

Selected List of Reported CIPP Caused Air Contamination Incidents and Styrene Concentration Reported In Air

Information presented in the table is verbatim or summarized from the references; Table Notes: nr = Not reported in the reference; PERSONAL COMMUNICATION indicates the source contacted co-author Dr. Whelton individually; FOIA indicates records were obtained from a utility by a Freedom of Information Act (FOIA) records request. Information obtained from that request, where applicable, was described. FOIA requests were submitted to the following organizations based on input from CIPP industry representatives and author contacts: Bureau of Engineering, City of Los Angeles, CA; Orange County Sanitation District, Orange County, CA; St. Louis Metropolitan Sewer District, St. Louis, MO; Citizens Energy Group, Indianapolis, IN; City of Chicago Division of Water Management, Chicago, IL; DC Water, Washington, DC; Washington Suburban Sanitation Commission, Laurel, MD. Citizens Energy Group did not provide documents to the authors in response to their January 2017 FOIA request by the time this manuscript was submitted.

Incident Location (Year)	Styrene	Description of events from reference
West Lafayette, IN (2016) ¹	nr	Fumes entered a University campus office building through floor drains; chemicals were generated by a nearby CIPP sewer pipe repair activity; building inhabitants complained to the University safety department and onsite CIPP contractor about odors; doors were opened to ventilate building before the safety department representative arrived to investigate; fire department was not called; University safety department conducted spot PID testing after building ventilation; contractor stated there was no health risk just an unpleasant odor.
Good Hope, IL (2016) ²	nr	Report that ‘steam’ filled the post office four different times; no fire department called; lateral not plugged allowed chemical plume to enter building; "It blew the water out of the toilet," Town Manager said. "It blew the wax seal out because steam was coming out between the floor and the toilet, and steam was coming out of the toilet...and it was coming out of the roof vent. I came up here six times." I got phone calls from the post office out of Bloomington, out of La Harpe, out of Galesburg and like three times up here...The first time, it ruined their computer, and they had to replace their computer inside. It was so wet, there was water dripping from the ceiling. Everything in there was just covered, and the floors were just sopping wet."
Madison, WI (2016) ³	nr	Hazardous materials team responded; odor-permeating basements of local businesses and exiting storm drains; The reporter stated, "A white haze that was unidentifiable on monitoring equipment was seen coming out of a storm sewer drain, so firefighters called in the hazardous incident team. Chemical identified was styrene." "An employee of the CIPP company said they used styrene and the chemical had been disposed of in a drain about four blocks away," per the fire department.

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Bethlehem, NY (2016) ⁴	nr	Reported stated that there was a foul smell up and down the street where cured in place pipe installation for sewer repair was occurring; Insituform hired by town for sewer work; Residents were asked to cover toilets.
Cheektowaga, NY (2016) ⁵	nr	Resident complained “it automatically takes your breath away. You're like what is that smell?” The Cheektowaga resident said it's coming from a silvery liquid that settled in her basement sump pump. It stems from sewer work performed by a company called Insituform last week. The letter also said homeowners might experience an odor. Resident said “I woke up in the middle of the night sick to my stomach from it.” Resident said she contacted Insituform and they did come and check out the problem. But, she said it hasn't been resolved. Resident worries what kind of effect the smell might have on her health. “... What is causing that smell?” The Town of Cheektowaga said they've received a handful of complaints. It said the gas is coming through a faulty trap or an illegal sump pump. The town recommends running water through the trap to fix it. But, it is on the homeowner to fix a faulty trap or an illegal sump pump.
Cornwall, UK (2016) ⁶	nr	Resident claimed, “Suffered from burning eyes, abdominal pain, aching joints and memory loss at their home”; Water utility stated, “No evidence their work caused the family's ill health. As a gesture of goodwill, they were paying for the family to stay in a B&B.” In a letter, specialist doctor at hospital said, “resident presented with symptoms of styrene poisoning and was advised not to enter the house until it had been cleared of the chemical.” Water utility stated, “styrene is widely used across the country to line water mains and sewers and there is no regulatory requirement to wear respiratory masks whilst working with the substance.”
Alexandria, VA (2016) ^{7,8}	nr	FOIA: Fire department responded to a resident complaint; collected dräger tube air sample; RK&K, Inc. contractor took them to the downstream manhole. Later, someone with a baby came by and said they called the fire department; fire department told her to open her windows and pour water down her basement drain. RK&K, Inc. contractor told person to additionally put a wet rag over the opening. RK&K, Inc. contractor thinks some people are more sensitive to styrene than others or their house somehow captures more odors due to their lateral location. Contractor recommends set up a fan “even if it is for show.” Per RK&K, Inc., “There was no visible steam or odor from the manhole although [fire department] took their reading about 4 inches from the bags' end which will/may result in a high reading. They did not return for further discussions.”
Alexandria, VA (2016) ⁹	0 ppm	FOIA: City spoke with resident who filed odor complaint April 14, 2016 to report styrene odor; RK&K, Inc. contractor visited home and used PID, which stated “0.0 ppm at all times when they were in the house.” Homeowner called again on April 27, 2016, 13 days after the lining cool down, to report the styrene odor again. RK&K went to the home again and this time there was a reading as they entered the front door. RK&K, Inc. walked outside, went back in and the reading was 0.0 both at the door and at the basement trap; Homeowner called May 16, 2016 (today) to request another reading; City explained to him that the work was accomplished over 3 weeks ago and that if there was an odor it was not caused by the sewer lining.

