



Comhairle Contae an Chláir
Clare County Council

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Clare County Council

Central Waste Management Facility, Ballyduffbeg, Inagh, County Clare.

▶ **Annual Environmental Report**

2017

Prepared by: Environment section, Clare County Council.

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2. INTRODUCTION

2.1 Background

The Central Waste Management Facility (CWMF) located at Ballyduff Beg, Inagh, County Clare, was granted a waste licence by the EPA on 13th June 2001 (W0109-01). A revised licence was issued in March 2010 (W0109-02).

Landfilling commenced at the site on the 30th September 2002 and ceased on the 26th November 2011 on completion of filling of the last constructed cell (cell 13). The Annual Environmental Report is prepared in compliance with Condition 2.3 of the licence.

2.2 Reporting Period

This report covers the period January 1st to December 31st 2017.

2.3 Waste Activities carried out at CWMF.

Waste activities at the CWMF are restricted to those outlined in "*Part 1, Activities Licensed*" of W0109-02. These are reproduced in Appendix 8.1 of this report.

The Civic Amenity (CA) site provides recycling receptacles for the collection and recycling of various recyclable waste streams, the materials accepted are detailed in Table 3.1. The Civic Amenity Site remains in operation.

Small quantities of municipal waste were accepted from householders in the civic amenity site during the year. The waste was removed from site by a third party waste contractor and brought to their facility for further processing for offsite landfill and/or diversion to waste-to-energy facilities.

A composting facility was developed in 2006 to accept and treat green waste from domestic customers only. The green waste is composted in an aerated static pile and the mature compost is used within the site as a soil conditioner. The facility has diverted approximately 4,650 tonnes of garden green waste from landfill between 2006 and the end of 2017. This facility remains in operation.

3. MATERIALS/WASTE TRANSPORTED ON/OFF SITE

3.1 Quantity of disposed waste

No waste was accepted for onsite landfill during the year. Small quantities of household waste were accepted for offsite landfill (see Section 3.2).

3.2 Waste Received in the Civic Amenity Site for Offsite Landfill

Residual (landfill) waste from householders and small commercial outlets is loaded into a hopper in the civic amenity site. The waste is moved into a sealed container by means of a static compactor. The container is uncoupled from the compactor and moved off site when full, normally twice per week. A total of 946 tonnes of residual waste was

accepted from householders in 2017, inclusive of mattresses and other bulky waste items and environmental cleanup material.

3.3 Waste Received in the Civic Amenity Site for Recovery

Various receptacles are provided within the CA site for collection of recyclable waste. The waste streams and tonnages received during the year for recycling are shown in Table 3.1 and in figure 3.1. The collection of waste electrical and electronic equipment (WEEE) commenced on August 13th 2005. All WEEE is stored on site prior to collection by the nominated contractor.

Green waste composting commenced in January 2006, using two aerated static piles to process green waste received from recycling centres in County Clare and including a small quantity of commercial green waste.. Exhaust air from the aerated static piles is drawn through a woodchip biofilter to protect against odours. The compost is turned regularly and compost temperature is recorded. The finished product is tested in accordance with the requirements of W01090-02. Approximately 4,650 tonnes of green waste has been recovered to date. The compost product is used mainly as a soil conditioner within the site.

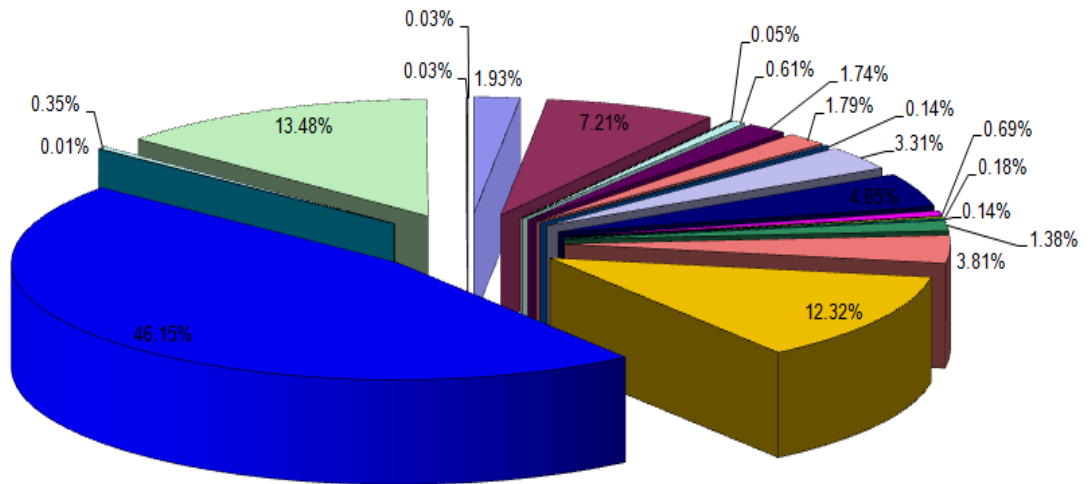
Hard plastics have been accepted at the facility for recovery since mid 2008.

In early 2009, construction & demolition waste from domestic customers was accepted with the agreement of the Agency. This material was used in the construction of haul roads within the operational landfill. With the closure of the landfill, there was no further recovery outlet for this material within the site and this waste stream is no longer accepted.

TABLE 3.1: QUANTITY (TONNES) OF MATERIALS RECYCLED/RECOVERED IN 2017

Material	Quantity	Material	Quantity	Material	Quantity
Glass Bottles	27.2	Textiles	9.78	Waste cooking oil	0
WEEE	102	Lead acid batteries	2.00	Waste mineral oil	4.94
Food/drink cans	9.30	portable batteries	2.6	Timber	190
Paint, Varnish	24.4	Plastic bottles	19.4	Fluorescent tubes	0.48
Plate Glass	25.3	Hard plastics	53.6	Oil filters	0.36
Tetra Pak	1.96	Metal	174		
Paper/ cardboard	112	Green waste	650	TOTAL	1324

Figure 3.1: Quantity of Household Material Recycled/Recovered during 2017 (percentage by weight)



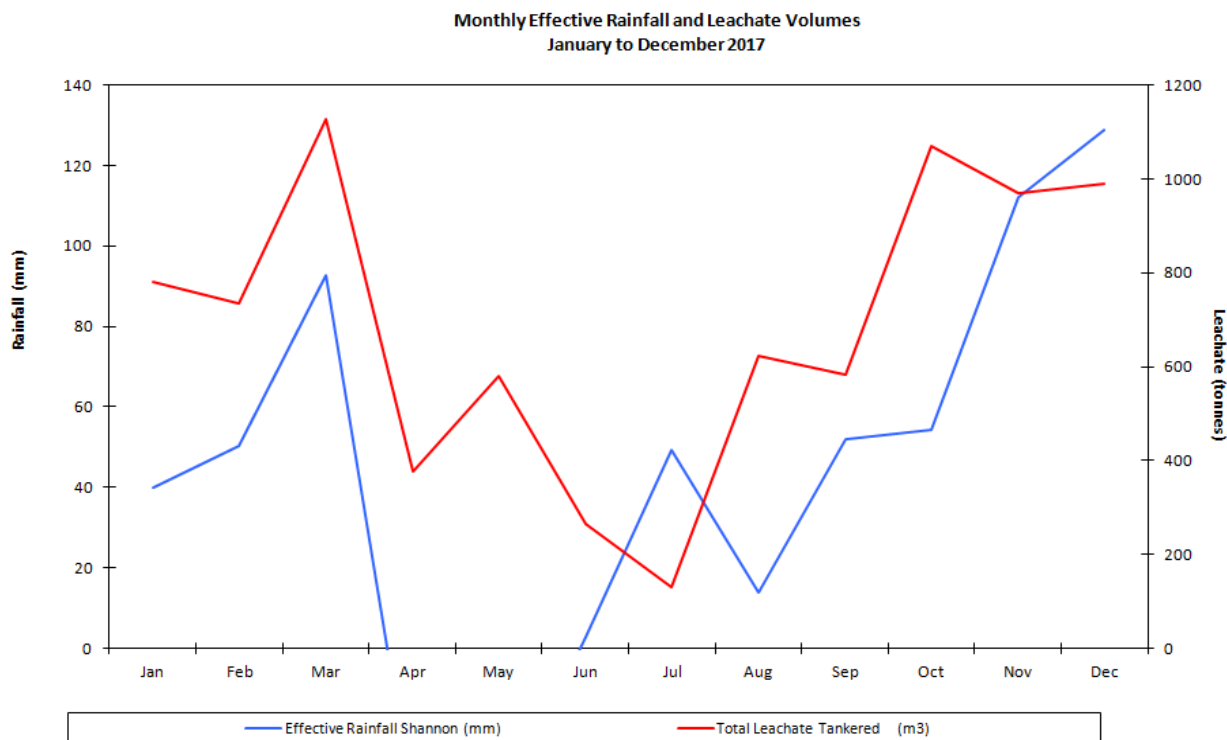
■ Glass Bottles	■ WEEE	□ Drink cans	□ Food cans	■ Paint, Varnish	■ Sheet Glass
■ Tetra Pak	□ cardboard	■ paper	■ Textiles	■ Batteries, portable	■ Batteries, lead acid
■ Plastic bottles	■ Hard plastics	■ Metal	■ Green waste	■ Waste cooking oil	□ Waste mineral oil
□ Timber	■ Fluorescent tubes	■ Oil filters			

3.4 Leachate Quantities/Water Mass Balance.

Leachate is pumped from a collection sump at the base of each landfill cell to a storage tank (tank 2) located in the lower CA site. Pumps are controlled via the Supervisory Control and Data Acquisition (SCADA) system to start and stop at pre-set levels within the cell sumps. Potentially contaminated stormwater from designated areas in the CA site is discharged to a second leachate storage tank (tank 1). Leachate is pumped from these tanks and transported to wastewater treatment plants in Lisdoonvarna, Sixmilebridge and the Limerick Main Drainage waste water treatment plant in Limerick City. The leachate removal contractor for 2017 was Martin Ryan Transport.

A total of 8,229 tonnes of leachate was transported off site during 2017. The quantities moved each month are graphed against monthly effective rainfall in figure 3.2 below, using rainfall and PE data for Shannon).

Fig. 3.2: Monthly Rainfall and Leachate Levels, 2017:



As expected, leachate levels are closely linked to rainfall, with highest tanker volumes in the first and fourth quarter, when effective rainfall levels were highest.

Annual leachate and rainfall volumes from 2003 to 2017 are graphed below in figures 3.3 and 3.4. As can be seen from the graphs, leachate volumes increased with the development of new landfill cells up to 2008/2009. Volumes reduced after 2009 partly due to lower annual rainfall and implementation of active leachate reduction measures pursued under Objective 3 of the Facility EMS. These measures included i) the installation of rainflaps on all side slopes adjoining the active cell to minimise infiltration of clean rainwater into the waste body; ii) during 2010, kerbing was installed along the civic amenity site lower road to minimise overflow of clean rainwater from the road onto the leachate collection area, a problem which had previously occurred during extreme rainfall events; iii) in October 2011, with the approval of the EPA, modifications were made to the storm drains at the upper level of the civic amenity site, diverting rainfall from this area to the stormwater lagoon. The upper CA site drains previously discharged to the leachate-holding tank. Leachate volumes from the lower CA site were further reduced by diversion of clean runoff away from the vehicle storage area and by reducing its size. Additional modifications continue to be investigated to reduce volumes of civic amenity site runoff discharging to the leachate management system.

Fig: 3.3: Annual Leachate Tonnages
(2003 to 2017)

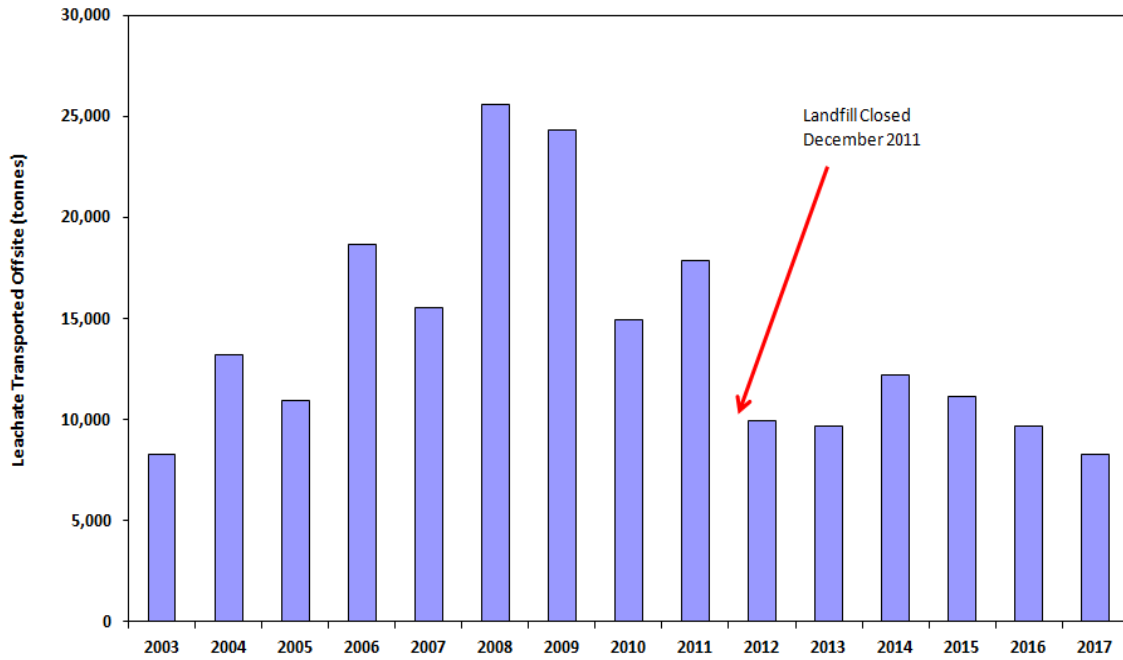
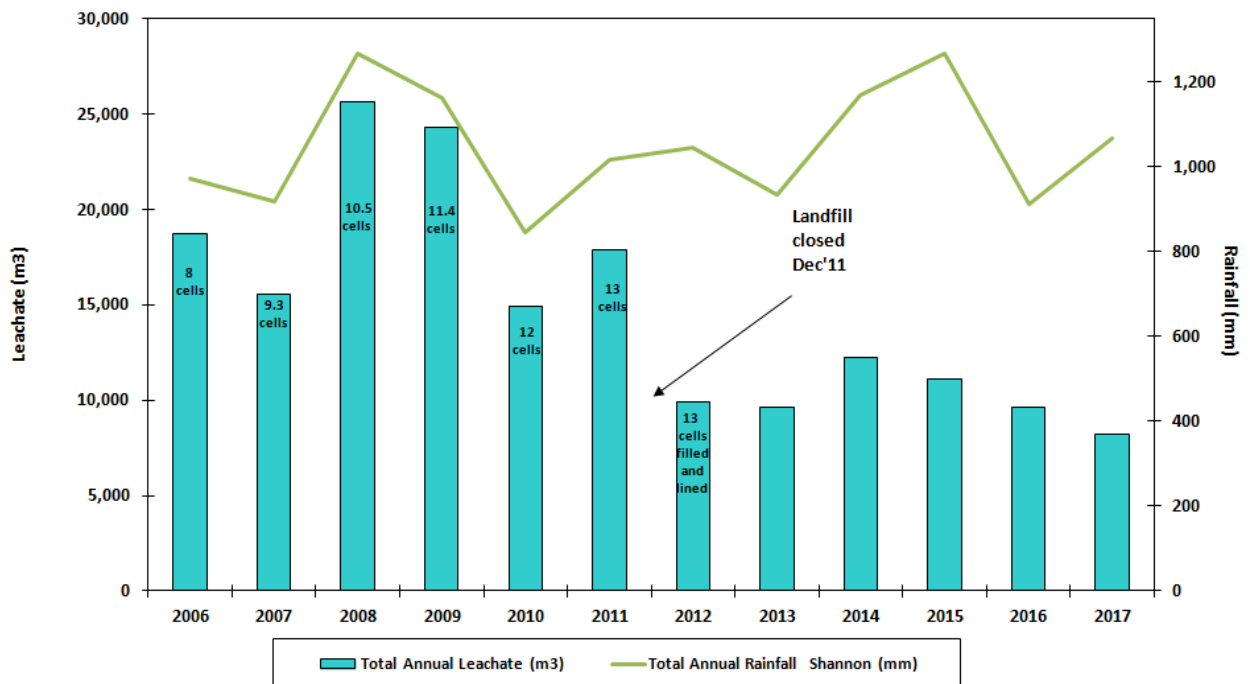


Figure 3.4: Summary of Annual Leachate and Rainfall Volumes, 2006 to 2017
(No. of cells filled or part-filled by end of each year is also shown on graph)



A monthly water balance calculation for the site is attached in Appendix 8.2. This calculation gives a theoretical leachate volume of 7,897m³ (tonnes) for 2017. The actual leachate volume tankered offsite was very close to this estimate, at 8,229m³.

3.5 Landfill Gas Management, January to December 2017

During 2017, a total of 390,140_kg of methane was extracted from thirteen permanently capped cells, five in phase one (cells 1, 2, 3, 4 and 5), four in phase two (cells 6, 7, 8 and 9) and four in phase 3 (cells 10, 11, 12 and 13) and flared in the site enclosed landfill gas flare. All gas extraction has been via capped cells since lining works on the last cell (cell 13) were completed in mid-January 2012.

Because landfill gas rates vary due to differential decomposition of the waste, the level of methane generation in each waste cell fluctuates, decreasing over time as the waste biodegrades. Extraction is regulated so as to optimise methane concentration and minimise oxygen levels in the landfill gas. This is done by regular gas field monitoring. Monitoring is supported by pressure checks on wells to ensure that all wells are under negative pressure and that there are no blockages in gas lines. Maintaining the integrity of the pipe network and freeing blocked lines is an essential element of effective gas management.

Flare downtime totalled 76.8 hours during the year due to various reasons including essential servicing/ maintenance. The service company is Irish Biotech Systems Ltd (IBSL).

3.6 Resource and Energy Consumption Summary

Resource and energy consumption figures for plant/equipment used during 2017 are outlined below:

TABLE 3.2: RECORDED DIESEL CONSUMPTION IN 2017

Plant/Machinery	Unit	Quantity
Generator/pumps/miscellaneous (diesel in cans)	litres	368
JCB	litres	1,026
Tractors	litres	2,750
CCC Site Vehicle (Toyota Pick-up)	litres	521
Total amount of Diesel Consumed:	litres	4,665

Diesel consumption figures are based on Council machinery yard records.

Electricity consumption was 112,050kWh for the reporting period January to December 2017. This represents a significant increase on 2016 figures and is currently under investigation.

4. SUMMARY OF MONITORING AND EMISSIONS

4.1 General

Section 4.0 presents the results of groundwater, surface water, leachate, noise, dust and flare monitoring for compliance with Condition 9 of Waste Licence W0109-02 for the period January to December 2017. Monitoring was conducted in accordance with Schedule E of the Waste Licence as indicated in Table 4.1 below.

TABLE 4.1: CENTRAL WASTE MANAGEMENT FACILITY (W0109-02) MONITORING SCHEDULE

Schedule	Monitoring Requirement
E.1	Landfill Gas
E.2	Landfill Gas Flare
E.3	Dust
E.4	Noise
E.5	Surface water, Groundwater and Leachate

Monitoring was carried out at the locations and frequencies specified in each of the above referenced schedules of the Waste Licence unless otherwise noted in this report. Surface water, groundwater, leachate, noise and dust monitoring surveys were conducted by John Rea Environmental (JRE). Conservation Services assessed biological quality of surface waters. Biannual monitoring of flare stack emissions was carried out by Air Scientific subcontracted to JRE. Environmental monitoring locations are shown in Drawing No. 1, attached in Appendix 8.5.

