Clare County Council

Waste Licence W0031-01

Annual Environmental Report for 2015

Location of facility: Doora Landfill, Bunnow, Ballaghboy,

Gaurus, Doora, Co. Clare

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List of Appendices

1.0 Introduction

1.1 Licence Reference

Condition	Details
Condition 2 Management of the activity **Schedule C**	2.8 AER: The licensee shall submit to the agency for its agreement, within thirteen months from the date of grant of this licence, or within one month of the end of each year thereafter. AER Content.

1.2 Waste Licence Register Number

The waste license number is W0031-01.

1.3 Name of Operator, Name and Address of Facility

Clare County Council
Doora Landfill Site
Bunnow/Ballaghboy/Gaurus/Doora
County Clare

1.4 Reporting Period

The reporting period for this AER is the calendar year 2015.

1.5 Site Description

1.5.1 Site Location

Doora landfill is located in a semi-rural area approximately 1.6km east of Ennis Town.

1.5.2 Area Occupied

The area occupied by the landfill and its ancillaries amounts to 29.8 hectares, of which 18.7 hectares was used for landfilling. No waste has been deposited at the site since June 30th 2001.

2.0 Waste Activities carried out at the facility.

In accordance with Condition 5.1.2 of the licence, no waste has been accepted for deposition on the site since June 30th 2001.

In accordance with Condition 4.18.1, no waste has been accepted for transfer at the facility since 30th June 2002.

Leachate collection and abstraction commenced at the site in 2008 and is on going to date. Clare County Council personnel monitor the level of leachate stored in the collection tank on a frequent basis, and removed off site to an appropriate facility as required.

3.0 Quantity and Composition of Waste Received in 2015.

No waste was received at the facility since June 2002.

4.0 Environmental Monitoring Results and Interpretation.

Section 4 presents the results of environmental monitoring undertaken from January to December 2015 in accordance with Condition 9 of Waste Licence No.0031-01, as indicated in Table 4.1 below.
SNC Environment Ltd. conduct surface water, groundwater and leachate monitoring, as well as monitoring for dust, noise and gas flare emissions. Conservation Services carry out biological monitoring on surface water drains and on the R. Fergus. Weekly gas monitoring and leachate level monitoring surveys, together with monthly surface water monitoring were carried out by Clare County Council staff. Monitoring locations are shown on Drawing Number 1 in Appendix I.

Table 4.1 :Doora Landfill (W0031-01) Monitoring Schedule

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

Note [1]: The monitoring frequency for surface water visual inspections was reduced to monthly from August 2008, as agreed with the EPA.

Monitoring was carried out in accordance with Schedule E of the Waste Licence as indicated in Table 4.1 unless otherwise noted in this report. Results for key parameters are summarised in Sections 4.1 to 4.6 of this report.

4.1. Landfill Gas

Clare County Council staff conducted landfill gas monitoring for the reporting period, in accordance with Schedule E.1 of the waste licence. Gas monitoring locations are shown in Drawing No. 1 "Environmental Monitoring Points" in Appendix I. Monthly monitoring is undertaken at forty-two locations across the three zones of Doora landfill. Thirty-five of these locations are tested on a monthly basis primarily to enable field balancing to be carried out to optimise gas collection and flare efficiency. The remaining seven locations are the original gas monitoring wells (LG1 to LG7) that are not connected to the gas network. Gas monitoring results from January to December 2015 are shown in figures 1a to 1c. Values continue to follow historic trends, with an overall downward trend observable. Monitoring at wells LG4, 5 & 7 did not take place due to previous damage at these wells, however, based on historic trends at each location, concentrations of CH4 and CO2 are similar to values at the other four wells.

Fig. 1a

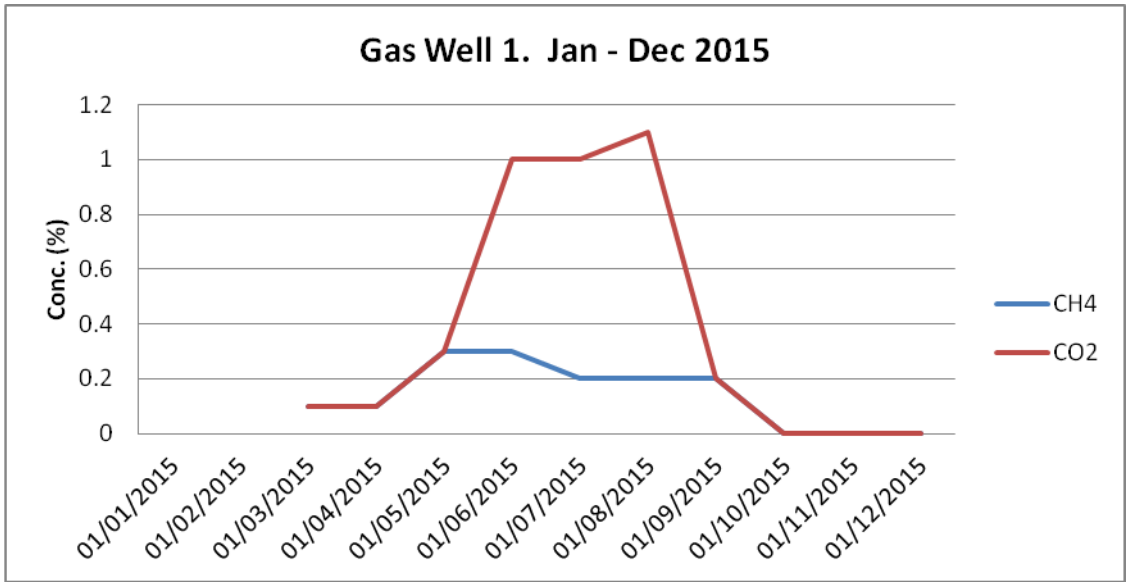


Fig. 1b

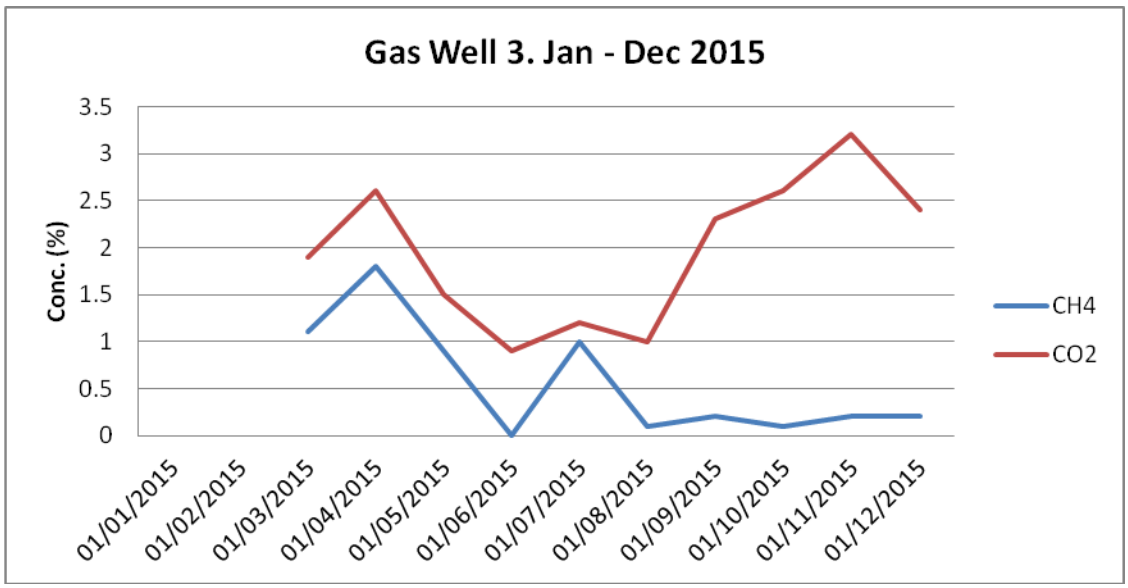
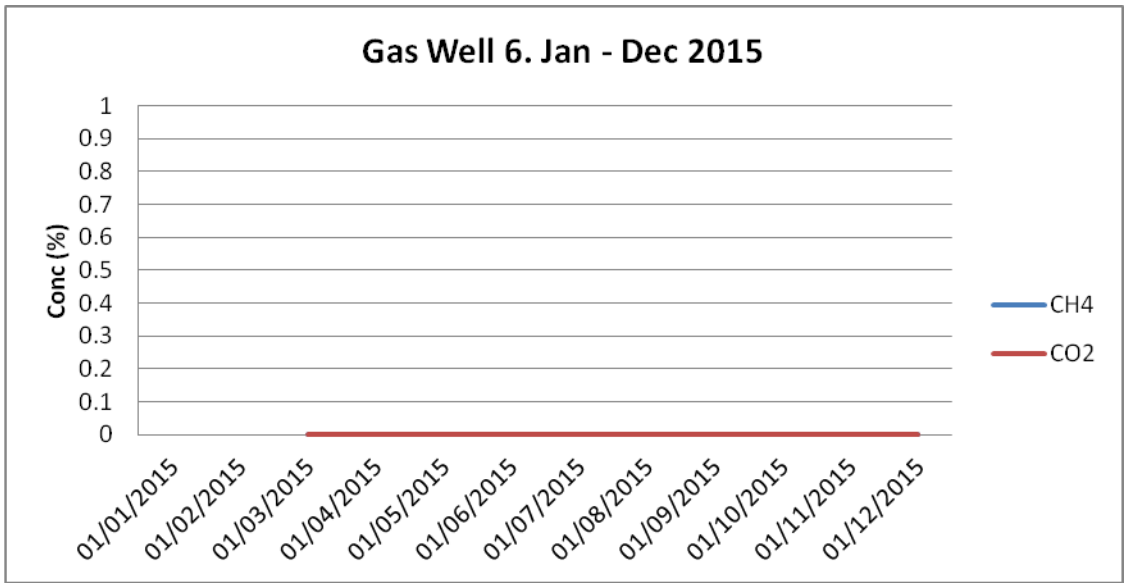

Gas Well 3. Jan - Dec 2015
Conc. (%)
3.5
3
2.5
2
1.5
1
0.5
0
01/01/2015
01/02/2015
01/03/2015
01/04/2015
01/05/2015
01/06/2015
01/07/2015
01/08/2015
01/09/2015
01/10/2015
01/11/2015
01/12/2015
CH4
CO2

Fig. 1c


Gas Well 6. Jan - Dec 2015
Conc (%)
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
01/01/2015
01/02/2015
01/03/2015
01/04/2015
01/05/2015
01/06/2015
01/07/2015
01/08/2015
01/09/2015
01/10/2015
01/11/2015
01/12/2015
CH4
CO2

4.2. Dust

Three ambient dust monitoring surveys were completed during this reporting period 2015. Monitoring locations are shown in Drawing 1 in Appendix I. Results are summarised in Table 4.2 below. There were no exceedences observed in 2015.

Table 4.2: Total Dust Monitoring Results.

Dust monitoring for July 2015

Sample ID	Location	Result ($mg/m^2/day$)	Waste Licence Limit ($mg/m^2/day$)
D15-ST1-070815	Site boundary east of GAA pitch	87.2	350
D15-ST2-070815	Southwest boundary of lower landfill area	164.3	350
D15-ST3-070815	Northern boundary of upper landfill area	109.5	350
D15-ST4-070815	Eastern area of upper landfill area	45.4	350
D15-ST5-070815	Northwest boundary of upper landfill area	40.1	350

Dust monitoring for September 2015

Sample ID	Location	Result ($mg/m^2/day$)	Waste Licence Limit ($mg/m^2/day$)
D15-ST1-070815	Site boundary east of GAA pitch	5.68	350
D15-ST2-070815	Southwest boundary of lower landfill area	26.77	350
D15-ST3-070815	Northern boundary of upper landfill area	28.4	350
D15-ST4-070815	Eastern area of upper landfill area	29.21	350
D15-ST5-070815	Northwest boundary of upper landfill area	36.11	350

4.3 Noise

Noise levels measured at all locations within the landfill site boundary were less than the daytime Waste Licence limit of 55 dB LAeq. No tonal or impulse noise component from the site was recorded during the monitoring period and no site activity was taking place due to the closed nature of the site.

