Analysis of the Republic of Ireland's Survey System for National Waste Reporting

FINAL REPORT

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Data system	National Waste Report
Country	Republic of Ireland (RoI)
Waste streams	Municipal waste, packaging waste, biodegradable municipal waste, industrial waste (bi-annually), hazardous waste, construction and demolition waste, waste electrical and electronic waste (WEEE), waste batteries
Operational since	1995
Survey method	Annual Excel surveys and questionnaires submitted electronically and, to a lesser extent, in paper format

Background and drivers

In 1994 the Irish Environmental Protection Agency (EPA) identified the availability of reliable and up-to-date data as a key aspect of improving the management of waste in the Republic of Ireland (RoI). In response to this, the National Waste Database was set up and the first National Waste Report was produced for the 1995 calendar year. The reports have been published annually since 2001.

The scope of the National Waste Report has changed little throughout its history, with a focus on waste generation and management in the RoI. The main waste streams covered in each report vary but are generally one or more of the following waste streams:

- municipal waste (household, commercial and local authority cleansing waste)
- packaging waste
- biodegradable municipal waste
- industrial and hazardous waste
- construction and demolition waste (C&D)
- waste electrical and electronic waste (WEEE)
- waste batteries.

Industrial waste generation and management is reported on biannually, in what is called a 'full' reporting year. Years in which National Waste Reports do not comment on industrial waste are called 'interim' reporting years. The scale of the work involved in collating the Industrial Dataset is the primary reason for this division into full and interim reporting years.

The drivers of the National Waste Report and the target waste streams are:

- measuring performance against national and European Union policy document**s**
- demonstrating compliance with legislative requirements, targets and obligations
- public interest—government initiatives, such as the collection of WEEE or waste batteries, often result in increased interest in the reporting of these waste streams
- the need to identify 'priority waste streams' to allow more effective management of certain waste streams.

Dataset and data uses

The National Waste Report series is produced using a number of datasets. The number and scale of datasets produced for the annual report has grown as the demand for verifiable and transparent national statistics has intensified. It is important to note that multiple datasets are often used in tandem to produce the tables and figures in the National Waste Reports, rather than discrete datasets.

The following datasets are currently produced for the National Waste Report.

Local Authority Dataset: There are 34 local authorities in the RoI, each of which is surveyed for the National Waste Report. The survey is in Excel format and is currently made up of six worksheets. This dataset collects information on:

- facilities controlled by waste facility permits—one of the conditions attached to a waste facility permit is that an annual environmental report (AER) is submitted to the issuing local authority on or before 28 February each year. It is the responsibility of each authority to ensure that all active waste facility permit holders submit accurate and complete AERs
- waste handled by waste collection permit holders—this is the system that regulates the collection and movement of waste between local authority areas
- bring banks—civic amenity sites and any other collection receptacles within their functional area, as each local authority has responsibility for maintaining accurate and auditable records.

The Local Authority Dataset, in conjunction with other datasets, is used to report on the generation and management of municipal waste in the RoI. It is also used to report on C&D waste generation and management and to comment on key performance indicators for waste infrastructure. In each given year this dataset also feeds into various other parts of the report, depending on the waste streams selected for commentary.

TransFrontier Shipment of Waste (TFS) Dataset: Information on TFS movements including the types, quantities and end-uses of exported waste streams is gathered through this dataset. The TFS Dataset is particularly important for reporting on industrial waste (bi-annually), hazardous waste and contaminated soil.

Hazardous Waste Facilities Dataset: As of the 2009 National Waste Report there were only 17 facilities in the RoI licensed by the EPA to accept, store or treat hazardous waste. These facilities are surveyed separately from other EPA waste licensed facilities to collate accurate data on the types, quantities and methods used to treat hazardous waste 'offsite from generation' at facilities in the RoI.

In conjunction with the industrial dataset and the TFS datasets, the Hazardous Waste Facilities Dataset is used to report on hazardous waste generation in the RoI and its management nationally and abroad.

Waste Treatment Dataset: This dataset is collated from the RoI Recycling Organisations Survey, UK Recycling Organisations Survey, Composting Facilities Survey, Pallet Merchant Survey and WEEE/ELV/Metal Survey. Some entries from the Landfill Survey and Hazardous Waste Facilities Survey are also used to compile this dataset.

The Waste Treatment Dataset is used to generate statistics on the recovery and disposal of household and commercial waste in the RoI and abroad. It is also used to feed into a number of other aspects of the report, depending on the reporting year.

Landfill Dataset: All active landfills, whether inert or municipal, are requested to submit a landfill survey providing details on the types and quantities of waste disposed and recovered (such as soil and stone or organic waste used for daily cover, capping, haul road construction and landscaping activities) onsite during that calendar year.

The Landfill Dataset is used to report on the quantities and types of waste disposed, which is imperative as a means of tracking national progress towards the Landfill Directive.

Industrial Dataset: A full Industrial Dataset is produced bi-annually and presents statistics on the types and quantities of industrial waste generated in the RoI and comments on how this waste is managed.

System design

The system is designed around a series of annual Excel surveys and questionnaires submitted electronically (although a small number of surveys are in paper format).

All surveys are developed in-house by the EPA, in conjunction with SKM Enviros acting as sole project contractor. Surveys are developed on a sector-specific basis. The current survey formats are as follows:

- **Local Authority Questionnaire:** This survey focuses on the quantities and types of household waste and C&D waste collected and managed in each local authority area. The survey also requests information on municipal waste collected at bring banks and civic amenity sites, the quantity of cleansing waste collected in each area and estimates on home composting and uncollected household waste (or otherwise unaccounted for household waste).
- **TFS Questionnaire:** This survey requests information on the export of waste from local authorities including the name of exporter, destination of waste, type of waste by European Waste Catalogue (EWC) code and waste description, quantity of waste and recovery or disposal code at the end destination.
- **Hazardous Waste Facilities Survey:** This survey requests information on the types and quantities of waste accepted onsite at EPA waste-licensed hazardous waste facilities and whether this waste is treated onsite or moved offsite for recovery or disposal by a third party.
- **RoI Recycling Organisations Survey:** This survey requests information on the types and quantities of waste accepted onsite at waste management facilities (such as material recovery facilities, waste transfer stations and recycling facilities) and whether this waste is recovered onsite or whether it is moved offsite for recovery or disposal by a third party. The survey also requests information on brokered waste—waste that is moved by a company but does not come over the site's weighbridge.
- **UK Recycling Organisations Survey:** This survey is provided to selected waste management companies located in the United Kingdom. This survey only requests information on the types, quantities and treatment (by recovery or disposal code) of waste accepted from the RoI.
- **Composting Facilities Survey:** This survey requests information on the types of waste accepted by composting facilities and the end-uses for the compost produced.
- **Pallet Merchant Survey:** This relatively simple survey requests pallet merchants to provide information on the number or tonnage of pallets and how they are managed.
- **WEEE/ELV/Metal Handlers Survey:** This survey is conducted in-house by the EPA and covers the types and quantities of waste handled by facilities.
- **Landfill Survey:** This survey is provided to all active inert and municipal landfill operators and requests information on the types, quantities and sources of all waste disposed and recovered onsite.

System design

- **Non IPPC-licensed[1] Industry Survey (bi-annual):** This voluntary survey requests industrial facilities to report on the types and quantities of waste generated onsite and for details of the offsite destinations for these waste streams.
- **IPPC-licensed Industry data**: This data is collated bi-annually through the EPA's Pollutant Release Transfer Register (PRTR) reporting system. This large dataset contains information on the quantities of waste generated at IPPC-licensed industrial facilities and whether this waste is treated onsite, treated offsite in the RoI or exported for treatment.

As neither the Non IPPC-licensed or IPPC-licensed datasets are complete, a scale-up methodology is applied to this data, based on sectoral employment levels obtained from the Central Statistics Office, to estimate the total projected waste generated in each of the industrial sectors from the reported data. With the exception of the UK Recycling Organisations Survey and the Non IPPC-Licensed Industry Survey, all surveys issued for the National Waste Report are mandatory.

