Environmental Protection Agency
An Ghníomhaireacht um Chaomhnú Comhshaoil

Guidance on waste acceptance criteria at authorised soil recovery facilities

ENVIRONMENTAL PROTECTION AGENCY

The Environmental Protection Agency (EPA) is responsible for protecting and improving the environment as a valuable asset for the people of Ireland. We are committed to protecting people and the environment from the harmful effects of radiation and pollution.

The work of the EPA can be divided into three main areas:

Regulation: We implement effective regulation and environmental compliance systems to deliver good environmental outcomes and target those who don't comply.

Knowledge: We provide high quality, targeted and timely environmental data, information and assessment to inform decision making at all levels.

Advocacy: We work with others to advocate for a clean, productive and well protected environment and for sustainable environmental behaviour.

Our Responsibilities

Licensing

We regulate the following activities so that they do not endanger human health or harm the environment:

- waste facilities (*e.g. landfills, incinerators, waste transfer* stations);
- large scale industrial activities (e.g. pharmaceutical, cement manufacturing, power plants);
- intensive agriculture (e.g. pigs, poultry);
- the contained use and controlled release of Genetically Modified Organisms (GMOs);
- sources of ionising radiation (e.g. x-ray and radiotherapy equipment, industrial sources);
- large petrol storage facilities;
- waste water discharges;
- dumping at sea activities.

National Environmental Enforcement

- Conducting an annual programme of audits and inspections of EPA licensed facilities.
- Overseeing local authorities' environmental protection responsibilities.
- Supervising the supply of drinking water by public water suppliers.
- Working with local authorities and other agencies to tackle environmental crime by coordinating a national enforcement network, targeting offenders and overseeing remediation.
- Enforcing Regulations such as Waste Electrical and Electronic Equipment (WEEE), Restriction of Hazardous Substances (RoHS) and substances that deplete the ozone layer.
- Prosecuting those who flout environmental law and damage the environment.

Water Management

- Monitoring and reporting on the quality of rivers, lakes, transitional and coastal waters of Ireland and groundwaters; measuring water levels and river flows.
- National coordination and oversight of the Water Framework Directive.
- Monitoring and reporting on Bathing Water Quality.

Monitoring, Analysing and Reporting on the Environment

- Monitoring air quality and implementing the EU Clean Air for Europe (CAFÉ) Directive.
- Independent reporting to inform decision making by national and local government (e.g. periodic reporting on the State of Ireland's Environment *and Indicator Reports*).

Regulating Ireland's Greenhouse Gas Emissions

- Preparing Ireland's greenhouse gas inventories and projections.
- Implementing the Emissions Trading Directive, for over 100 of the largest producers of carbon dioxide in Ireland.

Environmental Research and Development

- Funding environmental research to identify pressures, inform policy and provide solutions in the areas of climate, water and sustainability.

Strategic Environmental Assessment

- Assessing the impact of proposed plans and programmes on the Irish environment (*e.g. major development plans*).

Radiological Protection

- Monitoring radiation levels, assessing exposure of people in Ireland to ionising radiation.
- Assisting in developing national plans for emergencies arising from nuclear accidents.
- Monitoring developments abroad relating to nuclear installations and radiological safety.
- Providing, or overseeing the provision of, specialist radiation protection services.

Guidance, Accessible Information and Education

- Providing advice and guidance to industry and the public on environmental and radiological protection topics.
- Providing timely and easily accessible environmental information to encourage public participation in environmental decision-making (*e.g. My Local Environment, Radon Maps*).
- Advising Government on matters relating to radiological safety and emergency response.
- Developing a National Hazardous Waste Management Plan to prevent and manage hazardous waste.

Awareness Raising and Behavioural Change

- Generating greater environmental awareness and influencing positive behavioural change by supporting businesses, communities and householders to become more resource efficient.
- Promoting radon testing in homes and workplaces and encouraging remediation where necessary.

Management and Structure of the EPA

The EPA is managed by a full time Board, consisting of a Director General and five Directors. The work is carried out across five Offices:

- Office of Environmental Sustainability
- Office of Environmental Enforcement
- Office of Evidence and Assessment
- Office of Radiation Protection and Environmental Monitoring
- Office of Communications and Corporate Services

The EPA is assisted by an Advisory Committee of twelve members who meet regularly to discuss issues of concern and provide advice to the Board.

Guidance on waste acceptance criteria at authorised soil recovery facilities

2020

ENVIRONMENTAL PROTECTION AGENCY
An Ghníomhaireacht um Chaomhnú Comhshaoil

PO Box 3000,
Johnstown Castle,
Co. Wexford, Ireland
T +353 53 916 0600
F +353 53 916 0699
E info@epa.ie
www.epa.ie
LoCall 1890 33 55 99

ISBN 978-1-84095-880-5

January 2020

Price: Free of charge

Acknowledgements

This guidance was prepared by Stuart Huskisson (EPA), Kevin Motherway (Ex. EPA), Pat Byrne (EPA), Caoimhin Nolan (EPA), Carol O'Sullivan (EPA), Brian Meaney (EPA) and Graham Webb (Geosyntec) with the assistance of Una Fitzgerald (Eastern-Midlands Regional Waste Management Office) and technical input from Mairead Glennon (Geological Survey Ireland), Vincent Gallagher (Geological Survey Ireland) and Robbie Meehan (Geological Survey Ireland).

The authors thank Jim Moriarty (EPA), Stephen McCarthy (EPA), Ciaran Cuddihy (EPA) and Geological Survey Ireland for providing assistance by way of information and comment on the document.

The authors are grateful to the following organisations, who provided feedback in the consultation phase: AECOM Ireland Limited, Bord na Móna, Chartered Institution of Wastes Management, Construction Industry Federation, Cork County Council, Dún Laoghaire-Rathdown County Council, Enrich Environmental Limited, Golder Associates Limited, Institute of Geologists Ireland, Integrated Materials Solutions Limited Partnership, Ireland Brownfield Network, Irish Waste Management Association, Malone O'Reagan, McCarthy Keville O'Sullivan, Minerex Environmental Limited, O'Connor Sutton Cronin, Queen's University Belfast, Rilta Environmental Limited, Roadstone Limited, Soil Recovery Association, South Dublin County Council, Specialist in Land Condition, TMS Environment, Verde Environmental Consultants Limited, Waste Enforcement Regional Lead Authorities and Waterford County Council.

