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

2015

Prepared by: Environment section, Clare County Council.

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2. INTRODUCTION

2.1 Background

The Environmental Protection Agency granted Clare County Council a Waste Licence for the Central Waste Management Facility (CWMF) located at Ballyduff Beg, Inagh, County Clare, 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 an interim basis 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 2015.

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 a total of 3,370t of garden green waste from landfill between 2006 and the end of 2015. 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 937.8 tonnes of residual waste was accepted from householders in 2015, 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 aerated static pile technique to process domestic green waste received directly in the CWMF CA site and also green waste brought from Lisdeen, Ennis and Shannon CA sites. Exhaust air from the aerated static pile 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 3,370 tonnes of green waste has been recovered to date. The compost product is used mainly as a soil conditioner within the site.

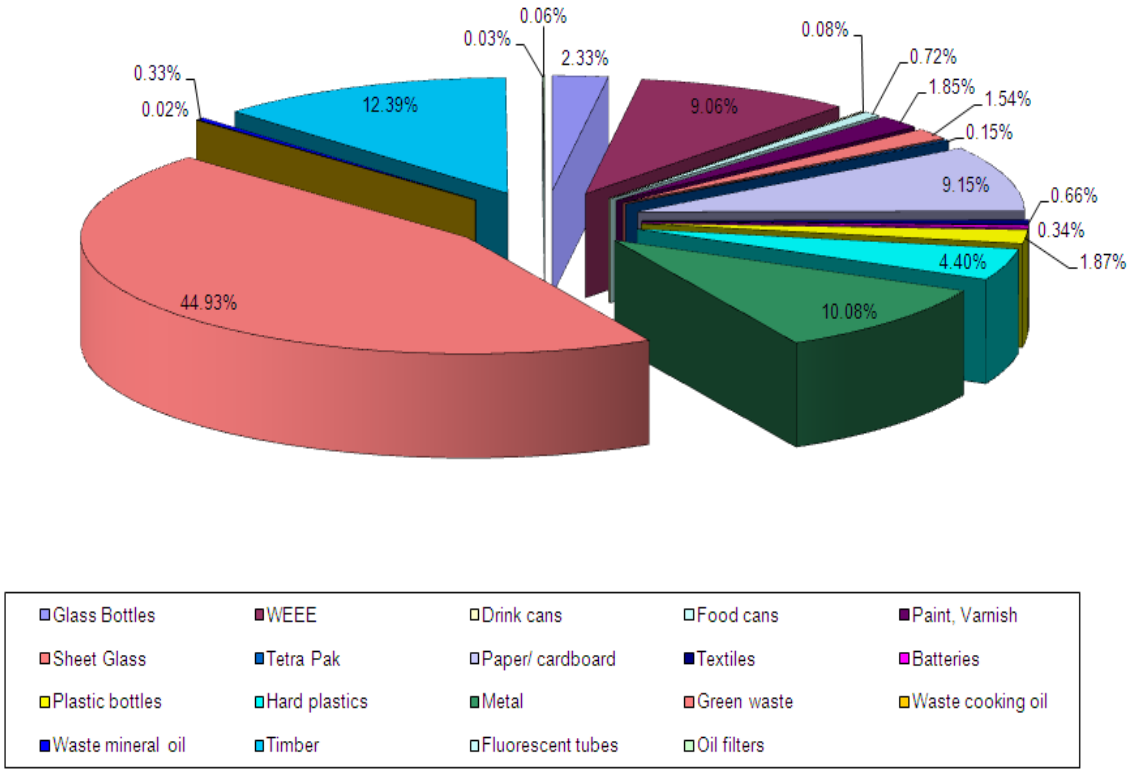
Hard plastics have been accepted at the facility for recovery since mid 2008.

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 2015

Material	Quantity	Material	Quantity	Material	Quantity
Glass Bottles	28.22	Textiles	8.02	Waste mineral oil	3.96
WEEE	109.8	Batteries (all)	4.06	Timber	150.1
Food cans	8.72	Plastic bottles	22.69	Fluorescent tubes	0.34
Beverage cans	1.00	Hard plastics	53.3	Oil filters	0.70
Sheet Glass	18.68	Metal	122.04	Paint, Varnish	22.42
Tetra Pak	1.86	Green waste	544	**Total (tonnes)**	**1211**
Paper/ cardboard	110.82	Waste cooking oil	0.24		

Figure 3.1: Quantity of Household Material Recycled/Recovered during 2015 (percentage by weight)

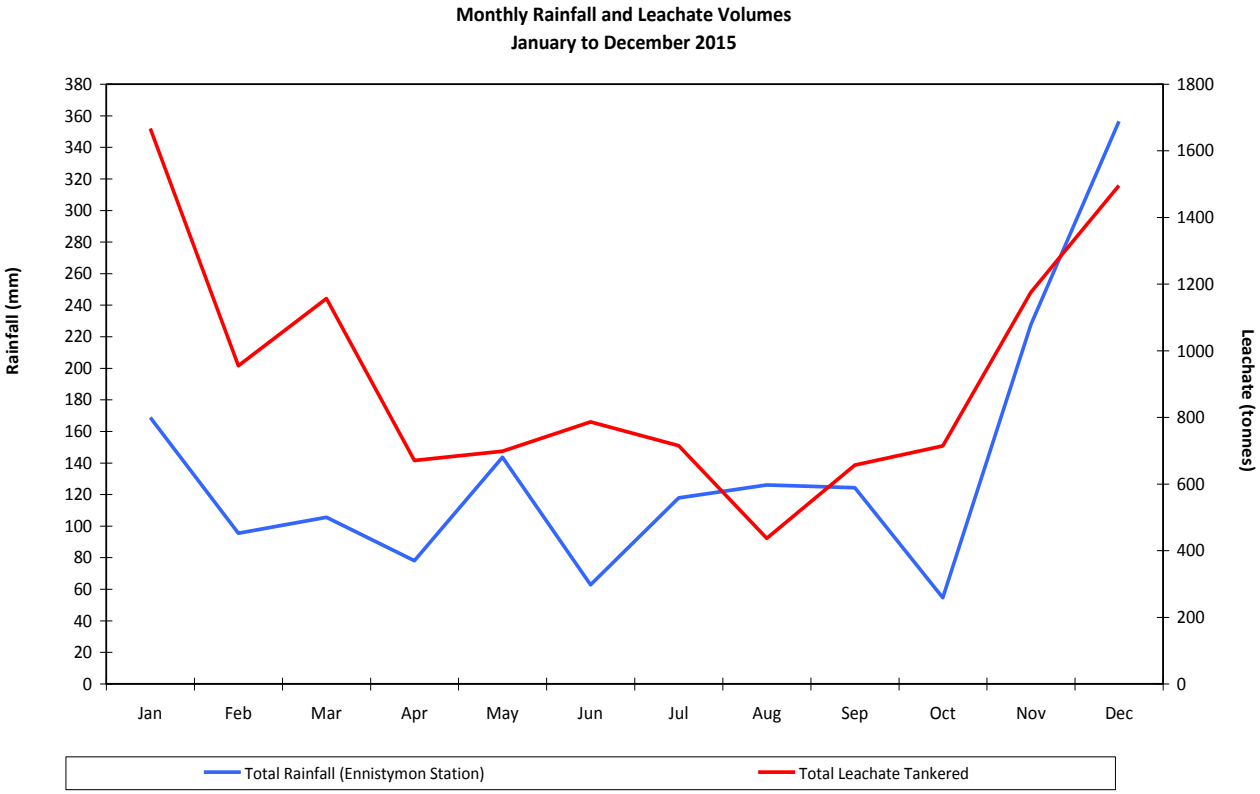


3.4 Leachate Quantities/Water Mass Balance.

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 2015 was Martin Ryan Transport.

A total of 11,126 tonnes of leachate was transported off site during 2015. The quantities moved each month are graphed against monthly rainfall in figure 3.2 below. Estimated effective rainfall is also shown on the graph (calculated using Met Eireann rainfall data for Ennistymon and PE data for Shannon). Although transpiration rates would be zero for unvegetated areas such as concrete and lined side slopes, some reduction in rainfall volumes would be expected due to evaporation during summer months.

Fig. 3.2: Monthly Rainfall and Leachate Levels, 2015:



As expected for this site, leachate levels are closely linked to rainfall. In 2015, as the graph shows, leachate levels rose in the last quarter, when rainfall levels were very high.

Annual leachate and rainfall volumes from 2003 to 2015 are shown below in figures 3.3 and 3.4. The graphs show that the volume of leachate increased with the development of new landfill cells up to 2008/2009. Volumes reduced after 2009 in part due to lower annual rainfall and also as a result of the 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 will be investigated in 2016 to reduce volumes of civic amenity site runoff discharging to the leachate management system.

Fig: 3.3: Annual Leachate Tonnages (2003 to 2015)

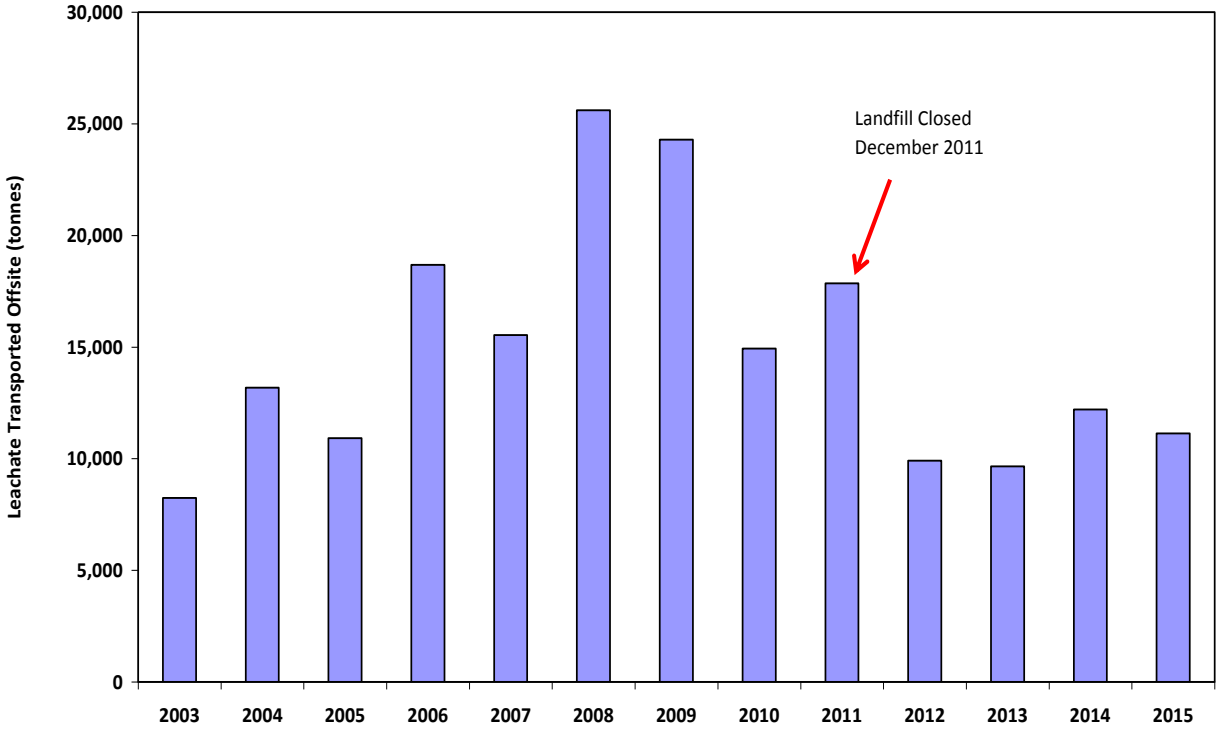
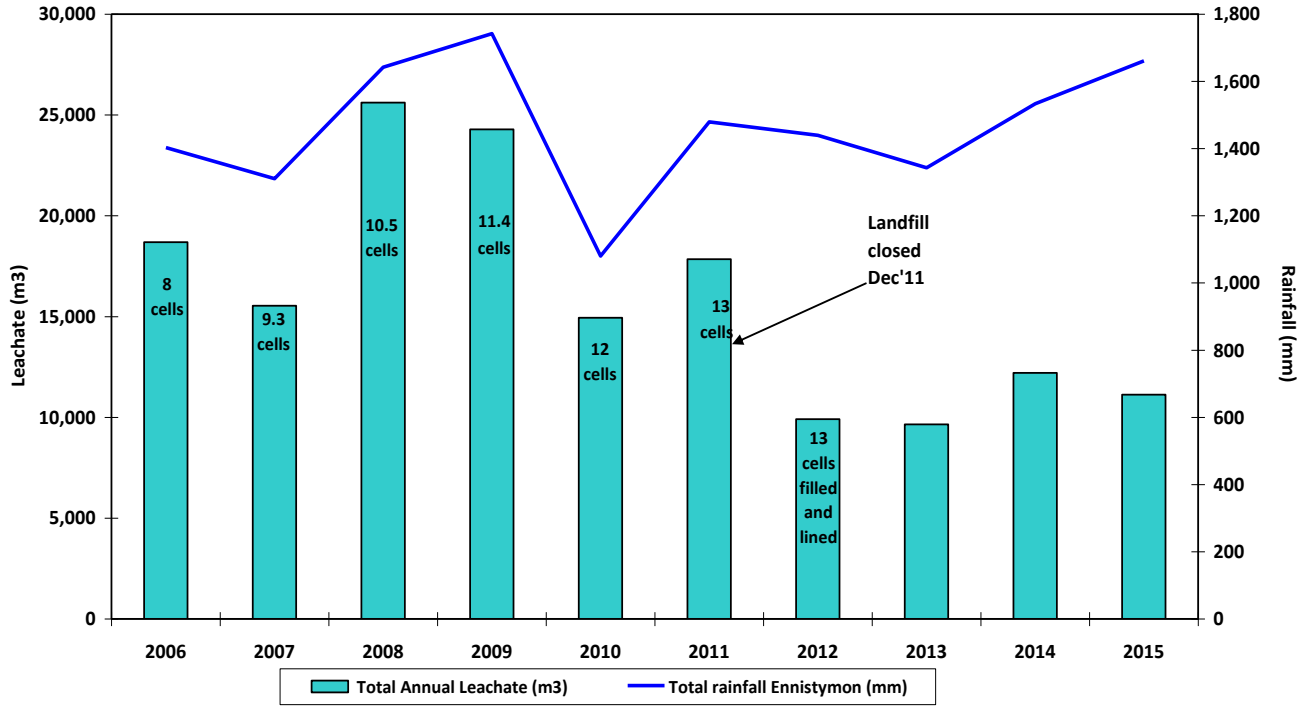


Figure 3.4: Summary of Annual Leachate and Rainfall Volumes, 2006 to 2015
(No. of cells filled or part-filled by end of each year is also shown on graph)



A monthly water balance calculation for the site is attached in Appendix 8.2. This calculation gives a theoretical leachate volume of 11,265m^3 (tonnes) for 2015 based on a total rainfall figure of 1,661mm from Ennistymon Rainfall Station (effective rainfall estimated at 1097mm using Shannon PE data). The actual

leachate volume tankered offsite in 2015 was 11,126 tonnes, which is very close to the calculated estimate. The water balance calculation assumes an infiltration rate of 10% over capped areas. This assumption is supported by the leachate volumes moved during the year.

