

ORDINANCE NO. 03-08

AN ORDINANCE OF THE BOROUGH OF MILLERSBURG, COUNTY OF DAUPHIN, COMMONWEALTH OF PENNSYLVANIA, FOR OUTSIDE FUEL BURNING APPLIANCES, ESTABLISHING PERMIT REQUIREMENTS; REGULATING THE OPERATION, INSTALLATION AND MAINTENANCE OF THE APPLIANCES; ESTABLISHING THE PENALTIES FOR VIOLATIONS OF THE ORDINANCE; ESTABLISHING A RIGHT OF ORDINANCE SEVERABILITY AND SETTING FORTH AN ORDINANCE DATE OF EFFECT.

BE IT ENACTED AND ORDAINED BY THE BOROUGH OF MILLERSBURG, COUNTY OF DAUPHIN, PENNSYLVANIA, AND IT IS HEREBY ENACTED AND ORDAINED BY THE AUTHORITY OF THE SAME AS FOLLOWS:

Section 1 – Purpose, Scope and Applicability:

- A. Research has indicated that Outdoor Fuel Burning Appliances [OFBA] cause emission problems that cross property lines. Smoke that stays close to the ground can easily be reached by humans working or playing outdoors. It penetrates neighboring buildings and also can cause problems with smoke visibility. An OFBA that supplies heat and/or hot water to residences are of special concern when compared to other outdoor burning and other transient sources of smoke. OFBA's operate eight to nine months of the year, and in some cases throughout the entire year. The fine particulates in smoke have been recognized as a particular health concern because they lodge deep in the lungs and cannot be easily expelled. Health studies have shown a significant association between exposure to fine particulates and cardiovascular problems such as angina, irritated eyes and lungs, and exposure can trigger headaches and worsen respiratory diseases such as asthma, emphysema and bronchitis and in the worst case can cause premature mortality. The most recent research has demonstrated that the health impacts of fine particulates are worse than previously realized, prompting the U.S. EPA, in September, 2006, to lower the National Ambient Air Quality Standard [NAAQS] for 2.5-micron particulates to a maximum 24-hour average of 35 micrograms per cubic meter.¹ It is the intent of the Borough to regulate the installation, maintenance and operation of OFBA's within the Borough so this air quality standard can be reasonably met.
- B. The Pennsylvania Code, Title 25, Chapter 121, also prohibits air pollution. This Ordinance is specifically intended to prohibit any person within the Borough from operating any OFBA in a manner that the emissions are visible, malodorous or where air contaminants are detectible, outside the property of the person owning the appliance.

- C. In accordance with **The Borough Code Act Of February 1, 1966 As Amended**, residences, commercial and industrial establishments situated within the Borough are entitled to clean air and environmental circumstances free of unreasonable dust, obnoxious odors, noxious fumes and smells, as well as an environment free of stored debris and storage of combustible fuels in adjacent or exposed exterior areas within a densely populated area.
- D. This Ordinance shall provide regulations for the installation, replacement and operation of any exterior fuel burning appliance whose primary purpose is to convert combustible fuel into a heat or energy source for interior spaces.
- E. This Ordinance does not apply to:
1. Grilling or cooking using charcoal, wood, propane or natural gas in cooking or grilling appliances.
 2. Burning in a stove, furnace, fireplace or other heating device that is located within a building or structure used for human or animal habitation.
 3. The use of propane, acetylene, natural gas, fuel oil, gasoline, kerosene, etc. used in a device that is intended for temporary use during construction or maintenance activities.
 4. This Ordinance does not apply to patio wood burning units.

