Waste Data Digest | 2002

SEPA
Scottish Environment Protection Agency

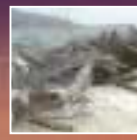
ISBN 1-901322-25-4

SEPA
Scottish Environment Protection Agency

Contents


Introduction





SEPA is committed to promoting sustainable waste management practices throughout Scotland. To facilitate this, comprehensive data on waste arisings and disposals, and the network of treatment and disposal facilities across Scotland are needed. Regulatory activity, policy development and monitoring the impact of policy changes all require reliable data. Information on waste management activities is also an integral part of the development and implementation of the statutory requirements placed on SEPA by the National Waste Strategy for Scotland.

Degassing a car

SEPA's National Waste Strategy: Scotland was published and adopted by Ministers in December 1999. It is the means by which the waste management planning requirements of the Waste Framework Directive (75/442/EEC as amended by Directive 91/156/EEC) are implemented in Scotland. The National Waste Strategy requires information on the type, quantity and origin of waste that is to be recovered or disposed of.

The Strategy and this document fulfil the waste management planning requirements in the Directive and the other data needs of SEPA.

This publication is the second in a series of annual Waste Data Digests that reports data collected on the waste management industry in Scotland. It identifies the licensed waste management facilities in Scotland during 2000. It presents data collected for 1999 from a variety of sources including the Strategic Waste Management Baseline Assessments carried out under the National Waste Strategy for Scotland. Since this study, SEPA has worked with local authorities to supplement and verify this data. Data presented for 2000 was collected under SEPA's Waste Data Strategy.

In April 2000, SEPA launched the Waste Data Strategy to provide accurate and up-to-date waste management data in a consistent and comprehensive national format. At this time the Waste Data Strategy introduced a standardised quarterly return form to collect waste management data from licensed waste management facilities. An annual Local Authority Waste Arisings Survey was also introduced to determine waste arisings and waste management activities carried out by, or on behalf of, Scottish local authorities. Data collection on priority waste streams also began during 2000. SEPA will publish separately the outputs from priority waste stream projects and industry trend surveys, however, where appropriate, summaries of these outputs will be included in relevant sections of this and future Digests.

Paper for recycling

Moving waste by train

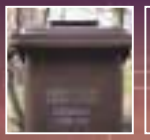
In common with most other organisations seeking to establish accurate data on waste arisings, SEPA has encountered problems in establishing robust sources of data. Producers of waste are not currently required to keep detailed records of the waste they produce and the information they have is not always available in a compatible format. Information on types and quantities of waste sent for recovery or disposal may be available from the duty of care transfer notes which producers must complete, but the descriptions are variable and the large number of notes produced means that data capture would have to be by sampling and extrapolating. Information on special waste can be taken from special waste consignment notes, but again there are problems in tracking the waste through multiple handling at transfer stations.

Where primary data were not available, secondary sources of data were used and Scottish figures were derived from UK information where necessary. Data are reported, as far as possible, for the calendar years 1999 and 2000. However, in some instances, only financial year information is available and this is referred to as 1999/2000 and 2000/2001. Where information is only available, or is more reliable, for one of these years then only that year is reported. SEPA recognises that industry organisations are often best placed to provide information on the management of the waste streams produced by their members and will, where appropriate, use these sources to supplement information reported.

The information in this document mainly covers controlled waste in Scotland. This means waste defined in the national legislation, which implements the Waste Framework Directive. Broadly speaking, this is household, industrial and commercial waste. It does not include radioactive waste or explosives, which are subject to separate legislation. It does, however, include agricultural wastes. These are not currently classed as controlled waste but the government intends to bring them under this definition in the future.

Degassing a refrigerator

Waste Arisings



Local Authority Waste Arisings

The data presented in this section are based on returns provided by local authorities in Scotland for SEPA's Local Authority Waste Arisings Survey (LAWAS) 2000/2001. The LAWAS is a voluntary survey that was established by SEPA. It is the primary means for collecting consistent, standardised data on waste arisings, recycling, composting and disposal for all wastes collected by, or on behalf of, local authorities. The first LAWAS collected data for the 2000/2001 financial year. There was a 100% response rate to this survey from the 32 local authorities.

Many local authorities collect commercial waste as part of their mainstream household collection round as well as, or instead of, having a separate collection of commercial waste. Where local authorities reported a mixed mainstream collection of waste an estimated composition was requested. If absent, an assumed composition of 80% household and 20% commercial waste has been applied. Therefore, household waste figures reported should only represent waste collected from household sources. Commercial waste figures include both separately collected commercial wastes and the estimated commercial waste from mixed mainstream collection rounds.

In 2000/2001, a total of 3.21 million tonnes of controlled wastes were collected by, or on behalf of, local authorities in Scotland. A breakdown of controlled wastes collected by Scottish local authorities in 2000/2001 is shown in **Table 1**. Corresponding figures for 1999/2000 are given in **Annex 1**. A breakdown of the figures in **Table 1**, by local authority, is represented in **Figure 1** and included in **Annex 2**.

Table 1 Controlled waste collected by, or on behalf of, local authorities 2000/2001

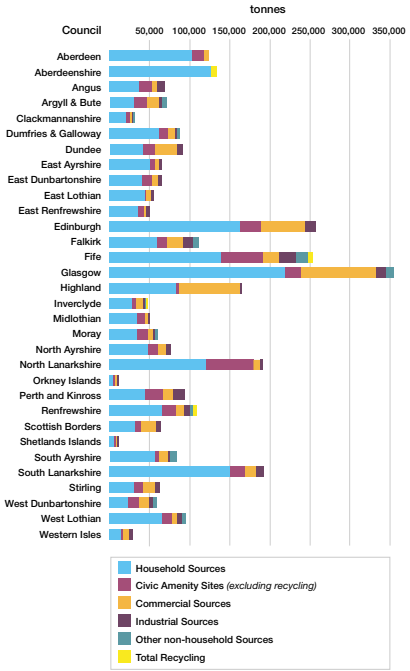
Type of waste	Tonnage	Percentage
Waste collected for disposal		
Household[1]	2,020,436	62.9
Civic amenity sites	384,578	12.0
Commercial sources	532,761	16.6
Industrial sources	42,215	1.3
Other non-household sources[2]	86,757	2.7
Waste collected for recycling & composting		
Household recycling and composting	122,433	3.8
Non-household recycling and composting	22,250	0.7
Total arisings[3]	**3,211,430**	**100**

[1] For many local authorities, the mainstream household waste collection service includes household, commercial and other non-household waste. However, for the purpose of the LAWAS, local authorities have provided the data for household and commercial waste from this collection round separately. Some authorities were unable to provide figures for all categories of other non-household waste separately. These tonnages are included in the household waste category.

[2] Other non-household waste includes; local authority parks and garden waste (not for composting); beach cleaning waste; clearance of fly-tipped waste; abandoned vehicles and other waste.

[3] Waste arisings do not include home composting tonnages

Figure 1 Controlled waste collected by local authority in 2000/2001



[4] Aberdeenshire council could not provide a breakdown of waste for household sources, civic amenity sites, commercial sources, industrial sources and other non-household sources. Therefore, the tonnage for all these categories has been entered under household sources.

The figures for 1999/2000 are based on data provided by some local authorities for the Strategic Waste Management Baseline Assessments (SWMBA) conducted by Enviros Aspinwall. The aim of this work was to provide baseline information to inform the development of Area Waste Plans under the National Waste Strategy for Scotland. SEPA carried out further data collection and verification with local authorities to complete the dataset.

Composition of Household Waste

The composition of household waste changes both seasonally and over time according to the demographic, geographic and socio-economic factors in each local authority. Knowing the composition of household waste and identifying trends in changes in composition are important for developing a strategy for household waste. Work is being carried out that will establish a standard methodology for compositional analysis.

The Local Authority Waste Arising Survey (LAWAS) 2000/2001 asked local authorities if a compositional analysis of household waste had been conducted during 2000/2001 and enquired about methods used to carry out this analysis. Six of the 32 local authorities reported they had carried out an analysis of household waste and provided their results. Only two of the six local authorities reported their results according to the breakdown suggested in the LAWAS. The remaining local authorities used different categories to classify household waste composition. Sampling methodologies also varied. These factors make it difficult to present a nationally consistent picture. The results of analysis carried out by the six local authorities are reported in **Table 2**.

Waste Storage - civic amenity site

Table 2 Waste composition - LAWAS survey 2000/2001

Waste category	Range of analysis (%)
Paper and card	18.7–33.4
Plastic film	3.0–10.9
Dense plastic	3.2–7.7
Textiles	2.0–5.8
Misc combustible	0–34.9
Misc non-combustibles	0–3.9
Glass	5.7–12.7
Ferrous metals	3.7–6.2
Non-ferrous metals	0.8–4.4
Organic waste	8.6–23.8
Fines	2.8–12.9

The Environment Agency of England and Wales is undertaking the third National Household Waste Analysis Programme (NHWAP). It began in October 2002 and involves 15 months of sampling and analysis. Samples of waste will be taken from selected local authorities across the UK. The study will not only analyse the composition of household dustbin waste, but also other aspects of the municipal waste stream including street sweepings and litter, civic amenity site waste and bulky wastes. The programme will also analyse the proportion of household waste that is biodegradable and investigate the attitudes of householders towards recycling and composting.

Non Local Authority Waste Arisings

Commercial and industrial waste producers are currently not required to keep detailed records of their waste arisings, therefore, the quantity of these wastes cannot be measured directly. It is also difficult to estimate quantities of waste recycled and recovered from figures for licensed treatment facilities. This is because many treatment facilities only carry out primary treatment on the waste before sending it elsewhere to be recycled or to undergo recovery. Waste arisings, therefore, have to be estimated and one method of doing this is to combine the quantities sent to landfill for disposal with information from secondary sources, such as representative industrial organisations. Alternatively, estimates can be obtained through statistical sampling. A number of organisations (including SEPA and the Environment Agency) have conducted studies to establish whether commercial waste arisings can be related to employee numbers or company turnover. This approach needs further development to establish whether this may be a useful method of predicting commercial waste arisings within Scotland.

SEPA has considered conducting a sample survey of commercial and industrial waste producers to establish the size of these waste streams, however, this would be a major and costly task. Experience elsewhere in the UK had also suggested that extrapolating sample results to give total arisings is not straightforward and therefore, SEPA do not plan to undertake such a wide-ranging study. However, to complement data on waste recovery and disposal, SEPA has identified 13 priority waste streams which are in the process of being studied in more detail. These have been chosen and prioritised because of their volume, hazardous nature, potential for recycling or their potential to create an economic benefit. In addition, work has begun to identify key industry sectors and further waste streams which require further study. Details on the progress of these priority waste stream studies are given later in the Digest.

Commercial Waste Arisings

In the past, recycling commercial waste has not been highly developed in Scotland, although this situation is improving. Some commercial wastes are collected as part of the household waste collection system by local authorities. As a result, these may not be identified as commercial waste by licence holders. For this reason, SEPA considers that the use of landfill quantities as a substitute for commercial waste arisings is problematic, therefore, commercial waste arisings may actually be significantly more than reported landfill disposals. Assuming a 5-10% recycling rate, the total waste arisings in 1999 may be in the range of 2.1 to 2.3 million tonnes. This is the same as the estimate for 1998. Details of commercial waste collected by, or on behalf of, local authorities in 2000/2001 are given in **Table 1**, **Figure 1** and **Annex 2**.

Industrial Waste Arisings

Industrial waste arisings can be estimated by using disposals data augmented with secondary source data on recovery, where available. Many industry associations compile data for waste streams dealt with by their sector. It is difficult to obtain any direct measurement of certain waste arisings (eg. construction and demolition waste), which may be have been disposed of on site or recovered through exempt activities. In view of this uncertainty, the quantity of industrial waste landfilled is not a good substitute for arisings. Details of industrial waste collected by, or on behalf of, local authorities in 2000/2001 are given in **Table 1**, **Figure 1** and **Annex 2**.

Specific and Priority Waste Streams

The National Waste Strategy: Scotland identified 13 priority wastes requiring study at national level due to one or more of the following properties:

- Volume;
- Hazardous nature;
- Potential for recycling;
- Potential to create economic benefit;
- Lack of handling facilities in Scotland.

Projects are conducted in three phases:

Phase One:	Data collection;
Phase Two:	Best practicable environmental option appraisal;
Phase Three:	Integrating findings into area waste plan process.

Phase One has been completed and phase two started for four priority waste streams: construction and demolition, newsprint, tyres, and end of life vehicles. The findings of the data collection phase are summarised as appropriate in the corresponding parts of the Digest.

It was intended that the Chlorofluorocarbons and Ozone Depleting Substances project should be carried out. However, the requirement for the project was superseded by investigations being carried out by other organisations. In the future, the need for study of this waste stream will remain under review.

[5] Identification of Packaging Data in Scotland, Central Research Unit, Scottish Executive, 2001.

Waste electrical and electronic equipment, household hazardous waste, batteries and waste oils are being investigated and their respective data will be reported in future Waste Data Digests.

The remaining priority waste streams; special waste, agricultural waste, packaging waste and clinical waste are programmed for investigation at a later date.

To avoid unnecessary replication of information, where no new data were available during 1999 and 2000, separate section headings have not been included. During 1999 and 2000 no new data were available for household hazardous, clinical, agricultural and chlorofluorocarbons wastes.

Packaging and Packaging Waste

In 2000, it was estimated that around 9.2 million tonnes of packaging waste was produced in the UK. The estimated proportion of waste that arose in Scotland was just under 1 million tonnes. **Table 3** provides a breakdown of packaging flowing into the UK waste stream in 2000. As a result of the Producer Responsibility Obligations (Packaging Waste) Regulations 1997, SEPA already handles considerable data relating to packaging and packaging waste. **Table 29** in **Annex 3** provides information for 1999. In addition, the Scottish Executive has conducted a study[5] into the sources of packaging and packaging waste in Scotland.

Table 3 Total tonnage of packaging flowing into the UK waste stream in 2000

Material	Tonnage
Paper	3,855,000
Glass	2,155,000
Plastic	1,600,000
Steel	750,000
Wood	670,000
Aluminium	110,000
Other	40,000
Total	**9,180,000**

Hazardous and Special Wastes

EU legislation deems hazardous waste to be waste that is most harmful to humans and the environment. Hazardous wastes are controlled by the Hazardous Waste Directive (Council Directive 91/689/EC) and are defined as wastes that are present on the European Hazardous Waste List and contain one or more of 14 hazardous properties. The Special Waste Regulations 1996 (as amended) implemented the Directive into UK legislation. The special waste regulations define special waste as: waste that is present on the EC Hazardous Waste List; any other controlled waste that displays defined properties of; hazardous waste ie. flammable, toxic or irritant waste prescription-only medicines.

A new technical guidance document for classifying hazardous waste in the UK has been proposed and has been produced by environmental consultants Enviros Aspinwall in consultation with SEPA, the Environment Agency, and the Northern Ireland Environment and Heritage Service. The aim of this document is to revise the criteria and protocols of assessment and classification of hazardous waste. It is intended to: 'provide guidance to all involved in the production, management and control of hazardous waste and to be a reference document for all legislation related to hazardous waste and its management' (Public Consultation Document, September 2002). At the time of the publication of the Digest, this document was open to public consultation.