3.5 Landfill Gas Management, January to December 2015

During 2015, a total of 387,408kg of methane was flared in the site enclosed flare 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). All gas extraction has been via capped cells since lining works on the last cell (cell 13) were completed in mid-January 2012. The final gas piping arrangement was in place by August 2012, on completion of earthworks on the cell 13 top slope. Gas is drawn around the site via a ring main system. Five manifolds are in place for measuring gas well levels and controlling suction for cells 1 to 11. The method of measurement and control was changed for cell 12 and 13 wells, with the manifold system replaced by a system of separate control valves at each well.

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 must be 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 7.3 hours during the year, mainly due to essential servicing/maintenance. The service company used is Irish Biotech Systems Ltd (IBSL).

An application was submitted to ESB Networks during 2009 for a grid connection for an engine with the total generating capacity of 1MW. A connection agreement offer was received in 2010, with a cost of close to 1m euro. The high cost of the grid connection and the early closure of the landfill made this proposal economically non-viable.

3.6 Resource and Energy Consumption Summary

Resource and energy consumption figures for plant/equipment used during 2015 are outlined below:

TABLE 3.2: RECORDED DIESEL CONSUMPTION IN 2015

Plant/Machinery	Unit	Quantity
Generator/pumps/miscellaneous (diesel in cans)	litres	70
JCB	litres	1,664
Tractors	litres	1,709
CCC Site Vehicle (Toyota Pick-up)	litres	780.5
Total amount of Diesel Consumed:	litres	4,223.5

Diesel consumption figures are based on Council machinery yard records.

Electricity consumption was 82,650kWh for the reporting period January to December 2015. Please note that there was an error in the reported consumption figure for 2014. Wattless usage was added in error to the total figure.

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 2015. 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 SNC Lavelin. Conservation Services assessed biological quality of surface waters. Biannual monitoring of flare stack emissions was carried out by Air Scientific subcontracted to SNC Lavelin. Environmental monitoring locations are shown in Drawing No. 1, attached in Appendix 8.5.

4.2 Landfill Gas Monitoring

See also 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 on a weekly basis throughout the year. Results were submitted to the Agency in monthly reports via EDEN. As for previous years, methane levels at a number of the 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 been carried out which confirm 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)	29/04/15	12/08/15	Emission Limit
Nitrogen Oxides (NO_x) as NO_2 (mg/Nm^3)	97.62	104.41	150 mg/m^3 for Flare Stacks
Carbon Monoxide (CO) (mg/Nm^3)	5.59	6.24	50 mg/m^3 for Flare Stacks
Sulphur Dioxide (SO_2) (mg/Nm^3)	34.69	27.31	-
Temperature (^0K)	1,278	1292	>1,273
Total volatile organic carbon (VOC)	4.07	-	-
Flow Rate (from flare data)	204	186	
TA Luft organics (mg/Nm^3)	<1.41	-	20 mg/m^3 (at mass flows >0.1kg/hr)
HCl (mg/Nm^3)	<0.21	-	50 mg/m^3 (at mass flows >0.3kg/hr)
HF (mg/Nm^3)	1.29	-	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 ($mg/m^2/day$)
	22nd April to 26th May 2015	26th May to 24th June 2015	24th June to 19th July 2015	
ST1	250.6	32.4	168.8	350
ST2	125.5	41.8	46.7	350
ST6	42.1	33.3	60.0	350
ST7	137.6	27.6	17.8	350

As can be seen from table 4.3, all results were below the licence limit of 350mg/m^2/day.

PM_{10} 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: PM_{10} MONITORING RESULTS.

Monitoring Location:	**ST1**	**ST2**	**ST6**	**ST7**
Monitoring period:	26^{th} to 27^{th} September 2015			
24 hour average PM_{10}, ug/m^3	<8.7	<8.7	<10.2	10.4

All results were within the licence limit of 50ug/m^3.

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	**26^{th} May 2015**			**21^{st} August 2015**		
	$L_{Aeq,\ 30min}$ 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	58.0	49.7	63.5	58.3	49.8	63.6
NS2	57.9	49.6	63.9	57.7	49.6	63.8
NS3	58.7	50.0	64.2	59.1	50.0	64.5
NS4	52.9	47.8	60.1	53.2	47.9	60.7
NS5	50.9	48.4	55.1	51.3	48.2	55.4
NS6	54.6	49.7	57.9	54.2	49.4	58.1

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:

BOD results for surface water streams and for the Inagh river are graphed in figures 4.1 to 4.4. The surface water environmental quality standard (EQS) for BOD (95%ile) for Good Status waters is shown on the graphs for comparative purposes. The majority of results were below the method detection limit of 1ppm.

Figure 4.1: Surface Water BOD Levels Inagh River

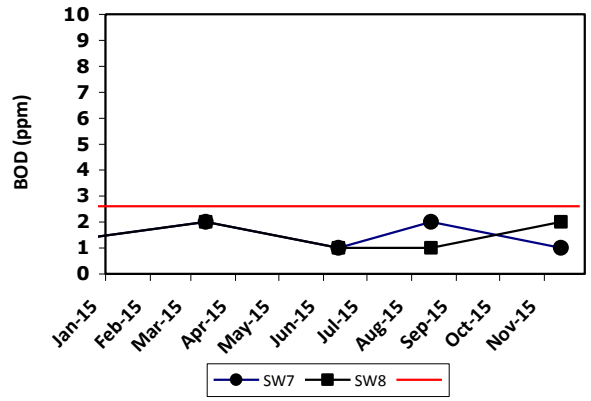


Figure 4.2: Surface Water BOD Levels Inagh River

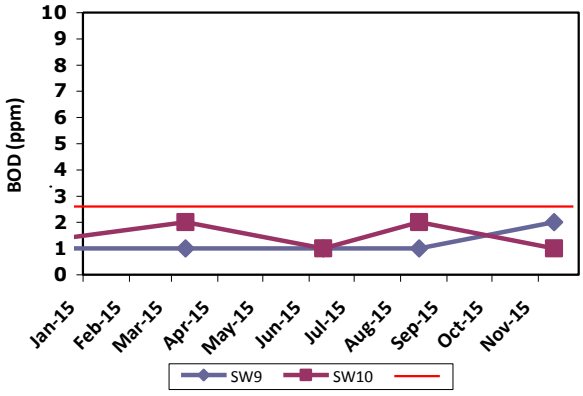


Figure 4.3: Surface Water BOD Levels Stream 1

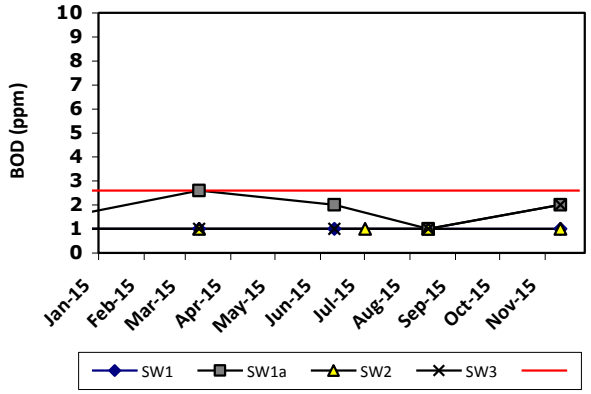
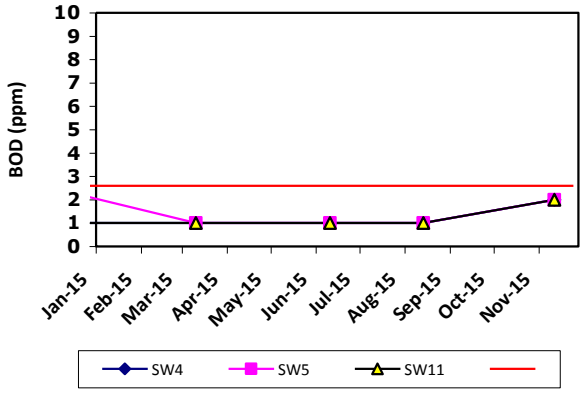


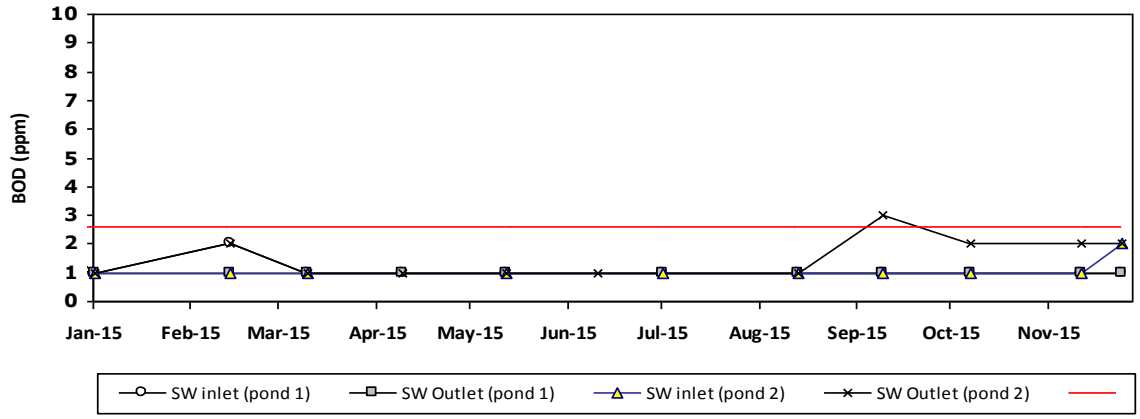
Figure 4.4: Surface Water BOD Levels Streams 2/3



As can be seen from the graphs, surface water BOD results for 2015 were at or below the EQS on all occasions monitored.

BOD results for stormwater pond inlet and outlet samples are graphed in Figure 4.5. All results were below the surface water EQS with the exception of the September 2015 result for the pond 2 outlet, which marginally exceeded the EQS at 3ppm.

Figure 4.5: SW Inlet and Outlet BOD Levels



4.6.1.2 Surface Water Ammonia:

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 Stream 1

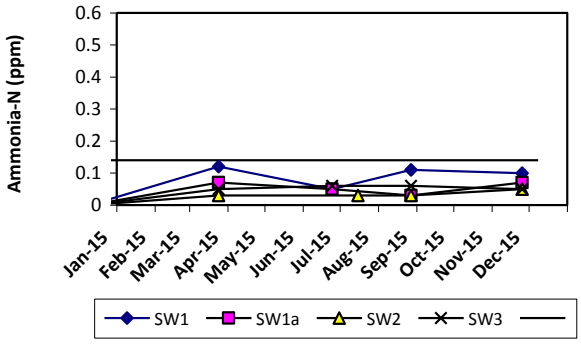


Figure 4.7: Surface Water Ammonia Levels Streams 2/3

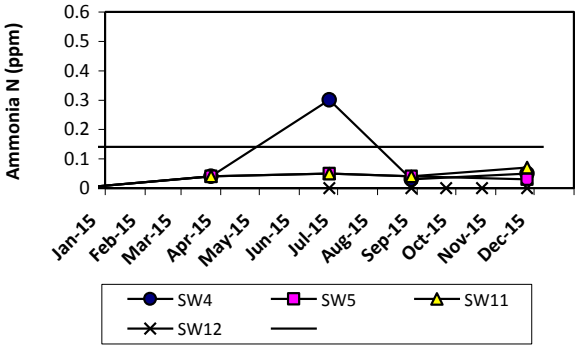


Figure 4.8: Surface Water Ammonia Levels Inagh River, SW7 and SW8

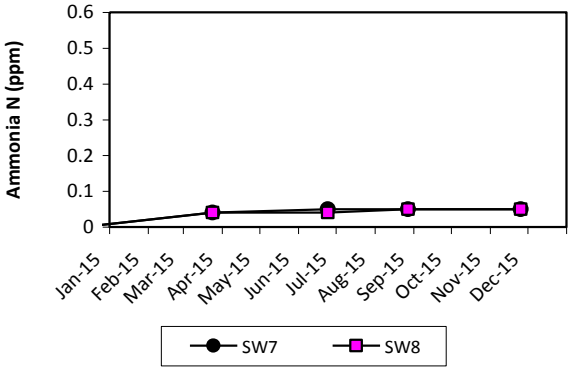
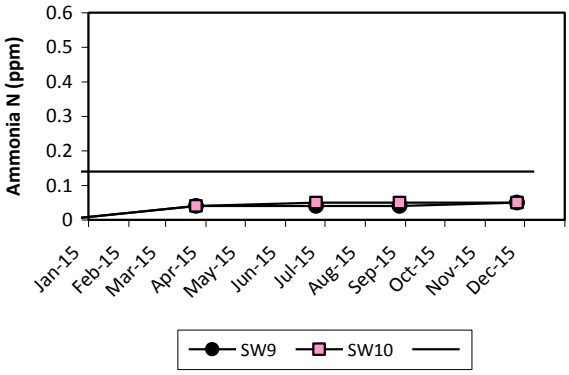


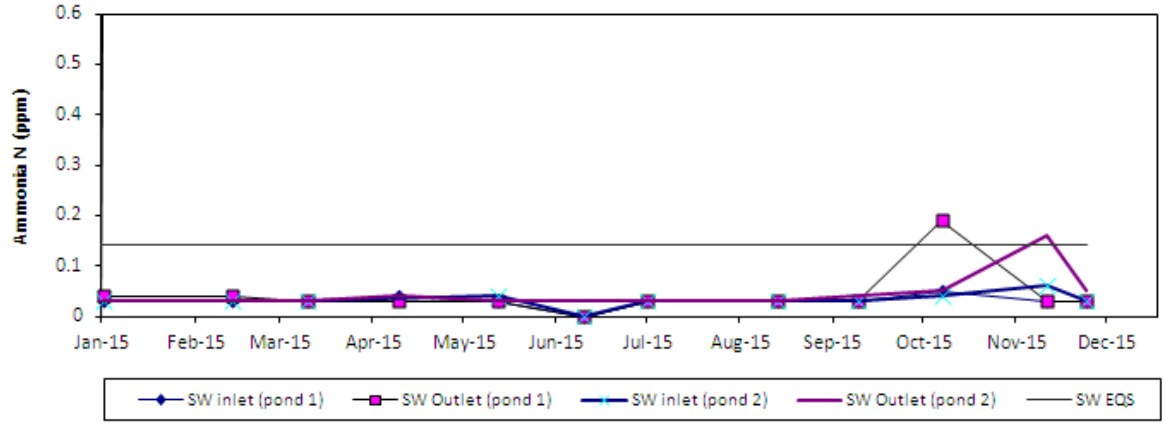
Figure 4.9: Surface Water Ammonia Levels Inagh River, SW9 and SW10



With the exception of one upstream ammonia result for SW4 in June 2015 (0.3ppm), all results were below the surface water ammonia EQS of 0.14ppm (95%ile).