Section 2 - Definitions:

Air Pollution – The presence in the outdoor atmosphere of any form of contaminant, including, but not limited to, the discharging from stacks, chimneys, openings, buildings, structures, open fires, vehicles, processes or any other source of any smoke, soot, fly ash, dust, cinders, dirt, noxious or obnoxious acids, fumes, oxides, gases, vapors, odors, toxic, hazardous or radioactive substances, waste or other matter in a place, manner or concentration inimical or which may be inimical to public health, safety or welfare or which is or may be injurious to human, plant or animal life or to property or which unreasonably interferes with the comfortable enjoyment of life or property.ⁱⁱ

Borough – Millersburg Borough

Chimney – Any vertical masonry structure enclosing a flue or flues that carry off smoke or exhaust gases from a furnace, especially that part of such structure extending above a roof.

Clean Wood – Wood without paint, or other coating and wood that has not been treated with, including but not limited to, cooper chromium arsenate, creosote pentachlorophenol or other wood life extending preservative.

Downwind – The prevailing winds for central Pennsylvania are westerly, therefore, downwind for the Borough of Millersburg is defined as lying eastward from a reference point, such as the center of a circular furnace stack.

Dwelling – A residence, whether or not currently occupied. Neighboring dwellings are dwellings, other than the OFBA owner's dwelling, which are located in the vicinity of the OFBA and which include, but are not limited to dwellings on adjacent properties.

EPA-Certified – A furnace or appliance for which the manufacturer has supplied a certificate of compliance, or other proof of compliance, with EPA promulgated emission standards for that particular furnace or appliance type and model. The certification must be in accordance with EPA approved procedures and test methods and be conducted by an EPA approved laboratory.

Existing Appliance – An appliance that is fully installed and operational at the intended location of use as of the enactment date of this Ordinance. The same meaning for "existing" is retained if applied to the OFBA, etc.

Firewood – Trunks and branches of trees and bushes, not including leaves, needles and vines or brush less than three inches in diameter.

Wood Burning Appliance – A wood burning furnace, heater, stove or other appliance primarily intended for providing continuous or near continuous heat and hot water to a dwelling or other building.

New Appliance – An appliance that is neither fully installed nor operational at the intended location of use as of the enactment date of this Ordinance.

NAAQS – National Ambient Air Quality Standards as set forth with the Code of Federal Regulations [40 CFR Part 50] by the EPA, which designates pollutants considered harmful to public health and the environment.

Obstructed – A solid structure, which may be a dwelling or building, which blocks the wind from blowing directly upon a particular dwelling or building. Trees and bushes do not constitute an obstruction. In addition, partial obstructions, such as fences or portions of buildings, shall also be deemed insufficient to be considered an obstruction.

Opacity – The degree to which emissions, other than water, reduce the transmission of light and obscure the view of an object in the background.

Outside Fuel Burning Appliance [OFBA] – An outside fuel burning appliance is located outside living space ordinarily used for human or animal habitation, and is designed to provide heat and/or domestic hot water to spaces or appliances within the residence or to a separate

structure. Most commonly the appliance is located as a standalone unit, in a shed or other outbuilding and the heat is transferred by water through a system of insulated piping or insulated duct work to the residence or other structure.

Fine Particulates – Particles less than 2.5 microns in size present in the emissions from furnaces.

Patio Fuel Burning Unit – A chimnea, patio warmer or other portable temporary fuel burning device used for outdoor recreation and/or heating.

Prohibited Fuels – The owner shall only burn fuels in the appliance for which the appliance was designed to burn and which are approved by the manufacturer. Although no list of non-burnable materials can be all inclusive, no person shall burn any of the following fuels or materials in any appliance under any circumstances:

- A. Any wood that does not meet the definition of “clean wood”
- B. Garbage
- C. Tires and other tire products
- D. Waste petroleum products
- E. Paint and paint thinners
- F. Construction and demolition debris
- G. Plywood
- H. Manure
- I. Asphalt products
- J. Animal carcasses or other animal by-products
- K. Plastic, rubber products, wire and cable insulation
- L. Household trash, newspapers
- M. Leaves or wet and soggy wood, grass clippings and other vegetative matter
- N. Recyclable material
- O. Batteries
- P. Fiberglass or asbestos products
- Q. Bio-hazardous waste, bandages, wound dressings, syringes, etc.
- R. Human waste
- S. Materials that create a foul or offensive odor or that cause smoke emissions that are reasonably offensive to occupants of the surrounding properties

Scrubber or Filter System – A diverse group of air pollution control devices that can be used to remove particulates and/or gases from exhaust gas streams.