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North Tonawanda, NY (2016) ¹⁰	nr	Reporter stated "For about a month, noses have been picking up a distinctive smell near the site of the former Durez Corp. plastics and chemical plant that was torn down in 1997." Sewer pipes were being repaired with cured in place pipe and the odor was suspected to be caused by the construction activity per the City Engineer. The reporter stated that community air monitoring was performed throughout the project.
Québec, CN (2015) ¹¹	nr	PERSONAL COMMUNICATION: Fumes stayed in building for 1 month; installers claimed styrene trapped underground and drifted into house; installers installed blowers; after the 2 nd month (1 month of ventilation) odor went away.
Picayune, MS (2015) ¹²	nr	Calls to utility during weeks and typically with older homes; Utility suspects most residents that notice a smell may be living in a home with inadequate vent or trap which is allowing the odor to enter the home from the wastewater lines; CIPP contractor recommends residents add water to sewer traps and if smell intrudes home they should open windows for a short time; CIPP contractor assures the smell is not harmful and cites a 2001 study to determine the levels of styrene concentration during the installation and a worst case scenario; Contractor states during testing the concentration detected with a working trap was 0.0002 ppm while faulty vents had 0.1 and 0.2 ppm; Claimed person standing over a manhole would experience 3.2 ppm styrene; Contractor reported that if odor does enter house it could remain for up to two days.
Lincoln, NE (2015) ¹³	nr	Several homes evacuated; fire department called and stated "The readings in one of the houses was significantly high, higher than expected levels or safe levels;" Fire department chief stated "When they inject steam into the sewer line and in that steam is a chemical called styrene." City health specialist stated, "Our assumption is it pushed a bunch of this odor through the sewer line, on down stream of where they were working." Fire department opened windows in the affected homes and set fans up to help aerate them, and residents were allowed back inside later that day.
Ottawa, CN (2015) ¹⁴	nr	Residents and businesses complained about chemical exposures: "The smell was so intense that I had to let my secretary go home because she was ready to vomit." The city paid for one family to be put up into a home; the city stopped CIPP work to investigate; city recommended work only be conducted in summer when buildings can be better aired out.
Ottawa, CN (2015) ¹⁵	nr	Residents state that odors come through drains and circulate in the building through air vents and started about a month ago, "Using incense to cover the smell"; Ottaway Public Health monitored air; City Hall recommends that residents open their windows until the smell goes away; the business owner interviewed however did not have windows that can be opened.

