

Attachment F.1

The wastes that will be handled at the site are dry recyclables that have little potential to generate odour, dust or effluent emissions. The techniques used to control emissions include the following:

- Adherence to an Environmental Management System;
- Waste profiling and characterisation to ensure that only dry recyclables are delivered to the facility;
- Waste acceptance procedures to ensure that only dry recyclables are accepted at the facility;
- Waste inspection and waste quarantine in a bunded area to ensure that potentially polluting materials are removed from the waste stream and contained in a safe manner prior to appropriate off-site treatment;
- Spill kits will be provided in vehicles and at appropriate locations to quickly contain any spills of potentially polluting liquids;
- Handling and storage of all waste materials inside buildings where they are protected from wind and rain;
- Concrete floors in buildings and yards with drainage of trade effluent to the sewer line via an appropriately sized and well maintained hydrocarbon interceptor;
- Drainage of roof and clean yard run-off to a stream outfall via an appropriately sized and well maintained hydrocarbon interceptor;
- Shut-off valves strategically placed on the foul line and the surface water line to allow full containment on site in an emergency situation;
- Ramps constructed at the doors of buildings to ensure adequate containment of fire-water;
- A Balancing Tank is provided on the surface water line to reduce the quantity of water discharged from the site in a flood event and this provides mitigation against off-site pollution caused by flood events.

Further abatement technology, such as air treatment or on-site waste water treatment, are not considered necessary for a facility that only handles dry recyclables.

The Hydrocarbon Interceptors and the Balancing Tank that are mentioned above are described in Attachment D.1(k) and their locations are shown on Drawings contained in that Attachment. Table F.1 has been completed to provide further details of the interceptors.

Attachment F.2 – Air Monitoring

Daily patrols will monitor odours around the site, although the risk of significant odours emanating from the MRF is low.

The Waste Permit issued by Cork County Council (see Attachment B.3.2) requires the following monitoring in relation to dust:

C.2 Dust

Table C.2.1 Dust Monitoring Frequency and Technique

Parameter (mg/m ² /day)	Monitoring Frequency	Analysis Method/Technique
Dust	Quarterly ^{Note 2}	Standard Method ^{Note 1}

Note 1: Standard method VDI2119 (Measurement of Dustfall, Determination of Dustfall using Bergerhoff Instrument (Standard Method) German Engineering Institute). A modification (not included in the standard) which 2 methoxy ethanol may be employed to eliminate interference due to algae growth in the gauge.

Note 2: Twice during the period May to September.

There are 4 proposed dust monitoring locations on site and these are shown as D1, D2, D3 and D4 on the attached Drawing WL17.

The waste permit sets the following emission limit values for dust emissions from the site:

B.2 Dust Deposition Limits: (Measured at the monitoring points indicated in *Figure 11.3 submitted as part of the EIS.*)

Level (mg/m ² /day) ^{Note 1}
350

Note 1: 30 day composite sample with the results expressed as mg/m² /day.

See Table F.2 in the application form for details of proposed dust monitoring and sampling, consistent with Cork County Council's requirements.

Attachment F.3 – Surface Water Monitoring

The Waste Permit issued by Cork County Council (see Attachment B.3.2) requires the following monitoring in relation to surface water:

C.4 Surface Water Emissions

Table C.4.1 Surface Water Monitoring Frequency and Techniques

Parameter	Monitoring Frequency	Analysis Method/Technique
pH	Quarterly	Electrometry
Biological Oxygen Demand	Quarterly	Standard Methods ^{Note 1}
Suspended Solids	Quarterly	Standard Methods ^{Note 1}
Heavy metals	Bi-annually	Standard Methods ^{Note 1}
Total Petroleum Hydrocarbons	Quarterly	Standard Methods ^{Note 1}
Ammonical Nitrogen	Quarterly	Standard Methods ^{Note 1}
Mineral Oils	Quarterly	Standard Methods ^{Note 1}
Fats, Oils, Grease	Quarterly	Standard Methods ^{Note 1}
Odour / Visual Inspection	Daily	Sample and examine for odour and colour

Note 1: "Standards Methods for the Examination of Water and Wastewater", (prepared and published jointly by A.P.H.A., A.W.W.A & W.E.F) 20th Ed., American Public Health Association, 1015 Fifteenth Street, Washington DC 20005, USA.