The noise level measured at location S4 were less than the Waste Licence limit of 55dB LAeq. Extraneous noise sources (e.g., road traffic) had a significant contribution to the levels recorded and no noise contribution is considered to be attributable to the Doora site. No tonal or impulse noise component from the site was recorded close to the noise sensitive receptors during the monitoring period.

Noise levels measured at locations S1, S2 and S3 exceeded the waste licence limit of 55 dB LAeq for daytime noise levels. However, extraneous noise sources (i.e., road traffic on the adjacent L4118 road) contributed to the elevated noise levels recorded and LA90 was considered be a more accurate measure of the consistent noise contribution from the site. The LA90 noise levels measured at all three locations was

less than 55 dBA indicating no consistent noise impacts from the site on noise sensitive locations located in close proximity to the site.
The 1/3 octave analysis completed at each monitoring location during the monitoring assessment indicated no tonal noise component from the site.
The landfill is a closed facility and no site activity has occurred on site for a number of years. No noise sources associated with the landfill were noted on site during the measurement period. The main environmental noise contribution at the site boundary and adjacent noise sensitive receptors around the site was from traffic on the L4118 and R469 roads and M18 motorway not associated with the site.

4.4 Groundwater, Surface Water and Leachate.

4.4.1 Groundwater

Groundwater monitoring was carried out in accordance with schedule E.4 of Waste Licence W0031-01 for the parameters and at the monitoring frequency specified in Table E.4.1 at locations: OB1, BR1, OB2, BR2, OB3, BR3, OB4, OB5, OB6, OB8, BR6, BR7, BR8 and BR9 (refer to Drawing No. 1 in Appendix I. for locations).

Results for key parameters chloride and ammonia at all wells are summarised below.

Chloride:

Groundwater chloride levels are graphed in figures 2 and 3 below. As can be seen from the graphs and in accordance with historical trends, higher chloride levels were observed in wells located close to the R. Fergus (OB1, BR1, OB2, BR2, and OB5). These elevated chloride levels may be in part attributed to the influence of the R. Fergus. Groundwater contamination from landfilling activities at the site may also be a factor (see section on ammonia below).

Fig. 2

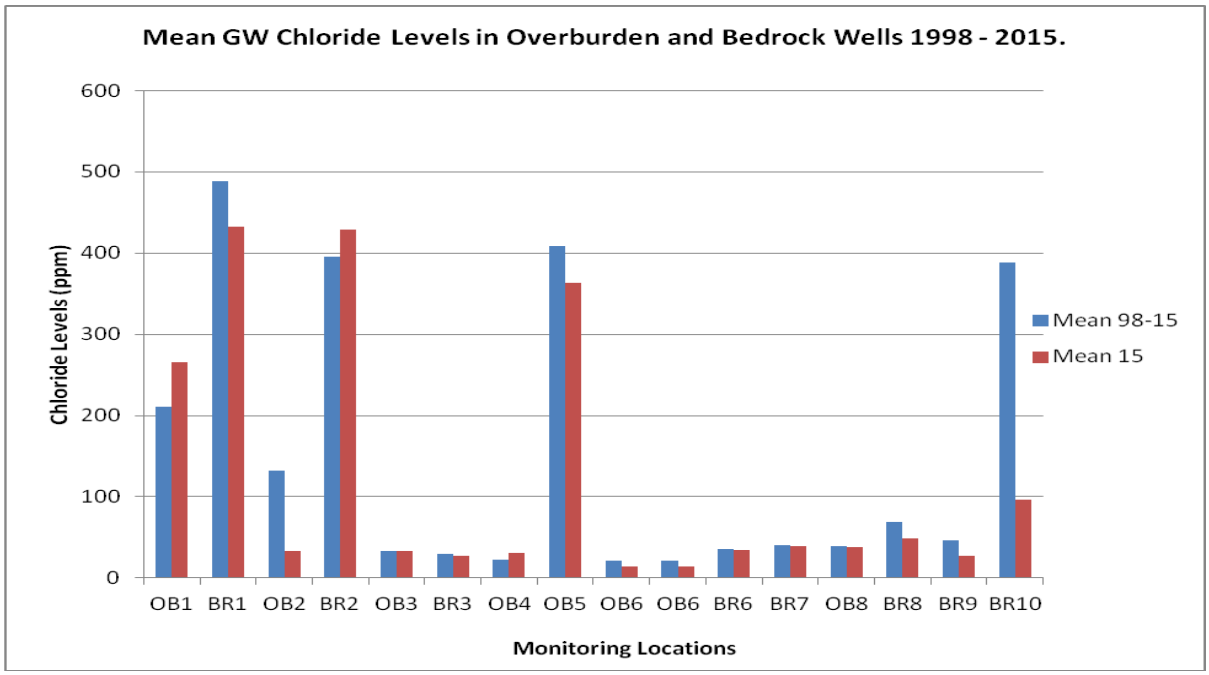
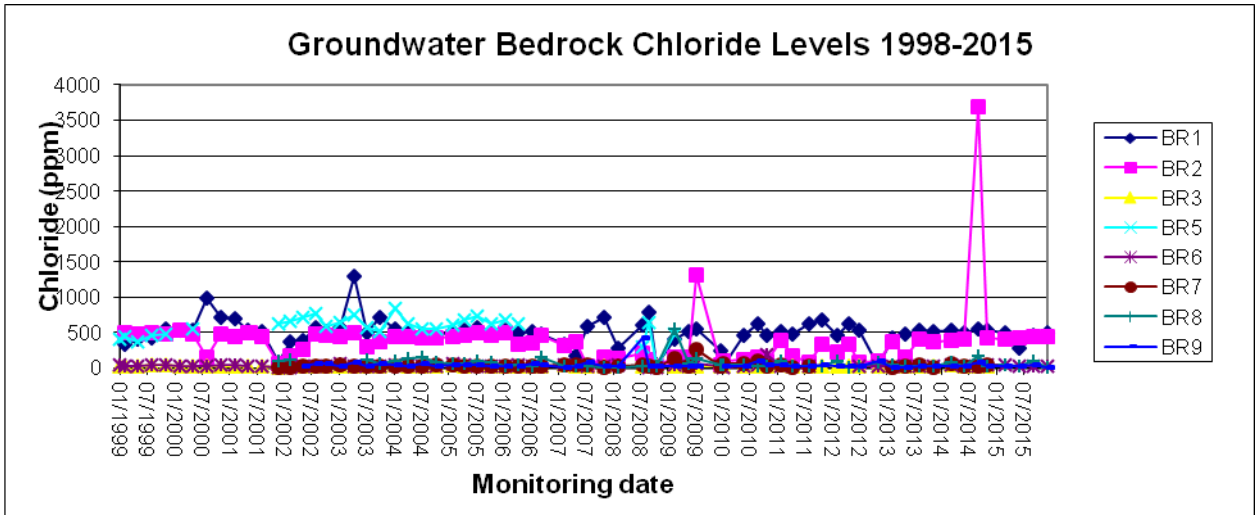


Fig. 3



Ammonia:

Groundwater ammonia levels for the eleven-year period from January 2004 to December 2015 are graphed below in figures 4 to 12. Mean ammonia levels for the period are graphed in figure 13. Overall, values for 2015 are below that of historic trends for each well, with recorded values at BR1, BR3, OB4 and OB5 slightly elevated above that of historic mean levels.

Groundwater ammonia results remain elevated for onsite monitoring wells (OB1/BR1 and OB2/BR2) when compared to values for other onsite and offsite wells. This is in keeping with the historic trend.

Similarly results for BR10, remain elevated when compared to other wells within the site, however when compared to historic values at this location, values have decreased during 2015.

As expected, lowest ammonia levels were found in up-gradient wells OB3, BR3 and BR7 and in the cross-gradient nested pair of wells OB6 and BR6.

Fig. 4

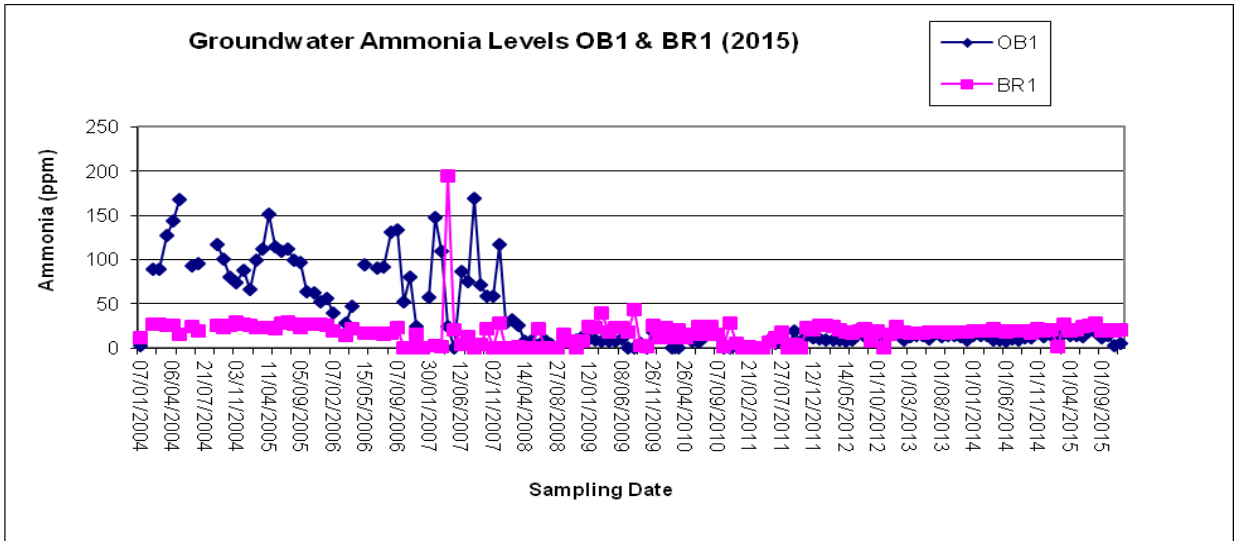


Fig 5.

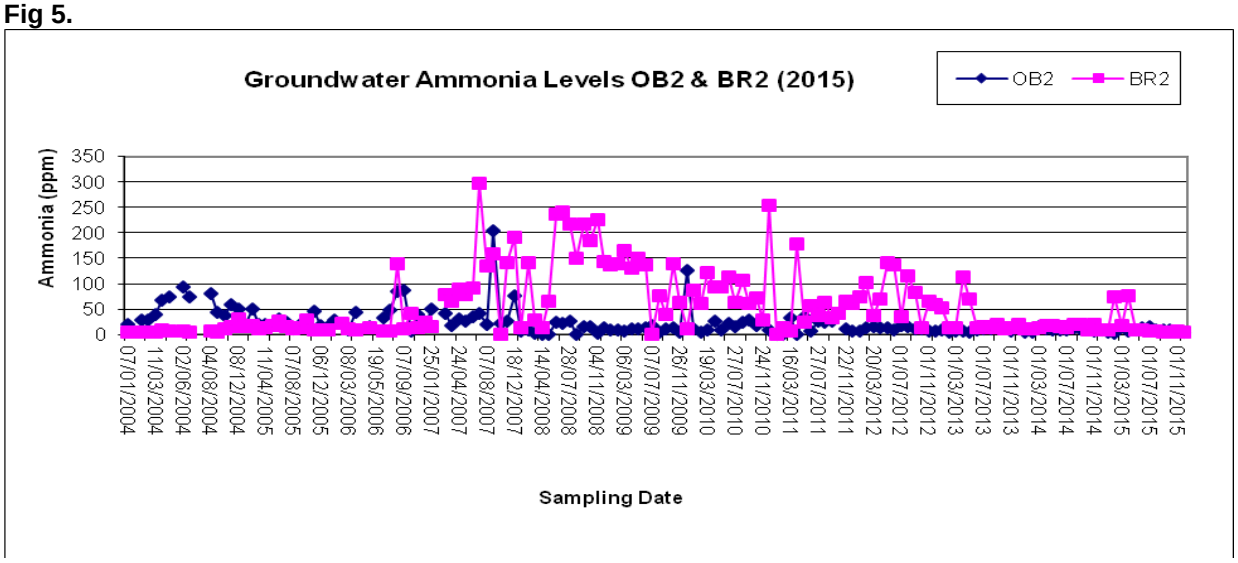


Fig 6.

