Docket: EPA–HQ–OAR–2002–0058; FRL–9503–6
National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters

Docket: EPA–HQ–OAR–2006–0790; FRL–9503–3
National Emission Standards for Hazardous Air Pollutants for Area Sources: Industrial, Commercial, and Institutional Boilers

Docket: EPA–HQ–OAR–2003–0119 and EPA–HQ–RCRA 2008–0329; FRL–9503–7
Commercial and Industrial Solid Waste Incineration Units: Reconsideration and Proposed Amendments; Non-Hazardous Secondary Materials That Are Solid Waste

COMMENTS OF PARTNERSHIP FOR POLICY INTEGRITY

Contents

Background; comments relevant to the area source rule

The purpose of this submission is to provide EPA with some information relevant to the boiler and waste rules applicability to biomass burners, using a fairly comprehensive database of recently issued air permits to characterize current trends in the industry. We wish to demonstrate to EPA that the boiler and waste rules as currently conceived are opening the door to far greater pollution, and more toxic pollution, from the biomass energy sector than is necessary, given the technologies available for emissions control and the reasonable presumption that the public should have that "clean" biomass fuel burned as renewable energy does not consist of toxic waste. We submit these comments in support of legal comments from Earthjustice, and also on our own behalf. As part of our own submission, we are attaching comments we submitted on the "beneficial use determination" for a facility in Massachusetts, Palmer Renewable Energy, that proposed to burn construction and demolition debris.

We compiled a database of permits for biomass facilities issued in the last four years. All are power producers.

- There are 67 new and re-permitted facilities in the database.
- Of these 21 are existing facilities that are expanding their existing biomass capacity or adding a biomass boiler; 46 are new facilities. Some of the new facilities have now been withdrawn but were included in the permit database as examples of contemporary permitting practices.

Not every permit or application specifies the type of boiler. Of the ones that are specified, 31 are fluidized bed boilers; 26 are stokers. There are no examples of some of EPA's categories, e.g. "dutch ovens" or "biomass fuel cells".

Major/minor status of facilities in the database

For the purposes of BACT determination/criteria pollutants, regarding major/minor status:

1) 3 are not specified
2) 22 are major sources.
3) 42 are minor sources. Of these, 29 are synthetic minors.

For the purposes of MACT determination/HAPs,

1) 7 facilities do not specify whether they are major or area sources (most of these are modifications to add a biomass boiler or expand capacity at an existing facility, and permits do not always specify whether these facilities are currently major sources for MACT).
2) 9 facilities are major sources
3) 44 facilities are "area" sources.

Synthetic area sources for HAPs – our definition

Of the 44 area source facilities, 32 are what we characterize as "synthetic" minor sources. By this we mean:

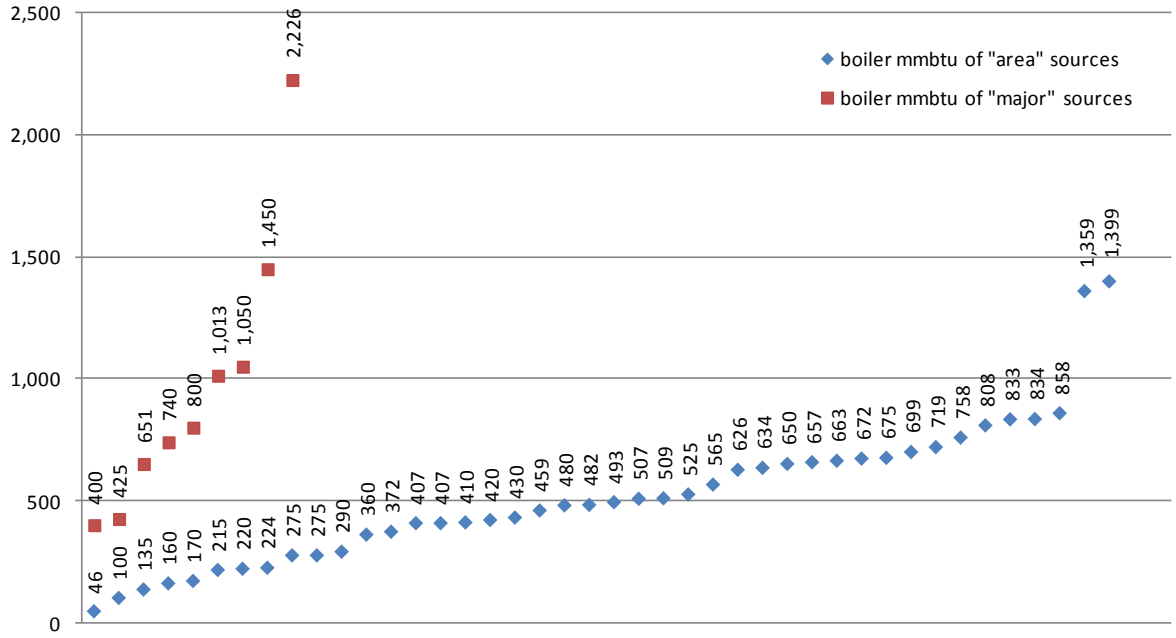
1) the permit either specifies little information about actual HAPs emission rates, but specifies that the facility will emit "less than" 25 tons of all HAPs and less than 10 tons of any HAP.
2) Or, the permit/application does add up emissions of HAPs with specific emission rates, and miraculously comes in just under 25 tons (it is common for HAPs to sum to 24.9 tons).
3) Or, the permit/application selectively uses a mix of AP-42 emission factors, NCASI emission factors, and other industry-provided emission factors to estimate HAPs emission rates, with a

