information box	External /Internal Lab Quality checklist / Assessment of results checklist	Yes	

Table W3: Licensed Emissions to water and /or wastewater (sewer)-periodic monitoring (non-continuous)

Emission reference no:	Emission released to	Parameter/ SubstanceNote 1	Type of sample	Frequency of monitoring	Averaging period	ELV or trigger values in licence or any revision therof[Note 2]	Licence Compliance criteria	Measured value	Unit of measurement	Compliant with licence	Method of analysis	Procedural reference source	Procedural reference standard number	Annual mass load (kg)	Comments
Final Permeate	Wastewater/Sewer	pH	discrete	Bi-Annual	N/A	6 - 9	All values < ELV	6.56	pH units	yes	pH Meter (Electrode)	US EPA		n/a	
Final Permeate	Wastewater/Sewer	Conductivity	discrete	Bi-Annual	N/A	-		297.5	µS/cm@25oC		Conductivity Meter (Electrode)	US EPA		n/a	
Final Permeate	Wastewater/Sewer	BOD	discrete	Bi-Annual	N/A	250	All values < ELV	1	mg/L	yes	5 Day ATU	US EPA		<0.007	
Final Permeate	Wastewater/Sewer	COD	discrete	Bi-Annual	N/A	750	All values < ELV	12	mg/L	yes	DR Lange Kit	US EPA		0.08	
Final Permeate	Wastewater/Sewer	Suspended Solids	discrete	Bi-Annual	N/A	300	All values < ELV	<10	mg/L	yes	Gravimetric analysis	US EPA		<0.069	
Final Permeate	Wastewater/Sewer	Nitrate (as N)	discrete	Bi-Annual	N/A	1000	All values < ELV	0.08	mg/L	yes	Kone Analyser	US EPA		0.0005	
Final Permeate	Wastewater/Sewer	Chlorides (as Cl)	discrete	Bi-Annual	N/A	2000	All values < ELV	0.6	mg/L	yes	Kone Analyser	US EPA		0.0041	
Final Permeate	Wastewater/Sewer	Ammoniacal Nitrogen (as NH4)	discrete	Bi-Annual	N/A	5	All values < ELV	10.97	mg/L	no (if no please enter details in comments box)	Kone Analyser	US EPA		0.075	Concentration of parameter acceptable to WWTP
Final Permeate	Wastewater/Sewer	Ortho-phosphate (as PO4)	discrete	Bi-Annual	N/A	20	All values < ELV	0.09	mg/L	yes	Kone Analyser	US EPA		0.0006	
Final Permeate	Wastewater/Sewer	Dissolved Methane	discrete	Bi-Annual	N/A	-		41	µg/L	yes	GC-FID	Other		0.281711	
Final Permeate	Wastewater/Sewer	volumetric flow	Flowmeter	Continuous	N/A	150	No flow value shall exceed the specific limit.	-	m3/day	yes	Flowmeter	Other		6,871,000	

Note 1: Volumetric flow shall be included as a reportable parameter

Note 2: Where Emission Limit Values (ELV) do not apply to your licence please compare results against EQS for Surface water or relevant receptor quality standards

Continuous monitoring

5	Does your site carry out continuous emissions to water/sewer monitoring?	No	Additional Information

If yes please summarise your continuous monitoring data below in Table W4 and compare it to its relevant Emission Limit Value (ELV)

6	Did continuous monitoring equipment experience downtime? **If yes please record downtime in table W4 below**	SELECT	
7	Do you have a proactive service contract for each piece of continuous monitoring equipment on site?	SELECT	
8	Did abatement system bypass occur during the reporting year? **If yes please complete table W5 below**	SELECT	

Table W4: Summary of average emissions -continuous monitoring

Emission reference no:	Emission released to	Parameter/ Substance	ELV or trigger values in licence or any revision thereof	Averaging Period	Compliance Criteria	Units of measurement	Annual Emission for current reporting year (kg)	% change +/- from previous reporting year	Monitoring Equipment downtime (hours)	Number of ELV exceedences in reporting year	Comments
	SELECT	SELECT		SELECT	SELECT	SELECT					
	SELECT	SELECT		SELECT	SELECT	SELECT					

note 1: Volumetric flow shall be included as a reportable parameter.

Table W5: Abatement system bypass reporting table

Date	Duration (hours)	Location	Resultant emissions	Reason for bypass	Corrective action*	Was a report submitted to the EPA?	When was this report submitted?
						SELECT	

*Measures taken or proposed to reduce or limit bypass frequency

Bund/Pipeline testing template Lic No: W0081-04 Year 2016

Bund testing

dropdown menu click to see options

		Additional information
Are you required by your licence to undertake integrity testing on bunds and containment structures ? if yes please fill out table B1 below listing all **new bunds and containment structures** on site, in addition to **all bunds which failed** the integrity test-**all bunding structures which failed including mobile bunds must be listed in the table below, please include all bunds outside the licenced testing period** (mobile bunds and chemstore included)		Killcullen Landfill Ltd have engaged Golder and associates to undertake tank, bund and pipe line testing scheduled for April 2017, the finalised report will be on file and available for inspection.
1	Yes	
2 Please provide integrity testing frequency period	SELECT	
Does the site maintain a register of bunds, underground pipelines (including stormwater and foul), Tanks, sumps and containers? (containers refers to 3 "Chemstore" type units and mobile bunds)	SELECT	
4 How many bunds are on site?		
5 How many of these bunds have been tested within the required test schedule?		
6 How many mobile bunds are on site?		
7 Are the mobile bunds included in the bund test schedule?	SELECT	
8 How many of these mobile bunds have been tested within the required test schedule?		
9 How many sumps on site are included in the integrity test schedule?		
10 How many of these sumps are integrity tested within the test schedule?		
Please list any sump integrity failures in table B1		
11 Do all sumps and chambers have high level liquid alarms?	SELECT	
12 If yes to Q11 are these failsafe systems included in a maintenance and testing programme?	SELECT	
13 Is the Fire Water Retention Pond included in your integrity test programme?	SELECT	

Table B1: Summary details of bund /containment structure integrity test

Bund/Containment structure ID	Type	Specify Other type	Product containment	Actual capacity	Capacity required*	Type of integrity test	Other test type	Test date	Integrity reports maintained on site?	Results of test	Integrity test failure explanation <50 words	Corrective action taken	Scheduled date for retest	Results of retest(if in current reporting year)
	SELECT					SELECT			SELECT	SELECT		SELECT		
Leachate Treatment Area	reinforced concrete		Leachate Treatment Area	175000L	circa 100000L	Hydraulic test		Due	Yes	Pass				
Sulphuric Acid bunded t	prefabricated		Sulphuric Acid	28000L	25000L	Other	Visual Assessment	Due	Yes	Pass		SELECT		
Caustic Acid bunded tar	prefabricated		Caustic Acid	28000L	25000L	Other	Visual Assessment	Due	Yes	Pass				
Mobile bund 1	prefabricated		Oils	275L	250L	Hydraulic test		Due	No					
Mobile bund 2	prefabricated		Oils	275L	250L	Hydraulic test		Due	No					
Steel mobile bund	prefabricated		Coolant	1100L	1000L	Hydraulic test		Due	No					
Mobile bund 3	prefabricated		oils	1100L	1000L	Hydraulic test		Due 2020						
	SELECT					SELECT			SELECT	SELECT		SELECT		

