

**STATE OF NEW MEXICO  
ENVIRONMENTAL IMPROVEMENT BOARD**

**NMED Exhibit 3**

**PETITION FOR HEARING ON PROPOSED AMENDMENTS  
TO 20.2.60 NMAC *OPEN BURNING***

**EIB 03-08E**

**DIRECT TESTIMONY OF BRAD MUSICK**

**Introduction**

Open burning refers to any burning which is conducted out of doors, and which is not contained in an incinerator or other device capable of controlling combustion or emissions of the combustion products to the atmosphere. This covers a wide range of burning activities, including everything from backyard burn barrels and leaf piles to prescribed burning of National Forests by federal land managers.

Since 1970, the New Mexico Environment Department (NMED) has administered and enforced a state regulation (20.2.60 NMAC) intended to control air pollution caused by open burning. This rule has not been substantively changed since 1971.

Implementation of the current rule has been highly problematic and sometimes contentious. NMED receives more public complaints about open burning than for any other air pollutant source we regulate. Some recent enforcement actions and disputes over fire safety issues have been highly contentious. Administering this rule consumes a considerable portion of NMED's taxpayer-funded resources. Burdens imposed on the public may, in some cases, be of little or no benefit.

Much has changed in thirty years since this regulation was first adopted. There are now new systems for environmentally safe solid waste disposal, new scientific knowledge about air pollutant emissions from burning, heightened concern for the threat of wildfires and new approaches to dealing with this threat, new state responsibilities for environmental protection, and rapid population growth in some parts of the state. The Department thinks that a new regulation and new administrative measures will enable us to address open burning problems more effectively and more efficiently, and will better serve New Mexico citizens.

**State and Federal Authority**

The state's legal authority to regulate open burning is established in the New Mexico Air Quality Control Act. Under that Act, the Environmental Improvement Board is responsible for adopting regulations for abatement of air pollution statewide, except in Bernalillo County and tribal lands. The Air Quality Control Act also states that the NMED is responsible for developing air pollution control plans and for enforcing the regulations.

There is no federal law or regulation specifically requiring that states have an open burning regulation, or specifying what must be included in a state open burning regulation. However, this regulation has always been part of New Mexico's State Implementation Plan, which consists of the regulations and other measures taken by New Mexico to ensure that federal air quality standards are met. Virtually every state has some sort of open burning regulation, which in many cases (if not all) is part of that state's State Implementation Plan.

Because this regulation is part of the New Mexico's State Implementation Plan, any changes to the rule are subject to federal review and approval. To obtain this approval, the state must successfully make the case that the changes will not jeopardize our ability to meet the federal air quality standards. We believe that we can obtain federal approval for the proposed new rule.

### **Current Open Burning Regulation**

Because we are proposing to repeal the current regulation and replace it, a brief summary of the current regulation as well as a discussion of the problems we have encountered will be helpful. The current regulation sets up three regulatory categories for allowable open burning, with each category having a different degree of restriction, and with different types of burning included in each regulatory category. The three regulatory categories are as follows, where section numbers refer to sections of the current rule (see NMED Exhibit 4):

#### 1) Allowed without restrictions (Sect. 109).

This category includes very minor sources such as campfires and ceremonial fires, fireplaces, fires for noncommercial cooking of food, and small warming fires at construction sites. Also included are natural gas flares and burning of explosives when necessary for safety reasons.

#### 2) Allowed subject to conditions specified in the rule (Sects. 110 & 111).

This includes burning of refuse, disposal of dried tumbleweeds, and burning for agricultural management directly related to the growing or harvesting of crops (excluding timber). Refuse burning is only allowed in communities which have a population of less than 3,000 people and which do not have a public refuse collection service or the economic means of establishing one. The population threshold is linked to Solid Waste rules that require incorporated municipalities with greater than 3,000 population to provide refuse collection service (20.9.1.106 NMAC). Burning under Section 110 is not allowed for salvage operations or to any person to whom a collection service is available.

Section 112 specifies the conditions for burning under Sections 110 and 111. Most of the conditions are intended to minimize the amount of heavy smoke or its impact on people. For example, the requirement that burning take place between 10 AM and 4 PM is intended to prevent trapping of smoke near the ground by atmospheric inversions which commonly occur at night. This time-of-day requirement does not apply to agricultural burning.

#### 3) Allowed if a permit is obtained (Sect. 113).

This section is intended for all other types of burning. The rule lists a number of possible purposes. Currently, most open burning permits are issued for weed abatement, forestry management, and control of vegetation in irrigation ditches.

Applicants for permits are required to provide the information specified in Section 115. Information required includes simple information like location, date, and quantity and type of material to be burned. In addition, the applicant must give reasons why the burning is necessary, and reasons why alternatives to burning are not feasible.

Section 113 gives NMED broad authority to specify conditions for any open burning permit. In contrast to most other permits issued by the Department, no fee is required for open burn permits.

Section 115 gives the grounds on which NMED shall deny a permit. These are stated in very general language.