4.2 Landfill Gas Monitoring

Also see Section 3.5 above. Monitoring of waste body wells was carried out on a monthly basis throughout the year except where gas quality issues indicated that additional checks were required. Perimeter gas wells were monitored weekly. Results were submitted to the Agency in monthly reports via EDEN. As for previous years, methane levels at a number of perimeter wells were elevated during the year. This is believed to be due to the ongoing decomposition of vegetation left in place prior to construction of the embankments. A number of investigations have confirmed this assessment, including pumping trials, monitoring of hydrogen sulphide as a marker gas, use of spike bars on the landfill side of the access road, and the installation of additional monitoring wells. Odour Monitoring Ireland (OMI) carried out a comparative assessment of the VOC profile of the landfill gas and of the perimeter well gas in 2007 and again in 2010. Results showed no similarity between waste body and perimeter well VOC type and level, providing further confirmation that the source of the perimeter well gas is unrelated to landfilling activities.

4.3 Landfill Gas Flare

Flare stack emissions were monitored on two occasions during the year. Results were submitted to the Agency in separate reports for each survey. A summary of survey findings is given in table 4.2 below:

TABLE 4.2: FLARE MONITORING RESULTS:

Parameter (units)	28 th June 2017	28 th November 2017	Emission Limit
Nitrogen Oxides (NO _x) as NO ₂ (mg/Nm ³)	85.82	36.83	150 mg/m ³ for Flare Stacks
Carbon Monoxide (CO) (mg/Nm ³)	6.50	13.26	50 mg/m ³ for Flare Stacks
Sulphur Dioxide (SO ₂) (mg/Nm ³)	37.05	29.13	-
Temperature (°K)	1283	1288	-
Total volatile organic carbon (VOC)	3.53	-	-
Flow Rate (from flare data)	183	203	
TA Luft organics (mg/Nm ³)	<1.41	-	20 mg/m ³ (at mass flows >0.1kg/hr)
HCl (mg/Nm ³)	<0.61	-	50 mg/m ³ (at mass flows >0.3kg/hr)
HF (mg/Nm ³)	<0.35	-	5 mg/m ³ (at mass flows >0.05 kg/hr)

All monitoring results were within emission limit values specified in Schedule F.4 of Waste Licence W0109-02.

4.4 Dust

Three ambient dust-monitoring surveys were carried out during the year. Results are summarised below in table 4.3.

TABLE 4.3: TOTAL DUST MONITORING RESULTS.

Sample location	Monitoring Period			Limit for Dust Deposition (mg/m ² /day)
	3 rd May to 7 th June 2017	7 th June to 5 th July 2017	23 rd August to 21 st September 2017	
ST1	166	124.1	240	350
ST2	71.5	5.03	208	350
ST6	148	126.6	285	350
ST7	49.9	61.7	240	350

As can be seen from table 4.3, all results were below the licence limit of 350mg/m²/day.

PM₁₀ monitoring was carried out at four locations using size selective sampling and gravimetric analysis. Results are shown in table 4.4 below:

TABLE 4.4: PM₁₀ MONITORING RESULTS.

Monitoring Location:	ST1	ST2	ST6	ST7
Monitoring period:	5 th to 6 th July 2017			
24 hour average PM ₁₀ , ug/m ³	13.30	14.86	9.65	11.21

All results were within the licence limit of 50ug/m³.

4.5 Noise

Results of noise monitoring surveys carried out during the year are summarised in Table 4.5. Survey results were submitted to the Agency in the environmental monitoring report for each quarter.

Noise results were quite similar to previous survey results. Noise levels at locations NS4, NS5 and NS6 were in compliance with the 55dB(A) daytime limit. Noise levels at NS1, NS2 and NS3 were above licence limits. The elevated noise levels at NS1, NS2 and NS3 were attributed to passing road traffic, as is reflected by the elevated L_{A10} readings obtained at each monitoring point. Monitoring consultants concluded that site noise did not contribute to the measured noise levels at these locations.

TABLE 4.5: ENVIRONMENTAL NOISE SURVEY RESULTS.

Location ID	3 rd May 2017			21 st September 2017		
	L _{Aeq} , 30min dB(A)	L _{A90} , 30min dB(A)	L _{A10} , 30min dB(A)	L _{Aeq} , 30min dB(A)	L _{A90} , 30 min dB(A)	L _{A10} , 30 min dB(A)
NS1	56.6	46.1	60.7	58.9	43.9	63.3
NS2	57.7	45.4	61.4	58.6	43.4	63.0
NS3	57.0	45.7	61.4	60.0	52.7	62.6
NS4	47.0	37.3	48.5	42.6	38.6	44.5
NS5	45.8	36.8	50.0	41.6	38.9	43.4
NS6	45.0	37.2	48.0	44.6	38.8	43.7

4.6 Surface Water, Groundwater and Leachate

4.6.1 Surface Water

Surface water monitoring was carried out on a quarterly basis at SW1, SW1a, SW2, SW3, SW4, SW5, SW7, SW8, SW9, SW10, SW11 and SW12 (an eastern boundary drain feeding into Stream 2). Monthly surface water monitoring was carried out at the inlet to the stormwater ponds (SW inlet 1 and SW inlet 2) and outlet from the sand filters for both ponds (SW outlet 1 and SW outlet 2). Access to sample point SW6 is not permitted by the landowner. Samples were analysed for the parameters specified in Schedule E5 of Waste Licence W0109-02, including monthly total suspended

solids monitoring at all locations. Weekly surface water visual inspections were also carried out. Sample locations are shown on the drawing attached in Appendix 8.5.

Results for key parameters (ammonia, BOD and total suspended solids) are discussed in this report. Detailed results of all surface water monitoring carried out during the year have previously been submitted to the Agency in separate reports for each quarter.

Stormwater ponds at the site discharge to boundary streams which flow on to the Inagh river. The Inagh River in the vicinity of the landfill is assigned Good Status under the Water Framework Directive.

Where applicable, surface water monitoring results are compared with the limits for Good Status waters specified in the Surface Water Regulations (SI 272 of 2009).

4.6.1.1. Surface Water BOD:

The BOD results for the inlets and outlets to settlement ponds 1 and 2 are presented in Fig 4.1. BOD results for surface water streams and for the Inagh river are graphed in figures 4.2 to 4.5. The surface water environmental quality standard (EQS) for BOD (95%ile) for Good Status waters is shown on the graphs for comparative purposes.

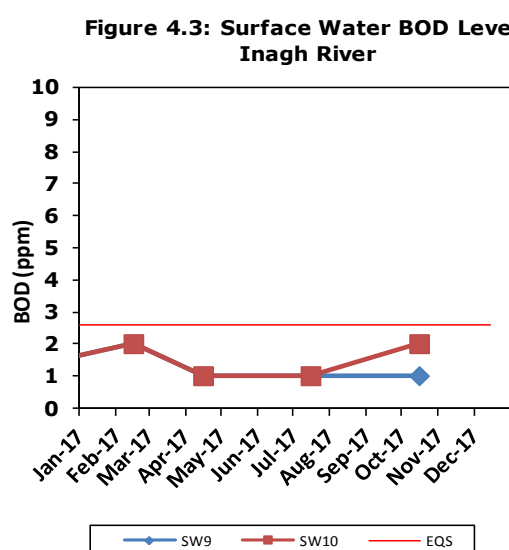
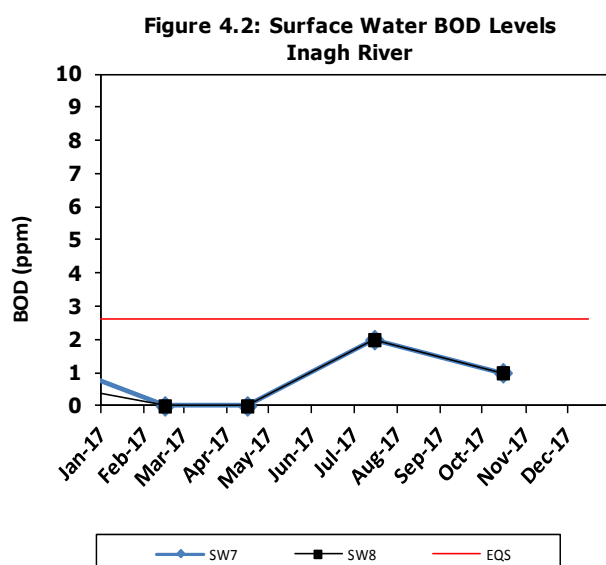
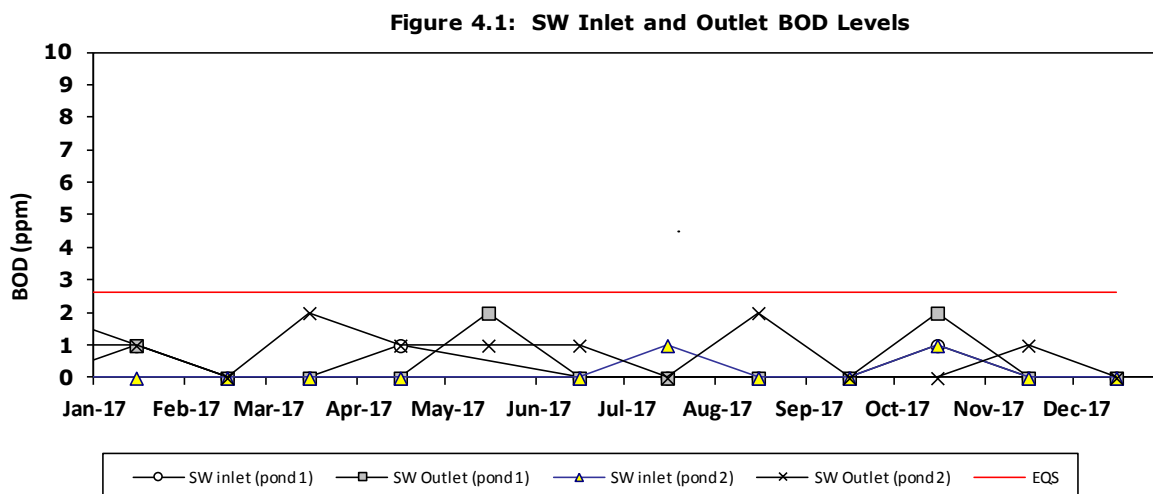


Figure 4.4: Surface Water BOD Levels Stream 1

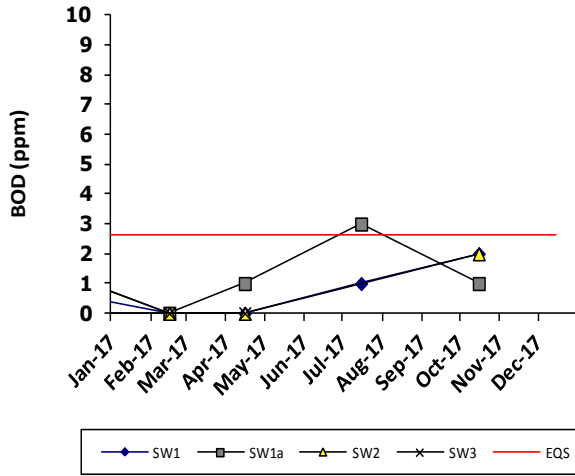
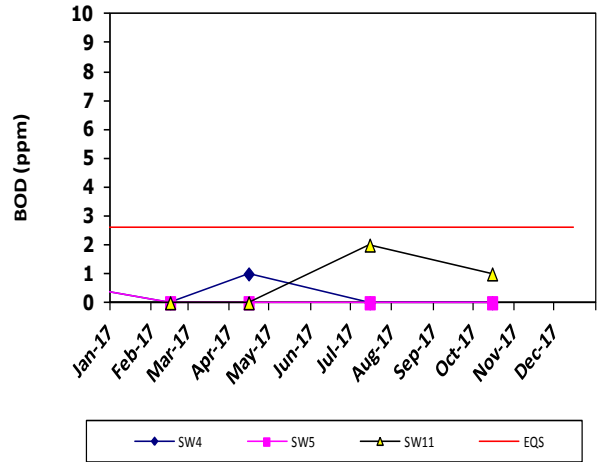


Figure 4.5: Surface Water BOD Levels Streams 2/3



The BOD results for all monthly samples from the inlet and outlet of the surface water settlement ponds were less than 2.6mg/l in 2017. All other BOD results for the remaining surface water sampling locations were also below the surface water EQS of 2.6mg/l O2 with the exception of one upstream sample (at SW1a) which marginally exceeded the EQS in July 2017.

4.6.1.2 Surface Water Ammonia:

Monthly analysis is carried out at the inlets to and outlets from the surface water settlement ponds. Quarterly analysis is carried out at all other surface water sampling locations. Surface water ammonia levels in Streams 1, 2 and 3 and in the Inagh River are graphed in figures 4.6 to 4.9.

Figure 4.6: Surface Water Ammonia Levels Inagh River, SW7 & SW 8

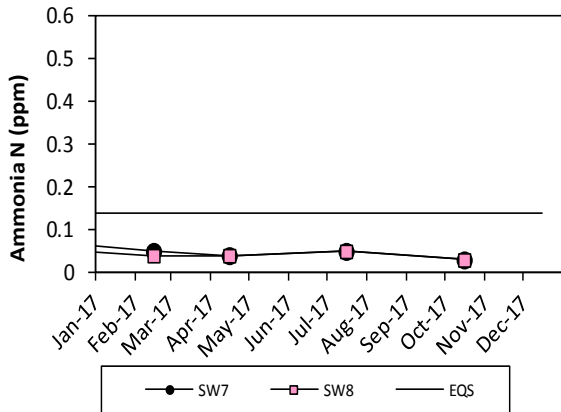


Figure 4.7: Surface Water Ammonia Levels Inagh River, SW9 and SW10

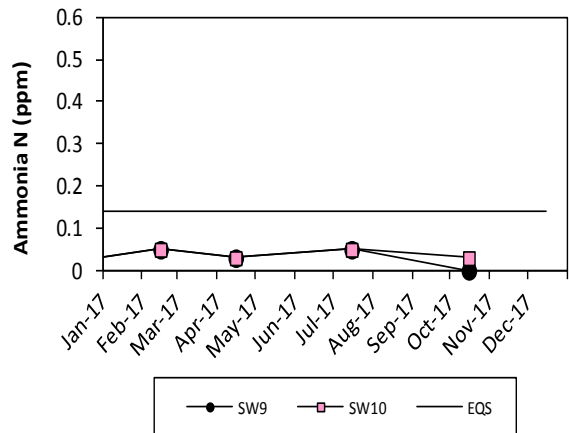


Figure 4.8: Surface Water Ammonia Levels Stream 1

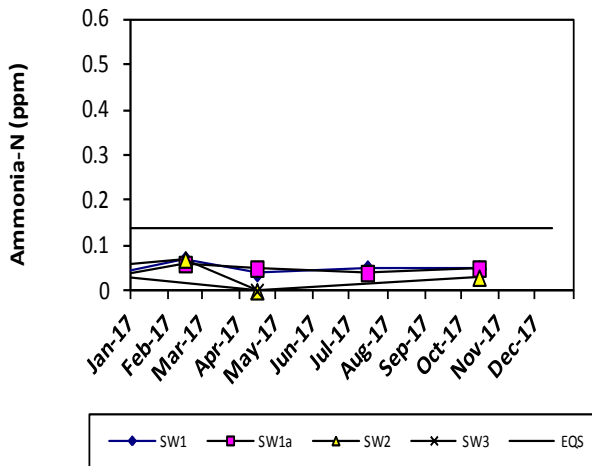
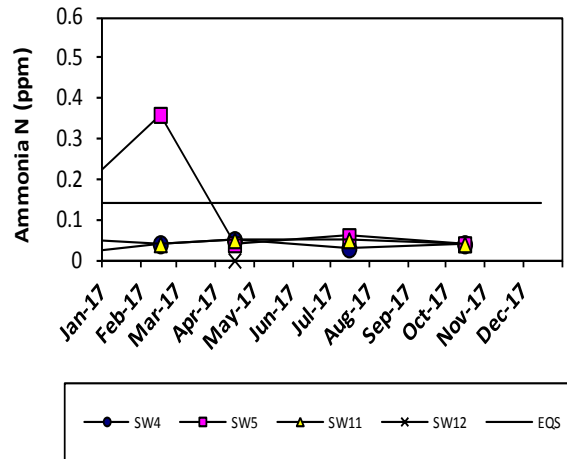


Figure 4.9: Surface Water Ammonia Levels Streams 2/3



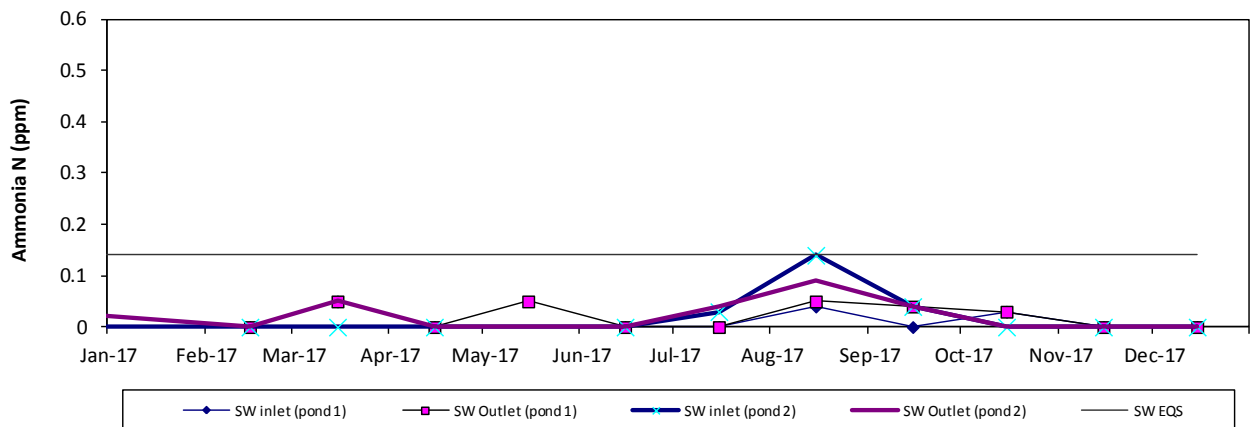
In Q1 2017, all quarterly samples collected were less than the 2009 surface water EQS of 0.14mg/l, with the exception of SW5 which yielded a value of 0.36mg/l in February. However, this monitoring location is upstream of the CWMF site. All surface water samples taken within the site were under the 0.14 mg/l limit.

In Q2 2017, all surface water samples from the inlets and outlets of the stormwater ponds, as well as all locations within the site were under the 0.14 mg/l limit.

For Q3 & Q4 2017, all the quarterly surface water samples analysed were within the limit of 0.14 mg/l.

Ammonia levels in stormwater pond inlet and outlet samples are graphed below in figure 4.10:

Figure 4.10: Ammonia results for inlet and outlet samples, Ponds 1 and 2



As can be seen from the graph, all ammonia results for surface water pond samples were below the EQS for good status waters with the exception of an Inlet Pond 2 sample for August 2017 (0.14 mg/l), which is just on the threshold of the EQS. All SW outlet samples taken in 2017 were well below the EQS.