* Capacity required should comply with 25% or 110% containment rule as detailed in your licence

			Commentary
Has integrity testing been carried out in accordance with licence requirements and are all structures tested 15 in line with BS8007/EPA Guidance?	bunding and storage guidelines	SELECT	
16 Are channels/transfer systems to remote containment systems tested?		SELECT	N/a
17 Are channels/transfer systems compliant in both integrity and available volume?		SELECT	N/a

Pipeline/underground structure testing

Are you required by your licence to undertake integrity testing* on underground structures e.g. pipelines or sumps etc ? if yes please fill out table 2 below listing 1 all underground structures and pipelines on site **which failed the integrity test and all which have not been tested withing the integrity test period as specified**	Yes	
2 Please provide integrity testing frequency period	3 years	

*please note integrity testing means water tightness testing for process and foul pipelines (as required under your licence)

Table B2: Summary details of pipeline/underground structures integrity test

Structure ID	Type system	Material of construction:	Does this structure have Secondary containment?	Type of secondary containment	Type integrity testing	Integrity reports maintained on site?	Results of test	Integrity test failure explanation <50 words	Corrective action taken	Scheduled date for retest	Results of retest(if in current reporting year)
	SELECT	SELECT	SELECT	SELECT	SELECT	SELECT	SELECT				SELECT
Riser main	Process	other(HDPE)	No		Hydraulic	Yes	Pass				

Please use commentary for additional details not answered by tables/ questions above

undwater/Soil monitoring template	Lic No:	W0081-04	Year	2016

				Comments
1	Are you required to carry out groundwater monitoring as part of your licence requirements?	yes		During 2016, two (2 No.) private groundwater well samples were collected and analysed. This sampling event took place in December 2016. The results of the analysis were reported in the Q4 quarterly report. All residents received copies of the results from their respective wells. All the parameters were lower that the IGV or GTV. Groundwater quality in the private wells was good and consistent with previous rounds. Groundwater quality was monitored in the on-site monitoring wells and reported to the Agency at quarterly intervals. The sampling was carried out in accordance with internationally accepted techniques and control procedures and the analyses were completed by a laboratory using standard and internationally accepted procedures
2	Are you required to carry out soil monitoring as part of your licence requirements?	no		
3	Do you extract groundwater for use on site? If yes please specify use in comment section	no		
4	Do monitoring results show that groundwater generic assessment criteria such as GTVs or IGVs are exceeded or is there an upward trend in results for a substance? If yes, please complete the Groundwater Monitoring Guideline Template Report (link in cell G8) and submit separately through ALDER as a licensee return AND answer questions 5-12 below. Groundwater monitoring template	no		The results from the on-site monitoring wells are consistent with previous results. The groundwater quality at the facility is influenced by an ongoing groundwater contamination plume emanating from the adjacent partially lined Silliot Hill landfill. The quality of the water in both private wells is generally good and shows no impacts associated with the landfill facility. Please enter interpretation of data here.
5	Is the contamination related to operations at the facility (either current and/or historic)	no		
6	Have actions been taken to address contamination issues?If yes please summarise remediation strategies proposed/undertaken for the site	no		
7	Please specify the proposed time frame for the remediation strategy	N/A		
8	Is there a licence condition to carry out/update ELRA for the site?	yes		
9	Has any type of risk assesment been carried out for the site?	yes		
10	Has a Conceptual Site Model been developed for the site?	yes		
11	Have potential receptors been identified on and off site?	yes		
12	Is there evidence that contamination is migrating offsite?	no		

undwater/Soil monitoring template Lic No: W0081-04 Year 2016

Table 1: Upgradient Groundwater monitoring results

Date of sampling	Sample location reference	Parameter/ Substance	Methodology	Monitoring frequency	Maximum Concentration++	Average Concentration+	unit	GTV's*	IGV	Upward trend in pollutant concentration over last 5 years of monitoring data
2016	KTK-16	Dissolved Arsenic	ICP-OES	Quarterly	111.7	73.8	µg/l	7.5	SELECT**	no
2016	KTK-16	Dissolved Barium	ICP-OES	Quarterly	551	513	µg/l	100	IGV	no
2016	KTK-16	Dissolved Boron	ICP-OES	Quarterly	903	872	µg/l	750	SELECT**	no
2016	KTK-16	Dissolved Cadmium	ICP-OES	Quarterly	<0.5	<0.5	µg/l	5	IGV	no
2016	KTK-16	Dissolved Calcium	ICP-OES	Quarterly	86.7	76.9	mg/l	200	IGV	no
2016	KTK-16	Total Dissolved Chromium	ICP-OES	Quarterly	4.1	3.8	µg/l	37.5	SELECT**	no
2016	KTK-16	Dissolved Copper	ICP-OES	Quarterly	<7	<7	µg/l	1500	SELECT**	no
2016	KTK-16	Total Dissolved Iron	ICP-OES	Quarterly	7227	4271	µg/l	200	IGV	no
2016	KTK-16	Dissolved Lead	ICP-OES	Quarterly	<5	<5	µg/l	18.75	SELECT**	no
2016	KTK-16	Dissolved Magnesium	ICP-OES	Quarterly	26.1	24.3	mg/l	50	IGV	no
2016	KTK-16	Dissolved Manganese	ICP-OES	Quarterly	136	96	µg/l	50	IGV	no
2016	KTK-16	Dissolved Mercury	ICP-OES	Quarterly	0.01	<0.01	µg/l	1	IGV	no
2016	KTK-16	Dissolved Nickel	ICP-OES	Quarterly	78	77	µg/l	15	SELECT**	no
2016	KTK-16	Dissolved Potassium	ICP-OES	Quarterly	94.8	92.9	mg/l	5	IGV	no
2016	KTK-16	Dissolved Sodium	ICP-OES	Quarterly	288.6	282.2	mg/l	150	IGV	no
2016	KTK-16	Dissolved Zinc	ICP-OES	Quarterly	9	7.5	µg/l	100	IGV	no
2016	KTK-16	Dissolved Phosphorus	ICP-OES	Quarterly	927.5	374.9	µg/l	-	SELECT**	no
2016	KTK-16	Total Phenols	HPLC	Quarterly	<0.1	<0.1	mg/l	0.5	IGV	no
2016	KTK-16	Fluoride	Dionex (Ion-Chromatography).	Quarterly	<0.3	<0.3	mg/l	1	IGV	no
2016	KTK-16	Sulphate	SIA-TAPAA	Quarterly	1.34	0.87	mg/l	187.5	SELECT**	no
2016	KTK-16	Chloride	SIA-TAPAA	Quarterly	260.1	255.8	mg/l	187.5	SELECT**	no
2016	KTK-16	Nitrate as NO3	SIA-TAPAA	Quarterly	21.2	10.9	mg/l	37.5	SELECT**	no
2016	KTK-16	Nitrite as NO2	SIA-TAPAA	Quarterly	0.12	0.08	mg/l	0.375	SELECT**	no
2016	KTK-16	Ortho Phosphate	SIA-TAPAA	Quarterly	<0.06	<0.06	mg/l	-	SELECT**	no
2016	KTK-16	Ammoniacal Nitrogen (N)	SIA-TAPAA	Quarterly	198.61	189.37	mg/l	0.065-0.175	SELECT**	no
2016	KTK-16	Total Alkalinity as CaCO3	Metrohm automated titration analyser	Quarterly	1316	1123	mg/l	NAC	IGV	no
2016	KTK-16	DO	Hach HQ30D Oxygen Meter	Quarterly	7	6	mg/l	-	SELECT**	no
2016	KTK-16	Electrical Conductivity	Field Probe	Quarterly	3005	2958	µS/cm	800-1,875	SELECT**	no
2016	KTK-16	TOC	TOC analyser	Quarterly	42	40	mg/l	NAC	IGV	no
2016	KTK-16	VOCs (TICs)	Headspace GC-MS	Quarterly	-	-	µg/l	-	SELECT**	no
2016	KTK-16	Semi - VOCs	GC-MS	Quarterly	-	-	µg/l	-	SELECT**	no
2016	KTK-16	Pesticides MS	Large Volume Injection on GC Triple Quad MS	Quarterly	-	-	µg/l	0.1	IGV	no
2016	KTK-16	Total Coliform	Membrane Filtration	Quarterly	-	-	cfu/100ml	0	IGV	no
2016	KTK-16	E-Coli	Membrane Filtration	Quarterly	-	-	cfu/100ml	0	IGV	no

