

Louisiana's Outdated Air Toxics Standards Undermine Environmental Justice

Kimberly Terrell, Ph.D.

Tulane Environmental Law Clinic

Research Scientist & Director of Community Engagement

kterrell1@tulane.edu



Louisiana's Air Toxics Program

Est. 1989 after public concern about air quality

- Truck driver killed by H₂S at dump site (1978)
- Toxic Release Inventory ranked LA in top 5 states for air pollution (1987)
- St. Gabriel residents report high miscarriage rate (1987)



“They say the chemical plants are causing the miscarriages, but they have no proof. I could say they [have sex] too much, and that’s the cause of the miscarriages.”



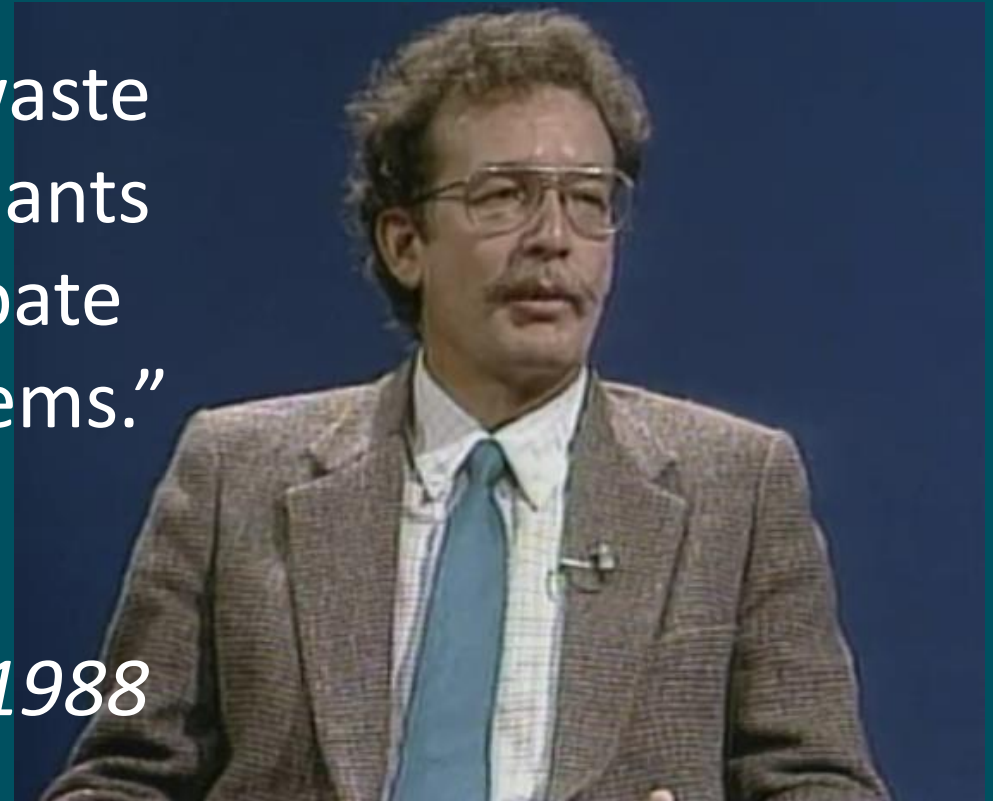
*Fred Loy, President,
Louisiana Chemical Association, 1998*

D. Maraniss and M. Weisskopf, *Los Angeles Times*. Jan 24, 1988.

<https://www.latimes.com/archives/la-xpm-1988-01-24-mn-37913-story.html>

“If you look at the amount of waste coming out of some of those plants along the river, you can anticipate that you’re going to have problems.”

Paul Templet, LDEQ Secretary, 1988



Louisiana's Air Toxics Program (LAC, 33:III, §5112)

- Required annual emissions reporting
- Required 50% reduction in air toxics from 1987 to 1996

U.S. NEWS

Researchers find higher levels of dangerous chemical than expected in southeast Louisiana



<https://apnews.com/article/cancer-ethylene-oxide-environmental-health-24d898ce0bd59d78cb387b3cfc16b9cd>

Louisiana's Air Toxics Program

- Required annual emissions reporting
- Required 50% reduction in air toxics from 1987 to 1996
- Ambient Air Standards for 97 toxics, set by LDEQ
 - Annual standards for carcinogens, based on **1-in-10,000 residual risk** (35 toxics)
 - 8-hr standards for other toxics based on **1/42 occupational limit** (62 toxics)
 - LDEQ may use “superior” data

LDEQ Toxics Classifications

- Originally based on EPA IRIS and IARC Groupings
- Class I: Carcinogenic (or probably carcinogenic) to humans
- Class II: Possibly carcinogenic to humans
- Class III: Not classifiable as to its carcinogenicity to humans

Louisiana Admin. Code, Title 33, Chapter III, Table 51.2.