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St. Petersburg, FL (2015) ¹⁶	nr	Resident filed complaint to city that “For two days having some strong chemical (epoxy or glue-like odor) coming from drains periodically. The smell has resulted in irritation to the back of our nasal passages in just a short period of time breathing it.”
Antigo, WI (2015) ¹⁷	nr	Illness symptoms reported by child; pregnant woman concerned about the exposure; firefighters responded to homes; firefighters said, “According to the MSDS sheet it was not safe to just be breathing those inhalants.” Resident explained, “The basement was incredibly full of fumes, and whatever they're shooting into the pipes was shooting up out of our drain pipe into our basement so forcefully it was actually whistling.”
Alexandria, VA (2015) ¹⁸⁻²¹	nr	FOIA: City tells residents, “Higher ambient temperatures have a tendency to exacerbate odors associated with the relining.” Homeowner association representative stated, “Different homes very near to one another have been affected to widely varying degrees. Just speaking in my home, the basement and main floors were worse than the second floor. Some houses were not affected. In addition, when all windows were opened, fumes dissipated fairly well and resident thought the threat was over. When resident closed windows, and turned on air conditioning, and left to go to the store, fumes became bad again. The fumes were also bad last night even though the crew finished work about 5:30pm the day before, albeit not nearly as bad as while they were working.” City declared, “People and Pets are safe because the contractors are not working with enough styrene to be dangerous. Styrene is only dangerous in large quantities.”
Kensington, MD (2015) ^{22,23}	rr	FOIA: Resident called utility and left message about complaint and claimed he and several neighbors who were ill due to the smell exposure that caused a nose bleed; utility CIPP contractor was lining a 30 inch diameter sewer pipe in the area with steam curing and utility suspects that would cause the styrene odor; utility spoke with one resident who claimed that there was a shift in the wind causing the odor to linger about his house and his neighbors causing temporary illness; utility staff explained they are working to figure out what chemicals were used; follow up by utility indicates that, “Customers contacted WSSC regarding the resin odor which is typical when lining sewers.” CIPP contractor installation failed (400 linear feet of the 500 linear foot liner) and contractor has been cutting/removing the failed liner.
Rensselaer, NY (2015) ²⁴	nr	Chemical entered homes from sewer CIPP lining; one resident taken to hospital; city paid for hotel rooms for 5 homes impacted. Resident claimed, “Styrene permeated the clothing in their drawers, closets, and couches.”
Botany Village, NJ (2015) ²⁵	nr	Resident reported strong and fragrant sewer odor pervaded the neighborhood; yearlong project.

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St. Louis, MO (2014) ²⁶	nr	Residents report odors in homes; Described them as “toxic, permanent-marker-type smell.” Sewer utility [Metropolitan St. Louis Sewer District] spokesperson stated: The heating/curing process is known to release smells that, while gross and annoying, don't pose a health risk, says LeComb. "Odors do come off sometimes, and we certainly apologize for the inconvenience. This is a very large sewer, so it'll have more of an odor impact than we usually see," says LeComb. However, Lacombe adds, it is possible for the smell to emanate from inside a home, likely through dried-out sink traps or basement drains. If you start to smell something funky indoors, he suggests pouring two or three cups of water in the sink or down the drain to seal those smells away.”
Prairie Village, KS (2014) ²⁷	nr	PERSONAL COMMUNICATION: Resident reported the smell of superglue in house, headaches and nostrils burning; utility contacted and told resident vapors nontoxic; windows and doors opened for ventilation, but odor remained; county did not investigate and told resident chemicals were nontoxic.
Manchester, UK (2014) ²⁸	nr	Steam cured CIPP was installed; residents complained about odor, and health effects such as headaches and nausea. “A number of households were relocated to stay with relatives or in hotels. Subsequent investigations indicated that a small breach occurred in the liner during the early curing process. This allowed chemicals to escape and enter nearby properties, most likely through connections to the culvert.”
Baltimore, MD (2014) ²⁹	nr	PERSONAL COMMUNICATION: Resident evacuated house after detecting odor caused by CIPP sewer pipe repair activity nearby and experienced chemical exposure symptoms; sought medical attention; fire department responded conducted air testing but discrepancy between resident observed results [400 ppm styrene on draeger tube] and fire department filed report [nothing found]; moved out of house for 1 month; odors got stronger when it rained.
Illinois (2014) ³⁰	nr	PERSONAL COMMUNICATION: Resident claimed fumes from CIPP sanitary sewer installation backed-up into private residences and residents reported chemical exposure symptoms.
Kensington, MD (2014) ³¹	nr	FOIA: Resident called utility and filed a complaint, chemical odor from nearby sewer work happening behind his house; utility staff recommended borrowing language provided to them by the CIPP when responding to the resident. The contractor language stated, but not limited to, “Don’t be alarmed. The CIPP industry is a worldwide 100 billion dollar industry that installs more than one million feet a year and thousands of people are involved with no diverse effects.”
Nashville, TN (2014) ³²	nr	Complaints from residents about chemicals emitted during CIPP activities; “We're having a hard time breathing, getting dizzy," Zach Shedd said. "Pretty much have to leave the house. It's got a very thick, pungent smell, like burning plastic. When you inhale or breathe it, it literally coats the back of your throat." Utility stated “There is no research or studies showing that this is hazardous, styrene is actually in things we use every day. It's in certain foods, like strawberries or coffee. It's in automobile exhaust."