Roles and responsibilities

The roles and responsibilities for the National Waste Report are outlined below.

- The **EPA** is responsible for producing national statistics on waste generation and management in the RoI, including information on waste exports and imports. This responsibility is fulfilled by publishing the annual National Waste Report. It is also responsible for engaging with survey groups (such as local authorities and waste management companies) to continually improve the quality and quantity of waste data maintained by organisations and submitted via the National Waste Report system.
- **Survey respondents** are required to:
  - submit a complete, valid and timely report to the National Waste Report project team. Failure to do so by EPA waste-licensed companies, local authority permitted facilities and EPA IPPC-licensed industrial facilities may result in enforcement action as it is a condition of all licenses and permits to submit reports to governing agencies as and when requested
  - maintain readily auditable records so that the EPA and SKM Enviros can visit the site and reproduce the submitted data
  - engage with the EPA and SKM Enviros to clarify any queries or issues that may arise from the submitted return.
- **SKM Enviros** (as sole project contractor) is responsible for:
  - ensuring 100 per cent response rates are achieved for all survey groups
  - ensuring all submitted surveys are fully validated and any issues are clarified with the organisations in question
  - ensuring all audits and site verifications visits are conducted to an agreed agency standard
  - ensuring that datasets are collated in full, on time and to the highest standard possible
  - liaising with the EPA after datasets are handed over to clarify any issues or queries that may arise at this time.

[1] Integrated Pollution Prevention Control—IPPC licences aim to prevent or reduce emissions to air, water and land, reduce waste and use energy and resources efficiently. An IPPC licence is a single integrated licence which covers all emissions from the facility and its environmental management.

Operational features

Each National Waste Report is made up of a number of readily identifiable phases, some of which run concurrently to meet strict time constraints. These phases and their principal components are as follows:

- **Project preparation and issuing of surveys**

  This includes:

  - updating master mailing lists
  - updating, amending or replacing surveys based on feedback from respondents and general observations by the EPA and SKM Enviros
  - issuing EPA letters to all respondents on the master mailing lists advising of deadline dates.

- **Survey chase-up**

  This includes courtesy phone calls to all respondents one week before the deadline to increase the response rate at survey deadline. There is also a dedicated National Waste Report helpline and email to support respondents. Once the survey deadlines have passed, the project team commences sustained chase-up of outstanding surveys. With the exception of the bi-annual Non IPPC Industry Survey, SKM Enviros must achieve a 100 per cent response rate for each of the surveyed groups for each National Waste Report project.

- **Desk-top validation of surveys**

  All submitted surveys are fully validated in line with agreed templates. As a minimum all surveys are:

  - compared with the previous year's return where available
  - checked for obvious anomalies
  - checked for mass balances to identify missing tonnages
  - assessed for flows of waste to ensure that incoming waste streams are consistent with treated, storage or outgoing waste streams.

  Once the validation templates have been completed and queries identified, organisations are contacted via telephone and email to resolve the issues.

- **Site verification visits and audits**

  A number of site verification visits to selected organisations are conducted each year. The purpose of these visits is to recreate the data submitted by organisations in their National Waste Report surveys from the company's raw data such as from weighbridge tickets, delivery dockets and sales invoices.

  A number of audits are also conducted on local authorities each year. These audits are used to verify the data submitted to local authorities by waste facility permit holders and waste collection permit holders in addition to the information held by authorities on bring banks, civic amenity sites, home composting and their own collections of household waste.

  As well as directly verifying individual survey submissions, the EPA and SKM Enviros conduct a data reconciliation exercise.

- **Collation of datasets**

  Once all surveys have been fully validated, the collation of datasets is initiated. When the databases have been fully reviewed and signed-off the data is exported to an Excel spreadsheet. This spreadsheet is further manipulated to present the data in varying formats, as required by the EPA.

System costs

There are a number of costs related to preparing and publishing the annual National Waste Report series.

- **Contractor costs**: The project duration is approximately nine months during which time a dedicated team (made up of a project manager, project director and, depending on the reporting year, approximately three to six team members) works on the project full-time and without interruption.
- **Direct agency costs:** A dedicated project team within the EPA also works full-time on collating the National Waste Report, particularly at and following the stage datasets are handed over.
- **Miscellaneous costs:** These include publishing the report and organising media and press releases at the time of publishing.

There is no publicly reported information on the costs of National Waste Report. However the last contract (2007 to 2010) was awarded under the European Procurement Regulations which suggests that the contract value was in excess of €193,000.

System benefits

The primary benefit of the National Waste Report is that it fulfils the RoI's national and European Union reporting requirements on waste data.

Lessons learnt

The National Waste Report series has evolved significantly since its inception in 1994. The level of detail requested from survey respondents, coupled with the level of validation checks performed on submitted returns and the number of site visits performed, has seen this reporting series evolve into a robust and thorough mechanism for reporting on waste statistics for the RoI. The key lessons learnt throughout the history of the National Waste Report series include:

- Surveys should be streamlined to exclude data that is not used for the National Waste Report as the EPA is aware of the reporting burdens already facing organisations and is keen to streamline and simplify all surveys as much as possible.
- Sector-specific surveys should be developed. During the early years of the National Waste Report series, often one survey was developed and issued to all survey groups. For very specific facilities such as composting facilities and pallet merchants, the survey did not fit their reporting requirements well and led to confusion and unnecessary levels of follow-up. By developing sector-specific surveys, organisations can readily identify with the information being requested and are more likely to complete and submit the survey on time.
- More training and guidance is needed. Since 2004 the EPA has conducted training courses with waste management facilities and local authorities on completing National Waste Report surveys. There is anecdotal evidence to suggest that the introduction of the annual training events and guidance manuals have improved the overall quality of data submitted to the National Waste Report.
- The dedicated helpline and email helpdesk have been beneficial. Since 2004 SKM Enviros has run a dedicated National Waste Report helpline and helpdesk and all parties (EPA, SKM Enviros, survey respondents) agree that these helpdesks have greatly increased the interaction between survey respondents and the National Waste Report team. The quality and timeliness of the submitted data has therefore greatly improved.

Lessons learnt
The primary lesson to be learnt from the current National Waste Report system is the need and desire for a combined, online reporting system to replace the current myriad of reports, surveys and questionnaires submitted by both EPA waste licensed and local authority permitted waste companies. The complexity of this task, in conjunction with issues of governance and liability, has prevented this from occurring to-date; however, it is expected that such a system will be introduced over the coming years.

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Detailed Report - National Waste Report

1 Background and drivers

In 1994 the Irish Environmental Protection Agency (EPA) identified reliable and up-to-date data as one of the keys to assisting improved management of waste in the Republic of Ireland (the RoI). In response to this the National Waste Database was set up and the first National Waste Report was produced for the 1995 calendar year. The reports have been published annually since 2001.

Considerable changes have taken place since the first National Waste Report was published. There have been changes in the way waste is managed and reported in the RoI and in policy and public attitudes towards waste. These changes are reflected in the National Waste Report series and the way data is collated, verified, analysed and reported.

The scope of the National Waste Report has remained quite similar throughout its history, with a focus on waste generation and management in the RoI. The main waste streams covered within each report vary but generally they are one or more of the following:

- municipal waste (household, commercial and local authority cleansing waste)
- packaging waste
- biodegradable municipal waste
- industrial and hazardous waste
- construction and demolition waste (C&D)
- waste electrical and electronic waste (WEEE)
- waste batteries.

Information on industrial waste generation and management is reported bi-annually, in what is called a 'full' reporting year. National Waste Reports that do not comment on industrial waste are called 'interim' reporting years. The scale of the work involved in collating the Industrial Dataset is the primary reason for this division into full and interim reporting years.

