SOUTH TIPPERARY COUNTY COUNCIL

WALLER'S LOT RECYCLING CENTRE & WASTE TRANSFER STATION
ANNUAL ENVIRONMENTAL REPORT

2015

Waste Licence Register No. W0200-01

Prepared by:

South Tipperary County Council
Emmet Street
Clonmel

May 2015

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1. INTRODUCTION

This Annual Environmental Report (AER) is required for submission to the Environmental Protection Agency in accordance with Condition 12.4 of Waste Licence W0200–01 for the Waller's Lot Site. This report presents the all the environmental data and other relevant information regarding the operation of the Waller's Lot Site for 2015

1.1. Scope and Purpose of the Report

South Tipperary County Council holds a waste licence (Register No W0200-01) for the operation of the Waller's Lot Site. The aim of this Annual Environmental Report (AER) is to provide a review of activities at the Waller's Lot Site during 2015.

This is the seventh AER to be submitted under Condition 12.4 of the licence. The Content of this AER is as defined in Schedule G of the waste licence.

1.2. Site Location

Waller's Lot is located on the edge of Cashel town.

The location of the site is shown on Figure 1.1.

The National Grid Reference for the site is: 208538969 139873395

1.2.1. Site Contacts

Name:	Mr. Pat Walsh
Job Title:	Site Manager
Telephone No:	(062) 64150
Fax No:	(062) 64157
Name:	Mr. Pat O' Dwyer
Job Title:	Deputy Site Manager:
Telephone No:	(052) 34882
Fax No:	(052) 34391
Name:	Ms. Ann Peters
Job Title:	Executive Engineer
Telephone No:	(052) 34397
Fax No:	(052) 34391

1.3. Environmental Policy

South Tipperary County Council is committed to conducting all activities such that they have a minimal effect on the environment.

South Tipperary County Councils main objectives are:

1. To comply with the Waste Licence (Licence Reg. W0200-01) and all relevant environmental legislation
2. To ensure that all facility infrastructure, as required in Condition 3 of the Waste Licence, is established
3. To ensure that all site personnel are familiar with:

    a. the Conditions of the Waste Licence
    b. the content of the Environmental Management System
    c. all operational procedures

4. To reduce the potential for negative environmental impacts by a programme of continuous development on-site and appropriate mitigation measures.
5. To carry out all environmental monitoring, as required by Condition 9 of the Waste Licence.
6. To provide adequate training and awareness to all employees with regard to minimising environmental risks.

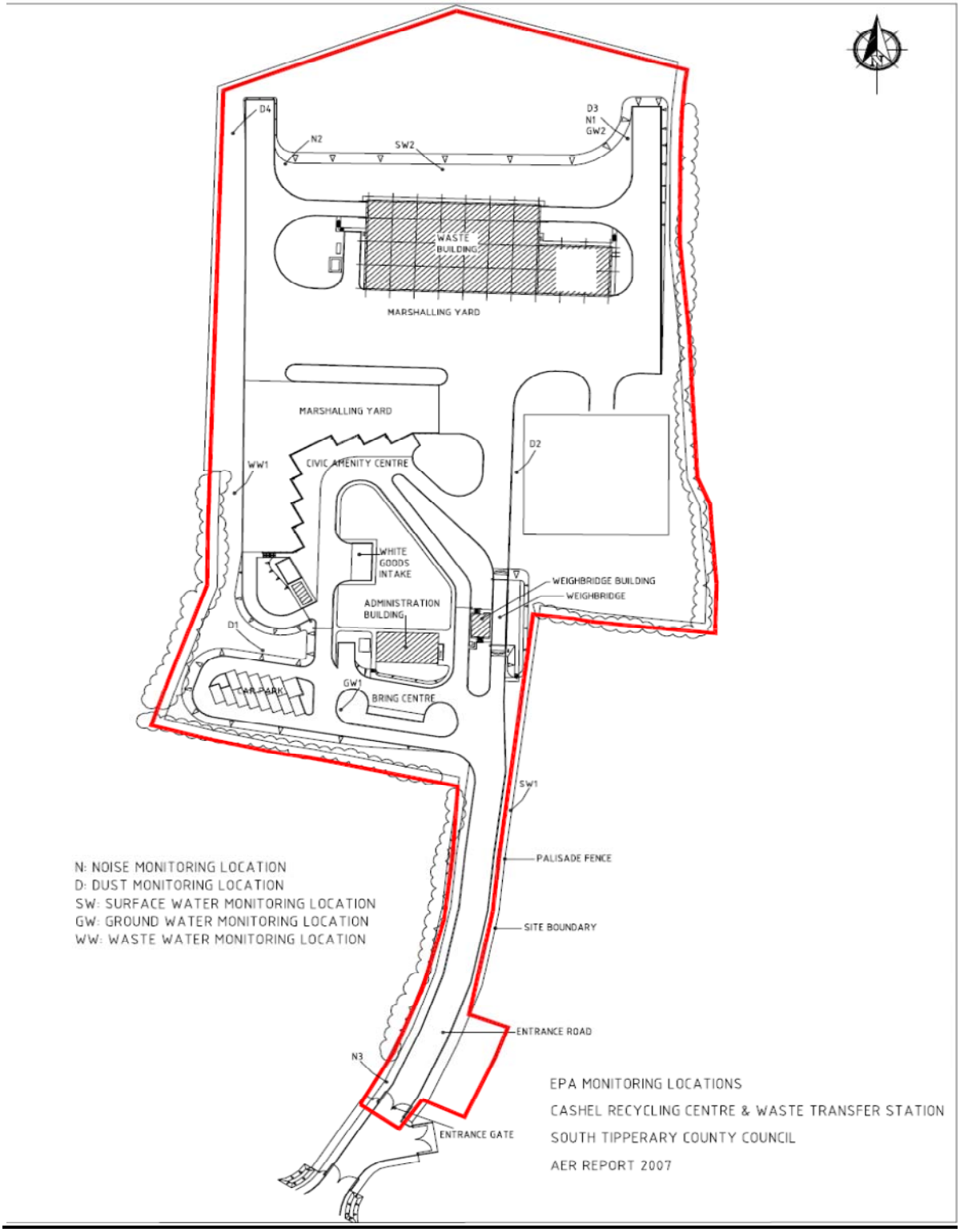


FIGURE 1.1: SITE LOCATION MAP

2 WASTE ACTIVITIES

The licensed waste disposal activities of the facility, in accordance with the Third Schedule of the Waste Management Act 1996 to 2003are:

Class 12. Repackaging prior to submission to any activity referred to in a preceding paragraph of this Schedule

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.

The licensed waste disposal activities of the facility, in accordance with the Third Schedule of the Waste Management Act 1996 to 2003 are:

Class 2 Recycling or reclamation of organic substances which are not used as solvents (including composting and other biological transformation processes).

Class 3. Recycling or reclamation of metals and metal compounds

Class 4. Recycling or reclamation of other inorganic materials

Class 11 Use of waste obtained from any activity referred to in a preceding paragraph pf this Schedule.

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 the waste concerned is produced.

The main activity at the site is as a Civic Amenity Centre and as a Waste Transfer Station.

Schedule A of the waste licence outlines the types and volumes of waste that can be accepted at the site. They are shown in Table 2.1 below.

Table 2.1: Licensed Categories and Quantities of Waste for Disposal

Waste Category	Maximum Quantity (Tonnes per annum)
Household and Commercial Waste	21,000
Household Hazardous Waste	100
Total	**21,100**

2.1 Waste Quantity and Composition

The quantity of waste removed from Waller's Lot in 2015 is outlined in Table 2.2.

Table 2.2: Detailed Quantities of Waste removed from Waller's Lot 2015

Waste Type	EWC Code	Quantity of Waste (Tonnes)
Aerosol	16 05 04	0
Batteries	16 06 01*	0.46
Cardboard	15 01 01	28.6
C + D	17 09 04	106.2
Cooking Oil	20 01 25	0.14
Aluminium Cans	19 08 14	1.12
Dry Recyclables	20 03 01	1406.04
Fluorescent tubes	20 01 21	0.6
Glass	20 01 02	82.06
Garden Waste	20 02 01	400.1
Hard Plastics	20 01 39	0
Household Hazardous	20 01 27 / 20 01 37 / 06 05 04	1.68
Electric Fence Batteries	20 01 33	0.68
Lead Acid Batteries	16 06 01	0.36
Mattresses	20 03 07	26.14
Metal	20 01 40	74.04
Oil Filters	16 01 07	0.14
Tyres	16 01 03	0
Household Waste	20 03 01	6055.18
Newsprint	20 01 01	36.8
Steel Food Cans	15 01 04	2.68
Timber	20 01 37* / 20 01 38	676.08
WEEE	20 01 35*/ 20 01 36	152.6
Waste Water	20 03 04	0
Waste Oil	13 08 99	1.34
Textiles	20 01 10 / 20 01 11	28.76
Plaster Board\Gypsum	17 08 02	27.28
Plate Glass	17 02 02	7.72
Plastic Bottles	15 01 02	3.78
Farm Plastic	15 01 02	303.9
Gas Cylinders	15 01 11	0
	Total	**9424.48**

MONITORING AND EMISSIONS

The monitoring carried out during 2015 is detailed below. All environmental monitoring locations are illustrated in Figure 3.1.

2.2 Dust Monitoring

Condition 9 and Schedule D.2.1 of the licence requires that the licensee conducts the following dust monitoring:

- Three times a year (two of which must occur between May and September) using the Standard Methods VDI2119 at onsite 4 locations.

2.2.1 Dust Monitoring Results

Dust Deposition Monitoring

Dust deposition monitoring was carried out in July, August\September. The results are shown in Table 3.1 below.

Dust Monitoring Point	Emission Limit	Q2 2015	Q3 2015	Q4 2015	Median
D1 (mg/m2/day)	350	253.08	66.12	24.96	66.12
D2 (mg/m2/day)	350	734.92	28.25	75.45	75.45
D3 (mg/m2/day)	350	42.39	417.15	24.37	42.39
D4 (mg/m2/day)	350	33.09	120.22	16.83	33.09

Q2 D2 Contaminated with decomposing flies
Q3 D3 Contaminated with bird faeces

Dust levels on site were well below limit value of 350 mg/m^2/day at each of the monitoring stations during the monitoring period.

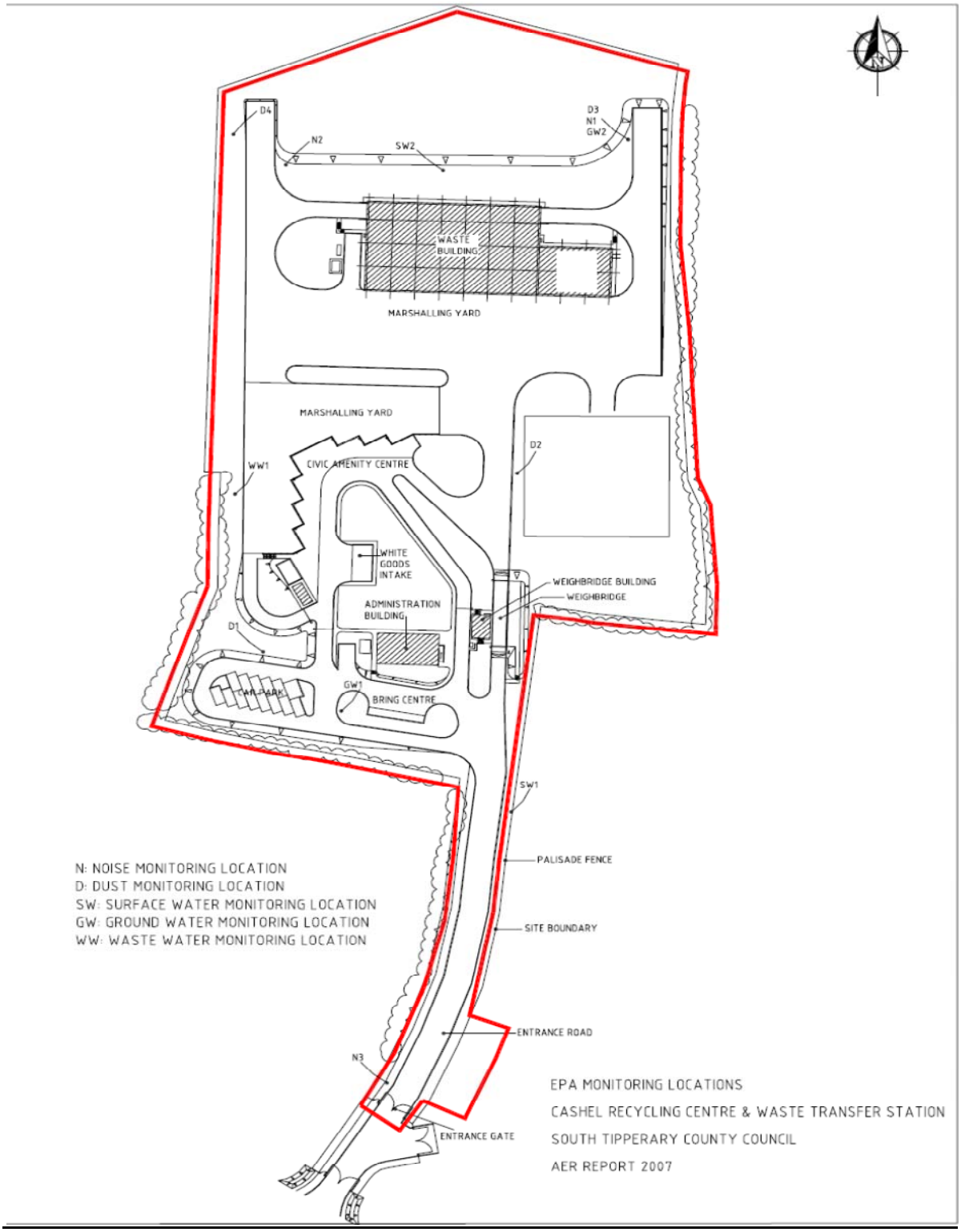


Figure 3.1: Monitoring Locations

2.3 Noise Monitoring

Condition 9 and Schedule D.3.1 of the licence require the licensee to conduct annual monitoring on noise emissions. A full noise survey was carried out on the 15th October 2015. A summary of the results can be seen in Table 3.2 below. A full copy of the results of these tests have been submitted to the Agency.

