

## 1. Introduction

In WDF, materials can be reported as collected co-mingled in Q10, 11, 12, 14, 16, 17, 33 and 34. Co-mingled materials can be sorted either at the kerbside or via an automated system at a Materials Recycling Facility (MRF).

The key issues to consider when recording co-mingled tonnages as collected, sorted and sent for recycling include:

- Rejects:
  - At what point during the process the rejection occurs;
  - Accuracy of reject rate;
  - Zero reject rate;
  - Avoiding double-counting of rejects;
- Use of a secondary MRF;
- Splitting of materials once sorted; and
- Final destination of materials.

These aspects are all considered in this guidance note.

## 2. How to avoid double-counting of rejects

When reporting co-mingled materials, rejects can occur:

- At the point of collection (Q10, 11, 12, 14, 16, 17, 33 and 34);
- At the MRF (Q100);
- At the gate of the reprocessor (Q100); or
- After acceptance into the reprocessor (Q100).

To avoid double-counting these rejects you should only report rejects in the question when they occur.

## 3. If co-mingled materials are sorted at a MRF

The material is collected and transferred to a MRF in a co-mingled state. Separation would occur as a result of going through the MRF. You should record the tonnages in WDF as below (Reporting the data in Qu10 has been used in this example).

*Note: Some MRF facilities are also used as transfer stations and materials are collected and bulk baled for onward transfer to reprocessors. They do not pass through the MRF automated sorting process and should **not**, therefore, be recorded as input to a MRF facility in Q100. Details of the transfer station can be recorded, if you wish, in the "Transfer station" box of the "Reprocessor" node.*

### 3.1 **Completing Q10 "Tonnes of material collected through kerbside schemes from household sources by LA or its contractors"**

Record the amount of co-mingled tonnage collected in this question under the material category "Co-mingled materials".

It is not expected that there would be any rejected tonnage recorded in this question. However, there may be circumstances where a whole load is rejected due to contamination. The rejected tonnage would then be reported in the collection question and not double-counted anywhere else in your return. The input tonnage to the MRF would be net of any rejects at the point of collection.

Record the number of households which receive this co-mingled collection in the “No of households receiving collection” column. Then choose “Yes” in the “Collected Co-mingled” drop-down option box.

**Figure 1. Q10 - reporting collection of co-mingled material collected kerbside.**

Enter Data For: Oct 15      Question: Q010: Tonnes from hh ks recycling

Q010 Tonnes of material collected through kerbside schemes from household sources by LA or its contractors

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Dwelling Stock: 0      All Materials

Material	Tonnage collected for recycling	Tonnage collected for recycling but actually rejected/disposed	No. of households receiving a collection	Tonnage Collected for Reuse	Tonnage Collected for reuse but actually rejected / disposed	Collected Co-mingled?
+ Green glass						
+ Brown glass						
+ Clear glass						
+ Mixed paper & card						
+ Mixed cans						
+ Plastics						
+ Mixed Plastic Bottles						
+ LDPE [4]						
+ PP [5]						
+ PS [5]						
+ Waste food only						
+ Mixed garden and food waste						
+ Other compostable waste						
+ Wood						
+ Mixed tyres						
+ Furniture						
+ Rubble						
+ Soil						
+ Vegetable Oil						
+ Aluminium foil						
+ Bric-a-brac						
+ Gas bottles						
+ Co-mingled materials	1000		20000			
Totals	0	0		0	0	

Comments: [ ]

Question Complete       [Top](#)

Once collected, this tonnage would then be transferred to the MRF for sorting. This data would be reported in Q100.

### 3.2 Completing Q100 “Waste sent for treatment or disposal”

The tonnage sent to the MRF (the collected tonnage less any rejections at the point of collection) needs to be recorded in a MRF node in Q100.

In the Waste Details box select “Materials recovery facility (qu58)” as the Facility/Process Type. Select the facility from the “Facility” drop-down box and then enter the tonnage sent to the MRF in the “Tonnes input” box highlighted in yellow in Figure 2 and click on “Save”. The Facility Name list can be updated using the Selection Lists functionality (accessed from the

Management section of the website). See guidance note GN4.2: System Management for further details.

