ANNUAL ENVIRONMENTAL REPORT 2009

KMK METALS RECYCLING LTD

WASTE LICENCE REF: W0113-03

Cappincur Industrial Estate,
Daingean Road, Tullamore, Co. Offaly

REPORT PERIOD: JANUARY 2009-December 2009

Compiled by:
ENVIROCO Management Ltd.
Bow House, O'Moore Street,
Tullamore, Co. Offaly
Tel: Lo-Call 1890 522000
Fax: 057 93 52342
Email: info@enviroco.ie
Website: www.enviroco.ie

Printed on
Recycled Paper

TABLE OF CONTENTS

LIST OF TABLES

LIST OF APPENDICES

1.0 REPORTING PERIOD

The reporting period for this Annual Environmental Report is 1st January 2009 to 31st of December 2009.

2.0 WASTE ACTIVITIES CARRIED OUT AT THE FACILITY

The principal class of activity is:

Class 13 of the Fourth Schedule (Waste Recovery Activities) of the Waste Management Act (1996): Storage of waste intended for submission to any activity referred to in a preceding paragraph of this Schedule, other than temporary storage, pending collection, on the premises where such waste is produced.

Non Technical Description: Temporary storage and processing of waste materials at the facility prior to removal off site for further metals recovery at an alternative facility.

Consequently, other activities carried out on site include:

Class 3 of the Fourth Schedule (Waste Recovery Activities) of the Waste Management Act (1996): Recycling or reclamation of metals and metal compounds.

Non Technical Description: Collection, acceptance and processing of metallic wastes (hazardous and non hazardous including electronic and electrical wastes and liquids containing dissolved metals) as part of waste loads arriving at the facility prior to removal off site for recycling or recovery.

Class 4 of the Fourth Schedule (Waste Recovery Activities) of the Waste Management Act (1996): Recycling or reclamation of other inorganic materials.

Non Technical Description: Acceptance of plastic components and packaging as part of incoming waste loads.

Class 6 of the Fourth Schedule (Waste Recovery Activities) of the Waste Management Act (1996): Recovery of components used for pollution abatement.

Non Technical Description: Acceptance of auto catalysts, filters etc.

Class 7 of the Fourth Schedule (Waste Recovery Activities) of the Waste Management Act (1996): Recovery of components from catalysts.

Non Technical Description: Recovery of metals from catalysts in manufacturing processes (this applies to liquids and solids)

Class 11 of the Fourth Schedule (Waste Recovery Activities) of the Waste Management Act (1996): Use of waste obtained from any activity referred to in a preceding paragraph of this schedule.

Non Technical Description: Re-use of some waste materials e.g. metal drums, IBCs, cardboard boxes and textile IBC bulk bags as waste receptacles.

Class 12 of the Fourth Schedule (Waste Recovery Activities) of the Waste Management Act (1996): Exchange of waste for submission to any activity referred to in a preceding paragraph of this schedule.

Non Technical Description: Trading activities in waste management.

3.0 WASTE MANAGEMENT RECORD

3.1 Waste Received in 2009

Waste is received in the KMK Metals Ltd facility from the following sources; amenity sites, commercials customers, industrial customers and transfer station waste management sites.

A summary of all waste received during 2009 is given below:

Source of waste accepted.	**Total quantities (tonnes)**
Civic amenity sites	12,119.146
Commercial	6,912.527
Industrial	675.723
Transfer Stations	3,548.404
Total	**23,255.8tonnes**

It is estimated that 85% of the total waste intake in 2009 was waste electrical and electronic equipment (WEEE).
A full breakdown of waste types and quantities accepted for 2009 is included in Appendix 1 attached to this AER.

3.2 Waste Dispatched from the Facility for Recovery in 2009

The total quantity of waste dispatched from the facility in 2009 was 23,074.016 tonnes.

A summary of all waste dispatched during 2009 is included in Appendix 2 attached to this AER.

Please note that there is a carry over of waste material from the year ending 2009 into the beginning of 2010 and this is waste material left in stock (See Appendix 3) which was 819.16 tonnes. Also, please note that any reference to Old Stock in this table refers to stock which was carried over from 2008 and previous years.

4.0 EMISSIONS FROM THE FACILITY

A summary and interpretation of all emissions monitoring carried out at the facility during 2009 is discussed in detail below.

4.1 Dust

Dust deposition assessment was carried out at the site from 5th August to 3rd September 2009 and again from the 7th September to the 6th October 2009 by ENVIROCO Management Ltd.

The Dust Deposition Assessment Report is included in Appendix 4 of this AER.

All dust deposition monitoring was based on the Bergerhoff method, 'Measurement of Dustfall Using the Bergerhoff Instrument (Standard Method)' VDI 2119. The Waste Licence requirements (ref. W0113-03) for dust monitoring are presented in table 4.1.1 below. A total of seven dust monitoring locations were selected (A2-1, A2-2, A2-3, A2-4, A2-5 and A2-6, A2-7*).

Table 4.1.1 Dust Monitoring Licence Requirements

Stations	**Parameter ($mg/m^2/day$)**	**Monitoring frequency**	**Analysis Method/ Technique**
A2-1, A2-2, A2-3, A2-4, A2-5 and A2-6	Total Dust Deposition	Annually[note1]	Standard method[note3]
	Metal content [note2]	Annually	Standard method

*A2-7: Additional Monitoring Location (not required as part of the compliance for the waste licence of KMK Metals).
Note 1: During the period May to September, or otherwise specified in writing by the Agency.
Note 2: Analysis to include the following metals: Al, As, Cd, Cr, Cu, Fe, Hg, Ni, Pb and Zn.

Note 3: Standard VDI 2119 (Measurement of dustfall, Determination of dustfall using Bergerhoff Instrument (Standard Method) German Engineering Institute). Any modifications to eliminate interference due to algae growth in the gauge should be reported to the Agency.

A summary of Dust Deposition Results for 7 locations are tabulated below in tables 4.1.2, 4.1.3 and figures 4.1.1 and 4.1.2 below.

Table 4.1.2 Results of total dust monitoring at the site

Station I.D.	**Monitoring Location**	**Irish Grid Ref.**		**Dust Deposition** (Aug/Sep 2009) **mg/m²/day**	**Dust Deposition** (Sept/Oct 2009) **mg/m²/day**	**EPA licence Limits mg/m²/day**
		Easting	**Northing**			
A2-1	Car Park at Fence Boundary	635955	725044	318	**1280**	350
A2-2	Eastern boundary, beside disused portacabin	635959	725004	323	**1057**	350
A2-3	Fence at southern boundary	635882	724955	115	**1179**	350
A2-4	Site Entrance	635911	724993	**692**	**1656**	350
A2-5	Western Boundary	635866	725002	**360**	**1107**	350
A2-6	Northern Boundary	635902	725021	**359**	**1177**	350
A2-7	At the North-western boundary of the yard which is located within the Industrial Estate, adjacent to the D5 yard area.	635911	725118	108	**803**	350

Table 4.1.3 Results of metallic species in dust at the site.

Parameters	**Metallic analysis in dust (µg/l)**						
	A2-1	**A2-2**	**A2-3**	**A2-4**	**A2-5**	**A2-6**	**A2-7**
Aluminium (Al)	23	54	<20	112	35	154	22
Copper (Cu)	4	26	34	27	33	132	2
Arsenic (As)	3	<0.5	<0.5	<0.5	<0.5	0.6	3
Cadmium (Cd)	<0.5	<0.5	<0.5	<0.5	0.6	0.6	<0.5
Chromium (Cr)	<0.5	0.6	<0.5	1	<0.5	1	<0.5
Iron (Fe)	32	195	33	375	66	336	28
Mercury (Hg)	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5
Nickel (Ni)	<0.5	4	3	6	4	4	<0.5

Lead (Pb)	8	41	33	58	53	91	5
Zinc (Zn)	14	172	151	251	217	174	15

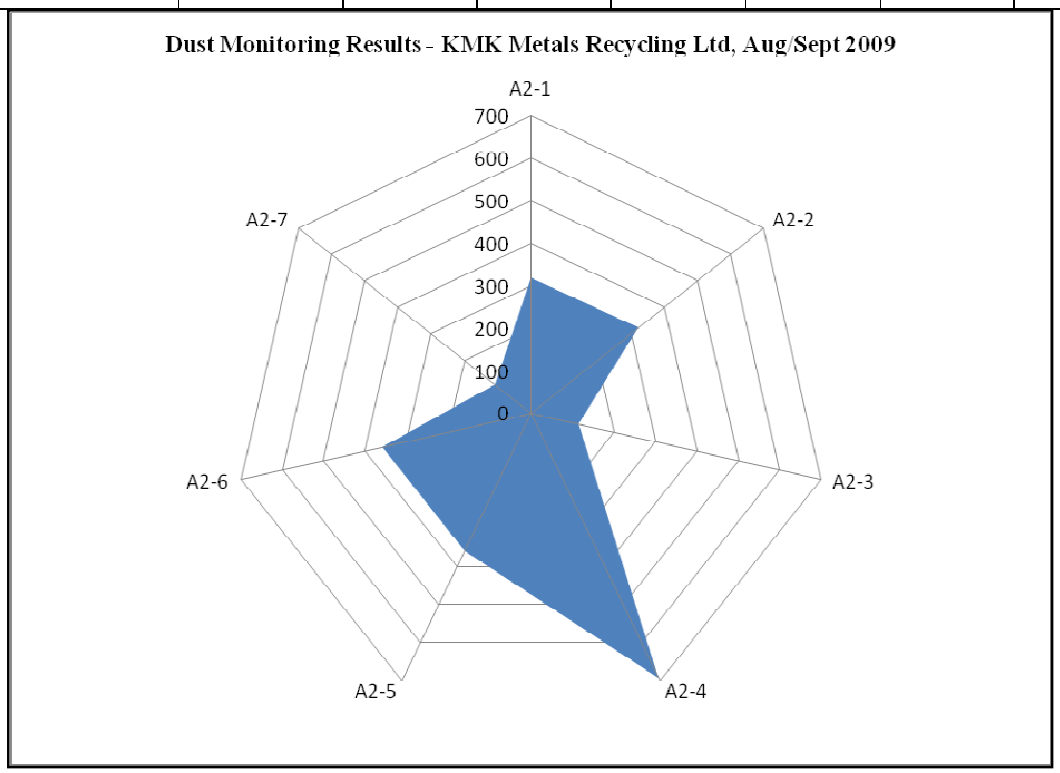


Figure 4.1.1 Distribution of the results from dust monitoring August/September 2009

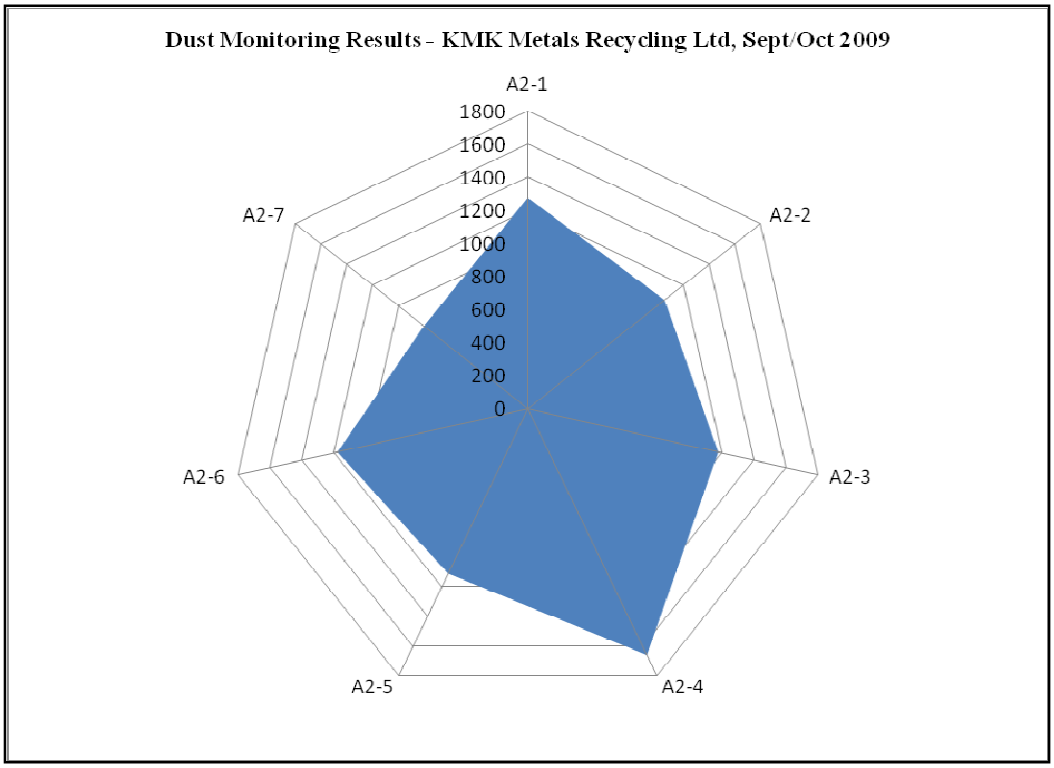


Figure 4.1.2 Distribution of the results from dust monitoring September/October 2009.

Weather conditions can have a noticeable impact upon dust creation and dust entrainment in the air. Drier weather will increase the ambient dust on the ground and will lighten small particulates. Wind strength will determine the size of particles that can be entrained in the air and the distance they will be transported. The Met Eireann data from the Birr Synoptic Station for the August/September and the September/October monitoring events show that August had high levels of rainfall throughout which reduced the dust levels within the Industrial Estate and within the KMK facility.

It was noted upon collection of the September/October event that there was no liquid in the dust jars. This is directly related to the low rainfall levels throughout the 30 day monitoring period of 9.1mm which was noticeably lower than previous years. It was noted upon consulting the Met Eireann records that the levels of rainfall during the 30day monitoring period were minimal with no precipitation for fifteen of the 30 days. This would have facilitated dust generation both at the facility but also in the neighbouring industrial units, on the roads within the Industrial Estate and also in the middle yard area (the D5 area and the adjacent yard area). Currently, the D5area and remaining middle yard (not utilised by KMK) is hardstanding (compacted gravel and stone) surfaced and therefore during prolonged dry weather periods movemnets in the middle yard result in high dust generation levels. Table 4.1.4 below provides an overview of the rainfall levels documented at the Birr Synoptic Station for both of the 30 day monitoring events.

Table 4.1.4 Rainfall levels from Birr Synoptic Station from the 5th Aug-3rd Sept and from the 7th Sept - 6th Oct 2009.

Date	Rainfall (mm)	Date	Rainfall (mm)
05/08/2009	0	07/09/2009	0.3
06/08/2009	0.8	08/09/2009	2.8
07/08/2009	0	09/09/2009	0.1
08/08/2009	0.6	10/09/2009	0.1
09/08/2009	0.6	11/09/2009	0
10/08/2009	0.7	12/09/2009	0
11/08/2009	2.8	13/09/2009	0
12/08/2009	6.4	14/09/2009	0.1
13/08/2009	0	15/09/2009	0
14/08/2009	2	16/09/2009	0
15/08/2009	6.9	17/09/2009	0
16/08/2009	0.2	18/09/2009	0
17/08/2009	0.6	19/09/2009	1
18/08/2009	2.2	20/09/2009	0
19/08/2009	15	21/09/2009	0
20/08/2009	14	22/09/2009	2.2
21/08/2009	1.8	23/09/2009	1.5
22/08/2009	3.6	24/09/2009	0
23/08/2009	10	25/09/2009	0
24/08/2009	0.2	26/09/2009	0
25/08/2009	1.2	27/09/2009	0.4
26/08/2009	2.8	28/09/2009	0
27/08/2009	3.7	29/09/2009	0
28/08/2009	5.7	30/09/2009	0.6
29/08/2009	0.1	01/10/2009	0
30/08/2009	4.4	02/10/2009	*
31/08/2009	5.5	03/10/2009	*
01/09/2009	1.8	04/10/2009	*
02/09/2009	10	05/10/2009	*
03/09/2009	1.1	06/10/2009	*
TOTAL Rainfall for the 30day period	**104.7mm**	**TOTAL Rainfall for the 30day period**	**9.1mm**

*No readings were presented for these dates on the Met Eireann database as of yet.

Based on the Beaufort Scale of Wind Force (see Appendix 4) it is clear that during the August/September event for 19 of the 30days wind in the area could be classified as a wind force 3 gentle breeze; which according to the specifications results in "Leaves and small twigs in constant motion, wind extends light flag".

For the remaining 11days the wind force was 2 (light breeze) which can result in movement of particles of dust and foliage.

Wind patterns during the September/October event show that for the majority of the monitoring event the wind ranged between force 1 and 3 which would have resulted in the movement of dust and foliage throughout sampling. All of these climatic elements can be seen as contributing factors to the dust levels shown at the KMK Metals facility.

Dust monitoring around the boundaries of the KMK Metals Recycling Ltd 's site showed results which were above the EPA Recommendation limit of 350mg/m^2/day.

The highest values recorded during both events were at dust station A2-4 located at the second entrance gate to the site, with results of 692 and 1,656mg/m^2/day. This station is notably where the most activity occurs at the site (where trucks are unloaded and loaded with waste) and where the majority of forklifts are travelling within to and from the D5 yard area.

During the Aug/Sept monitoring event four of the stations (A2-1, A2-2, A2-3 and A2-7) were below the EPA guideline limit value whilst two were slightly elevated. Therefore dust levels detected during this monitoring event were not deemed to have likely negative effects on the surrounding environment.

The high levels of dust in the Sept/Oct samples can be attributed largely to the low rainfall levels and wind patterns as well as a result of vehicular movements at the KMK facility and general vehicular movements within the Industrial Estate by neighbouring units.

An analysis of the metallic species in all 7 dust samples was also carried out. Not all samples measured were below the actual laboratory limits of detection as can be seen in Table 4.1.3. There is no EPA limit set in the licence for metallic species.

4.2 Noise

The Waste Licence requirements (ref. W0113-03) for noise monitoring are presented in table 4.2.1 below. A total of eight noise monitoring locations were selected (NE1, NE2, NE3, NE4, NE5, NE6, NE7*, NE8*).

Table 4.2.1 Noise Monitoring Licence Requirements

Stations	Parameter	Monitoring frequency	Analysis Method/ Technique
NE1, NE2, NE3, NE4, NE5, NE6	L(A)eq[30 minutes], $L(A)_{10}$ [30 minutes], $L(A)_{90}$ [30 minutes] and 1/3 Octave Band Analysis	Annually	Standard Method[Note1]

*NE7 and NE8: Additional Monitoring Location (not required as part of the compliance for the waste licence of KMK Metals).
Note 1: International Standards Organisation, ISO 1996 Acoustics – Description and Measurement of Environmental Noise. Parts 1,2 and 3.

A day-time noise assessment was carried out at the site on the 30th July 2009 by ENVIROCO Management Ltd and the full Noise Monitoring Survey report is included in Appendix 5 of this AER.

Monitoring Locations:

N1: Car park at fence boundary
N2: Eastern boundary, beside disused portacabin
N3: Fence at southwest boundary
N4: Western boundary
N5: North-western boundary of the D4 yard area
N6: North-eastern boundary of the D4 yard area
N7: Located at the North-western boundary of the proposed area for inclusion in the revised D5 yard.
N8: Located at the North-eastern boundary of the proposed area for inclusion in the revised D5 yard

All noise measurements were made according to the requirements of ISO 1996: Acoustics – Description and Measurement of Environmental Noise.

The complete set of noise measurement results is included in Appendix A of the Noise Monitoring Survey. These are summarised and discussed below.

Table 4.2.2 Summary of Site Boundary Noise Levels

Location	Start Time	L_{Aeq}	Comments
N1 Car park at fence boundary	09:21	62	**Background Noise;** Birdsong and wind gusting between the receptacles at this location. Sound of water flowing in a drain nearby where the lid of the drain was almost fully removed. Large truck idling in close proximity to the fence where the noise meter was set up. Cars and jeeps entering and exiting neighbouring facilities regularly and using the Industrial Estate Road. **Site Noise:** Audible noise coming from the KMK Facility and forklifts operating in the D5 area. Horns sounding from trucks leaving the industrial estate and from trucks leaving the KMK site. 9.30am Forklifts passing the noise meter and moving pallets and empty cages in close proximity to the meter. There was a short emission of sound from cages scraping across a gravel surface. 9.42am Some loud revving of a vehicles engine at a neighbouring facility took place for approximately 3 minutes prior to the vehicle leaving the site. A phone with an external bell for the yard area rang sporadically from the neighbouring site during the monitoring event.
N2 Eastern boundary, beside disused portacabin	10:00	59	**Background Noise;** Birdsong, wind gusts from between the buildings were frequent during this monitoring event. Some short conversations held in the yard in close proximity to the meter. Barking from the I.S.P.C.A Dog Pound in the neighbouring industrial estate. Truck pulling out from a neighbouring facility releasing its pressure caused a short increase in the LA_{eq} until the truck had left the area. **Site Noise:** 2 vans entered the site, one of which was a post van and the other van turned its engine off while waiting for a forklift to bring over 3 cages for the televisions in the back of it. This forklift brought cages which rattled while in motion and were scraped on the concrete surface for a brief moment. The unloading of the van by hand caused banging noise for approximately 5 minutes. During this monitoring event a forklift was loading a trailer with empty cages which caused a banging & scraping of metal. The reverse sounding alarms on the forklifts in the area were sounding quite regularly until the trailer was loaded.
N3 Fence at southwest boundary	10:39	60	**Background Noise;** Birdsong and rustling of the wind through the trees and hedgerow which are along the western boundary. During the monitoring event operational noises from the Ring Road construction works were clearly audible (diggers operating, articulated dump trucks travelling along the ring road). The noise levels from this increased between 11:05 and 11:10am. **Site Noise:** Sound of general operations and processing from the CRT processing area was ongoing during this monitoring event. People speaking in loud voices from the D1 area throughout the event. Ongoing sound from pneumatic drills, hammering and machines in the CRT processing area, Noise from the Large Household Baler unit was audible throughout this monitoring event and also the reverse alarms from forklifts operating in the D2 building and the D building.

Table 4.2.2 Summary of Site Boundary Noise Locations (contd.)

Location	Start Time	L_{Aeq}	Comments
N4 Western boundary	11:19	61	**Background Noise:** Birdsong, the constant rustling of silver birch tree leaves at this location was especially audible during this monitoring event. A road sweeper passed by the D4 yard fence twice during this period sweeping the industrial estate road. Dogs barking at the pound. Noise from the nearby ring road operations was clearly audible at this location & a number of horns sounded from the construction vehicles. **Site Noise:** Banging & other operational noises arising from the D building were audible as a trailor was being emptied of its load while another was being loaded for dispatching. Multiple forklifts were in operation (revving, sounding reverse alarms, etc) frequently resulting in banging and scraping of metal. The LHA baler was either in operation or idling pending loading during this time frame. A forklift fitted with a sweeping device to the front of it proceeded to sweep the D yard area and the D building which took place between 11:34-11:39am.
N5 North-western boundary of D4 area	11:55	49	**Background Noise:** Birdsong & rustling of leaves in the trees was audible at this location as it is located in close proximity to the western boundary. Dogs barking at the I.S.P.C.A pound. A number of aeroplanes passed overhead. Noise from the ongoing construction operations on the ring road were consistent throughout. A horn sounding on a truck travelling on the ring road route was audible at this time. **Site Noise:** Forklifts in operation at the KMK facility were slightly audible, however the noise from the ring road operations were clearly more audible. 12:11pm Banging of metal & moving of waste for processing at the KMK facility was continuous until 12:14pm.
N6 Northern boundary at fridge storage area	12:30	64	**Background Noise:** Birdsong. Wind gusting as there was little shelter at this location. It began to rain and proceeded throughout the monitoring event. **Site Noise:** Forklifts were in operation at the KMK site throughout this monitoring event & the LHA baler was in operation for the majority of the event. A forklift remained idling in close proximity to the noise meter for a few minutes. An oil delivery truck arrived at the site at 12:35pm and left again at 12:49pm. A number of forklifts passed the noise meter with empty cages and another with a pallet of microwaves. A car with a loud muffler started its engine at 12:54pm and left the car park which is in the D5 area.

Table 4.2.2 Summary of Site Boundary Noise Locations (contd.)

Location	Start Time	L_{Aeq}	Comments
N7 Located at the North-western boundary of the proposed area for inclusion in the revised D5 yard	13:24	58	**Background Noise:** Dogs barking at the I.S.P.C.A dog pound clearly audible at this location. Conversations from neighbouring industrial estate units were clearly audible. A truck was left idling outside the industrial unit adjacent to this monitoring location, there were also pick-up trucks starting their engines and leaving this industrial unit. A bus entering a nearby driving school turning & reversing in very close proximity to the noise meter at this location. **Site Noise:** A number of Roll on Roll off skips were being set down & collected from the central area adjacent to the D5 yard area by a waste company, resulting in trucks passing the noise meter. A number of trucks leaving other industrial units apart from the KMK facility & cars using the industrial estate road were frequent. Some noise originating from the general operations at the KMK facility were slightly audible.
N8 Located at the North-eastern boundary of the proposed area for inclusion in the revised D5 yard	13:58	70	**Background Noise:** Birdsong. Dog barking at a nearby industrial unit. Noise from a loud car exhaust, which remained idling for 2-3minutes. Car doors opening & closing was a common occurrence at this location. Banging & hammering arising from operations at an engineering facility to the front of the industrial estate was clearly audible but occurred sporadically. At 14:05pm a car parked adjacent to the noise meter while a person proceeded to shout loudly for a few moments before proceeding with a conversation for a number of minutes. A number of cars entered and exited a nearby car dismantlers unit during the monitoring event. Reverse alarms and horns sounding on trucks leaving a nearby couriers yard also occurred intermittently. The sound of an angle grinder was clearly audible at this location, the noise arising from the engineering unit located to the front of the Industrial Estate. **Site Noise:** Noise from operations at the KMK facility were audible at this location. A truck collecting a skip from the storage area adjacent to the D5 yard area emitted a loud screeching noise from metal on metal. A few minutes later a truck dropping off a chain skip left the storage area, as it did so the chains on the truck rattled loudly as the vehicle was in motion.