sum that comes in just under 25/10 tons. In some cases, NCASI and other industry emission rates are used that are orders of magnitude lower than AP-42 rates. Often the AP-42 rates that are supplanted with industry data are graded "A" for data reliability. Very few if any permits/applications provide justification for using something other than the AP-42 rates.

Area source biomass facilities are large

The new facilities now being permitted around the country are mostly large, standalone electricity-producing plants. While the "area" source rule would appear to be intended to govern relatively small facilities, the facilities governed by the rule are actually quite large and overlap considerably in size with facilities designated as major sources. The following graph shows the boiler capacity (mmbtu/hr) for "area" and "major" sources in our database.

Boiler capacity (mmbtu/hr) for major and area source biomass boilers (recently issued permits)



Facilities burning construction and demolition waste (C&D)

There are at least 16 facilities in the database that plan to burn construction and demolition waste. Some of these specify that only "clean" C&D can be burned. In our review of permits and applications, we found only one fuel sorting study. We analyzed this study and found it to be utterly deficient in terms of the statistical approach used to characterize contamination in the fuel stream (we have attached this analysis). Most if not all facilities with permits allowing burning of C&D do not specify a fuel testing plan; the permits generally say "no burning of treated wood" with no verification provisions.

Of the 16 facilities that plan to burn C&D,

- 11 are minor sources that will not go through BACT; 7 are synthetic minors for BACT (by "synthetic minor", we mean facilities with a potential to emit that is greater than 250 tons of a criteria pollutant, but the permit caps emissions at 250 tons).

- 10 are area sources for HAPs, and thus will be regulated under the area source rule. Of these, 9 are "synthetic" area sources (see above for our definition of a synthetic area source for HAPs).

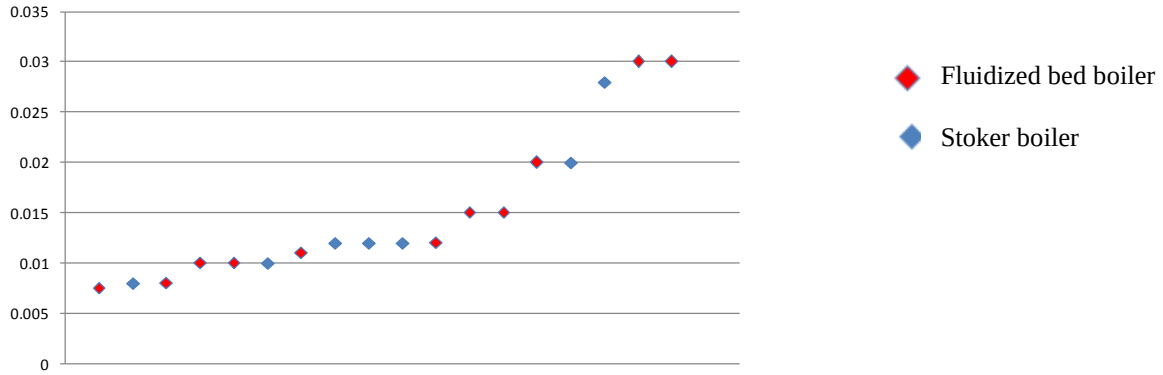
The significance of the waste definition in the context of the area source rule
We provide comment on the use of non-hazardous secondary materials such as C&D below. Here we note that the area source rule and the definition of biomass (which will now encompass a great deal of material that would ordinarily be considered "waste) are interlinked in an important way. As EPA loosens restrictions on what can be defined as "biomass" instead of "waste", there will be an increasing number of large facilities burning potentially contaminated material, but since many are considered "area" sources, they will only be regulated for PM, not other pollutants that are regulated under the major source MACT rule.

Emission control technologies now commonly used on new biomass boilers

PM: what is in general use
All new and re-permitted facilities in our database use either a baghouse or ESP for PM control. These technologies are assumed capable of removing >99% of PM; baghouse removal rates of 99.9% and above are sometimes promised in air permits.