Although administrative and enforcement procedures are not part of the current rule, a brief description of these procedures may be helpful in understanding the issues concerning the current and proposed rule. Except for prescribed burning (described below), permitting and enforcement have until recently been administered primarily by the Field Operations Division (FOD) of NMED. This Division has 4 District Offices and 18 other Field Offices in cities and towns scattered around the state. Permits are issued at each Field Office. Current FOD policy is that permit conditions shall include the conditions from Section 112. Enforcement is mostly complaint-driven. Usually, warnings are given to first-time violators. If further enforcement action is needed, the usual course of action is for NMED Field Office personnel to file a complaint in the magistrate court having jurisdiction. By state law (74-2-14 NMSA), a violation of this regulation is a petty misdemeanor, which means it is punishable by a fine of up to \$500 and a jail sentence of up to 6 months. The Air Quality Bureau may file a complaint in district court for serious violations. Recently, the Air Quality Bureau and Field Operations Division have agreed on an interim policy for joint investigation of complaints and enforcement action for some districts where there are Air Quality Bureau field staff.

Many local governments, especially in the cities and larger towns, have adopted their own local ordinances restricting open burning. Some ordinances are almost identical to the current state regulation, while others are more restrictive. Where there are local ordinances, local government usually exercises primary responsibility for enforcement by mutual agreement.

Permitting and enforcement for prescribed burning by federal land managers has been administered by the NMED's Air Quality Bureau. Federal land managers and NMED have entered into a Memorandum of Understanding which describes in general terms how this permitting process will work. In general, applicants must use standardized emission estimation techniques and smoke dispersion modeling to demonstrate that the proposed burning will not cause an exceedance of federal or state air quality standards. These procedures would be changed by adoption of the proposed new Smoke Management regulation (20.2.65 NMAC) and the proposed replacement of the Open Burning regulation.

## **Issues and Problems under the Current Regulation**

In recent years, NMED has become increasingly aware of problems with the open burning regulation and its implementation. Some of the problems are:

### 1) The current system for regulating open burning is expensive to administer.

Each year, NMED Field Operations Division issues more than 8,000 open burning permits and responds to more than 500 complaints about smoke and odor from open burning. In staff time alone, this costs state government over a quarter of a million dollars each year. No federal grant funds or fees are specifically earmarked for this activity, so the cost is absorbed by the state general fund. The work load of the Field Operations Division has increased significantly and has become increasingly focused on legislatively mandated programs. We need to look for ways to spend less taxpayers' money, while providing the public with both good service and protection of air quality.

### 2) Citizens are burdened by having to get permits for types of burning that are routinely allowed.

Individual citizens have to fill out an application and get a burn permit for many types of burning. Most burn permits are for disposal of yard waste or clearing of weeds or brush. Although the rule allows NMED to consider the particular circumstances of each proposed burn and specify permit conditions on a case-by-case basis, current policy is for all permits to include the conditions in Section 112. Field Offices are not open nights and weekends, so it is often difficult for people who work during regular weekday hours to obtain a permit. Some burners must travel long distances to the nearest Field Office. The permitting process does provide an opportunity for NMED to inform applicants of the rule requirements and the conditions under which they can burn, but we believe this can be accomplished more efficiently by other means.

### 3) Fire safety problems.

Although permit applicants are required by their permit to contact their local fire department before burning, some destructive wildfires have resulted when burning was conducted by permit holders under unsafe conditions. Also, the 10 AM - 4 PM time window in the current regulation can effectively prohibit burning in some areas during most of the spring, when wind speeds are often low enough for safe burning in the early morning, but by 10 AM become too strong to burn safely.

### 4) Criteria for household refuse burning are outdated.

The current rule hasn't been changed in 30 years, so it doesn't take into account recent developments in solid waste management in New Mexico. The rule allows household refuse burning where "collection service" is not available, and testimony given in 1970 and 1971 hearings indicates that this was originally intended to refer to on-premises pickup service. Today, many rural areas and small towns have a system of new transfer stations and convenience centers which provides a clean, environmentally safe way to get rid of household trash. Availability of these new systems of solid waste disposal needs to be taken into account in deciding whether refuse burning is allowed.

### 5) New studies indicate that smoke and fumes from burning household refuse are very dangerous to health, not just a nuisance.

Recent studies show that just a few household burn barrels produce more dioxin than a modern municipal waste incinerator burning the waste from thousands of households. Dioxin is one of the most potent cancer-causing chemicals known. Dioxin accumulates in the food chain and in people's bodies and, in animal experiments, has been shown to interfere with the normal function of sex hormones. Burn barrels emit significant quantities of a number of other toxic or cancer-causing chemicals, such as hydrochloric acid, hydrogen cyanide, benzene, styrene, hexachlorobenzene, and polychlorinated biphenyls (PCBs). Because these health concerns are much greater than previously thought, several states have taken steps in recent years to reduce household burning through tighter restrictions and/or public education campaigns.

