METRO

Metro Solid Waste Regulatory Guidance Bulletin

GB 8 Effective November 12, 2015

Procedures for Complying with EDWRP Sampling and Reporting Requirements

This *Metro Solid Waste Guidance Bulletin* (Bulletin) is intended to describe the procedures that may be used by Material Recovery Facility (MRF) operators to meet the sampling and reporting requirements of Metro's Enhanced Dry Waste Recovery Program (EDWRP). The procedures described in the Bulletin will be used by Metro to evaluate MRF compliance with the EDWRP processing residual standard. A MRF may choose to use a sampling method other than the one described in the Bulletin. However, the alternative method must be submitted to Metro for review and approval prior to its implementation. The sampling and reporting requirements can be found in Section 5.01.125 of the Metro Code. The entire Metro Code can be accessed on Metro's web site at www.oregonmetro.gov.

Background

In August 2007, in an effort to increase the recovery of solid waste generated in the Metro region, the Metro Council amended the Metro Code by adopting EDWRP via Ordinance No. 07-1147B. Metro Code required that effective January 1, 2009, all mixed non-putrescible (dry) waste generated in the Metro region be delivered to a MRF for processing prior to disposal. Due to market conditions the portions of Metro Code including Chapters 5.01 (Solid Waste Facility Regulation), 5.05 (Solid Waste Flow Control), and 5.09 (Illegal Disposal) that pertain to Metro's Enhanced Dry Waste Recovery Program (EDWRP) of Metro Code relating to wood waste have been temporarily suspended effective November 12, 2015.

EDWRP Requirements

Recovery Standards and Management Options

EDWRP requires that all dry waste generated in the Metro region be delivered to a Metro-authorized MRF for processing. Facilities that accept but do not process dry waste must deliver the dry waste to a Metro-authorized MRF for processing. EDWRP also requires that all dry waste delivered in drop boxes and self-tipping trucks be processed to recover at least cardboard, and metal. Processing residual generated during recovery from these specified loads may not contain more than 15 percent – by total combined weight – of cardboard pieces greater than 12 inches in any dimension, and metal pieces greater than eight inches in any dimension.

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(503) 797-1835

General Recovery Requirements for Metro Region MRFs

Metro-authorized MRFs are required to process all dry waste they accept. Dry waste loads delivered in drop boxes and self-tipping trucks are required to be processed to meet the EDWRP processing residual standard described in this bulletin. Metro region MRFs have the option to manage dry waste delivered in drop boxes and self-tipping trucks separately from that of other dry waste loads that are not subject to the processing residual standard (i.e., waste delivered in vehicles that do not self-tip such as pickup trucks). However, if these two waste streams are managed together at the MRF, either before or after processing has occurred, then all of the resulting processing residual is subject to the processing residual standard.

General Recovery Requirements for Out-of-Region MRFs

EDWRP requires that all dry waste generated inside the Metro region be delivered to an authorized MRF for processing for recovery prior to disposal. Dry waste loads delivered in drop boxes and self-tipping trucks are required to be processed to meet the processing residual standard. Out-of-region MRFs have the option to manage Metro region waste delivered in drop boxes and self-tipping trucks separately from other dry waste loads not subject to the processing residual standard (i.e., waste generated outside of the region or that delivered in vehicles that do not self-tip). However, if these waste streams are managed together at the MRF, either before or after processing has occurred, then all of the resulting processing residual is subject to the standard.

Sampling and Reporting Requirements

EDWRP requires that all Metro-authorized MRFs conduct quarterly self-sampling of dry waste processing residual that is subject to the EDWRP processing residual standard. Processing residual that is sampled should be representative of a MRF's operation. The results of quarterly self-sampling are required to be reported to Metro by the fifteenth day of each month following the end of each quarter.

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EDWRP SAMPLING AND REPORTING PROCEDURES

SAMPLING

Required Number and Weight of Samples per Quarter

EDWRP requires all Metro-authorized MRFs to "…take quarterly samples of processing residual that are statistically valid and representative of the facility's residual (not less than a 300-pound sample)" (Metro Code 5.01.125 (c) (2)).

The sampling procedures described in this bulletin were developed to help MRFs comply with the requirement that sampling be "statistically valid and representative" of recovery performance. For each quarter the MRF will provide Metro with the results from at least nine complete samples of processing residual. Each of the nine complete samples must weigh a minimum of 300 pounds. To complete nine samples in a quarter, the MRF will need to procure three samples per day during three separate days in each quarter. The three sampling days should not be consecutive, but they should be spread throughout a quarter as widely as practical. The MRF may choose to capture additional and/or larger samples in a quarter. However, Metro has established that nine 300-pound samples are the minimum needed to adequately characterize a MRF's performance under the processing residual standard in a given quarter.