4.6.1.3 Surface Water Suspended Solids.

Surface water monitoring locations were visually inspected each week for turbidity, gross solids, colour and surface film. Monthly samples were analysed for suspended solids levels. Results for 2017 are graphed below in figures 4.11 to 4.15. The 25ppm suspended solids limit for Salmonid waters is included in figures 4.11 to 4.14 for comparative purposes only. The site boundary streams and the Inagh river are not designated salmonid waters. The 35ppm licence limit for surface waters discharging from the site is shown on figure 4.15.

Inagh River suspended solids levels were below the 25ppm Salmonid limit for all samples taken during the year. Suspended solids results for streams 1, 2 and 3 are shown in figures 4.13 and 4.14 below.

Suspended solids levels at the outlet for stormwater ponds 1 and 2 are graphed in figure 4.15. The 35ppm licence limit is also shown on the graph. All results were within licence limits for 2017.

Figure 4.11: Surface Water Suspended Solids Levels Inagh River, SW7 and SW8

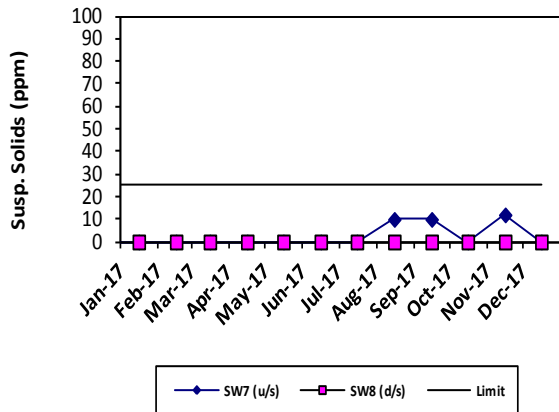


Figure 4.12: Surface Water Suspended Solids Levels Inagh River, SW9 and SW10

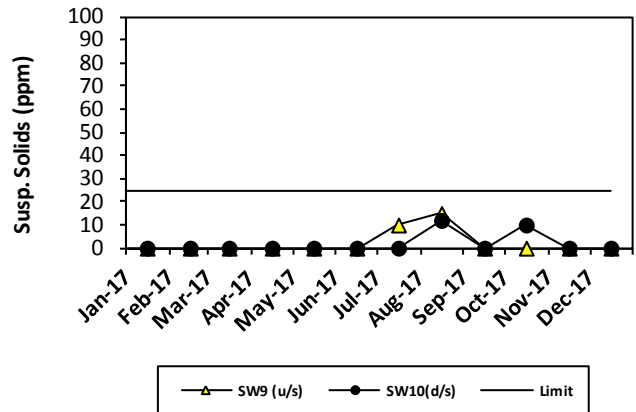


Figure 4.13: Surface Water Suspended Solids Levels Stream 1

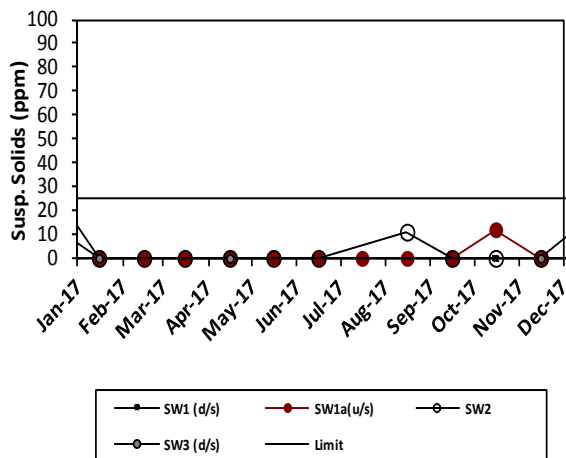


Figure 4.13: Surface Water Suspended Solids Levels Stream 1

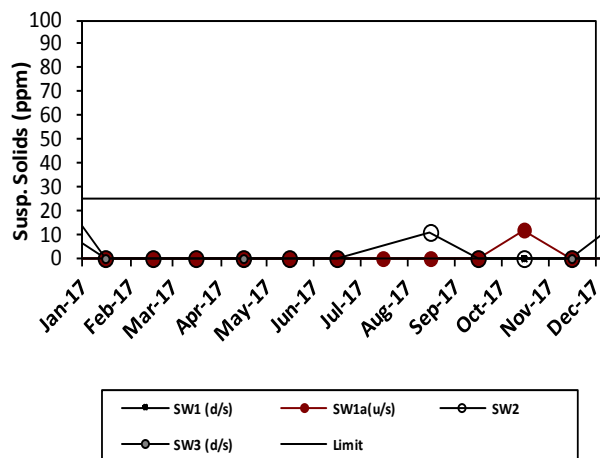
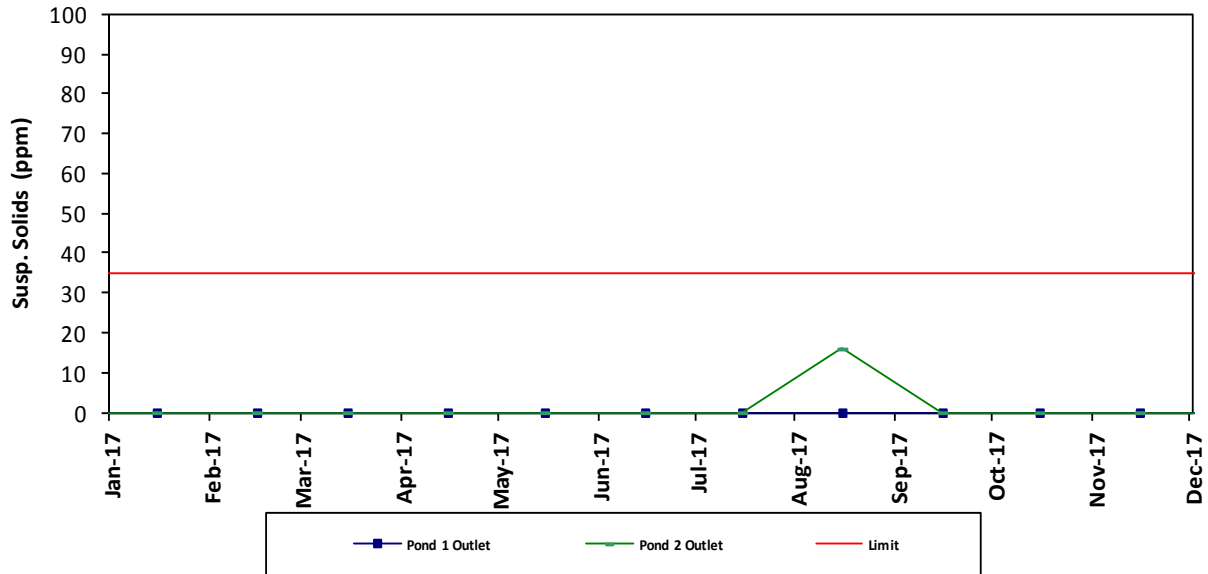


Figure 4.15: Stormwater Pond Outlet Suspended Solids Levels

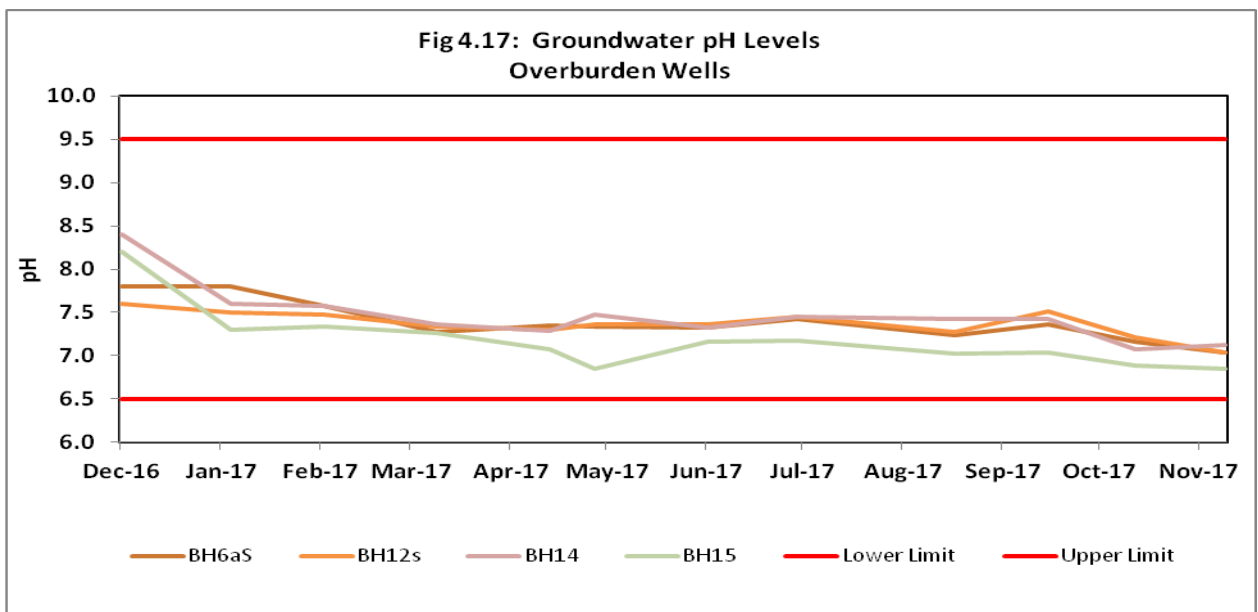
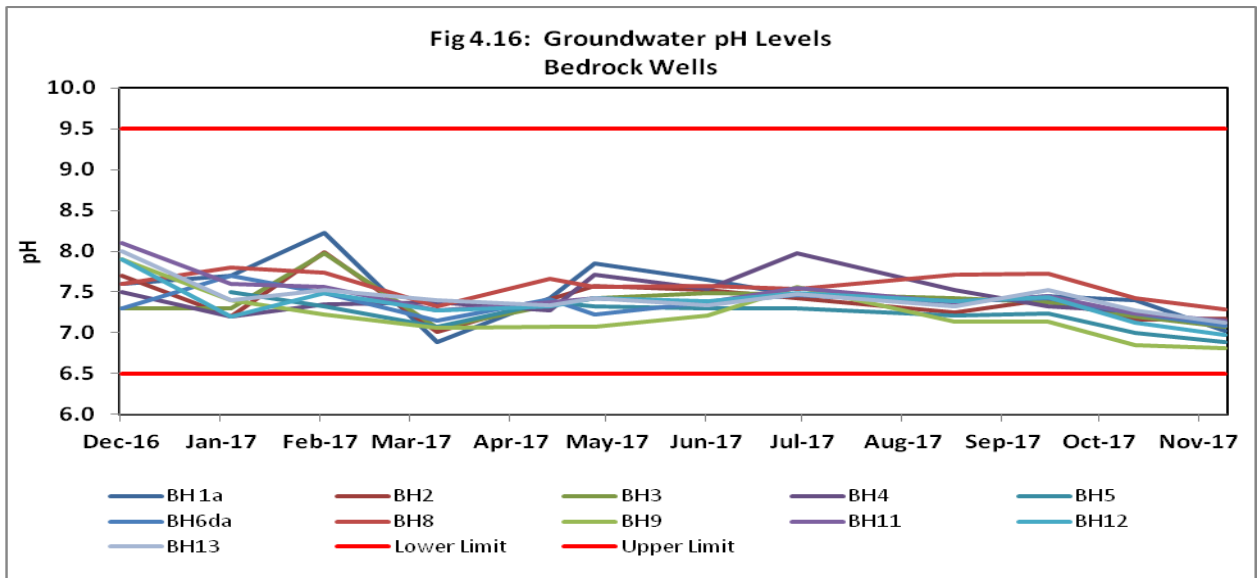


4.6.2 Groundwater

Groundwater monitoring was carried out on a monthly basis during the year at BH1a, BH2, BH3, BH4, BH5, BH6As and BH6Ad, BH8, BH9, BH11, BH12s, BH12d, BH13, BH14 and BH15. Four private wells were also monitored. Samples were analysed for the parameters and frequency specified in Schedule E5 of Waste Licence W0109-02. Detailed results of all groundwater monitoring carried out during the year were previously submitted to the Agency in quarterly monitoring reports. Results for key parameters are summarised in this report. Where relevant limits exist, monitoring results are compared with the threshold levels specified in European Communities Environmental Objectives (Groundwater) Regulations, 2010 (S.I. No 9 of 2010), as amended. The threshold levels given in columns 3 and/or 4 of Schedule 5 are used for comparison. These thresholds are annual arithmetic means. For groundwater metals, fluoride, cyanide and sulphate, only one result is available for 2017 as these parameters are monitored annually.

4.6.2.1 Groundwater pH:

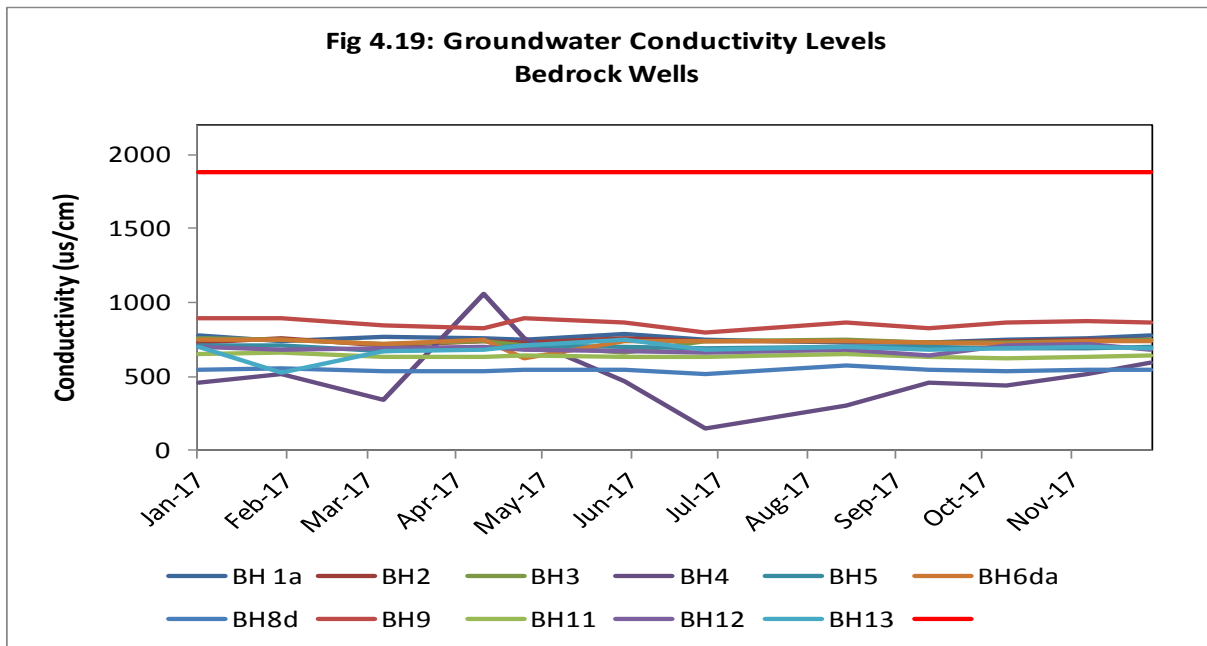
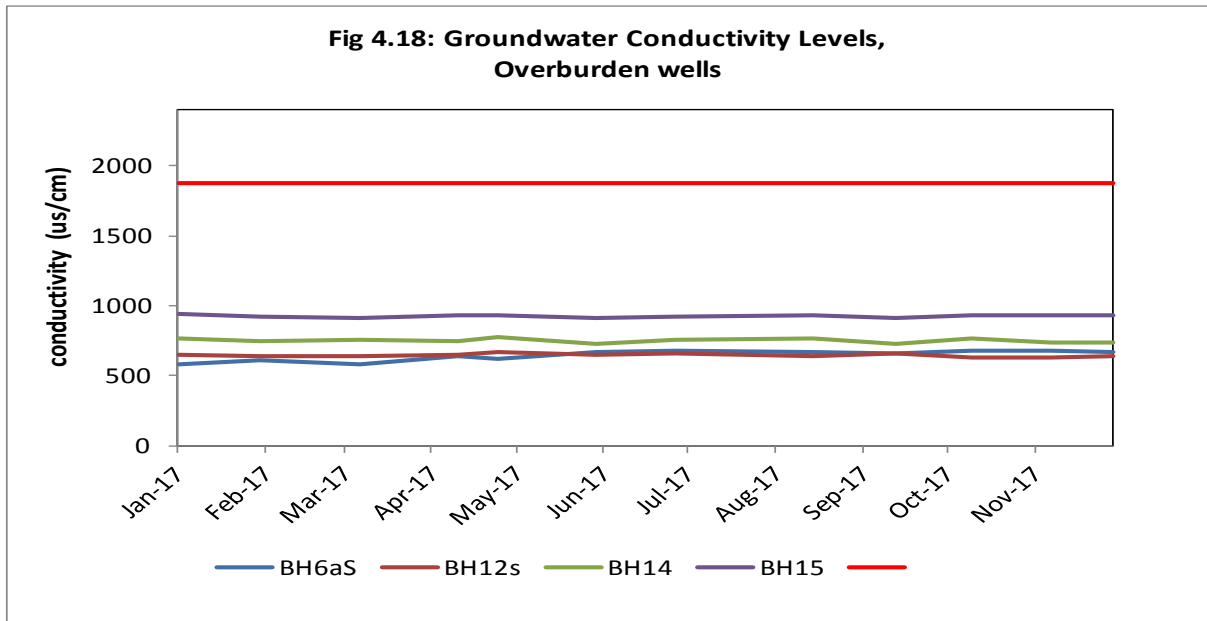
Groundwater pH results from January to December 2017 are graphed below in figure 4.16 and 4.17. The original EPA Interim Guidance Value range for pH (6.5 – 9.5) is shown on the graphs for comparative purposes. Limits for pH are not specified in the Groundwater Regulations.



As can be seen from the graphs, pH results were within the upper and lower IGVs for all samples analysed in 2017. There have been periodic elevated pH results obtained intermittently in the area around BH6, caused by localised lime contamination which occurred prior to commencement of landfilling at the site. Lime is not used within the facility and the contamination was attributed at the time to concrete slurry runoff from construction of the belowground chamber for the original BH6 pair of wells. With the approval of the EPA, the original pair of wells was grouted up at the time and replaced with new wells BH6aS and D. There are occasional instances of elevated pH reported at the replacement wells, due to the slow movement of perched lime-contaminated water through the overburden. However no incidents of this nature occurred during 2017.

4.6.2.2. Groundwater Conductivity:

Groundwater conductivity results for 2017 are graphed in figures 4.18 and 4.19. The threshold value of 1,875us/cm (from S.I. 9, 2010, as amended) is shown on the graphs for comparative purposes (in ms/cm).