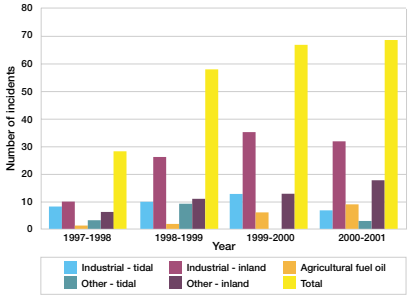
During 2000/2001, SEPA issued approximately 39,000 special waste consignment notes and in 1999/2000 approximately 36,000 notes were issued. The most common categories of special waste remain oily waste, waste from organic and inorganic chemical processes and construction and demolition wastes. To overcome past special waste database problems, a temporary system for recording and reporting essential data from special waste consignment notes was put in place at the start of 2002. This system will continue until the current review of the Special Waste Regulations has been completed. It is envisaged that special waste data information for 2002 will be available by spring 2003 and published in that year.

[6] UK Waste Oils Market 2001

Oils

Oil is one of the 13 priority waste streams identified in the National Waste Strategy: Scotland because of its potential to cause pollution. Oil accounted for 22% of the 318 significant Scottish water pollution incidents investigated in 2000/2001. Details of pollution incidents caused by oils for the years 1997/1998 to 2000/2001 are shown in **Figure 2**.

Figure 2 Significant water pollution incidents by oil in Scotland 1997-2001



A report[6], produced by Oakdene Hollins Ltd for the DETR (now DEFRA), indicated that during 1999 the total amount of oil and oil/water mixtures consigned as special waste in the UK was approximately 1,150,000 tonnes. Of this, it is estimated that 95,000 tonnes arose in Scotland.

SEPA is soon to commission a study on waste oils to identify the size and source of arisings, waste management practices and barriers to re-use and recovery of this waste stream.

Beach clean-up

End of Life Vehicles

The End of Life Vehicles (ELVs) Directive (2000/53/EC) aims to reduce the amount of waste going to landfill from vehicles reaching the end of their lives by introducing new regulatory controls on the scrapping and treatment of ELVs. These will include the following:

- The establishment of ELV take-back systems that will enable last owners to return their vehicles free of charge;
- The issue of Certificates of Destruction for 'depolluted' vehicles as a condition of deregistration of ELVs;
- The introduction of recovery, recycling and reuse targets for ELVs;
- Tightened environmental standards for treatment of ELVs through appropriate permits for authorised treatment facilities;
- Restriction of the content of certain heavy metals and hazardous substances in vehicles.

In accordance with the 'producer responsibility' principle the directive will also require producers (manufacturers and importers) to pay all or a significant part of the costs of take-back, treatment and recovery of ELVs from January 2007.

The Transport Research Laboratories (TRL) priority waste stream project on ELVs reported that, in 1999, Scottish ELVs arisings were estimated at 134,500 vehicles, equating to around 132,000 tonnes. The project assumed the average weight of a car to be 0.98 tonnes. As direct counts of ELVs are not presently recorded, these figures were derived from estimates of vehicle stock data, new registrations, exports of used vehicles and stolen vehicles. **Table 4** shows a breakdown of ELVs arising in Scotland.

Table 4 End of life vehicles arising in Scotland in 1999

Category	Number of ELVS	Percentage
Premature[7] ELVs	14,257	11
Abandoned ELVs *(recovered by local authorities)*	5,516	4
Private ELVs	114,660	85
Total	**134,433**	**100**

Tyres

In 2001 the Transport Research Laboratory (TRL) carried out a tyres priority waste stream study on behalf of SEPA. It estimated that, during 1999, used tyre arisings in Scotland amounted to 32,000 tonnes. This was calculated using information from scrap yards, dismantlers, tyre collectors and disposal companies and local authorities. **Annexes 4** and **5** provide further information on used tyre arisings by National Waste Strategy area and a summary of tyre flows in Scotland.

Newsprint

In the priority waste stream project carried out by TRL on behalf of SEPA in 2001, the 1999 newsprint waste arising in Scotland was calculated to be approximately 240,000 tonnes. This primarily comprised three categories: printers' waste, over-issue and post-consumer paper as shown in **Table 5**.

Table 5 Scottish newsprint waste arisings in 1999

Category	Waste Arising (tonnes)	Percentage
Printers waste	14,100	6
Over-issue	27,300	11
Post consumer paper	196,700*	83
Total	**238,100**	**100**

(14% of this amount ie. 27,500 tonnes was collected by local authorities)

A detailed breakdown of post-consumer newsprint waste arisings by local authority area is included in **Annex 6**.

[7] Premature vehicles are those processed by insurance companies with either no economically salvageable parts but can be used only as scrap (eg 'total burn outs') or those that cannot (or should not) be repaired but still have parts which are economically viable for resale (heavy damage such as bent chassis)

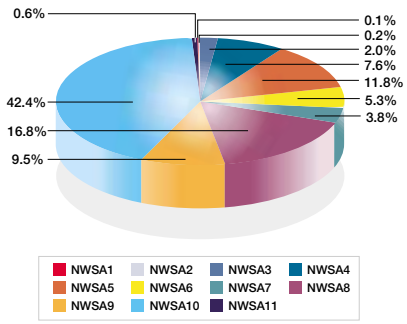
Construction and Demolition Wastes

EnviroCentre carried out a construction and demolition priority waste stream project on behalf of SEPA in 2001. The estimated total construction and demolition waste arisings for Scotland in 2000 was 6.28 million tonnes. **Table 6** shows construction and demolition waste arisings by National Waste Strategy Area. A percentage breakdown is given in **Figure 3**.

Table 6 Construction and demolition waste arisings for Scotland by National Waste Strategy Area (NWSA) 2000

NWSA Ref.	NWSA	Waste arisings (tonnes)
1	Orkney & Shetland	9,000
2	Western Isles	12,000
3	Highland	127,000
4	North East	478,000
5	Tayside	740,000
6	Forth Valley	331,000
7	Fife	237,000
8	Lothian & Borders	1,055,000
9	Ayrshire, Dumfries & Galloway	595,000
10	Clyde Valley	2,665,000
11	Argyll & Bute	35,000
Total		**6,284,000**

Figure 3 Relative proportions of construction and demolition waste arising by National Waste Strategy area (NWSA) 2000



Quarry, Perthshire

Waste Electrical and Electronic Equipment

The Waste Electrical and Electronic Equipment (WEEE) Directive aims to prevent the growth of WEEE and to encourage reuse, recycling and other forms of recovery in order to reduce the disposal of waste to landfill. It also seeks to improve the environmental performance of all economic operators involved in the life cycle of electrical and electronic equipment, in particular those directly involved in the treatment of WEEE.

An ENTEC UK Ltd report[8] for the Scottish Executive estimates that the amount of WEEE arisings in Scotland for 2000 was approximately 42,000 tonnes. A breakdown of the figure is given in **Table 7**.

Table 7 Waste electrical and electronic equipment arisings in Scotland 2000

Category	Waste arisings (tonnes)
Large household appliances	13,900
Small household appliances	2,400
IT equipment	5,900
Telecom devices	650
Radio, TVs, musical instruments	4,300
Lighting equipment	2,340
Medical equipment	n/a
Monitoring and control instruments	1,500
Toys	400
Electrical goods	700
Automatic dispensers	n/a
Consumables	10,000
Total WEEE	**42,090**

[8] Determination of the source, nature, amount and disposal routes of WEEE arising in Scotland

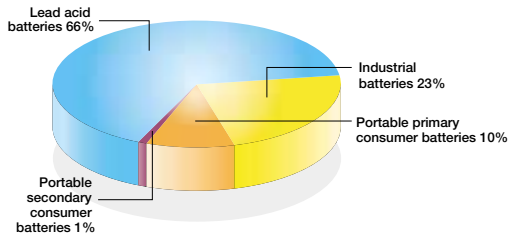
Batteries and Accumulators

The proposed European directive on batteries and accumulators aims to reduce levels of mercury, cadmium and lead in batteries. It also encourages EU member states to collect and recycle batteries by setting out collection targets on consumer and industrial batteries as well as recycling targets on materials recovered from the collection of spent batteries. An Environmental Resources Management (ERM) report[9] for the DTI gives a forecast of UK battery arisings for 2000 to 2005. Figures presented in **Table 8** were aggregated from the different graphs presented in the report. A percentage breakdown of **Table 8** is given in **Figure 4**.

Table 8 UK waste battery arisings in 2000

Type	Waste arisings (tonnes)
Portable primary consumer batteries	17,500
Portable secondary consumer batteries	2,300
Lead acid batteries	112,000
Industrial batteries	40,000
Total	**171,800**

Figure 4 Percentage breakdown of UK waste battery arisings in 2000



[9] Analysis of the Environmental Impact and Financial Costs of a Possible New European Directive on Batteries

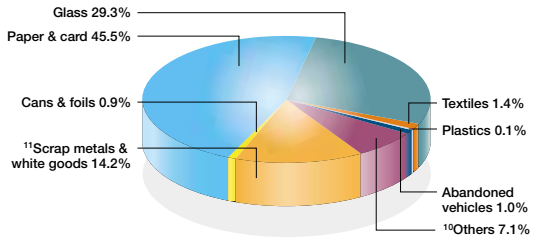
Waste Recovery and Disposal in Scotland

Recycling and Recovery

Local Authority Recycling and Composting

During 2000/2001, 110,008 tonnes of waste collected by, or on behalf of, local authorities were recycled and 34,675 tonnes were composted. The total figure of 144,683 tonnes of recycled and composted waste represents approximately 4.5% of total waste collected by, or on behalf of, local authorities in Scotland. There are a variety of possible methods that can be used for calculating the recycling rate and the results of the calculation can vary greatly depending on the criteria used. At present, there is no agreed standard methodology by which to calculate the recycling rate of waste collected by, or on behalf of, local authorities in Scotland. SEPA is working to standardise the methodology used for calculating recycling rates. **Figure 5** shows the percentage breakdown of local authority recycling by material in 2000/2001. **Annex 7** is a breakdown of the quantities of all materials recycled (excluding composting) by local authorities. **Annex 8** provides figures for waste composted by local authorities in Scotland in 2000/2001.

Figure 5 Local Authority recycling by material in 2000/2001 (excluding composting)



[10] Others includes: DIY/Rubble; wood; CFCs from fridges and freezers, books, other materials, co-mingled materials; batteries and oils.

[11] The scrap metals and white goods figure includes metals extracted, before disposal at landfill and before or after incineration, through the process of mechanised metal extraction (MME). In total, 2,048 tonnes of metals were recycled by this method in Scotland in 2000/2001.

Local Authority Recycling and Composting Initiatives

In the LAWAS 2000/2001 Scottish local authorities reported the following recycling initiatives were operating in their area:

- Twenty-two local authorities reported that they (or their agents) operated one or more kerbside schemes collecting household waste for recycling or composting;
- Seventeen reported that they (or their agents) operated one or more kerbside schemes collecting only commercial or industrial waste for recycling;
- Seven authorities were aware of other private or voluntary sector organisations operating independent household waste kerbside collection schemes within their authorities area.

In total, 19 local authorities operated a scheme to collect waste for composting, of which:

- Ten authorities operated a service for collecting waste for composting through civic amenity sites or bring sites only;
- Five authorities operated both a civic amenity site or bring site scheme and a household kerbside collection scheme;
- Four authorities operated a scheme that combined collections from civic amenity or bring sites with other collection services, including household, commercial, private or voluntary and non-household schemes.

Green Waste Shredding

Home Composting

In the LAWAS 2000/2001, local authorities were asked if they had ever distributed home composting bins to the public. Twenty-six local authorities reported that they had distributed home composting equipment within their local authority area during or prior to 2000/2001.

During 2000/2001 the local authorities reported that 11,340 composters, 12 wormeries and 1 digester were distributed. They indicated that, prior to 2000/2001, a total of 15,884 composters, 30 wormeries, 2208 digesters and 350 cone digesters had been distributed.

Home composting

Specific and Priority Waste Streams

Packaging and Packaging Waste

The Producer Responsibility Obligations (Packaging Waste) Regulations were introduced in 1997 as part of the UK implementation of EC Directive 94/62/EC on Packaging and Packaging Waste. One of the key objectives of the Directive is to reduce the impact of packaging on the environment by requiring that specific proportions of packaging waste are to be recovered and recycled. The Directive requires that from June 2001, Member States must recover 50% of packaging waste (within which further recycling targets must be met).

The regulations place recovery and recycling obligations on most companies who have a turnover exceeding £2 million and who handle more than 50 tonnes of packaging and packaging materials per annum. Companies who meet both thresholds are required to:

- Register annually with SEPA (or the appropriate agency) and submit data on packaging handled by the company in the previous year. Data should also include a statement of the company's recovery and recycling obligations as calculated using formulae given in the regulations. A compliance plan should be submitted if the company turnover is greater than £5 million;
- Take reasonable steps to meet specific recovery and recycling obligations;
- Submit a Certificate of Compliance and support this with evidence of compliance (i.e. evidence that the appropriate recovery and recycling has been carried out);
- Meet certain 'consumer information obligations' if the main activity of the company is 'seller'.

Alternatively, they may join, and supply their data to, a compliance scheme that will meet the company obligations on their behalf.

Wood Recycling

Although the Directive targets did not take effect until June 2001, the relatively poor packaging recovery that had taken place in the UK prior to the introduction of the regulations resulted in the UK introducing interim targets during 1998, 1999 and 2000 to provide for a smooth build up to Directive targets.

Recovery and recycling of packaging waste is carried out by reprocessors or exporters of UK packaging waste. Most of these companies are accredited and monitored by SEPA or the Environment Agency; further details are provided in the Waste Management Data section and in **Table 30, Annex 3**. These operators generate approved evidence of recovery and recycling in the form of Packaging Waste Recovery Notes or Packaging Waste Export Recovery Notes (PRN or PERN) in respect of each tonne of packaging waste recovered or recycled. Obligated companies (producers) and compliance schemes can meet their recovery and recycling obligations by buying or obtaining the correct amount and material type of recovery notes.

Glass factory

The nature of the regulatory regime means that it is always not possible to report separately on Scottish data. Depending on the extent of a company's operations, packaging handled in Scotland, England and Wales is often the subject of a single data report, which cannot be disaggregated into each nation. Similarly, data on packaging waste reprocessed in Scotland may include packaging waste that has arisen in England and Wales. Much of the data given below relates to UK figures.

Table 9 gives the recovery and recycling targets for the UK for 2000. The percentage target for recovery is 45% and for recycling 13%. **Table 10** details the recovery and recycling actually achieved in the UK in 2000. **Tables 31** and **32** in **Annex 3** provide equivalent data for 1999.