Procuring Complete Samples

Each complete sample will be a composite of three smaller grab samples taken from different areas of the processing residual being sampled. For example, to procure a single complete sample of not less than 300 pounds, three grab samples averaging not less than 100 pounds should be taken from different areas of the processing residual. These three smaller grab samples are then combined together to form one complete 300-pound sample. This entire process must be performed three separate times in a single day in order to produce three complete samples. (Note: Three complete samples will require that nine grab samples be taken).

MRFs generally perform material recovery by use of manual labor along an automated sort line or by manually sorting recoverable materials from waste that is spread on a facility floor. Processing residual from both types of operations is generally loaded directly into a trailer or stockpiled and loaded at a later time. The procedures described in this bulletin were developed to allow MRFs to either sample processing residual that is already loaded into trailers or that which is stockpiled in preparation for loading. Facilities that use compactors to load processing residual are not required to collect samples from loaded trailers.

Regardless of how the MRF generates or manages its processing residual, the initial step in the sample collection is to visually superimpose a three-part rectangular grid (illustrated below) over the processing residual to be sampled. The use of the grid allows the MRF to collect grab samples from three different sections of the waste pile (i.e., Sections A, B and C). This is procedure is described in more detail below.

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Sampling Grid

Section A	Section B	Section C

Sampling Options at MRFs

Stockpile method: For MRFs that stockpile processing residual, the facility should use a minimum of 40 cubic yards of processing residual and perform the following sampling procedures.

1. Level the stockpile to a uniform height and extend in one direction to create a roughly rectangular shape.
2. Visually superimpose the above grid on the processing residual.
3. Take one grab sample from each section of the grid. These three grab samples will be used to produce a single complete sample. Each grab sample should be approximately the same weight and when added together, be sufficient to generate a complete sample weight of at least 300 pounds. It is not necessary to weigh the individual grab samples.
4. Place the three grab samples into a single container with a known tare weight. Suitable containers include steel bins and facility equipment such as the bucket of a loader.
5. Weigh the containerized sample. A truck scale or commodity scale can be used to weigh the containerized sample.
6. Determine the weight of the complete sample by subtracting the tare weight from the gross weight of the containerized sample.
7. Record the net weight of the complete sample on the **Sample Data Form** (see attached).
8. Collect a minimum of three complete samples over the course of a processing shift. (Note: Three complete samples will require that nine grab samples be taken).
9. Perform this sampling method over three non-consecutive days each quarter to produce at least nine 300-pound samples.
10. Document the procedures used to procure these samples on the **Sample Data Form**.

Direct load method: For MRFs that convey processing residual directly into a transport trailer as it is generated, the facility should use a minimum of 40 cubic yards of processing residual and perform one of the following options for its sampling procedures.

Option No. 1

Divert the processing residual onto the floor of the facility until at least 40 cubic yards are collected and follow the stockpile method described above.

Option No. 2

1. Level processing residual already loaded in a trailer to a uniform height and extend in one direction to create a roughly rectangular shape.
2. Visually superimpose the above grid on the processing residual.

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3. Take one grab sample from each section of the grid. These three grab samples will be used to produce a complete sample. Each grab samples should be approximately the same weight and when added together, be sufficient to generate a complete sample weight of at least 300 pounds. It is not necessary to weigh the individual grab samples.
4. Place the three grab samples into a single container with a known tare weight. Suitable containers include steel bins and facility equipment such as the bucket of a loader.
5. Weigh the containerized sample. A truck scale or commodity scale can be used to weigh the containerized sample.
6. Determine the weight of the complete sample by subtracting the tare weight from the gross weight of the containerized sample.
7. Record the net weight of the complete sample on the **Sample Data Form** (see attached).
8. Collect a minimum of three complete samples over the course of a processing shift. (Note: Three complete samples will require that nine grab samples be taken).
9. Perform this sampling method over three non-consecutive days each quarter to produce at least nine 300-pound samples.
10. Document the procedures used to procure these samples on the **Sample Data Form**.