The surface water monitoring point is shown as SW1 on the attached Drawing WL17.

The waste permit sets the following emission limit values for surface water discharges from the site:

B.3 Surface Water Discharge Limits (Measured at the monitoring point SW-1 indicated on drawing no 4348-WP04 Rev 3)

Parameter	Emission Limit Value
Mineral oils	5mg/l

See Table F.3 in the application form for details of proposed surface water discharge monitoring and sampling, consistent with Cork County Council's requirements.

Attachment F.4 – Sewer Discharge Monitoring

The Discharge to Sewer Licence issued by Irish Water (see Attachment B.4) sets emission limit values and monitoring requirements in relation to sewer discharge, as follows:

LICENCE NO.: IW-DTS-728357-01 CONDITIONS

Schedule A

The Licensee shall discharge trade effluent in compliance with the emission limit values (ELVs) and sample at the prescribed monitoring frequency below.

Parameter	ELV*	ELV*	Monitoring Frequency**	Method
Flow	100 m3 /day		Continuous	On-line continuous flow monitor & recorder
Flow	30 m3 /hour		Continuous	" "
pH	6.0– 9.0		Continuous	On-line pH probe & recorder
Temperature	25 Celsius		Continuous	On-line Temp probe & recorder
BOD	2000 mg/l	200 kg/day	Monthly	Standard Method
COD	4000 mg/l	400 kg/day	Weekly	Standard Method
Suspended Solids	500 mg/l	50 kg/day	Weekly	Standard Method
VOCs	1 mg/l		Quarterly	Standard Method
Total Nitrogen	100 mg/l		Bi-annually	Standard Method
Sulphates (as SO4)	750 mg/l		Quarterly	Standard Method
Detergents(as MBAS)	10 mg/l		Quarterly	Standard Method
FOG	100 mg/l		Monthly	Standard Method
Total Heavy Metals	1 mg/l		Annually	Standard Method
Mineral Oils	5 mg/l		Bi-annually	Standard Method
Total Hydrocarbons	5 mg/l		Bi-annually	Standard Method
Toxicity***	10 Toxicity Units		As requested	Standard Method

*

Note: All samples with the exception of Flow, pH and Temperature shall be taken on a 24 hour flow proportionate composite sampling basis. In this regard, a composite sample for testing purposes shall be defined as any sample extracted from the sampling apparatus between 8.00 am and 12.00 noon on any day for which normal operational activities have been ongoing for the previous 24 hours.

**

Note: Sampling shall take place on alternate week days on a rolling basis to ensure representative samples are obtained for site operations which may vary across the working week.

Note: Toxicity Units (TU) are defined as: $TU = (100/x \text{ Hour EC}_{50})$ where x is the relevant period of exposure and EC50 is expressed as % vol/vol

The Foul Sewer monitoring point is shown as FW1 on the attached Drawing WL17.

See Table F.4 in the application form for details of proposed sewer discharge monitoring and sampling, consistent with Irish Water's requirements.

Attachment F.5 – Groundwater Monitoring

The Waste Permit issued by Cork County Council (see Attachment B.3.2) requires the following monitoring in relation to groundwater:

C.5 Groundwater Emissions

Table C.5.1 Groundwater Monitoring Frequency and Techniques

Parameter	Monitoring Frequency ² <small>Note 2</small>	Analysis Method/Technique
Visual Inspection/Odour	Bi-annually	Standard Methods ^{Note 1}
Ammonical Nitrogen	Bi-annually	Standard Methods ^{Note 1}
Heavy Metals	Bi-annually	Standard Methods ^{Note 1}
Total Petroleum Hydrocarbons	Bi-annually	Standard Methods ^{Note 1}

Note 1: "Standards Methods for the Examination of Water and Wastewater", (prepared and published jointly by A.P.H.A., A.W.W.A & W.E.F) 20th Ed., American Public Health Association, 1015 Fifteenth Street, Washington DC 20005, USA or as otherwise agreed with the Local Authority.

Note 2: Frequency and sampling method may be reduced as per Condition 6.20 of the waste facility permit.

The groundwater monitoring point is shown as GW1 on the attached Drawing WL17.