.+ where average indicates arithmetic mean

.++ maximum concentration indicates the maximum measured concentration from all monitoring results produced during the reporting year

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Table 2: Downgradient Groundwater monitoring results

Date of sampling	Sample location reference	Parameter/ Substance	Methodology	Monitoring frequency	Maximum Concentration	Average Concentration	unit	GTV's*	SELECT**	Upward trend in pollutant concentration over last 5 years of monitoring data
2016	KTK-10	Dissolved Arsenic	ICP-OES	Quarterly	<2.5	<2.5	µg/l	7.5	SELECT**	No
2016	KTK-10	Dissolved Barium	ICP-OES	Quarterly	67	54	µg/l	100	IGV	No
2016	KTK-10	Dissolved Boron	ICP-OES	Quarterly	14	13	µg/l	750	SELECT**	No
2016	KTK-10	Dissolved Cadmium	ICP-OES	Quarterly	<0.5	<0.5	µg/l	5	IGV	No
2016	KTK-10	Dissolved Calcium	ICP-OES	Quarterly	131	118	mg/l	200	IGV	No
2016	KTK-10	Total Dissolved Chromium	ICP-OES	Quarterly	<1.5	<1.5	µg/l	37.5	SELECT**	No
2016	KTK-10	Dissolved Copper	ICP-OES	Quarterly	<7	<7	µg/l	1500	SELECT**	No
2016	KTK-10	Total Dissolved Iron	ICP-OES	Quarterly	<20	<20	µg/l	200	IGV	No
2016	KTK-10	Dissolved Lead	ICP-OES	Quarterly	<5	<5	µg/l	18.75	SELECT**	No
2016	KTK-10	Dissolved Magnesium	ICP-OES	Quarterly	14	12	mg/l	50	IGV	No
2016	KTK-10	Dissolved Manganese	ICP-OES	Quarterly	<2	<2	µg/l	50	IGV	No
2016	KTK-10	Dissolved Mercury	ICP-OES	Quarterly	<0.01	<0.01	µg/l	1	IGV	No
2016	KTK-10	Dissolved Nickel	ICP-OES	Quarterly	<2	<2	µg/l	15	SELECT**	No
2016	KTK-10	Dissolved Potassium	ICP-OES	Quarterly	0.3	0.2	mg/l	5	IGV	No
2016	KTK-10	Dissolved Sodium	ICP-OES	Quarterly	18	16	mg/l	150	IGV	No
2016	KTK-10	Dissolved Zinc	ICP-OES	Quarterly	<3	<3	µg/l	100	IGV	No
2016	KTK-10	Dissolved Phosphorus	ICP-OES	Quarterly	43.5	34.6	µg/l	-	SELECT**	No
2016	KTK-10	Total Phenols	HPLC	Quarterly	<0.1	<0.1	mg/l	0.5	IGV	No
2016	KTK-10	Fluoride	Dionex (Ion-Chromatography).	Quarterly	<0.3	<0.3	mg/l	1	IGV	No
2016	KTK-10	Sulphate	SIA-TAPAA	Quarterly	68.9	43.9	mg/l	187.5	SELECT**	No
2016	KTK-10	Chloride	SIA-TAPAA	Quarterly	24.5	23.4	mg/l	187.5	SELECT**	No
2016	KTK-10	Nitrate as NO3	SIA-TAPAA	Quarterly	20.4	12.9	mg/l	37.5	SELECT**	No
2016	KTK-10	Nitrite as NO2	SIA-TAPAA	Quarterly	<0.02	<0.02	mg/l	0.375	SELECT**	No
2016	KTK-10	Ortho Phosphate	SIA-TAPAA	Quarterly	<0.06	<0.06	mg/l	-	SELECT**	No
2016	KTK-10	Ammoniacal Nitrogen (N)	SIA-TAPAA	Quarterly	0.08	0.08	mg/l	0.065-0.175	SELECT**	No
2016	KTK-10	Total Alkalinity as CaCO3	Metrohm automated titration analyser	Quarterly	316	306	mg/l	NAC	IGV	No
2016	KTK-10	DO	Hach HQ30D Oxygen Meter	Quarterly	10	9	mg/l	-	SELECT**	No
2016	KTK-10	Electrical Conductivity	Field Probe	Quarterly	795	694	µS/cm	800-1,875	SELECT**	No
2016	KTK-10	TOC	TOC analyser	Quarterly	<2	<2	mg/l	NAC	IGV	No
2016	KTK-10	VOCs (TICs)	Headspace GC-MS	Quarterly	ND	ND	µg/l	-	SELECT**	No
2016	KTK-10	Semi - VOCs	GC-MS	Quarterly	ND	ND	µg/l	-	SELECT**	No
2016	KTK-10	Pesticides MS	Large Volume Injection on GC Triple Quad MS	Quarterly	ND	ND	µg/l	0.1	IGV	No
2016	KTK-10	Total Coliform	Membrane Filtration	Quarterly	18	18	cfu/100ml	0	IGV	No
2016	KTK-10	E-Coli	Membrane Filtration	Quarterly	1	1	cfu/100ml	0	IGV	No