#### 6) Green waste disposal and prescribed burning issues.

Disposal of slash, yard waste, and other green waste is a growing problem. Because of heightened concern over wildfires, residents of many communities are thinning out fuel to create defensible space around residences, and large amounts of yard waste and slash are being generated. Modern sanitary landfills are more expensive than the old "town dumps" they have replaced, and local solid waste management authorities do not want this valuable landfill capacity to be consumed by clean vegetative waste which poses no threat to groundwater. The best solution is to recycle this material for some beneficial use, such as firewood, wood chips for landscaping, mulch, or compost. Some communities already have yard waste recycling programs, and more communities will start programs as funds become available for chippers and other needed equipment. However, recycling and reuse programs are not keeping up with the greatly increased generation of yard waste and slash in some communities, and the amount of this material that is requested to be burned is increasing.

Adoption of the proposed new Smoke Management regulation (20.2.65 NMAC) will necessitate changes in the those sections of the Open Burning regulation that address vegetation burning, to ensure continuity and consistency between the two regulations. These issues will be discussed in detail in our presentation of the Department's proposal.

#### 7) Lack of public notice and due process for permit decisions.

In contrast to most of NMED's other significant permitting decisions, open burn permitting has no public notice requirements or due process procedures specified by statute or regulation. Such requirements are needed to provide for public input to permitting decisions and to protect the rights of the permit applicants as well as the public. Issues of public notice and due process might rarely arise in permitting of small burns expected to have minimal impacts. However, when approval or denial of the permit would have significant impacts, the lack of public notice and due process requirements for open burn permits creates serious problems.

#### 8) Rule language is subject to varying interpretations.

Several terms and phrases in the current rule have been difficult to consistently apply because they can be interpreted in different ways. For example,

Section 110: - What is a "community"?

- Does "public refuse collection service" mean curbside collection only? Does it include an independent private waste hauler offering service to individuals?

- How is it determined whether a community has the "economic means of establishing [a public refuse collection service]"?

Section 111: - Does "agricultural management ... directly related to the growing or harvesting of crops" include prescribed burning of rangeland?

Section 112: - Does "petroleum products" include plastics?  
- How dry is "as dry as possible"?  
- How is it determined whether the smoke will "generally be carried away from areas of human habitation"?

Section 115: - What are the objective criteria for determining whether any of the three grounds for permit denial apply to a particular burn?

Problems of interpretation have sometimes resulted in inconsistent application of the rule by the Department, and in disagreements with and among the public. The Department has tried to maintain consistency through policymaking and guidelines, but we have been forced by the generality of the rule language to venture farther towards "rulemaking by policy" than we think is advisable. If carried too far, "rulemaking by policy" can circumvent public review and comment, due process, and other safeguards mandated by legislation.

### **Overview of the Department's Proposal (see NMED Exhibits 1 & 5)**

The following is a discussion of the effects that the Department's proposed rule would have on different aspects of open burning in New Mexico. Although the proposal is for repeal and replacement of the rule, Exhibit 5 shows the effect of the proposal in underline/strikethrough format to illustrate changes from the current rule.

Permits: Open burn permits would no longer be required. Burners would need to know and follow the requirements specified in the rule for the kind of burning they are doing. For special kinds of burning not specifically addressed by the proposed rule, burners may apply for a Construction Permit under 20.2.72 NMAC in order to provide for case-by-case technical analysis, public notice, and due process.

Household refuse: Open burning of household refuse (not including weeds and yard waste) would be prohibited effective June 1, 2004. During a transition period before this prohibition takes effect, burning of household refuse would be allowed if the household was not served by a public curbside collection service, if there was no public dropoff facility within ten miles by road, and if the burning would be at least 300 feet from the nearest neighbor.

Vegetative material (yard waste, weeds, slash, prescribed burning): This rule would apply to small-scale vegetative burning, up to 10 acres per day if the material is not piled, and up to 1,000 cubic feet of pile volume per day if the material is piled. Burning of greater daily amounts would be covered under the new Smoke Management rule (20.2.65 NMAC). Requirements would be uniform regardless of purpose or who is doing the burning. Some important requirements would be:

- 1) 300 feet minimum distance from neighbor;
- 2) burning allowed only from one hour after sunrise to one hour before sunset;
- 3) fire department must be notified prior to burning; and
- 4) if the burn is larger than one acre or 100 cubic feet of piled material, the burner must notify neighbors within 1/4 mile prior to burning.

Unrestricted and emergency burning: Recreational and ceremonial burning, campfires, fireplaces and other types of currently unrestricted burning would remain so, with one exception. Burning of explosive materials that cannot be safely removed would be covered under a new section on emergency burning to ensure that emergency response procedures and other state regulations on emergency disposal are followed.

Fire safety: Restrictions on burning issued by fire safety authorities to prevent wildfires would supersede any permission to burn in the Open Burning regulation. An explicit statement in the rule will clarify this, and correct the mistaken impression that the Open Burning regulation governs fire safety.

Firefighter training: Burning of structures for firefighter training would require prior notification to the Department to ensure that asbestos-containing material has been properly removed.