Table 3.2 Noise Monitoring Results Summary

Monitoring Point	Sampling Interval	Duration 30 (mins)	$L(A)_{EQ}$	Comments
N1	13.17-13.47	30	44.2	The main source of noise at this point was the traffic coming to and from the site, rustling of trees, birds chirping and people talking.
N2	12.48-13.18	30	43.9	The main source of noise at this location was trucks operating and birds chirping throughout
N3	12.43-13.13	30	53.0	The greatest source of noise at this point was the traffic from the M8 and R692 entering and leaving the roundabout. birds chirping, noise from a barking dog.

3.3 Surface water Monitoring

Condition 9 and Schedule D.4 of the licence require the licensee to conduct surface water monitoring at points prior to discharge to soak away at locations to be agreed with the Agency on a bi annual basis. The results can be seen in Table 3.3 and Table 3.4 below. All the results are very low.

Table 3.3 SW1 Surface Water Monitoring Results

Surface Water 1	Emission Limit	Q1 2015	Q4 2015	Median
BOD (mg/l)	10	8.29	Dry	
pH	6.0 – 9.0	5.21	Dry	
S.Solids (mg/l)	25	25	Dry	
Mineral Oil (mg/l)	5	0.195	Dry	

Table 3.4 SW2 Surface Water Monitoring Results

Surface Water 2	Emission Limit	Q1 2015	Q4 2015	Median
BOD (mg/l)	10	No Discharge	No Discharge	
pH	6.0 – 9.0	N\a	N\a	
S.Solids (mg/l)	25	N\a	N\a	
Conductivity (us/cm)	1500	N/a	N/a	
Mineral Oil (mg/l)	5	N\a	N\a	

3.4 Wastewater Monitoring

Condition 9 and Schedule D.5 of the licence require the licensee to conduct waste water monitoring at a point prior to discharge to sewer at a location to be agreed with the Agency on a bi annual basis. The results can be seen in Table 3.5 below.

Table 3.5 Waste Water Monitoring Results

Wastewater	Emission Limit	Q1 2015	Q4 2015	Median
pH	6.0 - 10.0	7.79	7.895	
Temperature (C)	25	19.1	NT*	
BOD (mg/l)	500	129.9	202.95	
Suspended Solids (mg/l)	500	76	78	
Fats, Oils, Grease (mg/l)	100	17.7	19.0mg/l	
Ammoniacial Nitrogen (mg/l)	50	20.5	32.0	

3.5 Groundwater Monitoring

Condition 9 and Schedule D.6 of the licence require the licensee to conduct groundwater monitoring at two groundwater wells located onsite on a bi annual basis. The results can be seen in Table 3.6 and Table 3.7 below.

Table 3.6 GW1 Groundwater Monitoring Results

Ground Water 1	Emission Limit	Q1 2015	Q4 2015	Median
Visual Inspection/Odour	No abnormal	No Odour detected	No Odour detected	
Groundwater Level (mts)		9.16	7.76m	
Conductivity (us/cm)	1500	669	NT*	
pH	6.0 – 9.0	7.43	8.395	
Temperature (C)	25	10.6	10.9°C	
Mineral Oil (mg/l)	5	BLD	BLD	

Table 3.7 GW2 Groundwater Monitoring Results

Ground Water 2	Emission Limit	Q1 2015	Q4 2015	Median
Visual Inspection/Odour	No abnormal	No Odour detected	No Odour detected	
Groundwater Level (mts)		7	5.1m	
Conductivity (us/cm)	1500	614	NT*	
pH	6.0 – 9.0	7.53	8.038	
Temperature (C)	25	9.9	10.7°C	
Mineral Oil (mg/l)	5	BLD	BLD	

3.6 Tank and pipeline Testing

Bund Tests Table 3.8

Cashel Recycling Centre & Waste Transfer Station			
CONCRETE BUND INSPECTION & TEST **Bund No.1** **Waste Oil Bund**			
Contractor:	South Tipperary Co.Co.		
Date:	14th and 15th December 2015		
Drawing Reference: (incl revision)	2003-024-03-035 Rev 0		
Location:	Civic Amenity Area		
Dimensions:	5.5m x 2.6m x 0.5m deep with 300mm sq sump 300mm deep		
Concrete Mix:	C35N20	**Reinforcement:**	T8 & T12
Date of Test:	January 2012	**Weather:**	Dry

1.4. Bund Inspection:

The bund was visually inspected on the 27th November 2015 and it was found that there was sign of damage i.e. two hairline cracks on the side walls. The bund has been lined with HDPE lliner and re tested.
The bund was clean and clear of debris.

There were no defects noted at the time of testing.

Bund Test:

The test was carried out in accordance with CIRIA Report 163 Construction of Bunds for Oil Storage Tanks Section 5.5.2.

No drop in water level was noted at the end of the test period, indicating the bund was found to be watertight.

Signed:	_____
Dated:	Anne Peters Executive Engineer 17/12/2015

3.7 Resource and Energy Consumption

Electricity and diesel usage are shown below.

Table 4.0 Electricity Use 2015

Total consumption = 51,650 kWh for 2015

Table 4.1 Diesel Usage 2015(ltrs)

Jan 13	480.97
Feb 13	452.36
Mar 13	543.17
Apr 13	308.36
May 13	604.79
June 13	697.29
July 13	686.77
Aug 13	280.41
Sept 13	817.79
Oct 13	540.91
Nov 13	557.39
Dec 13	453.35
Average p\month	535.30

3 SITE DEVELOPMENT / INFRASTRUCTURAL WORKS

Site development works initiated or completed during the report period are described hereunder.

4.1

The installation a building for WEEE and a concrete slab to facilitate the bulking up of items commenced in 2015 and was completed in 2015

SEW submitted to Agency in 2012.

5 ENVIRONMENTAL INCIDENTS AND COMPLAINTS

5.1 Incidents Summary

Condition 12.3 of the waste licence requires that the licensee shall make written records of environmental incidents. No incidents were recorded during this reporting period

5.2. Complaints Summary

There were no complaints received during the reporting period.

5.3 Review of Nuisance Controls.

All nuisance control systems are monitored weekly to ensure that they are working effectively. The findings of these inspections are recorded on Nuisance Check Sheets, which are held on record in the facility. Environmental nuisances include:

1. Litter
2. Vermin
3. Dust

5.3.1 Litter Control

There are regular checks for litter onsite.

5.3.2 Vermin & Insects Control

The initial vermin control system on site is prompt waste disposal and reducing access to material. Additional vermin control work, is contracted to Pest Patrol (Pest control and Environmental Services). They use bait boxes the following systems to control vermin on site.

Pest Patrol carries out eight to ten site inspections annually to ensure that the site is free of vermin. Waller's Lot is not considered to have a vermin problem. The findings of these inspections are recorded and are held on record in the facility.

5.3.3 Dust Control

Dust control on-site is controlled using the following systems:

1. Reduced vehicle speed on site to control dust rising
2. Roads sprayed with water to keep dust down, done in dry weather

No complaints were received at the as regards dust raised by operational activities.

6 ENVIRONMENTAL MANAGEMENT SYSTEM

6.1 SUMMARY OF PROCEDURES ASSOCIATED WITH THE FACILITY

Documented procedures governing the operation of the facility are outlined below. Complete copies of all procedures are included in the facility's EMS.

Doc. No.	Operational Procedure Title	Date of Revision	Revision Number	Date of Review
SCP/4200/04	Emergency Response Procedure	Mar 2017	Rev 4	28-02-16
SCP/4201/04	Corrective Action Procedure	Mar 2017	Rev 4	28-02-16
SCP/4202/02	Awareness and Training Procedure	Mar 2017	Rev 2	28-02-16
SCP/4203/00	Communication Procedure	Mar 2017	Rev 0	28-02-16
SCP/4204/03	Complaints Procedure	Mar 2017	Rev 3	28-02-16
SCP/4205/02	Waste Characterisation and Testing Procedure	Mar 2017	Rev 2	28-02-16
SCP/4206/05	Waste Acceptance & Rejection Procedure	Mar 2017	Rev 5	28-02-16
SCP/4207/03	Vehicle Movement Procedure	Mar 2017	Rev 3	28-02-16
SCP/4208/04	Environmental Monitoring Procedure	Mar 2017	Rev 4	28-02-16
SCP/4209/02	Site Inspection Procedure	Mar 2017	Rev 2	28-02-16
SCP/4210/02	Nuisance Inspection Procedure	Mar 2017	Rev 2	28-02-16
SCP/4211/01	Self Compacting Trailer operating Procedure	Mar 2017	Rev 1	28-02-16
SCP/4212/01	Waste Conveyor Operating Procedure	Mar 2017	Rev 1	28-02-16
SCP/4213/01	Waste Handling Procedure	Mar 2017	Rev 1	28-02-16
SCP/4214/01	Compactor Skip Procedure	Mar 2017	Rev 1	28-02-16
SCP/4215/01	Telescopic Handler Procedure	Mar 2017	Rev 1	28-02-16

6.2 OBJECTIVES AND TARGETS

Objective 1	**Continue Advertising campaign**	
Target	I	
	Tasks	**Timeframe**
	1. Advertise facilities in local paper.Ongoing	September 2017
Responsibility	Facility manager & PAO	
Resources\Comments		

Objective 2	**Review all aspects of Health and Safety in relation to the facility**	
Target	To carry out a review in relation to all aspects of health and safety concerning this facility	
	Tasks	**Timeframe**
	1. Review Site specific safety statement	July 2017
	2. Carry out any recommendations for reduction of risk outlined in Safety Statement.	July 2017
	3. Mantain OHSAS 18001	Ongoing
Responsibility	Facility manager & RE	
Resources\Comments		

Objective 3	**Improve energy efficiency on site**	
Target	In compliance with Condition 8.1 STCC will carry out an audit of the energy efficiency of the site to identify opportunities for energy use reduction and better resource use.	
	Tasks	**Timeframe**
	1. Carry out energy audit in accordance with guidance published by the Agency – 'Guidance note on energy efficiency auditing'.	September 2017
	2. Implement audit findings and review. Ongoing	January 2017
	3. Obtain ISO 5001	July 2017
Responsibility	Facility manager & E.E	
Resources\Comments	Audit Completed	

Objective 4	**Improve site security**	
Target		
	Tasks	**Timeframe**
	1. Maintain fence 2. Reduce scavengers / trespassers	Ongoing
Responsibility	Facility manager	
Resources\Comments	Worked with local Gardai / New Security cameras fitted	

Objective 5	**Implementation of a management and reporting system**	
Target	In compliance with Condition 2.4 STCC will maintain a system whereby all environmental information is available to members of the public during opening hours	
	Tasks	**Timeframe**
	1. Review and update the EMS 2016	September 2017
	2. Review and update the schedule of objectives and targets 2016	
	3. Implement reviewed EMP	
	4. Review and update the Corrective Action Procedure	September 2017
	5. Review and update the Awareness and Training Programme See Chapter 6	
	6. Prepare an AER	March 2017
Responsibility	Facility Manager	
Resources\Comments	Completed	

Objective 6	**Expand the range of products accepted for recycling**	
Target	Expand the range of products accepted	
	Tasks	**Timeframe**
	1. Investigate other materials	Ongoing
	2. Liaise with local Zero waste project	Ongoing
Responsibility	Facility Manager	
Resources\Comments		

Objective 7	**Site Inspections**	
Target	To ensure that all appropriate site inspections are carried out and documented as per the Licence requirements	
	Tasks	**Timeframe**
	1.Training of Staff in Inspection procedures	Ongoing
	3. Maintaining Inspection records	Ongoing
Responsibility	Facility manager	
Resources\Comments	Ongoing	

Objective 8	**Staff Training**	
Target	To ensure that all site personnel are appropriately qualified for the position they hold on site.	
	Tasks	**Timeframe**
	1. Implement regular in-house training for on-site personnel including First Aid and Spill Kit Training	Ongoing
Responsibility	Facility manager	
Resources\Comments	Ongoing	

Objective 9	**Environmental Education**	
Target	To encourage all interested parties to visit the site and learn about recycling	
	Tasks	**Timeframe**
	1. Use building to run courses regarding all forms of recycling	Ongoing
	2. Encourage school visits	Ongoing
Responsibility	Facility manager, Environmental Engineer, Public Awareness Officer.	
Resources\Comments	Ongoing	

Objective 10	**Reduction in Resourse usage**	
Target	To reduce usage of water and power on site	
	Tasks	**Timeframe**
	1. Implement recommendations of energy audit	Ongoing
Responsibility	Facility manager	
Resources\Comments	Regular monitoring of site water meter .	

