




DUBLIN WASTE-TO-ENERGY

CONSTRUCTION PHASE MONITORING SCHEME

LOCATION	Soft Copy	Hard Copy
1. Jacobs	√	√
2. DCC	None	√
3. Ringsend Office	None	√

	Name	Designation	Signature	Date
Originator	E. Casey	Jacobs		September 2009
Checked	D. Malone	Jacobs		September 2009
Verified	C. Farrell	Jacobs		September 2009

1 Introduction

An environmental monitoring programme will be implemented during the construction stage of the Dublin Waste to Energy (DWtE) Project. In conjunction with the monitoring, a number of controls and procedures will be implemented during construction activities to avoid, or minimise, potential adverse impacts to the environment and local community.

The monitoring programme will assist in demonstrating compliance with the conditions and requirements laid out in An Bord Pleanála Order -29S.EF2022, Condition 13d; *“A scheme for monitoring noise, dust deposition and suspended solids in surface water run-offs and adjacent waters shall be prepared for the construction phase of the development. Details of the scheme shall be made available for inspection at the offices of Dublin City Council and at a local office in the Ringsend/Poolbeg area prior to the commencement of construction works. Monitoring shall be carried out during the construction phase and reports on the monitoring shall be made available for inspection at the offices in question on a 3 monthly basis. The reports shall compare monitored results with standards set out in the environmental impact statement or standards given in recognised national or international guidelines as relevant.”*

2 Local Environment

The main population centres of Ringsend, Irishtown and Sandymount are located approximately 1km from the boundary of the site. The nearest educational establishments are located approximately 850m and 1km south-west of the site and 1.5km west of the site boundary. Representative sensitive receptors will be monitored throughout the construction period for noise and vibration.

The closest sensitive receptors to the site are the residential properties at Pigeon House Road (B) which are located approximately 800m west of the site boundary.

The identified sensitive locations are shown in Attachment 1. They are as follows:

- Seafort Avenue (marked “**(1)**” in Attachment 1);
- Beach Avenue (marked “**(2)**” in Attachment 1);
- Leukos Road (St Lukes Road) (marked “**(3)**” in Attachment 1);
- Walkway south of the Site connecting Sean Moore Park and Irishtown Nature Park (marked “**(4)**” in Attachment 1); and
- Pigeon House Road (marked “**(5)**” in Attachment 1).

3 Noise

A number of noise management and mitigation measure will be put in place during the construction stage of the development. Monitoring of noise levels at sensitive locations will take place during construction to ensure compliance with the requirements of the Environmental Impact Statement (EIS).

3.1 Noise Management and Mitigation Measures

The following measures will be implemented in accordance with the requirements of the EIS, Oral Hearing Briefs, EPA Waste License Decision (W0232-01) and the An Bord Pleanála Order (29S.EF2022).

- Noisy construction activities outside normal hours will be limited where possible & monitored during critical periods and a sensitive receptors;
- Where night time construction is required (22:00 to 07:00 hours), it is required that noise levels are limited to 45dB L_{Aeq} at the nearest noise sensitive locations;
- For limited periods during Construction, piling and steam blowing will take place. During these periods there will be an elevated noise level and the daytime noise limits outlined in Table 1 overleaf will be increased by 5 (five) dB(A) for all noise sensitive locations;
- Plant and equipment such as vehicles, compressors, pumps, pneumatic tools with the low inherent potential for the generation of noise will be selected. Plant and equipment will be maintained in proper condition with the purpose of reducing noise and vibration output;
- There will be a limit to the hours during which site activities likely to create high levels of noise are permitted. Piling operations will only take place during daytime hours (i.e. 07:00 to 21:00hrs);
- The piling method will be optimised to avoid impulses;
- Locate noisy/vibratory plant as far away from sensitive receptors as permitted by site constraints and the use of vibration isolating support structures where necessary;
- Erection of barriers as necessary around items such as generators or high duty compressors;
- Communication between the Contractor, Developer, Local Authority and residents will be established via the Community Liaison Committee to make parties aware of works which may cause noise emissions; and
- A Project Environmental Consultant (PEC) will be appointed who will be responsible for matters relating to noise and vibration.