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 stormwater pond samples were below the EQS for good status waters with the exception of an Outlet 1 sample for October 2015 and an Outlet 2 sample for November 2015, both of which marginally exceeded the EQS. All SW Inlet samples were well below the EQS; 64% of inlet results were below the ammonia method detection limit of 0.03ppm.

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 2015 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.

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

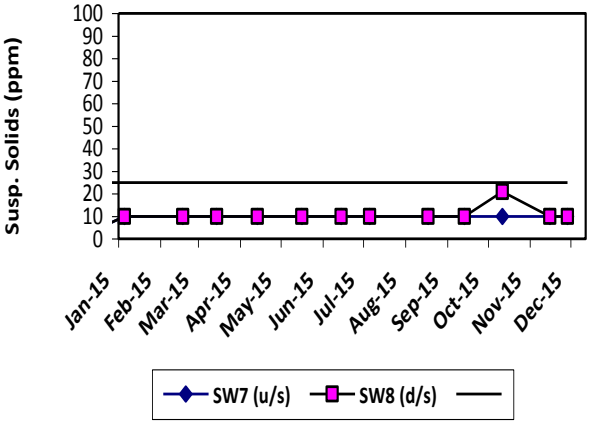
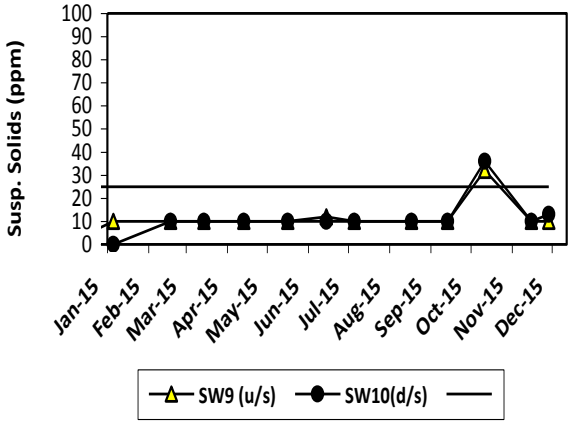


Figure 4.12: Surface Water Suspended Solids Levels
Inagh River, SW9 and SW10



Inagh River suspended solids levels were below the 25ppm Salmonid limit for all samples taken during the year, with the exception of results for SW9 and SW10 (upstream and downstream of the confluence with Stream 1) in October 2015. Similar results were obtained for both samples (32ppm at the upstream location and 36ppm downstream).

Suspended solids results for streams 1, 2 and 3 are shown in figures 4.13 and 4.14 below.

Figure 4.13: Surface Water Suspended Solids Levels Stream 1

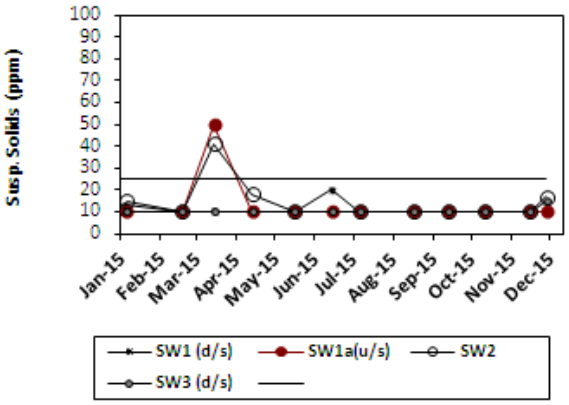
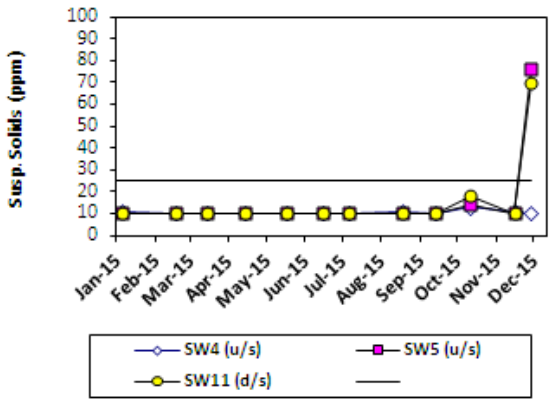


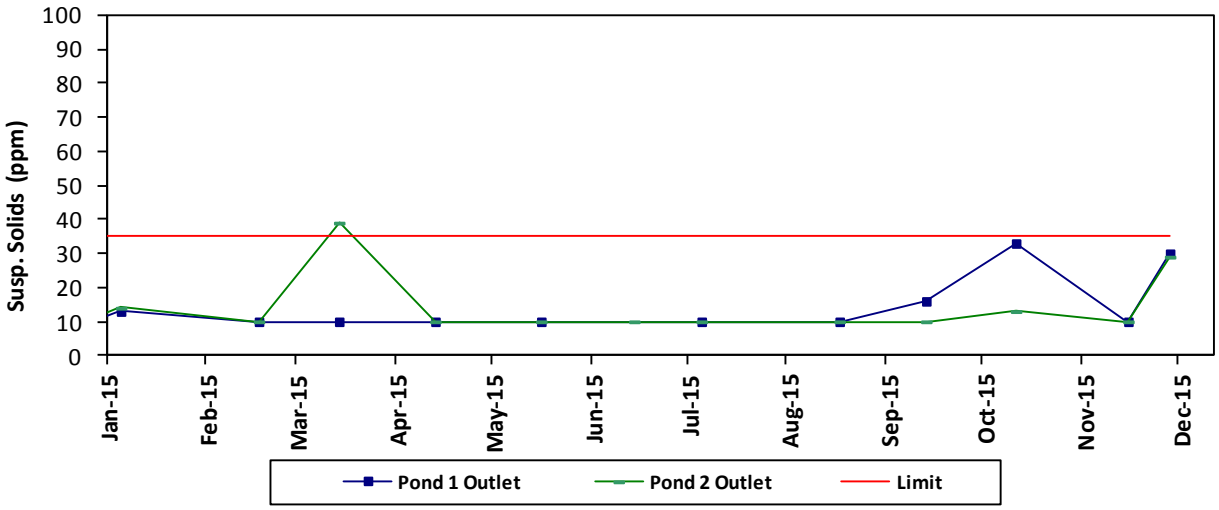
Figure 4.14: Surface Water Suspended Solids Levels Streams 2 and 3



As can be seen from figure 4.13, suspended solids levels in Stream 1 exceeded the Salmonid limit in April 2015 at an upstream location (SW1a) and in a site drain (SW2). All other results for Stream 1 were below 25ppm. Results for Streams 2 and 3 exceeded the 25ppm limit in December 2015 due to an elevated result of 76ppm upstream of the site on Stream 3 (SW5), which caused the downstream result to rise to 70ppm.

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.

Figure 4.15: Stormwater Pond Outlet Suspended Solids Levels



All results were within the 35ppm suspended solids limit with the exception of the pond 2 sample in March 2015, which had a measured suspended solids level of 38ppm, slightly above the 35ppm limit. An incident

report was generated for this exceedence. The elevated result was found to be due to a build-up of sediment on the base of the sample chamber. The sediment became suspended and entrained in the sample when sampling was undertaken during low flow conditions.

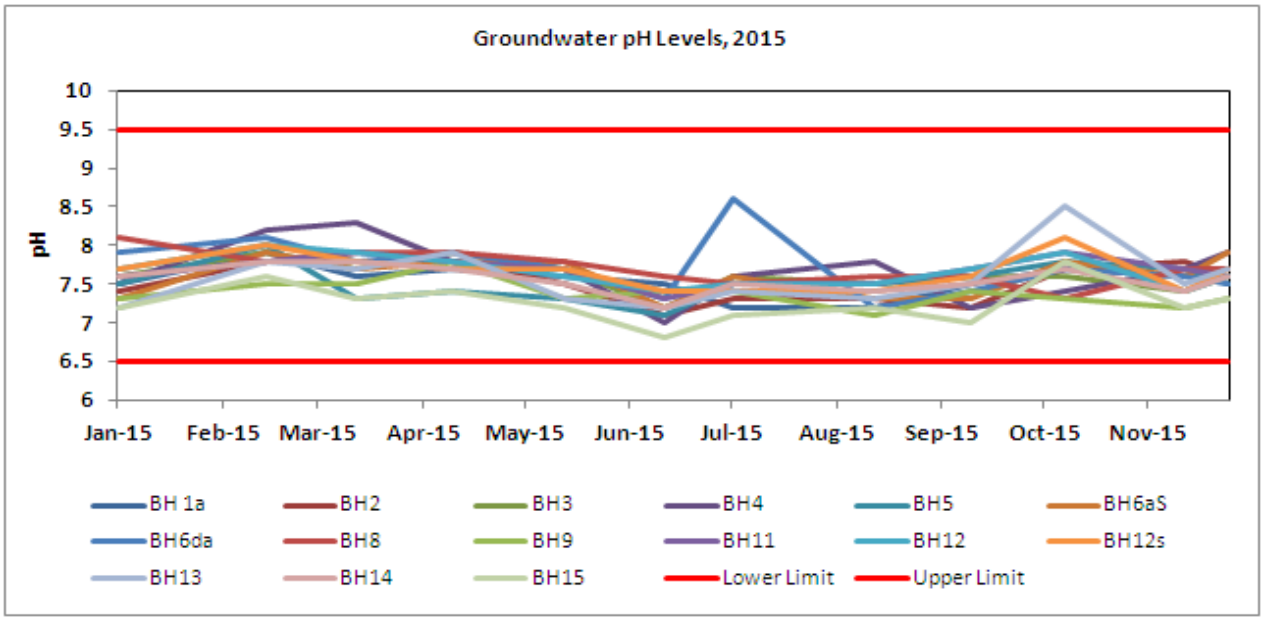
4.6.2 Groundwater

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 2015 as these parameters are monitored once annually.

4.6.2.1 Groundwater pH:

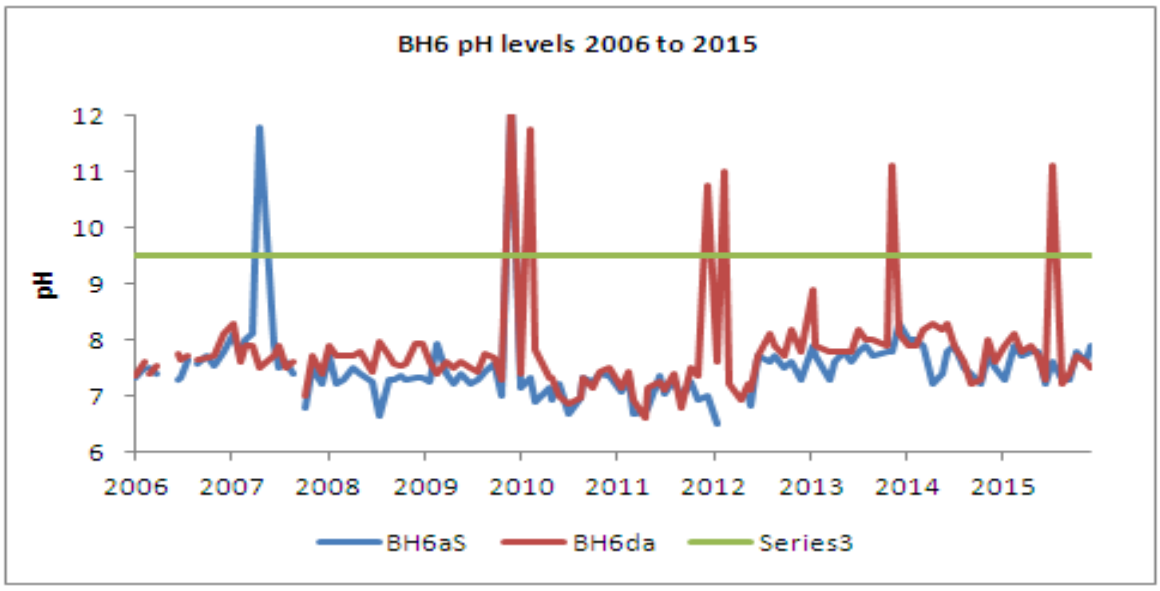
Groundwater pH results from January to December 2015 are graphed below in figure 4.16. The original EPA Interim Guidance Value range for pH (6.5 – 9.5) is shown on the graph for comparative purposes. Limits for pH are not specified in the Groundwater Regulations.

Figure 4.16



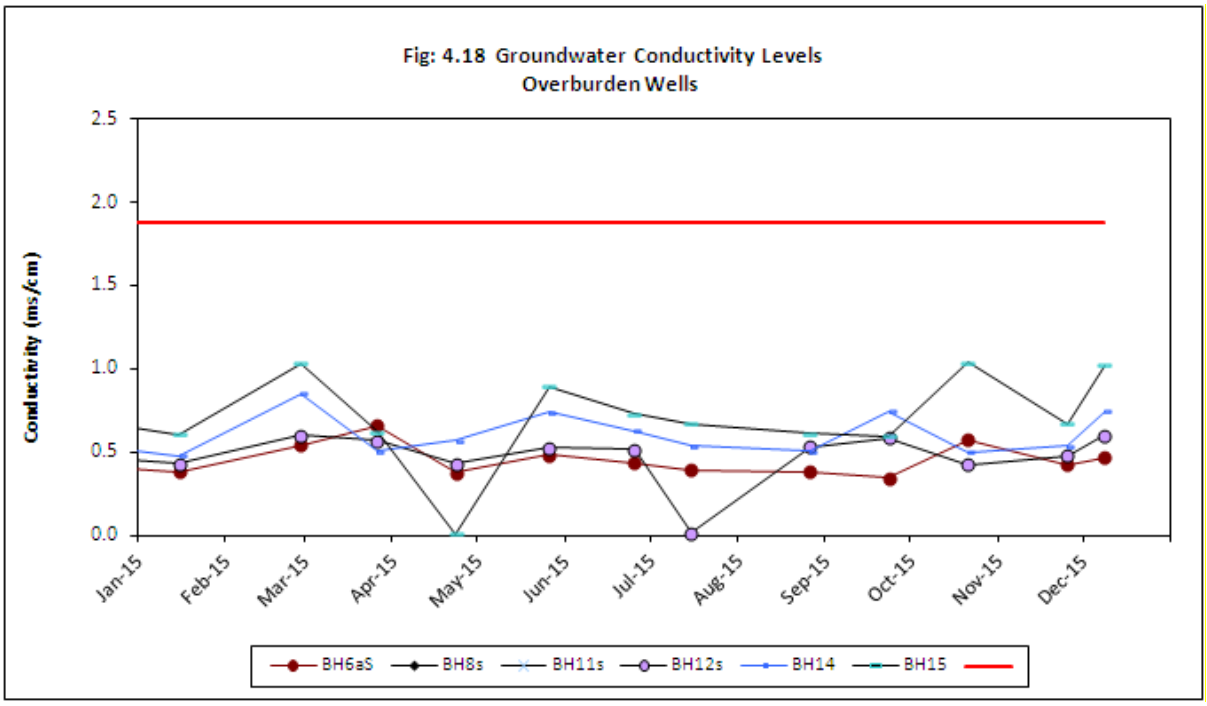
As can be seen from the graph, pH results were within the upper and lower IGVs for all groundwater pH readings taken ***in the field*** during the year. There have been periodic elevated pH results obtained intermittently in the area around BH6, caused by localised lime contamination which occurred prior 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. When these incidents occur, they are reported to the EPA in an incident report. However in July 2015, consultants' monitoring personnel prepared the BH6aD sample for analysis in the UK prior to completing the full well purge and prior to observing stability in groundwater pH results. Monitoring staff then continued to purge the well and took field pH and conductivity measurements on the final groundwater sample. These field measurements were recorded formally for file and for EPA report. However, the UK laboratory also carried out a pH analysis on the incompletely purged sample which they had received, and the result was found to be 11.1. To ensure that all monitoring data is accurately represented in the AER, pH results for this sample are included in the graph below (figure 4.17), which illustrates pH results for BH6aD and BH6aS for the ten year period, 2006 to 2015. As can be seen from the graph below, there have been 7 instances of elevated pH between the two wells in the past ten years of monthly pH monitoring. This problem is localised and intermittent, and is due to slowly moving lime contaminated runoff.