The authors also thank the people that provided the photographs used in this publication.

Contents

Underlined text in blue = Hyperlink

1. Introduction

This guidance document applies to all soil recovery facilities authorised under the Waste Management Act as amended, including the Waste Management (Facility Permit and Registration) Regulations as amended. This includes facilities operating under waste licences granted by the Environmental Protection Agency (the Agency) and those operating under Waste Facility Permits/Certificates of Registration granted by local authorities. Licences granted by the Agency for soil recovery facilities typically include a condition requiring the licensee to propose maximum concentrations and/or trigger levels for relevant contaminants in soil and stone proposed to be accepted from non-greenfield sources. This document provides guidance on developing maximum concentrations and/or soil trigger levels that will be acceptable to the Agency, to comply with this condition. The maximum concentrations and/or soil trigger levels specified in this guidance document may also be applied to authorised soil recovery facilities regulated by local authorities.

Authorised soil recovery facilities are often worked-out quarries that are in the process of being restored. They may also be sites where soil and stone is being imported to raise natural ground levels. In all cases, soil recovery facilities are authorised to accept only uncontaminated soil and stone[1] - i.e., EU List of Waste Code 17 05 04 (some authorisations include municipal waste soil and stones, List of Waste Code 20 02 02).

In some cases, soil recovery facilities are also permitted to accept dredging spoil (List of Waste Code 17 05 06). List of Waste Code 17 05 06 is outside the scope of this document and if an operator proposes to accept dredging spoil at their facility, they should submit details of the source material and the proposed waste acceptance procedures on a case-by-case basis to the Agency or local authority for their consideration.

Unlike landfills, soil recovery facilities do not have an engineered basal liner, nor are they required to install an engineered cap following completion of restoration or land raising. As such there are no engineering controls to protect groundwater from contamination that may be present in soil and stone accepted at these facilities. Because of this, it is imperative that effective waste acceptance procedures are implemented by operators of these facilities, both prior to accepting soil and stone from individual source sites and while soil and stone is being received, to ensure that only suitable soil and stone is accepted. It is best practice to monitor incoming materials so that the facility operator can determine if this material is suitable for acceptance at their site.

2. Waste Acceptance Criteria for Soil Recovery Facilities

With a view to ensuring that only suitable soil and stone is accepted at authorised soil recovery facilities, only soil and stone from the following types of source site should be considered:

Source Site	Suitability for Acceptance at a Soil Recovery Facility
Greenfield sites:	Acceptable, subject to meeting agreed Waste Acceptance Criteria.
Non-greenfield sites where the risk of contamination from chemical or solid materials is low:	Acceptable, subject to meeting agreed Waste Acceptance Criteria.
Non-greenfield sites where there is an increased risk of contamination from chemicals or solid materials:	Not acceptable – such materials should generally not be accepted at soil recovery facilities. Waste soil and stone from such sites should be transferred to an appropriately licensed landfill, disposal or recovery facility.

The criteria under which soil and stone may be accepted at an authorised soil recovery facility from source sites are outlined in Table 2.1. There are different criteria for material originating from greenfield sites and for material originating from non-greenfield sites. This reflects the increased risk of contamination being present in soil and stone originating from non-greenfield sites.

[1] *Soil and stone: Excavation or dredge spoil comprising natural materials of clay, silt, sand, gravel or stone and which comes within the meaning of inert waste*

Table 2.1: Waste Acceptance Criteria [2]

Waste Type	Minimum Criteria
Greenfield soil and stone: -	A letter of suitability should be obtained for greenfield soil and stone. A template 'Letter of Suitability' is located in Appendix 1. For facilities with a waste licence, a letter of suitability should be obtained for the first 5,000 tonnes of material received from a source site, and a further letter of suitability for each subsequent 5,000 tonnes of material received from the same source site. For facilities regulated by a local authority, letters of suitability should be obtained at the frequency set out in the standardised national conditions for local authority authorisations. Each letter of suitability should be signed by a qualified person [3] and should state the following: • The waste is greenfield soil and stone • A description of the source and nature of the soil and stone • The location of the source of the soil and stone (including a map showing the source site boundary) • The material is suitable for use within the facility • The material will not cause environmental pollution at the facility There is no requirement for testing greenfield soil and stone, unless directed by the Agency or local authority. When the material arrives at the soil recovery facility, a visual check is required to verify that the material is greenfield soil and stone. A record of visual checks should be maintained.
Non-greenfield soil and stone: -	Prior to accepting material from each individual source site, the facility operator should obtain information on the past use of the site and should reject non-greenfield sites where soil or groundwater contamination has been identified or where there is an increased risk of contamination being present. Soil and stone should generally not be accepted from sites where activities in the past have involved the manufacture or storage of hazardous substances (e.g., chemical manufacturing facilities, oil storage facilities, retail filling stations) unless it is clear that the risk of contamination being present is low. Soil and stone containing up to 2% non-natural materials by weight is acceptable, i.e., anthropogenic or man-made substances such as rubble, concrete, bricks, metal and bitumen that are non-natural to the environment from which the material was extracted. Basic characterisation, compliance testing and on-site verification should be undertaken, as outlined in Table 2.2 below (refer also to Glossary of Terms in Section 6). Contaminant concentrations within the soil and stone must comply with maximum concentrations and/or soil trigger levels agreed by the Agency or local authority.

[2] In the case where there is conflict between Table 2.1 and a licence or permit/certificate requirement, the licence or permit/certificate requirement shall prevail.

[3] Qualified person: A suitably qualified, trained and experienced person who is a registered professional with chartered status (or equivalent) awarded by a relevant professional body and who has the requisite knowledge and experience required to issue a letter of suitability.