Hazardous waste: A new section of the rule would allow for open burning of hazardous waste when this is authorized by RCRA rules or permits. The only types of hazardous waste that can be disposed of by open burning under RCRA regulations are explosives and propellants. The RCRA permitting process includes analyses of environmental effects and provisions for public notice and due process that are protective of public health.

### **Elimination of Open Burn Permit System (Repeal of Current Sections 113, 114, and 115)**

NMED weighed the advantages and disadvantages of eliminating the permit system in use under the current rule. We concluded that abolishing the permit system for open burning would not significantly affect air quality but would significantly reduce costs to the agency and burdens to the public. The following discussion briefly summarizes the issues we considered.

Records of labor allocation to open burning were compiled for the second half of calendar year 2001 and extrapolated to annual values. These records indicate that Field Operations Division has been using about 10 full time employees, or 13% of the Division total, on open burning. The Field Operations Division cannot sustain this level of effort for open burning, because it has been assigned many new tasks and its efforts must be focused on legislatively mandated programs for which it is held accountable. The Air Quality Bureau cannot assume this additional workload, given its current resources.

We considered establishing a fee system to fund open burn permitting and enforcement activities, but this approach was rejected. Statutory changes would likely be needed to authorize such fees. The fees would have to average over \$40 per permit to cover current costs, and we did not think this would be fair or acceptable to the general public.

A fee system could be supported only if we could present a compelling argument for the necessity of case-by-case review of all permit applications. We did not think that this argument could be supported for most permits. In most cases, permit issuance does not require extensive technical analysis or site inspection. In the current rule (Section 113), the Department is given no regulatory limits or guidance in determining conditions imposed in open burn permits. This has led to attempts to standardize permit conditions, most recently by a policy to incorporate the conditions for restricted open burning (Section 112), for which no permit is required, into the permits as conditions. In view of the routine issuance and standardized conditions for most permits, we believe that the same results could be achieved by a rule, with a lessening of burdens on both the Department and the citizens.

We considered retaining the open burn permit system for those special cases that would not be addressed by the new rule, but this approach was also rejected. In deciding whether to issue a permit for burning of unusual materials or under unusual circumstances, the AQB would require a detailed evaluation of emissions and air quality impacts. Furthermore, these burning activities would also be the cases for which public notice and due process provisions would be most needed. To provide for technical review, public notice, and due process for these decisions, we propose to rely upon the well-established provisions of the New Source Review permitting process set forth in 20.2.72 NMAC - *Construction Permits*. Section 108 of our proposal would therefore require any open burning that is not expressly allowed, prohibited or otherwise addressed by the Open Burning regulation or the proposed Smoke Management regulation to be conducted only after issuance of a Construction Permit, regardless of the applicability thresholds that would normally apply to permitting under that Part (20.2.72 NMAC).

In comments on our draft proposal, Los Alamos National Laboratory (LANL) asked us to clarify how the status of current open burn permits would be affected by our proposed repeal of the permit sections of this rule and the proposed replacement of Section 108. The Department does not believe that repeal of the open burn permitting sections of 20.2.60 NMAC would invalidate existing open burn permits prior to their stated expiration date. However, we recognize the need for due process and public notification in permitting open burning for special circumstances and ongoing operations, and we think it advisable to provide for such processes within a reasonable period of time. For any open burning now being conducted pursuant to a valid open burning permit, but which is of a type that would require a Construction Permit under our proposed Section 108, we think it would be appropriate for the burner to submit a complete Construction Permit application within 6 months after the new rule becomes effective if they wished to continue the burning activity after that time. We believe this would allow sufficient time for preparation of the Construction Permit application. We would allow burning in compliance with the current open burning permit to continue until the Department's decision on the Construction Permit application.

### **Household Waste Burning (Repeal and Replacement of Section 110)**

As part of the proposed rule, the Department is recommending a complete ban on burning of household refuse. This decision was based on the serious impacts to human health and the environment caused through the use of burn barrels.

Burning of household refuse in backyard barrels, piles, or simple incinerators has long been a common practice in rural areas. Although the Department receives many complaints about trash burning, many rural residents view this practice as either benign or as a positive good. The view that burning trash is benign or beneficial is based on the following assumptions:

- 1) burning makes trash "clean" by eliminating odors and flies;
- 2) smoke from burning trash has insignificant effects on health and the environment;
- 3) smoke from burning trash doesn't affect anyone else if the burner is far from neighbors;
- 4) people who burn their trash instead of putting it into the community solid waste disposal system are acting responsibly, because this reduces the hauling costs and tipping fees the community must pay for disposal of trash at a regional landfill;
- 5) restrictions on trash burning are intended to protect the person doing the burning from their own actions, and are therefore an unwarranted interference by government;
- 6) the only legitimate interest of government in trash burning is fire safety, and if the burner is responsible and takes precautions to avoid the fire escaping and causing a wildfire, there is no need for government regulation of trash burning.