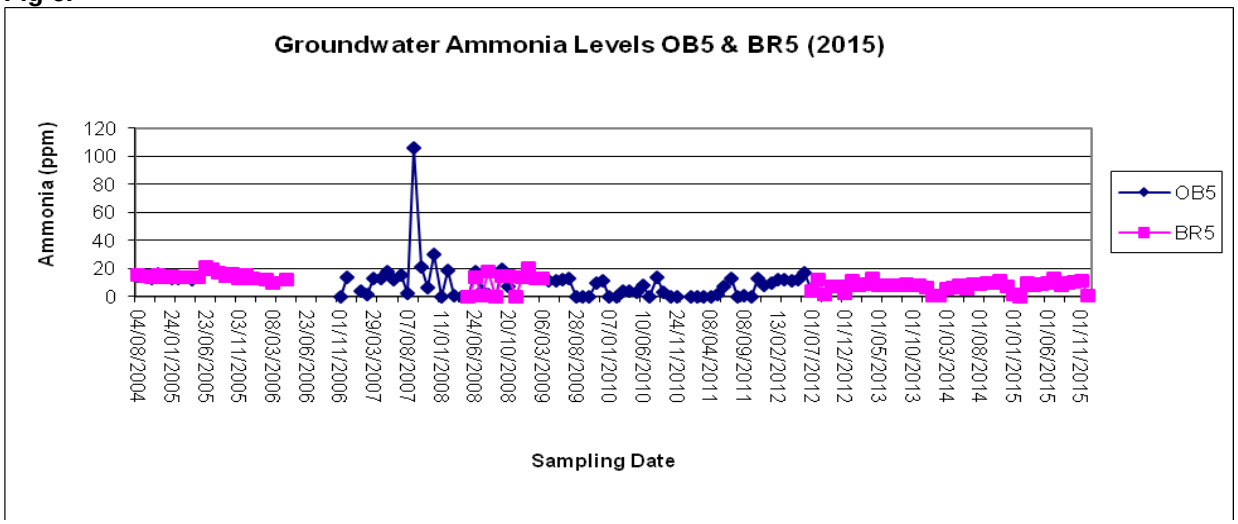


Fig. 7

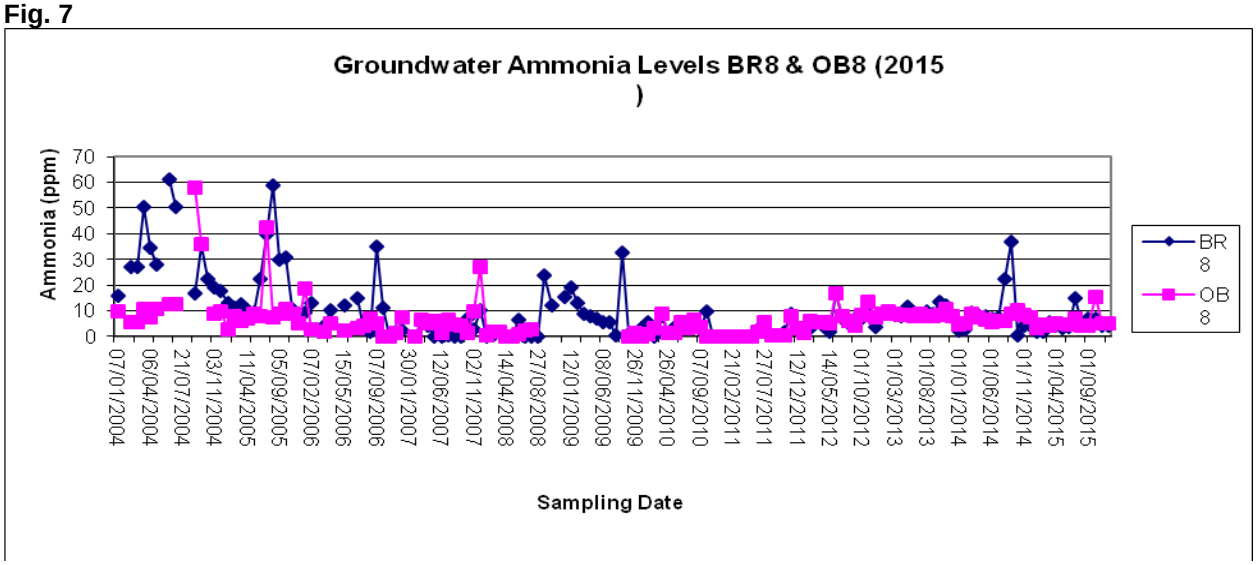


Fig. 8

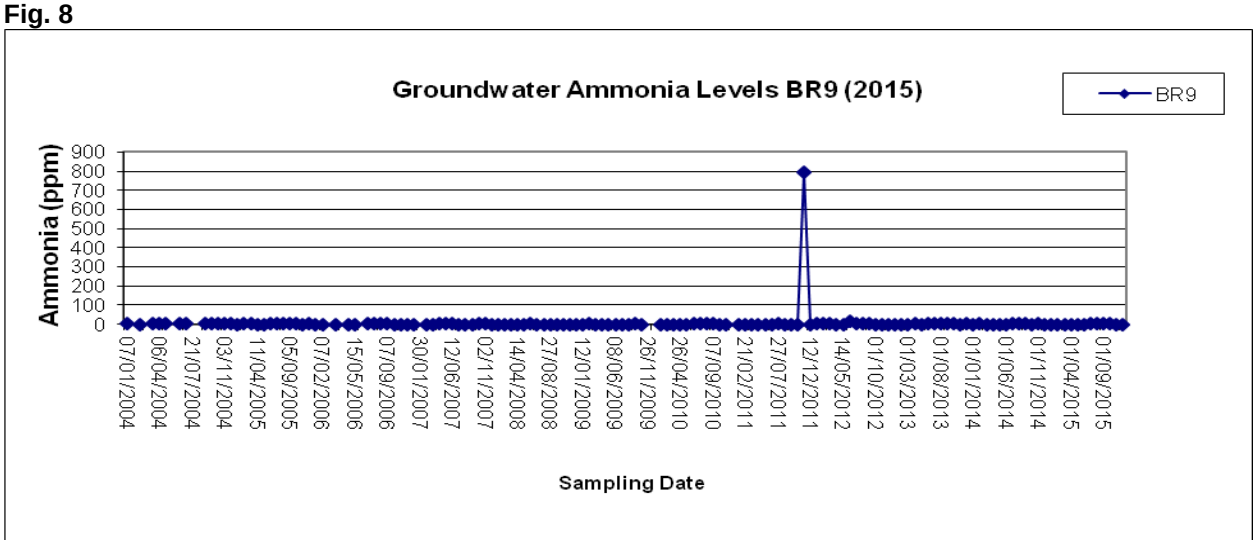


Fig. 9

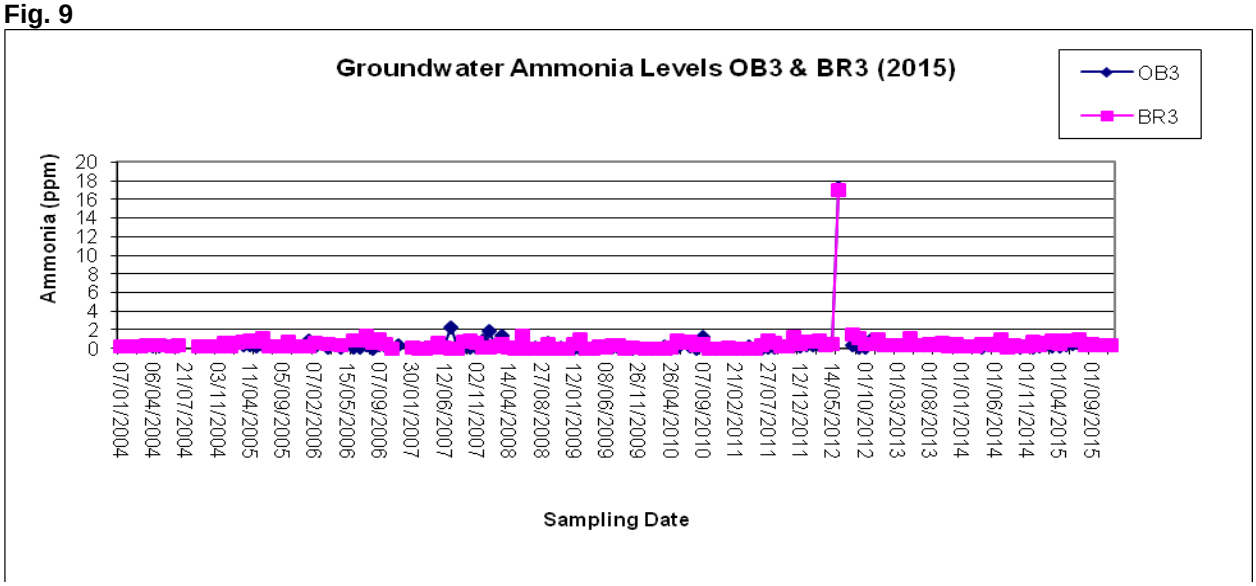


Fig. 10

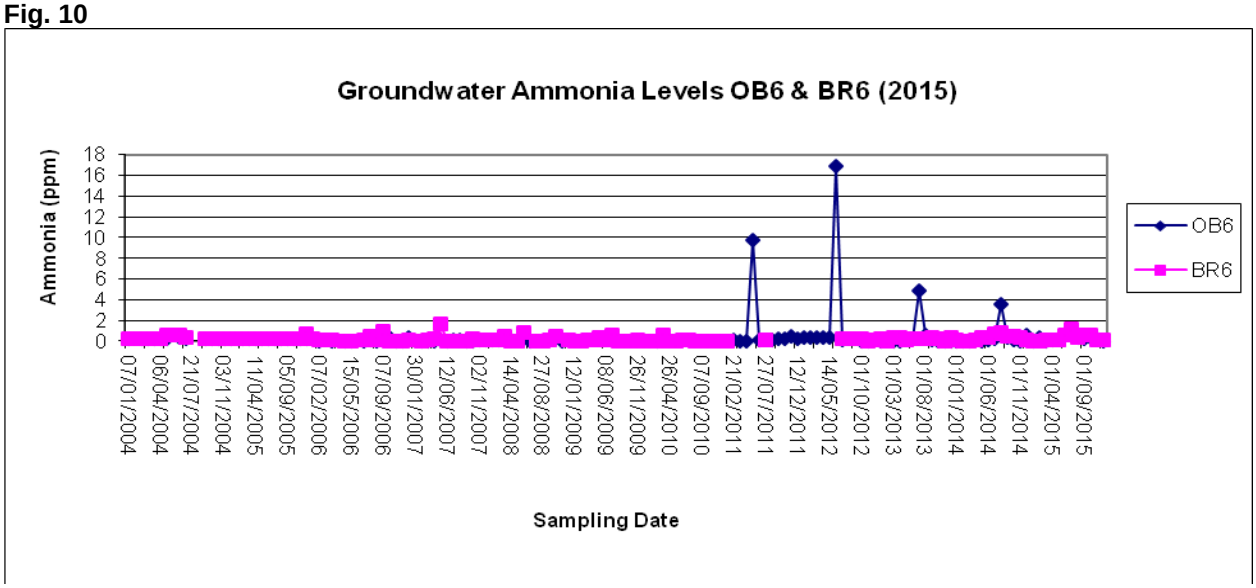


Fig. 11

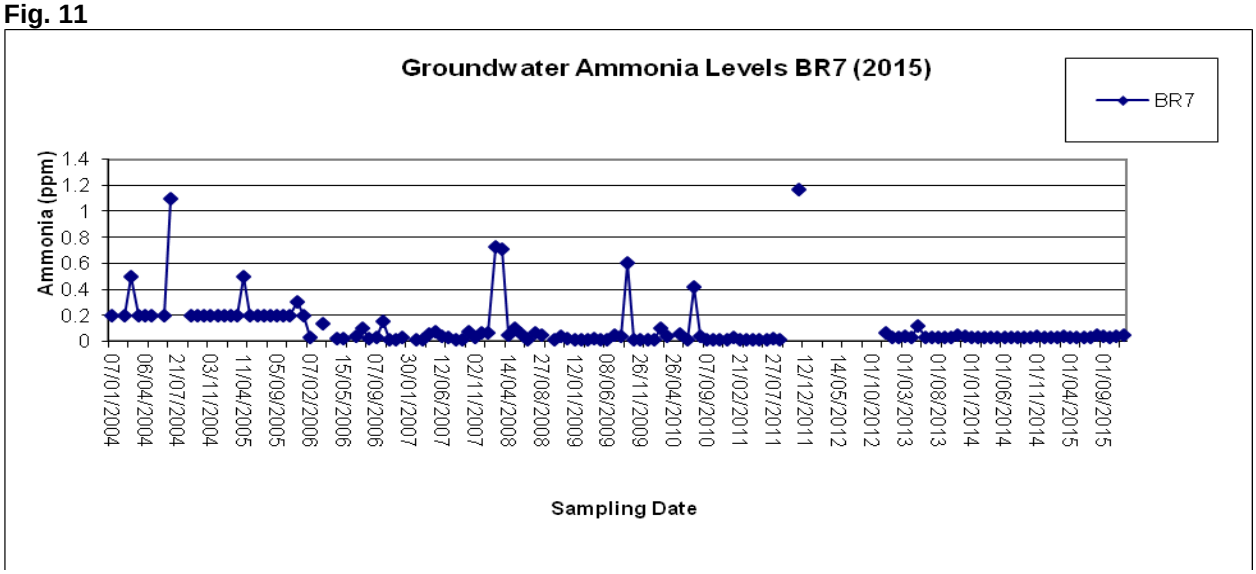


Fig. 12

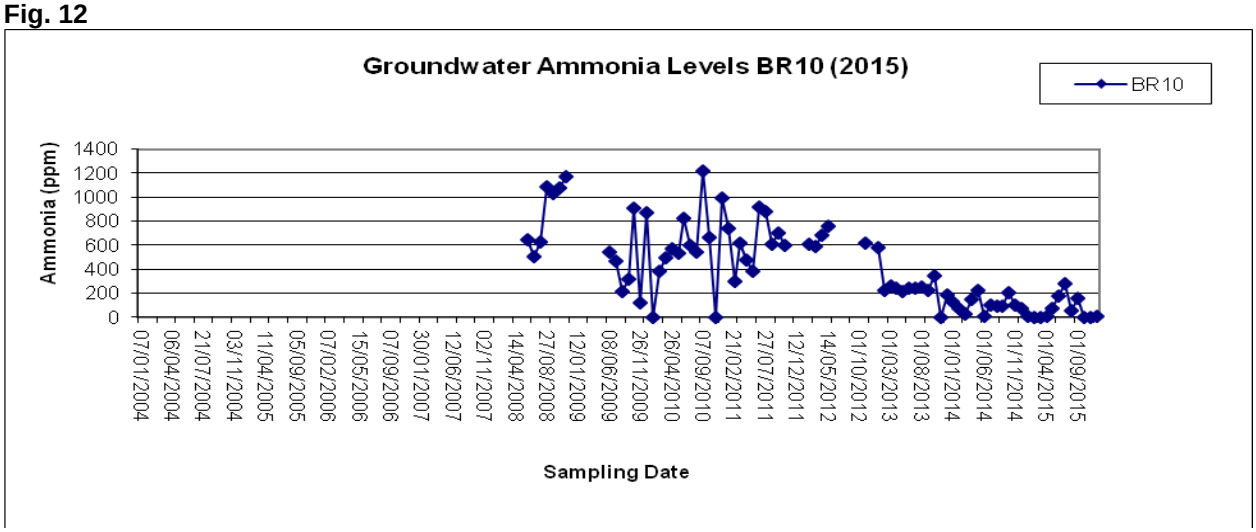
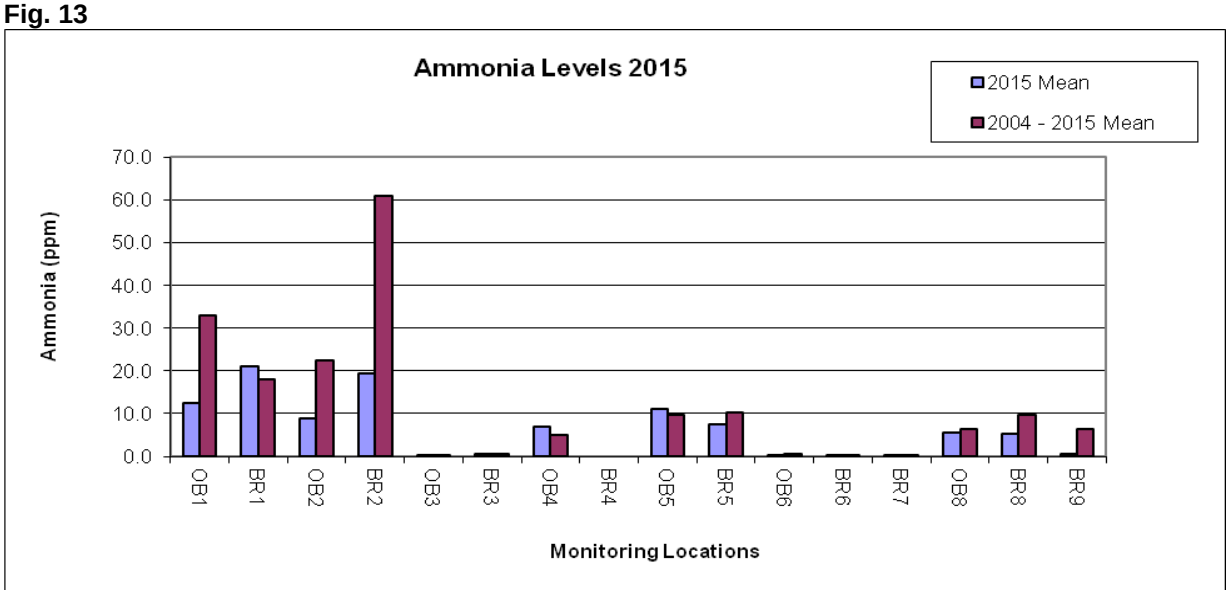


Fig. 13



4.4.2 Surface Water

Surface water monitoring during 2015 was carried out at the following locations: SW1, SW2, SW3, SW4, SW5, SW6, SW7, SW8, SW11, SW12, SW13, SW14 and SW15. Monitoring locations are shown in Drawing no. 1 in Appendix I. Surface water samples were collected for analysis as specified in Table E.4.1 of Waste Licence W0031-01. In addition, monthly monitoring was carried out at SW2, SW3 and SW7 for pH, conductivity and ammonia levels.

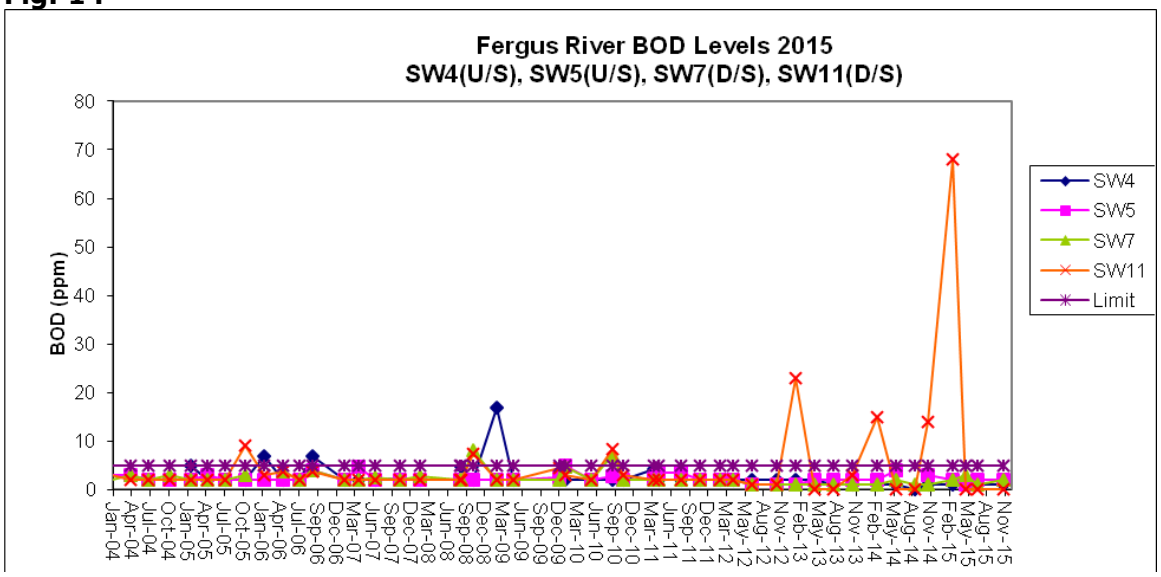
Results for key parameters ammonia and BOD are summarised in this report.

BOD:

BOD results for the R. Fergus and R. Gaurus for the eleven-year period from 2004 to 2015 are graphed in fig. 14 and 15 respectively. An unusually elevated level was recorded at SW11 in Q1 of 2015. It was reported at the of sample collection that water was stagnated and this is the most likely cause for the artificially high result. The R. Fergus is classified as a Salmonid water[1] to which a 5ppm BOD limit applies. This limit is shown in figure 14.