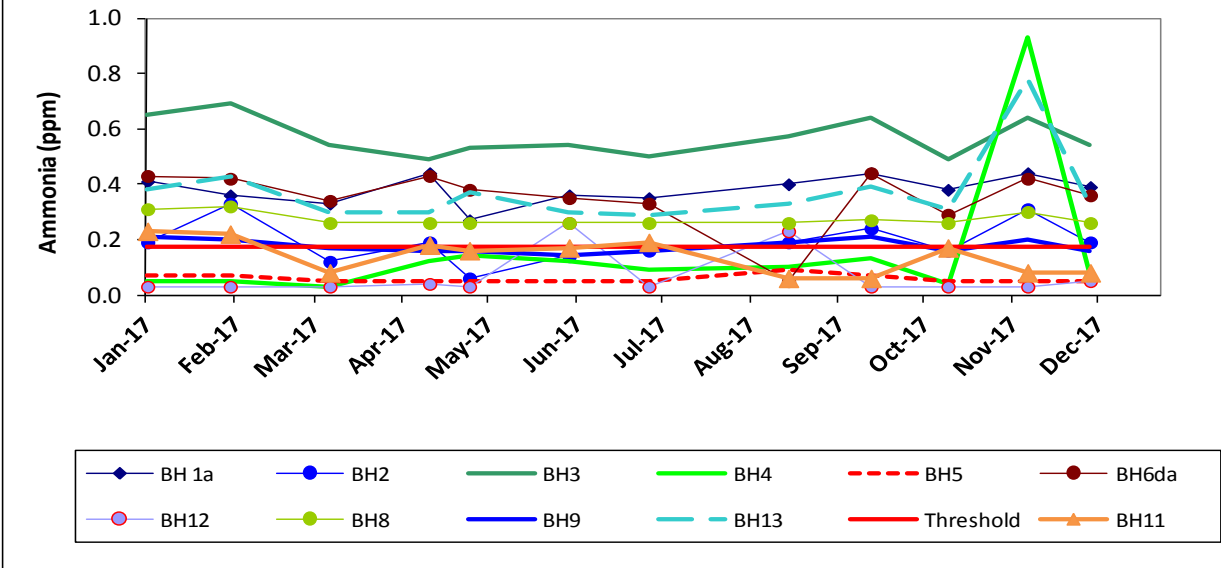


As can be seen from the graphs, conductivity levels at all wells were satisfactory for 2017.

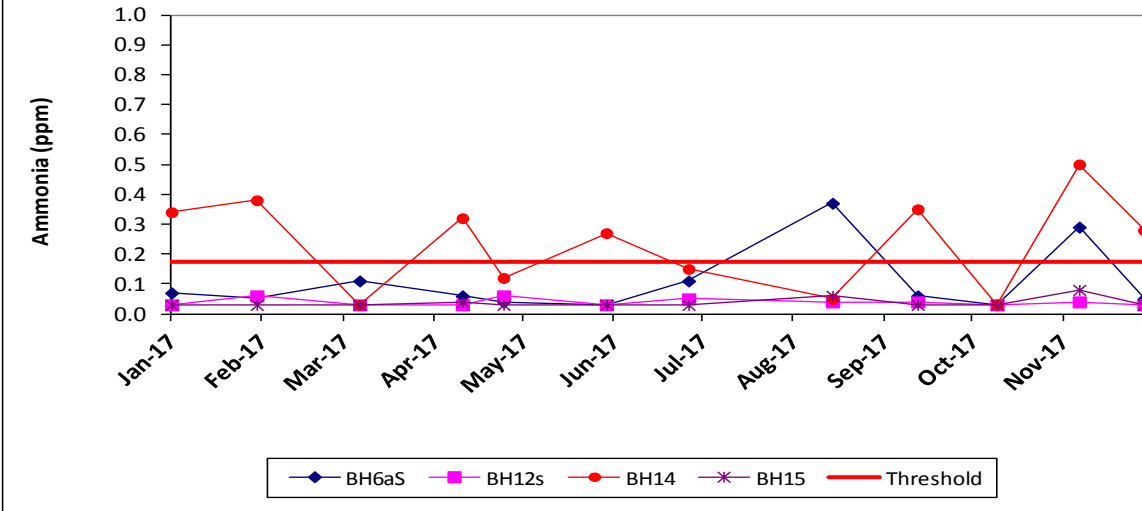
4.6.2.3 Groundwater Ammonia

Groundwater ammonia results for 2017 are graphed below in figures 4.20 and 4.21. The groundwater ammonia threshold of 0.175ppm (from S.I.9, 2010) is also shown on the graphs.

**Figure 4.20: Groundwater Ammonia Levels, Bedrock Wells
January to December 2017**



**Figure 4.21: Groundwater Ammonia Levels, Overburden Wells
January to December 2017**



As can be seen from the graphs, ammonia results were frequently elevated above the groundwater threshold value in BH1A, BH2, BH3, BH6dA, BH8, BH11 and BH13. Results were occasionally elevated above the threshold value in BH4, BH9 (upgradient), BH6s, BH11, BH12d and BH14. However groundwater ammonia levels at the site were elevated prior to commencement of landfilling; an 80m well installed for the purpose of providing a potable supply for the site has never been used because of elevated ammonia in the groundwater. Mean results for bedrock wells for 2017 are shown below in table 4.6. Where data is available, results are compared with ammonia results from a survey carried out in September 2002, prior to commencement of landfilling at the facility:

Table 4.6: Mean Ammonia Results for Bedrock Wells.

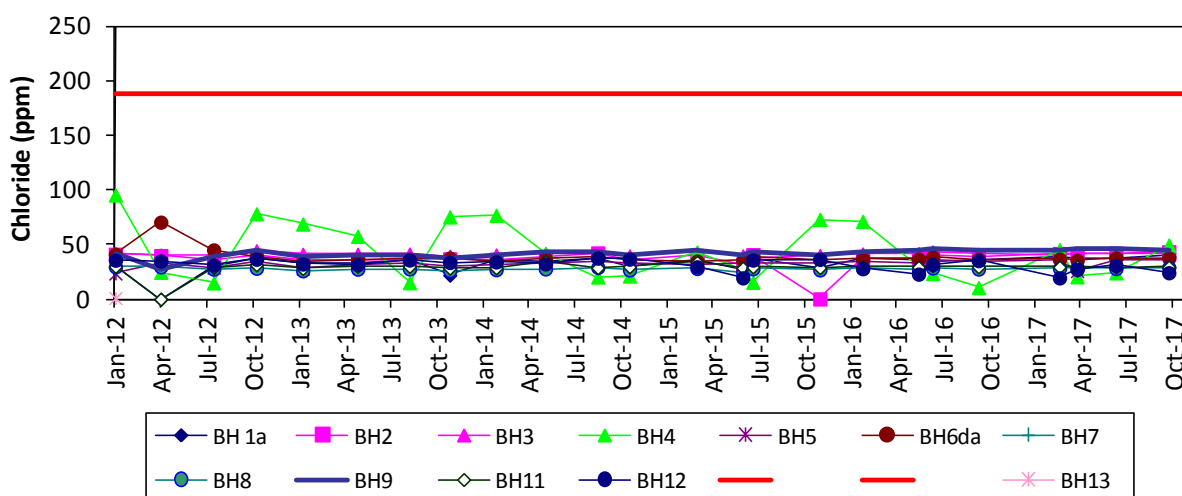
	BH1A	BH2	BH3	BH4	BH5	BH6D	BH8	BH9	BH11	BH12D	BH13
Ammonia-N (ppm) (mean 2017)	0.38	0.19	0.57	0.16	0.06	0.35	0.27	0.18	0.14	0.07	0.38
Ammonia N (ppm) for Sept'02 GW survey (prior to landfill opening)	0.60	0.70	1.10	0.70	<0.2	0.40 (BH6)	0.30	-	0.20	0.30	-

As table 4.6 shows, mean results for BH1, BH2, BH3, BH6D, BH8, BH9 and BH13 exceeded the groundwater threshold level of 0.175ppm (from SI 9, 2010) in 2017. As for other years, highest results were observed in BH3 with a mean of 0.57ppm for the year. However, results were similar to or less than ammonia results for samples analysed prior to commencement of landfilling at the facility. The site and lands upgradient were heavily planted with commercial spruce forestry in the 1980's/1990's. The periodic elevated ammonia results are possibly attributable to the use of fertiliser during the original forestry planting in the mid 1980's. Ammonia results for the water supply well located upgradient of the landfill exceeded the 0.3ppm drinking water limit from 2002 so this well has never been used as a source of drinking water for the site.

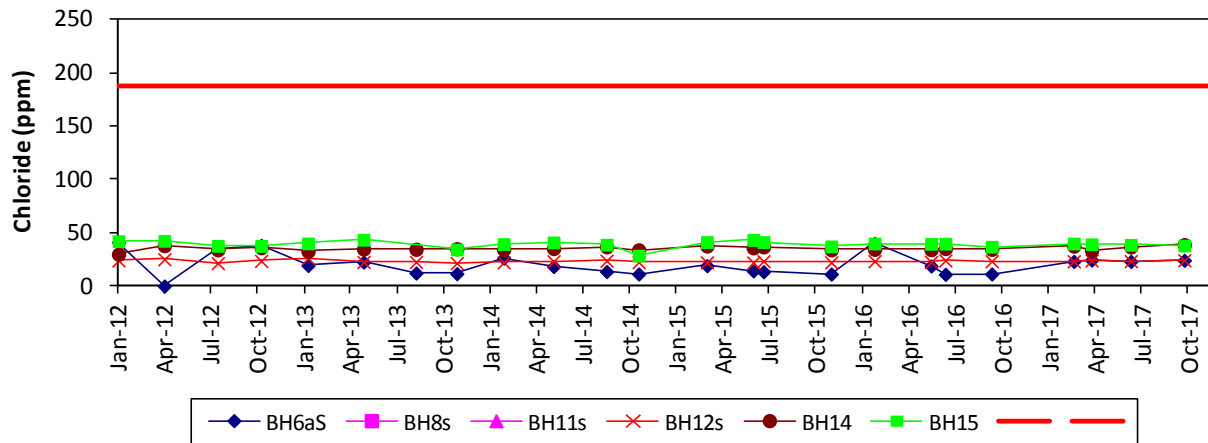
4.6.2.4 Groundwater Chloride.

Groundwater chloride levels from 2010 to 2017 are graphed in Figures 4.22 and 4.23. The groundwater chloride threshold of 187.5ppm is included in the graphs for comparative purposes.

**Figure 4.22: Groundwater Chloride Levels
Bedrock Wells, 2012 to 2017**



**Figure 4.23: Groundwater Chloride Levels
Overburden Wells, 2012 to 2017**



As can be seen from the graphs, all groundwater chloride results were significantly below the groundwater threshold value of 187.5ppm.

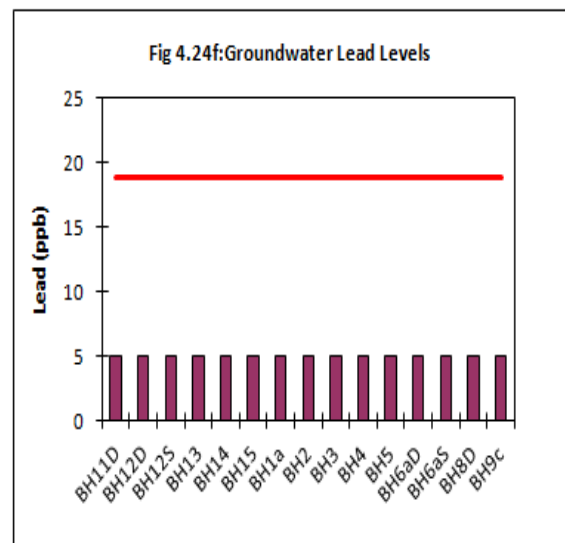
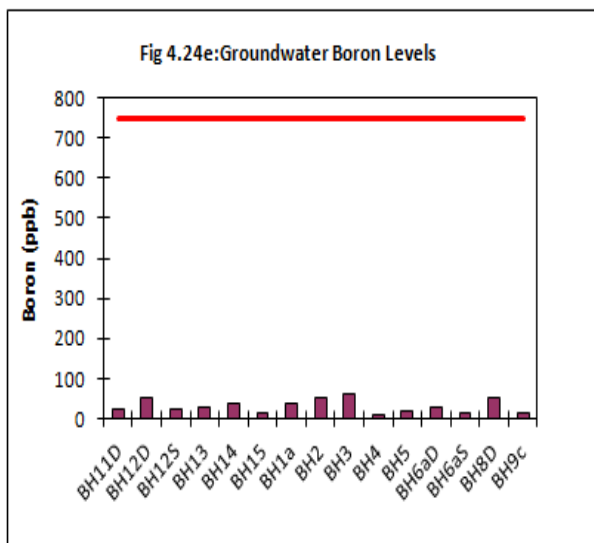
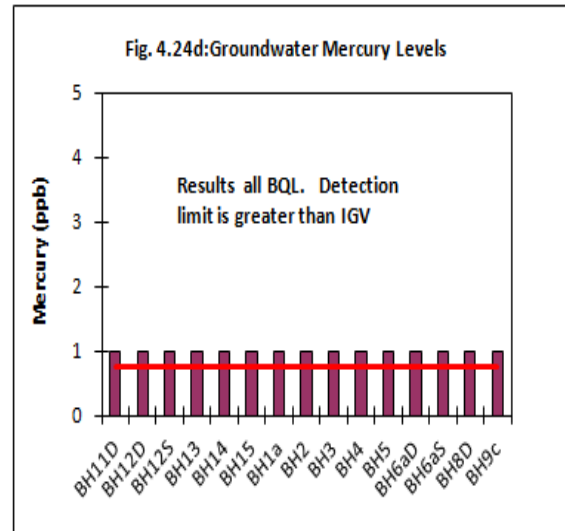
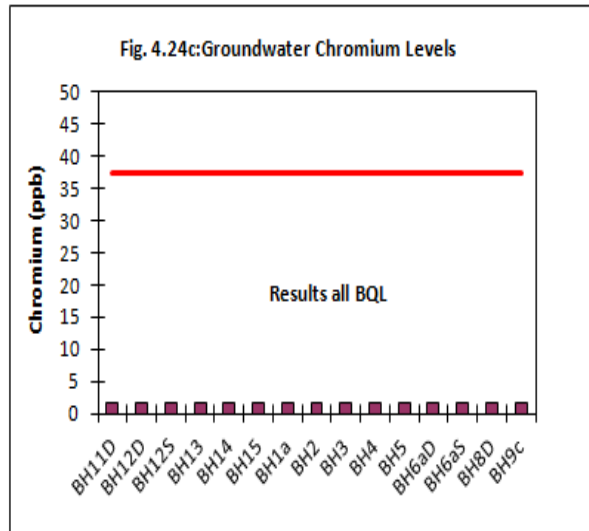
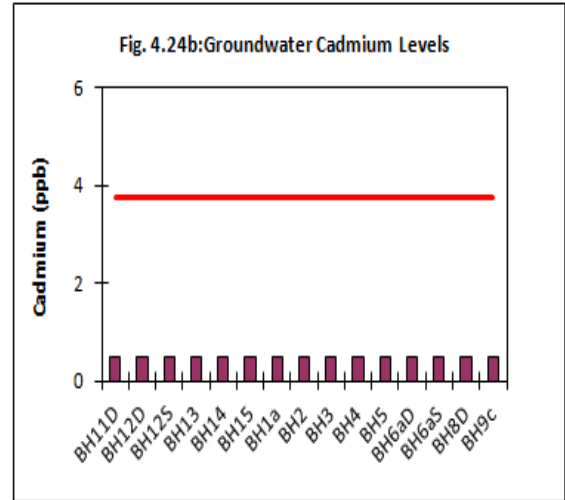
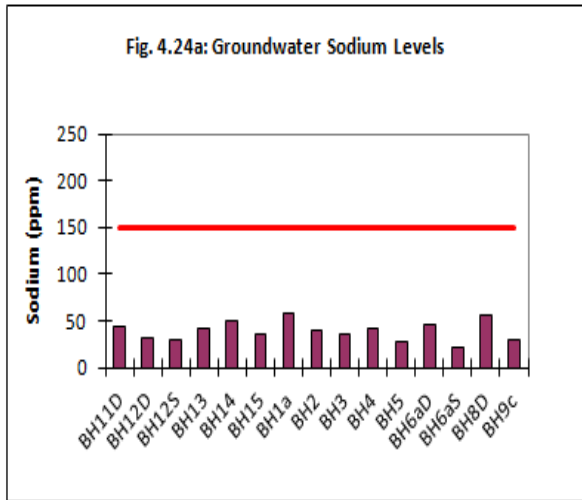
4.6.2.5 Groundwater volatile and semi-volatile organic compounds

Groundwater samples were analysed for volatile and semi-volatile organic compounds in July 2017. Results were below method detection limits for all samples.

4.6.2.6 Groundwater metals levels:

Groundwater samples were analysed for metals in July 2017. Results are graphed below in figures 4.24a to 4.24f. As can be seen from the graphs, sodium, cadmium, chromium, boron and lead levels were all below the relevant groundwater threshold levels. Although all groundwater mercury results were below detection limits, the detection limit was above the groundwater threshold of 0.75ppb. Results for cyanide and sulphate (not shown) were also below the relevant threshold levels for all samples.

Figure 4.24a to 4.24f; Groundwater Metals Levels (2017)



Note: The limits shown on the graphs are the groundwater threshold values specified in columns 3 / 4 of Schedule 5 of SI 9 of 2010.

4.6.3 Leachate.

Landfill leachate is discharged to an overground leachate storage tank (tank 2) for transport to one of three designated municipal wastewater treatment facilities in Lisdoonvarna, Sixmilebridge and Limerick City. An underground storage tank (tank 1) was installed when the facility was initially developed and up to November 2007, all leachate and potentially contaminated runoff was discharged to this tank. The second tank (Tank 2, above ground) was constructed in November 2007 as part of the Phase 3 project. This tank now receives all landfill leachate from the waste body. Tank 1 receives only runoff from the composting/green waste processing areas and from potentially contaminated sections of the civic amenity site. The contents of tank 1 are transferred to Tank 2 when the Tank 1 level exceeds 2m, and as required.

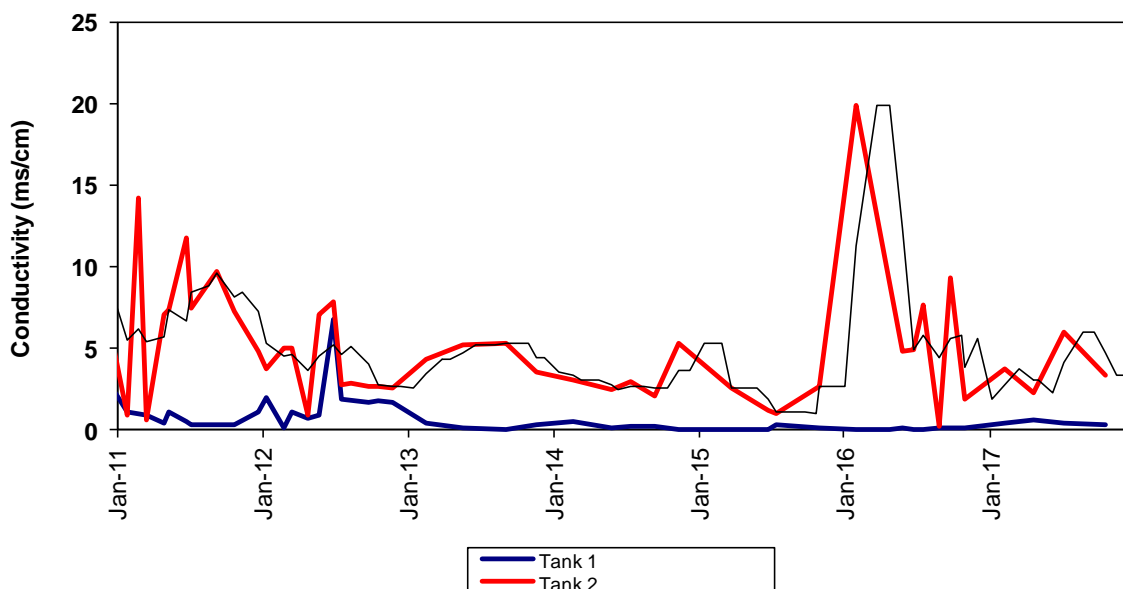
Results for tanks 1 and 2 for conductivity, BOD, COD and ammonia, are graphed in figures 4.25 to 4.29 of this report. Detailed results were submitted during the year in the quarterly environmental reports for the facility.