3.2 Monitoring Method

Monitoring will be carried by the PEC and will be carried out with due regard to the following accepted Guidance and Industry Standards:

- BS 7445: 2003 Description and Measurement of Environmental Noise Part 1;
- ISO 1996-1, Acoustics Description, measurement and assessment of environmental noise Part 1: Basic quantities and assessment procedures;
- BS 4142:1997, Method for rating industrial noise affecting mixed residential and industrial areas;

- EPA, Guidance Note For Noise in Relation to Scheduled Activities 2006;and
- EPA, Environmental Noise Survey Guidance Document, 2003.

A Cirrus CR:831C Data Logging Type 1 Noise Meter (or similar) together with an appropriate Acoustic Calibrator will be used to carry out the monitoring. All measuring equipment will be fully charged and calibrated before and after measurements, and will only be operated by appropriately trained personnel.

Considering the existing baseline noise levels all measured results at the noise sensitive locations during construction will be compared against the values identified in NRA Guidance Document entitled ' Guidelines for the treatment of noise and vibration in National Road Schemes' as document in the EIS and in Table 1 below.

Table 1: Construction Noise Limits at the Sensitive Locations

Sensitive Receptor:	A	B	C	D	E
	Leukos Road	Pigeon House Rd.	Beach Avenue	Seafort Avenue	Irishtown Nature Park Walkway
Monday-Friday 0700 hrs to 1900 hrs Rating level, LAeq(1hr)dB	70	70	70	70	70
Night time 1900 hrs to 2200 hrs Rating level, LAeq(1hr)dB	60	60	60	60	60
Saturday 0800 hrs -1630 hrs Rating level, LAeq(1hr)dB	65	65	65	65	65
Sundays & Bank Holidays 08:00 to 16:30hrs Rating level, LAeq(1hr)dB	60	60	60	60	60

3.3 Monitoring Locations / Periods during Construction

Noise monitoring will be carried out weekly by the PEC at 4 site boundary locations depending on the schedule of construction works as per the table below. (See Attachment 1 for site boundary locations 6-9).

Monitoring at the 5 sensitive receptors identified in Attachment 1 will be undertaken by the PEC at certain periods during construction depending on the construction works schedule and associated activities.

Construction Schedule in relation to noise generation

Activity	Duration
Bulk Earthworks	Month 1
Piling enabling works	Month 1
Piling	Month 2 – Month 8
Main Building Structural Steel Works	Month 4- Month 23
Dozers, loader tractors and trucks	Month 1- Month 23

4 Dust Deposition

A number of dust deposition management and mitigation measure will be put in place during the construction stage of the development. A scheme for monitoring dust deposition and direction has been developed for the construction phase of the development.

4.1 Dust Management and Mitigation Measures

The following measures will be implemented as per the requirements of the EIS;

- Hard surface roads will be regularly swept to remove mud and aggregate materials from their surface;
- Access to any un-surfaced roads will be restricted to essential Site traffic only, with the exception of the contractor's car park which will be hardcore only;
- Any road that has the potential to give rise to fugitive dust must be regularly watered, as appropriate, during dry and/or windy conditions;
- Vehicles using Site roads will have their speed restricted, and this speed restriction must be enforced rigidly. On any un-surfaced Site road, this maximum speed will be 10 kph, and on hard surfaced roads maximum speeds will be enforced as Site management dictates;
- Vehicles delivering material with the potential to generate dust (soil, aggregates) will be enclosed or covered with a tarpaulin at all times to restrict the escape of dust. Before entrance onto public roads, trucks will be inspected to confirm that there is no potential for dust emissions;
- Wheel washing facilities will be provided for vehicles exiting Site in order to prevent mud and other wastes being tracked onto public roads;
- Public roads outside the Site will be regularly inspected for cleanliness, and cleaned as necessary;
- Material handling systems and Site stockpiling of materials will be designed and laid out to minimise exposure to wind; and
- Water misting or sprays will be used on stockpiles as required if particularly dusty activities are necessary during dry or windy periods.