The number and selection of waste streams for each National Waste Report is driven by a number of factors including:

National and European Union policy documents

- Waste Management—Changing Our Ways, a policy statement, Department of the Environment and Local Government, 1998.
- Preventing and Recycling Waste—Delivering Change, a policy statement, Department of the Environment and Local Government, 2002.
- National Hazardous Waste Management Plan, EPA, as updated.
- International Review of Waste Management Policy in Ireland, Eunomia et al., Department of Environment, Heritage and Local Government, 2009.
- Municipal Solid Waste—Pre-Treatment and Residuals Management, an EPA technical guidance document, EPA, 2009.

Legislative drivers, targets and obligations

- European Waste Statistics Regulations
- The Basel Convention (related to the international shipment of waste)
- The Packaging Directive 94/62/EC as amended
- WEEE directive 2002/96/EC
- End of Life Vehicles Directive 2000/53/EC
- Batteries Directive 2006/66/EC
- Landfill Directive 1999/31/EC
- New Waste Framework Directive 2008/98/EC.

Public interest

Intense government-driven initiatives, such as the collection of WEEE or waste batteries, often result in increased interest in the reporting of these waste streams.

Identification of 'priority waste streams'

Waste streams may be designated as 'priority' for a number of reasons including:

- quantities generated—for example demolition C&D waste over the last decade
- to assess compliance with legislation—for example disposal of whole waste tyres to landfill
- to assess progress towards national or European Union targets—for example the quantity of biodegradable municipal waste disposed to landfill against the Landfill Directive 1999/31/EC.

2 Dataset and data uses

The National Waste Report series is produced using a number of datasets. The number and scale of datasets produced for this annual report has evolved significantly as the demand for robust, verifiable and transparent national statistics has intensified. It is important to note that multiple datasets are often used in tandem to produce the tables and figures in the reports, rather than discrete datasets.

Datasets are produced from submitted surveys and questionnaires. The number of surveys and questionnaires issued for the National Waste Report varies significantly according to the reporting year (whether full or interim) but it is generally more than 450 surveys. To some extent the companies to be surveyed during each reporting year is decided arbitrarily by the EPA. In general, the master mailing list is made up of:

- all active EPA waste licensed facilities including landfills, composting facilities, material recovery facilities (MRF), waste transfer stations (WTS), civic amenity sites and integrated waste management facilities (approximately 150 surveys in the 2009 National Waste Report)
- a large number of local authority permitted waste facilities which handle, treat or broker loads of waste (approximately 60 surveys in the 2009 National Waste Report)
- a large number of facilities involved in the management and handling of waste but which are not local-authority permitted or EPA waste-licensed (approximately 140 surveys in the 2009 National Waste Report)

- a small number of manufacturing facilities which are important for understanding the Irish waste market (five companies in the 2009 National Waste Report)
- recycling facilities based in Northern Ireland and Great Britain (approximately 40 surveys in the 2009 National Waste Report)
- local authorities (34 surveys each year—the number does not vary between reporting years)
- National TFS Office (one survey)
- a large number of non-IPPC licensed[2] industrial facilities (selected for survey based on NACE code[3] and surveyed bi-annually (approximately 100 surveys in 2008)
- all IPPC-licensed industrial facilities. These facilities must submit a return through the EPA's Pollutant Release Transfer Register (PRTR) reporting system. This information is collated bi-annually for the National Waste Report. In 2008 data was received from approximately 300 facilities by way of the PRTR system.

It is important to note that some larger organisations with multiple sites choose to submit a combined survey for all sites. The number of facilities surveyed is therefore generally higher than the number of surveys issued.

The following datasets are currently produced for the National Waste Report.

2.1 Local Authority Dataset

There are 34 local authorities in the RoI. Each of these is surveyed for the National Waste Report. The survey issued to local authorities is called the Local Authority Questionnaire. There is no specific reason why this survey is called a questionnaire as, similar to the other National Waste Report surveys, it is in Excel format. In its current format the Local Authority Questionnaire is made up of six worksheets.

In the RoI each local authority is responsible for issuing waste facility permits. A waste facility permit allows for the temporary storage, recovery or disposal of a specified number of waste streams at a site, up to a specified tonnage capacity. For example, land restoration sites, where soil and stone is being used to fill in a site back to its original condition, are governed by waste facility permits. One of the conditions attached to granting a waste facility permit is that an annual environmental report (AER) is submitted to the issuing local authority on or before 28 February each year. It is the responsibility of each authority to ensure that all active waste facility permit holders submit accurate and complete AERs.

Local authorities are also responsible for issuing waste collection permits—the system which regulates the collection and movement of waste between local authority areas. Local authorities are grouped into regions for the waste collection permit system. One local authority within each region is designated as the 'nominated' authority and is responsible for issuing all waste collection permits on behalf of that region to companies collecting waste within the boundaries of the regional grouping.

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2 Integrated Pollution Prevention Control—IPPC licences aim to prevent or reduce emissions to air, water and land, reduce waste and use energy/resources efficiently. An IPPC licence is a single integrated licence which covers all emissions from the facility and its environmental management.

3 A pan-European classification system that groups organisations according to their business activities. The code designates a unique five or six digit code to each sector.

The nominated authority is also responsible for ensuring waste collection permit holders submit valid AERs. They then circulate the submitted data to the secondary authorities within the regional grouping. A second system is also in operation whereby 10 nominated authorities nationwide may grant multi-region permits. Companies may then request to collect waste across multiple regional groupings under one waste collection permit rather than apply for several individual regional waste collection permits.

Individual local authorities are also responsible for maintaining accurate and auditable records in on bring banks, civic amenity sites and any other collection receptacles within their area.

The Local Authority Dataset, in conjunction with various other datasets, is used to report on the generation and management of municipal waste in the RoI. It is also used to report on C&D waste generation and management and to comment on key performance indicators on national waste infrastructure for industry and public use . Each year this dataset also feeds into various other parts of the report, depending on the waste streams selected for commentary.

2.2 TFS Dataset

Until relatively recently each local authority was responsible for issuing TransFrontier Shipment of Waste (TFS) forms for loads of waste exported from its area. This responsibility now lies with the National TFS Office operated by Dublin City Council.

Information on TFS movements within each calendar year is submitted to the EPA so that data on the types, quantities and end-uses of exported waste streams can be assessed for the National Waste Report. The TFS dataset is particularly important for reporting industrial waste (bi-annually), hazardous waste and contaminated soil.

2.3 Hazardous Waste Facilities Dataset

As of the 2009 National Waste Report there were only 17 facilities in the RoI which were waste licensed by the EPA to accept, store and/or treat hazardous waste. These facilities, called hazardous waste facilities, are surveyed separately from other EPA waste-licensed facilities to collate accurate data on the types, quantities and methods used to treat hazardous waste 'offsite from generation' at facilities in the RoI.

In conjunction with the industrial dataset and the TFS datasets, the Hazardous Waste Facilities Dataset is used to report on hazardous waste generation in the RoI and its management nationally and abroad.

2.4 Waste Treatment Dataset

This dataset is collated from the RoI Recycling Organisations Survey, UK Recycling Organisations Survey, Composting Facilities Survey, Pallet Merchant Survey and WEEE/ELV/Metal Survey. Some entries from the Landfill Survey and Hazardous Waste Facilities Survey are also used.

Survey respondents are requested to provide detailed information on all waste types accepted, stored and treated onsite and moved offsite for recovery or disposal by a third party. Respondents are also requested to provide information on brokered waste—waste that has been moved by the company but that has not come through the site. It is imperative that detailed information is provided by respondents as this is used to track the flow of waste across the RoI and beyond.

The Waste Treatment Dataset is used to generate statistics on the recovery and disposal of household and commercial waste in the RoI and abroad. It is also used to feed into a number of other aspects of the report, as determined by the reporting year.

2.5 Landfill Dataset

All active landfills, whether inert or municipal, are requested to submit a Landfill Survey providing details on the types and quantities of waste disposed and recovered (such as soil and stone or organic waste used for daily cover, capping, haul road construction and landscaping activities) onsite during the calendar year in question.

The Landfill Dataset is used to report on the quantities and types of waste disposed. This is imperative as a means of tracking national progress towards the Landfill Directive.

2.6 Industrial Dataset

A full Industrial Dataset is produced bi-annually and presents statistics on the types and quantities of industrial waste generated in the RoI and comments on how this waste is managed.