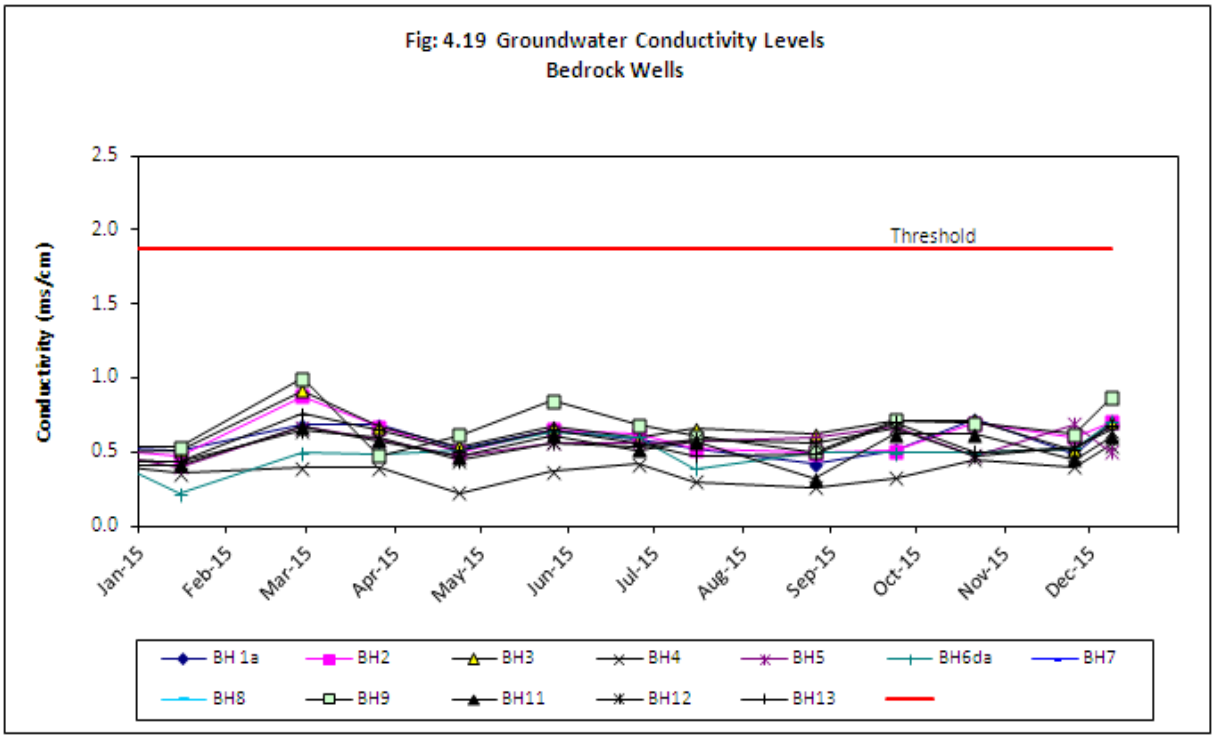
Figure 4.17



4.6.2.2. Groundwater Conductivity:

Groundwater conductivity results for 2015 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 2015.

4.6.2.3 Groundwater Ammonia

Groundwater ammonia results for 2015 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 2015

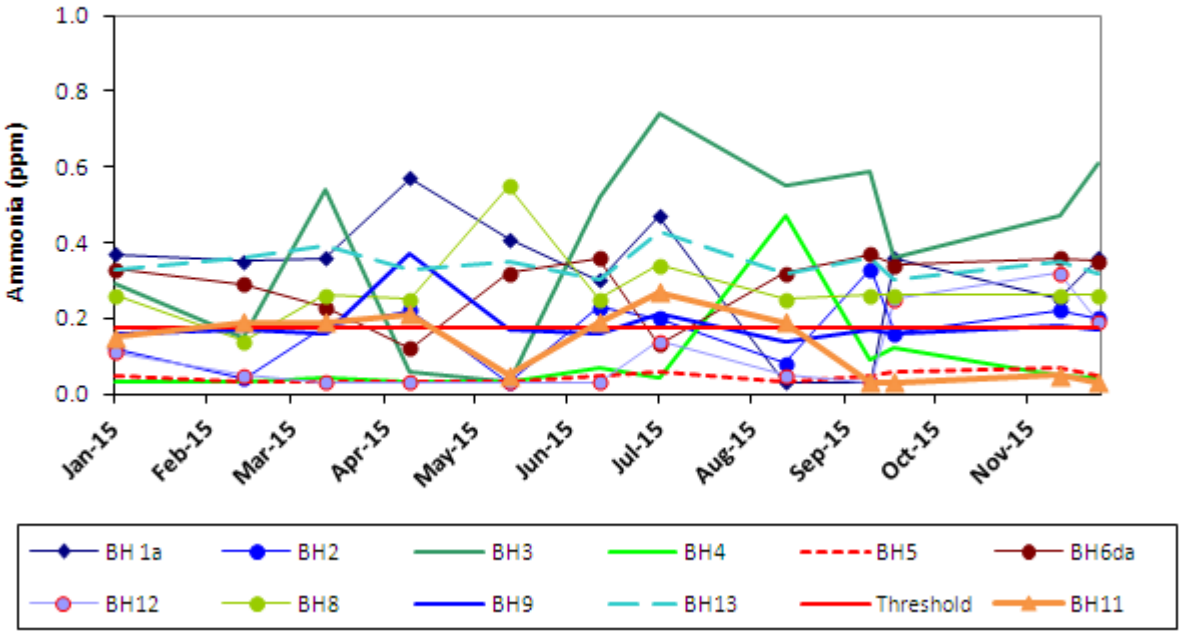
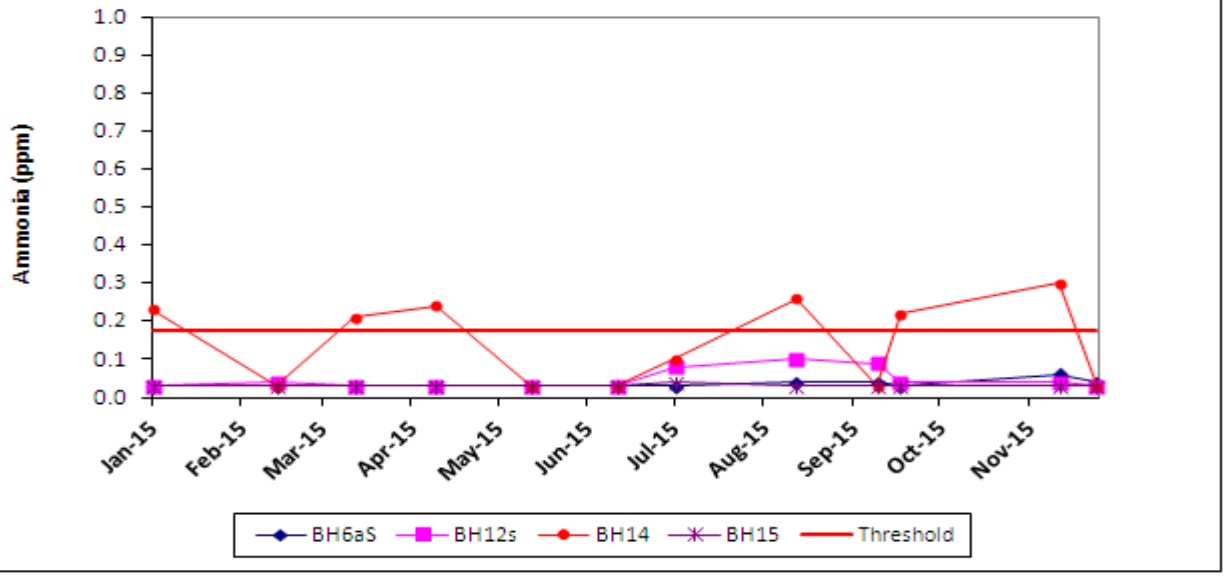


Figure 4.21: Groundwater Ammonia Levels, Overburden Wells
January to December 2015



As can be seen from the graphs, ammonia results were slightly elevated above the groundwater threshold for BH3, BH1A, BH6dA, BH8 and BH13. Ammonia levels were intermittently above the threshold also in BH2, BH4, BH9 (upgradient), BH11 and BH14. Mean results for all wells are shown below in tables 4.6 and 4.7. 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 2015)	0.32	0.17	0.41	0.09	0.05	0.29	0.28	0.19	0.13	0.11	0.35
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	-

Table 4.7: Mean ammonia results for overburden wells.

	BH6s	BH12S	BH14	BH15
Ammonia-N (ppm) (mean 2015)	0.04	0.05	0.14	0.03
Ammonia N (ppm) for Sept'02 GW survey (prior to landfill opening)	-	-	-	-

As can be seen from the tables, mean results for the year for BH1, BH3, BH6D, BH8, BH9 and BH13 exceeded the groundwater threshold of 0.175ppm (from SI 9, 2010). Highest results were observed in BH3 with a mean of 0.41ppm for the year. However, as tables 4.6 and 4.7 show, results are similar to or lower than ammonia levels from 2002, before landfilling commenced 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 2015 are graphed in Figures 4.21 and 4.22. 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 2015

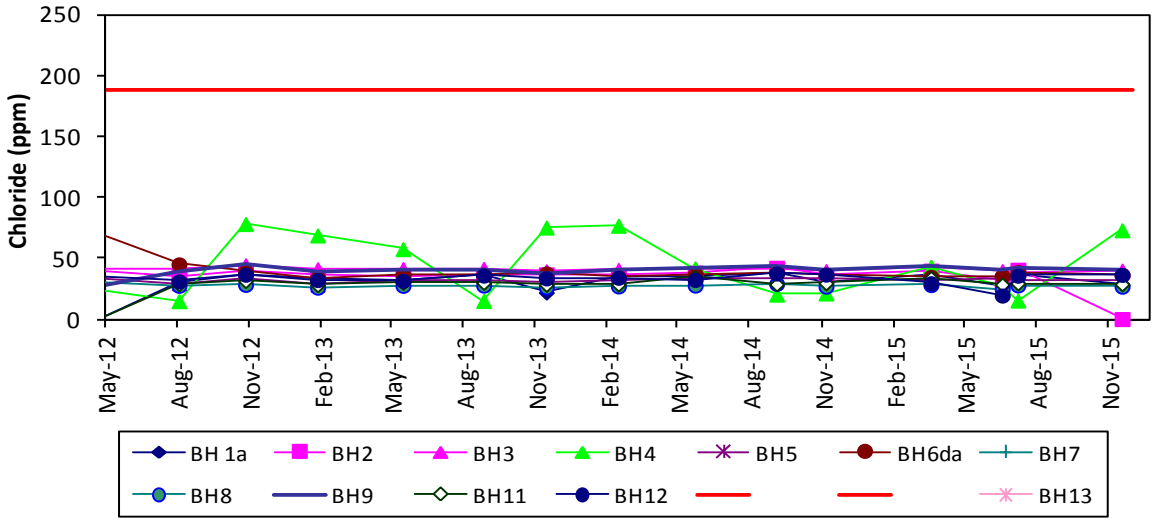
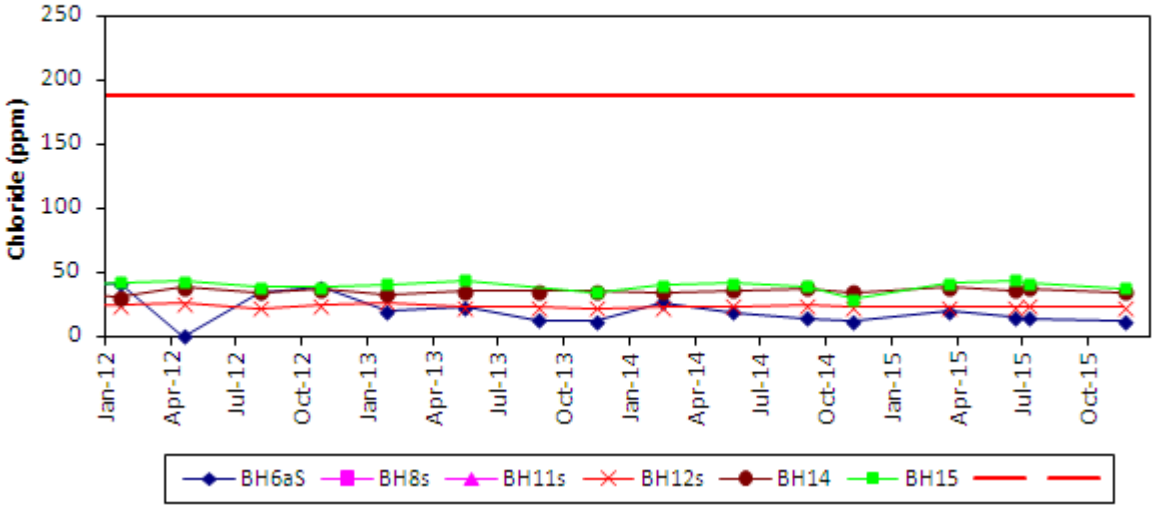


Figure 4.23: Groundwater Chloride Levels
Overburden Wells, 2012 to 2015



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

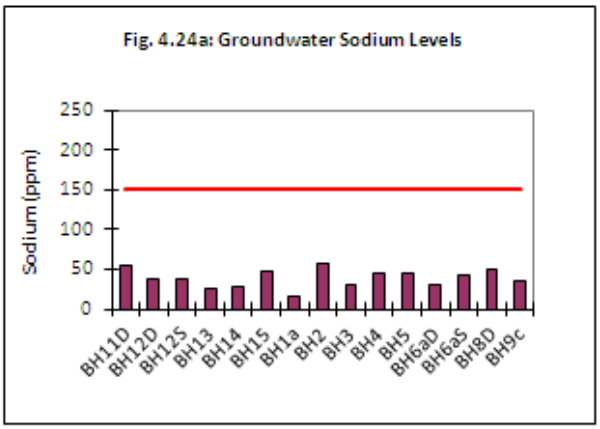
4.6.2.5 Groundwater volatile and semi-volatile organic compounds

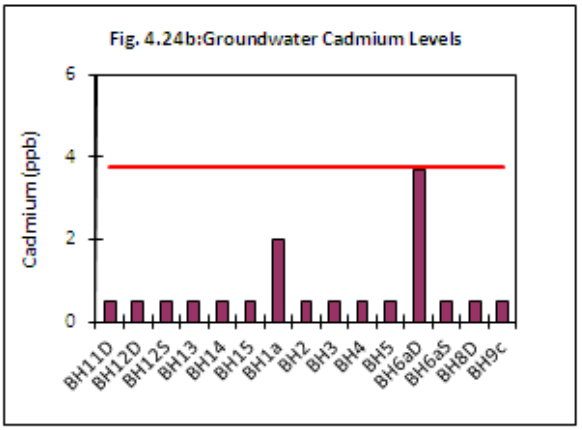
Groundwater samples were analysed for volatile and semi-volatile organic compounds in July 2015. Results were below method detection limits for all samples (i.e. <1ppb).