SORTING

Regardless of the sampling method used, all MRFs should perform the following sorting procedures and document the information on the **Sample Data Form**:

1. Take each complete 300-pound sample to a safe sorting location away from competition with vehicle or equipment traffic.
2. Tip the complete sample onto the ground.
3. Manually sort through the complete sample and move the contents, in their entirety, from one spot to another. Ensure that no portion of the sample remains unsorted. Tools such as a long-handled garden cultivator are useful for sorting samples and enhancing worker safety.
4. Segregate cardboard and metal pieces that appear to exceed the outside dimensions of the EDWRP standard (i.e., 12" for cardboard, and 8" for metal).
5. After sorting the complete sample, measure the segregated cardboard and metal pieces to determine if they exceed the outside dimensions stated in EDWRP. Tools such as a "check box" are useful for the quick measurement of segregated materials (see below). A listing of further material specifications is also provided in this bulletin to help the facility determine if a particular material is considered recoverable.
6. Place all of the cardboard, and metal pieces that exceed the outside dimensions stated in EDWRP into separate tared containers (i.e., cardboard in one container, wood in another container and metals in a third container). Plastic totes or refuse cans are suitable for this. Using separate containers for this step allows the MRF to determine its specific performance in recovering each of these respective materials.
7. Use a scale with a minimum accuracy of 0.1 pounds to weigh each separate container.
8. Subtract the tare weights from the gross weights of each containerized material in order to determine the net weights of each.

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9. Record the gross and tare weights for each of the recoverable materials on the **Sample Data Form**.
10. Each complete sample should be sorted and documented before beginning subsequent samples.

REPORTING

1. Determine the percentage of recoverable materials in each complete sample by adding together the net weights of the recoverable cardboard and metal. Divide the net weight of the recovered materials by the net weight of the total sample to determine the recovery rate percentage. For example, a MRF procures a 450-pound complete sample. The MRF then sorts the sample and finds seven pounds of metal, and 11 pounds of cardboard that are eligible for recovery under EDWRP. This corresponds to a percentage rate of 13.3 (within the acceptable limits of EDWRP). The equation used to calculate this percentage rate is illustrated below.

$$\frac{(7+11)}{450} \text{ or } \frac{18}{450} = 0.04\%$$

2. An easier way to perform this percentage rate calculation is to transfer the information from the **Sample Data Form** onto the **Processing Residual Quarterly Report** electronic form which may be downloaded at www.oregonmetro.gov (see attached). The MRF simply enters the net weight of each complete sample and the net weights of each recoverable material found in that sample into the appropriate fields on the form. The form will then automatically calculate the percentages of recovered materials that were found in the total sample.
3. Use the **Processing Residual Quarterly Report** to track sample data and calculate the percentage of recoverable materials for each of the nine complete samples collected over a quarter.
4. After completing all of the quarterly samples, the average percentage of recoverable material that was found in each of the nine complete samples can be calculated using the **Processing Residual Quarterly Report**. The MRF simply enters the combined net weight of all of the nine complete samples and the combined net weight of all of the recoverable materials found in those nine samples into the appropriate fields on the form. The form will then automatically calculate the total percentage of recovered materials that were found in the total quarterly sample.
5. Print and sign the **Processing Residual Quarterly Report** after recording and calculating the sampling results for a full quarter.
6. The **Processing Residual Quarterly Report** is due to Metro by the 15th day of the month following the end of each quarter. The reporting months for a calendar year are April, July, October and January.
7. In an instance that Metro performs a sampling event at a MRF, the facility may use Metro's sampling results as a substitute for a portion or all of that quarter's sampling requirements dependent upon the number of samples procured by Metro. In all cases, the MRF is required to provide Metro with a completed **Processing Residual Quarterly Report** by the 15th day of the month following each quarter.

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The **Processing Residual Quarterly Report** should be submitted to:

Metro
Attention: Accounting Front Desk
600 NE Grand Avenue
Portland, OR 97232-2736

Alternatively the completed and signed **Processing Residual Quarterly Report** can be submitted electronically to: EDWRPreports@oregonmetro.gov .

For questions about this Bulletin, contact Metro's Solid Waste Compliance & Cleanup Division at 503-797-1667.

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DEFINITIONS

Recoverable Materials

In addition to the EDWRP size specifications, the determination of the recoverability of a particular item within the cardboard and metal categories is based on local recycling market specifications. Materials attached to dissimilar materials, such as wood glued to sheet vinyl flooring or cardboard heavily contaminated with grease, will not count as recoverable for the purposes of sampling under EDWRP. Materials that, in Metro's opinion, pose significant safety issues for recovery purposes, such as steel banding, will not count toward the recoverable percentage. For the purposes of determining facility performance with the processing residual standard, sorters should not unfold, bend or otherwise alter the size of materials being sorted. Further detail on how the recoverable materials are defined is provided below.