Table 9 UK Recovery and Recycling Targets for 2000

Material	Recovery (tonnes)	Recycling (tonnes)
Paper	1,319,403	381,161
Glass	779,393	225,158
Aluminium	48,985	14,151
Steel	300,702	86,869
Plastic	630,643	182,186
Wood	393,852	113,780
Other	8,223	2,376
Total	**3,481,201**	**889,525***

Note that there is no material specific recycling target for wood and 'other' packaging material hence these are not included in the total recycling target.

Table 10 UK Recovery and Recycling achieved in 2000

Material	Tonnes
Paper	1,880,414
Glass	715,037
Aluminium	16,299
Steel	238,668
Plastic	204,430
Wood	296,437
Total recycling	3,351,285
Energy from Waste	500,047
Total recovery	**3,851,332**
Specific Waste stream	**9,179,981**
Recovery %	**41.90%**
Recycling %	**36.40%**

The recovery achieved per material may appear to be less than the target for that material as shown in **Table 9**. This is because recovery targets are general and may be achieved through recovery of any other packaging waste material. Recycling targets are material specific and can only be achieved through recycling of that specific material.

Table 11 shows the proportion of packaging waste reprocessed by SEPA accredited companies in 2000. **Table 33** in **Annex 3** provides equivalent data for 1999.

Table 11 Packaging waste reprocessed by SEPA accredited reprocessors and exporters in 2000

Material	Accepted (tonnes)	Reprocessed/Exported (tonnes)	Total PRN/PERNs
REPROCESSING			
Paper	235,749	235,096	234,250
Plastic	2,702	2,750	2,540
Glass	101,079	101,076	59,313
Energy from Waste - municipal solid waste	10,949	10,949	8,303
Wood	55,260	55,260	54,607
Wood composting	435	435	332
Paper composting	242	242	460
Total	406,416	405,808	359,805
EXPORTING			
Paper export	15,663	15,663	15,663
Plastic export	7,435	7,157	7,278
Steel export	10,594	10,594	10,185
Aluminium export	67	67	31
Total	33,759	33,481	33,157
Total Reprocessed	440,175	439,289	392,962

Hazardous and Special Waste

In 2000/2001, 131 sites were licensed to handle special waste in Scotland. **Annex 9** provides details of sites and operators licensed to handle special waste. Every year approximately 40 to 50% of special wastes arising in Scotland are sent to England and Wales for treatment or recovery. In 2000, approximately 90,000 tonnes of wastes going to landfill were classed as special, this accounted for less than 1% of all wastes going to landfill.

Sampling waste

Imports and Exports of Hazardous Waste

The movement of waste into and out of EC member states is governed by Council Regulation (EEC) No 259/93, the Waste Shipments Regulations which is supplemented by the Transfrontier Shipment of Waste Regulations 1994.

Wastes which are imported or exported from member states (eg. UK) are classified by their hazardous nature as green, amber or red list substances (green indicates non-hazardous, red indicates hazardous). Under the transfrontier shipment regulations, wastes can only be moved for the purposes of treatment or recovery. The waste shipments regulations outline the control procedure for movement of red and amber substances. Wastes on the green list, which are shipped for recovery or recycling, are not subject to additional procedures other that normal commercial controls, however, they must be accompanied by a document containing information about the consignment.

In 1999 a total of 6.35 million litres of red and amber list wastes were imported to Scotland from outside the UK for recovery. In 2000 the total was 9.62 million litres. Most of the substances are halogenated or non-halogenated solvents.

Oils

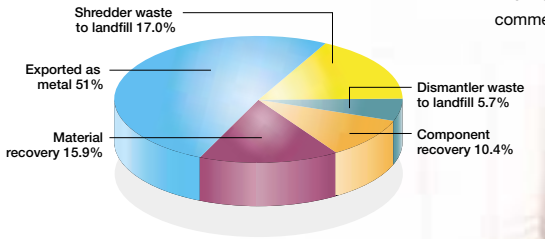
There are currently no robust data on recovery and disposal of oil wastes in Scotland. However, the planned priority waste stream project on oils will help to clarify issues surrounding this waste stream.

In the LAWAS 2000/2001, 31 of the 32 local authorities indicated that they have waste oil collection schemes. The total of waste oils collected by them, or on their behalf, was 406.5 tonnes (equivalent to approximately 500,000 litres). Of this, approximately 305 tonnes (380,000 litres) comprised household waste oils and 101 tonnes (125,000 litres) non-household waste oils. According to the survey, waste oil quantities collected by individual local authorities during 2000/2001 ranged from 0.01 (12.5 litres) to 43 tonnes (54,000 litres). A breakdown for each local authority is included in **Annex 7**.

End of Life Vehicles (ELVs)

ELVs are processed by up to four different types of business; salvage operators, dismantlers, scrap merchants and shredders (commonly termed fragmentisers or metal recoverers). **Figure 6** shows the percentage breakdown of ELV treatment, recovery and disposal routes in Scotland for 1999.

Figure 6 ELV treatments and disposal routes in Scotland 1999



In the priority waste stream project report for SEPA, TRL estimated that 132,000 tonnes of ELVs were treated and disposed of in Scotland in 1999. ACORD (Automotive Consortium On Recycling and Disposal, 2000) estimate that, in addition to the 10% of a vehicle recycled as vehicle components, a total of 67% of the original vehicle material can be recovered. At the shredding stage in Scotland only 51% was recovered. Therefore, TRL assumed that a further 16% of material was recovered at the dismantling stage, in addition to the recycled vehicle components.

As ELVs are not processed separately in shredding facilities, data on actual quantities of metal recovered are not available. However, the tonnage of Scottish-derived ELVs processed by Scottish shredders in 1999 was estimated by the industry to be 90,000 tonnes. The actual weight of a vehicle received for shredding was estimated by the industry to range between 0.5 tonnes and 0.75 tonnes, this equates to the processing of a total of between 120,000 and 180,000 vehicles.

Of the total material shredded 75% is recovered metal. The remaining 25% consists of multi-material shredder residue, almost all of which is sent to landfill. All the metal recovered in Scotland is exported. For example, ferrous metals are sent to Spain and aluminium is sent to China. Of the landfills licensed in Scotland, only a limited number are used for disposing of shredder residue. These are located close to the four shredding facilities. It is difficult to identify the actual landfill operators taking shredder residue as this information is deemed by the industry to be commercially sensitive.

Collecting waste oil for recycling

Newsprint

The TRL priority waste stream project identified that out of the 238,100 tonnes of Scottish newsprint arising in 1999, an estimated 65,000 tonnes were recovered. The main recovery route was export for recycling with a small fraction going for energy recovery and other uses (eg. animal bedding) as shown in **Table 13**.

Figures for recovery and disposal of newsprint were based on information supplied by the newsprint papermills in England, Scottish local authorities, newsprint paper merchants and statistics on imports and exports of recovered paper.

Table 13 Newsprint recovery and disposal routes for 1999

Destination	Tonnes
Landfill	174,550
Exported to England & Wales for recycling	44,650
Exported outwith the UK for recycling	18,000
Energy recovery	900
Other destinations (eg animal bedding)	15
Total	**238,115**

Construction and Demolition Waste

The Enviro Centre priority waste stream project report estimated that in 2000 approximately 2.31 million tonnes of construction and demolition waste were recovered and 1.36 million tonnes sent to exempt sites. The total amount landfilled was 2.62 million tonnes. The waste recovery and disposal figures split by National Waste StrategyArea are shown in **Table 14**.

The relative proportions of construction and demolition waste treatment methods by National Waste Strategy Area, which requires further investigation, are shown in **Figure 7**.

Tyres

The Used Tyre Working Group (a joint Government, Agencies and Industry initiative) reported that a very significant quantity of tyres was still being landfilled in 1999. An estimated 120,000 tonnes were landfilled in the UK during 1999, of which 14,500 tonnes were disposed of in Scotland. **Table 12** details Scottish waste tyre management methods in 1999, as identified in the TRL priority waste stream project report.

Table 12 Scottish waste tyre disposal routes for 1999

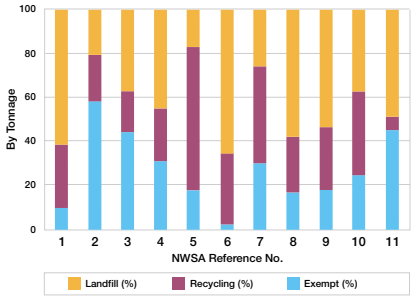
Destination	Management methods	Tonnes	Percentage
Within Scotland	Landfilled	14,500	45.4
	Retreaded	1,060	3.3
	Silage clamps & landfill engineering	2,960	9.3
	Re-used	1,016	3.2
	Unknown (Stockpiles, landfill unaccounted for silage clamps & re-use)	2,270	7.1
From Scotland to the rest of the UK	Material Recovery	6,040	18.9
	Energy recovery in England	1,920	6.0
	Retreaded	1,720	5.4
Export elsewhere		440	1.4
Total		**31,926**	**100**

Table 14 Construction and demolition waste disposal figures in 2000

Waste Strategy Area	Arising (t)	Arising (%)	Recovery (t)	Recovery (%)	Exempt (t)	Exempt (%)	*Landfill (t)	Landfill (%)
Orkney & Shetland	9,000	100	3,000	28.2	1,000	10.1	6,000	61.6
Western Isles	12,000	100	3,000	21.2	7,000	58.1	3,000	20.7
Highland	127,000	100	24,000	18.9	56,000	44	47,000	37.1
North East	478,000	100	114,000	23.9	148,000	30.9	216,000	45.2
Tayside	740,000	100	486,000	65.7	129,000	17.4	125,000	16.9
Forth Valley	331,000	100	100,000	30.3	9,000	2.8	221,000	66.9
Fife	237,000	100	105,000	44.3	71,000	30	61,000	25.7
Lothian & Borders	1,055,000	100	269,000	25.5	175,000	16.6	612,000	58
Ayrshire, Dumfries & Galloway	595,000	100	172,000	28.8	105,000	17.6	319,000	53.6
Clyde Valley	2,665,000	100	1,032,000	38.7	645,000	24.2	988,000	37.1
Argyll & Bute	35,000	100	2,000	6	16,000	45.1	17,000	48.9
Total	**6,284,000**	**100**	**2,310,000**	**36.8**	**1,362,000**	**21.7**	**2,615,000**	**41.6**

*These figures were collated from SEPA landfill returns available when this project was undertaken. No attempt was made to extrapolate this data to fill gaps for sites where data was not reported.

Figure 7 Relative proportion of construction and demolition waste management methods by NWSA in 2000



NWSA Reference
1. Orkney & Shetland **2.** Western Isles **3.** Highland
4. North East **5.** Tayside **6.** Forth Valley **7.** Fife
8. Lothian & Borders **9.** Ayrshire, Dumfries & Galloway
10. Clyde Valley **11.** Argyll & Bute

Waste Electrical and Electronic Equipment (WEEE)

The ENTEC report[12] identified that there are huge data gaps on WEEE collections, treatment and disposal for 2000. Very few local authorities have a separate collection system for WEEE or have a reliable system for monitoring amounts of WEEE collected. The report indicated that there were approximately 110 scrapyards licensed to accept household electrical waste. They potentially have a capacity to handle around 800,000 tonnes of scrap metal per annum, which includes an unknown proportion of WEEE.

SEPA is currently undertaking a priority waste stream project on WEEE, which is looking at all the issues surrounding this waste stream.

Batteries

As post-consumer household batteries are generally discarded along with general household waste, it is difficult to establish their collection and disposal figures. In the LAWAS 2000/2001, it was found that 29 out of the 32 local authorities have a battery bring recycling service at their civic amenity sites. A total of 430 tonnes were collected from households and 6 tonnes from non-household sources were also collected. There was a huge difference in the tonnage collected between the local authorities, varying from 0.02 to 64 tonnes.

The ERM study[13] conducted for the DTI estimated recycling rates for each of the battery types. These are given in **Table 15**.

Table 15 UK waste battery recycling rates in 2000

Battery type	Percentage recycled
Portable primary batteries	<1
Portable rechargeable batteries	5
Total Household	**2.5**
Automotive lead acid batteries	90
Industrial lead acid batteries	90
Industrial nickel cadmium batteries	25
Total Industrial	**90**

There are no separate figures for Scotland and SEPA is currently carrying out a priority waste stream project on batteries.

[12] Determination of the source, nature, amount and disposal routes of WEEE arising in Scotland. ENTEC Uk Ltd (A report for the Scottish Office Central Research Unit).
[13] Analysis of the Environmental Impact and Financial Costs of a Possible New European Directive on Batteries.

Phone recycling

Waste burning power station

Waste Disposal

Incineration and Thermal Treatment Plants

Many incinerators are not subject to the Waste Management Licensing Regulations 1996 (as amended) as they are regulated either under Integrated Pollution Control (under Part 1 of the Environmental Protection Act 1990) or Pollution Prevention Control Regulations 2000.

There were two municipal waste incinerators operating in Scotland in 2000. One in Dundee and the other on the Shetland Islands. The Dundee facility is licensed to accept 105,000 tonnes on municipal solid waste and 15,000 tonnes of commercial and industrial wastes per year. Energy in the form of electricity is produced by the plant and is sold into the National Grid. Technical difficulties were experienced in 2000, which limited its throughput. The Shetland facility is licensed to deal with 26,000 tonnes of municipal solid waste per year, 200 tonnes of which may be clinical waste. Waste heat is used in a district heating scheme.

In addition, there were 18 operational incinerators and thermal treatment plants that dealt with commercial and industrial wastes during 2000; **Annex 9** provides details of these sites. In 2000 the total licensed capacity of these facilities was approximately 77,000 tonnes per year. Many only handle waste arising on site and are designed to handle specific waste streams such as clinical waste, animal carcasses and other industrial wastes.

Landfilled Waste

Sites licensed under the Waste Management Licensing Regulations 1996 are obligated to make available information regarding the wastes handled on their site. In the past this has been executed in various formats, which has led to inconsistent and incomplete data reporting at a national level. The Waste Data Strategy launched a standardized quarterly return form in April 2001 to request information from licensed sites in a consistent national format.

Due to incomplete data returns it has been necessary to extrapolate from the data returned. Where data was not available, each site was allocated a tonnage throughput band as assigned under the SEPA Fees and Charges Scheme. From this, an average throughput tonnage was assigned to each site according to its charging band. The bands adopted under SEPA's Fees and Charges Scheme are:

0 to 5, 000 tonnes per year

5, 000 to < 25, 000 tonnes per year

25, 000 to < 75, 000 tonnes per year

75, 000 to < 150,000 tonnes per year

≥150, 000 tonnes per year

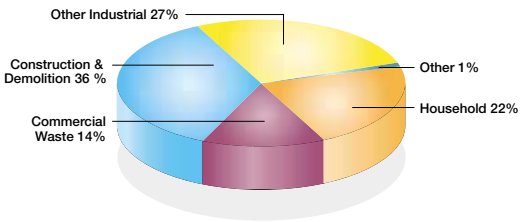
Work carried out by SEPA on the distribution and size range of missing returns suggests that the methodology adopted for extrapolation gives reliable figures for quantities of waste landfilled.

SEPA estimates that the total amount of controlled waste landfilled in 2000 was 11.1 million tonnes. The breakdown figures are given in **Table 16**. Corresponding figures for 1999 are provided in **Annex 10**.