Overall, the noise levels recorded at stations N1, N2, N3, N4 and N6 during monitoring located within the boundary of the KMK Metals Recycling Ltd facility exceeded the Daytime Noise Limit Value L_{Aeq} (30 minutes) of 55dB (A), with the exception of N5 which was below the recommended limit. The noise levels recorded at stations N7 and N8 were recorded to provide a representation of the existing levels along the boundaries of the area proposed for inclusion in the revised D5 area. Both sets of results were above the recommended Daytime Noise Limit Values with the highest level being recorded at 70 dB (A). These results were not as a direct result of

operations at the KMK facility but can be largely associated with neighbouring industrial units operations/activities and general traffic generated within the industrial estate.

On examination of the L_{Aeq} (30 minutes) for the noise monitoring locations N1, N2, N3, N4, N5 and N6, the average or steady rate of noise levels generated at the KMK Metals facility was between 49dB(A) and 64dB(A). This overall noise rate in real terms is somewhere between typical office noise to experiencing light traffic at 15m distance away as illustrated in the table 2.3.2 of the Noise Monitoring Survey (Appendix 5).

Overall results for the 1/3 octave analysis at the KMK Metal Recycling facility, show level of noise to be moderate at the boundaries of the facility, with primary noise arising from the movement of forklift trucks associated with unloading of WEEE for processing and LHA's (cold) for storage at the KMK Metals facility.

Noise monitoring at the KMK Metals Recycling Ltd facility during this event has shown that the noise levels have decreased overall in comparison with the 2008 noise monitoring event. The results of the noise survey show that noise emissions from the KMK Metals facility are not significant and will not have any negative effect of neighbouring businesses.

4.3 Surface Water

Surface water samples were taken directly from the outlets CX and DX on the 19th of February, 5th August and 17th December 2009 for all parameters applicable under the licence limits. On the 6th May 2009 a water sample was taken from the CX outlet only, as there was no flow from the DX outlet due to de-sludging and cleaning of the interceptor on the 1st May 2009. CX and DX were not tested for Ammonia until the 4th quarter due to miscommunication on the chain of custody form, this was through no fault of KMK Metals and all efforts will be made to ensure that this does not happen with future sampling. In May 2009, a TRIGGER & ACTION LEVELS FOR SURFACE WATER DISCHARGES report was submitted to the EPA. The actual action levels adopted in this report are taken from the EPA Surface Water Regs. (1989) mandatory value for (A3 waters).
The test certificates are included in Appendix 6 of this AER.
A summary of Surface Water Results are tabulated below in table 4.3.1.

Table 4.3.1 Surface Water Monitoring Results 2009

Parameters	CX 19/02/09	DX 19/02/09	CX 06/05/09	DX No Flow from Outlet	CX 5/08/09	DX 5/08/09	CX 17/12/09	DX 17/12/09	1989 Surface Water Regs. *
Aluminium (µg/l)	-	-	<20	-	27	163	8.98	10.3	NRG
COD (mg/l)	**64**	**231**	14	-	20	**55**	**58.3**	**130**	40
Arsenic (µg/l)	-	-	1	-	1.2	0.8	0.325	<0.12	100
Chromium (µg/l)	-	-	1	-	<0.5	0.8	4.31	6.9	50
Conductivity (µS/cm)	**1741**	**1032**	**1170**	-	**1,332**	581	233	228	1000
Iron (mg/l)	-	-	0.066	-	0.976	0.472	<0.019	1.9	2.0
Lead (mg/l)	-	-	<0.005	-	0.0024	**0.221**	0.00565	0.00568	0.05
Mercury (µg/l)	-	-	<0.05	-	<0.05	<0.05	0.0116	<0.01	1
Nickel (µg /l)	-	-	2	-	<0.5	<0.5	59.7	14.5	NRG
Mineral Oil by Gc(µg/l)	<10	<10	<100	-	<100	<100	228	189	1,000**
pH (units)	7.8	7.8	7.4	-	7.6	7.4	8.4	8.47	5.5 – 8.5
Suspended Solids (mg/l)	11	29	7	-	14	23	110	68	Varies
Total Organic Carbon(mg/l)	-	-	30	-	-	-	-	-	NRG*
Chloride(mg/l)	-	-	236.37	-	-	-	-	-	250
Zinc (mg/l)	0.054	0.053	0.051	-	0.044	0.198	0.152	0.0452	5
Diesel Range Organics (mg/l)	<0.001	0.563	<0.001	-	0.856	<0.10	0.678	0.512	NRG*
Ammonia (mg/l)	-	-	-	-	-	1.500	0.728	3.03	4

- = not measured
NRG: No reference given
* Limits for surface waters / rivers i.e. EPA Surface Water Regs (1989) mandatory value (A3 water). Please note that these levels are also now the 'Action Levels' as adopted in the May 2009 TRIGGER & ACTION LEVELS FOR SURFACE WATER DISCHARGES Report– see notes on interpretation.
** Limits established by virtue of best practise in determining mineral oils content run-off from interceptors to surface waters.

Interpretation of results from the February, May August and December of 2009.

The receiving water (land drain) has been historically eutrophic and has little importance or significance. The licence limits set for the surface water discharge to drain from the facility (CX and DX) are now established under the May 2009, TRIGGER & ACTION LEVELS FOR SURFACE WATER DISCHARGES report as previously submitted to the EPA.

The discharge from DX is more significant than the discharge from CX in relation to COD levels. The results for all DX samples throughout the sampling year exceeded the 'action levels' of 40mg/l for COD, while just two of the CX samples (February-64mg/l and December-58mg/l) slightly exceeded the levels. In general the COD levels from both CX and DX fluctuate above and below the 'action levels' during the course of the monitoring year.

Since November 2008 all baling of washing machines takes place under roof inside DX building. This has significantly reduced rain water run-off mixing with liquids associated with treated metals at this area. This in turn has reduced COD levels in DX discharge. In addition, the yard surface water run-off at D4 area was connected to the gullies and interceptor at D3 in May 2009 which now results in all surface water run-off from WEEE yard areas being treated prior to discharge at DX outlet. The resultant impact on parameters as a result of this drainage upgrade works appears to be insignificant which further suggests that the existing interceptor at D3 yard is capable of accommodating the increase in run-off volume from D4 area.

Conductivity levels in the CX sample were above the action levels for 3 out of four samples during the year. However, the most recent conductivity of 233µS/cm for CX was significantly reduced from previous conductivity values and below the action levels.

All other metallic, physical, chemical and hydrocarbon parameters for CX and DX were below the action levels with one exception – slightly elevated lead levels (0.221mg/l) for DX August sample which exceeded the action levels of 0.05mg/l. This may be attributed to temporary unloading of TVs from incoming cages at the facility whereby some broken TV units may have exposed glass funnel parts which contain lead metallic species. This activity ceased thereafter and the final DX December sample had a lead level of 0.00568mg/l which was below the action levels.

It is important to note that the interceptor at DX is emptied by a vacuum tanker on a number of occasions during the year and therefore there is no

actual constant discharge from this interceptor as it remains empty for a period until it reaches capacity again.

Based on the above analysis data, and nature of activity at the site, it is considered that KMK Metals Recycling Ltd discharge is not resulting in a significant negative effect on the land drain and the site interceptors are operating adequately (removal of silts, metals, physical debris etc).

All surface water monitoring was for the most part in compliance with the waste licence ref: W0113-03.

4.4 Groundwater

Two groundwater samples (GW1 and GW2) were taken from the KMK Metals Recycling Ltd site on the 26th May 2009. The test certificate is included in Appendix 6 of this AER. A Summary of Groundwater Results is tabulated below in table 4.4.1

Table 4.4.1 Groundwater Monitoring Results

Parameter	**GW1**	**GW2**	**Licence Limit (EC Drinking Water Guideline SI 106/2007)**
Conductivity @ 20C (µS/cm)	502	503	2500
pH (pH units)	7.3	7.2	6.5-9.5
E. Coli (cfu/100mls)	0	**4**	0
Total Coliforms (cfu/100mls)	0	**>100**	0
VOC (EPA 524.2)	None Detected	None Detected	NRG
Total Nitrogen (as N) (mg/l)	<0.1	<0.1	NRG*
Chloride (mg/l)	12.32	12.25	250
Nickel (µg/l)	<0.5	13	20
Lead (µg/l)	<0.5	<0.5	25
Iron (µg/l)	<10	118	200
Chromium (µg/l)	<0.5	<0.5	50
Arsenic (µg/l)	<0.5	2	10
Aluminium (µg/l)	<20	37	200
Mercury (mg/l)	<0.05	<0.05	1

* EC Drinking Water Guideline SI 439/2000 used here in the absence of any limits specified in the waste licence.

Interpretation of Results for May 2009

The parameters highlighted in red are those which exceeded the recommended guideline limits set by SI 106 Drinking Water Guideline GW1 and GW2. As can be seen in table 4.4.1 above all of the parameters tested for in sample GW1 were within the recommended guideline limits, while all of the parameters except for E.coli and total faecal coliforms were within the guidelines for GW2. Historically and presently there is no foul sewer treatment scheme within the Industrial Estate, which has resulted in the construction of individual septic tank and percolation systems for each of the businesses operating within the industrial estate. Therefore, the exceedences are most likely related to the percolation area located here which was utilised by the previous occupier of the unit. Also, there is no treatment of this water taking place as it is not utilised for human consumption.

5.0 ENERGY CONSUMPTION AND COST

Electricity, green diesel and kerosene are used at the facility. The following tables summarise the electricity and fuel consumption and CO_2 emission at the facility for 2008 and 2009.

Table 5.1.1 Breakdown of the energy consumption for the years 2008 and 2009

	Consumption, kWh*			
	2008	**%**	**2009**	**%**
Electricity	50,682	11	138,191	18
Kerosene	69,910	14	31,195	5
Green Diesel	360,774	75	581,224	77
Total	**481,366**	**100**	**750,605**	**100**

*Energy conversion factors: kerosene 10.4kWh/l and green diesel 10.8kWh/l.

Table 5.1.2 Breakdown of the energy costs for the years 2008 and 2009

	Cost, €			
	2008	**%**	**2009**	**%**
Electricity	11,657	27.6	32,091	52
Kerosene	3,021	7.2	1,145	2
Green Diesel	27,497	65.2	29,473	46
Total	**42,175**	**100**	**62,709**	**100**

Table 5.1.3 CO_2 emissions in 2008 and 2009

	CO_2 emissions, tonnes*			
	2008	**%**	**2009**	**%**
Electricity	39.3	25.8	109.23	41
Kerosene	17.97	11.8	8.01	3
Green Diesel	95.2	62.4	153.44	56
Total	**152.47**	**100**	**270.68**	**100**

*Energy to Carbon conversion factors: electricity 0.776kg CO_2 /kWh, Kerosene 0.257 kg CO_2 /kWh and Green Diesel 0.264 kg CO_2 / kWh

In 2009 the total energy consumption increased by approximately 61% from 2008. The green diesel consumption increased by approximately 61%, while electricity consumption increased by approximately 172% and kerosene consumption was decreased by 55% at the facility in 2009. The increase in total energy consumption in 2009, especially in the electricity usage can be attributed to the operating hours at the facility changing to 6am to 10pm due to increased demand for acceptance and processing of

waste entering the facility (previous times were 8am to 5pm) . The rise in green diesel consumption was due to increases in the quantities of waste (both WEEE and metallic) being handled and the subsequent processing of these wastes at the facility.

6.0 MOBILE BUNDS ASSESSMENT

There are none required for assessment for 2010

7.0 INCIDENTS SUMMARY

An incident involving a small fire at the Large Household Appliance Baler (LHA) occurred in March 2009 to which the EPA were duly notified at the time under separate correspondences.

8.0 DEVELOPMENT WORKS

8.1 Development works in 2009

KMK Metals Recycling Ltd have continually improved infrastructure and carried out development works at the site in 2009. The following developments have taken place at the KMK facility in 2009:

- The upgrading of the drainage works at the site (storm water run-off from D4 yard being connected to the existing interceptor at D3 area prior to discharge to DX outlet) as per condition 3.17 of licence ref. W0113-03. The Agency (EPA) was notified on the 12th June 2009.
- The successful purchase & installation of Battery Sorting Equipment for the sorting of household portable alkaline batteries on-site. This progressive step is a first in Ireland and is ensuring that these batteries are no longer destined for landfill outlets.
- A CCTV security surveillance system was upgraded at the site with monitoring and recording being carried out in the administration office.

8.2 Proposed Development for 2010

The following development works are proposed for 2010:

Further to condition 3.3 of the licence, the following infrastructural improvements are to be carried out at the facility in 2010;

- As mentioned in the recent waste licence review application (ref: W0113-04) and submitted to the Agency on the 20th October 2009, there are proposed roof/canopies to be erected at either side of D4 building (planning permission granted 04/09/09 and ref; 09/311 attached). These structures will further increase the roof coverage of the facility for

WEEE materials. In particular it is proposed to use the newly roofed area for a variety of WEEE activities; incoming WEEE storage, some WEEE sorting, storage of material for outward transport. There will be no liquid wastes or wet/sludge wastes accepted or handled in this area.

Construction commenced on mid February 2010 and is estimated to be complete by the end of April 2010. Following full completion, a letter/document will be supplied to the EPA confirming the same.

- A planning application was lodged with Offaly County Council on mid February 2010 for the development of 'E' area. Again, this proposal was mentioned in the recent waste licence review application (ref: W0113-04). Following successful grant of planning permission, this area will be developed on a phased basis as detailed below;

  Phase 1 – Surface infrastructure for; staff and visitor car park (tarmac type), access route (concrete road) through E area, weighbridge installation and some surfacing of remaining E area (concrete type). Install interceptor unit for surface water run-off from surfaced areas.

  Phase 2 – Repairs, maintenance and modifications to the palisade fence boundary of E area including new sliding entrance gates.

  Phase 3 – Construction of the proposed new building at E area as per layout plan PP02.

  The proposed use for E area will be for bulk storage areas and bays for reception and loading of WEEE waste. Similarly, there will be no liquid wastes or wet/sludge wastes accepted or handled in this area. It is proposed to commence building work at this area during the summer upon successful grant of planning permission.

- It is proposed to replace D1, D2 and D3 area with a newly constructed building similar in design to the existing roof at DX. This is subject to grant of planning permission.

9.0 ENVIRONMENTAL OBJECTIVES AND TARGETS

9.1 Progress in 2009

A list of objectives and targets and their current status is included below in table 9.1.1 and are regulated by the company environmental management system. Most of the scheduled objectives and targets were achieved in 2009.

Table 9.1.1 Environmental Objectives and Targets for 2009.

Objectives	Target	Time Scale	Responsibility	Status
1. Installation of weighbridge and maintenance of the D5 area	To enable KMK Metals waste accepted to and removed from the facility to be weighed accurately (on-site) and recorded in compliance with Condition 3.8 of the waste licence.	September 2009	Kurt M. Kyck	Now referred to as Area E for which a planning application was been lodged with Offaly County Council (Feb 2010) and was also referred to in the Waste Licence Review (W0113-04) submitted to the EPA (Oct 2009). Development will be subject to successful grant of permission.
2. Improvement of drainage works at D4	To effectively control and treat all storm water run-off from the facility yards in line with best practise and the current waste licence ref; W0113-03.	August 2009	Kurt M. Kyck	Completed May 2009
3. The emptying of the D3 yard interceptor and tank prior to any discharges from the DX outlet.	To ensure there will be no discharge from the DX outlet.	Ongoing	KMK Metals Management C. Walker	The DX interceptor was emptied/de-sludged by ENVA Ireland Ltd in July and November 2009.
4. Installation of a gully system and sump in the D building area.	To effectively control and treat any leakage/spillages associated with the LHA Baler Unit and its operations under the new D building.	September 2009	Kurt M. Kyck	Not completed. This project is being reviewed at present based on the effective workings of the DX interceptor at the facility and on-going maintenance of same.

Table 9.1.1 Environmental Objectives and Targets for 2009 continued

Objectives	**Target**	**Time Scale set**	**Responsibility**	**Status**
5. Purchase a battery sorting plant for the D4 specialised building.	To facilitate the recovery of portable household batteries on-site in D4 building.	February 2009	KMK Metals management	Completed
6. Completion of KMK's computer management system	To improve efficiency in the tracking, recording and overall management of waste records at the facility.	March 2009	KMK Metals management	To be completed in 2010
7. Updating of KMK's original website www.metalsrecycling.ie	To improve the service options and information available to customers.	July 2009	KMK Metals management	To be completed in 2010

Table 9.1.1 Environmental Objectives and Targets for 2009 continued.

Objectives	**Target**	**Time Scale set**	**Responsibility**	**Status**
8. Training improvements	Update records for employees at facility and increase an awareness of waste licence conditions for all key staff at the facility.	On-going	C. Walker	On-going
	Provide training of staff on the collection and sorting of Alkaline batteries in relation to the Battery Directive 2006/66/EC	February 2009	KMK Metals management	Completed
	Provide training of staff for the battery sorting plant by specialists from the Netherlands.	March 2009	KMK Metals management	Completed
	Provide training of staff on the collection and sorting of Fluorescent Tubes.	March 2009	KMK Metals management	Completed

9. Site house-keeping improvements	Ensure all designated employees responsible for housekeeping at the facility carry out their duties as specified. Ensure all records relating to housekeeping, visual inspections, checklists etc are updated, and maintained accordingly.	On-going On-going	C. Walker Enda Thornton Max Kyck	On-going Constantly under review
10.New Waste Licence application to the EPA	Seeking a review of the current licence W0113-03 to facilitate an expected increase in tonnages of waste to be handled at the KMK facility and an expansion in licence boundary for the facility.	December 2009	KMK management and ENVIROCO Management Ltd	Completed October 2009
11. Documentation improvements	Complete review/audit of existing ISO 14001 and Waste licence associated documentation with the express purpose of improving the efficiency of this documentation in line with company operations. Areas of particular importance are: • Training • Document control as per ISO 14001 • Environmental legislation register • Environmental Aspects register	On-going	C. Walker ENVIROCO Mgt Ltd	On-going

9.2 Schedule for 2010

Any objectives and targets listed above which have not been completed by end 2009 will be carried forward for the following year.

A summary of the new scheduled objectives and targets for the year ending 2010 is listed in table 8.2.1 below.

Table 9.2.1 Environmental Objectives and Targets for 2010

Objectives	Target	Time Scale	Responsibility	Status
1. ISO 9001 incorporating revision of ISO 14001	ISO 9001 documentation system to be accredited by July 2010	July 2010	C. Walker & A. Rust	Planned
2. Managing the AQSIQ Project (China Waste Shipment Licence Application)	To allow the shipment of waste to China	September 2010	C. Walker & A. Rust	Planned
3. Proposed roof/canopies to be erected at either side of D4 building (planning permission granted 04/09/09 and ref; 09/311)	These structures will further increase the roof coverage of the facility for WEEE materials.	April 2010	KMK Management	Planned
4. Installation of a gully system and sump in the D building area.	To effectively control and treat any leakage/spillages associated with the LHA Baler Unit and its operations under the new D building.	September 2010	Kurt M. Kyck	Planned

5. Development of 'E' area Phase 1 – Surface infrastructure for; staff and visitor car park (tarmac type), access route (concrete road) through E area, weighbridge installation and some surfacing of remaining E area (concrete type). Install interceptor unit for surface water run-off from surfaced areas. Phase 2 – Repairs, maintenance and modifications to the palisade fence boundary of E area including new sliding entrance gates. Phase 3 – Construction of the proposed new building at E area as per layout plan PP02.	The proposed use for E area will be for bulk storage areas and bays for reception and loading of WEEE waste. Similarly, there will be no liquid wastes or wet/sludge wastes accepted or handled in this area.	It is proposed to commence building work at this area during the summer upon successful grant of planning permission.	Kurt M. Kyck	Planned
6. It is proposed to remove the existing roof structures from D1, D2 and D3 buildings and replace with a newly constructed building similar to the existing roof at DX.	This is subject to grant of planning permission.	Subject to Planning	Kurt M. Kyck	Planned
7. Updating of KMK's original website www.metalsrecycling.ie	To improve the service options and information available to customers.	Ongoing	KMK Metals management	Planned
8. Completion of KMK's computer management system	To improve efficiency in the tracking, recording and overall management of waste at the facility.	September 2010	KMK Metals management	Planned

10.0 FINANCIAL PROVISIONS, MANAGEMENT & STAFFING STRUCTURE, PROGRAMME FOR PUBLIC INFORMATION

10.1 Financial Provisions and Environmental Liability Risk Assessment

KMK management wish to confirm that adequate financial provisions are in place for all proposed environmental improvements and controls for the forthcoming year and thereafter. Currently KMK Metals Recycling Ltd has a Guarantee Bond with Offaly County Council for €64,000. KMK Metals Recycling Ltd is presently awaiting clarification as to whether this bond needs to be transferred from Offaly County Council to the Agency.

ELRA annual statement;

Condition 12.3.1 of the waste licence states that: '*The licensee shall as part of the AER provide an annual statement as to the measures taken or adopted at the site in relation to the prevention of environmental damage, and the financial provisions in place in relation to the underwriting of costs for remedial actions following anticipated events (including closure) or accidents/incidents, as may be associated with the carrying out of the activity'.*

There are no deviations from the 2009 ELRA report as submitted to the EPA in February 2009. In relation to prevention of environmental damage, this is ensured by;

- Existing site and facility infrastructure.
- Proposed improvements in development works as referred to in Section 9.2 above.
- Maintenance of ISO 14001 environmental management system.
- Compliance with the conditions of the waste licence ref: W0113-03.

In relation to financial provisions, KMK Metals Recycling Ltd has 'Pollution Liability' of €6.5 million included in their company insurance document. This is more than adequate to cover any pollution incidence of environmental significance as requested in the Environmental Liability Directive.

10.2 Management & Staffing Structure

Organisational Chart of the Environmental Management Structure at KMK Metals Recycling Ltd is presented below.

KMK Metals Recycling Ltd Staffing Structure

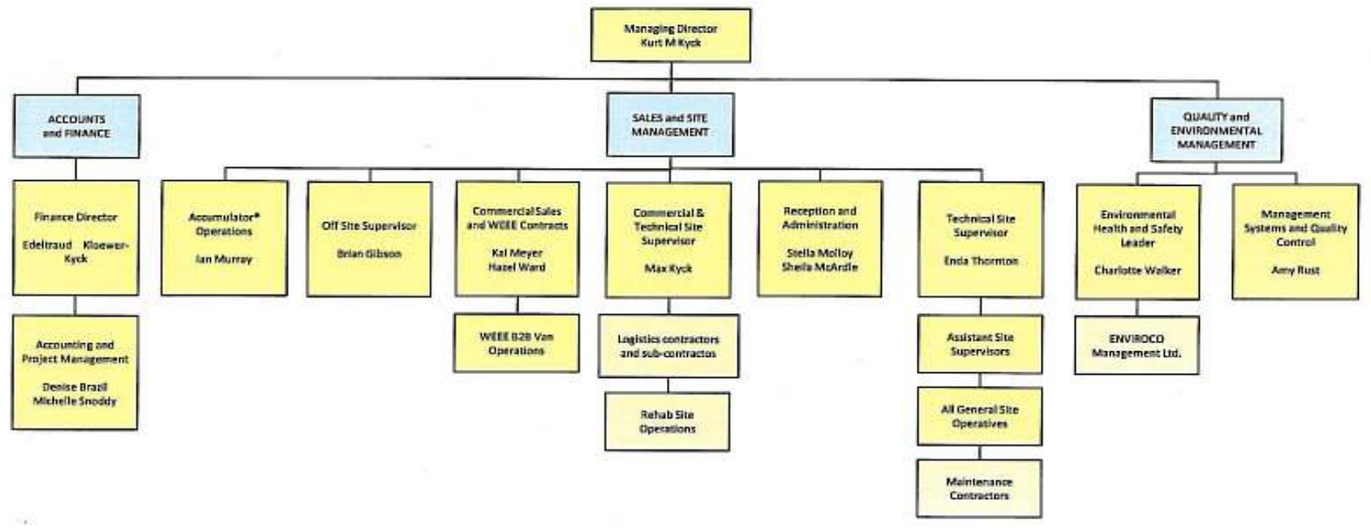
ISO 9001:2008 and 14001:2004

Responsibilities and Organisational Structure

Revision Number	Date	Page
Rev 00	06.03.2010	1 of 6

Contents

1.0 Organisational Structure



Document Reference: RES-DOC-312

All changes to this document must be correctly recorded; revisions controlled; and updates saved / filed according to Control of Records procedure.

10.3 Programme for Public Information

A file cabinet is in place at the KMK Metals Recycling Ltd facility (EHS Office) and contains all data and information similar to that supplied to the Agency in compliance with the Waste Licence (e.g. monitoring data, ISO 14001 documents, environmental policy etc).

The company's three websites (detailed below) are also a valuable source of information readily available to the public regarding company operations and environmental progress.

- (www.metalsrecycling.ie)
- (www.weeerecycle.ie)
- (www.accumulator.ie)

11.0 STAFF TRAINING

The following environmental training has been completed during the reporting period January 1st 2009to December 31st 2009.

Table 10.1.1 Environmental Training for Staff

Course	Dates	Location	Trainer	Participants
ADR Training	April 2009	Poland	Polish Local Authority (Training Division)	Company Driver (Pawel Kowalczyk
Battery Training	March 2009	On-site	Van Peperzeel (Netherlands)	Kurt m. Kyck Max Kyck Kai Meyer Enda Thornton Charlotte Walker Pawel Kowalczyk Dominik Nowak
Fire Training	July 2009	On- site	Fire Direct	Krzysztof Nowak Mikael Serhil Rimantas Pukys Olegs Ptasinskis Dominik Nowak Aleksas Akekna Jurijs Kolunovs Maksims Selickis Andris Baturo Yuri Tokmakov

KMK management wish to confirm that environmental training programmes are carried out for selected staff every year and all training records and training procedures will be up-dated during the next working year.

