

## Air Pollution from Proposed Sunnyside Ethanol Biorefinery

This is what the proposed Sunnyside Ethanol, LLC biorefinery would be allowed to put in the air, according to the air permit granted by the state Department of Environmental Protection (DEP) in May 2007. Most of this pollution would come out of a smokestack about 30 stories high (for the small waste coal-burning power plant that will power the refinery), but some would come from storage tanks, leaks and other sources at ground-level.

<u>Pollutant</u>	<u>Permitted Emissions (tons / year)</u>	<u>Health Problems</u> caused or made worse <i>(not a complete list!)</i>	<u>Frequency of Testing</u>
<b>Nitrogen Oxides (NOx)</b>	171.0	Worsens asthma; decreases lung function; respiratory disease; helps form ozone, which contributes to asthma, heart attacks, low birth weight and premature births	Continuous for main stack; Once every 2 years for rest of facility
<b>Carbon Monoxide (CO)</b>	330.7	Injuries to heart, brain and other organ and tissues	Continuous
<b>Sulfur Dioxides (SOx)</b>	435.9	Lung irritation; worsens asthma; destabilizes heart, low birth rate; sudden infant death syndrome	Continuous
<b>Particulate Matter (PM)</b>	130.1	Increased asthma attacks; increased deaths in elderly; heart disease; stroke; low birth weight; premature births; airway obstruction; sudden infant death syndrome	Once/year for main stack; every 2 years for rest of facility
<b>Ammonia</b>	14.2	Breathing problems; suspected neurotoxin and reproductive toxin	Once/year
<b>Sulfuric Acid (H<sub>2</sub>SO<sub>4</sub>)</b>	21.8	Reduced lung function	Once/year
<b>Volatile Organic Compounds (VOCs)</b>	37.6	Suspected to cause cancer and to be toxic to reproductive system; 8.41 tons/year allowed from leaks	Once/year for main stack; every 2 years for rest of facility
<b>Hazardous Air Pollutants (HAPs):</b>	2.2	See below:	Once/year
The toxins below are all considered HAPs. Total HAP emissions can't exceed 2.22 tons/year. Three chemical storage tanks on site will release VOCs and volatile HAPs, but these emissions will not be monitored.			
<b>Beryllium</b>	37.34 lbs/year	Lung scarring, breathing difficulties, heart strain, and skin irritation, cancer (lung & bone)	Once/year
<b>Lead</b>	123.6 lbs/year	Reproductive problems; Memory & behaviour problems, Nerve damage, kidney damage	Once/year
<b>Mercury</b>	2.1 lbs/year	Nerve toxin; brain damage, mental retardation; birth defects; blood pressure; heart rate	Once/year
<b>Other toxic metals</b> (antimony, arsenic, cadmium, chromium, cobalt, manganese, nickel, selenium)		Cancers (lung, throat, skin, bladder, kidney); reproductive problems; may damage fetus; brain and nerve damage; liver, stomach, intestines, heart, lung and thyroid problems; headaches, asthma	Once/year
<b>Hydrofluoric Acid (HF)</b>	3.1	Kidney and nervous system damage; damage to bones; learning disabilities	Once/year
<b>Hydrochloric Acid (HCl)</b>	9.9	Lung irritation, worsens asthma	Once/year
<b>Polycyclic Aromatic Hydrocarbons (PAHs) *</b>	no limits	Cancer, birth defects, immune system problems	Never
<b>Dioxins / Furans **</b>	no limits	Cancer; reproductive problems; birth defects; learning disabilities	Never

### 1,156 Tons of air pollution each year - 3.17 Tons per day

\* **PAHs** are a group of toxic, cancer-causing chemicals that are known to be a problem with the type of burner that Sunnyside would be using to power their process (a waste coal-burning fluidized bed boiler). These pollutants won't be monitored or limited at all.

\*\* **Dioxins and furans** are the most toxic chemicals known to science. They're produced primarily by burning anything that includes chlorine (waste coal contains high levels of chlorine). These pollutants won't be monitored or limited at all.