The Industrial Dataset is collated from IPPC data (submitted via the EPA's PRTR system) and non-IPPC Industry Survey returns. Responses to the Non IPPC Industry Survey are generally poor. This is primarily because this is a voluntary survey which, unlike the other National Waste Report Surveys, the EPA does not hold jurisdiction to enforce.

3 System design

All surveys are developed in-house by the EPA, in conjunction with SKM Enviros acting as sole project contractor. Surveys are developed on a sector-specific basis and are in Excel format. The current survey formats are as follows:

- **Local Authority Questionnaire**: This survey focuses on the quantities and types of household waste and construction and C&D waste collected and managed within each local authority area. The survey also requests information on municipal waste collected at bring banks and civic amenity sites, the quantity of cleansing waste collected within each area and estimates regarding home composting and uncollected household waste (or otherwise unaccounted for household waste).
- **TFS Questionnaire**: This survey requests information on the export of waste from local authorities abroad, including the name of exporter, destination of waste, type of waste by European Waste Catalogue (EWC)[4] code and waste description, quantity of waste and recovery or disposal code at the end destination.
- **Hazardous Waste Facilities Survey**: This survey requests information on the types and quantities of waste accepted onsite at EPA waste-licensed hazardous waste facilities and whether this waste is treated onsite or moved offsite for recovery or disposal by a third party.
- **RoI Recycling Organisations Survey**: This survey requests information on the types and quantities of waste accepted onsite at waste management facilities (such as MRF, WTS and recycling facilities) and whether this waste is recovered onsite or whether it is moved offsite for recovery or disposal by a third party. The survey also requests information on brokered waste—waste that is moved by a company but does not come over the site's weighbridge.

[4] The European Waste Catalogue is the European-wide coding system for waste.

- **UK Recycling Organisations Survey**: This survey is provided to selected waste management companies located in the United Kingdom. It consists of one worksheet only and merely requests information on the types, quantities and treatment (by recovery or disposal code) of waste accepted from the RoI.
- **Composting Facilities Survey**: This survey requests information on the types of waste accepted by composting facilities and the end uses for the compost produced.
- **Pallet Merchant Survey**: This relatively simple survey requests pallet merchants to detail either the number or tonnage of pallets[5]:

  (i) accepted onsite

  (ii) repaired onsite for re-sale

  (iii) re-used directly without need of repair

  (iv) sent offsite for recovery or disposal by a third party.

  Pallet merchants are also requested to provide information on miscellaneous waste generated onsite such as steel banding and plastic sheeting from pallet bales and steel nails removed during refurbishment.
- **WEEE/ELV/Metal Handlers Survey**: This survey is conducted in-house by the EPA rather than by SKM Enviros and therefore the content of the survey is subject to change. Some pieces of data which are relevant to the Waste Treatment Dataset are provided to SKM Enviros.
- **Landfill Survey**: This survey is provided to all active inert and municipal landfill operators and requests information on the types, quantities and sources of all waste disposed and recovered onsite.
- **Non IPPC-licensed Industry Survey (bi-annual):** This voluntary survey requests industrial facilities to report on the types and quantities of waste generated onsite and to provide details on the offsite destinations for these waste streams.
- **IPPC-licensed Industry data:** This data is collated bi-annually through the EPA's PRTR reporting system. This large dataset contains information on the quantities of waste generated at IPPC-licensed industrial facilities and whether this waste is treated onsite, treated offsite in the RoI or exported for treatment.

As neither the Non IPPC-licensed or IPPC-licensed datasets are complete, a scale-up methodology is applied to this data based on sectoral employment levels obtained from the Central Statistics Office. These are used to estimate the total projected waste generated in each of the industrial sectors from the reported data.

The EPA issues letters to all respondents in January each year requesting they submit a completed survey to a dedicated email account on or before 28 February, with the exception of local authorities which have until mid-May to submit their returns. SKM Enviros starts sustained 'chase-up' of surveys one week before survey deadlines and continues until a 100 per cent response rate has been achieved for all survey groups. It is important to note that a '100 per cent response rate' does not equate to 100 per cent of surveys being submitted as some companies may have ceased trading or may not have accepted any waste in that calendar year. Once all surveys have been received or designated as 'not responding', then it is accepted that a 100 per cent response rate has been achieved.

[5] A pallet (sometimes called a skid) is a flat transport structure (normally wooden) that supports goods while being lifted by a forklift, pallet jack, front loader or other jacking device.

A small number of respondents continue to submit completed surveys in paper format. Once received, these are transcribed into electronic format for ease of use and for version control purposes.

With the exception of the UK Recycling Organisations Survey and the Non IPPC-Licensed Industry Survey, all surveys issued for the National Waste Report require mandatory completion and submission.

4 Roles and responsibilities

The roles and responsibilities for the EPA, survey respondents and SKM Enviros are outlined in the following sections.

4.1 Environmental Protection Agency

The EPA is responsible for producing national statistics on waste generation and management in the RoI, including information on waste exports and imports.[6] This responsibility is fulfilled by publishing the annual National Waste Report.

The EPA is also responsible for engaging with survey groups (such as local authorities and waste management companies) to continually improve the quality and quantity of waste data maintained by organisations and submitted via the National Waste Report system.

The annual preparation of the National Waste Report is a time-limited exercise. Considerable efforts are expended on collating, verifying and analysing an entire year's data in a 12-month period so that the reports are no more than one year in arrears. Where additional or improved datasets become available after reports have been published, the recalculated data is published (for example with packaging and biodegradable municipal waste data).[7]

The EPA is committed to auditing and verifying a portion of submitted National Waste Report data each year. This process is critical for ensuring that reported data is accurate.

As the scope of the report continues to grow and as new policy documents and drivers come into force, the EPA is committed to devising new surveys and datasets to capture data on new waste streams such as WEEE, ELVs and waste batteries in recent years.

4.2 Survey respondents

It is the responsibility of survey respondents to:

- submit a complete, valid and timely response to the National Waste Report project team. Failure to do so by EPA waste-licensed companies, local authority permitted facilities and EPA IPPC-licensed industrial facilities may result in enforcement action as it is a condition of all licenses or permits to submit reports to governing agencies as and when requested. Failure by unlicensed or unpermitted facilities to submit a return may result in a site inspection by the EPA to retrieve the data directly
- maintain readily auditable records so that the EPA and SKM Enviros can visit the site and reproduce the submitted data
- engage with the EPA and SKM Enviros to clarify any queries or issues.

[6] National Waste Report 2008

[7] National Waste Report 2006

4.3 SKM Enviros

It is the responsibility of SKM Enviros to:

- ensure a 100 per cent response rate is achieved for all survey groups
- ensure all submitted surveys are fully validated and any issues clarified with the organisations in question
- ensure all audits and site verifications visits are conducted to an agreed agency standard and that reports are circulated in a timely manner to all attendees following the visits and audits
- ensure that datasets are collated in full, on time and to the highest standards possible
- ensure that the contractor liaise with the EPA following handover of datasets to clarify any issues or queries.

5 Operational features

Each National Waste Report is made up of a number of readily identifiable phases, some of which run concurrently to meet strict time constraints. These phases and their principal components are outlined below.

5.1 Project preparation and issuing of surveys

The main tasks undertaken within this phase are:

- **updating master mailing lists**

  This includes amending contact details, removing closed companies and adding new companies. This information is collated and logged during each reporting period so that the next reporting year contains the most up-to-date information possible.

- **updating, amending or replacing surveys**

  Feedback from respondents and general observations by the EPA and SKM Enviros may necessitate amendments to surveys between reporting years. The EPA strives to minimise the reporting burden on survey respondents therefore surveys are streamlined and simplified as far as possible each year, whilst still maintaining the level of detail necessary for the EPA to fulfil its reporting obligations.

- **issuing EPA letters to all respondents on the master mailing lists advising of deadline dates**

  This is performed by the EPA directly, although all subsequent contact with the organisations from this time until project closure is conducted by SKM Enviros.