Not every permit specifies a separate emission rate for filterable PM versus total PM. For those in the database that do (there are 19 of them), values range from 0.0075 to 0.03 lb/mmbtu. In the graph below, red dots designate bubbling fluidized bed boilers or circulating fluidized bed boilers; blue dots designate stokers. Given the similarity of the emission rates, it is not clear why EPA has designated such a large difference in the between the new unit standard for "wet" stokers (0.029 lb/mmbtu) and BFB's (0.0098 lb/mmbtu). These units appear to be using the same technologies and achieving the same emissions rates for PM.

Filterable PM rates for stoker and BFB boilers



PM emissions at existing facilities are commonly controlled with ESPs and baghouses. Emissions test data from the McNeil biomass plant in Vermont shows that filterable PM can be controlled well.

TABLE 3-1. SUMMARY OF PARTICULATE MATTER TEST RESULTS

McNeil Generating Station
Burlington Electric Department
Burlington, Vermont

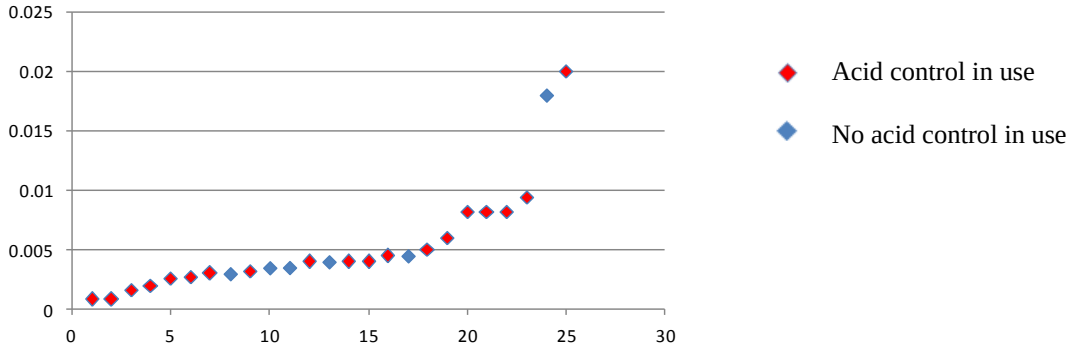
Run No. Test Date Start Time Stop Time			1 10/26/2010 6:40 DAS 8:48 DAS	2 10/26/2010 9:10 DAS 11:20 DAS	3 10/26/2010 11:50 DAS 14:00 DAS	4 10/26/2010 14:25 DAS 16:33 DAS	AVERAGE	LIMIT
Total Sampling Time O2 CO2 Gas Sample Volume Stack Gas Flow Rate		minutes percent (%) percent (%) DSCF DSCFM	120 5.60 15.12 75.84 163,595	120 5.92 14.76 78.21 166,747	120 6.20 14.43 81.09 172,626	120 6.05 14.60 77.78 169,509	120 5.94 14.73 78.23 168,119	
Filterable Particulate Matter Particulate Matter Grain Loading Particulate Matter Grain Loading		mg gr/dscf gr/dscf @ 12% CO_2	0.40 0.00008 0.00006	0.30 0.00006 0.00005	0.40 0.00008 0.00006	0.50 0.00010 0.00008	0.40 0.00008 0.00006	0.007
Particulate Matter Emission Rate		lb/MMBtu	0.00015	0.00011	0.00014	0.00018	0.00015	
Particulate Matter Emission Rate		lb/hr	0.11	0.08	0.11	0.14	0.11	9.7
Weighted Concentrations During Sootblowing vs. Non-Sootblowing								
Soot blowing only (Run 3)	E soot	gr/dscf @ 12% CO_2			0.000007			
NO soot blowing (Runs 1, 2, and 4)	E no soot	gr/dscf @ 12% CO_2				0.000057		
Average Concentration for all 4 combined runs	E	**gr/dscf @ 12% CO_2**					**0.000064**	0.007

HCl: what is in general use

- Of the 26 facilities in our database that list HCl emission rates, rates range from 0.00083 to 0.02 lb/mmbtu. There are 36 facilities in the database that list some kind of acid gas control, such as trona injection, trona plus wet scrubber, pulverized limestone injection, dry scrubber, etc. Not all of these specify an actual emission rate however. Many permits that are synthetic area sources for HAPs simply specify that HCl emissions are capped at less than 10 tons per year, and they basically promise that they will keep adding sorbent until they reduce the emission rate to an acceptable level.

For facilities that do list rates, the red dots in the graph below designate rates at facilities that will use of some kind of acid control.