Stack – A flue system for an outside multi-fuel burning stove that comprises a stainless steel flue pipe extending from a lower anchor plate at the wood burning stove upwardly and at the top of the flue pipe a control assemblage, including an upper rain cover. The size and construction of the stack shall be in accordance with the manufacturer’s specifications.

Substantiated Complaint – A written complaint from a resident of the Borough, which is supported by at least two [2] additional, written complaints from other Borough residents, not

members of the same household, and which relate to the same occurrence within a twenty-four [24] hour period. An "occurrence" shall be emissions that affect the same or different properties. All written complaints must be dated and signed to be the basis of a substantiated complaint. Upon establishment of a substantiated complaint the property owner shall be subject to the requirements of **Section 6**. If the Outside Fuel Burning Appliance is an existing OFBA, then upon receipt of a verified complaint the property owner shall be subject to **Section 7**.

Verified Complaint – A verbal or written complaint from a Borough resident which is mailed, tendered or delivered to a representative of the Borough, which is subsequently verified to be valid through observation by a Borough or other governmental representative within twenty-four [24] hours of receipt of the complaint. In the event of a verbal complaint, the resident will be requested to place the complaint in writing and submit it to a Borough representative. All written complaints must be dated and signed to be the basis of a verified complaint. Upon establishment of a verified complaint the property owner where the Outside Fuel Burning Appliance (OFBA) is located shall be subject to **Sections 6 and 7**.

Section 3 – Regulations for New Outdoor Fuel Burning Appliances:

- A. All new OFBA's shall be installed not less than two hundred [200] feet from the nearest dwelling not served by the appliance.
- B. The stack shall be three [3] feet higher than the roof peak of any residence within five hundred [500] feet of the furnace.
- C. The stack shall not exceed fifty-five [55] feet in height.
- D. No OFBA may be installed or operated in a structure that is used for human or animal habitation, unless designed and manufactured specifically for that type of use.
- E. A "scrubber" or "filter" system must be attached to the appliance.
- F. A fan or blower system must be attached to the appliance to assist with the efficient burning of the fuel.
- G. OFBA's shall not be installed within twenty-five [25] feet of any structure without specific permission from the Borough Code Enforcement Officer [CEO] or other authorized Borough representative.
- H. All OFBA's are required to meet emission standards currently required by the Environmental Protection Agency [EPA]. Emission standards currently required by the EPA are hereby adopted by reference together with any amendments or modifications made to them in the future.

- I. All OFBA's shall be installed, operated and maintained in strict conformance with the manufacturer's specifications and the regulations promulgated herein. In the event of a conflict, the regulations promulgated herein shall apply unless the manufacturer's instructions are stricter, in which case the manufacturer's instructions shall apply.
- J. No homemade OFBA's will be allowed to operate in the Borough.
- K. Only clean wood, coal, heating oil, natural gas, propane, kerosene or other fuel specifically permitted by the manufacturer in writing may be burned in an OFBA. The burning in an OFBA of processed wood products and non-wood products, household or other garbage, recyclable materials, rubber tires, railroad ties, leaves, laminated wood, wet or soggy wood, painted or treated wood and any item not specifically and in writing permitted by the manufacturer is prohibited.
- L. No OFBA shall be operated until inspected and approved for use by an authorized Millersburg Fire Company representative and an authorized representative of the Borough Council.
- M. No person shall install or operate a new Outside Fuel Burning Appliance in the Borough without first obtaining a permit. [The permit fee is \$100.00].
- N. Ashes or waste cannot be accumulated in a large area on the property. Any accumulation of ashes or waste must be disposed of weekly with your trash.
- O. All OFBA's may only be utilized for the sole purpose of furnishing heat and hot water to a dwelling during the period of October 1 through April 30; and only if the OFBA meets the requirements of this Ordinance and any other applicable Borough ordinances.
- P. No OFBA may be operated on days when the EPA has declared an "air quality action day" applicable to the Borough or Dauphin County.
- Q. All storage of materials to be burned in the OFBA, shall be neatly stacked and/or stored under cover and free from insects [termites, ants, mosquitoes, etc.], or any type of disease carrying rodents or vectors.
- R. The stack or chimney shall be reinforced or guyed so as not to pose a threat to the public or surrounding structures during high winds.
- S. All reinforcement or guying of the stack must be located on the property the OFBA serves.

