

Burning Wastes

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Overview of Burning Wastes

Burning solid waste can be an effective way to **reduce the volume of waste** going into a dump or landfill, and a **relatively low-cost option** to manage the dump.

By reducing volume, Villages with **poorly located dumps** can **stop the dump edge from expanding** right into town, subsistence areas, or drinking water sources. A dump adjacent to town has very serious health risks due to risks of disease transmission, contaminated air, fire, and injuries. It presents residents with a poor quality of life. A dump in a subsistence area can contaminate plants and animals that live there. It can taint our way of life. Even if the contamination is not high outside the dump, people might stop their subsistence because they are concerned.

For Villages **without heavy equipment**, burning can provide **a way of managing the dump** so that a clear access is maintained. Safe and easy access is important so that residents use the dump, instead of using other practices like in-town garage storage/litter, river dumping, and barrel burning.

For Villages that can locate **their burnboxes downwind and separate from their Villages**, and can educate people to **keep away from the burnbox smoke**, burning might be a **good decision for the intermediate future**.

But burning garbage can be associated with its own

health risks

It creates **toxic smoke**. Uncontained burning is also a serious fire risk. So burning is a decision where the advantages to your community must be weighed against the disadvantages. In our experience, some **Villages burn when they don't need to**, and their community, especially elders and kids, are placed at risk. On the other hand, many Villages are in a situation where their best short-term option is to burn.



Like all waste planning, we recommend considering hard all of the options to see where your Village fits. Study the types of problems you will have with burning, and the types of problems you will have if you do not burn. **Sometimes, the total health risks your Village might face if you don't burn are greater than if you burn wisely.**

Everything is connected. There may be other issues for **your Village** to consider that are just as important as physical health to your **community well-being**. For example, we know there are Villages that don't have enough land for housing. The dump takes up too much room. Without their own homes, people might feel they must move to the City. Another example is subsistence. **There is no price for people stopping their subsistence,** because they are afraid of the dump pollution.



These are very difficult decisions. This handout is **one piece of information** when your community makes its burning decisions. If you decide that your Village should burn the wastes - at least for now- there are many steps that can **reduce the health risks.**

What Health Risks Are Associated With Garbage Burning?

There have not been any detailed studies on Alaska burnbox or Village open dump smoke yet. But very high breathing of smoke particulates has been shown to be connected with...

- o Increased deaths
- o Cancer
- o Hospitalization
- o Functional limitation,
- o Physiological impairment (like breathing problems).



Garbage is garbage. For health problems, it doesn't matter where you burn it. It only matters whether a "connection" to the smoke is made. **Are people coming in contact with the smoke?** Are they being exposed?

So home barrel burning can be very dangerous because the smoke is close and in-town. In our scientific study in four Villages, we found that **people who burned garbage 2 times each week suffered faintness 17 times more,** and nausea *10 times* more, than people who didn't burn their garbage. People who burned only every couple of weeks cut those risks in half.

Burning must be stopped as soon as possible if:

- ❖ Residents smell dump smoke **in-town** every day.
- ❖ People burn unseparated garbage **in-town** in their home barrels (with homes next door to each other).



Both of these situations mean that the **connection to smoke** is there for **everyone, all the time**. When the connection is longer, more regular, and closer, the bad effects are **more likely** to happen, and the size of the effect can be **worse**.



If we can't stop burning, we can

Stop the smoke connections:

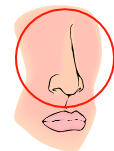
- ◆ Breathing it
- ◆ Absorbing chemicals through skin
- ◆ Eating it (by eating settled ash on hanging fish, or children ingesting dirt, etc.)
- ◆ Drinking it (by drinking settled ash/smoke in water)

If these connections don't happen, your community won't suffer the health effects.

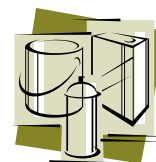
How To Break The Smoke Connections

Study your community carefully, and decide what community practices will lead to:

- ❖ The **lowest number of noses, hands, and mouths** connecting to the smoke and ash, *and*
- ❖ The smoke occurring for the **shortest period** of time.
- ❖ The **smallest amount of chemicals** in the smoke.

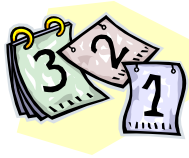


The Nose



Each of These Actions Reduces the Smoke Connections:

Keep the burning out of the Village. Don't allow (or limit) in-town burning.



Keep burn hours at the dump when the public won't come.

Consider burning during low-activity hours when children are not playing outside, such as night.