12.0 OTHER ITEMS

There are no further items included in this Annual Environmental Report.

APPENDIX 1

Waste Received in 2009

Table 1: Total Amenity waste received in 2009 at KMK Metals Recycling Ltd.

Point of Collection	Description Of Waste	EWC Code	Qty Tonnes
Civic Amenity	Discarded equipment containing chlorofluorocarbons, HCFC, HFC	16 02 11*	2.956
Civic Amenity	Discarded equipment other than those mentioned in 16 02 09 to 16 02 13	16 02 14	0.06
Civic Amenity	Lead batteries	16 06 01*	240.488
Civic Amenity	Alkaline batteries (except 16 06 03)	16 06 04	40.284
Civic Amenity	Fluorescent tubes and other mercury-containing waste	20 01 21*	56.708
Civic Amenity	Discarded equipment containing chlorofluorocarbons	20 01 23*	1,433.07
Civic Amenity	Discarded electrical and electronic equipment other than those mentioned in 20 01 21 and 20 01 23 containing hazardous components	20 01 35*	1,855.71
Civic Amenity	Discarded electrical and electric equipment other than those mentioned in 20 01 21, 20 01 23 and 20 01 35	20 01 36	8,489.87
TOTAL			**12,119.146**

Table 2: Total Commercial waste received in 2009 at KMK Metals Recycling Ltd.

Point of Collection	Description Of Waste	EWC Code	Qty Tonnes
Commercial	Ferrous metal filings and turnings	12 01 01	57.671
Commercial	Non-ferrous metal filings and turnings	12 01 03	2.564
Commercial	Welding wastes	12 01 13	2.228
Commercial	Paper and Cardboard	15 01 01	5.143
Commercial	Plastic packaging	15 01 02	2.511
Commercial	Wood other than mentioned in 20 01 37	15 01 03	1.414
Commercial	Metallic packaging	15 01 06	1.24
Commercial	Absorbents, filter materials, wiping cloths and protective clothing other than those mentioned in 15 02 02	15 02 03	0.31
Commercial	Discarded equipment containing chlorofluorocarbons, HCFC, HFC	16 02 11*	38.523
Commercial	Smoke Detectors	16 02 13*	83.269
Commercial	Discarded equipment other than those mentioned in 16 02 09 to 16 02 13	16 02 14	232.973
Commercial	Components removed from discarded equipment other than those mentioned in 16 02 15	16 02 16	120.236
Commercial	Lead batteries	16 06 01*	118.335
Commercial	Alkaline batteries	16 06 04	4.058
Commercial	Other batteries and accumulators	16 06 05	0.5
Commercial	Mineral	19 02 09	0.07
Commercial	Fluorescent tubes and other mercury-containing waste	20 01 21*	28.476
Commercial	Discarded equipment containing chlorofluorocarbons	20 01 23*	991.608
Commercial	Discarded electrical and electronic equipment other than those mentioned in 20 01 21 and 20 01 23 containing hazardous components	20 01 35*	357.958
Commercial	Discarded electrical and electric equipment other than those mentioned in 20 01 21, 20 01 23 and 20 01 35	20 01 36	4,863.47
TOTAL			**6,912.527**

Table 3: Total Industrial waste received in 2009 at KMK Metals Recycling Ltd.

Point of Collection	Description Of Waste	EWC Code	Qty Tonnes
Industrial	Wastes not otherwise specified	06 04 99	4.923
Industrial	Sludges from on-site effluent treatment containing dangerous solutions	06 05 02*	58.255
Industrial	Wastes not otherwise specified	06 13 99	1.108
Industrial	Sludges and filter cakes containing dangerous substances	11 01 09*	1.328
Industrial	Ferrous metal filings and turnings	12 01 01	82.916
Industrial	Non-ferrous metal filings and turnings	12 01 03	49.166
Industrial	Non-ferrous metal dust and particles	12 01 04	107.197
Industrial	Welding wastes	12 01 13	9.061
Industrial	Waste blasting material other than those mentioned in 12 01 16	12 01 17	20.306
Industrial	Spent grinding bodies and grinding materials containing dangerous substances	12 01 20*	63.28
Industrial	Paper and Cardboard	15 01 01	0.46
Industrial	Plastic packaging	15 01 02	0.515
Industrial	Wood other than mentioned in 20 01 37	15 01 03	0.25
Industrial	Metallic packaging	15 01 06	0.269
Industrial	Absorbents, filter materials, wiping cloths and protective clothing other than those mentioned in 15 02 02	15 02 03	1.343
Industrial	Discarded equipment containing chlorofluorocarbons, HCFC, HFC	16 02 11*	1.884
Industrial	Discarded equipment containing hazardous components other than those mentioned in 16 02 09 to 16 02 12	16 02 13*	17.682
Industrial	Discarded equipment other than those mentioned in 16 02 09 to 16 02 13	16 02 14	55.254
Industrial	Components removed from discarded equipment other than those mentioned in 16 02 15	16 02 16	181.12
Industrial	Lead batteries	16 06 01*	6.001
Industrial	Alkaline batteries (except 16 06 03)	16 06 04	1.13
Industrial	Other batteries and accumulators	16 06 05	0.235
Industrial	Sludges from physico/chemical treatment containing dangerous substances	19 02 09*	0.108
Industrial	Fluorescent tubes and other mercury-containing waste	20 01 21*	0.614
Industrial	Discarded equipment containing chlorofluorocarbons	20 01 23*	0.258
Industrial	Discarded electrical and electronic equipment other than those mentioned in 20 01 21 and 20 01 23 containing hazardous components	20 01 35*	0.56
Industrial	Discarded electrical and electric equipment other than those mentioned in 20 01 21, 20 01 23 and 20 01 35	20 01 36	10.5
TOTAL			**675.723**

Table 4: Total waste received at the Transfer Station in 2009 at KMK Metals Recycling Ltd.

Point of Collection	Description Of Waste	EWC Code	Qty Tonnes
Transfer Station	Sludges from on-site effluent treatment containing dangerous solutions	06 05 02*	3.511
Transfer Station	Sludges and filter cakes containing dangerous substances	11 01 09*	140.537
Transfer Station	Ferrous metal filings and turnings	12 01 01	802.945
Transfer Station	Non-ferrous metal filings and turnings	12 01 03	15.703
Transfer Station	Discarded electrical equipment containing chlorofluorocarbons, HCFC, HFC	16 02 11*	26.08
Transfer Station	Discarded electrical equipment containing hazardous components other than those mentioned in 16 02 09 to 16 02 12	16 02 13*	103.889
Transfer Station	Discarded equipment other than those mentioned in 16 02 09 to 16 02 13	16 02 14	246.123
Transfer Station	Components removed from discarded equipment other than those mentioned in 16 02 15	16 02 16	338.167
Transfer Station	Lead batteries	16 06 01*	274.254
Transfer Station	Ni-Cd batteries	16 06 02*	4.267
Transfer Station	Alkaline Batteries (except 16 06 03)	16 06 04	16.084
Transfer Station	Other batteries and accumulators	16 06 05	0.566
Transfer Station	Ferrous Metal	19 12 02	100.4
Transfer Station	Fluorescent tubes and other mercury-containing waste	20 01 21*	5.911
Transfer Station	Discarded equipment containing chlorofluorocarbons	20 01 23*	337.477
Transfer Station	Discarded electrical and electronic equipment other than those mentioned in 20 01 21 and 20 01 23 containing hazardous components	20 01 35*	131.682
Transfer Station	Discarded electrical and electronic equipment other than those mentioned in 20 01 21, 20 01 23 and 20 01 35	20 01 36	1000.808
TOTAL			**3,548.404**

APPENDIX 2

Waste Despatched in 2009

Table 1: Waste despatched in 2009 at KMK Metals Recycling Ltd.

Description Of Waste	EWC Code	Qty Tonnes
Wastes not otherwise specified	06 04 99	14.185
Sludges from on-site effluent treatment containing dangerous solutions	06 05 02*	61.466
Wastes not otherwise specified	06 13 99	0.08
Sludges and filter cakes containing dangerous substances	11 01 09*	144.31
Ferrous metal filings and turnings	12 01 01	944.206
Non-ferrous metal filings and turnings	12 01 03	71.427
Non-ferrous metal dust and particles	12 01 04	119.89
Welding wastes	12 01 13	11.747
Waste blasting material other than those mentioned in 12 01 14	12 01 17	20.306
Spent grinding bodies and grinding materials containing dangerous substances	12 01 20*	11.646
Paper and Cardboard	15 01 01	5.603
Plastic packaging	15 01 02	3.026
Wood other than mentioned in 20 01 37	15 01 03	1.664
Mixed packaging	15 01 06	1.509
Absorbents, filter materials, wiping cloths and protective clothing other than those mentioned in 15 02 02	15 02 03	1.42
Discarded equipment containing chloroflourocarbons, HCFC, HFC	16 02 11*	76.64
Discarded equipment containing hazardous components other than those mentioned in 16 02 09 to 16 02 12	16 02 13*	224.37
Discarded equipment other than those mentioned in 16 02 09 to 16 02 13	16 02 14	712.101
Components removed from discarded equipment other than those mentioned in 16 02 15	16 02 16	760.621
Lead batteries	16 06 01*	638.08
Alkaline batteries	16 06 04	48.38
Transformers and capacitors containing PCB's	16 02 09*	0.108
Ferrous Metal	19 12 02	100.4
Fluorescent tubes and other mercury-containing waste	20 01 21*	82.498
Discarded equipment containing chlorofluorocarbons	20 01 23*	2,721.513
Discarded electrical and electronic equipment other than those mentioned in 20 01 21 and 20 01 23 containing hazardous components	20 01 35*	2,281.570
Discarded electrical and electronic equipment other than those mentioned in 20 01 21, 20 01 23 and 20 01 35.	20 01 36	14,014.950
TOTAL		**23,074.016**

APPENDIX 3

Waste in Stock in 2009

Table 1: Waste in stock during 2009 at KMK Metal Recycling Ltd.

Description Of Waste	**EWC Code**	**Qty Tonnes**
Wastes not otherwise specified	06 13 99	4.175
Photographic film and paper containing silver or silver compounds (Old Stock)	09 01 07	0.255
Non-ferrous metal filings and turnings	12 01 03	28.325
Welding wastes	12 01 13	1.847
Spent grinding bodies and grinding materials containing dangerous substances	12 01 20*	51.634
Spent grinding bodies and grinding materials other than those mentioned in 12 01 20 (Old Stock)	12 01 21	24.96
Other engine, gear and lubricating oils (Old Stock)	13 02 08*	3.53
Wastes not otherwise specified (Old Stock)	13 08 99	0.79
Metallic Packaging	15 01 04	4.434
Packaging containing residues of or contaminated by dangerous substances	15 01 10	0.122
Absorbents, filter materials (including oil filters not otherwise specified), wiping cloths, protective clothing contaminated by dangerous substances	15 02 02*	1.272
Absorbents, filter materials, wiping cloths and protective clothing other than those mentioned in 15 02 02	15 02 03	0.661
Transformers and capacitors containing PCBs	16 02 09*	2.461
Discarded equipment other than those mentioned in 16 02 09 to 16 02 13 (phones)	16 02 14	15.767
Hazardous components removed from discarded equipment (capacitors, breakdown from washing machines also) Old Stock	16 02 15*	27.5
Components removed from discarded equipment other than those mentioned in 16 02 15	16 02 16	83.245
Discarded inorganic chemicals consisting of or containing dangerous substances	16 05 07*	0.571
Lead batteries	16 06 01*	39.389
Ni-Cd batteries	16 06 02*	8.475
Alkaline batteries (except 16 06 03)	16 06 04	13.172
Other batteries and accumulators	16 06 05	2.836
Fluorescent tubes and other mercury-containing waste	20 01 21*	10.4
Discarded equipment containing chlorofluorocarbons	20 01 23*	40.9
Batteries and accumulators included in 16 06 01, 16 06 02 or 16 06 03 and unsorted batteries and accumulators containing these batteries	20 01 33*	38.4
Discarded electrical and electronic equipment other than those mentioned in 20 01 21 and 20 01 23 containing hazardous components	20 01 35*	64.34
Discarded electrical and electronic equipment other than those mentioned in 20 01 21, 20 01 23 and 20 01 35.	20 01 36	349.7
TOTAL		**819.16**

APPENDIX 4

Dust Monitoring Report

SEE ATTACHED FILE

Dust Report

for

KMK METALS RECYCLING LTD.

WASTE LICENCE REF: W0113-03

CAPPINCUR INDUSTRIAL ESTATE, DAINGEAN ROAD, TULLAMORE, CO. OFFALY

October 2009

Printed on
Recycled Paper

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDIX

1.0 INTRODUCTION

ENVIROCO Management has been commissioned by Mr. Kurt Kyck of KMK Metals Recycling Ltd, Cappincur Industrial Estate, Tullamore, Co Offaly to conduct the annual dust monitoring event at the facility.

The KMK Metals facility is located in the Cappincur Industrial Estate towards the east of Tullamore town, off the L-02025 road to Daingean – figure 1.0.1.

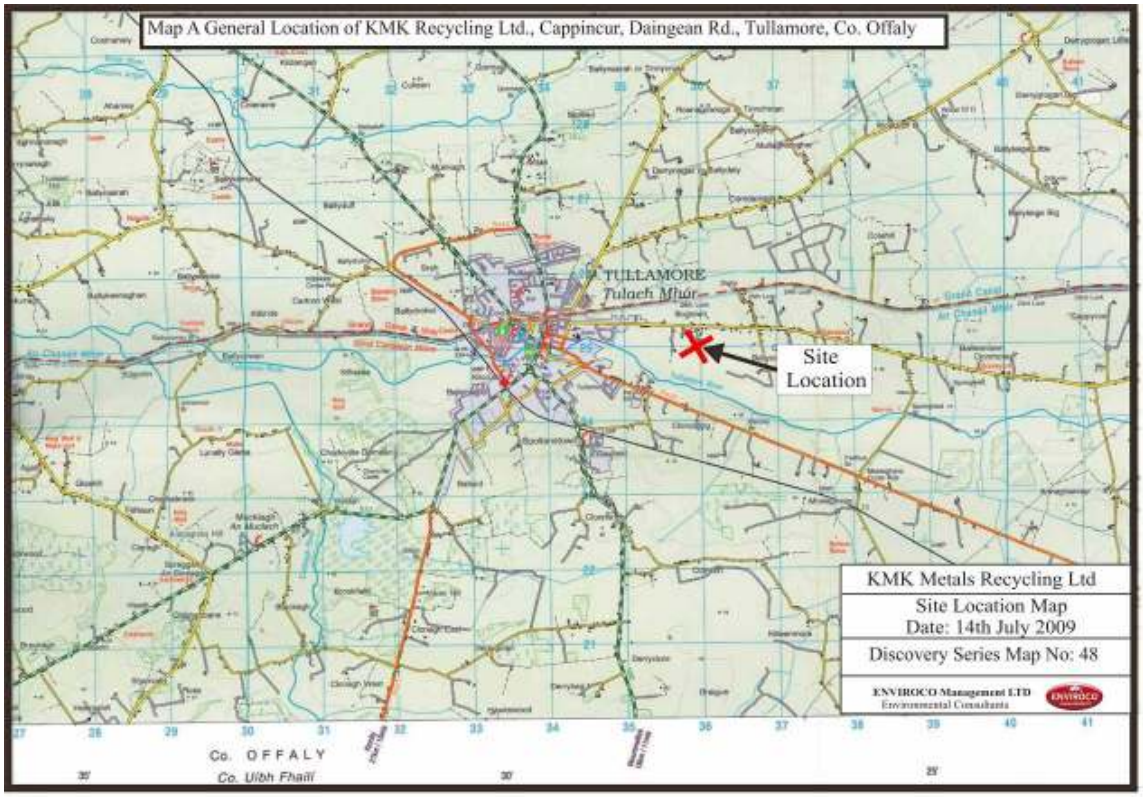


Figure 1.0.1 Site Location map of the KMK Facility, Tullamore, Co. Offaly

1.1 ENVIRONMENTAL MONITORING

Annual dust deposition monitoring was carried out by ENVIROCO Management Ltd in compliance with Waste Licence W0113-03. Monitoring occurred from the 5th August to the 3rd September 2009 during normal activity at the facility and again from the 7th September to the 6th October 2009. A total of 7 locations were set up for the annual monitoring, six which form part of the compliance requirements of KMK's waste licence and one additional location.

2.0 METHODOLOGY

The dust monitoring method used for the monitoring event is based on a modified version of the Bergerhoff Method VID 2119 'Measurement of Dustfall Using the Bergerhoff Instrument (Standard Method)'. The dust monitoring map (Map I.1.1 below) will be submitted to the EPA for the waste licence review ref: W0113-03 to identify the locations for the 7 monitoring stations and therefore give an accurate representation of the site.

The dust monitors were left in-situ for 30 days from the 5th August to the 3rd September 2009 and from the 7th September to the 6th October 2009. Figure 2.0.1 shows the location of each of the stations. These are described in table 2.0.1 below.

Table 2.0.1 Location of Dust Monitoring Stations at Cappincur site, Co. Offaly

Station I.D.	Location Description	Irish Grid Reference	
		Easting	Northing
A2-1	Car Park at Fence Boundary	635955	725044
A2-2	Eastern boundary, beside disused portacabin	635959	725004
A2-3	Fence at southwest boundary	635882	724955
A2-4	Site Entrance	635911	724993
A2-5	Western Boundary	635866	725002
A2-6	Northern Boundary	635902	725021
A2-7*	At the North-western boundary of the yard which is located within the Industrial Estate, adjacent to the D5 yard area.	635911	725118

* Additional Monitoring Location (not required as part of the compliance for the waste licence of KMK Metals).

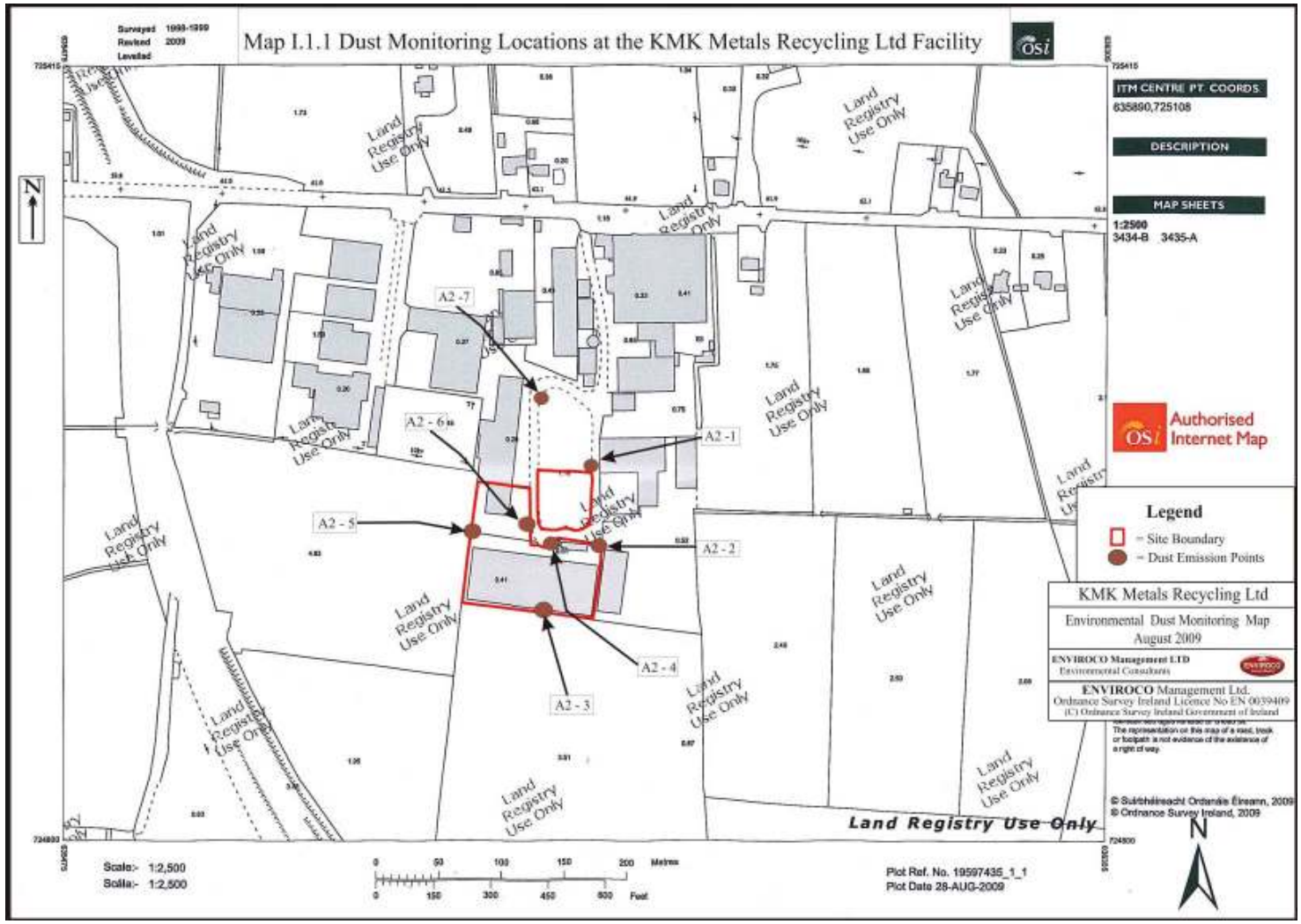


Figure 2.0.1 Dust Monitoring Stations at Cappincur site, Tullamore, Co. Offaly

2.1 PROBLEMS ENCOUNTERED

The following dust monitoring locations were changed as follows:

- Station A2-5 – the dust monitor was placed on the outside of the western boundary instead of the inside location due to the temporary storage of cages and presence of WEEE materials.

3.0 RESULTS

After 30 days of monitoring, each of the dust stations was disassembled and the samples were sent to an Accredited Laboratory for analysis (Complete Laboratory Solutions). The Certificates of Analysis are presented in Appendix A.

The results from the monitoring are shown in table 3.0.1, 3.0.2 and figure 3.0.1 below. These levels are compared to the EPA guidance limit for nuisance dust.

Table 3.0.1 Results of total dust monitoring at the site.

Station I.D.	Monitoring Location	Irish Grid Ref.		Dust Deposition (Aug/Sep 2008) mg/m²/day	Dust Deposition (Sept/Oct 2008) mg/m²/day	EPA licence Limits mg/m²/day
		Easting	Northing			
A2-1	Car Park at Fence Boundary	635955	725044	318	**1280**	350
A2-2	Eastern boundary, beside disused portacabin	635959	725004	323	**1057**	350
A2-3	Fence at southern boundary	635882	724955	115	**1179**	350
A2-4	Site Entrance	635911	724993	**692**	**1656**	350
A2-5	Western Boundary	635866	725002	**360**	**1107**	350
A2-6	Northern Boundary	635902	725021	**359**	**1177**	350
A2-7	At the North-western boundary of the yard which is located within the Industrial Estate, adjacent to the D5 yard area.	635911	725118	108	**803**	350

Table 3.0.2 Results of metallic species in dust at the site.

