highly volatile'' F039 constituents "that are more likely to be released to air and not treated. (ETC did not indicate at what point these concentrations should be measured, although they did suggest that wastes should be segregated at "battery limits".)

The ÉTC believes that such "nonamenable" wastes should either be required to undergo pretreatment prior to aggregation with other wastewaters (e.g., steam stripping of volatile compounds), or be required to go to other appropriate treatment (e.g., precipitation of metals). The ETC argues that such segregation of nonamenable wastes will promote pollution prevention because companies will have an incentive to modify raw materials or production processes to keep such hazardous constituents out of the waste stream.

C. Summary of the CMA's Position

The full text of CMA's comments can be found in the administrative record for today's rule. This section summarizes that document. CMA describes "three situations in which characteristically corrosive or ignitable hazardous wastes could be sent to biological treatment in surface impoundments without jeopardizing the treatment units effectiveness by introducing non-amenable compounds". CMA implicitly requests that the LDR Phase III rule allow CWA-permitted biological treatment in the following three situations:

(a) When the stream to the impoundment only contains hazardous constituents amenable to biological treatment (listed below);

(b) When the stream contains hazardous constituents amenable to biological treatment plus other (nonamenable) constituents present at concentrations equal to some multiple (e.g., 1000) of the F039/UTS treatment standards in the influent to the surface impoundment; or,

(c) The facility can demonstrate on a case-by-case basis that a nonamenable hazardous constituent is amenable to treatment occurring in the treatment system.

CMA identifies most of the organic UTS constituents as "amenable to biological treatment". This includes all the constituents for which biological treatment is the basis of the F039 wastewater treatment standards plus a number of organic constituents generally recognized in the literature as biodegradable.

The BDAT List constituents not designated by CMA as "amenable to biological treatment are: all UTS metals, fluoride, sulfide and the volatile and semivolatile organics in the table that follows.

Nonamenable Volatile Organics

Bromodichloromethane Carbon tetrachloride Chloroethane 2-Chloroethyl vinyl ether Chloroform Chloromethane 1,2-Dibromoethane Dichlorodifluoromethane 1,1-Dichloroethane 1,2-Dichloroethane 1,1-Dichloroethylene trans-1,2-Dichloroethene 1.4-Dioxane Ethylene oxide Iodomethane 1.1.1.2-Tetrachloroethane 1,1,2,2-Tetrachloroethane Tribromomethane (Bromoform) 1,1,1-Trichloroethane 1.1.2-Trichloroethane Trichloroethene Trichloromonofluoromethane Vinyl Chloride

Nonamenable Semivolatile Organics

Benzal chloride 2-sec-Butyl-4,6-dinitrophenol p-Chloroaniline Chlorobenzilate p-Dimethylaminoazobenzene 1.4-Dinitrobenzene 4,6-Dinitro-o-cresol 2,4-Dinitrotoluene 2,6-Dinitrotoluene Di-n-propylnitrosamine Isosafrole Methapyriline 3-Methylcholanthrene 4,4'-Methylenebis (2-chloroaniline) 5-Nitro-o-toluidine Phenacetin Pronamide Safrole Methoxychlor

D. Summary of EPA's Preliminary Response to CMA's and ETC's Technical Concerns

EPA presents its preliminary evaluation of three major issues that are raised by both CMA's and ETC's suggestions: the question of feed limits for land-based biological treatment units; behavior of nonamenable constituents in land-based biological treatment units and constituent-specific solubility and toxicity questions.

1. Feed Limits

The CMA and ETC approaches both suggest constituent-specific limitations of decharacterized ICR waste streams entering surface impoundments to ensure that certain toxic constituents do not bypass treatment by volatilizing into the atmosphere, by adsorbing permanently onto sludge sediments at the bottom of the impoundment or by inhibiting biodegradation processes in the impoundment. The Agency agrees that all three of these mechanisms can hinder treatment.

While many aspects of both the ETC and CMA positions have technical and regulatory merit, there appear to be fundamental technical disagreements that need to be resolved. First and primary is the fact that ETC and CMA differ on which constituents (and chemical families of constituents) are "amenable" or "nonamenable" to treatment. Second, proposing regulations requiring segregation of streams entering impoundments would raise the following issues:

(a) Surface impoundments have traditionally provided an engineering advantage-in addition to low energy, maintenance and construction costs-in that, they offer a means of "equilibrating" and "equalizing" the relatively frequent variations in chemical compositions of process wastes (i.e., aggregated waste streams). As such, they receive variable wastes in their capacity as large-volume holding units for process upset streams, stormwaters, spill washdown and other unscheduled wastewater releases. Segregation of these various streams would require construction of holding tanks that may not be able to provide the same equalization capability of an impoundment;

(b) Mandatory analyses and separation may impose considerable added expense; and,

(c) EPA, in some cases, assumed that impoundments would be used for these purposes by not including the costs of impoundment replacement when developing effluent guidelines for affected industries.

2. Technical Concern

In theory, EPA agrees that certain RCRA waste streams should be kept out of certain types of Subtitle D impoundments. (Listed wastes already must go to Subtitle C impoundments, and High TOC D001 ignitables, as well as high mercury wastes, are also restricted from Subtitle D impoundments.) In addition, in 55 FR at 22666 (June 1, 1990), EPA presented general criteria that could affect amenable/nonamenable determinations. All parties seem to agree that certain metal-bearing wastes could also be restricted from impoundments. However, there are additional factors that need to be considered, such as impoundment size, depth, temperature, and retention time. (An individual