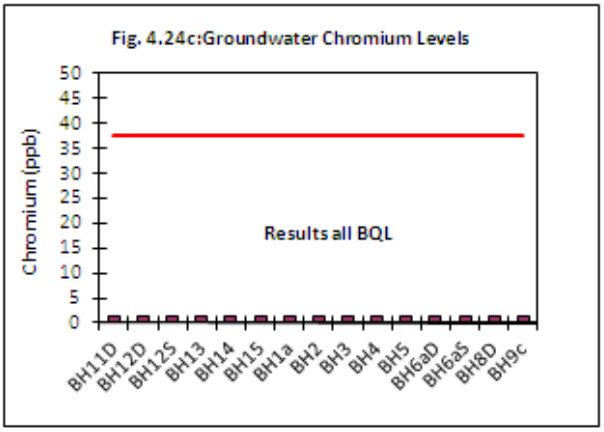
4.6.2.6 Groundwater metals levels:

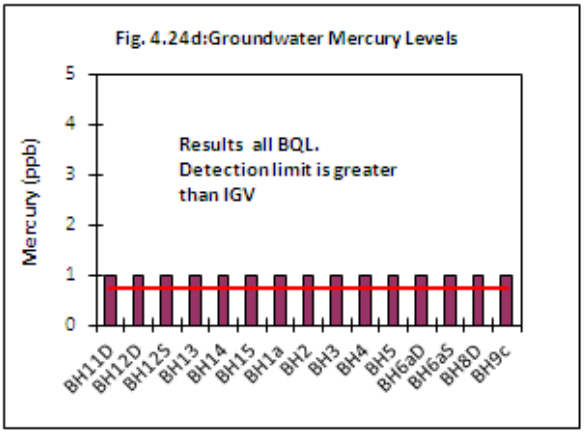
Groundwater samples were analysed for metals in July 2015. Results are graphed below in figures 4.24a to 4.24f.

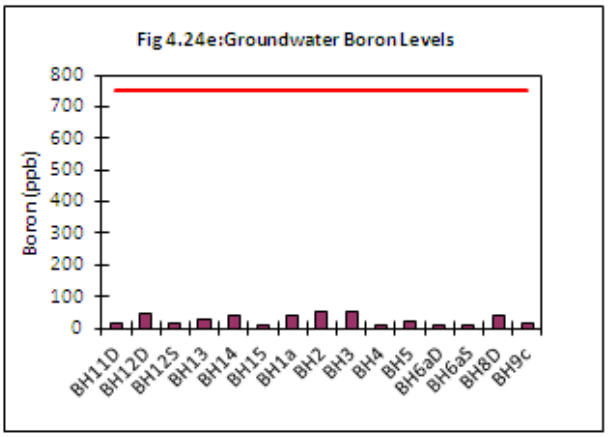
Figure 4.24a to 4.24f; Groundwater Metals Levels (2015)

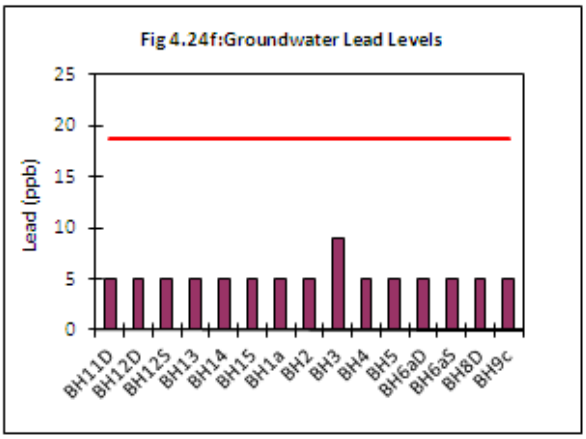












Note: The limits shown on the graphs are the groundwater threshold values specified in columns 3 / 4 of Schedule 5 of SI 9 of 2010.

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 threshold of 0.75ppb.

Results for cyanide and sulphate (not shown) were also below the relevant threshold levels for all samples.

4.6.3 Leachate.

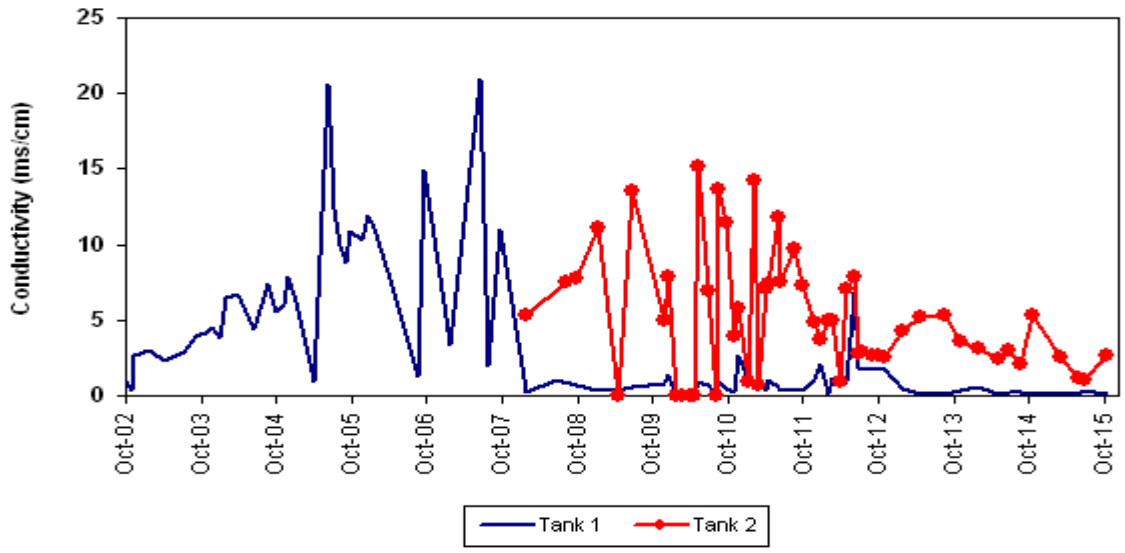
Leachate generated on site is discharged to one of two storage tanks for transport to a designated wastewater treatment facility. An underground storage tank (tank 1) was installed when the facility was initially developed. Up to November 2007, all leachate generated on site was discharged to this tank, including landfill leachate from within the waste body and runoff from designated concrete areas of the civic amenity site. A second tank (Tank 2) was installed above ground in November 2007 as part of the Phase 3 construction project. This tank now receives all landfill leachate from the waste body. Tank 1 receives runoff from the composting area and from potentially contaminated areas of the civic amenity site only.

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. As would be expected with the diversion of higher strength landfill leachate away from the old leachate lagoon (tank 1) in early 2008, conductivity levels in tank 1 reduced significantly in 2008 and have remained low since. Higher levels were observed in tank 2, which receives only landfill leachate. Conductivity is within the range expected for landfill leachate. A reducing trend in leachate conductivity is evident, particularly since closure of the landfill in November 2011.

Figure 4.25: Leachate Conductivity Levels 2002 to 2015



4.6.3.2 Leachate BOD and COD

Leachate BOD and COD results for 2015 are graphed below in figures 4.26 and 4.27.

Figure 4.26: Leachate BOD Levels
January to December 2015

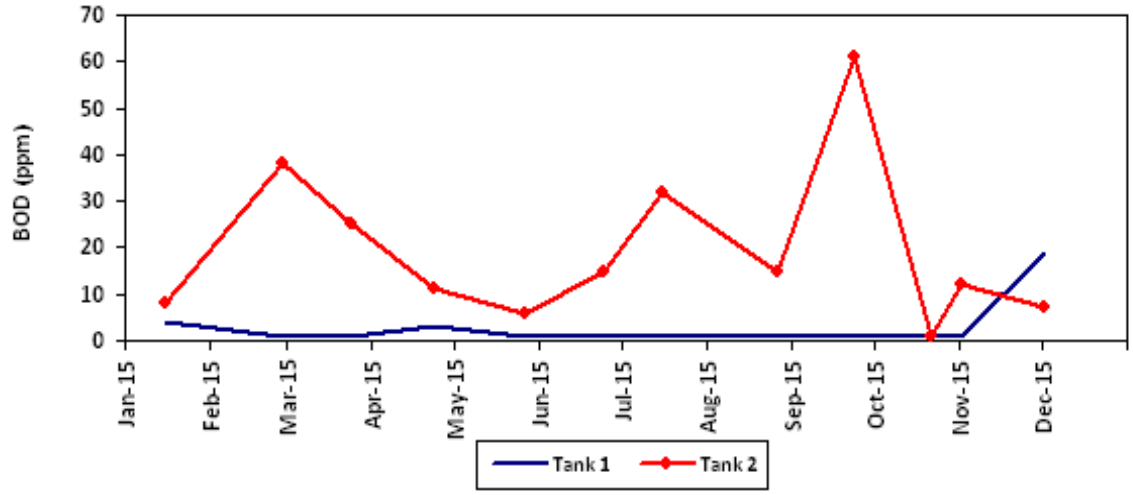
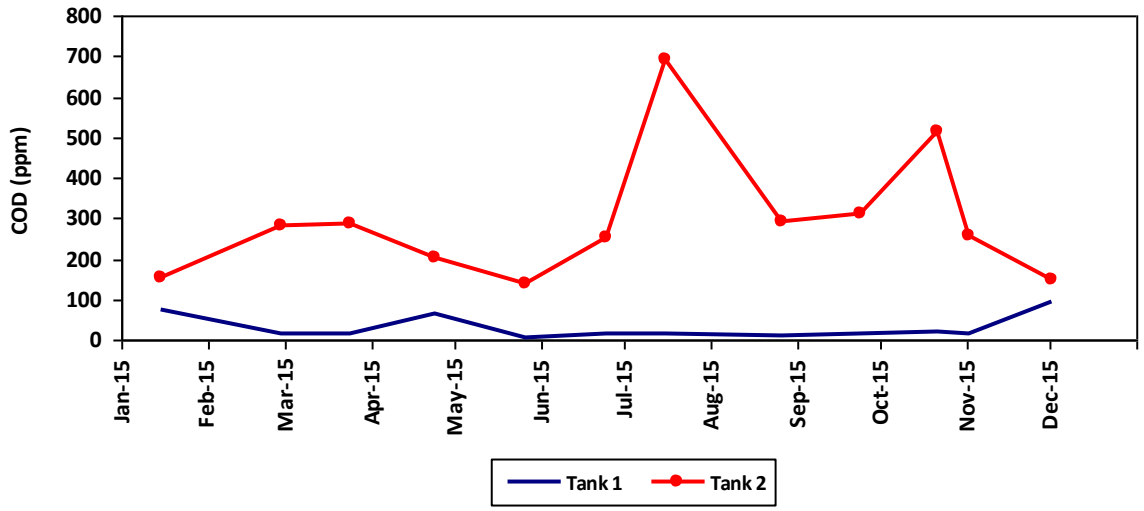


Figure 4.27: Leachate COD Levels
January to December 2015

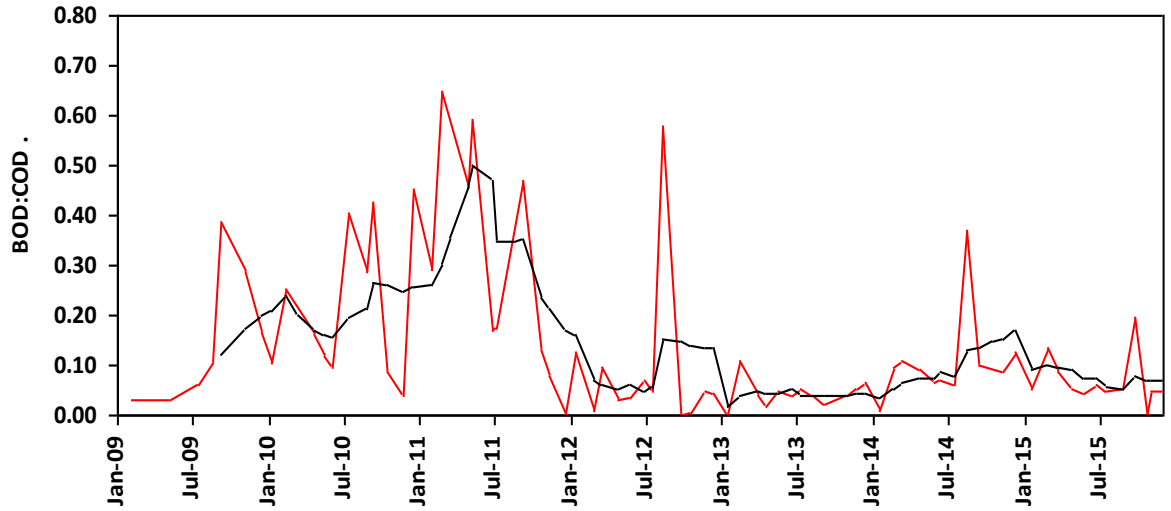


Results were as normal for this site, with higher BOD and COD concentrations observed in landfill leachate samples (tank 2) in comparison to the civic amenity site runoff samples (tank 1). The leachate results (tank 2) were as expected for landfill leachate.