Table 2.2: Waste Characterisation for Non-Greenfield Soil and Stone[4]

Quantity	Testing Requirement	Frequency of Testing/Location of Sampling
2,000 tonnes or more from a single source	Basic characterisation	To be carried out off-site prior to agreeing acceptance of the waste at the soil recovery facility.
	Compliance testing[5]	One representative sample should be analysed for every 2,000 tonnes of material received at the soil recovery facility.
	On-site verification[6]	Every load received at the soil recovery facility.
Less than 2,000 tonnes from a single source	Basic characterisation	Sampling should be undertaken at the soil recovery facility prior to the recovery of the material. At least one representative sample should be collected from every 2,000 tonnes of material combined from a number of single sources (each of which is less than 2,000 tonnes)[7]. A facility may alternatively be required to undertake Basic Characterisation at the source site, regardless of the amount of material involved.
	On-site verification[6]	Every load received at the facility

[4] In the case where there is conflict between Table 2.2 and the licence or permit/certificate requirements, the licence or permit/certificate requirements shall prevail.
[5] Compliance samples should be collected in accordance with a standard procedure (e.g., ISO 10381-8:2006).
[6] Rapid check methods (e.g., visual inspection, with a record maintained) to confirm that a waste is the same as that which has been subjected to compliance testing and that which is described in any accompanying documents.
[7] It is recommended that waste in this category is placed in a quarantine area until sampling is completed and the results are available to determine suitability for acceptance.

3. Development of Maximum Concentrations and/or Soil Trigger Levels

Maximum concentrations and/or soil trigger levels for authorised soil recovery facilities must focus on the requirement for material accepted at the facility to be suitable soil and stone. Generic maximum concentrations and/or soil trigger levels that should be used for acceptance at authorised soil recovery facilities are presented in this section for the following parameters:

- Metals in soil and stone (including As, Cd, Cr, Cu, Hg, Ni, Pb, Zn);
- Total organic carbon in soil and stone;
- Total BTEX (benzene, toluene, ethylbenzene, xylenes) in soil and stone;
- Mineral oil in soil and stone;
- Polycyclic aromatic hydrocarbons (PAHs) in soil and stone;
- Polychlorinated Biphenyls (PCBs) in soil and stone;
- Asbestos fibres in soil and stone.

Metals

Many metals are naturally present (at milligram per kilogram concentrations) in soil and stone in Ireland, and these elements will also be present at detectable concentrations in uncontaminated soil and stone.

Table 3.1 contains summary data from a Teagasc report entitled 'National Soils Database' dated July 2007 (report reference RMIS 5192) for a number of metals including those listed above. The data presented in this table is a summary of chemical data for near-surface soil samples collected by Teagasc across Ireland, and it gives an indication of the range in natural concentrations of these elements found in Irish soils.

Table 3.1: Concentrations of Metals in Soil and Stone in Ireland (From Teagasc National Soils Database)

Element	Irish Soil Geochemistry (mg/kg)		
	Median	Min	Max
Arsenic	7.25	<0.2	122.7
Cadmium	0.326	<0.02	15.15
Total Chromium	42.6	<2	221.7
Copper	16.2	1.1	272.4
Mercury	0.087	<0.02	3.45
Nickel	17.5	0.8	176
Lead	24.8	1.1	2634.7
Zinc	62.6	3.6	1384.4

More detailed information on the National Soils Database is available on Teagasc's website, including an on-line mapping tool that provides a break-down of the soil quality data by area across Ireland.

During 2019, a project was completed jointly by Geological Survey Ireland (GSI) and the Agency with input from local authorities, the aim of which was to determine appropriate maximum concentrations and/or soil trigger levels for metals in the context of waste acceptance at authorised soil recovery facilities. The work, incorporating drilling and sampling, found that the composition of topsoils and subsoils in Ireland are comparable and that it is appropriate, given currently available data, that maximum concentrations and/or soil trigger levels for metals should be based on 98th percentile values from the National Soils Database, with the database subdivided into seven distinct geological domains[8].

The GSI noted in the project report that a degree of under-reporting of concentrations of most metals can be expected for Basic Characterisation and Compliance Testing of soil and stone, in particular for chromium. This is due to the analytical method commonly used in environmental testing in Ireland and the U.K. for metals in soil and stone[9].

With the above in mind, for any particular soil recovery facility the maximum concentrations and/or soil trigger levels for metals - except for chromium - should be the 98th percentile value from the National Soils Database for the geological domain in which the soil recovery facility is located.

[8] *These maximum concentrations/soil trigger levels for metals are referred to as 'Geochemically Appropriate Levels' in the* GSI's report on the project - Glennon, M., Gallagher, V., Meehan, R. and Hodgson, J. (2020) Geochemical Characterization and Geochemically Appropriate Levels for Soil Recovery Facilities. Geological Survey Ireland report.

[9] *This is because the metals data in the National Soils Database are based on near-total concentrations, as determined following strong acid digestion, whereas analyses carried out in the course of environmental testing in Ireland and the U.K. typically employ a weaker aqua regia digestion.*

To account for the different extraction rate for chromium, the soil trigger value for chromium should be based on 60% of the 98th percentile values from the National Soils Database for each of the seven geological domains.

The GSI has developed a digital map which shows the boundaries of the geological domains. The GSI 'Geochemically Appropriate Levels for Soil Recovery Facilities' domain viewer map can be used by operators/proposed operators to determine the geological domain in which their facility is located and assist them to establish proposed maximum concentrations and/or trigger levels.

The maximum concentrations and/or soil trigger levels for metals for each of the seven geological/ geochemical domains are presented in Table 3.2 below. A map of the defined geochemical domains is shown in Figure 1.

