

Outdoor Wood Boilers

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Presented to:

The Central NH Forest Fire Warden Association

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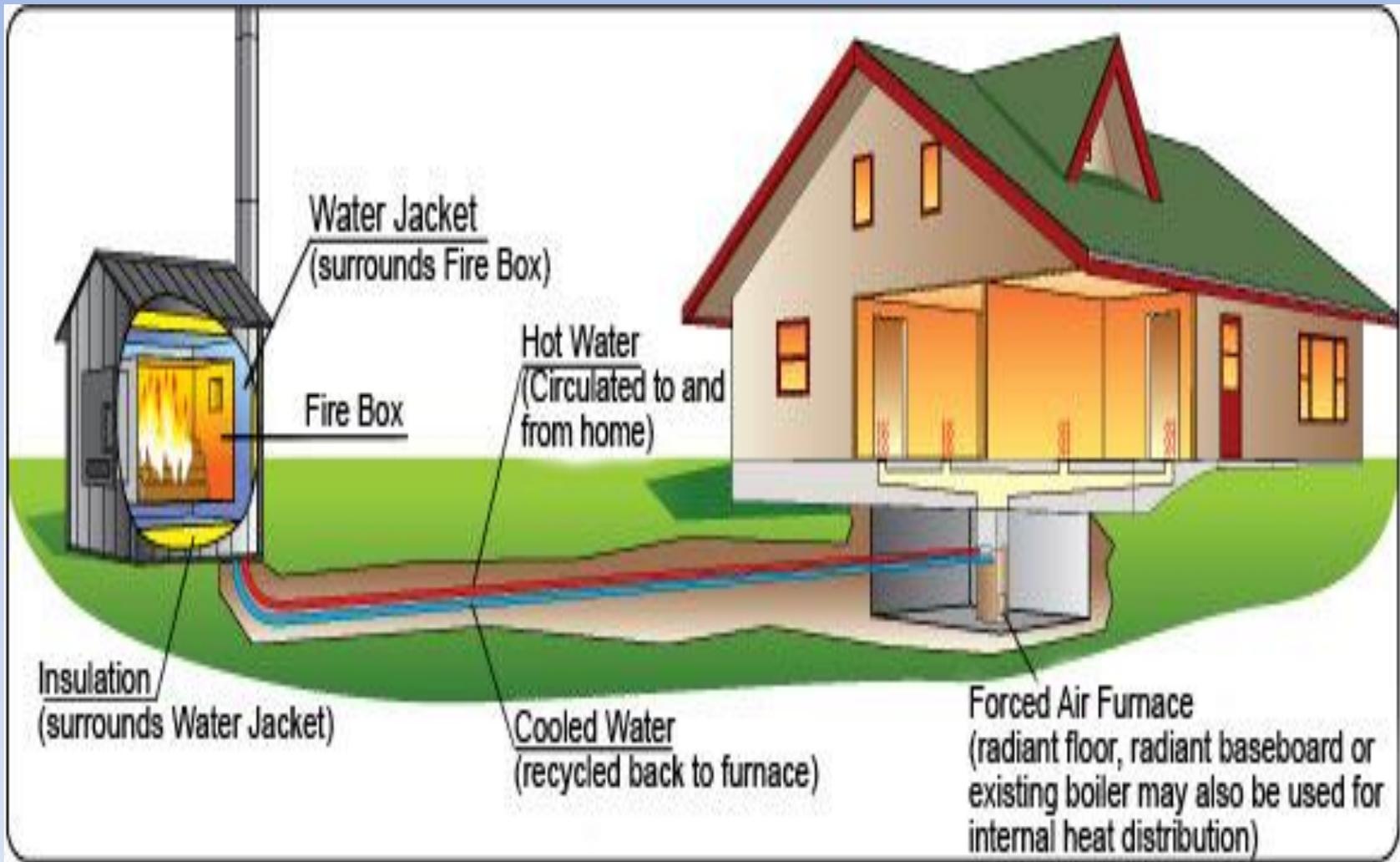
Overview

- ✓ How do OWBs work?
- ✓ State Law
- ✓ EPA Qualified Units
- ✓ Examples
- ✓ NH DES & Municipal Authority
- ✓ Resources

How do OWBs work?