Parameters	Metallic analysis in dust (ug/l)						
	A2-1	**A2-2**	**A2-3**	**A2-4**	**A2-5**	**A2-6**	**A2-7**
Aluminium (Al)	23	54	<20	112	35	154	22
Copper (Cu)	4	26	34	27	33	132	2
Arsenic (As)	3	<0.5	<0.5	<0.5	<0.5	0.6	3
Cadmium (Cd)	<0.5	<0.5	<0.5	<0.5	0.6	0.6	<0.5
Chromium (Cr)	<0.5	0.6	<0.5	1	<0.5	1	<0.5
Iron (Fe)	32	195	33	375	66	336	28
Mercury (Hg)	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5
Nickel (Ni)	<0.5	4	3	6	4	4	<0.5
Lead (Pb)	8	41	33	58	53	91	5
Zinc (Zn)	14	172	151	251	217	174	15

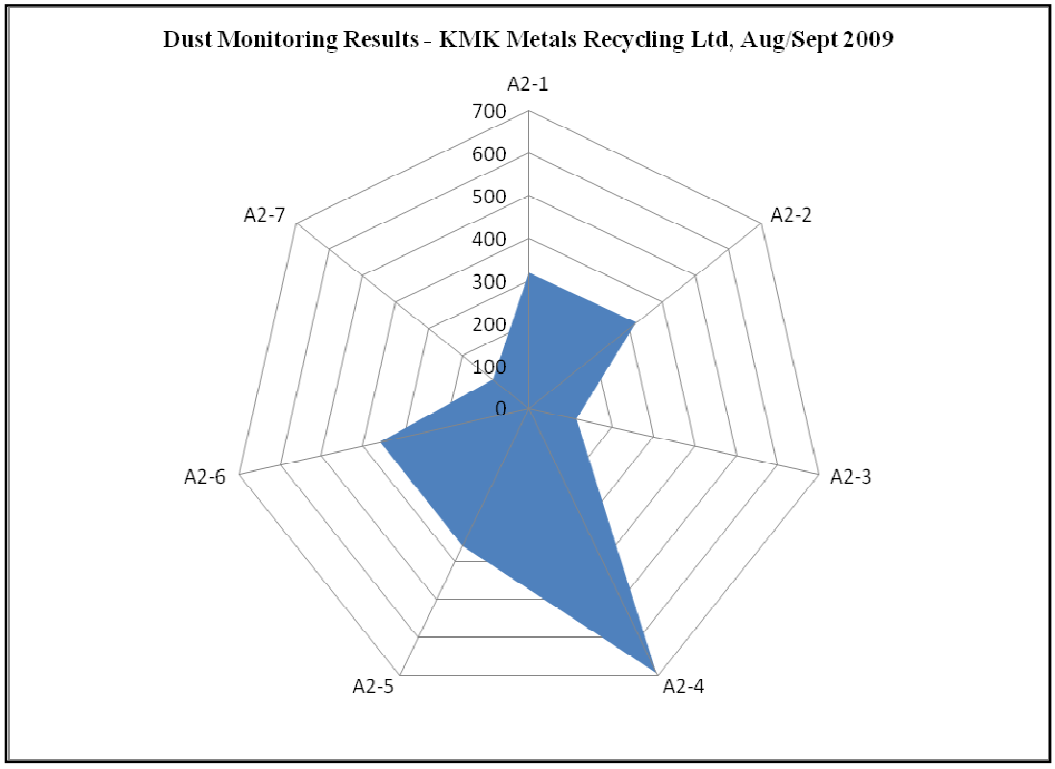


Figure 3.0.1 Distribution of the results from dust monitoring August/September 2009

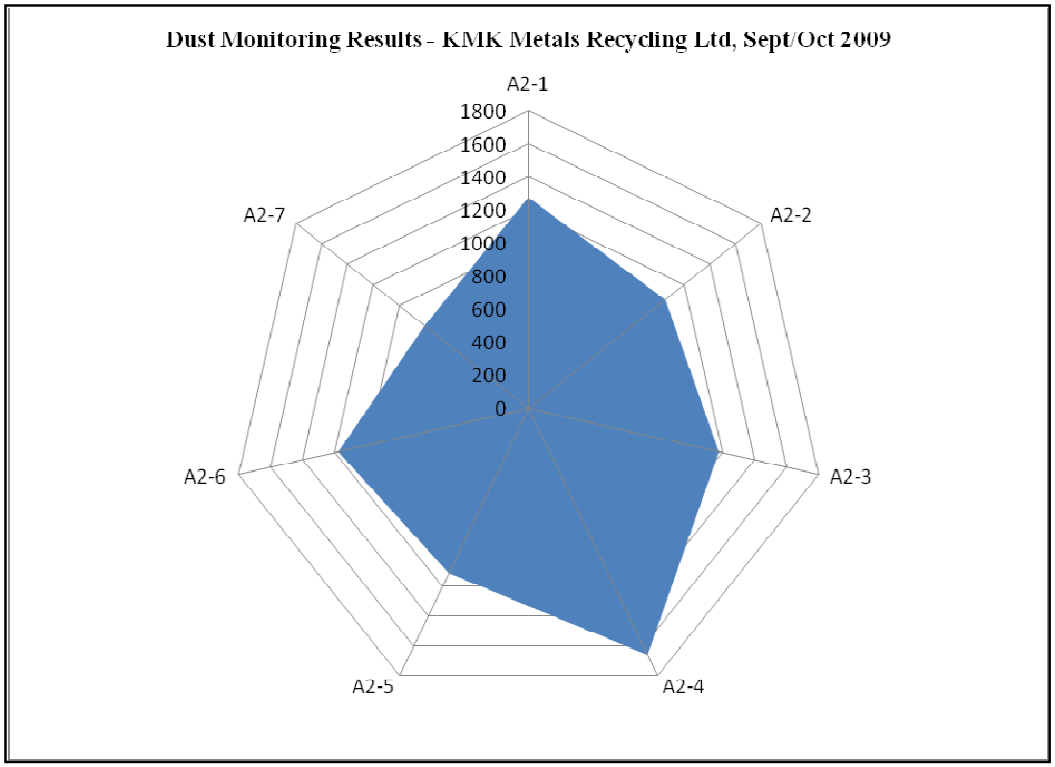


Figure 3.0.2 Distribution of the results from dust monitoring September/October 2009.

Weather conditions can have a noticeable impact upon dust creation and dust entrainment in the air. Drier weather will increase the ambient dust on the ground and will lighten small particulates. Wind strength will determine the size of particles that can be entrained in the air and the distance they will be transported. The Met Eireann data from the Birr Synoptic Station for the August/September and the September/October monitoring events show that August had high levels of rainfall throughout which reduced the dust levels within the Industrial Estate and within the KMK facility.

It was noted upon collection of the September/October event that there was no liquid in the dust jars. This is directly related to the low rainfall levels throughout the 30 day monitoring period of 9.1mm which was noticeably lower than previous years. It was noted upon consulting the Met Eireann records that the levels of rainfall during the 30day monitoring period were minimal with no precipitation for fifteen of the 30 days. This would have facilitated dust generation both at the facility but also in the neighbouring industrial units, on the roads within the Industrial Estate and also in the middle yard area (the D5 area and the adjacent yard area). Table 3.03 below provides an overview of the rainfall levels documented at the Birr Synoptic Station for both of the 30 day monitoring events.

Table 3.0.3 Rainfall levels from Birr Synoptic Station from the 5th Aug-3rd Sept and from the 7th Sept - 6th Oct 2009.

Date	Rainfall (mm)	Date	Rainfall (mm)
05/08/2009	0	07/09/2009	0.3
06/08/2009	0.8	08/09/2009	2.8
07/08/2009	0	09/09/2009	0.1
08/08/2009	0.6	10/09/2009	0.1
09/08/2009	0.6	11/09/2009	0
10/08/2009	0.7	12/09/2009	0
11/08/2009	2.8	13/09/2009	0
12/08/2009	6.4	14/09/2009	0.1
13/08/2009	0	15/09/2009	0
14/08/2009	2	16/09/2009	0
15/08/2009	6.9	17/09/2009	0
16/08/2009	0.2	18/09/2009	0
17/08/2009	0.6	19/09/2009	1
18/08/2009	2.2	20/09/2009	0
19/08/2009	15	21/09/2009	0
20/08/2009	14	22/09/2009	2.2
21/08/2009	1.8	23/09/2009	1.5
22/08/2009	3.6	24/09/2009	0
23/08/2009	10	25/09/2009	0
24/08/2009	0.2	26/09/2009	0
25/08/2009	1.2	27/09/2009	0.4
26/08/2009	2.8	28/09/2009	0
27/08/2009	3.7	29/09/2009	0
28/08/2009	5.7	30/09/2009	0.6
29/08/2009	0.1	01/10/2009	0
30/08/2009	4.4	02/10/2009	*
31/08/2009	5.5	03/10/2009	*
01/09/2009	1.8	04/10/2009	*
02/09/2009	10	05/10/2009	*
03/09/2009	1.1	06/10/2009	*
TOTAL Rainfall for the 30day period	**104.7mm**	**TOTAL Rainfall for the 30day period**	**9.1mm**

*No readings were presented for these dates on the Met Eireann database as of yet.

Table 3.0.4 Wind (knots) levels from Birr Synoptic Station from the 5th Aug – 3rd September 2009 and from the 7th Sept – 6th October 2009.

Date	Wind Speed (knots)	Date	Wind Speed (knots)
05/08/2009	9.9	07/09/2009	8.4
06/08/2009	5.2	08/09/2009	9.1
07/08/2009	5.4	09/09/2009	3.7
08/08/2009	5.9	10/09/2009	2.3
09/08/2009	5.5	11/09/2009	2.1
10/08/2009	6.2	12/09/2009	2
11/08/2009	6	13/09/2009	3.3
12/08/2009	5.1	14/09/2009	3.9
13/08/2009	2.3	15/09/2009	4.3
14/08/2009	8.6	16/09/2009	3.5
15/08/2009	8.7	17/09/2009	3
16/08/2009	8.1	18/09/2009	2.9
17/08/2009	5.9	19/09/2009	4.7
18/08/2009	8.7	20/09/2009	5.5
19/08/2009	7.9	21/09/2009	10.3
20/08/2009	7.6	22/09/2009	7.8
21/08/2009	8.1	23/09/2009	6.1
22/08/2009	8	24/09/2009	5.6
23/08/2009	9.2	25/09/2009	6.2
24/08/2009	7.8	26/09/2009	3.9
25/08/2009	7.5	27/09/2009	5.2
26/08/2009	9.2	28/09/2009	6.3
27/08/2009	9	29/09/2009	5.3
28/08/2009	9.5	30/09/2009	4
29/08/2009	6	01/10/2009	4.2
30/08/2009	7.7	02/10/2009	*
31/08/2009	8.3	03/10/2009	*
01/09/2009	7.7	04/10/2009	*
02/09/2009	5.7	05/10/2009	*
03/09/2009	7.6	06/10/2009	*

Table 3.0.5 Beaufort Scale of wind force

Wind Force	Short Description	Specifications for use on Land	Wind Speed at 10 metres above Level Ground		
			Knots	Metres per second	KM per hour
0	Calm	Smoke rises vertically	<1	<0.3	<1
1	Light Air	Direction of wind shown by smoke but not by wind vanes	1-3	0.3-1.5	1-5
2	Light breeze	Wind felt on face, leaves rustle, ordinary vanes moved by wind	4-6	1.6-3.3	6-11
3	Gentle breeze	Leaves and small twigs in constant motion, wind extends light flag	7-10	3.4-5.4	12-19
4	Moderate breeze	Raises dust and loose paper, small branches are moved	11-16	5.5-7.9	20-28
5	Fresh breeze	Small trees in leaf begin to sway, crested wavelets form on inland waters	17-21	8.0-10.7	29-38
6	Strong breeze	Large branches in motion, whistling heard in telegraph wires; umbellas used with difficulty	22-27	10.8-13.8	39-49
7	Near gale	Whole trees in motion, inconvenience walking against the wind	28-33	13.9-17.1	50-61
8	Gale	Breaks twigs off trees, generally impedes progress	34-40	17.2-20.7	62-74
9	Strong gale	Slight structural damage occurs (chimney pots and slates removed)	41-47	20.8-24.4	75-88
10	Storm	Seldom experienced inland, trees uprooted, considerable structural damage occurs	48-55	24.5-28.4	89-102
11	Violent storm	Very rarely experienced, accompanied by widespread damage	56-63	28.5-32.6	103-117
12	Hurricane	-	64 and over	32.7 and over	117 and over

Table 3.0.4 provides an overview of the wind levels throughout both of the 30day periods the dust jars were in position. Based on the Beaufort Scale of Wind Force (see Table 3.0.5 above) it is clear that during the August/September event for 19 of the 30days wind in the area could be classified as a wind force 3 gentle breeze; which according to the specifications results in "Leaves and small twigs in constant motion, wind extends light flag". For the remaining 11days the wind force was 2 (light breeze) which can result in movement of particles of dust and foliage.

Wind patterns during the September/October event show that for the majority of the monitoring event the wind ranged between force 1 and 3 which would have resulted in the movement of dust and foliage throughout sampling. All of these climatic elements can be seen as contributing factors to the dust levels shown at the KMK Metals facility.

4.0 DISCUSSION

Dust monitoring around the boundaries of the KMK Metals Recycling Ltd, Cappincur site show results which range above the EPA Recommendation limit of 350mg/m^2/day.

The highest values recorded during both events were at dust station A2-4 located at the second entrance gate to the site, with results of 692 and 1,656mg/m^2/day. This station is notably where the most activity occurs at the site (where trucks are unloaded and loaded with waste) and where the majority of forklifts are travelling within to and from the D5 yard area.

During the Aug/Sept monitoring event four of the stations (A2-1, A2-2, A2-3 and A2-7) were below the EPA guideline limit value whilst two were slightly elevated. Therefore dust levels detected during this monitoring event were not deemed to have likely negative effects on the surrounding environment.

The high levels of dust in the Sept/Oct samples can be attributed largely to the low rainfall levels and wind patterns as well as a result of vehicular movements at the KMK facility and general vehicular movements within the Industrial Estate by neighbouring units.

An analysis of the metallic species in all 7 dust samples was also carried out. Not all samples measured were below the actual laboratory limits of detection as can be seen in Table 3.0.2. There is no EPA limit set in the licence for metallic species.

CONCLUSIONS

Monitoring of dust deposition occurred at six stations around the site and one additional location not located within the boundaries of the site between the 5th August and 3rd September and the 7th September and 6th October 2009. Stations were left in situ for 30 days. During the August/September event some of the stations resulted in dust deposition levels greater than the EPA limit of 350 mg/m^2/day, while the September/October event displayed dust levels over the EPA limit for each station, the reasons for which have been addressed in this report. An analysis of metals in the dust samples showed there were some detection levels but not for all metals, which can be attributed to loading and unloading of trucks at the facility and to low rainfall levels and winds during the sampling period.

6.0 RECOMMENDATIONS

- During dry weather conditions it is advised to dampen down the immediate areas around the site entrances with water (use hose reel to spray dusty areas).
- In line with future development plans at the KMK facility it is recommended that a concrete surface be installed at the D5 yard area. This will have the effect of preventing clay and muck creation at this area and hence the generation of dust particles from vehicles driving on this surface.

APPENDIX A

Certificate of Analysis

September/October 2009

Complete Laboratory Solutions
Ros Muc, Co. Galway.
[Tel] 091 574355
[Fax] 091 574356
[Email] services@cls.ie
[web] www.completelabsolutions.com

Client	:	Eamon Lee / Eimear Gormally	Report No.	: 99089
		Enviroco Management Ltd.	Date of Receipt	: 01/09/2009
		Bow House, O'Moore Street,	Start Date of Analysis	: 01/09/2009
		Tullamore	Date of Report	: 03/09/2009
		Co. Offaly	Order Number	: KMM D1 70692
			Sample taken by	: Client

CERTIFICATE OF ANALYSIS

Results				
Lab No	Sample Description	Test	Result	Units
227803	KMM D1. 70692. 31/8/09. Sampled by P.Maleady	Settleable Dust (Bergerhoff Method)	318. Dusty	mg/sq.M/Day
227804	KMM D2. 70692. 31/8/09. Sampled by P.Maleady	Settleable Dust (Bergerhoff Method)	323. Dusty	mg/sq.M/Day
227805	KMM D3. 70692. 31/8/09. Sampled by P.Maleady	Settleable Dust (Bergerhoff Method)	115	mg/sq.M/Day
227806	KMM D4. 70692. 31/8/09. Sampled by P.Maleady	Settleable Dust (Bergerhoff Method)	692. Very dusty	mg/sq.M/Day
227807	KMM D5. 70692. 31/8/09. Sampled by P.Maleady	Settleable Dust (Bergerhoff Method)	360. Dusty	mg/sq.M/Day
227808	KMM D6. 70692. 31/8/09. Sampled by P.Maleady	Settleable Dust (Bergerhoff Method)	359. Dusty	mg/sq.M/Day
227809	KMM D7. 70692. 31/8/09. Sampled by P.Maleady	Settleable Dust (Bergerhoff Method)	108	mg/sq.M/Day

Authorised by: Barbara Lee
Barbara Lee
Environmental Scientist

See reverse for Test Specifications

APPENDIX A

Certificate of Analysis

September/October 2009

Complete Laboratory Solutions
Ros Muc, Co. Galway.
[Tel] 091 574355
[Fax] 091 574356
[Email] services@cls.ie
[web] www.completelabsolutions.com

Client : Eamon Lee / Eimear Gormally
Enviroco Management Ltd.
Bow House, O'Moore Street,
Tullamore
Co. Offaly

Report No.	:	101501
Date of Receipt	:	06/10/2009
Start Date of Analysis	:	06/10/2009
Date of Report	:	20/10/2009
Order Number	:	D1 KNK 70692
Sample taken by	:	Client

CERTIFICATE OF ANALYSIS

Results				
Lab No	Sample Description	Test	Result	Units
233141	D 1. KNK. 70692. 05/10/09	Copper, total	4	ug/l
		Iron, total	32	ug/l
		Settleable Dust (Bergerhoff Method)	1280	mg/sq.M/Day
		Arsenic, total	3	ug/l
		Zinc, total	14	ug/l
		Chromium, total	<0.5	ug/l
		Nickel, total	<0.5	ug/l
		Aluminium, Total	23	ug/l
		Lead, total	8	ug/l
		Cadmium, total	<0.5	ug/l
		Mercury	<0.05	ug/l

Authorised by: Barbara Lee
Barbara Lee
Environmental Scientist

See reverse for Test Specifications

Complete Laboratory Solutions
Ros Muc, Co. Galway.
[Tel] 091 574355
[Fax] 091 574356
[Email] services@cls.ie
[web] www.completelabsolutions.com

Client : Eamon Lee / Eimear Gormally
Enviroco Management Ltd.
Bow House, O'Moore Street,
Tullamore
Co. Offaly

Report No.	:	101502
Date of Receipt	:	06/10/2009
Start Date of Analysis	:	06/10/2009
Date of Report	:	20/10/2009
Order Number	:	D1 KMK 70692
Sample taken by	:	Client

CERTIFICATE OF ANALYSIS

Results				
Lab No	Sample Description	Test	Result	Units
233142	D 2. KMK. 70692. 05/10/09	Copper, total	26	ug/l
		Iron, total	195	ug/l
		Settleable Dust (Bergerhoff Method)	1057	mg/sq.M/Day
		Arsenic, total	<0.5	ug/l
		Zinc, total	172	ug/l
		Chromium, total	0.6	ug/l
		Nickel, total	4	ug/l
		Aluminium, Total	54	ug/l
		Lead, total	41	ug/l
		Cadmium, total	<0.5	ug/l
		Mercury	<0.05	ug/l

Authorised by: Barbara Lee
Barbara Lee
Environmental Scientist

See reverse for Test Specifications

Complete Laboratory Solutions
Ros Muc, Co. Galway.
[Tel] 091 574355
[Fax] 091 574356
[Email] services@cls.ie
[web] www.completelabsolutions.com

Client	:	Eamon Lee / Eimear Gormally Enviroco Management Ltd. Bow House, O'Moore Street, Tullamore Co. Offaly	Report No. Date of Receipt Start Date of Analysis Date of Report Order Number Sample taken by	: 101503 : 06/10/2009 : 06/10/2009 : 20/10/2009 : D1 KMK 70692 : Client

CERTIFICATE OF ANALYSIS

Results				
Lab No	Sample Description	Test	Result	Units
233143	D 3. KMK. 70692. 05/10/09	Copper, total	34	ug/l
		Iron, total	33	ug/l
		Settleable Dust (Bergerhoff Method)	1179	mg/sq.M/Day
		Arsenic, total	<0.5	ug/l
		Zinc, total	151	ug/l
		Chromium, total	<0.5	ug/l
		Nickel, total	3	ug/l
		Aluminium, Total	<20	ug/l
		Lead, total	33	ug/l
		Cadmium, total	<0.5	ug/l
		Mercury	<0.05	ug/l

Authorised by: Barbara Lee
Barbara Lee
Environmental Scientist

See reverse for Test Specifications
This report only relates to items tested and shall not be reproduced but in full with the permission of Complete Laboratory Solutions.

Complete Laboratory Solutions
Ros Muc, Co. Galway.
[Tel] 091 574355
[Fax] 091 574356
[Email] services@cls.ie
[web] www.completelabsolutions.com

Client	:	Eamon Lee / Eimear Gormally	Report No.	: 101504
		Enviroco Management Ltd.	Date of Receipt	: 06/10/2009
		Bow House, O'Moore Street,	Start Date of Analysis	: 06/10/2009
		Tullamore	Date of Report	: 20/10/2009
		Co. Offaly	Order Number	: D1 KMK 70692
			Sample taken by	: Client

CERTIFICATE OF ANALYSIS

Results				
Lab No	Sample Description	Test	Result	Units
233144	D 4. KMK. 70692. 05/10/09	Copper, total	27	ug/l
		Iron, total	375	ug/l
		Settleable Dust (Bergerhoff Method)	1656	mg/sq.M/Day
		Arsenic, total	<0.5	ug/l
		Zinc, total	251	ug/l
		Chromium, total	1	ug/l
		Nickel, total	6	ug/l
		Aluminium, Total	112	ug/l
		Lead, total	58	ug/l
		Cadmium, total	<0.5	ug/l
		Mercury	<0.05	ug/l

Authorised by: Barbara Lee
Barbara Lee
Environmental Scientist

See reverse for Test Specifications

Complete Laboratory Solutions
Ros Muc, Co. Galway.
[Tel] 091 574355
[Fax] 091 574356
[Email] services@cls.ie
[web] www.completelabsolutions.com

Client	:	Eamon Lee / Elmear Gormally	Report No.	: 101505
		Enviroco Management Ltd.	Date of Receipt	: 06/10/2009
		Bow House, O'Moore Street,	Start Date of Analysis	: 06/10/2009
		Tullamore	Date of Report	: 20/10/2009
		Co. Offaly	Order Number	: D1 KMK 70692
			Sample taken by	: Client

CERTIFICATE OF ANALYSIS

Results				
Lab No	Sample Description	Test	Result	Units
233145	D 5. KMK. 70692. 05/10/09	Copper, total	33	ug/l
		Iron, total	66	ug/l
		Settleable Dust (Bergerhoff Method)	1107	mg/sq.M/Day
		Arsenic, total	<0.5	ug/l
		Zinc, total	217	ug/l
		Chromium, total	<0.5	ug/l
		Nickel, total	4	ug/l
		Aluminium, Total	35	ug/l
		Lead, total	53	ug/l
		Cadmium, total	0.6	ug/l
		Mercury	<0.05	ug/l

Authorised by: Barbara Lee
Barbara Lee
Environmental Scientist

See reverse for Test Specifications

Complete Laboratory Solutions
Ros Muc, Co. Galway.
[Tel] 091 574355
[Fax] 091 574356
[Email] services@cls.ie
[web] www.completelabsolutions.com

Client	: Eamon Lee / Elmear Gormally	Report No.	:	101506
	Enviroco Management Ltd.	Date of Receipt	:	06/10/2009
	Bow House, O'Moore Street,	Start Date of Analysis	:	06/10/2009
	Tullamore	Date of Report	:	20/10/2009
	Co. Offaly	Order Number	:	D1 KMK 70692
		Sample taken by	:	Client

CERTIFICATE OF ANALYSIS

Results				
Lab No	Sample Description	Test	Result	Units
233146	D 6. KMK. 70692. 05/10/09	Copper, total	132	ug/l
		Iron, total	336	ug/l
		Settleable Dust (Bergerhoff Method)	1177	mg/sq.M/Day
		Arsenic, total	0.6	ug/l
		Zinc, total	174	ug/l
		Chromium, total	1	ug/l
		Nickel, total	4	ug/l
		Aluminium, Total	154	ug/l
		Lead, total	91	ug/l
		Cadmium, total	0.6	ug/l
		Mercury	<0.05	ug/l

Authorised by: Barbara Lee
Barbara Lee
Environmental Scientist

See reverse for Test Specifications

Complete Laboratory Solutions
Ros Muc, Co. Galway.
[Tel] 091 574355
[Fax] 091 574356
[Email] services@cls.ie
[web] www.completelabsolutions.com

Client	: Eamon Lee / Eimear Gormally	Report No.	:	101507
	Envirocc Management Ltd.	Date of Receipt	:	06/10/2009
	Bow House, O'Moore Street,	Start Date of Analysis	:	06/10/2009
	Tullamore	Date of Report	:	20/10/2009
	Co. Offaly	Order Number	:	D1 KMK 70692
		Sample taken by	:	Client

CERTIFICATE OF ANALYSIS

Results				
Lab No	Sample Description	Test	Result	Units
233147	D 7. KMK. 70692. 05/10/09	Copper, total	2	ug/l
		Iron, total	28	ug/l
		Settleable Dust (Bergerhoff Method)	803	mg/sq.M/Day
		Arsenic, total	3	ug/l
		Zinc, total	15	ug/l
		Chromium, total	<0.5	ug/l
		Nickel, total	<0.5	ug/l
		Aluminium, Total	22	ug/l
		Lead, total	5	ug/l
		Cadmium, total	<0.5	ug/l
		Mercury	<0.05	ug/l

Authorised by: Barbara Lee
Barbara Lee
Environmental Scientist

See reverse for Test Specifications
This report only relates to items tested and shall not be reproduced but in full with the permission of Complete Laboratory Solutions.

APPENDIX 5

Noise Monitoring Report

SEE ATTACHED FILES

Noise Report for

KMK METALS RECYCLING LTD.

CAPPINCUR INDUSTRIAL ESTATE, DAINGEAN ROAD, TULLAMORE, CO. OFFALY

August 2009

Table of Contents

Appendices

Appendix A Noise Results & Charts

List of Tables:

List of Figures:

1.0 Introduction

ENVIROCO Management has been commissioned by Mr. Kurt Kyck of KMK Metal Recycling Ltd, Cappincur Industrial Estate, Tullamore, Co Offaly; Waste Licence Number W0113-03 to submit an environmental noise survey as required by the facilities licence conditions and also in conjunction with an EIS required as part of a waste licence review.

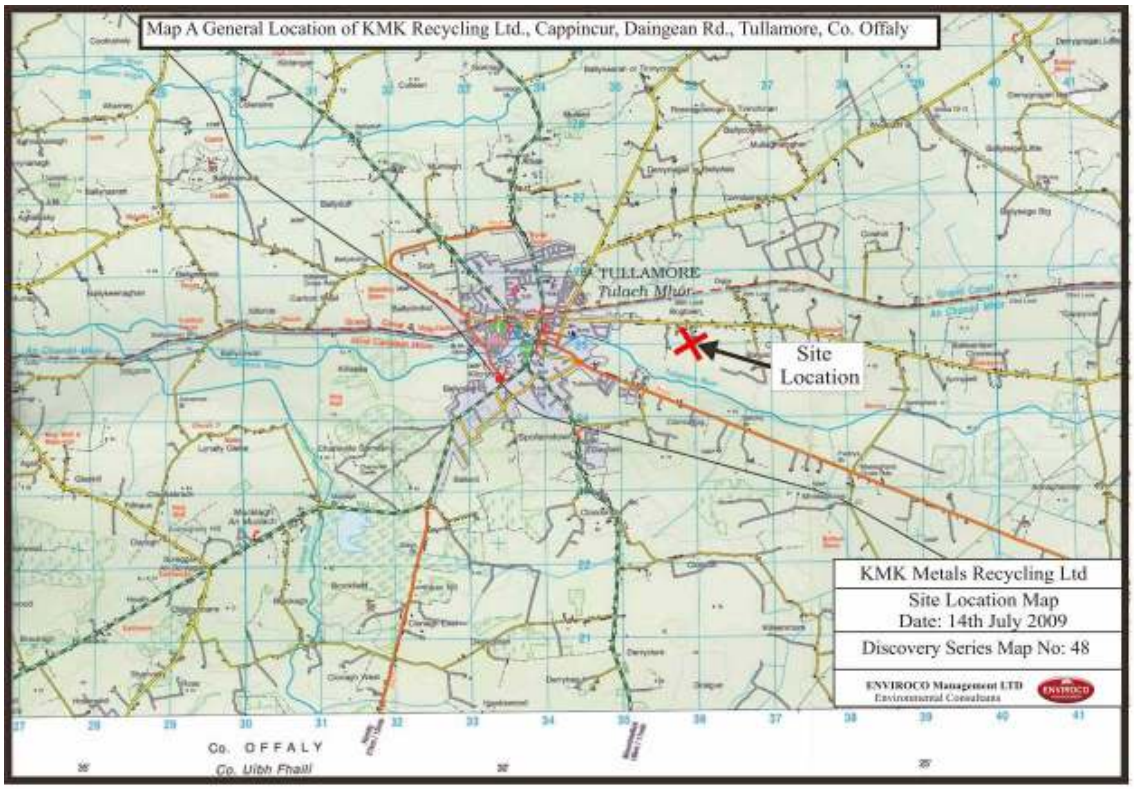


Figure 1.0.1 Site Location map of the KMK Facility, Tullamore, Co. Offaly

The KMK LTD facility is located in the Cappincur Industrial Estate towards the east of Tullamore town, off the L-02025 road to Daingean – Figure 1.0.1. The Cappincur Industrial Estate is dominated by enclosed industrial units, with little mobile machinery operating outside of these units.