HCl emission rates with and without controls (recently issued permits)



CO: what is in general use

EPA presents CO limits in units of ppm, not lb/mmbtu as they are usually specified in emissions permits. We backcalculated what EPA's CO limits were in terms of lb/mmbtu (heat input basis) by reversing the formula that EPA provides for estimating output-based limits from input-based limits, and applying this to EPA's output-based limits provided in the major source rule. They are as follow:

EPA's CO emission rates converted to lb/mmbtu (heat input basis)

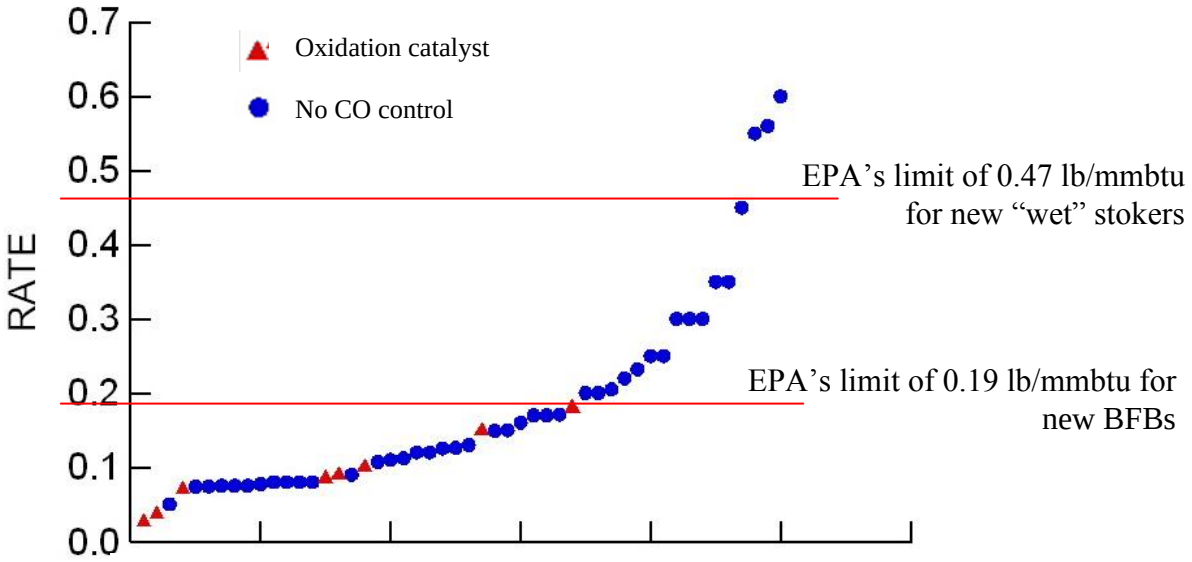
	NEW UNITS		EXISTING UNITS	
	output limit (lb/MWh)	input limit (lb/mmbtu)	output limit (lb/MWh)	input limit (lb/mmbtu)
Stokers/sloped grate/others designed to burn wet biomass fuel	6.5	0.47	8.7	0.63
Stokers/sloped grate/others designed to burn kiln-dried biomass fuel.	2.8	0.20	2.8	0.20
Fluidized bed units designed to burn biomass/bio-based solids.	2.6	0.19	4.1	0.29
Suspension burners designed to burn biomass/bio-based solids.	0.64	0.05	0.64	0.05
Dutch Ovens/Pile burners designed to burn biomass/bio-based solids.	8.9	0.64	8.9	0.64
Fuel cell units designed to burn biomass/bio-based solids.	2.3	0.17	17	1.22
Hybrid suspension grate boiler designed to burn biomass/bio-based solids.	17	1.22	43	3.09

All the facilities in our database fall into one of the two highlighted categories above.

In our database, there are 50 facilities with permits that specify a CO emission rate, which range from 0.027 to 0.6 lb/mmbtu . CO is very hard to control in biomass burners, but nonetheless, most facilities still claim they will control it using "good combustion practices". There are 9 facilities (marked in red on the graph below) that state they will use an oxidation catalyst for CO control.