5.2 Survey chase-up

Courtesy phone calls are made to all respondents on the mailing lists one week before the deadline. This has been found to increase the response rate by the survey deadline. Respondents are provided with the dedicated National Waste Report helpline and email account details at this time. The helpdesks are open during normal working hours for the duration of the project and operated by the SKM Enviros National Waste Report team. All calls, both incoming and outgoing, are logged in a correspondence spreadsheet. All project team members can then access up-to-date information for all survey respondents at any time.

Once the survey deadline has passed, the project team commences sustained 'chase-up' of outstanding surveys. With the exception of the bi-annual Non-IPPC Industry Survey, SKM Enviros must achieve a 100 per cent response rate for each of the surveyed groups for each National Waste Report project.

5.3 Desk-top validation of surveys

All submitted surveys are fully validated in line with agreed templates (an example is provided in Appendix 1). As a minimum all surveys are:

- compared with the previous year's return where available
- checked for obvious anomalies such as unit errors, EWC codes that do not match waste descriptions, missing or incomplete information and nonsensical information
- checked for mass balances—to identify missing tonnages
- assessed for flows of waste—to ensure that incoming waste streams are consistent with treated, storage and/or outgoing waste streams.

Once the validation templates have been completed and queries identified, organisations are contacted via telephone and email to resolve the issues. All clarifications are logged appropriately and the surveys updated if necessary.

5.4 Site verification visits and audits

A number of site verification visits to selected organisations are conducted each year. The number of visits can vary significantly between reporting years with a previous maximum of approximately 50 site visits to a recent minimum of approximately 20. The number of site verification visits undertaken and the type of facilities selected (such as recycling organisations, MRFs, landfills or composting facilities) depend on a number of factors including:

- the reporting year in question (whether full or interim)
- policy and legislative drivers (related to new requirements)
- EPA commitments during previous reports.

The purpose of the site verification visits is to recreate the data submitted by organisations in their National Waste Report surveys from the company's raw data such as from weighbridge tickets, delivery dockets or sales invoices.

A site verification visit proforma (an example is provided in Appendix 2) is developed for each reporting year. This ensures that each site visit is performed and executed to an agreed agency standard (see Appendix 3 for an example). A site verification visit report template is also agreed for each National Waste Report project. Site verification visit reports (see Appendix 4) are circulated to those being audited as quickly as possible following the visit and close-off of outstanding queries.

A number of audits are also conducted on local authorities each year. These audits are used to verify the data submitted to local authorities by waste facility permit holders and waste collection permit holders in addition to the information held by authorities on bring banks, civic amenity sites, home composting and their own collections of household waste.

As well as verifying individual survey submissions the EPA, in conjunction with SKM Enviros, conducts a data reconciliation exercise between the collated National Waste Report packaging data (broken

down by waste stream—paper and cardboard, plastic, wood, metal, glass) against that compiled by Repak.[8] This exercise further verifies the submitted survey data. .

5.5 Collation of datasets

Once all surveys have been fully validated, datasets are collated. The Local Authority Dataset, Landfill Dataset, TFS Dataset, Industry Dataset and Hazardous Waste Facilities Dataset are collated in Excel spreadsheets. The complexity of the data collation phases varies considerably between datasets.

The Waste Treatment Dataset is compiled in an 'online database'. This was developed in-house by SKM Enviros in 2004 to track waste flows across facilities in the RoI, until they reach a designated 'end-handler'. The online database was developed in Sql Server and is accessed remotely via a dedicated IP address. Data from the ROI Recycling Organisations Survey, UK Recycling Organisations Survey, Composting Facilities Survey, Pallet Merchant Survey and WEEE/ELV/Metal Survey is entered in the online database. Some entries from the Hazardous Waste Facilities Survey and the Landfill Survey are also entered in the database. Once all entries have been entered into the online database, the data is analysed in detail to track waste flows between waste facilities. At this time further validation issues may become apparent. These are clarified with the relevant facilities and appropriate amendments are logged. Once the database has been fully reviewed and signed off the data is exported to an Excel spreadsheet. This spreadsheet is further manipulated to present the data in various formats as required by the EPA.

6 System costs

There are a number of costs related to preparing and publishing the annual National Waste Report series. These include:

- **contractor costs**—the project duration is approximately nine months during which time a dedicated team (a project manager, a project director and, depending on the reporting year, approximately three to six team members) works on the project full-time and without interruption
- **direct agency costs—**a dedicated project team in the EPA also works full-time on collating the National Waste Report, particularly during and following the handover of datasets
- **miscellaneous costs—**these include publishing the report and organising media and press releases at the time of publishing.

There is no publicly reported information on the costs of National Waste Report. However the last contract (2007 to 2010) was awarded under the European Procurement Regulations which suggests that the contract value was in excess of €193,000.

7 System benefits

The primary benefit of the National Waste Report is that it fulfils the RoI's national and European Union reporting requirements on waste data.

The established nature of the National Waste Report (it has been in operation since 1995) ensures the cooperation and loyalty of survey respondents, which is critical to the successful collation of

[8] Repak is Ireland's packaging recovery organisation.

accurate national statistics. It also allows for the relatively easy introduction of new surveys to compile statistics on new waste streams as and when this becomes necessary, such as for waste batteries and ELVs.

8 Lessons learnt

The National Waste Report series has evolved significantly since its inception in 1994. The level of detail requested from survey respondents, coupled with the level of validation checks performed on submitted returns and the number of site visits performed has seen this reporting series evolve into a thorough mechanism for reporting waste statistics for the RoI. The main changes throughout the history of the National Waste Report series are detailed below.

- **Streamlining of surveys to exclude data not used for the National Waste Report**

  Until around 2005 the Local Authority Questionnaire requested information on commercial waste collected within each functional area. It also requested information on C1 Forms[9] and priority waste streams such as drinking water sludges, municipal sludges and tyres. It was found over a number of years that the quality and reliability of each of these waste streams was extremely poor and could not be correlated against other data sources such as data reported by on-the-ground waste management facilities or water services departments of local authorities.

  Local authorities were expending a vast amount of time and resources collating information that was useless and often discarded by the agency. A decision was made to remove these waste streams from the Local Authority Questionnaire and to source the information from other more reliable sources. This has markedly improved the quality of Local Authority Questionnaires because staff have more time to spend on collating the important information.

  This lesson continues to be transferred across all survey groups. The EPA, aware of the reporting burdens already facing organisations, is mindful to streamline and simplify all surveys as much as possible.

- **Development of sector-specific surveys**

  During the early years of the National Waste Report series, one survey was often developed and issued to all survey groups. For very specific facilities, such as composting facilities and pallet merchants, the survey did not fit their reporting requirements and led to confusion and unnecessary levels of validation follow-up. Similarly, UK Recycling Organisations were immediately deterred from completing the survey due to its size and complexity. Sector-specific surveys allow organisations to readily identify with the information being requested and are more likely to complete and submit a timely return.

- **Requirement for training and guidance**

  Since 2004 the EPA has conducted training courses with waste management facilities and local authorities on completing National Waste Report surveys. These training events, conducted in February each year, are a useful mechanism for educating companies on the need for submission of verifiable data. They also act as platforms to discuss potential amendments to surveys and to listen to feedback, concerns and issues from the Irish waste sector. There is anecdotal evidence to suggest that the introduction of the annual training events and guidance manuals has improved the overall quality of data submitted to the National Waste Report.

[9] A consignment note for the movement of hazardous waste with the State. Completion of C1 Forms is mandatory for all hazardous waste moved within the RoI.

- **Provision of a dedicated helpline and email helpdesk**

  Since 2004 SKM Enviros has operated a dedicated National Waste Report helpline and helpdesk. This is open during normal working hours for the duration of the project (approximately nine months). Before this, survey respondents were advised to contact the EPA's headquarters in Wexford and request to be put through to an appropriate member of the team. The dedicated helpdesks are staffed by SKM Enviros National Waste Report team members so incoming calls are dealt with immediately and correctly. All parties agree (EPA, SKM Enviros and survey respondents) that these helpdesks have greatly increased the interaction between survey respondents and the National Waste Report team. The quality and timeliness of the submitted data is therefore also greatly improved.