4.6.3.1 Leachate Conductivity

Leachate conductivity levels are graphed in figure 4.25. Results are within the range expected for landfill leachate. A five-point moving average trendline of Tank 2 conductivity readings is also shown on the graph (in black). While a reducing trend was apparent in the first two years after landfill closure, this is no longer apparent.

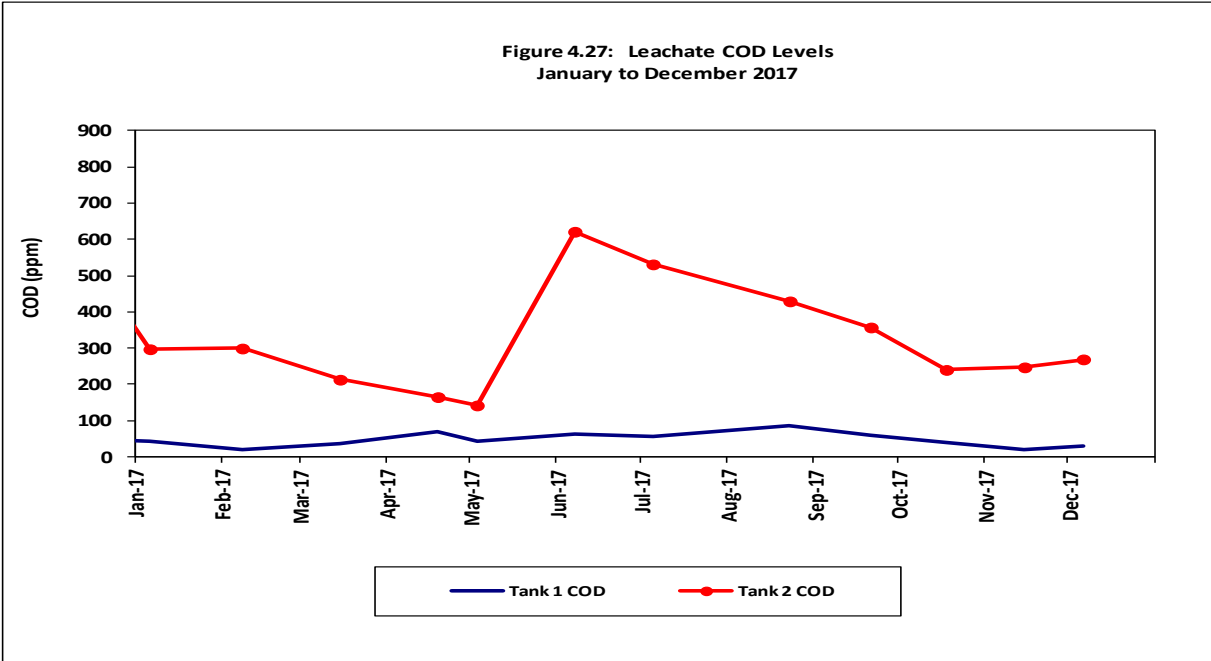
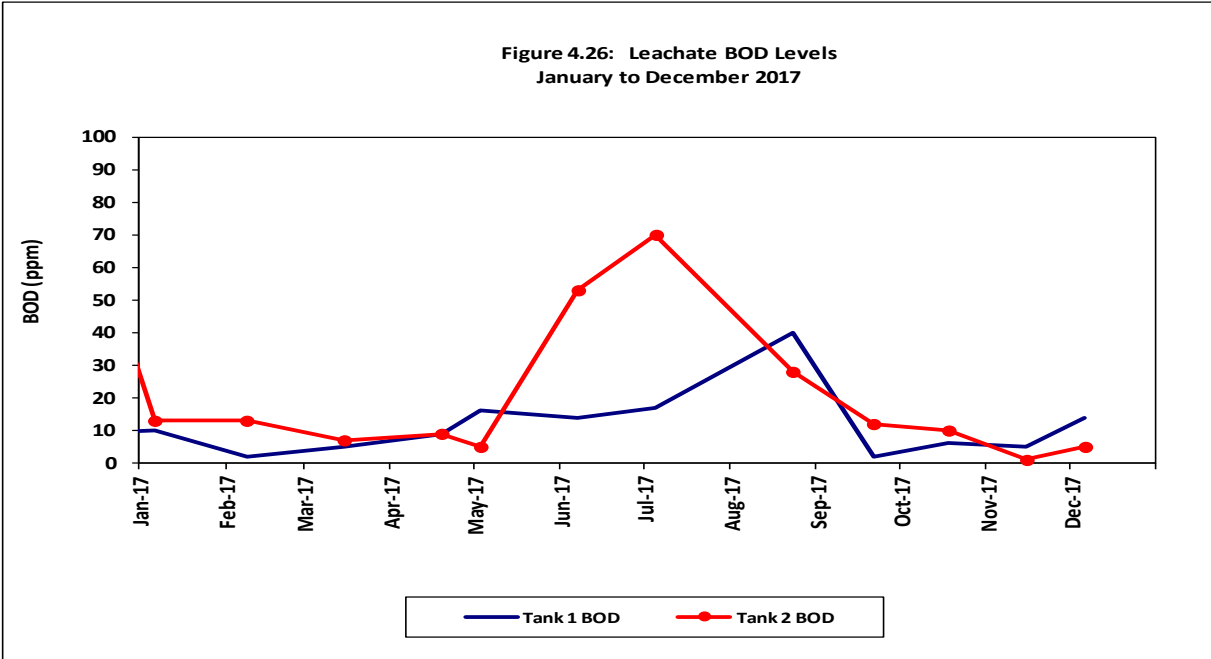
Figure 4.25: Leachate Conductivity Levels

2011 to 2017

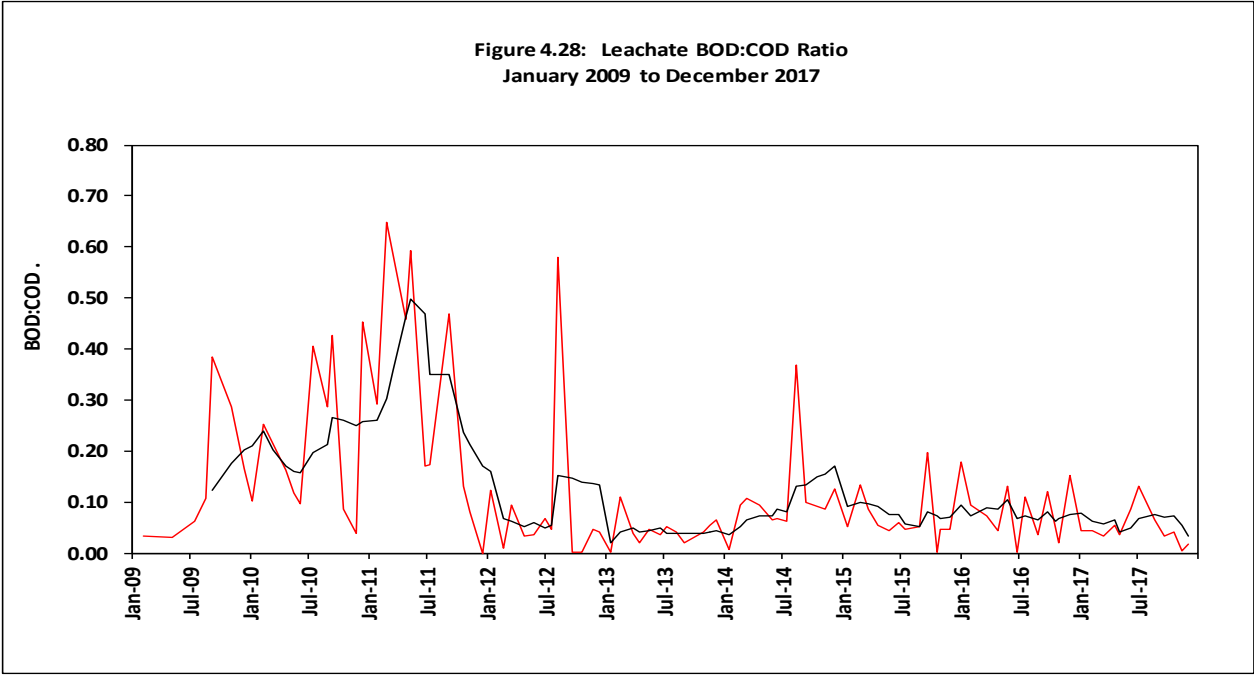


4.6.3.2 Leachate BOD and COD

Leachate BOD and COD results for 2017 are graphed below in figures 4.26 and 4.27. Results were normal for the site, with higher BOD and COD concentrations observed in landfill leachate samples (tank 2) in comparison to civic amenity site runoff samples (tank 1). The leachate results (tank 2) were as expected for landfill leachate.



Leachate BOD: COD ratio is graphed against time in Figure 4.28. The ratio has reduced over time as expected as the landfill ages, with the more biodegradable waste types broken down earlier in the process.



4.6.3.3 Leachate Ammonia Levels.

Leachate ammonia results from January to December 2017 are graphed below in figure 4.29. As expected, ammonia levels in tank 2 (landfill leachate tank) were significantly higher than in tank 1 (CA site runoff tank). The mean result for tank 1 was 9ppm (max: 21ppm). Levels in tank 2 were within the expected range for landfill leachate, with a mean of 262ppm ammonia nitrogen and a maximum result of 466ppm.

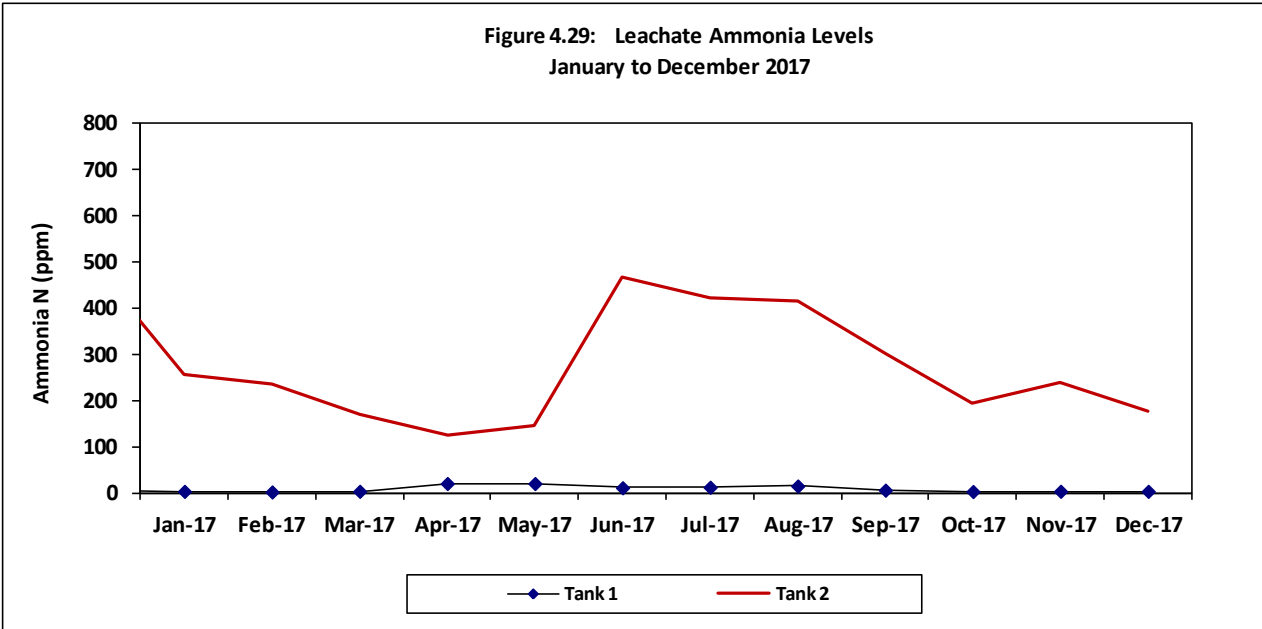
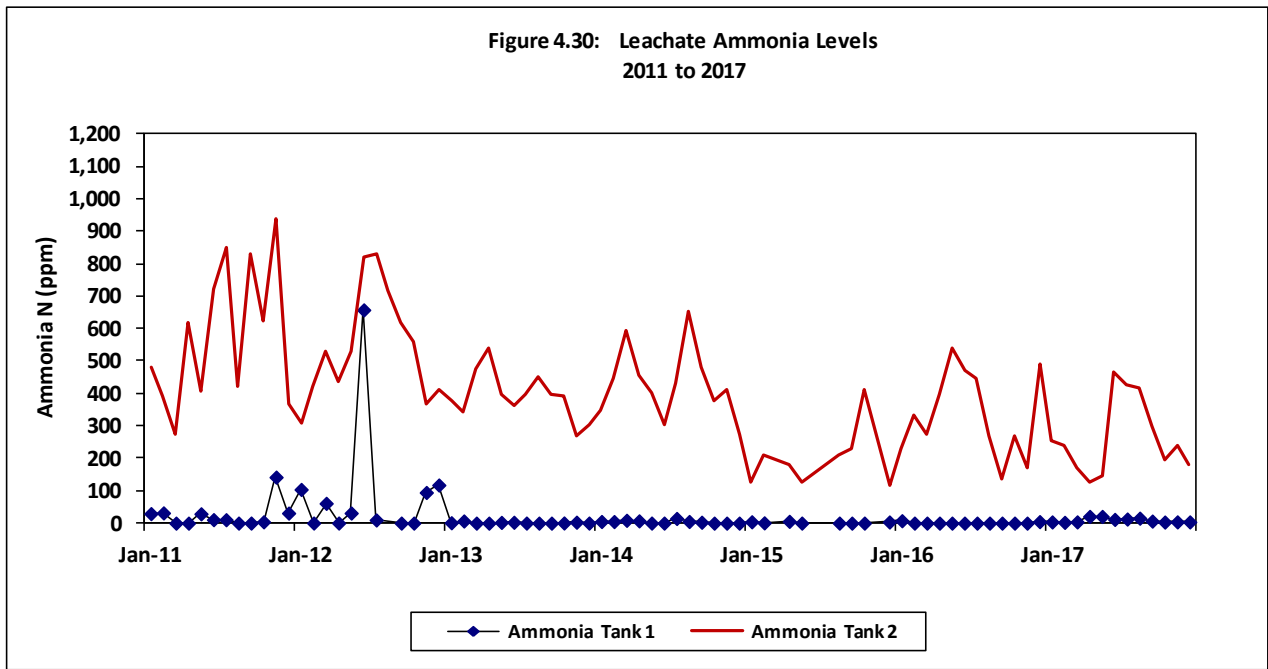


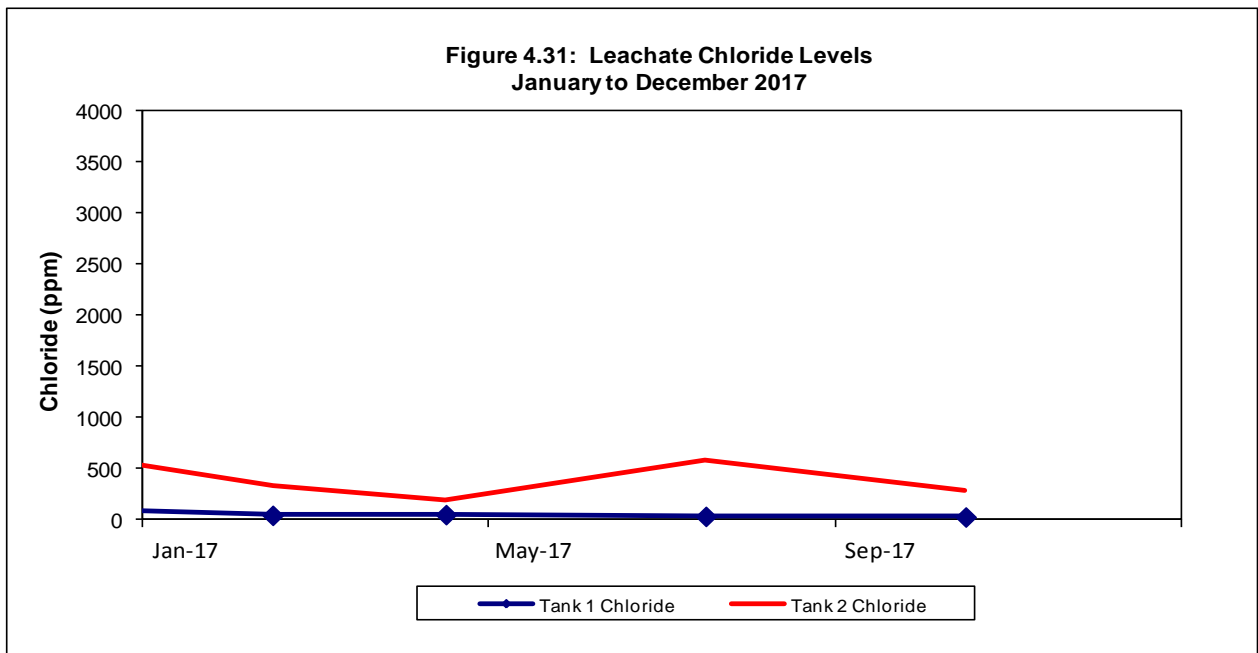
Figure 4.30 is a graph of landfill leachate ammonia levels between 2010 and 2017. A gradually reducing trend in ammonia concentration is evident from the graph, as would be expected as the waste breaks down.

Figure 4.30: Leachate Ammonia Levels
2011 to 2017

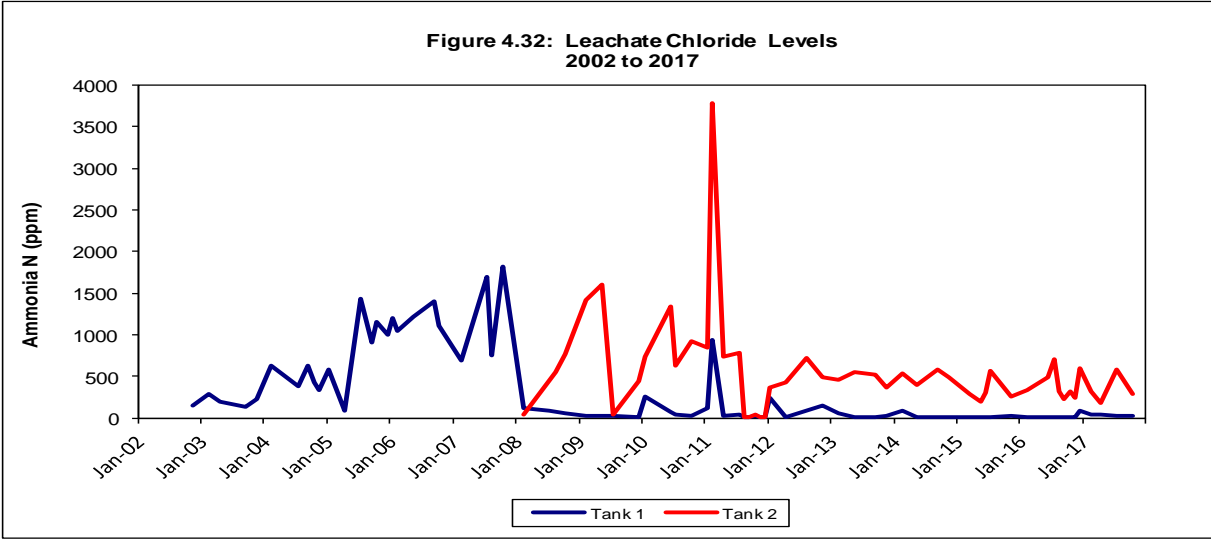


4.6.3.4 Leachate Chloride Levels

Leachate chloride levels are graphed in figure 4.31 for the period January to December 2017. The mean result for tank 2 was 341ppm. Chloride levels in CA site runoff (tank 1) were considerably lower (mean 33ppm).

