MEMORANDUM

Date: September 17, 1998

Subject: Revised Preliminary MACT Floors for Surface Coating Manufacturing Processes

From: Bill Gibbons and Reese Howle
Alpha-Gamma Technologies, Inc.

To: Miscellaneous Organic NESHAP Project File

The purpose of this memorandum is to revise the preliminary maximum achievable control technology (MACT) floors for surface coating manufacturing processes at existing sources covered under the Miscellaneous Organic NESHAP (MON). These standards will apply to processes that:

a. manufacture paints, varnishes, lacquers, enamels, and allied products, adhesives and sealants, or printing ink;
b. emit a hazardous air pollutant (HAP);
c. are located within a major source;
d. are covered by one of the following Standard Industrial Classification (SIC) codes: 2851, 2891 or 2893; and
e. are not covered by any other MACT standard.

Additional details regarding applicability are provided in 61 FR 57602.

Previous memoranda identified the preliminary MACT floors for surface coating manufacturing processes ("Preliminary MACT Floor for Surface Coating Manufacturing", November 13, 1997 and “Revisions to Preliminary MACT Floors for Surface Coating Manufacturing Processes”, April 2, 1998). These data were presented at meetings with the Environmental Protection Agency (EPA), industry representatives and trade association representatives on December 9, 1997 and April 24, 1998.

Background

The preliminary MACT floors for MON surface coating manufacturing processes were revised based on the following:

1. Corrections to facility data as a result of the April 24, 1998 meeting; and
2. Data from facilities identified by the National Paint and Coatings Association (NPCA); a list of the facilities is included as Attachment A.

The new preliminary MACT floors are summarized in the following sections.

Storage Tanks

The recommended preliminary MACT floor for storage tanks is no control for all storage tanks. Revisions of facility data and the addition of new data to the surface coating manufacturing database made significant changes to the storage tank data. Overall, 73 tanks were added to the database. A summary of the revised surface coating storage tank data is given in Table 1.

Table 1. MON Surface Coating Storage Tank Information Summary

Tank Size (gal)	Total Number Of Tanks	Number of Tanks With:	
		Add-on Control Device	Int./Ext. Floating Roof
≥10,000 to <20,000	363	12 (3.3%)	0 (0%)
≥20,000 to <40,000	151	8 (5.3%)	0 (0%)
≥40,000	8	0 (0%)	0 (0%)

To determine the preliminary MACT floor for storage tanks, two different control methods were examined: add-on controls and an internal or external floating roof. All HAPs stored, regardless of vapor pressure, were considered in the preliminary MACT floor determination. Vapor balancing was considered as a possible control method for storage tanks. However, since off-site control of the associated tank truck emissions could not be verified, vapor balancing was rejected from the MACT floor consideration. Note that none of the tanks in the database are equipped with an internal or external floating roof. Therefore, this control method was not included in the MACT floor analysis. Storage tanks with add-on controls represent less than 6 percent of all storage tanks in each tank size category. Therefore, add-on controls were rejected as the preliminary MACT floor for all storage tank sizes, and the preliminary MACT floor for all storage tank categories is no control. Refer to Attachment B for a summary of the storage tank controls for each tank size category.

Wastewater Streams

The recommended preliminary MACT floor for wastewater streams from MON surface coating manufacturing is off-site control for wastewater streams with an organic HAP concentration greater than or equal to 10,000 parts per million (ppm) and a total loading of greater than 1 Mg per year. The methodology to determine the preliminary MACT floor is given below.

Wastewater stream data were provided for all surface coating process wastewater streams containing 1,000 ppm HAP or more, by weight. The data collected included the product process line, wastewater ID code, wastewater stream description, wastewater volume, the HAP name, the HAP concentration in water, the wastewater treatment code(s) and comments. Examples of the wastewater treatment codes are: BI=Biological Treatment, SS=Stream Stripper, AS=Air Stripper, DP=Discharge to a POTW (publicly owned treatment works), etc. However, from the 127 facilities which provided a response, data were provided for only 34 wastewater streams from 17 facilities (see Attachment C). Wastewater streams with an organic HAP concentration greater than or equal to 10,000 ppm and a total loading of greater than 1 Mg per year were evaluated to see if there was a MACT floor for these wastewater streams. The cutoffs selected are the same as those used in the hazardous organic NESHAP (HON) since wastewater streams from surface coating manufacturing processes are similar to those evaluated in the HON. There are 11 wastewater streams meeting these criteria; off-site control was reported for 5 of these streams (45 percent) as shown in Attachment C. Since more than 12 percent of these wastewater streams have off-site control, the MACT floor for wastewater streams with greater than or equal to 10,000

ppm organic HAP concentration and greater than 1 Mg per year total loading was selected as off-site control.

Wastewater streams with organic HAP concentrations between 1,000 ppm and 10,000 ppm were also evaluated. Less than 6 percent of these wastewater streams have off-site control, control with an air stripper, or control with a steam stripper. Thus, the MACT floor is no control for wastewater streams with an organic HAP concentration less than 10,000 ppm.

Equipment Leaks

The preliminary MACT floor for equipment leaks from MON surface coating manufacturing was determined to be a leak detection and repair (LDAR) program involving sensory inspection. Table 2 summarizes the data obtained from the 49 facilities with LDAR programs in place.