A common question is "We have always burned our trash, so why is this a problem now?" In view of changed circumstances and the availability of new information since the current rule was adopted over thirty years ago, we believe that it is time to revisit these assumptions.

There is mounting evidence that smoke and fumes from burn barrels are not just a nuisance, but can be extremely hazardous to health and the environment. Exhibit 6 summarizes effects on human health of pollutants from backyard trash burning. A recent study shows that the amount of hazardous air pollutants emitted by burn barrels is many times greater than if the same amount of garbage was burned in an industrial-type incinerator with strict air pollution controls. For some pollutants, only two to forty households disposing of their trash by open burning can produce as much pollution as a clean-operating municipal incinerator serving thousands of households. More than 400,000 New Mexicans live in areas where burn barrels are currently allowed. They produce almost 200,000 tons of refuse a year. Even if only half of this amount of refuse is burned in burn barrels, it would be New Mexico's greatest source of dioxin emissions to the air.

Some of the more toxic air pollutants produced by backyard trash burning are toxic at extremely low concentrations, are likely to cause cancer, and are suspected of interfering with immune response and the normal function of hormones. Several of these, including dioxin, persist for years in the environment and in organisms, so they accumulate up the food chain and in our bodies over many years. Therefore, even very small amounts of these extremely toxic, persistent, and bioaccumulative chemicals are a cause for concern. For example, the U.S. E.P.A. health-based drinking water limit for 2,3,7,8-TCDD, the most toxic form of dioxin, is 0.00003 micrograms per liter. To illustrate how low this concentration is, diluting one pound of TCDD down to this low concentration would take 4 trillion gallons of water, which is about 10 times the maximum capacity of Elephant Butte Reservoir. So, even a few pounds of dioxin emissions is enough for us to be concerned about health effects. Because dioxin and other persistent toxins take years to break down, they can be widely dispersed during their lifetime. The main pathway for human exposure is through the food we eat, not through directly breathing the smoke from

the emissions source. Therefore, emissions of dioxin and other persistent pollutants in New Mexico are a potential concern for everyone in the state, not just neighbors who might be directly exposed to the smoke as it comes out of the burn barrel.

President George W. Bush has expressed the need for action to reduce emissions of persistent organic pollutants. Upon signing the Stockholm Convention on Persistent Organic Pollutants (which includes PCBs, dioxins, furans and hexachlorobenzene), President Bush said: "First, concerns over the hazards of PCBs, DDT, and the other toxic chemicals covered by the agreement are based on solid scientific information. These pollutants are linked to developmental defects, cancer, and other grave problems in humans and animals. The risks are great, and the need for action is clear. We must work to eliminate, or at least to severely restrict the release of these toxins without delay." (White House Press Release, April 19, 2001)

The ash residue from burning household waste is potentially hazardous. It can contain hazardous concentrations of heavy metals such as lead, cadmium, mercury, arsenic, chromium, copper and zinc, as well as toxic organic compounds such as PCBs, dioxins and furans. These chemicals come from burning of items commonly found in household waste, such as plastics, some kinds of inked and coated paper products, batteries, thermostats, fluorescent lamps, consumer electronics, light bulb sockets, and plated metal products. They can leach from the ash into surface water and groundwater, or they can enter the body directly through breathing or swallowing ash or ash-contaminated soil, or by eating food grown in ash-contaminated soil. The New Mexico State University Cooperative Extension Service has issued precautions to prevent burn barrel ash from contaminating water wells, gardens, and stock ponds. Reducing household refuse burning will reduce the amount of these hazardous chemicals being spread around New Mexico's environment in the form of ash. Although burn barrel ash may seem "clean" because it doesn't smell or draw flies, it can actually be a potentially toxic waste.

In considering the benefits of reducing pollutant emissions from trash burning, it is important to know whether these emissions contribute significantly to the total from all sources. On a national scale, industrial sources of air pollution have had to meet increasingly strict air pollution control requirements over the last thirty years, while very little has been done to reduce toxic emissions from some very high-emitting sources such as burn barrels. Consequently, backyard burning is now the largest quantified source of dioxin emission in the country. We have estimated how much air pollution is produced by household trash burning in our jurisdiction in New Mexico. For some of the toxic air pollutants, we have compared these emissions with those of major industrial sources in New Mexico, as given in EPA's Toxic Release Inventory database. The results of this study are presented in Exhibit 7. The results indicate that backyard trash burning emissions are much greater than industrial emissions for many toxic pollutants (hydrogen cyanide, benzene, styrene, phenol, phenanthrene, polycyclic aromatic hydrocarbons or PAHs, chlorobenzenes, dichlorobenzenes, trichlorobenzenes, hexachlorobenzene, polychlorinated biphenyls or PCBs, and dioxins and furans), and for some others (hydrochloric acid, naphthalene) are about the same order of magnitude as industrial emissions.

Because of these concerns, at least fourteen states ban backyard burning of domestic wastes, and it is restricted in almost all other states. Most, if not all, states which have changed their open burning regulations in recent years have increased restrictions on household refuse burning.

