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By email

Anhthu Hoang
Acting Deputy Director
U.S. EPA External Civil Rights
Compliance Office (2310A)
1200 Pennsylvania Ave., N.W.
Washington, D.C. 20460
Title_VI_Complaints@epa.gov

Daria Neal
Deputy Chief, Federal Coordination and Compliance Section
Civil Rights Division
U.S. Department of Justice
950 Pennsylvania Avenue, N.W.
Washington, D.C. 20530
Daria.Neal@usdoj.gov

Re: Complaint Under Title VI of the Civil Rights Act of 1964, 42 U.S.C. § 2000d, Regarding Civil Rights Violations by Louisiana State Agency Grantees and Environmental Injustice in St. John the Baptist Parish

Dear Acting Deputy Director Hoang and Deputy Chief Neal:

Concerned Citizens of St. John ("CCSJ") and Sierra Club respectfully submit this complaint against the Louisiana Department of Environmental Quality ("LDEQ") and the Louisiana Department of Health ("LDH") for violations of Title VI of the Civil Rights Act of 1964, 42 U.S.C. § 2000d *et seq.*, and the U.S. Environmental Protection Agency's ("EPA") implementing regulations, 40 C.F.R. Part 7. Title VI prohibits entities receiving federal financial assistance from engaging in activities that subject individuals to discrimination on the basis of race, color, or national origin. 42 U.S.C. § 2000d. As entities receiving financial assistance from EPA, LDEQ and LDH are subject to Title VI's prohibition against discrimination. LDEQ and LDH have violated that prohibition by subjecting Black residents of St. John the Baptist Parish to disproportionate air pollution and related harms from various facilities, including ethylene oxide from various sources and chloroprene from a neoprene production facility. St. John the Baptist Parish is a majority Black parish, and, due to LDEQ's and LDH's failures, its residents face the highest cancer risk from air pollution in the nation.

LDEQ has violated Title VI and EPA's implementing regulations by: (1) failing to review the permit renewal applications submitted by the neoprene production facility (Denka Performance Elastomer LLC or "Denka") and to determine whether to renew and strengthen those permits; (2) failing to conduct the public notice and comment process required by

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Louisiana and federal law for permit renewal applications; and (3) failing to control hazardous air pollution from Denka and other air toxics sources as needed to protect St. John residents from disproportionate, adverse impacts from this pollution. LDH has violated Title VI and EPA's implementing regulations by: (1) failing to provide the public with necessary information on the health threats of air pollution from Denka and nearby sources, and (2) failing to make necessary recommendations to all relevant government agencies and communities on ways to reduce and prevent exposure to hazardous chemicals from these sources, such as recommending the relocation of students at the disproportionately Black Fifth Ward Elementary School.

Additionally, LDEQ and LDH have both failed to timely and transparently fulfill the terms of an EPA grant awarded to determine if Denka's hazardous air pollutant emissions have caused higher instances of cancer in St. John.

Accordingly, Complainants request that EPA and DOJ promptly and comprehensively investigate the allegations in this complaint, take specific actions discussed at the end of this complaint, and take all other actions necessary to ensure that LDEQ and LDH comply fully with the law and remedy violations of Title VI. If LDEQ and LDH do not come into compliance voluntarily, Complainants request that EPA, working with DOJ, suspend or terminate financial assistance to those agencies, at least regarding any discretionary funding requested by those agencies that would not directly benefit public health. *See* 40 C.F.R. § 7.130.

I. Parties

A. Concerned Citizens of St. John

Concerned Citizens of St. John is a non-profit organization based in St. John the Baptist Parish, Louisiana whose primary mission is to ensure the health and safety of communities in Cancer Alley by holding government officials and industry accountable for air pollution. St. John residents founded the organization in 2016 when they learned from EPA that their community faced a heightened cancer risk due in great part to chloroprene emissions from Denka. CCSJ has demanded that Denka reduce its chloroprene emissions by ensuring ambient air concentrations of chloroprene no longer exceed 0.2 $\mu g/m^3$—the maximum chloroprene air concentration that would keep cancer risk from this air pollutant below EPA's benchmark for unacceptable cancer risk, 100-in-1 million.[1]

CCSJ has advocated for residents of St. John at the local, state, federal, and international levels. For years, CCSJ has tried to arrange meetings with local and state government to share their members' concerns about chloroprene exposure and their desire to relocate Fifth Ward Elementary School, located three blocks from Denka. Yet these efforts have been dismissed by

[1] *See* Memo from Kelly Rimer, Leader, Air Toxics Assessment Group, Health & Env't Impacts Div., OAQPS, to Frances Verhalen, P.E., Chief, Air Monitoring/Grants Section, EPA Region 6, Re: Preliminary Risk-Based Concentration Value for Chloroprene in Ambient Air (May 5, 2016), https://www.epa.gov/sites/default/files/2016-06/documents/memo-prelim-risk-based-concentrations050516.pdf; University Network for Human Rights, *Concerned Citizens of St. John Parish Meet with EPA in Washington, D.C.* (Nov. 21, 2019), https://www.humanrightsnetwork.org/press/2019/11/20/concerned-citizens-of-st-john-parish-meet-with-epa-in-washington-dc.

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local and state authorities, including LDEQ and LDH, as discussed in further detail below.

At the federal level, CCSJ submitted a petition to EPA in May 2021 for emergency action and rulemaking pursuant to the Clean Air Act, 42 U.S.C. § 7412, and *Oljato Chapter of Navajo Tribe v. Train*, 515 F.2d 654 (D.C. Cir. 1975).[2] In the petition, CCSJ asked EPA to address the health emergency in St. John by reviewing and revising the national emission standards regulating chloroprene emissions, reinstating fenceline monitoring, and taking other necessary actions to protect community health. In November 2021, CCSJ and Sierra Club also filed a deadline suit in the U.S. District Court for the District of Columbia to compel EPA to conduct overdue reviews and rulemakings under section 112(d)(6) and (f)(2) of the Clean Air Act for Group I Polymers and Resins source categories regulated under the National Emission Standards for Hazardous Air Pollutants ("NESHAP"), 40 C.F.R. Part 63 Subpart U, including Neoprene Production.

At the international level, CCSJ has attempted to meet with representatives of Denka at the company's headquarters in Japan. In October 2019, two members of CCSJ traveled from St. John to Tokyo to present evidence that the company's neoprene facility was responsible for unusually high rates of cancer and other illnesses in the parish.[3] Denka did not meet with them.[4] In May 2021, CCSJ filed an emergency request for Precautionary Measures at the Inter-American Commission on Human Rights seeking protective measures to protect the human rights of St. John residents.[5]

B. Sierra Club

Sierra Club is a national nonprofit organization with 67 chapters and over 800,000 members dedicated to exploring, enjoying, and protecting the wild places of the earth; to practicing and promoting the responsible use of the earth's ecosystems and resources; to educating and enlisting humanity to protect and restore the quality of the natural and human environment; and to using all lawful means to carry out these objectives. Sierra Club is committed to reducing toxic air pollution and its impact on human health and the environment. For years, Sierra Club has advocated for EPA to promptly enforce Title VI. In 2015, Sierra Club and other groups brought a lawsuit against EPA challenging its failure to investigate their civil rights complaints for over a decade. The U.S. District Court for the Northern District of California ordered EPA as follows:

> ...for any Title VI complaint submitted by [Sierra Club] and accepted by EPA after the date of entry of this judgment, subject to

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[2] CCSJ Petition for Emergency Action and Rulemaking to EPA (May 6, 2021), https://earthjustice.org/sites/default/files/files/ccsj_petition_for_emergency_action_petition_for_rulemaking_05-06-2021_1.pdf.

[3] Justin McCurry, *Japanese owners of plant at heart of US Cancer Town refuse to meet activists,* THE GUARDIAN (Oct. 8, 2019), https://www.theguardian.com/us-news/2019/oct/08/cancer-town-japan-factory-owners-refuse-meet-activists.

[4] *Id.*

[5] CCSJ Emergency Request for Precautionary Measures to Inter-American Commission of Human Rights (2021), https://law.tulane.edu/sites/law.tulane.edu/files/Files/CCSJ%20Emergency%20Request%20for%20Precautionary%20Measures%20to%20Inter-American%20Commission%20on%20Human%20Rights.pdf.

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> any extension agreement between the complainant and the party complained against under 40 C.F.R. § 7.120, EPA must issue preliminary findings and any recommendations for voluntary compliance, or otherwise resolve the complaint, within 180 days of the date of acceptance. The requirements of this paragraph shall continue for a period of five years from the date judgment is entered.[6]

Sierra Club also filed the above-mentioned Group I Polymers and Resins deadline suit with CCSJ and is part of other longstanding national advocacy and pending litigation that covers air toxics emissions in St. John. Sierra Club's Delta Chapter has members residing in St. John the Baptist Parish and Cancer Alley.

C. Louisiana Department of Environmental Quality

LDEQ is the primary state agency responsible for environmental protection, regulation, and enforcement in Louisiana. La. Stat. Ann. § 30:2011. The LDEQ secretary maintains the power to grant or deny permits governed by Louisiana regulations and to apply for EPA funds. *Id.* § 30:2011(D)(2)-(5). EPA has delegated to LDEQ the authority to implement and enforce National Emission Standards for Hazardous Air Pollutants and administer the Clean Air Act Title V permitting program. 40 C.F.R. § 52.970 (approving Louisiana state implementation plan). LDEQ must ensure that air permits comply with "all state and federally applicable air quality requirements and standards at the source," including Title V of the Clean Air Act. La. Admin. Code tit. 33, § 501(C)(6).

The Louisiana Environmental Quality Act grants the LDEQ secretary various powers and duties, including to "issue such orders or determinations as may be necessary to effectuate the purpose of th[e Act]," La. Stat. Ann. § 30:2011(D)(6), and to "exercise all incidental powers necessary or proper to carry out the purposes of th[e Act]," *id.* § 30:2011(D)(14). The purpose of the Act is "[t]he maintenance of a healthful and safe environment" and "to preserve, protect, and enhance the quality of the environment in Louisiana." *Id.* § 30:2003. The LDEQ Secretary may also "formulate contingency plans for environmental emergencies, including interagency agreements with state, local, and federal agencies and with private agencies and persons." *Id.* § 30:2011(D)(15).

Furthermore, under the public trust doctrine, "[t]he natural resources of the state, including air and water, and the healthful, scenic, historic, and esthetic quality of the environment shall be protected, conserved, and replenished insofar as possible and consistent with the health, safety, and welfare of the people." La. Const. art. IX, § 1. The Louisiana Supreme Court interpreted this constitutional mandate as requiring LDEQ to determine "before granting approval of proposed action affecting the environment, [] that adverse environmental impacts have been minimized or avoided as much as possible consistently with the public welfare." *Save Ourselves, Inc. v. La. Env't Control Comm'n*, 452 So. 2d 1152, 1157 (La. 1984). To fulfill the public trust duty, LDEQ "must act with diligence, fairness and faithfulness to

[6] Amended Judgment at 2-3, *Sierra Club, et al. v. EPA* (N.D. Cal. Oct. 2, 2020) (No. 4:15-cv-03292-SBA).

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protect this particular public interest in the resources." *Id.* Specifically, LDEQ must conduct a "balancing [] in which environmental costs and benefits must be given full and careful consideration along with economic, social and other factors." *Id.* The Louisiana Environmental Quality Act underscores LDEQ's public trust duty, mandating that "as the primary public trustee of the environment, [LDEQ] shall consider and follow the will and intent of the Constitution of Louisiana and Louisiana statutory law in making any determination relative to the granting or denying of permits." La. Stat. Ann. § 30:2014(A)(4).

D. Louisiana Department of Health

LDH is the state agency responsible for "the development and providing of health and medical services for the prevention of disease for the citizens of Louisiana." *Id.* § 36:251(B). The Office of Public Health, a division of the Department of Health, is tasked with "perform[ing] those functions of the state provided by law relating to environmental quality and pollution control which are related to the public health and which are specifically assigned to the department." *Id.* § 36.258(B). LDH's Section of Environmental Epidemiology and Toxicology ("SEET") "investigates the health effects of chemical exposures" and participates in environmental health research.[7] The duties of SEET include: (1) "[i]dentifying chemicals in the environment which are likely to cause adverse health effects," (2) "[e]valuating the extent of human exposure to these chemicals and the resultant adverse health effects," (3) "[m]aking recommendations for the prevention and reduction of exposure to hazardous chemicals," and (4) "[p]romoting a better public understanding of the health effects of chemicals in the environment."[8]

II. Jurisdiction

Title VI's prohibition on discrimination applies to all recipients of federal funds: "No person in the United States shall, on the ground of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance." 42 U.S.C. § 2000d. Acceptance of federal funds creates an obligation of the recipient to comply with Title VI and the EPA's implementing regulations. 40 C.F.R. § 7.80. Title VI applies to the entire institution that receives funds from EPA, not only the part of the institution that has received the financial assistance.[9] As discussed below, LDEQ and LDH receive federal funding from EPA and are therefore subject to the requirements of Title VI and EPA's implementing regulations.

Under Title VI and EPA's implementing regulations, EPA is required to ensure that its funds are not used to support discrimination on the basis of race, color, or national origin.[10] EPA's External Civil Rights Compliance Office ("ECRCO") is responsible for enforcing Title VI through complaint investigations, compliance reviews, technical assistance, community

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[7] LDH, *Environmental Epidemiology & Toxicology*, https://ldh.la.gov/subhome/22 (last visited Jan. 18, 2022).
[8] *Id.*
[9] *See* 40 C.F.R. § 7.25.
[10] *See* 42 U.S.C. § 2000d; 40 C.F.R. Part 7; EPA, *U.S. EPA's EXTERNAL CIVIL RIGHTS COMPLIANCE OFFICE COMPLIANCE TOOLKIT* 2 (Jan. 18, 2017), https://www.epa.gov/sites/production/files/2020-02/documents/toolkit_ecrco_chapter_1-letter-faqs_2017.01.18.pdf.

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engagement, and policy formulation.[11] ECRCO has jurisdiction to respond to Title VI complaints that implicate recipients of federal financial assistance such as a state agency.[12] As ECRCO noted, "many state environmental agencies receive federal funding for their regulatory and environmental protection functions. Those agencies should be aware that all actions, not just permitting decisions, taken by state agencies funded by EPA are subject to federal civil rights laws."[13]

A. Program or Activity

As Louisiana state agencies, any LDEQ and LDH operation is considered a "program or activity" that falls under Title VI compliance. 42 U.S.C. § 2000d. A "program or activity" is defined as "all of the operations of . . . a department, agency, special purpose district, or other instrumentality of a State or of a local government . . . any part of which is extended Federal financial assistance." *Id.* § 2000d-4a. Accordingly, LDEQ and LDH are agencies or instrumentalities of the State of Louisiana and must comply with Title VI whenever they receive financial assistance.

B. Federal Funding

LDEQ and LDH are subject to Title VI compliance because each agency received funding from EPA. LDEQ received federal funds from EPA through numerous grants. According to USASpending.gov, LDEQ received $33,285,179 in funding from EPA in FY2021.[14] In 2020, EPA awarded $978,866 to LDEQ to monitor ambient air quality for fine particulate matter.[15] Louisiana has received over $25 million in EPA Brownfield funding including grants to LDEQ.[16] On October 8, 2020, EPA announced that it awarded LDEQ $224,931 and LDH $86,081 to "(1) determine if there are higher instances of cancer in the community due to toxic chemical emissions by the Denka Plant, and (2) to determine if there has been under-reporting of these cases of cancer in the Louisiana Tumor Registry."[17]

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[11] EPA, *U.S. EPA's EXTERNAL CIVIL RIGHTS COMPLIANCE OFFICE COMPLIANCE TOOLKIT* 2 (Jan. 18, 2017), https://www.epa.gov/sites/production/files/2020-02/documents/toolkit_ecrco_chapter_1-letter-faqs_2017.01.18.pdf.

[12] *See* 40 C.F.R. § 7.15.

[13] EPA, *U.S. EPA's EXTERNAL CIVIL RIGHTS COMPLIANCE OFFICE COMPLIANCE TOOLKIT* 6 (Jan. 18, 2017), https://www.epa.gov/sites/production/files/2020-02/documents/toolkit_ecrco_chapter_1-letter-faqs_2017.01.18.pdf.

[14] USASpending, https://www.usaspending.gov/explorer/agency (select "FY2021," and "Environmental Protection Agency," then filter by "Recipient" and find LDEQ).

[15] EPA, *Louisiana receives $978,866 from EPA to enhance air quality* (Dec. 10, 2020), https://www.epa.gov/newsreleases/louisiana-receives-978866-epa-enhance-air-quality.

[16] LDEQ, *Brownfields: Overview of LDEQ's Brownfield Program*, https://deq.louisiana.gov/page/brownfields (last visited Jan. 18, 2022).

[17] EPA, *Cooperative Agreement with LDH* 1 (Sept. 19, 2020) (attached); EPA, *Cooperative Agreement with LDEQ* 1 (Sept. 19, 2020) (attached). *See* EPA, *EPA awards Louisiana over $311,000 to assess air pollutants in St. John Parish* (Oct. 8, 2020), https://www.epa.gov/newsreleases/epa-awards-louisiana-over-311000-assess-air-pollutants-st-john-parish.

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C. Timeliness

This Title VI complaint is timely. ECRCO considers Title VI complaints to be timely when the complaint has been filed within 180 calendar days of the date of the last alleged act of discrimination, 40 C.F.R. § 7.120(b)(2), or if the complainant alleges a "continuing policy or practice" of discrimination.[18] A complaint alleging a continuing discriminatory policy or practice must "allege facts that are sufficient to indicate either a series of related acts of which one occurred within the 180-day filing period or a systematic policy or practice that operated within the 180-day period."[19]

LDEQ's discriminatory conduct consists of discriminatory actions and continuing discriminatory policies and practices. LDEQ has failed to fulfil its legal obligations under Title V of the Clean Air Act or state law by allowing Denka to operate with outdated and expired air permits. As explained in further detail below, the following Title V permits expired on the following dates:

1) Chloroprene Unit Title V Operating Permit (No. 3000-V5), expired on April 26, 2017;[20]
2) Neoprene Unit Title V Operating Permit (No. 2249-V9), expired on May 15, 2019;[21] and
3) HCl Recovery Unit Title V Operating Permit (No. 206-V4), expired on June 18, 2020.[22]

Title V permits must include conditions sufficient to "assure compliance" with applicable Clean Air Act requirements, 42 U.S.C. §7661c(a), and are applicable for a maximum of five years, *id.* § 7661a(b)(5)(B). If a facility applies for a renewal of a permit, the permitting authority must review the permit to assure compliance with the Clean Air Act and provide an opportunity for meaningful public notice and comment. *See* 40 C.F.R. § 70.7(a)(1)(ii), (iv).[23] LDEQ's multiple failures to review Denka's permit renewal applications and determine whether to renew and strengthen those permits are ongoing violations of Title VI and are therefore timely for ECRCO to consider. LDEQ has an ongoing duty to review and determine whether to renew these permits. Each day that LDEQ fails to review and take action on Denka's renewal applications, it allows Denka to operate without a current, unexpired permit that assures compliance with all applicable Clean Air Act requirements.

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[18] EPA, *Case Resolution Manual* 8 (Jan. 2021), https://www.epa.gov/sites/default/files/2021-01/documents/2021.1.5_final_case_resolution_manual_.pdf.

[19] *Id.*

[20] Approval of Title V Permit for Chloroprene Unit 2 (Sept. 9, 2014), https://edms.deq.louisiana.gov/app/doc/view?doc=9456485.

[21] Approval of Title V Permit for Neoprene Unit 2 (Apr. 27, 2017), https://edms.deq.louisiana.gov/app/doc/view?doc=10591494.

[22] Approval of Title V Permit for HCl Unit 2 (Mar. 3, 2017), https://edms.deq.louisiana.gov/app/doc/view?doc=10524994.

[23] Denka is allowed to operate on an expired permit only after submitting a "timely and complete renewal application has been submitted." 40 C.F.R. 70.7(c)(ii). This provision, however, does not excuse permitting authorities from their duty to review and decide on permit renewal applications.

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Additionally, for years, LDEQ has allowed Denka to release excessive levels of chloroprene emissions that disproportionately affect St. John's Black community. This failure is an ongoing violation of Title VI and is therefore timely for ECRCO to consider. As discussed in further detail below, EPA concluded that chloroprene is "likely to be carcinogenic to humans" and determined that ambient air concentrations of chloroprene of 0.2 $\mu g/m^3$ are attributable to a cancer risk of 100-in-1 million, EPA's benchmark for unacceptable cancer risk.[24] EPA's air monitoring to date has consistently shown that ambient air levels of chloroprene in St. John the Baptist Parish far exceed the ambient concentration risk value of 0.2 $\mu g/m^3$.[25] According to EPA's monitoring data, chloroprene air concentrations in St. John remained as high as 23.677 $\mu g/m^3$ as of September 2021—almost *120 times* the ambient concentration cancer risk value of 0.2 $\mu g/m^3$ that is presumptively unacceptable.[26] The most recent data available indicate that chloroprene air concentrations in St. John remained as high as 18.387 $\mu g/m^3$ on December 3, 2021, in Chad Baker—over 90 times higher than the 0.2 $\mu g/m^3$ unacceptability benchmark.[27] In spite of this data, LDEQ has not reviewed Denka's permit renewal applications, conducted the required public participation process for permit renewals, determined whether to strengthen the permits to assure compliance with the Clean Air Act, or otherwise acted to sufficiently protect public health.

LDEQ's discriminatory conduct also consists of discriminatory actions and continuing discriminatory policies and practices. LDH has failed to recommend the relocation of Fifth Ward Elementary School or make any other recommendations to protect public health in St. John the Baptist Parish from the unacceptable cancer risk EPA data show.

Notably, and in the alternative, ECRCO may and should waive the 180-day time limit in view of the longstanding harm caused by both LDEQ's and LDH's discriminatory acts and failures to act, and EPA's failure to engage in oversight and ensure civil rights compliance by these federal grant recipients. *See* 40 C.F.R. § 7.120(b)(2).

D. Other Jurisdictional and Prudential Concerns

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[24] EPA, *IRIS Summary for Chloroprene* 11 (Sept. 2010), https://iris.epa.gov/static/pdfs/1021_summary.pdf. *See* EPA, *Toxicological Review of Chloroprene* 138 (Sept. 2010), https://iris.epa.gov/static/pdfs/1021tr.pdf; Memo from Kelly Rimer, Leader, Air Toxics Assessment Group, Health & Env't Impacts Div., OAQPS, to Frances Verhalen, P.E., Chief, Air Monitoring/Grants Section, EPA Region 6, Re: Preliminary Risk-Based Concentration Value for Chloroprene in Ambient Air (May 5, 2016), https://www.epa.gov/sites/default/files/2016-06/documents/memo-prelim-risk-based-concentrations050516.pdf. As Sierra Club and CCSJ have explained in comments to EPA, the 100-in-1 million cancer risk benchmark, set in 1989, is outdated and far too high. The benchmark should be reduced in light of children's vulnerability to cancer risk, environmental justice concerns, multiple source impacts, and the availability of current monitoring and pollution controls.

[25] *See* Memo from Kelly Rimer, Leader, Air Toxics Assessment Group, Health & Env't Impacts Div., OAQPS, to Frances Verhalen, P.E., Chief, Air Monitoring/Grants Section, EPA Region 6, Re: Preliminary Risk-Based Concentration Value for Chloroprene in Ambient Air (May 5, 2016), https://www.epa.gov/sites/production/files/2016-06/documents/memo-prelim-risk-based-concentrations050516.pdf.

[26] EPA, *Continuous Air Monitoring Summary Results for Chloroprene March 10, 2020 - December 8, 2021*, https://www.epa.gov/system/files/documents/2022-01/continuous-monitoring-summary-march-10-2020-through-december-08-2021.pdf (last visited Jan. 18, 2022).

[27] *Id.*

This complaint satisfies all other jurisdictional and prudential considerations laid out in Title VI, EPA's implementing regulations, and EPA's Interim Case Resolution Manual. This complaint is in writing, describes the alleged discriminatory acts, and is filed with EPA by CCSJ and Sierra Club, authorized representatives of St. John residents harmed by LDEQ's and LDH's violations of Title VI. 40 C.F.R. § 7.120(a). This complaint contains unique civil rights allegations that have not been alleged in a pending or resolved complaint before the EPA or another Federal, State, or local agency, or a state or federal court.[28] CCSJ and Sierra Club's deadline suit in the United States District Court for the District of Columbia federal court alleges that EPA is in violation of the Clean Air Act only. Complaint, *Concerned Citizens of St. John, et al. v. EPA*, D.D.C. Nov. 18, 2021) (No. 21-3063). It does not allege civil rights allegations. CCSJ has not filed any Title VI court action against the agencies at issue here, LDEQ or LDH.

III. Facts

A. Residents of St. John the Baptist Parish are disproportionately exposed to toxic air pollution, including chloroprene emissions from Denka.

