

Counting Dangerous Waste



***Are you a
Small, Medium, or Large
Quantity Generator?***

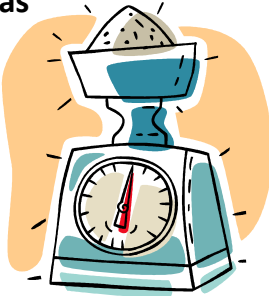
Now that you have figured out what dangerous waste you generate, you need to find out your generator status.

Generator status is determined by the amount of waste you generate. This section walks you through how to count your wastes.

Information To Count

Collecting Information

- ❖ Quantity of DW on-site
- ❖ Quantity of DW generated each month
 - ❖ Include satellite accumulation areas
 - ❖ Keep a waste generation log!
- ❖ Do not use manifests to count
 - ❖ Lump all waste into one month
 - ❖ Inaccurate count
 - ❖ (i.e. nominal, not actual weight)



First of all, there's some information you're going to need in order to count.

You need to know how much dangerous waste you have on-site and how much you generate each month. This means each month...not an average you determine in December! Also, you need to designate ahead of time so you know what kind of waste you have.

Do not use your dangerous waste manifests to calculate monthly totals or your generator status.

Using manifests could cost you because:

- Manifests will lump all the waste you have accumulated, maybe over several months, into the count for the month you ship offsite. This can make you appear to be a Large Quantity Generator, when you are actually a Medium or Small Quantity Generator.
- Dangerous waste haulers may not be as accurate in counting your waste as you would be and could overcharge you. (For example, a hauler might count a nominal weight per barrel, rather than the actual amount.)

Both of these can affect what you end up paying to Ecology.

A Note on Terms

- ❖ ***Washington state and federal EPA use different terms for the same generator classifications.***
- ❖ **Washington SQG = EPA CESQG**
 - ❖ **(Conditionally Exempt Small Quantity Generator)**
- ❖ **Washington MQG = EPA SQG**
 - ❖ **(No EPA MQG level)**
- ❖ **Washington LQG = EPA LQG**




One of the ways the federal rules differ from the Washington state rules, is in terminology. The generator classes are determined by the same amounts, but the names are different.

Keep this in mind in national trainings, magazines, and trade journals. And in dealing with people in other states.

Small Quantity Generators (SQG)

- ❖ Generate < 220 lbs/month of DW
- ❖ Always have < 2,200 lbs of DW on-site
- ❖ Generate and accumulate < 2.2 lbs/month of Acutely Hazardous Wastes (P code wastes, F020-023, F026-027) or WT01 wastes

A 55-gallon drum is shown, partially filled with a red liquid. A yellow label on the drum indicates that the liquid inside represents 220 lbs of waste.

Every business generating dangerous waste would prefer to be an SQG if they could. SQGs have the lightest regulatory burden — not to mention greatly reduced costs related to waste management.

In order to qualify as an SQG, you have to generate less than 220 pounds of regular DW per month, and you must never accumulate more than 2,200 pounds of waste on-site.

A very rough estimate of 220 pounds of liquid waste is half of a 55-gallon drum.

Also, the more toxic wastes, such as those that are P-listed, or have the F020-F023, F026, F027, or WT01 waste codes, are regulated more stringently. SQGs must not generate more than 2.2 lbs per month, or have more than 2.2 pounds of these wastes on-site. These are particularly nasty wastes, which you should be extra-careful with. We discussed the P-listed and WT01 wastes in the designation session. The F-listed wastes shown here are from the wood preservative and pesticide manufacturing industries.

Medium Quantity Generators (MQG)

- ❖ **Generate 220-2,200 lbs/month of DW**
- ❖ **Always have < 2,200 lbs of DW on-site**
- ❖ **Generate and accumulate < 2.2 lbs/month of AHW (P code wastes, F020-023, F026-027) or WT01 wastes**



The next level is medium quantity generator, or MQG.

The only difference between MQG and SQG status is that an MQG generates between 220 and 2,200 pounds of 'regular' dangerous waste.

You still can't generate or accumulate more than 2.2 pounds per month of AHW. More than that and you are automatically a LQG.

Large Quantity Generators (LQG)

- ❖ Generate $\geq 2,200$ lbs/month of DW
- ❖ Accumulate $\geq 2,200$ lbs of DW
- ❖ Generate ≥ 2.2 lbs/month of AHW (P code wastes, F020-023, F026-027) or WT01 wastes
- ❖ Accumulate ≥ 2.2 lbs of AHW



Your business is an LQG if:

- you generate more than 2,200 pounds of waste in a month; or
- have more than 2,200 pounds of waste on-site; or
- You generate or accumulate more than 2.2 pounds of AHW.

What's the Status?

What if...

- ❖ A facility generates 500 pounds of waste paint thinner (D001) in a month.
- ❖ At the beginning of the month, the facility had 2,100 pounds of waste on-site.

Is the business a SQG, MQG, or LQG?