Rural communities now have clean alternatives to burning for disposal of their trash. More than 20 million dollars in state grant funds have been provided to local communities to help establish new waste disposal facilities. Because curbside pickup is not economical for sparsely populated rural areas, the system relies on residents to take their trash to convenience centers and drop-off bins scattered throughout the area. From these initial collection points, the trash is then taken to sanitary landfills which are sited and designed to prevent groundwater contamination.

Some rural residents continue to burn their trash to avoid the inconvenience of taking it to a drop-off bin or collection facility. While we recognize that there is some inconvenience in having to haul trash, we also note that the necessity to travel some distance to obtain goods and services is accepted as an inherent part of rural life. Most of the material in household refuse was originally brought to the residence by hauling it some distance from town. If drop-off facilities are conveniently located along commonly used travel routes and at destinations where rural residents obtain their goods and services, hauling away their trash can be combined with trips to obtain the goods that end up in the trash.

Some rural residents burn their trash even when a publicly-provided collection facility is readily available in order to reduce their personal cost or the community's cost of waste disposal. If the community solid waste authority takes more trash to the regional landfill, the total cost of increased tipping fees may require an increase in solid waste fees charged to residents. For this reason, some community governments strongly encourage residents to burn their trash to reduce the volume that must be taken to the landfill, and some have even refused to pick up trash that was not burned. We believe that solid waste disposal fee increases resulting from ending trash burning will be modest, on the order of a few dollars per month. For those people for whom even this limited increase is a burden, we think that other solutions are far preferable than allowing the burning of trash. For example, many solid waste authorities have a fee structure that provides a lower rate to people with limited income. Increased state assistance may be needed for communities where this is a problem. Also, households can greatly reduce the amount of waste that needs to be taken to the landfill by recycling and composting. Efforts to find ways of providing clean and affordable solid waste disposal to everyone will not be pursued vigorously as long as backyard burning is available as a cheap alternative.

There may also be concerns that prohibiting open burning will result in more illegal dumping of trash. We do not think that allowing open burning of trash is a good way to discourage illegal dumping. They are both harmful to the environment, and it could even be argued that burning is more harmful to human health. We note that the prohibitions on illegal dumping of trash apply equally to everyone, and we do not see why the same principle should not apply to the equally (or possibly more) harmful practice of open burning.

Because of the concerns regarding health and environmental effects, we are proposing to prohibit household refuse burning throughout our jurisdiction. We are proposing to delay the effective date of this prohibition until June 1st of 2004 to allow householders and communities to work out any necessary changes to their means of trash disposal.

During the period before June 1st, we will undertake a campaign to inform the public of the forthcoming prohibition and the health and environmental hazards of burning trash that led to this action. During this interim period, we propose restrictions (subsection C of section 110 of our proposal) that will be clearer and easier to implement than the current rule. Our past experience with public information campaigns on open burning is that such campaigns can generate many questions and complaints about what is and what is not allowed. We would like to be prepared with clear, unambiguous answers based directly on the content of the rule with a minimum of interpretation. Therefore, our proposed language (subsection C of Section 110) is intended to clarify, for this interim period, what constitutes reasonable availability of proper waste disposal, what materials may not be burned, and what distance from neighbors constitutes a reasonable precaution for protection from adverse effects of exposure to the smoke.

### **Burning of Vegetative Material (Proposed Section 111)**

Proposed new language for this section would cover almost all burning of vegetative material. This would replace the current system under which some of this burning is regulated as "other restricted open burning" (current sections 111 and 112), and many other types of this burning currently require open burn permits (current sections 113, 114, and 115).

Our development of this proposed new section was strongly influenced by development of the Smoke Management regulation (20.2.65 NMAC), which was a process characterized by active involvement of many stakeholders. One decision made in Smoke Management rule development was setting of a minimum daily burn size (in acres and in pile volume) for applicability of that rule. To ensure continuity between the Smoke Management and Open Burning rules, the upper limit of daily burn size for Open Burning was set to avoid overlaps or gaps in applicability. Thus the upper limits of applicability for Open Burning were set at 10 acres per day, or 1,000 cubic feet of pile volume if the material is piled. It is important to note that these are not absolute limits on the amount that can be burned each day, just the upper limits of applicability of this regulation. Burning of larger daily amounts can be done under the Smoke Management regulation. Another consideration for continuity and consistency between these two regulations is that we wanted, insofar as possible, for requirements to increase with the potential impacts of the burning. That is, we did not want to create a situation where requirements were more stringent for smaller or lower-impact burns than for larger burns.

Language is included to clarify how close together piles must be to be summed into the same daily burn total for pile volume, or conversely, how far apart piles must be to count as separate burns with their own individual daily burn thresholds. Burning of widely separated areas or piles should not be viewed as circumvention of the daily thresholds because such separation disperses the sources of smoke, thus enhancing dispersal of the combined smoke emissions.

Calculating pile volume may be difficult for some citizens. We can provide simple, understandable guidance materials for citizens in our public information campaign. Such guidance could be as simple as a drawing of a pile next to a person, for scale.