John the Baptist Parish is located in Cancer Alley, an 85-mile-long corridor between Baton Rouge and New Orleans with over 150 industrial polluting facilities that have contributed to numerous environmental harms that disproportionately affect communities of color.[29] Environmental racism in Cancer Alley is a longstanding issue.[30] St. John the Baptist Parish has 42,477 residents, and 58.4% of them are African American.[31] St. John the Baptist residents are surrounded by petrochemical plants and oil refineries, including Denka, Evonik Materials' plant, Union Carbide Corporation's Taft/Star operation, and Marathon Petroleum's oil refinery.[32] Children are particularly vulnerable to the health consequences of toxic air pollution, and one of the parish's elementary schools, Fifth Ward Elementary, is located three blocks from Denka. EPA's 2014 National Air Toxics Assessment concluded that St. John residents face a cancer risk as high as 1,505-in-1 million—the highest cancer risk in the nation from air pollution—due to toxic air pollutant emissions from nearby facilities.[33] EPA attributed 85% (1,279-in-1 million)

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[28] EPA, *Case Resolution Manual* 11-12 (Jan. 2021), https://www.epa.gov/sites/default/files/2021-01/documents/2021.1.5_final_case_resolution_manual_.pdf. After CCSJ filed its emergency petition providing notice to the EPA Administrator that a Title VI investigation was needed, ECRCO conferred with petitioners' counsel and stated that it would wait to begin a Title VI investigation until CCSJ filed a full, formal Title VI complaint. This complaint includes newly detailed factual allegations of violations demonstrating that an investigation and relief to remedy these violations are required.

[29] *See* Matt Black & Trymaine Lee, *Cancer Alley: Big Industry, Big Problems*, PULITZER CENTER (Aug. 7, 2015), https://pulitzercenter.org/stories/cancer-alley-big-industry-big-problems.

[30] *See* United Nations Human Rights Office of the High Commissioner, *USA: Environmental racism in "Cancer Alley" must end – experts* (Mar. 2, 2021), https://www.ohchr.org/EN/NewsEvents/Pages/DisplayNews.aspx?NewsID=26824&LangID=E; Forensic Architecture, *Environmental Racism in Death Alley, Louisiana* (June 28, 2021) https://forensic-architecture.org/investigation/environmental-racism-in-death-alley-louisiana.

[31] U.S. Census Bureau, *QuickFacts St. John the Baptist Parish, Louisiana,* https://www.census.gov/quickfacts/fact/table/stjohnthebaptistparishlouisiana/PST045217 (last visited Jan. 18, 2022).

[32] Sharon Lerner, *A Tale of Two Toxic Cities*, THE INTERCEPT (Feb. 24, 2019), https://theintercept.com/2019/02/24/epa-response-air-pollution-crisis-toxic-racial-divide/.

[33] EPA, *2014 National Air Toxics Assessment* (Aug. 22, 2018), https://gispub.epa.gov/NATA/.

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of the cancer risk from air pollution in census tract 708 in St. John to chloroprene emissions from Denka, 12% (187-in-1 million) to ethylene oxide emissions, and 3% (38-in-1 million) to all other pollutants.[34]

The Denka facility, originally owned by E.I. DuPont de Nemours and Company ("DuPont"), produces neoprene. In 1941, Dupont constructed a neoprene facility in Rubbertown, a neighborhood in Louisville, Kentucky. Almost three decades later, in 1969, the company constructed a neoprene facility in St. John the Baptist Parish.[35] Since then, the plant has emitted chloroprene, a hazardous air pollutant.[36] In 2008, DuPont closed its plant in Rubbertown and relocated all neoprene production operations to the Dupont/Denka facility in St. John.[37]

In a 2010 Integrated Risk Information System assessment for chloroprene, EPA concluded that chloroprene "is likely to be carcinogenic to humans"[38] and determined that chloroprene levels of 0.002 $\mu g/m^3$ are attributable to a cancer risk of 1-in-1 million.[39] EPA also concluded that inhalation of chloroprene increases the risk of not only cancer but also numerous other adverse health effects, including nervous system and heart damage, gastrointestinal problems, hematological problems, and immune system dysfunction.[40]

Consistent with EPA's IRIS assessment, Stanford researchers conducted a 2018 household health survey of residents who lived within 2.5 kilometers of the Denka facility and found that the neighborhoods in the census blocks immediately adjacent to the facility, which were predominantly African American, faced "extremely improbable rates of cancer and other illness."[41] The survey also found that:

> nearly 40% [of those surveyed] regularly experience chest pain, heart palpitations, or both; one-third regularly experience[d] wheezing and/or difficulty breathing; more than half regularly experience[d] headaches, dizziness, and/or lightheadedness; nearly half regularly experience[d] eye pain/irritation and/or watery eyes; more than 40% experience[d] cough, sneezing, and/or sore/hoarse

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[34] *Id. See* Al Shaw & Lylla Younes, *The Most Detailed Map of Cancer-Causing Industrial Air Pollution in the U.S.*, PROPUBLICA (Nov. 2, 2021), https://projects.propublica.org/toxmap/ (showing high cancer rates in St. John the Baptist Parish and Cancer Alley due to toxic air pollution); Lylla Younes et al., *Poison in the Air*, PROPUBLICA (Nov. 2, 2021), https://www.propublica.org/article/toxmap-poison-in-the-air (discussing map and data analysis).
[35] Rebecca Hersher, *After Decades of Air Pollution, A Louisiana Town Rebels Against A Chemical Giant*, NPR (Mar. 6, 2018), https://www npr.org/sections/health-shots/2018/03/06/583973428/after-decades-of-air-pollution-a-louisiana-town-rebels-against-a-chemical-giant.
[36] Sharon Lerner, *A Tale of Two Toxic Cities*, THE INTERCEPT (Feb. 24, 2019), https://theintercept.com/2019/02/24/epa-response-air-pollution-crisis-toxic-racial-divide/.
[37] *Id.*
[38] EPA, *IRIS Summary for Chloroprene* 11 (Sept. 2010), https://iris.epa.gov/static/pdfs/1021_summary.pdf.
[39] EPA, *Toxicological Review of Chloroprene* 138 (Sept. 2010), https://iris.epa.gov/static/pdfs/1021tr.pdf.
[40] EPA, *IRIS Summary for Chloroprene* 5 (Sept. 2010), https://iris.epa.gov/static/pdfs/1021_summary.pdf.
[41] University Network for Human Rights, *Waiting to Die: Toxic Emissions and Disease Near the Louisiana Denka/DuPont Plant* (2019), https://www humanrightsnetwork.org/waiting-to-die; *see* Ruhan Nagra et al., *"Waiting to Die": Toxic Emissions and Disease Near the Denka Performance Elastomer Neoprene Facility in Louisiana's Cancer Alley*, 14 ENVIRONMENTAL JUSTICE 14 (Feb. 18, 2021), https://www.liebertpub.com/doi/abs/10.1089/env.2020.0056 (attached).

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> throat most of the time; more than one-third regularly experience[d] skin rash/irritation and/or itchy skin; and nearly 30% experience[d] fatigue/lethargy most of the time.[42]

Additionally, the study concluded there was a positive correlation between the prevalence of cancer (and other illnesses) and proximity to the Denka facility, meaning that residents were more likely to suffer from one or more of the aforementioned health afflictions the closer they live to Denka.[43]

Denka's owners and operators have known about the adverse health consequences from chloroprene exposure since the 1940s.[44] In 1941, then-owner Dupont produced a report detailing many of the same illnesses that workers suffered at the time, which are now experienced by residents of St. John the Baptist Parish.[45] Although Dupont knew about the dangers for years, it did not submit the report to EPA until 1992.[46]

For years, Denka has attempted to undermine EPA's science on the carcinogenicity of chloroprene. Denka has repeatedly attacked EPA's chloroprene IRIS assessment and risk value determination, even though they are directly supported by and consistent with findings of similarly highly regarded, scientific agencies, like the National Toxicology Program.[47] For example, in 2017, Denka filed a request for correction of the 2010 IRIS cancer risk value under the Information Quality Act. Denka claimed to have "derived an [inhalation unit risk] for chloroprene that is 156 times lower than that derived by US EPA."[48] In 2018, EPA denied Denka's request for correction because it found that EPA's underlying toxicological review was consistent with its Information Quality Guidelines.[49] In 2018, Denka submitted a request for reconsideration alleging that the 2010 IRIS cancer risk value warranted reconsideration due to new developments to a physiologically based pharmacokinetic ("PBPK") model for chloroprene.[50] The PBPK model was developed by Ramboll Environ, an industry-consulting

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[42] University Network for Human Rights, *Waiting to Die: Toxic Emissions and Disease Near the Louisiana Denka/DuPont Plant* (2019), https://www humanrightsnetwork.org/waiting-to-die.
[43] *Id.* (summarizing study findings).
[44] Submission from Mark Christman, Counsel, Dupont to EPA's Document Processing Center (Oct. 18, 1992), https://theintercept.com/document/2017/03/23/toxicity-of-chlorabutadiene/. Also available at https://chemview.epa.gov/chemview/ (search under "Advanced Search," then "Document Information" for 8EHQ-92-13131, click on "chloroprene" and then click "TSCA § 8(e) Submission).
[44] *Id.*
[45] *Id.* attachment "Medical Research Project No. MR-77" at 3-19 (May 28, 1941), https://theintercept.com/document /2017/03/23/toxicity-of-chlorabutadiene/.
[46] Submission from Mark Christman, Counsel, Dupont to EPA's Document Processing Center (Oct. 18, 1992), https://theintercept.com/document/2017/03/23/toxicity-of-chlorabutadiene/.
[47] *See, e.g.*, Dep't of Health and Human Servs. Nat. Toxicology Prog., *Report on Carcinogens, Chloroprene* (15 ed. 2021), https://ntp.niehs nih.gov/ntp/roc/content/profiles/chloroprene.pdf.
[48] Ramboll Environ, *Basis for Requesting Correction of the US EPA Toxicological Review of Chloroprene* 56 (June 2017), https://www.epa.gov/sites/production/files/2017-06/documents/exhibit_1-6_to_request_for_correction.pdf.
[49] Letter from Jennifer Orme-Zavaleta, PhD, Principal Deputy Assistant Adm'r for Science, Off. of Rsch. and Dev., EPA, to Robert Holden 2 (Jan. 25, 2018), https://www.epa.gov/sites/production/files/2018-08/documents/rfr_exhibits_a-g_n3630829x7a3a0.pdf (responding to Denka's RFC).
[50] Request for Reconsideration (RFR 17002A), Robert Holden on behalf of Denka Performance Elastomer LLC (July 23, 2018), https://www.epa.gov/sites/production/files/2018-08/documents/rfr_final_draft_7-23-2018_n3630830x7a3a0.pdf.

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group hired by Denka, and concluded that the inhalation unit risk for chloroprene was 156 times lower than EPA had found.[51] In 2020, EPA convened an external peer-review panel to review the PBPK model developed by Ramboll and by December 2021, the resulting peer review concluded and the findings were released to the public.[52] Notably, the reviewers overwhelmingly concluded that the model was not appropriate or sufficient for use as an alternative to EPA's 2010 IRIS toxicological assessment for chloroprene, with one reviewer stating, "...that it is NOT PRUDENT for the EPA to grant the requested 137X relaxation of the risk estimate in the IRIS risk assessment."[53] CCSJ and other groups also submitted comments to EPA on the fatal flaws with the PBPK model.[54] In the subsequent months, Denka voluntarily withdrew its request for reconsideration and submitted a new request for correction on July 15, 2021.[55]

EPA's air monitoring data show that St. John residents have been exposed to dangerous levels of chloroprene emissions for years.[56] More recent data shows that chloroprene air concentrations in St. John remained as high as 23.677 $\mu g/m^3$ in September 2021and 18.387 $\mu g/m^3$ in December 2021.[57]

In addition to longstanding exposure to chloroprene, residents of St. John also face exposure to ethylene oxide emissions from facilities owned by Union Carbide and Evonik Materials Corporation. EPA classifies ethylene oxide as a potent, known carcinogen.[58] The NATA has shown ethylene oxide emissions also contribute substantially to the unacceptable cancer risks faced by the St. John community.[59]

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[51] *Id.* at 4 n.6.

[52] *See* Versar, Inc., *Post-Meeting Peer Review Summary Report: External Peer Review of a Report on Physiologically Based Pharmacokinetic (PBPK) Modeling for Chloroprene (Ramboll, 2020) and a Supplemental Analysis of Metabolite Clearance (U.S. EPA, 2020)* (Dec. 17, 2020), https://ofmpub.epa.gov/eims/eimscomm.getfile?p_download_id=541872.

[53] *See id.* at 15-16 (Raymond S.H. Yang, PhD).

[54] *See* Letter from CCSJ et al. to John Vandenberg, Dir. of Rsch., Nat'l Ctr. for Env't Assessment, EPA (Aug. 2, 2019) (attached); CCSJ et al., Comment Letter on PBPK Modeling for Chloroprene, 85 Fed. Reg. 44,885, Docket: EPA-HQ-ORD-2020-0181-0001 (Aug. 24, 2020), https://www regulations.gov/comment/EPA-HQ-ORD-2020-0181-0016.

[55] Letter from Denka to EPA (July 15, 2021), https://www.epa.gov/system/files/documents/2021-07/chloroprene_rfc_letter-_071521.pdf.

[56] EPA, *Continuous Air Monitoring Summary Results for Chloroprene March 10, 2020 - December 8, 2021*, https://www.epa.gov/system/files/documents/2022-01/continuous-monitoring-summary-march-10-2020-through-december-08-2021.pdf (last visited Jan. 18, 2022).

[57] *Id.* EPA has directed Denka to add new fenceline monitoring using Methods 325A and 325B. *See* Letter from Penny Lassiter, Off. of Air Quality Plan. and Standards, EPA and Evan Belser, Off. of Civ. Enf't, EPA, to Jorge Lavastida, Exec. Officer and Plant Manager, Denka Performance Elastomer, LLC, Re: Clean Air Act Information Request for Denka Performance Elastomer, LLC Facility in LaPlace, Louisiana 7 (June 15, 2021), https://edms.deq.louisiana.gov/app/doc/view?doc=12754954. So far, these data have not been made publicly available. ECRCO should consult OAR to review the data and to monitor LDEQ's and LDH's action or inaction in response to the data.

[58] EPA, *Evaluation of the Inhalation Carcinogenicity of Ethylene Oxide* 2 (Dec. 2016), https://iris.epa.gov/static/pdfs/1025_summary.pdf.

[59] EPA, *2014 National Air Toxics Assessment* (Aug. 22, 2018), https://gispub.epa.gov/NATA/.

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The COVID-19 pandemic has exacerbated the harms from exposure to toxic air pollution. St. John residents have increased vulnerability to mortality from COVID-19.[60] At one point of the COVID-19 pandemic, St. John the Baptist had the highest COVID-19 death rate per capita in the United States.[61] By July 2020, six of the ten parishes with the highest COVID-19 death rates in Louisiana were in Cancer Alley.[62] A Harvard study found a correlation between long-term exposure to air pollution and COVID-19 mortality rates.[63] The results of the study "underscore the importance of continuing to enforce existing air pollution regulations to protect human health both during and after the COVID-19 crisis."[64] A more localized study confirmed that across parishes in Louisiana, higher COVID-19 deaths were associated with higher exposure to air pollution.[65]

B. LDEQ and LDH have failed to protect St. John residents from toxic air pollution and the consequent health crisis.

In spite of the data showing high rates of cancer and other illnesses in St. John the Baptist Parish, LDEQ and LDH have failed to take sufficient action to protect the community.

1. LDEQ's Failure to Review Permit Renewal Applications and Determine Whether to Strengthen and Renew Permits

For years, LDEQ has failed to review Denka's permit renewal applications for the Chloroprene Unit, Neoprene Unit, and HCl Unit and to determine whether to renew and strengthen those permits.

Under EPA regulations, a state permitting program "shall provide that the permitting authority take final action on each permit application (including a request for permit modification or renewal) within 18 months, or such lesser time approved by the Administrator, after receiving a complete application." 40 C.F.R. § 70.7(a)(2). "If the permitting authority fails to act in a timely way on a permit renewal, EPA may invoke its authority under section 505(e) of

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[60] *See* Michael Petroni et al., *Hazardous air pollutant exposure as a contributing factor to COVID-19 mortality in the United States*, 15 ENVIRONMENTAL RESEARCH LETTERS (Sept. 11, 2020), https://iopscience.iop.org/article/10.1088/1748-9326/abaf86/pdf; Sara Sneath, *Louisiana's river region residents seek scrutiny of pollution's role in coronavirus deaths*, THE NEW ORLEANS ADVOCATE (Apr. 16, 2020), https://www.nola.com/news/coronavirus/article_773badc2-7a6c-11ea-bb14-d325aeecfb71.html.

[61] Ashley Killough & Ed Lavandera, *This small Louisiana parish has the highest death rate per capita for coronavirus in the country*, CNN (Apr. 16, 2020), https://www.cnn.com/2020/04/15/us/louisiana-st-john-the-baptist-coronavirus/index.html.

[62] Kimberly A. Terrell & Wesley James, *Racial Disparities in Air Pollution Burden and COVID-19 Deaths in Louisiana, USA, in the Context of Long-Term Changes in Fine Particulate Pollution* 6, ENVIRONMENTAL JUSTICE (Sept. 2, 2020), https://www.liebertpub.com/doi/pdfplus/10.1089/env.2020.0021.

[63] X. Wu, et al., *Fine particulate matter and COVID-19 mortality in the United States: A national study on long-term exposure to air pollution and COVID-19 mortality in the United States* (Nov. 4, 2020) https://www.science.org/doi/10.1126/sciadv.abd4049.

[64] Harvard T.H. Chan Sch. of Pub. Health, *Air pollution linked with higher COVID-19 death rates* (May 5, 2020), https://www.hsph.harvard.edu/news/hsph-in-the-news/air-pollution-linked-with-higher-covid-19-death-rates/.

[65] Kimberly A. Terrell & Wesley James, *Racial Disparities in Air Pollution Burden and COVID-19 Deaths in Louisiana, USA, in the Context of Long-Term Changes in Fine Particulate Pollution* 6, ENVIRONMENTAL JUSTICE (Sept. 2, 2020), https://www.liebertpub.com/doi/pdfplus/10.1089/env.2020.0021.

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the Act to terminate or revoke and reissue the permit." *Id.* (c)(2). Title V permits must "assure compliance with applicable requirements of [the Clean Air Act]." 42 U.S.C. § 7661c(a).

Denka's Chloroprene Unit Title V Operating Permit expired on April 26, 2017.[66] Denka submitted a permit renewal application in 2016 and addenda in 2018 and 2020.[67] The Neoprene Unit Title V Operating Permit expired on May 15, 2019.[68] Denka submitted a permit renewal application in 2018 and two addenda in 2020.[69] Denka's HCl Recovery Unit Title V permit expired on June 18, 2020.[70] Denka submitted a permit renewal application in 2019 and addendum in 2020.[71] According to LDEQ's Electronic Document Management System, LDEQ did not make a determination on whether to renew and strengthen any of these three renewal applications.

2. *LDEQ's Failure to Conduct Public Notice and Comment Procedures on Permit Renewals*

Because LDEQ failed to renew the above permits, it also failed to provide the public with the legally required opportunity to participate in decision-making on the continued operation of Denka's Neoprene, Chloroprene, and HCl Recovery Units. LDEQ may not issue or renew a permit without conducting specific public participation processes. *See* 40 C.F.R. § 70.7(a)(1)(ii), (c)(1)(i) (federal requirements for public participation); La. Admin. Code tit. 33, § 531 (Louisiana requirements for public participation). LDEQ must give the public notice of all Part 70 permit proceedings (including initial permit issuance, significant modifications, and renewals) except for minor permit modification procedures. La. Admin. Code tit. 33, § 531(A)(2). LDEQ

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[66] Approval of Title V Permit for Chloroprene Unit 2 (Sept. 9, 2014), https://edms.deq.louisiana.gov/app/doc/view?doc=9456485.

[67] Title V Permit Renewal Application for Chloroprene Unit (Oct. 26, 2016), https://edms.deq.louisiana.gov/app/doc/recaptcha?previousUrl=https://edms.deq.louisiana.gov/app/doc/view?doc=10386907; Letter from LDEQ to Denka (Oct. 27, 2016), https://edms.deq.louisiana.gov/app/doc/view?doc=10380644 (stating permit renewal application was complete); Addendum 1 to Oct. 26, 2016 Title V Permit Renewal Application for Chloroprene Unit (Nov. 1, 2018), https://edms.deq.louisiana.gov/app/doc/view?doc=11395898 (stating that LDEQ did not renew permit); Addendum 2 to Oct. 26, 2016 Title V Permit Renewal Application for Chloroprene Unit (Dec. 18, 2020), https://edms.deq.louisiana.gov/app/doc/view?doc=12489947. Complainants note LDEQ recognized the application as complete, but Complainants take no position on whether the application actually contained or satisfied any substantive requirements.

[68] Approval of Title V Permit for Neoprene Unit (Apr. 27, 2017), https://edms.deq.louisiana.gov/app/doc/view?doc=10591494.

[69] Title V Permit Renewal Application for Neoprene Unit (July 26, 2018), https://edms.deq.louisiana.gov/app/doc/view?doc=11249049; Addendum 1 to July 26, 2018 Title V Permit Renewal Application for Neoprene Unit (Jan. 28, 2020), https://edms.deq.louisiana.gov/app/doc/view?doc=12041259; Addendum 2 to July 26, 2018 Title V Permit Renewal Application for Neoprene Unit (Aug. 28, 2020), https://edms.deq.louisiana.gov/app/doc/view?doc=12328494.

[70] Approval of Title V Permit for HCl Unit (Mar. 3, 2017), https://edms.deq.louisiana.gov/app/doc/view?doc=10524994.

[71] Title V Permit Renewal Application for HCl Unit (Nov. 19, 2019), https://edms.deq.louisiana.gov/app/doc/view?doc=11954047; Letter from LDEQ to Denka (Nov. 21, 2019), https://edms.deq.louisiana.gov/app/doc/view?doc=11949706 (stating that application was complete); Addendum 1 to Nov. 19, 2019 Title V Permit Renewal Application for HCl Unit (June 2, 2020), https://edms.deq.louisiana.gov/app/doc/view?doc=12204487. Complainants note LDEQ recognized the application as complete, but Complainants take no position on whether the application actually contained or satisfied any substantive requirements.

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must also provide at least 30 days for public comment and notice of any public hearing at least 30 days in advance of the hearing. *Id.* § 531(A)(3)(c). LDEQ "shall keep a record of the commenters and of the issues raised during the public participation process, as well as records of the written comments submitted during that process," and these records shall be available to the public. *Id.* § 531(C). LDEQ must also respond in writing to all significant comments raised during the public participation process and make the response public. *Id.* § 531(D).

Here, LDEQ failed to comply with public participation requirements, including to conduct notice and comment, regarding Denka's three permit renewals. LDEQ still has not issued any information on the status of these permits.

3. *LDEQ's Failure to Sufficiently Reduce Denka's Chloroprene Emissions*

LDEQ has failed to sufficiently reduce chloroprene emissions and follow the most recent science on the carcinogenicity of chloroprene. In doing so, LDEQ has failed to fulfill its duty under the Louisiana Environmental Quality Act and the public trustee doctrine, both of which require the Department to protect public health.

On January 6, 2017, LDEQ and Denka signed an Administrative Order on Consent, issued under the Louisiana Environmental Quality Act, La. Stat. Ann. § 30:2011(D)(6), (14).[72] Denka agreed to install emissions reductions devices to lower the facility's 2014 baseline chloroprene emissions by 85%.[73] Even when Denka purported to reduce its emissions by 85%, however, the ambient air concentration of chloroprene has remained astronomically higher than EPA's acceptable cancer risk value. For example, ambient air concentrations of chloroprene remained as high as 23.677 $\mu g/m^3$ in St. John as of September 2021.[74] This value is over *11,000 times* the ambient concentration cancer risk value of 0.002 $\mu g/m^3$, the level set by EPA scientists in 2010 and recognized as the goal for community health protection. It is over 118 times the level of 0.2 $\mu g/m^3$, the level at which EPA deems the cancer risk level presumptively unacceptable because it causes a cancer risk of 100-in-1 million or more.[75] More recently, continuous air monitoring results showed ambient air concentrations of chloroprene as high as 18.387 $\mu g/m^3$ on December 3, 2021.[76]

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[72] LDEQ, *Administrative Order on Consent* (Jan. 6, 2017), https://www.deq.louisiana.gov/assets/docs/Denka/DENKA_AdministrativeOrderOnConsentAOCJan2017.pdf.

[73] LDEQ, *LDEQ and Denka sign AOC designed to reduce chloroprene emissions at LaPlace facility* (Jan. 10, 2017), https://deq.louisiana.gov/news/ldeq-and-denka-sign-aoc-designed-to-reduce-chloroprene-emissions-at-laplace-facility.

[74] EPA, *Continuous Air Monitoring Summary Results for Chloroprene March 10, 2020 - December 8, 2021*, https://www.epa.gov/system/files/documents/2022-01/continuous-monitoring-summary-march-10-2020-through-december-08-2021.pdf (last visited Jan. 18, 2022).

[75] *See* Memo from Kelly Rimer, Leader, Air Toxics Assessment Group, Health & Env't Impacts Div., OAQPS, to Frances Verhalen, P.E., Chief, Air Monitoring/Grants Section, EPA Region 6, Re: Preliminary Risk-Based Concentration Value for Chloroprene in Ambient Air (May 5, 2016), https://www.epa.gov/sites/production/files/2016-06/documents/memo-prelim-risk-based-concentrations050516.pdf.

[76] EPA, *Continuous Air Monitoring Summary Results for Chloroprene March 10, 2020 - December 8, 2021*, https://www.epa.gov/system/files/documents/2022-01/continuous-monitoring-summary-march-10-2020-through-december-08-2021.pdf (last visited Jan. 18, 2022).