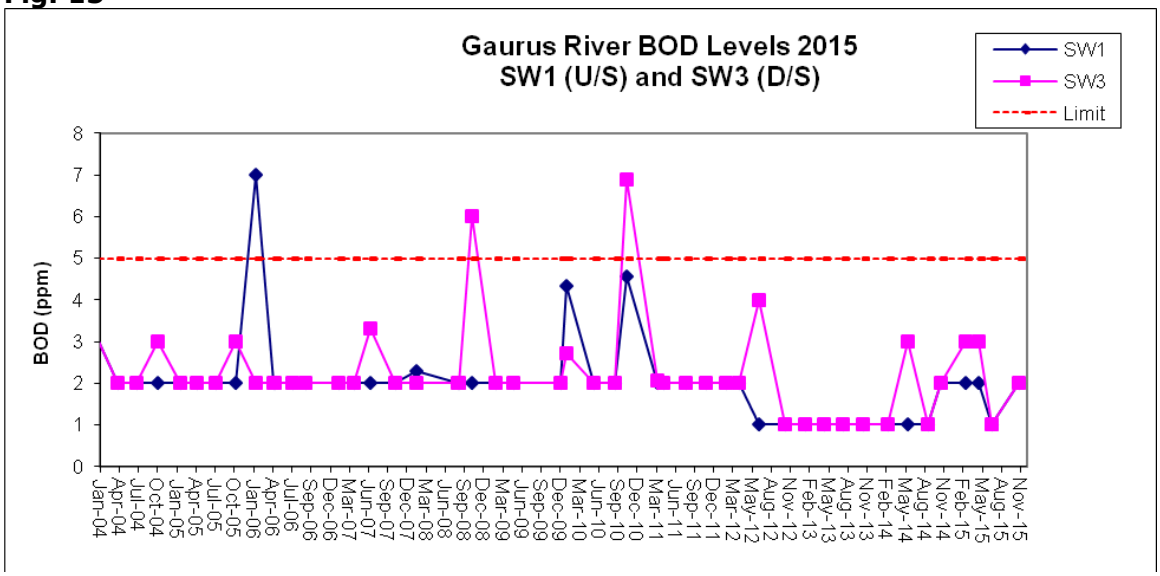
1: From European Communities (Quality of Salmonid Waters) Regulations, 1988 (SI No. 293 of 1988). Note that the freshwater fish directive 2006/44/EC does not include a mandatory BOD limit but does include a guide BOD level of ≤3ppm for salmonid waters.

Fig. 14



Gaurus River BOD results are graphed in figure 15. The 5ppm Salmonid limit is also shown on this graph for comparative purposes.

Fig. 15



There are two surface water sampling locations (SW12 and SW13) on the eastern boundary drain. This drain runs in a southerly direction along the eastern boundary and is piped underground close to the southern site boundary, feeding into the R. Fergus upstream of Doora Bridge. BOD levels in the eastern boundary drain are graphed in figure 16.

There are three sampling locations on the western boundary drain (SW2, SW8 and SW14) which feed into the R. Gaurus downstream of SW2. Results for this drain are graphed in figure 17. Also included on the graphs is the 7ppm BOD for A3 waters from the Surface Water Regulations (1989). This limit is included for comparative purposes only; no limits exist for BOD levels in site drains.

Fig 16.