Section 4 – Regulations for Existing Outdoor Fuel Burning Appliances:

- A. All OFBA's are required to meet emission standards currently required by the Environmental Protection Agency [EPA]. Emission standards currently required by the EPA are hereby adopted by reference together with any amendments or modifications made to them in the future.
- B. All OFBA's shall be operated and maintained in strict conformance with the manufacturer's instructions and the regulations promulgated herein. In the event of a conflict, the regulations promulgated herein shall apply unless the manufacturer's instructions are stricter, in which case the manufacturer's instructions shall apply.
- C. All OFBA's in existence at the effective date of this Ordinance shall have or must erect a stack or chimney which has a minimum termination height three [3] feet higher than the roof peak of any residence within five hundred [500] feet of the furnace but no more than fifty-five [55] feet above the natural ground level upon which the appliance is located.
- D. All OFBA's in existence at the effective date of this Ordinance shall have or must have installed a "scrubber" or "filter" type system attached to the appliance.
- E. All OFBA's in existence at the effective date of this Ordinance shall have or must install a fan or blower to increase the efficiency of the appliance.
- F. Only clean wood, coal, heating oil, natural gas, propane, kerosene or other fuel specifically permitted by the manufacturer in writing may be burned in an OFBA. The burning in an OFBA of processed wood products and non-wood products, household or other garbage, recyclable materials, rubber tires, railroad ties, leaves, laminated wood, wet or soggy wood, painted or treated wood and any item not specifically and in writing permitted by the manufacturer is prohibited.
- G. All OFBA's may only be utilized for the sole purpose of furnishing heat and hot water to a dwelling during the period of October 1 through April 30; and only if the OFBA meets the requirements of this Ordinance and any other applicable Borough ordinances.
- H. No OFBA may be operated on days when the EPA has declared an "air quality action day" applicable to the Borough or Dauphin County.
- I. If an OFBA is more than fifty [50%] percent torn down, physically deteriorated or decayed, the appliance must be removed and/or replaced with a new unit and the new unit must comply with all of the regulations listed in **Section 3** of this Ordinance.

- J. Ashes or waste cannot be accumulated in a large area on the property. Any accumulation of ashes or waste must be disposed of weekly with your trash.
- K. All storage of materials to be burned in the OFBA shall be neatly stacked and/or stored under cover and free from insects [termites, ants, mosquitoes, etc.] or any type of disease carrying rodents or vectors.
- L. An authorized representative of the Millersburg Fire Company and the Borough Council shall inspect all OFBA's in existence at the effective date of this Ordinance for compliance with this Ordinance.

Section 5 – Permits and Appeals

- A. No person shall install, replace or operate a new or existing OFBA in the Borough without first obtaining a permit.
- B. The application for a permit must be accompanied by a check or money order as payment of the permit fee. Checks or money orders should be made payable to "Millersburg Borough" according to the following fee schedule:
 - 1. The permit fee for an Outside Fuel Burning Appliance is \$100.00. If the permit is denied for any reason this permit fee is non-refundable.
 - 2. The appeal fee for the denial of an application is \$250.00 and this denial fee is non-refundable.
 - 3. The appeal fee for a variance to this Ordinance is \$250.00 and this variance fee is non-refundable.
- C. An additional \$20.00 fee will be charged for any check or money order that is returned by the financial institution as non-payable for any reason. In addition, non-payable checks or money orders shall result in automatic denial of the application, unless the application fee and the additional fee are paid in full within ten [10] days of notice of non-payment.
- D. A permit to install, replace or operate an OFBA shall remain in effect for three [3] years from the time of issuance, unless revoked by the Borough for any reason. A new permit must then be applied for and the OFBA must be re-inspected for compliance with manufacturer's, Borough's and EPA specifications on file in the Borough Office.
- E. The following procedure shall be followed when applying for a permit:
 - 1. Anyone who desires to install, replace or operate a new or existing OFBA upon their property in the Borough, must complete a permit application in