Table 16 Total controlled waste going to landfill in 2000

Type of waste	Tonnes	Percentage
Household	2,494,182	22%
Commercial	1,574,060	14%
Industrial -		
Construction and Demolition	3,952,617	36%
Other Industrial	3,053,982	27%
Other	90,861	1%
Total	**11,165,702**	**100%**

Figure 8 Total controlled waste going to landfill per type of waste



Sewage Sludge

Table 17 shows the disposal routes for sewage sludge in Scotland in 2000. In accordance with the requirements of the Urban Waste Water Treatment Directive (91/271/EEC) the disposal of sewage sludge to surface waters, including the sea, ceased in December 1998. Consequently, alternative disposal routes have now been developed. In 2000, approximately 64% of sludge was disposed of to landfill compared with 3% in 1998. Figures for 1999 are given in **Annex 11**.

Water Treatment Plant

Table 17 Disposal routes for sewage sludge in Scotland 2000

Outlet	Water authority			Total	Percentage
	NoSWA	ESWA	WoSWA		
	Tonnes of dry solids				
Agriculture treated[14]	1,151	6,555	2,455	10,161	9.8
Agriculture enhanced treated[14]	9,822	0	0	9,822	9.5
Land reclamation	653	0	12,929	13,582	13.1
Forestry	0	41	404	445	0.4
Landfill	4,167	29,229	33,574	66,970	64.4
Stored	1,003	1,860	0	2,863	2.8
Total (9)	**16,796**	**37,685**	**49,362**	**103,843**	**100.0**

NoSWA - North of Scotland Water Authority
ESWA - East of Scotland Water Authority
WoSWA - West of Scotland Water Authority

[14] "Treated" sewage sludge and "enhanced treated" sewage sludge, as defined in the British Retail Consortium/Water UK Safe Sewage Sludge Matrix (April 2000 version)

Landfill site - waste delivery

Waste Management Data

Waste Management Licensing

Registered Brokers and Carriers

Carriers and brokers of waste must be registered with SEPA or the Environment Agency, subject to a few exceptions. Once registered carriers and brokers may operate throughout the UK. Registration must be renewed on a three yearly basis.

During both 1999/2000 and 2000/2001 the total number of registered brokers and carriers of waste was approximately 6500. Of these, approximately 10 were registered as brokers only while approximately 70 held joint registrations for carrying and brokering waste. The remainder were registered as carriers.

Number of Waste Management Licences

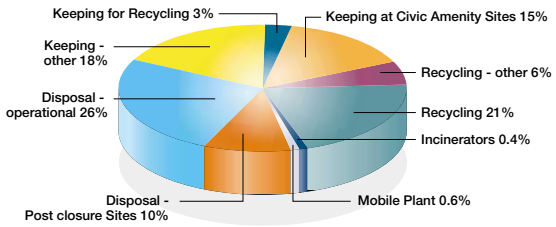
Part II of the Environmental Protection Act 1990 states that waste management licences are required for keeping, treating and disposing of wastes. In Scotland these are issued by SEPA. Once a waste management licence has been issued by SEPA, the licence holder is responsible for the licensed activity and aftercare of the site until such time as SEPA accepts the surrender of the licence. In the case of landfill licences the period of aftercare could be many years.

A total of 1,008 licences were in force during 2000/2001. A breakdown of these licences is given in **Table 18** and **Figure 9**.

Table 18 Number of licences by activity in 2000

Activity	Number of licences in 2000
Treatment	
Recycling	209
Other	57
Keeping	
At civic amenity sites	153
For recycling	28
Other	180
Disposal	
Disposal - operational	274
Post closure sites	98
Other	
Incinerators	3
Mobile plant	6
Total	1,008

Figure 9 Waste Management Licences by Activity in 2000/2001



Landfill gas pipes

Lined landfill site

Licences Related to Recycling Activity

Table 19 shows that, in 2000/2001 there were 209 operations licensed to carry out recycling activities.

Table 19 Number of licensed recycling operations by capacity in 2000

Licensed capacity (tonnes)	Number
0 to < 5,000	145
5,000 to < 25,000	35
25,000 to < 75,000	15
75,000 and above	14
Total	209

Accredited Reprocessors and Exporters of Packaging Waste

SEPA accredited reprocessors and exporters of packaging waste operating during 1999 and 2000 are listed in **Annex 12**.

Registered Companies and Compliance Schemes under the Producer Responsibility (Packaging Waste) Regulations 1997 (As Amended)

In 1999 and 2000, Wastepack was the only compliance scheme registered with SEPA. It should be noted that less than 10% of the scheme members were Scottish companies. **Table 20** gives details of the number of registrations in 2000 under the regulations. **Table 30** in **Annex 3** provides the corresponding data for 1999.

Table 20 Registrations with SEPA, the Environment Agency and Northern Ireland Environment and Heritage Service in 2000

Organisation	Number
Producers with SEPA	123
Members of schemes that are registered with SEPA	368
Producers with Environment Agency	811
Members of schemes that are registered with the EA	4,248
Total businesses registered with NIEHS	221
Total registrations	5,771

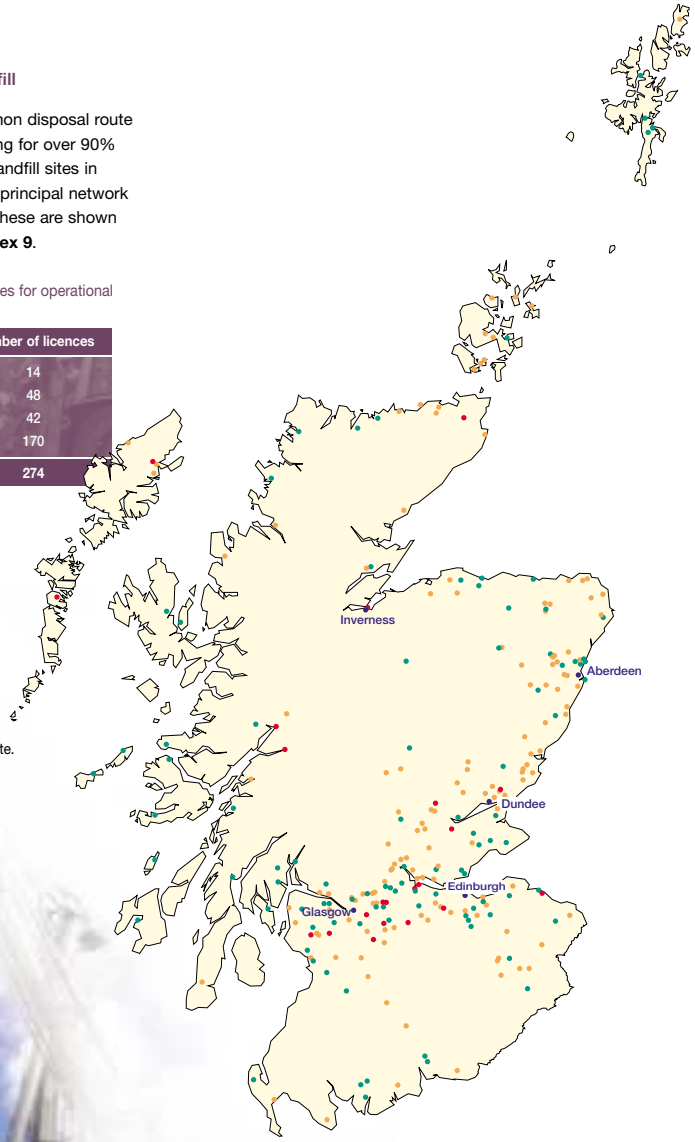
Landfill Licences

Disposal of Waste to Landfill

Landfill is by far the most common disposal route for waste in Scotland, accounting for over 90% of the total disposed. The 274 landfill sites in operation during 2000 form the principal network of disposal facilities. Details of these are shown on the map and detailed in **Annex 9**.

Table 21 Waste management licences for operational landfills by charging band 2000/2001

Annual throughput (tonnes)	Number of licences
150,000 and above	14
75,000 to < 150,000	48
25,000 to < 75,000	42
0 to < 25,000	170
Total	**274**



Landfill Sites 2000

- 25 Hazardous Waste Sites*
- 99 Non Hazardous Waste Sites*
- 150 Inert Waste Sites*
- Scottish Cities

* Sites which take household, commercial or industrial waste, including specified hazardous waste.

Landfill gas pipework

Operational Controls

Some of the larger landfill sites carry out gas and/or leachate management at their sites. During 2000, 43 sites undertook some form of gas management; the most common method of which was venting. Flaring or energy production took place at a limited number of sites. Leachate management was carried out at 39 sites. Recirculation was the most common method of management. However, aerobic treatment, waste stabilization ponds and other methods were also used.

Post Closure Licences

Table 22 shows that 56 licensed sites had ceased landfilling waste and were in their period of aftercare in 2000/2001.

Table 22 Number of waste management licences for post-closure landfill sites in 2000/2001

Total site licensed capacity (million tonnes)	Number of licences
2.5 and above	0
1 to < 2.5	9
0.25 to < 1	8
0 to < 0.25	39
Total	**56**

Waste Management Licences held for Handling Special Waste

In 2000/2001 131 sites were licensed to handle special waste. **Table 23** provides a breakdown of this information.

Table 23 Number of waste management licences for handling special wastes in 2000/2001

Activity	Number of Licences
Treating	28
Keeping	76
Disposal - operational	24
Disposal - post closure	3
Total	**131**

Inspections and Enforcement

Number of Inspections of Licensed Facilities

SEPA is required to undertake periodic inspections of all licensed facilities. In the year 1999/2000, SEPA staff made 15,779 planned inspections of waste management facilities. In 2000/2001 the number of planned inspections was 14,487.

Number of Pollution Complaints Related to Waste Management

There were 3,932 pollution complaints recorded in 1999/2000 of which 82% were responded to within 24 hours. In the year 2000/2001 the corresponding figure was 2,877 of which 86% were responded to within 24 hours.

Fly-Tipping

The illegal dumping of waste, is not only an eyesore, but also a potential risk to health and an expensive problem to resolve. Scottish local authorities are responsible for clearing waste that has been illegally dumped on land that they occupy and, in combination with SEPA, are responsible for clearing illegally dumped waste from private land. In order to address this problem, SEPA is involved with Strathclyde Police in an initiative, Operation Spotlight. This has resulted in successful prosecutions for the illegal dumping of waste.

In the LAWAS 2000/2001, local authorities were asked to provide separate tonnages for the clearance of fly-tipped material, if known. Seven out of the 32 local authorities were able to provide this information for 2000/2001. The total amount of fly tipped material separately cleared was 6872 tonnes. However, most local authorities collect fly-tipped material as part of their mainstream collection rounds and are not able to provide separate tonnages. It is not possible, therefore, to accurately represent the level of the fly-tipping problem in Scotland from this data.

Enforcement

Table 24 records the formal enforcement proceedings with regard to waste instigated by SEPA during 2000/2001. **Annex 13** provides corresponding data for 1999/2000.

Table 24 Number of waste related enforcement cases 2000/2001

Nature of enforcement	Number
Final warning letters	72
Enforcement notices issued	57
Referrals to Procurator Fiscal	16
Convictions	5
Total	**150**

Conclusions


This chapter looks at emerging trends from currently available data. It covers waste collection by and for local authorities and wastes disposed of to landfill as these are the most reliable and robust data for the period from which to draw conclusions.

The 1997 and 1998 household, commercial and industrial wastes collected for disposal figures differ slightly from those figures previously published. Data quoted in the Waste Data Digest 2001 includes wastes collected for recycling.

Local Authority Waste Collection

Table 25 and **Figure 10** present the available data for controlled waste collected for both recycling and disposal by, or on behalf of, Scottish local authorities.

Trend analysis of the overall household waste arisings and the total waste collected for disposal by local authorities indicate that the rate of increase ranges from zero to around 2%. This is somewhat less than the 3% increase in household waste reported for England and Wales. This difference may represent different economic circumstances in England and Wales compared to Scotland. Further investigation is, therefore, needed to establish a better understanding of growth rate of this waste stream.

Figure 10 Controlled waste collected by or for local authorities in Scotland 1991-2000 (thousand tonnes)

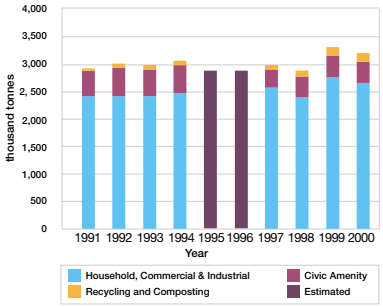


Table 25 Controlled waste collected by or for local authorities 1991-2000 (thousand tonnes)

Type of Waste	[15]1991	[15]1992	[15]1993	[15]1994	[16]1995	1996	[17]1997	[17]1998	[18]1999	[19]2000/2001
Waste Collected for disposal of which:										
Household, commercial and industrial	2,403.3	2,427.9	2,392.9	2,471.0	*n/k	n/k	2,567.6	2,396.0	2,763.9	2,682.2
Civic amenity	466.5	515.2	507.1	518.1	n/k	n/k	340.0	385.7	402.1	384.6
Total waste collected for disposal	2,869.9	2,943.1	2,899.9	2,989.1	n/k	n/k	2,907.6	2,781.8	3,166.0	3,066.7
Total waste collected for recycling & composting	64.5	72.2	82.3	93.2	n/k	n/k	93.4	115.0	162.0	144.7
Total local authority waste arisings	2,934.4	3,015.2	2,982.3	3,082.3	n/k	n/k	3,001.0	2,896.8	3,328.0	3,211.4

[15] 1991 - 1994 figures extracted from Table A1.2 of Scottish Office Bulletin for 1994 (refers to 1991-1994 inclusive).
[16] 1995 - 1996 figures are not known (n/k).
[17] 1997 and 1998 figures are based on data reported in the Databridge.
[18] 1999 figures based on the National Waste Strategy Strategic Waste Management Baseline Assessments although further work was carried out to complete the Dataset.
[19] 2000/01 figures from the Local Authority Waste Arisings Survey 2000/01.

*n/k - not known

Disposal of Waste to Landfill

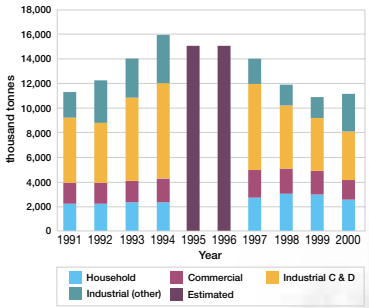
The total amount of wastes being landfilled in Scotland from 1991 to 2000 are presented in **Table 26** and **Figure 11**. From a peak of approximately 16 million tonnes in 1994, wastes landfilled have substantially fallen in recent years. The fall between 1994 and 1998 was largely due to reductions in construction and demolition waste. More recent data indicates that levels of waste being landfilled may be starting to stabilise. Further analysis of this trend will be conducted in the coming years.