The objectives of the environmental noise survey were to:

- Investigate the noise emissions arising from the facility during a typical working day as part of the waste licence operations.
- Assess the noise emissions in terms of nuisance or pollution potential on the immediate environment around the KMK Metals facility.

1.1 Environmental Monitoring

ENVIROCO Management was commissioned by KMK Metals Recycling LTD, Cappincur Industrial Estate, Tullamore, Co Offaly to carry out environmental noise monitoring.

Monitoring occurred on the 30th July 2009. Monitoring took place during the course of a normal working day.

2.0 Noise Survey

Noise has many sources, both manmade and environmental. Noise is observer defined, as levels unacceptable to one person may be perceived as necessary or enjoyable to another. As such the monitoring of noise is primarily an observational discipline requiring a full identification of the sources of possible noise and the type of sound that is been emitted (continuous, intermittent, tonal, broad-spectrum, single source, multiple source). The Environmental Protection Agency (EPA) has adopted a noise level (as a continuous equivalent noise reading – Leq) of 55 dB(A) as an indicator of annoyance due to noise arising from industrial activity. This level is given at the receptor or noise sensitive location (NSL). Monitoring of noise at the KMK plc facility in the Cappincur Industrial Estate, Tullamore, took into account both the nature of the site, the history of the site, the intensity of the operations and the proximity of local sensitive receivers. Monitoring was carried out mid-week during the hours of 9am to 3 pm; the facility does not operate during night-time therefore readings after 7pm were not recorded.

2.1 Methodology

Noise monitoring was carried out to the International Standard ISO 1996/1 "Acoustics – Description & measurement of environmental noise", using a Type 1 Bruel Kjaer 2250 Sound Level Meter with outdoor equipment that was fully calibrated prior to and after the monitoring event. The meter was set to Fast Response with an effective averaging time of 0.25sec during noise monitoring. All noise monitoring was 'A' weighted which attenuates low frequencies strongly so noise measuring is more specific to human hearing and environmental noise.

Noise monitoring was carried out on the 30th July 2009. The KMK facility in the Cappincur Industrial Estate does not operate over night; therefore noise monitoring was not carried out overnight. Each monitoring location is identified on the map shown in Figure 2.1.1.

Weather conditions during sampling were; bright and sunny with a light breeze becoming overcast as the morning passed with a brief rain shower.

Table 2.1.1 Met Eireann Report

REPORTS FROM BIRR WEATHER STATION						
Date	**Rainfall (mm)**	**Max Temp**	**Min Temp**	**Sunshine (hours)**	**Gusts**	**Wind speed**
30/07/2009	5.4	18.3	8.8	8.8	0	6.3

The monitoring equipment was manned throughout the sampling period and comments/notes taken to assist the interpretation and assessment of results.

Sampling was carried out at 6 locations along the facilities boundaries where accessible (Figure 2.1.1) and 2 locations along the boundaries of the proposed new area for inclusion i.e. Revised D5 area as part of the licence review and EIS application. ENVIROCO Management staff selected these monitoring locations in accordance with Schedule C Control and Monitoring of KMK's waste licence conditions (W0113-03).

The monitoring locations were:

N1: Car park at fence boundary
N2: Eastern boundary, beside disused portacabin
N3: Fence at southwest boundary
N4: Western boundary
N5: North-western boundary of the D4 yard area
N6: North-eastern boundary of the D4 yard area
N7: Located at the North-western boundary of the proposed area for inclusion in the revised D5 yard.
N8: Located at the North-eastern boundary of the proposed area for inclusion in the revised D5 yard

Table 2.1.2 Grid Reference Points of Noise Monitoring Positions

Monitoring Locations	**Grid Reference (ING)**	
	Easting	**Northing**
N1	635950	725047
N2	635956	725002
N3	635863	724963
N4	635872	725008
N5	635862	725032
N6	635906	725043
N7	635908	725115
N8	635951	725114

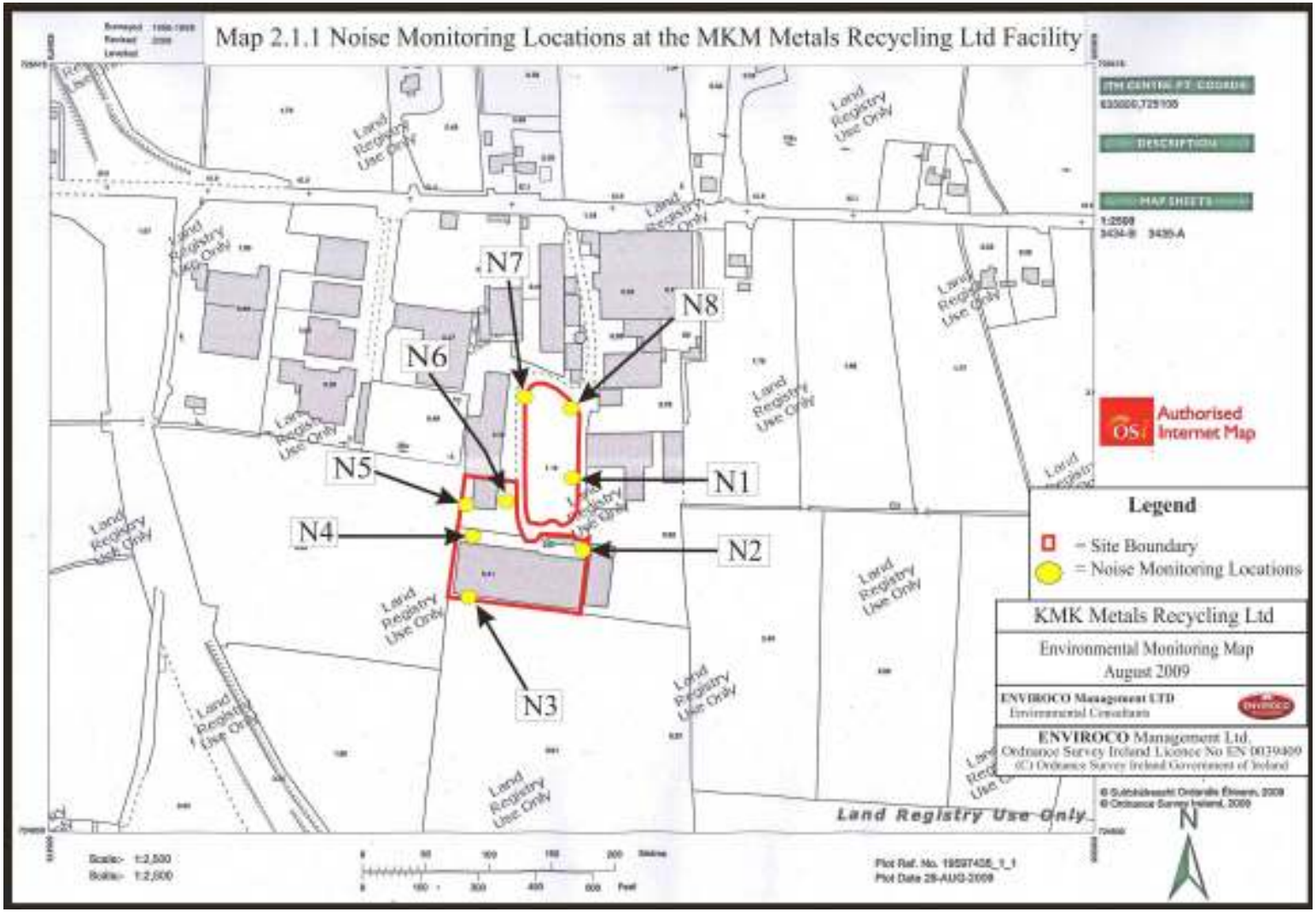


Figure 2.1.1 Noise Monitoring Locations at KMK Metal Recycling Ltd on the 30th July 2009.

2.2 Results

The complete set of noise measurement results is included in Appendix A. These are summarised and discussed below.

Table 2.2.1 Summary of Site Boundary Noise Levels

Location	Start Time	L_{Aeq}	Comments
N1 Car park at fence boundary	09:21	62	**Background Noise;** Birdsong and wind gusting between the receptacles at this location. Sound of water flowing in a drain nearby where the lid of the drain was almost fully removed. Large truck idling in close proximity to the fence where the noise meter was set up. Cars and jeeps entering and exiting neighbouring facilities regularly and using the Industrial Estate Road. **Site Noise:** Audible noise coming from the KMK Facility and forklifts operating in the D5 area. Horns sounding from trucks leaving the industrial estate and from trucks leaving the KMK site. 9.30am Forklifts passing the noise meter and moving pallets and empty cages in close proximity to the meter. There was a short emission of sound from cages scraping across a gravel surface. 9.42am Some loud revving of a vehicles engine at a neighbouring facility took place for approximately 3 minutes prior to the vehicle leaving the site. A phone with an external bell for the yard area rang sporadically from the neighbouring site during the monitoring event.
N2 Eastern boundary, beside disused portacabin	10:00	59	**Background Noise;** Birdsong, wind gusts from between the buildings were frequent during this monitoring event. Some short conversations held in the yard in close proximity to the meter. Barking from the I.S.P.C.A Dog Pound in the neighbouring industrial estate. Truck pulling out from a neighbouring facility releasing its pressure caused a short increase in the LA_{eq} until the truck had left the area. **Site Noise:** 2 vans entered the site, one of which was a post van and the other van turned its engine off while waiting for a forklift to bring over 3 cages for the televisions in the back of it. This forklift brought cages which rattled while in motion and were scraped on the concrete surface for a brief moment. The unloading of the van by hand caused banging noise for approximately 5 minutes. During this monitoring event a forklift was loading a trailer with empty cages which caused a banging & scraping of metal. The reverse sounding alarms on the forklifts in the area were sounding quite regularly until the trailer was loaded.
N3 Fence at southwest boundary	10:39	60	**Background Noise;** Birdsong and rustling of the wind through the trees and hedgerow which are along the western boundary. During the monitoring event operational noises from the Ring Road construction works were clearly audible (diggers operating, articulated dump trucks travelling along the ring road). The noise levels from this increased between 11:05 and 11:10am. **Site Noise:** Sound of general operations and processing from the CRT processing area was ongoing during this monitoring event. People speaking in loud voices from the D1 area throughout the event. Ongoing sound from pneumatic drills, hammering and machines in the CRT processing area, Noise from the Large Household Baler unit was audible throughout this monitoring event and also the reverse alarms from forklifts operating in the D2 building and the D building.

Table 2.2.1 Summary of Site Boundary Noise Locations (contd.)

Location	Start Time	L_{Aeq}	Comments
N4 Western boundary	11:19	61	**Background Noise:** Birdsong, the constant rustling of silver birch tree leaves at this location was especially audible during this monitoring event. A road sweeper passed by the D4 yard fence twice during this period sweeping the industrial estate road. Dogs barking at the pound. Noise from the nearby ring road operations was clearly audible at this location & a number of horns sounded from the construction vehicles. **Site Noise:** Banging & other operational noises arising from the D building were audible as a trailor was being emptied of its load while another was being loaded for dispatching. Multiple forklifts were in operation (revving, sounding reverse alarms, etc) frequently resulting in banging and scraping of metal. The LHA baler was either in operation or idling pending loading during this time frame. A forklift fitted with a sweeping device to the front of it proceeded to sweep the D yard area and the D building which took place between 11:34-11:39am.
N5 North-western boundary of D4 area	11:55	49	**Background Noise:** Birdsong & rustling of leaves in the trees was audible at this location as it is located in close proximity to the western boundary. Dogs barking at the I.S.P.C.A pound. A number of aeroplanes passed overhead. Noise from the ongoing construction operations on the ring road were consistent throughout. A horn sounding on a truck travelling on the ring road route was audible at this time. **Site Noise:** Forklifts in operation at the KMK facility were slightly audible, however the noise from the ring road operations were clearly more audible. 12:11pm Banging of metal & moving of waste for processing at the KMK facility was continuous until 12:14pm.
N6 Northern boundary at fridge storage area	12:30	64	**Background Noise:** Birdsong. Wind gusting as there was little shelter at this location. It began to rain and proceeded throughout the monitoring event. **Site Noise:** Forklifts were in operation at the KMK site throughout this monitoring event & the LHA baler was in operation for the majority of the event. A forklift remained idling in close proximity to the noise meter for a few minutes. An oil delivery truck arrived at the site at 12:35pm and left again at 12:49pm. A number of forklifts passed the noise meter with empty cages and another with a pallet of microwaves. A car with a loud muffler started its engine at 12:54pm and left the car park which is in the D5 area.
N7 Located at the North-western boundary of the proposed area for inclusion in the revised D5	13:24	58	**Background Noise:** Dogs barking at the I.S.P.C.A dog pound clearly audible at this location. Conversations from neighbouring industrial estate units were clearly audible. A truck was left idling outside the industrial unit adjacent to this monitoring location, there were also pick-up trucks starting their engines and leaving this industrial unit. A bus entering a nearby driving school turning & reversing in very close proximity to the noise meter at this location. **Site Noise:** A number of Roll on Roll off skips were being set down & collected from the central area adjacent to the D5 yard area by a waste company, resulting in trucks passing the noise meter. A number of trucks leaving other industrial units apart from the KMK facility & cars

yard			using the industrial estate road were frequent. Some noise originating from the general operations at the KMK facility were slightly audible.

Table 2.2.1 Summary of Site Boundary Noise Locations (contd.)

Location	**Start Time**	**L_{Aeq}**	**Comments**
N8 Located at the North-eastern boundary of the proposed area for inclusion in the revised D5 yard	13:58	70	**Background Noise:** Birdsong. Dog barking at a nearby industrial unit. Noise from a loud car exhaust, which remained idling for 2-3minutes. Car doors opening & closing was a common occurrence at this location. Banging & hammering arising from operations at an engineering facility to the front of the industrial estate was clearly audible but occurred sporadically. At 14:05pm a car parked adjacent to the noise meter while a person proceeded to shout loudly for a few moments before proceeding with a conversation for a number of minutes. A number of cars entered and exited a nearby car dismantlers unit during the monitoring event. Reverse alarms and horns sounding on trucks leaving a nearby couriers yard also occurred intermittently. The sound of an angle grinder was clearly audible at this location, the noise arising from the engineering unit located to the front of the Industrial Estate. **Site Noise:** Noise from operations at the KMK facility were audible at this location. A truck collecting a skip from the storage area adjacent to the D5 yard area emitted a loud screeching noise from metal on metal. A few minutes later a truck dropping off a chain skip left the storage area, as it did so the chains on the truck rattled loudly as the vehicle was in motion.

2.3 Discussion

There are currently no statutory limits for the control of environmental noise in Ireland. However, the EPA has issued a guidance note on noise emissions that states, '*Ideally, if the total noise level from all sources is taken into account, the noise level* ***at sensitive locations*** *should be kept below an L_{Aeq} value of 55dB(A) by daytime. At night, to avoid disturbance, the noise level at noise sensitive locations should not exceed a $L_{Aeq\ T}$ value of 45dB(A).'*

Noise monitoring was carried out between the hours of 9am and 3 pm. Noise monitoring was not carried out overnight as the facility does not operate outside of normal hours. Noise sources from the plant, audible at the site boundaries have been identified as:

- Vehicles entering/leaving the site
- Personnel entering/leaving buildings
- Unloading and loading of trucks with waste materials
- The movement of fork lift trucks in the process areas
- Reversing alarms from fork trucks
- Operation of the baler unit for Large Household Appliances (LHA).

The KMK Metals facility is located within the Cappincur Industrial Estate, Tullamore. This industrial estate includes warehousing, commercial/industrial and waste management operations with Tullamore Steel, Palace Kitchens, Modified Motors, Ravenhill Couriers, Robedesign and Condron Car Dismantlers, all located within a relatively close proximity to the KMK site. These other occupants all have noise associated with their activities and this results in a cumulative noise impact within the industrial estate e.g. all warehousing environments require controlled ventilation and air supply, and therefore there is noise associated with these fans, car dismantlers use angle grinders, acetylene torches, fork lift trucks and other ancillary activities e.g. vehicle movements. Motor modification shops result in loud noise from engine tests/revving noises etc.

In relation to KMK Metals site, the greatest ascendance in noise levels occurred at N8 located at the north-eastern boundary of the proposed area for inclusion in the revised site boundary to be named at E area with an L_{Aeq} reading of 70 dB (A). This noise level was 6 dB(A) greater than the next highest noise reading which was 64dB(A) at N6. An increase in 6dB(A) is perceptible by the human ear in the form of recognisable loudness and is seen as significant as it equates to a tripling of sound intensity or energy being experienced by the human ear and the greater the sound energy experienced the greater the potential hazard to human hearing. The L_{Aeq} value recorded at N8 was heavily influenced by the L_{10} level i.e. 68 dB(A). The L_{10} noise parameter represents the noise level exceeded for 10% of the time and is often used as an indicator of the typical maximum level. L_{10} is widely used to describe peak road traffic noise and sometimes other short duration noises. It was noted during noise monitoring at N8 that a car engine from Modified Motors was revving for some minutes and this clearly elevated the noise levels at N8. The L_{10} value at station N6 was 66 dB (A). The main sources of

noise at station N6 emanated from site operations involving the unloading of a truck of fridges and freezers with the aid of a fork-lift. These operations resulted in the sounding of the reverse alarm, scraping of metal surfaces as well as occasional falling material from the back of the truck.

N5 located in the north-western boundary of the D4 yard area experienced the lowest L_{Aeq} reading of 49 db (A) which was below the EPA limit of 55 dB (A). Much of the noise was created from sources outside the boundaries of the site such as passing traffic; truck engines idling near the noise meter and noise from construction works being carried out in conjunction with the ring road close by. Noise stations N1, N2, N3, N4 and N6 located in the Northeast of the D5 area, East, South, West and Northeast of the D4 yard area of the site experienced similar L_{Aeq} values of 59-64 dB (A). Much of the noise at these locations were linked to general operations within the KMK facility with some outside factors i.e. an oil delivery took place during the N6 monitoring event. The operations within the site influencing the noise levels were the unloading of, dismantling and processing of waste electrical products (WEEE). The noise generated during these operations is not likely to be a source of disturbance to neighbouring properties as it is known that noise dissipates over distance, and for point source emissions, there is a decrease in 6dB(A) for every doubling in distance away (see table 2.3.1 below).

Table 2.3.1 Attenuation of Noise over Distance for point source emissions e.g. industrial sources.

Distance m	Noise level dB
10	70
20	64
40	58
80	52
160	46

Stations N7 and N8 were sampled for the purposes of a waste licence review and EIS and were situated at the north-western and north-eastern boundary of the proposed area for inclusion in site to be renamed at E area.

N7 gave a L_{Aeq} and L_{10} value of 58 dB(A) each. Therefore the typical maximum noise and average noise levels are equal at this location which means that the dominant noise at this location was due to passing traffic in the industrial estate. The majority of all traffic observed during this event were entering and exiting neighbouring industrial estate units.

The results for the N8 station provided the highest L_{Aeq} value of the days monitoring, 70 dB(A). Again, as with station N7 only a small amount of the noise could be sourced to operations at the KMK facility. This is further shown by virtue of the L_{10} level of 68dB(A) which was only 2dB lower than the average level. The majority of the noise at this station arose from neighbouring industrial estate units including a Modified Car shop and a Car Dismantlers, an engineering facility located to the front of the estate facing the L-02025 road to Daingean

(hammering & banging as well as the sound of an angle grinder), a haulage company and also a driving school all located within a 50-150m radius of the noise meter.

Overall, the noise levels recorded at stations N1, N2, N3, N4 and N6 during monitoring located within the boundary of the KMK Metals Recycling Ltd facility exceeded the Daytime Noise Limit Value L_{Aeq} (30 minutes) of 55dB (A), with the exception of N5 which was below the recommended limit. The noise levels recorded at stations N7 and N8 were recorded to provide a representation of the existing levels along the boundaries of the area proposed for inclusion in the revised D5 area. Both sets of results were above the recommended Daytime Noise Limit Values with the highest level being recorded at 70 dB (A). These results were not as a direct result of operations at the KMK facility but can be largely associated with neighbouring industrial units operations/activities and general traffic generated within the industrial estate.

On examination of the L_{Aeq} (30 minutes) for the noise monitoring locations N1, N2, N3, N4, N5 and N6, the average or steady rate of noise levels generated at the KMK Metals facility was between 49dB(A) and 64dB(A). This overall noise rate in real terms is somewhere between typical office noise to experiencing light traffic at 15m distance away as illustrated in the description table below;

Table 2.3.2

Sound Pressure level dB(A)	**Typical source**
120	Jet take off at 50m
100	Pneumatic Drill
90	Generator hall
80	Light machine shop, Heavy Truck at 15m
70 – 60	Light traffic (cars) at 15m
60	Office Noise
40	Library
20	Rural evening

3.0 Octave Band Analysis and Discussion

Octave band analysis of noise is the breakdown of the sound pressure readings, as recorded on site, into specific frequency band widths. This enables a greater understanding of the type of noise evident at a site and can give indications to where tonal noise is present. There are two common forms of octave analysis. Full octave analysis groups sound pressure readings into frequency readings that cover a full octave. This type of monitoring gives a good general description of how people will perceive a sound/noise. One third octave analysis, further separates the noise reading into $^{1}/_{3}$ octave frequency groupings. Each frequency reading is given in Hz. The frequency reading is the central frequency for each band that is been monitored (i.e. Frequency band 250 Hz covers all sound pressure readings recorded between 167Hz to 333Hz). 1/3 octave analysis of noise enables the identification of tonal components present at a site. Long duration tonal noise is typically found as more aggravating to nearby sensitive receivers than broad spectrum noise sources and control measures can be used to minimise the annoyance caused by tonal sources.

3.1 Octave Analysis

The scope of this noise assessment is to evaluate the noise arising from the KMK Metals Recycling Ltd facility within the Cappincur Industrial Estate, Daingean Road, Tullamore, Co. Offaly. Full results of the 1/3 octave analysis are shown in Appendix A, including charted results for each location. These results and charts are discussed below. The overview chart of all monitoring stations shows a similar trend at most locations, with a general decline in sound pressure as frequency increases with the lowest noise at 16kHz.

The octave analysis chart for the sound pressure recorded at KMK Metals Recycling Ltd facility on 30-07-09 shows a general trend for all monitoring locations. At low frequencies (20 Hz to 63 Hz) the sound pressure is highest between 50 dB(A) and 70 dB(A). A gradual decrease in sound pressure readings is noted with each increase in frequency bandwidth until the lowest sound pressure approximately between 10 dB(A) and 40 dB(A) is noted for each monitoring location after the 16KHz bandwidth. This charts highlights that primary noise arising at the site boundary and in the surrounding area is primary low frequency range (20 Hz to 63KHz).

At mid to high frequency bandwidth's (400 to 4 KHz) monitoring positions N1, N2, N3 & N4 all located at boundaries of KMK's site displayed very similar sound pressure levels at the low 50s dB(A). These locations are strongly influenced by site activities as they are in the closest proximity to on-going operations and vehicle movements.

N5 monitoring location showed the lowest sound pressure level throughout all frequencies. At this location, noise was less audible and possibly the building at D4 was acting as a noise barrier at this location.

N8 had the highest sound pressure level throughout all frequencies. There were two distinct peaks also for N8 at 40 Hz and 160 Hz (low frequencies). The highest peak exceeded 70 dB(A) at 160Hz. This location was significantly

influenced by noise originating at other commercial sites and especially the Modified Motors shop close by.

N6, positioned near the unloading of LHA's (Cold) for storage to the front of the facility at the D4 yard area, received sound pressure readings between 55 dB(A) and 60 dB(A) at mid frequency bandwidth's. Forklifts operating, the moving of metal and the noise vehicles on the immediate roadway in close proximity to the site boundary along with other general site operations all influenced these mid to high frequency noise readings.

Analysis of the octave frequencies at the KMK Metals Recycling facility show all monitoring stations to have a close relationship across the varying bandwidths. As mentioned the general trend noted is an initial high sound pressure at low frequency (20Hz) with a gradual drop and levelling off in sound pressure at mid frequency (400 Hz to 2KHz) and a sharp drop in sound pressure from 4 kHz to 16 kHz onwards (apart from Stations N1 & N8).

3.2 1/3 Octave Analysis

In this section, all charts of individual noise monitoring locations (N1 to N8) as produced in Appendix A will be discussed.

N1 positioned on the east boundary of the carpark showed an initial peak in the sound pressure of 65 dB(A) at 50 Hz. This was followed by a relatively sharp drop (4 dB(A) in sound pressure at 63 Hz and continuing in gradually after that until a sound pressure of 52 dB(A) was noted from 250Hz to 500 Hz. The sound pressure continued to slightly drop further and the lowest result was at 20kHz with a sound pressure of 35 dB(A). The N1 noise monitoring station was the located close to one of the sites entrance gates and in close proximity to forklift trucks operating located nearby. The nature in sound pressure at this location was gradual with no sharp peaks noticeable and no tones detected.