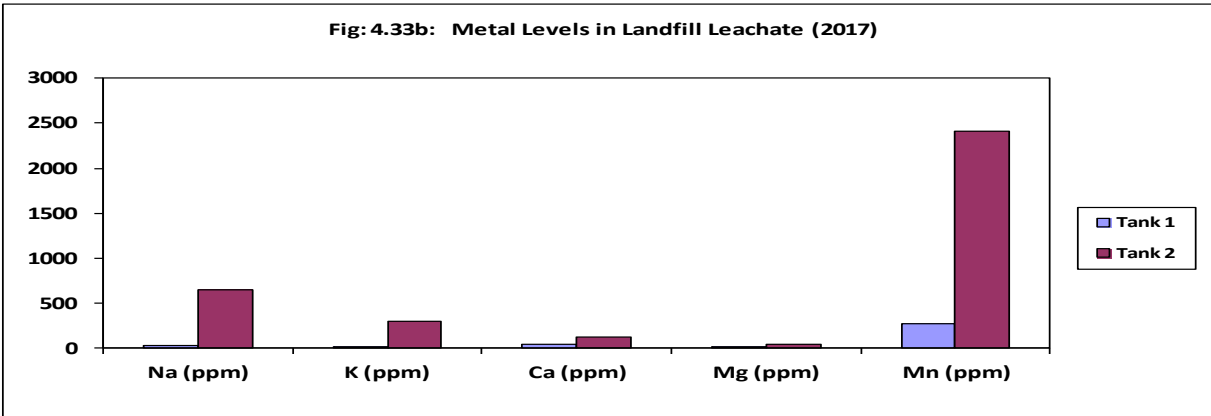
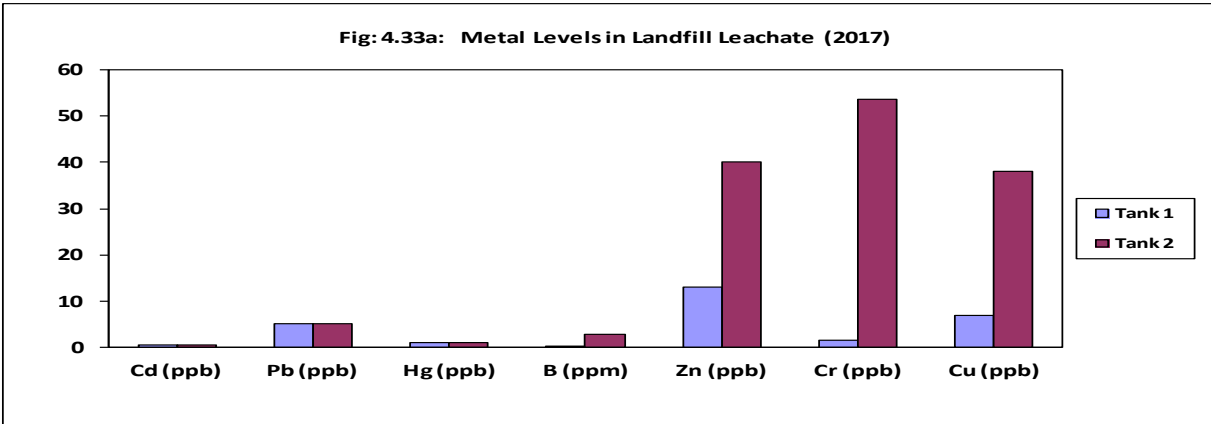


Leachate chloride levels from September 2002 (when the site first opened) to end of 2017 are graphed below in figure 4.32. As explained elsewhere in this report, landfill leachate was discharged to Tank 1 until Tank 2 was commissioned in late 2007. From then, all leachate from landfill cells was diverted to Tank 2 and Tank 1 received only civic amenity site runoff. There is a slightly reducing trend in chloride levels over time.



4.6.3.5 Leachate Metals Levels

Leachate metal results are graphed in figures 4.33a and b. As expected, levels of metals were significantly higher in tank 2, except where results for both tanks were below laboratory method detection limits.



In summary, levels of leachate parameters (tank 2) were within the ranges expected for municipal waste landfills. Levels of most parameters were significantly higher in tank 2 than in the civic amenity site runoff tank (tank 1). Variations in BOD, COD, conductivity and ammonia results during the year were most likely due to changes in rainfall level. There is evidence of a reducing trend in ammonia and chloride levels over time.

4.7 Biological and Ecological Monitoring.

4.7.1 Biological Monitoring:

Biological monitoring of surface water quality was undertaken in July 2017. The report concluded that there is no evidence of an impact from the landfill on surface waters.

4.7.2 Ecological Monitoring:

Ecological monitoring surveys are now required every three years. The site was last surveyed in 2016 with the next survey due in 2019. The 2016 report concluded that whilst there are no natural habitats of significant conservation value within the site, the site does provide useful habitat for a range of local wildlife including some species listed as of conservation importance on the national Red lists and/or legally protected. The ecologist recommended that scrub and grassland management be undertaken to optimise habitats for biodiversity. This work was undertaken in late 2017.

4.8 EPA Site Visits

The following is a summary of EPA site visits made during 2017:

1. 9th August 2017: Groundwater/surface water monitoring visit. No issues.
2. 10th November 2017: Annual enforcement plan site visit (10th November 2017). No non-compliances were received. Observations noted during the inspection were subsequently addressed.

5. WORKS PROGRAMME 2017/2018

5.1 Development Works carried out during 2017

A summary of site development works undertaken during 2017 is provided in Table 5.1.

TABLE 5.1: LIST OF DEVELOPMENT WORKS CARRIED OUT DURING 2017 (NON-EXHAUSTIVE).

Site Development Works	Completion Date
Grassland and scrub management undertaken on site for the purpose of enhancing biodiversity.	Ongoing
Drainage improvements to facility access road (health and safety measure)	August 2017
Forestry management including cutting of inspection paths through the forested area	December 2017
Site assessment with a view to preparation of CRAMP draft design, including wetland areas on phase 4/5 and on the interface between phase 3 and 4/5	Ongoing

5.2 Proposed Development Works 2018

Proposed site development works for 2018 are set out in Table 5.2 below (also see section 7.2).

TABLE 5.2: PROPOSED DEVELOPMENT WORKS FOR 2018

Description of Works	Date
Forestry management.	Felling planned for late 2018.
Grassland and scrub management for biodiversity enhancement	Planned for late 2018
Further optimising gas management for cells with poor quality landfill gas	Ongoing through 2018
Commencement of landfill final capping project	Design tender to be advertised during 2018

5.3 Progress to Site Restoration

A site restoration plan was submitted to the Agency in April 2003. The plan covered the following issues related to the restoration of the site, including:

- Final landfill profile
- Final cap construction
- Access roads
- Proposed land use
- Fencing and security
- Environmental monitoring and pollution

A revised interim closure plan was issued in December 2011 to address the (interim) closure of the landfill in November 2011. Work commenced during 2016 to prepare the final closure plan. Consultants visited the facility in late 2016 and draft design drawings were prepared and approved by the Agency during 2017.

5.4 Site Survey and Remaining Void Space

There is no remaining constructed void space at this facility. There is an unconstructed area which was originally planned as part of the landfill footprint (phase 4 and 5) but which was not excavated.

6. FINANCIAL ASPECTS

6.1 Annual Budget and Operating Costs

The annual budget for the Central Waste Management Facility for 2017 is outlined in Table 6.1 below.

TABLE 6.1: SUMMARY OF FINANCIAL PROVISIONS 2017

Item	2017 budget
CWMF - Landfill operation	301,217
CWMF - Recycling centre operation	368,013
CWMF - Compost operation	92,577
Total	761,807

6.2 Report on the use of a portion of the waste charges and gate fees on appropriate environmental improvement projects.

A Community Fund was in place throughout the landfill operational period. The fund was introduced under the Government Policy Statement on waste management “Changing Our Ways” - local authorities working in partnership with local communities to mitigate the impact of waste management facilities on these communities through appropriate environmental improvement projects. An amount of €1.27 (index linked) per tonne of waste accepted for disposal at the landfill was allocated to the fund.

A formal structure was in place for distribution of the Fund, which was agreed with the Community Liaison and Monitoring Committee (CLMC). A fund adjudication panel was established, consisting of three members of the CLMC and three external members. Up to and including tranche 4, eligible local communities (Inagh, Cloonanaha and Kilnamona) applied to the committee for funding for community projects. Applications were assessed by the committee, with a weighting criteria applied; projects nearest to the facility carried the greatest weighting. The approach to distribution of the final tranche (5) was changed with the agreement of the committee. Tranche 5 was distributed during 2014 to residences within a 1.5km radius of the centre of the landfill footprint (filled area) for home improvement projects of an environmental/energy saving nature. The final balance of €62,515 was advertised in December 2016, for projects with an environmental focus. Six applications were received and a total of €13,542 was awarded to four of the applicant groups. The remaining fund will be distributed to individual households located within a 1.5km buffer zone of the landfill, via a small grants scheme. Fifty three residences were contacted in relation to this process in October 2017.

6.3 Review of Environmental Liabilities.

An environmental liability risk assessment was carried out for the facility during 2009. The report of this assessment was submitted to the EPA during 2009. Clare County Council submitted revised closure costs as part of the interim CRAMP submitted to the Agency in December 2011. Ongoing measures to protect against the risk of environmental damage are outlined in the Site Procedures Manual and in the EMP for the facility (see also section 7.2 below). A final CRAMP for the facility is currently being prepared.

7. REVIEW

7.1 Nuisance Controls.

Controls are in place to minimise nuisance from litter, birds, vermin, fires, vehicles, odours, dust, visual intrusion and noise associated with activities at the site. A complaints register is maintained at the facility, located in the site administration office. No complaints were received during 2017. Nuisance control measures are described below under separate headings for each nuisance type:

7.1.1 Litter Control

Daily litter inspections are still ongoing within the site. Loose material is gathered and disposed of regularly to keep the site tidy. For main roads outside the facility boundary, periodic cleanups are arranged with Area Roads staff. For health and safety reasons, this work must be carried out by a team under the supervision of suitably trained staff.

7.1.2 Birds

Clare County Council employed Falcon Bird Control to control bird activities on site up to completion of earthworks on the last filled cell, in July 2012. Bird control measures are no longer required at the facility.

7.1.3 Vermin

Curtin Pest Control is employed by Clare County Council to control rodents. The company carries out monthly inspections on site and maintains a baiting programme to control rat or mice infestations. Details of the inspections and baiting programme are kept on file at the facility.

7.1.4 Fires

Adequate fire fighting equipment capable of handling small outbreaks of fire is maintained on site. Site staff are trained in the use of the equipment. In the event that a fire breaks out, it will be treated as an emergency and dealt with immediately. The county Fire Brigade and the EPA will be contacted in the event of any fire-related incident.

7.1.5 Vehicles

All roads around the Civic Amenity area, the access roads to the flare and the old stormwater pond are tarred. Access roads around the landfill footprint are stone-coated. Until the completion of earthworks on the last filled cell, these roads were regularly cleaned and scraped with fresh stone applied as required. However as heavy vehicles no longer

access internal roads around the landfill area, the haul roads around the landfill footprint are not currently maintained except for regular wetting to suppress dust during periods of prolonged dry weather.

7.1.6 Odours

Waste odours:

The landfill is closed. Small quantities of wet waste are accepted in the civic amenity site, for temporary storage in a closed container prior to removal by a third party contractor. This container is closed and sealed at the end of every work shift and is removed from site twice per week. No waste odours have been detected by the odour patrol or by site staff since November 2011.

Landfill Gas Odours:

The landfill is closed and capped. Landfill gas odours are controlled by continuous extraction from 70 gas wells located at spaced intervals throughout the waste body. Gas levels are gradually reducing as the waste ages. Potential odours from the main point sources (leachate riser pipes) are controlled by means of specially-designed seals on pipe ends combined with gas extraction from the pipes. Potential odours from gas extraction wells are controlled by connection to the extraction network and the use of outer rings around the wells, filled with wetted bentonite clay. Odour Monitoring Ireland carried out surface VOC profile surveys on the landfill cap on one occasion during 2017 (Agency approval was received in 2014 to reduce the assessment frequency to once per annum). No emissions were detected. Up to August 2014, daily odour patrols were carried out both on and offsite by two council employees. The procedure was modified in August 2014 with the approval of the Agency; daily odour patrols are now carried out within the site only. In the event that odours are detected on site, this triggers a full off site patrol. No odours were detected offsite during 2017. A monthly odour report is completed by site staff and retained on file in the administration office. This report provides useful summary information in relation to odour performance and the effectiveness of the various odour control measures employed at the facility.

7.1.7 Dust

Site access roads are water-sprayed in dry weather to suppress dust. Ambient dust monitoring is carried out three times per annum at four boundary locations in accordance with the conditions of the waste licence. All results for 2017 were within the ambient dust limit of 350mg/m² per day. See Section 4.4 for further details.

7.1.8 Visual Intrusion

The principal method of limiting visual intrusion is by the retention of a screening belt of trees around the site. The site entrance and access roads are also landscaped to minimise visual intrusion. The earthen embankments surrounding the landfill area to the east, west and north of the site were raised some years ago and new screening embankments were constructed as part of the phase 3 development works. All embankments were grassed and planted with Scots Pine and Sitka Spruce.

7.1.9 Noise

Two noise surveys are carried out each year at noise sensitive locations adjacent to the facility. Results indicate that noise generated by activities at the site complies with licence limits (see section 4.5 for further information).

7.1.10 Complaints Register

No complaints were received at the facility or via the EPA during 2017. The complaints register is located in the site administration office. The register includes the name of the complainant, the nature of the complaint, the date of the complaint and the actions taken to remedy the complaint. The site manager signs off completed complaint forms. The register is available for inspection by members of the public. See Section 7.5 for further details.

7.2 Landfill Environmental Management Plan

Updates on objectives under the last site environmental management plan (EMP) are provided below. The EMP was updated during 2016 with four new objectives set.

7.2.1. Objective 1: Reduce the tonnage of civic amenity site runoff diverted to leachate tank

Leachate generated on site is tankered to wastewater treatment plants at Lisdoonvarna, Sixmilebridge and Limerick Main Drainage plant at Bunlicky. The most successful measure carried out to minimise leachate volumes when the landfill was operational was the installation of rainflaps on the side slopes of the active cells. The landfill is now closed and capped.

To date, measures to reduce leachate levels generated in the civic amenity site have included:

- Diversion of stormwater from the higher level of the civic amenity site to the stormwater pond from the leachate lagoon.
- Modifications to the abandoned vehicle storage area to divert clean runoff from the adjoining slope away from leachate collection.
- Access roads are regularly inspected to ensure free flow of rainwater towards stormwater lagoons and away from leachate collection areas.

7.2.2. Objective 2: Continue forestry management programme for the site

A forestry management plan is in place for the site. Felling was last carried out in November and December 2015. Next phase felling was due to be carried out in the fourth quarter of 2017. This work has not yet been undertaken although inspection paths were cut in late 2017 to facilitate inspection by the forest service. The felling licence application will be submitted to the forest service by mid 2018. The Agency will be notified in advance of all works.

7.2.3 Objective 3: Assessment and protection of designated species on site

As part of the ecological monitoring survey work undertaken on site in 2016, the ecologist recommended a list of measures to enhance species biodiversity. These included grassland management, limited scrub removal and introduction of additional wetlands where appropriate. Recommendations are being implemented on an ongoing basis and are also incorporated into the draft final site closure plan.

7.2.4 Objective 4: Improvement of gas management across cells with poor gas quality

Works undertaken during 2017 to optimise gas extraction from older landfill cells included the introduction of a monthly pressure-based balance of the gas field. Flexible connections were also replaced where required on a number of gas wells.

7.3 Programme of Public Information

The following information is held in the site office and in the Environment Section in Aras Contae an Chlair:

- A copy of the waste licence and amendments.
- All correspondence from the Agency relating to the facility.
- All correspondence from Clare County Council to the Agency relating to the facility.
- Copies of quarterly monitoring reports.
- Copies of annual environmental reports (AER).
- Copy of all procedures relating to the facility.
- Incident reporting files.
- Complaints Register.

A community liaison and monitoring committee (CLMC) was established when the facility opened. The purpose of the CLMC was to provide a forum for the local community to raise issues in relation to, and to receive regular updates on, the operation of the facility. The committee consists of members of the local community and local Councillors. While the landfill was operational, the CLMC met every one to two months in the Inagh National School hall. When the landfill initially closed, the meeting frequency was reduced to quarterly. As the landfill has now been closed since 2011 with no plans for re-opening, the meeting frequency has been reduced to twice yearly. This was agreed with the CLMC in 2014.

In addition to the CLMC committee, the meetings are attended by the environment section's Senior Engineer and Staff Officer. Site management staff are also available to attend if required.

7.4 Management and Staffing Structure

The current management structure is outlined in the chart in Appendix 8.3.

7.5 Environmental Incidents and Complaints

Condition 3 of the waste licence requires that the licensee shall make written records of environmental incidents. When incidents arise, completed incident reports are uploaded to the EPA via EDEN. A list of the incident reports submitted during the reporting period is provided in Appendix 8.4. A summary of the incident numbers and types is provided in table 7.9 below:

TABLE 7.9A: SUMMARY OF INCIDENTS ARISING IN 2017

Tracking Number	Incident Type
INCI007672	Perimeter well gas levels
INCI011609	LFG Flare - Abatement equipment offline
INCI012199	Perimeter well gas levels
INCI012701	TOC analyser offline
INCI013150	LFG Flare - Abatement equipment offline
INCI013151	Monitoring issue-loss of SCADA data for 18 hours

Condition 3 of W0109-02 requires that the licensee shall make written records of all complaints. No complaints were received during 2017.

7.6 Waste Reduction and Recovery

7.6.1 Civic Amenity Centre

In order to maximise waste recoveries in the area, the capacity of the civic amenity centre at the CWMF has been expanded over the years to include additional streams such as plate glass, bulky plastic, metal and timber items and household green waste. The list of materials now accepted at the facility is provided below:

Cardboard and paper	Tetrapaks	Waste engine oil
Plastic bottles	Hard plastic	Car batteries
Glass bottles	Sheet glass	Paint/varnish/pesticides etc
Steel cans	Large metal items	Waste cooking oil
Aluminium cans	Textiles	Household and dry cell batteries
Disposable Light bulbs	Fluorescent tubes and long-life bulbs	WEEE
Garden waste	Timber items	

7.6.2 Composting Facility

Garden waste composting commenced in January 2006. Members of the public bring clean green waste (e.g. grass cuttings, hedge trimmings, leaves) to the CWMF CA site. Green waste from the CA sites at Lisdeen, Shannon and Ennis and from Clare County Council’s gardening and roads sections is brought to the CWMF site for composting. The material is first processed on site to remove litter and other unsuitable items and to separate branches from fines. Branches are chipped using a wood chipper. The chipped product is mixed with the green waste fines and placed in the site augur mix, which loads the material by conveyor onto one of two aerated static piles. Air is continuously drawn through the piles by means of an air blower to provide the oxygen needed to break down the waste. The temperature of the static pile is monitored weekly. Each pile is turned to ensure even decomposition. After approximately twelve weeks, a mature compost product is formed. This product is mainly used within the site as a soil conditioner. Four

compost samples are tested each year in accordance with W0109-02. The CWMF has accepted approximately 4,650 tonnes of green waste for composting since 2006. 650 tonnes of green waste was received during 2017.