Compounds	Class	Ambient Air Standard ($\mu\text{g}/\text{m}^3$)	
		(8 Hour Avg.)	(Annual Avg.)
Acetaldehyde	II		45.5
Acetonitrile	II	810.0	
Acrolein	II	5.4	
Acrylamide	II		0.08
Acrylic Acid	III	140.0	
Acrylonitrile	I		1.47
Allyl chloride	II	71.4	
Ammonia	III	640.0	

Stringent or Outdated?

TOXIC AIR POLLUTANTS FACT SHEET FAQs

As mandated by the law, the Louisiana DEQ developed and promulgated the Comprehensive Toxic Air Pollutant Emission Control regulation, one of the most stringent state air toxics rules in the country.

1992 State-of-the-Art Technology

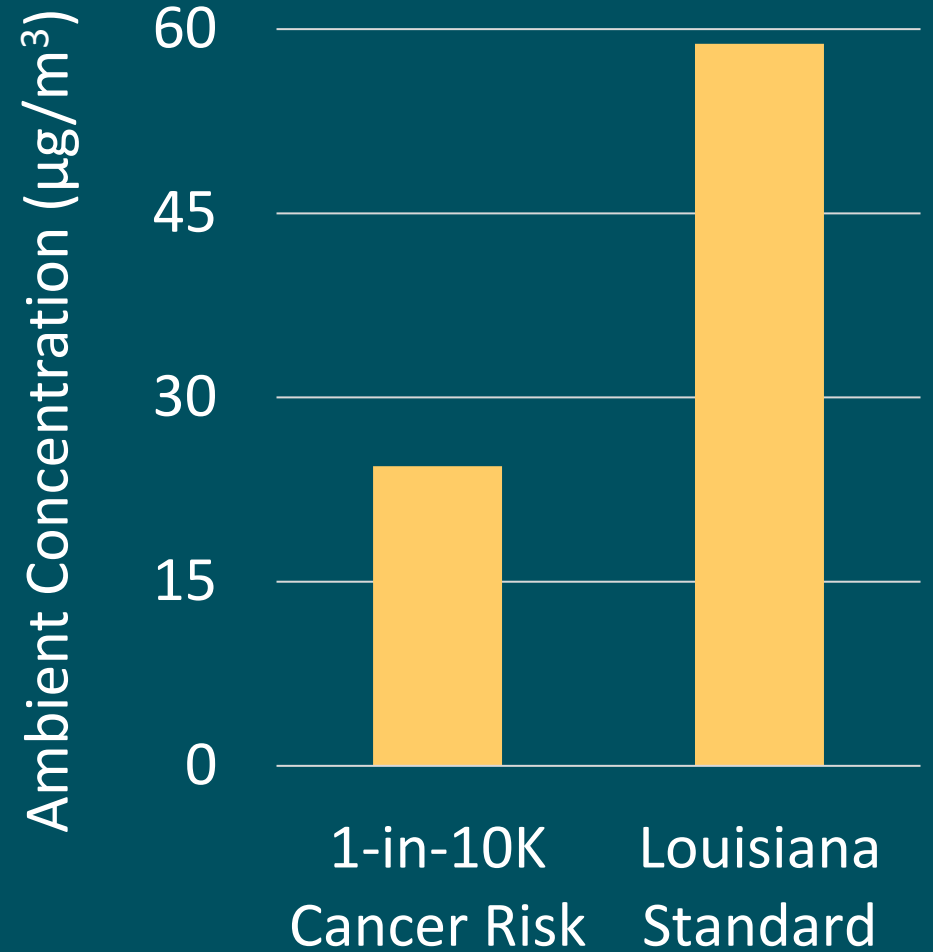


U.S. National Toxicology Program 1997 Report on Carcinogens

1,3-Butadiene is *known to be a human carcinogen*... In 1991, an IARC expert panel concluded that 1,3-butadiene is probably carcinogenic... **newer data have confirmed and strengthened the previous evidence** of a causal relationship between exposure to 1,3-butadiene and human cancer risk.