Recoverable Metal: For the purposes of sampling under EDWRP, metal that is greater than eight inches in any direction, including ferrous and non-ferrous metals, and meets the quality standards at Metro region scrap metal markets is recoverable. Types of recoverable metal include, but are not limited to; metal connected to incidental quantities of non-metal materials, such as power tools, lighting fixtures and plumbing fixtures. Types of non-recoverable metal include material where the metal portion makes up such a small portion of the object's overall mass that it would be rejected by local scrap metal markets. Examples of these materials include unbroken metal frame windows or metal pieces that require hand tools to separate the metal from significant quantities of other non-metal components.

Recoverable Cardboard: For the purposes of sampling under EDWRP, corrugated cardboard that is greater than 12 inches in any direction and meets the quality standards at Metro region corrugated cardboard markets is recoverable. Types of recoverable cardboard include, but are not limited to; corrugated cardboard with tape, staples and other fasteners. Types of non-recoverable corrugated cardboard include materials where the cardboard portion makes up such a small portion of the objects overall mass, that it would be rejected by local cardboard recycling markets. Examples of these materials include waxed corrugated cardboard and corrugated cardboard pieces that are securely attached or adhered to non-corrugated cardboard materials such as wood, plastic, glass and other composite materials.

Pursuant to Resolution No. 15-4666, the Metro Council has temporarily suspended enforcement of the EDWRP requirement to separate and recover wood waste effective November 12, 2015. Although wood recovery is not required as part of EDWRP at this time, there are still reuse and fuel markets available for very clean wood waste such as raw dimensional lumber, pallets and packing crates. Metro encourages the separation and recovery of such reusable wood at facilities that can put it to better use than disposal.

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CHECK BOX

A check box similar to the one pictured below can be used to quickly determine if wood, metal and cardboard pieces exceed the dimensions stated in EDWRP. The check box pictured below is constructed from 2-inch by 4-inch lumber, but other types of wood or metal can be used. Corner bracing can be used to retain the shape and true inner dimensions of the check box. The check box pictured below is rectangular with an inner dimension in one direction of 12 inches (for testing wood and cardboard) and an inner dimension in the other direction of 8 inches (for testing metal). Center markings have been placed along each side of the check box to avoid inaccurate measurements due to placing an item at an angle upon the check box.

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SAMPLE DATA FORM

Facility Name: _____	Date: _____
Sample #: _____	Time: _____
Material: _____	Recorder: _____
Number of sorters on shift: _____	

Operating hours on day of test: _____

Sampling location: _____

Describe how sample was taken: _____

_____

_____

SAMPLE	GROSS WEIGHT	TARE WEIGHT	NET WEIGHT
Total Sample			
		TOTAL WEIGHT OF SAMPLE	(A)

MATERIAL	GROSS WEIGHT	TARE WEIGHT	NET WEIGHT
Cardboard			
~~Wood~~	n/a	n/a	n/a
Metal			
		TOTAL WEIGHT OF RECYCLABLES	(B)
		PERCENT RECYCLABLES (B/A x 100)	%

Notes/Comments (note unusual conditions, whether equipment operating normally, etc.):

_____

_____

_____

_____

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TO REPORT ILLEGAL DUMPING
CALL (503) 234-3000 or report via Internet at www.oregonmetro.gov

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Metro

Processing Residual Quarterly Report

(With No Wood Sampling)

For the Quarter Ending:

Company Name	
Address	*Phone No.*
City, State, Zip	*Date*

	Day 1			Day 2			Day 3		
Date of Sample									
Sample Number	1	2	3	1	2	3	1	2	3
Time									
Sample Net Wt. (lbs)									
Cardboard									
Wood				Sampling temporarily suspended					
Metal									
Sample Totals									

Quarterly Sample Totals

	Totals	Average
Sample Net Wt. (lbs)		
Cardboard		
Wood	n/a	
Metal		
Totals		

Report prepared by:		Phone No.
REMIT TO:	**Metro Attn: Accounting Front Desk** **600 NE Grand Avenue** **Portland, OR 97232-2736**	
	Or transmit electronically to: EDWRPreports@oregonmetro.gov	
	I DECLARE THAT TO THE BEST OF MY KNOWLEDGE AND BELIEF THE STATEMENTS HEREIN ARE CORRECT AND TRUE.	
Authorized Signature		***Date***
Print Name and Title		

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