7.7 Report on Biodegradable Waste Diversion from Landfill

With the interim closure of the landfill in November 2011, the BMW diversion target is not directly relevant to this facility. The Council continues to promote composting by means of the Green Schools programme. Composters are sold at each of the recycling centres. The CWMF CA site accepts green waste from householders for composting on site. The waste enforcement section of Clare County Council continues its enforcement of the Food Waste Regulations to ensure that commercial facilities carry out food waste separation at source.

7.8 Report on progress in meeting the requirements of the Landfill Directive

The landfill is closed. The civic amenity site continues to accept recyclable waste, including household hazardous waste for offsite recycling/recovery and garden waste for onsite recovery. The site is managed in such a way as to maximise recycling by the public. Customer use of the wet waste container is supervised by site staff to ensure as far as possible that recyclable items are not placed in this container.

7.9 Statement on the achievement of the waste acceptance and treatment obligations of W0109-02.

The landfill is closed. Waste brought to the civic amenity site by domestic customers is monitored by site staff who instruct and advise the public on appropriate disposal/recycling. A leaflet has been printed showing the various streams that can be recycled at the facility. This leaflet is handed out at the pay kiosk by site staff.

7.10 Statement of compliance with relevant updates of the Regional Waste Management Plan.

The Regional Waste Management Plan was updated during 2016. The Central Waste Management Facility remains compliant with the Plan. Although the landfill is closed, the site continues to provide recycling and recovery facilities for the general public for over twenty different waste streams including household chemical waste, waste oil and other hazardous waste.

7.11 Updates/amendments to Odour Management Plan.

The Odour Management Plan (OMP) was last revised during 2014. The most recent plan revision outlined a revised odour patrol regime with daily patrols carried out by site staff within the facility boundary. Under the revised OMP, there is provision for offsite patrols to be carried out in the event of problems arising.

8. APPENDICES

8.1 Licensed Activities at CWMF

APPENDIX 1A: LICENSED WASTE DISPOSAL ACTIVITIES, IN ACCORDANCE WITH THE THIRD SCHEDULE OF THE WASTE MANAGEMENT ACT, 1996 - 2005

- Class 4. Surface impoundment, including placement of liquid or sludge discards into pits, ponds or lagoons:
This activity is limited to the storage and management of leachate and stormwater in lined lagoons.*
- Class 5. Specially engineered landfill, including placement into lined discrete cells which are capped and isolated from one another and the environment.
This activity is limited to the disposal of a maximum of 56,500 tonnes of non-hazardous waste, excluding sewage sludge, per annum into engineered lined cells.*
- Class 6. Biological treatment not referred to elsewhere in this Schedule which results in final compounds or mixtures which are disposed of by means of any activity referred to in paragraphs 1. to 10. of this Schedule:
This activity is limited to leachate re-circulation and the disposal of compost that is produced on site.*
- Class 7. Physico-chemical treatment not referred to elsewhere in this Schedule (including evaporation, drying and calcination) which results in final compounds or mixtures which are disposed of by means of any activity referred to in paragraphs 1. to 10. of this Schedule (including evaporation, drying and calcination):
This activity is limited to possible future leachate treatment at the facility in order to reduce the strength and volume of leachate tankered off-site for treatment.*
- Class 11. Blending or mixture prior to submission to any activity referred to in a preceding paragraph of this Schedule.
This activity is limited to the mixing of waste at the Civic Waste Facility prior to being landfilled.*
- Class 12. Repackaging prior to submission to any activity referred to in a preceding paragraph of this Schedule.
This activity is limited to the mixing or compaction of waste and the reloading of waste tipped for inspection into a container prior to landfilling at the facility or disposal off site.*
- Class 13. Storage prior to submission to any activity referred to in a preceding paragraph of this Schedule, other than temporary storage, pending collection, on the premises where the waste concerned is produced.
This activity is limited to the storage of waste at the Civic Waste Facility prior to disposal either off site or at the landfill.*

Appendix 1b: Licensed waste recovery activities, in accordance with the Fourth Schedule of the Waste Management Act, 1996 – 2005.

- Class 2. Recycling or reclamation of organic substances which are not used as solvents (including composting and other biological transformation processes):
This activity is limited to the composting of waste and the recovery of organic wastes including timber, paper and cardboard at the facility.*
- Class 3. Recycling or reclamation of metals and metal compounds:
This activity is limited to the storage of metals including white goods, batteries and scrap metal at the facility pending further recovery off-site.*
- Class 4. Recycling or reclamation of other inorganic materials:
This activity is limited to the storage and recovery of glass and construction and demolition waste at the facility pending the recovery off-site or in the case of construction and demolition waste its use in landfill restoration and engineering works.*
- Class 9. Use of any waste principally as a fuel or other means to generate energy:
This activity is limited to the possible future use of landfill gas as an energy resource to produce electricity and heat.*
- Class 10. The treatment of any waste on land with a consequential benefit for an agricultural activity or ecological system.
This activity is limited to the use of compost as a soil conditioner at the facility for restoration.*
- Class 11. Use of waste obtained from any activity referred to in a preceding paragraph of this Schedule:
This activity is limited to the use of compost and construction and demolition waste as cover material or in restoration, and the use of construction and demolition waste as building material at the facility.*
- Class 13. Storage of waste intended for submission to any activity referred to in a preceding paragraph of this Schedule, other than temporary storage, pending collection, on the premises where such waste is produced:
This activity is limited to the storage of waste destined for recovery activities.*

8.2 Water Balance Calculation

Appendix 8.2: Water Mass Balance Calculation 2017

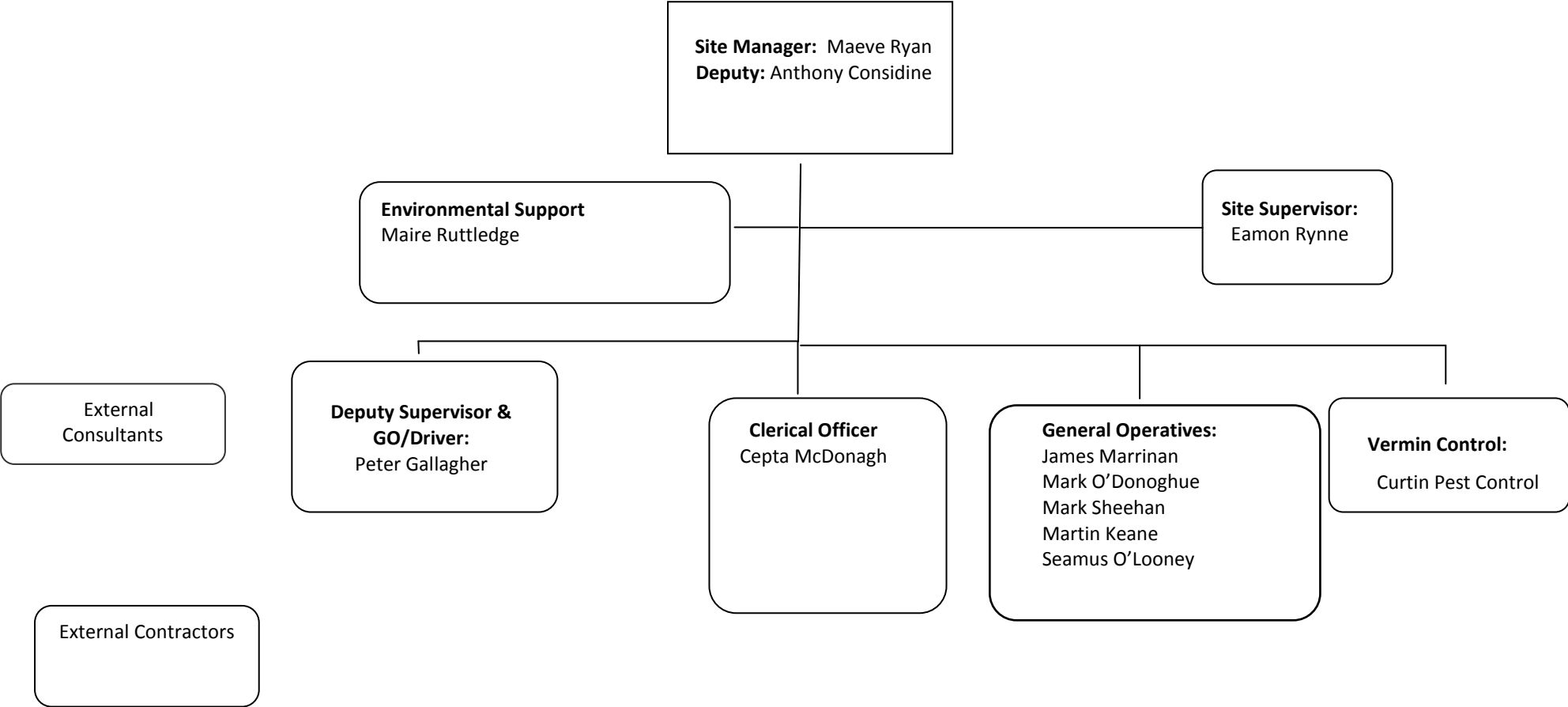
Month	Monthly total rainfall Figures (mm) (Shannon)	Landfill Operations			Area (m ²)				Infiltration (m ³)			Estimated Total Leachate (m ³)	
		Active Cell	Temp Cap	Full Cap	Active Area*	Temp Cap	Full Cap*	Concrete*	Active Area @ 100% estimated infiltration	Full Cap @ 10% estimated infiltration, using effective rainfall	Concrete @ 100% infiltration (total rainfall figure used, not PE)	Monthly	Cumulative
January	53.2	None	0	Cells 1 - 13	0	0	70,000	2,600	0	372	138	511	454
February	71.1	None	0	Cells 1 - 13	0	0	70,000	2,600	0	498	185	683	1,137
March	133.9	None	0	Cells 1 - 13	0	0	70,000	2,600	0	937	348	1,285	2,422
April	17.5	None	0	Cells 1 - 13	0	0	70,000	2,600	0	0	46	46	2,468
May	45.2	None	0	Cells 1 - 13	0	0	70,000	2,600	0	316	118	434	2,901
June	86.5	None	0	Cells 1 - 13	0	0	70,000	2,600	0	0	225	225	3,126
July	133.6	None	0	Cells 1 - 13	0	0	70,000	2,600	0	0	347	347	3,474
August	82.7	None	0	Cells 1 - 13	0	0	70,000	2,600	0	579	215	794	4,268
September	99.2	None	0	Cells 1 - 13	0	0	70,000	2,600	0	0	258	258	4,526
October	80.6	None	0	Cells 1 - 13	0	0	70,000	2,600	0	564	210	774	5,299
November	125.1	None	0	Cells 1 - 13	0	0	70,000	2,600	0	876	325	1,201	6,500
December	139.6	None	0	Cells 1 - 13	0	0	70,000	2,600	0	977	363	1,340	7,840
<i>Estimated leachate volume (m3), using total rainfall for concrete area and effective rainfall for landfill:</i>										5,120	2,777	7,897	

Area was measured and confirmed to be 2400m²

Actual leachate volume transported offsite in 2017 = 8,229 tonnes. Theoretical leachate volume estimate for the site = 7,897m³. Therefore, additional leachate transported over mass balance calculation = 332m³ (4% of theoretical total).

8.3 Management Structure

Appendix 8.3: Site Management Structure, Central Waste Management Facility

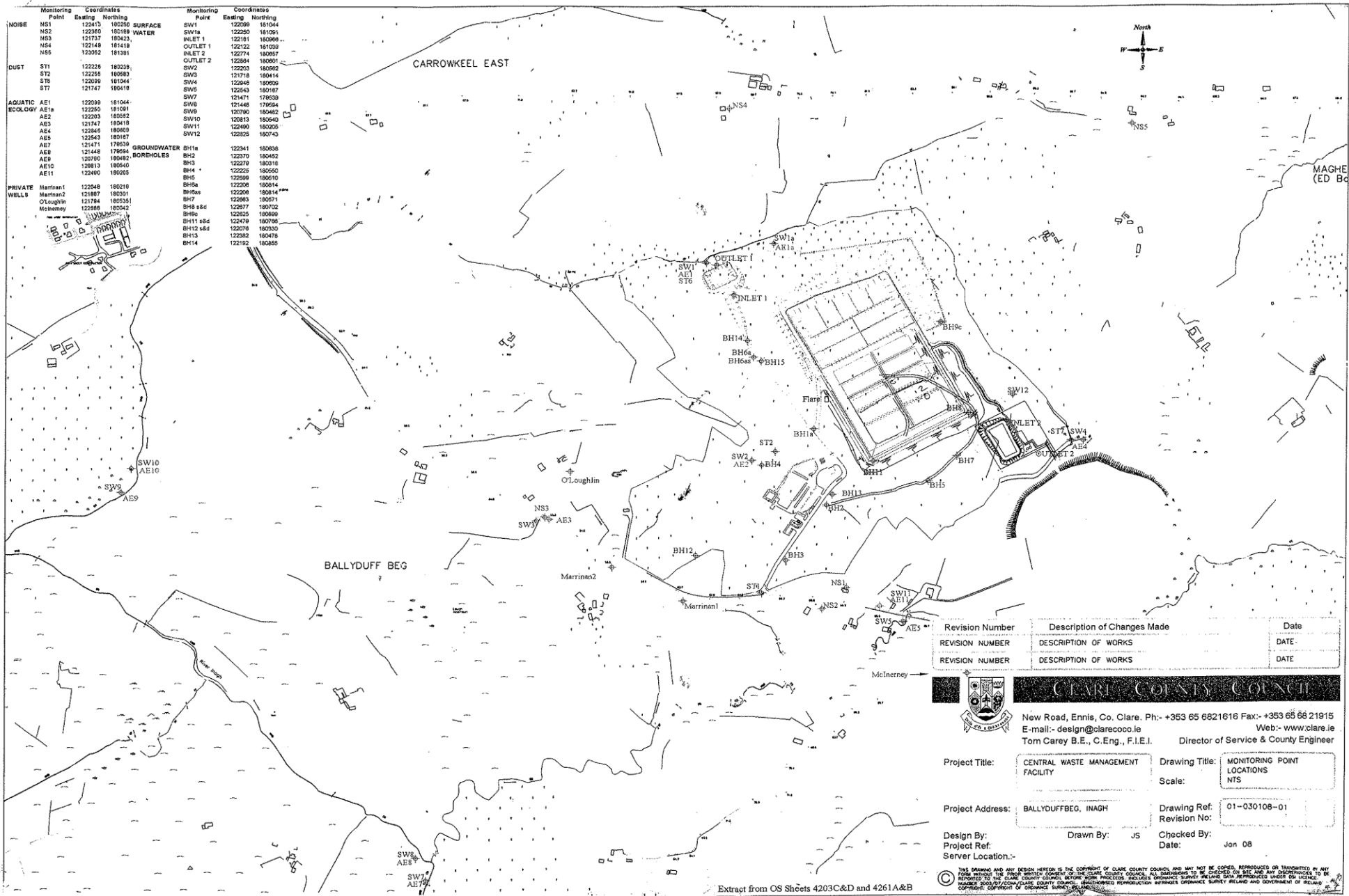


8.4 Summary Details of Incidents for 2017

2017

Tracking Number	Incident Type	Date issued	Current Status
INCI007672	Perimeter well gas levels	14/05/2015	closed
INCI011609	LFG Flare - Abatement equipment offline	08/02/2017	closed
INCI012199	Perimeter well gas levels	01/06/2017	closed
INCI012701	TOC analyser offline	17/08/2017	closed
INCI013150	LFG Flare - Abatement equipment offline	18/10/2017	closed
INCI013151	Monitoring issue-loss of SCADA data for 18 hours	18/10/2017	closed

8.5 Monitoring Point Location Map



Monitoring Point	Coordinates Easting	Coordinates Northing	Monitoring Point	Coordinates Easting	Coordinates Northing
NOISE NS1	122413	180250	SURFACE	SW1	122099
NS2	122360	180189	WATER	SW1a	122250
NS3	121737	180423			122181
NS4	121148	181418			122122
NS5	123052	181381			122274
DUST ST1	122226	180338	OUTLET 1	INLET 1	122884
ST2	122255	180583	OUTLET 2	INLET 2	122884
ST3	122099	181341			122203
ST7	121747	180418			121718
AQUATIC AE1	122099	181044			122846
AE1a	122250	181081			122543
AE2	122203	180252			121471
AE3	121747	180418			121448
AE4	122846	180605			120790
AE5	122543	181187			120218
AE7	121471	178538			122460
AE8	121448	178538	GROUNDWATER Boreholes	BH1a	122341
AE9	120790	180482			122070
AE10	120813	180540			122278
AE11	123490	180285			122225
PRIVATE WELL	Marrinan1	122048	180216	BH5	122599
	Marrinan2	121887	180291	BH6a	122208
	O'Loughlin	121784	180535	BH7	122098
	McInerney	122988	180542	BH8 s&sd	122677
				BH9	122325
				BH11 s&sd	122478
				BH12 s&sd	122078
				BH13	122382
				BH14	122192

Revision Number	Description of Changes Made	Date
REVISION NUMBER	DESCRIPTION OF WORKS	DATE
REVISION NUMBER	DESCRIPTION OF WORKS	DATE

CLARE COUNTY COUNCIL

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 Tom Carey B.E., C.Eng., F.I.E.I. Director of Service & County Engineer

Project Title:	CENTRAL WASTE MANAGEMENT FACILITY	Drawing Title:	MONITORING POINT LOCATIONS NTS
Project Address:	BALLYDUFFBEG, INAGH	Scale:	
Design By:		Drawing Ref:	01-030108-01
Project Ref:		Revision No:	
Sever Location:-		Checked By:	
		Date:	Jan 08

Extract from OS Sheets 4203C&D and 4261A&B

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8.6 List of Site Standard Operating Procedures

Site Procedures List

SOP	Description	Last Revision Date
1	<i>Procedure to be followed in the event of malfunction/non-operation of TOC analyser</i>	31/10/2017
2	<i>Procedure to be followed in the event of activation of the pH alarm</i>	31/10/2017
3	<i>Procedure to be followed in the event of activation of the conductivity alarm</i>	31/10/2017
4	<i>Landfill gas monitoring/training procedure</i>	31/10/2017
5	<i>Exceedence of Trigger Levels for Key Parameters in Groundwater Samples</i>	03/04/2012
6	<i>Communications Programme</i>	03/04/2012
7	<i>Documentation Procedure</i>	03/04/2012
8	<i>Procedure to be followed in the event of landfill gas flare malfunction.</i>	21/03/2018
9	<i>Awareness and Training Procedure</i>	03/04/2012
10	<i>Emergency Response Procedure</i>	01/11/2017
11	<i>Corrective Action Procedure</i>	05/11/2015
12	<i>Complaints Procedure</i>	04/04/2012
13	<i>Waste Acceptance Procedure (relevant to operational landfill only)</i>	29/09/2011
14	<i>Procedure for handling hazardous domestic waste</i>	04/04/2012
15	<i>Handling Procedure for Difficult Wastes and Non-Hazardous Industrial Solid Wastes (relevant to operational landfill only)</i>	02/06/2011
16	<i>Odour Patrol Procedure</i>	01/11/2017
17	<i>Surface Water Visual Inspection Procedure.</i>	04/04/2012
18	<i>Administrative Procedure</i>	01/11/2017
19	<i>Procedure for Handling, storage and deposition of wood ash (relevant to operational landfill only)</i>	02/06/2011
20	<i>Procedure for Leachate Handling</i>	01/11/2017
21	<i>Procedure for Removal of Recyclable Waste from the Civic Amenity Site</i>	23/02/2016
22	<i>Procedure for Application of Landfill Cover (relevant to operational landfill only)</i>	18/01/2011
23	<i>Accident Prevention Policy</i>	03/04/2012
24	<i>Procedure for preparation of BMW returns under condition 3.16 of W0109-02 (relevant to operational landfill only)</i>	03/10/2011
25	<i>Procedure for maintenance of the landfill gas flare</i>	01/11/2017

8.7 Landfill Gas Survey Returns for 2017

A survey of landfill sites to determine the quantity of methane flared and or recovered in utilisation plants for 2017

Please choose from the drop down menu the license number for your site

Please choose from the drop down menu the name of the landfill site

Please enter the number of flares operational at your site in 2017

Please enter the number of engines operational at your site in 2017

Total methane flared kg/year

Total methane utilised in engines kg/year

Please note that the closing date for receipt of completed surveys is 31/03/2018

Introduction

The Office of Environmental Sustainability (OES) of the Environmental Protection Agency acts as the inventory agency in Ireland with responsibility for compiling and reporting national greenhouse gas inventories to the European Commission and the United Nations Framework Convention on Climate Change. In addition to meeting international commitments Ireland's national greenhouse gas inventory informs national agencies and Government departments as they face the challenge to curb emissions and meet Ireland's emission reduction targets under the Effort Sharing Decision (No. 406/2009/EC). The national inventory also informs data suppliers, making them aware of the importance of their contributions to the inventory process and a means of identifying areas where input data may be improved.