How do OWBs work? (cont.)



Source: [Hearth, Patio and Barbecue Association \(HPBA\)](#)

State Law - Chapter 125-R

☞ Became effective August 10, 2008

☞ Establishes requirements for:

- » Sale and purchase
- » Installation
- » Permitted fuel
- » DES authority
- » Municipal authority

State Law - Chapter 125-R (cont.)

Sale and Purchase:

☞ August 10, 2008 to December 31, 2008

Non-Phase I or II units

☞ January 1, 2009 to March 31, 2010

Phase I or II Units

☞ April 1, 2010

Phase II Units

State Law - Chapter 125-R (cont.)

*What about a unit installed prior to
August 10, 2008?*

“Grandfathered”

What is an EPA Qualified Unit?

Units are qualified based on emission rates
(particulate matter)

Unit Types:

- ☞ Non-Phase I or II (not rated)
- ☞ Phase I (no more than 0.6 lbs/MMBtu, heat input)
- ☞ Phase II (no more than 0.32 lbs/MMBtu, heat output)

Qualification:

- ✓ Unit is tested by an independent laboratory
- ✓ Test report approved by EPA

Phase I Unit Emission Standard

Phase I: Orange Tag

- No more than 0.60 lb/MMbtu heat input (particulate matter) emission limit

U.S. Environmental Protection Agency 2007
Outdoor Wood-Fired Hydronic Heater Program

This Outdoor Wood-Fired Hydronic Heater has been tested and meets a certain air quality emissions level.* ①

By meeting this level this model is cleaner and pollutes less than those models that have not met this emissions level. Exposure to wood smoke has been associated with respiratory illness and other health problems. Models that have lower smoke emissions may reduce your family's risk.

For more information go to www.epa.gov/woodheaters

OUTDOOR WOOD-FIRED HYDRONIC HEATERS SMOKE EMISSIONS RANGE

Lower Emissions 0.1 Better
Higher Emissions 2.0 Worse

0.5 0.6 EPA PHASE I EMISSIONS LEVEL

② THIS MODEL ③ ④

Outdoor wood-fired hydronic heaters with lower emissions produce less smoke when installed and operated properly.

⑤ MANUFACTURER: XXXXXXXXXXXX
MODEL NO: XXXXXXXX ⑥
8-HOUR HEAT OUTPUT RATING: 58,000 BTU/HR ⑦
EMISSIONS: XXX GRAMS/HR ⑧
0.5 LBS/MILLION BTU HEAT INPUT
XX GRAMS/HR / 10,000 BTU HEAT OUTPUT ⑨

* - This model has been tested by an accredited independent laboratory according to EPA method 28 OWPH and meets the emissions level for U.S. EPA's Phase I Voluntary Program.

⑪ ⑫

Phase II Unit Emission Standard

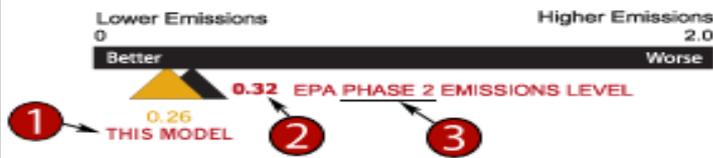
PHASE 2 QUALIFIED

U.S. Environmental Protection Agency
2008 Hydronic Heater Program

Phase 2 Qualified models are cleaner and pollute less than those models that have not met this emission level. Exposure to smoke has been associated with respiratory illness and other health problems. Models that have lower smoke emissions may reduce your risk.

For more information go to www.epa.gov/woodheaters

HYDRONIC HEATERS SMOKE EMISSIONS RANGE



Heaters with lower emissions produce less smoke when installed and operated properly.