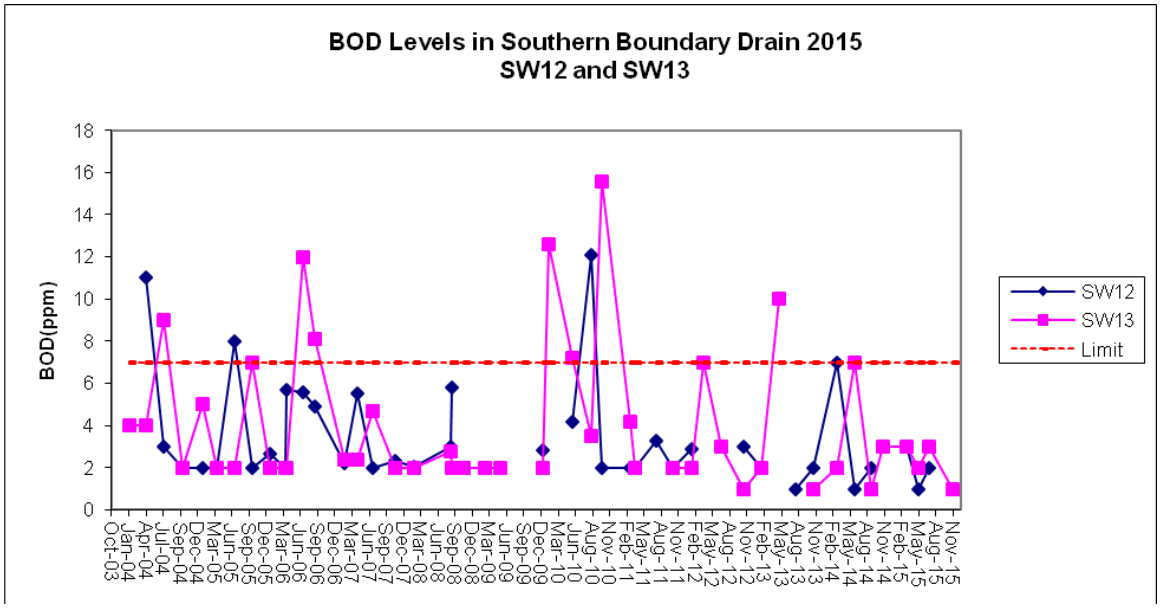
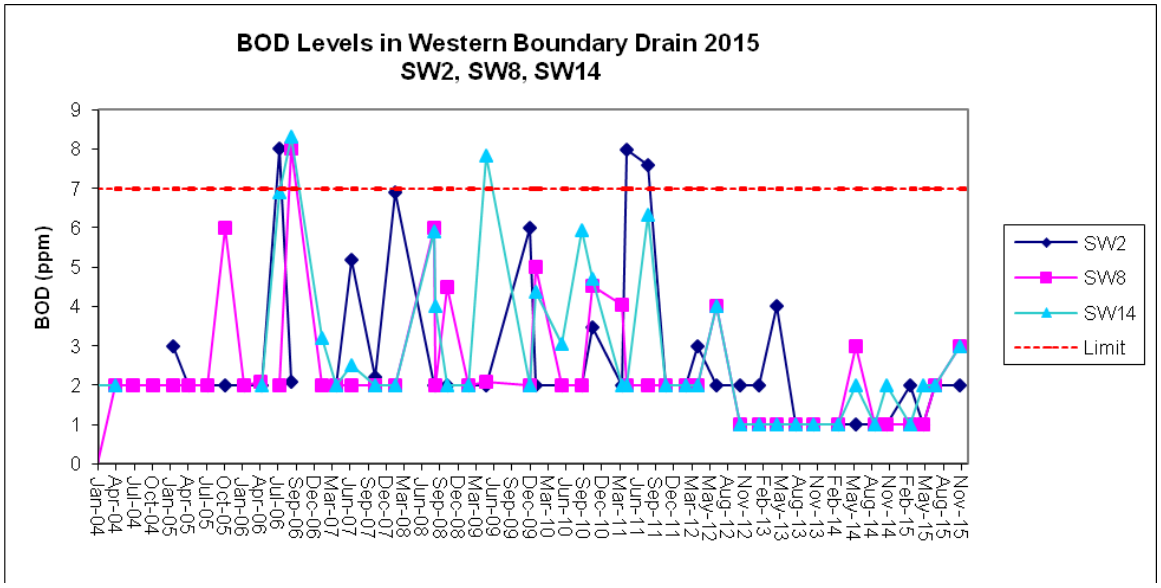


Fig 17



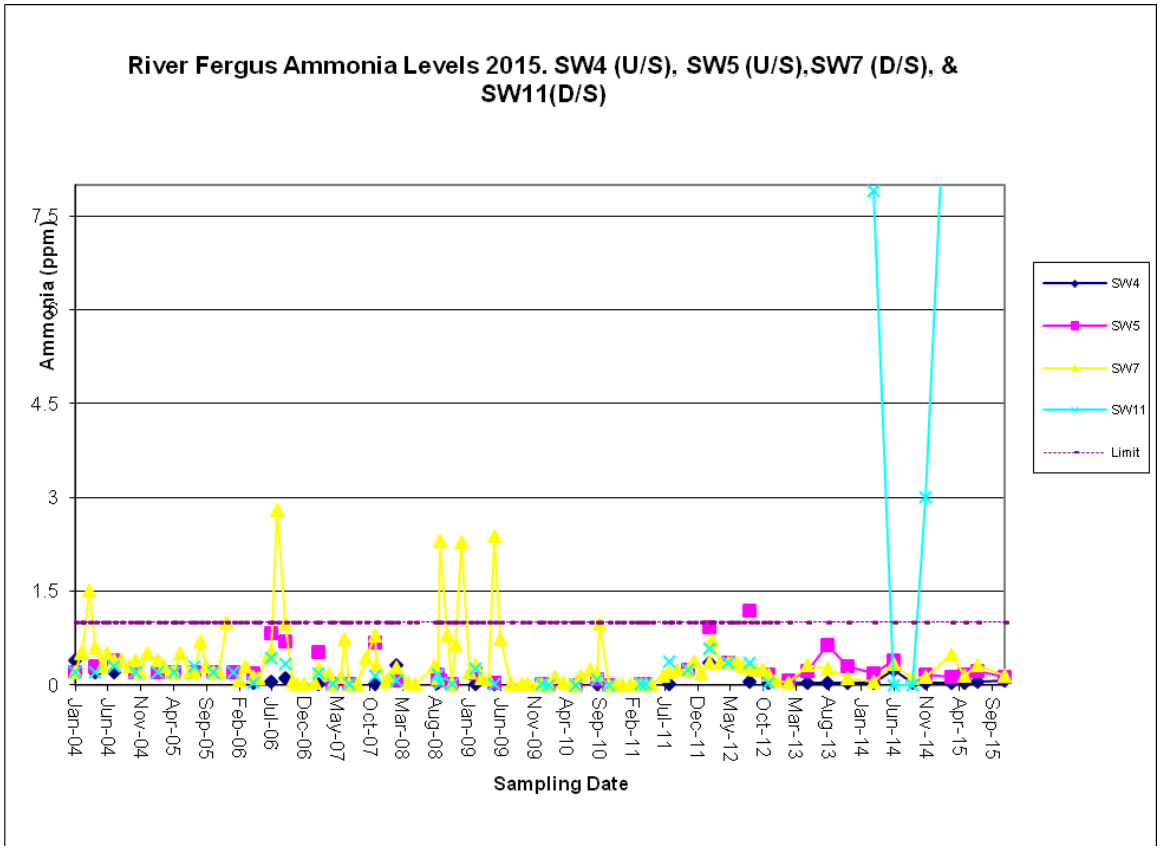
Ammonia:

Ammonia results for Gaurus and Fergus river samples for the ten-year period from January 2004 to December 2015 are graphed in figures 18 and 19 respectively. Also

shown on the graphs is the 1ppm ammonia limit for Salmonid Waters. This limit is included in the Gaurus river graph for comparative purposes only.

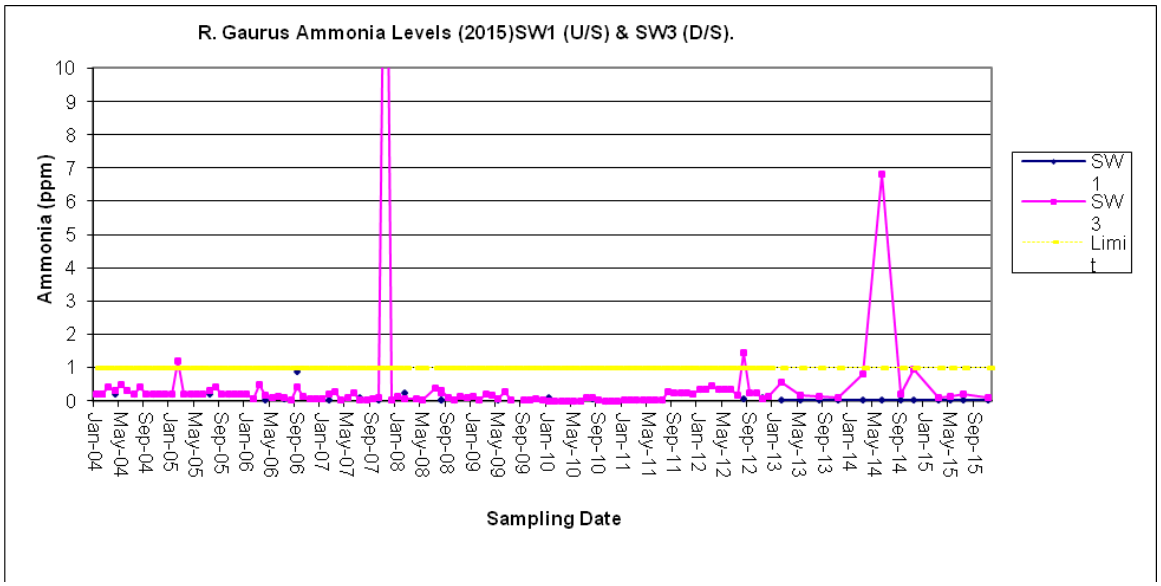
An isolated exceedence at SW11 was recorded in March 2015. The cause for this monitoring spike is believed to have been a sample collected from a stagnant water source.

Fig. 18



Ammonia results for Gaurus river location SW1 (upstream of the landfill) have been below 1ppm for the 11 year period from January 2004 to December 2015. Ammonia results at SW3 (downstream of the landfill) continued to remain below 1ppm for much of the 2015 period.

Fig. 19



Ammonia results for the western and eastern boundary drains for the 11 year period are shown in figures 20 and 21.