4.2 Monitoring Method

There are no legislative regulations regarding fugitive dust during construction either in Ireland or the UK.

The "Technical Instructions on Air Quality Control – TA Luft" 2002 immission value for dustfall of 350 mg/m²/day will therefore be used as the maximum guideline level during construction.

4.3 Monitoring Locations / Periods

Dust deposition and indicative dust directional monitoring will be undertaken at 4 locations on the site boundaries (Attachment 1).

Weather conditions such as wind speed and direction and rainfall frequency and amounts that prevail over the monitoring period will be observed and recorded.

Dust Deposition - Bergerhoff Gauges

The Bergerhoff dust deposition gauges will be deployed on site throughout the construction stage for a 30 day periods at a time. Dust deposition will be calculated in a laboratory and will be expressed as mg/m²/day.

Directional Monitoring - Sticky Pads

Dust direction information will be recorded in situ by the PEC on a daily basis on site. In addition the Sticky Pads which are attached to the Bergerhoff gauges will assist in providing indicative information on dust direction.

Visual Inspections

Daily visual inspections will be carried at locations around the site boundary and at the 5 sensitive receptors as required. These inspections will monitor the effectiveness of dust mitigation measures.

5 Surface Water

Measures to mitigate against increased levels of suspended solids in surface waters will be put in place during the construction phase of the project as per the EIS. A scheme for monitoring suspended solids in surface waters adjacent to the site has been prepared.

5.1 Suspended Solids Management and Mitigation Measures

The following measures will be implemented as per the requirements of the EIS;

- Good housekeeping (daily site clean-ups, use of disposal bins, etc.) and the proper use, storage and disposal of lubricants, fuels and oils etc and their containers.
- Earthworks operations shall be carried out such that surfaces as they are being raised shall be designed with adequate falls, profiling and drainage to control run-off and prevent ponding and flooding. Run-off will be controlled through silt/sediment traps as appropriate to minimise the turbidity of water in outfall areas. Care will be taken to ensure that the bank surfaces are stable to minimise erosion;
- The effects of soil erosion will be minimised by ensuring that all ground disturbances or excavations are completed and covered as soon as practical. Where applicable, areas will only be stripped of topsoil as required in order to limit the length of time the soil is exposed to erosion and the generation of silt in runoff within each construction area. Fills or stockpiles which are likely to erode into nearby water-bodies, will be covered temporarily e.g. with polythene sheeting. Eroded sediments will be retained on site with erosion and sediment control structures such as sediment traps and silt fences;
- Seepages will be mitigated by employing a suitable drainage system, with suitable slope angles employed to maintain stability; and
- Contaminated surface water arising during the construction period shall be directed to a series of settlement ponds/lagoons, sumps and interceptor traps before discharge to the foul sewer.

5.2 Monitoring Method

Analysis of suspended solids in surface water will be carried out in accordance with An Bord Pleanála Order -29S.EF2022, Condition 13(d).

Testing of suspended solids will be carried out by an accredited laboratory and results will be compared against those values established during baseline monitoring which will be undertaken prior to the commencement of the construction works.

It is proposed that on collation of the baseline results, a trigger level will be agreed which if recorded during the construction stage will result in measures being implemented to address the effectiveness of the construction mitigation measures.

5.3 Monitoring Locations / Period

Depending on site activities at time of monitoring, surface water quality monitoring will take place in four locations, one in the cooling water channel, two in the fairway north of the cooling water channel (one upstream and one downstream) and the fourth to the south of the site, adjacent to the Irishtown Nature Park (Please see Attachment 1).

Monitoring will be carried out once a month or as required by any Licences or Permits issued to the project at a later date. Visual inspections will be undertaken from the shore on at least a weekly basis dependant on site activities.

6 Monitoring Results

Reports on the monitoring shall be made available for inspection at the offices of Dublin City Council and at the Dublin Waste to Energy Facility Ringsend/Pembroke area office on a 3 monthly basis. The reports shall compare monitored results with standards set out in the environmental impact statement or standards given in recognised national or international guidelines as relevant.