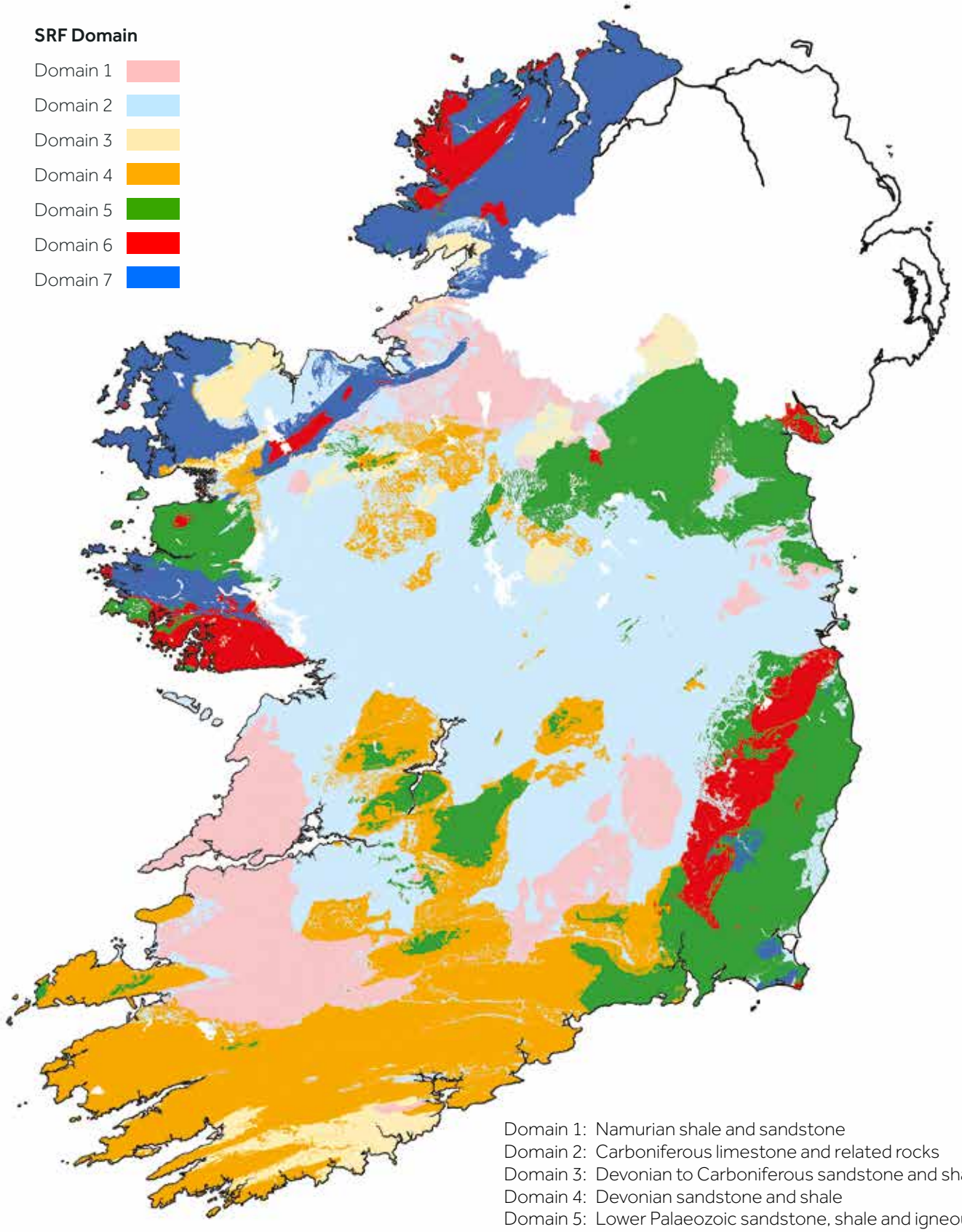
Table 3.2: Calculated Maximum Concentrations and/or Soil Trigger Levels [10] for Metals in the defined Geochemical Domains (values in mg/kg)

Domain	As	Cd	Cr[11]	Cu	Hg	Ni	Pb	Zn
Domain 1	15.6	1.50	51.5	51.2	0.254	47.8	48.3	137
Domain 2	24.9	3.28	50.3	63.5	0.360	61.9	86.1	197
Domain 3	38.1	1.60	47.5	56.9	0.457	54.4	81.3	237
Domain 4	32.3	0.97	51.7	80.4	0.285	50.3	91.4	155
Domain 5	41.5	1.42	73.2	77.6	0.302	65.7	109	224
Domain 6	85.8	2.38	54.0	40.0	0.527	28.2	108	168
Domain 7	30.9	0.542	57.6	83.1	0.262	35.7	61.1	122

[10] Values are based on acid digestion, using aqua regia, of soil samples dried at ≤ 30 °C, sieved to < 2 mm and milled to a fine pulp.

[11] The maximum concentrations/soil trigger levels for chromium are based on 60% of the 98th percentile values from the National Soils Database for each of the seven geological domains.

Figure 1. Map of Defined Geochemical Domains



Domain 1: Namurian shale and sandstone
Domain 2: Carboniferous limestone and related rocks
Domain 3: Devonian to Carboniferous sandstone and shale
Domain 4: Devonian sandstone and shale
Domain 5: Lower Palaeozoic sandstone, shale and igneous rock
Domain 6: Granitic rocks
Domain 7: Schist, quartzite and gneiss

Geological Survey
Suirbhéireacht Gheolaíochta
Ireland | Éireann

Rialtas na hÉireann
Government of Ireland

Total Organic Carbon (TOC)
The primary concern in relation to soil and stone with elevated TOC is the potential for generation of methane gas. This risk must be maintained at a very low level at soil recovery sites and as such, materials including topsoil and peat should not be accepted at soil recovery facilities other than for final restoration purposes (in any case these materials are generally prohibited for soil recovery facilities).

This is also the case at licensed inert waste landfills, i.e., inert waste landfills are not licensed to accept materials that could potentially generate landfill gas. In the case of inert waste landfills, the Waste Acceptance Criterion (WAC) for TOC is 3% by weight or 30,000 mg/kg[12].

This criterion for inert waste landfills of 3% has been adopted as the soil trigger level for TOC at authorised soil recovery facilities.

Organic Compounds (BTEX, Mineral Oil, PAH, PCBs)
Organic compounds such as BTEX, mineral oil, PAHs and PCBs should not be present in uncontaminated soil and stone. As such, the concentrations of these groups of compounds in samples of uncontaminated soil and stone submitted for laboratory analysis should be below the laboratory's limits of detection.