undwater/Soil monitoring template					Lic No:	W0081-04		Year	2016	
2016	KTK-11	Dissolved Arsenic	ICP-OES	Quarterly	7	5.1	µg/l	7.5	SELECT**	No
2016	KTK-11	Dissolved Barium	ICP-OES	Quarterly	122	107	µg/l	100	IGV	No
2016	KTK-11	Dissolved Boron	ICP-OES	Quarterly	159	126	µg/l	750	SELECT**	No
2016	KTK-11	Dissolved Cadmium	ICP-OES	Quarterly	0.6	0.6	µg/l	5	IGV	No
2016	KTK-11	Dissolved Calcium	ICP-OES	Quarterly	157.8	154.1	mg/l	200	IGV	No
2016	KTK-11	Total Dissolved Chromium	ICP-OES	Quarterly	<1.5	<1.5	µg/l	37.5	SELECT**	No
2016	KTK-11	Dissolved Copper	ICP-OES	Quarterly	<7	<7	µg/l	1500	SELECT**	No
2016	KTK-11	Total Dissolved Iron	ICP-OES	Quarterly	<20	<20	µg/l	200	IGV	No
2016	KTK-11	Dissolved Lead	ICP-OES	Quarterly	<5	<5	µg/l	18.75	SELECT**	No
2016	KTK-11	Dissolved Magnesium	ICP-OES	Quarterly	15.9	13.8	mg/l	50	IGV	No
2016	KTK-11	Dissolved Manganese	ICP-OES	Quarterly	1246	1058	µg/l	50	IGV	No
2016	KTK-11	Dissolved Mercury	ICP-OES	Quarterly	0.07	0.04	µg/l	1	IGV	No
2016	KTK-11	Dissolved Nickel	ICP-OES	Quarterly	9	8	µg/l	15	SELECT**	No
2016	KTK-11	Dissolved Potassium	ICP-OES	Quarterly	6.8	6	mg/l	5	IGV	No
2016	KTK-11	Dissolved Sodium	ICP-OES	Quarterly	60.4	46.2	mg/l	150	IGV	No
2016	KTK-11	Dissolved Zinc	ICP-OES	Quarterly	6	4	µg/l	100	IGV	No
2016	KTK-11	Dissolved Phosphorus	ICP-OES	Quarterly	68.6	44.2	µg/l	-	SELECT**	No
2016	KTK-11	Total Phenols	HPLC	Quarterly	<0.1	<0.1	mg/l	0.5	IGV	No
2016	KTK-11	Fluoride	Dionex (Ion-Chromatography).	Quarterly	<0.3	<0.3	mg/l	1	IGV	No
2016	KTK-11	Sulphate	SIA-TAPAA	Quarterly	92.1	57.2	mg/l	187.5	SELECT**	No
2016	KTK-11	Chloride	SIA-TAPAA	Quarterly	70.3	54.7	mg/l	187.5	SELECT**	No
2016	KTK-11	Nitrate as NO3	SIA-TAPAA	Quarterly	1.5	0.8	mg/l	37.5	SELECT**	No
2016	KTK-11	Nitrite as NO2	SIA-TAPAA	Quarterly	0.03	0.03	mg/l	0.375	SELECT**	No
2016	KTK-11	Ortho Phosphate	SIA-TAPAA	Quarterly	<0.06	<0.06	mg/l	-	SELECT**	No
2016	KTK-11	Ammoniacal Nitrogen (N)	SIA-TAPAA	Quarterly	6.97	4.39	mg/l	0.065-0.175	SELECT**	Yes
2016	KTK-11	Total Alkalinity as CaCO3	Metrohm automated titration analyser	Quarterly	460	445	mg/l	NAC	IGV	No
2016	KTK-11	DO	Hach HQ30D Oxygen Meter	Quarterly	8	7	mg/l	-	SELECT**	No
2016	KTK-11	Electrical Conductivity	Field Probe	Quarterly	1088	1020	µS/cm	800-1,875	SELECT**	No
2016	KTK-11	TOC	TOC analyser	Quarterly	5	5	mg/l	NAC	IGV	No
2016	KTK-11	VOCs (TICs)	Headspace GC-MS	Quarterly	ND	ND	µg/l	-	SELECT**	No
2016	KTK-11	Semi - VOCs	GC-MS	Quarterly	ND	ND	µg/l	-	SELECT**	No
2016	KTK-11	Pesticides MS	Large Volume Injection on GC Triple Quad MS	Quarterly	ND	ND	µg/l	0.1	IGV	No
2016	KTK-11	Total Coliform	Membrane Filtration	Quarterly	10	10	cfu/100ml	0	IGV	No
2016	KTK-11	E-Coli	Membrane Filtration	Quarterly	2	2	cfu/100ml	0	IGV	No

*please note exceedance of generic assessment criteria (GAC) such as a Groundwater Threshold Value (GTV) or an Interim Guideline Value (IGV) or an upward trend in results for a substance indicates that further interpretation of monitoring results is required. In addition to completing the above table, please complete the Groundwater Monitoring Guideline Template Report at the link provided and submit separately through ALDER as a licensee return or as otherwise instructed by the EPA.

Groundwater monitoring template

More information on the use of soil and groundwater standards/ generic assessment criteria (GAC) and risk assessment tools is available in the EPA published guidance (see the link in G31)

Guidance on the Management of Contaminated Land and Groundwater at EPA Licensed Sites (EPA 2013).

**Depending on location of the site and proximity to other sensitive receptors alternative Receptor based Water Quality standards should be used in addition to the GTV e.g. if the site is close to surface water compare to Surface Water Environmental Quality Standards (SWEQS), if the site is close to a drinking water supply compare results to the Drinking Water Standards (DWS)

Surface water EQS | Groundwater regulations GTV's | Drinking water (private supply) standards | Drinking water (public supply) standards | Interim Guideline Values (IGV)

undwater/Soil monitoring template	Lic No:	W0081-04	Year	2016

Table 3: Soil results

Date of sampling	Sample location reference	Parameter/ Substance	Methodology	Monitoring frequency	Maximum Concentration	Average Concentration	unit
							SELECT
							SELECT

Where additional detail is required please enter it here in 200 words or less

	Environmental Liabilities template	Lic No:	W0081-04	Year	2016

Click here to access EPA guidance on Environmental Liabilities and Financial provision