Table 26 Total controlled waste going to landfill in Scotland 1991-2000 (thousand tonnes)

Type of Waste	[20]1991	[20]1992	[20]1993	[20]1994	[21]1995	[21]1996	[22]1997	1998	1999	2000
Household	2,291.3	2,246.6	2,336.1	2,381.6	*n/k	n/k	2,698.0	2,990.9	2,888.9	2,494.2
Commercial	1,667.5	1,733.8	1,790.6	1,873.5	n/k	n/k	2,218.0	2,024.0	2,003.0	1,574.0
Industrial (total)	7,384.5	8,229.4	9,862.1	11,622.3	n/k	n/k	8,959.5	6,767.9	5,946.3	7,006.6
Other	-	-	-	-	n/k	n/k	103.1	90.7	57.9	90.9
Total	11,343.3	12,209.8	13,998.8	15,877.4	15,000.00	15,000.00	13,978.5	11,873.4	10,896.2	11,165.7
Industrial (C&D)	5,217.9	4,847.3	6,714.6	7,716.4	n/k	n/k	7,007.5	5,096.9	4,277.0	3,952.6
Industrial (other)	2,166.6	3,382.1	3,147.5	3,905.9	n/k	n/k	1,951.9	1,671.1	1,669.3	3,054.0
Industrial (total)	7,384.5	8,229.4	9,862.1	11,622.3	n/k	n/k	8,959.4	6,767.9	5,946.3	7,006.6

*n/k - not known

Figure 11 Total Controlled Waste going to Landfill in Scotland 1991-2000 (thousand tonnes)



Note the tonnage for 'Other' has not been included in Figure 11

[20] Figures extracted from Table A1.3 of Scottish Office Statistical Bulletin published in 1996, referring to 1991-1994 inclusive.
[21] The 1995 and 1996 values are estimates. No specific data was available for these years.
[22] 1997-1998 figures taken from ERM Study for SEPA and the Scottish Executive.

Annexes

Annex 1

Table 27 Controlled waste collected by, or on behalf of local authorities in 1999

Type of waste	Tonnage	Percentage
Household	2,089,984	62.8
Civic amenity site	402,082	12.1
Commercial	549,120	16.5
Industrial	41,614	1.2
Other non household	83,200	2.5
Waste collected for disposal	**3,166,000**	**95.1**
Waste collected for recycling and composting	**162,000**	**4.9**
Total arisings	**3,328,000**	**100**

Annex 2

Table 28 Controlled waste collected by, or on behalf of, local authorities 2000/2001

Local authority	Waste strategy area	Population (30th June 2000)	Total LA waste arisings	Household waste	Civic amenity site waste (excluding recycling)	Commercial waste	Industrial waste	Other non-household wastes	Waste collected for recycling
Aberdeen	4	211,250	123,973	90,625	12,330	16,113	0	0	4,905
Aberdeenshire	4	227,200	137,527	127,632	0	0	0	0	4,895
Angus	5	109,180	68,897	37,460	16,255	6,611	0	0	8,572
Argyll and Bute	11	88,790	71,540	31,590	16,290	14,309	4,629	480	4,242
Clackmannanshire	6	48,460	31,956	21,371	5,607	1,606	0	2,195	1,177
Dumfries and Galloway	9	145,800	87,182	62,786	10,611	9,295	0	1,471	3,019
Dundee	5	142,700	91,334	42,601	13,930	28,012	0	180	6,611
East Ayrshire	9	120,630	64,856	51,077	6,376	5,370	0	0	2,033
East Dunbartonshire	10	110,760	64,203	41,906	11,566	7,643	0	0	3,088
East Lothian	8	91,280	55,305	45,564	960	6,805	230	0	1,746
East Renfrewshire	10	89,790	50,286	35,719	7,007	3,611	0	0	3,949
Edinburgh	8	453,430	257,367	162,954	25,982	54,513	0	848	13,070
Falkirk	6	144,320	110,870	60,265	12,417	19,760	0	12,399	6,029
Fife	7	350,400	253,443	139,359	52,001	20,781	20,215	15,437	5,650
Glasgow	10	609,370	354,549	219,225	20,000	92,364	0	14,727	8,233
Highland	3	208,600	164,492	84,852	500	77,040	0	1,020	1,080
Inverclyde	10	84,600	47,243	29,294	4,490	8,266	1,944	2,016	1,233
Midlothian	8	82,200	49,527	36,016	8,519	3,486	0	0	1,506
Moray	4	84,950	59,200	35,847	12,073	6,912	0	881	3,487
North Ayrshire	9	138,850	76,800	48,417	12,989	10,084	0	0	5,310
North Lanarkshire	10	327,620	191,357	120,085	21,294	38,202	0	9,893	1,883
Orkney Islands	1	19,480	11,021	5,089	2,504	1,711	0	36	1,681
Perth and Kinross	5	133,620	93,149	45,110	23,099	10,921	0	57	13,963
Renfrewshire	10	179,970	108,397	65,323	18,288	8,846	7,390	4,593	3,957
Scottish Borders	8	106,900	63,597	31,600	8,168	18,390	0	0	5,439
Shetland Islands	1	22,440	11,010	6,005	1,692	2,450	0	123	740
South Ayrshire	9	113,920	83,108	57,131	5,316	10,020	143	3,409	7,089
South Lanarkshire	10	307,400	191,592	151,133	18,000	14,000	0	0	8,459
Stirling	6	85,220	62,142	31,534	10,367	14,629	0	1,160	4,452
West Dunbartonshire	10	94,600	57,683	23,755	12,971	12,570	0	5,000	3,388
West Lothian	8	156,690	94,413	65,457	12,394	6,196	0	6,632	3,734
Western Isles	2	27,180	28,410	13,655	582	2,245	7,664	4,200	64
Total		**5,114,600**	**3,211,430**	**2,020,436**	**384,578**	**532,761**	**42,215**	**86,757**	**144,683**

Annex 3

Table 29 Estimated total tonnage of packaging flowing into the UK waste stream in 1999

Material	Tonnage
Paper	3,855,000
Glass	2,155,000
Plastic	1,600,000
Steel	750,000
Wood	670,000
Aluminium	110,000
Other	50,000
Total	**9,190,000**

Table 30 Registrations with SEPA, the Environment Agency and NIEHS in 1999

Organisation	1999
Producers with SEPA	113
Members of schemes that are registered with SEPA	177
Producers with Environment Agency	693
Members of schemes that are registered with the EA	3,267
Total businesses registered with NIEHS	-
Total registrations	**4,250**

Table 31 UK recovery and recycling targets in 1999 (tonnes)

Material	Recovery[23]	Recycling
Paper	1,150,057	267,455
Glass	668,957	155,571
Aluminium	44,576	10,366
Steel	278,449	64,756
Plastic	563,181	130,972
Wood	362,522	84,307
Other	5,968	1,388
Total	**3,073,710**	**629,121***

***Note** that there is no material specific recycling target for wood and 'other' packaging materials hence these are not included in the total recycling target.

Table 32 UK recovery and recycling achieved in 1999

Material	Tonnes
Paper	1,820,732
Glass	582,577
Aluminium	15,402
Steel	225,216
Plastic	198,461
Wood	94,000
Total recycling	3,084,296
Energy from waste	496,269
Total recovery	**3,506,611**
In waste stream	**9,189,981**
Recovery %	**38.10%**
Recycling %	**32.70%**

Table 33 Packaging waste reprocessed by SEPA accredited reprocessors and exporters in 1999

Material	Pack waste accepted (tonnes)	Pack waste reprocessed/ exported (tonnes)	Total PRN/PERNs issued
Reprocessing			
Paper	209,763	208,346	215,749
Plastic	4,415	4,235	3,730
Glass	112,296	90,234	82,115
Energy from waste - municipal solid waste	2,296	2,296	1,375
Wood	0	0	0
Wood composting	12	12	0
Paper composting	0	0	0
Total	**328,782**	**305,122**	**302,969**
Exporting			
Paper export	27,615	27,615	12,189
Plastic export	3,268	2,940	2,940
Steel export	3,842	3,842	2,012
Aluminium export	0	0	0
Total	34,725	34,397	17,141
Total Reprocessed	**363,507**	**339,519**	**320,110**

[23] The recovery target is 43% and the recycling target is 10%.

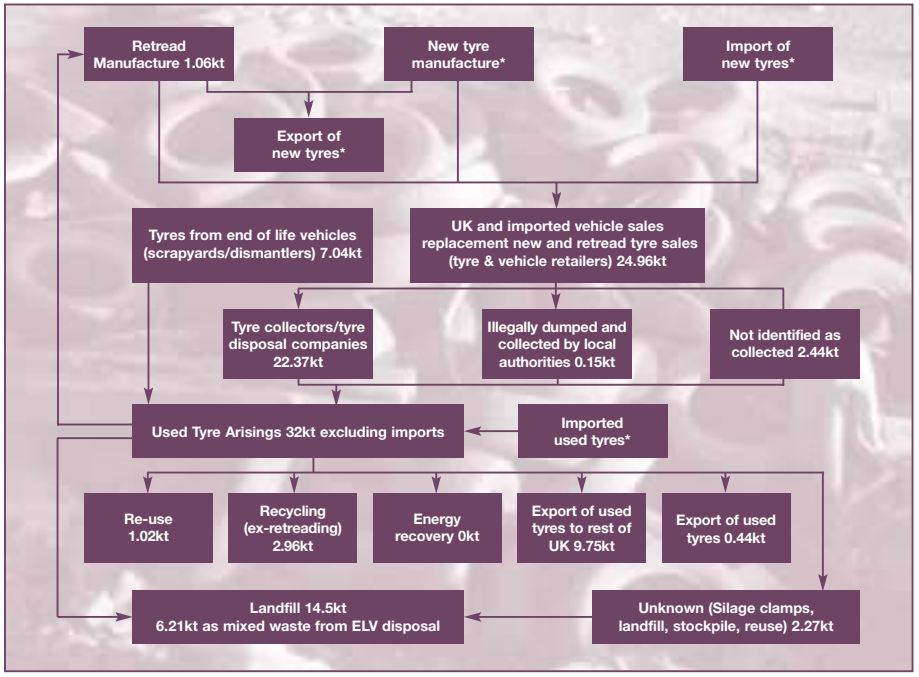
Annex 4

Table 34 Summary of used tyre arising by national waste strategy (NWSA) area from a predictive model for 1999

NWSA	Total number of used tyres arising				Total of used tyres arising (tonnes)			
	Car	Small Truck	Large Truck	Total	Car	Small Truck	Large Truck	Total
1 Orkney & Shetland	25,000	4,000	3,000	**31,000**	160	80	150	**390**
2 Western Isles	13,000	2,000	2,000	**17,000**	90	40	90	**220**
3 Highland	117,000	13,000	11,000	**141,000**	770	270	550	**1,600**
4 North East	325,000	27,000	24,000	**376,000**	2,150	570	1,190	**3,900**
5 Tayside	211,000	16,000	13,000	**240,000**	1,390	340	650	**2,380**
6 Forth Valley	224,000	13,000	11,000	**248,000**	1,480	270	560	**2,310**
7 Fife	177,000	9,000	8,000	**193,000**	1,170	180	380	**1,730**
8 Lothian & Borders	566,000	29,000	25,000	**620,000**	3,740	610	1,250	**5,590**
9 Ayrshire, Dumfries & Galloway	282,000	21,000	18,000	**321,000**	1,860	440	920	**3,220**
10 Clyde Valley	999,000	41,000	39,000	**1,079,000**	6,590	900	1,950	**9,440**
11 Argyll & Bute	48,000	5,000	4,000	**57,000**	320	100	210	**630**
Total	**2,986,000**	**179,000**	**158,000**	**3,323,000**	**19,710**	**3,790**	**7,900**	**31,400**

Annex 5

Table 35 Tyre flows Scotland 1999



*In these stages, data could not be estimated but has been accounted for in the next aggregated stage of the flow process.

Annex 6

Table 36 Post consumer newsprint waste arisings by local authority in 1999

	Households	Population	Total post consumer newsprint waste (tonnes)
Aberdeen	99,900	212,650	8,580
Aberdeenshire	90,000	227,440	8,419
Angus	46,600	109,840	4,207
Argyll & Bute	38,200	89,730	3,442
Clackmannanshire	20,400	48,530	1,850
Dumfries & Galloway	63,300	146,800	5,668
Dundee	66,800	144,430	5,780
East Ayrshire	50,800	120,940	4,609
East Dunbartonshire	41,900	110,690	4,012
East Lothian	37,500	90,430	3,424
East Renfrewshire	34,100	89,280	3,249
Edinburgh	205,900	451,710	17,941
Falkirk	61,300	144,370	5,531
Fife	149,000	349,200	13,412
Glasgow	273,900	611,440	24,069
Highland	88,100	208,600	7,971
Inverclyde	37,800	85,190	3,337
Midlothian	31,800	81,680	3,000
Moray	35,800	85,210	3,248
North Ayrshire	58,900	139,410	5,328
North Lanarkshire	132,200	327,940	12,248
Orkney	8,200	19,600	745
Perth & Kinross	57,100	134,030	5,144
Renfrewshire	76,900	177,230	6,865
Scottish Borders	46,100	106,400	4,118
Shetland	9,000	22,740	842
South Ayrshire	48,600	114,250	4,381
South Lanarkshire	125,300	307,520	11,545
Stirling	34,000	84,700	3,157
West Dunbartonshire	41,600	94,980	3,696
Western Isles	11,600	27,560	1,051
West Lothian	63,400	154,680	5,824
Total	**2,186,100**	**5,119,200**	**196,693**

All the household figures are individually rounded to the nearest hundred and the population figures to the nearest ten. As a result the Scotland figure may not be the same as the sum of all Local Authorities.