- **Timely release of the National Waste Report**

  In response to a demand for timely waste statistics (from government, stakeholder groups, interested parties and the general public), the EPA has endeavoured to make the reports as current and applicable as possible. Before 2007 National Waste Reports were published two years in arrears, albeit the January of the second year. The 2004 National Waste Report was published in January 2006 for example. Since 2007 the EPA, in conjunction with SKM Enviros, has revised the project timeframes so that the report is issued within one year of the waste data in question—for example, the 2008 National Waste Report was released in November 2009.

The primary lesson to be learned from the current National Waste Report system is the need and desire for a combined, online reporting system to replace the current myriad of reports, surveys and questionnaires submitted by EPA waste-licensed and local authority permitted waste companies. The complexity of this task, in conjunction with issues of governance and liability, has so far prevented this from occurring. It is expected, however, that such a system will be introduced over the coming years.

Appendix 1: Sample validation template

NATIONAL WASTE REPORT 2009

WASTE TREATMENT SURVEY VALIDATION REPORT

ROI RO

VALIDATION & SIGN-OFF:

Company Name:	**XXXX**
Site:	**XXXX**
Validated By:	**XXX (XXX) XX/XX/2010**
Misc. Comments:	**xxx**
First Review:	**xx/xx/2010**
Second Review & Sign-off:	**xx/xx/2010**
Additional Information:	**xxxxxxxxxxx**

(As per company info sheet free text box)

VALIDATION COMMENTS

Remember to apply a sense-check to each return – ensure:

- **Units make sense**
- **EWCs and descriptions make sense**
- **Offsite destinations are specified, and in particular SITE NAME e.g. Enva Portlaoise. We need this for waste tracking purposes**
- **Packaging/Non packaging splits have been provided**
- **Company has provided tonnage splits for multiple destinations**
- **Data makes sense! I.e. if there has been a huge increase/decrease on 2008 – find out why. Similarly if the 2009 return only lists 2 waste streams but 2008 listed 10 – find out why.**
- **Correct recovery/disposal codes have been selected etc**
- **That the auto-calc sums are correct for the survey and done include extra information**

Remember if you make any amendments to a return, please update and save as a new version*

COMPANY INFORMATION

SECTION 1 – General Information

1. Are any of the following details blank? (If so, please follow-up with company)

- **Company Name** YES/NO
- **Trade Names (if any)** YES/NO
- **No. of sites** YES/NO
- **Combined Return** YES/NO
- **Facility Address** YES/NO
- **LA Permit Number / Waste licence** YES/NO
- **Contact name and Job Title** YES/NO
- **Correspondence address (if different from site address)** YES/NO
- **Telephone/ Mobile / Fax** YES/NO
- **Email** YES/NO

2. Do the above details match the details in the contact list? YES/NO

If No, please clarify the reason for this and/or update the contact list:

SECTION 2 - Waste Activities carried out by your company in 2009

3. Are any of the following details blank? (If so, please follow-up with company)

- **Household Waste at Kerbside in 2009 (Q1)** YES/NO
- **Waste acceptance in 2009 (Q2)** YES/NO
- **Storage (Q3)** YES/NO
- **Brokering (Q4)** YES/NO
- **Onsite Waste Activities (Q5)** YES/NO
- **Onsite Treatment / Sorting Activities (Q6)** YES/NO

If the site selects yes for Depollute Vehicles and/or Dismantle WEEE, please email site details to KC for passing onto EPA.

- **Onsite Recovery Activities (Q7)** YES/NO **Quantification methods (Q8)**

YES/NO

If 'Estimate' or 'Other' is selected, please ensure that appropriate qualifying text is included

- **Repak (Q9)** YES/NO

Prompt to NWR Team: Confirm that the worksheets prompted by Qs 1, 2, 3, 4 and 7 have been completed as necessary.

4. Does the company state it claims from Repak?

If Yes, please mark this in Column R in the Master Contacts sheet, in order to highlight company for comparison with Repak Dataset later on in the project.

Waste Stream	Repak (Tonnes)	NWR (Tonnes)	Query

5. Does the company include any additional information? Yes / No

If Yes please insert this information into the 'Validation and Sign off' section above.

6. Did the facility claim for packaging wastes from Repak and not report them to the EPA? (To be answered during Repak meeting) Yes / No

If Yes, please clarify:

7. If they claim from Repak, have they reported these packaging waste types in the survey and if so, in which sheet? Yes / No

If Yes, please clarify which sheet(s):

If No, please clarify:

8. Does the 'Mass Balance' for the facility give a % difference greater than 5%?

If Yes, please follow up any queries raised from the rest of the validation before RETURNING to this mass balance to see if it has been affected by the potential change in data. Please also clarify any additional information supplied by the company about this.

SHEET A: COLLECTION

PROMPT TO NWR TEAM: Validate this section only if the site has answered YES to Q1 on the 'Company Info' worksheet.

SECTION 1 - Waste Collection Permits

9. Did the facility include the 'Name of Local Authority' and associated 'WCP Number(s)? **Yes / No**

If No, please clarify with operator:

SECTION 2 - Kerbside Waste Collections in 2009

10. Do these figures seem sensible? **Yes / No**

Additional commentary:

SECTION 3 - Quantity of Household and Commercial Waste Collected at Kerbside 2009

11. Do these figures seem sensible? **Yes / No**

Additional commentary:

SHEET B: INCOMING

PROMPT TO NWR TEAM: Validate this section only if the site has answered YES to Q2 and/or Q6 on the 'Company Info' worksheet.

12. For each of the waste streams does the EWC code match the waste description?

If No, please clarify:

13. Did the operator report mixed dry recyclables?

If Yes, and the material left the site as unsorted (i.e. check outgoing sheet for baled or bulked only) please try to obtain a rough percentage breakdown of this by waste type (e.g. 30% paper/card, 30% wood, 30% plastics, 10% metal, etc):

14. Do the onsite treatment operations make sense?

If No, please list and clarify:

15. How does the tonnages for each waste stream compare with the previous year? Does this require follow up with the site?

Please provide commentary:

16. How do the details (waste types, offsite destinations etc) in general compare with the previous year? Does this require follow up with the site?

Please provide commentary:

SECTION C: OUTGOING

PROMPT TO NWR TEAM: Validate this section only if the site has answered YES to Q2 on the 'Company Info' worksheet.

17. For each of the waste streams does the EWC code match the description?

Yes / No

If No, please clarify:

18. For each of the waste streams does the ID No. make sense? **Yes / No**

I.e. check that plastic outputs are not derived from cardboard packaging; that the separation of mixed dry recyclables results in expected single waste stream etc.

If No, please clarify:

19. For the 'linked wastes, do the onsite vs offsite tonnages make sense? **Yes / No**

I.e. Onsite processes result in a reasonable **change of tonnage.**

If No, please clarify:

20. Has the company provided packaging / non packaging breakdowns for each waste stream (where applicable)?
Yes / No

It is very important we obtain this – please revert to company if not

If No, list queries:

21. For offsite recycling / offsite disposal – has the operator provided a split of the tonnage to each destination?
Yes / No

It is very important we obtain this – please revert to company if not

If No, list queries:

22. Are the offsite destination details correct and complete? **Yes / No**

E.g. If a company specifies "ENVA" as an offsite destination, please check which site. If the company is not on our lists we will need additional information such as a site contact and working telephone number. Any 'new company' details are to be saved to the New Companies Folder. *This is imperative for input into the online db and will save valuable time at later stages in the project*

If No, list queries:

23. Are the off-site processes correct, and make sense? **Yes / No**

If No, list queries:

24. How does the tonnages for each waste stream compare with the previous year?

Please provide commentary:

25. How do the details (waste types, offsite destinations etc) in general compare with the previous year?

Please provide commentary:

26. Any further follow-up required on offsite destinations? **Yes / No**

E.g. where we are unsure what happens at the site.