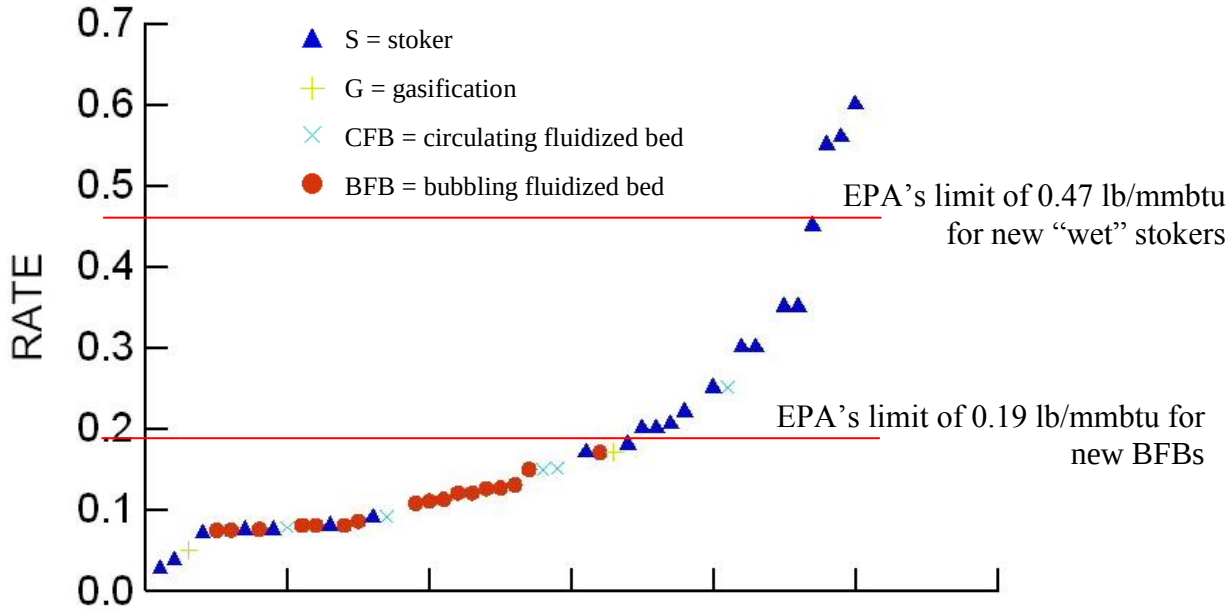
Many facilities that do not proposed to use an oxidation catalyst nonetheless are permitted at CO emission rates similar to those promised at facilities that do use a catalyst.

CO emission rates in recent biomass air permits



The stoker and fluidized bed categories are the types of boilers found in the permit database. There is a big difference in the new unit CO emission rates between stoker and fluidized bed boilers in EPA's rule. The graph below suggests that the stokers with the very lowest CO rates do tend to be fluidized bed units. However, there are a number of BFB's that are permitted with CO emission rates considerably lower than the limit of 0.19 lb/mmbtu that EPA has proposed. Further, while stoker units do appear to be using oxidation catalysts to achieve the lowest rates, there are some stokers that are not proposing to use oxidation catalysts that will achieve a CO rate comparable to a BFB. The bottom line: EPA's new source performance standards for stokers and BFB's do not appear to represent anything close to the best/lowest rates.

CO emission rates in recent biomass air permits – different boiler types



Some comments on the major source rule

Boiler classifications issue

<u>The 10% rule for classification as biomass is arbitrary</u>
EPA has decided to designate any major source that burns at least 10% biomass as a biomass burner (pages 80601 and 80655 of the major source rule). This means that a facility burning 90% coal and 10% biomass would be held to the less rigorous PM emission standard for biomass than for coal. This is arbitrary. At a minimum, the rule should make basic sense. This does not pass that test.

Filterable PM rate (lb/mmbtu)	Coal	Biomass "wet"	Biomass "dry"
Existing Stoker	0.028	0.029	0.32
ExistingFluidized bed	0.088	0.11	
New Stoker	0.028	0.029	0.32
New Fluidized bed	0.0011	0.0098	

<u>Sub-classifications do not correspond to the population of burners now being permitted</u>
EPA has designated still more sub-classifications of biomass boiler type than it had before. Our permit database indicates that new boilers now being permitted around the country do not fall under

the categories of biomass boiler that EPA designates. Almost all are either stokers or fluidized bed boilers. We have never seen a permit for a new "dutch oven" or "biomass fuel cell". EPA's ever-growing number of categories corresponds to a shrinking population of burners in each category, rendering the MACT floors meaningless. The floors set in subclassifications do not reflect generally achievable rates, as illustrated above.

Classifying boilers by fuel is arbitrary and does not correspond to real-world permitting

In our review of biomass facility permits from around the country, we have never seen fuel moisture taken into consideration when setting emission limits at facilities.

EPA states that one reason for sub-categorization is its decision to treat PM as a "combustion-based pollutant". Page 80607 states:

Differences in PM particle size, applicability of air- pollution controls to units combusting various fuels, and the lack of demonstration of certain control technologies on certain designs of boilers (e.g., fabric filters are not used on any hybrid suspension grate boilers) suggest that PM is more appropriately classified as a combustion-based pollutant. Therefore, the EPA is now proposing separate PM limits for each ''combustion-based'' subcategory.

However, this does not correspond to real-world permitting. It should make no difference if a baghouse is demonstrated, an ESP can do about as well as a baghouse. EPA's proposed PM limit for suspension based boilers is 0.05 lb/mmbtu, much higher than is achievable with an ESP. The limit should be lower.

Major source emissions standards for PM are higher than area source standards

Major source emissions for PM (new sources) are as follows. The area source standard is 0.03 lb/mmbtu for boilers greater than 30 mmbtu/hr. It makes no sense for new major sources to be permitted to emit more PM than area sources.