4 MANUFACTURER: XXXX
5 MODEL NUMBER: XXXXX
8 8-HOUR OUTPUT RATING: 112,000 BTU/HR
9 8-HOUR AVERAGE EFFICIENCY: 70% (using higher heating value)
10 FINE PARTICLE EMISSIONS: 81% (using lower heating value)
11 6.1 GRAMS/HR (average)
17.4 GRAMS/HR (maximum test run)
0.17 LBS/MILLION BTU INPUT
0.26 LBS/MILLION BTU OUTPUT
0.09 GRAMS/HR/10,000 BTU OUTPUT

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EPA has determined, based on testing by an accredited independent laboratory, that this model qualifies at the Phase 2 emissions level for U.S. EPA's Voluntary Program.

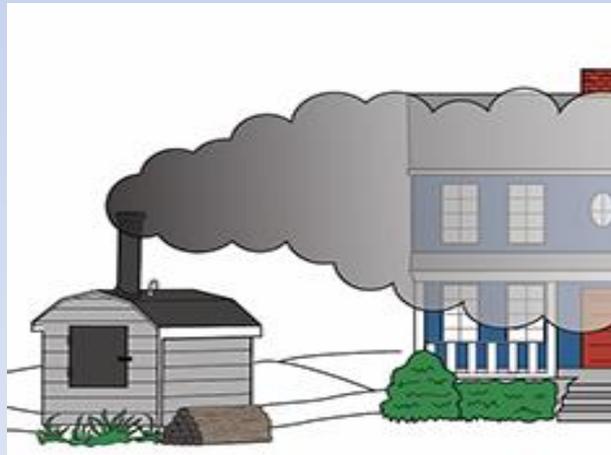
Phase II: White Tag

- No more than 0.32 lb/MMbtu heat output (particulate matter) emission limit

Installation Requirements

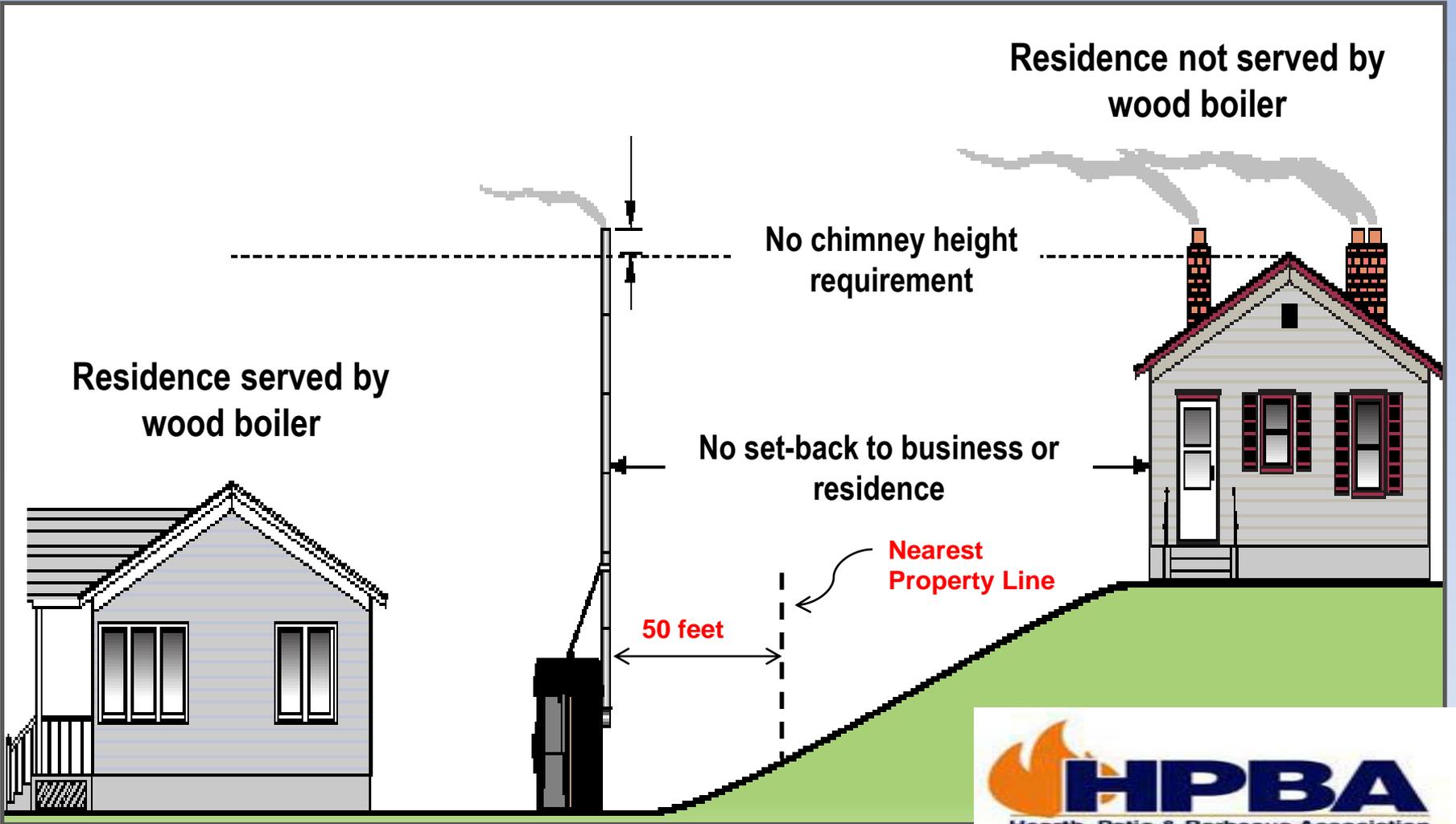
RSA 125-R:3 Setback and Stack Height Requirements