**Figure 2. Creating a MRF node in Q100.**

The screenshot shows a 'Waste Details' form with the following fields:

- Facility/Process Type:** Materials recovery facility (qu58)
- Facility:** select facility (with a green note: 'Enter 3 or more characters into the box to filter the choice' and a 'show all facilities' link)
- Waste Stream Type:** Comingled recyclate
- Tonnes Input:** (highlighted in yellow)

Buttons: Save, Cancel

### 3.2.1. Q100: Recording the final destination of your materials sent for recycling

Once the co-mingled tonnage has gone through the MRF there should be a tonnage available for each of the individual materials that are sent for recycling.

To create an output from the “MRF” node, click on the node in the tree so it is highlighted and then click on the “New output” button in the “Waste details” box on the right.

Select “Dry recyclate” as the Output Waste Type and “Reprocessor – recycling (qu19)” as the Facility/Process Type (see Figure 3). Select the recycling destination from the Facility Name drop-down list then click on “Save”. The tonnages sent to the reprocessor must be recorded in the “Materials” box below the “Waste details” box.

You will need to create a “Reprocessor” node for each facility used to recycle material that has been sorted at the MRF so that each “Reprocessor” node represents one recycling destination. In Figure 3 the recyclate from the MRF is sent to three different reprocessors.

**Figure 3. Waste details box for a “Reprocessor – recycling” facility.**

The screenshot shows a 'Waste Details' form with the following fields:

- Facility/Process Type:** Reprocessor - recycling (qu19)
- Facility Name:** Biffa Leicester Ltd [change](#)
- Facility Description:** (empty text box)
- Facility Address:** Bridge Road C A Site, Bridge Road C A Site, Bridge Road, Leicester, Leicestershire LE5 3LB
- Facility Licence:** 43382 / RP3193CW
- National Facility ID:** 35733
- Waste Stream Type:** Source segregated recyclate
- Tonnes Input:** 50 (Please see the the Materials section.)

Buttons: New Output, Final Destination, Delete, Save, Cancel

In the Materials box (below the “Waste details” box), enter the tonnage of each material sent to be recycled at the reprocessing destination. The materials list shown is based on your Materials list which can be managed via the Management section of the website. If you wish to show the whole list of available Materials, click on “Show all materials”.

Figure 4. Materials box where tonnages of recyclate sent to a reprocessor can be recorded by material type.

Materials <span style="float: right;">▲</span>	
<a href="#">Show all materials</a>	
Material	Tonnes
Green glass	
Brown glass	
Clear glass	
Mixed paper & card	
Mixed cans	20
Mixed Plastics	
Mixed Plastic Bottles	30
Waste food only	
Mixed garden and food waste	
Other compostable waste	
Wood	
Other Scrap metal	
Furniture	
Rubble	
Co mingled materials	

If the MRF provider is not able to provide the split of tonnages for each of the individual materials, please see the section below on “Splitting of Co-mingled Materials” for guidance. Check that this amount is equal to the amount the facility stated was sent for recycling. Tonnages recorded as sent to reprocessors in Q100 should be net of MRF rejects.

In addition, you will need to know the end destination of each of the materials in order to add them to the selection list and record against them in Q100. This end destination should be the final destination of the material (i.e. where it has been sent for recycling and not the MRF). There are some non-specific listings available to use under certain circumstances where you do not have all the details regarding MRF output destinations. These need to be added to your selection list via the “Management” section of the website before you can use them for the first time (see guidance note GN4.2: System management for instructions on managing your selection list). These include:

**Other/exempt or Charity/exempt** – for use where the facility operates under an Environment Agency exemption

**Site details not known (Nat facility ID 39611)** – to be used if you know what treatment material undergoes but do not know the specific facility it is sent to. We would ask that you try to get more information so this listing can be replaced with the actual facility in future.

**Multiple destinations (Nat facility ID 39612)** – this is useful where you have a large range of destinations that may change on a regular basis dependent on price and so on, for example the outputs from a MRF to a glass market. We would encourage you to find the actual sites wherever possible and if more than 80% of material goes to one facility, you can report against this one.