The leachate BOD: COD ratio is a useful tool for assessing biodegradability. Ideal ratios should be in the region of 0.3 or greater. The BOD: COD ratio for landfill leachate (tank 2) from February 2009 to December 2015 is graphed below in figure 4.28. The ratio remained below 0.3 throughout the monitoring period. It is possible

that elevated ammonia levels in the leachate contribute to the COD reading whereas a nItrification inhibition step is used to suppress the interference of ammonia in BOD measurement.

Figure 4.28: Leachate BOD:COD Ratio
January 2009 to December 2015



4.6.3.3 Leachate Ammonia Levels.

Leachate ammonia results from January to December 2015 are graphed below in figure 4.29. As would be 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 1.82ppm (max: 5.51ppm). Levels in tank 2 were within the expected range for landfill leachate, with a mean of 200ppm ammonia nitrogen and a maximum result of 414ppm.

Figure 4.29: Leachate Ammonia Levels
January to December 2015

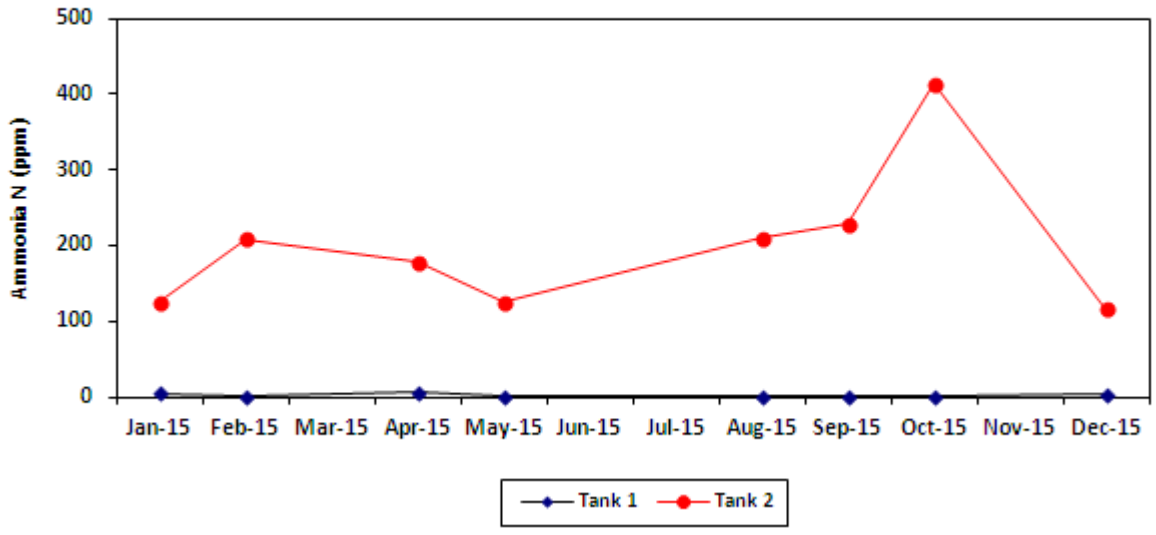
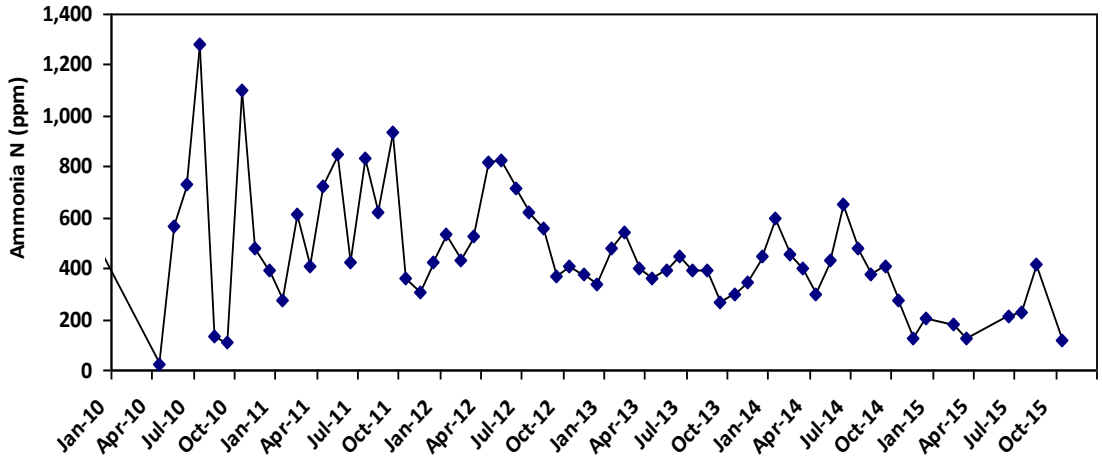


Figure 4.30 is a graph of landfill leachate ammonia levels between 2010 and 2015. As can be seen from the graph, results show a reducing trend over time, as would be expected as the waste biodegrades.

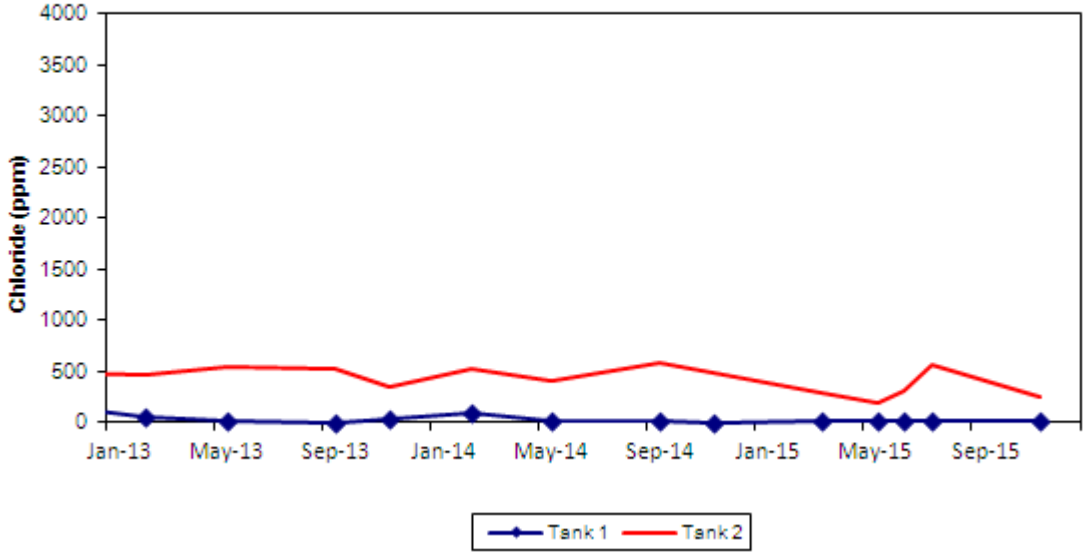
Figure 4.30: Landfill Leachate Ammonia Levels
January 2010 to December 2015



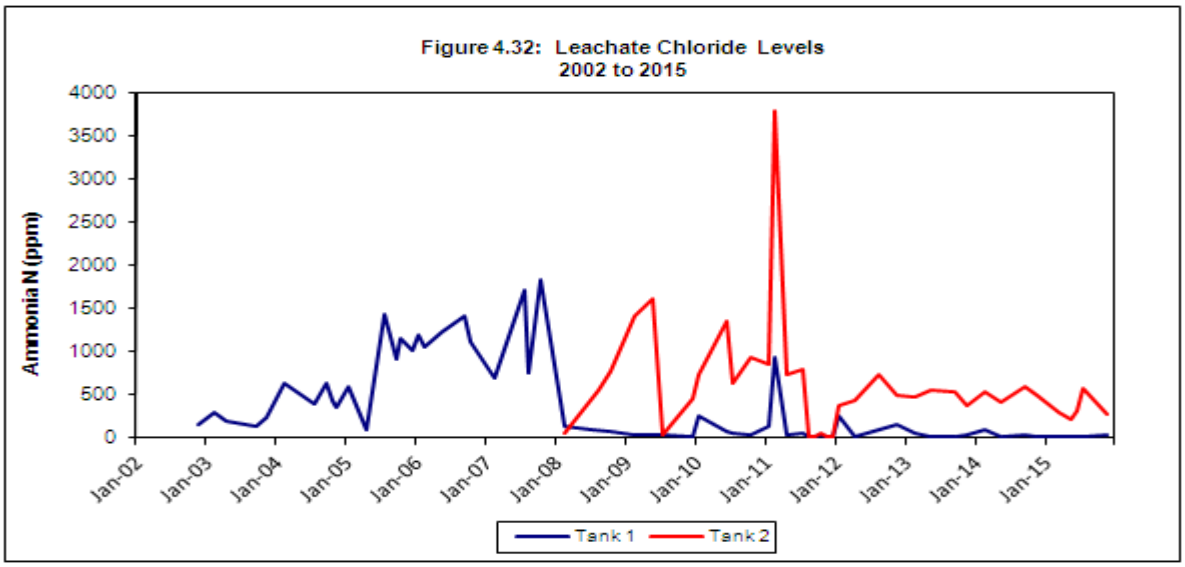
4.6.3.4 Leachate Chloride Levels

Leachate chloride levels are graphed in figure 4.31 for the period January 2013 to December 2015. The mean for 2015 was 325ppm. Chloride levels in CA site runoff (tank 1) were considerably lower (mean 11.7ppm).

Figure 4.31: Leachate Chloride Levels
January 2013 to December 2015

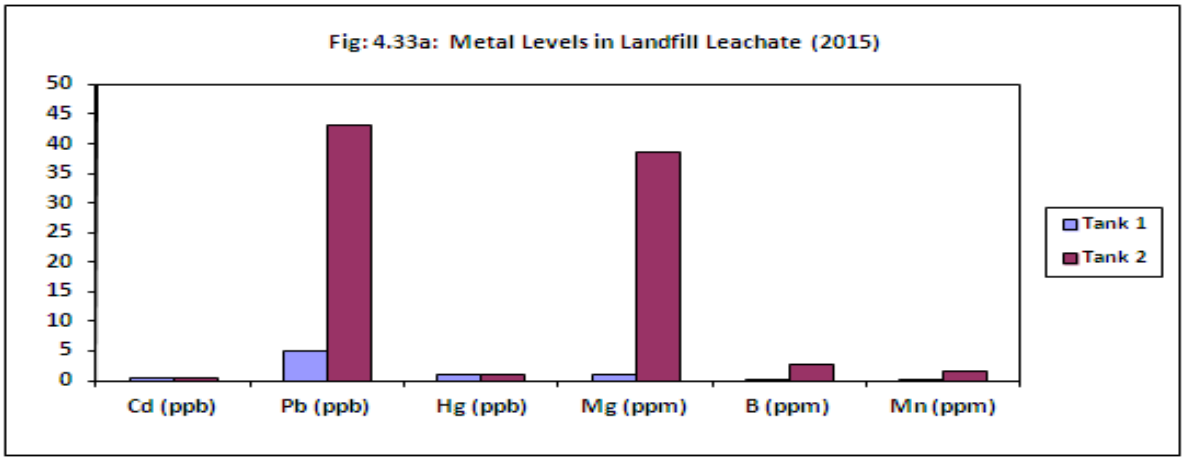


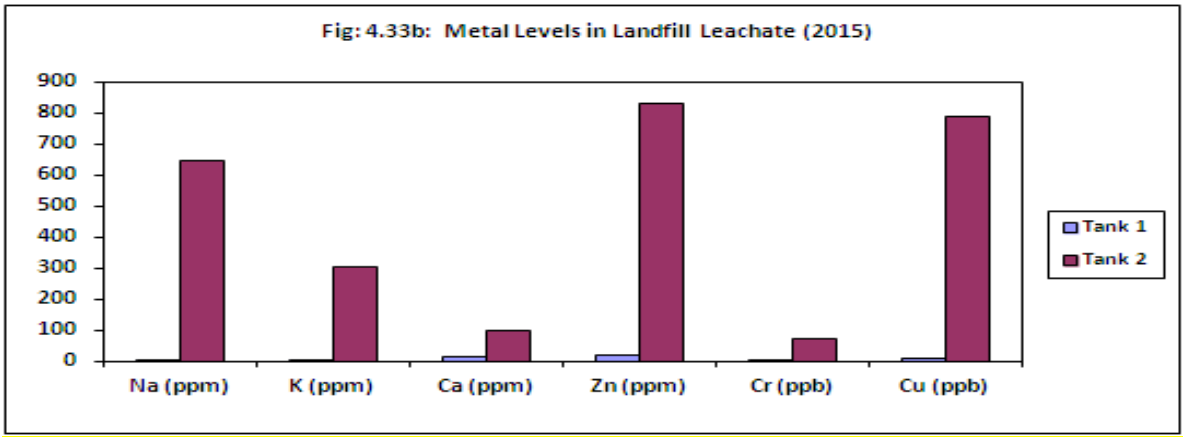
Leachate chloride levels since the site opened are shown below in fig 4.31. As explained elsewhere in this report, landfill leachate was discharged to Tank 1 until Tank 2 was commissioned in late 2007. From then, tank 1 received only civic amenity site runoff; all leachate from landfill cells was diverted to Tank 2. As can be seen from the graph, a reducing trend in leachate choride levels is evident, particularly since landfilling ceased in November 2015.



4.6.3.5 Leachate Metals Levels

Results for leachate metals are shown below in figures 4.33 a and b. As expected, where metals were detectable in the samples, results were significantly lower in tank 1.





In summary, levels of leachate parameters (tank 2) were within the ranges expected for municipal waste landfills. As expected, 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, although there is a reducing trend evident in ammonia, chloride and conductivity, particularly since the closure of the landfill in November 2011.

4.7 Biological and Ecological Monitoring.

4.7.1 Biological Monitoring:

The Biological Monitoring survey was carried out in August 2015. The report concluded that that there is no evidence of an impact from the landfill on surface waters.

4.7.2 Ecological Monitoring:

A full ecological monitoring survey was not carried out on site during 2015 as Clare County Council previously received approval to amend the monitoring frequency from annual to three-yearly surveys. The next survey is scheduled for 2016. A partial badger survey was conducted around the areas proposed for tree felling, to ensure no interference with badger setts.

4.8 EPA Site Visits

The following is a summary of EPA site visits made during 2015:

- The EPA inspector for the facility carried out an unannounced site audit in October 2015. No operational non-compliances were recorded during the audit but the inspector subsequently recorded a non compliance under Condition 3.3, for failing to submit an incident report for an elevated groundwater pH result in BH6aD in July 2015 (discussed also under section 4.6.2.1). An incident report was not raised for this pH result because Clare County Council was unaware of the exceedence, which was not highlighted by the monitoring consultants for reasons discussed earlier. A reply to this non-compliance has since been submitted by Clare County Council.