7 FACILITY RECOURCES

7.1 Management and Staff Structure

There are six operational staff at the site: a Facility Manager, responsible for the day-to-day site activities, a deputy manager, environmental chemist, a weighbridge operator and two general operatives.

A staffing structure for site operations is presented in Figure 7.1. Their qualifications and responsibilities are outlined below:

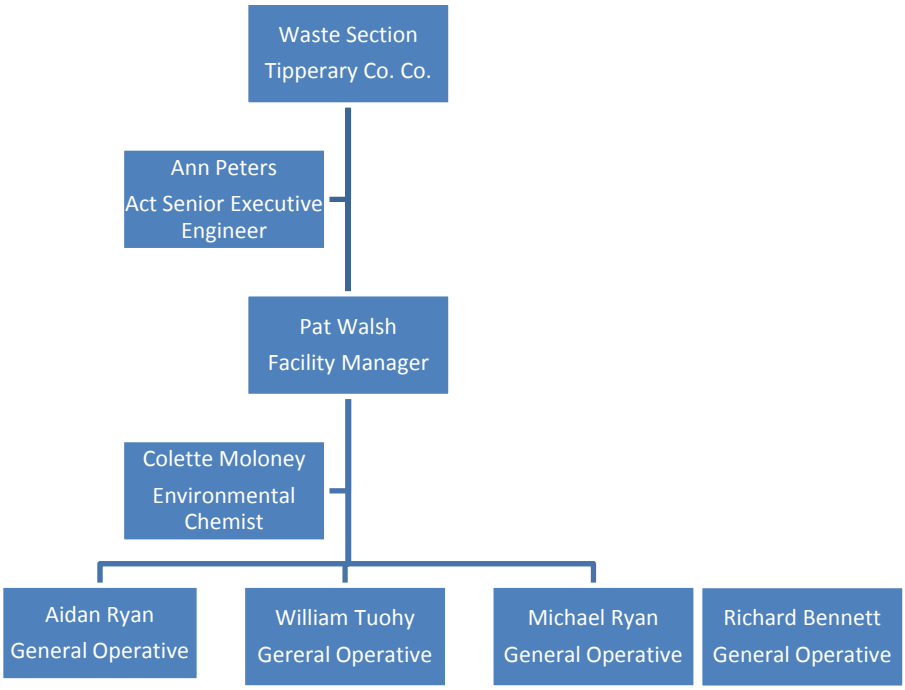


Figure 7.1: Management Structure

Facility Manager:	*Pat Walsh*
Qualifications:	FAS Waste Management Training Course FAS SafePass Course
Responsibilities:	Day-to-Day Operations Waste Acceptance Environmental Protection

Executive Engineer:	*Anne Peters*
Qualifications:	B.E. (Chem.) FAS Waste Management Training Course FAS SafePass Course
Responsibilities:	Oversee infrastructure development and management on site

Deputy Manager:	*Colette Moloney*
Qualifications:	B.Sc.
Responsibilities:	Responsible for analytical analysis of monitoring on site

Deputy Manager:	*Michael Ryan*
Qualifications:	FAS Waste Management Training Course FAS SafePass Course
Responsibilities:	Deputy for the Facility Manager, has the same responsibilities • Day-to-day operations • Waste acceptance • Environmental protection

General Operators	Michael Ryan
Qualifications:	FAS Waste Management Training Course In –house Training • Weighbridge operation • Telescopic handler • Safe Pass • Manual handling • Instruction on the implication of the waste licence on site staff
Responsibilities:	Weighing Waste Acceptance Records Cash Duty General house keeping

General Operators	Aidan Ryan ,Richard Bennett, William Tuohy.
Qualifications:	In –house Training • Weighbridge operation • Telescopic handler • Safe Pass • Manual handling • Instruction on the implication of the waste licence on site staff
Responsibilities:	Weighing Waste Acceptance Records Cash Duty General house keeping

Staff will be present on site during operational hours to supervise the waste disposal, deal with any emergency that arises and to prevent unauthorised entry into the site. The Facility Manager, or appointed deputy, must be on site during opening hours.

The primary goal of all training is to ensure that there is awareness at all levels of:

- the importance of compliance with conditions of the licence
- the potential environmental effects of work activities
- individual roles and responsibilities in achieving compliance with the waste licence
- the environmental benefits of improved performance
- the Health, Safety & Welfare at Work Act.

7.1.1 Training of Personnel

It will be the responsibility of the Manager to ensure that all staff receives training in relevant areas/tasks, including:

- instruction and operation of the machinery
- operation of the weighbridge and computer system
- training for specific functions

The Manager shall also ensure that all staff receives general training, including:

- instruction in manual handling
- the use of fire extinguishers
- FAS SafePass Course
- First Aid training

It is also the responsibility of the Manager to ensure that site staff are aware of the terms of the waste licence at the facility and the responsibility of each staff member to maintain specific terms of the waste licence. It is the responsibility of the facility manager to ensure that each staff member is aware of his or her specific function.

The Health and Safety Officer makes regular visits to the site, to promote awareness of safety issues and to audit the site. Any suggested improvements are implemented as soon as possible.

7.1.2 Records for the Training and Awareness Programme

- A training records file is kept at the site office
- All relevant operational procedures and documentation relevant to the licence shall be kept at the facility office and updated regularly
- All staff shall be made aware of the existence of such documents.

7.2 Financial Provisions

The county council have the funds available to them to complete the aftercare and restoration of the site in the event of the site closure.

The aftercare and restoration plan was submitted to the Agency in attachment G.1 of the Waste Licence application.

Air I Noise I Water I Soil I Environmental Consultancy
www.axisenv.ie

Unit 5 Caherdavin Business Centre,
Ennis Road,
Limerick

Tipperary County Council

Recycling Centre and Waste Transfer Station,
Waller's Lot,
Cashel,
Tipperary.

Annual Environmental Noise Report
Noise Survey 2015

Licence Number: W0200-01

Report Reference Number:	**3450-15-06**
Version:	**1**
Date of Issue:	**27/10/2015**
Report Compiled by:	**Daniel Mullins**

Report Content

Report Date	27/10/2015	**Site Contact:**	Louise M. Ryan
Report Issued By	Mark Mc Garry	**Version No:**	1
Signed:		**Client:**	Tipperary Co. Co.
Notes:			

1.0 Executive Summary

Tipperary County Council is required as part of licence W0200-01; Schedule C.1 an D.3 to carry out a noise survey of the installation on an annual basis. AXIS environmental services were commissioned to complete the survey after proposal acknowledgment and acceptance by Tipperary County Council's Environmental Department.

The purpose of the survey was to monitor noise at predetermined locations and assess the sites compliance against Schedule C.1 limits.

The survey was carried out in strict accordance with the standard ISO 1996 Parts 1 – 3, Acoustics – description, measurement and assessment of environmental noise. Reference was also made to the EPA guidelines NG4 *"Guidance Note for Noise: Licence Applications, Surveys and Assessments in Relation to Scheduled Activities"* April 2012, in conjunction with the frequently asked questions issued by the Agency in August 2012.

All operations at Waller's Lot were running as normal throughout the survey. Traffic entering and leaving the site was the most prevalent cause of noise during the monitoring survey. This was most notable at N3 which is located next to the road near the site entrance. Distant traffic and rustling of trees in the breeze we noted at both N1 and N2. There were other sources of noise at each individual location which are summarised further on in this report.

The impact of road traffic noise could be a significant interference on the survey at certain locations as defined in the report. As outlined in the Standard ISO 1996 and the associated noise guidance document issued by the Agency in 2012, where traffic noise is interfering with noise measurements, it is acceptable to assess noise compliance against the L_{A90} for the monitoring period. This is a statistical measurement of the noise level exceeded for 90% of the time which would largely be associated with the facility under assessment.

Three points were monitored for noise during the survey. N1, N2 and N3 are all boundary monitoring points which are located within the confines of the site and are in close proximity to all activities in operation. Under the aforementioned EPA guidelines boundary locations are not required to be compliant with noise emission limit values [Day – 55dB(A), Night – 45dB(A)] as they are not noise sensitive locations.

There are no noise sensitive locations to be monitored at this site.

There was no tonal or impulsive noise observed at any of the locations for the duration of the assessment.

All monitoring points were determined to comply in full with licence requirements. There was no tonal or impulsive noise observed at either location for the duration of the assessment.

2.0 Introduction

As part of compliance monitoring at Waller's Lot, an annual noise survey is to be carried out at noise sensitive receptors in the vicinity of the plant. The Agency and Tipperary County Council have agreed on the monitoring points on the boundary of the site and at the nearest noise sensitive locations.

The IPPC licence W0200-01 outlines the requirements under Conditions C.1and D.3 which have been documented as follows:

2.1 Condition C.1: Noise Emissions

Day dB(A) L_{Aeq}(30minutes)	Night dB(A) L_{Aeq}(30 minutes)
55	45

2.2 Schedule D.3: Nose Monitoring Parameters and Frequency

Table 1: Schedule Noise Monitoring

Location	***Measurement***	***Frequency***
N1	30minute Daytime survey to include 1/3rd octave measurements	Annually
N2	30minute Daytime survey to include 1/3rd octave measurements	Annually
N3	30minute Daytime survey to include 1/3rd octave measurements	Annually

3.0 Methods

Monitoring was carried out in strict accordance with ISO 1996 Parts 1 – 3, Description and Measurement of Environmental Noise. Reference was also made to the EPA guidelines NG4 *"Guidance Note for Noise: Licence Applications, Surveys and Assessments in Relation to Scheduled Activities"*April 2012, in conjunction with the frequently asked questions issued by the Agency in August 2012.

Table 2: Equipment Details

	Meter No 2	**Meter No 3**
Manufacturer	Cirrus Optimus Green	Cirrus Optimus Green
Model	CR:171B	CR:172B
Serial Number	G061082	G061817
Firmware	V2.3.1156	V2.4.1529
Calibrator	CR:515 Acoustic Calibrator	CR:515 Acoustic Calibrator
Microphone	B&K4180 - 1893453	B&K4180 - 1893453
Windshield Type	UA:237 90mm Foam Windshield	UA:237 90mm Foam Windshield
Calibration Date		
Noise Meter	07th April 2015 – 2016	09th October 2015 - 2016
Certificate Number	227467	232526
Calibrator	07th April 2015 – 2016	09th October 2015 - 2016
Certificate Number	227465	102905

4.0 Monitoring Locations

4.1 N1 Day Time Survey

N1 is located at the back right hand corner of the site, next to the Quarantine Area. The predominant source of noise here was from traffic movements, both on and of site.

Secondary sources of noise included the rustling of trees and birds chirping in the surrounding area. There was also some brief noise from people talking nearby.

4.2 N2 Day Time Survey

N2 is located at the back left of the Waller's Lot site, opposite N1. The main sources of noise here was from traffic which made noise both on and offsite.

There was a light breeze during the noise survey and birds also made noise throughout.

4.3 N3 Day Time Survey

N3 is located inside the entrance to the site, close to the road. As a result of its location, the main sources of noise at this location was traffic which created some interference throughout the survey. This included traffic coming and going from the site as well as traffic on the M8 and R692.