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Philadelphia, PA (2013) ³³	nr	PERSONAL COMMUNICATION: Resident took 4 month old baby to a medical center after exposure to fumes inside a house generated during nearby CIPP sanitary sewer repair.
Fayetteville, NY (2012) ³⁴	nr	Odors permeated into nearby residences; residents complained and evacuated their homes; city engineer stated odor "Is not toxic, not dangerous"; contractor stated, "Odor from it is not harmful. There is no health risk. The contractor's personnel are trained in handling the liner properly, and once it hardens, there is no residual left. There is no exposure other than an odor blown off the material. It's no different than smelling turpentine or gas."
Brisbane, AUS (2012) ³⁵	nr	PERSONAL COMMUNICATION: Resident reported that odors were detected and exposure lasted 5 days in home; person hospitalized; health department investigated and demanded home be decontaminated; resident reported his and his neighbor's pets died.
Ontario, CN (2012) ³⁶	nr	Odors detected kilometers from worksite and within nearby private residences; exhaust fans used for manholes.
Ontario, CN (2012) ³⁷	nr	CIPP wastewater discharged to sanitary sewer; odors reported near worksites.
Worcester, MA (2011) ³⁸	60 - 70	Fumes caused daycare center evacuation; headaches reported; emergency responders called to site; Fire chief reported, "For the styrene to be dangerous, it needs to be 10 times that amount."
Minnesota (2011) ³⁹⁻⁴¹	nr	Odor caused by resin spill prompted building evacuations; residual remained for five months.
Port Huron, MI (2011) ⁴²	nr	Daycare owner sent children home early and remained closed; claimed odors made staff and children sick and dizzy; residents reported strong odors in homes; firefighters responded and said no toxic or flammable fumes in homes; officials told residents to pour water in their traps to keep odors out of homes.
Port Huron, MI (2011) ⁴³	nr	Firefighters responded to reports of a strong odor; resident claimed it smelled like turpentine, started puking, removed her three dogs, and opened house windows.
Southfield, MI (2011) ⁴⁴⁻⁴⁶	nr	Five students and one staff member at high school transported to hospital after becoming nauseated; 20-25 classrooms affected; fire fighters responded with local HAZMAT unit; odor reportedly entered building day before and students were moved by teachers to different part of building; Oakland County Water resources (water utility) manager stated, "At levels present in the resin, neither the styrene nor the other chemicals were toxic." Civil Engineer at water utility stated, "It's not uncommon to have people complain about the odor, and we have had complaints (about the odor) from the public before, but we've never had people go to the hospital until this incident. Up to this point, it's really just been about odor. We have had complaints about eye irritation and gastroenterological problems, but nothing worse than that. It's never really been a public health concern.....the process only produces one to three parts per million when you're exposed."

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Saugus, MA (2011) ^{47,48}	nr	Firefighters ordered evacuation of elementary school because of strong odor; dizzy and light-headed symptoms reported; the following day, after the building had been evacuated, the state health agency conducted air testing using a PID; odor detected outside above a manhole cover but PID did not respond; PID did not respond for VOCs in the in-building locations.
Pittsburgh, PA (2011) ⁴⁹	nr	Two schools evacuated; elementary and high school students evacuated for fear of gas leak, but odors turned out to be caused by nearby CIPP operation; theory was “The wind was blowing in such a way that the smell drifted to the schools, where windows were open.” Utility stated, “Did not believe chemicals used in the process would cause any danger to people in the schools, especially since schools were not in close proximity to the work and the contractors doing the work aren't required to wear masks or other breathing apparatus.”
Clear Creek, CO (2011) ⁵⁰⁻⁵²	nr	“Source Type: Culvert Lining. Cause Information: Styrene was released to the water of Clear Creek after it had been used on 2/4/11 by CDOT [Colorado Department of Transportation] as part of the process of lining a culvert near the water intake on Clear Creek for the Loveland Valley Ski Area. The ski area noted the smell on 2/7/11 and did a test that showed the presence of styrene.” It had contaminated their drinking water. “...February 7, 2011 at 1125 a.m. the Clear Creek County Environmental Health Dept received information of a possible contamination of the waterway of Clear Creek at the Loveland Ski Area. An elevated, but unknown amount of styrene has been detected, and is suspected to be at the CDOT culverts ...” Investigation discovered unknown amount of uncured resin was discharged to creek and styrene as well as other compounds known to be present in resin or produced during CIPP manufacture were detected in downstream waterways. Community affected by drinking water contamination was provided alternate drinking water supply followed by actions to remediate the affected area and wide area environmental sampling.
Birmingham, UK (2011) ⁵³	15 - 200	Odor complaints reported by residents; residences evacuated homes at contractor's recommendation; one resident claimed, “My 3 children (6yrs, 4yrs, 17 mths) have all been sick during the night and we have all suffered headaches, dizziness, tight chests and nausea. My baby has swollen & inflamed tonsils & throat which the GP feels is due to the irritation caused by styrene.” 3 days after, reported styrene above 20 ppm in one home still; 8 days after incident 100 ppm styrene measured in one home and resident reporting chemical exposure symptoms; responders theorized there was a leak in the lining used for styrene CIPP sewer pipe repair; building ventilation conducted; health department did not conducted testing, relied on contractor results to make safety decisions; contractor did not disclose styrene present in homes above health limits until days after health agency involved.