- EPA monitoring personnel were on site in September 2015 to conduct groundwater and surface water monitoring. Results were similar to those obtained on behalf of Clare County Council by monitoring consultants.

5. WORKS PROGRAMME 2015/2016

5.1 Development Works carried out during 2015

Site development works that were carried out during the reporting period are outlined in Table 5.1.

TABLE 5.1: LIST OF DEVELOPMENT WORKS CARRIED OUT DURING 2015 (NON-EXHAUSTIVE).

Site Development Works	Completion Date
Forestry felling works	End of December 2015
Investigation of alternatives for landfill gas, including use for generation of biomethane	Ongoing with UL and LCEA

5.2 Proposed Development Works 2016

Proposed site development works for 2016 are set out in Table 5.2 below (also see section 7.2).

TABLE 5.2: PROPOSED DEVELOPMENT WORKS FOR 2016

Description of Works	Date
Investigation of options to reduce CA site leachate levels	Ongoing through 2016
Forestry management.	Ongoing through 2016
Works associated with assessment and protection of designated species	Ongoing through 2016
Further optimising gas management for cells with poor quality landfill gas	Ongoing through 2016
Investigation of options for applying final clay cover to cell 11 and 13 side slopes	Ongoing through 2016

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, after completion of filling of phase 3. By the end of December 2012, the requirements of the interim plan had been complied with. An updated CRAMP will be submitted to the Agency during 2016.

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. The most recent site survey was carried out by Clare County Council in late 2015.

6. FINANCIAL ASPECTS

6.1 Annual Budget and Operating Costs

The annual budget for the Central Waste Management Facility for 2015 is outlined in Table 6.1 below.

TABLE 6.1: SUMMARY OF FINANCIAL PROVISIONS 2015

Item	2015 budget
CWMF - Landfill operation	299,515
CWMF - Recycling centre operation	355,795
CWMF - Compost operation	90,830
Total	**746,140**

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. A final balance of 54,000 euro remains to be distributed. The mechanism for distribution will be determined by the panel during 2016.

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).

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 2015. 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 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. Potential odours from the main point sources (leachate riser pipes) are controlled by means of specially-designed seals on the pipe ends combined with gas extraction from the pipes. Potential odours from the wells at the weakest point where the wells exit the LLDPE liner are controlled via outer rings containing wetted bentonite clay. Odour Monitoring Ireland carried out surface VOC profile surveys on the landfill cap on one occasion during 2015 (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 on-site and offsite by a member of site staff accompanied by a Council employee based in the environment section in Ennis. 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 will trigger a full off site patrol. No odours were detected during 2015.

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 2015 were within the ambient dust limit of 350mg/m^2 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 2015. 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 has since been updated again with four new objectives set. A summary of the revised objectives is provided in section 7.2.4 below.

7.2.1. Objective 1: Reduce the tonnage of landfill leachate and civic amenity site runoff removed from the facility:

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

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.

Further works to reduce CA site runoff levels were not undertaken in 2015. This is included as Objective 1 in the revised 2016 EMP.

7.2.2. Objective 2: Investigate feasibility of converting landfill gas to compressed natural gas for use as heat or vehicle fuel

Clare County Council participated in a research proposal with the Centre for Biofuelling and Bioenergy to investigate the feasibility of a project to convert landfill gas into compressed natural gas. Issues identified and informally communicated to the Council included problems with volume of gas and the presence of contaminants. We are awaiting further developments/formal report on this project. With the closure of the landfill in November 2011, this objective has been shelved for the present.

7.2.3. Objective 3: Put in place a forestry management plan for the site

A forestry management plan is in place and felling commenced in November 2015. The landfill phase 4/5 area was clear-felled. Felling was also carried out beside the 10kv power line close to the southern site boundary. This was done at the request of ESB Networks. Limited felling was also undertaken in the vicinity of the administration building car park, for health and safety reasons. Forestry management remains an objective (Objective 2) under the revised EMP.

7.2.4. Objective Summary for 2016 EMP:

Objective 1: Reduce the tonnage of civic amenity site runoff diverted to leachate tank
Objective 2: Continue forestry management programme for the site
Objective 3: Assessment and protection of designated species on site
Objective 4: Improvement of gas management across cells with poor gas quality

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 closed, the meeting frequency was reduced to quarterly. As the landfill has now been closed for over two years, the meeting frequency was reviewed during 2014 and a revised frequency of twice yearly meetings was agreed with the committee.

In addition to attending the CLMC meetings, Clare County Council staff are available to meet with members of the public and answer queries regarding the facility if requested.

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 7.9: SUMMARY OF INCIDENTS ARISING IN 2015

Nature of Incident	Number of Incidents
SCADA malfunction	1
Monitoring equipment offline or faulty:	2
Perimeter well gas levels:	5
Surface water suspended solids levels	1

Condition 3 of W0109-02 requires that the licensee shall make written records of all complaints. No complaints were received during 2015.

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 3,370 tonnes of green waste for composting since 2006. An estimated 544* tonnes of green waste was received during 2015.

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.

*Note *: Estimate only as green waste brought directly to the CWMF site by members of the public is not weighed.*

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 2015. 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 allows for elimination of the requirement for daily offsite odour patrols. These patrols were carried out by a member of site staff accompanied by a member of staff from the Council's environment section. A revised odour patrol regime is now in place, 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 2015

Month	Monthly total rainfall Figures (mm) (Ennis-tymon)	Monthly Effective rainfall Figures (mm) (Ennis-tymon)**	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	168.8	149.0	None	0	Cells 1 - 13	0	0	70,000	2,600	0	1,043	439	1,482	454
February	95.4	78.0	None	0	Cells 1 - 13	0	0	70,000	2,600	0	546	248	794	1,248
March	105.5	66.8	None	0	Cells 1 - 13	0	0	70,000	2,600	0	468	274	742	1,990
April	78.0	10.2	None	0	Cells 1 - 13	0	0	70,000	2,600	0	0	203	203	2,193
May	143.6	72.3	None	0	Cells 1 - 13	0	0	70,000	2,600	0	506	373	879	3,072
June	62.8	-24.1	None	0	Cells 1 - 13	0	0	70,000	2,600	0	0	163	163	3,235
July	117.8	41.1	None	0	Cells 1 - 13	0	0	70,000	2,600	0	0	306	306	3,542
August	126.0	56.1	None	0	Cells 1 - 13	0	0	70,000	2,600	0	393	328	720	4,262
September	124.3	77.3	None	0	Cells 1 - 13	0	0	70,000	2,600	0	0	323	323	4,585
October	54.6	26.5	None	0	Cells 1 - 13	0	0	70,000	2,600	0	186	142	327	4,913
November	227.6	206.5	None	0	Cells 1 - 13	0	0	70,000	2,600	0	1,446	592	2,037	6,950
December	356.5	337.2	None	0	Cells 1 - 13	0	0	70,000	2,600	0	2,360	927	3,287	10,237
Maximum estimated leachate volume (m3), (using total rainfall for concrete area and effective rainfall for landfill:											**6,947**	**4,318**		**11,265**

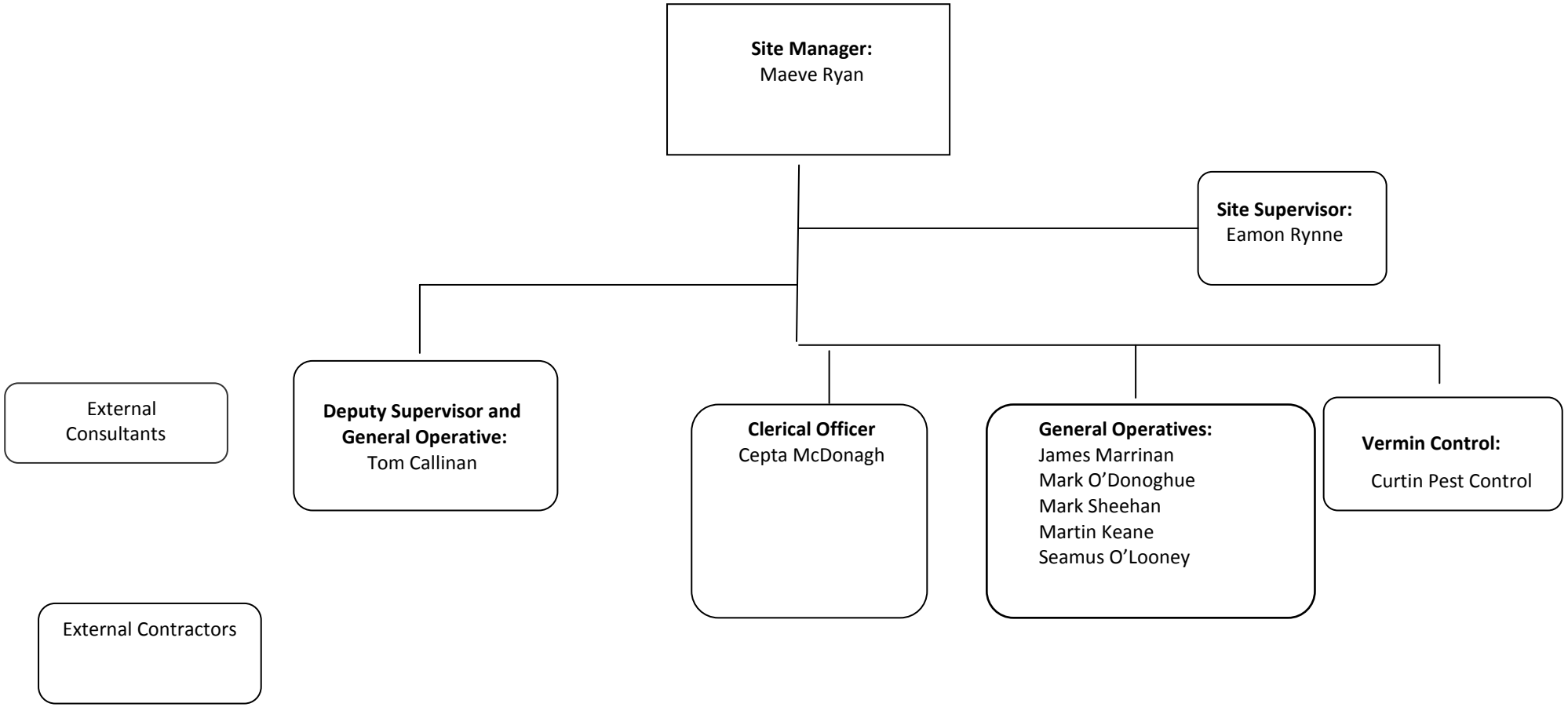
Area was measured and confirmed to be 2400m2

*NOTE **: Met Eireann PE data is only available for Shannon. However, total rainfall for Ennistymon is generally more than 40% greater than for Shannon (2013 to 2015 data). To calculate rainfall on landfill area, Ennistymon total was used with the Shannon PE data, to estimate effective rainfall. To calculate total runoff from concrete, the total Ennistymon rainfall data was used as there is no transpiration effect on concrete. There would be a reduction through evaporation here, so the figures used for these calculations may be an overestimate of concrete*

Actual leachate total for 2015= 11,126 tonnes

8.3 Management Structure

Appendix 8.3: Site Management Structure, Central Waste Management Facility



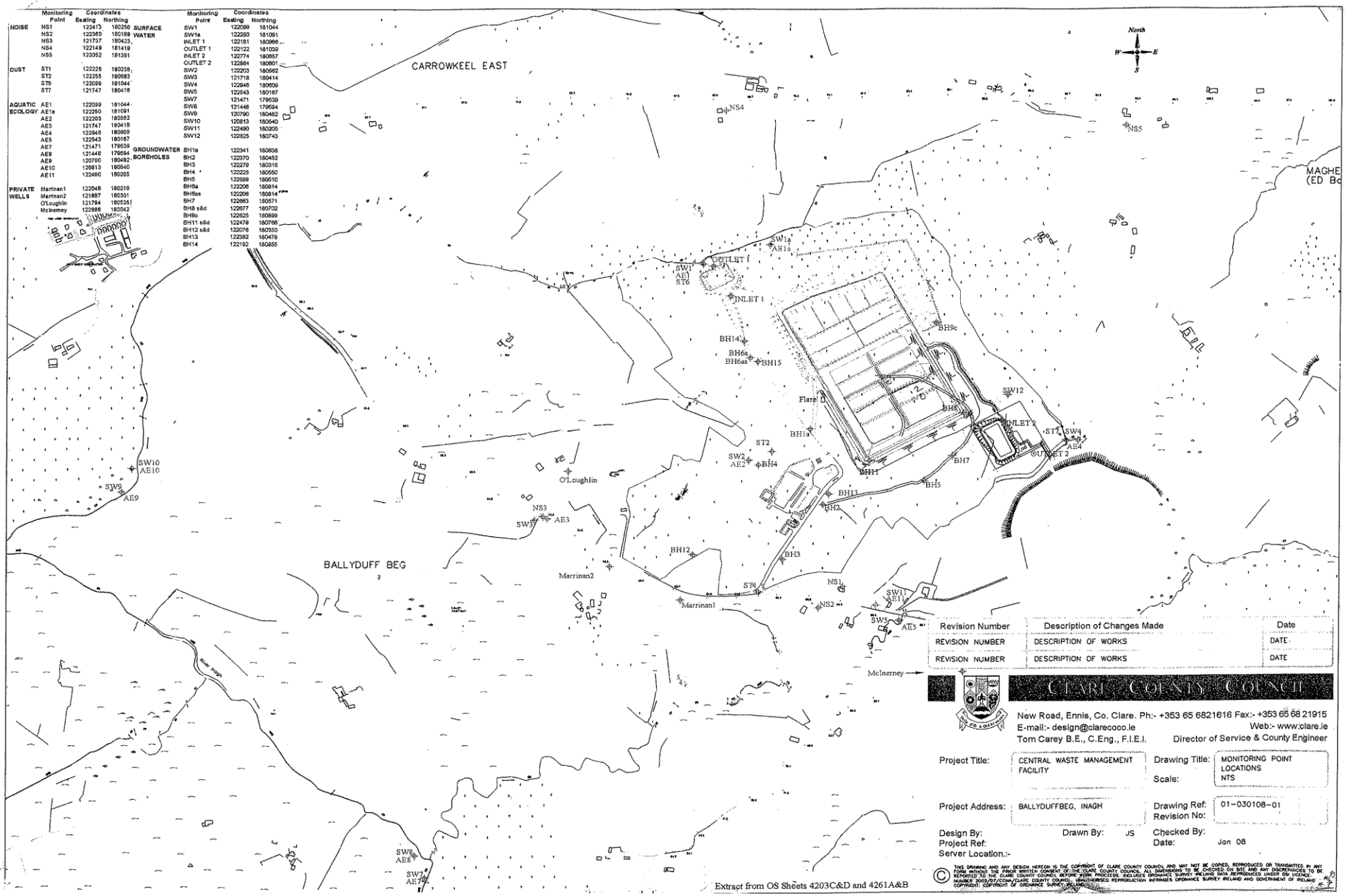
8.4 Summary Details of Incidents for 2015