Answer

- ✓ Business is a Large Quantity Generator
 - ❖ 500 lbs/month < 2,220 lbs/month, but...
 - ❖ 2,100 lbs + 500 lbs = 2,600 lbs > 2,200 lbs onsite

But...they can lower their status by getting the waste offsite before the higher status applies!



QUESTION:

If a site generates 500 pounds of waste paint thinner (solvent) in a month, and at the beginning of that month it had 2,100 pounds of waste on-site, and none was shipped offsite, what is the generator status at the end of the month?

ANSWER:

The facility is an LQG because there is more than 2,200 lbs of waste on-site at the end of the month.

Is there a way to get this business to be an MQG? Yes...get that waste offsite before the higher generator status applies!

This example shows the importance of keeping tabs on your waste and ensuring it gets offsite in a timely manner.

Do Not Count:

- ❖ Recycled antifreeze
 - ❖ Properly labeled (“spent”), contained, logged
- ❖ Shop rags
 - ❖ Sent to permitted facility, properly labeled, contained
- ❖ Recycled used oil
 - ❖ Properly labeled, contained



You can do some things to help lower your generator status. As long as you manage these wastes properly, they don't count toward your status:

- Spent antifreeze:
 - containers must be closed,
 - labeled **“spent antifreeze only”**,
 - have no leaks,
 - keep a log showing **who** took **how much** & **when** for offsite recycling, or keep a log of **how much** and **when** it was recycled onsite
- Shop rags:
 - sent to a **permitted** laundry facility
 - closed container
 - labeled **“contaminated shop towels only”**
- Used oil:
 - closed
 - Labeled **“used oil”**
 - good container, no leaks
 - no spills
 - being sent for recycling



Do Not Count:

- ❖ Universal waste
 - ❖ Mercury thermostats, other mercury (Hg) containing equipment
 - ❖ Fluorescent lamps/high intensity discharge lamps
 - ❖ Batteries
 - ❖ Cathode Ray Tubes (CRTs)
- ❖ Permit-By-Rule (PBR) wastewater
 - ❖ Do count PBR residual DW sludge



- **Universal Wastes** are common wastes that don't count towards your generator status **IF** they are properly handled and safely recycled or disposed.
 - Mercury equipment: Thermostats, barometers, etc. Must be accumulated in containers that are structurally sound, closed, and labeled "**universal waste/waste/used-mercury thermostats**" on the thermostat or the container
 - Fluorescent Lights: NOT THE BALLASTS (They may contain PCB!!!) Prevent spillage/leakage. Containers must be structurally sound, closed and undamaged. Labeled "**universal waste/waste/used lamps**" on the container. Accumulate for no more than one year. Must be able to demonstrate how long they've been on-site. (There are exceptions to the one-year rule.)
 - Batteries: Containers must be structurally sound, closed, and labeled "**universal waste/waste/used-batteries.**" One year accumulation limit.
 - CRTs: These are regulated under an interim enforcement policy. You do not have to count designated CRTs and PC equipment that is recycled, accumulated in a manner that prevents breakage and protects the environment, or kept on-site for 180 days or less.
- Permit By Rule (PBR): Under certain conditions, facilities are **permitted to send specific waste water** to a Publicly Owned Treatment Works (POTW) that can handle certain dangerous waste through their treatment program. Wastes handled this way don't get counted as dangerous waste, though any resulting DW sludge does. Check with the POTW first, to make sure your waste won't damage their system.

A Quick Quiz

In a calendar month, a business generates:

- ❖ 125 lbs of D002 caustic solution
- ❖ 75 lbs of D003 oxidizing chemical
- ❖ 15 lbs of dirty shop rags
- ❖ 120 lbs of used batteries
- ❖ 50 lbs of fluorescent light tubes

Is the business a SQG, MQG, or LQG?

Answer

- ✓ Business is an SQG
 - ❖ Used shop rags, batteries, and fluorescent lights not counted as DW if handled appropriately
 - ❖ $125 \text{ lbs} + 75 \text{ lbs} = 200 \text{ lbs} < 220 \text{ lbs}$



Take a minute to think about this question and recall what was on the previous slide.

QUESTION:

Is this business a small, medium or large quantity generator?

ANSWER:

So long as the batteries, fluorescents, and shop rags are handled correctly, this business is an SQG, because 200 is less than 220.

Treatment By Generator (TBG)

- ❖ Need Ecology approval
- ❖ Prescribed manner
 - ❖ Water evaporation
 - ❖ Elementary neutralization
 - ❖ Filtration
 - ❖ Separation
 - ❖ Solidification
 - ❖ Carbon adsorption




Advantage: Pay less to dispose of less waste
See also *Treatment by Generator*
www.ecy.wa.gov/biblio/96412.html

Are you allowed to treat your wastes onsite?

Answer – Maybe, but:

- You must get **approval** from Ecology **first**
- Must be done in a particular, **prescribed manner**
- **Treatments allowed:**
 - Water-only evaporation
 - Neutralization
 - Filtration
 - Separation
 - Solidification
 - Carbon adsorption

See *Treatment by Generator* (Technical Information Memorandum) at <http://www.ecy.wa.gov/biblio/96412.html>. The link to the document is on that page, as well as links to publications related to each treatment type.