The detection limits commonly reported by environmental testing laboratories for these groups of compounds have been used as the basis for maximum concentrations and/or soil trigger levels for these groups of compounds.

BY SETTING MAXIMUM CONCENTRATIONS AND/OR SOIL TRIGGER LEVELS FOR THESE COMPOUNDS AT THE LEVEL OF READILY ACHIEVABLE DETECTION LIMITS, THEY WILL BE CONSISTENT WITH THE REQUIREMENT FOR SOIL AND STONE ACCEPTED AT AUTHORISED SOIL RECOVERY FACILITIES TO BE UNCONTAMINATED AND AT THESE LEVELS THE RISK OF ENVIRONMENTAL POLLUTION CAN BE EXPECTED TO BE MINIMAL.

With the above in mind, the following maximum concentrations and/or soil trigger levels have been adopted for organic compounds:

- Total BTEX - 0.05 mg/kg
- Mineral oil - 50 mg/kg
- Total PAHs - 1 mg/kg
- Total PCBs - 0.05 mg/kg

[12] *Council Decision 2003/33/EC of 19th December 2002 establishing criteria and procedures for the acceptance of waste at landfills pursuant to Article 16 of and Annex II to Directive 1999/31/EC*

Asbestos
Asbestos fibres should not be present in soil and stone accepted at soil recovery facilities. As such, the soil trigger level for asbestos should be "No Asbestos Detected", as determined in an accredited laboratory by a thorough visual inspection for asbestos fibres by a competent analyst.

Other Substances
The list of maximum concentrations and/or soil trigger levels included in this guidance note should be considered de minimus for the basic characterisation and compliance testing of soil and stone at authorised soil recovery facilities.

It may be necessary to develop maximum concentrations and/or soil trigger levels for other parameters or substances on a case-by-case basis, depending on the historical use of sites from which soil and stone is to be received. Concentrations of such substances (for example volatile organic compounds and pesticides) should be below detection in soil and stone proposed for acceptance at soil recovery facilities, unless they can be demonstrated to be present at detectable concentrations in uncontaminated soil and stone, including at the receiving site.

As a general rule, maximum concentrations and/or soil trigger levels for all other substances should be set at levels that are consistent with detection limits reported by accredited environmental testing laboratories, unless they are present at detectable concentrations in uncontaminated soil and stone.

Summary
A summary of the maximum concentrations and/or soil trigger levels that should be adopted for authorised soil recovery facilities is presented below in Table 3.3. Additional parameters should be included on a case-by-case basis, depending on the historical activities at non-greenfield source sites.

Table 3.3: Summary of Maximum Concentrations and/or Trigger Levels in Soil & Stone for Soil Recovery Facilities (values in mg/kg unless states otherwise)

Domain	As[13]	Cd[14]	Cr[13&14]	Cu[13]	Hg[13]	Ni[13]	Pb[13]	Zn[13]	TOC	Total BTEX	Mineral oil	Total PAHs[15]	Total PCBs[16]	Asbestos fibres[17]
Domain 1	15.6	1.5	51.5	51.2	0.254	47.8	48.3	137	3%	0.05	50	1	0.05	NAD
Domain 2	24.9	3.28	50.3	63.5	0.36	61.9	86.1	197	3%	0.05	50	1	0.05	NAD
Domain 3	38.1	1.6	47.5	56.9	0.457	54.4	81.3	237	3%	0.05	50	1	0.05	NAD
Domain 4	32.3	0.97	51.7	80.4	0.285	50.3	91.4	155	3%	0.05	50	1	0.05	NAD
Domain 5	41.5	1.42	73.2	77.6	0.302	65.7	109	224	3%	0.05	50	1	0.05	NAD
Domain 6	85.8	2.38	54	40	0.527	28.2	108	168	3%	0.05	50	1	0.05	NAD
Domain 7	30.9	0.542	57.6	83.1	0.262	35.7	61.1	122	3%	0.05	50	1	0.05	NAD

[13] The values for metals are based on acid digestion, using aqua regia, of soil samples dried at ≤ 30 °C, sieved to < 2 mm and milled to a fine pulp.

[14] The maximum concentrations/soil trigger levels for chromium are based on 60% of the 98th percentile values from the National Soils Database for each of the seven geological domains.

[15] Total concentration of the following 17 compounds: Naphthalene, Acenaphthylene, Acenaphthene, Anthracene, Benzo[a]anthracene, Benzo[b] fluoranthene, Benzo[k]fluoranthene, Benzo[g,h,i] perylene, Benzo[a]pyrene, Chrysene, Coronene, Dibenzo[a,h]anthracene, Fluorene, Fluoranthene, Indeno[1,2,3-c,d]pyrene, Phenanthrene and Pyrene.

[16] Total concentration of the following seven PCB congeners: PCB-28, PCB-52, PCB-101, PCB-118, PCB-138, PCB-153 and PCB-180.

[17] NAD = No Asbestos Detected.

4. Interpretation of Maximum Concentrations and/or Soil Trigger Levels

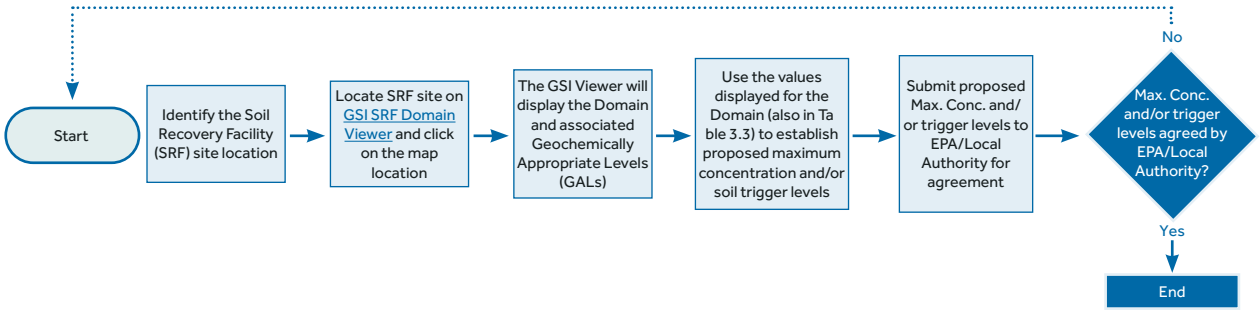
The maximum concentration and/or trigger levels specified in Table 3.3 for non-greenfield soil and stone should be interpreted in the following way for both Basic Characterisation and Compliance Testing:

i. No TOC, total BTEX, mineral oil, total PCBs, total PAH or asbestos result should exceed the respective maximum concentration and/or soil trigger level;

ii. For metals, the analytical results for up to three parameters in any particular soil and stone sample may exceed the respective maximum concentration and/or soil trigger level. However, no individual result should exceed 1.5 times the respective maximum concentration and/or soil trigger level.