Annex 7

Table 37 Breakdown by material of waste recycled by local authorities 2000/2001 (tonnes)

Local authority	Sum	Abandoned vehicles	Mixed plastic	Textiles	Glass	Paper	Card	Mixed paper & card	Mixed cans & foils	Oils	Scrap metal & white goods	Batteries	Co-mingled materials	Other materials
Aberdeen	4,905	0	0	10	1,145	2,705	717	125	0	2	200	1	0	0
Aberdeenshire	4,895	0	16	92	2,051	604	873	0	72	34	1,088	64	0	1
Angus	5,704	0	17	65	1,043	2,770	80	690	17	10	802	12	0	198
Argyll & Bute	4,197	225	6	95	1,300	1,800	230	80	37	2	400	21	0	1
Clackmannanshire	1,077	0	0	1	311	552	0	0	1	8	129	10	0	65
Dumfries & Galloway	2,629	0	0	15	490	450	86	0	5	14	836	25	0	708
Dundee	5,901	0	12	200	1,834	2,399	50	214	58	3	1,111	20	0	0
East Ayrshire	1,878	0	1	69	845	56	144	467	47	0	223	18	0	8
East Dunbartonshire	3,088	0	0	68	554	2,270	0	0	26	1	161	7	0	0
East Lothian	1,746	0	0	36	316	779	0	0	4	9	600	3	0	0
East Renfrewshire	3,949	0	0	53	417	2,228	43	0	10	9	366	8	0	815
Edinburgh	10,488	0	0	211	3,464	5,733	177	0	68	27	535	41	0	232
Falkirk	3,972	238	0	32	1,061	2,090	0	336	42	10	160	3	0	0
Fife	5,650	597	11	25	2,856	199	0	0	85	5	1,760	12	0	100
Glasgow	7,733	0	10	89	3,101	1,477	0	197	33	11	443	30	2,255	87
Highland	1,080	0	0	50	630	0	5	341	52	0	0	1	0	0
Inverclyde	1,233	0	0	40	220	680	0	0	18	5	250	20	0	0
Midlothian	1,506	0	0	48	497	0	0	415	18	10	494	15	0	9
Moray	2,776	0	0	25	904	0	58	1,522	40	3	214	10	0	1
North Ayrshire	1,930	0	0	56	705	683	0	0	178	10	81	0	0	218
North Lanarkshire	1,883	0	0	49	120	371	973	0	1	10	340	19	0	1
Orkney	1,010	0	0	0	215	0	0	5	46	84	653	7	0	0
Perth & Kinross	3,984	0	1	38	1,391	1,709	0	116	11	24	662	33	0	0
Renfrewshire	2,741	0	0	1	773	507	0	0	0	16	984	14	96	351
Scottish Borders	5,439	0	0	40	1,364	0	0	3,486	36	10	474	20	0	9
Shetland	740	94	0	0	255	0	0	2	3	4	358	14	0	10
South Ayrshire	3,352	0	0	49	723	789	70	178	4	39	554	4	0	943
South Lanarkshire	4,158	400	0	25	1,359	1,084	0	0	9	0	1,264	0	0	18
Stirling	3,503	0	0	26	1,458	1,376	0	514	19	0	87	0	0	23
West Dunbartonshire	3,296	0	6	22	446	1,784	0	30	18	0	430	0	0	560
West Lothian	3,501	0	0	14	414	1,879	0	888	15	3	0	0	0	288
Western Isles	64	0	0	0	4	12	0	0	1	43	0	5	0	0
Total	**110,008**	**1,554**	**81**	**1,543**	**32,266**	**36,985**	**3,506**	**9,605**	**971**	**406**	**15,659**	**436**	**2,351**	**4,645**

Annex 8

Table 38 Waste composted by local authorities in Scotland 2000/2001 (tonnes)

Local Authority	Bring composting	Kerbside collection	Kerbside collection of green waste only	Total Waste	Household	Commercial	Other
Aberdeen	NR[24]	NR	NR	0	0	0	0
Aberdeenshire	NR	NR	NR	0	0	0	0
Angus	YES	YES	YES	2,868	2,868	0	0
Argyll & Bute	YES	YES	NO	45	45	0	0
Clackmannanshire	YES	NO	NR	100	10	0	90
Dumfries & Galloway	YES	NO	NR	390	390	0	0
Dundee	YES	YES	YES	711	563	148	0
East Ayrshire	YES	NO	NR	155	155	0	0
East Dunbartonshire	NR	NR	NR	0	0	0	0
East Lothian	NR	NR	NR	0	0	0	0
East Renfrewshire	NR	NR	NR	0	0	0	0
Edinburgh	YES	YES	NO	2,582	610	1,972	0
Falkirk	YES	NO	NR	2,057	1440	617	0
Fife	NR	NR	NR	0	0	0	0
Glasgow	YES	NO	YES	500	500	0	0
Highlands	NR	NR	NR	0	0	0	0
Inverclyde	NR	NR	NR	0	0	0	0
Midlothian	NR	NR	NR	0	0	0	0
Moray	NR	NR	NR	711	569	142	0
North Ayrshire	NR	YES	YES	3,380	3,380	0	0
North Lanarkshire	NR	NR	NR	0	0	0	0
Orkney Islands	YES	YES	YES	671	667	4	0
Perth & Kinross	YES	YES	YES	9,978	8,296	1,683	0
Renfrewshire	YES	YES	YES	1,216	1,216	0	0
Scottish Borders	NR	NR	NR	0	0	0	0
Sheltand Islands	NR	NR	NR	0	0	0	0
South Ayrshire	YES	NO	NR	3,737	3,737	0	0
South Lanarkshire	YES	NO	NR	4,301	4,301	0	0
Stirling	YES	NO	YES	949	664	285	0
West Dunbartonshire	YES	NO	NR	92	92	0	0
West Lothian	YES	YES	YES	233	233	0	0
Western Isles	NR	NR	NR	0	0	0	0
Total				**34,675**	**29,735**	**4,851**	**90**

Of the 100 tonnes of material sent for composting in Clackmannanshire, 90 tonnes is from local authority parks and gardens and 10 tonnes from household sources.

[24]NR - No Return

Annex 9

Licensed sites in Scotland in 2000 *Sites licensed to accept special waste

Licence holder	Site	National grid reference
Incinerators and Thermal Treatment Plants		
Borders General Hospital	Huntlyburn, Melrose	NT534338
ChiRex (Annan) Ltd	Newbie, Annan	NY644187
Dundee Energy Centre Ltd	Forties Road, Dundee	NO446328
Elf Exploration uk plc	Flotta Oil Terminal, Flotta	ND355945
Glaxo Wellcome Operations	Montrose, Angus	NO574723
Hamilton (Irvine) Ltd	Shewalton, Irvine	NS339367
Hamilton Clinical Waste Ltd	Irvine	NS339367
Inveresk Research	Tranent, East Lothian	NT405711
Moredun Research Institute	Penicuik, Midlothian	NT243634
North Ayrshire & Arran National Health Service Trust	Crosshouse Hospital, Kilmarnock	NS403384
Orkney Health Board	Kirkwall, Orkney	HY456105
Orkney Islands Council	Chinglebraes, Orkney	HY437091
SAC Veterinary Science	Perth	NO 94 231
SAC Veterinary Services	Bucksburn, Aberdeen	NJ882106
Sacone Environmental Ltd	Brechin	NO614596
Sacone Environmental Ltd	Shettleston, Glasgow	NS638645
Scottish Agricultural College	Auchincruive, Ayr	NS238662
Scottish Agricultural College	Greycrook, St Boswells	NT599304
Shetland Islands Council	Greenhead Base, Gremista, Lerwick	HU475445
University of Edinburgh	Edinburgh	NT258731
Landfill Sites		
*Aberdeen City Council	Ness Farm, Aberdeen	NJ967037
*Alcan	Alcan, Kinlochleven	NN180619
*Alcan	Alcan, Lochaber Works	NN125753
*Biffa Waste Services Ltd.	Wellbank Quarry, Dundee	NO473378
*Caird Environmental Ltd	Hartlouphill, Airdrie	NS770699
*Comhairle nan Eilean Siar	Bennadrove, Stornoway	NB386345
*Comhairle nan Eilean Siar	Rueval, Isle of Benbecula	NF811535
*Falkirk Council	Kinneil Kerse Landfill Site, Bo'ness	NS975810
*Hanson Waste Management	Kaimes Quarry, Kirknewton	NT130665
*Haul Waste	South Quarry, Dunbar	NT720755
*Highland Council	Longman, Inverness	NH675468
*Highland Council	Seater Landfill Site, By Wick	ND248603
*I & H Brown (Plant) Ltd	Battleby, Perth	NO082295
*Levenseat Ltd	Muldron Quarry, near Fauldhouse	NS915575
*Mr G Kerr	Pumpherston Works	NT074695
*Northumbrian Environmental Management Ltd	Binn Farm, Glenfarg	NO178142
*Patersons of Greenoakhill Ltd	Greenoakhill, Glasgow	NS666627
*Shanks & McEwan (Northern) Ltd	Tarbothill, Murcar	NJ957138
*Shanks & McEwan Northern Ltd	Greengairs, Airdrie	NS789698
*Shanks Avondale Ltd	Avondale Quarry, Polmont	NS952787
*Shanks Northern Ltd	Wester Hatton Landfill, Balmedie Aberdeenshire	NJ954152
*Stirling Council	Lower Polmaise Landfill, Stirling	NS834931
*Tarmac (Northern) Ltd	Craignaught Quarry, Dunlop	NS444516
*West of Scotland Water	Glassford Water Treatment Works	NS708478
*William Tracey Ltd	Barkip Landfill	NS335505
A & M Smith	Bankhead, Portlethen	NO928996
A B Hendry	Beam Quarry, Bonnybridge	NS836771
Aberdeen City Council	Hill of Tramaud, Aberdeen	NJ948133
Aberdeenshire Council	Brandon Howe Landfill, Banff	NJ667638
Aberdeenshire Council	Burnside Quarry, Kintore	NJ774127
Aberdeenshire Council	Crows Nest Landfill, Banchory	NO688973
Aberdeenshire Council	Govals Quarry, Lumsden	NJ477232
Aberdeenshire Council	Millmoss Landfill, Turriff	NJ728493
Aberdeenshire Council	Pitdrichie Landfill, Drumlithie	NO798819
Aggregate Industries UK Ltd	Fledmyre, Montrose Rd, Forfar (Site 2)	NO487516
Alcan Chemicals Europe	Whinneyhall Landfill, Burntisland	NT248874
Alexander Sandison & Sons Ltd	Hagdale Quarry, Shetland	HP638101
Andrew Cook (Containers) Ltd	Belliston Quarry, Arncroach	NO498063
Andrew Cook (Containers) Ltd	Devon Quarry, Kennoway	NO337048
Angus Council	Arrats Mill, Brechin	NO646587
Angus Council	Lochhead Landfill, Forfar	NO480510
Angus Council	Restenneth Landfill Site, Forfar	NO483515
Angus M Howie	Millhouse Farm, Dunning	NO020143
ANI Bradken	Balbarnie Works Landfill	NS974682
Argyll and Bute Council	Dalinlongart Landfill Site, near Dunoon	NS138814
Argyll and Bute Council	Glengorm Landfill Site, Isle of Mull	NM488558
Argyll and Bute Council	Larkhall/Westland Road, Isle of Bute	NS078648
Argyll and Bute Council	Moleigh Landfill Site, Oban	NM869268
Argyll and Bute Council	Achadaphail, Isle of Mull	NM400225
Argyll and Bute Council	Bonaveh Landfill Site, Isle of Colonsay	NR398955
Argyll and Bute Council	Cliad landfill Site, Isle of Coll	NM204602
Argyll and Bute Council	Garetbreck landfill Site, Isle of Islay	NR291579
Argyll and Bute Council	Gott Bay Landfill Site, Isle of Tiree	NM028462
Argyll and Bute Council	Lingerton Landfill Site, Lochgilphead	NR867853
Arjo Wiggins Fine Papers Ltd	Little Clinterty Quarry, Clinterty	NJ836123
Armstrong Waste Management Ltd	Auchenlosh Quarry, Dalbeattie (Phase II)	NX851612
Balfour Beatty	Creagan Bridge, Balcardine, Argyll	NM977441
Banchory Contractions Ltd	South Hirn, Crathes	NJ737002
Bardon Aggregates	Upper Townhead Farm, Kintore	NJ782170
Bardon Aggregates Ltd.	West Quarry, Charlestown	NT065840
Barr Ltd	Clayshant, Sandhead	NX110525
Barr Ltd	Garlaff Quarry, Cumnock	NS542176
Barr Ltd	Site 5, Mid Auchencarroch Farm, Jamestown	NS420813
Blue Circle Industries plc	North Quarry, Dunbar	NT700775
Booth Plant & Equipment Ltd	Tarbolton Moss Landfill	NS426283
Borderland Reclamation Ltd	Meigle Potts, Clovenfords	NT453365
British Petroleum	Caldback Ness, Sullom Voe	HU403765
Bruce Plant Hire	Arnhall Quarry, Edzell	NO608697
Bruce Plant Hire	Lochburn Quarry, Stonehaven	NO854832
Bruce Plant Hire	Ury Quarry, Stonehaven	NO860874
Burnthills Demolition	Summerston Farm, Glasgow	NS581725
C & S Smith	Drumsleed, Fordoun	NO733777
C A Duguid & Sons	Knapps of Thernie, Turriff	NJ738446
Chap Quarries (Aberdeen) Ltd	Park Quarry, Durris	NO804979
Clackmannanshire Council	Black Devon, Alloa	NS895913
Comhairle nan Eilean Siar	Raoinavat, Isle of Lewis	NB243459
D Cochrane	Catmoss Quarry, Greenlaw	NT713451
D Geddes (Contractors) Ltd	Ardownie Quarry, Monifieth	NO493345
D Geddes (Contractors) Ltd	Border Quarry, Leysmill	NO600485
D Geddes (Contractors) Ltd	Kinnell, Friockheim	NO607503
D Geddes (Contractors) Ltd	Lochaber, Arbroath	NO604433
D Geddes (Contractors) Ltd	Prettycur, Montrose	NO698608
D J Laing (Contractors) Ltd	Gallowflats, Errol	NO209213
D J Laing (Contracts) Ltd	Petterden Land Reclaimation, Dundee	NO424398
Dr & Mrs H Riffkin	Teuchats Farm, By Leven, Fife	NO403075
Dumfries & Galloway Council	Blacks Plantation Landfill, Whithorn	NX428406
Dumfries & Galloway Council	Galdenoch, Leswalt, Stranraer	NW988644
Dumfries & Galloway Council	Gatelawbridge Waste disposal Site, Thornhill	NX902965
Dumfries & Galloway Council	Locharmoss Waste Disposal Site, Dumfries	NY007774
Dumfries & Galloway Council	St Mary's Street Disposal Site, Sanquhar	NS782104
Dumfries & Galloway Council	Corsehill Waste Disposal Site, Eaglesfield Road, Annan	NY206697
Dundee City Council	Longhaugh Landfill, Dundee	NO433329
Dundee City Council	Riverside Landfill, Dundee	NO037029
E W G Dickey & Co	Kingsdale, Firth, Orkney	HY378115
E. Bowman	Kinlochiel	NN009767
East Ayrshire Council	Milton Landfill Site, Kilmarnock	NS480376
East Coast Skips	Hope Quarry Near Pathhead	NT403630
East Lothian Council	Carberry, East Lothian	NT364701
East of Scotland Water	Broadside Reservoir, Denny	NS769831
East of Scotland Water	Upperside Quarry, Near Temple	NT291559
East of Scotland Water Authority	Craggans Hill, Glenturret	NN856243
Easter Hatton Environmental (Waste Away) Ltd	Easter Hatton Farm, Balmedie	NJ965157
Elf Exploration uk plc	Golta Tip, Flotta	ND365948
Fife Council	Lochhead Landfill Site	NT080903
Fife Council	Lower Melville Wood , By Ladybank	NO300117
G & F Milne	Bodychell, Memsie, Fraserburgh	NJ954629
G S Brown Construction Ltd	North Ballo Quarry	NO247359
Glasgow City Council	Kilgarth Cartgill Road, Coatbridge	NS719675