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Williams Co. Village, OH (2010) ⁵⁴	nr	Residents complained, "Smelling a glue-like odor inside their houses for the last two weeks, and have suffered from severe headaches, nausea, and dizziness." Some claimed, "They only began to link their symptoms to the fumes this week after the odor intensified." Family began experiencing upset stomachs, diarrhea, severe headaches, dizziness, and lethargy about 2.5 weeks ago. Residents moved out of house and afraid to return home; some went to emergency room to seek help, hospital told them they do not have facilities to test for the chemicals. Village manager evacuated 19 families from their homes and put them up in a hotel for 2 nights at a total cost of about \$3,000. Town manager stated, "There's flu going around. I can't tell you why they were sick." Town manager said, "Smell came from a chemical called styrene which was used as a sealant for the sewer pipeline... odor got into people's homes through floor drains." Reporter stated other substances - acetone, a polyester resin and chemical products named "Perkadox 16" and "Trigonox 42S" - also were used during the project.
Helena, MT (2010) ⁵⁵	nr	Fire department evacuated affected building because of complaints of strong odors, nausea, and headaches.
Helena, MT (2010) ⁵⁶	nr	Workers at local businesses left the office after smelling the CIPP causing odor. Businesses opened doors to ventilate their buildings; city hired contractor to test air, but was unaware of complaint by business interviewed by reporter; the prior week firefighters evacuated an area due to odors; businesses filed insurance claims due to lost business.
Helena, MT (2010) ⁵⁷	nr	Businesses closed; residents reported chemical exposure symptoms to include headaches; part of the old sewer pipe being repaired was exposed in a building's basement, making it easier for the chemicals to escape. Complaints about the smell of paint thinner or glue caused firefighters to evacuate the building 3 days ago; at that time a peak of 67 ppm in the building's basement was detected; following day, it was 10.2 ppm on average, and 3 days later, the level was 2.5 ppm. City workers set fans to pump fresh air into the building, which made the problem worse by pushing gases into other areas.
Lorain County, OH (2010) ⁵⁸	nr	Residents claimed, "They became nauseated or dizzy last week from 8 days ago from an overpowering chemical smell coming from their toilets or floor drains." CIPP contractor stated, "Styrene odor can be irritating to some people but that rarely does anyone become ill." 5 days after odor, engineering contractor conducted testing per residents; resident claimed, "Went in the bathroom and the pressure had shot up water out of the toilet -- and the smell just about knocked you over...couldn't breathe right and got a headache from it...felt confused, groggy, like I was drunk or slurring my speech."
Arlington, VA (2010) ⁵⁹	nr	Nearby CIPP installation caused odor; residents called, fire department responded; city publicly claimed, "The resin is not harmful to pets or people." City claims pouring water in sewer traps "prevents sewer odors from entering the home."
Willamette River, OR (2012) ⁶⁰	nr	Contractor discharged steam cured CIPP waste to Willamette River; "Styrene levels were so high that the responder had to wear a respirator to collect samples."