New—Biomass Wet Stoker/Sloped Grate/Other	0.029 (2.6E–05)
New—Biomass Kiln-Dried Stoker/Sloped Grate/Other	0.32 (0.0040)
New—Biomass Fluidized Bed	0.0098 (4.2E–05)
New—Biomass Suspension Burner	0.051 (0.0011)
New—Biomass Dutch Ovens/Pile Burners	0.036 (4.1E–05)
New—Biomass Fuel Cells	0.011 (4.9E–05)
New—Biomass Hybrid Suspension Grate	0.026 (4.9E–04)

Rates for some categories are as high as from a unit that has ***no*** emission controls

The floor for new stokers burning kiln-dried wood in the rule is 0.32 lb/mmbtu; EPA's own AP-42 document shows filterable PM10 emissions of 0.36 lb/mmbtu for dry wood combusted with no emissions controls. The AP-42 document further shows that use of just a mechanical collector (which relies on centrifugal force to spin out large particles) reduces the emissions to 0.3 lb/mmbtu for dry wood.

Table 1.6-1. EMISSION FACTORS FOR PM FROM WOOD RESIDUE COMBUSTION[a]

Fuel	PM Control Device	Filterable PM		Filterable PM-10[b]		Filterable PM-2.5[b]	
		Emission Factor (lb/MMbtu)	EMISSION FACTOR RATING	Emission Factor (lb/MMbtu)	EMISSION FACTOR RATING	Emission Factor (lb/MMbtu)	EMISSION FACTOR RATING
Bark/Bark and Wet Wood	No Control[c]	0.56[d]	C	0.50[e]	D	0.43[e]	D
Dry Wood	No Control[c]	0.40[f]	A	0.36[e]	D	0.31[e]	D
Wet Wood	No Control[c]	0.33[g]	A	0.29[e]	D	0.25[e]	D
Bark	Mechanical Collector	0.54[h]	D	0.49[e]	D	0.29[e]	D
Bark and Wet Wood	Mechanical Collector	0.35[i]	C	0.32[e]	D	0.19[e]	D
Dry Wood	Mechanical Collector	0.30[j]	A	0.27[e]	D	0.16[e]	D
Wet Wood	Mechanical Collector	0.22[k]	A	0.20[e]	D	0.12[e]	D

Comments on use of non-hazardous secondary materials as fuel

EPA bases its rules on incorrect assumptions about contamination levels in waste wood
EPA paints a rosy picture of how it is possible to render a "clean" fuel stream from C&D. EPA's March 2011 document "Identification of non-hazardous secondary materials that are solid waste" states that when C&D is sorted, painted wood is removed. This is not the case. Painted and contaminated wood is routinely burned.

For instance, the picture below is from the Palmer Renewable Energy (MA) facility's application to the Massachusetts Department of Environmental Protection.[1] The facility actively lobbied against any requirement to sort material to remove painted wood, stating "a specific sorting step for painted wood would result in losses of wood with no lead, losing the opportunity for safe beneficial use of this material".[2] When we interviewed the plant manager at New England Recycling, the main facility where Palmer would get its wood, he informed us that the "positive pick" process did not remove painted wood from the line. The majority of the wood they sort there is sent to Maine for burning. The picture below clearly shows painted wood in the debris pile from a Maine facility.

[1] Palmer Renewable Energy Project: Major comprehensive air plan approval application, revised June 29,2009. Submitted to MassDEP, Springfield, MA.
[2] Palmer Renewable Energy Project. Beneficial use determination application. Revised June, 2009. Submitted to MassDEP, Springfield, MA.

Figure 2-7 CPRC Wood Pile, Scarborough, ME

The wood in the picture above is described as "clean". The description of the picture is as follows: *"The second facility is Commercial Paving & Recycling Company (CPRC), which operates "wood recycling" operations at the City of Portland Riverside Facility and at CPRC's Scarborough Facility. At these sites, C&D wood is primarily received in a pre-sorted condition. CPRC only accepts pre-sorted, "clean" C&D wood and prohibits plastics, treated woods, non-combustibles, fines (dirt, wallboard, sawdust, roofing materials), asbestos, and metals from the wood storage piles (see Figure 2-7)."*

The "Evergreen Community Power" facility in Reading PA is a synthetic minor source for BACT (we could not ascertain its status with regard to HAPs). A Department of Energy report on the facility[3] states that its fuel consists of "*forest industry waste, shredded construction wood waste, and demolition debris. The 'mulch' is mostly wood product, but there are significant amounts of paper, plastic and foreign debris*." The typical fuel composition is shown below.

[3] Department of Energy, Mid-Atlantic Clean Energy Application Center. Evergreen Community Power Plant Case Study. November 16, 2011.

Fuel composition at the Evergreen Community Power facility

Comparison with traditional fuels for C&D should be restricted to virgin biomass

EPA states that in determining whether a NHSM meets the legitimacy criteria, its contamination level must be compared to that of a traditional fuel. EPA explicitly states that a facility can compare the contamination level of construction and demolition debris and other wood waste to contamination levels in coal, even if the facility is not permitted to burn coal.