			Commentary
1	ELRA initial agreement status	Submitted and agreed by EPA	As part of Condition 12.3.2, the Licensee has completed a fully costed Environmental Liabilities Risk Assessment for the site. This document outlines the potential unknown environmental liabilities associated with the landfill and estimates the possible cost of these liabilities. An environmental liability insurance policy has been taken out for €10M which is more than sufficient to cover any unforeseen event contemplated within the ELRA.
2	ELRA review status	Review required and completed	
3	Amount of Financial Provision cover required as determined by the latest ELRA		
4	Financial Provision for ELRA status	Submitted and agreed by EPA	
5	Financial Provision for ELRA - amount of cover		
6	Financial Provision for ELRA - type	Public Liability Insurance with Environmental Impairment Liability cover,	
7	Financial provision for ELRA expiry date		
8	Closure plan initial agreement status	Closure plan submitted and agreed by EPA	Under condition 12.3.3 of the site licence Kilcullen Landfill is required to maintain a financial provision that is sufficient to cover all liabilities incurred whilst carrying on the activities to which this licence relates. As part of the licence transfer from KTK Landfill Ltd to Kilcullen landfill Ltd, the CRAMP liability was recalculated and agreed with the Office for Environmental Enforcement as being €3.42M as at 1 January 2013. Financial provision, to the satisfaction of the Board of the EPA, was then put in place sufficient to cover the cost of this CRAMP liability.
9	Closure plan review status	Review required and completed	
10	Financial Provision for Closure status	Submitted and agreed by EPA	
11	Financial Provision for Closure - amount of cover		
12	Financial Provision for Closure - type	Other please specify	see above
13	Financial provision for Closure expiry date	N/A	

Environmental Management Programme/Continuous Improvement Programme template	Lic No:	W0081-04	Year	2016

	Highlighted cells contain dropdown menu click to view		Additional Information
1	Do you maintain an Environmental Mangement System (EMS) for the site. If yes, please detail in additional information	Yes	
2	Does the EMS reference the most significant environmental aspects and associated impacts on-site	Yes	
3	Does the EMS maintain an Environmental Management Programme (EMP) as required in accordance with the licence requirements	Yes	
4	Do you maintain an environmental documentation/communication system to inform the public on environmental performance of the facility, as required by the licence	Yes	

Environmental Management Programme (EMP) report

Objective Category	Target	Status (% completed)	How target was progressed	Responsibility	Intermediate outcomes
CRAMP	Complete installation of the permanent Surface Water Management System	aim autumn 2017	Meetings held and documented	Facility Manager	Project drawings and plans in place
	Removal of surplus equipment and materials etc. on site	ongoing	Surplus fencing, disused items,	Facility Manager	Reduction of materials on site
Licence	Energy Audit of Facility and identify opportunities for improved energy efficiency in aftercare phase.	To be completed	Minimise the amount of natural resources (water, power etc.) consumed at the Facility.	Site Manager	Conduct Energy Audit of Facility and identify opportunities for improved energy efficiency in aftercare phase.
Training	Continue to train and refresh staff on a regular basis in EMS system.	Ongoing Annual Basis	Regular training and toolbox talks attendance at AGB sites.	Site Manager	Trained expereinced staff on site.
IMS System	Review and amend IMS system in accordance with the new AGB landfills IMS systems	0.2	Review and amend IMS system in accordance with the new AGB landfills IMS systems	Facility and Assistant Manager	Updated procedures and forms for daily inspections and site monitoring

Noise monitoring summary report	Lic No:	W0081-04	Year	2016

1	Was noise monitoring a licence requirement for the AER period? If yes please fill in table N1 noise summary below	No
2	Was noise monitoring carried out using the EPA Guidance note, including completion of the "Checklist for noise measurement report" included in the guidance note as table 6? (Noise Guidance note NG4)	No
3	Does your site have a noise reduction plan	No
4	When was the noise reduction plan last updated?	NA
5	Have there been changes relevant to site noise emissions (e.g. plant or operational changes) since the last noise survey?	No

Table N1: Noise monitoring summary

Date of monitoring	Time period	Noise location (on site)	Noise sensitive location -NSL (if applicable)	LA_{eq}	LA_{90}	LA_{10}	LA_{max}	Tonal or Impulsive noise* (Y/N)	If tonal /impulsive noise was identified was 5dB penalty applied?	Comments (ex. main noise sources on site, & extraneous noise ex. road traffic)	Is site compliant with noise limits (day/evening/night)?
								SELECT	SELECT		SELECT

*Please ensure that a tonal analysis has been carried out as per guidance note NG4. These records must be maintained onsite for future inspection

If noise limits exceeded as a result of noise attributed to site activities, please choose the corrective action from the following options? SELECT

** please explain the reason for not taking action/resolution of noise issues?
Any additional comments? (less than 200 words)

Resource Usage/Energy efficiency summary

Lic No: W0081-04 Year 2016

			Additional information
1	When did the site carry out the most recent energy efficiency audit? Please list the recommendations in table 3 below	2010	
2	Is the site a member of any accredited programmes for reducing energy usage/water conservation such as the SEAI programme linked to the right? If yes please list them in additional information	SEAI - Large Industry Energy Network (LIEN) / No	
3	Where Fuel Oil is used in boilers on site is the sulphur content compliant with licence conditions? Please state percentage in additional information	SELECT	Not Applicable

Table R1 Energy usage on site

Energy Use	Previous year	Current year	Production +/- % compared to previous reporting year**	Energy Consumption +/- % vs overall site production*
Total Energy Used (MWHrs)				
Total Energy Generated (MWHrs)				
Total Renewable Energy Generated (MWHrs)	8,916.00	7,423.00	-16.75%	
Electricity Consumption (MWHrs)	1.93	2.00	3.64%	
Fossil Fuels Consumption:				
Heavy Fuel Oil (m3)				
Light Fuel Oil (m3)	9	0.5	-94.50%	
Natural gas (m3)	NA	NA		
Coal/Solid fuel (metric tonnes)	NA	NA		
Peat (metric tonnes)				
Renewable Biomass				
Renewable energy generated on site				

* where consumption of energy can be compared to overall site production please enter this information as percentage increase or decrease compared to the previous reporting year.

** where site production information is available please enter percentage increase or decrease compared to previous year

Table R2 Water usage on site

					Water Emissions	Water Consumption	
Water use	Water extracted Previous year m3/yr.	Water extracted Current year m3/yr.	Production +/- % compared to previous reporting year**	Energy Consumption +/- % vs overall site production*	Volume Discharged back to environment(m^3yr):	Volume used i.e not discharged to environment e.g. released as steam m3/yr	Unaccounted for Water:
Groundwater							
Surface water							
Public supply	322	475	0				
Recycled water							
Total							

* where consumption of water can be compared to overall site production please enter this information as percentage increase or decrease compared to the previous reporting year.