N2 positioned on the eastern boundary of the site displayed an initial peak in the sound pressure of 62 dB(A) at 20 Hz. Sound pressure levels then proceeded to drop with an increase in frequency and this continued until the lowest sound pressure was recorded 23 dB(A) at 20 kHz. Specific noise sources recorded at this station included noise from forklift trucks in the yard area, reverse alarms, movement of cages and vehicle movements on the nearby industrial estate road. The nature in sound pressure at this location was gradual with no sharp peaks noticeable and no tones detected.

N3 positioned on the south-western boundary of the facility showed an initial peak in the sound pressure of 63 dB(A) at 40 Hz. This was followed by a sharp drop of 10 dB(A) in sound pressure at 50 Hz. A slight rise in sound pressure levels of 56 dB(A) was noted at 100 Hz and this was followed by a continual and gradual drop in sound pressure of with an increase in frequency throughout the bandwidth spectrum. Noise levels at this location were dominated by the processing operations (CRT plant and associated manual manipulation practices i.e. hammers, drills etc). There was also background noise which was sourced from a radio in the D3 building and loud conversations from workers. The nature

in sound pressure at this location was slightly erratic which would explain the CRT processes with a drop in sound pressure from 63 dB(A) to 53 dB(A) from 31.5 Hz to 40 Hz. However, there were no tones detected despite this sharp drop as there must be >5 dB difference either side of the peak noise which was not evident.

N4 positioned along the western boundary, shows an initial peak in the sound pressure of 61 dB(A) from 20 to 31.5 Hz. This was followed by a relatively sharp drop, 5 dB(A) in sound pressure, at 40 Hz and continuing in gradually after that until a sound pressure of 48 dB(A) was noted at 100 Hz. There was a slight rise in sound pressure, 52 dB(A), at 160 Hz and followed by a steady sound pressure level of 52 dB(A) from 500 Hz to 1 kHz (mid frequency range). Sound pressure levels proceeded to drop noticeably after this as the frequency scale increased. Monitoring records at station N4 show that most noise source emanated from forklift trucks in operation either loading or unloading trailers and LHA baler use inside D building. There were no tones detected at this location.

N5 positioned to the north-western boundary of the D4 yard area, showed an initial peak in sound pressure of 57 dB(A) at 31.5 Hz. This sound pressure level then proceeded to decrease with an increase in frequency throughout the all frequency bandwidth spectrums. This noise monitoring location showed the lowest noise levels on the day and this was possibly due to barriers effects from D4 building and also a wall and shipment containers placed between D4 yard and DX area. These features of the site effectively were in the line of sight of the noise monitoring location and therefore acted as barriers between the noise monitor and the noise sources (i.e. fork trucks, baler in D etc). There were no tones detected at this location.

N6 positioned on the western boundary of the D4 building showed a general erratic nature of sound pressure levels throughout the whole frequency spectrum. However, there were no peaks detected. Sound pressure levels were consistently between 60 dB(A) and 51 dB(A) from 20 Hz to 3.15 kHz. Noise was dominated by a varying mixture of traffic both within and outside of the KMK Metal's site. This noise monitoring location was quite loud but typical of industrial estate environments. The nature of sound pressure recorded is not likely result in complaints as there were no peaks detected and therefore no real noticeable noise effects. There were no tones detected at this location.

N7 positioned to the north-western boundary of the proposed E area, showed an initial peak in sound pressure of 63 dB(A) at 31.5 Hz. This sound pressure level then proceeded to decrease to 56 dB(A) at 100 Hz and drop sharply to 50 dB(A) at 125 Hz. From 125 Hz onwards to 20 kHz the sound pressure decreased in a relatively steady fashion. The sharp drop in sound pressure level at 125 Hz is noticeable but did not result in a tone detected. Noise at this locations was dominated by another waste company using this space for large skip set-downs and vehicular noise in the estate.

N8 positioned on the north-east boundary of the proposed E area showed a general erratic nature of sound pressure levels from the low to mid frequency

bandwidths. There were two distinct peaks; 69 dB(A) at 40 Hz and 72 dB(A) at 125 Hz. Each peak was followed by a sharp drop in sound pressure level at the next immediate frequency e.g. 72 dB(A) at 125 Hz followed by 63 dB(A) at 160 Hz. A steady sound pressure level of between 58 and 59 d B(A) was noted in the mid to high frequency bandwidth of 1 kHz to 4 kHz. The erratic sound pressure can be explained by the varying noises from neighbouring industrial sites ranging from vehicular types to machinery noises. However, there were no tones detected despite this sharp drop as there must be >5 dB difference either side of the peak noise which was not evident.

Overall results for the 1/3 octave analysis at the KMK Metal Recycling facility, show level of noise to be moderate at the boundaries of the facility, with primary noise arising from the movement of forklift trucks associated with unloading of WEEE for processing and LHA's (cold) for storage at the KMK Metals facility. Noise at the proposed E area was dominated by activities from neighbouring sites within the industrial estate.

4.0 Conclusions

Environmental noise monitoring was carried out by ENVIROCO Management Ltd at the KMK Metals Recycling Ltd facility situated within the Cappincur Industrial Estate, Daingean Road, Tullamore, Co. Offaly, on the 30th July 2009. Monitoring was requested by Mr. Kurt Kyck of KMK Metals Recycling Ltd as part of the waste licence review application and associated EIS for submission to the Environmental Protection Agency.

Noise monitoring was conducted utilising the Type 1 Bruel Kjaer 2250 SLM with wind muffler noise meter. This monitor operates as a Real Time Analyser (RTA) and Sound Level Meter (SLM), enabling both statistical analysis of the audible noise and breakdown of the sound pressure recorded into frequency bandwidths.

The statistical analysis of the noise at boundary monitoring stations shows that L_{Aeq} levels increase with proximity to the main road. Notes of audible noise sources taken by staff of ENVIROCO Management Ltd. noted that primary noise arising from the activities at the KMK Metals facility were located to the front of the site (northern and western boundaries).

Statistical analysis of noise at sensitive receivers was lower at stations located east and south of the site. Each of noise monitoring locations except for N5 provided readings which were above the EPA recommended guidelines of 55 dB (A), the highest reading was from the N8 station which was taken to the north-east of the proposed E area and this was associated largely with operations occurring at industrial units in close proximity to the station. A large number of vehicle movements were noted (trucks, cars, jeeps and cars) of which only a very small amount could be associated with the KMK Metals facility. The general operational noise from the site was only slightly audible intermittently at this location.

Octave analysis of the measurements taken at the facility boundaries and at noise sensitive locations, show a general trend for sound pressure to start low at low frequency, increasing gradually to mid-frequency ranges and a peak at higher frequency levels, with an overall reduction in sound pressure levels from the 3.15KHz to 8KHz. There were no

tonal components of noise recorded during the day. Overall results for the 1/3 octave analysis at the KMK Metal Recycling facility, show level of noise to be moderate at the boundaries of the facility, with primary noise arising from the movement of forklift trucks associated with unloading of WEEE for processing and LHA's (cold) for storage at the KMK Metals facility. Noise at the proposed E area was dominated by activities from neighbouring sites within the industrial estate.

Noise monitoring at the KMK Metals Recycling Ltd facility during this event has shown that the noise levels have decreased overall in comparison with the 2008 noise monitoring event. The results of the noise survey show that noise emissions from the KMK Metals facility are not significant and will not have any negative effect of neighbouring businesses.

Appendix A

- **Noise Results & Charts**

Noise Results

Client: KMK Metals Recycling Ltd
Site: Cappincur Industrial Estate, Daingean Road, Tullamore, Co. Offaly
Monitoring Date: 30th July 2009
Sampler: Pamela Maleady (ENVIROCO Management Ltd)
Weather: Light to moderate breeze, warm with clear skies, becoming increasingly overcast as the day progressed resulting in a brief rain shower.
Equipment: Type 1 Bruel Kjaer 2250 SLM with wind muffler

Table 1 Noise Results

Number	Time	Duration (min)	L_{eq} dB(A)	L_{max} dB(A)	L_{min} dB(A)	$L_{(1)}$ dB(A)	$L_{(5)}$ dB(A)	$L_{(10)}$ dB(A)	$L_{(50)}$ dB(A)	$L_{(90)}$ dB(A)	$L_{(95)}$ dB(A)	$L_{(99)}$ dB(A)
N1	09:21	30:00	62	92	45	71	64	61	55	51	51	48
N2	10:00	30:00	59	86	39	70	63	61	49	43	42	41
N3	10:39	30:00	60	77	49	70	65	63	57	54	54	52
N4	11:19	30:00	61	80	52	68	64	63	60	57	57	53
N5	11:55	30:00	49	70	41	54	52	51	48	46	45	43
N6	12:30	30:00	64	81	49	71	67	66	64	54	52	51
N7	13:24	30:00	58	83	37	68	59	58	47	41	40	39
N8	13:58	30:00	70	104	39	77	72	68	53	44	43	41

Notes

Table 2 Notes Regarding Monitoring Positions

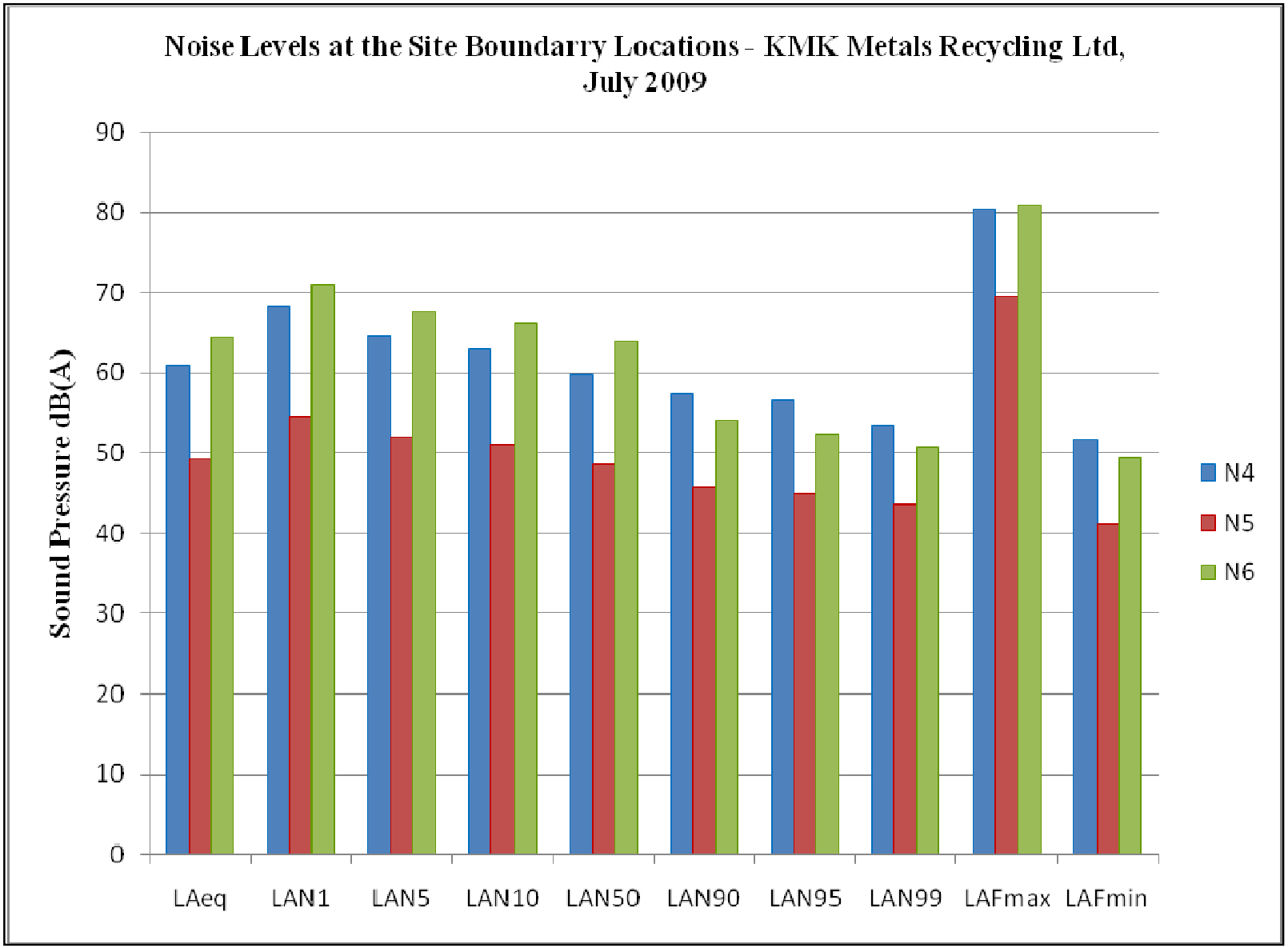
Number	Grid Ref.*		Comments
	Easting	**Northing**	
N1	635950	725047	Car park at fence boundary
N2	635956	725002	Eastern boundary, beside disused portacabin
N3	635863	724963	Fence at South-western boundary
N4	635872	725008	Western boundary
N5	635862	725032	North-western boundary at washing machine processing area
N6	635906	725043	Northern beside the fridge storage area (D4 yard)
N7	635908	725115	Located at the North-western boundary of the area proposed for inclusion in the revised D5 yard area
N8	635951	725114	Located at the North-eastern boundary of the area proposed for inclusion in the revised D5 yard area

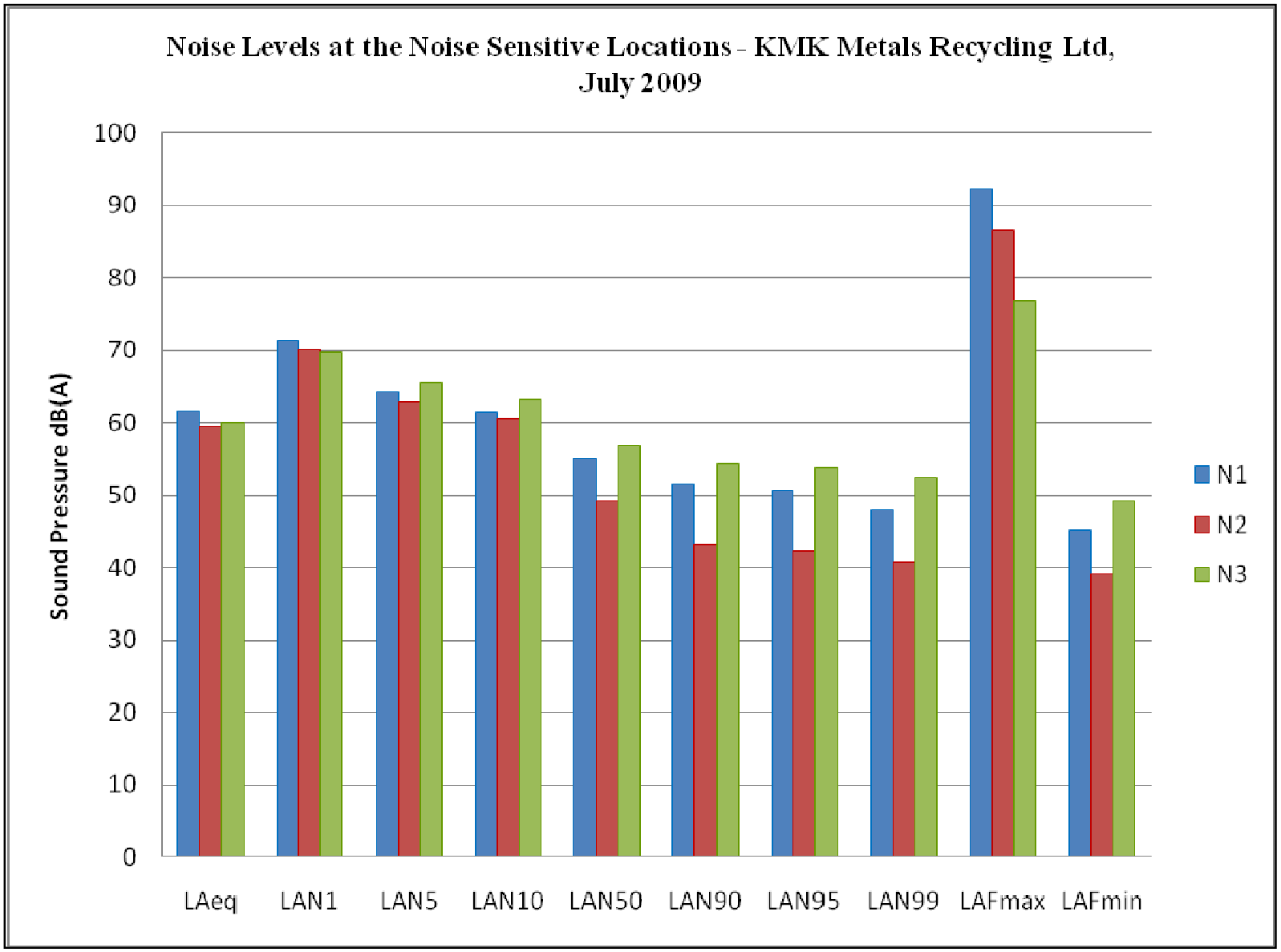
*Grid reference are 6 figure ITM reference

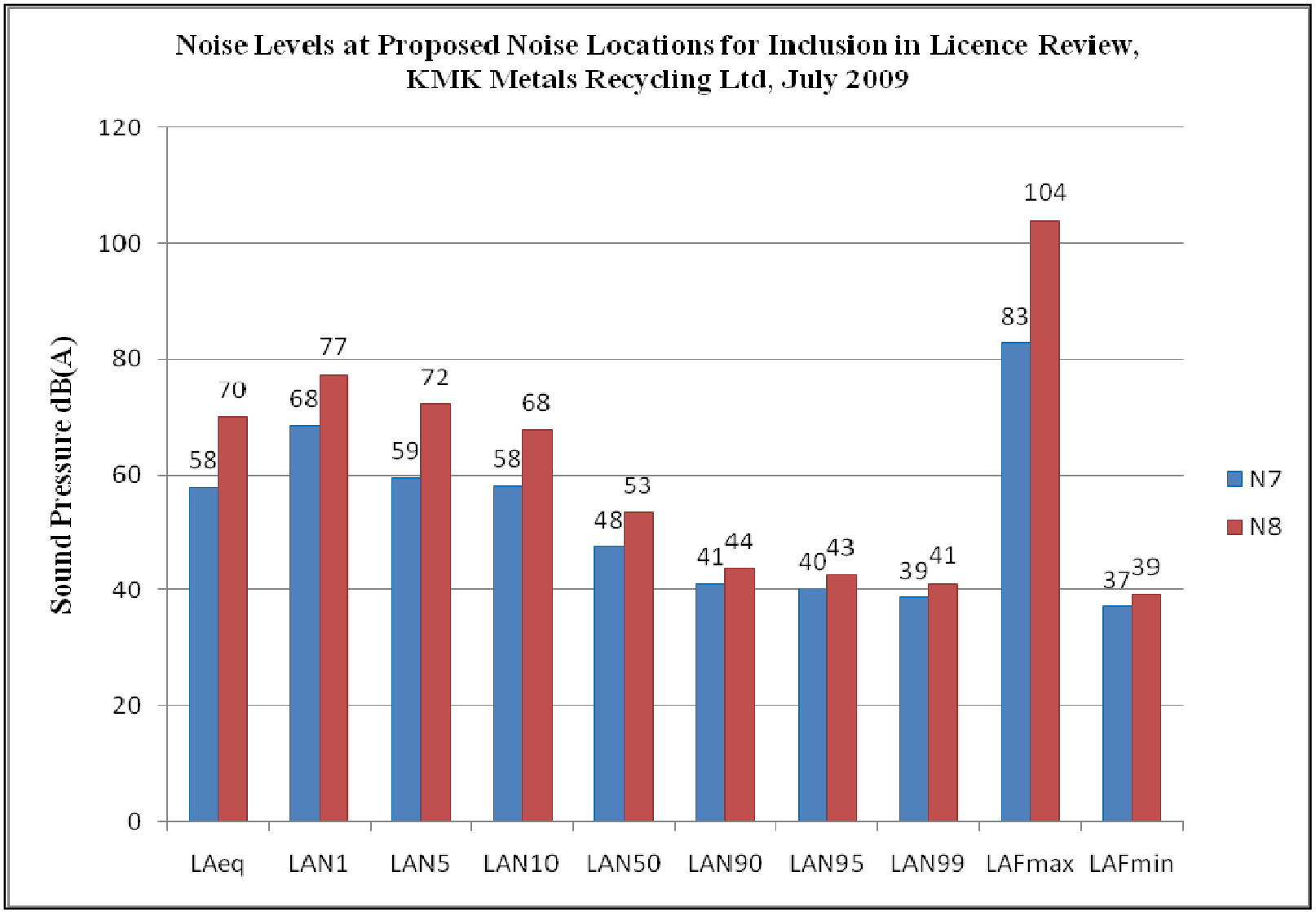
Table 3 Weather Data 30-07-09

Weather Station	Rain (mm)	Max temp (˚C)	Min temp (˚C)	Sun (hours)	Gust (knots)	Wind (knots)
Birr	5.4	18.3	8.8	8.8	0	6.3

The above data refer to the period midnight to midnight They are provisional data and have not been quality controlled Rain is total precipitation plus deposition in mm. Max is the maximum temperature in Degrees Celsius Min is the minimum temperature in Degrees Celsius Sun is the total sunshine in hours Gust is the highest gust of wind in knots if 34 knots or greater Wind is the mean wind speed in knots Soil is the mean 10cm temperature in Degrees Celsius G_{min} is the minimum temperature on a grass surface in Degrees Celsius.


Noise Levels at the Site Boundarry Locations - KMK Metals Recycling Ltd, July 2009
Sound Pressure dB(A)
90
80
70
60
50
40
30
20
10
0
LAeq
LAN1
LAN5
LAN10
LAN50
LAN90
LAN95
LAN99
LAFmax
LAFmin
N4
N5
N6


Noise Levels at the Noise Sensitive Locations - KMK Metals Recycling Ltd, July 2009
Sound Pressure dB(A)
100
90
80
70
60
50
40
30
20
10
0
LAeq
LAN1
LAN5
LAN10
LAN50
LAN90
LAN95
LAN99
LAFmax
LAFmin
N1
N2
N3


Noise Levels at Proposed Noise Locations for Inclusion in Licence Review,
KMK Metals Recycling Ltd, July 2009
Sound Pressure dB(A)
120
100
80
60
40
20
0
58
70
68
77
59
72
58
68
48
53
41
44
40
43
39
41
83
104
37
39
LAeq
LAN1
LAN5
LAN10
LAN50
LAN90
LAN95
LAN99
LAFmax
LAFmin
N7
N8

Noise Results

Client: KMK Metals Recycling Ltd
Site: Cappincur Industrial Estate, Daingean Road, Tullamore, Co. Offaly
Monitoring Date: 30th July 2009
Sampler: Pamela Maleady (ENVIROCO Management Ltd)
Weather: Light to moderate breeze, warm with clear skies, becoming increasingly overcast as the day progressed resulting in a 20 minute rain shower.
Equipment: Type 1 Bruel Kjaer 2250 SLM with wind muffler

Notes:
The Bruel Kjaer 2250 SLM was calibrated to 114 dB prior to sampling.