Licence holder	Site	National grid reference
Glasgow City Council	South Cathkin Landfill, East Kilbride	NS624574
Glasgow City Council	Summerston Landfill, Glasgow	NS579718
Hanson Waste Management	Oatslie(No 7) Sandpit, Roslin	NT258626
Henry Boot Scotland	Marchbanks WTW, Balerno	NT166 646
Henry Gilles Haulage Contr	Drumshoreland Bing, Pumpherston	NT074700
Hepworth Refractories	Haining Wood,Whitecross	NS955774
Highland Council	Ardachu Landfill Site, Brora	NC893047
Highland Council	Bettyhill Landfill, Sutherland	NC737603
Highland Council	Brackletter	NN190828
Highland Council	Gairloch Site C, Gairloch	NG819778
Highland Council	Granish Landfill, Aviemore	NH900148
Highland Council	Kilchoan Landfill, Argyll	NM469649
Highland Council	Melvich Landfill, Sutherland	NC866645
Highland Council	Old Quarry, Wick	ND372501
Highland Council	Portree	NG471447
Highland Council	Raasay Waste Disposal Site, Creachan	NG554379
Highland Council	Rhiconich Landfill, Sutherland	NC262526
Highland Council	Stoneyfield, Invergordon	NH690713
Highland Council	Tongue Landfill, Sutherland	NC612547
Highland Council	Torbreck, Lochinver	NC097241
Highland Council	Ullapool Waste Transfer Station, Ullapool	NH122964
Holt Drainage	Achscrabster, near Thurso	ND080633
Howegarden Ltd	Hospital Wood, Turriff	NJ735458
International Paper (UK) Ltd	Broomend, Inverurie	NJ770190
J & A Plant Services in liquidation	Beithglass Quarry, Skelmorlie	NS200672
J & S Mackie	South House, Tankerness	HY507076
J H Connon Ltd	Cairnhall, Kintore	NJ787178
J H Connon Ltd	Greendams, Newmachar	NJ868202
J Haig-Hamilton and Sons	West Fortune Landfill, Drem	NT534801
J M Kennie(Demolitions) Ltd	Auldcathie, Winchburgh	NT075755
J M Murdoch & Sons Ltd	Capellie Landfill, Neilston	NS472583
J.D.H. Gordon, Esq	Railway Cutting, Whitehill Farm, St Boswells	NT578310
James Fairbairn	Lamberton Landfill, Berwick upon Tweed	NT973575
James Rae	Auchenstarry Farm, Innerwick	NS712765
John Gibbons	Middle Essie, St Fergus	NK076546
John Marshall & Son	Dalreoch Farm, Dunning	NO003173
Johnston Controls Ltd	Dounreay near Thurso	NC992679
Joss (Aberdeen) Ltd	Loch-hills, Dyce	NJ914144
King Contractors (Perth) Ltd	Huntingtower Quarry, Perth	NO076247
Kirkmyres Sand & Gravel	Balquhindachy Farm, Turriff	NJ761486
Kirkmyres Sand & Gravel	Pitnacalder Quarry, New Aberdour	NJ873628
Kirkton Barns Reclamation Account	Kirktonbarns Landfill, Tayport	NO452261
L H Spence & Sons	Brackmont Mill, St Michaels, Leuchars	NO437224
Leiths Surfacing Ltd	Home Farm, Kingswells	NJ863063
Les Taylor Contractors Ltd	Boghead Farm, Kintore	NJ803140
Les Taylor Contractors Ltd	Newton of Savoch, Longside, Peterhead, Aberdeen	NK066424
Les Taylor Contractors Ltd	Savoch Quarry, Peterhead	NK066425
Levenseat Ltd	Torphin Quarry	NT028597
Lothian Recycling 1996 Ltd	Pentland Mains Landfill, Midlothian	NT254654
Lothian Recycling 1996 Ltd (Mr Ian Ross)	Cousland, By Dalkeith	NT375688
Luddon Construction Ltd	Birdston Tip, Kirkintilloch	NS649751
Luddon Construction Ltd	East Mavis Valley, Bishopbriggs	NS597714
Luddon Construction Ltd	Dalreoch Quarry, Dumbarton	NS388761
M & J Ballantyne	Broomhouse Quarry, Maxton	NT633309
M K Leslie Ltd	West Staney Hill, Lerwick	HU448422
M Ridgeway, Esq	Railway Cutting, Nether Howden Farm, Oxton	NT499532
Mardon Plant Hire Ltd	Hillhouse Farm	NT117674
Marshall Farms	Balquharn No 2, By Alva	NS866966
Marshall Farms	Muirpark Farm, Tullibody	NS867961
McFadyens Contractors Ltd	Dhurrie Quarry, Campbeltown	NR684223
McIntosh Plant Hire (Aberdeen) Ltd	Cairdhillock Landfill, Kingswells	NJ847068
McIntosh Plant Hire (Aberdeen) Ltd	Easter Beltie, Torphins	NJ644004
McIntosh Plant Hire Ltd	Leys Quarry, Mintlaw	NK004524
McTaggart Construction Ltd	Giffenmill Railway Cutting, Barrmill, by Beith	NS372514
Messrs D Menzies & Partners	Mains of Taymouth, Kenmore	NN789477
Messrs George Raeburn	Auchentibber, East Kilbride	NS667527
Messrs J & R Mitchell	Old Pairney Quarry, Auchterarder	NN977130
Messrs Swanson and Gunn	Heathfield Quarry Janetstown	ND096667

Licence holder	Site	National grid reference
Midlothian Council	Drummond Moor Landfill, Penicuik	NT273 597
Moray Council	Kirkhill Landfill, Elgin	NJ234634
Moray Council	Nether Dallachy Landfill, near Buckie	NJ361643
Moray Council	Newtyle Landfill, near Forres	NJ054552
Morris Young (Perth) Ltd	Loanleven Farm, Perth	NO055258
Mr A P Anderson	Kinbuck Quarry	NN795050
Mr Angus Macleod	Marybank Quarry, Stornoway	NB408328
Mr B Paterson	Barclosh, Dalbeattie	NX851612
Mr Gavin Craig	Avonside, Drumclog	NS630370
Mr George Adam	Muirton Park Cottage, Bannockburn	NS818896
Mr J Halliday	Campbelton Farm, Twynholm	NX657538
Mr J Muir	Inverqueich Farm, Alyth	NO274499
Mr Robert Drummond	Straid Farm, Lendalfoot	NS139907
Murray & Burrell Ltd	Hartwoodburn Farm, Selkirk	NT467269
N.C. Law Construction & Demolition	Burnside Phase 2, By Tillicoultry	NS907968
Norman Jamieson	Gagie Quarries, near Monikie	NO468367
North Ayrshire Council	Nethermains Landfill, Bartonholm, Irvine	NS309415
North Ayrshire Council	Shewalton Landfill, Irvine	NS333365
North Lanarkshire Council	Auchinlea Landfill, Cleland	NS280658
North Lanarkshire Council	Dalmacoulter Landfill, Airdrie	NS765678
North of Scotland Water Authority	Elf Hill Quarry, Elgin	NJ211557
North of Scotland Water Authority	Killiecrankie Water Treatment Works, Perthshire	NN921626
North of Scotland Water Authority	Lochcraigs Wood, Lintrathen	NO280543
North of Scotland Water Authority	Lumsden, Rhynie	NJ468224
North of Scotland Water Authority	Ruthven	NJ517467
O McCarroll & Sons	West Carron, Falkirk	NS875820
Orkney Islands Councils	Blossom Quarry, Rousay, Orkney	HY42493248
Orkney Islands Councils	Bossack Quarry, Tankerness, Orkney	HY504084
Orkney Islands Councils	Chinglebraes Quarry, St Ola, Orkney	HY427090
Orkney Islands Councils	Gallowtuag Quarry, South Walls, Hoy	ND304896
Orkney Islands Councils	Mitchell's Quarry, Stronsay, Orkney	HY657281
Orkney Islands Councils	Peat Road Landfill, Flotta	ND347926
Orkney Islands Councils	Westside Road Quarry, Eday, Orkney	HY562334
P.S. Nelson & Sons	Lower Polmaise, Fallin	NS834931
Pat Munro (Alness) Ltd	Caplich Quarry, Alness	NH668704
Pennant Plant Ltd	Prestonholm, Dalhousie	NT324627
Perth & Kinross Council	North Forr Landfill, By Crieff	NN871202
Peter D Stirling Ltd	Drumcavel Quarry, Darcosh	NS705693
Pure Malt Products Ltd	Haddington	NT518744
R Garrick	The Old Lime Quarry, Girlsta	HU430504
R W & P Millican	Heughhead, Reston	NT877626
Railtrack PLC	Shewalton Moss Tip, Irvine	NS344352
Realm Construction	Lathalmond Tip, near Dunfermline	NT090920
Reclaim (Helensburgh) Ltd	Finnart Landfill, Garelochhead	NS242944
Renfrewshire Council	Moss Road, Linwood	NS443656
Robert Russell	Wester Seamores Farm, Dennyloanhead	NS805794
Robertson Contracting	Newton Toll, Elgin	NJ166632
Robinson & Davidson Ltd	Townhead Farm, Collin	NY025755
Russell Coal Limited	Gartshore, Twechar	NS702763
S McAlister	West Thomaston Farm, Banknock	NS778798
Scottish Borders Council	SBC Roads DLO, Caddonlee Farm, Clovenfords	NT447357
Scottish Borders Council	Cleugh Landfill, Preston	NT792592
Scottish Borders Council	Dunion Hill Landfill, Jedburgh	NT625189
Scottish Borders Council	Easter Langlee Landfill, Galashiels	NT518367
Scottish Power	Foreshore, W.Pans/Musselburgh	NT360735
Scottish Power	Longannet	NS960850
Scottish Power	Valleyfield (Torry Bay)	NT000850
Shanks Waste Services Ltd	Wester Hatton Farm, Balmedie	NJ948153
Shetland Islands Council	Rova Head, Lerwick	HU471452
Smith Skip Ltd	Knowes Farm, Beith	NS342553
Stoneyhill Waste Management Ltd	Stoneyhill Quarry, Peterhead	NK076409
Stuart Milne Homes Ltd	Lynturk Tough, Alford	NJ595124
T Muir (Haulage) Ltd	Balbie Farm, Kirkcaldy	NT232892
Tarmac (Northern) Ltd	Haveral Wood Quarry, Lasswade	NT293659
Tarmac (Northern) Ltd	Melville No 2, Lasswade	NT298667
Tarmac (Northern) Ltd	Coltness Factory, Wishaw	NS825553
Tarmac Northern Ltd	Addiewell, near West Calder	NS992626
Taylors Non-Hazardous Services Ltd	Gregness, Aberdeen	NJ968037

Licence holder	Site	National grid reference
Tayside Contracts	Bolshan Quarry, Friockheim	NO621527
Tayside Contracts	Cultullich, Aberfeldy	NN873504
Tayside Contracts	Isla Bank, By Coupar Angus	NO213414
Thistle Agregates Ltd	Ethiebeaton Quarry, Monifieth	NO486573385
Tillicoultry Quarries Ltd	Tulliallan Quarry	NS939898
Toffolo Jackson	Glasgow	NS557598
Torith Ltd	Baldragon Farm, Dundee	NO378352
Tullis Russell & Co Ltd	East Forthar Farm, Ladybank	NO296059
Uist Builders (Construction) Ltd	Grimshader Quarry	NB394275
W Forrest & Son	Omoa Works, Bellshill	NS798598
W H Malcolm Ltd	Giffen Quarry, By Beith	NS379507
W H Malcolm Ltd	Inchbelle, Kirkintilloch	NS668756
W H Malcolm Ltd	Mavis Valley, Bishopbriggs	NS593714
W H Malcolm Ltd	Medrox Quarry, Glenboig	NS726699
W H Malcolm Ltd	Reilly Quarry, Renfrewshire	NS418695
W H Malcolm Ltd	Shewalton Road Sand Quarry, Irvine	NS330371
W H Malcolm Ltd	Southbar Landfill, Inchinnan	NS447693
W J & R Morgan	Anniston, Inverkeilor, Arbroath	NO663478
W M Tracey Ltd	Griffenmill Quarry	NS373510
Watermill Aggregates Ltd	Broomhead Farm Quarry	NJ983637
West of Scotland Water	Carbarns STW, Wishaw	NS772539
West of Scotland Water	Dryfield STW, Kirkintilloch	NS 673263
West of Scotland Water	Gatehouse of Fleet, Lochwhinyeon	NX630612
West of Scotland Water	Gorbals Works, Glasgow	NS235583
West of Scotland Water	Jellyhill STW, Bishopbriggs	NS671260
West of Scotland Water	Lauriestion Forest	NX665635
West of Scotland Water	Locharmoss, Dumfries	NY010785
William Hamilton & Sons (Contractors) Ltd	Dovesdale Farm, Stonehouse	NS770460
Wm Baxter & Son	Baxter's Food Factory, Fochabers	NJ339601
Wm Thompson & Son (Dumbarton) Ltd	Riggangower Quarry, Midton	NS438752
Mobile Plants		
Bio-logic Remediation Limited	N/A as Mobile Plant	
Bio-logic Remediation Limited	N/A as Mobile Plant	
Bio-logic Remediation Limited	N/A as Mobile Plant	
Bio-logic Remediation Limited	N/A as Mobile Plant	
Environmental Reclamation Services Ltd	N/A as Mobile Plant	
Environmental Reclamation Services Ltd	N/A as Mobile Plant	
Treatment Plants		
A & M Smith	Bankhead,Duffshill, Portlethen	NJ927997
Aberdeen City Council	Refuse Treatment Plant, Greenbank Crescent, East Tullos, Aberdeen	NJ953039
Aberdeen City Council	Sclattie Refuse Treatment Plant, Off Bankhead Road, Bucksburn, Aberdeen	NJ893100
Armstrong Waste Management Ltd	Newton Road Ind Est, Dumfries	NX955783
ASAP Contracts Ltd	Rear of Cairnhill Cottage, Airdrie	NS754637
Biffa Waste Services Ltd	Greenbank Road, Aberdeen	NJ948038
Biffa Waste Services Ltd	Twechar Works, Kilsyth	NS701762
Caird Environmental Ltd	Greenbank Road, East Tullos, Aberdeen	NJ950038
Caledonian Industrial Ltd, Caleco Waste	Caleco Waste Transfer Station	NT284666
Champion Technologies Inc	Minto Avenue, Altens, Aberdeen	NJ955030
D & W Stewart (Ladybank) Ltd	Lower Melville Wood, Ladybank	NO297116
East Coast Skips	Macmerry Industrial Estate, Macmerry, East Lothian	NT443726
East Dunbartonshire Council	Broomhill Dewatering Facility, Broomhill Ind. Estate, Kirkintilloch	NS662748
East Lothian Council	Barbachlaw Refuse Baling and Transfer Station, Wallyford	NT361719
East of Scotland Water	Dalderse Waste Water Treatment Works, Davids Loan, Falkirk	NS902820
East of Scotland Water Authority	Dunfermline WWTW, St Margarets Bay, North Queensferry	NT122816
East of Scotland Water Authority	East of Scotland Water, Stirling WWTW, Whitehouse Road	NS808935
Enviroco Limited	Damhead Waste Management Centre, Upperton Industrial Estate, Peterhead AB42 3GL	NK012044
Enviroco Limited	Hillview Ind Est, Hillview Road,East Tullos, Aberdeen	NJ950037
Enviroscot	600 Gilmerton Road, Edinburgh EH17 8RY	NT298681
Enviroscot Limited - FAO Glen Ballantyne	Langmuir Way, Bargeddie	NS705641