The waste permit does not set emission limit values for groundwater discharges at the site. This is presumably because there are no planned discharges to ground, the waste materials are dry with little potential to contaminate groundwater and the site is fully contained with concrete and tarmacadam surfaces.

See Table F.5 in the application form for details of proposed groundwater monitoring and sampling, consistent with Cork County Council's requirements..

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Attachment F.6 – Noise Monitoring

The Waste Permit issued by Cork County Council (see Attachment B.3.2) requires the following monitoring in relation to noise:

C.3 Noise

Table C.3.1 Noise Monitoring Frequency and Technique

Parameter	Monitoring Frequency	Analysis Method/Technique
L(A) _{EQ} [30 minutes]	Annual	Standard ^{Note 1}
L(A) ₁₀ [30 minutes]	Annual	Standard ^{Note 1}
L(A) ₉₀ [30 minutes]	Annual	Standard ^{Note 1}
Frequency Analysis(1/3 Octave band analysis)	Annual	Standard ^{Note 1}

Note 1: "International Standards Organisation. ISO 1996. Acoustics - description and Measurement of Environmental noise. Parts 1, 2 and 3."

The proposed boundary noise monitoring points are shown as N1, N2, N3 and N4 on the attached Drawing WL17. The proposed noise sensitive monitoring points are shown as NS1, NS2 and NS3 on Drawing WL18. These monitoring locations are subject to agreement with Cork County Council.

The waste permit sets the following limit values for noise from the site as measured at sensitive receptors:

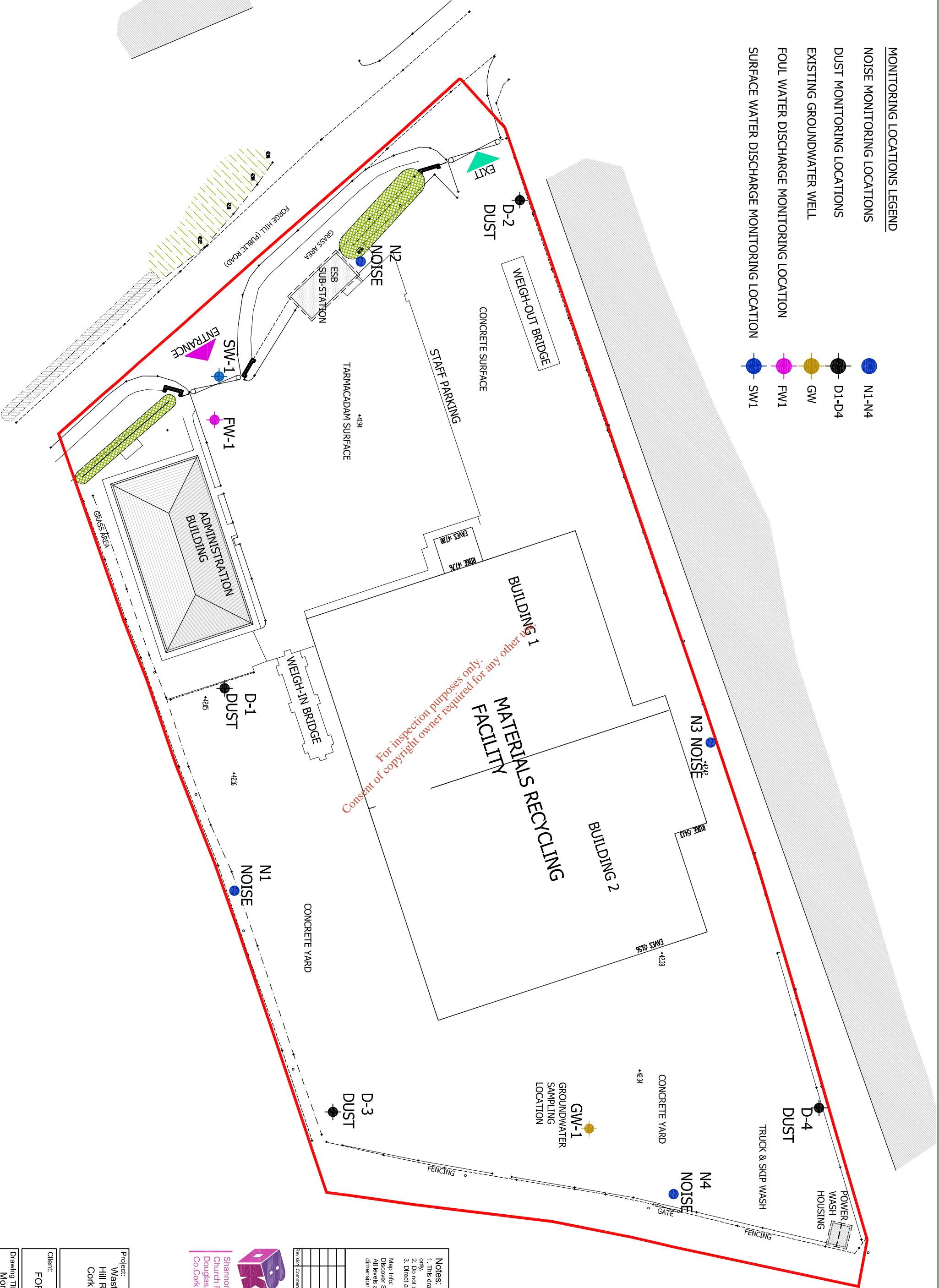
B.1 Noise Emissions: (Measured at the monitoring points to be agreed- refer to condition 6.23).