If Yes, list queries:

SECTION D: STORAGE

PROMPT TO NWR TEAM: Validate this section only if the site has answered YES to Q3 on the 'Company Info' worksheet.

27. Does the information make sense? **YES/NO**

If No, please clarify:

28. Has the operator provided sufficient 'packaging content' information? **YES/NO**

If No, please clarify:

SECTION E: BROKERED

PROMPT TO NWR TEAM: Validate this section only if the site has answered YES to Q4 on the 'Company Info' worksheet.

29. For each of the waste streams do the EWC codes match the waste description?
Yes / No

If No, please clarify:

30. Has the company provided packaging / non packaging breakdowns for each waste stream (where applicable)?
Yes / No

It is very important we obtain this – please revert to company if not

If No, list queries:

31. For offsite recycling / offsite disposal – has the operator provided a split of the tonnage to each destination?
Yes / No

It is very important we obtain this – please revert to company if not

If No, list queries:

32. Are the offsite destination details correct and complete? **Yes / No**

E.g. If a company specifies "ENVA" as an offsite destination, please check which site. If the company is not on our lists we will need additional information such as a site contact and working telephone number. Any New Facility Companies details are to be saved to the New Companies Folder. *This is imperative for input into the online db and will save valuable time at later stages in the project*

If No, please list:

33. Are the off-site processes correct, and make sense? **Yes / No**

If No, please list:

34. Any further follow-up required on offsite destinations? **Yes / No**

E.g. where we are unsure what happens at the site.

If Yes, please list:

35. How does the tonnages for each waste stream compare with the previous year?

Please provide commentary:

36. How do the details (waste types, offsite destinations etc) in general compare with the previous year?

Please provide commentary:

PROMPT TO NWR TEAM: Please double check the total brokered waste SUM Function as a previous survey type accidentally included one of the example figures as part of the figures

SECTION F: RECOVERED ON-SITE

PROMPT TO NWR TEAM: Validate this section only if the site has answered YES to Q7 on the 'Company Info' worksheet.

37. Are any wastes recycled onsite? Do the waste descriptions make sense when accompanied by the ID number Yes / No

Please list and clarify how they recycled onsite:

38. If wastes are recycled onsite is there likely to be any residual wastes generated from these activities & if so, are they included in the Outgoing Sheet? Yes / No

Please provide commentary:

39. Has the company provided packaging / non packaging breakdowns for each waste stream (where applicable)? Yes / No

It is very important we obtain this – please revert to company if not

If No, list queries:

40. Are any of the R/D Codes blank / incorrect? Yes / No

If Yes, list queries:

41. How does the tonnages for each waste stream compare with the previous year?

Please provide commentary:

42. How do the details (waste types, offsite destinations etc) in general compare with the previous year?

Please provide commentary:

43. Do the 'recovery operation' descriptions match the selected R Codes? Yes / No

If No list queries:

FINAL: CROSS-CHECK AGAINST LANDFILL RETURNS

44. Any discrepancies between data reported as sent to landfill(s) by the RO and that accepted by the landfill(s) Yes / No

If Yes, list queries:

Appendix 2: Site verification visit proforma

NATIONAL WASTE REPORT 2008 SITE VERIFICATION VISITS	

Company Name:		
Facility Name & Address:		
	EPA:	
	Enviros:	
	Facility:	
Date:		

Part 1: Introductory Meeting

This part of the site visit should be limited to approximately 10 minutes. The lead auditor should introduce the attendees, followed by a brief overview of the National Waste Report and Enviros' role in the project. The aims and objectives of the site visit should be outlined i.e. to verify the data and calculations provided in the NWR return and to, in so far as is reasonably possible, reproduce the submitted data from onsite records. The following schedule for the site visit should be outlined:

- Introductory Meeting;
- Brief site walkover, if applicable;
- Full or sample audit of facility records (depending on availability and volume of records); and
- Post-audit discussion of audit findings, outstanding validation queries and any feedback the operator may wish to contribute.

The operator should be advised that, where necessary, their NWR submission will be updated and a copy forwarded to them for their files. A site visit report will also be compiled and following review and sign-off by the EPA a copy will also be forwarded to the contact person.

General discussion regarding onsite activities e.g. including but not limited to: . **Waste steams handled** . **Onsite recovery operations** . **Any issues/problems/queries regarding compilation of NWR return** . **Any other issues deemed relevant** **Please note information about the organisation such as whether they plan to expand or increase capacity is not required and should not be requested. This info is not used by the EPA.**	

How does the facility collate and maintain waste data? i.e. details of the onsite data management system	
List of files made available at the audit – electronic and paper	

Part 2: Site Walkover

This part of the site verification visit should be limited to a maximum of 20 minutes. Please use this site walkover to gain information relating to onsite activities. Please remember NWR site verification visits are not enforcement audits.

General observations:	
Photographs taken?	

Part 3: Audit

The purpose of these visits is to reproduce the data submitted in the return. Where the returns have a lot of data it is acceptable to reproduce sections of it. **The main focus should be on the mixed waste types such as mixed residual waste and other mixed waste types. For facilities which handle C&D and household/commercial waste we need to clarify if they mix the waste streams**. Please ensure you go through the weighbridge/paper records in order to reproduce the data.

Type of Audit:	**FULL / SAMPLE**	
	Brief description /methodology of audit **Please use separate excel sheets to document audited tonnages etc**	

Does audited data tally with NWR return?		**YES / NO**
	Please explain:	
Are there any concerns regarding classification of waste streams? **E.g. inaccurate classification of packaging** **/ non packaging waste. Inaccuracies in the classification of household / non household / C&D / industrial wastes**		
Further clarification required from organisation?		**YES / NO**
	If yes, list queries:	

Part 4: Post-Audit Discussion & Feedback

This part of the site verification visit should be used to query any anomalies found during the audit process. Any validation queries not already clarified prior to the site visit should also be raised at this time. All clarifications provided by the organisation should be carefully documented and used to update the validation document on return to the office.

This close-out meeting is also a valuable opportunity for the organisation to provide any feedback on NWR/the surveys etc should they wish to do so. Please remember to issue company with **Feedback Form**.

Miscellaneous Notes

Appendix 3: Site verification visit protocol

National Waste Report 2009 - Site Verification Visit Protocol

Date	30th April 2010
Project No	EW30003
Subject	Site Verification Visit Protocol

1 Introduction

Two members of Enviros Consulting will attend each site visit so as to maximise accuracy and efficiency whilst onsite. If a member of the EPA project team (Fiona McCoole, Michael McDonagh, Isabelle Kurz or Jonathan Durham) attends then (usually) only one Enviros staff member will accompany him/her on the visit. This can be agreed with the EPA prior to the site verification visit in question.

A total of 10 site verification visits will be conducted as part of the 2009 National Waste Report project. 9 site visits will be conducted to the large MSW operators who were fully audited last year. The most up-to-date schedule for the site visits can be found in I:\EWAE\Projects\EW30003\Technical\SITE VISITS 2009\site visit scheduling.

2 Site Verification Visit Aims & Objectives

The main aims and objectives of each site verification visit are:

- to verify the data and calculations submitted in the 2009 National Waste Report (NWR) Survey i.e. in so far as possible to reproduce the return or sections of it from onsite records. This will be determined on a site-by-site basis, based on the information presented to the auditors during the visit. This part of the site verification visit is extremely important in determining confidence in the submitted data;
- to verify how the operator classifies, identifies and quantifies different waste streams entering the site, leaving the site (including breakdowns, packaging splits etc) and recovered and/or disposed on the site;
- to review the facility's data management system;
- to clarify any outstanding queries/discrepancies that may have arisen from the validation process;
- to clarify any anomalies that may arise from the auditing process;

- to gain useful feedback from companies regarding the reporting process, including any difficulties, constraints, suggestions etc.

In some instances the purpose of the site visit may be to aid in the completion of an outstanding submission.

3 Prior to Site Verification Visit

Which organisations receive a site verification visit will be agreed in conjunction with the EPA in advance to ensure maximum data verification percentages for reporting to the EU.