** where site production information is available please enter percentage increase or decrease compared to previous year

Table R3 Waste Stream Summary

	Total	Landfill	Incineration	Recycled	Other
Hazardous (Tonnes)					
Non-Hazardous (Tonnes)					

Resource Usage/Energy efficiency summary Lic No: W0081-04 Year 2016

Table R4: Energy Audit finding recommendations

Date of audit	Recommendations	Description of Measures proposed	Origin of measures	Predicted energy savings %	Implementation date	Responsibility	Completion date	Status and comments
Oct-10		A number of measures were proposed in line with audit criteria	Energy audit		These were managed during the following years of the audit.			
			SELECT					
			SELECT					

Table R5: Power Generation: Where power is generated onsite (e.g. power generation facilities/food and drink industry)please complete the following information

	Unit ID	Unit ID	Unit ID	Unit ID	Station Total
Technology					
Primary Fuel					
Thermal Efficiency					
Unit Date of Commission					
Total Starts for year					
Total Running Time					
Total Electricity Generated (GWH)					
House Load (GWH)					
KWH per Litre of Process Water					
KWH per Litre of Total Water used on Site					

Complaints and Incidents summary template Lic No: W0081-04 Year 2016

Complaints		
		Additional information
Have you received any environmental complaints in the current reporting year? If yes please complete summary details of complaints received on site in table 1 below	No	

Table 1 Complaints summary

Date	Category	Other type (please specify)	Brief description of complaint (Free txt <20 words)	Corrective action< 20 words	Resolution status	Resolution date	Further information
Total complaints open at start of reporting year	0						
Total new complaints received during reporting year	0						
Total complaints closed during reporting year	0						
Balance of complaints end of reporting year	0						

Incidents		
		Additional information
Have any incidents occurred on site in the current reporting year? Please list all incidents for current reporting year in Table 2 below	Yes	
*For information on how to report and what constitutes an incident	What is an incident	

Table 2 Incidents summary

Date of occurrence	Incident nature	Location of occurrence	Incident category*please refer to guidance	Receptor	Cause of incident	Other cause(please specify)	Activity in progress at time of incident	Communication	Occurrence	Corrective action<20 words	Preventative action <20 words	Resolution status	Resolution date	Likelihood of reoccurence
28/01/2016	Perimeter exceedances	Other location (perimeter gas wells)	1. Minor	Air	Trigger Level Reached	INCI009559	Normal activities	EPA	New			Complete	30/01/2017	Low
29/02/2016	Perimeter exceedances	Other location (perimeter gas wells)	1. Minor	Air	Trigger Level Reached	INCI009750	Normal activities	EPA	New			Complete	30/01/2017	Low
24/03/2016	Perimeter exceedances	Other location (perimeter gas wells)	1. Minor	Air	Trigger Level Reached	INCI009865	Normal activities	EPA	New			Complete	30/01/2017	Low
19/04/2016	Perimeter exceedances	Other location (perimeter gas wells)	1. Minor	Air	Trigger Level Reached	INCI010010	Normal activities	EPA	New			Complete	30/01/2017	Low
19/05/2016	Perimeter exceedances	Other location (perimeter gas wells)	1. Minor	Air	Trigger Level Reached	INCI010155	Normal activities	EPA	New			Complete	30/01/2017	Low
23/06/2016	Perimeter exceedances	Other location (perimeter gas wells)	1. Minor	Air	Trigger Level Reached	INCI010354	Normal activities	EPA	New			Complete	30/01/2017	Low
23/07/2016	Trigger Level Reached	Other location (LP1 and LP6)	1. Minor	No Uncontrolled release	Leachate levels slightly above 1m in LP1 and LP6, due to reduced treatment on site	INCI011378	None	EPA	New	As per incident lodged INC1011378, resumed treatment after plant repairs	As per incident lodged INC1011378, resumed treatment after plant repairs	Complete	30/01/2017	Low
29/07/2016	Perimeter exceedances	Other location (perimeter gas wells)	1. Minor	Air	Trigger Level Reached	INCI010590	Normal activities	EPA	New			Complete	30/01/2017	Low
15/08/2016	Perimeter exceedances	Other location (perimeter gas wells)	1. Minor	Air	Trigger Level Reached	INCI010783	Normal activities	EPA	New			Complete	30/01/2017	Low
22/09/2016	Perimeter exceedances	Other location (perimeter gas wells)	1. Minor	Air	Trigger Level Reached	INCI010897	Normal activities	EPA	New			Complete	30/01/2017	Low
27/10/2016	Perimeter exceedances	Other location (perimeter gas wells)	1. Minor	Air	Trigger Level Reached	INCI011063	Normal activities	EPA	New			Complete	30/01/2017	Low

Total number of incidents current year	11
Total number of incidents previous year	13
% reduction/ increase	15%

WASTE SUMMARY Lic No: W0081-04 Year 2016

SECTION A-PRTR ON SITE WASTE TREATMENT AND WASTE TRANSFERS TAB- TO BE COMPLETED BY ALL IPPC AND WASTE FACILITIES

PRTR facility logon — dropdown list click to see options

SECTION B- WASTE ACCEPTED ONTO SITE-TO BE COMPLETED BY ALL IPPC AND WASTE FACILITIES

			Additional Information
1	Were any wastes accepted onto your site for recovery or disposal or treatment prior to recovery or disposal within the boundaries of your facility ?; (waste generated within your boundaries is to be captured through PRTR reporting) If yes please enter details in table 1 below	Yes	
2	Did your site have any rejected consignments of waste in the current reporting year? If yes please give a brief explanation in the additional information	SELECT	
3	Was waste accepted onto your site that was generated outside the Republic of Ireland? If yes please state the quantity in tonnes in additional information	SELECT	

Table 1 Details of waste accepted onto your site for recovery, disposal or treatment (do not include wastes generated at your site, as these will have been reported in your PRTR workbook)

Licenced annual tonnage limit for your site (total tonnes/annum)	EWC code (European Waste Catalogue EWC codes)	Source of waste accepted	Description of waste accepted **Please enter an accurate and detailed description - which applies to relevant EWC code** (European Waste Catalogue EWC codes)	Quantity of waste accepted in current reporting year (tonnes)	Quantity of waste accepted in previous reporting year (tonnes)	Reduction/ Increase over previous year +/ - %	Reason for reduction/ increase from previous reporting year	Packaging Content (%)- only applies if the waste has a packaging component	Disposal/Recovery or treatment operation carried out at your site and the description of this operation	Quantity of waste remaining on site at the end of reporting year (tonnes)	Comments -
275,000	19 07 03	*20- MUNICIPAL WASTES (HOUSEHOLD WASTE AND SIMILAR COMMERCIAL, INDUSTRIAL AND INSTITUTIONAL WASTES) INCLUDING SEPARATELY COLLECTED FRACTIONS*	*Leachate from landfill*	1011.56	921.94	110%	*Site generally ceased waste acceptance in December 2011.*	*N/A*	*D8-Biological treatment not specified elsewhere which are discarded by means of any of the operations numbered D1 to D12*		*A limited amount of leachate was transported to Kilcullen Landfill from Ballynagran Landfill in 2016 for treatment following continous high rainfall events and leachate outlet shortage.*

SECTION C-TO BE COMPLETED BY ALL WASTE FACILITIES (waste transfer stations, Composters, Material recovery facilities etc) EXCEPT LANDFILL SITES