Fig. 20

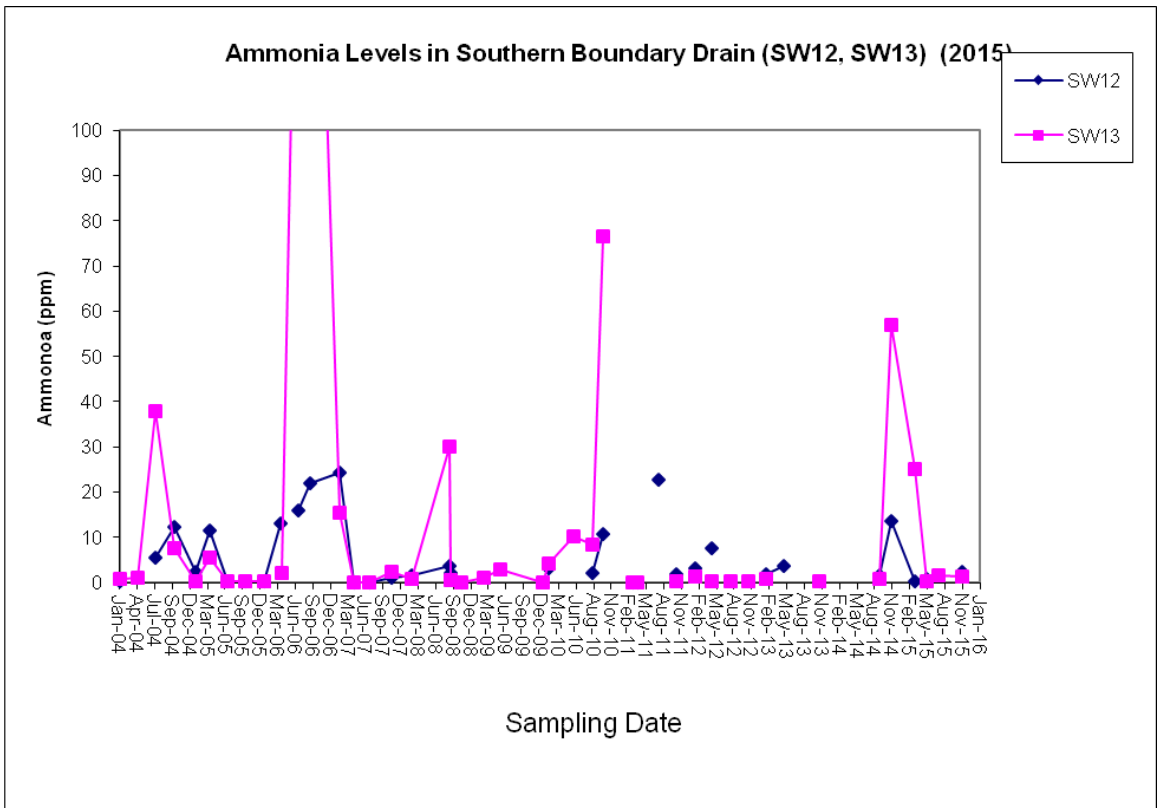
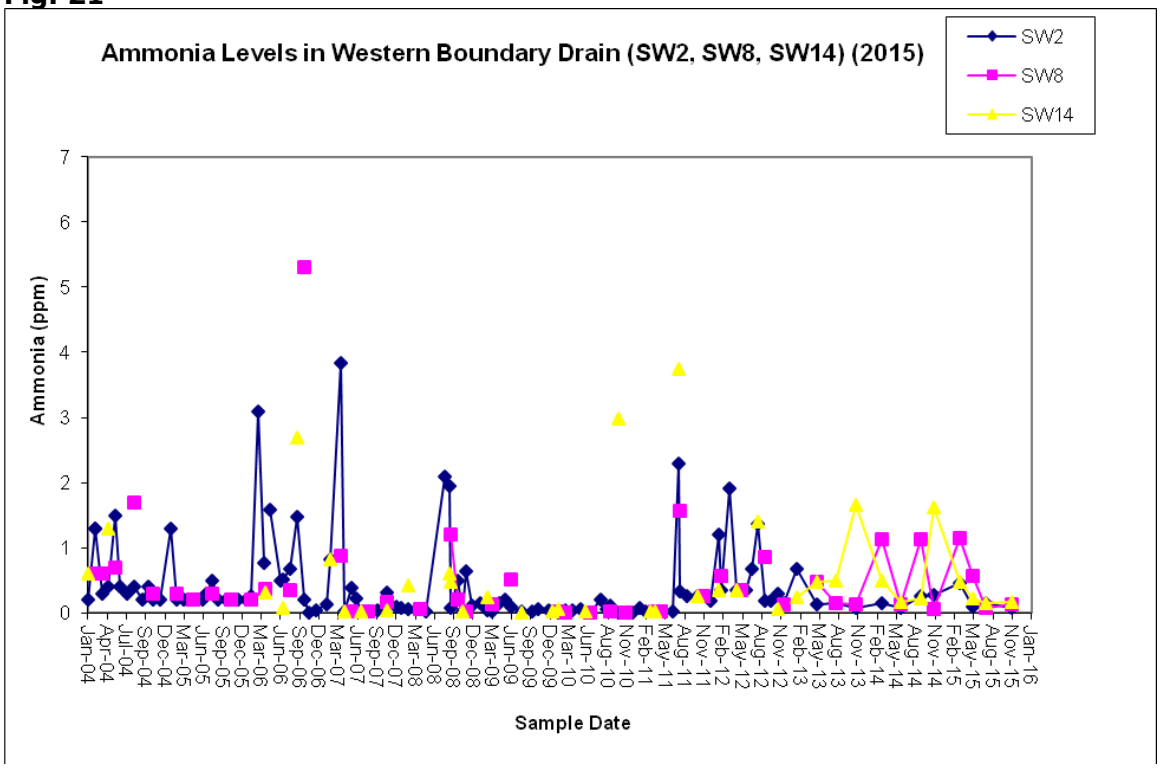


Fig. 21



Ammonia levels at all locations on the southern and western boundaries have remained consistently low for the 2015 period.

4.4.3 Leachate

Leachate monitoring was conducted in accordance with Schedule E.4 of Waste Licence W0031-01 for the parameters and at the monitoring frequency specified in Table E.4.1 at locations L1, L6, L7, L8 and L9 (see Drawing No. 1 in Appendix I for locations). An additional leachate abstraction well (L10) was installed in mid 2008 in zone 3 of the landfill. Monitoring of this well commenced in July 2008.

Ammonia, BOD and COD results for leachate wells are graphed in figures 22 to 25.

As would be expected given the locations of L8, L9 and L10 in Zone 3 (the area of most recent waste deposition) BOD, COD and ammonia levels were higher in these wells than in zone 1 (L1) and zone 2 (L6).

Fig. 22

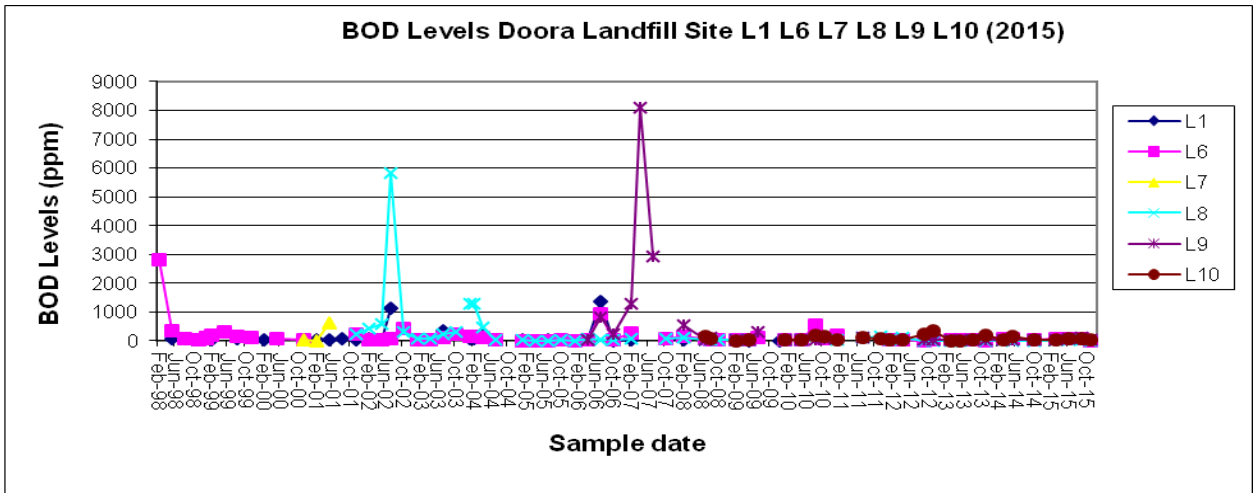


Fig. 23

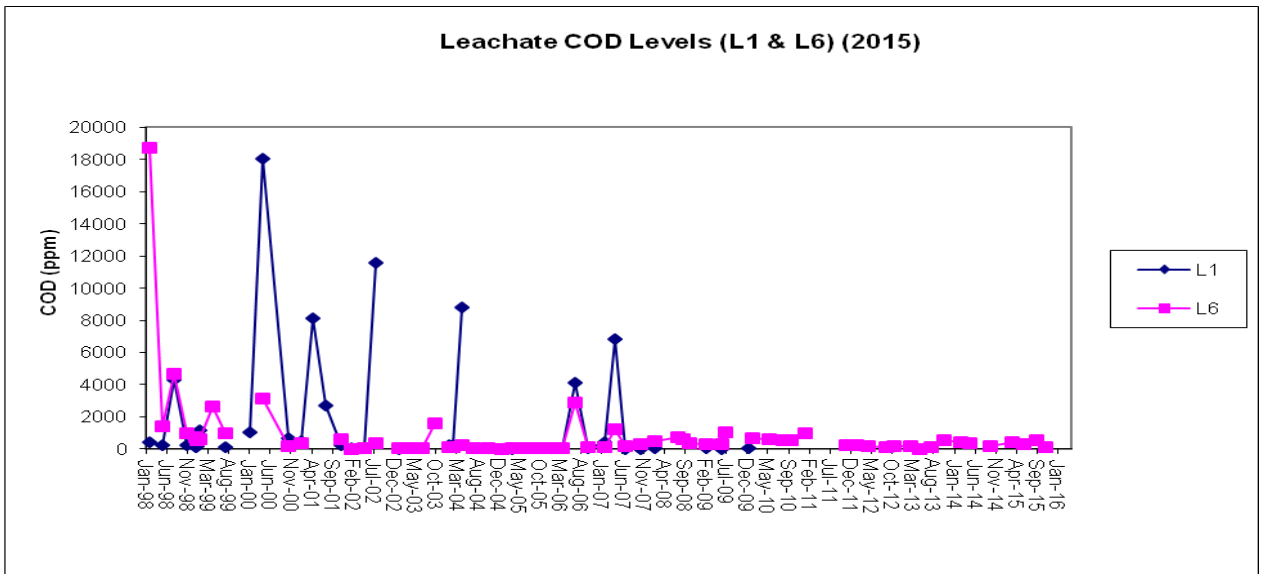


Fig. 24

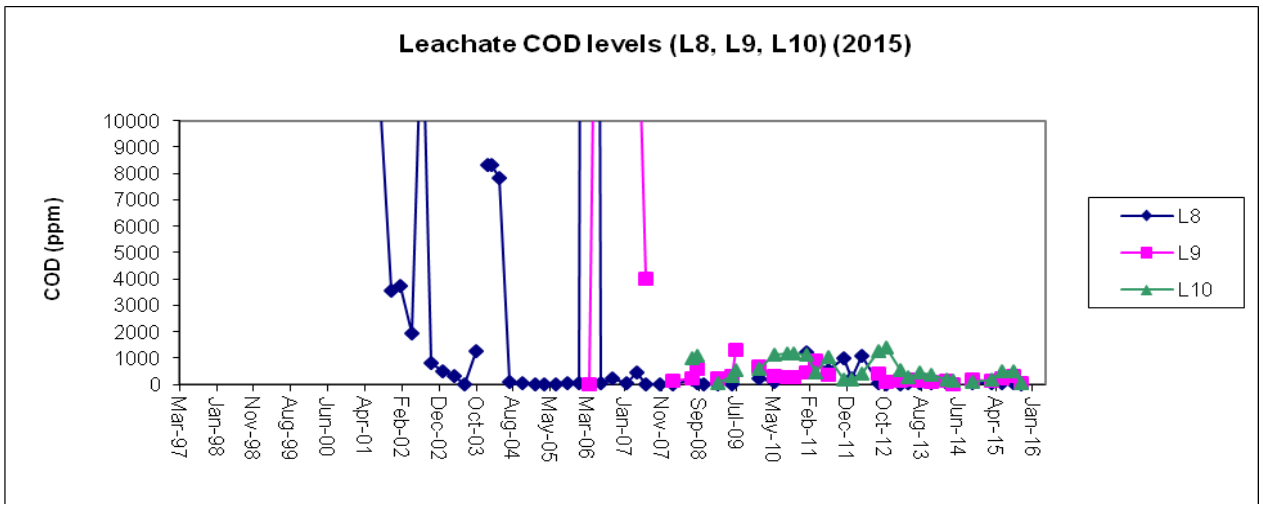
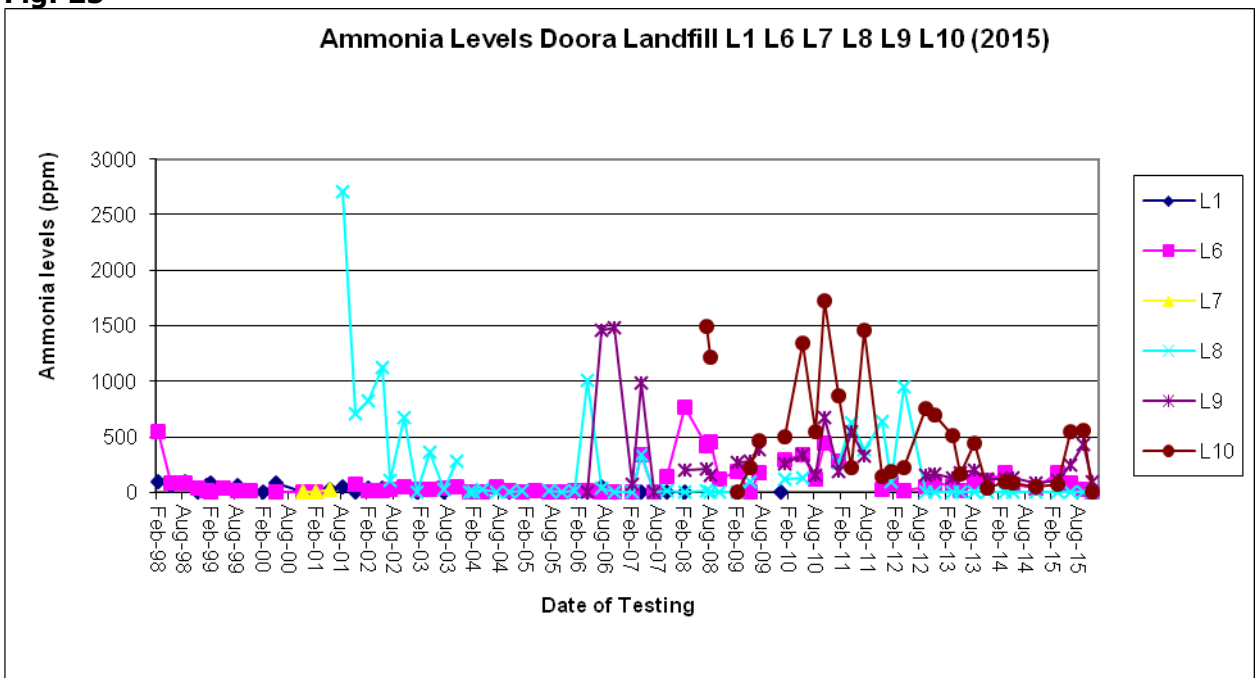