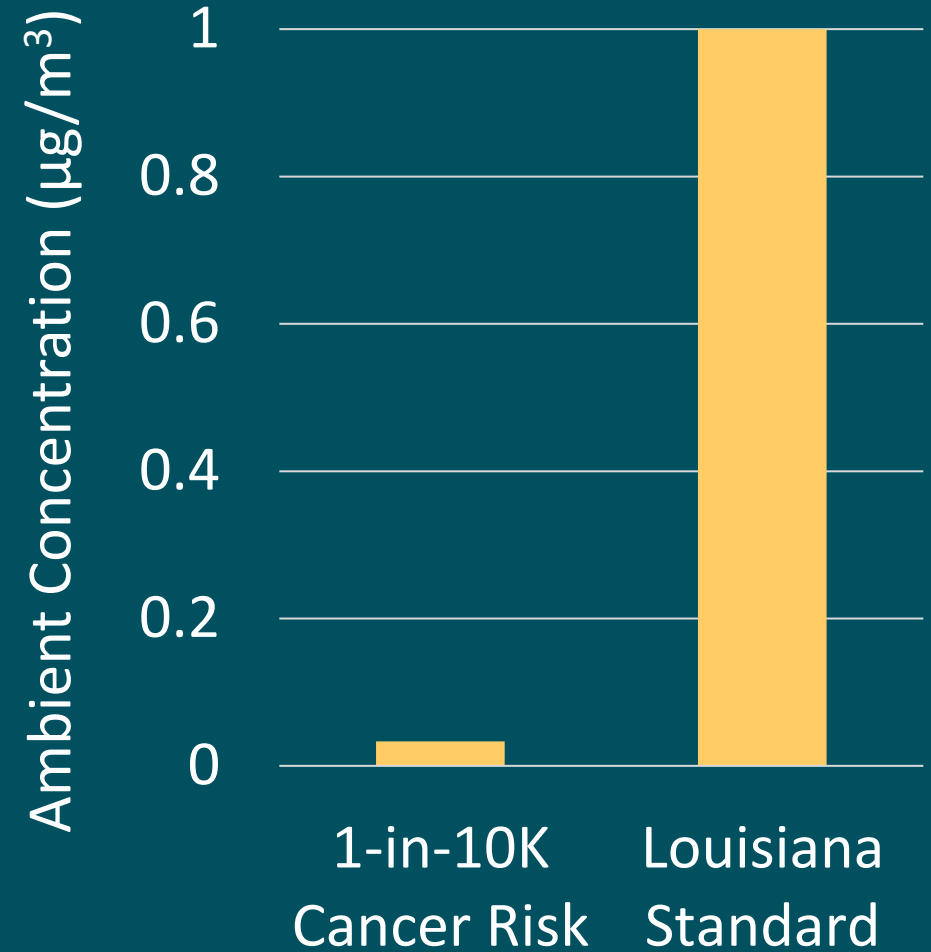
Trichloroethylene

- Lymphoma, kidney, & liver cancers
- Emitted by 43 LA facilities
- Current EPA IUR (est. 2011):
 4.1×10^{-6} risk per $\mu\text{g}/\text{m}^3$
- Louisiana standard (est. 1992):
 $58.8 \mu\text{g}/\text{m}^3$
- Equates to 2-in-10,000 cancer risk