4	Is all waste processing infrastructure as required by your licence and approved by the Agency in place? If no please list waste processing infrastructure required onsite	SELECT	Site closed and in aftercare period
5	Is all waste storage infrastructure as required by your licence and approved by the Agency in place? If no please list waste storage infrastructure required on site	SELECT	Site closed and in aftercare period
6	Does your facility have relevant nuisance controls in place?	Yes	
7	Do you have an odour management system in place for your facility? If no why?	Yes	
8	Do you maintain a sludge register on site?	No	

SECTION D-TO BE COMPLETED BY LANDFILL SITES ONLY

Table 2 Waste type and tonnage-landfill only

Waste types permitted for disposal	Authorised/licenced annual intake for disposal (tpa)	Actual intake for disposal in reporting year (tpa)	Remaining licensed capacity at end of reporting year (m3)	Comments
				Site closed and in aftercare period

Table 3 General information-Landfill only

Area ID	Date landfilling commenced	Date landfilling ceased	Currently landfilling	Private or Public Operated	Inert or non-hazardous	Predicted date to cease landfilling	Licence permits asbestos	Is there a separate cell for asbestos?	Accepted asbestos in reporting year	Total disposal area occupied by waste	Lined disposal area occupied by waste	Unlined area	Comments on liner type
										SELECT UNIT	SELECT UNIT	SELECT UNIT	
	1999	Dec-11	No	Private	Non Hazardous	Dec-11							

Table 4 Environmental monitoring-landfill only Landfill Manual-Monitoring Standards

Was meterological monitoring in compliance with Landfill Directive (LD) standard in reporting year +	Was leachate monitored in compliance with LD standard in reporting year	Was Landfill Gas monitored in compliance with LD standard in reporting year	Was SW monitored in compliance with LD standard in reporting year	Have GW trigger levels been established	Were emission limit values agreed with the Agency (ELVs)	Was topography of the site surveyed in reporting year	Has the statement under S53(A)(5) of WMA been submitted in reporting year	Comments

WASTE SUMMARY Lic No: W0081-04 Year 2016

Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	

.+ please refer to Landfill Manual linked above for relevant Landfill Directive monitoring standards

Table 5 Capping-Landfill only

Area uncapped*	Area with temporary cap	Area with final cap to LD Standard m2 ha, a	Area capped other	Area with waste that should be permanently capped to date under licence	What materials are used in the cap	Comments
SELECT UNIT	SELECT UNIT					
		Entire site			As per licence and approved SEW	Site closed and in aftercare period

*please note this includes daily cover area

Table 6 Leachate-Landfill only

9	Is leachate from your site treated in a Waste Water Treatment Plant?	Yes	offsite
10	Is leachate released to surface water? If yes please complete leachate mass load information below	No	

Volume of leachate in reporting year(m3)	Leachate (BOD) mass load (kg/annum)	Leachate (COD) mass load (kg/annum)	Leachate (NH4) mass load (kg/annum)	Leachate (Chloride) mass load kg/annum	Leachate treatment on-site	Specify type of leachate treatment	Comments
6,871						Reverse Osmosis	6871m3 of Permeate (treated leachate) discharged to sewer.

Please ensure that all information reported in the landfill gas section is consistent with the Landfill Gas Survey submitted in conjunction with PRTR returns

Table 7 Landfill Gas-Landfill only

Gas Captured&Treated by LFG System m3	Power generated (MW / KWh)	Used on-site or to national grid	Was surface emissions monitoring performed during the reporting year?	Comments
5,167,398	7,423 MWH	grid	No	Site in aftercare period

Guidance to completing the PRTR workbook

PRTR Returns Workbook

Version 1.1.19

REFERENCE YEAR	2016

1. FACILITY IDENTIFICATION

Parent Company Name	Kilcullen Landfill Limited
Facility Name	Kilcullen Landfill Limited
PRTR Identification Number	W0081
Licence Number	W0081-04

Classes of Activity

No.	**class_name**
-	Refer to PRTR class activities below

Address 1	Brownstown and Carnalway
Address 2	Kilcullen
Address 3	
Address 4	
	Kildare
Country	Ireland
Coordinates of Location	-6.71785 53.1451
River Basin District	IEEA
NACE Code	3821
Main Economic Activity	Treatment and disposal of non-hazardous waste
AER Returns Contact Name	Tomas Fingleton
AER Returns Contact Email Address	tomas.fingleton@landfills.ie
AER Returns Contact Position	Landfill Manager
AER Returns Contact Telephone Number	0867741813
AER Returns Contact Mobile Phone Number	0867741813
AER Returns Contact Fax Number	045 482629
Production Volume	0.0
Production Volume Units	
Number of Installations	0
Number of Operating Hours in Year	0
Number of Employees	3
User Feedback/Comments	
Web Address	

2. PRTR CLASS ACTIVITIES

Activity Number	**Activity Name**
5(d)	Landfills
5(c)	Installations for the disposal of non-hazardous waste
5(d)	Landfills
50.1	General

3. SOLVENTS REGULATIONS (S.I. No. 543 of 2002)

Is it applicable?	
Have you been granted an exemption ?	
If applicable which activity class applies (as per Schedule 2 of the regulations) ?	
Is the reduction scheme compliance route being used ?	

4. WASTE IMPORTED/ACCEPTED ONTO SITE Guidance on waste imported/accepted onto site

Do you import/accept waste onto your site for on-site treatment (either recovery or disposal activities) ?	No

This question is only applicable if you are an IPPC or Quarry site

4.1 RELEASES TO AIR

Link to previous years emissions data

SECTION A : SECTOR SPECIFIC PRTR POLLUTANTS

RELEASES TO AIR					Please enter all quantities in this section in KGs				
POLLUTANT		METHOD					QUANTITY		
			Method Used		GE-01	Flare 1			
No. Annex II	Name	M/C/E	Method Code	Designation or Description	Emission Point 1	Emission Point 2	T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) KG/Year
02	Carbon monoxide (CO)	M	EN 15058:2004	NCIR By Horiba PG-250	6343.05	11.42	6354.47	0.0	0.0
05	Nitrous oxide (N2O)	M	ISO 11564:1998	Chemiluminescence	2173.63	18.57	2192.2	0.0	0.0
11	Sulphur oxides (SOx/SO2)	M	ALT	TGN 21	5498.3	223.07	5721.37	0.0	0.0
07	Non-methane volatile organic compounds (NMVOC)	M	ALT	FID	4169.0	0.0	4169.0		0.0
01	Methane (CH4)	C	OTH	Gassim model and monitoring data	0.0	0.0	608406.83	0.0	608406.83

* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

SECTION B : REMAINING PRTR POLLUTANTS

RELEASES TO AIR					Please enter all quantities in this section in KGs			
POLLUTANT		METHOD			QUANTITY			
			Method Used					
No. Annex II	Name	M/C/E	Method Code	Designation or Description	Emission Point 1	T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) KG/Year
					0.0	0.0	0.0	0.0

* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

SECTION C : REMAINING POLLUTANT EMISSIONS (As required in your Licence)