The following factors will be highlighted to the EPA for use in determining site verification visits:

- Organisations handling large volumes of waste;
- Organisations which are tardy in their response to validation queries;
- Organisations which have not yet submitted their return;
- Organisations submitting data that is significantly different to previous years; and
- Organisations handling interesting or unusual waste streams.

Enviros are to contact the organisation and arrange a meeting date and time. This will be confirmed by the EPA and an official letter will be sent out to the waste treatment facility detailing the agreed date and time of the meeting. The letter will explain outline Enviros' role in the National Waste Report project.

Before attending a site verification visit, all Enviros personnel must have the following organised:

- A copy of the H&S Risk Assessment signed and returned to the Project Manager;
- Tyres, oil and water have been checked and that the car you will be travelling in is in proper working order and has adequate fuel!);
- A map;
- Directions to the site;
- Directions to the hotel (if staying overnight);
- A mobile phone (fully charged in case you get lost!);
- The phone number of the hotel (if staying overnight);
- The phone number of the site operator;

- The phone number of the EPA team member attending the site verification visit (if applicable);
- A copy of the official EPA letter regarding the site visit;
- Copies of the facility's submissions for 2007 and 2008 (if we have received them);
- A copy of the validation document (blank if we have not received their return, completed if we have);
- A copy of the site visit pro-forma template;
- A copy of the site visit feedback form;
- A copy of the EWC codes;
- Adequate pens, paper;
- Laptop;
- Calculator;
- Hard hats for each attendee;
- Boots for each attendee;
- High-Viz jackets for each attendee;
- A Camera.

3.1 Sample phone script for organising a site verification visit

Good Morning/Good Afternoon, my name is xx xx. I am calling you on behalf of the EPA regarding the waste statistics questionnaire. I am just calling to arrange a site verification visit to your site. The EPA has been conducting a number of these site verification visits over the past number of years as part of the National Waste Report project. A number of companies are selected each year for site verification visit. This is because the EPA has to verify a portion of Ireland's waste data annually to report back to the EU and you have been chosen as one of the companies for this year's visits. The following key points should be explained:

- The purpose of the visit is <u>either</u> (1) verification of the submission data and to check waste records or (2) to aid in the completion of submission data, in conjunction with the checking of the waste records;

- The site visit will act as an information exchange where the auditee can ask questions or make suggestions in relation to the survey;

- The auditee should be advised that all waste records for 2009, including summary spreadsheets, log books, weighbridge records etc, must be made available on the day of the site visit.

Arrange a date and time with the caller. Also obtain directions to the site. Finally, advise the caller that the EPA will issue an official letter to confirm the visit which will further clarify the points above.

4 Onsite Procedures

The following key points must be adhered to whilst onsite:

- Where an EPA representative is to attend a site visit, the Enviros attendee(s) will meet with him/her prior to the site visit so that all auditors arrive onsite together;
- A maximum of three people are to attend any one site visit;
- Enviros personnel will wear PPE at all times whilst onsite, including hard hat and steel capped boots;
- Upon arriving onsite Enviros personnel must proceed directly to the site office / weighbridge office to sign in;
- Enviros personnel must adhere to auditees' site-specific H&S procedures at all times;
- Any accidents, incidents or near-misses must be reported to Louise Bolger immediately.

4.1 Proposed Site Verification Visit Schedule

For continuity purposes it is advised that each site verification visit adhere to the following schedule:

- Introductory meeting (approximately 10 minutes)
- Site walkover (maximum 20 minutes);
- Auditing of onsite waste records (facility-dependent);
- Post-audit discussion / close-out meeting (facility-dependent).

The site verification template should be used as a guide when conducting a site visit.

4.1.1 Introductory meeting

This part of the site visit should be limited to approximately 10 minutes. The lead auditor should introduce the attendees, followed by a brief overview of the National Waste Report project series and Enviros' role in the project. The aims and objectives of the site verification visit should be outlined i.e. to verify the data and calculations provided in the NWR return and to, in so far as is reasonably possible, reproduce the submitted data from onsite records. The above schedule for the site verification visit should also be outlined to the attendees.

The operator should be advised that, where necessary, their NWR submission will be updated and a copy forwarded to them for their files. A site verification visit report will also be compiled and following review and sign-off by the EPA a copy will also be forwarded to the contact person.

4.1.2 Site Walkover

This part of the site verification visit should be limited to a maximum of 15/20 minutes. Please use this site walkover to gain information relating to onsite activities. Please remember NWR site verification visits are not enforcement audits. Also, information about the organisation such as whether they plan to expand or increase capacity is not required and should not be requested. This information is not used by the EPA.

If possible take photographs during the site walkover, however always seek permission from the organisation first.

Ensure that the organisation is correctly classifying the waste that they accept, recover onsite or remove offsite for recovery or disposal. In particular ensure the organisation is correctly differentiating between packaging / non-packaging waste and household / non household waste streams.

4.1.3 Audit / Data Verification

The purpose of these visits is to reproduce the data submitted in the return. Where the returns have a lot of data it is acceptable to reproduce sections of it. The main focus should be on the mixed waste types such as mixed residual

waste and other mixed waste types. For facilities which handle C&D and household/commercial waste we need to clarify if they mix the waste streams. Please ensure you go through the weighbridge/paper records in order to reproduce the data. Accepting a company collated summary spreadsheet is not acceptable; the data used to collate the spreadsheet must be interrogated.

It is difficult to provide a definitive guideline as to how waste data should be verified on each and every site as this will be dependent on a number of factors, including:

- method of record keeping i.e. paper or electronic;
- transparency of data; and
- number of records.

Where possible, all waste records should be examined and in effect the submitted NWR data should be replicated during the site verification visit. If this is not possible, records should be sampled in the most effective manner to verify a significant portion of the data. All sampled records should be logged and saved, using separate excel spreadsheets where appropriate.

4.1.4 Post Audit Discussion

This part of the site verification visit should be used to query any anomalies found during the data verification process. Any validation queries not already clarified prior to the site verification visit should also be raised at this time. All clarifications provided by the organisation should be carefully documented and used to update the validation document on return to the office.

This close-out meeting is also a valuable opportunity for the organisation to provide any feedback on NWR/the surveys etc should they wish to do so.

5 Post Site Verification Visit

For each site verification visit, Enviros attendees must:

- Update the validation report for the waste treatment facility;
- Follow-up any outstanding queries, if necessary;

- Update the return and save as a new version;
- Complete a site verification visit report within one week of conducting the site visit;
- Advise the Project Manager that the site verification visit report is ready for review **– only to be done when all queries have been clarified**;
- Project Manager to forward copy of report to the EPA for sign-off;
- Following sign-off by the EPA a copy will be sent to the auditees for their records.

Appendix 4: Site verification visit report template

SITE VERIFICATION VISITS

Company Name:		
Site:		
Attendees	**EPA:**	
	SKM Enviros:	
	Waste Treatment facility:	
Date:		

The data verification visit to xxxxxxxx for the National Waste Report 2009 took place at the company's office at xxxxxxxxxxxx on xxxxxxx 2010 and was attended by the persons named above. xxxxxxxx outlined the background, objectives and format of the visit to xxxxxxx. It was explained that a template had been developed for use in all audits in order to standardise the information asked of all auditees. Following this introductory briefing, xxxxxxxxx led the audit based on agreed standard template. The findings are outlined in the relevant sections below. Auditees were advised that an audit report would be circulated following the visit detailing relevant findings, discussions and recommendations.

Part 1: Introductory Meeting

Overview of the company

Data management systems

Part 2: Site walkover

Part 3: Audit

Validation queries

Data Audit

Part 4: Close-out meeting

Part 5: Follow-up Actions & Responses

Part 6: Conclusions and Recommendations

Part 7: Feedback Form

Part 8: Version Control & Sign-off

Survey updated:		
Validation document updated:		
Site visit report sent to EPA for comment/signoff:		
Site visit report approved and signed off by EPA:		
Copy of site visit report sent to auditee:		