There was also a light breeze blowing throughout the survey. Birds could be heard chirping throughout the survey. A dog is the distance was also heard barking for a time.

5.0 Summary of Daytime Noise Measurements

Noise Monitoring Location: N1 (Boundary Monitoring Location) 15-10-2015					
Period:	**Time**	**Measured Noise Levels (dB re. 2 x 10^{-5} Pa)**			**Comments**
		L_{Aeq}	**L_{AFMAX}**	**L_{A90}**	
Daytime:	13:17	44.2	78.8	36.8	The predominant source of noise here was from traffic movements, both on and of site. Secondary sources of noise included the rustling of trees and birds chirping in the surrounding area. There was also some brief noise from people talking nearby.
	-	-	-	-	
	-	-	-	-	
Arithmetic Average (dB):		44.2	78.8	36.8	
Daytime Criterion, dB $L_{Ar,T}$:		55	-	**-**	
Evening:	-	-	-	-	This site is not required to monitor noise emissions during the evening period. The site is not defined as a new or revised licence since the guidelines were issued in 2012.
Arithmetic Average (dB):		-	-	-	
Evening Criterion, dB $L_{Ar,T}$:		-	-	-	
Night Time:	-	-	-	-	This site is not required to monitor noise emissions during the evening period. The site is not defined as a new or revised licence since the guidelines were issued in 2012.
	-	-	-	-	
Arithmetic Average (dB):		-	-	**-**	
Night time Criterion, dB $L_{Ar,T}$:		-	-	**-**	

Weather Conditions:			
	Daytime:	**Evening:**	**Night Time:**
Temperature (^{O}C)	11	-	-
Wind Speed (m/s)	<1.0	-	-
Wind Direction:	Westerly	-	-
Precipitation (mm):	0	-	-

Tonal Noise Assessment			
Daytime:	Run 1: None	-	-
Evening:	-	-	-
Night Time:	-	-	-

Compliance Status – this is not a noise sensitive location therefore limits would not apply

Noise Monitoring Location: N2 (Boundary Monitoring Location) 15-10-2015					
Period:	**Time**	**Measured Noise Levels (dB re. 2 x 10^{-5} Pa)**			**Comments**
		L_{Aeq}	**L_{AFMAX}**	**L_{A90}**	
Daytime:	12:48	43.9	75.1	36.8	The main sources of noise here was from traffic which made noise both on and offsite. There was a light breeze during the noise survey and birds also made noise throughout.
	-	-	-	-	
	-	-	-	-	
Arithmetic Average (dB):		43.9	75.1	36.8	
Daytime Criterion, dB $L_{Ar,T}$:		55	-	**-**	
Evening:	-	-	-	-	This site is not required to monitor noise emissions during the evening period. The site is not defined as a new or revised licence since the guidelines were issued in 2012.
Arithmetic Average (dB):		-	-	-	
Evening Criterion, dB $L_{Ar,T}$:		-	-	-	
Night Time:	-	-	-	-	This site is not required to monitor noise emissions during the evening period. The site is not defined as a new or revised licence since the guidelines were issued in 2012.
	-	-	-	-	
Arithmetic Average (dB):		-	-	**-**	
Night time Criterion, dB $L_{Ar,T}$:		-	-	**-**	

Weather Conditions:			
	Daytime:	**Evening:**	**Night Time:**
Temperature (^{o}C)	11	-	-
Wind Speed (m/s)	<1.0	-	-
Wind Direction:	Westerly	-	-
Precipitation (mm):	0	-	-

Tonal Noise Assessment			
Daytime:	Run 1: None	-	-
Evening:	-	-	-
Night Time:	-	-	-

Compliance Status – this is not a noise sensitive location therefore limits would not apply

Noise Monitoring Location: N3 (Boundary Monitoring Location) 15-10-2015					
Period:	**Time**	**Measured Noise Levels (dB re. 2 x 10^{-5} Pa)**			**Comments**
		L_{Aeq}	**L_{AFMAX}**	**L_{A90}**	
Daytime:	12:43	53.0	86.0	45.4	The main sources of noise was from traffic coming and going from the site as well as traffic on the M8 and R692. There was also a light breeze blowing throughout the survey. Birds could be heard chirping throughout the survey. A dog is the distance was also heard barking for a time.
	-	-	-	-	
	-	-	-	-	
Arithmetic Average (dB):		53.0	86.0	45.4	
Daytime Criterion, dB $L_{Ar,T}$:		55	-	**-**	
Evening:	-	-	-	-	This site is not required to monitor noise emissions during the evening period. The site is not defined as a new or revised licence since the guidelines were issued in 2012.
Arithmetic Average (dB):		-	-	-	
Evening Criterion, dB $L_{Ar,T}$:		-	-	-	
Night Time:	-	-	-	-	This site is not required to monitor noise emissions during the evening period. The site is not defined as a new or revised licence since the guidelines were issued in 2012.
	-	-	-	-	
Arithmetic Average (dB):		-	-	**-**	
Night time Criterion, dB $L_{Ar,T}$:		-	-	**-**	

Weather Conditions:			
	Daytime:	**Evening:**	**Night Time:**
Temperature (^{o}C)	11	-	-
Wind Speed (m/s)	<1.0	-	-
Wind Direction:	Westerly	-	-
Precipitation (mm):	0	-	-

Tonal Noise Assessment			
Daytime:	Run 1: None	-	-
Evening:	-	-	-
Night Time:	-	-	-

Compliance Status – this is not a noise sensitive location therefore limits would not apply

6.0 Conclusions

Three boundary locations were monitored for broadband and 1/3rd Octave frequency as part of this annual environmental noise survey at Waller's Lot.

Each point was monitored for 30 minute periods during the Daytime survey.

The predominant source of noise at all monitoring points was traffic which was recorded both on and offsite. There were several other noises noted including people talking, a dog barking, a light breeze and chirping birds.

There was no tonal noise determined at any monitoring location; therefore there are no requirements to apply penalties to the broadband measurement.

Appendix I Graphical Display of Raw Data

Tonal Noise:

The appropriate level differences vary with frequency. They should be greater than or equal to the following values in both adjacent one third octave bands:

· 15dB in low frequency one third octave bands (25Hz to 125Hz);
· 8dB in middle frequency bands (160Hz to 400Hz), and;
· 5dB in high frequency bands (500Hz to 10,000Hz)

This is the definition outlined by the EPA in the guidance note issued in 2012: NG4.

16/10/2015

Cirrus Research plc

Measurement Summary Report

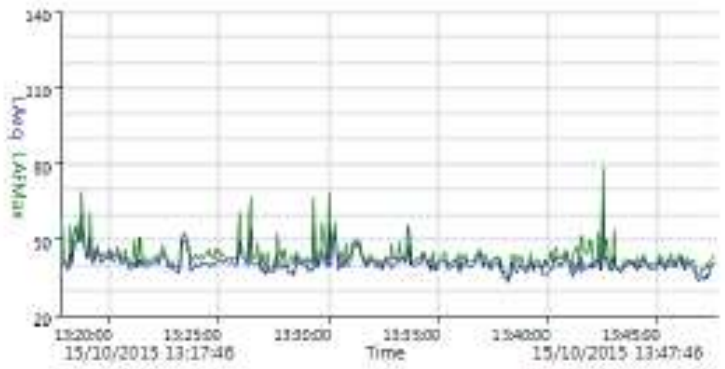
Name	Waller's Lot, Day, N1			
Time	15/10/2015 13:17:46	**Person**	**Place**	**Project**
Duration	00:30:00	Dan Mullins	South Tipp Co. Co	Environmental Noise
Instrument	G061082, CR:171B			

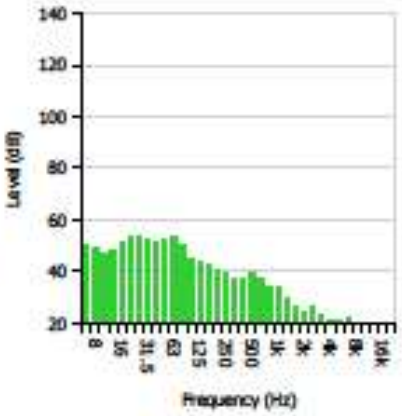
Calibration

Before 15/10/2015 12:43 Offset -2.54 dB **After** 15/10/2015 13:49 Offset -2.45 dB

Basic Values	
LAeq	44.2 dB
LAE	76.7 dB
LAFMax	78.8 dB

Statistical Levels (Ln)	
LAF1	51.3 dB
LAF5	46.4 dB
LAF10	44.0 dB
LAF50	39.9 dB
LAF90	36.8 dB
LAF95	35.7 dB
LAF99	33.8 dB





Report ID

MC197010000012C Cirrus Research NoiseTools Page 1 of 1

16/10/2015

Cirrus Research plc

Measurement Summary Report

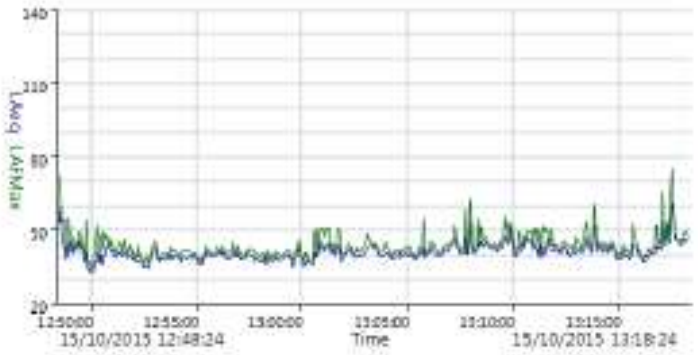
Name	Waller's Lot, Day, N2			
Time	15/10/2015 12:48:24	**Person**	**Place**	**Project**
Duration	00:30:00	Dan Mullins	South Tipp Co. Co	Environmental Noise
Instrument	G061817, CR:172B			

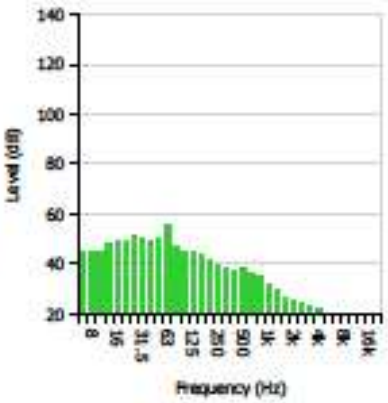
Calibration

Before 15/10/2015 12:48 Offset -1.44 dB **After** 15/10/2015 13:18 Offset -1.44 dB

Basic Values	
LAeq	43.9 dB
LAE	76.5 dB
LAFMax	75.1 dB

Statistical Levels (Ln)	
LAF1	51.6 dB
LAF5	46.4 dB
LAF10	44.6 dB
LAF50	40.1 dB
LAF90	36.8 dB
LAF95	35.6 dB
LAF99	33.3 dB





Report ID

MC1970100000122 Cirrus Research NoiseTools Page 1 of 1

16/10/2015

Cirrus Research plc

Measurement Summary Report

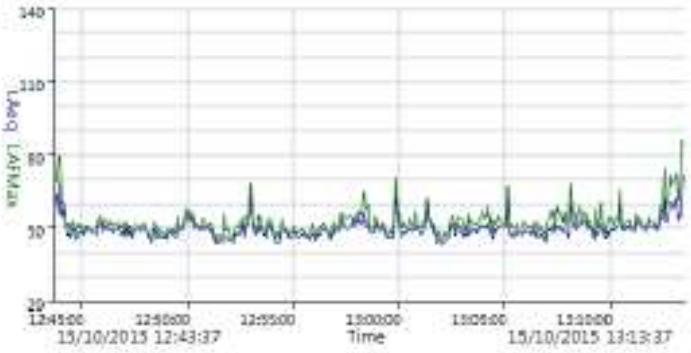
Name	Waller's Lot, Day, N3			
Time	15/10/2015 12:43:37	**Person**	**Place**	**Project**
Duration	00:30:00	Dan Mullins	South Tipp Co. Co	Environmental Noise
Instrument	G061082, CR:171B			

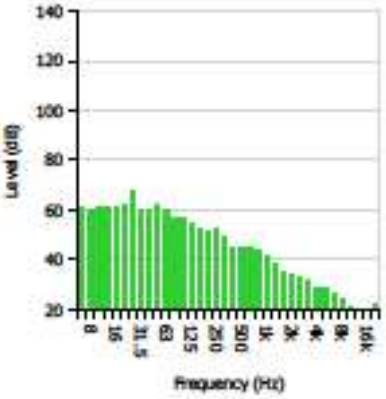
Calibration

Before 15/10/2015 12:43 Offset -2.54 dB **After** 15/10/2015 13:49 Offset -2.45 dB