writing and submit it to the Borough Manager along with the requisite application fee, at least twenty [20] days prior to the desired date of installation, replacement or operation. Permit application forms shall be available from the Borough Manager or Code Enforcement Officer or other Borough representative.

2. Proof that the wood-burning appliance is certified to meet applicable EPA emission standards must be submitted with the application, unless the appliance is considered by EPA to be exempt from certification due to generally recognized low emissions. As of the date of this Ordinance, the following wood-burning appliances are generally recognized by EPA to not need certification due to low emissions: [a] masonry stoves, and [b] pellet stoves, provided the air-fuel ratio is greater than 35:1. For all other uncertified wood-burning appliances, proof of emissions lower than required for EPA-certified non-catalytic indoor stoves must be submitted in lieu of proof of certification. The owner of the wood-burning appliance shall also be required to submit with the proof of low emissions, a copy of the manufacturer's recommended operating parameters and fuels necessary to achieve the low emissions. This information shall be kept on file at the Borough Office along with copies of the permit, and proof of certification, or other proof of low emissions.
3. If an existing chimney is to be utilized, a statement from the local Fire Chief or Code Enforcement Officer, stating that the chimney has been inspected and is suitable for use with manufacturer's recommended fuels, shall be submitted with the Application. If a new chimney is to be constructed, a construction permit will be required.
4. Within five [5] days of receipt of proof of certification, or site inspection, if required, a letter shall be forwarded to the Applicant from the Code Enforcement Officer or other Borough representative, which either grants or denies the application to install the wood-burning appliance. In the event the application is denied, the letter shall state the reasons therefore.
5. Should the Applicant desire to appeal a denial, written notice of the request for appeal shall be forwarded to the Borough Manager within twenty [20] days of the date of denial along with the requisite appeal fee.
6. Upon receipt of an appeal, a hearing shall be scheduled before an Appeal Committee within thirty [30] days and shall be held at the Borough Building or other designated location within the Borough. Notice of the hearing shall be posted at the Borough Building and other appropriate locations as determined by Borough Council; and shall be served by the Borough via United States First Class Mail, or by hand delivery, upon the Applicant and all property owners having a property line within five hundred [500] feet of the proposed OFBA site.

7. The Appeal Committee shall consist of four [4] appointed members, all of whom shall be Borough residents, two [2] members shall be appointed by Borough Council, at least one [1] of whom is also a member of Council, and two [2] shall be appointed by the Mayor. The Council shall also designate the chairperson of the Committee.
8. The Appeal Committee members are expected to review EPA's references on fuel burning and National Ambient Air Quality Standards [NAAQS] as set forth with the Code of Federal Regulations [40 CFR Part 50] by the EPA, which designates pollutants considered harmful to public health and the environment. If the appeal is for a variance to operate an existing OFBA, then the Appeal Committee members shall also review EPA's references on OFBA's. The Borough shall furnish such materials to the Appeal Committee members and shall update the same at least annually.
9. The Appeal Committee Chairman shall designate three [3] Appeal Committee members who must be present for the hearing. The burden shall be on the Applicant to supply installation, operation, or approved fuel information to the Appeal Committee. The Borough Solicitor shall be present at this hearing and the owner may be represented by counsel.
10. Following the hearing, the Borough Solicitor shall issue a written statement within seven [7] days of the Appeal Committee's decision, which either grants or denies the application. The decision shall be forwarded to the Applicant by United States First Class Mail and shall also be posted at the Borough Building. The Appeal Committee may impose additional conditions or restrictions upon the Applicant. The determination of the Appeal Committee shall be final unless an appeal is filed within thirty [30] days to the Dauphin County Court of Common Pleas, Harrisburg, Pennsylvania, in accordance with applicable procedures.