Page 80471:

> *2. Contaminant Legitimacy Criterion for NHSM Used as Fuels The 2011 NHSM final rule codified three self-implementing legitimacy criteria that NHSM must meet in order to be considered a non-waste fuel when burned in a combustion unit (40 CFR 241.3(d)(1)(i)–(iii)). One of these criteria focused on comparing levels of contaminants contained in the NHSM to levels of those constituents found in traditional fuels. Specifically, the contaminant legitimacy criterion for fuels was finalized as follows:* ***''The non-hazardous secondary material must contain contaminants at levels comparable in concentration to or lower than those in traditional fuels which the combustion unit is designed to burn. Such comparison is to be based on a direct comparison of the contaminant levels in the non-hazardous secondary material to the traditional fuel itself.''*** *40 CFR 241.3(d)(1)(iii). The existing language provides flexibility for persons to make comparisons on a contaminant- by-contaminant basis or on a group of contaminants-by-group of contaminants basis in determining what constituents to*

compare. The phrase ''traditional fuels which the combustion unit is designed to burn'' also provides the flexibility to choose among multiple fuel options.

This old language did not catch our attention in the previous version of the rule, because it never occurred to us, when talking about C&D, that the "traditional fuel" used for comparison could be anything other than biomass.

Industry groups have expressed concern that the regulatory language does not clearly reflect the EPA's intent. 9 The EPA agrees that the regulatory language can be revised to better reflect the EPA's intent in implementing the contaminant legitimacy criterion. Therefore, the Agency is proposing to revise this criterion to read, ''The non-hazardous secondary material must contain contaminants or groups of contaminants at levels comparable in concentration to or lower than those in traditional fuel(s) which the combustion unit is designed to burn. ***In determining which traditional fuel(s) a unit is designed to burn, persons can choose a traditional fuel that can be or is burned in the particular type of boiler, whether or not the combustion unit is permitted to burn that traditional fuel.*** *In comparing contaminants between traditional fuel(s) and a non-hazardous secondary material, persons can use* ***ranges of traditional fuel contaminant levels*** *compiled from national surveys, as well as contaminant level data from the specific traditional fuel being replaced. Such comparisons are to be based on a direct comparison of the contaminant levels in both the non-hazardous secondary material and traditional fuel(s) prior to combustion.''* ***We are taking comment on how this revised contaminant legitimacy criterion would apply to specific fuels.***

This is a disaster for new biomass electric plants that are area sources and also overwhelmingly synthetic minor sources for BACT. Under this rule, they would be permitted to burn wood with contamination levels far above clean biomass, particularly since EPA specifies it is acceptable to use "**ranges** of traditional fuel contaminant levels" for purposes of comparison (not averages or medians). This opens the door to comparing biomass/C&D contaminant levels with the *highest* contaminant levels found in coal. In the face of such a collapse of protection at the federal level, states wishing to protect themselves against C&D burning will be forced to enact new regulations, such as Massachusetts is already doing, in response to the Palmer Renewable Energy proposal to burn C&D which was shown to be so fatally flawed.

This should not be permitted. Clean untreated wood is the obvious "traditional" fuel to which C&D should be compared. C&D wood should not contain contaminants at levels higher than found on average in virgin biomass. This is particularly important for pellet manufacture, since pellets are burned not only in commercial and institutional boilers, such as those found in schools, but also in domestic pellet burners.

EPA must require testing of contaminant levels in fuels

On page 80477, EPA states the following:

Two other issues have arisen during implementation of the 2011 NHSM final rule that, while not leading to specific regulatory changes in today's proposal, still merit discussion. The first issue is that contaminant legitimacy criterion determinations do not require testing contaminant levels, in either the NHSM or an appropriate traditional fuel. Persons can use expert or process knowledge to justify decisions to rule out certain constituents.

EPA must require testing for contamination. C&D as a waste fuel is extremely variable. "Slugs" of contaminated wood move through sorting facilities at various times. Particularly given the large amount of material that is going to be generated as abandoned and foreclosed housing is torn down, the potential for liberating vast amounts of lead and other urban toxics, to say nothing of arsenic and chromium from pressure-treated wood, has never been higher. Facilities burning this contaminated material tend to be located in urban areas that already have high levels of air toxics. The Evergreen facility in Reading PA is a good example – it was built (with $39 million in Stimulus funds) in a county (Berks) that is not only out of attainment with the ozone NAAQS, but also with the lead NAAQS (hard to do, considering it is an order of magnitude lower than it used to be). The region where the plant was built is also an environmental justice area. The facility is burning whatever comes through its door, with waste imported from all over the region, including New Jersey.