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Furthermore, although LDEQ has inspected the Denka facility to gauge compliance with various regulations, such inspections lack transparency. For example, LDEQ conducted an on-site compliance inspection on June 6, 2016, but failed to notify the public as to the results of that inspection.[77] When the facility reported ICIS-Air-related deviations, LDEQ failed to notify the public as to the nature of the deviations and whether Denka remedied them.[78] LDEQ is continuing to allow high ambient concentrations of chloroprene to occur, without consequence or action.

Indeed, a legislative audit of LDEQ confirmed that the agency's monitoring and enforcement processes contain numerous gaps.[79] According to the audit, LDEQ's identification of high priority violations is riddled with delays.[80] LDEQ does not issue enforcement actions in a timely manner to permitted facilities that violate air permit requirements. The time it took LDEQ to issue enforcement actions between 2015 and 2019 increased by 102.1%, from 289 days on average to 585 days.[81] Additionally, under Louisiana law, LDEQ loses its ability to assess or enforce actions after 5 years from the date of first reporting an enforcement action.[82] Of the 211 violations surveyed by the audit, 48 (22.7%) occurred more than five years prior to LDEQ issuing the enforcement action.[83] As a result, violations of air permits remain uncorrected for years.[84] LDEQ also does not effectively track penalties it has assessed and whether companies have paid these fines.[85] The agency has failed to remedy this process which appears to be due in part to its choices leading to insufficient staffing, high workloads, frequent staff turnover, and inefficient data systems.[86]

4. LDH's Failure to Protect the Health of St. John Residents

LDH has also failed to adequately protect St. John residents from disproportionate exposure to toxic air pollution. LDH's Office of Public Health is tasked with "perform[ing] those functions of the state provided by law relating to environmental quality and pollution control which are related to the public health and which are specifically assigned to the department." La. Stat. Ann. § 36.258. The Section of Environmental Epidemiology and Toxicology ("SEET") serves as a public health program for LDH and investigates the health effects of chemical exposure and participates in environmental health research.[87] The duties of SEET include: (1) "identifying chemicals in the environment which are likely to cause adverse

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[77] *See* EPA, *Action Plan* 5 (June 2016), https://www.epa.gov/sites/production/files/2016-06/documents/epa-laplace-action-plan.pdf.
[78] *See* EPA, *Detailed History Report*, https://echo.epa.gov/detailed-facility-report?fid=110067396669. LDEQ performed TV ACC Receipt/Review Inspections on March 29, 2019, and April 29, 2020, and found deviations.
[79] Louisiana Legislative Auditor, *Monitoring and Enforcement of Air Quality* 3 (Jan. 20, 2021), http://app.lla.state.la.us/PublicReports.nsf/0/4F3372ABDDF0F271862586630067C25D/$FILE/00022660A.pdf?OpenElement&.7773098.
[80] *Id.* at 9.
[81] *Id.* at 3, 12.
[82] *Id.* at 11.
[83] *Id.* at 13.
[84] *Id.* at 11.
[85] *Id.* at 3-4.
[86] *Id.* at 4.
[87] LDH, *Environmental Epidemiology & Toxicology*, https://ldh.la.gov/subhome/22 (last visited Jan. 18, 2022).

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health effects," (2) "evaluating the extent of human exposure to these chemicals and the resultant adverse health effects," (3) "making recommendations for the prevention and reduction of exposure to hazardous chemicals," and (4) "promoting a better public understanding of the health effects of chemicals in the environment."[88]

In the face of alarming EPA data on the cancer risk in St. John the Baptist Parish, LDH has not protected public health, "ma[de] recommendations for the prevention and reduction of exposure to hazardous chemicals," or "promot[ed] a better public understanding of the health effects of chemicals in the environment."[89] CCSJ has repeatedly advocated for the relocation of Fifth Ward Elementary School, located three blocks from Denka, to protect schoolchildren from chloroprene emissions.[90] A 2018 LDH study conducted by SEET concluded that Fifth Ward Elementary School students faced a higher cancer risk due to chloroprene emissions than children in East St. John Elementary School, located further from Denka.[91] Nonetheless, LDH did not recommend relocation of the school.

LDH's provided reasoning for not recommending relocation was nonsensical and out of step with its legal obligations and public health mission. LDH concluded that "transferring children from the current Fifth Ward Elementary School location to another location within the community would not greatly decrease their theoretical risks of developing excess cancers from exposure to chloroprene."[92] In other words, in spite of LDH's duty to "mak[e] recommendations for the prevention and reduction of exposure to hazardous chemicals," LDH has refused to provide recommendations for protecting schoolchildren at Fifth Ward Elementary School because the entire parish suffers a high cancer risk.[93] In contrast to LDH's approach to widespread chloroprene exposure in St. John the Baptist Parish, LDH has provided schools with recommendations on how to protect students from the COVID-19 pandemic and even provided free testing for students.[94]

Furthermore, LDH officials also "found no reason that children cannot attend the school" because "[m]onitoring has shown spikes of chloroprene, not continuous exposure."[95] LDH and LDEQ failed to demonstrate or explain, however, why spikes in chloroprene emissions do not

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[88] *Id.*
[89] *Id.*
[90] Nick Reimann, *St. John School Board panel suggests study on moving students from school near chemical plant*, NEW ORLEANS ADVOCATE (Aug. 27, 2019), https://www nola.com/news/education/article 275fc7d2-c83a-11e9-8fa9-87f1f4a3225a html; St. John the Baptist Parish School Board, *Proceedings* 14 (Aug. 15, 2019), https://4 files.edl.io/a7b7/08/21/19/170128-caa64fa9-39c6-45b3-83fd-be5c1091fce6.pdf (CCSJ advocating to School Board for the relocation of Fifth Ward Elementary School).
[91] LDH, *A REFERENCE DOCUMENT FOR THE PRELIMINARY ASSESSMENT OF CHLOROPRENE LEVELS IN ST. JOHN THE BAPTIST PARISH: Evaluation of Potential Health Risks for Elementary School Students based on Early Sampling Results following Emissions Reductions* 14-15 (June 14, 2018), https://ldh.la.gov/assets/oph/Center-EH/DENKA/PreliminaryChloropreneReport.pdf.
[92] *Id.* at 15.
[93] *Id.*
[94] *See* LDH, *COVID-19 Information*, https://ldh.la.gov/safer-smarter-schools (last visited Jan. 18, 2022); LDH, *Safer Smarter Schools: K-12 COVID Testing in Louisiana Schools*, https://ldh.la.gov/assets/oph/Coronavirus/In-School Testing/WorkingwithSchools 101 StrategicEngagement.pdf (last visited Jan. 18, 2022).
[95] LDEQ, *Denka: The Path Forward*, https://www.deq.louisiana.gov/index.cfm?md=pagebuilder&tmp=home&pid =denka (last visited Jan. 18, 2022).

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pose a threat to students' health. To the contrary, short-term exposure "spikes" in chloroprene emissions should be cause for concern given that cancer risk is additive and children spend substantial time on the school campus and grounds. Furthermore, inhalation of chloroprene emission is associated with acute and chronic non-cancer risks.[96]

LDH's approach to pollution-related health issues at Fifth Ward Elementary School differs significantly from its approach to those issues at East St. John Elementary School. In 2015, LDH recommended that East St. John Elementary School "be moved back to its permanent location at the earliest possible time" because it "[wa]s located in a high risk area situated among several industrial facilities that produce air-borne particulates and the risk of chemical releases."[97] LDH did not make that same recommendation for Fifth Ward Elementary School, even after finding that its students suffered a higher cancer risk than students at East St. John Elementary School.[98] This discrepancy in treatment between the schools appears to be unexplained.

LDH also failed to make other recommendations to protect Fifth Ward Elementary School students' health. For example, for East St. John Elementary School students, LDH recommended that the school have a plan to: (1) "respond to any warnings of releases or production of particulates and should continue its close communications with the St. John Parish Office of Emergency Preparedness" and (2) "minimize the entry of particulates into the school and to manage indoor air quality using the EPA Tools for Schools process.[99] LDH also recommended that "[m]echanisms for the industrial facilities to provide immediate warnings to the school of chemical releases or times when heavy particulates are produced [] be put into place."[100] LDH has provided no similar information for chloroprene exposure for Fifth Ward Elementary students and their families.

5. *LDEQ's and LDH's Failure to Timely and Transparently Fulfill the Terms of an EPA Grant to Assess Cause of Cancer Risk in St. John*

LDEQ and LDH have also failed to timely and transparently fulfill the terms of an EPA grant to study cancer risk in St. John. In September 2020, EPA awarded LDH $86,081 and LDEQ $224,931 "to assess the health risks associated with Chloroprene exposure in St. John the Baptist Parish near the Denka Plant" by September 30, 2021.[101] The project had two objectives:

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[96] *See* EPA, Toxicological Review of Chloroprene, EPA/635/R-09/010F (Sept. 2010), https://cfpub.epa.gov/ncea/iris/iris_documents/documents/toxreviews/1021tr.pdf.

[97] *See* EPA, *Action Plan* 5 (June 2016), https://www.epa.gov/sites/production/files/2016-06/documents/epa-laplace-action-plan.pdf (summarizing LDH report).

[98] LDH, *A REFERENCE DOCUMENT FOR THE PRELIMINARY ASSESSMENT OF CHLOROPRENE LEVELS IN ST. JOHN THE BAPTIST PARISH: Evaluation of Potential Health Risks for Elementary School Students based on Early Sampling Results following Emissions Reductions* 14-15 (June 14, 2018), https://ldh.la.gov/assets/oph/Center-EH/DENKA/PreliminaryChloropreneReport.pdf.

[99] *See* EPA, *Action Plan* 6 (June 2016), https://www.epa.gov/sites/production/files/2016-06/documents/epa-laplace-action-plan.pdf (summarizing LDH report).

[100] *Id.*

[101] EPA, *Cooperative Agreement with LDH* 1 (Sept. 19, 2020) (attached); EPA, *Cooperative Agreement with LDEQ* 1 (Sept. 19, 2020) (attached). *See* EPA, *EPA awards Louisiana over $311,000 to assess air pollutants in St. John*

"(1) to determine if there are higher instances of cancer in the community due to toxic chemical emissions by the Denka Plant, and (2) to determine if there has been under-reporting of these cases of cancer in the Louisiana Tumor Registry."[102] To date, the community has been informed that LDEQ and LDH have performed an audit of the Tumor Registry in fulfillment of the grant's second objective.[103] To the community's knowledge, LDEQ and LDH have published no assessment that fulfills the first objective of the grant. The audit did not fulfill the first objective of the grant because it did not provide any conclusion as to whether higher instances of cancer in St. John were due to Denka's emissions or any other information that fulfills the obligation "to assess the health risks" from chloroprene exposure in St. John.[104] Indeed, Dr. Edward Trapido from Louisiana State University, who conducted the audit, stated that the Tumor Registry "does not collect data on possible contributing factors or environmental conditions to which persons with cancer may have been exposed. That is the purview of other entities and scientists."[105]

IV. Title VI Violations

Title VI and EPA's implementing regulations prohibit recipients of EPA financial assistance from carrying out activities that intentionally discriminate or create a disparate impact on protected groups, including communities of color. To establish a prima facie case of disparate impact, EPA must: "(1) identify the specific policy or practice at issue; (2) establish adversity/harm; (3) establish disparity; **and** establish (4) causation."[106] EPA's analysis focuses on the consequences of the policies or decisions instead of intent. If the evidence establishes a prima facie case of adverse disparate impact, EPA determines "whether the recipient has articulated a 'substantial legitimate justification' for the challenged policy or practice."[107] If a recipient shows a "substantial legitimate justification," EPA must determine whether there are less discriminatory alternatives to the policy or practice.[108] EPA has recognized that an agency may be in violation of Title VI even in circumstances where an agency is complying with applicable environmental laws if there is an adverse health impact on protected groups.[109]

LDEQ's and LDH's practices with respect to Denka have a disparate, adverse impact on Black residents of St. John the Baptist Parish. These agencies have failed to implement less

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Parish (Oct. 8, 2020), https://www.epa.gov/newsreleases/epa-awards-louisiana-over-311000-assess-air-pollutants-st-john-parish.

[102] EPA, *Cooperative Agreement with LDH* 1 (Sept. 19, 2020) (attached); EPA, *Cooperative Agreement with LDEQ* 1 (Sept. 19, 2020) (attached).

[103] Letter from David Gray, Acting Regional Administrator, EPA Region 6 to CCSJ (Apr. 5, 2021) (attached).

[104] *Id.*; EPA, *EPA awards Louisiana over $311,000 to assess air pollutants in St. John Parish* (Oct. 8, 2020), https://www.epa.gov/newsreleases/epa-awards-louisiana-over-311000-assess-air-pollutants-st-john-parish.

[105] David Mitchell, *Louisiana Tumor Registry hasn't missed cancers around Denka, LSU says, but can't speak to causes*, THE ADVOCATE (Mar. 1, 2021), https://www.theadvocate.com/baton_rouge/news/article_8ed5b334-7aa1-11eb-88b6-4be749a395f7.html.

[106] EPA, EPA, *U.S. EPA's EXTERNAL CIVIL RIGHTS COMPLIANCE OFFICE COMPLIANCE TOOLKIT* 8 (Jan. 18, 2017), https://www.epa.gov/sites/default/files/2020-02/documents/toolkit_ecrco_chapter_1-letter-faqs_2017.01.18.pdf (internal citations removed).

[107] *Id.* at 9.

[108] *Id.*

[109] *See Elston v. Talladega County Bd. Of Educ.*, 997 F.2d 1394, 1407, 1413 (11th Cir. 1993); *Larry P. v. Riles*, 793 F.2d 969, 982 (9th Cir. 1984).

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discriminatory alternatives. As a result, these agencies' practices violate Title VI and EPA's implementing regulations and warrant an investigation by ECRCO.

A. Practices at Issue

Both LDEQ and LDH have engaged in a series of conduct that has caused a disparate, adverse impact on St. John's African American community. As explained in detail above, LDEQ has permitted Denka to continue to operate under its standard mode of operations even though ambient air concentrations of chloroprene have consistently remained dangerously high and well above EPA's 0.2 $\mu g/m^3$ unacceptability benchmark. As of the date of the submission of this complaint, LDEQ has also failed to review Denka's permit renewal applications and determine whether to renew and strengthen those permits. LDEQ's failure to review Denka's permit renewals has delayed and denied the public's right to gain information about this facility's operations and impacts and to participate in the permit decision-making process. LDEQ has also failed to demonstrate that it is using its enforcement authority as needed to control Denka's chloroprene emissions to a level that protects public health.

As to LDH, the agency has repeatedly dismissed legitimate health concerns related to Denka's chloroprene emissions. Despite EPA's finding that there is a higher risk of cancer in St. John, LDH has not provided concrete recommendations to protect the students at Fifth Ward Elementary School or any other community members.

B. Adverse Impact

St. John the Baptist residents are adversely impacted by hazardous air pollution, especially chloroprene and ethylene oxide emissions. As discussed above, EPA data show that St. John the Baptist Parish residents face the highest cancer risk in the nation due to toxic air pollution—1,505-in-1 million—and that 97% of this risk comes from chloroprene and ethylene oxide emissions.[110]

Because they breathe toxic air daily, St. John residents have been exposed and are being exposed to extremely high cancer and other health risks associated with chloroprene emissions. Chloroprene is a likely human carcinogen that also weakens the immune system and causes headaches, heart palpitations, anemia, stomach problems, impaired kidney function, and rashes.[111] Indeed, many residents have endured or died from a range of illnesses including cancer, seizures, tumors, neurological problems, asthma, autoimmune disorders, stomach problems, heart palpitations, rashes, and kidney disorders.[112] Complainants are particularly

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[110] EPA, *2014 National Air Toxics Assessment* (Aug. 22, 2018), https://gispub.epa.gov/NATA/; Al Shaw & Lylla Younes, *The Most Detailed Map of Cancer-Causing Industrial Air Pollution in the U.S.*, PROPUBLICA (Nov. 2, 2021), https://projects.propublica.org/toxmap/ (showing high cancer rates in St. John the Baptist Parish and Cancer Alley due to toxic air pollution); Lylla Younes et al., *Poison in the Air*, PROPUBLICA (Nov. 2, 2021), https://www.propublica.org/article/toxmap-poison-in-the-air (discussing map and data analysis).
[111] Sharon Lerner, *The Plant Next Door*, THE INTERCEPT (Mar. 24, 2017), https://theintercept.com/2017/03/24/a-louisiana-town-plagued-by-pollution-shows-why-cuts-to-the-epa-will-be-measured-in-illnesses-and-deaths/.
[112] *Id.*

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concerned about how chloroprene affects local children's health.[113] In 2015, LDH investigated a report of asthma-like symptoms at East St. John Elementary School, which is near Denka.[114] On two separate occasions that year, children complained to the school nurse of stomachache, headache, sore throat, chest tightness, vomiting, burning eyes/nose, dizziness, fever, nausea, and weakness.[115] Importantly, respiratory and neurotoxic effects are all health issues associated with chloroprene exposure. Although LDH concluded that it was difficult to assess the underlying causes of these symptoms, the Department found that the school is in a high-risk area because of several industrial facilities and should be moved to another location at the earliest possible time.[116]

Further, constant exposure to toxic air pollution has harmed and is continuing to harm the quality of life for residents in St. John. Residents avoid going outside of their homes during certain times of the day because the odor of the fumes from the Denka facility are intolerable. During the summers, residents are often forced to turn off their air conditioning during the day or the middle of the night because the odor from the facility has permeated through the air conditioning. Having to do so is particularly uncomfortable given that the average temperature in St. John during the summer is above 90 degrees. Even so, residents cannot avoid exposure and are essentially trapped when emissions from the Denka facility are at their peak. In the words of a St. John resident, "we're just sitting here, waiting to die."[117]

C. Adverse Impact Suffered Disproportionately By St. John The Baptist Parish's Black Community

As EPA and the United Nations have acknowledged, environmental injustice in Cancer Alley is longstanding.[118] In St. John the Baptist Parish, the severe health impacts and reduced quality of life caused by the Denka facility disproportionately burden Black residents, who live, work, and go to school near Denka and other local pollution sources. St. John the Baptist Parish is 58.4% Black.[119] But 94% of the population within one mile of Denka is Black.[120]

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[113] *Id.*

[114] *See* EPA, *Action Plan* 5 (June 2016), https://www.epa.gov/sites/production/files/2016-06/documents/epa-laplace-action-plan.pdf.

[115] *Id.*

[116] *Id.*

[117] University Network for Human Rights, *Gloria Dumas*, YOUTUBE (Aug. 8, 2019), https://youtu.be/F77MvXt6y88?t=48.

[118] *See* EPA, *ICYMI: On his Journey to Justice, EPA Administrator Michael S. Regan Toured Historically Marginalized Communities in the American South, Highlighted Benefits of Bipartisan Infrastructure Law* (Nov. 22, 2021), https://www.epa.gov/newsreleases/icymi-his-journey-justice-epa-administrator-michael-s-regan-toured-historically; Bobbi-Jeanne Misick, WWNO-New Orleans Public Radio, *Louisiana's most vulnerable residents share their stories during EPA's 'Journey to Justice' tour* (Nov. 19, 2021), https://www.wwno.org/news/2021-11-19/louisianas-most-vulnerable-residents-share-their-stories-during-epas-journey-to-justice-tour; United Nations Human Rights Office of the High Commissioner, *USA: Environmental racism in "Cancer Alley" must end – experts* (Mar. 2, 2021), https://www.ohchr.org/EN/NewsEvents/Pages/DisplayNews.aspx?NewsID=26824&LangID=E.

[119] U.S. Census Bureau, *QuickFacts: St. John the Baptist Parish, Louisiana*, https://www.census.gov/quickfacts/stjohnthebaptistparishlouisiana (last visited Jan. 18, 2022).

[120] This data is 2014-2018 American Community Survey data shown on EPA's Environmental Justice Screening and Mapping tool. EPA, *EPA's Environmental Justice Screening and Mapping Tool (version 2020)*, https://ejscreen.epa.gov/mapper/ (last visited Jan. 18, 2022).

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Researchers from Stanford University conducted a household health survey of residents who live within 2.5 kilometers of the Denka facility.[121] The study found that the neighborhoods in the census blocks immediately adjacent to the facility, which are predominantly African American, face "extremely improbable rates of cancer and other illness."[122] Indeed, EPA's 2014 National Air Toxics Assessment found that residents in census tract 708, which is located in St. John the Baptist Parish and next to Denka, face a cancer risk 47 times the national average.[123] Ninety-one percent of the residents in that census tract are African American.[124]

The racial health disparities also extend to COVID-19 mortalities. Black residents account for 33% of Louisiana's population but 51% of COVID-19 deaths.[125] Louisiana census tracts with higher populations of Black residents have higher pollution burdens in contrast to census tracts with large percentages of white populations.[126] These disparities also correlate with higher death rates from COVID-19 in Louisiana. In other words, increased per-capita COVID-19 death rates are associated with higher estimates of air pollution exposure and larger percentages of Black residents.[127] Smoking, diabetes, and obesity do not play a role in driving these trends.[128] This signifies that the disproportionate harm burdening the Black population in St. John due to chloroprene emissions also extend to that population's susceptibility to COVID-19 mortality.

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[121] Ruhan Nagra et al., *"Waiting to Die": Toxic Emissions and Disease Near the Denka Performance Elastomer Neoprene Facility in Louisiana's Cancer Alley*, 14 ENVIRONMENTAL JUSTICE 14 (Feb. 18, 2021), https://www.liebertpub.com/doi/abs/10.1089/env.2020.0056 (attached).
[122] University Network for Human Rights, *Waiting to Die: Toxic Emissions and Disease Near the Louisiana Denka/DuPont Plant* (2019), https://www humanrightsnetwork.org/waiting-to-die (summarizing study findings).
[123] EPA, *2014 National Air Toxics Assessment* (Aug. 22, 2018), https://gispub.epa.gov/NATA/.
[124] Census Reporter, *Census Tract 708, St. John the Baptist, LA*, https://censusreporter.org/profiles/14000US22095070800-census-tract-708-st-john-the-baptist-la/ (last visited Jan. 18, 2022).
[125] Kimberly A. Terrell and Wesley James, *Racial Disparities in Air Pollution Burden and COVID-19 Deaths in Louisiana, USA, in the Context of Long-Term Changes in Fine Particulate Pollution* 1-2, ENVIRONMENTAL JUSTICE (Sept. 2, 2020), https://www.liebertpub.com/doi/pdfplus/10.1089/env.2020.0021.
[126] *See* Kimberly Terrell & Wesley James, *Air Pollution and COVID-19: A Double Whammy for African American and Impoverished Communities in Cancer Alley* 5 (2020), https://law.tulane.edu/sites/law.tulane.edu/files/Files/Terrell%20-%20COVID-19%20-%20PM%202.5%20Louisiana%202020-5-14%20WEB%20VERSION.pdf.
[127] *Id.* at 7.
[128] *Id.*

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D. Adverse Impact Caused by LDEQ and LDH

Black residents in St. John the Baptist Parish continue to suffer a disproportionate, adverse impact from toxic air pollution due to LDEQ's and LDH's failures to protect public health. LDEQ has failed to ensure that Denka reduce its chloroprene emissions sufficiently to protect public health. Although the Administrative Order on Consent signed by LDEQ and Denka required the company to implement measures designed to reduce emissions of chloroprene by 85% from the facility's 2014 baseline chloroprene emission, chloroprene emissions remain dangerously high.[129] For example, EPA data shows that chloroprene air concentrations in St. John the Baptist Parish remained as high as 17.588 $\mu g/m^3$ on December 12, 2020, in Chad Baker, 13.194 $\mu g/m^3$ on January 18, 2021, in Levee, and 18.387 $\mu g/m^3$ on December 3, 2021, in Chad Baker.[130] LDEQ has not taken sufficient action to reduce these emissions to a level that protects St. John the Baptist residents.

Further, LDEQ's failure to review and determine whether to renew Denka's Chloroprene Unit, Neoprene Unit, and HCl Recovery Unit operating permits has adversely impacted St John the Baptist residents by depriving them of critical public participation processes, information, and government oversight of this facility's permits and operations.[131] The public notice and comment process is a protected legal right under Title V of the Clean Air Act and is integral to the permit decision making process. *See* 40 C.F.R. § 70.7(a)(1)(ii), (c)(1)(i). Without this process, CCSJ and Sierra Club are unable to participate in permitting decisions that affect their community and environment and pressure LDEQ to exercise its authority in lowering chloroprene emissions. Importantly, EPA has acknowledged that public participation is critical to Title VI compliance: "Violations of Title VI or EPA's Title VI regulations can be based solely on discriminatory actions in the procedural aspects of the permitting process," and "[m]any Title VI complaints . . . may have been prevented, mitigated, or resolved if certain public involvement practices had been implemented by recipient agencies."[132]

As a result of LDH's failure to recommend the relocation of Fifth Ward Elementary School students or any other mitigation measures, these students continue to go to school next to Denka and suffer the consequences of chloroprene exposure. As LDH concluded, these students face a higher cancer risk due to chloroprene emissions, yet LDH has done and is doing nothing to

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[129] LDEQ, *Administrative Order on Consent* 2 (Jan. 6, 2017), https://www.deq.louisiana.gov/assets/docs/Denka/DENKA_AdministrativeOrderOnConsentAOCJan2017.pdf.

[130] EPA, *Continuous Air Monitoring Summary Results for Chloroprene March 10, 2020 - December 8, 2021*, https://www.epa.gov/system/files/documents/2022-01/continuous-monitoring-summary-march-10-2020-through-december-08-2021.pdf (last visited Jan. 18, 2022).

