

## **PRACTICING PERSONAL POLLUTION PREVENTION: THE NEED FOR UNIFORM, FEDERAL REGULATIONS PROHIBITING OPEN BURNING/BURN BARREL USE**

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### **Introduction**

Open burning and the use of backyard burn barrels for solid waste disposal have been identified by the U.S. Environmental Protection Agency (USEPA) as a significant source of dioxin air emissions. For example, "Test results showed that burn barrels could emit up to 17 times more total PCDDs/PCDFs on a per unit mass refuse burned basis than a controlled municipal waste incinerator. This result is consistent with the Minnesota study measurement of 2,3,7,8-TCDD."<sup>1</sup>

It has been well-documented that the primary route of human exposure to dioxin is through food, primarily beef, dairy products and other products containing animal fats. The health effects of dioxin exposure have also been well documented and include very serious impacts including cancer, endometriosis, infertility, immune system suppression, altered glucose tolerance and many others.

USEPA has claimed that levels of dioxin emissions to the environment have been decreasing in recent years. The agency attributes this alleged decline to "Maximum Achievable Control Technology" (MACT) regulations that it has enacted for a number of industrial sectors, and that burn barrels/open burning remains as a significant contributor to known sources of dioxin air emissions.

*The decrease in estimated emissions of dioxin-like compounds between 1987 and 1995 was due primarily to reductions in emissions from municipal and medical waste incinerators. For both categories these emission reductions have occurred from a combination of improved combustion and emission controls and from the closing of a number of facilities.*<sup>2</sup>

Indeed, numerous municipal solid waste and medical waste incinerators closed because of community opposition and concerns about the public health impacts of dioxin and other pollutants emitted from incinerators and the role of chlorinated products in that pollution. That same level of organized opposition is beginning to turn its attention to burn barrels.

We will focus on the current situation in Minnesota and compare it to regulations and "messages" conveyed to the public in some other key food-producing states. The ways in which information about burn barrels is conveyed to the public are as important as the facts themselves. The language, format, and method of distribution all affect the message.

### **Methods and materials**

To assess the regulatory climate in Minnesota, we used publicly available information provided by a number of state and local government agencies (the Western Lake Superior Sanitary District; the Minnesota Department of Health; the Minnesota Office of Environmental Assistance; and the Minnesota Pollution Control Agency). In order not only to quickly obtain information on what various states are doing to regulate burn barrels and to educate the public, but also to simulate the

way an average concerned resident might go about obtaining information on burn barrels in his or her state, we used an Internet meta-search engine ([www.dogpile.com](http://www.dogpile.com)). We also used the USEPA web site, [www.epa.gov](http://www.epa.gov)

### Results and discussion

Open burning of solid waste or in burn barrels is illegal in Minnesota for all residents, with some exceptions for farmers in counties where service options are minimal. The practice has also been identified as a major source of dioxin pollution and a leading cause of forest fires. Yet those facts do not deter thousands of Minnesotans from engaging in this practice that poses serious risks to human health and the environment. Minnesota residents have proven to be quite stubborn when it comes to backyard burning. A survey by the Western Lake Superior Sanitary District in Duluth found some very strong opinions on the subject.

Of those people who indicated they currently burn, 35% expressed strong resentment to stopping the practice and indicating there was nothing that would cause them to stop. Resentment was particularly strong on the Minnesota side of the border where 57% of the people interviewed indicated there was nothing that could be done to cause them to stop burning. There appears to be an attitude of disbelief that burning presents a problem – if it's something we've always done, what's the problem?<sup>3</sup>

The Internet search revealed that while most states seem to have at least some regulation on open burning or use of burn barrels and at least some educational material available, the laxity or strictness of the regulation and the education/accessibility level of the information vary widely. With such disparities in regulation, the Minnesota Pollution Control Agency has been reluctant to advocate strongly for changes in state statutes.

State	Burn barrels banned?	Does state produce large quantities of food at risk for dioxin contamination?	Type of educational materials available online from state government or state university
Washington	Yes, 2000	Yes (beef cattle, dairy products, hogs, poultry <sup>4</sup> )	"Burn Barrels: A Burning Health Problem" non-technical factsheet <sup>5</sup>
Wisconsin	No (permit required)	Yes (beef cattle, dairy products, hogs, poultry <sup>6</sup> )	"Debris burning and burn barrels" <sup>7</sup>
South Dakota	No (restrictions apply; local ordinances may ban)	Yes (beef cattle, dairy products, hogs, poultry <sup>8</sup> )	"Reducing the Risk of Groundwater Contamination by Improving Farmstead Hazardous Waste Management" Extension Service factsheet <sup>9</sup>
Minnesota	<i>Yes, but w/ exemption for farmers in counties where collection service is minimal</i>	Yes (beef cattle, dairy products, hogs, poultry <sup>10</sup> )	"Safe Solutions to Toxic Problems" factsheet <sup>11</sup> (available from WLSSD); "Don't Burn Your Garbage" web page <sup>12</sup>

Even within the state of Minnesota, there are major differences. The Western Lake Superior Sanitary District has taken a strong, proactive approach that tells residents about how dioxin and other pollutants are formed in burn barrels and specifically tells them to avoid burning products that contain chlorine (namely, polyvinyl chloride plastic and chlorine-bleached paper). [cite] They have developed radio and television public service announcements (PSAs) and simple brochures. Meanwhile, the Minnesota Pollution Control Agency – the agency charged with enforcing the prohibition of open burning except in certain remote areas – has no readily available public information or educational materials. The Minnesota Office of Environmental Assistance just added its "Don't Burn Your Garbage" page to its web site in June 2003. The page contains numerous resources, including newspaper ads. However, the burn barrel page must be sought; there is no button on the home page to promote the information.