In all the cases above you should provide what information you have in either the “Address details” section (for Other/exempt facilities) or the “Comments” box of the facility node. If the materials are sent overseas then please use Outside UK-EU or Outside UK-nonEU as appropriate. See guidance note GN63: Q100 Data entry for further information.

**Material sent outside the UK:** Where material is exported directly by a MRF to a reprocessor overseas, the output from the MRF is recorded as a “Reprocessor – recycling” or “Reuse” node

with “Outside UK-EU” or “Outside UK-non EU” as the facility. You can record information about the overseas facility in the “Reprocessor” node comments if you wish.

If material is sent by the MRF to a broker/exporter and they send it overseas then the output from the MRF is recorded as an “Exporter – recycling” or “Exporter – reuse” node.

The output from the “Exporter” node is then a “Reprocessor – recycling” or “Reuse” node with “Outside UK-EU” or “Outside UK-non EU” as the facility. See guidance note GN63: Q100 Data entry for further information and examples.

In the “Reprocessor” node click on the “Final destination” button, complete the drop-down lists (selecting “Dry recyclate” and “Final destination”) and click save to complete the branch.

**Gate Rejects:** If rejects occur at **the gate of the reprocessor**, after sorting at the MRF, this can be shown by creating a disposal node as an output from the “Reprocessor” node and recording the Output Waste Type as “Contamination (gate rejects)”. Select the Facility/Process Type as appropriate (e.g. landfill or energy recovery) and enter the tonnage of material rejected by material type (see Figure 7).

**Process rejects at a post-MRF Reprocessor:** With the exception of WEEE, you are not required to record any rejects which occur after material has been accepted by a recycling reprocessor, reuse facility or source-segregated composting facility. For WEEE reprocessors, if you do record process rejects these should be recorded as an output from the facility node, using the Output Waste Type “Contamination (process rejects)”. Again, select the Facility/Process Type as appropriate and enter the tonnage rejected by material type. For waste sent to an incinerator you will need to complete the branch with the outputs from the incinerator (See GN63 Q100 Data entry for further details). Then create a “Final destination” node from the reprocessor to account for the rest of the material input.

### 3.2.2. Completing Q100: Recording the final destination of materials rejected during the MRF process

There will always be a reject rate from a MRF – the EA has collected information on reject rates from MRFs using a survey of Waste Disposal and Waste Collection Authorities. In addition, the EA has conducted an inspection programme of MRFs. The EA’s evidence has indicated that reject rates of 10.85% would be a typical average and “zero reject rates” are very unlikely. Find out what the rejected tonnage is and where it goes (landfill or energy recovery, for example) and create the appropriate disposal node as an output from the “Materials recovery facility” (Figure 3).

Landfill nodes are treated as the end of the branch but if rejects are sent to an incinerator you will need to record the outputs of that facility (which may include Incinerator Bottom Ash (IBA) or Metals from IBA going to reprocessors or landfill and/ or process loss).

Material rejected from the MRF should be recorded in the appropriate disposal node (for example “Incineration with energy recovery” or the appropriate landfill type as shown in Figure 3 above).