RELEASES TO AIR					Please enter all quantities in this section in KGs			
POLLUTANT		METHOD			QUANTITY			
			Method Used		GE01			
Pollutant No.	Name	M/C/E	Method Code	Designation or Description	Emission Point 1	T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) KG/Year
224	TA Luft carcinogenic substances Class 1	M	ALT	Thermal Desorption	0.54	0.54	0.0	0.0
244	**Total Particulates**	M	ALT	Gravimetric	8.74	8.74	0.0	0.0

* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

Additional Data Requested from Landfill operators

For the purposes of the National Inventory on Greenhouse Gases, landfill operators are requested to provide summary data on landfill gas (Methane) flared or utilised on their facilities to accompany the figures for total methane generated. Operators should only report their Net methane (CH4) emission to the environment under T(total) KG/yr for Section A: Sector specific PRTR pollutants above. Please complete the table below:

Landfill: Kilcullen Landfill Limited

Please enter summary data on the quantities of methane flared and / or utilised	T (Total) kg/Year	M/C/E	Method Used: Method Code	Method Used: Designation or Description	Facility Total Capacity m3 per hour	
Total estimated methane generation (as per site model)	1872183.0	C	OTH	Gassim Lite	N/A	
Methane flared	55596.98	M	OTH	Facility on-site Monitoring	2500.0	(Total Flaring Capacity)
Methane utilised in engine/s	1208179.19	M	OTH	Facility on-site Monitoring	1600.0	(Total Utilising Capacity)
Net methane emission (as reported in Section A above)	608406.83	C	OTH	Model and monitoring data	N/A	

4.2 RELEASES TO WATERS

Link to previous years emissions data

SECTION A : SECTOR SPECIFIC PRTR POLLUTANTS

Data on ambient monitoring of storm/surface water or groundwater, conducted as part of your licence requirements, should NOT be submitted under AER / PRTR Reporting as t

RELEASES TO WATERS					Please enter all quantities in this section in KGs			
POLLUTANT					QUANTITY			
			Method Used					
No. Annex II	Name	M/C/E	Method Code	Designation or Description	Emission Point 1	T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) KG/Year
					0.0	0.0	0.0	0.0

* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

SECTION B : REMAINING PRTR POLLUTANTS

RELEASES TO WATERS					Please enter all quantities in this section in KGs			
POLLUTANT					QUANTITY			
			Method Used					
No. Annex II	Name	M/C/E	Method Code	Designation or Description	Emission Point 1	T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) KG/Year
					0.0	0.0	0.0	0.0

* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

SECTION C : REMAINING POLLUTANT EMISSIONS (as required in your Licence)

RELEASES TO WATERS					Please enter all quantities in this section in KGs			
POLLUTANT					QUANTITY			
			Method Used					
Pollutant No.	Name	M/C/E	Method Code	Designation or Description	Emission Point 1	T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) KG/Year
					0.0	0.0	0.0	0.0

4.3 RELEASES TO WASTEWATER OR SEWER

Link to previous years emissions data

SECTION A : PRTR POLLUTANTS

OFFSITE TRANSFER OF POLLUTANTS DESTINED FOR WASTE-WATER TREATMENT OR SEWER					Please enter all quantities in this section in KGs			
POLLUTANT		METHOD			QUANTITY			
			Method Used		Final Permeate			
No. Annex II	Name	M/C/E	Method Code	Designation or Description	Emission Point 1	T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) KG/Year
79	Chlorides (as Cl)	C	EN ISO 15682:2001		0.0041	0.0041	0.0	0.0

* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

SECTION B : REMAINING POLLUTANT EMISSIONS (as required in your Licence)

OFFSITE TRANSFER OF POLLUTANTS DESTINED FOR WASTE-WATER TREATMENT OR SEWER					Please enter all quantities in this section in KGs			
POLLUTANT		METHOD			QUANTITY			
			Method Used		Final Permeate			
Pollutant No.	Name	M/C/E	Method Code	Designation or Description	Emission Point 1	T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) KG/Year
303	BOD	C	ALT		0.007	0.007	0.0	0.0
306	COD	C	EN 1484:1997		0.08	0.08	0.0	0.0
240	Suspended Solids	C	ALT		0.069	0.069	0.0	0.0
327	Nitrate (as N)	C	ALT		0.0005	0.0005	0.0	0.0
238	Ammonia (as N)	C	ALT		0.075	0.075	0.0	0.0
332	Ortho-phosphate (as PO4)	C	ALT		0.0006	0.0006	0.0	0.0

SECTION A : PRTR POLLUTANTS

RELEASES TO LAND					Please enter all quantities in this section in KGs		
POLLUTANT		METHOD			QUANTITY		
			Method Used				
No. Annex II	Name	M/C/E	Method Code	Designation or Description	Emission Point 1	T (Total) KG/Year	A (Accidental) KG/Year
					0.0	0.0	0.0

* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

SECTION B : REMAINING POLLUTANT EMISSIONS (as required in your Licence)

RELEASES TO LAND					Please enter all quantities in this section in KGs		
POLLUTANT		METHOD			QUANTITY		
			Method Used				
Pollutant No.	Name	M/C/E	Method Code	Designation or Description	Emission Point 1	T (Total) KG/Year	A (Accidental) KG/Year
					0.0	0.0	0.0

5. ONSITE TREATMENT & OFFSITE TRANSFERS OF WASTE

Please enter all quantities on this sheet in Tonnes

Transfer Destination	European Waste Code	Hazardous	Quantity (Tonnes per Year)	Description of Waste	Waste Treatment Operation	Method Used		Location of Treatment	Haz Waste : Name and Licence/Permit No of Next Destination Facility Non Haz Waste: Name and Licence/Permit No of Recover/Disposer	Haz Waste : Address of Next Destination Facility Non Haz Waste: Address of Recover/Disposer	Name and License / Permit No. and Address of Final Recoverer / Disposer (HAZARDOUS WASTE ONLY)	Actual Address of Final Destination i.e. Final Recovery / Disposal Site (HAZARDOUS WASTE ONLY)
						M/C/E	Method Used					
Within the Country	19 07 03	No	6871	landfill leachate other than those mentioned in 19 07 02	D8	M	Weighed	Offsite in Ireland	Oberstown wwtp Kildare Coco,D00**	Kildare County Council headquarters,Aras Chill Dara Devoy Park,Naas,Kildare ,Ireland		
Within the Country	**13 02 05**	**Yes**	7.5	mineral-based non-chlorinated engine, gear and lubricating oils	D9	C	Volume Calculation	Offsite in Ireland	Rilta Environmental Ltd,W0192-01	Block 402,Grant's Drive,Greenogue Business Park,Rathcoole Co. Dublin,Ireland	Rilta Environmental Ltd,W192-01,Block 402,Grants Drive,Greenogue Business Park,Rathcoole Co. Dublin,Ireland	Block 402,Grants Drive,Greenogue Business Park,Rathcoole Co. Dublin,Ireland

* Select a row by double-clicking the Description of Waste then click the delete button

Link to previous years waste data
Link to previous years waste summary data & percentage change
Link to Waste Guidance