Day dB(A) LAeq(30 minutes)	Night dB(A) LAeq(30 minutes)
55	45

See Table F.6 in the application form for details of proposed noise monitoring and sampling, consistent with Cork County Council's requirements.

MONITORING LOCATIONS LEGEND

- NOISE MONITORING LOCATIONS ● N1-N4
- DUST MONITORING LOCATIONS ● D1-D4
- EXISTING GROUNDWATER WELL ● GW
- FOUL WATER DISCHARGE MONITORING LOCATION ● FW1
- SURFACE WATER DISCHARGE MONITORING LOCATION ● SW1



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MONITORING LOCATIONS
SCALE 1:500

SITE BOUNDARY IN RED

- Notes:**
1. This drawing is for permit application purposes only.
 2. Do not scale from drawing.
 3. Direct any queries to the engineer.
- Map Info:
Discover Series 87, Scale 1:50,000
All levels are related to Mean Head Datum and dimensioned in meters.

Revised	Comments	Date


BRIAN O'KENNEDY & ASSOCIATES LTD
 Consulting Engineers

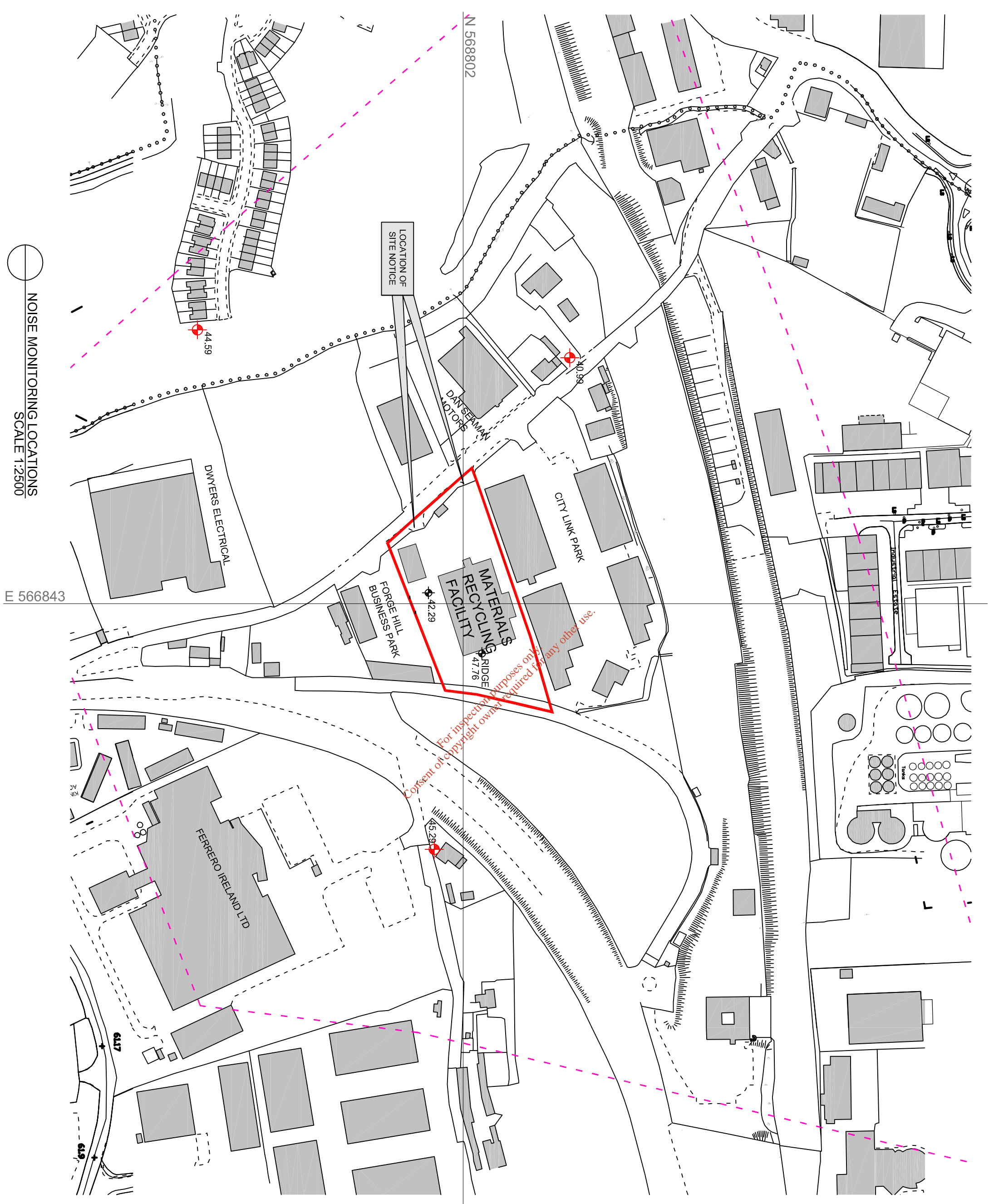
Shannon House,
 Church Road,
 Douglas,
 Co. Cork

Tel: 021-4899854
 Fax: 021-4899464
 Email: info@bok.ie
 Web: www.bok.ie

Client: **FORGE HILL RECYCLING**
 Project: **Waste Permit Application for Forge Hill Recycling at Forge Hill, Co. Cork**

Drawing Title: **Monitoring Locations**
