

## **Directions for Spreadsheets Calculating the Potential to Emit (PTE) and Actual Emissions from Boilers**

These spreadsheets are designed to help you determine the potential to emit and actual emissions from your boilers for all different types of fuels (#2 fuel oil, bituminous coal, natural gas, propane, sub-bituminous coal, and wood materials namely).

### **Step 1**

Pick the appropriate spreadsheets that represent the fuels your boiler is capable of burning (including backup fuels).

### **Step 2**

Enter the BTU/hour rating of the burner in the appropriate field at the top of the spreadsheet. If applicable, enter the sulfur content of the fuel. The potential emissions will then be automatically calculated.

### **Step 3**

Compare PTE totals to the insignificant activity thresholds. If the PTE totals are less than the thresholds, the boiler qualifies as an insignificant activity. If your boiler can use multiple fuels, you must compare the worst case fuel per pollutant with the permitting threshold. For example, natural gas generally has the highest NO<sub>x</sub> emissions while fuel oil has the highest SO<sub>2</sub> emissions. Therefore, you would compare the natural gas PTE to the NO<sub>x</sub> permitting threshold and the fuel oil PTE to the SO<sub>2</sub> permitting threshold.

### **Step 4**

If the boiler is your only emissions unit, compare the PTEs with the permitting thresholds. If you have other emission sources you will have to add the emission sources together by pollutant and then compare the values to the permitting thresholds. If your values exceed any of the thresholds, you will need an air emissions permit. Again, if your boiler can use multiple fuels, you must compare the worst case fuel per pollutant with the permitting threshold.

### **Step 5**

If you need a permit you will have to calculate your actual emissions. In the actual emissions section, enter either the hours/year the boiler operated or the total amount of fuel burned/year. Compare the Actual Emissions Totals with the Option D Permit Thresholds. If the total for each pollutant is less than the threshold, you qualify for an Option D Registration permit. If your totals exceed the thresholds, call the Small Business Assistance Program (651-282-6143 or 800-657-3938) for assistance.

### **Step 6**

Save a copy of your calculations either electronically or as a printout. If you need a permit, you will have to submit a copy of this with your permit application. Otherwise, this is your proof that you do not need a permit. Note that if your operations change you will have to reevaluate if you need an air emissions permit.

The Environmental Protection Agency (EPA) is currently in the process of developing a National Emission Standard for Hazardous Air Pollutants (NESHAP) that applies to Industrial/Commercial/Institutional Boilers & Process Heaters. This regulation is based on a Maximum Achievable Control Technology (MACT) that is being established by the EPA. According to available information found at <http://www.epa.gov/ttn/atw/combust/boiler/boilerpg.html> and [http://www.epa.gov/ttn/atw/112j/info/112\(j\)-table2.html](http://www.epa.gov/ttn/atw/112j/info/112(j)-table2.html), in its current draft status, this regulation will apply to the following facilities/emission sources (please note, this may be subject to change):

The NESHAP would APPLY to:  
Boilers and process heaters that are located at major sources of HAPs.

The NESHAP would NOT APPLY to:

- Fossil fuel-fired electric utility boilers
- Boilers burning municipal waste
- Boilers burning hazardous waste
- Boilers burning medical waste
- Black liquor recovery boilers
- Hot water heaters
- Waste heat boilers
- Boilers and process heaters that are not located at major sources of HAPs.

Where:

*Process heaters* means units in which the combustion gases do not directly come into contact with process gases in the combustion chamber (e.g. indirect fired).

*Boiler* means an enclosed device using controlled flame combustion and having the primary purpose of recovering thermal energy in the form of steam or hot water.

*Major source* means a facility that emits or has the potential to emit greater than 10 tons per year of a single HAP and 25 tons per year of combined HAPs.

*HAPs* means Hazardous Air Pollutants, a list of 188 air toxics.

*For an electronically searchable list of HAPs go to*

[www.pca.state.mn.us/industry/sbeg/index.html#spreadsheets](http://www.pca.state.mn.us/industry/sbeg/index.html#spreadsheets)

Because this NESHAP has not been promulgated (finalized) by May 15, 2002, it is subject to a provision known as the “MACT hammer”. This means that if a facility is subject to this MACT, they are required to apply for a Part 70 (federal) permit by May 15, 2002. This can be done by completing MPCA [Form GI-112\(j\) Part 1 MACT Hammer Notification](#). This notification form will act as Part 1 of the permit application. Part 2 will not be due until May 15, 2003, and will only be needed if this NESHAP has not yet been promulgated.

New units that are subject to the MACT and installed after the proposed date but before promulgation, may require a case-by-case MACT determination. Contact the MPCA for further assistance prior to construction.