

Note: This is a reference cited in *AP 42, Compilation of Air Pollutant Emission Factors, Volume I Stationary Point and Area Sources*. AP42 is located on the EPA web site at www.epa.gov/ttn/chief/ap42/

The file name refers to the reference number, the AP42 chapter and section. The file name "ref02_c01s02.pdf" would mean the reference is from AP42 chapter 1 section 2. The reference may be from a previous version of the section and no longer cited. The primary source should always be checked.

Background Report Reference

AP-42 Section Number: 10.8

Background Report Section: 4

Reference Number: 17

Title: **Written Communication from
Steve Smith, Koppers Industries,
Pittsburgh, Pennsylvania
To Rick Marinshaw, MRI**

July 10, 1997

July 10, 1997

Telephone: (412) 227-2001
Fax: 1412 227-2423

Rick Marinshaw
MRI
Suite 350
350 Harrison Oaks Blvd.
Cary, N.C. 27513

AP-42 Section _____
Reference _____
Report Sect. _____
Reference 4
17

RE: Treated Wood Emissions Evaluation, AquAeTer & Koppers Studies

Dear Mr. Marinshaw:

After we discussed by phone on July 8 the difficulty in following data coming from the Koppers Industries, Inc. (KII) 1990 emissions study as used in the AquAeTer study, I looked and found some of the same problems. Enclosed is one table from the AquAeTer study on which I marked the actual test times for each emission data point. What I found is that the time assigned in the AquAeTer study did not correspond to the actual times, although they were all generally about right. These are also summarized below:

| Test Number | Actual Time (days) | Assigned Time (days) |
|-------------|--------------------|----------------------|
| 0-1 | 0.04 | 0.083 |
| 0-2 | 0.13 | 0.208 |
| 0-3 | 0.21 | 0.521 |
| 1-1 | 1.04 | 1 |
| 1-2 | 1.13 | 1.33 |
| 1-3 | 1.21 | 2 |
| 4-1 | 4.04 | 3 |
| 4-2 | 4.13 | 4 |
| 4-3 | 4.21 | 5 |
| 7 | 7.21 | 7.5 |
| 12 | 12.08 | 15 |
| 30 | 30 | 30 |

I also looked at the naphthalene emission plot from the AquAeTer study and marked the corrected times for the raw data points on the plot (attached). I expect that if the correct times had been entered for each point, slightly different curves would have resulted from the regression analysis. However, based on inspection of the plot, it appears that such change would have been insignificant relative to the resulting emissions model. As you can see, the corrected data points at least seem to fit the curve about as well as the plotted points.

Concerning the emission rate values, I believe reason that values in the AquAeTer study vary from the Koppers study is that the background level of 19.3 mg/hr was subtracted from the raw data values. This is consistent with the method KII used to estimate emissions for the California AB 2588 report.

I have also enclosed an extra copy of photos, which I took during the Koppers emission field work. These will explain better than I can in words the test structure and methods involved. As I explained on the phone, testing was conducted in reverse order of age from treatment to minimize any potential for contamination of the test structure.

While I agree that there are some inconsistencies in the way the data was used, I hope you will agree that the impact is not significant to the accuracy of the resulting emissions model. Please call me if you have any questions at (412)227-2677.

Sincerely,



Stephen T. Smith
Environmental Program Manager

cc without photos:

Mike Corn, AquAeTer
George Parris, AWPI
Nick Bock, Kerr McGee

8:00 a.m. — Day of Test
 Test Hours (from 0)
 Test Minutes-Hrs
 Day + hrs Min

Cumulative
Time-Days

KOPPERS DATA - EMISSIONS FROM CREOSOTE-TREATED POLES

| Naphthalene Emissions: Regression on First Two Data Points | | | | |
|--|----------------|----------------------|-------------------------|-----------------------|
| | Time (days) | Emissions (mg/hr) | Calculated Emissions | Percent Difference |
| 0 | 0-2 1 | 0.04 0.083 | 0-1 18,822 | 18,822 0.0 |
| | 2-4 3 | 0.13 0.208 | 0-2 19,953 | 19,953 0.0 |
| | 4-6 5 | 0.21 0.521 | 0-3 15,273 | - |
| 1 | 0-2 1 | 1.04 1 | 1-1 1,238 | - |
| 1 | 2-4 3 | 1.13 1.333 | 1-2 2,507 | - |
| 1 | 4-6 5 | 1.21 2 | 1-3 2,784 | - |
| 4 | 0-2 1 | 4.04 3 | 4-1 2,960 | - |
| 4 | 2-4 3 | 4.13 4 | 4-2 3,021 | - |
| 4 | 4-6 5 | 4.21 5 | 4-3 3,287 | - |
| 7 | 4-6 5 | 7.21 7.5 | 7 2,114 | - |
| 12 | 0-3 2 | 12.08 15 | 12 1,591 | - |
| 30 | 2-5 4 | 30 30 | 30 944 | - |

Regression Output:

loss background of 19.3

| | |
|---------------------|----------|
| Constant | 9.803863 |
| Std Err of Y Est | 1.7E-18 |
| R Squared | 1 |
| No. of Observations | 4 |
| Degrees of Freedom | 2 |

| | |
|------------------|----------|
| X Coefficient(s) | 0.466832 |
| Std Err of Coef. | 1.4E-17 |

| |
|--|
| N1(t) = 18,104 * exp (0.466832 * t, days) |
|--|

EMISSION RATES FROM SIX CREOSOTE-TREATED POLES