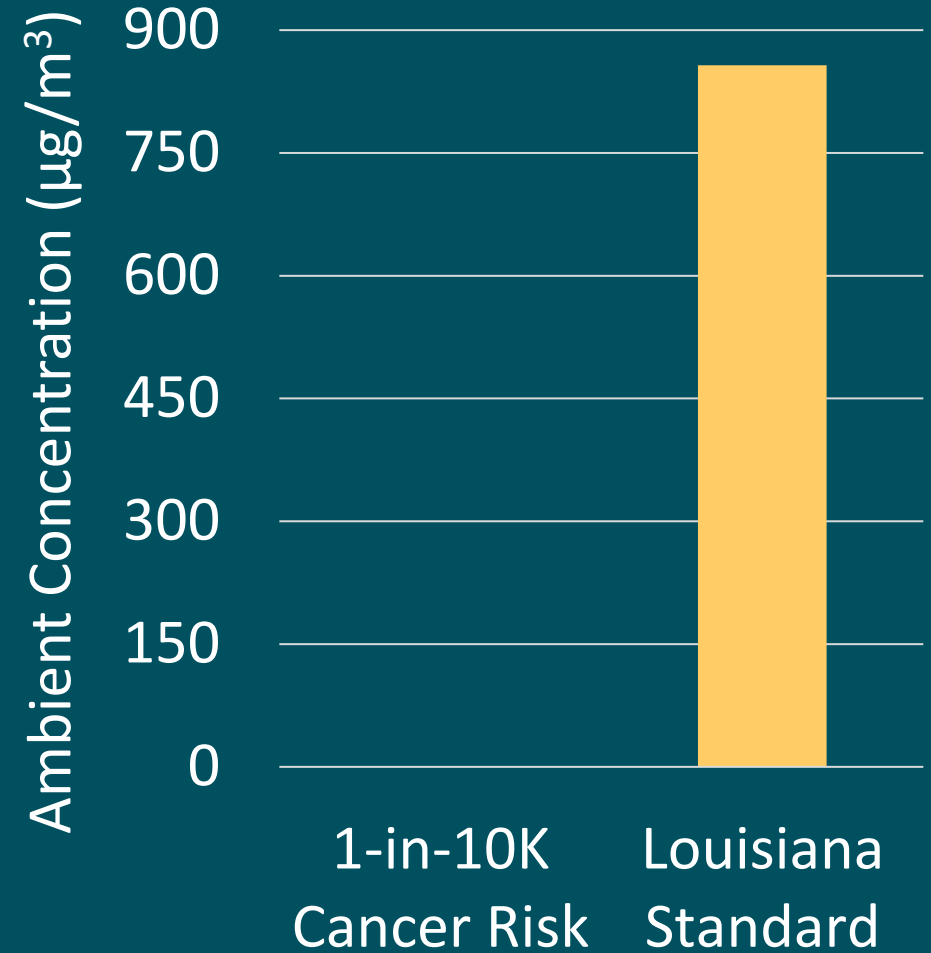
Ethylene Oxide

- Lymphoma, leukemia, breast, & other cancers
- Emitted by 19 LA facilities
- Current EPA IUR (est. 2016): 0.003 risk per $\mu\text{g}/\text{m}^3$
- Louisiana standard (est. 1992): $1 \mu\text{g}/\text{m}^3$
- Equates to 3-in-1,000 cancer risk



Chloroprene

- Leukemia, lung, stomach, & other cancers
- Emitted by 9 LA facilities (1 major emitter)
- EPA IUR (est. 2010):
 3×10^{-4} risk per $\mu\text{g}/\text{m}^3$
- Louisiana standard (est. 1992):
 $857 \mu\text{g}/\text{m}^3$
- **Equates to 1-in-4 cancer risk**



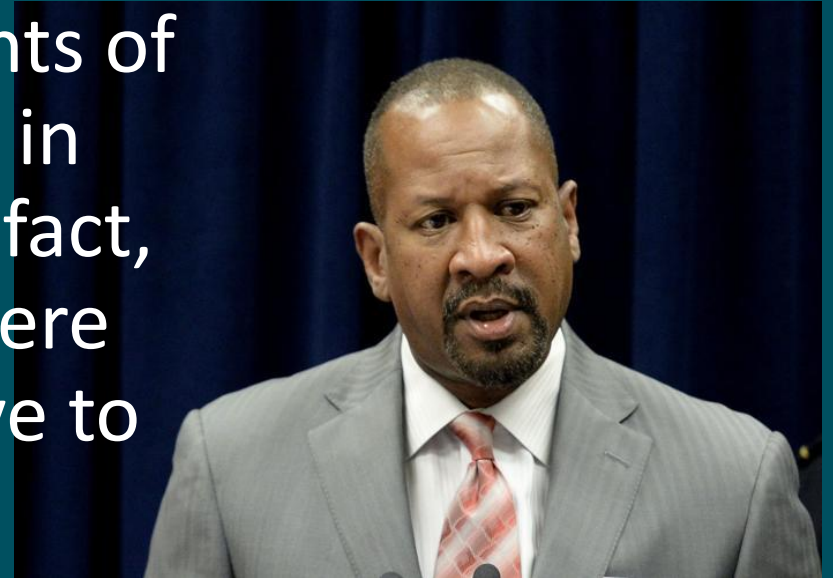
Chloroprene emissions concern many; State official addresses 'fear mongering,' cancer questions

Published 12:11 am Wednesday, December 14, 2016

By Stephen Hemelt



“We have not seen any higher incidents of illness in St. John than anywhere else in the state of Louisiana. As a matter of fact, for some categories it is even less. There are no imminent threats that you have to take any action to address.”