Washington State has outlawed burn barrels. The state's Department of Ecology has created a simple, straightforward factsheet on one double-sided page that uses language that is easy to understand. The factsheet focuses on the health impacts of open burning and emphasizes that it is illegal. Washington state also used radio public service announcements (PSAs) to communicate messages about alternatives to burning to residents of eastern Washington.

Wisconsin, on the other hand, allows burn barrels, with a permit. The state Department of Natural Resources (DNR) sends a mixed message when it tells residents that they cannot burn garbage but also say "CAUTION: Only **DRY paper and wood** products can be burned in a barrel.[emphasis in original document]"<sup>13</sup> Inclusion of information on constructing, complete with a diagram, would also imply endorsement or validation of burn barrel usage. DNR information also states "Burning permits are typically written for evening hours when there is less likelihood of your debris fire escaping control." They don't explain why that would be the case, but one could infer that burning at night, and therefore, in the dark would make the act (and therefore, compliance) less visible to one's neighbors. There is the implication that backyard burning can be done right.

South Dakota has yet another approach, folding information on open burning into the middle of a multi-page booklet on farm safety, which minimizes the importance of the potential impacts to the farmer and his/her health and livelihood.

When putting together its *Sources Inventory*, USEPA used data aggregated from surveys of individual households when figuring emissions for residential combustion of wood or coal.<sup>14</sup> This begins to establish a precedent for regulating burn barrels as an industrial source of dioxin. Moreover, municipal solid waste incinerators, medical waste incinerators and other combustors are regulated as an industrial sector, even though each is at least somewhat unique in its design, construction, operating conditions and feedstock. This certainly holds true for burn barrels.

## Conclusions

We recommend that USEPA regulate burn barrels as an industrial source of dioxin emissions. We also recommend that, as it has done with other industrial sources of dioxin emissions, USEPA should work *with* rural residents to create educational materials and to identify pollution prevention methods to assist with compliance. After all, the agency freely admits that

Comparatively large quantities of dioxin are produced by burning chlorine-containing plastics and paper. The dioxin accumulates in the soil in areas surrounding burn barrels. A recent study found that a family of four burning trash in a barrel in their backyard - still a common practice in many rural areas - can put as much or more dioxin and furan into the air as a well-controlled municipal waste incinerator serving tens of thousands of households.<sup>15</sup>

USEPA also acknowledges that dioxin doesn't stay in one place, so the emissions can and do affect other people in other states – even other countries. We think that the best way to stop the use of burn barrels is to create federal regulations, thus eliminating the conflicting messages among the states. We believe that the way to get more data and to address the incidence of burn barrel usage is to involve the people actually doing the burning and give them the "tools" they need in order to stop. This means teaching consumers about how to identify chlorine-containing items in their trash and either helping to identify alternative products or establishing alternative means to dispose of them.

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## References

- <sup>1</sup> Control Technology Center, United States Environmental Protection Agency; *Evaluation of Emissions from the Open Burning of Household Waste in Barrels* Vol. 1 Technical Report, (1997). EPA-600/R-97-134a
- <sup>2</sup> Exposure Analysis and Risk Characterization Group, National Center for Environmental Assessment, Office of Research and Development, U.S. Environmental Protection Agency; *The Inventory of Sources of Dioxin in the United States*, (1998) EPA/600/P-98/002Aa, 2-8 to 2-9
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- <sup>4</sup> Washington Agricultural Statistics Service, *Washington Agri-Facts April 24, 2003*, <http://www.nass.usda.gov/wa/agri2apr.pdf>
- <sup>5</sup> Washington State Department of Ecology; "Burn Barrels: A Burning Health Problem," (2002; rev. 04/03)
- <sup>6</sup> Washington Agricultural Statistics Service
- <sup>7</sup> Wisconsin Department of Natural Resources. "Debris burning and burn barrels," <http://www.dnr.state.wi.us/org/land/forestry/fire/dbbb.htm>
- <sup>8</sup> Washington Agricultural Statistics Service
- <sup>9</sup> Andrews, E.; "Reducing the Risk of Groundwater Contamination by Improving Farmstead Hazardous Waste Management," Cooperative Extension Service (1993)
- <sup>10</sup> Washington Agricultural Statistics Service
- <sup>11</sup> Western Lake Superior Sanitary District web page, *Safe Solutions to Toxic Problems*, <http://www.wlssd.duluth.mn.us/safe.htm>
- <sup>12</sup> Minnesota Office of Environmental Assistance web page, "Don't Burn Your Garbage," <http://www.moea.state.mn.us/reduce/burnbarrel.cfm>
- <sup>13</sup> Wisconsin Department of Natural Resources
- <sup>14</sup> USEPA, 4.2.1, 4.3.1, 4.4.2
- <sup>15</sup> Lemieux, P., as cited in *Regulatory History of Air Toxics in Minnesota Appendix K Current Efforts – Stationary Sources*. Minnesota Pollution Control Agency (2001), K-7