Air Toxics Summary

Air Toxics are those pollutants known or suspected of causing cancer or other serious health effects. In the 1990 Clean Air Act Amendment, Congress defined 188 compounds as being air toxics and directed EPA to create a program to reduce these compounds to safe levels.

Since 1990, EPA has instituted a number of programs to carry out its Congressional mandate, including instituting technology-based controls to reduce emissions of air toxics. EPA has already instituted a number of these controls and is finalizing the last of the controls this year. The result is that there has already been a reduction in the emissions of air toxics since 1990, and more reductions are anticipated in the future.

Also since 1990, as EPA learned more about the problem, EPA has begun to concentrate on 33 of the 188 air toxics that present the greatest threat to the largest number of people, those in urban areas. Those 33 are called the Urban Air Toxics.

In addition to passing regulations to control air toxics, EPA has begun a national program to better quantify air toxics and help direct EPA's future efforts. These efforts include regular inventories of air toxics emissions and air toxics monitoring, although insufficient funding in the past has restricted these efforts.

The Environmental Protection Commission (EPC) of Hillsborough County has been an active participant in EPA's air toxics program. In order to insure that all air toxic emitting facilities are aware of the new EPA regulations, EPC routinely searches for facilities that might be subject to the new EPA regulations and conducts regular inspections of subject facilities to insure their compliance with the new control strategies. EPC has also been conducting air toxics inventories of large point sources, mobile sources, and smaller more numerous area sources since 1996, and providing the information to EPA as part of its inventory efforts.

Previous air toxics emissions estimates have primarily been based on inventory information. EPA used the inventory information for modeling to estimate air toxics concentrations and potential health impacts. The Cumulative Exposure Project (CEP), the first of these assessments, was based on 1990 emissions inventory information, and was released in 1998. The National Air Toxics Assessment (NATA), based on 1996 emissions inventory information, refined the process started with the CEP with better emissions information and refined computer models, and was released in 2002. EPA will continue to update and refine these inventories every three years.

Because of the high cost of monitoring for air toxics, EPA has not been able to conduct much toxics monitoring in the past, and is just now setting up a national air toxics monitoring network. EPC sought additional funding and began monitoring for air toxics in 2001, in cooperation with Pinellas County. Again, because of the high cost, EPC can only monitor for a portion of the air toxics, approximately 2/3 of the urban air toxics and only 1/4 of all air toxics.

Both the CEP and the NATA identified a number of compounds, which might be health risks across the country, in Florida, and in the Tampa Bay area. EPC is not monitoring for all of the toxic chemicals in NATA, however, a summary of the results from EPC's monitoring in 2001 and the NATA modeling study for Hillsborough County indicates that the median concentrations for 14 of the air toxics exceed EPA's inhalation health benchmarks. Attached is a summary of the 2001 air toxics monitoring comparing the Tampa Bay region to other large cities that used identical monitoring equipment, which shows the Tampa Bay metals emissions to be similar to other large urban areas across the country. Also, the results of the last NATA modeling assessment shows Hillsborough County's emissions to be similar to other national urban areas and those in Florida. However, three of those (carbon tetrachloride, chloroform, and ethylene dibromide) are almost entirely due to

background concentrations. Background concentrations are emissions that occurred in the past, are transported over many miles, and take many years to breakdown chemically. Another four (benzene, 1,3-butadiene, formaldehyde, and acetaldehyde) are primarily from mobile source emissions. Mobile source emissions include cars, trucks and all other off-road sources that burn fossil fuels. The other seven toxics (arsenic, beryllium, cadmium, chromium, nickel, acrylonitrile, and vinyl chloride) originate from industrial and smaller area sources. Industrial sources include major sources of combustion, such as power plants and incinerators. Smaller area sources include sources of chemical evaporation such as landfills and numerous smaller users of chemicals. It is not surprising that three of the metals identified above are also found in the air around Coronet Junction at similar levels found at other sites around Tampa Bay. Furthermore, even though these 14 compounds were identified as possible health risks, a complete health risk assessment needs to be conducted to examine all possible ways that these compounds might enter the human body and cause problems, such as ingestion or dermal contact. That is what EPC is requesting the Department of Health do in the case of these three compounds.

EPA has already taken steps to eliminate the persistent chemicals contributing to background concentrations, through regulations decreasing the use of carbon tetrachloride and chloroform. EPA has also proposed rules to reduce mobile source toxics by limiting the toxics in gasoline and diesel fuel. Since the mid-90's, EPA has published 50 standards to control toxic emissions from industrial and small area sources, and plans to publish another 47 by 2004. As EPA publishes these standards, EPC continues to seek out these sources to make them aware of the standards, to permit them if required, and to insure they are complying with the standards. We will continue these efforts in the future.

For more information on EPA's air toxics program, visit EPA's website at: www.epa.gov/ttn/atw.

Tampa Bay as Compared to National Monitored and Modeled Air Toxics

			Actual Monitoring Data - 2001 Pilot Cities (10 cities)					
	All Cities		**Tampa Bay***		**Detroit**	**Providence**	**Seattle**	**San Jacinto**
					MI	**RI**	**WA**	**CA**
			Measured Concentrations exceed EPA Benchmarks (yes/no)					
Arsenic	yes		yes		yes	NA	yes	yes
Beryllium	no		yes		no	no	no	NA
Cadmium	yes		no		yes	no	no	yes
Chromium	yes		yes		yes	yes	yes	yes
Lead	yes		no		yes	yes	no	yes
Manganese	no		no		yes	no	no	no
Nickel	no		no		no	yes	no	yes
Antimony	not part of pilot cities study							
Cobalt	not part of pilot cities study							
Selenium	not part of pilot cities study							
	*includes Pinellas County							
				Predicted Values Based on				
				Modeling - 1996 NATA (released 2002)				
				National	Florida	Hillsborough		
				Urban Areas		County		
			Measured Concentrations exceed EPA Benchmarks (yes/no)					
			Arsenic	no	no	no		
			Beryllium	no	no	no		
			Cadmium	no	no	no		
			Chromium	yes	yes	yes		
			Lead	no	no	no		
			Manganese	no	no	no		
			Nickel	no	no	no		
			Antimony	not part of NATA				
			Cobalt	not part of NATA				
			Selenium	not part of NATA				