Basic Values	
LAeq	53.0 dB
LAE	85.5 dB
LAFMax	86.0 dB

Statistical Levels (Ln)	
LAF1	63.1 dB
LAF5	55.0 dB
LAF10	52.9 dB
LAF50	48.5 dB
LAF90	45.4 dB
LAF95	44.5 dB
LAF99	43.1 dB





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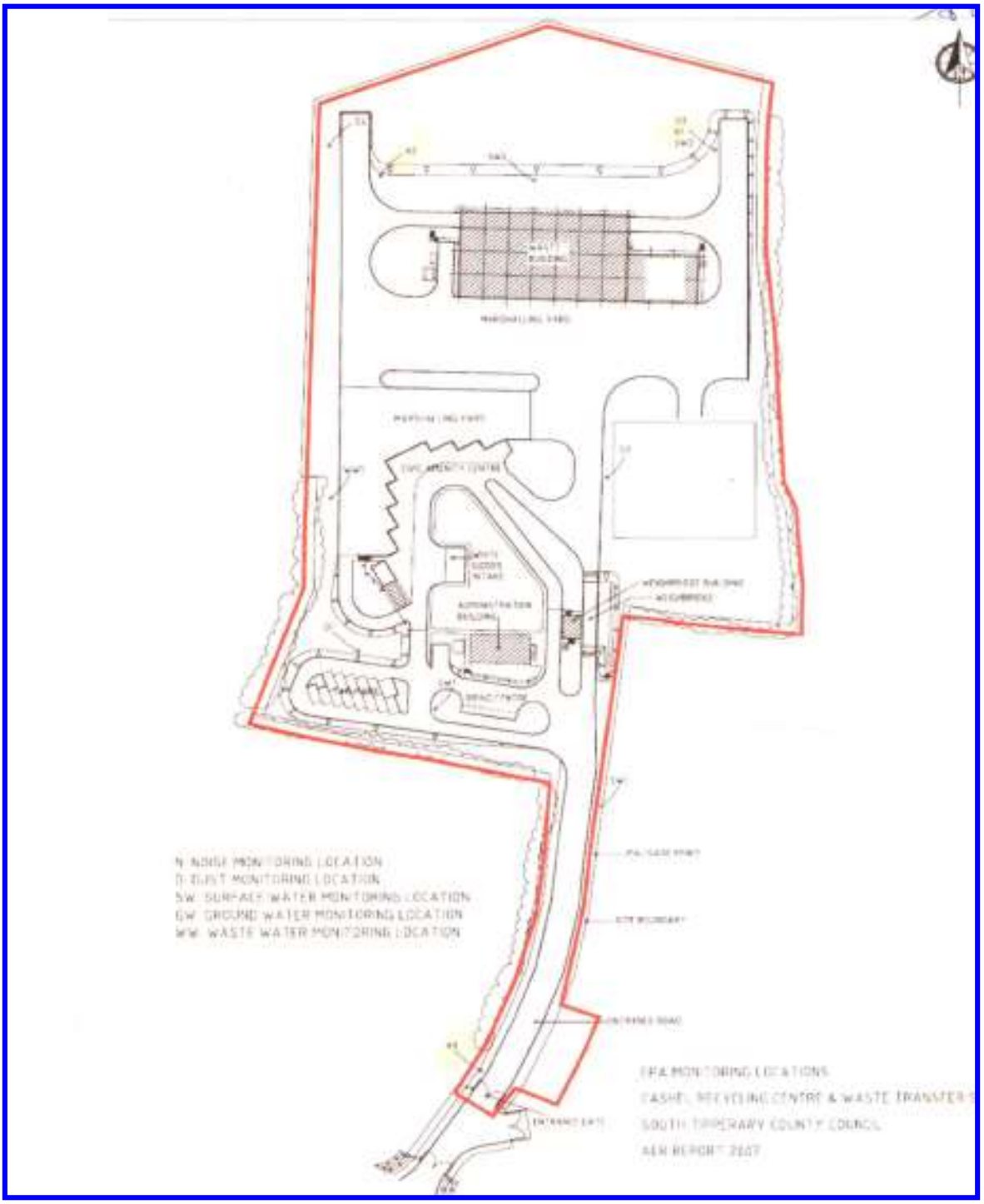
Appendix II Site Map



Appendix III Calibration Certificates

Certificate of Calibration

Cirrus Research plc
dedicated to noise measurement

Equipment Details

Instrument Manufacturer	Cirrus Research plc
Instrument Type	CR:172B
Description	Sound Level Meter
Serial Number	G061817

Calibration Procedure

The instrument detailed above has been calibrated to the publish test and calibration data as detailed in the instrument hand book, using the techniques recommended in the latest revisions of the International Standards IEC 61672-1:2002, IEC 60651:1979, IEC 60804:2001,IEC 61260:1995, IEC 60942:1997, IEC 61252:1993, ANSI S1.4-1983, ANSI S1.11-1986 and ANSI S1.43-1997 where applicable.
Sound Level Meters: All Calibration procedures were carried out by subsitituting the microphone capsule with a suitable electrical signal, apart from the final acoustic calibration.

Calibration Traceability

The equipment detailed above was calibrated against the calibration laboratory standards held by Cirrus Research plc. These are traceable to International Standards {A.0.6}. The standards are:

Microphone Type	B&K 4192	Serial Number	1920791	Calibration Ref.	S6450
Pistonphone Type	B&K 4220	Serial Number	613843	Calibration Ref.	S6388

Calibrated by T. A. Goodrich

Calibration Date 09 October 2015
Calibration Certificate Number 232526

This Calibration Certificate is valid for 12 months from the date above.

Cirrus Research plc, Acoustic House, Bridlington Road, Hunmanby, North Yorkshire, YO14 0PH
Telephone: +44 (0) 1723 891655 Fax: +44 (0) 1723 891742
Email: sales@cirrusresearch.co.uk

Certificate of Calibration

Cirrus Research plc
dedicated to noise measurement

Certificate Number: **102905**
Date of Issue: **09 October 2015**

Acoustic Calibrator

Manufacturer: **Cirrus Research plc** Serial Number: **59318**
Model Number: **CR:515**

Calibration Procedure

The sound calibrator detailed above has been calibrated to the published data as described in the operating manual and in the half-inch configuration. The procedures and techniques used are as described in IEC 60942:2003 Annex B – Periodic Tests and three determinations of the sound pressure level, frequency and total distortion were made.

The sound pressure level was measured using a WS2F condenser microphone type MK:224 manufactured by Cirrus Research plc.

The results have been corrected to the reference pressure of 101.33 kPa using the manufacturer s data.

Date of Calibration: **09 October 2015**

Calibration Results

Measurement	Level (dB)	Frequency (Hz)	Distortion (% THD + Noise)
1	94.02	1000.0	0.39
2	94.00	1000.0	0.38
3	94.00	1000.0	0.39
Average	**94.01**	**1000.0**	**0.39**
Uncertainty	± 0.13	± 0.1	± 0.10

The reported uncertainties of measurement are expanded by a coverage factor of k=2, providing a 95% confidence level.

Cirrus Research plc, Acoustic House, Bridlington Road Hunmanby, North Yorkshire, YO14 0PH, United Kingdom
Telephone: 0845 230 2434 **Int**: +44 1723 891655
Email: sales@cirusresearch.co.uk
Web: www.cirusresearch.co.uk
UK Registration No. 987160

bsi. ISO 9001 Quality Management FM 531001 ISO 14001 Environmental Management EMS 552104

Environmental Conditions

Pressure:	**101.49 kPa**
Temperature:	**21.8 °C**
Humidity:	**48.1 %**

Evidence of Pattern Approval

The manufacturer's product information indicates that this model of sound calibrator has been formally pattern approved to IEC 60942:2003 Annex A to Class 1. This has been confirmed with the PhysikalischTechnische Bundesanstalt (PTB).

Statement of Calibration

As public evidence was available, from a testing organisation responsible for approving the results of pattern evaluation tests, to demonstrate that the model of sound calibrator fully conformed to the requirements for pattern evaluation described in Annex A of IEC 60942:2003, the sound calibrator tested is considered to conform to all the Class 1 requirements of IEC 60942:2003.

Calibration Laboratory

Laboratory:	Cirrus Research plc Acoustic House, Bridlington Road, Hunmanby North Yorkshire, YO14 0PH, United Kingdom
Test Engineer:	Mark Berry

M.BERRY

Page 2 of 2

Certificate of Calibration

Cirrus Research plc
dedicated to noise measurement

Certificate Number: **102903**

Date of Issue: **09 October 2015**

Microphone Capsule

Manufacturer: **Cirrus Research plc** Serial Number: **203029A**

Model Number: **MK224**

Calibration Procedure

The microphone capsule detailed above has been calibrated to the published data as described in the operating manual of the associated sound level meter (where applicable).

The frequency response was measured using an electrostatic actuator in accordance with BS EN 61094-6:2005 with the free-field response derived via standard correction data traceable to the National Physical Laboratory, Middlesex, UK.

The absolute sensitivity at 1 kHz was measured using an acoustic calibrator conforming to IEC 60942:2003 Class 1.

Date of Calibration: **08 October 2015**

Open Circuit Sensitivity at 1 kHz: **43.2 mV/Pa** **-27.3 dB rel 1 V/Pa**

Environmental Conditions

Pressure: **101.10 kPa**

Temperature: **21.0 °C**

Humidity: **38.0 %**

Calibration Laboratory

Laboratory: Cirrus Research plc
Acoustic House, Bridlington Road, Hunmanby
North Yorkshire, YO14 0PH, United Kingdom

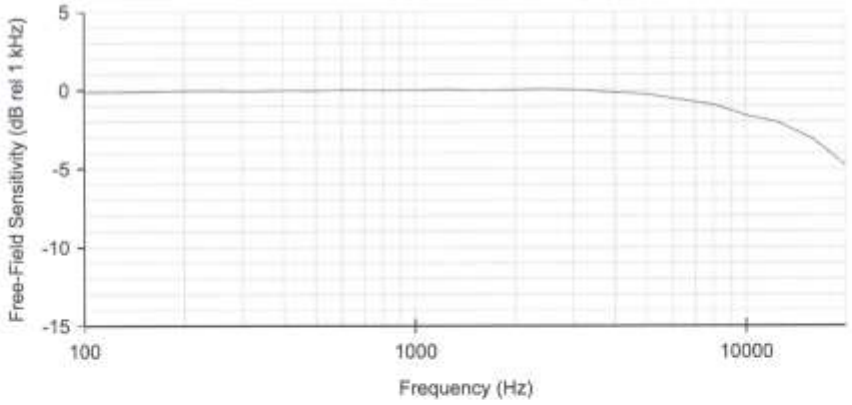
Test Engineer: Debra Swalwell

Cirrus Research plc, Acoustic House, Bridlington Road
Hunmanby, North Yorkshire, YO14 0PH, United Kingdom
Telephone: 0845 230 2434 **Int**: +44 1723 891655
Email: sales@cirrusresearch.co.uk
Web: www.cirrusresearch.co.uk
UK Registration No. 987160

bsi. ISO 9001 Quality Management FM 531001 ISO 14001 Environmental Management EMS 552104

Free-Field Frequency Response

Frequency (Hz)	Free-Field Sensitivity (dB rel 1 kHz)	Actuator to Free-Field Correction (dB)
100	-0.12	-2.10
125	-0.13	-1.41
160	-0.10	-0.88
200	-0.04	-0.52
250	-0.04	-0.33
315	-0.06	-0.25
400	-0.03	-0.12
500	-0.04	-0.08
630	0.02	0.01
800	-0.03	-0.05
1 000	0.00	-0.01
1 250	0.04	-0.04
1 600	-0.02	-0.21
2 000	0.03	-0.28
2 500	0.06	-0.45
3 150	0.00	-0.76
4 000	-0.14	-1.31
5 000	-0.26	-2.02
6 300	-0.61	-3.11
8 000	-0.94	-4.62
10 000	-1.62	-6.78
12 500	-2.07	-8.77
16 000	-3.16	-11.25
20 000	-4.75	-14.96



Certificate of Calibration

Cirrus Research plc
dedicated to noise measurement

Equipment Details

Instrument Manufacturer	Cirrus Research plc
Instrument Type	CR:171B
Description	Sound Level Meter
Serial Number	G061082

Calibration Procedure

The instrument detailed above has been calibrated to the publish test and calibration data as detailed in the instrument hand book, using the techniques recommended in the latest revisions of the International Standards IEC 61672-1:2002, IEC 60651:1979, IEC 60804:2001,IEC 61260:1995, IEC 60942:1997, IEC 61252:1993, ANSI S1.4-1983, ANSI S1.11-1986 and ANSI S1.43-1997 where applicable.
Sound Level Meters: All Calibration procedures were carried out by substituting the microphone capsule with a suitable electrical signal, apart from the final acoustic calibration.