Central Waste Management Facility, Ballyduff Beg

Incident Report Tracking Sheet 2015

Incident Report Ref	Subject	Date
INCI006263	Perimeter well gas levels January 2015	06/01/2015
INCI006286	TOC analyser offline	07/01/2015
INCI006398	SCADA failure	14/01/2015
INCI006753	Perimeter well gas levels February 2015	13/02/2015
INCI007138	Perimeter well gas levels March 2015	11/03/2015
INCI007417	Perimeter well gas levels April 2015	10/04/2015
INCI007672	Perimeter well gas levels May 2015	14/05/2015
INCI007867	Elevated suspended solids, stormwater pond 1	08/06/2015
INCI009283	Transducer error	18/12/2015

8.5 Monitoring Point Location Map



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
		Scale:	NTS
Project Address:	BALLYDUFFBEG, INAGH	Drawing Ref:	01-030108-01
		Revision No:	
Design By:		Drawn By: JS	Checked By:
Project Ref:			Date: Jan 08
Server Location.:-			

8.6 List of Site Standard Operating Procedures

Site Procedures List

SOP	Description	Last Revision Date
1	Procedure to be followed in the event of malfunction/non-operation of TOC analyser	02/04/2012
2	Procedure to be followed in the event of activation of the pH alarm	02/04/2012
3	Procedure to be followed in the event of activation of the conductivity alarm	03/04/2012
4	Landfill gas monitoring/training procedure	18/09/2013
5	Exceedence of Trigger Levels for Key Parameters in Groundwater Samples	03/04/2012
6	Communications Programme	03/04/2012
7	Documentation Procedure	03/04/2012
8	Procedure to be followed in the event of landfill gas flare malfunction.	05/11/2015
9	Awareness and Training Procedure	03/04/2012
10	Emergency Response Procedure	05/11/2015
11	Corrective Action Procedure	05/11/2015
12	Complaints Procedure	04/04/2012
13	Waste Acceptance Procedure (relevant to operational landfill only)	29/09/2011
14	Procedure for handling hazardous domestic waste	04/04/2012
15	Handling Procedure for Difficult Wastes and Non-Hazardous Industrial Solid Wastes (relevant to operational landfill only)	02/06/2011
16	Odour Patrol Procedure	03/07/2014
17	Surface Water Visual Inspection Procedure.	04/04/2012
18	Administrative Procedure	05/11/2015
19	Procedure for Handling, storage and deposition of wood ash (relevant to operational landfill only)	02/06/2011
20	Procedure for Leachate Handling	18/09/2013
21	Procedure for Removal of Recyclable Waste from the Civic Amenity Site	23/02/2016
22	Procedure for Application of Landfill Cover (relevant to operational landfill only)	18/01/2011
23	Accident Prevention Policy	03/04/2012
24	Procedure for preparation of BMW returns under condition 3.16 of W0109-02 (relevant to operational landfill only)	03/10/2011
25	Procedure for maintenance of the landfill gas flare	15/07/2013

8.7 Landfill Gas Survey Returns for 2015

Environmental Protection Agency

A survey of landfill sites to determine the quantity of methane flared and or recovered in utilisation plants for 2015

Please choose from the drop down menu the license number for your site	W0109
Please choose from the drop down menu the name of the landfill site	Ballyduff Beg
Please enter the number of flares operational at your site in 2015	1
Please enter the number of engines operational at your site in 2015	0
Total methane flared	387,408 kg/year
Total methane utilised in engines	0 kg/year

Please note that the closing date for reciept of completed surveys is 31/03/2016

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 uptodate information on methane flaring and recovery in utilisation plants at landfills 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

	to be filled in by licensee		calculated by spreadsheet

Flare No. 1

Flare type ?	AFS HT750	**If "other" enter flare description here**	
Is the flare an open or enclosed flare ?	Enclosed	**Rated flare capacity ?**	750 **m3/hr**
Month /year comissioned ?	September 2003		
Month decomissioned if decomissioned in 2015 ?	Select		
What is the function of the flare ?	Extraction from capped area	**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 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	0.8	743	-10	256	27.10	20.90	2.00	99.9	51,512	35,216
February	m	28	24.0		672	-5	193	31.60	22.40	1.60	99.9	40,943	28,130
March	m	31	24.0		744	-5	182	33.50	24.10	1.40	99.9	45,316	31,134
April	m	30	24.0	1.0	719	-5	197	34.10	23.50	1.90	99.9	48,252	33,151
May	m	31	24.0	2.0	742	-5	192	35.00	24.00	1.50	99.9	49,813	34,223
June	m	30	24.0	0.3	720	-5	199	34.00	23.20	1.70	99.9	48,644	33,421
July	m	31	24.0	0.3	744	-5	202	34.30	22.60	2.10	99.9	51,474	35,365
August	m	31	24.0	1.5	743	-5	188	36.20	25.20	1.00	99.9	50,481	34,683
September	m	30	24.0		720	-5	186	34.60	23.00	1.00	99.9	46,290	31,803
October	m	31	24.0		744	-5	186	33.60	22.30	1.30	99.9	46,451	31,913
November	m	30	24.0	0.7	719	-5	179	33.50	23.20	1.00	99.9	43,092	29,606
December	m	31	24.0	0.7	743	-5	174	32.40	22.50	1.00	99.9	41,865	28,763
Total					8,753							564,133	387,408

Please note: Only fill the "Yearly" table if data is not availabe 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 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
2015					0						98.0	0	0

8.8 PRTR Returns for 2015

Environmental Protection Agency

Guidance to completing the PRTR workbook

PRTR Returns Workbook

Version 1.1.19

REFERENCE YEAR	2015

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
AER Returns Contact Email Address	mryan@clarecoco.ie
AER Returns Contact Position	Executive scientist/CWMF facility manager
AER Returns Contact Telephone Number	065 6846359
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	8
User Feedback/Comments	Variation highlighted in flare gas emissions. The emissions are a spot check assessment over two surveys during the twelve month period. This level of variation is as would be expected for spot check monitoring. Variation in fugitive CH4 emissions between 2015 and 2014 are most likely due to model errors
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?	
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) ?	

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

SECTION A : SECTOR SPECIFIC PRTR POLLUTANTS

RELEASES TO AIR					Please enter all quantities in this section in KGs			
POLLUTANT		METHOD			ADD EMISSION POINT	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
01	**Methane (CH4)**	C	OTH	flare analyser	0.0	45056.0	0.0	45056.0
08	Nitrogen oxides (NOx/NO2)	M	EN 14792:2005		172.55	172.55	0.0	0.0
02	Carbon monoxide (CO)	M	EN 15058:2004		10.1	10.1	0.0	0.0
11	Sulphur oxides (SOx/SO2)	M	OTH	TGN 21	52.95	52.95	0.0	0.0
03	Carbon dioxide (CO2)	M	OTH	flare analyser	1535673.0	1535673.0	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

RELEASES TO AIR					Please enter all quantities in this section in KGs			
POLLUTANT		METHOD			ADD EMISSION POINT	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
84	Fluorine and inorganic compounds (as HF)	M	ISO/DIS 15713:2004		2.2	2.2	0.0	0.0
35	Dichloromethane (DCM)	M	OTH	EN 12619, measurement of total VOC's. Result reported as less than this figure	6.95	6.95	0.0	0.0
52	Tetrachloroethylene (PER)	M	OTH	EN 12619, measurement of total VOC's. Result reported as less than this figure	6.95	6.95	0.0	0.0
60	Vinyl chloride	M	OTH	EN 12619, measurement of total VOC's. Result reported as less than this figure	6.95	6.95	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

EMISSIONS (As required in your Licence)

RELEASES TO AIR					Please enter all quantities in this section in KGs			
POLLUTANT		METHOD			ADD EMISSION POINT	QUANTITY		
			Method Used					
	Name	M/C/E	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		0.36	0.36	0.0	0.0
230	TA Luft organic substances class 1	M	EN 13649:2001		2.41	2.41	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: Inagh Landfill

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)	432464.0	E	OTH	Gassim Lite	N/A	
Methane flared	387408.0	M	OTH	flare analyser	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)	45056.0	C	OTH	Model calculation less the a	N/A	

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	3.96	other engine, gear and lubricating oils	R9	M	Weighed	Offsite in Ireland	Enva,W0184-01	Clonminan Industrial Estate,Portlaoise,County Laoise,,,Ireland	Enva,W0184-01	Clonminan Industrial Estate,Portlaoise,County Laoise,,,Ireland
Within the Country	15 01 01	No	44.78	paper and cardboard packaging	R3	M	Weighed	Offsite in Ireland	Clean Ireland,W0253-01	Cree,Kilrush,County Clare,,,Ireland		
Within the Country	15 01 02	No	6.64	plastic packaging	R3	M	Weighed	Offsite in Ireland	Mr Binman,W0061-03	Luddenmore,Grange,Kilmallock,County Limerick,Ireland		
Within the Country	15 01 04	No	8.72	metallic packaging, steel cans	R4	M	Weighed	Offsite in Ireland	Clare Waste,WFP/CE/08/0002/01	Raheen,Tuamgraney,County Clare,,,Ireland		
Within the Country	15 01 04	No	1.0	metallic packaging, aluminium cans	R4	M	Weighed	Offsite in Ireland	Mr Binman,W0061-03	Luddenmore,Grange,Kilmallock,County Limerick,Ireland		
Within the Country	15 01 05	No	1.86	composite packaging	R3	M	Weighed	Offsite in Ireland	Clean Ireland,W0253-01	Cree,Kilrush,County Clare,,,Ireland	Enva,W0184-01	Clonminan Industrial Estate,Portlaoise,County Laoise,,,Ireland
Within the Country	15 01 07	No	28.22	glass packaging	R5	M	Weighed	Offsite in Ireland	Mr Binman,W0061-03	Luddenmore,Grange,Kilmallock,County Limerick,Ireland		
Within the Country	16 01 07	Yes	0.7	oil filters	R9	M	Weighed	Offsite in Ireland	Enva,W0184-01 Rilta Environmental Ltd,W0192-03,Block 402 Grant's Drive,Greenogue Business Park Rathcoole,County	Clonminan Industrial Estate,Portlaoise,County Laoise,,,Ireland	Enva,W0184-01 HJ Enthoven & Sons ,BL5598IR,Darley dale Smelter,South Darley,Matlock Derbyshire,DE4 2LP,United	Clonminan Industrial Estate,Portlaoise,County Laoise,,,Ireland
Within the Country	16 06 01	Yes	1.94	lead batteries	R4	M	Weighed	Offsite in Ireland	Dublin,,,ireland	,,,,,,,ireland	Kingdom	,,,,,,,United Kingdom
To Other Countries	16 06 04	No	2.116	alkaline batteries (except 16 06 03)	R4	M	Weighed	Abroad	Electrical Waste Management,WFP DS-09001201	Jordanstown Drive,Greenogue Industrial Estate,Rathcoole,County Dublin,Ireland	Recypilas,,,,,,,Bilbao,,,Spain	,,,Bilbao,,,Spain
Within the Country	19 07 03	No	7390.12	landfill leachate other than those mentioned in 19 07 02	D8	M	Weighed	Offsite in Ireland	Lisdoonvarna Wastewater Treatment plant ,D0077-01	Knocknagulla,Lisdoonvarna, County Clare,0,Ireland		
Within the Country	19 07 03	No	2343.42	landfill leachate other than those mentioned in 19 07 02	D8	M	Weighed	Offsite in Ireland	Sixmilebridge WWTP,D0076-01	Sixmilebridge ,County Clare,,,,Ireland		
Within the Country	19 07 03	No	1392.72	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		
Within the Country	20 01 01	No	66.04	paper and cardboard	R3	M	Weighed	Offsite in Ireland	Clean Ireland,W0253-01	Cree,Kilrush,County Clare,,,Ireland		
Within the Country	20 01 02	No	18.68	glass	R5	M	Weighed	Offsite in Ireland	Tullagower Quarries Ltd,004/08/WPT/CL	Tullagower,Kilrush,County Clare,,,Ireland		
To Other Countries	20 01 11	No	8.02	textiles	R3	M	Weighed	Abroad	Alltex Recyclers Limited 1 Ballycregagh Road Cloughmills Ballymena BT44 9LB. Licence WMEX 04/12,WMEX 04/12	1 Ballycregagh Rd ,Cloughmills,Ballymena,BT44 9LB,United Kingdom		
Within the Country	20 01 21	Yes	0.34	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	Woodstock Industrial Estate,Athy,County Kildare,,,Ireland
To Other Countries	20 01 23	Yes	19.414	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	,,,,,,,United Kingdom
Within the Country	20 01 25	No	0.24	edible oil and fat	R9	M	Weighed	Offsite in Ireland	Frilite,IEWCP-DC-10-1297	Kilcolgan,Galway,,,,Ireland		
Within the Country	20 01 28	No	22.88	paint, inks, adhesives and resins other than those mentioned in 20 01 27	R1	M	Weighed	Offsite in Ireland	Enva,W0184-01	Clonminan Industrial Estate,Portlaoise,County Laoise,,,Ireland		
Within the Country	20 01 35	Yes	24.996	discarded electrical and electronic equipment other than those mentioned in 20 01 21 and 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	...	,,,,,,,Ireland
To Other Countries	**20 01 36**	**No**	65.363	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		
Within the Country	20 01 38	No	150.1	wood other than that mentioned in 20 01 37	R3	M	Weighed	Offsite in Ireland	Clean Ireland,W0253-01	Cree,Kilrush,County Clare,,,Ireland		
Within the Country	20 01 39	No	53.3	plastics	R3	M	Weighed	Offsite in Ireland	Mr Binman,W0061-03	Luddenmore,Grange,Kilmallock,County Limerick,Ireland		
Within the Country	20 01 40	No	122.04	metals	R4	M	Weighed	Offsite in Ireland	United Metals,NWCPO-10-05657-01	Eastway Recycling Park,Ballysimon,Limerick,,,,Ireland		
Within the Country	20 03 07	No	27.32	bulky waste	R4	M	Weighed	Offsite in Ireland	Clean Ireland,W0253-01	Cree,Kilrush,County Clare,,,Ireland		
Within the Country	20 03 01	No	910.48	mixed municipal waste	D1	M	Weighed	Offsite in Ireland	Clean Ireland,W0253-01	Cree,Kilrush,County Clare,,,Ireland		
Within the Country	15 01 02	No	16.054	plastic packaging	R3	M	Weighed	Offsite in Ireland	Clean Ireland,W0253-01	Cree,Kilrush,County Clare,,,Ireland		