Burn downwind of the Village always.

Instead of open burning, **Use a good burnbox to quick-burn.** This makes the connection shorter, with less chemicals. If in-town burn barrels *must* be used for now, help their owners to retrofit them to burn well. For good designs, see "burnboxes" and "burn barrels" in the SWAN Index at <http://www.ccthita-swan.org/main/a-z.cfm>



Move the burnbox further away. This will dilute the smoke by the time it reaches people's noses.



Separate out hazardous wastes, Styrofoam, and bulk plastics.

Remember every waste separated is less chemicals to the environment. Plastic wrapping and bags are almost impossible to separate without a lot of effort - so work on reducing their use.



Styrofoam



Make less smoke contact with skin Wear long sleeves and pants if there is a chance you will be exposed to smoke. Wearing protective clothing when out at the dump is always a good idea anyway.



Breaking the Smoke - Eating Connection.



The goal here is to **stop the settlement of ash and smoke** onto drying food, berries, and medicinal plants.

- ❖ Check in town for each place where the barrel burning is - can you **relocate these barrels** somewhere else?
- ❖ **Where are the hanging racks** for foods? Can they be located for less smoke from the dump or town barrels?
- ❖ Think about how ash can settle and how smoke travels. If you **block the wind**, ash will settle there. Are there racks that can be sheltered from smoke and ash with tarps? Will locating them on the other side of the home help?
- ❖ Where is the **dump smell less noticeable** in town? That might be a good place for drying foods.
- ❖ Can the burning be done during **regular hours** when people can cover their racks temporarily?
- ❖ One more important action -washing hands. Children are known to often eat dirt purposely or accidentally - educate parents to **keep little children away** from areas where garbage smoke and ash is likely to settle.



Breaking the Smoke-Water Connection.

- ◆ This is a **smoke-absorbing and ash-settling** problem again.
- ◆ Do people obtain **traditional water** in the path of the smoke?
- ◆ Can they **taste the difference** when the dump burns? If they can, there is a connection that must be broken.
- ◆ The **burnbox must be moved**, or people must change their collection practices.



- ◆ If they do not want to change **where**, can they change **when** they collect the water?
- ◆ If **regular burn hours** are set, they can wait right before the burning? That gives the most time for the smoke chemicals to settle or disperse.

Making Decisions, Changing The Connections

Observing connections is what Native peoples have done successfully for thousands of years.

**Elders are expert
environmental observers.**

By observing exactly where the smoke connections are between wastes and people and the river, communities can protect themselves. Communities can break or weaken many of these connections- by knowing and deciding.



To read about waste connections that are not burning-related, and must be broken to protect health, go to <http://www.ccthita-swan.org/main/a-z.cfm> and look up "Health Risks", or:

- ◆ Protecting communities from open dumps (a public health summary and tutorial presentation)
- ◆ Protecting communities through PASTE (a 1 page handout)
- ◆ Household Hazardous Wastes
- ◆ Site Closure Guide - Chapter 3 and Appendix B
- ◆ Making your dump safer
- ◆ Health Risk Studies Summary (available March 2005)



Overview of State Regulations for Burning Wastes

Burning solid waste can be an effective way to reduce the volume of waste going into a dump or landfill. For Villages without heavy equipment, it can provide a way of managing the dump so that a clear access is maintained.

You need to know: Under the State Solid Waste regulations, **controlled open burning** of most solid wastes is allowed for Class 3 landfills. It is confusing, but under the State's Air Quality regulations, open burning of anything but paper or untreated wood is illegal!

But the solid waste folks at DEC recognize that small Villages may not be able to afford an incinerator. And they know that controlled waste burning can sometimes be the best management method for the situation in our Villages. So they are working out how to address this issue. They want to make sure their regulations still protect community health and environment. On the other hand, they want the regulations practical enough so that if we want to meet them, we can.

You have to make the decision that is right for your community. If you decide to burn your wastes, **be sure to use controlled burning**. For the State, this means:

- ◆ Burning in a burnbox or in a shallow ground depression away from any active areas of the dump;
- ◆ The smoke should not be black;
- ◆ And uncontained waste burning should be watched the whole time.

Whether you want to meet DEC regulations or not, using their burn policies as guidelines can help protect your community. Check out DEC's helpful publication *Burning Garbage in Rural Alaska* for further information about burning wastes. It contains operating and design tips, and can be found at: <http://www.state.ak.us/local/akpages/ENV.CONSERV/eh/docs/sw/Burning%20Garbage%20Factsheet.pdf>

Contact: **Ed Emswiler, ADEC Solid Waste at 465-5353** to request a hard copy of the document.