Calibration Traceability

The equipment detailed above was calibrated against the calibration laboratory standards held by Cirrus Research plc. These are traceable to International Standards {A.0.6}. The standards are:

Microphone Type	B&K 4192	Serial Number	19207921	Calibration Ref.	56450
Pistonphone Type	B&K 4220	Serial Number	613843	Calibration Ref.	56388

Calibrated by T. A. Goodall

Calibration Date	07 April 2015
Calibration Certificate Number	227467

This Calibration Certificate is valid for 12 months from the date above.

Cirrus Research plc, Acoustic House, Bridlington Road, Hunmanby, North Yorkshire, YO14 0PH
Telephone: +44 (0) 1723 891655 Fax: +44 (0) 1723 891742
Email: sales@cirrusresearch.co.uk

Certificate of Calibration

Cirrus Research plc
dedicated to noise measurement

Equipment Details

Instrument Manufacturer	Cirrus Research plc
Instrument Type	CR:511E
Description	Acoustic Calibrator
Serial Number	41373

Calibration Procedure

The acoustic calibrator detailed above has been calibrated to the published data as described in the operating manual. The procedures and techniques used to follow the recommendations of the IEC standard Electroacoustics – Sound Calibrators IEC 60942:2003, IEC 60942:1997, BS EN 60942:1998 and BS EN 60942:2003 where applicable.. The calibrator's main output is 94.00 dB (1 Pa) and this was set within the 0.01 dB resolution of the test system, i.e. one hundredth of a decibel. Numbers in {parenthesis} refer to the paragraph in IEC 60942.

Calibration Traceability

The calibrator above was calibrated against the calibration laboratory standards held by Cirrus Research plc. These are traceable to International Standards {A.0.6}. The standards are:

Microphone Type	B&K 4192	Serial Number	19207921	Calibration Ref.	S6450
Pistonphone Type	B&K 4220	Serial Number	613843	Calibration Ref.	S6388

Calibration Climate Conditions

The climatic test conditions were all maintained within the permitted limits of IEC 60942:1997.

Temperature	{B.3.2}	Permitted band 15°C to 25°C
Humidity	{B.3.2}	Permitted band 30% to 90% RH
Static Pressure	{B.3.2}	Permitted band 85 kPa to 105 kPa
Ambient Noise Level	{B.3.3.6}	Max permitted level 64 dB(Z)

Measurement Results

The figures below are the Calibration Laboratory test limits for this model calibrator and have a smaller tolerance than those permitted in IEC 60942.

94 dB Output	94.00 dB	Permitted band	93.95 to 94.05dB
104 dB Output	103.98 dB	Permitted band	103.80 to 104.30dB
Frequency	998.19 Hz	Permitted band	990 to 1010Hz

Uncertainty

With an uncertainty coefficient of k=2, i.e. a 95% confidence level, the uncertainty of each measure is

94 dB Output	± 0.13 dB	104 dB Output	± 0.14 dB
Frequency	± 0.1 Hz	Level Stability	± 0.04 dB

Calibrated by T. A. Goodall

Calibration Date 07 April 2015

Calibration Certificate Number 227465

This Calibration Certificate is valid for 12 months from the date above.

Cirrus Research plc, Acoustic House, Bridlington Road, Hunmanby, North Yorkshire, YO14 0PH
Telephone: +44 (0) 1723 891655 Fax: +44 (0) 1723 891742
Email: sales@cirrusresearch.co.uk

Cirrus Research plc

Calibration Chart for Electret Microphone

Type: MK:224 **Serial No.:** 203029A

Open Circuit Sensitivity at 1kHz:
-26.1 dB ref. 1V/Pa
49.7 mV/Pa

Conditions of Tests:

Barometric Pressure	978 mBar
Relative Humidity	29 %
Temperature	18 °C

Signature: **Date:** 23/02/2016

Cirrus Research plc
Acoustic House, Hunmanby YO14 0PH UK
www.cirrusresearch.co.uk

Specifications:

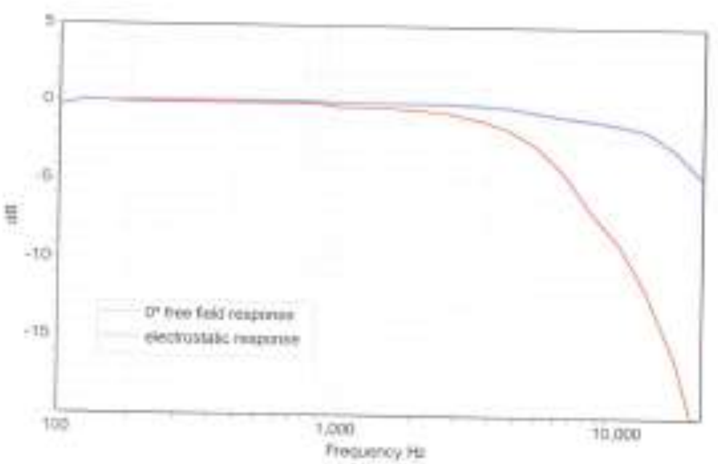
Outside Diameter:
13.2mm with protecting grid
12.7mm without protecting grid

Mounting Thread:
11.7mm 60 UNS 2

Ambient Pressure Coefficient:
-0.02 to +0.02 dB/kPa for
±10% pressure change at 250Hz

Temperature Coefficient:
-10°C to +50°C
Approx. -0.015dB/k at 250Hz

Dynamic Range:
SPL below which total harmonic
distortion is <1%: 130dB



Glossary of Terms

Note: Not all terms were used in the description of noise for this noise survey.

Ambient noise	The totally encompassing sound in a given situation at a given time, usually composed of sound from many sources, near and far.
Acoustic shadow	An acoustic shadow is an area through which sound waves fail to propagate, due to topographical obstructions or disruption of the waves via phenomena such as wind currents.
Background noise	The steady existing noise level present without contribution from any intermittent sources. The A weighted sound pressure level of the residual noise at the assessment position that is exceeded for 90 per cent of a given time interval, T (LAF90,T).
Broadband	Sounds that contain energy distributed across a wide range of frequencies.
Competent person	Individual possessing a combination of technical knowledge, experience and skills as outlined in Section 2.0 and who can demonstrate both practical and theoretical competence.
Criterion noise level	The long term mean value of the noise level that must not be exceeded. This is generally stipulated in the IPPC/Waste licence and it may be applied to a noise source, a boundary of the activity or to an NSL in the vicinity of the site.
dB	Decibel. The scale in which sound pressure level is expressed. It is defined as 20 times the logarithm of the ratio between the RMS pressure of the sound field and the reference pressure of 20 micro pascals (20 uPa).
Facade level	The noise level at a location 1m from the facade of a building is described by the term facade level, and is subject to a higher noise level than one in an open area (free-field conditions) due to reflection effects.
Free field	These are conditions in which the radiation from sound sources is unaffected by the presence of any reflecting boundaries or the source itself. In practice, it is a field in which the effects of the boundaries are negligible over the frequency range of interest. In environmental noise, true free-field measurement conditions are seldom achieved and generally the microphone will be positioned at a height between 1.2 and 1.5 metres above ground level. To minimise the influence of reflections, measurements are generally made at least 3.5 metres from any reflecting surface other than the ground.
Hertz (Hz)	The unit of sound frequency in cycles per second.
Impulsive	A noise that is of short duration (typically less than one second), the sound pressure level of which is significantly higher than the background.
LAeq,T	This is the equivalent continuous sound level. It is a type of average and is used to describe a fluctuating noise in terms of a single noise level over the sample period (T).The closer the LAeq value is to either the LAF10 or LAF90 value indicates the relative impact of the intermittent sources and their contribution. The relative spread between the values determines the impact of intermittent sources, such as traffic, on the background.
LAFN	The A-weighted noise level exceeded for N% of the sampling internal. Measured using the "Fast" time weighting.
LAr,T	The Rated Noise Level, equal to the LAeq during a specified time interval (T), plus specified adjustments for tonal character and/or impulsiveness of the sound.
LAF10	Refers to those A-weighted noise levels in the top 10 percentile of the sampling interval; it is the level which is exceeded for 10% of the measurement period. It is

	used to determine the intermittent high noise level features of locally generated noise and usually gives an indicator of the level of road traffic. Measured using the "Fast" time weighting.
LAF90	Refers to those A-weighted noise levels in the lower 90 percentile of the sampling interval; it is the level which is exceeded for 90% of the measurement period. It will therefore exclude the intermittent features of traffic and is used to describe a background level. Measured using the "Fast" time weighting.
LAFmax	The maximum **RMS** A-weighted sound pressure level occurring within a specified time period. Measured using the "Fast" time weighting.
LAFmin	The minimum **RMS** A-weighted sound pressure level occurring within a specified time period. Measured using the "Fast" time weighting.
Lden	Is the 24 hour noise rating level determined by the averaging of the Lday with the Levening plus a 5 dB penalty and the Lnight plus a 10 dB penalty.
Low background noise	An area of low background noise is one where the existing background noise levels measured during an environmental noise survey are as follows: o Average Daytime Background Noise Level ≤40dB LAF90, and; o Average Evening Background Noise Level ≤35dB LAF90, and; o Average Night-time Background Noise Level ≤30dB LAF90.
Low frequency noise	LFN - noise which is dominated by frequency components towards the lower end of the frequency spectrum; see Appendix VI for a more detailed discussion.
LpA (dB)	An 'A-weighted decibel' K a measure of the overall level of soundacross the audible frequency range (20Hz – 20kHz) with A-frequency weighting (i.e. 'A–weighting') to compensate for the varying sensitivity of the human ear to sound at different frequencies.
Noise	Any sound, that has the potential to cause disturbance, discomfort or psychological stress to a person exposed to it, or any sound that could cause actual physiological harm to a person exposed to it, or physical damage to any structure exposed to it, is known as noise.
Noise sensitive location	NSL – any dwelling house, hotel or hostel, health building, educational establishment, place of worship or entertainment, or any other facility or other area of high amenity which for its proper enjoyment requires the absence of noise at nuisance levels.
Octave band	A frequency interval, the upper limit of which is twice that of the lower limit. For example, the 1,000Hz octave band contains acoustical energy between 707Hz and 1,414Hz. The centre frequencies used for the designation of octave bands are defined in ISO and ANSI standards.
Rating level	See LAr,T.
RMS	The RMS (Root Mean Square) value of a set of numbers is the square root of the average of their squares.
SEL (LAX or LAE)	Sound exposure level **–** a measure of the A-weighted sound energy used to describe noise events such as the passing of a train or aircraft; it is the A-weighted sound pressure level if occurring over a period of 1 second, would contain the same amount of A-weighted sound energy as the event.
Sound pressure level	Sound pressure refers to the fluctuations in air pressure caused by the passage of a sound wave. It may be expressed in terms of sound pressure level at a point.

Specific noise level	A component of the ambient noise which can be specifically identified by acoustical means and may be associated with a specific source. In BS 4142, there is a more precise definition as follows: 'the equivalent continuous A-weighted sound pressure level at the assessment position produced by the specific noise source over a given reference time interval (LAeq, T)'.
Time weighting	One of the averaging times (Fast, Slow or Impulse) used for the measurement of RMS sound pressure level in sound level meters.
Tonal	Sounds which cover a range of only a few Hz which contains a clearly audible tone, i.e. distinguishable, discrete or continuous noise (whine, hiss, screech, or hum etc.) are referred to as being 'tonal'.
1/3 octave analysis	Frequency analysis of sound such that the frequency spectrum issubdivided into bands of one–third of an octave each.

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Limerick

Tipperary County Council
Recycling Centre and Waste Transfer Station,
Waller's Lot,
Cashel,
Co. Tipperary

Environmental Bergerhoff Dust Report
Round 1 Survey 2015

Licence Number: W0200-02

Report Reference Number:	**3450-15-02**
Version:	**1**
Date of Issue:	**24-08-2015**
Report Compiled by:	**Dan Mullins**

1.0 Executive Summary

Tipperary County Council is required as part of their Waste License W0200-01 Cashel Recycling Centre and Waste Transfer Station; to carry out a Dustfall survey for this installation three times annually.

AXIS environmental services were commissioned to complete the survey after proposal acknowledgment and acceptance by Tipperary County Council.

The survey was carried out in strict accordance with the standard VDI 2119 Determination of Dust Precipitation with Collection Pots made of Glass (Bergerhoff Method).

Four points were monitored for the dust survey at Cashel Recycling Centre and Waste Transfer Station. D1, D2, D3 &D4 are facility boundary monitoring points which are located within the confines of the site and are in close proximity to all activities in operation.