Based on unit type

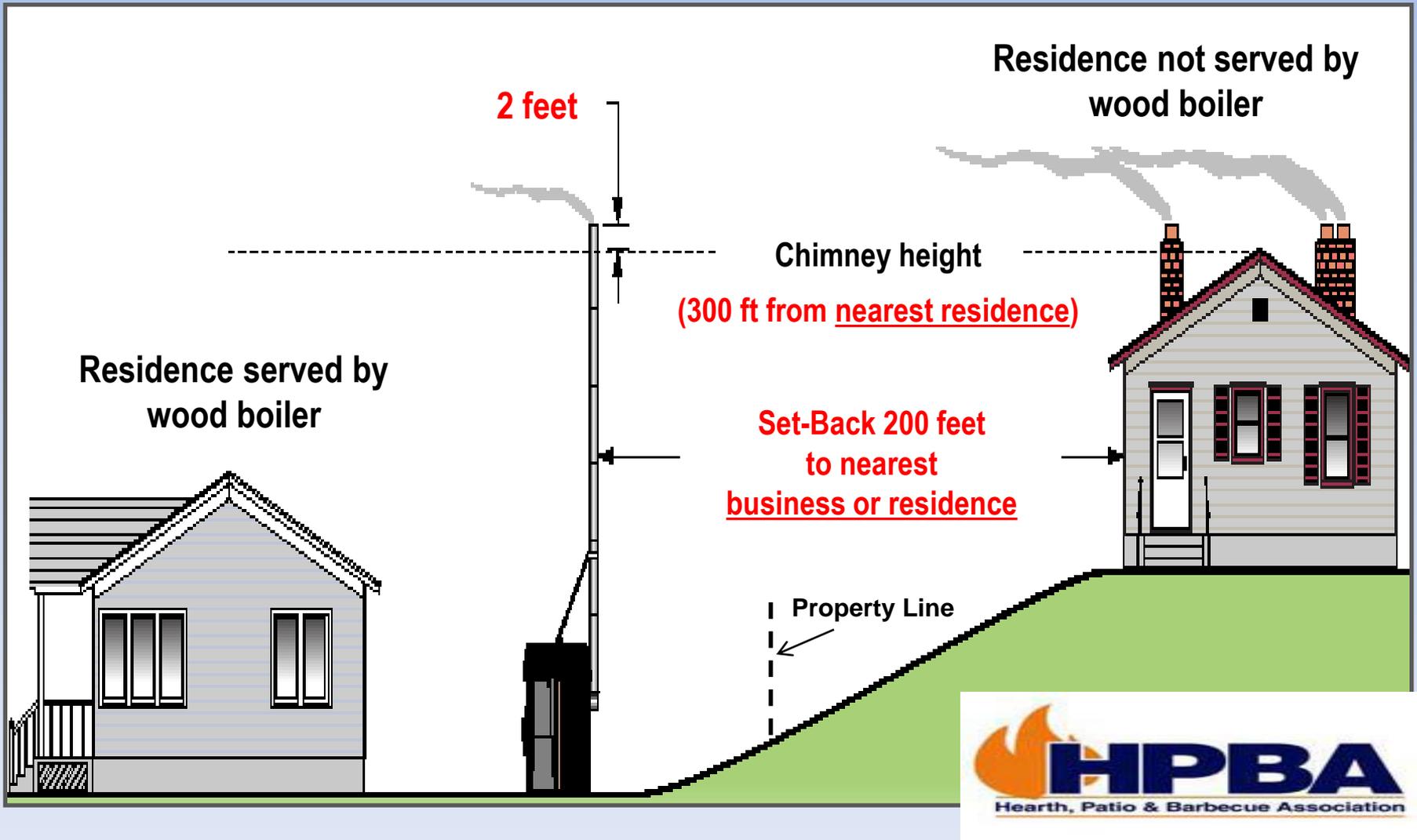


Source: CT Department of Energy and Environmental Protection

Phase II Unit - Installation



Non Phase I or II Unit - Installation



Permitted Fuels

RSA 125-R:4 Permitted Fuels

- ☞ Clean wood
- ☞ Wood pellets made from clean wood
- ☞ Home heating oil, natural gas or propane used:
 - ✓ For supplemental fuel (dual fuel units)
 - ✓ As a fire starter

**No painted or treated wood,
plywood or household trash**

Permitted Fuels



Examples



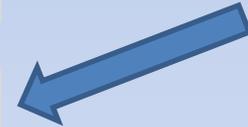
Observations



Observations



Smoke Inversion



DES's Authority

RSA 125-R:6 Enforcement

Provides DES with the authority to regulate:

- ☞ Installation:
 - ✓ Setbacks
 - ✓ Stack height

- ☞ Permitted fuels

Municipal Authority

RSA 125-R:7 Municipal Authority

- Provides that under RSA 147, if an OWB is operated in a manner which causes a nuisance or is injurious to public health, the local health officer may order that the use of the OWB be discontinued.
- Provides that the municipality can adopt and enforce land-use ordinances with regard to installation and operation of OWB.

Note: DES will provide technical assistance to the municipality for the purpose of enforcing the nuisance provisions in RSA 147.



NH Resources

NH RSA 125-R

<http://www.gencourt.state.nh.us/rsa/html/X/125-R/125-R-mrg.htm>

DES Web Page

www.des.nh.gov/organization/divisions/air/cb/ceps/wba/index.htm

Fact Sheet: ARD-40

www.des.nh.gov/organization/commissioner/pip/factsheets/ard/documents/ard-40.pdf

EPA Resources

EPA' Web Site:

www.epa.gov/burnwise/index.html

www.epa.gov/burnwise/owhhlist.html

DES Contact Information

For Technical Assistance and Complaints

 Contact:

NH DES - Air Resources Division

Tom Guertin

Email: thomas.guertin@des.nh.gov

Phone: (603) 271-0907