Smoke Management stakeholders also endorsed the principle of equity among different types of burners (of vegetation), which meant that requirements should be based on emissions and burn

size rather than on who the burner is or the purpose of the vegetation burning. Distinctions based on purpose are difficult to apply because there are often multiple purposes for burning, and purpose is often a matter of interpretation. To consistently apply this principle of equity among burners, this section of the proposed Open Burning regulation applies equally to all small-scale burning of vegetative material, including those prescribed burns and agricultural burns that are small, in addition to small-scale weed and yard waste burning by individual householders.

Requirements for this burning are listed in subsection B of section 111 of the Department's proposal. The following are comments on the requirements, as identified by paragraph numbers in the proposed rule:

(1) The setback distance of 300 feet from neighbors is proposed as a reasonable precaution against adverse impacts of the smoke on neighbors, for burns up to the maximum size covered by this regulation. Our proposal for this distance came out of discussions with Smoke Management stakeholders, and is incorporated in appropriate sections of the proposed Smoke Management rule for continuity in requirements. Texas and Florida also require a 300 foot setback for some kinds of small-scale open burning.

We recognize that some commenters will believe this distance is excessive, and others will view it as insufficient. Any distance which would guarantee absolutely no adverse impacts under any conditions would effectively prohibit vegetation burning over most the state. We note that smoke impacts for a particular burn depend on many variables, especially weather and the condition of the material burned. The perception or experience of adverse impacts also varies among individuals. For some conditions, the 300 foot distance we propose may be insufficient, while for other conditions it may be unduly restrictive. It might be theoretically possible to specify different distances for different sets of weather and fuel conditions, but this would make the rule too complex and cumbersome for citizens to understand and for NMED to apply. The 300 foot setback distance is our best judgment of what constitutes a reasonable precaution.

(2) Restricting this burning to daylight hours (exclusive of the first hour and last hour) is intended to limit burning to favorable times for optimal dispersion of the smoke, and particularly to avoid trapping of smoke under nighttime atmospheric inversions. Expressing the time-of-day limits in relation to sunrise and sunset rather than in terms of fixed clock times allows the burn window to vary appropriately with seasonal changes in day length. The proposed time window would allow burning early enough on many spring days to allow for good dispersal while also allowing the burn to be completed before mid-day when high winds frequently make burning unsafe.

(3) The requirement for the burning to be constantly attended is to ensure that the burner can be held responsible for the burn not exceeding the daily limits and setback requirements of this rule.

(4) Many citizens have the mistaken belief that the primary purpose of this Open Burning regulation is to prevent wildfires. The Department does not have the authority to set requirements for fire safety (prevention of wildfire or escaped fire). Depending on land ownership and location, this is the responsibility of local, state or federal officials having legal authority for this issue. We have tried to clarify this in the regulation through changes in Section

6 regarding the objective of the rule. Additionally, burners would be required to contact the authority in their jurisdiction responsible for implementing wildfire prevention requirements.

(5) For the larger burns covered by this rule, we think it would be appropriate for the burner to notify nearby neighbors so that any who were especially likely to experience adverse effects of smoke could take precautions to limit their exposure.

(6) This paragraph is to ensure that the Open Burning rule is not construed as relieving the burner of the need to comply with applicable Solid Waste requirements. Burning of vegetative material may be subject to requirements in 20.9.1 (Solid Waste Management) if the material is removed from the property where it was generated and burned on other property.

(7) The Air Pollution Episode Contingency Plan for New Mexico is a required element of New Mexico's State Implementation Plan. It defines air pollution episodes in terms of monitored concentrations of criteria pollutants, with thresholds at more than twice the values of federal ambient standards set to protect health. The Air Pollution Episode Contingency Plan calls for the Department to cancel open burning permits if an air pollution episode is declared. Since the proposed rule would eliminate open burning permits, we believe this condition (7) needs to be in the rule to maintain the adequacy of our State Implementation Plan. To our knowledge, an air pollution episode (as defined by the Air Pollution Episode Contingency Plan) has never been declared in New Mexico.

(8) This paragraph allows for the use of fuel or incendiary devices to start the burning of vegetative material. Appropriate use of such material can reduce smoldering and enhance combustion efficiency.

(9) We propose this section to allow for use of an emissions reduction technique. Slash which has been allowed to dry after cutting burns more efficiently and produces less smoke and other pollutants than wet or green slash. Slash from logging or thinning operations can be cut and piled during periods when fire danger is high, and the piles are then capped with a sheet of polyethylene plastic held down by a layer of additional slash on top, with the sides of the pile mostly uncovered so air can circulate. Twenty pounds of plastic sheeting is sufficient to cover about 10,000 pounds of piled slash. The piles are then left to cure for several months, protected from rain and snow. The piles can then be ignited during a period of low fire danger, when the surrounding ground cover is still covered with snow or otherwise at a low risk of igniting. It is often impractical to remove the plastic before igniting the piles. Allowing the interior of the pile to dry before burning results in a hotter fire with more complete combustion and reduced emissions of pollutants, and burning when the surrounding material is snow-covered or damp reduces the risk of wildfire. Reductions in emissions using this technique depend on the pollutant and other variables, but are mostly in the range of 20% to 80% reduction. Therefore this practice is favored by managers of forest land, who need to minimize emissions increases while stepping up their efforts to reduce forest fuel accumulations.