**Figure 5. A Reprocessor node (output from a MRF) showing Contamination (gate rejects).**

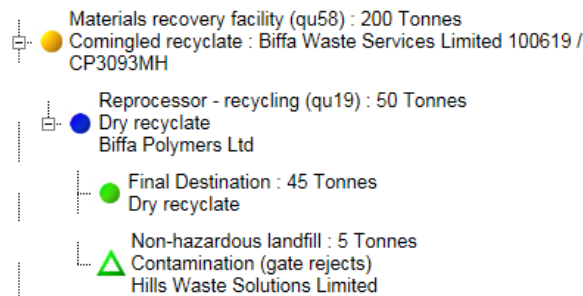




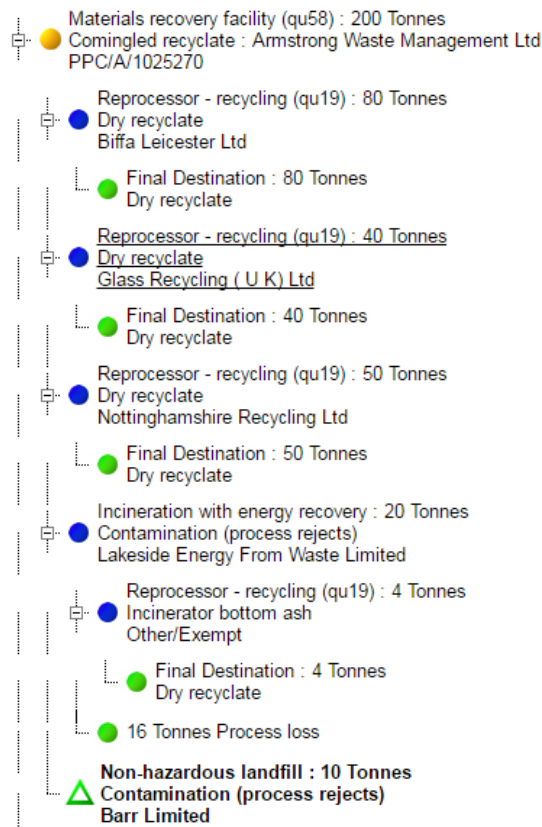
Figure 5 shows how a proportion of the material sent to a reprocessor after sorting at the MRF may be rejected at the gate. In the example above 50 tonnes of material is sent to a reprocessor and 5 tonnes of this material is rejected at the gate and sent to landfill.

When the material has reached its final reprocessing destination a “Final destination” node needs to be created as an output from the final “Reprocessor” node to signify this is the final destination. This should have the same destination and material type and tonnage as the “Reprocessor” node.

WDF Tip: Creating a Final destination node allows the system to recognise that the material has gone to a Reprocessor so the material is recognised as being recycled for the purposes of calculating NIs and BVPIs.

Once completed your branch should look something like the one shown in Figure 6. The Q100 tree in Figure 6 shows the outputs from a single MRF with 200 tonnes input. 20 tonnes of material are rejected to an incinerator with energy recovery (from where some IBA is processed) and 10 tonnes are rejected to a non-hazardous landfill. The remaining 170 tonnes is sent to three different Reprocessors.

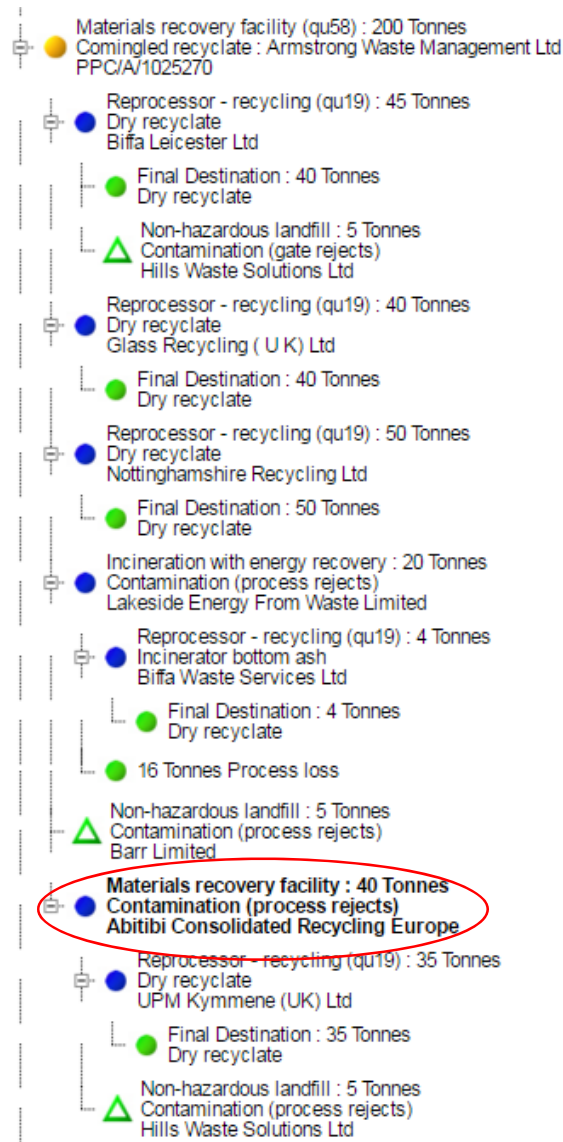
**Figure 6. MRF branch with recyclates sent to reprocessors and contamination (process rejects) sent to landfill and incineration.**



### Secondary MRF sorting process

In some cases material is sent from the primary MRF to a secondary MRF for further sorting. This is represented in Q100 by creating a secondary “MRF” node (blue) as an output from the primary “MRF” node (yellow) (Figure 7). The correct Output waste type for this material is “Contamination (process rejects)” and the Facility/process type is “Materials recovery facility”. You will then need to create the appropriate reprocessor(s) and disposal outputs from the secondary MRF to show the flow of materials to their final destinations.