[131] *See* EPA, *Action Plan* 1 (June 2016), https://www.epa.gov/sites/production/files/2016-06/documents/epa-laplace-action-plan.pdf.

[132] EPA, *Title V Public Involvement Guidance for EPA Assistance Recipients Administering Environmental Permitting Programs (Recipient Guidance)*, 71 Fed. Reg. 54, 14,207, 14,210 (Mar. 21, 2006), https://www.epa.gov/sites/default/files/2013-09/documents/title6_public_involvement_guidance.3.13.13.pdf.

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protect them or provide them with information or recommendations on protections for their health.[133]

LDEQ and LDH have contributed to the disparate impact affecting Black St. John residents by failing to fulfill the terms of an EPA grant in a timely and transparent fashion. In September 2020, EPA awarded LDEQ and LDH to "assess the health risks associated with Chloroprene exposure in the community near the Denka Plant" by September 30, 2021.[134] Months after an assessment was due, the community is unaware of such an assessment being conducted or submitted. By failing to fulfill the purpose of this EPA grant and provide this information to the public, LDEQ and LDH have prolonged the delay of much-needed support for St. John residents.

E. Less Discriminatory Alternatives

The following less discriminatory alternatives are and have been available to LDEQ:

1. Review and determine whether to renew Denka's air permits once the company submitted renewal applications. Conduct all required public participation processes required under 40 C.F.R. § 70.7 and Louisiana Administrative Code title 33 § 531, including public notice and comment. Condition renewal of a permit on assuring full compliance with federal and state legal requirements, including ending and ameliorating the negative impacts of the facility's emissions on St. John the Baptist Parish's predominantly Black community.

2. Exercise all available legal and equitable remedies available to LDEQ to seek emission reductions to 0.2 $\mu g/m^3$ or less pursuant to La. Stat. Ann. § 30:2011(D)(6), (D)(14), and (D)(15).

3. Share inspection reports and the results of its investigations of Denka. Maintain transparency on how, if at all, LDEQ responded or is responding to the violations, and any potential mitigation or other remedies. Provide a mechanism for community input on potential mitigation or other remedies.

4. Fulfill the first objective of the EPA grant in a timely and transparent fashion, including sharing the final assessment with the public, along with any recommendations regarding ways to protect the community's health.

The following less discriminatory alternatives are and have been available to LDH:

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[133] LDH, *A REFERENCE DOCUMENT FOR THE PRELIMINARY ASSESSMENT OF CHLOROPRENE LEVELS IN ST. JOHN THE BAPTIST PARISH: Evaluation of Potential Health Risks for Elementary School Students based on Early Sampling Results following Emissions Reductions* 14-15 (June 14, 2018), https://ldh.la.gov/assets/oph/Center-EH/DENKA/PreliminaryChloropreneReport.pdf.

[134] EPA, *EPA awards Louisiana over $311,000 to assess air pollutants in St. John Parish* (Oct. 8, 2020), https://www.epa.gov/newsreleases/epa-awards-louisiana-over-311000-assess-air-pollutants-st-john-parish.

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1. Recommend the relocation of Fifth Ward Elementary School to an area with lower cancer risk; provide information to the school district, students, and their families on the cancer risk at the School; and recommend the use of air filters and other mechanisms that will reduce the impact of chloroprene emission on students.

2. Fulfill the first objective of the EPA grant in a timely and transparent fashion, including sharing with the public the final assessment and any recommendations to protect community health.

V. Relief Requested

Complainants request that EPA promptly and comprehensively accept this complaint; investigate the allegations in this complaint, including whether LDEQ and LDH violated Title VI of the Civil Rights Act and its implementing regulations; and take all actions necessary to ensure that LDEQ and LDH comply fully with the law. *See* 40 C.F.R. § 7.130. Complainants also request that the Civil Rights Division of the Department of Justice play an active role in coordinating this federal investigation and any enforcement actions, consistent with the mission of the Federal Coordination and Compliance Section.

Complainants request that LDEQ and LDH be brought into full compliance and ask EPA to provide the following relief:

1. Require LDEQ to respond to Denka's permit renewal applications and assure compliance with all applicable federal and state legal requirements; conduct a full and fair analysis of whether a decision to renew the permits would disproportionately harm communities on the basis of race, color, or national origin; and identify alternatives that would avoid, minimize, or mitigate this harm. Any decision to renew a permit must be conditioned on ameliorating the negative impacts of the facility's emissions on St. John the Baptist Parish's predominantly Black community and ensuring compliance with Title V of the Clean Air Act and Title VI of the Civil Rights Act.

2. Require LDEQ to comply with federal and state public notice, participation, and public input consideration requirements in determining whether to renew or strengthen any expired air permits at Denka. *See* 40 C.F.R. § 70.7(a)(1)(ii), (c)(1)(i), (h) (requiring state operating air permitting programs to provide specific public participation procedures); La. Admin. Code tit. 33, § 531 (requiring public participation in permitting process).

3. Oversee the permitting process for Denka and ethylene oxide-emitting sources that impact St. John the Baptist Parish, including Union Carbide Corporation's Taft/Star Operation and Evonik Materials' plant, to ensure LDEQ's full compliance with the Clean Air Act and Title VI of the Civil Rights Act.

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4. Require LDEQ to exercise all available legal and equitable remedies to seek and ensure chloroprene emission reductions occur until the ambient air concentration is 0.2 $\mu g/m^3$ or less. *See* La. Stat. Ann. § 30:2011(D)(6), (D)(14), (D)(15).

5. Require LDEQ to publicly share inspection reports and the results of its investigations of Denka and maintain transparency on how, if at all, LDEQ responded or is in the process of responding to identified violations. Involve CCSJ and other affected community members in ensuring any remedies actually protect and mitigate harm to the community through seeking input and participation to determine corrective remedies for any current or future violations in any enforcement actions for the next 5 years.

6. Require LDH's Section of Environmental Epidemiology and Toxicology to conduct medical monitoring in St. John the Baptist Parish, assess healthcare access in the community and the need to relocate the students at Fifth Ward Elementary School in light of emissions exposure, and issue recommendations for mitigating the health risks students face.

7. Require LDEQ and LDH to form an environmental emergency contingency plan wherein the agencies conduct a full assessment of disparate impacts from the Denka facility including: fenceline monitoring, a cooperative community needs assessment, and in-person visits to affected neighborhoods. *See* La. Stat. Ann. § 30:2011(D)(15).

8. Require LDEQ and LDH to provide Complainants and EPA with an update on the status of the grant-funded assessment on cause of cancer risk in St. John and require them to submit the assessment to EPA and the public by a prompt deadline in 2022.

9. Perform any other action EPA deems appropriate to remedy the disparate impact caused by the conduct of LDEQ and LDH.

If LDEQ and LDH do not come into compliance voluntarily, Complainants request that EPA suspend or terminate financially assisting those agencies at least in regard to any discretionary funding requested by those agencies or used in a manner that does not directly protect the public and community members in St. John. *See* 40 C.F.R. § 7.130.

Complainants also request that they be involved in the investigation and resolution of this complaint. We look forward to working with EPA's ECRCO to prevent further harm to the St. John the Baptist community.

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Sincerely,

Deena Tumeh
Emma Cheuse
Earthjustice
1001 G Street NW, Suite 1000
Washington, D.C. 20001
(202) 667-4500
dtumeh@earthjustice.org
echeuse@earthustice.org
Counsel for Concerned Citizens of St. John and Sierra Club

Dorian Spence
Lawyers' Committee for Civil Rights Under Law
1500 K Street NW Suite 900
Washington, DC 20005
(202) 662-8324
dspence@lawyerscommittee.org

Counsel for Concerned Citizens of St. John

Cc: Matthew Tejeda
Office of Environmental Justice (2201A)
1200 Pennsylvania Ave., NW
Washington, D.C. 20460
tejada.matthew@epa.gov

Cynthia Ferguson
Environmental Justice Senior Litigation Counsel
Environment and Natural Resources Division
U.S. Department of Justice
cynthia.ferguson@usdoj.gov

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Attachments to CCSJ and Sierra Club Title VI Complaint to EPA

Attachments are listed in the order they appear in the Complaint. Additional sources cited are in EPA's possession or available by request to Earthjustice.

1. Amended Judgment, *Sierra Club, et al. v. EPA* (N.D. Cal. Oct. 2, 2020) (No. 4:15-cv-03292-SBA).

2. EPA, *Cooperative Agreement with LDH* (Sept. 19, 2020).

3. EPA, *Cooperative Agreement with LDEQ* (Sept. 19, 2020).

4. Ruhan Nagra et al., *"Waiting to Die": Toxic Emissions and Disease Near the Denka Performance Elastomer Neoprene Facility in Louisiana's Cancer Alley*, 14 ENVIRONMENTAL JUSTICE 14 (Feb. 18, 2021).

5. Letter from Concerned Citizens of St. John et al. to John Vandenberg, Dir. of Rsch., Nat'l Ctr. for Env't Assessment, EPA (Aug. 2, 2019).

6. Letter from David Gray, Acting Regional Administrator, EPA Region 6 to CCSJ (Apr. 5, 2021).

UNITED STATES DISTRICT COURT

FOR THE NORTHERN DISTRICT OF CALIFORNIA

OAKLAND DIVISION

CALIFORNIANS FOR RENEWABLE ENERGY, ASHURST BAR/SMITH COMMUNITY ORGANIZATION, CITIZENS FOR ALTERNATIVES TO RADIOACTIVE DUMPING, SAINT FRANCIS PRAYER CENTER, SIERRA CLUB, and MICHAEL BOYD, Plaintiffs, vs. UNITED STATES ENVIRONMENTAL PROTECTION AGENCY and ANDREW R. WHEELER, in his official capacity as Administrator of the Environmental Protection Agency, Defendants.	Case No: C 15-3292 SBA **AMENDED JUDGMENT**

In accordance with the Court's Order Granting in Part and Denying in Part Plaintiffs' Motion for Summary Judgment and Denying Defendants' Rule 12 Motion to Dismiss and Granting Alternative Motion for Summary Judgment as to the Sixth Claim for Relief, Dkt. 114, the Order Granting in Part and Denying in Part Defendants' Motion to Alter Judgment, Dkt. 144, and for the reasons set forth therein, the Court hereby enters judgment as follows:

1. Judgment is entered in favor of Plaintiff Saint Francis Prayer Center with respect to the First Claim for Relief; in favor of Plaintiffs CAlifornians for Renewable Energy and Michael Boyd with respect to the Second Claim for Relief; in favor of Plaintiff Sierra Club with respect to the Third Claim for Relief; in favor of Plaintiff Citizens for Alternatives to Radioactive Dumping with respect to the Fourth Claim for Relief; and, in favor of Plaintiff Ashurst Bar/Smith Community Organization with respect to the Fifth Claim for Relief.

2. Judgment is entered in favor of Defendants U.S. Environmental Protection Agency ("EPA") and Scott Pruitt, Administrator of EPA, with respect to Plaintiffs' Sixth Claim for Relief.

3. The Court declares that the EPA's failure to issue preliminary findings and any recommendations as to Plaintiffs' Title VI complaints numbered 01R-94-R5, 02R-00-R9, 01R-00-R6, 09R-02-R6, and 06R-03-R4 in accordance with the timeline set forth in 40 C.F.R. § 7.115(c) constitutes agency action unlawfully withheld, under the Administrative Procedure Act, 5 U.S.C. § 706(1).

4. The EPA shall timely process any pending and future Title VI complaints submitted by Plaintiffs and accepted for investigation by EPA as follows: for any pending investigation into a Title VI complaint submitted by any Plaintiff, EPA must issue preliminary findings and any recommendations for voluntary compliance, or otherwise resolve the complaint, within 180 days of the date of entry of this judgment; for any Title VI complaint submitted by any Plaintiff and accepted by EPA after the date of entry of this judgment, subject to any extension agreement between the complainant and the party complained against under 40 C.F.R. § 7.120, EPA must issue preliminary findings and any recommendations for voluntary compliance, or otherwise resolve the complaint,

ED_012929_00012077-00030

within 180 days of the date of acceptance. The requirements of this paragraph shall continue for a period of five years from the date judgment is entered.

5. The Court shall retain jurisdiction to enforce this judgment only as to those complaints subject to Paragraph 4 above.

IT IS SO ORDERED.

Dated: 10/02/20

SAUNDRA BROWN ARMSTRONG
Senior United States District Judge

U.S. ENVIRONMENTAL PROTECTION AGENCY

Cooperative Agreement

GRANT NUMBER (FAIN): 01F70501	
MODIFICATION NUMBER: 0	**DATE OF AWARD** 09/19/2020
PROGRAM CODE: AA	
TYPE OF ACTION New	**MAILING DATE** 09/26/2020
PAYMENT METHOD: ASAP	**ACH#** 60612

RECIPIENT TYPE:
State

Send Payment Request to:
Research Triangle Park Finance Center

RECIPIENT:
Louisiana Department of Health
1450 Poydras St., Ste 1652
New Orleans, LA 70112-1227
EIN: 72-6000821

PAYEE:
Louisiana Department of Health
P.O. Box 4489
Baton Rouge, LA 70821-4489

PROJECT MANAGER	EPA PROJECT OFFICER	EPA GRANT SPECIALIST
Jimmy Guidry P. O. Box 3214 Baton Rouge, LA 70821 **E-Mail:** jimmy.guidry@la.gov **Phone:** 225-342-0236	Ashley Williams 1201 Elm Street, Suite 500, ARPM Dallas, TX 75270-2102 **E-Mail:** williams.ashley@epa.gov **Phone:** 214-665-8183	Anedia Feaster Mission Support Division, MSDCA **E-Mail:** feaster.anedia@epa.gov **Phone:** 214-665-2267

PROJECT TITLE AND DESCRIPTION
Louisiana Department of Health - Tumor Registry and Denka Plant
Louisiana Department of Health, in partnership with Louisiana State University and Louisiana Department of Environmental Quality, proposes to assess the health risks associated with Chloroprene exposure in St. John the Baptist Parish near the Denka Plant. The objective of this project is twofold: (1) to determine if there are higher instances of cancer in the community due to toxic chemical emissions by the Denka Plant, and (2) to determine if there has been under-reporting of these cases of cancer in the Louisiana Tumor Registry.

BUDGET PERIOD	PROJECT PERIOD	TOTAL BUDGET PERIOD COST	TOTAL PROJECT PERIOD COST
10/01/2019 - 09/30/2021	10/01/2019 - 09/30/2021	$86,081.00	$86,081.00

NOTICE OF AWARD

Based on your Application dated 09/09/2020 including all modifications and amendments, the United States acting by and through the US Environmental Protection Agency (EPA) hereby awards $86,081. EPA agrees to cost-share 100.00% of all approved budget period costs incurred, up to and not exceeding total federal funding of $86,081. Recipient's signature is not required on this agreement. The recipient demonstrates its commitment to carry out this award by either: 1) drawing down funds within 21 days after the EPA award or amendment mailing date; or 2) not filing a notice of disagreement with the award terms and conditions within 21 days after the EPA award or amendment mailing date. If the recipient disagrees with the terms and conditions specified in this award, the authorized representative of the recipient must furnish a notice of disagreement to the EPA Award Official within 21 days after the EPA award or amendment mailing date. In case of disagreement, and until the disagreement is resolved, the recipient should not draw down on the funds provided by this award/amendment, and any costs incurred by the recipient are at its own risk. This agreement is subject to applicable EPA regulatory and statutory provisions, all terms and conditions of this agreement and any attachments.

ISSUING OFFICE (GRANTS MANAGEMENT OFFICE)	AWARD APPROVAL OFFICE
ORGANIZATION / ADDRESS	**ORGANIZATION / ADDRESS**
Acquisition and Assistance Section 1201 Elm Street, Suite 500 Dallas, TX 75270-2102	U.S. EPA, Region 6 Air and Radiation Division 1201 Elm Street, Suite 500 Dallas, TX 75270-2102

THE UNITED STATES OF AMERICA BY THE U.S. ENVIRONMENTAL PROTECTION AGENCY

Digital signature applied by EPA Award Official James McDonald - Director, Mission Support Division	**DATE** 09/19/2020

EPA Funding Information

FUNDS	FORMER AWARD	THIS ACTION	AMENDED TOTAL
EPA Amount This Action	$	$ 86,081	$ 86,081
EPA In-Kind Amount	$	$	$ 0
Unexpended Prior Year Balance	$	$	$ 0
Other Federal Funds	$	$	$ 0
Recipient Contribution	$	$	$ 0
State Contribution	$	$	$ 0
Local Contribution	$	$	$ 0
Other Contribution	$	$	$ 0
Allowable Project Cost	$ 0	$ 86,081	$ 86,081

Assistance Program (CFDA)	Statutory Authority	Regulatory Authority
66.204 - Multipurpose Grants to States and Tribes	Consolidated Appropriations Act of 2018 (P.L. 115-141) Consolidated Appropriations Act of 2019 (PL 116-6)	2 CFR 200 2 CFR 1500 and 40 CFR 33

Fiscal

Site Name	Req No	FY	Approp. Code	Budget Organization	PRC	Object Class	Site/Project	Cost Organization	Obligation / Deobligation
-	2006JSR025	19	E1	06J2	000M20	4133	-	-	86,081
									86,081

Budget Summary Page

Table A - Object Class Category (Non-construction)	Total Approved Allowable Budget Period Cost
1. Personnel	$36,683
2. Fringe Benefits	$20,750
3. Travel	$0
4. Equipment	$0
5. Supplies	$12,967
6. Contractual	$3,000
7. Construction	$0
8. Other	$12,681
9. Total Direct Charges	$86,081
10. Indirect Costs: % Base	$0
11. Total (Share: Recipient 0.00 % Federal 100.00 %.)	$86,081
12. Total Approved Assistance Amount	$86,081
13. Program Income	$0
14. Total EPA Amount Awarded This Action	$86,081
15. Total EPA Amount Awarded To Date	$86,081

Administrative Conditions

A. General Terms and Conditions

The recipient agrees to comply with the current EPA general terms and conditions available at: https://www.epa.gov/grants/epa-general-terms-and-conditions-effective-october-1-2019-or-later These terms and conditions are in addition to the assurances and certifications made as a part of the award and the terms, conditions, or restrictions cited throughout the award.

The EPA repository for the general terms and conditions by year can be found at: https://www.epa.gov/grants/grant-terms-and-conditions.

B. Correspondence Condition

The terms and conditions of this agreement require the submittal of reports, specific requests for approval, or notifications to EPA. Unless otherwise noted, all such correspondence should be sent to the following email addresses:

- Federal Financial Reports (SF-425): RTPFC-grants@epa.gov and (GS) Anedia Feaster, feaster.anedia@epa.gov, (214) 665-2267, R6_EPA_Grants_Programs@epa.gov
- MBE/WBE reports (EPA Form 5700-52A): Debora Bradford, bradford.debora@epa.gov, (214) 665-7406, R6_EPA_Grants_Programs@epa.gov
- All other forms/certifications/assurances, Indirect Cost Rate Agreements, Requests for Extensions of the Budget and Project Period, Amendment Requests, Requests for other Prior Approvals, updates to recipient information (including email addresses, changes in contact information or changes in authorized representatives) and other notifications: (GS) Anedia Feaster, feaster.anedia@epa.gov, (214) 665-2267, (PO) Ashley Williams, williams.ashley@epa.gov, (214) 665-8183, R6_EPA_Grants_Programs@epa.gov
- Payment requests (if applicable): RTPFC-grants@epa.gov
- Quality Assurance documents, workplan revisions, equipment lists, programmatic reports and deliverables: (PO) Ashley Williams, williams.ashley@epa.gov, (214) 665-8183

C. Extension of Project/Budget Period Expiration Date

EPA has not exercised the waiver option to allow automatic one-time extensions for non-research grants under 2 CFR 200.308 (d)(2). Therefore, if a no-cost time extension is necessary to extend the period of availability of funds the recipient must submit a written request to the EPA prior to the budget/project period expiration dates. **The written request must include:** a justification describing the need for additional time, an estimated date of completion, and a revised schedule for project completion including updated milestone target dates for the approved workplan activities. In addition, if there are overdue reports required by the general, administrative, and/or programmatic terms and conditions of this assistance agreement, the recipient must ensure that they are submitted along with or prior to submitting the no-cost time extension request.

D. Disadvantaged Business Enterprise (DBEs)

UTILIZATION OF SMALL, MINORITY AND WOMEN'S BUSINESS ENTERPRISES

GENERAL COMPLIANCE, 40 CFR, Part 33

The recipient agrees to comply with the requirements of EPA's Disadvantaged Business Enterprise (DBE) Program for procurement activities under assistance agreements, contained in 40 CFR, Part 33 except as described below based upon the associated class deviation.

EPA MBE/WBE CERTIFICATION, 40 CFR, Part 33, Subpart B
A class exception to the following provisions of Subpart B of 40 CFR Part 33 has been issued suspending the EPA MBE/WBE certification program: §33.204(a)(3) providing that an entity may apply to EPA MBE or WBE certification after unsuccessfully attempting to obtain certification as otherwise described in §33.204; and §33.205 through and including §33.211. The class exception was authorized pursuant to the authority in 2 CFR 1500.3(b).

SIX GOOD FAITH EFFORTS, 40 CFR, Part 33, Subpart C
Pursuant to 40 CFR, Section 33.301, the recipient agrees to make the following good faith efforts whenever procuring construction, equipment, services and supplies under an EPA financial assistance agreement, and to require that sub-recipients, loan recipients, and prime contractors also comply. Records documenting compliance with the six good faith efforts shall be retained:

(a) Ensure DBEs are made aware of contracting opportunities to the fullest extent practicable through outreach and recruitment activities. For Indian Tribal, State and Local and Government recipients, this will include placing DBEs on solicitation lists and soliciting them whenever they are potential sources.

(b) Make information on forthcoming opportunities available to DBEs and arrange time frames for contracts and establish delivery schedules, where the requirements permit, in a way that encourages and facilitates participation by DBEs in the competitive process. This includes, whenever possible, posting solicitations for bids or proposals for a minimum of 30 calendar days before the bid or proposal closing date.

(c) Consider in the contracting process whether firms competing for large contracts could subcontract with DBEs. For Indian Tribal, State and local Government recipients, this will include dividing total requirements when economically feasible into smaller tasks or quantities to permit maximum participation by DBEs in the competitive process.

(d) Encourage contracting with a consortium of DBEs when a contract is too large for one of these firms to handle individually.

(e) Use the services and assistance of the SBA and the Minority Business Development Agency of the Department of Commerce.

(f) If the prime contractor awards subcontracts, require the prime contractor to take the steps in paragraphs (a) through (e) of this section.

CONTRACT ADMINISTRATION PROVISIONS, 40 CFR, Section 33.302
The recipient agrees to comply with the contract administration provisions of 40 CFR, Section 33.302 (a)-(d) and (i).

BIDDERS LIST, 40 CFR, Section 33.501(b) and (c)
Recipients of a Continuing Environmental Program Grant or other annual reporting grant, agree to create and maintain a bidders list. Recipients of an EPA financial assistance agreement to capitalize a revolving loan fund also agree to require entities receiving identified loans to create and maintain a bidders list if the recipient of the loan is subject to, or chooses to follow, competitive bidding requirements. Please see 40 CFR, Section 33.501 (b) and (c) for specific requirements and exemptions.

FAIR SHARE OBJECTIVES, 40 CFR, Part 33, Subpart D
A class exception to the entire Subpart D of 40 CFR Part 33 has been authorized pursuant to the authority in 2 CFR 1500.3(b). Notwithstanding Subpart D of 40 CFR Part 33, recipients are not required to negotiate or apply fair share objectives in procurements under assistance agreements.

MBE/WBE REPORTING- SPECIFIC CHANGES PURSUANT TO CLASS DEVIATION, 40 CFR, Part 33, Subpart E

When required, the recipient agrees to complete and submit a "MBE/WBE Utilization Under Federal Grants and Cooperative Agreements" report (EPA Form 5700-52A) on an annual basis. The current EPA Form 5700-52A can be found at the EPA Grantee Forms Page at https://www.epa.gov/grants/epa-grantee-forms.

Reporting is required for assistance agreements where funds are budgeted for procuring construction, equipment, services and supplies (including funds budgeted for direct procurement by the recipient or procurement under subawards or loans in the "Other" category) with a cumulative total that exceed the threshold amount of $250,000, including amendments and/or modifications. When reporting is required, all procurement actions are reportable, not just that portion which exceeds $250,000.

Annual reports are due by October 30th of each year. Final reports are due by October 30th or 90 days after the end of the project period, whichever comes first.

This provision represents an approved deviation from the MBE/WBE reporting requirements as described in 40 CFR, Part 33, Section 33.502.

E. Pre-Award Costs

In accordance with 2 CFR 1500.8, the grantee may charge otherwise allowable pre-award costs (both Federal and non-Federal matching shares) incurred from ***10/01/*** 2019 to the actual award date provided that such costs were contained in the approved application and all costs are incurred within the approved budget period.

Programmatic Conditions

GRANT-SPECIFIC PROGRAMMATIC TERMS AND CONDITIONS

F. PERFORMANCE REPORTING AND FINAL PERFORMANCE REPORT

Performance Reports – Content

In accordance with 2 CFR 200.328, the recipient agrees to submit performance reports that include brief information on each of the following areas: 1) an abstract or overview of the project including completed workplan activities; 2) a comparison of actual accomplishments to the outputs/outcomes established in the assistance agreement workplan for the period; 3) the reasons why established outputs/outcomes were not met; 4) additional pertinent information, including, when appropriate, analysis and explanation of cost overruns or high-unit costs; 5) methods to be used to effectively disseminate project information and/or continue the benefits of this project (although the project itself may not be continuing); and 6) materials generated in connection with project activities (e.g., workshop announcements, newspaper/newsletter announcements, articles or releases, press packets, pamphlets). Additionally, the recipient agrees to inform EPA as soon as problems, delays or adverse conditions which will materially impair the ability to meet the outputs/outcomes specified in the assistance agreement workplan are known.