Section 6 – Inspection

It is recognized that improper use, improper fuels, modifying or tampering with any appliance may cause an increase in emissions, such that it may become necessary to conduct site inspections to determine compliance. If a verified complaint is received by the Borough, the Borough may conduct an inspection to determine if the OFBA is being operated in accordance with the manufacturer's recommended operating parameters and approved fuels from the manufacturer's materials on file at the Borough Office. In the event the owner has received updated recommendations from the manufacturer, the same shall be utilized to determine compliance. The owner shall be required to correct any deviations found as a result of the inspection. Failure to correct the deviations within thirty [30] days shall constitute a violation of this Ordinance. The owner's refusal to allow the inspection shall result in immediate permit revocation.

Section 7 – Enforcement and Penalties

- A. It shall be the duty of the Borough Council, Code Enforcement Officer, Borough Health Officer or Borough Police to enforce the terms of this Ordinance and secure compliance with the requirements thereof.
- B. In the event an owner does not comply with a notice from the Borough which requires that use of the appliance cease, the Borough shall have the authority to disconnect the appliance and/or render it unusable. The owner shall pay the costs of such measures, including but not limited to the costs of any equipment and reimbursement of wages for Borough employees or agents. The Borough, in such event and pursuant to its statutory or otherwise authorized police powers, shall have the right and power to enter upon the owner’s premises to accomplish the foregoing.
- C. Every day that a violation of this Ordinance continues, it shall constitute a separate offense.
- D. Penalties are determined on the basis of the date of commission of the offense[s].
- E. Penalties:

	<u>Minimum Fine</u>	<u>Maximum Fine</u>
1 st Offense within 3 year period*	\$ 75.00	\$500.00
2 nd Offense within 3 year period*	\$150.00	\$500.00
3 rd Offense within 3 year period*	\$325.00	\$500.00
4 th or More Offense within 3 year period*	\$500.00	\$500.00
- F. In the event a violation of Sections 3[J] and 4[F] of this Ordinance is found, the penalties set forth in Section 7 shall be doubled.
- G. Failure of the owner to pay the costs and/or any fine within sixty [60] days shall result in permanent revocation of their permit.

Section 8 – Liability

- A. The owner of the property utilizing or maintaining an OFBA shall be responsible for all fire suppression costs and any other liability resulting from damage caused by a fire.
- B. The owner of the property utilizing or maintaining an OFBA shall be responsible for any damage or other cost to neighboring properties associated with the installation, maintenance and operation of an OFBA.

Section 9 – Severability

If any sentence, clause, section or part of this ordinance is for any reason be found to be unconstitutional, illegal or invalid, such unconstitutionality, illegality or invalidity shall not affect or impair any of the remaining provisions, sentences, clauses, sections or parts of this Ordinance. It is hereby declared as the intent of the Borough of Millersburg that this Ordinance would have been adopted had such unconstitutional, illegal or invalid sentence, clause, section or part thereof not been included herein.

Section 10 – Repealer

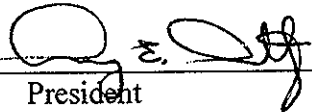
All other ordinances or parts thereof, which are in conflict with this Ordinance, are hereby repealed.