Table 2. Summary of LDAR Programs at MON Surface Coating Facilities

Leak Detection Frequency	Leak Detection Method				
	Hydrocarbon Analyzer				
	500 ppmv	1,000 ppmv	10,000 ppmv	Bubble Formation	Sensory Detection
Daily	0 0.0%	0 0.0%	0 0.0%	0 0.0%	11 8.7%
Weekly	0 0.0%	0 0.0%	2 1.6%	0 0.0%	6 4.7%
Monthly	1 0.79%	0 0.0%	2 1.6%	1 0.79%	22 17%
Quarterly	0 0.0%	0 0.0%	1 0.79%	1 0.79%	2 1.6%
Semi-Annually	1 0.79%	0 0.0%	0 0.0%	0 0.0%	1 0.79%
Annually	0 0.0%	0 0.0%	1 0.79%	0 0.0%	3 2.4%

Programs which include hydrocarbon analyzers (EPA Method 21) or bubble formation were initially considered as the "best performing" LDAR programs. Only 5 of the 127 responding facilities use either of these two methods. Note that Table 2 indicates 8 different responses for hydrocarbon analyzers and bubble formation due to multiple responses from several facilities. Since a total of 15 facilities (127 *0.12) are required to represent the "best performing" 12 percent, the central tendency of facilities using EPA Method 21 or bubble formation is no LDAR program. However, there are enough facilities which perform a sensory detection LDAR program to form the basis for a MACT floor (see Attachment D). Thus, the preliminary MACT floor for equipment leaks from MON surface coating processes is a sensory detection LDAR program. This proposed LDAR program would be similar to the equipment leak standard found in National Emissions Standards for Hazardous Air Pollutants for Source Categories: Gasoline Distribution (Stage I), 40 FR 7718. This LDAR program is summarized below.

- **!** Monthly inspection using sight, sound and smell.
- **!** First attempt at repair made within 5 days and repair completed within 15 days after detection.
- **!** Full records of each inspection are required. For each leak, a record of the date of detection, nature of the leak and detection method, dates of repair attempts and methods used and details of any delays of repairs are required.

Based on a review of the equipment leak data received from facilities along with telephone calls to facilities, it was determined that the majority of LDAR programs are performed for the entire facility. Thus, the LDAR program for surface coating manufacturing facilities would apply to the entire facility.

Process Tanks/Vessels

The preliminary MACT floor for all portable process tanks/vessels greater than 250 gallons was determined to be a cover. The preliminary MACT floor for all stationary process tanks greater than 250 gallons is a cover plus an add-on control device with a control efficiency of 60 percent or greater. The methodology used to determine the preliminary MACT floor is given below.

Table 3 shows a summary of the revised process tank data.

Table 3. Summary of Revised MON Surface Coating Process Tank Data

Tank Size and Number	Number and Percent of Tanks Using:	
	Cover	Add-on Control[a]
All tanks >250 gal 7,647 Tanks	7,348 (96%)	483 (6.3%)

[a]Add-on control includes volatile HAP control devices only.

Industry representatives believed portable process tanks should be considered as a separate subcategory. Based on the technical difficulty of controlling emissions from portable process tanks, controls were analyzed separately for portable process tanks and stationary process tanks. A summary of the controls for portable and stationary process tanks is shown in Tables 4 and 5.

Table 4. Summary of MON Portable Surface Coating Process Tank Data

Tank Size and Number	Number and Percent of Tanks Using:	
	Cover	Add-on Control[a]
All tanks > 250 gal 3,011 Tanks	2,783 (92%)	108 (3.6%)

[a]Add-on control includes volatile HAP control devices only.

Table 5. Summary of MON Stationary Surface Coating Process Tank Data

Tank Size and Number	Number and Percent of Tanks Using:	
	Cover	Add-on Control[a]
All tanks > 250 gal 4,636 Tanks	4,566 (98%)	375 (8.1%)

[a]Add-on control includes volatile HAP control devices only.

Table 4 shows that portable process tanks at surface coating manufacturing facilities typically have a cover (92 percent of all tanks have a cover) and are not controlled with an add-on control device (3.6 percent). Since the MACT floor is based on the top performing 12 percent of portable process tanks and since less than 6 percent of all portable process tanks have an add-on control device, an add-on control device was rejected as the preliminary MACT floor for portable process tanks. Since the next level of emission control, process tank with a cover, represented over 90 percent of all process tanks, the preliminary MACT floor for portable process tanks greater than 250 gallons was determined to be a cover.

Table 5 shows that stationary process tanks at surface coating manufacturing facilities typically have a cover (98 percent of all tanks have a cover) with some tanks controlled by an add-on control device (8.1 percent). Since the MACT floor is based on the top performing 12 percent of stationary process tanks, process tanks with a cover and an add-on control device were evaluated to determine the preliminary MACT floor. This data is shown in Attachment E. The median add-on control efficiency for the top 12 percent of stationary process tanks was determined to be 80 percent. The mean add-on control efficiency for the top 12 percent of stationary process tanks was determined to be 58 percent which was rounded to 60 percent. The mean appeared to be more representative of the level of control for stationary process tanks and was determined to be the preliminary MACT floor. Thus, the preliminary MACT floor for stationary process tanks was determined to be a cover with emissions vented to an add-on control device with a control efficiency of 60 percent.

ATTACHMENT A

List of Facilities Providing Data

ATTACHMENT B

Storage Tank Data

ATTACHMENT C

Wastewater Data

ATTACHMENT D

Equipment Leak Data

ATTACHMENT E

Stationary Process Tanks/Vessels Data