Interim performance and final progress reports must prominently display the three Essential Elements for state work plans: 1) Strategic Plan Goal; (2) Strategic Plan Objective; and (3) Workplan Commitments plus time frame. (See Grants Policy Issuance 11-03 State Grant Workplans and Progress Reports for more information).

Performance Reports - Frequency

1) The recipient shall submit performance reports annually.
2) The recipient agrees to submit the Final Performance Report electronically to the EPA Project Officer within 90 days of the budget/project period end date (9/30/2021).

G. STATE CYBERSECURITY CONDITION

(a) The recipient agrees that when collecting and managing environmental data under this assistance agreement, it will protect the data by following all applicable State law cybersecurity requirements.
(b) (1) EPA must ensure that any connections between the recipient's network or information system and EPA networks used by the recipient to transfer data under this agreement, are secure. For purposes of this Section, a connection is defined as a dedicated persistent interface between an Agency IT system and an external IT system for the purpose of transferring information. Transitory, user-controlled connections such as website browsing are excluded from this definition. If the recipient's connections as defined above do not go through the Environmental Information Exchange Network or EPA's Central Data Exchange, the recipient agrees to contact the EPA Project Officer and work with the designated Regional/Headquarters Information Security Officer to ensure that the connections meet EPA security requirements, including entering into Interconnection Service Agreements as appropriate. This condition does not apply to manual entry of data by the recipient into systems operated and used by EPA's regulatory programs for the submission of reporting and/or compliance data.
(2) The recipient agrees that any subawards it makes under this agreement will require the subrecipient to comply with the requirements in (b)(1) if the subrecipient's network or information system is connected to EPA networks to transfer data to the Agency using systems other than the Environmental Information Exchange Network or EPA's Central Data Exchange. The recipient will be in compliance with this condition: by including this requirement in subaward agreements; and during subrecipient monitoring deemed necessary by the recipient under 2 CFR 200.331(d), by inquiring whether the subrecipient has contacted the EPA Project Officer. Nothing in this condition requires the recipient to contact the EPA Project Officer on behalf of a subrecipient or to be involved in the negotiation of an Interconnection Service Agreement between the subrecipient and EPA.

H. COMPETENCY OF ORGANIZATIONS GENERATING ENVIRONMENTAL MEASUREMENT DATA

In accordance with Agency Policy Directive Number FEM-2012-02, Policy to Assure the Competency of Organizations Generating Environmental Measurement Data under Agency-Funded Assistance Agreements, recipient agrees, by entering into this agreement, that it has demonstrated competency prior to award, or alternatively, where a pre-award demonstration of competency is not practicable, recipient agrees to demonstrate competency prior to carrying out any activities under the award involving the generation or use of environmental data. Recipient shall maintain competency for the duration of the project period of this agreement and this will be documented during the annual reporting process. A copy of the Policy is available online at https://www.epa.gov/sites/production/files/2015-03/documents/competency-policy-aaia-new.pdf, or a copy may also be requested by contacting the EPA Project Officer for this award.

I. QUALITY ASSURANCE

Quality Management Plan

In accordance with 2 CFR 1500.11, the recipient shall continue to implement and adhere to the Quality Management Plan (QMP) submitted to EPA. The QMP should be updated annually or as necessary based on the EPA QA/R-2: EPA Requirements for Quality Management Plans. This quality assurance requirement applies to all grants, cooperative agreements, contracts and interagency agreements that involve the use of environmental data.

Quality Assurance Project Plan

In accordance with 2 CFR 1500.11, the recipient must develop and implement quality assurance and

quality control procedures, specifications and documentation that are sufficient to produce data of adequate quality to meet project objectives. Recipients implementing environmental programs within the scope of the assistance agreement must submit to the EPA Project Officer an approvable Quality Assurance Project Plan (QAPP) at least 60 days prior to the initiating of data collection or data compilation. The Quality Assurance Project Plan (QAPP) is the document that provides comprehensive details about the quality assurance, quality control, and technical activities that must be implemented to ensure that project objectives are met. Environmental programs include direct measurements or data generation, environmental modeling, compilation of date from literature or electronic media and data supporting the design, construction and operation of environmental technology. The QAPP should be prepared in accordance with EPA QA/R-5: EPA Requirements for Quality Assurance Project Plans.

No environmental data collection or data compilation may occur until the QAPP is approved by the EPA Project Officer and Quality Assurance Regional Manager. When the recipient is delegating the responsibility for an environmental data collection or data compilation activity to another organization, the EPA Regional Quality Assurance Manager may allow the recipient to review and approve that organization's QAPP. Additional information on these requirements can be found at the EPA Office of Grants and Debarment website:
https://www.epa.gov/grants/implementation-quality-assurance-requirements-organizations-receiving-epa-financial

J. SUBSTANTIAL INVOLVEMENT

EPA will be substantially involved in this agreement. Substantial involvement by the EPA Project Officer may include:
1) monthly telephone calls and other monitoring,
2) reviewing project phases and providing approval to continue to the next phase,
3) reviewing and commenting on any documents, web content or other materials developed under this agreement (the recipient will make final decisions on these matters),
4) approving substantive terms included in contracts or subawards (EPA's Project Officer will not suggest, recommend or direct the recipient to select any particular contractor or subrecipient except to the extent permitted in Section 10 of EPA's Subaward Policy),
5) reviewing and commenting on the programmatic progress reports,
6) consultation with EPA regarding the selection of key personnel (EPA's involvement is limited to reviewing the technical qualifications of key personnel and the recipient will make the final decisions on selection. EPA's Project Officer will not suggest, recommend or direct the recipient to select any individual), and/or
7) joint operational involvement, participation and/or collaboration between EPA and the recipient.

K. Pre-Award Costs

In accordance with 2 CFR 1500.8, the grantee may charge otherwise allowable pre-award costs (both Federal and non-Federal matching shares) incurred from October 1, 2019 to the actual award date provided that such costs were contained in the approved application and all costs are incurred within the approved budget period.

U.S. ENVIRONMENTAL PROTECTION AGENCY

Cooperative Agreement

GRANT NUMBER (FAIN): 01F70601	
MODIFICATION NUMBER: 0	**DATE OF AWARD** 09/19/2020
PROGRAM CODE: AA	
TYPE OF ACTION New	**MAILING DATE** 09/26/2020
PAYMENT METHOD: ASAP	**ACH#** 60626

RECIPIENT TYPE:
State

Send Payment Request to:
Research Triangle Park Finance Center

RECIPIENT:
Louisiana Department of Environmental Quality
P.O Box 4303
Baton Rouge, LA 70821-4303
EIN: 72-0999270

PAYEE:
LA Department of Environmental Quality
P.O. Box 4303
Baton Rouge, LA 70821-4303

PROJECT MANAGER	EPA PROJECT OFFICER	EPA GRANT SPECIALIST
Tomeka Prioleau P.O Box 4303 Baton Rouge, LA 70821-4303 **E-Mail:** tomeka.prioleau@la.gov **Phone:** 225-219-0877	Ashley Williams 1201 Elm Street, Suite 500, ARPM Dallas, TX 75270-2102 **E-Mail:** williams.ashley@epa.gov **Phone:** 214-665-8183	Anedia Feaster Mission Support Division, MSDCA **E-Mail:** feaster.anedia@epa.gov **Phone:** 214-665-2267

PROJECT TITLE AND DESCRIPTION
LDEQ Multi-Purpose Grant
Louisiana Department of Environmental Quality, in partnership with Louisiana State University and Louisiana Department of Health, proposes to assess the health risks associated with Chloroprene exposure in St. John the Baptist Parish near the Denka Plant. The objective of this project is twofold: (1) to determine if there are higher instances of cancer in the community due to toxic chemical emissions by the Denka Plant, and (2) to determine if there has been under-reporting of these cases in the Louisiana Tumor Registry.

BUDGET PERIOD	PROJECT PERIOD	TOTAL BUDGET PERIOD COST	TOTAL PROJECT PERIOD COST
10/01/2019 - 09/30/2021	10/01/2019 - 09/30/2021	$224,931.00	$224,931.00

NOTICE OF AWARD

Based on your Application dated 09/09/2020 including all modifications and amendments, the United States acting by and through the US Environmental Protection Agency (EPA) hereby awards $224,931. EPA agrees to cost-share 100.00% of all approved budget period costs incurred, up to and not exceeding total federal funding of $224,931. Recipient's signature is not required on this agreement. The recipient demonstrates its commitment to carry out this award by either: 1) drawing down funds within 21 days after the EPA award or amendment mailing date; or 2) not filing a notice of disagreement with the award terms and conditions within 21 days after the EPA award or amendment mailing date. If the recipient disagrees with the terms and conditions specified in this award, the authorized representative of the recipient must furnish a notice of disagreement to the EPA Award Official within 21 days after the EPA award or amendment mailing date. In case of disagreement, and until the disagreement is resolved, the recipient should not draw down on the funds provided by this award/amendment, and any costs incurred by the recipient are at its own risk. This agreement is subject to applicable EPA regulatory and statutory provisions, all terms and conditions of this agreement and any attachments.

ISSUING OFFICE (GRANTS MANAGEMENT OFFICE)	AWARD APPROVAL OFFICE
ORGANIZATION / ADDRESS	**ORGANIZATION / ADDRESS**
Acquisition and Assistance Section 1201 Elm Street, Suite 500 Dallas, TX 75270-2102	U.S. EPA, Region 6 Air and Radiation Division 1201 Elm Street, Suite 500 Dallas, TX 75270-2102

THE UNITED STATES OF AMERICA BY THE U.S. ENVIRONMENTAL PROTECTION AGENCY

Digital signature applied by EPA Award Official James McDonald - Director, Mission Support Division	**DATE** 09/19/2020

EPA Funding Information

FUNDS	FORMER AWARD	THIS ACTION	AMENDED TOTAL
EPA Amount This Action	$	$ 224,931	$ 224,931
EPA In-Kind Amount	$	$	$ 0
Unexpended Prior Year Balance	$	$	$ 0
Other Federal Funds	$	$	$ 0
Recipient Contribution	$	$	$ 0
State Contribution	$	$	$ 0
Local Contribution	$	$	$ 0
Other Contribution	$	$	$ 0
Allowable Project Cost	$ 0	$ 224,931	$ 224,931

Assistance Program (CFDA)	Statutory Authority	Regulatory Authority
66.204 - Multipurpose Grants to States and Tribes	Consolidated Appropriations Act of 2018 (P.L. 115-141) Consolidated Appropriations Act of 2019 (PL 116-6)	2 CFR 200 2 CFR 1500 and 40 CFR 33

Fiscal

Site Name	Req No	FY	Approp. Code	Budget Organization	PRC	Object Class	Site/Project	Cost Organization	Obligation / Deobligation
-	2006JSR024	19	E1	06J2	000M20	4133	-	-	224,931
									224,931

Budget Summary Page

Table A - Object Class Category (Non-construction)	Total Approved Allowable Budget Period Cost
1. Personnel	$0
2. Fringe Benefits	$0
3. Travel	$0
4. Equipment	$0
5. Supplies	$25,147
6. Contractual	$0
7. Construction	$0
8. Other	$199,784
9. Total Direct Charges	$224,931
10. Indirect Costs: % Base	$0
11. Total (Share: Recipient 0.00 % Federal 100.00 %.)	$224,931
12. Total Approved Assistance Amount	$224,931
13. Program Income	$0
14. Total EPA Amount Awarded This Action	$224,931
15. Total EPA Amount Awarded To Date	$224,931

Administrative Conditions

A. General Terms and Conditions

The recipient agrees to comply with the current EPA general terms and conditions available at: https://www.epa.gov/grants/epa-general-terms-and-conditions-effective-october-1-2019-or-later These terms and conditions are in addition to the assurances and certifications made as a part of the award and the terms, conditions, or restrictions cited throughout the award.

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B. Correspondence Condition

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- MBE/WBE reports (EPA Form 5700-52A): R6_EPA_Grants_Programs@epa.gov
- All other forms/certifications/assurances, Indirect Cost Rate Agreements, Requests for Extensions of the Budget and Project Period, Amendment Requests, Requests for other Prior Approvals, updates to recipient information (including email addresses, changes in contact information or changes in authorized representatives) and other notifications: (GS) Anedia Feaster, feaster.anedia@epa.gov, (214) 665-2267, (PO) Ashley Williams, williams.ashley@epa.gov, (214) 665-8183, R6_EPA_Grants_Programs@epa.gov
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- Quality Assurance documents, workplan revisions, equipment lists, programmatic reports and deliverables: (PO) Ashley Williams, williams.ashley@epa.gov, (214) 665-8183

C. Extension of Project/Budget Period Expiration Date

EPA has not exercised the waiver option to allow automatic one-time extensions for non-research grants under 2 CFR 200.308 (d)(2). Therefore, if a no-cost time extension is necessary to extend the period of availability of funds the recipient must submit a written request to the EPA prior to the budget/project period expiration dates. **The written request must include:** a justification describing the need for additional time, an estimated date of completion, and a revised schedule for project completion including updated milestone target dates for the approved workplan activities. In addition, if there are overdue reports required by the general, administrative, and/or programmatic terms and conditions of this assistance agreement, the recipient must ensure that they are submitted along with or prior to submitting the no-cost time extension request.

D. Disadvantaged Business Enterprise (DBEs)

UTILIZATION OF SMALL, MINORITY AND WOMEN'S BUSINESS ENTERPRISES

GENERAL COMPLIANCE, 40 CFR, Part 33

The recipient agrees to comply with the requirements of EPA's Disadvantaged Business Enterprise (DBE) Program for procurement activities under assistance agreements, contained in 40 CFR, Part 33 except as described below based upon the associated class deviation.

EPA MBE/WBE CERTIFICATION, 40 CFR, Part 33, Subpart B

A class exception to the following provisions of Subpart B of 40 CFR Part 33 has been issued suspending the EPA MBE/WBE certification program: §33.204(a)(3) providing that an entity may apply to EPA MBE or WBE certification after unsuccessfully attempting to obtain certification as otherwise described in §33.204; and §33.205 through and including §33.211. The class exception was authorized pursuant to the authority in 2 CFR 1500.3(b).

SIX GOOD FAITH EFFORTS, 40 CFR, Part 33, Subpart C
Pursuant to 40 CFR, Section 33.301, the recipient agrees to make the following good faith efforts whenever procuring construction, equipment, services and supplies under an EPA financial assistance agreement, and to require that sub-recipients, loan recipients, and prime contractors also comply. Records documenting compliance with the six good faith efforts shall be retained:

(a) Ensure DBEs are made aware of contracting opportunities to the fullest extent practicable through outreach and recruitment activities. For Indian Tribal, State and Local and Government recipients, this will include placing DBEs on solicitation lists and soliciting them whenever they are potential sources.

(b) Make information on forthcoming opportunities available to DBEs and arrange time frames for contracts and establish delivery schedules, where the requirements permit, in a way that encourages and facilitates participation by DBEs in the competitive process. This includes, whenever possible, posting solicitations for bids or proposals for a minimum of 30 calendar days before the bid or proposal closing date.

(c) Consider in the contracting process whether firms competing for large contracts could subcontract with DBEs. For Indian Tribal, State and local Government recipients, this will include dividing total requirements when economically feasible into smaller tasks or quantities to permit maximum participation by DBEs in the competitive process.

(d) Encourage contracting with a consortium of DBEs when a contract is too large for one of these firms to handle individually.

(e) Use the services and assistance of the SBA and the Minority Business Development Agency of the Department of Commerce.

(f) If the prime contractor awards subcontracts, require the prime contractor to take the steps in paragraphs (a) through (e) of this section.

CONTRACT ADMINISTRATION PROVISIONS, 40 CFR, Section 33.302
The recipient agrees to comply with the contract administration provisions of 40 CFR, Section 33.302 (a)-(d) and (i).

BIDDERS LIST, 40 CFR, Section 33.501(b) and (c)
Recipients of a Continuing Environmental Program Grant or other annual reporting grant, agree to create and maintain a bidders list. Recipients of an EPA financial assistance agreement to capitalize a revolving loan fund also agree to require entities receiving identified loans to create and maintain a bidders list if the recipient of the loan is subject to, or chooses to follow, competitive bidding requirements. Please see 40 CFR, Section 33.501 (b) and (c) for specific requirements and exemptions.

FAIR SHARE OBJECTIVES, 40 CFR, Part 33, Subpart D
A class exception to the entire Subpart D of 40 CFR Part 33 has been authorized pursuant to the authority in 2 CFR 1500.3(b). Notwithstanding Subpart D of 40 CFR Part 33, recipients are not required to negotiate or apply fair share objectives in procurements under assistance agreements.

MBE/WBE REPORTING- SPECIFIC CHANGES PURSUANT TO CLASS DEVIATION, 40 CFR,

Part 33, Subpart E
When required, the recipient agrees to complete and submit a "MBE/WBE Utilization Under Federal Grants and Cooperative Agreements" report (EPA Form 5700-52A) on an annual basis. The current EPA Form 5700-52A can be found at the EPA Grantee Forms Page at https://www.epa.gov/grants/epa-grantee-forms.

Reporting is required for assistance agreements where funds are budgeted for procuring construction, equipment, services and supplies (including funds budgeted for direct procurement by the recipient or procurement under subawards or loans in the "Other" category) with a cumulative total that exceed the threshold amount of $250,000, including amendments and/or modifications. When reporting is required, all procurement actions are reportable, not just that portion which exceeds $250,000.

Annual reports are due by October 30th of each year. Final reports are due by October 30th or 90 days after the end of the project period, whichever comes first.

This provision represents an approved deviation from the MBE/WBE reporting requirements as described in 40 CFR, Part 33, Section 33.502. 1.1.

E. National Term and Condition for Subawards

a. The recipient agrees to:
   (1) Establish all subaward agreements in writing;
   (2) Maintain primary responsibility for ensuring successful completion of the EPA-approved project (this responsibility cannot be delegated or transferred to a subrecipient);
   (3) Ensure that any subawards comply with the standards in Section 210(a)-(d) of OMB Circular A-133 and are not used to acquire commercial goods or services for the recipient;
   (4) Ensure that any subawards are awarded to eligible subrecipients and that proposed subaward costs are necessary, reasonable, and allocable;
   (5) Ensure that any subawards to 501(c)(4) organizations do not involve lobbying activities;
   (6) Monitor the performance of their recipients and ensure that they comply with all applicable regulations, statutes, and terms and conditions which flow down in the subaward;
   (7) Obtain EPA's consent before making a subaward to a foreign or international organization, or a subaward to be performed in a foreign country; and
   (8) Obtain approval from EPA for any new subaward work that is not outlined in the approved work plan in accordance with 40 CFR Parts 30.25 and 31.30, as applicable.
b. Any questions about subrecipient eligibility or other issues pertaining to subawards should be addressed to the recipient's EPA Project Officer. Additional information regarding subawards may be found at http://www.epa.gov/ogd/guide/subaward-policy-part-2.pdf. Guidance for distinguishing between vendor and subrecipient relationships and ensuring compliance with Section 210(a)-(d) of OMB Circular A-133 can be found at http://www.epa.gov/ogd/guide/subawards-appendix-b.pdf and http://www.whitehouse.gov/omb/circulars/a133/a133.html.
c. The recipient is responsible for selecting its subrecipients and, if applicable, for conducting subaward competitions.

Programmatic Conditions

GRANT-SPECIFIC PROGRAMMATIC TERMS AND CONDITIONS

E. PERFORMANCE REPORTING AND FINAL PERFORMANCE REPORT

Performance Reports – Content

In accordance with 2 CFR 200.328, the recipient agrees to submit performance reports that include brief information on each of the following areas: 1) an abstract or overview of the project including completed workplan activities; 2) a comparison of actual accomplishments to the outputs/outcomes established in the assistance agreement workplan for the period; 3) the reasons why established outputs/outcomes were not met; 4) additional pertinent information, including, when appropriate, analysis and explanation of cost overruns or high-unit costs; 5) methods to be used to effectively disseminate project information and/or continue the benefits of this project (although the project itself may not be continuing); and 6) materials generated in connection with project activities (e.g., workshop announcements, newspaper/newsletter announcements, articles or releases, press packets, pamphlets). Additionally, the recipient agrees to inform EPA as soon as problems, delays or adverse conditions which will materially impair the ability to meet the outputs/outcomes specified in the assistance agreement workplan are known.

Interim performance and final progress reports must prominently display the three Essential Elements for state work plans: 1) Strategic Plan Goal; (2) Strategic Plan Objective; and (3) Workplan Commitments plus time frame. (See Grants Policy Issuance 11-03 State Grant Workplans and Progress Reports for more information).

Performance Reports - Frequency

1) The recipient shall submit performance reports annually.
2) The recipient agrees to submit the Final Performance Report electronically to the EPA Project Officer within 90 days of the budget/project period end date (9/30/2021).

F. STATE CYBERSECURITY CONDITION

(a) The recipient agrees that when collecting and managing environmental data under this assistance agreement, it will protect the data by following all applicable State law cybersecurity requirements.
(b) (1) EPA must ensure that any connections between the recipient's network or information system and EPA networks used by the recipient to transfer data under this agreement, are secure. For purposes of this Section, a connection is defined as a dedicated persistent interface between an Agency IT system and an external IT system for the purpose of transferring information. Transitory, user-controlled connections such as website browsing are excluded from this definition. If the recipient's connections as defined above do not go through the Environmental Information Exchange Network or EPA's Central Data Exchange, the recipient agrees to contact the EPA Project Officer and work with the designated Regional/Headquarters Information Security Officer to ensure that the connections meet EPA security requirements, including entering into Interconnection Service Agreements as appropriate. This condition does not apply to manual entry of data by the recipient into systems operated and used by EPA's regulatory programs for the submission of reporting and/or compliance data.
(2) The recipient agrees that any subawards it makes under this agreement will require the subrecipient to comply with the requirements in (b)(1) if the subrecipient's network or information system is connected to EPA networks to transfer data to the Agency using systems other than the Environmental Information Exchange Network or EPA's Central Data Exchange. The recipient will be in compliance with this condition: by including this requirement in subaward agreements; and during subrecipient monitoring deemed necessary by the recipient under 2 CFR 200.331(d), by inquiring whether the subrecipient has contacted the EPA Project Officer. Nothing in this condition requires the recipient to contact the EPA Project Officer on behalf of a subrecipient or to be involved in the negotiation of an Interconnection Service Agreement between the subrecipient and EPA.

G. COMPETENCY OF ORGANIZATIONS GENERATING ENVIRONMENTAL MEASUREMENT DATA

In accordance with Agency Policy Directive Number FEM-2012-02, Policy to Assure the Competency of Organizations Generating Environmental
Measurement Data under Agency-Funded Assistance Agreements, recipient agrees, by entering into this agreement, that it has demonstrated competency

prior to award, or alternatively, where a pre-award demonstration of competency is not practicable, recipient agrees to demonstrate competency prior to
carrying out any activities under the award involving the generation or use of environmental data. Recipient shall maintain competency for the duration of the
project period of this agreement and this will be documented during the annual reporting process. A copy of the Policy is available online at
https://www.epa.gov/sites/production/files/2015-03/documents/competency-policy-aaia-new.pdf, or a copy may also be requested by contacting the EPA
Project Officer for this award.

H. QUALITY ASSURANCE

Quality Management Plan

In accordance with 2 CFR 1500.11, the recipient shall continue to implement and adhere to the Quality Management Plan (QMP) submitted to EPA. The QMP should be updated annually or as necessary based on the EPA QA/R-2: EPA Requirements for Quality Management Plans. This quality assurance requirement applies to all grants, cooperative agreements, contracts and interagency agreements that involve the use of environmental data.

Quality Assurance Project Plan

In accordance with 2 CFR 1500.11, the recipient must develop and implement quality assurance and quality control procedures, specifications and documentation that are sufficient to produce data of adequate quality to meet project objectives. Recipients implementing environmental programs within the scope of the assistance agreement must submit to the EPA Project Officer an approvable Quality Assurance Project Plan (QAPP) at least 60 days prior to the initiating of data collection or data compilation. The Quality Assurance Project Plan (QAPP) is the document that provides comprehensive details about the quality assurance, quality control, and technical activities that must be implemented to ensure that project objectives are met. Environmental programs include direct measurements or data generation, environmental modeling, compilation of date from literature or electronic media and data supporting the design, construction and operation of environmental technology. The QAPP should be prepared in accordance with EPA QA/R-5: EPA Requirements for Quality Assurance Project Plans.