Questions about this provision arise because it is an exception to the general prohibition on burning of plastic. We believe that this strictly limited exemption is justifiable because there is a net reduction in emissions, even when emissions from the plastic are included. Polyethylene

consists of carbon and hydrogen atoms, so the products of complete combustion are carbon dioxide and water vapor. Since it does not contain chlorine, burning it does not produce the chlorinated hydrocarbons such as PCBs or dioxin which are of such great concern when some other types of plastic are burned. Incomplete combustion of polyethylene will produce some toxic air pollutants such as aldehydes, but so will incomplete combustion of wood and slash.

Given that the amount of plastic is very small relative to the amount of slash, we believe that the net effect is a significant reduction in emissions of criteria pollutants and toxic air pollutants. Additional requirements in this paragraph (plastic to be in place at least a month, proof of composition to be produced upon request) will prevent this paragraph from being misused for disposal of plastic without an emissions reduction benefit.

Subsection C of Section 111 of the proposed rule applies only to facilities which are subject to hazardous waste regulation. In cases where hazardous substances have contaminated vegetative materials on the site, permission to burn this material would require a detailed technical analysis. Therefore, the proposed rule would require such burning to be conducted only pursuant to a Construction Permit (20.2.72 NMAC).

#### **Burning for Firefighter Training (Proposed Section 112)**

This section would replace the current requirement that a permit be obtained for this type of burning. The requirements are to ensure compliance with federal regulations on removal of asbestos-containing material. NMED's Air Quality Bureau implements federal regulations for asbestos within the part of New Mexico that is within its jurisdiction.

#### **Burning of Hazardous Waste (Proposed Section 113)**

Explosives and propellants are the only types of hazardous waste allowed by federal and state regulations to be burned in the open. Hazardous waste rules and permits provide for detailed technical analysis of environmental impacts and health risks, including those resulting from emissions to the atmosphere. Also included are requirements for public notice and comment. These existing rules and permit requirements are more stringent and provide for greater protection of public health and the environment than could be provided for under air quality permitting. To avoid duplication, this section clarifies that this type of burning is subject hazardous waste rules and permits rather than air quality rules.

#### **Emergency Burning (Proposed Section 114)**

Under the current rule, emergency burning would require a permit, except for some cases of open burning of explosives materials, which would be unrestricted (current subsection C of Section 109). Proposed Section 114 would eliminate the requirement for a permit and thereby remove an obstacle to rapid emergency response. Standard requirements are included to prevent abuse and ensure that such burning is truly for an emergency which poses an imminent threat to health, safety or the environment.

## **How This Proposal Was Developed**

In 2000, the Department created an ad hoc team to determine problems with open burning and to recommend possible changes. The team consisted of myself and one staff person each from the Enforcement Section of the Air Quality Bureau and from the Field Operations Division. We conducted extensive interviews with staff and managers in Field Offices around the state. We also reviewed open burning regulations of other states.

In 2001 the Department formed a new Technical Team with representation from the Field Operations Division, the Solid Waste Bureau, and the Air Quality Bureau. This team was supervised by a Management Steering Committee consisting of the Directors of the Field Operations and Environmental Protection Divisions, and the Chiefs of the Solid Waste and Air Quality Bureaus. The initial product of this effort was a discussion paper, entitled "Open Burning: Issues and Options for Regulation Changes", which was released for public comment in December 2002 (Exhibit 8). Public comments on the discussion paper, and on open burning issues generally, were posted on the Department's web site, along with our responses (Exhibit 9).

While comments on the discussion paper were being received, the two Air Quality Bureau members of the Technical Team participated in the stakeholder involvement process for the proposed Smoke Management regulation (20.2.65 NMAC). The Technical Team considered the comments received, incorporated decisions made for Smoke Management as they affected the provisions for vegetation burning, and prepared a draft proposal for the Open Burning regulation, which was released for comment in June 2003 (Exhibit 10). Additional public comments on this proposal, along with our responses, were also posted on the Department's web site (Exhibit 11). Additional comments were received by phone, by electronic mail, and in meetings with interested parties. Exhibit 12 is a recently received comment. Several changes to the proposal were made in response to public comments and further internal review, leading to development of the final proposal now presented for the Board's consideration.

## **Conclusion**

Replacing the permit system with a rule will eliminate much bureaucratic paperwork, allow the Department to focus its limited resources on education and enforcement, and provide everyone with consistent requirements. Ending garbage burning will protect the health of all New Mexicans, especially rural residents, and will make our rural areas more desirable places to live and work. We recommend that the Board adopt the proposed replacement of 20.2.60 NMAC.