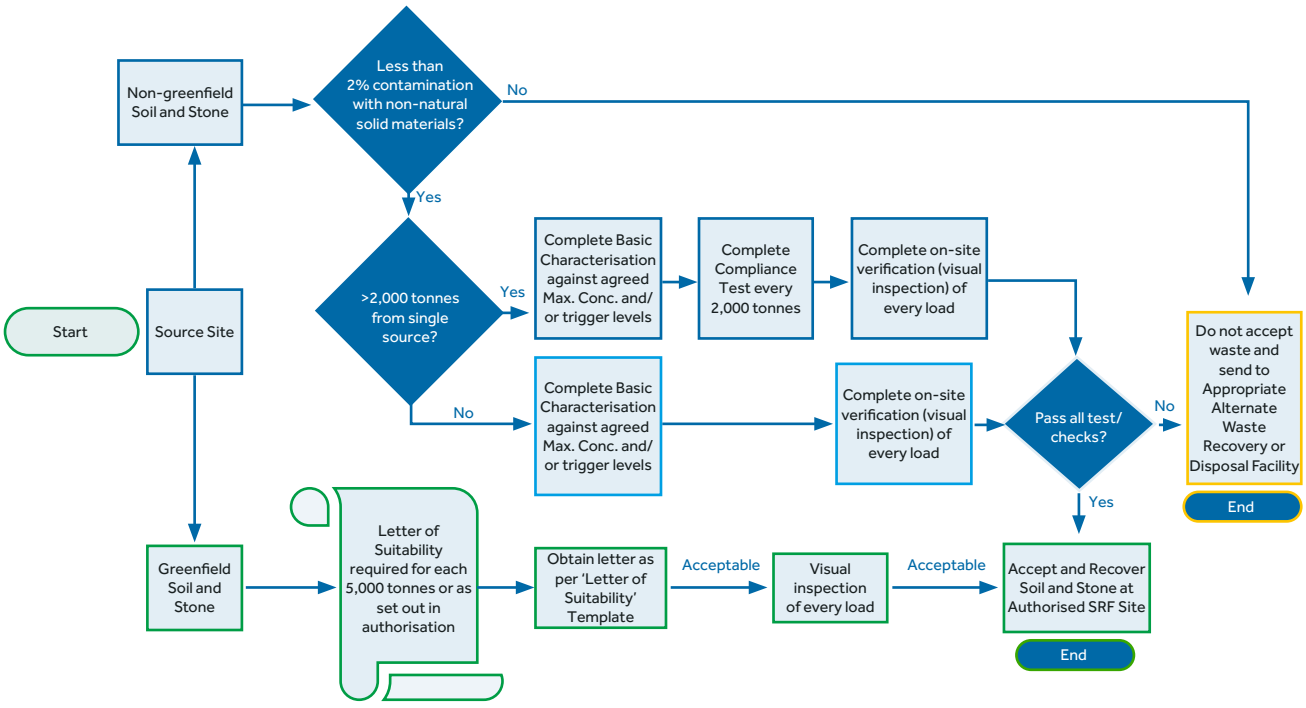
5. The Establishment of Maximum Concentrations and/or Trigger Levels for Soil Recovery Facilities

The flowchart below sets out the steps required to obtain agreement of the maximum concentration and/or trigger levels for relevant contaminants in non-greenfield soil and stone.



6. Soil Recovery Facility Waste Acceptance Protocols

This flowchart illustrates the standard waste acceptance protocols for soil recovery facilities.



7. Glossary of Terms

Basic characterisation
A thorough determination, according to standardised analysis and behaviour testing methods, of the short and long-term leaching behaviour and/or characteristic properties of the soil and stone.

Compliance testing
Periodical testing by standard analysis and behaviour-testing methods to determine whether soil and stone complies with a condition and/or specific reference criteria. The tests focus on key variables and behaviour identified by basic characterisation.

Contaminated soil and stone
Soil and stone that contains anthropogenic or man-made substances (such as rubble, concrete, bricks, metal and bitumen) that are not natural to the environment from which the material was extracted.

Greenfield soil and stone
Soil and stone from land that has not been previously developed and is not contaminated soil and stone.

Inert waste
Waste that does not undergo any significant physical, chemical or biological transformations. Inert waste will not dissolve, burn or otherwise physically or chemically react, biodegrade or adversely affect other matter with which it comes into contact in a way likely to give rise to environmental pollution or harm human health. The total leachability and pollutant content of the waste and the ecotoxicity of the leachate must be insignificant, and in particular must not endanger the quality of surface water and/or groundwater.

Non-greenfield soil and stone
Soil and stone that is not greenfield soil and stone.

Qualified person
A suitably qualified, trained and experienced person who is a registered professional with chartered status (or equivalent) awarded by a relevant professional body and who has the requisite knowledge and experience required to issue a letter of suitability.

Soil and stone
Excavation or dredge spoil comprising natural materials of clay, silt, sand, gravel or stone and which comes within the meaning of inert waste.

Trigger level
A parameter value, the achievement or exceedance of which requires certain actions to be taken by the licensee or permit/certificate holder.

Uncontaminated soil and stone
Essentially relates to virgin soil or soil that is equivalent to virgin soil.

Appendix 1. Template Letter of Suitability for Greenfield Soil and Stone

Declaration
I declare that all the information and particulars given in this letter and any associated attachments are truthful, accurate and complete to the best of my knowledge and belief.

