Methodology

Existing local, state or federal monitors: Not all monitoring sites measure every pollutant. The map shows the location of monitors that measured one or more of Environmental Protection Agency's six priority pollutants for at least six months in the most recent year of available data. The visible monitors correspond to those sites that measure the pollutant selected by the user.

Data sources:

1. LDEQ (Louisiana Department of Environmental Quality) Canister Data
   This data was downloaded from LDEQ's website on May 4, 2023.
   Monitors with measurements during at least six months of 2022 were included.
2. EPA (Environmental Protection Agency) Ambient Monitoring Archive (AMA) for Hazardous Air Pollutants (HAPs)
   This data was downloaded from EPA's website on May 4, 2023
   Monitors with measurements during at least six months of 2020 (most recent available year) were included.
3. EPA (Environmental Protection Agency) Refinery Benzene Fenceline Monitoring
   This data was downloaded from EPA's dashboard on November 3, 2022.
   Map shows centroid of monitors around each facility that report benzene fenceline measurements to EPA as required under 40 CFR part 63 subpart CC (Refinery MACT CC).

Facilities impacted by proposal:
Data sources: List of Facilities Subject to the HON and Group I and Group II Polymers and Resins NESHAPs EPA-HQ-OAR-2022-0730-0069 Appendix A

Facilities impacted by proposal expected to require fenceline monitoring: HON and Polymer/Resin I & II facilities that the EPA has identified as emitting at least one of the following pollutants: benzene, 1,3-butadiene, chloroprene, ethylene dichloride, ethylene oxide, and vinyl chloride.
Data sources: EPA-HQ-OAR-2022-0730-0091 Appendix C

Emission estimates: Values in popup box are the sum of facility self-reported stack and fugitive (excluding one-time) air emissions from 2016 to 2020 for each of EPA's six priority chemicals (benzene, 1,3-butadiene, chloroprene, ethylene dichloride, ethylene oxide, and vinyl chloride). For individual chemicals, facility symbol radii are proportional to pounds released at the facility. For all six priority chemicals together and all chemicals (six priority+non priority) together, symbol radii are proportional to the toxicity-weighted sum of the pounds released, also known as the RSEI hazard. which accounts for varying levels of toxicity of the different chemicals.
Data sources: Pounds released from EPA's Toxic Release Inventory and toxicity weights from EPA's 2020 Risk Screening Environmental Indicators (RSEI) dataset.

Cancer risk modeled in 49 km zone: These maps are based on EPA model data that takes as inputs emission estimates, facility information, weather variables and other information to output estimates of annual-average ambient air concentrations of each chemical in the 49 km zone around a facility. The maps represent the relative incremental cancer risk from a lifetime of exposure at the modeled concentration levels caused by aggregated emissions from the facilities affected by EPA's proposed rules (HON and Polymer/Resin I & II facilities) considering:
a. one chemical at a time (benzene, 1,3-butadiene, chloroprene, ethylene dichloride, ethylene

oxide, and vinyl chloride); b. all six of EPA's priority chemicals together; and c. all priority and non-priority chemicals together where a cancer toxicity weight was available in EPA's database. We summed the modeled concentrations where there was overlap from the emissions of multiple facilities in each of five reporting years (2016-2020), and then averaged over the five years of data. When aggregating over multiple chemicals, each associated with a different degree of cancer risk, we computed toxicity-weighted concentration sums before calculating five-year averages. Cancer toxicity weights were provided by EPA. Not all carcinogenic chemical emissions are reported; notably, $PM_{2.5}$, recognized as a probable human carcinogen, is not included in facility reports to EPA's Toxic Release Inventory. Of the reported chemicals, not all had cancer toxicity weights. In addition, many of the reported and unreported air pollutants also pose non-cancer health risks not captured here. The risk color scale is shown on the map as the lower, middle, and upper third of concentrations or toxicity-weighted concentrations corresponding to the affected facilities nationally. Note that the risk corresponding to each third of the distribution is not a linear spacing.

This map provides a relative estimate of incremental cancer risk and should not be used to try to establish whether any individual cancer case was the result of toxic air emissions from a particular facility.

Data sources: EPA's 2020 Risk Screening Environmental Indicators disaggregated geographic micro data (RSEI-GM)