The potential for C&D fuel to emit toxics used to be taken seriously by EPA; for instance, in 2010 an ethanol company in Minnesota was fined $120,000 for burning wood contaminated with lead-based paint and arsenic preservatives in its biomass gasification unit.[4] With the proposed rule, EPA is removing any hope of regulating contaminants from the biomass power industry. Fuel won't be tested, and emissions won't be regulated, especially given the number of large biomass facilities that claim to be "area" sources.

Definition of "clean" cellulosic biomass has become too expansive
EPA is proposing to modify the definition of "clean" cellulosic biomass. Page 80470:

> *Clean Cellulosic Biomass The EPA is proposing to revise the definition of ''clean cellulosic biomass'' to list additional examples of biomass materials that are appropriately included within this definition….*
>
> *…. Thus, the EPA is proposing to revise the definition of ''clean cellulosic biomass'' as follows: ''Clean cellulosic biomass means those residuals that are akin to traditional cellulosic biomass, including, but not limited to: agricultural and forest-derived biomass (e.g., green wood, forest thinnings, clean and unadulterated bark, sawdust, trim, tree harvesting residuals from logging and sawmill materials, **hogged fuel**, **wood pellets**, untreated wood pallets); urban wood (e.g., tree trimmings, stumps, and related forest-derived biomass from urban settings); corn stover and other biomass crops used specifically for the production of cellulosic biofuels (e.g., energy cane, other fast growing grasses, **byproducts of ethanol natural fermentation processes**); bagasse and other crop residues (e.g., peanut shells, vines, orchard trees, hulls, seeds, spent grains, cotton byproducts, corn and peanut production residues, rice milling and grain elevator operation residues); wood collected from forest fire clearance activities, trees and **clean wood found in disaster debris**, clean biomass from land clearing operations, and **clean construction and demolition wood**. These fuels are not secondary materials or solid wastes unless discarded. Clean biomass is biomass that does not contain contaminants at concentrations not normally associated with virgin biomass materials.''*

[4] Minnesota Pollution Control Agency. Chippewa Valley Ethanol to pay $120,000 environmental penalty. April 30, 2010.

Comments on bolded terms:

1. **Hogged fuel**. "Hogging" refers to the process of shredding material. Just because material has been shredded does not make it clean. This description of a process does not belong in this list, which otherwise consists of material fuel sources.
2. **Wood pellets**. Like hogging, pelletizing can be done to almost any material. Wood pellets can be made from any kind of wood. The definition should specify "wood pellets made from virgin biomass materials".
3. **Byproducts of ethanol natural fermentation processes**. This is a discarded waste product and does not deserve the appellation "clean". What is the standard of "virgin biomass" to which is being compared?
4. **Clean wood found in disaster debris**. This again refers indirectly to a process (the process by which standing wood is knocked down in a disaster such as a tornado). This adds nothing to the list that is not already there (i.e, all the "clean" kinds of materials that could be found in disaster debris are already listed).
5. **Clean construction and demolition wood**. This should not be in here, because operationally, this material is discarded by definition. Further, the majority of this material can in no way be considered "clean".

Asbestos should be included as a regulated contaminant
EPA states on page 80475:
Also, we are proposing to exclude from the definition of contaminants those pollutants in the CAA sections 112(b) and 129(a)(4) lists that we do not expect to find in any NHSM…. Fine mineral fibers are excluded because they are releases from the manufacturing and processing (not combustion) of non-combustible rock, glass, or slag into mineral fibers.

Asbestos is commonly found in construction and demolition debris. Asbestos particles in smoke are deadly. Sorting procedures at C&D sorting facilities commonly attempt to remove material that looks like it contains asbestos, but by nature this material can end up in the "fines". The description[5] of the sorting procedure at a C&D sorting facility in Massachusetts demonstrates why asbestos contamination (and contamination by lead, mercury, and other toxics) is common:

> *NER accepts mixed C&D waste and separates out ferrous and non-ferrous metals, aggregate (asphalt, brick, concrete (ABC)), OCC (cardboard), plastics (Nos. l and 2), gypsum, wood and fines. The mixed C&D is dumped onto the tipping floor where it is inspected for presence of unacceptable materials (hazardous materials, municipal solid waste, and **suspect asbestos containing materials**). A grapple sorts out large bulky items (large aggregate, bulky insulation or plastics, and large gypsum/wallboard), roughly crushes remaining items and feeds a conveyor to a trommel screen where approx. 1/2 inch fines are removed. The remaining materials move via conveyor onto the sorting line, where some 20 pickers manually remove ABC OCC, metals, and wood. The wood is thus picked off the line by a positive sort.*

Excluding mineral fibers from regulation explicitly ignores the possibility of such contamination in C&D. Asbestos should be a regulated contaminant.

[5] Palmer Renewable Energy Project: Major comprehensive air plan approval application, revised June 29,2009. Submitted to MassDEP, Springfield, MA.