Table 1 Record of Monitoring Events and L_{Aeq} values

Rec #	Date	Time	Duration	L_{eq}
N1	30th July 09	09:21	30:00	62
N2	30th July 09	10:00	30:00	59
N3	30th July 09	10:39	30:00	60
N4	30th July 09	11:19	30:00	61
N5	30th July 09	11:55	30:00	49
N6	30th July 09	12:30	30:00	64
N7	30th July 09	13:24	30:00	58
N8	30th July 09	13:58	30:00	70

Table 2 Monitoring Locations

Monitoring Locations	Grid Reference (ING)	
	Easting	Northing
N1	635950	725047
N2	635956	725002
N3	635863	724963
N4	635872	725008
N5	635862	725032
N6	635906	725043
N7	635908	725115
N8	635951	725114

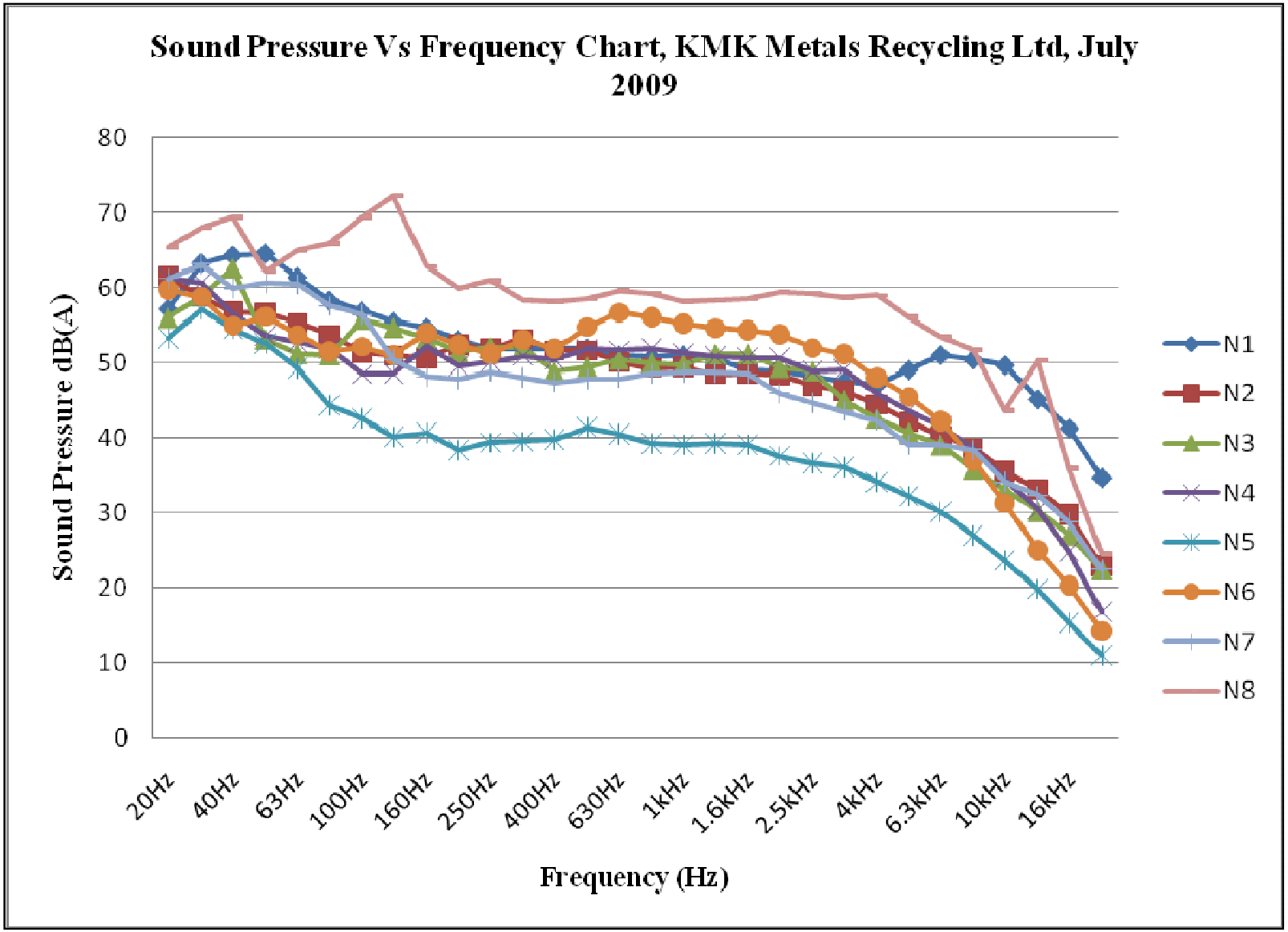
Table 5 Statistical Analysis of Noise Readings

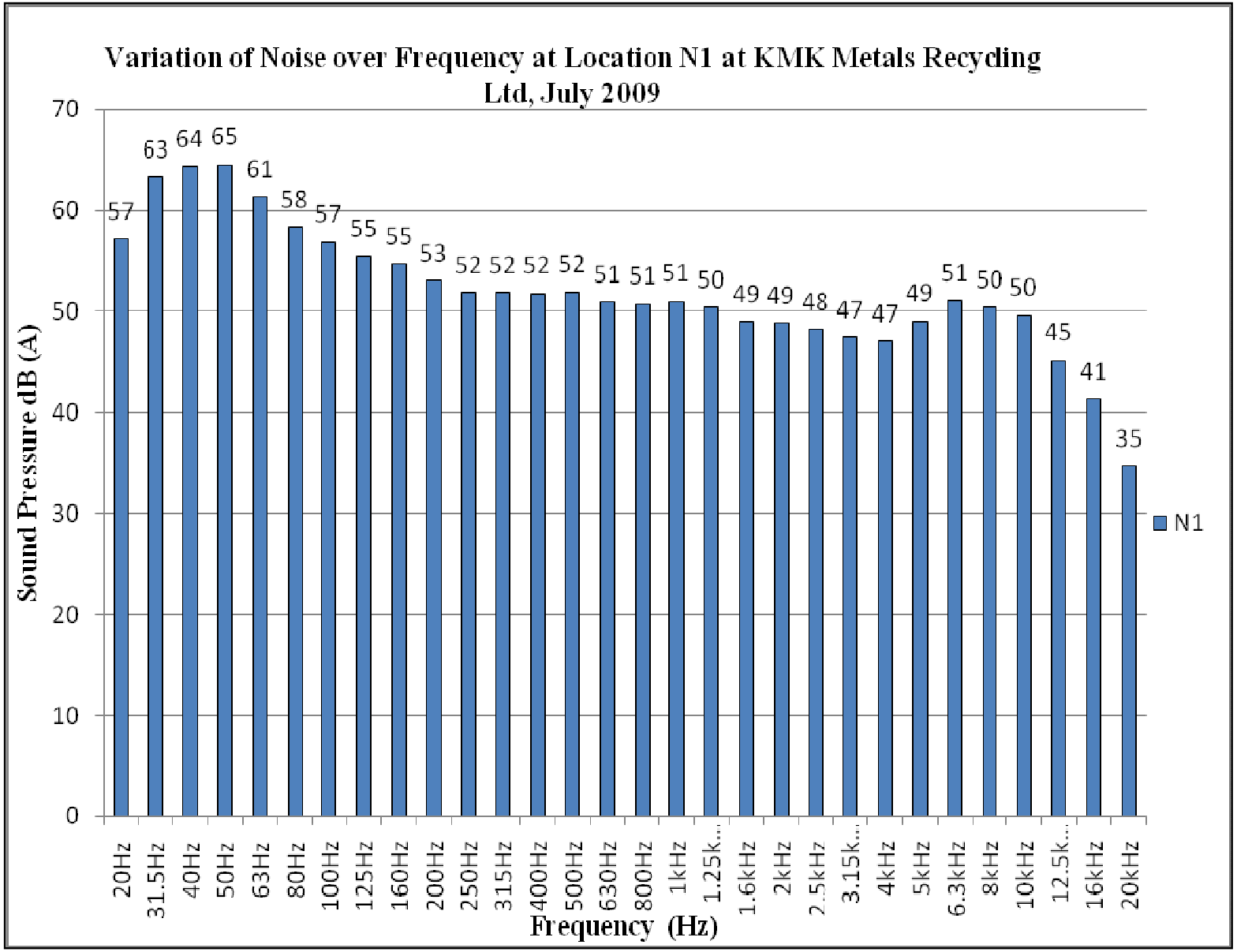
Project Name	LAeq	LAN 01	LAN 05	LAN 10	LAN 50	LAN 90	LAN 95	LAN 99
N1	62	71	64	61	55	51	51	48
N2	59	70	63	61	49	43	42	41
N3	60	70	65	63	57	54	54	52
N4	61	68	64	63	60	57	57	53
N5	49	54	52	51	48	46	45	43
N6	64	71	67	66	64	54	52	51
N7	58	68	59	58	47	41	40	39
N8	70	77	72	68	53	44	43	41

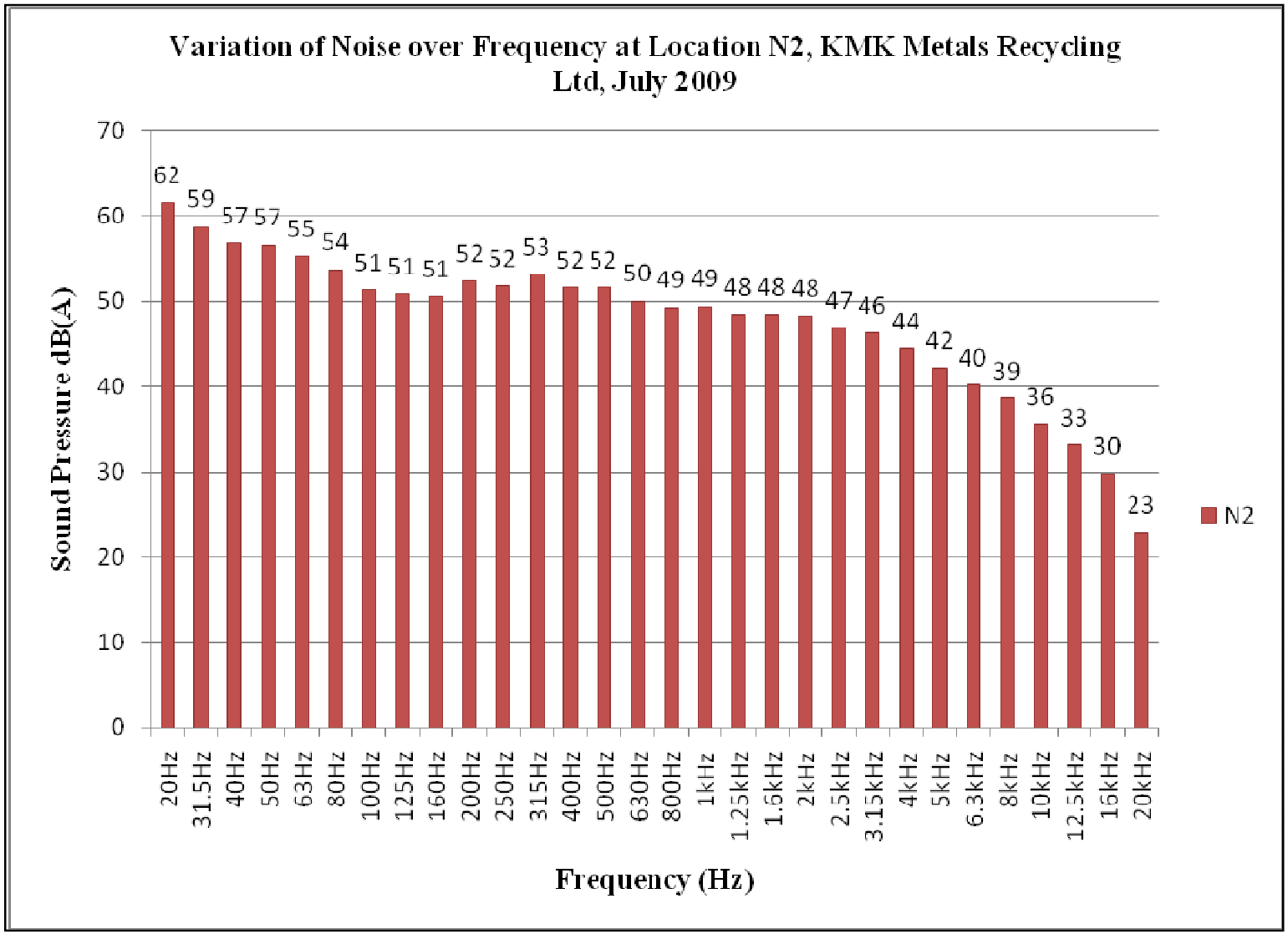
Table 6 L_{Aeq} Full Octave Analysis of Noise Measurements, taken on the 30th July 2009

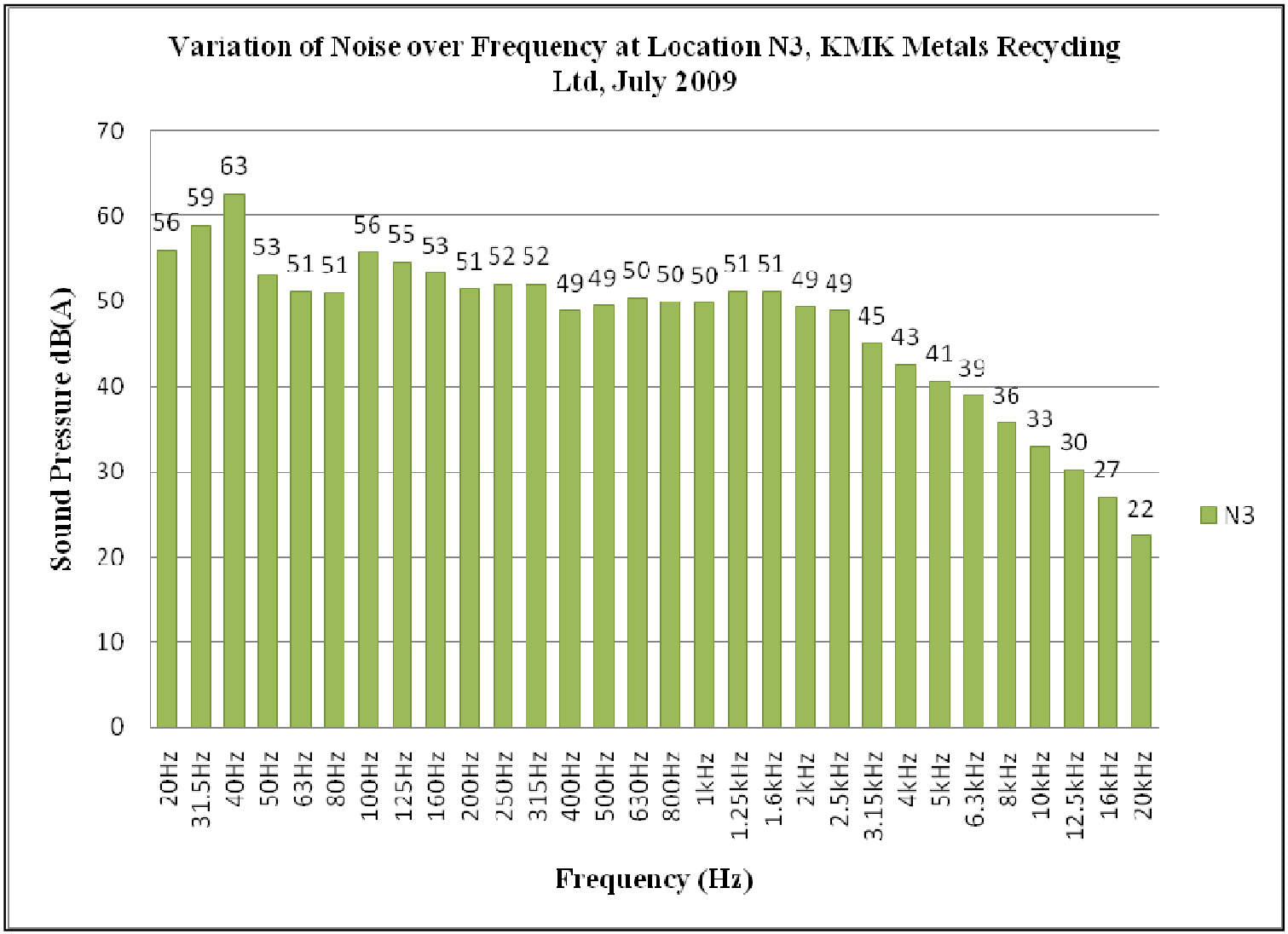
	L_{Aeq} Frequency (Hz)																		
Project Name	**12.5**	**16**	**20**	**25**	**31.5**	**40**	**50**	**63**	**80**	**100**	**125**	**160**	**200**	**250**	**315**	**400**	**500**	**630**	**800**
N1	60	59	57	62	63	64	64	61	58	57	55	55	53	52	52	52	52	51	51
N2	66	64	61	61	59	57	57	55	54	51	51	51	52	52	53	51	52	50	49
N3	60	58	56	57	59	63	53	51	51	56	55	53	51	52	52	49	49	50	50
N4	66	64	61	59	61	56	54	53	52	48	48	52	49	50	51	50	52	52	52
N5	57	55	53	52	57	54	52	49	44	42	40	41	38	39	59	40	41	40	39
N6	65	63	60	60	59	55	56	54	51	52	51	54	52	51	53	52	55	57	56
N7	65	63	61	61	63	60	60	60	57	56	50	48	48	49	48	47	48	48	48
N8	63	63	65	63	68	70	62	65	66	69	72	63	60	61	58	58	59	60	59

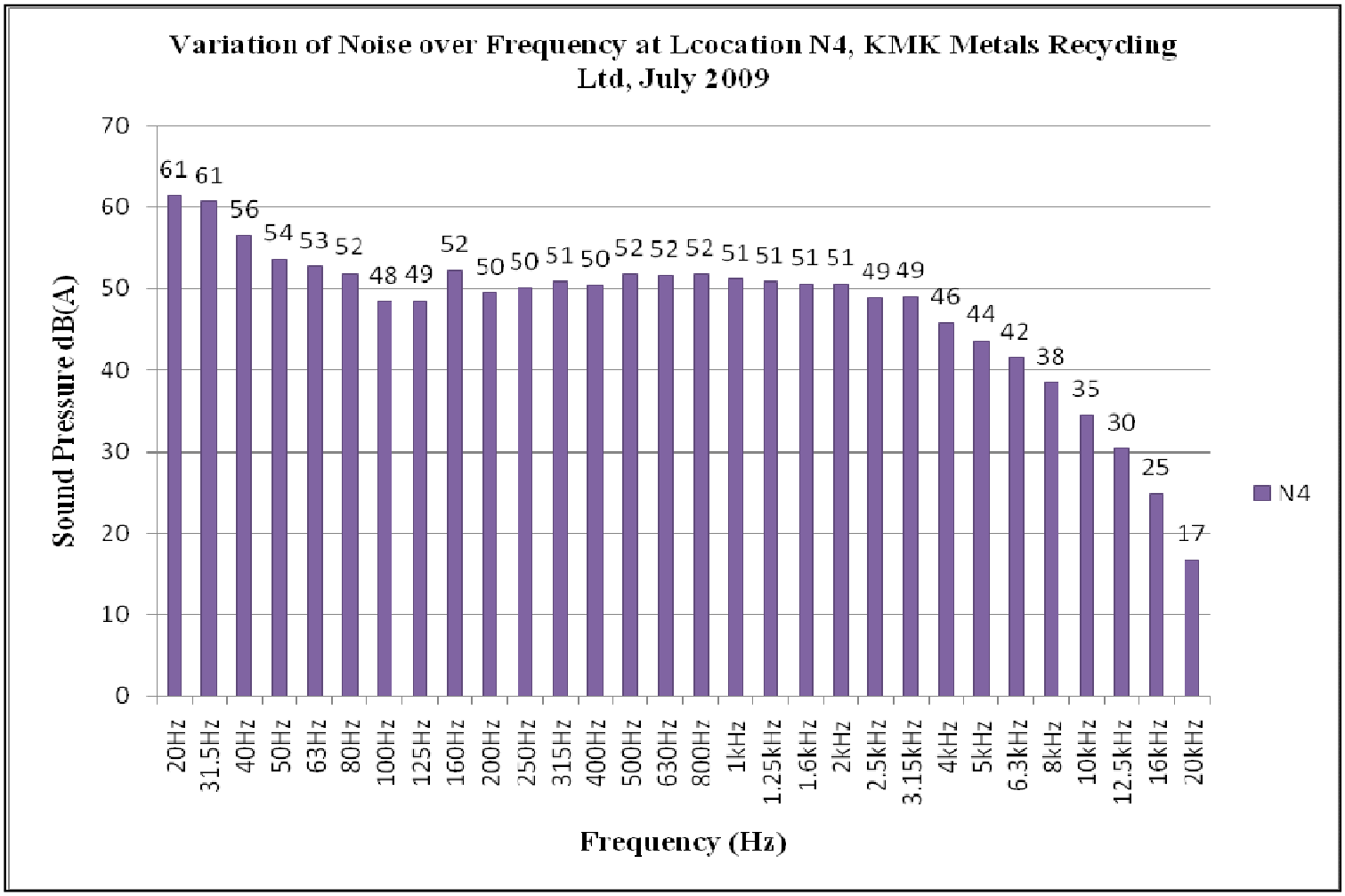
	L_{Aeq} Frequency (Hz)													
Rec#	**1k**	**1.25k**	**1.6k**	**2k**	**2.5k**	**3.15k**	**4k**	**5k**	**6.3k**	**8k**	**10k**	**12.5k**	**16k**	**20k**
N1	51	50	49	49	48	47	47	49	51	50	50	45	41	35
N2	49	48	48	48	47	46	44	42	40	39	35	33	30	23
N3	48	51	51	49	49	45	42	41	39	36	33	30	27	22
N4	51	51	50	50	49	49	46	44	41	38	34	30	25	17
N5	39	39	39	37	36	36	34	32	30	27	24	20	15	11
N6	55	54	54	54	52	51	48	45	42	37	31	25	20	14
N7	49	49	48	46	45	43	42	39	39	38	34	32	29	22
N8	58	58	58	59	59	59	59	56	53	52	44	50	36	24

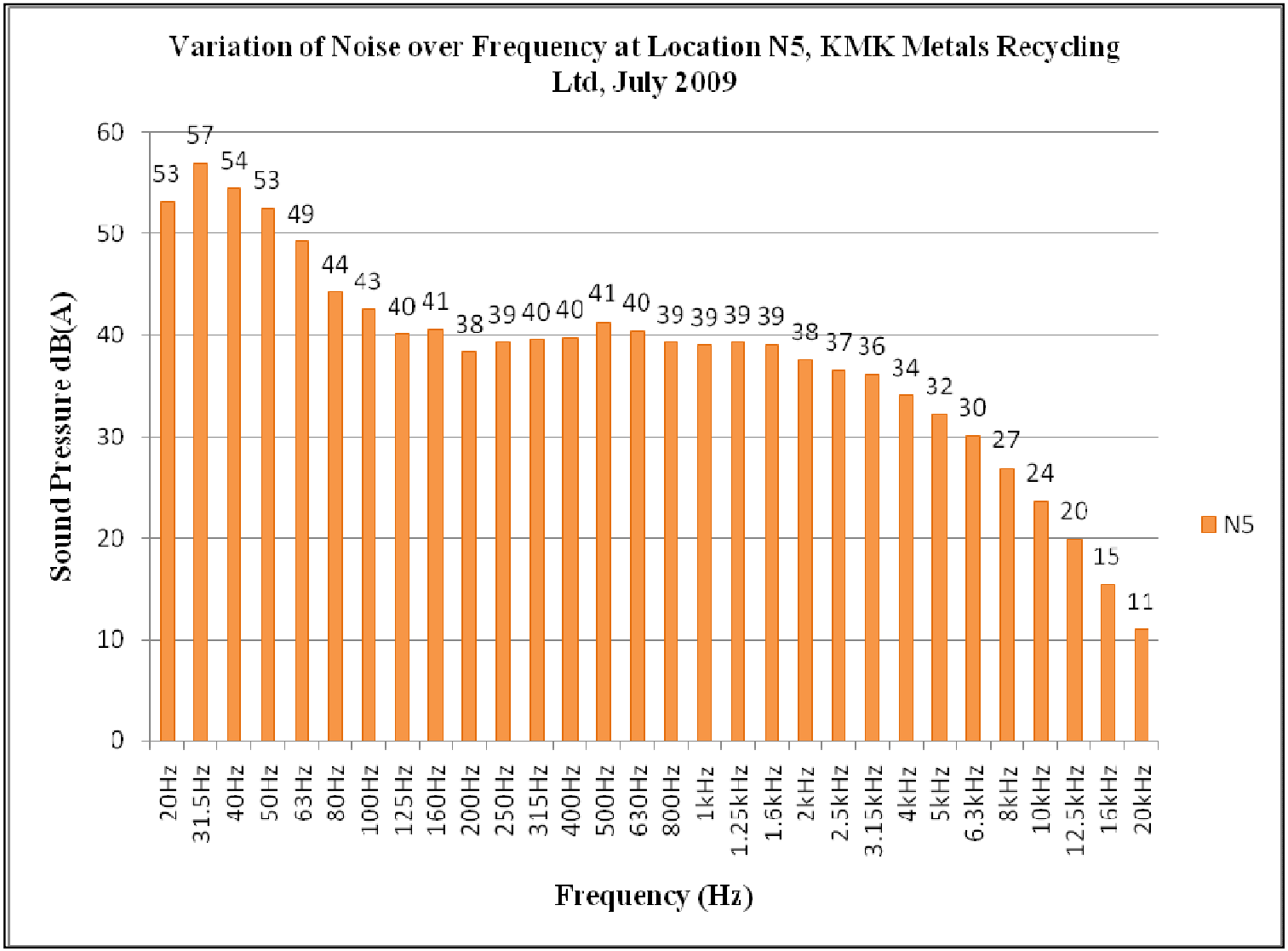

Sound Pressure Vs Frequency Chart, KMK Metals Recycling Ltd, July 2009
Sound Pressure dB(A)
80
70
60
50
40
30
20
10
0
20Hz
40Hz
63Hz
100Hz
160Hz
250Hz
400Hz
630Hz
1kHz
1.6kHz
2.5kHz
4kHz
6.3kHz
10kHz
16kHz
Frequency (Hz)
N1
N2
N3
N4
N5
N6
N7
N8