Fig. 25



4.5 Landfill Gas Flare Unit.

Emissions to atmosphere from the enclosed landfill gas flare were monitored in accordance with the requirements of Schedule E.5. of Waste Licence W0031-01. This monitoring was carried out on two occasions in 2015.

Monitoring results are presented below in Table 4.3:

Table 4.3: Flare Monitoring Results:			
Parameter/units	**24th June 2015**	**16th December 2015**	**Emission Limit[1]**
Nitrogen Oxides (NO_x) as NO_2 (mgN/m^3)	16.32	74.53	150 mg/m^3 for Flare Stacks
Carbon Monoxide (CO) (mg/Nm^3)	5.71	52.55	50 mg/m^3 for Flare Stacks
Sulphur Dioxide (SO_2) (mg/Nm^3)	174.46	23.14	-
Temperature (K)	1278.15	953.15	-

TA Luft Organics(mg/m^3)	<1.33		20 mg/m^3 (at mass flows >0.1 kg/hr)
HCl (mg/m^3)	0.48		50 mg/m^3 (at mass flows >0.3kg/hr)
HF (mg/m^3)	0.31		5 mg/m^3 (at mass flows >0.05 kg/hr)

4.6 Biological Monitoring

A Biological Monitoring survey was carried out in May and September 2015 in accordance with Condition 9, Schedule E of WL 31-1. Survey conclusions are summarised below:

4.6.1 Gaurus River

Results at WQ1 as observed during the 2015 improved slightly on previous years., with a value of 3-4 recorded at both May and September events. Results for WQ3 remained the same as results for previous years. These ratings are in line with historic data for both locations

4.6.2 Fergus River

Three sites are monitored on the R. Fergus: WQ4, WQ5 and WQ6. For the 2015 period, results remained broadly the same as in previous years. Q ratings at WQ4 did improve to a rating of 3 in May before return to a rating of 2-3 during Sept 2015.

The poor water quality in the R. Fergus immediately upstream and downstream of the R. Gaurus confluence would appear to be due to upstream conditions in the Fergus rather than any impact from the Gaurus, however an impact from the R. Gaurus on both sites on incoming and outgoing tides cannot be conclusively ruled out.

The ongoing monitoring since 2002 have shown that the sites monitored on the R. Fergus have a very unstable invertebrate community. This instability is likely due to the tidal and occasional saline conditions at these sites.

It cannot be concluded from the invertebrate data that there is an adverse impact on the Fergus from the landfill, however, given the tentative nature of the Q-ratings at these sites a minor impact cannot be ruled out.

	WQ1	WQ2	WQ3	WQ4	WQ5	WQ6
April 2003	4	3-4	3	3	3	3
June 2003	3-4	3-4	3	3	3	3
Sept. 2003	3-4	3	3	3	3	3
July 2004	3	3	3	3	3	3
Sept 2004	3-4	3	3	3	3	3
May 2005	3-4	3	3	3	3	3
Sept 2005	3-4	3-4	3	3	2-3	3
May 2006	3-4	3	3	2-3	2-3	2-3
Sept 2006	3-4	3	3	3	3	3
May 2007	3-4	3	3	3	3	3
Aug 2007	3	3	3	3	3	3
May 2008	3-4	3	3	3	3	3
Aug 2008	3	3	2-3	3	3	3
May 2009	3-4	3	3	2-3	3	2-3
Oct 2009	3-4	3	3	2-3	2-3	2-3
July 2010	3-4	3	3	3	3	3
Sept 2010	3-4	3	3	2-3	2-3	2-3
May 2011	3-4	3	3	2-3	3	2-3
Sept 2011	3	3	3	3	3	3
May 2012	3-4	3	3	3	3	3
Sept 2012	3-4	3	3	2-3	3	2-3
May 2013	3-4	3	3	3	3	3

Sept 2013	3	3	3	2-3	3	2-3
May 2014	3-4	3	3	3	3	3
Sept 2014	3	3	3	2-3	3	3
May 2015	3-4	3	3	3	3	3
Sept 2015	3-4	3	3	2-3	3	3

4.7 Odours

No odour problems were encountered during the reporting period.

5.0 Monthly Water Balance Calculations and Interpretation

Total effective rainfall for the reporting period 2015 was calculated using monthly data from the Shannon Airport Meteorological Station. The effective rainfall for the period January to December 2015 was 704mm. The water balance calculation for the period is set out in Table 5.2 below:

Table 5.2: Water Balance Calculation at Infiltration Rates from 10-30%.

Capped area infiltration (%)	Active Area	Active area infiltration	Capped Area ($m^{2)}$	Total rainfall (m)	Net Leachate 2014 (m^3)
30%	0	0	186,900	0.704	39473
20%	0	0	186,900	0.704	26513
10%	0	0	186,900	0.704	13157

As for previous reports, the rainfall infiltration through capping was assessed at three infiltration rates (10%, 20% and 30%), based on a variation in capping thickness throughout the site. Final capping has been in place throughout the site since early November 2008 so in practice, the actual amount of rainfall infiltration will be at the lower end of the range from that time.

6.0 Volume of Leachate Produced and Discharged On Site

The theoretical assessment of leachate generation at the Doora site was based on the monthly water balance calculation provided in Table 5.2. As the landfill was operated on the "dilute and disperse" principle, it is not possible to provide an absolute value for leachate volumes arising during the year. The volume of leachate produced is linked to two external factors (in addition to the moisture content of the waste deposited):

- Possible infiltration from tidal movement as the landfill site is below the high water mark.
- Rainfall infiltration.

Infiltration from tidal movement cannot be quantified. An assessment of tidal infiltration was made from two wells in Zones 2 and 3 in January 2004 and no link was found (8m well depth). This assessment was not carried out in Zone 1 so the possibility of tidal infiltration can't be ruled out here but observations from monitoring data indicate that Zone 1 is virtually dry with very little leachate produced.

The most significant factor limiting rainfall infiltration and resultant leachate production at Doora is the extent of capping in place at the facility. Prior to November 2008, there were varying depths of soil cover through the site. Trial pit investigations revealed that the majority of Zone 3 had a capping thickness of >1.5m. The southern part of Zone 3 had up to 6m of cover and in the northeast, the cover ranged from 3.5 to 5m. Less capping was in place in the older landfilled zones - Zones 1 and 2. Areas in each of these zones had between 0.5 and 2m of capping in place but there were sections with less than 0.5m of cover. Since November 2008, the required thickness of final capping material has been in place throughout the site and rainfall infiltration should now be minimal.

7.0 Cumulative Annual Emissions to Groundwater

Leachate is the most significant emission to groundwater from the site. Monitoring results indicate that leachate is more likely to be discharging to ground than to surface waters. The direction of groundwater flow is northeast to southwest across the site, towards the Fergus river. Existing information from investigations on Drumcliffe Springs in the same bedrock body, located approx 3.5km to the northwest of the landfill, indicate that there is no hydrological link between surface and groundwater bodies.

In the latter period of 2009, a dedicated leachate storage tank was commissioned, as planned under the remediation project. Off site tankering commenced in late 2009, and is ongoing to date. A total of 63,660litres of leachate was removed off site during 2015 and directed to a WWTP for treatment.

8.0 Resource and energy consumption

8.1 Fuel usage

There was no fuel usage on site during 2015. The only use of machinery on site during 2015 related to maintenance of the site, in the form of grass cutting and similar landscaping related activities

8.2 Electrical usage:

The facility is a closed landfill site with no power-consuming equipment in use except for the landfill gas flare and the leachate abstraction pumps.

8.3 Water usage

No full-time staff have been employed at the site since October 2004. Toilet facilities at the site have since been decommissioned, hence, there is no water usage for the period 2015.

9.0 Review of nuisance controls

9.1 Site Inspection

As Doora landfill is a closed facility, site inspections are no longer formally carried out. However Council staff visit the facility once per week at a minimum, to carry

out surface water visual inspections and to measure gas and leachate levels. No nuisance was noted during these site visits.

9.2 Litter Control

Doora landfill is a closed facility. The most significant potential issue in relation to fresh litter would be fly tipping outside the site entrance. There was no incidence of fly tipping during this reporting period. Clare County Council personnel carry out informal litter audits as part of the weekly surface water visual inspection surveys. There were no litter problems noted.

9.3 Bird Control

No bird nuisance was observed by Council staff or reported to the Council by any other person during the reporting period. Since closure of the landfill and capping of the waste body birds have not been a problem.

9.4 Odour Control

No odours were observed by Council staff or by our monitoring consultants during this reporting period. The Council received no complaints of odours relating to Doora landfill during the period.

10.0 Environmental objectives and targets.

A copy of the Environmental Objectives and Targets is included in Appendix II.

11.0 Summary of procedures developed.

No new procedures were developed during this reporting period.

12.0 Incidents

No incidents were reported during 2015.

12.1 Complaints

No complaints were received during the reporting period.

13.0 Development works undertaken and proposed development of the facility with timescale

No development works undertaken during 2015.

In latter 2012, The Clare Camogie Board took charge of the sports pitches and car park area in the form of a formal lease arrangement, and carried out certain additional improvement works within this area, namely the erection of lighting, security fencing and goal post nets, in conjunction with the extension of the existing car park, and the construction of permanent changing facilities, including shower and toilet facilities. The exact detail of this development was submitted to the EPA in various correspondence during 2012, and full approval was sought prior to the commencement of any works.

To date these works have not been completed and activities at the facility merely consist of use of the playing fields.

14.0 Annual and cumulative quantities of landfill gas

The volume of gas production at Doora Landfill was estimated using a computerised gas model called "LandGEM Version 3.20", which was developed by the US EPA.
based on weighbridge data for waste tonnage information from 1998 to 2001 and on estimated tonnages for the period prior to 1998. As part of the restoration and aftercare plan for Doora landfill, the Landgem gas generation model was run for the facility in August 2006, with each of the three zones addressed separately. Results from this model for 2010 are shown below in table 15.2:

Table 15.2: Results from Landgem Gas Model for 2010

Zone	Landfill Gas m^3/yr	Methane m^3/yr
1	$2.5X10^5$	$1.3X10^5$
2	$8.6X10^5$	$4.1X10^5$
3	$2.9X10^6$	$1.4X10^6$
Total	$4.01X10^6$	$1.94X10^6$

The final landfill gas production figures derived using the Landgem model were similar to the figures obtained using the 1st Order Decay method. The Landgem model is based on the original first order decay model. The additional information provided from running each zone separately under the Landgem model indicates, as would be expected, that practically all of the theoretical tonnage of landfill gas generated is coming from Zone 3.