*Dr. Chuck Carr Brown, Secretary,
LDEQ, 2016*

Hemelt, Stephen. *L'Observateur*. Dec 14, 2016. <https://www.lobservateur.com/2016/12/14/chloroprene-emissions-concern-man-state-official-addresses-fear-mongering-cancer-questions/>

Cumulative Risk

- Combined exposure to 97 air toxics at legal limits equates to a **1-in-3 cancer risk**, based on current science.
- Excluding chloroprene, combined exposure equates to a **2-in-100 cancer risk**.
- Realistic co-exposures can exceed 1-in-10,000 risk.
 - **Arsenic + Cadmium** (coke plants, paper mills, oil refineries)
 - **Acrylonitrile + Chloroform** (chemical plants, paper mills)
 - **Formaldehyde + 1,1,2-Trichloroethane** (chem. plants, mills)

LDEQ Obstructs Public Use of Air Toxics Data

- LDEQ collects toxics (VOC) data at 16 sites.
- Public dataset “has not been subject to a quality assurance review” and is not “the official record.”
- LDEQ does not provide averages or design values for toxics.
- LDEQ reports toxics data in ppb; standards in $\mu\text{g}/\text{m}^3$.

	A	B	C	I	J	K
1	SampleDate	AINum	Parish	ResultUnit	1-1-1-TRICH	1-1-2-2-TE
2	1/4/2023 6:50	120556	Calcasieu	ppbv	0	0
3	1/17/2023 9:20	120556	Calcasieu	ppbv	0	0
4	1/19/2023 0:30	120556	Calcasieu	ppbv	0	0
5	1/24/2023 18:30	120556	Calcasieu	ppbv	0	0
6	2/8/2023 18:00	120556	Calcasieu	ppbv	0	0
7	2/10/2023 2:10	120556	Calcasieu	ppbv	0	0
8	2/27/2023 17:10	120556	Calcasieu	ppbv	0	0
9	2/28/2023 18:10	120556	Calcasieu	ppbv	2.32	0.02
10	3/8/2023 9:30	120556	Calcasieu	ppbv	2.74	0
11	3/17/2023 2:50	120556	Calcasieu	ppbv	0.01	0
12	3/26/2023 2:00	120556	Calcasieu	ppbv	0.01	0
13	4/4/2023 19:00	120556	Calcasieu	ppbv	0	0
14	4/15/2023 23:20	120556	Calcasieu	ppbv	0	0
15	4/30/2023 10:00	120556	Calcasieu	ppbv	0	0
16	5/9/2023 18:30	120556	Calcasieu	ppbv	0.07	0.01
17	5/19/2023 23:40	120556	Calcasieu	ppbv	0	0
18	6/1/2023 22:40	120556	Calcasieu	ppbv	0.02	0
19	6/9/2023 22:10	120556	Calcasieu	ppbv	0	0
20	6/11/2023 22:30	120556	Calcasieu	ppbv	0	0
21	6/16/2023 9:40	120556	Calcasieu	ppbv	0	0

1,3-Butadiene exceeds 0.92 $\mu\text{g}/\text{m}^3$ standard in Westlake, LA

Year	Sample Type	Mean Conc ($\mu\text{g}/\text{m}^3$)	Max Conc ($\mu\text{g}/\text{m}^3$)
2023	24-hr	1.29	11.75
2022	24-hr	1.03	6.31
2021	24-hr	1.02	25.88

1,3-Butadiene exceeds 0.92 $\mu\text{g}/\text{m}^3$ standard in Westlake, LA

Year	Sample Type	Mean Conc ($\mu\text{g}/\text{m}^3$)	Max Conc ($\mu\text{g}/\text{m}^3$)
2023	24-hr	1.29	11.75
2022	24-hr	1.03	6.31
2021	24-hr	1.02	25.88
2023	trigger	19.67	222.92
2022	trigger	10.90	182.50
2021	trigger	13.56	204.18



Photo credit: Healthy Gulf/Southwings

Take Home Messages

- Louisiana air toxics standards are grossly outdated.
- Some exceed EPA risk thresholds by 10X or more.
- No protection against cumulative risk.
- LDEQ obstructs public use of air toxics data.
- LDEQ fails to act when toxics standards are violated.
- LDEQ's air toxics program puts EJ communities at risk.