Health Risks Near Port Townsend Paper Company

A Summary of the ATSDR Health Consultation, June 24, 2024

Citizens for Safe Water and Air - Port Townsend

PORT TOWNSEND, WA

This research has been compiled to the best of our ability from named public sources. If you believe any fact presented here is incorrect or incomplete, please contact safewaterandair@gmail.com so it can be reviewed and corrected.

This document summarizes a federal health agency's direct study of air quality near Port Townsend Paper Company (PTPC). The Agency for Toxic Substances and Disease Registry (ATSDR), part of the United States Department of Health and Human Services, conducted a ten week air sampling investigation near PTPC in the fall of 2018 and published its findings on June 24, 2024 [1]. This is not a study of workers inside the facility. It is a study of outdoor air in the surrounding community, measured at eight locations including private residences, a public school, and a local business, all within three miles of the facility.

This summary presents the agency's findings plainly, including findings that support community health concerns and findings that do not. Citizens for Safe Water and Air - Port Townsend is committed to accuracy over advocacy. Every figure below is drawn directly from the published consultation report [1].

Background and Purpose

Citizens in Port Townsend and Jefferson County, Washington first contacted the Washington State Department of Health in 2007 with concerns about air emissions from PTPC. Between 2016 and 2021, nearly two thousand odor complaints about the facility were recorded by the Washington State Department of Ecology and by PTPC itself [1].

In response, Agency for Toxic Substances and Disease Registry (ATSDR) placed air monitors at eight locations near the facility for ten weeks, from August 30, 2018 to November 10, 2018, and measured sulfur compounds, fine particle pollution, and aldehydes in the outdoor air that residents breathe. The investigation period was extended specifically to capture a one week shutdown of PTPC's operations, so that air quality during normal operation could be directly compared to air quality while the facility was not running [1].

Cancer Risk Findings

Of the contaminants measured, two aldehydes, formaldehyde and acetaldehyde, were found at levels that exceeded Agency for Toxic Substances and Disease Registry (ATSDR)'s cancer risk evaluation guideline. Formaldehyde is classified as a known human carcinogen by the National Toxicology Program, a probable human carcinogen by United States Environmental Protection Agency (EPA), and as carcinogenic to humans (Group 1) by International Agency for Research on Cancer (IARC). Acetaldehyde is classified as reasonably anticipated to be a carcinogen by the National Toxicology

Program and as possibly carcinogenic to humans (Group 2B) by International Agency for Research on Cancer (IARC) [1].

All thirty formaldehyde samples collected over twenty four hour periods, one hundred percent, exceeded the cancer risk evaluation guideline. Twenty three of thirty five acetaldehyde samples, sixty six percent, also exceeded the guideline. Concentrations of both chemicals were significantly higher while PTPC was operating than during the one week shutdown [1].

Combining both chemicals, Agency for Toxic Substances and Disease Registry (ATSDR) calculated an additional lifetime cancer risk of approximately eleven cases per one million people, based on thirty three years of continuous exposure at the same location. The agency describes this combined risk as low. Citizens for Safe Water and Air - Port Townsend presents this figure exactly as published, without characterizing it further, so readers can draw their own conclusions [1].

Contaminants Not Classified as Cancer Risks

The agency's report is equally clear that two of the most prominent contaminants near PTPC, hydrogen sulfide and sulfur dioxide, the chemicals most responsible for the facility's characteristic sulfur odor, are not classified as carcinogens. Hydrogen sulfide has not been shown to cause cancer in humans and is not currently classified as a carcinogen by the National Toxicology Program, United States Environmental Protection Agency (EPA), or International Agency for Research on Cancer (IARC). Neither the National Toxicology Program, United States Environmental Protection Agency (EPA), nor International Agency for Research on Cancer (IARC) have classified sulfur dioxide as a carcinogen [1].

Citizens for Safe Water and Air - Port Townsend includes this finding deliberately. A credible campaign states what the science supports and what it does not. The case for concern about hydrogen sulfide and sulfur dioxide near PTPC rests on acute respiratory effects and odor impact on quality of life, not on cancer risk.

Acute Respiratory Effects and the Link to Plant Operations

The agency concluded that breathing the mixture of sulfur compounds in the air near PTPC, specifically sulfur dioxide, hydrogen sulfide, dimethyl sulfide, dimethyl disulfide, and methyl mercaptan, can potentially cause adverse acute respiratory effects. While no single one of these chemicals at the concentrations measured was likely to cause harm on its own, the combined mixture produced an acute hazard index of ninety, far above the threshold of one that the agency uses to flag a combined exposure for further evaluation. This acute hazard was dominated by sulfur dioxide [1].

The connection between these contaminants and PTPC's operations was direct and measurable. During the facility's one week shutdown in 2018, concentrations of aldehydes, sulfur dioxide, hydrogen sulfide, methyl mercaptan, dimethyl sulfide, and dimethyl disulfide were all significantly lower than during normal operation [1].

Community odor complaints followed the same pattern: twenty eight complaints were recorded in the two weeks before the shutdown, only one complaint during the shutdown itself, and sixteen complaints in the two weeks after the facility restarted [1].

What the Data Did Not Show

In the interest of accuracy, Citizens for Safe Water and Air - Port Townsend also reports a finding that does not support a community health concern. The agency reviewed asthma hospitalization records for the zip code covering Port Townsend from 2010 through 2020 and found that the rate was not statistically different from the surrounding county or from the state of Washington as a whole. The agency was careful to note that hospitalization data alone cannot identify the cause of any health outcome, and that asthma can be influenced by many factors over a person's lifetime. This finding is included here because a campaign that only reports favorable findings is not a credible campaign [1].

The agency also concluded that fine particle pollution and the aldehydes measured were not expected to harm the general public's health, though it noted that particle pollution could affect unusually sensitive individuals, including children, older adults, and people with existing heart or lung disease, on days when concentrations were higher [1].

Limitations Acknowledged by the Agency

The agency's own report lists several limitations that should be carried forward honestly in any discussion of these findings. The ten week sampling period may not represent long term, year round exposure. The agency sampled during conditions it expected to be among the most severe, which may produce a higher estimate of annual exposure than would otherwise occur [1].

Air samples were collected at fixed locations, while people move throughout the day, so the measurements are not a direct measure of any individual person's actual exposure. Finally, one of the two sampling methods used for sulfur compounds is new to this type of investigation and was found to be less reliable for hydrogen sulfide and sulfur dioxide than measuring those two chemicals alone, which may have led to an overestimate of the highest short term concentrations [1].

Sources and Citations

All factual claims in this document are drawn from the following sources, verified during research for this document.

1. Agency for Toxic Substances and Disease Registry (ATSDR): Health Consultation and Exposure Investigation, Outdoor Air Exposures from the Port Townsend Paper Corporation, published June 24, 2024, based on air sampling conducted fall 2018. Available at: atsdr.cdc.gov/HAC/pha/PortTownsendPaperCorp/Port-Townsend-HC-508.pdf. (The underlying research text for this document ended its own source list with only the heading "Source" and no citation text; this entry reconstructs that citation from the report title, agency, and June 24, 2024 publication date stated in this document's own body text, and from the identical citation already used for the same report elsewhere in this campaign's research.)