Figure 7. Q100 tree representing the use of a secondary MRF. The tree shows 200 tonnes input to the primary MRF. 40 tonnes of material is sent to a secondary MRF for sorting, where 35 tonnes is sent on to a reprocessor and 5 tonnes is rejected to landfill.



### 4. Splitting of co-mingled tonnages

Wherever possible, actual tonnage figures of each material type should be estimated based on compositional analysis by the local authority or MRF provider. In cases where LAs are not able to draw on compositional analysis, the tables below present a compositional profile for a number of typical material collection scheme types. This should be used as a guide for apportioning tonnage outputs from the MRF into individual material types when the LA has no documented study of their own. The output tonnages by individual material type from the MRF should then be recorded in Q100.

Figure 8. Estimated split for typical co-mingled recycling collections.

#### Co-mingled Splits - no plastics collected

Type	Glass	Cans	Card	Plastic bottles	Pots, Tubs, Trays	Paper	Textiles
Type V	36%	6%				58%	

### Co-mingled Splits - plastic bottles only collected

Type	Glass	Cans	Card	Plastic bottles	Pots, Tubs, Trays	Paper	Textiles
Type B		6%	23%	9%		62%	
Type D	28%	4%	15%	6%		47%	
Type F	69%	15%		16%			
Type K		42%		58%			
Type N	28%	4%	15%	6%		46%	1%

### Co-mingled Splits - plastic bottles, pots, tubs and trays collected

Type	Glass	Cans	Card	Plastic bottles	Pots, Tubs, Trays	Paper	Textiles
Type C - PTT		6%	21%	9%	4%	60%	
Type E - PTT	27%	5%	16%	7%	3%	42%	
Type G - PTT	66%	12%		16%	6%		
Type I - PTT	26%	5%	16%	7%	3%	42%	1%
Type J - PTT	47%	9%	27%	12%	5%		
Type O - PTT		6%	21%	9%	4%	59%	1%
Type Z - PTT		33%		48%	19%		

### Co-mingled Splits - plastic bottles, pots, tubs, trays and carrier bags (no other plastic film) collected

Type	Glass	Cans	Card	Plastic bottles	Pots, Tubs, Trays	Carrier Bags	Paper	Textiles
Type C – carrier bags		6%	21%	9%	4%	1%	59%	
Type E – carrier bags	26%	5%	16%	7%	3%	1%	42%	
Type G – carrier bags	65%	11%		15%	6%	3%		
Type I – carrier bags	26%	5%	15%	7%	3%	1%	42%	1%
Type J – carrier bags	45%	9%	27%	12%	5%	2%		
Type O – carrier bags		6%	20%	9%	4%	2%	58%	1%
Type Z – carrier bags		31%		44%	18%	7%		



**Co-mingled Splits - plastic bottles, pots, tubs, trays and all plastic film collected**

Type	Glass	Cans	Card	Plastic bottles	Pots, Tubs, Trays	All Plastic Film	Paper	Textiles
Type C – all film		6%	20%	9%	4%	3%	58%	
Type E – all film	26%	5%	15%	7%	3%	2%	42%	
Type G – all film	63%	11%		15%	6%	5%		
Type I – all film	26%	5%	15%	7%	3%	2%	41%	1%
Type J – all film	44%	9%	26%	12%	5%	4%		
Type O – all film		6%	20%	9%	4%	3%	57%	1%
Type Z – all film		29%		41%	16%	14%		

(Derived from Local Authority kerbside compositional data, compiled as part of Defra's EV0801 "Updated compositional estimates for local authority collected waste and recycling in England, 2010/11" and other additional data).