Signed:_____**Date:**_____

Name (print):_____

Position:_____

Company name:_____

Telephone number & email:_____

Destination Authorisation Reference No.:_____

Tonnes of Soil & Stone covered by this letter:_____
(Maximum 5,000 tonnes per letter)

1. Is the waste greenfield soil and stone*? ☐Yes ☐No
   (please place x in the corresponding box).

   If the answer is 'No', the soil and stone is required to meet the minimum criteria for non-greenfield soil and stone to be accepted at an authorised soil recovery facility.

2. Provide details of the location of the source of the soil and stone (including a map showing the source site boundary and approximate extent of the excavation).

Map Ref. No: Map. Address/Location:

3. Provide the source site grid reference for the centre point of the site (Irish Grid Reference: Easting 6 digit, Northing 6 digit):

Grid Reference: Easting _____ Northing _____

4. Provide the Planning Permission Reference Number for the source site, where applicable:

Planning Ref. No.:

5. Provide a description of the source and nature of the soil and stone:

**Greenfield soil and stone: Soil and stone from land that has not been previously developed and is not contaminated soil and stone.*

6. Is the waste suitable for acceptance at the destination soil recovery facility? ☐Yes ☐No
(please place x in the corresponding box)

7. Is the source site free from contamination that may have arisen from activities at or adjacent to the source (e.g., industry)? ☐Yes ☐No
(please place x in the corresponding box)

8. Does the source site contain any invasive plant species (e.g., Japanese Knotweed)? ☐Yes ☐No
(please place x in the corresponding box)

9. Provide details of your professional registration and chartered status (or equivalent):

10. Provide details of the relevant Professional body who awarded your chartered status (or equivalent):

11. Attach a letter from the Professional body who awarded your chartered status (or equivalent) stating that the body is satisfied to state that you are a person who is suitably qualified, trained and experienced to be able to issue a letter of suitability.

    Confirm letter attached by placing an x in this box: ☐

12. Provide details of your relevant knowledge and experience:

13. Relevant additional information/comments:

NOTES

An Ghníomhaireacht um Chaomhnú Comhshaoil

Tá an Ghníomhaireacht um Chaomhnú Comhshaoil (GCC) freagrach as an gcomhshaol a chaomhnú agus a fheabhsú mar shócmhainn luachmhar do mhuintir na hÉireann. Táimid tiomanta do dhaoine agus don chomhshaol a chosaint ar thionchar díobhálach na radaíochta agus an truaillithe.

Is féidir obair na Gníomhaireachta a roinnt ina trí phríomhréimse:

Rialú: Déanaimid córais éifeachtacha rialaithe agus comhlíonta comhshaoil a chur i bhfeidhm chun torthaí maithe comhshaoil a sholáthar agus chun díriú orthu siúd nach gcloíonn leis na córais sin.

Eolas: Soláthraímid sonraí, faisnéis agus measúnú comhshaoil atá ar ardchaighdeán, spriocdhírithe agus tráthúil chun bonn eolais a chur faoin gcinnteoireacht ar gach leibhéal.

Tacaíocht: Bímid ag saothrú i gcomhar le grúpaí eile chun tacú le comhshaol atá glan, táirgiúil agus cosanta go maith, agus le hiompar a chuirfidh le comhshaol inbhuanaithe.

Ár bhFreagrachtaí

Ceadúnú

Déanaimid na gníomhaíochtaí seo a leanas a rialú ionas nach ndéanann siad dochar do shláinte an phobail ná don chomhshaol:

- saoráidí dramhaíola (m.sh. láithreáin líonta talún, loisceoirí, stáisiúin aistrithe dramhaíola);
- gníomhaíochtaí tionsclaíocha ar scála mór (m.sh. déantúsaíocht cógaisíochta, déantúsaíocht stroighne, stáisiúin chumhachta);
- an diantalmhaíocht (m.sh. muca, éanlaith);
- úsáid ghlanscartha agus scaoileadh rialaithe Orgánach Géinmhodhnaithe (OGanna);
- foinsí radaíochta ianúcháin (m.sh. trealamh x-gha agus radaiteiripe, foinsí tionsclaíocha);
- áiseanna móra stórála peitril;
- sceitheadh fuíolluisce;
- gníomhaíochtaí dumpála ar farraige.

Forfheidhmiú Náisiúnta i leith Cúrsaí Comhshaoil

- Clár náisiúnta iniúchtaí agus cigireachtaí a dhéanamh gach bliain ar shaoráidí a bhfuil ceadúnas ón nGníomhaireacht acu.
- Maoirseacht a dhéanamh ar fhreagrachtaí cosanta comhshaoil na n-údarás áitiúil.
- Caighdeán an uisce óil, arna sholáthar ag soláthraithe uisce phoiblí, a mhaoirsiú.
- Obair le húdaráis áitiúla agus gníomhaireachtaí eile chun dul i ngleic le coireacht chomhshaoil trí chomhordú a dhéanamh ar líonra forfheidhmiúcháin náisiúnta, díriú ar chiontóirí, agus maoirsiú a dhéanamh ar fheabhsúchán.
- Cur i bhfeidhm rialachán ar nós na Rialachán um Dhramhthrealamh Leictreach agus Leictreonach (WEEE), um Shrian ar Shubstaintí Guaiseacha agus na Rialachán um rialú ar shubstaintí a ídíonn an ciseal ózóin.
- An dlí a chur orthu siúd a bhriseann dlí an chomhshaoil agus a dhéanann dochar don chomhshaol.

Bainistíocht Uisce

- Monatóireacht agus tuairisciú a dhéanamh ar cháilíocht aibhneacha, lochanna, uiscí idirchreasa agus cósta na hÉireann, agus screamhuiscí; leibhéil uisce agus sruthanna aibhneacha a thomhas.
- Comhordú náisiúnta agus maoirsiú a dhéanamh ar an gCreat-Treoir Uisce.
- Monatóireacht agus tuairisciú a dhéanamh ar Cháilíocht an Uisce Snámha.