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Bellevue, WA (2010) ^{61,62}	nr	CIPP storm water pipe cured by steam; plug failed and released waste to local waterway including styrene two different days; odors detected; city closed area to the public near spill to prevent exposures; odor remained for more than 14 days after the spill.
Pittsburgh, PA (2009) ⁶³	nr	Firefighters evacuated apartment buildings; initially suspected cyanide gas, but styrene was ultimately detected from nearby CIPP.
Des Moines, IA (2009) ⁶⁴	nr	Odor inside government building caused by CIPP nearby caused building inhabitants to evacuate twice; downtown workers and residents also noted the odor. Fire department stated, “Smell is harmless and will dissipate quickly.”
Cambridge, MA (2008) ⁶⁵	nr	Contractor released contaminated process water down sewer line which exited downstream manhole; fans were used to divert fumes away from a neighborhood; cease and desist order issued by utility to contractor.
Snellville, GA (2007) ⁶⁶	nr	Resident contacted health department about chemicals entering homes during a recent storm sewer rehabilitation project and reportedly caused neighbors to experience headaches. Health department contacted the contractor who installed in-place polymer liners. The process involved running a polyester resin tube inside existing storm pipe, then filled with 180 degree water. A styrene based thermoset resin and catalyst system was used to cure the resin in place when the 180 degree water was added. According to the contractor, during this process, all the styrene was gassed off. Upon complaint by the resident, the contractor discovered an illegal drain pipe coming from the home that was connected to the storm pipe. Resident ventilated the house during the day, which health department told him was the right thing to do. Four days after the incident, the resident stated that the smell had diminished, but was still present. The health department informed the resident that the NIOSH relative exposure limit was set at a TWA of 50 ppm. Without measuring the actual indoor air concentration, the health department reported that there was no way of knowing whether his family was exposed to styrene gas above the REL. The resident continued to ventilate the home and the health department informed the resident that this was all that could be done and that the styrene gas would eventually dissipate.
Somerset, UK (2007) ⁶⁷	nr	Foul CIPP styrene odor permeated into residence through drain because of nearby installation; resident stated odor persisted for 12 days and rejected the offer of a masking spray. Utility (Wessex Water) stated, “The smell of styrene is not harmful and is generally short-lived.”
Brooklyn, NY (2007) ⁶⁸	nr	Foul CIPP styrene odor permeated into buildings through drain because of nearby installations; Department of Environmental Protection adds pine deodorizer at the site cover the smell; odors first detected in 2006.
Boston, MA (2007) ⁶⁹	nr	CIPP installation prompted chemicals to enter the basement of a nearby restaurant.
Ottawa, CN (2004) ⁷⁰	20, 115	Venting determined to be helpful to prevent air backup into nearby residences/ buildings.

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Alexandria, VA (2004) ⁷¹	500	HAZMAT team responded because of styrene vapor backup into nearby buildings; illness symptoms reported by residents and residents evacuated homes. Police officer stated he felt nauseated, light-headed, short of breath and his eyes were burning, like they were on fire. Went to urgent-care center and was diagnosed with an inhalation injury. Another resident who worked at the World Bank said, "The smell was so strong that he was afraid to return to his home with his 19-month-old son.". He reported vomiting repeatedly the next day, and thought he had food poisoning. City officials said yesterday, "That the toxic fumes might have affected more residents than they initially disclosed." Hose left behind by contractor was emitting 500 ppm of styrene; public works conducted tests in sewer and homes and declared styrene was "within acceptable levels"; city recommended residents fill "dry pipe traps with water to prevent fumes from entering through pipes. Workers also planned to ventilate manholes and flush sewer lines with water. Contractor stated, "On rare occasions, we've had people overreact, as we've had in this situation, and go to the hospital as a result of smelling the styrene . . . which can cause your eyes to burn and your nose to run, much like smelling ammonia."
Milwaukee, WI (2004) ⁷²	0.01 - 0.32; 30 ppm _v for total VOC	An office building became contaminated; building evacuated for 2 days. Occupants complained about irritant symptoms and strong odor. US federal health agency investigated; styrene and other VOCs detected; 4 months required to reduce styrene levels to background; greatest styrene levels detected in basement; ASTDR declared the exposures a public health hazard due to styrene levels exceeding acceptable ATSDR chronic (long-term) exposure levels. Recommendations made to ventilate the building basement to reduce exposure and odor. A temporary exhaust system was installed in the building basement near the point of vapor entry.