15.0 Financial provisions, staffing and public information.

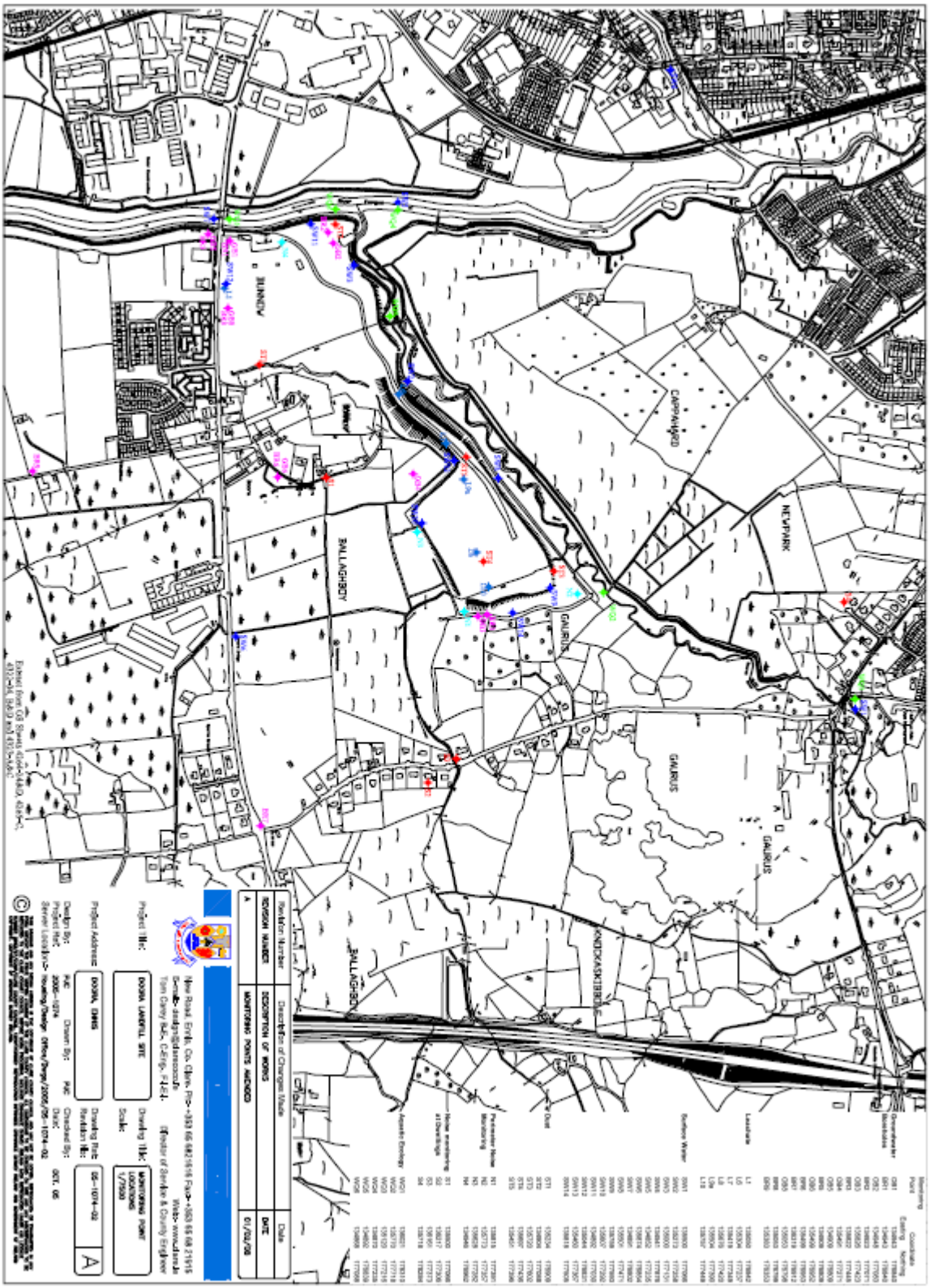
15.1 Budgetary allocations for the facility.

The maintenance budget for the facility for 2015 was in line with previous. The cost of permanent restoration and landscaping is €1.3m.

15.2 Public Information.

Information relating to monitoring of the facility and correspondence to/from the EPA is available for inspection at the Environment Section of Clare County Council, Áras Contae An Chláir, New Road, Ennis, County Clare.

APPENDIX I


BUNNOW
BALLAGHBOY
GAURUS
CARRAHARD
NEWPARK
KNOCKASKIBEG
Revision Number
Description of Changes Made
Date
A
MONITORING POINTS ADDED
01/02/06
DOONA LANDFILL SITE
DOONA, CAVAN
MONITORING POINT LOCATIONS
1/7500
Drawing No:
Scale:
Drawing Ref:
Revision No:
Drawn By:
Checked By:
Date:
OCT. 06
A

APPENDIX II

DOORA LANDFILL

WASTE LICENCE

Ref W0031-01

ENVIRONMENTAL OBJECTIVES AND TARGETS

Environmental Objectives and Targets

Objective 1

Comply with all aspects of the licence.

Target 1.1 - Every effort will be made to comply with all conditions of the waste licence by the prescribed dates.

The Senior Engineer, Executive Engineer and various contractors under the supervision of Clare County Council staff have responsibility for implementing this objective.

Performance against Target: - Waste licence requirements have been complied with in a timely manner on all occasions except on occasion in relation to quarterly reports where delay in receipt of reports from consultants resulted in a delay in submission of reports to the Agency.

Objective 2

Ensure that sufficient funds are available to comply with Condition 11 of the licence.

Responsibility for ensuring compliance with this objective lies with the Finance Officer of Clare County Council.

Performance against Target: Satisfactory**.**

Objective 3

Rehabilitate the closed landfill.

Target 3.1 – Ensure that the site is restored in accordance with a plan submitted to the EPA and ensure good aftercare.

The Senior Engineer, Environmental Services has responsibility for implementing this objective with the assistance of the Executive Engineer in charge and the Environmental Awareness Officer in the Environment Dept.

Performance against Target: On time. Restoration of the facility commenced in summer 2008 and is on target to be completed in August 2009.

Objective 4

Develop the closed Landfill site as an amenity for the public.

Target 4.1 – Restore the site to a green field site and develop playing pitches and facilities for the general public. These facilities to be developed by the year 2009.

The Executive Engineer in charge has responsibility for implementing this objective.

Performance against Target: Upon completion of remediation works two playing pitches and a series of public walkways will be assessable from a carpark facility on the site.

Objective 5

Improve correspondence with the E.P.A.

Target 5.1 - Council will make every effort to reply to letters of correspondence received from the Agency by the requested dates.

The Executive Engineer in charge and Senior Staff Officer have responsibility for implementing this objective.

Performance against Target: The Council has responded to EPA communications by prescribed dates

Objective 6

Continue monitoring of site for leachate and landfill gas

Performance against Target: The Council is in compliance with this objective on an ongoing basis. Upon completion of the remediation works improved gas and leachate infrastructure will have been installed on site.

Time scale

The time scale for achieving these objectives is generally outlined in the target description. The others are generally ongoing and the aim is to achieve progress before the next review of the E.M.P.

Designation of Responsibilities

The Senior Engineer, Environmental Services Section of Clare County Council has overall responsibility for the implementation of these objectives. The specific responsibilities for each objective are outlined in the description.

Responsibility for ensuring compliance with objective number 2 lies with the Finance Officer of Clare County Council.

Appendix III

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	Doora Landfill Site
PRTR Identification Number	W0031
Licence Number	W0031-01

Classes of Activity

No.	class_name
-	Refer to PRTR class activities below

Address 1	Bunnow
Address 2	Ballaghboy
Address 3	Gaurus
Address 4	Doora
	Clare
Country	Ireland
Coordinates of Location	-8.96627 52.8394
River Basin District	IEGBNISH
NACE Code	3821
Main Economic Activity	Treatment and disposal of non-hazardous waste
AER Returns Contact Name	Patrick Mullane
AER Returns Contact Email Address	pmullane@clareoco.ie
AER Returns Contact Position	Enforcement Officer
AER Returns Contact Telephone Number	065-6846200
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	0
User Feedback/Comments	
Web Address	

2. PRTR CLASS ACTIVITIES

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

4,1 RELEASES TO AIR Link to previous years emissions data | PRTR# : W0031 | Facility Name : Doora Landfill Site | Filename : W0031_2015(1)_prtr.xls | Return Year : 2015 | 18/05/2016 12:10

SECTION A : SECTOR SPECIFIC PRTR POLLUTANTS

RELEASES TO AIR					Please enter all quantities in this section in KGs			
POLLUTANT		METHOD				QUANTITY		
			Method Used					
No. Annex II	Name	M/C/E	Method Code	Designation or Description	Emission Point 1	T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) KG/Year
03	Carbon dioxide (CO2)	C	OTH	Flare emission estimated based on 99.8% flare efficiency. Fugitive emissions estimated using Gas model	302517.0	302517.0	0.0	0.0
01	Methane (CH4)	C	OTH	Flare emission estimated based on 99.8% flare efficiency. Fugitive emissions estimated using Gas model	137.0	137.0	0.0	0.0
08	Nitrogen oxides (NOx/NO2)	M	OTH	From flare survey	0.0	0.0	0.0	0.0

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

SECTION B : REMAINING PRTR POLLUTANTS

RELEASES TO AIR					Please enter all quantities in this section in KGs			
POLLUTANT		METHOD				QUANTITY		
			Method Used					
No. Annex II	Name	M/C/E	Method Code	Designation or Description	Emission Point 1	T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) KG/Year
11	Sulphur oxides (SOx/SO2)				0.0	0.0	0.0	0.0
02	Carbon monoxide (CO)				0.0	0.0	0.0	0.0

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

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

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

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

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: Doora Landfill Site

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)	0.0				N/A	
Methane flared	0.0				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)	137.0				N/A	

4.3 RELEASES TO WASTEWATER OR SEWER

Link to previous years emissions data

SECTION A : PRTR POLLUTANTS

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

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

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

OFFSITE TRANSFER OF POLLUTANTS DESTINED FOR WASTE-WATER TREATMENT OR SEWER					Please enter all quantities in this section in KGs			
POLLUTANT		METHOD			QUANTITY			
			Method Used					
Pollutant No.	Name	M/C/E	Method Code	Designation or Description	Emission Point 1	T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) KG/Year
					0.0	0.0	0.0	0.0

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

4.4 RELEASES TO LAND

Link to previous years emissions data

| PRTR# : W0031 | Facility Name : Doora Landfill Site | Filename : W0031_2015(1)_prtr.xls | Return Year : 2015 | 18/05/2016 12:11

SECTION A : PRTR POLLUTANTS

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

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

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

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

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

5. ONSITE TREATMENT & OFFSITE TRANSFERS OF WASTE

| PRTR# : W0031 | Facility Name : Doora Landfill Site | Filename : W0031_2015(1)_prtr.xls | Return Year : 2015 |

18/05/2016 12:11

Please enter all quantities on this sheet in Tonnes

5

Transfer Destination	European Waste Code	Hazardous	Quantity (Tonnes per Year)	Description of Waste	Waste Treatment Operation	Method Used		Location of Treatment	Haz Waste : Name and Licence/Permit No of Next Destination Facility Non Haz Waste: Name and Licence/Permit No of Recover/Disposer	Haz Waste : Address of Next Destination Facility Non Haz Waste: Address of Recover/Disposer	Name and License / Permit No. and Address of Final Recoverer / Disposer (HAZARDOUS WASTE ONLY)	Actual Address of Final Destination i.e. Final Recovery / Disposal Site (HAZARDOUS WASTE ONLY)
						M/C/E	Method Used					
Within the Country	**19 07 03**	No	63.6	landfill leachate other than those mentioned in 19 07 02	D8	C	Volume Calculation	Offsite In Ireland	Sixmilebridge Waste Water Treatment Plant.,D0076/01	Sixmilebridge,Co. Clare,,.,Ireland		

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