Licence holder	Site	National grid reference
Glasgow City Council	Easter Queenslie Road, Glasgow	NS664658
Highland Council	Torbreck Waste Transfer Station, Torbreck, Lochinver	NC088243
J A Kerins, Kwik Skips	Yard No 5, The Clippens Yard, Station Road, Loanhead	NT270662
J Burnett	Dalkeith Demolition, Mayfield Ind Est, Dalkeith	NT343643
J M Cunningham	Yard No 6, The Clippens Yard, Station Road, Loanhead	NT269662
Lanstar (Scotland) Ltd	Transfer Station (Solvent Processing),Murray St, Paisley	NS476647
Leigh Environmental Ltd	Abbots Road, Bankside Ind Estate, Falkirk	NS897815
M McKenzie	Old Pentland, Loanhead	NT265662
Marshall Farms	Balquharn Farm, Alva	
McIntosh Plant Hire (Aberdeen) Ltd	Birchmoss Plant & Storage Depot, Echt, Westhill	NJ747502
Ministry of Defence (N) - FAO Mr M B Neal	Ministry of Defence, Clyde Submarine Base, Faslane	NS242901
Morris Young (Perth) Ltd	Loanleven Farm, Perth	NO055258
Mr George Kerr	Drumshoreland Road, Pumpherston	NT074695
North Ayrshire Council	Shewalton Pulveriser, Shewalton Landfill Site, Shewalton, Irvine	NS333365
North of Scotland Water Authority	Aberdeen Long Sea Outfall, Nigg, Aberdeen	NJ964045
North of Scotland Water Authority	Halkirk Wastewater Treatment Plant	ND141597
Orkney Islands Councils	Workwell Quarry,Orphir,Orkney	HY307054
Personnel Hygiene Services	Unit 2, Howemoss Crescent, Dyce, Aberdeen	NJ867128
Perth & Kinross Council	Ladywell leachate Irrigation System, Dunkeld	
Shanks Northern Ltd	Greenbank Cresc., East Tullos, Aberdeen	NJ952037
Shaun Skinner	Veitch's Yard, Edgefield Rd, Loanhead, Midlothian	NT284668
Shetland Offshore Environmental Services	Layfields/Rova Head, Lerwick	HU470449
Stirling Water Seafield Limited	Sewage Treatment Works, 4 Marine Esplanade	NT288760
Sureclean	Sureclean, Teaninian Ind Est, Alness	NH652692
Swire Oilfield Services	Souterhead Rd, Altens, Aberdeen	NJ950020
T B Williamson & Son Ltd	Unit 39, Newbattle Ind Est, Mayfield, Dalkeith	NT344644
Taylors Industrial Services Ltd	Hareness Circle, Altens, Aberdeen	NJ945027
Taylors Industrial Services Ltd	Hareness Circle, Altens, Aberdeen	NJ945027
The Director, Tayside Contracts	Welton Road Depot, Blairgowrie	
UK AEA	Dounreay near Thurso	NC992679
West of Scotland Water	Daldowie Sludge Treatment Centre, Broomhouse, Uddingston	NS672621
West of Scotland Water	Sheildhill, 38 Renfrew Rd, Glasgow	NS537661
William Finlayson & Son	Wallyford Ind Estate	NT369718
William Tracey Ltd	Burnbrae Road, Linwood	NS432643
William Tracey Ltd	Dunniflats, Lugton	NS418531
William Tracey Ltd	Carlibar Road, Barrhead	NS500592

Annex 10

Table 39 Controlled waste going to landfill in Scotland in 1999

Type of Waste	Tonnes	Percentage
Household	2,888,937	27
Commercial	2,003,015	18
Industrial -		
Construction & demolition	4,277,051	39
Other industrial	1,669,253	15
Other	57,922	1
Total controlled Waste to Landfill	**10,896,177**	**100**

Annex 11

Table 40 Disposal routes for sewage sludge in Scotland 1999

Outlet	Water authority NOSWA	ESWA	WOSWA	Totals	Percentage
	Tonnes of dry solids				
Agriculture treated	7,919	6,000	2,982	16,901	18.7
Agriculture enhanced treated	0	0	0	0	0
Land reclamation	0	4,000	0	4,000	4.4
Forestry	0	0	0	0	0
Landfill	617	18,500	45,118	64,235	70.9
Stored	3,925	1,500	0	5,425	6.0
Total	**12,461**	**30,000**	**48,100**	**90,561**	**100.0**

Annex 12

Table 41 Accredited reprocessors and exporters of packaging waste

Reprocessors accredited in 2000 Name of Company	Site	Principle operation	Year operational 1999	2000
Adam Robertson & Co Ltd	Newcalder Paper Mill, West Lothian	Paper	✓	✓
Armstrong Waste Management Ltd	Auchenlosh Landfill Site, Dumfries & Galloway	Paper Composting	✓	✓
Armstrong Waste Management Ltd	Auchenlosh Landfill Site, Dumfries & Galloway	Wood Composting		✓
BPB Paperboard	Davidson Mill, Aberdeen	Paper	✓	✓
bpi.recycled products - Dumfries	College Road, Dumfries	Plastic	✓	✓
British Polythene Industries plc	96 Port Glasgow Road, Greenock	Plastic	✓	✓
Caledonian, Ferguson, Timpson	5 Atholl Avenue, Glasgow	Plastic		✓
Decocrete	52 Easthouses Road, Dalkeith	Glass	✓	✓
Dundee Energy Recycling Ltd	Dundee	Energy from waste	✓	✓
John W Hannay & Co Ltd	Linwood Avenue, East Kilbride	Paper	✓	✓
L.S. Recycling Limited	Charlesfield Industrial Estate, Melrose	Plastic	✓	
Lerwick Waste to Energy Plant	Shetland Island Council, Shetland	Energy from waste		✓
M McKenzie	Old Pentland Sawmill, Midlothian	Wood		✓
Mac-Glass Recycling	52 Easthouses Road, Dalkeith	Glass	✓	✓
Nexfor Limited	Station Road, Stirling	Wood		✓
Norfrost Limited	Murrayfield, Caithness	Plastic	✓	✓
Plastic Technology Services Limited	Garroch Business Park, Dumfries	Plastic		✓
Robert Cullen & Sons Limited	10 Dawsholm Avenue, Glasgow	Paper	✓	✓
Rockware Glass Ltd	Portland Plant, Ayrshire	Glass	✓	✓
Scottish Recycling	St Machar Road, Aberdeen	Plastic		✓
Smith Anderson & Sons Ltd	St John's Works, Fife	Plastic	✓	
Smith Anderson & Sons Ltd	Fettykil Mills, Fife	Paper	✓	✓
Tracey Timber Recycling Limited	Burnbrae Road, Linwood	Wood		✓
United Glass Ltd	Glasshouse Loan, Clackmannanshire	Glass	✓	✓
Vencel Resil Ltd	160 East Wellington Street, Glasgow	Plastic	✓	✓
EXPORTERS ACCREDITED IN 2000				
FBI Glasgow Ltd	P.O Box 8, Ayrshire	Paper Export		✓
bpi.retail	Heanor Gate, Derbyshire	Plastic Export		✓
bpi.recycled products (Heanor)	Heanor Gate, Derbyshire	Plastic Export		✓
CELL Glasgow	P O Box 8, Troon	Export Paper	✓	
Christie & Son (Metal Merchants) Ltd	Lobnitz Dock, Renfrew	Steel Export	✓	✓
John Lawrie (Aberdeen) Limited	Forties Road, Montrose	Steel Export	✓	✓
John R Adam & Sons Limited	Riverside Berth, Glasgow	Steel Export	✓	✓
John R Adam & Sons Ltd	Riverside Berth, Glasgow	Export Aluminium		
R M Supplies (Inverkeithing) Ltd	The Bay, Fife	Steel Export		✓
Wastepack UK Limited	Pishiobury House, Herts	Plastic Export	✓	✓

Annex 13 - Enforcement

Table 42 Number of cases 1999/2000

Nature of enforcement	Total
Final warning letters	118
Enforcement notices issued	39
Referrals to procurator fiscal	23
Convictions secured	15
Total	**195**

Other Guidance

- Producer Responsibility Obligations (Packaging Waste) Regulations 1997. Guidance on the evidence of compliance and voluntary accreditation of reprocessors (1st Edition) (SEPA/ EA);
- Producer Responsibility Obligations (Packaging Waste) Regulations 1997. The Agencies' Interpretation of Packaging (2nd Edition) (SEPA/ EA);
- Producer Responsibility Obligations (Packaging Waste) Regulations 1997. SEPA Monitoring Strategy Report (Published Annually) (SEPA);
- Producer Responsibility Obligations (Packaging Waste) Regulations 1997 'Are You Obligated' (SEPA/ EA);
- Special Wastes: A technical guidance note on their definition and classification (EA/ SEPA/ Environment and Heritage Service, Northern Ireland);
- Safe Disposal of Clinical Waste (Health and Safety Commission Health Services Advisory Committee);
- Identification of Packaging Data in Scotland, Central Research Unit, Scottish Executive, 2001.

Related Publications

- Waste Data Digest 2001
- National Waste Strategy: Scotland 1999
- Area Waste Plans
- NWS: BPEO Guidance
- SEPA Annual Report 1999/2000
- SEPA Annual Report 2000/2001

References

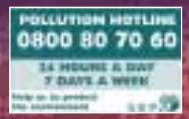
- Local Authority Waste Arisings Survey 2000/01
- SEPA Business Planners
- UK National Household Waste Analysis Project
- Environment Agency
- Analysis of the Environmental Impact and Financial Costs of a Possible New European Directive on Batteries by Environmental Resources Management (ERM)
- Strategic Waste Management Baseline Assessment (SWMBA) by Enviros Aspinwall
- UK Waste Oils Market 2001 report, produced by Oakdene Hollins Ltd for (DEFRA)
- End Of Life Vehicles (ELV) Directive (2000/53/EC)
- Tyres priority waste stream study by Transport Research Laboratory (TRL)
- Newsprint priority waste stream study by TRL
- End of Life Vehicles (ELV) priority waste stream report by TRL
- Construction and Demolition priority waste stream project by EnviroCentre
- Determination of the source, nature, amount and disposal routes of WEEE arisings in Scotland by ENTEC UK Ltd

Acronyms used in the Waste Data Digest 2002

ACORD	Automotive Consortium on Recycling and Disposal
ATF	Authorised Treatment Facility
AWP	Area Waste Plans (National Waste Strategy: Scotland)
BPEO	Best Practicable Environmental Option
C&D Waste	Construction and Demolition Waste
C&I Waste	Commercial and Industrial Waste
CFCs	Chlorofluorocarbons
DEFRA	Department for Environment, Food and Rural Affairs (Formerly DETR Department for Environment, Transport and Regions)
DTI	Department of Trade and Industry
EA	Environment Agency
EC	European Commission
ELVs	End-of-Life Vehicles
ERM	Environmental Resources Management
LA	Local Authority
LAWAS	Local Authority Waste Arisings Survey
LH	Licence Holder
MME	Mechanised Metal Extraction
NWS	National Waste Strategy
ODS	Ozone Depleting Substances
PERN	Packaging Waste Export Recovery Notes
PRN	Packaging Waste Recovery Notes
PWSP	Priority Waste Stream Projects
SE	Scottish Executive
SEPA	Scottish Environment Protection Agency
SWMBA	Strategic Waste Management Baseline Assessments
TRL	Transport Research Laboratory
WDD	Waste Data Digest
WEEE	Waste Electronic and Electrical Equipment
WML	Waste Management Licence
WSA	Waste Strategy Area
WSR	Waste Shipment Regulations

SEPA Internet address:
www.sepa.org.uk

Email:
publicrelations@sepa.org.uk



Please do not call this number for general enquiries

GG 3K 12/2002

Corporate Office
Erskine Court
Castle Business Park
Stirling
FK9 4TR
t: 01786 457700
f: 01786 446885

Aberdeen Office
Greyhope House
Greyhope Road, Torry
Aberdeen
AB11 9RD
t: 01224 248338
f: 01224 248591

Arbroath Office
62 High Street
Arbroath
DD11 1AW
t: 01241 874370
f: 01241 430695

Ayr Office
31 Miller Road
Ayr
KA7 2AX
t: 01292 294000
f: 01292 611130

Dingwall Office
Graesser House, Fodderty Way
Dingwall Business Park
Dingwall, IV15 9XB
t: 01349 862021
f: 01349 863987

Dumfries Office
Rivers House, Irongray Road
Dumfries
DG2 0JE
t: 01387 720502
f: 01387 721154

East Kilbride Office
5 Redwood Crescent, Peel Park
East Kilbride
G74 5PP
t: 01355 574200
f: 01355 574688

Edinburgh Office
Clearwater House, Heriot Watt
Research Park, Avenue North
Riccarton
Edinburgh
EH14 4AP
t: 0131 449 7296
f: 0131 449 7277

Elgin Office
28 Perimeter Road, Pinefield
Elgin
IV30 6AF
t: 01343 547663
f: 01343 540884

Fort William Office
Carr's Corner Industrial Estate
Lochybridge
Fort William
PH33 6TL
t: 01397 704426
f: 01397 705404

Fraserburgh Office
Shaw House, Mid Street
Fraserburgh
AB43 9JN
t: 01346 510502
f: 01346 515444

Galashiels Office
Burnbrae, Mossilee Road
Galashiels
TD1 1NF
t: 01896 754797
f: 01896 754412

Glasgow Office
Law House, Todd Campus
West of Scotland Science Park
Maryhill Road
Glasgow
G20 0XA
t: 0141 945 6350
f: 0141 948 0006

Glenrothes Office
Pentland Court, Saltire Centre
Glenrothes
KY6 2DA
t: 01592 776910
f: 01592 775923

Lochgilphead Office
2 Smithy Lane
Lochgilphead
PA31 8TA
t: 01546 602876
f: 01546 602337

Newton Stewart Office
Penkiln Bridge Court, Minnigaff
Newton Stewart
DG8 6AA
t: 01671 402618
f: 01671 404121

Orkney Office
Norlantic House, Scott's Road
Hatston Industrial Estate, Kirkwall
Orkney
KW15 1RE
t: 01856 871080
f: 01856 871090

Perth Office
7 Whitefriars Crescent
Perth
PH2 0PA
t: 01738 627989
f: 01738 630997

Shetland Office
The Esplanade, Lerwick
Shetland
ZE1 0LL
t: 01595 696926
f: 01595 696946

Stirling Office
Erskine Court
Castle Business Park
Stirling
FK9 4TF
t: 01786 461407
f: 01786 461425

Thurso Office
Thurso Business Park, Thurso
Caithness
KW14 7XW
t: 01847 894422
f: 01847 893365

Western Isles Office
2 James Square, James Street
Stornoway
Isle of Lewis
HS1 2QN
t: 01851 706477
f: 01851 703510

Designed and Produced by geo-graphicsdesign.com