No environmental data collection or data compilation may occur until the QAPP is approved by the EPA Project Officer and Quality Assurance Regional Manager. When the recipient is delegating the responsibility for an environmental data collection or data compilation activity to another organization, the EPA Regional Quality Assurance Manager may allow the recipient to review and approve that organization's QAPP. Additional information on these requirements can be found at the EPA Office of Grants and Debarment website:
https://www.epa.gov/grants/implementation-quality-assurance-requirements-organizations-receiving-epa-financial

I. SUBSTANTIAL INVOLVEMENT

EPA will be substantially involved in this agreement. Substantial involvement by the EPA Project Officer may include:
1) monthly telephone calls and other monitoring,
2) reviewing project phases and providing approval to continue to the next phase,
3) reviewing and commenting on any documents, web content or other materials developed under this agreement (the recipient will make final decisions on these matters),
4) approving substantive terms included in contracts or subawards (EPA's Project Officer will not suggest, recommend or direct the recipient to select any particular contractor or subrecipient except to the extent permitted in Section 10 of EPA's Subaward Policy),
5) reviewing and commenting on the programmatic progress reports,

6) consultation with EPA regarding the selection of key personnel (EPA's involvement is limited to reviewing the technical qualifications of key personnel and the recipient will make the final decisions on selection. EPA's Project Officer will not suggest, recommend or direct the recipient to select any individual), and/or
7) joint operational involvement, participation and/or collaboration between EPA and the recipient.

J. Pre-Award Costs

In accordance with 2 CFR 1500.8, the grantee may charge otherwise allowable pre-award costs (both Federal and non-Federal matching shares) incurred from October 1, 2019 to the actual award date provided that such costs were contained in the approved application and all costs are incurred within the approved budget period.

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"Waiting to Die": Toxic Emissions and Disease Near the Denka Performance Elastomer Neoprene Facility in Louisiana's Cancer Alley

Ruhan Nagra, Robert Taylor, Mary Hampton, and Lance Hilderbrand

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ABSTRACT

Background: Residents of census tract 708 in St. John Parish, Louisiana, face the highest nationwide cancer risk from air pollution due to chloroprene emissions from the Denka Performance Elastomer facility. The University Network for Human Rights worked with residents of this predominantly Black community in Cancer Alley to design and implement a survey-based health study of the area. The study aimed to (1) assess the relationship between household proximity to the facility and reported illness, and (2) advance the advocacy objectives of the community.
Methods: The survey area consisted of households w thin a 2.5-km radius of the Denka facility. Sixty percent of the households within 1.5 km of the facility ("Zone 1") and 20% of the households between 1.5 and 2.5 km from the facility ("Zone 2 ') were randomly sampled. Survey implementers collected information on cancer diagnoses about all residents of each surveyed household. Information on chloroprene-linked medical symptoms was collected about respondents (those who took the survey) only.
Results: Cancer prevalence among the survey sample is (1) significantly higher than what is considered likely using Monte Carlo simulations based on Surveillance, Epidemiology, and End Results prevalence data (p 0.0306); and (2) associated with proximity to the facility, with significantly higher-than-likely prevalence in Zone 1 (p 0.0032) and lower prevalence in Zone 2. Levels of medical symptoms among respondents are high and also associated with proximity to the facility.
Discussion: Our findings highlight the need for action to compel Denka to reduce chloroprene emissions to Environmental Protection Agency-recommended limits.
Conclusion: Our findings are consistent with Cancer Alley communities' lived experiences of the debilitating health consequences of the area's industrial emissions. The burden of proof must shift to polluting industries.

Keywords: environmental justice, environmental racism, industrial corridor, Cancer Alley, health disparities, community-engaged research

INTRODUCTION

Cancer Alley and the Denka neoprene facility

LOUISIANA'S HEAVILY INDUSTRIALIZED CORRIDOR between New Orleans and Baton Rouge has long been known as "Cancer Alley." More than 200 chemical plants and refineries are concentrated in this 210-kilometer stretch of land along the Mississippi River, mostly in or near historically Black communities where many residents can trace their lineage to ancestors who were enslaved in the area.[1]

Nagra is a Supervisor in Human Rights Practice at University Network for Human Rights, Middletown, Connecticut, USA. Taylor is Executive Director of Concerned Citizens of St. John the Baptist Parish, Reserve, Louisiana, USA. Hampton is President of Concerned Citizens of St. John the Baptist Parish, Reserve, Louisiana, USA. Hilderbrand was a Data Analyst at University Network for Human Rights, Middletown, Connecticut, USA. He is currently a Data Management Specialist at USC Equity Research Institute, Los Angeles, California, USA.

A preliminary version of this study was posted on the Uni versity Network for Human Rights website at: https://drive.google .com/file/d/1Ie93SHF GrgFfN61PqwXrGh1Ay4lWqMD/view

[1]Trymaine Lee. "Cancer Alley: Big Industry, Big Problems." *MSNBC*. <www.msnbc.com/interactives/geography of poverty/se.html>. (Last accessed September 30, 2020).

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Since the late 1970s, many Cancer Alley residents have attributed cancer and other illness in their communities to toxic industrial pollution[2] and sought to use regulatory and legal challenges as well as grassroots struggle to compel industry to reduce emissions.[3]

In the past several years, Environmental Protection Agency (EPA) data have bolstered suspicions about the link between air pollution and negative health outcomes in Cancer Alley.[4] According to the most recent EPA National Air Toxics Assessment (NATA), 7 of the 10 U.S. census tracts with the highest cancer risk from air pollution are in Cancer Alley, including the tract with the highest nationwide risk tract 708 in the town of Reserve in St. John the Baptist Parish.[5]

Nationally, the average estimated risk of developing cancer from air pollution is 32 per million people; in Louisiana's census tract 708, the estimated cancer risk from air pollution is 1505 per million people 47 times the national average.[6] The vast majority of this risk, moreover, is attributed to a single chemical, chloroprene, emitted by the Denka Performance Elastomer neoprene facility. EPA attributes 85% (1279 per million people) of the cancer risk from air pollution in census tract 708 to chloroprene emissions, 12% (187 per million people) to ethylene oxide emissions, and 3% (38 per million people) to all other pollutants.[7] The Denka facility is the only source of chloroprene emissions in St. John Parish[8] and the only producer of chloroprene and neoprene in the United States.[9]

The neoprene facility, owned by DuPont until its sale to Japanese company Denka Performance Elastomer in November 2015, has been pumping chloroprene into the neighboring Black community since 1969.[10] Residents of the community had long felt that there was too much illness in the area far beyond what could be considered normal.[11] As one resident told us, "We're just sitting here, waiting to die."[12]

EPA's Integrated Risk Information System (IRIS) classified chloroprene as a "likely human carcinogen" in 2010. Reflecting this new IRIS assessment of chloroprene toxicity, the 2011 NATA (published in December 2015) estimated highly elevated cancer risk from air pollution near the Denka facility. Upon learning about EPA's estimate of their cancer risk in July 2016, residents of Reserve formed a community group called Concerned Citizens of St. John the Baptist Parish ("Concerned Citizens"). Concerned Citizens has demanded a significant reduction in chloroprene emissions from the Denka facility, such that air concentration of the chemical does not exceed 0.2 $\mu g/m^3$ the maximum chloroprene air concentration that would keep cancer risk from air pollution within EPA's "upper limit of acceptability" (100 per million people)[13] Concerned Citizens' ongoing struggle for environmental justice has gained increasing traction and national media coverage.[14]

[2]Barbara Allen. "Cradle of a Revolution? The Industrial Transformation of Louisiana's Lower Mississippi River." *Technology and Culture* 47 (2006): 115 116.

[3]Ibid: 116 117. In the Great Louisiana Toxics March of 1989, hundreds of Cancer Alley residents walked from Baton Rouge to New Orleans over a 10 day period. Thirty years later, in 2019, the Coalition Against Death Alley a coalition of community groups across Cancer Alley and their allies marched from the town of Reserve to the state capitol n Baton Rouge, demanding environmental justice. Jamiles Lartey and Oliver Laughland. 'They've been killing us for too long': Louisiana residents march in coalition against 'death alley.'" *The Guardian*, 30 May 2019. <https://www.theguardian.com/us news/2019/may/30/toxic america louisiana residents march against polluting plant>. (Last accessed February 10, 2021).

[4]EPA's 201 and 2014 National Air Toxics Assessment (NATA) data showed elevated cancer risks from air pollution in a number of Cancer Alley census tracts. According to he 2014 NATA, for example of the 109 U.S. census tracts where the probability of developing cancer from air pollution is higher than EPA's upper limit of acceptable risk (100 per million people), 31 are in Cancer Alley. In addition, EPA's Risk Screening Environmental Indicators model shows very high estimated levels of cancer causing pollutants in Cancer Alley, according to a recent analysis. Lylla Younes, Al Shaw, and Claire Perlman. "In a Notoriously Polluted Area of the Country, Massive New Chemical Plants Are Still Moving In." *ProPublica*, 30 October 2019. <https://projects.propublica.org/louisiana toxic air/>. (Last accessed February 10, 2021).

[5]U.S. Environmental Protection Agency. 2014 National Air Toxics Assessment. August 2018. <https://www.epa.gov/national air toxics assessment/2014 nata assessment results#nationwide>. (Last accessed February 10, 2021). We consider Cancer Alley to include the following 11 parishes (i.e., counties) of Louisiana: Ascension, East Baton Rouge, Iberville, Jefferson, Orleans, Plaquemines, St. Bernard, St. Charles, St. James, St. John the Baptist, and West Baton Rouge.

[6]Ibid.

[7]Ibid.

[8]Louisiana Department of Environmental Quality. "Annual Certified Emissions Data 1991 present." April 2020 <https://www.deq.louisiana.gov/page/eric public reports>. (Last accessed February 10, 2021).

[9]Jamiles Lartey and Oliver Laughland. "Cancer and chemicals in Reserve, Louisiana: the science explained." *The Guardian*, 6 May 2019. <https://www.theguardian.com/us news/2019/may/06/cancertown chemicals reserve louisiana science>. (Last accessed February 10, 2021).

[10]Sharon Lerner. "The Plant Next Door." *The Intercept* (March 2017 . <https://theintercept.com/2017/03/24/a louisiana town plagued by pollution shows why cuts to the epa will be measured in illnesses and deaths/>. (Last accessed February 10, 2021).

[11]Ibid.

[12]"Gloria Dumas." YouTube video, 2:46, excerpts of interview conducted by University Network for Human Rights, posted by "University Network for Human Rights." 2019. <https://www.youtube.com/watch?time continue=63&v=F77MvXt6y88&feature=emb logo>. (Last accessed February 10, 2021).

[13]U.S. Environmental Protection Agency. "Preliminary Risk Based Concentration Value for Chloroprene in Ambient Air." May 2016. <https://www.epa.gov/sites/production/files/2016 06/documents/memo prelim risk based concentrations050516.pdf>. (Last accessed February 10, 2021).

[14]Sharon Lerner. "When Pollution Is a Matter of Life and Death." *New York Times*, 22 June 2019. <https://www.nytimes.com/2019/06/22/opinion/sunday/epa carniogens.html>. (Last accessed February 10, 2021); Jamiles Lartey and Oliver Laughland. "'Almost every household has someone that has died from cancer,'" *The Guardian*, 6 May 2019. <https://www.theguardian.com/us news/ng interactive/2019/may/06/cancertown louisana reserve special report>. (Last accessed February 10, 2021); Rebecca Hersher. "After Decades of Air Pollution, a Louisiana Town Rebels Against a Chemical Giant." *NPR*, 6 March 2018. <https://www.npr.org/sections/health shots/2018/03/06/583973428/after decades of air pollution a louisiana town rebels against a chemical giant>. (Last accessed February 10, 2021); Victor Blackwell, Wayne Drash, and Christopher Lett. "Toxic tensions in the heart of 'Cancer Alley'" *CNN*, 20 October 2017. <https://www.cnn.com/2017/10/20/health/louisiana toxic town/index.html>. (Last accessed February 10, 2021).

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TABLE 1. SUMMARY STATISTICS OF ENVIRONMENTAL PROTECTION AGENCY'S CHLOROPRENE AIR MONITORING DATA

Year	*Maximum concentration detected (μg/m³)*	*Mean concentration (lower bound) (μg/m³)*	*Mean concentration (upper bound) (μg/m³)*	*Proportion of samples >0.2 μg/m³ (%)*
2016	153.0	7.3289	7.3387	68.6
2017	151.0	3.7076	3.7190	53.5
2018	98.7	2.1262	2.1393	47.8
2019	27.2	1.1558	1.1737	46.5
2020	22.6	0.7175	0.7349	35.4

In January 2017, Denka signed a voluntary agreement with the Louisiana Department of Environmental Quality to reduce its emissions.[15] Although chloroprene air concentrations have dropped since then, EPA's monitoring data have continued to show concentrations well in excess of 0.2 μg/m^3 in the neighborhoods around the Denka facility: in 2020, 35% of air samples exceeded the 0.2 μg/m^3 threshold and the mean chloroprene air concentration was 0.7 μg/m^3 more than three times the threshold (Table 1).

Although EPA's estimates of air pollution-related cancer risk have been critical in elevating the long-standing concerns of Cancer Alley residents, these risk estimates have not compelled adequate action to protect human health. As discussed further hereunder, although building upon risk estimates with health studies to determine observed levels of negative health outcomes is valuable, such studies should not be necessary to compel action to protect human health Once EPA has determined that residents of certain areas may face unacceptably high health risks, strong and swift action is not only warranted but obligatory.[16]

Genesis and goals of our community-engaged research project

The University Network for Human Rights (UNHR) is a nonprofit organization that works closely with communities affected by rights abuse to amplify and advance their struggles through community-led interdisciplinary research, documentation, and advocacy. The authors of this study UNHR researchers and leaders of Concerned Citizens of St. John Parish first met in fall 2017.[17] Concerned Citizens then convened several joint community meetings with UNHR researchers to discern residents' most pressing concerns and advocacy priorities. Residents discussed at length their anecdotal evidence of abnormally high levels of cancer and other illness in the community. Multiple people reported, for example, that in almost every household on the streets closest to the Denka facility someone had cancer or had died of cancer. Residents felt that, to have an impact, this anecdotal evidence needed to be supplemented with quantita ive data collected through a household health survey of the a ea near the plant.

After community members identified a survey-based household health study as one of their priorities, UNHR researchers began working closely with Concerned Citizens to develop a community-engaged research plan for implementation of the study. The goals of the study were (1) to determine the overall health status of a large sample of residents living in the area of the Denka facility, (2) to assess the relationship between household proximity to the Denka facility and reported illness, and (3) to advance the advocacy objectives of Concerned Citizens by collecting and analyzing data that might be useful in the group's efforts to compel Denka to adhere to the EPA's 0.2 μg/m^3 guideline for maximum chloroprene air concentration.

The survey instrument focused on chloroprene-linked health outcomes, in particular, because (1) the vast majority of the cancer risk from air pollution near the Denka facility is due to chloroprene emissions, (2) these emissions can be attributed to the Denka facility since it is the only source of chloroprene emissions in St. John Parish, and (3) the study was motivated by community members' concern about their exposure to chloroprene, which EPA had recently brought to their attention after the release of the 2011 NATA.

METHODS

Epidemiologists and statisticians at Stanford University provided input and guidance to ensure use of proper actuarial processes, study design methods, and

[15]Louisiana Department of Environmental Quality. "Administrative Order on Consent." (Jan 2017). <https://www.deq.louisiana.gov/assets/docs/Denka/DENKA AdministrativeOrderOnConsentAOCJan2017.pdf>. (Last accessed February 10, 2021).

[16]According to the precautionary principle, one of the most significant developments in modern international environmental law, decision makers must take action to protect the environment and public health when there is scientific uncertainty. Principle 15 of the 1992 Rio Declaration on Environment and Development states, for example: "In order to protect the environment, the precautionary approach shall be widely applied by States according to their capabilities. Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost effective measures to prevent environmental degradation." United Nations General Assembly, "Annex 1: Rio Declaration on Environment and Development." *Report of the United Nations Conference on Environment and Development.* 12 August 1992, <https://www.un.org/en/development/desa/population/migration/generalassembly/docs/globalcompact/A CONF.151 26 Vol.I Declaration.pdf>. (Last accessed February 10, 2021).

[17]At the time, Ruhan Nagra was a clinical instructor at Stanford Law School's Human Rights Clinic. She transitioned employment to the University Network for Human Rights in fall 2018 and has continued this work in that capacity.

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survey implementation principles and techniques. As a field epidemiology investigation, the study was (1) initiated in response to what community members described as a public health crisis in the area near the Denka facility, and (2) conducted in the field, through survey-based collection of residents' health information.[18] Stanford University's Research Compliance Office has determined that no IRB review would have been required "[b]ecause the goal of this project was advocacy for a specific issue in a specific situation and not generalizable research."

Survey instrument

To guide the development of our survey instrument (Appendix A1), we used peer-reviewed studies based on similar household health surveys.[19] The survey instrument was designed to collect certain health and other information including age, sex, part- or full-time residency status, cancer and other medical diagnoses, and child health about all residents of a household. Additional information was collected about respondents (those who took the survey) only, including race/ethnicity and medical symptoms.

Many symptoms and diagnoses were included in the survey instrument because of their link to chloroprene exposure, according to EPA's *Toxicological Review of Chloroprene*. Other symptoms and diagnoses were included after community members identified them as particular sources of concern in focus group sessions held in February 2018.

In addition to cancer diagnoses, the following chloroprene-linked health symp oms were included in the survey instrument: headache dizziness, fatigue, shortness of breath, rapid heart rate, heart palpitations, chest pain, and irritation of the eyes, nose, throat, and skin.[20] In light of community members' particular concern about health impacts on children as well as evidence suggesting that children are more susceptible than adults to the toxic effects of chloroprene exposure,[21] we also collected s rvey data on two specific symptoms in children: headaches and nosebleeds. Community members cited both of these symptoms as common in children who live and/or attend school in the area near the Denka facility. (In addition, as noted, headaches are linked to chloroprene exposure.)

Finally, the survey instrument included questions on the frequency and strength of chemical odors in the area as well as residents' level of concern about pollution in their community.

A draft survey instrument was piloted with five residents of the area in February 2018 and modified accordingly for clarity and efficiency of data collection.

Study design

The geographic scope of the study was the area within a 2.5-km radius of the Denka facility. In Figure 1, the outer circle circumscribes the entire survey area and the inner circle circumscribes the area within 1.5 km of the facility. The facility with a red dot at its center can be seen at the center of the survey area. In the map on the right, gray dots represent households. Residents of the orange-colored census tract (708) face the nation's highest cancer risk from air pollution, according to EPA. Residents of the yellow-colored census tract (709) face the third-highest nationwide risk.

We ultimately surveyed 60% of households (267 out of 445) within the 1.5-km radius of the plant ("Zone 1," as shown in Fig. 1) and 20% of households (271 out of 1376) located between 1 5 and 2.5 km from the plant ("Zone 2"). Households were randomly sampled After obtaining addresses by census block online, we used a census batch geocoder to geocode the addresses. We determined that there are 445 total households in Zone 1 and 1376 total households in Zone 2, according to 2010 census information We designed our protocol to ensure that we would randomly survey at least 250 households in Zone 1 (56% of the Zone 1 tota) and at least 250 households in Zone 2 (18% of the Zone 2 total). Assuming a survey response rate of ~50%, we used the R random number generator to gene ate a randomly ordered list of all 445 households in Zone 1 (predicting that we would need to attempt to survey all 445 households to achieve our target number of 250 surveys in Zone 1). We also used the R random number generator to randomly select (and randomly order) 500 addresses in Zone 2 (predicting that we would need to attempt to survey at least 500 households to achieve our target number of 250 surveys in Zone 2). Once we had attempted to survey all 500 households on our Zone 2 list at least twice without reaching the target number of surveys (250), we generated a randomly ordered list of all remaining households in Zone 2. To reach our target number of surveys for each zone, we attempted to survey almost every household in Zone 2 and every household in Zone 1. Thus, the survey response rate is equivalent to the percentage of households ultimately surveyed in each zone.

Study protocol

One day before the start of survey implementation, a team of community members and UNHR researchers distributed flyers throughout the survey area. The flyers informed residents about the upcoming health survey, its goals, and the possibility that their household might be randomly selected for participation. The flyers also stated that residents' participation in the survey was entirely voluntary.

[18]Richard A. Goodman, James W. Buehler, and Michael Gregg. "Field epidemiology defined." *Field Epidemiology* (2008): 3 15. doi: 10.1093/acprof:oso/9780195313802.001.0001.

[19]Peter M. Rabinowitz, Ilya B. Slizovskiy, Vanessa Lamers, Sally J. Trufan, Theodore R. Holford, James D. Dziura, Peter N. Peduzzi, Michael J. Kane, John S. Reif, Theresa R. Weiss, and Meredith H. Stowe. "Proximity to Natural Gas Wells and Reported Health Status: Results of a Household Survey in Washington County, Pennsylvania." *Environmental Health Perspectives* 123 (2015): 21 26.

[20]U S. Environmental Protection Agency. "Toxicological Re view of Chloroprene." September 2010. <https://www.epa.gov/sites/production/files/2016 10/documents/chloroprene.pdf>. (Last accessed February 10, 2021). These conditions can affect people both short and long term following exposure to chloroprene.

[21]Ibid.

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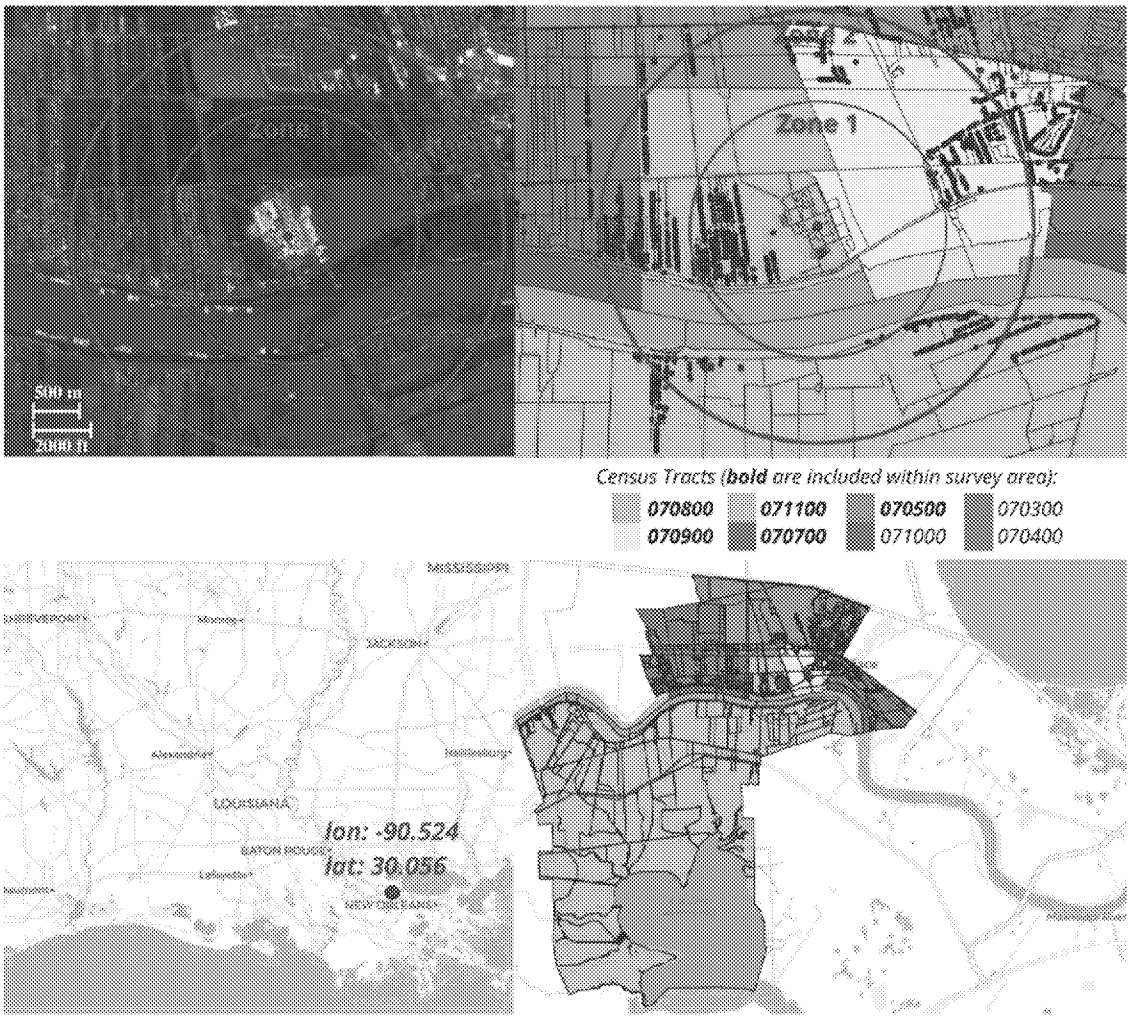

FIG. 1. Maps of survey area.

After undergoing intensive training and practice in survey implementation principles and techniques under the supervision of Stanford University experts, a team of 14 Stanford undergraduates implemented the survey over 9 days (March 22 30, 2018). The survey area was divided into seven geographic subareas for ease of survey implementation (i.e., so that survey implementers could be assigned to a subarea for a given period of time rather than having to walk long distances from household to household across the entire survey area). Survey implementers almost always worked in pairs. Each day, each pair of survey implementers was assigned to one of the seven geographic subareas and provided with a list of households in their subarea. The list was randomized, but to reduce time spent walking between households, the route efficiency was optimized for each set of 20 addresses. Survey implementers attempted to survey each of the 20 route-optimized households twice before moving on to the next set of 20. The following day, survey implementers made a third attempt to survey households that had been attempted twice the previous day, before moving on to the next set of households. Survey implementers generally did not visit a household more than three times. If a household member declined to participate in the survey, implementers did not attempt to survey that household again. Households were surveyed from ~9 am to 7 pm each day.

For each household surveyed, one household member (the "respondent") provided health and demographic information about themself and every other person living in the household. We use the term "residents" to refer to everyone for whom data were collected (i.e., respondents plus all other household members).