Example: your LA has a co-mingled collection scheme based on Type B, there are 1,000t of material collected for recycling as co-mingled and sent to the MRF, and the MRF has a 10% reject rate. The tonnages for each of these materials would be derived as follows:

- Co-mingled materials collected = 1,000t (recorded in collection question)

The following tonnages will be recorded in Q100:

- Amount input to MRF = 1,000t
- Rejected tonnage at the MRF = 10% (100 tonnes) = 900t sent for recycling
- Apportionment of tonnage between materials:
  - Paper 900t x (62%/100) = 558t for recycling
  - Card 900t x (23%/100) = 207t for recycling
  - Cans/metals 900t x (6%/100) = 54t for recycling
  - Plastic bottles 900t x (9%/100) = 81t for recycling
- The tonnes of material sent for recycling will be recorded under the appropriate reprocessor node(s) in Q100.

## 5. If co-mingled materials are sorted at the kerbside

These materials are held in a single container for collection and therefore deemed co-mingled. However, the content of these containers is separated at the kerbside before being transported to the end recycling destination and therefore tonnages for the individual materials will be available to record. The tonnages should be recorded as follows.

*NB: Qu10 has been used in this example.*

### 5.1 Completing Q10 “Tonnes of material collected through kerbside schemes from household sources by LA or its contractors”

Record the **total** tonnage (*before* any reject is made) collected of **each** of the individual materials initially held in a co-mingled container but separated at the kerbside against the material categories – record these tonnages in the “Tonnage collected for recycling” column.

There may be a rejected tonnage for one or more of the materials which is made at the kerbside during sorting – if this is the case, enter the rejected tonnages under “Tonnage collected for recycling but actually rejected/disposed”.

Record the number of households receiving the collection in the “No of households receiving collection” column against each of the materials.

Choose “Yes” in the “Collected Co-mingled” drop-down option box.

**Figure 9. Q10 recording of co0mingled tonnages separated at kerbside.**

Enter Data For: Mar 16 Question: \* Q010:Tonnes from hh ks recycling

Q010 Tonnes of material collected through kerbside schemes from household sources by LA or its contractors

Load comments only from: [ ] GO

Dwelling Stock: 0 All Materials

Material	Tonnage collected for recycling	Tonnage collected for recycling but actually rejected/disposed	No. of households receiving a collection	Tonnage Collected for Reuse	Tonnage Collected for reuse but actually rejected / disposed	Collected Co-mingled?
+ Green glass						
+ Brown glass						
+ Clear glass	300	50	20000			Yes
+ Mixed glass						
+ Paper	250	0	20000			Yes
+ Card	250	0	20000			Yes
+ Mixed paper & card						
+ Steel cans						
+ Aluminium cans						
+ Plastics						
+ Waste food only						
+ Mixed garden and food waste						
+ Furniture						
+ Mattresses						
+ Co mingled materials						
+ Books	200	50	20000			Yes
Totals	1000	100		0	0	

Comments: [ ]

The tonnages for each of the individual materials are then transferred to the final recycling destination.

### 5.2 Completing Q100: Recording the final destination of your materials sent for recycling (materials sorted at the kerbside).

The end destination of each of the materials should be known in order to add them to the selection list and record against them in Q100. This end destination should be the final destination of the material (i.e. where it has been sent for recycling).

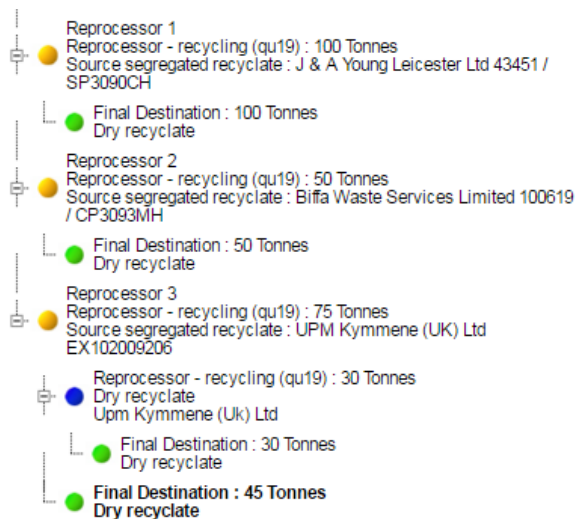
Create primary (yellow) Reprocessor nodes in Q100 for each reprocessor used (one destination per node) to show the material goes directly to the Reprocessor (see Figure 10). Within each

Reprocessor node the Transfer station box can be completed to show material goes via a transfer station to the reprocessor if you wish.