Monatóireacht, Anailís agus Tuairisciú ar an gComhshaol

- Monatóireacht a dhéanamh ar cháilíocht an aeir agus Treoir an AE maidir le hAer Glan don Eoraip (CAFÉ) a chur chun feidhme.
- Tuairisciú neamhspleách le cabhrú le cinnteoireacht an rialtais náisiúnta agus áitiúil (*m.sh. tuairisciú tréimhsiúil ar Staid Chomhshaol na hÉireann agus Tuarascálacha ar Thascairí*).
- **Rialú Astaíochtaí na nGás Ceaptha Teasa in Éirinn**
- Fardail agus réamh-mheastacháin na hÉireann maidir le gás ceaptha teasa a ullmhú.
- An Treoir maidir le Trádáil Astaíochtaí a chur chun feidhme i gcomhair breis agus 100 de na táirgeoirí dé-ocsaíde carbóin is mó in Éirinn.

Taighde agus Forbairt Comhshaoil

- Taighde comhshaoil a chistiú chun brúnna a shainaithint, bonn eolais a chur faoi bheartais, agus réitigh a sholáthar i réimsí na haeráide, an uisce agus na hinbhuanaitheachta.

Measúnú Straitéiseach Comhshaoil

- Measúnacht a dhéanamh ar thionchar pleananna agus clár beartaithe ar an gcomhshaol in Éirinn (*m.sh. mórphleananna forbartha*).

Cosaint Raideolaíoch

- Monatóireacht a dhéanamh ar leibhéil radaíochta, agus measúnacht a dhéanamh ar a oiread is atá muintir na hÉireann gan chosaint ar an radaíocht ianúcháin.
- Cabhrú le pleananna náisiúnta a fhorbairt le haghaidh éigeandálaí ag eascairt as taismí núicléacha.
- Monatóireacht a dhéanamh ar fhorbairtí thar lear a bhaineann le saoráidí núicléacha agus leis an tsábháilteacht raideolaíochta.
- Sainseirbhísí cosanta ar an radaíocht a sholáthar, nó maoirsiú a dhéanamh ar sholáthar na seirbhísí sin.

Treoir, Faisnéis Inrochtana agus Oideachas

- Comhairle agus treoir a chur ar fáil d'earnáil na tionsclaíochta agus don phobal maidir le hábhair a bhaineann le caomhnú an chomhshaoil agus leis an gcosaint raideolaíoch.
- Faisnéis thráthúil ar an gcomhshaol ar a bhfuil fáil éasca a chur ar fáil chun rannpháirtíocht an phobail a spreagadh sa chinnteoireacht i ndáil leis an gcomhshaol (m.sh. Timpeall an Tí, Mapaí Radóin).
- Comhairle a chur ar fáil don Rialtas maidir le hábhair a bhaineann leis an tsábháilteacht raideolaíoch agus le cúrsaí práinnfhreagartha.
- Plean Náisiúnta Bainistíochta Dramhaíola Guaisí a fhorbairt chun dramhaíl ghuaiseach a chosc agus a bhainistiú.

Múscailt Feasachta agus Athrú Iompraíochta

- Feasacht chomhshaoil níos fearr a ghiniúint agus dul i bhfeidhm ar athrú iompraíochta dearfach trí thacú le gnóthais, le pobail agus le teaghlaigh a bheith níos éifeachtúla ar acmhainní.
- Tástáil le haghaidh radóin a chur chun cinn i dtithe agus in ionaid oibre, agus gníomhartha leasúcháin a spreagadh nuair is gá.

Bainistíocht agus Struchtúr an GCC

Tá an ghníomhaíocht á bainistiú ag Bord lánaimseartha, ar a bhfuil Ard-Stiúrthóir agus cúigear Stiúrthóirí. Déantar an obair ar fud cúig cinn d'Oifigí:

- An Oifig um Inbhuanaitheacht Comhshaoil
- An Oifig Forfheidhmithe i leith cúrsaí Comhshaoil
- An Oifig um Fhianaise agus Measúnú
- An Oifig um Chosaint Radaíochta agus Monatóireacht Comhshaoil
- An Oifig Cumarsáide agus Seirbhísí Corparáideacha

Tá Coiste Comhairleach ag an nGníomhaireacht le cabhrú léi. Tá dáréag comhaltaí air agus tagann siad le chéile go rialta le plé a dhéanamh ar ábhair imní agus le comhairle a chur ar an mBord.

Environmental Protection Agency
An Ghníomhaireacht um Chaomhnú Comhshaoil

Headquarters, PO Box 3000
Johnstown Castle Estate
County Wexford, Ireland

Ceanncheathrú, Bosca Poist 3000
Eastát Chaisleán Bhaile Sheáin
Contae Loch Garman, Éire

T:+353 53 916 0600
F:+353 53 916 0699

Regional Inspectorate
McCumiskey House, Richview
Clonskeagh Road, Dublin 14, Ireland

Cigireacht Réigiúnach, Teach Mhic Chumascaigh
Dea-Radharc, Bóthar Cluain Sceach
Baile Átha Cliath 14, Éire

T:+353 1 268 0100
F:+353 1 268 0199

Regional Inspectorate
Inniscarra, County Cork, Ireland

Cigireacht Réigiúnach, Inis Cara
Contae Chorcaí, Éire

T:+353 21 487 5540
F:+353 21 487 5545

Regional Inspectorate
John Moore Road, Castlebar
County Mayo, Ireland

Cigireacht Réigiúnach, Bóthar Sheán de Mórdha
Caisleán an Bharraigh, Contae Mhaigh Eo, Éire

T:+353 94 904 8400
F:+353 94 902 1934

Regional Inspectorate
Seville Lodge, Callan Road,
Kilkenny, Ireland

Cigireacht Réigiúnach, Lóiste Sevilla,
Bóthar Challainn, Cill Chainnigh, Éire

T:+353 56 779 6700
F:+353 56 779 6798

Regional Inspectorate
The Glen, Monaghan, Ireland

Cigireacht Réigiúnach, An Gleann
Muineachán, Éire

T:+353 47 77600
F:+353 47 84987

E: info@epa.ie
W: www.epa.ie
Lo Call: 1890 33 55 99

Printed on an environmentally friendly paper stock