Treatment By Generator and Waste Counting

- ❖ Count DW before treatment, and track it on a treatment log
- ❖ Designate all residuals
- ❖ Count DW residuals, track on a treatment log
- ❖ Comply with all waste accumulation regulations



So how do you count if you're doing treatment by generator?

You **count the wastes you're going to treat before you treat them.** Then, if you have any **residuals** from that treatment, you **count those**, too.

You still have to count the waste you've generated, but you wind up paying less for disposal because you have less waste to dispose of.

Always make sure that you accumulate these wastes in appropriately managed containers — closed, labeled ,etc.

Quick Quiz #2

What if...

A metal finisher produces 500 lbs of chromium bearing solution (D007) in a month, evaporates off the water, and is left with 50 lbs of sludge that designates for chromium (D007).

How many lbs of Dangerous Waste are counted?

Answer

- ✓ 550 lbs of DW waste total
 - Count it twice since you “made” it twice!
 - But only have to dispose of 50 lbs of DW



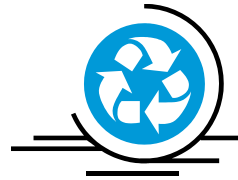
Consider this example of a business generating 500 lbs of chromium bearing solution. You evaporate off the water and are left with 50 lbs of sludge that designates for chromium. How many lbs of waste do you count towards your totals?

ANSWER: $500 + 50 = 550$ lbs!

You count it twice since you “made” it twice! BUT, you only end up having to dispose of 50 lbs of waste instead of 500 lbs!

Recycling Exemptions & Credits WAC 173-303-017

- ❖ Write down the specifics of the situation.
- ❖ Get copies of:
 - [Counting Dangerous Waste Under the Dangerous Waste Regulations](#)
 - [Dangerous Waste Regulations](#)
- ❖ Figure out what you think
- ❖ Call Ecology!



There are other waste recycling exemptions and credits – more than this presentation can cover.

What you need to do is sit down with a copy of the regulations and the publication *Counting Dangerous Waste Under the Dangerous Waste Regulations*. It has a flowchart that you can walk through to find the exemptions and credits that might apply. *Counting* is available online at www.ecy.wa.gov/biblio/98414.html

Then call an Ecology employee and check whether you're right.

Distillation Units and Counting

You Must Count & Log:

- ❖ Largest amount of spent solvent awaiting distillation during the month
- ❖ Still bottoms
- ❖ Spills
- ❖ Evaporation losses (if necessary)
 - ❖ Not applicable to fire-code airtight (UL-2208) containers

Distillation is active recycling – counted differently than TBG

Many generators do some on-site solvent distillation and reuse. Here are the counting rules that apply:

If you have a system where the still is a **hard-piped** part of the process, then you **don't have to count spent solvent**. You **do** have to count **still bottoms**.

If you have a **batch system**, then you have to **count the still bottoms** generated during the distillation process, **any other lost solvent** (through spills or significant evaporation), **and the largest amount of solvent you had waiting for distillation during the month**.

Still counting policy is based on safety concerns, but if done in this manner, it can help reduce the amount of solvent waste you have to report as a dangerous waste!

Still counting is different from counting under Treatment by Generator, because **distillation is active recycling**. It is not simple treatment of your hazardous waste. Because of this, the two are counted differently.

Distillation Example


An auto body shop generates 2,300 lbs of spent solvent per month, approximately 115 lbs/day. There are no spills or evaporative losses. Assume a distillation solvent recovery rate of 90%.

- What is the generator status assuming no distillation?
- What if the site started batch distilling all of the solvent generated *weekly*?
- How about *daily*?



Distillation Example

Given:	2300 lbs/month ← LQG	
	90% still recovery rate	
Assumptions:	5 work days/week	
	4 weeks/month	
	7.5 lbs/gallon	
COUNTING	115.0 lbs/day	
Distill weekly		
Solvent	575.0 lbs	= 115 x 5
Still Bottoms	230.0 lbs	= 575 x 4 x (1-.90)
TOTAL HW	805.0 lbs	← MQG
Distill daily		
Solvent	115.0 lbs	= 115 x 1
Still Bottoms	230.0 lbs	= 575 x 4 x (1-.90)
TOTAL HW	345.0 lbs	← MQG



Without distilling, there are 2,300 lbs/ month, which makes the business an LQG.

Distilled weekly, there would be 575.0 lbs collected to distill. At 90% recovery, the month’s total still bottoms would be 230.0 lbs. The **month’s total generation would be 805.0 lbs**, which makes the business an MQG.

Distilled daily, there would only be 115.0 lbs collected to distill. At 90% recovery, again the month’s total still bottoms would be 230.0 lbs. The **month’s total generation would be 345.0 lbs**, so the business is again an MQG.

But it is probably cheaper to distill daily because:

- The reduced volume means you don’t need as large a still; and
- There is a larger buffer (1,855 lbs vs. 1,395 lbs) before the business becomes an LQG.