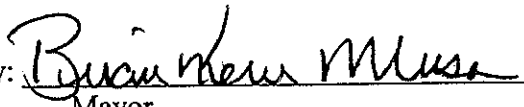
Section 11 – Effective Date

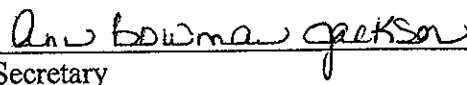
- A. This Ordinance shall take effect immediately upon enactment for all new Outside Fuel Burning Appliances installations.
- B. This Ordinance shall take effect seven [7] days from the date of enactment for all Outside Fuel Burning Appliances currently under construction.
- C. Exceptions: For Borough residences which have existing Outdoor Fuel Burning Appliances in place that do not conform to **Section 4**, that portion of this Ordinance will take effect sixty [60] days from date of enactment.

DULY ORDAINED AND ENACTED this 8th day of October, 2008, by the Borough Council of the Borough of Millersburg, Dauphin County, Pennsylvania, in lawful session duly assembled.

**BOROUGH OF MILLERSBURG
Dauphin County, Pennsylvania**

By: 
President

By: 
Mayor

Attest: 
Secretary

¹ EPA, *Fact Sheet: Regulatory Impact Analysis of EPA's Final Revisions to the NAAQS for Particle Pollution*. Accessed on-line: 2/15/07 @ <http://epa.gov/pm/fs20061006.html>.

ⁱⁱ 25 Pa. Code § 121.1.

ⁱⁱ NESCAUM [Northeastern States for Coordinated Air Use Management], *Outdoor Wood Boiler Fact Sheet*, 2/13/07.

ⁱⁱ EPA (Environmental Protection Agency), *PM2.5 NAAQS Implementation*. Accessed on-line @ www.epa.gov/ttn/naaqs/pm/pm25_index.html.

ⁱⁱ NESCAUM, *Assessment of Outdoor Wood-fired Boilers*, 3/28/06, pp. 4-4 & 4-5.

ⁱⁱ Wisconsin Department of Health & Safety, *Guidance for Health Professionals: Outdoor Wood Boilers*, Accessed on-line: 12/3/06 @ www.dhfs.state.wi.us/eh/HlthHaz/fs/waterstoves.htm.

ⁱⁱ NESCAUM, *Assessment of Outdoor Wood-fired Boilers*, 3/28/06, p. 2-1.

ⁱⁱ EPA, *Clean Burning Woodstoves and Fireplaces, Basic Information, Clean Burning Choices*, available on-line at www.epa.gov/woodstoves/basic.html, and *Wood Burning Efficiency & Safety*, available on-line at www.epa.gov/woodstoves/efficiently.html.

ⁱⁱ Prevailing winds are extremely important for assessing pollution exposure, and downwind is logically and generally recognized as the worst case. For Northern Pennsylvania the prevailing winds are westerly. See *General Facts for Pennsylvania* @ www.new-construction.net/Pennsylvania/Pahome.htm.

ⁱⁱ EPA, *1.10: Residential Wood Stoves*, 10/21/05.

ⁱⁱ CFR Title 40, Part 60, Subpart AAA. For a summary of the indoor emission standards see: *Hearth Wiki, EPA Emission Regulations*, at http://www.hearth.com/econtent/index.php/wiki/EPA_Emissions_Regulations.

ⁱⁱ These guidelines were derived from recently published or recommended references by EPA, NESCAUM [Northeastern States for Coordinated Air Use Management], state environmental agencies, and HHPA [Hearth Patio and Barbeque Association, the OFBA industry's trade association].

ⁱⁱ Phase I and Phase II emission standards for OWHs were promulgated by EPA and NESCAUM on January 29, 2007.

ⁱⁱ HPBA is the OFBA industry's trade association and its published guidelines in *Best Burn Practices* represent the most lenient recommendations.

ⁱⁱ AIR Now, a cross agency U.S. Government Web site, states in *Particle Pollution and Your Health*, "People with heart or lung disease, older adults, and children are considered at greater risk from particles than other people." EPA's Community Information Sheet, *Reducing Air Pollution from Residential Wood Burning*, 9/12/05, states, "In low concentrations, particle pollution in wood smoke can harm the health of children, the elderly and those with existing respiratory diseases." There are many other supporting references.