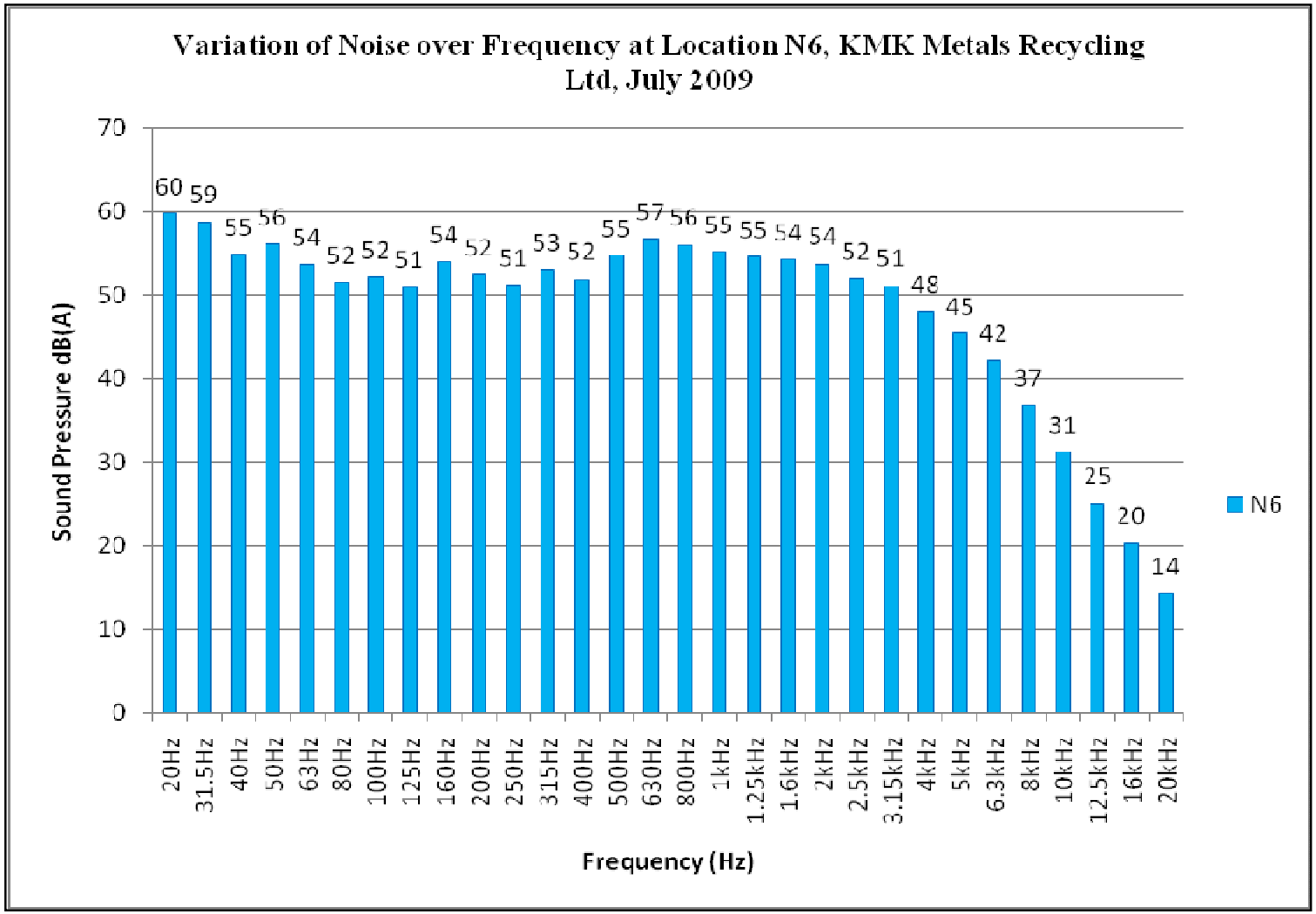

Variation of Noise over Frequency at Location N1 at KMK Metals Recycling Ltd, July 2009
Sound Pressure dB (A)
Frequency (Hz)
N1
0
10
20
30
40
50
60
70
57
63
64
65
61
58
57
55
55
53
52
52
52
52
51
51
51
50
49
49
48
47
47
49
51
50
50
45
41
35
20Hz
31.5Hz
40Hz
50Hz
63Hz
80Hz
100Hz
125Hz
160Hz
200Hz
250Hz
315Hz
400Hz
500Hz
630Hz
800Hz
1kHz
1.25k...
1.6kHz
2kHz
2.5kHz
3.15k...
4kHz
5kHz
6.3kHz
8kHz
10kHz
12.5k...
16kHz
20kHz

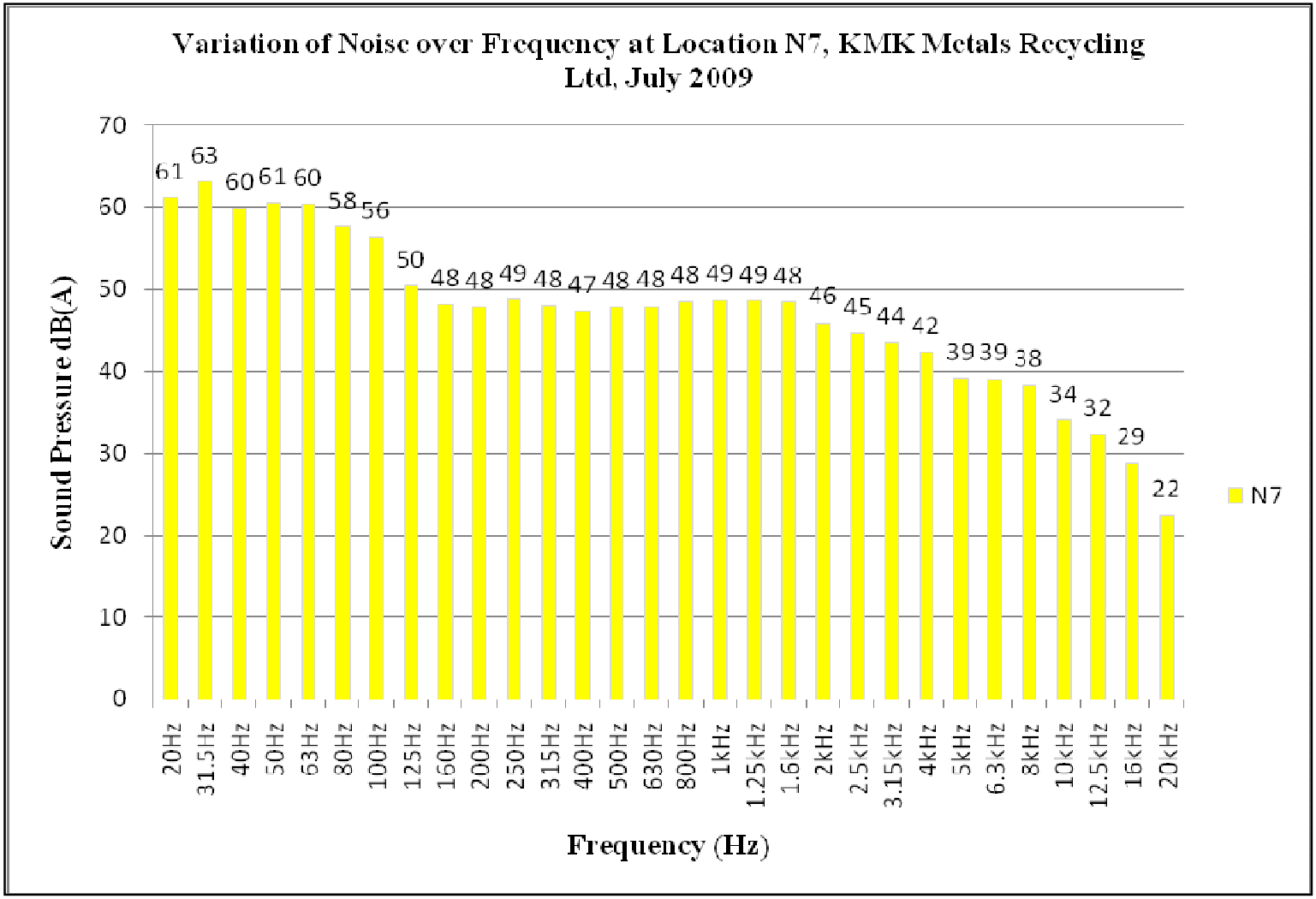

Variation of Noise over Frequency at Location N2, KMK Metals Recycling Ltd, July 2009
Sound Pressure dB(A)
70
60
50
40
30
20
10
0
62 59 57 57 55 54 51 51 51 52 52 53 52 52 50 49 49 48 48 48 47 46 44 42 40 39 36 33 30 23
20Hz 31.5Hz 40Hz 50Hz 63Hz 80Hz 100Hz 125Hz 160Hz 200Hz 250Hz 315Hz 400Hz 500Hz 630Hz 800Hz 1kHz 1.25kHz 1.6kHz 2kHz 2.5kHz 3.15kHz 4kHz 5kHz 6.3kHz 8kHz 10kHz 12.5kHz 16kHz 20kHz
Frequency (Hz)
N2

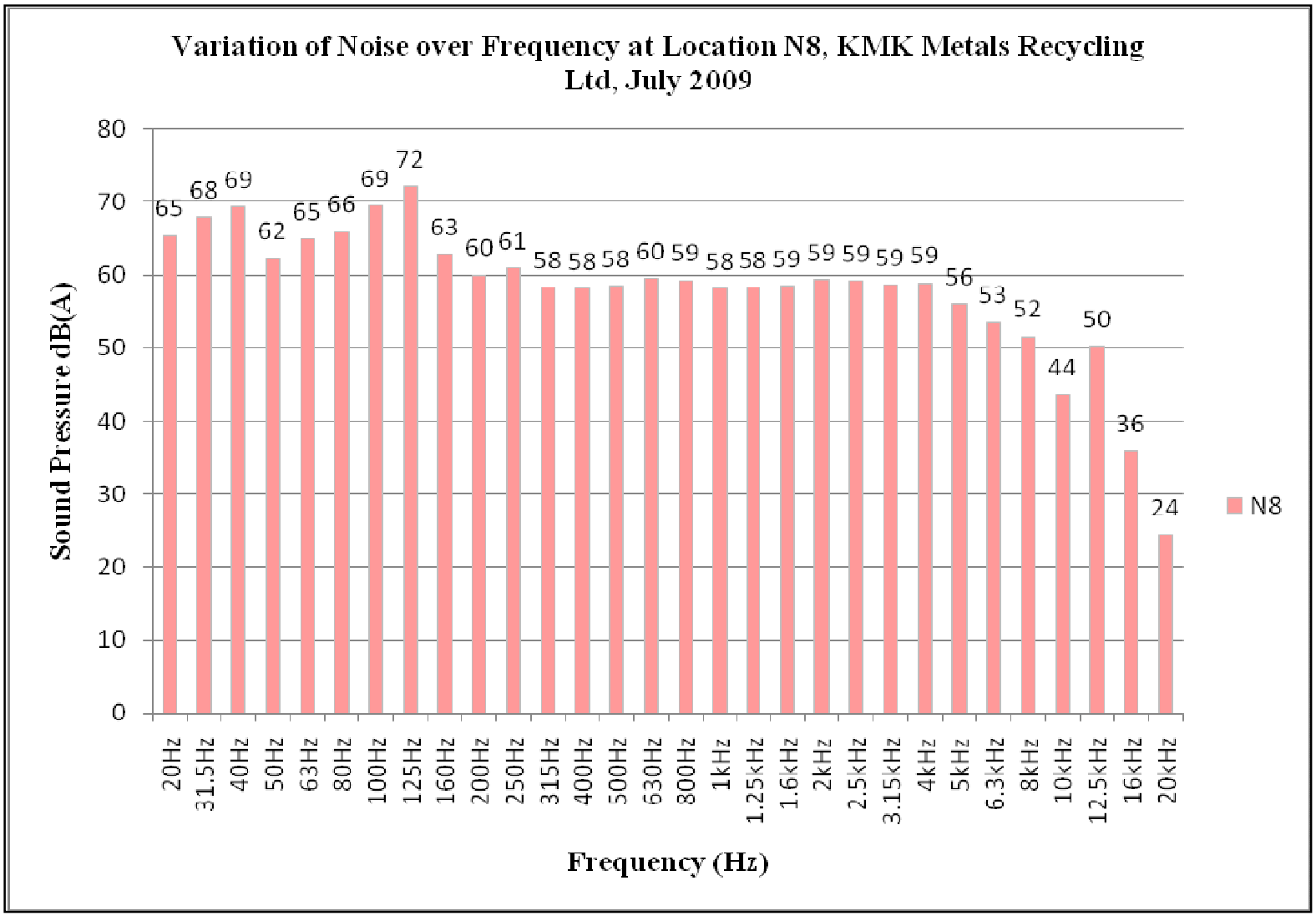

Variation of Noise over Frequency at Location N3, KMK Metals Recycling Ltd, July 2009
Sound Pressure dB(A)
70
60
50
40
30
20
10
0
56
59
63
53
51
51
56
55
53
51
52
52
49
49
50
50
50
51
51
49
49
45
43
41
39
36
33
30
27
22
20Hz
31.5Hz
40Hz
50Hz
63Hz
80Hz
100Hz
125Hz
160Hz
200Hz
250Hz
315Hz
400Hz
500Hz
630Hz
800Hz
1kHz
1.25kHz
1.6kHz
2kHz
2.5kHz
3.15kHz
4kHz
5kHz
6.3kHz
8kHz
10kHz
12.5kHz
16kHz
20kHz
Frequency (Hz)
N3


Variation of Noise over Frequency at Lcocation N4, KMK Metals Recycling Ltd, July 2009
Sound Pressure dB(A)
70
60
50
40
30
20
10
0
61 61 56 54 53 52 48 49 52 50 50 51 50 52 52 52 51 51 51 51 49 49 46 44 42 38 35 30 25 17
20Hz 31.5Hz 40Hz 50Hz 63Hz 80Hz 100Hz 125Hz 160Hz 200Hz 250Hz 315Hz 400Hz 500Hz 630Hz 800Hz 1kHz 1.25kHz 1.6kHz 2kHz 2.5kHz 3.15kHz 4kHz 5kHz 6.3kHz 8kHz 10kHz 12.5kHz 16kHz 20kHz
Frequency (Hz)
N4


Variation of Noise over Frequency at Location N5, KMK Metals Recycling Ltd, July 2009
Sound Pressure dB(A)
60
50
40
30
20
10
0
53
57
54
53
49
44
43
40
41
38
39
40
40
41
40
39
39
39
39
38
37
36
34
32
30
27
24
20
15
11
20Hz
31.5Hz
40Hz
50Hz
63Hz
80Hz
100Hz
125Hz
160Hz
200Hz
250Hz
315Hz
400Hz
500Hz
630Hz
800Hz
1kHz
1.25kHz
1.6kHz
2kHz
2.5kHz
3.15kHz
4kHz
5kHz
6.3kHz
8kHz
10kHz
12.5kHz
16kHz
20kHz
Frequency (Hz)
N5


Variation of Noise over Frequency at Location N6, KMK Metals Recycling Ltd, July 2009
Sound Pressure dB(A)
70
60
50
40
30
20
10
0
60 59 55 56 54 52 52 51 54 52 51 53 52 55 57 56 55 55 54 54 52 51 48 45 42 37 31 25 20 14
20Hz 31.5Hz 40Hz 50Hz 63Hz 80Hz 100Hz 125Hz 160Hz 200Hz 250Hz 315Hz 400Hz 500Hz 630Hz 800Hz 1kHz 1.25kHz 1.6kHz 2kHz 2.5kHz 3.15kHz 4kHz 5kHz 6.3kHz 8kHz 10kHz 12.5kHz 16kHz 20kHz
Frequency (Hz)
N6


Variation of Noise over Frequency at Location N7, KMK Metals Recycling Ltd, July 2009
Sound Pressure dB(A)
70
60
50
40
30
20
10
0
61 63 60 61 60 58 56 50 48 48 49 48 47 48 48 48 49 49 48 46 45 44 42 39 39 38 34 32 29 22
20Hz 31.5Hz 40Hz 50Hz 63Hz 80Hz 100Hz 125Hz 160Hz 200Hz 250Hz 315Hz 400Hz 500Hz 630Hz 800Hz 1kHz 1.25kHz 1.6kHz 2kHz 2.5kHz 3.15kHz 4kHz 5kHz 6.3kHz 8kHz 10kHz 12.5kHz 16kHz 20kHz
Frequency (Hz)
N7


Variation of Noise over Frequency at Location N8, KMK Metals Recycling Ltd, July 2009
Sound Pressure dB(A)
0
10
20
30
40
50
60
70
80
65 68 69 62 65 66 69 72 63 60 61 58 58 58 60 59 58 58 59 59 59 59 59 56 53 52 44 50 36 24
20Hz 31.5Hz 40Hz 50Hz 63Hz 80Hz 100Hz 125Hz 160Hz 200Hz 250Hz 315Hz 400Hz 500Hz 630Hz 800Hz 1kHz 1.25kHz 1.6kHz 2kHz 2.5kHz 3.15kHz 4kHz 5kHz 6.3kHz 8kHz 10kHz 12.5kHz 16kHz 20kHz
Frequency (Hz)
N8

APPENDIX 6

Water Quality Analysis Test Certificate

Complete Laboratory Solutions
Ros Muc, Co. Galway.
[Tel] 091 574355
[Fax] 091 574356
[Email] info@cls.ie
[web] www.completelabsolutions.com

Client :	Eamon Lee / Eimear Gormally	Report No.	: 88595
	Enviroco Management Ltd.	Date of Receipt	: 20/02/2009
	Bow House, O'Moore Street,	Start Date of Analysis	: 20/02/2009
	Tullamore	Date of Report	: 06/03/2009
	Co. Offaly	Order Number	:
		Sample taken by	: Client

CERTIFICATE OF ANALYSIS

Results

Lab No	Sample Description	Test	Result	Units
199857	KNK. CK 1. Surface water.19/2/09	Suspended Solids	11	mg/l
		COD	64	mg/l
		pH	7.8	pH Units
		Conductivity @20C	1741	uS/cm
		Ammonia as NH3-N (sw)	15.883	mg/l
		Mineral oil	<10	ug/l

10 MAR 2009

Authorised by: Barbara Lee
Barbara Lee
Environmental Scientist

See scope for Test Specifications

Complete Laboratory Solutions
Ros Muc, Co. Galway.
[Tel] 091 574355
[Fax] 091 574356
[Email] info@cls.ie
[web] www.completelabsolutions.com

Client : Eamon Lee / Eimear Gormally
Enviroco Management Ltd.
Bow House, O'Moore Street,
Tullamore
Co. Offaly

Report No.	:	88596
Date of Receipt	:	20/02/2009
Start Date of Analysis	:	20/02/2009
Date of Report	:	06/03/2009
Order Number	:	
Sample taken by	:	Client

CERTIFICATE OF ANALYSIS

Results

Lab No	Sample Description	Test	Result	Units
199868	KMK. DX 1. Surface water.19/2/09	Suspended Solids	29	mg/l
		COD	231	mg/l
		pH	7.8	pH Units
		Conductivity @20C	1032	uS/cm
		Ammonia as NH3-N (sw)	0.286	mg/l
		Mineral oil	<10	ug/l

10 MAR 2009

Authorised by: Barbara Lee
Barbara Lee
Environmental Scientist

Secretariat for Test Specifications

Complete Laboratory Solutions
Ros Muc, Co. Galway.
[Tel] 091 574355
[Fax] 091 574356
[Email] info@cls.ie
[web] www.completelabsolutions.com

Client :	Eamon Lee / Eimear Gormally Enviroco Management Ltd. Bow House, O'Moore Street, Tullamore Co. Offaly	Report No.	: 92299
		Date of Receipt	: 07/05/2009
		Start Date of Analysis	: 07/05/2009
		Date of Report	: 03/06/2009
		Order Number	:
		Sample taken by	: Client

CERTIFICATE OF ANALYSIS

Results

Lab No	Sample Description	Test	Result	Units
212393	70676. CX KMC. 6/5/09	Suspended Solids	7	mg/l
		COD	14	mg/l
		pH	7.4	pH Units
		Conductivity @20C	1170	uS/cm
		Chloride [sw]	235.37	mg/l
		Iron, total	66	ug/l
		Arsenic, total	1	ug/l
		Zinc, total	8	ug/l
		Chromium, total	1	ug/l
		Nickel, total	2	ug/l
		Aluminium, Total	<20	ug/l
		Lead, total	<0.5	ug/l
		Mercury	<0.05	ug/l
		Extractable Hydrocarbons (DRO) (C8 to C40)	238 - Unknown Pattern	ug/l
		Mineral Oil	<100	ug/l
		TOC	30	mg/l

Authorised by: Barbara Lee
Barbara Lee
Environmental Scientist

See reverse for Test Specifications
This report only relates to items tested and shall not be reproduced but in full with the permission of Complete Laboratory Solutions.

Complete Laboratory Solutions
Ros Muc, Co. Galway.
[Tel] 091 574355
[Fax] 091 574356
[Email] info@cls.ie
[web] www.completelabsolutions.com

Client : Eamon Lee / Eimear Gormally
Enviroco Management Ltd.
Bow House, O'Moore Street,
Tullamore
Co. Offaly

Report No.	: 97449
Date of Receipt	: 06/08/2009
Start Date of Analysis	: 06/08/2009
Date of Report	: 14/08/2009
Order Number	:
Sample taken by	: Client

CERTIFICATE OF ANALYSIS

Results				
Lab No	Sample Description	Test	Result	Units
223995	CX KMK 7096Z. 5/8/09	Suspended Solids	14	mg/l
		COD	20	mg/l
		pH	7.6	pH Units
		Conductivity @20C	1332	uS/cm
		Iron, total	976	ug/l
		Ammonia as N	7.750	mg/l
		Arsenic, total	1.2	ug/l
		Zinc, total	44	ug/l
		Chromium, total	<0.5	ug/l
		Nickel, total	<0.5	ug/l
		Aluminium, Total	27	ug/l
		Lead, total	2.4	ug/l
		Mercury	<0.05	ug/l
		Extractable Hydrocarbons (DRO) (C8 to C40)	<100	ug/l
		Mineral Oil	<100	ug/l

Authorised by: Barbara Lee
Barbara Lee
Environmental Scientist

See reverse for Test Specifications
This report only relates to items tested and shall not be reproduced but in full with the permission of Complete Laboratory Solutions.

Complete Laboratory Solutions
Ros Muc, Co. Galway.
[Tel] 091 574355
[Fax] 091 574356
[Email] info@cls.ie
[web] www.completelabsolutions.com

Client	: Eamon Lee / Eimear Gormally	Report No.	:	97450
	Enviroco Management Ltd.	Date of Receipt	:	05/08/2009
	Bow House, O'Moore Street,	Start Date of Analysis	:	05/08/2009
	Tullamore	Date of Report	:	14/08/2009
	Co. Offaly	Order Number	:	
		Sample taken by	:	Client

CERTIFICATE OF ANALYSIS

Results				
Lab No	Sample Description	Test	Result	Units
223996	DX KNK 70962. 5/8/09	Suspended Solids	23	mg/l
		COD	55	mg/l
		pH	7.4	pH Units
		Conductivity @20C	581	uS/cm
		Iron, total	472	ug/l
		Ammonia as N	1.500	mg/l
		Arsenic, total	0.8	ug/l
		Zinc, total	198	ug/l
		Chromium, total	0.8	ug/l
		Nickel, total	<0.5	ug/l
		Aluminium, Total	163	ug/l
		Lead, total	221	ug/l
		Mercury	<0.05	ug/l
		Extractable Hydrocarbons (DRO) (C8 to C40)	<100	ug/l
		Mineral Oil	<100	ug/l

Authorised by: Barbara Lee
Barbara Lee
Environmental Scientist

See reverse for Test Specifications
This report only relates to items tested and shall not be reproduced but in full with the permission of Complete Laboratory Solutions.

Validated

ALcontrol Laboratories Analytical Services

SDG:	091221-56	**Customer:**	Enviroco Management Ltd
Job:	D_ENVMAN_TAM-13	**Attention:**	Pamela Malcady
Client Reference:		**Order No.:**	70775
Location:	KMK	**Report No:**	60247

Results Legend			Sample Identity	KMK CX 70775		KMK CX 70775	
# ISO17025 accredited. M mCERTS accredited. * subcontracted test. ** This result relates to the % recovery of the surrogate standard added to the sample to check on the efficiency of the method. [illegible] The results of the individual compounds within the sample are not corrected for this recovery.			Depth (m)				
			Sample Type	Water(GW/SW)		Water(GW/SW)	
			Date Sampled				
			Date Received	21/12/2009		21/12/2009	
			SDG Ref	091221-56		091221-56	
			Lab Sample No.(s)	768481		768483	
Component	**LOD/Units**	**Method**					
Total Suspended Solids	<3 mg/l	TM022		110	#	88	#
Ammoniacal Nitrogen as N	<0.2 mg/l as N	TM099		0.726	#	3.03	#
COD	7 mg/l	TM107		68.3	#	190	#
Conductivity (at 20 deg.C)	<0.014 mS/cm	TM120		2.33	#	3.28	#
Aluminium Dissolved	<0.9 µg/l	TM152		8.86	#	10.3	#
Arsenic Dissolved	<0.12 µg/l	TM152		0.926	#	<0.12	#
Chromium Dissolved	<0.22 µg/l	TM152		4.31	#	6.8	#
Lead Dissolved	<0.02 µg/l	TM152		5.65	#	0.05	#
Nickel Dissolved	<0.15 µg/l	TM152		58.7	#	14.5	#
Zinc Dissolved	<0.41 µg/l	TM152		152	#	46.2	#
EPH Range Organics (C10 - C40) (Aqueous)	<10 µg/l	TM172		878	#	912	#
Mineral Oil (Aqueous)	<10 µg/l	TM172		338		165	
Mercury Dissolved	<0.01 µg/l	TM183		0.0116	#	<0.01	#
Iron Dissolved	0.019 mg/l	TM228		<0.019		1.8	
pH value	<1 pH Units	TM256		8.4	#	8.47	#

Independent Micro Lab Ltd · Lismard Business Park ·
Timahoe Road · Portlaoise · Co Laois ·
Tel: +353 (0) 57 862 0819
Fax: +353 (0) 57 862 0878
E-mail: info@IMLab.ie
Web site: www.IMLab.ie

TEST CERTIFICATE

ECLIPSE SCIENTIFIC GROUP

Mr Niall Nally
Enviroco Management Ltd
Bow House
O'Moore Street
Tullamore, Offaly
Ireland
Fax: 00353 506 52342

Certificate Number: TPOL265093-1 Final

Order Number:

Date Analysis Started: 26/05/2009

Date Reported: 29/05/2009

Lab Ref.	Sample Details	Method Number	Test	Result	Units	Flag
PQ0051510	Desc: IDK GW1 26-5-09 Groundwater Date Received: 26/05/2009	ESGM107	Total Coliforms (presumptive)	0	cfu / 100ml	
		ESGM107	Escherichia coli (presumptive)	0	cfu / 100ml	
PQ0051511	Desc: IDK GW2 26-5-09 Groundwater Date Received: 26/05/2009	ESGM107	Total Coliforms (confirmed)	>100	cfu / 100ml	*
		ESGM107	**Total Coliforms (presumptive)**	**>100**	**cfu / 100ml**	O
		ESGM107	Escherichia coli (confirmed)	0	cfu / 100ml	
		ESGM107	**Escherichia coli (presumptive)**	**4**	**cfu / 100ml**	O

Thomas O'Sullivan

Thomas O'Sullivan
Section Head - Microbiology

Disclaimers:

Please note Method References with the prefix ESGM are the Eclipse Group methods that replace the site methods - Refer to the INAB accreditation schedule for further information
Unless otherwise stated, all results are expressed on an as received basis.
Opinions and interpretations expressed herein are outside the scope of INAB accreditation.
'*' Indicates a test which is not included in the INAB accreditation schedule of this laboratory.
Results in bold indicate an out of specification result.
O = Other Specification failure

IVNAB ACCREDITED TESTING