Also check out our







Burning Tips

on the next page for simple but useful burning advice!


















Wastes that should not be burned*

Wastes that give off black smoke when burned, such as:

-  Asphalt
-  Tires
-  Large quantities of plastic
-  Tars
-  Oily wastes
-  Spill absorbents and contaminated soils that are classified as hazardous waste

Other items that should not be burned include (but are not limited to):

-  Batteries
-  Fertilizers
-  Pesticides
-  Propane Cylinders
-  Paints and Glues (except those applied and dried on solid wastes)
-  Solvents (except those that are water and soap/detergent solutions)
-  Household cleaners
-  Linoleum flooring
-  Insulated wire
-  Plastic (PVC) piping
-  Urethane or other plastic foam insulation
-  Aerosol cans
-  Creosote-treated wood
-  Lamps and light fixtures
-  Asbestos-containing materials

*From DEC's website:

<http://www.state.ak.us/local/akpages/ENV.CONSERV/eh/docs/sw/Openburn-bmp.doc>



Burning Tips

If your dump catches on fire.

Note: There have been a few Villages that have closed or cleaned up their dumps by setting them on fire. This is a dangerous practice, and we don't recommend it. Here are some tips that will make this action less dangerous, and will help protect your Village also if your dump catches fire by accident.

(1) Burn on days when the wind is blowing at moderate speed **away from the community**.

(2) Don't let residents go to the dump during the smoky period.

(3) Don't start cleanup activities until **several days after the burn**, to avoid people getting hurt from flare-ups.



(4) Be prepared to pass out **face masks** to residents if the smoke starts blowing to the village. If the fire can't be put out, surgical masks from the **clinic** offer at least some protection. Elders and people with respiratory conditions should stay indoors.



(5) Tell residents who rely on traditional water sources located in the smoke area to fill up before the burn, and not to go back for about a week after.

(6) Staff the dump during the burn to ensure no one goes there, and to ensure the fire does not spread. Protect this worker with a high quality **face mask fitted with filter cartridges**. For info on buying face masks and safety gear, See our safety gear document.



(7) If you have vegetated area around the main dump area, you need to protect it. **Plants** there help **filter** out contaminants and prevent erosion. Try berming or wetting the area if possible.

(8) Wear protective gear and sturdy boots. Look for and **remove all hazardous wastes** that you see before burning - especially batteries - the likelihood of lead contamination from batteries will increase if left on the ground and burned.

(9) If you have access to water hoses, do not flush the area with water after the burn, runoff will be heavily contaminated. **Light wetting** to settle ash is useful, if possible. If not flooded out, many contaminants, such as a large portion of heavy metals, will eventually bind to soil, and stay out of the water.

(10) Take care that you do not endanger nesting waterfowl in the area. If a stream nearby is important for spawning, take extra care to avoid creating any erosion or runoff.

(11) If you are considering lighting your dump on-fire, it would be good to discuss the risks with your friendly technical expert. If you don't know someone you feel comfortable asking, contact: **Or call us! We can find you an expert to ask or we can ask for you. We don't need to tell them your name or the name of your Village...**



Burnboxes

To read all about using a burnbox, see our burnbox document.



Photo source: Tok Welding

Incinerators



To read all about using an incinerator, see our incinerator document.

Burncages



Coming Soon! For now - here is a picture of what they look like.



Other Burning Links

DEC's Open Burning of Solid Waste

<http://www.state.ak.us/local/akpages/ENV.CONSERV/eh/docs/sw/Openburn-bmp.doc>

DEC's Open Burning Regulations [http://www.legis.state.ak.us/cgi-](http://www.legis.state.ak.us/cgi-bin/folioisa.dll/aac/query=%5Bgroup%2B18%2Baac%2B6012E35513A%5D/doc/%7B@1%7D/hits_only?)

[bin/folioisa.dll/aac/query=%5Bgroup%2B18%2Baac%2B6012E35513A%5D/doc/%7B@1%7D/hits_only?](http://www.legis.state.ak.us/cgi-bin/folioisa.dll/aac/query=%5Bgroup%2B18%2Baac%2B6012E35513A%5D/doc/%7B@1%7D/hits_only?)

EPA's "Backyard Burning" (this information applies to open burning, burnboxes, burn barrels)

<http://www.epa.gov/epaoswer/non-hw/muncpl/backyard/index.htm>