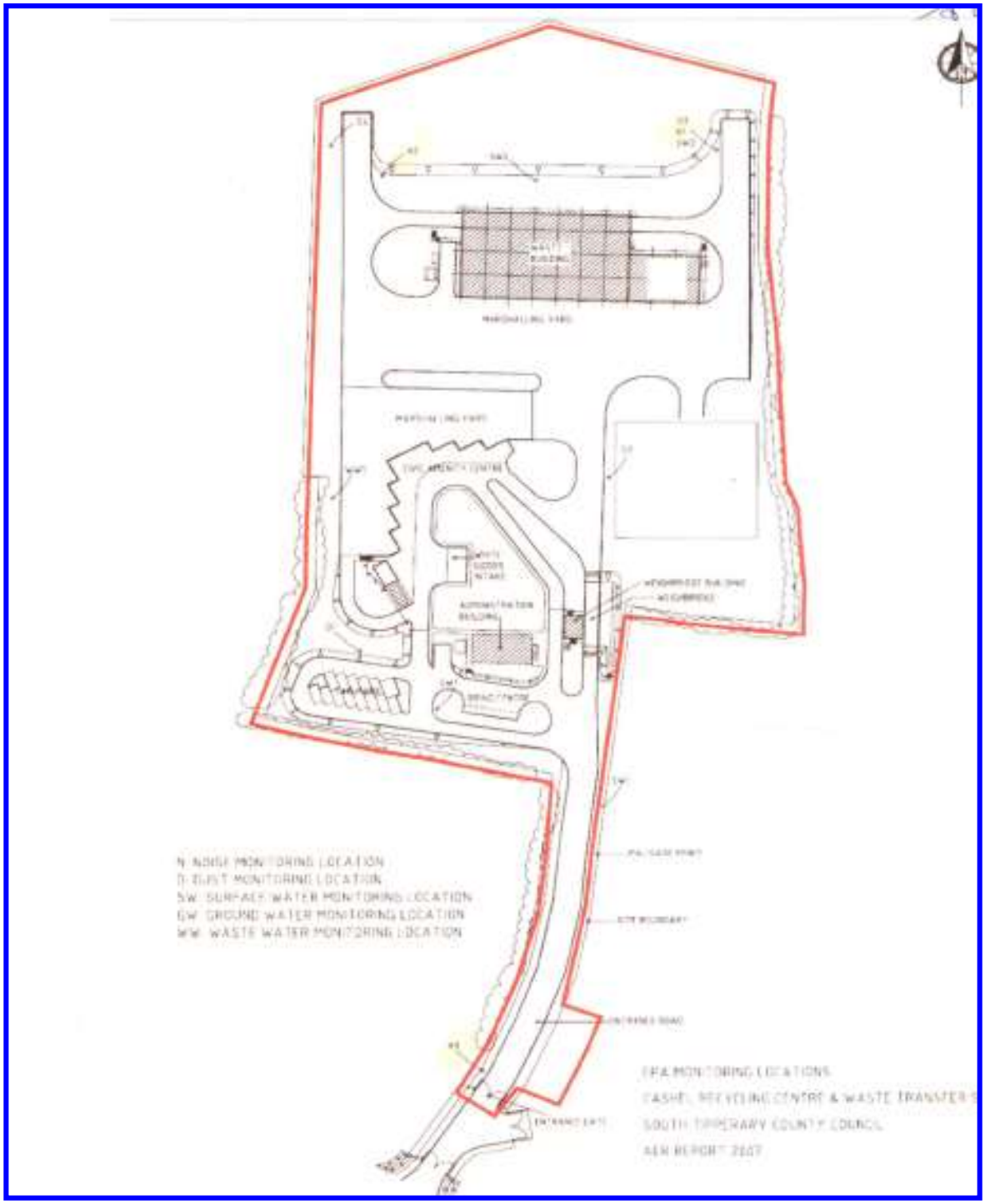
D2, which is located next to the weighbridge was deemed to be over the limit set out in the licence due to a large amount of decomposing flies in the sample. All other samples were determined to be within the Dustfall limits applied in the waste licence.

Table 1: Summary of Results

Location	Date Out	Date In	Dust Weight (mg)	Dust Fall mg/m^2/day	Limit	Compliant
D1	22/07/15	18/08/15	0.0406	253.08	350	Yes
D2	22/07/15	18/08/15	0.1179	734.92 Note 1	350	No Note 1
D3	22/07/15	18/08/15	0.0068	42.39	350	Yes
D4	22/07/15	18/08/15	0.0053	33.04	350	Yes

Note 1: Contaminated with decomposing flies

Appendix II Site Map



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Environmental Bergerhoff Dust Report
Round 2 Survey 2015

Licence Number: W0200-02

Report Reference Number:	**3450-15-05**
Version:	**1**
Date of Issue:	**12/10/2015**
Report Compiled by:	**Dan Mullins**

1.0 Executive Summary

Tipperary County Council is required as part of their Waste License W0200-01 Cashel Recycling Centre and Waste Transfer Station; to carry out a Dustfall survey for this installation three times annually.

AXIS environmental services were commissioned to complete the survey after proposal acknowledgment and acceptance by Tipperary County Council.

The survey was carried out in strict accordance with the standard VDI 2119 Determination of Dust Precipitation with Collection Pots made of Glass (Bergerhoff Method).

Four points were monitored for the dust survey at Cashel Recycling Centre and Waste Transfer Station. D1, D2, D3 & D4 are facility boundary monitoring points which are located within the confines of the site and are in close proximity to all activities in operation.

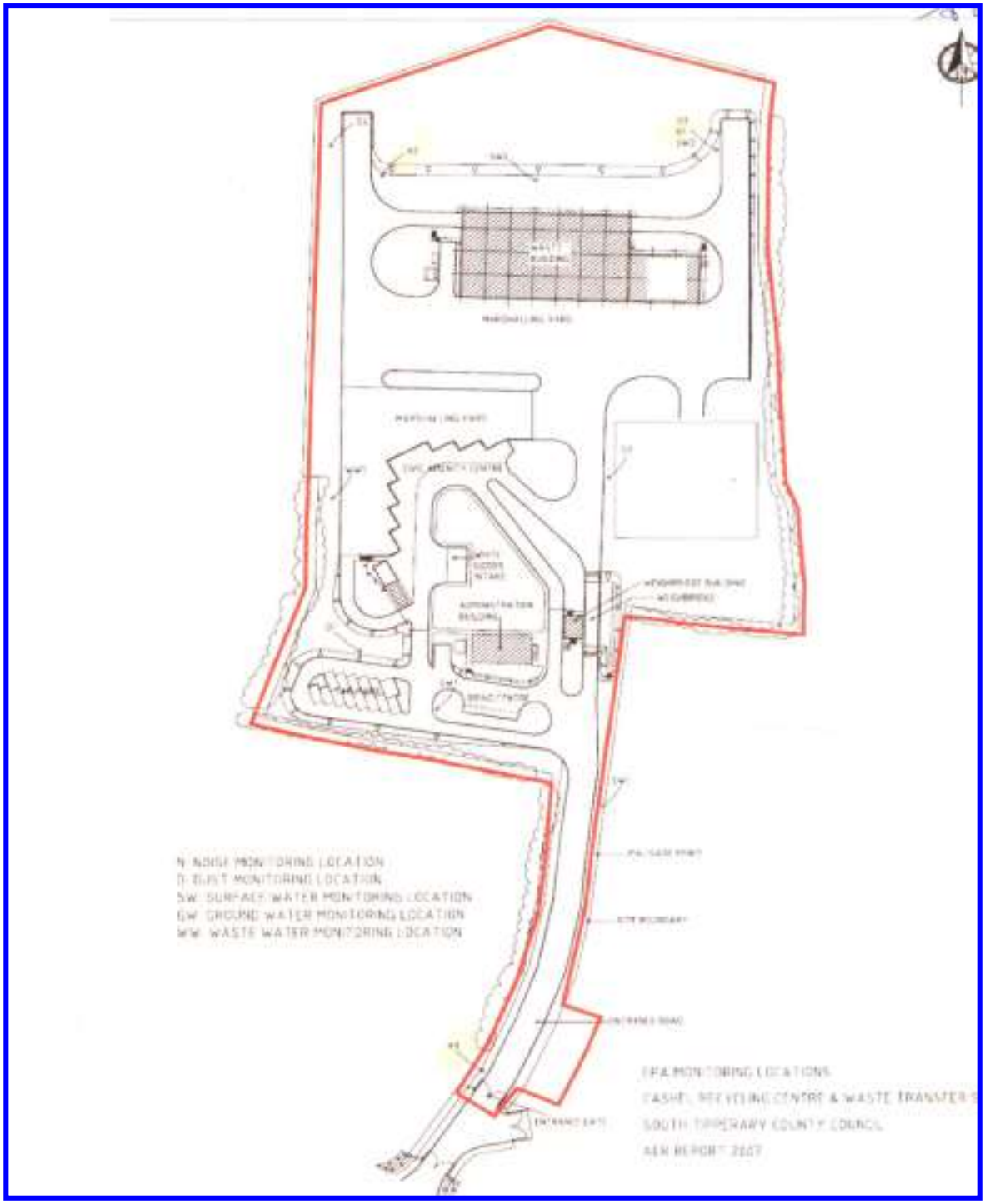
D3 was deemed to be over the limit set out in the licence due to a large amount of bird faeces in the sample. All other samples were determined to be within the Dustfall limits applied in the waste licence.

Table 1: Summary of Results

Location	Date Out	Date In	Dust Weight (mg)	Dust Fall mg/m^2/day	Limit	Compliant
D1	18/08/15	15/09/15	0.011	66.12	350	Yes
D2	18/08/15	15/09/15	0.0048	28.85	350	Yes
D3	18/08/15	15/09/15	0.0694	417.15	350	No Note 1
D4	18/08/15	15/09/15	0.0059	120.22	350	Yes

Note 1: Contaminated with bird faeces

Appendix II Site Map



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Environmental Bergerhoff Dust Report
Round 3 Survey 2015

Licence Number: W0200-01

Report Reference Number:	**3450-15-08**
Version:	**2**
Date of Issue:	**10/11/2015**
Report Compiled by:	**Dan Mullins**

1.0 Executive Summary

Tipperary County Council is required as part of their Waste License W0200-01 Cashel Recycling Centre and Waste Transfer Station; to carry out a Dustfall survey for this installation three times annually.

AXIS environmental services were commissioned to complete the survey after proposal acknowledgment and acceptance by Tipperary County Council.

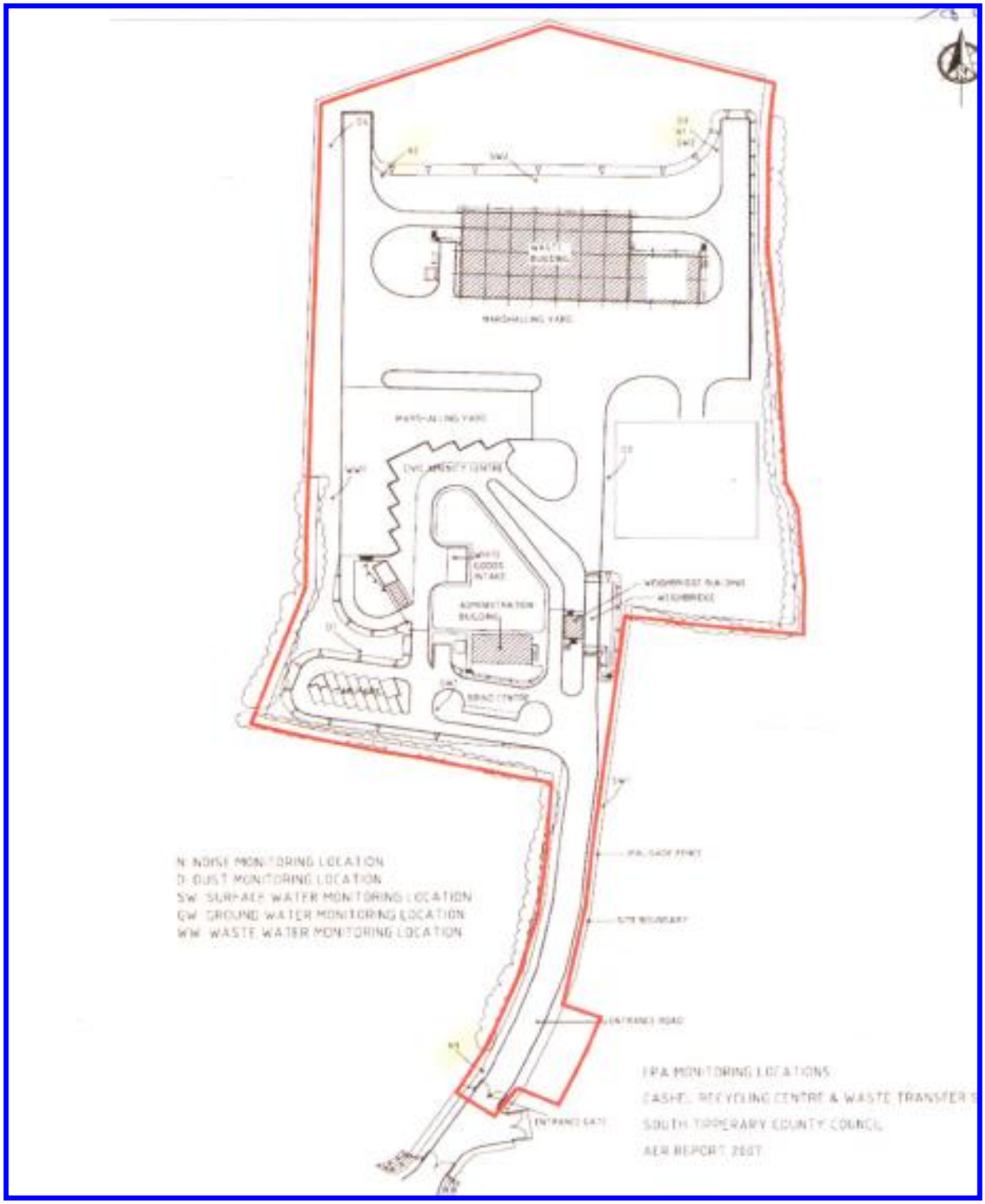
The survey was carried out in strict accordance with the standard VDI 2119 Determination of Dust Precipitation with Collection Pots made of Glass (Bergerhoff Method).