Survey implementers obtained verbal informed consent from each respondent before proceeding. Upon encountering a potential respondent, survey implementers introduced themselves and conveyed the purpose of the survey. They explained that participation in the survey was voluntary; that, if the potential respondent chose to participate, neither their name nor the names of any of their household members would be recorded; that any information provided would remain strictly confidential and would not be shared outside our research team; and that the overall results of the study would be made public but no one's identity or identifying health information

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would be disclosed. If the respondent verbally consented to participate in the survey, one of the survey implementers asked the survey questions, while the other recorded the respondent's answers on a paper survey.

After completion of survey implementation, the data from each survey were manually entered into an electronic REDCap instrument.

Data analysis

Monte Carlo analyses of cancer prevalence. We used Monte Carlo simulations in RStudio to analyze our data on cancer prevalence among residents surveyed. We simulated a population in the United States with the same race, sex, and age demographics as the survey sample. Using 10,000 simulations, we generated probability distributions of cancer prevalence in the simulated population based on the National Cancer Institute's 2015 Surveillance, Epidemiology, and End Results (SEER) data for 23-year cancer prevalence (see Appendix A2 for code abstract).[22] "Simulated" cancer prevalence refers to the probability distribution of outcomes generated by these 10,000 simulations. We then compared 23-year cancer prevalence in the survey sample ("observed" cancer prevalence) with the 23-year cancer prevalence values that are likely based on SEER data broken down by race, sex, and age in a demographically similar U.S. population (see Appendix Table A1 for the race/sex/age breakdown of the survey sample with corresponding SEER prevalence data for each demographic). We determined the probability (p-value) that a simulated population with the same race, sex, and age makeup as the survey sample would have a cancer prevalence as high or higher than that observed in the survey sample. We considered results significant when $p < 0.05$.[23]

For every resident in the survey sample, we had a corresponding resident of the same race, sex, and age in the simulated population. Each member of the simulated population was assigned a value of 0 (no cancer diagnosis in the previous 23 years) or 1 (one or more cancer diagnoses in the previous 23 years). The probability that a simulated resident in a certain race/sex/age group would be assigned 0 or 1 was based on SEER data. For example, according to SEER data, 23-year cancer prevalence among Black men between the ages of 60 and 69 years is about 12.8%. In the simulated population, every Black male in his 60s was randomly assigned a value of 1 with probability $p = 12.8\%$ (otherwise, a value of 0 with probability $1 - p = 87.2\%$). Each simulated resident was assigned a value of 0 or 1 in this manner, using the SEER cancer prevalence data for that resident's race/sex/age group. The process was then repeated 9999 times to generate a total of 10,000 simulations. This enabled us to compare the observed cancer prevalence outcome in the survey sample to a distribution of cancer prevalence outcomes in the simulated population. Race, sex, and age were considered in our Monte Carlo analyses because SEER data are broken down by these three demographic variables. Other demographic variables (such as socioeconomic status) could not be considered because we lacked comparable national cancer prevalence data for other variables.

We ran Monte Carlo simulations for cancer prevalence in the overall survey area as well as by spatial zone. After separately determining cancer prevalence probabilities closer to the Denka facility (in Zone 1) and farther away from the facility (in Zone 2), we were able to determine whether or not there is an association between cancer prevalence among the survey sample and proximity to the Denka plant.

We ran Monte Carlo simulations both with and without a smoking exclusion criterion. This exclusion criterion removed all residents who live in households where anyone smokes on a daily basis. Since corresponding residents were also removed from the simulated population, the smoking exclusion criterion impacted the range of simulated outcomes as well as the survey outcome.

Age-adjusted cancer prevalence by spatial zone. In addition to Monte Carlo analyses, crude survey data on cancer prevalence in each zone were age-adjusted to the U.S. Standard Population in the year 2000 so that the survey data by zone could be directly compared with SEER's national cancer prevalence (which is also age-adjusted to the 2000 U.S. Standard Population). Survey data were age-adjusted both with and without a smoking exclusion criterion.

Health symptoms and pollution data. We did not use Monte Carlo simulations for health symptoms and pollution data because we lacked comparable national data by demographic group. Survey data on the following symptoms and pollution questions are presented by spatial zone: (1) headaches and nosebleeds in children; (2) chest pain and heart palpitations; (3) wheezing and difficulty breathing; (4) headaches, dizziness, and lightheadedness; (5) eye pain/irritation and watery eyes; (6) cough, sneezing, and sore/hoarse throat; (7) skin rash/irritation and itchy skin; (8) fatigue/lethargy; (9) chemical odors; and (10) concern about pollution.

RESULTS

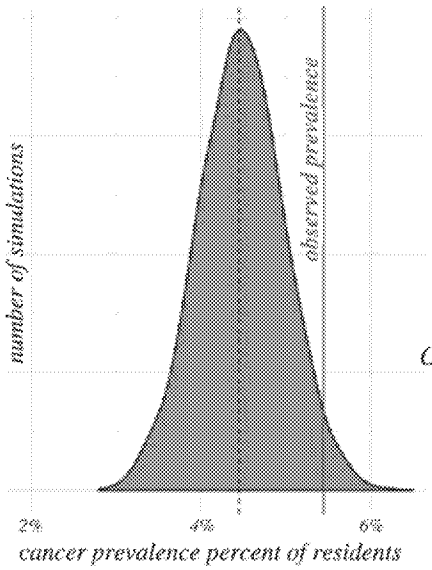
Analysis of EPA's chloroprene air monitoring data

Since 2016, EPA has collected chloroprene air concentration data from six monitoring sites surrounding the Denka facility.[24] Using these data, we calculated annual

[22] A.M. Noone, N. Howlader, M. Krapcho, D. Miller, A. Brest, M. Yu, J. Ruhl, Z. Tatalovich, A. Mariotto, D.R. Lewis, H.S. Chen, E.J. Feuer, and K.A. Cronin (eds). *SEER Cancer Statistics Review, 1975 2015*. (National Cancer Institute, 2018). <https://seer.cancer.gov/archive/csr/1975 2015/results merged/sect 02 all sites.pdf>. (Last accessed February 10, 2021).

[23] A lower p value indicates a smaller probability that the observed difference is due to chance; in other words, the lower the p value, the more likely that the observed difference is a true difference.

[24] U.S. Environmental Protection Agency. "DENKA Air Monitoring Summary Sheet." September 2020. <https://www.epa.gov/sites/production/files/2020 10/documents/r6 summary through september 26 2020.pdf>. (Last accessed February 10, 2021).



Simulated Cancer Prevalence

Statistic	Value
Minimum	2.8%
1st Quartile	4.1%
Median	4.4%
3rd Quartile	4.8%
Maximum	6.5%

Observed cancer prevalence: **5.4%**
p-value: **0.0343**

FIG. 2. Simulated and observed 23-year cancer prevalence.

mean concentrations in two different ways (Table 1): in our "lower bound" method, we replaced entries listed as "ND" (concentration not detected) with values of 0 μg/m^3 and kept all values below the method detection limit (0.0417 μg/m^3) as they are. In our "upper bound" method, we substituted 0.0417 μg/m^3 for each "ND" entry and for each value below 0.0417 μg/m^3.

In 2020, the maximum chloroprene air concentration detected was 22.6 μg/m^3, 113 times the 0.2 μg/m^3 threshold. The lower and upper bound mean concentrations that year 0.7175 and 0.7349 μg/m^3, respectively were both more than three times the threshold. 35.4% of air samples collected in 2020 had a chloroprene concentration that exceeded 0.2 μg/m^3.

Analyses of cancer prevalence

Of the 1640 total residents in the su vey sample, eliminations from the data set were made as follows for the analyses of cancer prevalence: 98 part-time residents (defined as those who live in the household for only 1 5 days of the week, inclusive) were eliminated from the data set. Eight residents for whom we did not have all three pieces of necessary demographic information race, sex, and age were eliminated from the data set. Twenty-one residents who reported a race/ethnicity for which there is no SEER analogue (and, therefore, no comparable national cancer prevalence statistic) were eliminated from the data set. Finally, since we used SEER's 23-year cancer prevalence statistics, we eliminated the six residents whose only cancer diagnosis happened in 1994 or earlier (>23 years before the health survey).

After all eliminations, the numbers of residents included in the cancer prevalence analyses were 777 in Zone 1 (from 262 households) and 730 in Zone 2 (from 263 households), for a total of 1507 (from 525 households).

Although race information was collected for respondents only, we assumed for purposes of the cancer prevalence analyses only that all residents of a household shared the race of the respondent. If a particular respondent was eliminated from the data set (due to one of the aforementioned elimination criteria), all members of the respondent's household were eliminated from the data set as well (since the other household members' race depended on the respondent's race).

Monte Carlo analyses of cancer prevalence across survey area. In a probability distribution of 10,000 simulations, the median value for 23-year cancer prevalence in a population with the same race, sex, and age demographics as the survey sample was 4.4% (Fig. 2). In other words, half of the simulations yielded cancer prevalence values <4.4% and half of the simulations yielded cancer prevalence values >4.4%. The median is, therefore, an approximation of the cancer prevalence outcome that is most likely in a simulated population with the same demographic makeup as the survey sample.[25] In Figure 2, the median is represented by the dotted vertical line in the distribution.

The percentage of survey residents who reported at least one cancer diagnosis in the previous 23 years ("observed cancer prevalence") was 5.4%, significantly higher than indicated by Monte Carlo simulations based on SEER prevalence data ($p=0.0343$) (Fig. 2). This p-value indicates the probability that a simulated population with the same demographic makeup as the survey sample would have a cancer prevalence greater than or equal to that of the survey sample. In Figure 2, the survey sample cancer prevalence is represented by the solid red

[25]The table in Figure 2 also provides: (1) minimum, that is, the lowest cancer prevalence value in the probability distribu tion; (2) first quartile, that is, the cancer prevalence value at which 25% of the simulations yielded lower values and 75% of the simulations yielded higher values; (3) third quartile, that is, the cancer prevalence value at which 75% of the simulations yielded lower values and 25% of the simulations yielded higher values; (4) maximum, that is, the highest cancer prevalence value in the probability distribution.

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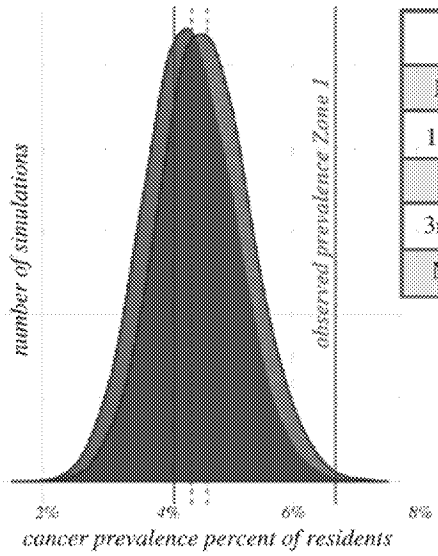

Simulated Cancer Prevalence

Statistic	Zone 1 value	Zone 2 value
Minimum	2.2%	1.5%
1st Quartile	4.1%	3.8%
Median	4.6%	4.4%
3rd Quartile	5.1%	4.8%
Maximum	7.3%	7.5%

Observed cancer prevalence:
Zone 1: **6.7%**; Zone 2: **4.1%**
p-value:
Zone 1: **0.0033**; Zone 2: **0.6527**

FIG. 3. Simulated and observed 23-year cancer prevalence by zone.

vertical line in the distribution. The greater the distance between the solid red line (survey sample cancer prevalence) and the dotted line (approximation of most likely cancer prevalence), the more unusual the cancer prevalence in the survey sample.

When the smoking exclusion criterion was applied, the median value for cancer prevalence in the probability distribution for the simulated population was 4.5% (Appendix Fig. A1). The percentage of survey residents who reported a cancer diagnosis in the previous 23 years was 5.4%, significantly higher than indicated by Monte Carlo simulations based on SEER prevalence data ($p=0.0306$) (Appendix Fig. A1).

Monte Carlo analyses of cancer prevalence by spatial zone. In probability distributions of 10,000 simulations by spatial zone, the median value for cancer prevalence in Zone 1 was 4.6% and the median value for cancer prevalence in Zone 2 was 4.4% (Fig. 3). In other words, in Zone 1 half of the simulations yielded cancer prevalence values <4.6% and half of the simulations yielded cancer prevalence values >4.6%, and in Zone 2 half of the simulations yielded cancer prevalence values <4.4% and half of the simulations yielded cancer prevalence values >4.4%. The median is, therefore, an approximation of the cancer prevalence outcome that is most likely in a simulated population with the same demographic makeup as the survey sample for each zone.[26] In Figure 3, the red distribution shows the range of cancer prevalence values likely for a simulated population with the same demographic makeup as the Zone 1 survey sample, and the blue distribution shows the range of cancer prevalence values likely for a simulated population with the same demographic makeup as the Zone 2 survey sample. Because there is not a significant difference in the range of simulated cancer prevalence outcomes for Zone 1 and Zone 2, the two distributions overlap significantly. The median for Zone 1 is represented by the dotted red vertical line, and the median for Zone 2 is represented by the dotted blue vertical line.

The percentage of survey residents in Zone 1 who reported a cancer diagnosis was 6.7%, significantly higher than indicated by Monte Carlo simulations based on SEER prevalence data ($p=0.0033$) (Fig. 3). This p-value indicates the probability that a simulated population with the same demographic makeup as the Zone 1 survey sample would have a cancer prevalence greater than or equal to that of the survey sample. The percentage of survey residents in Zone 2 who reported a cancer diagnosis was 4.1% (Fig. 3). In Figure 3, Zone 1 cancer prevalence is represented by the solid red vertical line, and Zone 2 cancer prevalence is represented by the solid blue vertical line. The greater the distance between the solid line (survey sample cancer prevalence for zone) and dotted line of corresponding color (approximation of most likely cancer prevalence for zone), the more unusual the survey sample cancer prevalence for that zone.

When the smoking exclusion criterion was applied, the median value for cancer prevalence in the Zone 1 probability distribution was 4.6% and the percentage of Zone 1 survey residents who reported a cancer diagnosis was 7.0%, significantly higher than indicated by Monte Carlo simulations based on SEER prevalence data ($p=0.0032$) (Appendix Fig. A1). The median value in the Zone 2 probability distribution was 4.5% and the percentage of Zone 2 survey residents who reported a cancer diagnosis was 4.3% (Appendix Fig. A1).

[26]The table in Figure 3 also provides: (1) minimum, that is, the lowest cancer prevalence value in each probability distribution; (2) first quartile, that is, the cancer prevalence value for each distribution at which 25% of the simulations yielded lower values and 75% of the simulations yielded higher values; (3) third quartile, that is, the cancer prevalence value for each distribution at which 75% of the simulations yielded lower values and 25% of the simulations yielded higher values; and (4) maximum, that is, the highest cancer prevalence value in each probability distribution.

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Age-adjusted cancer prevalence by spatial zone. Age-adjusted cancer prevalence among residents surveyed in Zone 1 was 5.0139%, 44% higher than SEER's age-adjusted national cancer prevalence of 3.4851%. When the smoking exclusion criterion was applied, age-adjusted Zone 1 prevalence was 5.1421%, 48% higher than the national prevalence of 3.4851%. Age-adjusted cancer prevalence among residents surveyed in Zone 2 was 3.5308%. When the smoking exclusion criterion was applied, age-adjusted Zone 2 prevalence was 3.5112%.

Race/ethnicity, health symptoms, and pollution data

The race/ethnicity, health symptoms, and pollution data presented hereunder were collected for survey respondents only, with the exception of data pertaining to children in the household. After part-time respondents were eliminated from the data set, the sample size for race/ethnicity, symptoms, and pollution data was 263 in Zone 1 and 259 in Zone 2 (a total of 522). Data on headaches and nosebleeds in children were collected from survey respondents, who were asked about the health of any children in their households. After part-time children were eliminated from the data set, the sample size for child health data was 186 in Zone 1 and 220 in Zone 2 (a total of 406).

Race/ethnicity data. The overwhelming majority of respondents in the survey area (80.7%) identified as Black. 15.7% of respondents identified as white, and 3.6% identified as another race/ethnicity or did not provide race/ethnicity information. Black respondents were not distributed evenly throughout the survey area. In Zone 1, a higher proportion of respondents identified as Black than in Zone 2 (93.2% vs. 68.0%). Conversely, 4.9% of Zone 1 respondents and 26.6% of Zone 2 respondents identified as white. 1.9% of Zone 1 respondents and 5.4% of Zone 2 respondents identified as another race/ethnicity or did not provide race/ethnicity information.

Health symptoms data. More than 40% of children in households surveyed in Zone 1 (40.3%) reportedly suffer from headaches. This proportion dropped to 28.6% in Zone 2. More than one-fifth of children in households surveyed in Zone 1 (21%) reportedly suffer from nosebleeds. This proportion dropped slightly in Zone 2, to 18.2%. Nearly 40% of Zone 1 respondents (37.3%) reported that they experienced chest pain, heart palpitations, or both at least 1 day per week in the past month. This proportion dropped to 27.8% in Zone 2. Approximately one-third of Zone 1 respondents (33.5%) reported that they experienced wheezing and/or difficulty breathing at least 2 days per week in the past month. This proportion dropped to 24.3% in Zone 2. More than half of Zone 1 respondents (50.6%) reported that they experienced headaches, dizziness, and/or lightheadedness at least 2 days per week in the past month. This proportion dropped to 37.5% in Zone 2. Nearly half of Zone 1 respondents (44.5%) reported that they experienced eye pain/irritation and/or watery eyes at least 2 days per week in the past month. This proportion was roughly the same in Zone 2 (43.6%). More than 40% of Zone 1 respondents (41.1%) reported that they experienced cough, sneezing, and/or sore/hoarse throat at least 4 days per week in the past month. This proportion dropped to 33.6% in Zone 2. More than one-third of Zone 1 respondents (34.6%) reported that they experienced skin rash/irritation and/or itchy skin at least 2 days per week in the past month. This proportion dropped slightly in Zone 2, to 30.5%. Nearly 30% of Zone 1 respondents (29.3%) reported that they experienced fatigue/lethargy at least 4 days per week in the past month. This proportion dropped to 22.8% in Zone 2.

Pollution data. Approximately half of Zone 1 respondents (49.4%) reported that they smell chemical odors while inside their homes "at least a few times per month." This proportion dropped to 31.3% in Zone 2. More than half of Zone 1 respondents (51.7%) reported that they smell chemical odors while outside their homes "at least a few times per week." This proportion dropped to 42.1% in Zone 2. More than three-fourths of Zone 1 respondents (76.4%) reported that they smell chemical odors while outside their homes "at least a few times per month." This proportion dropped to 67.2% in Zone 2. 84.0% of Zone 1 respondents reported that they are "extremely concerned" about pollution in their community. This proportion dropped to 63.7% in Zone 2.

DISCUSSION

To our knowledge, this is the first study conducted in Cancer Alley that evaluates the potential link between household proximity to a particular industrial facility and reported adverse health outcomes. Our analysis yielded three major findings. First, cancer prevalence among the survey sample is significantly higher than what is considered likely using Monte Carlo simulations based on SEER prevalence data. Second, cancer prevalence among the survey sample is associated with proximity to the Denka facility, with significantly higher-than-likely prevalence in the zone closer to the facility and lower prevalence in the zone further from the facility. Third, levels of chloroprene-linked health symptoms among the survey sample including among children are high and also associated with proximity to the Denka facility.

Across the survey area as a whole, cancer prevalence among residents surveyed is significantly higher than what is considered likely for a U.S. population with the same race, sex, and age makeup. Removing residents who live in households where anyone smokes on a daily basis does not alter this result. When cancer prevalence among the survey sample is analyzed by spatial zone, prevalence in the zone closer to the Denka facility (Zone 1) is more statistically significant (with a p-value 10 times lower) than prevalence in the survey area as a whole. Prevalence in Zone 1 is higher than prevalence in Zone 2, further from the facility. Again, applying the smoking exclusion criterion does not alter this result.

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Our findings on other adverse health outcomes linked to chloroprene exposure show that high proportions of respondents regularly experience cardiac symptoms, difficulty breathing, headaches, eye irritation, respiratory symptoms, skin irritation, and fatigue. In virtually every case, respondents who live closer to the Denka facility (Zone 1) are affected in higher proportions than respondents who live further away (Zone 2).

Our findings on child health show that >40% of children in surveyed households in Zone 1 suffer from headaches, an outcome linked to short- and long-term chloroprene exposure. Since the beginning of their struggle for environmental justice, Concerned Citizens of St. John Parish has advocated for the health and well-being of the children in their community. In particular, Fifth Ward Elementary School located less than a third of a mile from the Denka facility has been a focal point of activism.[27]

A strength of the study was the random sampling design, which reduced the possibility of selection bias. Race data from survey samples in Zones 1 and 2 were representative of the respective larger areas: according to American Community Survey data, Zone 1 is 95% Black and 5% white (compared with 93% Black and 5% white in the survey sample) and Zone 2 is 71% Black and 27% white (compared with 68% Black and 27% white in the survey sample).[28] Additional strengths of the study included the spatial analysis of the data, that is, the use of geographic zones by proximity to the facility; the consideration of confounding variables such as smoking, age, sex, and race; the value of field epidemiology, that is, data collection in the field to investigate concerns about community health; and the strong partnership and relationship of trust between researchers and community members, which facilitated the design of a robust survey instrument (including through the use of focus groups) and collection of a large amount of data. Survey respondents were neither aware that the study design relied on the use of geographic zones nor aware of the zone in which their residence was located, reducing the possibility of awareness bias.

A limitation of the study was the reliance on self-reported health information provided by a single household member about all members of the household. On the one hand, respondents may have underreported other household members' health conditions. On the other hand, awareness bias in respondents who were concerned about air pollution, their own health, or household members' health may have increased reporting of adverse health outcomes. Other limitations included the use of only two comparison groups, limiting the ability to conduct statistical tests; the lack of reliable statistics to enable robust comparison of symptoms data; and potential confounding factors that were not considered, such as inclusion of multiple household members who share an indoor environment and may share genetics. In addition, our use of proximity to the facility was an indirect measure of exposure to air emissions; more precise measures of exposure include air monitoring and biomonitoring of individuals. Finally, stigma associated with illness especially cancer in the community may have led to a nonresponse bias that favored healthier individuals and households.

None of our findings came as a surprise to community members; rather, the study findings were consistent with community members' lived experiences. Community members view the health study as a useful tool to advance their struggle for clean air. Simultaneously 5 years after discovering that they face the highest likelihood in the country of developing cancer from air pollution residents are weary of hearing and reading about adverse health outcomes and pollution in their community and believe that it is long past time for action. More than sufficient evidence of chloroprene toxicity and community suffering has been collected to justify action; now, the state must compel Denka Performance Elastomer to reduce emissions so that chloroprene air concentration does not exceed EPA's maximum guideline of 0.2 $\mu g/m^3$.

CONCLUSION

EPA's estimate of cancer risk alone should have been enough to warrant swift and decisive action. As valuable as they are, health studies such as this one should not be necessary to compel decision makers to act to protect public health. Consistent with the precautionary principle in environmental science which maintains that "when an activity raises threats of harm to human health or the environment, precautionary measures should be taken even if some cause and effect relationships are not fully established scientifically" action to protect public health in St. John should be taken on the basis of EPA's estimate of cancer risk in the parish.[29] Producing definitive scientific proof of a cause-and-effect relationship between chloroprene emissions and cancer in the area of the Denka facility would be virtually impossible a feature of scientific uncertainty that polluting industries have long exploited to maintain their potentially toxic activities. Communities across Cancer Alley should not have to bear the burden of proof to achieve environmental justice. It is long past time for this burden to shift to Denka and other industries that are threatening human and environmental health.

ACKNOWLEDGMENTS

We extend our deepest gratitude to the St. John Parish residents who participated in this study. James Cavallaro, Executive Director of the University Network for Human Rights, played an instrumental role in the survey

[27]Nick Reimann. "St. John School Board panel suggests study on moving students from school near chemical plant." *The Advocate*, 27 August 2019. <https://www.nola.com/news/education/article 275fc7d2 c83a 11e9 8fa9 87f1f4a3225a.html>. (Last accessed February 10, 2021).

[28]The EPA's EJSCREEN tool was used to generate maps of Zones 1 and 2 and download 2013 2017 American Community Survey data for each zone.

[29]David Kriebel, Joel Tickner, Paul Epstein, John Lemons, Richard Levins, Edward L. Loechler, Margaret Quinn, Ruthann Rudel, Ted Schettler, and Michael Stoto. "The Precautionary Principle in Environmental Science." *Environmental Health Perspectives* 109 (2001): 871.

implementation process and provided constructive feedback throughout the data analysis phase. Elan Dagenais provided invaluable assistance with data analysis. Finally, we thank our 14 survey implementers: Ravi Chandra, Neha Chetry, Julia Daniel, Vance Farrant, Hattie Gawande, Yu Jin Lee, Sarah Maung, Kinsey Morrison, Keith Nobbs, Lorenzo de la Puente, Noam Shemtov, Hannah Smith, Mauranda Upchurch, and Alisha Zhao.

AUTHOR DISCLOSURE STATEMENT

No competing financial interests exist.

FUNDING INFORMATION

This study was designed and implemented while the first author was an instructor at Stanford University. As such, all hard costs of survey implementation were assumed by Stanford University. When the first author transitioned employment to co-found the University Network for Human Rights, the study was in the data analysis phase and no additional hard costs were incurred.