 Drawing Number: **4348-WL17**

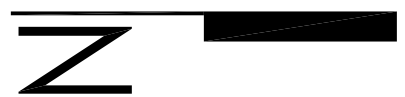
Scale:	Date:	Revision:
1:500 @A3	APRIL 2016	-
Drawn By: JB	Drawing Number: 4348-WL17	



NOISE MONITORING LOCATIONS
SCALE 1:2500

E 566843

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<p>LEGEND:</p> <p>— SITE BOUNDARY</p> <p>● NOISE SENSITIVE RECEPTOR MONITORING LOCATIONS</p> <p>- - - LINE 250M FROM BOUNDARY</p>	
<p>Notes:</p> <p>1. This drawing is for permit application purposes only.</p> <p>2. Do not scale from drawing.</p> <p>3. Direct any queries to the engineer.</p>	
<p>Map Info:</p> <p>Dkcover Series 87, Scale 1:50,000</p> <p>All levels are related to Mean High Water Datum and dimensioned in meters.</p>	
<p>Project:</p> <p>WASTE PERMIT APPLICATION FOR FORGE HILL RECYCLING AT FORGE HILL, CO. CORK</p>	
<p>Client:</p> <p>FORGE HILL RECYCLING</p>	
<p>Drawing Title:</p> <p>NOISE SENSITIVE RECEPTOR MONITORING LOCATIONS</p>	
<p>Scale: 1:2500 @A3</p> <p>Drawn By: JB</p>	<p>Date: APRIL 2016</p> <p>Drawing Number: 4348-WL.18</p>
<p>BRIAN O'KENNEDY & ASSOCIATES LTD Consulting Engineers</p> <p>Shannon House, Church Road, Douglas, Co. Cork</p> <p>Tel: 021-4899854 Fax: 021-4899464 Email: info@bok.ie Web: www.bok.ie</p>	