If some of the material is sent to a secondary reprocessor, this can be shown by creating a Reprocessor node (blue) as a new output from the primary (yellow) "Reprocessor" node. When the material has reached its final reprocessing destination a "Final destination" node needs to be created as an output from the each of the final reprocessor nodes (Figure 10).

If the material is sent to a reprocessor outside the UK via an exporter, create an Exporter branch as detailed earlier in this guidance note. If it is sent directly to an overseas facility, follow the procedure below and use Outside UK-EU or Outside UK-nonEU as the facility.

**Figure 10. Section of Q100 tree showing material sent directly to reprocessors.**



Within the Waste Details box of the reprocessor node select the Facility Name. If the Facility is an Other/exempt facility include the name and address details in the Facility Address field. If the Facility is outside the UK, ensure the address details are included in the comments if you wish. The Waste Stream Type will be "Source segregated recyclate" (Figure 11).

**Figure 11. Waste details box.**

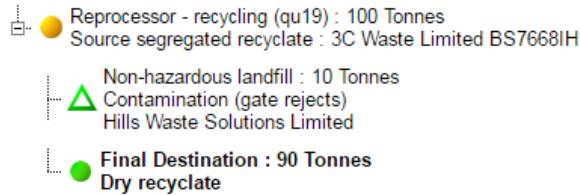
**Waste Details**

<b>Facility/Process Type</b>	Reprocessor - recycling (qu19) <span style="float: right;">▼</span>
<b>Facility Name</b>	Other/Exempt <span style="color: green; text-decoration: underline;">change</span>
Facility Description	<input type="text"/>
Facility Address	<div style="border: 1px solid #ccc; padding: 5px; min-height: 40px;">Record the full name and address here</div>
Facility Code	<input type="text"/>
<b>Waste Stream Type</b>	Source segregated recyclate <span style="float: right;">▼</span>
<b>Tonnes Input</b>	50 (Please see the the Materials section.)

Scroll down to the "Materials" box and record the tonnage of each material sent to the reprocessor. If the material description is not listed record the tonnage as other materials and make a note in the comments stating the nature of the material.

If material is rejected at the gate of the reprocessor this should be recorded as an output from the Reprocessor as detailed previously using the waste type Contamination (**gate rejects**). For post-MRF materials, **Process rejects** are only required to be shown from facilities processing WEEE.

**Figure 12. Reprocessor branch showing 10 tonnes of Gate rejects sent to landfill.**



### FAQs on co-mingled materials and MRF

Question	Answer
I collect materials which are sent to the MRF, but they don't actually go through the MRF process. Should I report the material as sent to the MRF in Q100?	No. Only materials which go through the MRF process should be recorded as sent to the MRF in Q100. Material sent via the MRF, where the MRF is acting as a transfer station, will be recorded as going directly to the reprocessor in Q100. The transfer station details can be recorded within the primary reprocessor node in the Transfer Station drop-down box.
I collect co-mingled materials and mixed paper and card at the kerbside, and send this all to the MRF for processing. Is this OK?	Yes. Your WDF return will show an imbalance between what has been collected co-mingled and what has been sent to the MRF. You should make a note in the comments box of the MRF node in Q100 to explain that x tonnes of co-mingled and x tonnes of mixed paper and card is also sent to the MRF.
I don't know the split of the materials which are sent from the MRF, how do I report this in Q100?	If you are unable to confirm the split of the materials sent for recycling from the MRF, you can use the table above and co-mingled collection type to apply a % split. Remember to remove your rejects and apply this split to the net tonnage sent for recycling.
I use a secondary MRF to further sort my rejects, how do I report this data in WDF?	A secondary MRF node can be created as an output from the primary MRF node. See guidance above.