Four points were monitored for the dust survey at Cashel Recycling Centre and Waste Transfer Station. D1, D2, D3 & D4 are facility boundary monitoring points which are located within the confines of the site and are in close proximity to all activities in operation.

Table 1: Summary of Results

Location	Date Out	Date In	Dust Weight (mg)	Dust Fall mg/m^2/day	Limit	Compliant
D1	15/09/15	14/10/15	0.0043	24.96	350	Yes
D2	15/09/15	14/10/15	0.0130	75.45	350	Yes
D3	15/09/15	14/10/15	0.0042	24.37	350	Yes
D4	15/09/15	14/10/15	0.0029	16.83	350	Yes

Appendix II Site Map



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	Tipperary County Council
Facility Name	Recycling Centre and Waste Transfer Station
PRTR Identification Number	W0200
Licence Number	W0200-01

Classes of Activity

No.	class_name
-	Refer to PRTR class activities below

Address 1	Waller's Lot
Address 2	Cashel
Address 3	
Address 4	
	Tipperary
Country	Ireland
Coordinates of Location	-7.8745 52.5126
River Basin District	IESE
NACE Code	3821
Main Economic Activity	Treatment and disposal of non-hazardous waste
AER Returns Contact Name	Pat Walsh
AER Returns Contact Email Address	pat.walsh@tipperarycoco.ie
AER Returns Contact Position	Facility Manager
AER Returns Contact Telephone Number	06264150
AER Returns Contact Mobile Phone Number	0872318627
AER Returns Contact Fax Number	0
Production Volume	0.0
Production Volume Units	
Number of Installations	0
Number of Operating Hours in Year	0
Number of Employees	5
User Feedback/Comments	
Web Address	

2. PRTR CLASS ACTIVITIES

Activity Number	Activity Name
50.1	General
50.1	General

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

Is it applicable?	No
Have you been granted an exemption ?	No
If applicable which activity class applies (as per Schedule 2 of the regulations) ?	
Is the reduction scheme compliance route being used ?	

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

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

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

5. ONSITE TREATMENT & OFFSITE TRANSFERS OF WASTE

Please enter all quantities on this sheet in Tonnes

Transfer Destination	European Waste Code	Hazardous	Quantity (Tonnes per Year)	Description of Waste	Waste Treatment Operation	Method Used		Location of Treatment	Haz Waste : Name and Licence/Permit No of Next Destination Facility Non Haz Waste: Name and Licence/Permit No of Recover/Disposer	Haz Waste : Address of Next Destination Facility Non Haz Waste: Address of Recover/Disposer	Name and License / Permit No. and Address of Final Recoverer / Disposer (HAZARDOUS WASTE ONLY)	Actual Address of Final Destination i.e. Final Recovery / Disposal Site (HAZARDOUS WASTE ONLY)
						M/C/E	Method Used					
Within the Country	13 08 99	Yes	1.34	Waste Oil	R13	M	Weighed	Offsite in Ireland	Enva,W0184-01	.,.,.,.,Ireland	Enva,W0184-01,Enva,Clonimam ind est,Portlaoise,.,Ireland	Enva,Clonimam ind est,.,Portlaoise,Ireland
Within the Country	15 01 01	No	28.6	paper and cardboard packaging	R13	M	Weighed	Offsite in Ireland	Greenstar,WO-103-81	.,.,.,.,Ireland		
Within the Country	15 01 02	No	0.0	plastic packaging	R13	M	Weighed	Offsite in Ireland	Walker Recycling Services,WMP044B	.,.,.,.,Ireland		
Within the Country	15 01 04	No	3.8	metallic packaging	R13	M	Weighed	Offsite in Ireland	Rehab Recycling,08/04 (Reg 635)	.,.,.,.,Ireland		
Within the Country	15 01 04	No	0.0	metallic packaging	R13	M	Weighed	Offsite in Ireland	Rehab Recycling,08/04 (Reg 635)	.,.,.,.,Ireland		
Within the Country	15 01 06	No	262.3	mixed packaging	R13	M	Weighed	Offsite in Ireland	Clonmel Waste Disposal Ltd.,WCPKK/025/02	Lawless Town,.,Clonmel,Tipperary,Ireland		
Within the Country	15 01 06	No	1143.74	mixed packaging	R13	M	Weighed	Offsite in Ireland	Clean Ireland Recycling,W0253-01	Ballingun West,Cree,Clare,.,Ireland		
To Other Countries	16 05 04	Yes	1.68	gases in pressure containers (including halons) containing dangerous substances	R13	M	Weighed	Abroad	Enva,W0184-01	.,.,.,.,Ireland	Geocycle,38.152/BP,Feneffe,.,.,.Belgium	.,.,.,.,Belgium
Within the Country	17 02 02	No	7.72	glass	R13	M	Weighed	Offsite in Ireland	Greenstar,WO-103-81	.,.,.,.,Ireland		
Within the Country	17 08 02	No	27.28	gypsum-based construction materials other than those mentioned in 17 08 01	R13	M	Weighed	Offsite in Ireland	Greenstar,WO-103-81	.,.,.,.,Ireland		
Within the Country	17 01 07	No	106.2	mixture of concrete, bricks, tiles and ceramics other than those mentioned in 17 01 06	R13	M	Weighed	Offsite in Ireland	Greenstar,WO-103-81	.,.,.,.,Ireland		
Within the Country	20 01 01	No	36.8	paper and cardboard	R13	M	Weighed	Offsite in Ireland	Greenstar,WO-103-81	.,.,.,.,Ireland		
Within the Country	20 01 02	No	82.06	glass	R13	M	Weighed	Offsite in Ireland	Rehab Recycling,08/04 (Reg 635)	.,.,.,.,Ireland		
To Other Countries	20 01 11	No	28.76	textiles	R13	M	Weighed	Abroad	Cookstown Recycling,Charity	.,.,.,.,United Kingdom		
Within the Country	20 01 21	Yes	0.6	fluorescent tubes and other mercury-containing waste	R13	M	Weighed	Offsite in Ireland	KMK,W0113-04	.,.,.,.,Ireland	KMK,W0114,KMK,.,Tullamore,.,Ireland	KMK,.,Tullamore,.,Ireland
Within the Country	20 01 33	Yes	1.14	batteries and accumulators included in 16 06 01, 16 06 02 or 16 06 03 and unsorted batteries and accumulators containing these batteries	R13	M	Weighed	Offsite in Ireland	KMK,W0113-04	.,.,.,.,Ireland	Geocycle,38.152/BP,Feneffe,.,.,.Belgium	.,.,.,.,Belgium
To Other Countries	20 01 35	Yes	152.6	discarded electrical and electronic equipment other than those mentioned in 20 01 21 and and 20 01 23 containing hazardous components	R13	M	Weighed	Abroad	KMK,W0113-04	.,.,.,.,Ireland	Geocycle,38.152/BP,Feneffe,.,.,.Belgium	.,.,.,.,Belgium
Within the Country	20 01 38	No	38.94	wood other than that mentioned in 20 01 37	R13	M	Weighed	Offsite in Ireland	Clonmel Waste Disposal Ltd.,WCPKK/025/02	Lawless Town,.,Clonmel,Tipperary,Ireland		
Within the Country	20 02 01	No	400.1	biodegradable waste	R3	M	Weighed	Offsite in Ireland	Clonmel Waste Disposal Ltd.,WCPKK/025/02	Lawless Town,.,Clonmel,Tipperary,Ireland		
Within the Country	20 03 01	No	692.56	mixed municipal waste	D13	M	Weighed	Offsite in Ireland	Glanway Ltd,WFP KK 14-0002-01	Kilkenny,.,.,.,.,Ireland		
Within the Country	20 03 01	No	30.72	mixed municipal waste	D13	M	Weighed	Offsite in Ireland	Greenstar,WO-103-81	.,.,.,.,Ireland		
Within the Country	20 03 01	No	27.78	mixed municipal waste	D13	M	Weighed	Offsite in Ireland	Ryan Brothers Ltd.,NWCPO-08-10597-02	Mill Road,.,Thurles,Tipperary,Ireland		
Within the Country	20 03 07	No	26.14	Mattresses	R13	M	Weighed	Offsite in Ireland	Boomerang Recycling,WFP-CC-10/2014	Unit 2B,Ballyvolane Business Park,Ballyvolane,Cork,Ireland		
Within the Country	16 01 07	Yes	0.14	oil filters	R9	M	Weighed	Offsite in Ireland	Enva,W0184-01	.,.,.,.,Ireland	Enva,W0184-01,Enva,Clonimam ind est,Portlaoise,.,Ireland	Enva,Clonimam ind est,.,Portlaoise,Ireland
Within the Country	**02 01 04**	**No**	303.9	waste plastics (except packaging)	R13	M	Weighed	Offsite in Ireland	Filmco Limited,WFP-TS-10-0003-03	Filmco Limited,Ballylynch,Carrick on Suir,Tipperary,Ireland		
Within the Country	17 04 07	No	74.04	mixed metals	R13	M	Weighed	Offsite in Ireland	Greenstar,WO-103-81	.,.,.,.,Ireland		
Within the Country	20 01 39	No	3.78	plastics	R13	M	Weighed	Offsite in Ireland	Greenstar,WO-103-81	.,.,.,.,Ireland		
Within the Country	16 06 01	Yes	0.36	lead batteries	R13	M	Weighed	Offsite in Ireland	KMK,W0113-04	.,.,.,.,Ireland	KMK,W0114,KMK,.,Tullamore,.,Ireland	KMK,.,Tullamore,.,Ireland
Within the Country	20 03 01	No	163.64	mixed municipal waste	D13	M	Weighed	Offsite in Ireland	Greyhound Recycling,WCP-DC-08-1154-01	Clondalkin,.,Dublin,.,Ireland		
Within the Country	20 03 01	No	2550.1	mixed municipal waste	D1	M	Weighed	Offsite in Ireland	Drehid Landfill,W0201-03	Drehid,.,Kildare,.,.Ireland		
Within the Country	20 03 01	No	2356.56	mixed municipal waste	D1	M	Weighed	Offsite in Ireland	Powerstown Landfill,W0025-03	Carlow,.,.,.,Ireland		
Within the Country	20 03 01	No	233.82	mixed municipal waste	D13	M	Weighed	Offsite in Ireland	O'Tooles Composting,W0284-01	Ballintrane,Fenagh,.,Carlow,Ireland		
Within the Country	19 12 07	No	544.9	wood other than that mentioned in 19 12 06	R3	M	Weighed	Offsite in Ireland	Medite Europe Limited,P0027-02	Redmondstown,.,Clonmel,Tipperary,Ireland		
Within the Country	20 01 25	No	0.14	edible oil and fat	R1	M	Weighed	Offsite in Ireland	Agri-Energy,CK-WMC-397/06	St Annes Cloghran,Swords,Dublin,.,Ireland		
Within the Country	20 01 38	No	92.24	wood other than that mentioned in 20 01 37	R3	M	Weighed	Offsite in Ireland	Clonmel Waste Disposal Ltd.,WCPKK/025/02	Lawless Town,.,Clonmel,Tipperary,Ireland		

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

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