It is on this basis that the Environmental Protection Agency is asking landfill operators to partake in this survey so that the most up to date information on methane flaring and recovery in utilisation plants at landfill sites is used in calculating the contribution of the landfill sector to national greenhouse gas emissions

The Environmental Protection Agency wishes to thank you for partaking in this survey. If you have any questions about the survey and how to complete it please view the "Help sheet" worksheet. If however, your query is not answered by viewing the "Help sheet" worksheet please contact:

LFGProject@epa.ie

Once completed please send the completed file as an attachment clearly stating the name and or license number of the landfill site (e.g. W000 Xanadu landfill_2017) to:

LFGProject@epa.ie

to be filled in by licensee calculated by spreadsheet

Flare No. 1

Flare type ? If "other" enter flare description here

Is the flare an open or enclosed flare ? Rated flare capacity ? m3/hr

Month /year comissioned ?

Month decomissioned if decomissioned in 2017 ?

What is the function of the flare ? If "other" enter flare function here

Monthly	Method M/C/E	Runtime days/month	Runtime hrs/day	Downtime hrs	Total runtime hrs/month	Average Inlet Pressure (mbg)	Average Inlet Temp ° C	Average Flow Rate (m ³ /hr)	Average CH ₄ %v/v	Average CO ₂ %v/v	Average O ₂ %v/v	Combustion efficiency (%)	Total CH ₄ m ³	Total CH ₄ kgs
January	M	31	24.0	0.0	744	-5	10	168	34.50	22.90	2.00	99.9	43,079	29,597
February	M	28	24.0	13.0	659	-5	10	169	40.00	25.20	2.00	99.9	44,504	30,576
March	M	31	24.0	7.5	737	-5	10	168	41.00	28.10	2.00	99.9	50,679	34,819
April	M	30	24.0	3.0	717	-5	10	175	38.40	26.80	2.00	99.9	48,134	33,070
May	M	31	24.0	5.3	739	-5	10	178	37.90	27.20	2.00	99.9	49,788	34,206
June	M	30	24.0	6.0	714	-5	10	183	38.60	28.10	2.00	99.9	50,385	34,617
July	M	31	24.0	12.5	732	-5	10	189	34.70	30.00	2.00	99.9	47,926	32,927
August	M	31	24.0	2.5	742	-5	10	194	31.00	33.50	2.00	99.9	44,549	30,607
September	M	30	24.0	1.0	719	-5	10	195	32.00	33.50	2.00	99.9	44,821	30,794
October	M	31	24.0	26.0	718	-5	10	202	33.30	36.60	2.00	99.9	48,344	33,215
November	M	30	24.0	0.0	720	-5	10	203	32.60	24.80	2.00	99.9	47,601	32,704
December	M	31	24.0	0.0	744	-5	10	202	32.00	26.60	2.00	99.9	48,044	33,008
Total					8,683								567,854	390,140

Please note: Only fill the "Yearly" table if data is not available or cannot be calculated nor estimated on a monthly basis

Yearly	Method M/C/E	Runtime days/year	Runtime hrs/day	Downtime hrs	Total runtime hrs/year	Average Inlet Pressure (mbg)	Average Inlet Temp ° C	Average Flow Rate m ³ /hr	Average CH ₄ %v/v	Average CO ₂ %v/v	Average O ₂ %v/v	Combustion efficiency (%)	Total CH ₄ m ³	Total CH ₄ kgs
2017					0		10					98.0	0	0

8.8 PRTR Returns for 2016



Environmental Protection Agency

[Guidance to completing the PRTR workbook](#)

PRTR Returns Workbook

Version 1.1.19

REFERENCE YEAR	2017
-----------------------	------

1. FACILITY IDENTIFICATION

Parent Company Name	Clare County Council
Facility Name	Inagh Landfill
PRTR Identification Number	W0109
Licence Number	W0109-02

Classes of Activity

No.	class_name
-	Refer to PRTR class activities below

Address 1	Ballyduff Beg
Address 2	Inagh
Address 3	
Address 4	
	Clare
Country	Ireland
Coordinates of Location	-9.14882 52.5393
River Basin District	IEGBNISH
NACE Code	3821
Main Economic Activity	Treatment and disposal of non-hazardous waste
AER Returns Contact Name	Maeve Ryan/Maire Rutledge
AER Returns Contact Email Address	mryan@clarecoco.ie
AER Returns Contact Position	facility manager/scientific support
AER Returns Contact Telephone Number	065 6846359/065 6846561
AER Returns Contact Mobile Phone Number	
AER Returns Contact Fax Number	
Production Volume	0.0
Production Volume Units	
Number of Installations	0
Number of Operating Hours in Year	0
Number of Employees	6
User Feedback/Comments	Variations in LFG parameters most likely due to the fact that TA Luft organics are required to be analysed only once per annum. Results are normally close to detection limits. With these low levels and a low monitoring frequency, variation in results can be
Web Address	

2. PRTR CLASS ACTIVITIES

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

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

Is it applicable?	No
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) ?	
--	--

4.1 RELEASES TO AIR

[Link to previous years emissions data](#)

| PRTR#: W0109 | Facility Name : Inagh Landfill | Filename : W0109_2017 (1).xls | Return Year : 2017 |

28/03/2018 12:23

SECTION A : SECTOR SPECIFIC PRTR POLLUTANTS

POLLUTANT		METHOD		Please enter all quantities in this section in KGs				
No. Annex II	Name	M/C/E	Method Used		ADD EMISSION POINT		QUANTITY	
			Method Code	Designation or Description	Emission Point 1	T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) KG/Year
03	Carbon dioxide (CO2)	M	OTH		889369.0	889369.0	0.0	0.0
02	Carbon monoxide (CO)	M	EN 15058:2004		16.7	16.7	0.0	0.0
01	Methane (CH4)	M	OTH		11944.0	11944.0	0.0	0.0
08	Nitrogen oxides (NOx/NO2)	M	EN 14792:2005		103.68	103.68	0.0	0.0
					0.0	0.0	0.0	0.0

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

SECTION B : REMAINING PRTR POLLUTANTS

POLLUTANT		METHOD		Please enter all quantities in this section in KGs				
No. Annex II	Name	M/C/E	Method Used		ADD EMISSION POINT		QUANTITY	
			Method Code	Designation or Description	Emission Point 1	T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) KG/Year
84	Fluorine and inorganic compounds (as HF)	M	ISO/DIS 15713:2004		0.59	0.59	0.0	0.0
					0.0	0.0	0.0	0.0

ADD NEW ROW DELETE ROW * * 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)

POLLUTANT		METHOD		Please enter all quantities in this section in KGs				
Pollutant No.	Name	M/C/E	Method Used		ADD EMISSION POINT		QUANTITY	
			Method Code	Designation or Description	Emission Point 1	T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) KG/Year
319	Inorganic acids	M	EN 1911-1 to 3:2003		1.03	1.03	0.0	0.0
230	TA Luft organic substances class 1	M	EN 13649:2001		2.38	2.38	0.0	0.0

ADD NEW ROW DELETE ROW * * 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: Please enter summary data on the quantities of methane flared and / or utilised	Inagh Landfill				
	T (Total) kg/Year	M/C/E	Method Code	Designation or Description	Facility Total Capacity m3 per hour
Total estimated methane generation (as per site model)	402084.0	E	OTH	Gassim Lite 1.5	N/A
Methane flared	390140.0	M	OTH	Online	0.0 (Total Flaring Capacity)
Methane utilised in engine/s	0.0				0.0 (Total Utilising Capacity)
Net methane emission (as reported in Section A above)	11944.0	C	OTH	Subtraction	N/A

5. ONSITE TREATMENT & OFFSITE TRANSFERS OF WASTE

[PRTR# : W0109 | Facility Name : Inagh Landfill | Filename : W0109_2017 (1).xls | Return Year : 2017]

28/03/2018 12:23

Please enter all quantities on this sheet in Tonnes

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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	13 02 08	Yes	4.94	other engine, gear and lubricating oils	R9	M	Weighed	Offsite in Ireland	Erva,W0184-01	Clonminan Industrial Estate,Portlaoise,County Laoise,,Ireland	Erva,W0184-01	Clonminan Industrial Estate,Portlaoise,County Laoise,,Ireland	
Within the Country	15 01 01	No	46.68	paper and cardboard packaging	R3	M	Weighed	Offsite in Ireland	Clean Ireland,W0253-01	Clonminan Industrial Estate,Portlaoise,County Laoise,,Ireland	Erva,W0184-01	Clonminan Industrial Estate,Portlaoise,County Laoise,,Ireland	
Within the Country	15 01 02	No	19.38	plastic packaging	R3	M	Weighed	Offsite in Ireland	Clean Ireland,W0253-01	Cree,Kilrush,County Clare,,Ireland	Erva,W0184-01	Clonminan Industrial Estate,Portlaoise,County Laoise,,Ireland	
Within the Country	15 01 04	No	8.64	metallic packaging, steel cans	R4	M	Weighed	Offsite in Ireland	Waste,WFP/CE/08/0002/01	Clonminan Industrial Estate,Portlaoise,County Laoise,,Ireland	Erva,W0184-01	Clonminan Industrial Estate,Portlaoise,County Laoise,,Ireland	
Within the Country	15 01 04	No	0.66	metallic packaging, aluminium cans	R4	M	Weighed	Offsite in Ireland	Mr Binman,W0061-03	Luddenmore,Grange,Kilmallock,County Limerick,Ireland	Erva,W0184-01	Clonminan Industrial Estate,Portlaoise,County Laoise,,Ireland	
Within the Country	15 01 05	No	1.96	composite packaging	R3	M	Weighed	Offsite in Ireland	Clean Ireland,W0253-01	Clonminan Industrial Estate,Portlaoise,County Laoise,,Ireland	Erva,W0184-01	Clonminan Industrial Estate,Portlaoise,County Laoise,,Ireland	
Within the Country	15 01 07	No	27.18	glass packaging	R5	M	Weighed	Offsite in Ireland	Mr Binman,W0061-03	Clonminan Industrial Estate,Portlaoise,County Laoise,,Ireland	Erva,W0184-01	Clonminan Industrial Estate,Portlaoise,County Laoise,,Ireland	
Within the Country	16 01 07	Yes	0.355	oil filters	R9	M	Weighed	Offsite in Ireland	Erva,W0184-01 Rifta Environmental Ltd,W0192-03,Block 402 Grant's Drive,Greenogue Business Park Rathcoole,County Dublin,,Ireland	Erva,W0184-01 HJ Enthoven & Sons ,BL5598IR,Darley dale Smelter,South Darley,Matlock Derbyshire,DE4 2LP,United Kingdom	Erva,W0184-01	Clonminan Industrial Estate,Portlaoise,County Laoise,,Ireland	
To Other Countries	16 06 01	Yes	2.0	lead batteries	R4	M	Weighed	Abroad	Electrical Waste Management,WFP DS-09001201,Ireland Jordanstown Drive,Greenogue Industrial Estate,Rathcoole,County Dublin,Ireland	Recypilas,.....,Bilbao,,Spain,United Kingdom	
To Other Countries	16 06 04	No	2.567	alkaline batteries (except 16 06 03)	R4	M	Weighed	Abroad	Lisdoonvarna Wastewater Treatment plant, D0077-01	Knocknagulla,Lisdoonvarna,County Clare,0,Ireland	Recypilas,.....,Bilbao,,Spain,United Kingdom	
Within the Country	19 07 03	No	4115.93	landfill leachate other than those mentioned in 19 07 02	D8	M	Weighed	Offsite in Ireland	Sixmilebridge WWTP,D0076-01	Sixmilebridge,County Clare,,Ireland	Erva,W0184-01	Clonminan Industrial Estate,Portlaoise,County Laoise,,Ireland	
Within the Country	19 07 03	No	1748.98	landfill leachate other than those mentioned in 19 07 02	D8	M	Weighed	Offsite in Ireland	Limerick Main Drainage WWTP,D0013-01	Bunlicky,,Limerick,,Ireland	Erva,W0184-01	Clonminan Industrial Estate,Portlaoise,County Laoise,,Ireland	
Within the Country	19 07 03	No	2364.58	landfill leachate other than those mentioned in 19 07 02	D8	M	Weighed	Offsite in Ireland	WWTP,D0013-01	Bunlicky,,Limerick,,Ireland	Erva,W0184-01	Clonminan Industrial Estate,Portlaoise,County Laoise,,Ireland	
Within the Country	20 01 01	No	65.55	paper and cardboard	R3	M	Weighed	Offsite in Ireland	Clean Ireland,W0253-01	Clonminan Industrial Estate,Portlaoise,County Laoise,,Ireland	Erva,W0184-01	Clonminan Industrial Estate,Portlaoise,County Laoise,,Ireland	
Within the Country	20 01 02	No	25.26	glass	R5	M	Weighed	Offsite in Ireland	Tullagower Quarries Ltd,004/08/WPT/CL	Clonminan Industrial Estate,Portlaoise,County Laoise,,Ireland	Erva,W0184-01	Clonminan Industrial Estate,Portlaoise,County Laoise,,Ireland	
To Other Countries	20 01 11	No	9.78	textiles	R3	M	Weighed	Abroad	Alltex Recyclers Limited 1 Ballycragh Road Cloughmills Ballymena BT44 9LB Licence WMEX 04/12,WMEX 04/12	1 Ballycragh Rd ,Cloughmills,Ballymena,BT44 9LB,United Kingdom	Erva,W0184-01	Clonminan Industrial Estate,Portlaoise,County Laoise,,Ireland	
Within the Country	20 01 21	Yes	0.48	fluorescent tubes and other mercury-containing waste	R4	M	Weighed	Offsite in Ireland	KMK Metals,W0113/03	Dangan Road,Tullamore,County Offaly,,Ireland	Irish Lamp Recycling Company Ltd,WFP-KE-140072-01,Woodstock Industrial Estate,Athy,County Kildare,,Ireland	Erva,W0184-01	Clonminan Industrial Estate,Portlaoise,County Laoise,,Ireland
To Other Countries	20 01 23	Yes	11.583	discarded equipment containing chlorofluorocarbons	R4	M	Weighed	Abroad	Electrical Waste Management,WFP DS-09001201	Jordanstown Drive,Greenogue Industrial Estate,Rathcoole,County Dublin,Ireland	European Metal Recycling Ltd,,Bentley Road South,Darlaston,WS10 8LW,West Midlands,United Kingdom	Erva,W0184-01	Clonminan Industrial Estate,Portlaoise,County Laoise,,Ireland
Within the Country	20 01 25	No	0.08	edible oil and fat	R9	M	Weighed	Offsite in Ireland	Fritite,IEWCP-DC-10-1297	Clonminan Industrial Estate,Portlaoise,County Laoise,,Ireland	Erva,W0184-01	Clonminan Industrial Estate,Portlaoise,County Laoise,,Ireland	
Within the Country	20 01 28	No	24.44	paint, inks, adhesives and resins other than those mentioned in 20 01 27	R1	M	Weighed	Offsite in Ireland	Erva,W0184-01	Clonminan Industrial Estate,Portlaoise,County Laoise,,Ireland	Erva,W0184-01	Clonminan Industrial Estate,Portlaoise,County Laoise,,Ireland	
Within the Country	20 01 35	Yes	23.296	discarded electrical and electronic equipment other than those mentioned in 20 01 21 and 20 01 23 containing hazardous components	R4	M	Weighed	Offsite in Ireland	The Recycling Village,,Unit 21,Duleek Business Park,Commons,Duleek Meath,Ireland,Ireland Jordanstown Drive,Greenogue Industrial Estate,Rathcoole,County Dublin,Ireland	Erva,W0184-01	Clonminan Industrial Estate,Portlaoise,County Laoise,,Ireland	
To Other Countries	20 01 36	No	66.681	discarded electrical and electronic equipment other than those mentioned in 20 01 21, 20 01 23 and 20 01 35	R4	M	Weighed	Abroad	Electrical Waste Management,WFP DS-09001201	Jordanstown Drive,Greenogue Industrial Estate,Rathcoole,County Dublin,Ireland	Erva,W0184-01	Clonminan Industrial Estate,Portlaoise,County Laoise,,Ireland	
Within the Country	20 01 38	No	189.84	wood other than that mentioned in 20 01 37	R3	M	Weighed	Offsite in Ireland	Clean Ireland,W0253-01	Cree,Kilrush,County Clare,,Ireland	Erva,W0184-01	Clonminan Industrial Estate,Portlaoise,County Laoise,,Ireland	
Within the Country	20 01 39	No	53.62	plastics	R3	M	Weighed	Offsite in Ireland	Mr Binman,W0061-03	Luddenmore,Grange,Kilmallock,County Limerick,Ireland	Erva,W0184-01	Clonminan Industrial Estate,Portlaoise,County Laoise,,Ireland	
Within the Country	20 01 40	No	173.56	metals	R4	M	Weighed	Offsite in Ireland	United Metals,NWCPO-10-05657-01	Eastway Recycling Park,Ballysimon,Limerick,,Ireland	Erva,W0184-01	Clonminan Industrial Estate,Portlaoise,County Laoise,,Ireland	
Within the Country	20 03 01	No	917.34	mixed municipal waste	D1	M	Weighed	Offsite in Ireland	Clean Ireland,W0253-01	Clonminan Industrial Estate,Portlaoise,County Laoise,,Ireland	Erva,W0184-01	Clonminan Industrial Estate,Portlaoise,County Laoise,,Ireland	
Within the Country	20 03 07	No	0.0	blank row, cant delete	R4	M	Weighed	Offsite in Ireland	Clean Ireland,W0253-01	Clonminan Industrial Estate,Portlaoise,County Laoise,,Ireland	Erva,W0184-01	Clonminan Industrial Estate,Portlaoise,County Laoise,,Ireland	
Within the Country	20 03 07	No	28.82	bulky waste	R4	M	Weighed	Offsite in Ireland	Clean Ireland,W0253-01	Clonminan Industrial Estate,Portlaoise,County Laoise,,Ireland	Erva,W0184-01	Clonminan Industrial Estate,Portlaoise,County Laoise,,Ireland	