Address correspondence to:
Ruhan Nagra
University Network for Human Rights
15 Ellsworth Road
West Hartford, CT 06107
USA

E-mail: ruhan@humanrightsnetwork.org

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Appendices

APPENDIX A1

Community Health Survey
St. John the Baptist Parish

Participant ID#:

Data Collector 1:
Data Collector 2:
Date: Time:

First, I'd like to ask some basic questions about you and each member of your household. We won't record names, just first initials.

Initial	**Age** (years)	**Sex** (M/F)	**Blood relative?** (Y/N)	**Part- or full-time resident***	**School (if 18 or under)**
			N/A (self)		

*A part time resident is someone who lives in the household for 1 5 days of the week (inclusive)

(*Appendix continues* →)

Now I'm going to ask you some basic questions about yourself, where you live, and where you used to live.

1. What is your race/ethnicity? (check all that apply)	☐ Asian ☐ Black or African American ☐ Hispanic/Latina/Latino/Latinx ☐ Native American ☐ Native Hawaiian and Other Pacific Islander ☐ White ☐ Other:
2. How long have you lived in this home?	☐ Less than one year ☐ year(s)
3. Where did you live before moving to this home? (*city and state*)	
4. How long did you live in your previous home?	☐ Less than one year ☐ year(s)

5. Now I'm going to ask you some questions about your medical history and the medical histories of others in your household. I'm going to go through a list of medical conditions. For each medical condition, I'll ask you whether a doctor or another health care provider has ever told you or anyone else in your household that you or they have the condition, and if so, what year you or they were told that. (*For the survey respondent, write yes or no, and year if relevant and known. For household members, provide the initial of every household member who has received the diagnosis, as well as year of diagnosis, if known.*)

	Yourself? (*yes/no, year*)	**Household members?** (*if yes, initial and year*)
a. ADHD?		
b. Allergies?		
c. Asthma?		
d. Anemia?		
e. Birth defects? Which one(s):		
f. Bronchitis?		
g. Congestive heart failure?		
h. Diabetes, other than during pregnancy?		
i. Heart disease?		
j. High blood pressure?		
k. Hyperthyroidism?		
l. Hypothyroidism?		
m. Learning difficulties?		
n. Nodules or a mass on the liver?		
o. Nodules or a mass on the lung(s)?		
p. Rapid pulse or rapid heartrate?		
q. Sinus infection?		

(*Appendix continues* →)

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6. Now I'm going to ask about all members of your household and whether or not they had cancer, beginning with yourself. Please tell me the month and year of diagnosis, if possible. If members of your household had cancer and died, we will ask you about them afterward.

Type of cancer	**Yourself?** (*yes/no, month & year*)	**Household members?** (*if yes, initial and month & year*)
a. Bladder cancer		
b. Brain cancer		
c. Breast cancer		
d. Colon cancer		
e. Esophageal cancer		
f. Kidney cancer		
g. Leukemia		
h. Liver cancer		
i. Lung cancer		
j. Lymphoma		
k. Melanoma		
l. Oral cancer		
m. Ovarian cancer		
n. Pancreatic cancer		
o. Prostate cancer		
p. Sarcoma		
q. Skin cancer		
r. Spleen cancer		
s. Thyroid cancer		
t. Uterine cancer		
u. Other (*specify*):		

Now I'm going to ask you a few questions about others in your household and family.

7a. Has anyone in this household had cancer and died in the past 20 years?

☐ Yes
If YES, who? (*use first initial*):

☐ No
☐ Don't know

If YES to 7a…
7b. What kind of cancer did that person have? (*initial: type of cancer*)
7c. What was that person's relationship to you? (*initial: relationship*)
7d. Were they a blood relative? (*initial: Y/N/IDK*)
7e. What was their sex? (*initial: M/F*)
7f. How old were they when they died? (*initial: age at death*)
7g. What year did they die? (*initial: year*)

(*Appendix continues* →)

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8a. Has anyone in your immediate family had cancer and died, who we haven't already talked about? This includes your parents, siblings, spouse, and children.

☐ Yes
If YES, who? (*use first initial*):

☐ No
☐ Don't know

If YES to 8a…
8b. What kind of cancer did that person have?
(*initial: type of cancer*)
8c. What was that person's relationship to you?
(*initial: relationship*)
8d. Were they a blood relative?
(*initial: Y/N/IDK*)
8e. What was their sex? (*initial: M/F*)
8f. How old were they when they died?
(*initial: age at death*)
8g. What year did they die?
(*initial: year*)
8h. Did they live in St. John the Baptist Parish?
(*initial: Y/N/IDK*)
If YES to 8h:
8i. What city? (*initial: city*)

9a. Has anyone in this household ever had a miscarriage?

☐ Yes
If YES, who? (*use first initial*):

☐ No
☐ Don't know

If YES to 9a…
9b. When did the miscarriage(s) happen?
(*initial: year*)
9c. At what stage(s) of pregnancy did the miscarriage(s) happen?
(*initial: week or month*)
9d. Did that person live in St. John the Baptist Parish at the time of the miscarriage(s)? (*initial: Y/N/IDK*)
If YES to 9d:
9e. What city? (*initial: city*)

10a. Has anyone in this household ever had a stillbirth (loss at 20+ weeks)?

☐ Yes
If YES, who? (*use first initial*):

☐ No
☐ Don't know

If YES to 10a…
10b. When did the stillbirth(s) happen? (*initial: year*)
10c. Did that person live in St. John the Baptist Parish at the time of the stillbirth(s)? (*initial: Y/N/IDK*)
If YES to 10c:
10d. What city? (*initial: city*)
11a. Do any children in the household suffer from nosebleeds?
If YES to 11a…
11b. Who suffers from nosebleeds?
(*Use initials*)
11c. In the past month, how many nosebleeds did they have?
(*Write number next to initials*)

12a. Do any children in the household suffer from headaches?
If YES to 12a…
12b. Who suffers from headaches?
(*Use initials*)
12c. In the past month, how many headaches did they have?
(*Write number next to initials*)

(*Appendix continues* →)

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Now I'm going to ask you some questions about yourself.

13. How would you rate your current overall health?
- ☐ Very good
- ☐ Good
- ☐ Fair
- ☐ Poor
- ☐ Very Poor

14a. In the past 12 months, have you visited a doctor or other health care provider for treatment or consultation about a medical condition?
- ☐ Yes
- ☐ No

If YES, to 14a…
14b. Approximately how many times?

15. In the past month, how often did you experience the following symptoms?

	Never	1 day per week	2 3 days per week	4 5 days per week	6 7 days per week
a. Achiness					
b. Chest pain					
c. Cough					
d. Difficulty breathing					
e. Dizziness					
f. Eye pain or irritation					
g. Fatigue/lethargy					
h. Headaches					
i. Heart palpitations*					
j. Itchy skin					
k. Joint pain					
l. Light headedness					
m. Nosebleeds					
n. Skin rash or irritation					
o. Sneezing					
p. Sore/hoarse throat					
q. Watery eyes					
r. Weakness					
s. Wheezing					
t. Other:					

*Palpitations are when you feel like your heart is beating too hard, too fast, skipping a beat, or fluttering.

Now I have a few questions about the environment near your home.

16. How concerned are you about pollution in your community?
- ☐ Not at all concerned
- ☐ Slightly concerned
- ☐ Moderately concerned
- ☐ Extremely concerned

17. How often do you smell chemical odors while inside your home?
- ☐ Never
- ☐ A few times per year
- ☐ A few times per month
- ☐ A few times per week
- ☐ Daily

18. How often do you smell chemical odors while outside your home?
- ☐ Never
- ☐ A few times per year
- ☐ A few times per month
- ☐ A few times per week
- ☐ Daily

(*Appendix continues* →)

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The next few questions I'm going to ask are about whether or not you work or have ever worked at an industrial facility. The reason we ask these questions is to get a sense of any potential exposure to chemicals as a result of your workplace.

19a. Does your job involve working on the property of an industrial facility or plant? (*It doesn't matter whether you're employed by the facility itself, by a contractor of the facility, or by a servicing company only whether you work on the site of an industrial facility.*)	☐ Yes ☐ No ☐ Don't know
If YES to 19a…	
19b. How long have you worked on the property of an industrial facility?	☐ Less than one year ☐ year(s)
19c. Approximately how many hours per week do you work on the property of an industrial facility?	
If NO to 19a…	
19d. Has your job ever involved working on the property of an industrial facility or plant? (*It doesn't matter whether you were employed by the facility itself, by a contractor of the facility, or by a servicing company only whether you worked on the site of an industrial facility.*)	☐ Yes ☐ No ☐ Don't know
If **YES** to 19d…	
19e. How long did you work on the property of an industrial facility?	☐ Less than one year ☐ year(s)
19f. Approximately how many hours per week did you work on the property of an industrial facility?	

Now I'm going to ask you a few short questions about tobacco use.

20. How often does anyone smoke inside your home? Would you say daily, weekly, monthly, less than monthly, or never?	☐ Daily ☐ Weekly ☐ Monthly ☐ Less than monthly ☐ Never ☐ Don't know
21a. Altogether, have you smoked at least 100 or more cigarettes, cigars, or other tobacco products in your entire lifetime?	☐ Yes ☐ No ☐ Don't know
If YES to 21a…	
21b. For how many years have you smoked?	☐ Less than one year ☐ year(s)
21c. How many days per week did you smoke in the last month?	☐ 7 days per week ☐ 2 to 6 days per week ☐ 1 or fewer days per week
22. Finally, are there any other relevant health or environmental issues that we haven't talked about that you think we should know?	

Thank you for your time!

(*Appendix continues* →)

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APPENDIX A2

```
Code Abstract
```{r}
# 'residents' refers to the dataframe containing one row per resident represented in the survey.

# the lookup() function returns the corresponding SEER prevalence stat for the given race/age/sex input.

# This arbitrary seed has been set for all Monte Carlo calculations.
set.seed(140637)
# setting loop to repeat simulation 10,000 times.
for(i in 1:10000) {
sim <- c() # creating/resetting an empty vector to store the next simulated values.

# setting loop to run calculation for each resident (i.e., each row in 'residents' dataframe).
for(j in 1:nrow(residents)) {
# retrieving relevant SEER prevalence stat as a decimal.
x <- lookup(residents$race[j], residents$age[j], residents$sex[j])

# assigning a resident a simulated binary cancer diagnosis (1, cancer; 0, no cancer) using their SEER stat (x) as probability.
sim[j] < - sample(c(0,1), size = 1, replace = TRUE, prob = c(1-x, x))
}
# the vector of simulated resident cancer diagnoses are saved to be compiled (cbind()) with the others.
}


# The final result gives a data frame with one row per resident, along with a column per simulation (10,000), each cell containing
# either 0 or 1 based on the sampled value. The sum of each column divided by the number of rows then gives the cancer prevalence
# for the simulation. These 10,000 simulated prevalences naturally give a normal distribution with the median simulated prevalence
# at its center. P-values are then calculated by the number of simulated prevalences >= the survey population's cancer prevalence,
# divided by the number of simulations (10,000).
```
```

(Appendix continues →)

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Appendix Table A1. Demographic Breakdown of Survey Population and Corresponding Surveillance, Epidemiology, and End Results Probabilities

Race	*Sex*	*Age*	*Total sample size*	*Zone 1 sample size*	*Zone 2 sample size*	*SEER probability (%)*
Black	M	0 9	85	49	36	0.0692
Black	M	10 19	104	48	56	0.1382
Black	M	20 29	82	54	28	0.2256
Black	M	30 39	65	37	28	0.4453
Black	M	40 49	65	40	25	1.1497
Black	M	50 59	89	58	31	4.1103
Black	M	60 69	84	54	30	12.8086
Black	M	70 79	46	23	23	24.8125
Black	M	80+	11	8	3	29.4374
Black	F	0 9	71	40	31	0.0634
Black	F	10 19	107	55	52	0.1352
Black	F	20 29	56	28	28	0.2442
Black	F	30 39	80	48	32	0.7119
Black	F	40 49	90	45	45	2.0842
Black	F	50 59	91	59	32	4.6132
Black	F	60 69	79	50	29	8.3256
Black	F	70 79	59	35	24	11.8842
Black	F	80+	28	20	8	12.1149
White	M	0 9	8	0	8	0.0947
White	M	10 19	10	0	10	0.2258
White	M	20 29	12	1	11	0.4143
White	M	30 39	10	1	9	0.7700
White	M	40 49	10	1	9	1.5339
White	M	50 59	14	1	13	3.8687
White	M	60 69	18	1	17	10.3809
White	M	70 79	9	3	6	21.9162
White	M	80+	7	1	6	29.0692
White	F	0 9	7	0	7	0.0909
White	F	10 19	10	0	10	0.2003
White	F	20 29	11	1	10	0.4296
White	F	30 39	14	0	14	1.1432
White	F	40 49	5	0	5	2.9117
White	F	50 59	9	2	7	5.9617
White	F	60 69	16	3	13	10.3736
White	F	70 79	15	5	10	15.3738
White	F	80+	5	2	3	16.9960
Hispanic	M	0 9	2	0	2	0.0842
Hispanic	M	10 19	4	1	3	0.1992
Hispanic	M	20 29	1	1	0	0.3187
Hispanic	M	30 39	2	0	2	0.5131
Hispanic	M	50 59	1	0	1	2.3494
Hispanic	M	80+	1	0	1	21.1148
Hispanic	F	0 9	6	1	5	0.0749
Hispanic	F	20 29	2	1	1	0.2970
Hispanic	F	30 39	2	0	2	0.7641
Hispanic	F	40 49	1	0	1	1.9653
Hispanic	F	50 59	2	0	2	4.1819
Hispanic	F	70 79	1	0	1	9.9048
Total			1507	777	730	

SEER, Surveillance, Epidemiology, and End Results.

(*Appendix continues* →)

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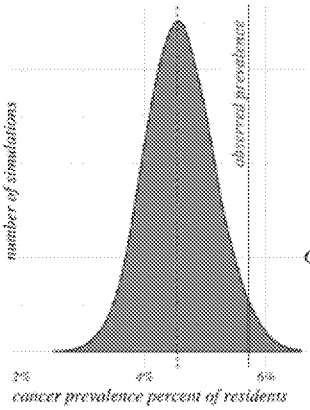
*Simulated and observed 23-year cancer prevalence**



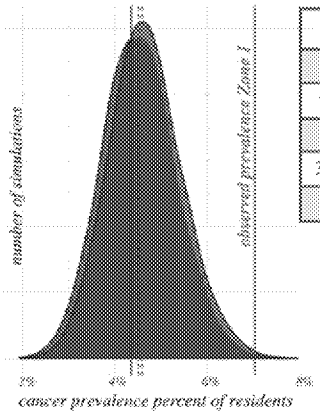
Simulated Cancer Prevalence

Statistic	Value
Minimum	2.5%
1st Quartile	4.2%
Median	4.5%
3rd Quartile	4.9%
Maximum	6.6%

Observed cancer prevalence: **5.4%**
p-value: **0.0306**

**after removing all residents who live in households where anyone smokes on a daily basis*

*Simulated and observed 23-year cancer prevalence by zone**



Simulated Cancer Prevalence

Statistic	Zone 1 value	Zone 2 value
Minimum	2.0%	1.9%
1st Quartile	4.1%	4.0%
Median	4.6%	4.5%
3rd Quartile	5.2%	5.0%
Maximum	8.1%	7.6%

Observed cancer prevalence:
Zone 1: **7.0%**; Zone 2: **4.3%**
p-value:
Zone 1: **0.0032**; Zone 2: **0.6139**

**after removing all residents who live in households where anyone smokes on a daily basis*

APPENDIX FIG. A1.

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Concerned Citizens for St. John * Earthjustice * Lambert Law Firm * Lawyers Committee for Civil Rights Under Law * Louisiana Environmental Action Network * University Network for Human Rights et al.

August 2, 2019

John Vandenberg, PhD
Director of Research
National Center for Environmental Assessment
U.S. Environmental Protection Agency
Mail Code: B243-01
109 T.W. Alexander Drive
Research Triangle Park, NC 27709
Vandenberg.john@Epa.gov

Re: Requesting a Meeting; Opposition to Denka's Request for Reconsideration of EPA's Toxicological Review of Chloroprene (RFC 17002)

Dear Dr. Vandenberg,

The undersigned groups respectfully request a meeting to discuss EPA's process for the *Request for Reconsideration of the Toxicological Review of Chloroprene* (RFC 17002), submitted by Denka Performance Elastomer LLC (Denka).[1] In addition to discussing the request for correction and request for reconsideration (and supporting materials) submitted by Denka, we would like to discuss both the *Third Party Correspondence (RFC 17002); Objection to RFC regarding IRIS Toxicological Review of Chloroprene* submitted by Dr. Karl Brooks, PhD[2] and the *Third Party Correspondence (RfR 17002A: Response to Denka Request for Reconsideration* submitted by Marco Kaltofen, PhD, PE and Keeve Nachman, PhD.[3] The purpose of this meeting is to address concerns regarding the reconsideration process itself and Denka's suggestion that EPA might reconsider the chloroprene risk value in light of Denka's request for reconsideration.[4] We seek to ensure that EPA considers community and scientific voices regarding this matter, and ask EPA to follow its usual scientific protocols and decide not to reconsider the robust and well-supported 2010 IRIS assessment.

---

[1] EPA, EPA Information Quality Guidelines - Requests for Correction and Requests for Reconsideration Submitted to EPA (RFC 17002) (June 2017), https://www.epa.gov/quality/epa-information-quality-guidelines-requests-correction-and-requests-reconsideration.

[2] Third Party Correspondence (RfC 17002) from Karl Brooks, PhD, to Tina Bahadori, PhD and Kristina Thayer, PhD PhD, NCEA (September 8, 2017), https://www.epa.gov/sites/production/files/2017-10/documents/response_to_denka_rfc_17002_re_chloroprene.pdf.

[3] Third Party Correspondence (RfC 17002) from Marco Kaltofen, PhD and Keeve Nachman, PhD, John Hopkins University, to EPA (July 23, 2018), https://www.epa.gov/sites/production/files/2018-09/documents/rfr_17002a_3rd_party_correspondence.pdf.

[4] Request of Reconsideration of Denial of Request for Correction (RfR 17002A), Jorge Lavastida and Robert E. Holden, Denka (July 23, 2018), https://www.epa.gov/sites/production/files/2018-08/documents/rfr_transmittal_ltr_7-23-2018_n3630834x7a3a0.pdf.

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EPA's 2010 IRIS assessment of chloroprene concluded that chloroprene is "likely to be carcinogenic to humans" through a mutagenic mode of action and with the primary exposure route being the inhalation pathway.[5] The conclusion in the assessment was based on a comprehensive and systematic review of the available evidence on chloroprene toxicity. An inhalation unit risk (IUR) was set based on the available toxicological studies on increased incidence of tumors in a number of organ systems observed in both rat and mice and epidemiological studies of occupational workers, which showed an increased risk of liver cancer and lung cancer among workers. IRIS concluded based on the best available science that: "These tumors generally appeared earlier with increasing exposure level and showed statistically significantly increasing trends with increasing exposure level [to chloroprene]."[6] Moreover, chloroprene's chemical structure is similar to known human carcinogens 1,3-butadiene and vinyl chloride, which provides an additional level of evidence to support the conclusion that chloroprene is a likely carcinogen. IRIS also determined that this chemical operates with a mutagenic mode of action for carcinogenicity, such that early-life exposure to babies, young children, or *in utero*, causes increased lifetime cancer risk.[7]

Based on these studies and the weight of the evidence, the IUR for cancer from chloroprene was set at 0.0003 per $\mu g/m^3$ for adult-only exposure through inhalation. IRIS also determined that it is necessary to account for increased vulnerability from early-life exposure, such that the more protective value of 0.0005 per $\mu g/m^3$ should be used to calculate cancer risks. [8]

IRIS's evidence and conclusions are directly supported by or consistent with findings of similarly highly regarded, scientific agencies, like the National Toxicology Program (NTP) and the International Agency for Research on Cancer (IARC), which conclude that based on available evidence chloroprene is classified as "reasonably anticipated to be a human carcinogen" (NTP) and it is "possibly carcinogenic to humans" (IARC).[9] Each institution – EPA, NTP, and IARC are highly reputable, respected, and known to conduct robust, independently peer-reviewed research on the toxicity of chemicals. The high standards set by each of these agencies results in chemical assessments that are both unbiased and reliable.[10]

An EPA Office of Air Quality Planning and Standards (OAQPS) internal memo on the *Preliminary Risk-Based Concentration Value for Chloroprene in Ambient Air* by Kelly Rimer, Leader of the Air Toxics Assessment Group, in the Health and Environmental Impacts Division of OAQPS, in reliance on the 2010 IRIS value, states,

---

[5] EPA, Toxicological Review of Chloroprene, EPA/635/R-09/010F (Sept 2010), https://cfpub.epa.gov/ncea/iris/iris_documents/documents/toxreviews/1021tr.pdf ("IRIS 2010") and EPA, IRIS Chemical Assessment Summary – Chloroprene (Sept 2010), https://cfpub.epa.gov/ncea/iris/iris_documents/documents/subst/1021_summary.pdf ("IRIS Summary 2010").

[6] IRIS 2010 at 148.

[7] IRIS Summary 2010 at 17.

[8] IRIS 2010 at 109-11, 148.

[9] NTP, Report on Carcinogens, Fourteenth Edition – Chloroprene (2016), attached as Attachment 1; IARC, IARC Monographs on the Evaluation of Carcinogenic Risks to Humans, Volume 71 – Chloroprene, attached as Attachment 2.

[10] Similarly, California's Office of Environmental Health Hazard Assessment has long recognized chloroprene as a chemical "known to cause cancer." https://oehha.ca.gov/proposition-65/crnr/chloroprene-cobalt-sulfate-heptahydrate-and-fenoxycarb-listed-known-cause-cancer (listing chloroprene as a carcinogen in June 2000).

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> *Under EPA's air toxics risk management framework, a cancer risk of 100-in-1 million is generally described as the upper limit of acceptability for purposes of risk-based decisions. Cancer risks at or below 1-in-1 million indicate little potential for cancer risk in the air toxics program. When existing source emissions are too high to achieve the 1-in-1 million level and controls are being considered, EPA is interested in controls that reduce off-site exposure concentrations associated with cancer risks to no higher than approximately 1-in-1 million for as much of the nearby population as feasible.*[11]

The memo goes on to acknowledge that:

> [T]he 100-in-1 million cancer-risk based comparison level and the 1-in-1 million cancer-risk based comparison levels for chloroprene are 0.2 $\mu g/m^3$, and 0.002 $\mu g/m^3$ respectively. At a minimum, [the memo] recommend[s] that [Denka] aims for emission reductions such that the maximum annual average chloroprene concentration is no higher than 0.2 $\mu g/m^3$ at the highest modeled off-site location…it is preferable to have the chloroprene concentration at the highest modeled census block as close to 0.002 $\mu g/m^3$ as reasonably achievable.[12]

It is not clear from this letter whether OAQPS used 0.0003 per $\mu g/m^3$ or 0.0005 per $\mu g/m^3$, which is needed to protect public health, including children, from higher vulnerability to cancer that can result from exposure to chloroprene early in life. Regardless, EPA's letter and an analysis of the current air monitoring data make clear that the levels of chloroprene and resulting health risk are currently unacceptable, and far too high for community members in LaPlace, LA.[13] Recent air monitoring data from 2016-19 show elevated levels of chloroprene that are far higher than 0.2 per $\mu g/m^3$ and 0.002 per $\mu g/m^3$ – including at a local hospital, elementary and high schools, and other community locations – that demonstrate the need for action to protect public health.[14]

It is important to the community for EPA to continue relying on the IRIS assessment to reduce the unhealthy levels of chloroprene Denka is emitting in LaPlace, LA, to get emissions down and end the currently unacceptable levels of cancer risk. It is essential for EPA's IRIS program to

---

[11] Memo from Kelly Rimer, Leader, Air Toxics Assessment Group, Health & Envtl Impacts Div., OAQPS, to Frances Verhalen, P.E., Chief, Air Monitoring/Grants Section, EPA Region 6, Re: Preliminary Risk-Based Concentration Value for Chloroprene in Ambient Air (May 5, 2016) ("2016 EPA Memo"), https://www.epa.gov/sites/production/files/2016-06/documents/memo-prelim-risk-based-concentrations050516.pdf.

[12] *Id.*

[13] The undersigned groups believe that EPA's benchmark of presumed unacceptability (100-in-1 million) is far too high for any given source category, as discussed in prior comments submitted on EPA's Cumulative Risk Assessment Request for Information. *See, e.g.*, Comments of Earthjustice, NRDC, et al. on Request for Information and Citations on Methods for Cumulative Risk Assessment at 9, 38-40 (May 1, 2013), https://www.regulations.gov/document?D=EPA-HQ-ORD-2013-0292-0132 (filed June 28, 2013), attached as Attachment 3. It is important and "preferable," as EPA's memo states, to reduce the ambient air concentration down to the level needed to avoid a cancer risk above 1-in-1 million. 2016 EPA Memo at 1.

[14] *See* EPA, Denka Air Monitoring Summary Sheet, May 25, 2016 – April 29, 2019, *see also* EPA, DENKA Air Monitoring Summary Sheet, May 25, 2016-April 29, 2019, https://www.epa.gov/sites/production/files/2019-05/documents/r6_summary_through_april_29_2019.pdf; https://deq.louisiana.gov/index.cfm?md=pagebuilder&tmp=home&pid=denka&id=2425 (average values in May 2018 at monitors ranged from 0.35 to 2.26 per $\mu g/m^3$, which are orders of magnitude higher than the levels threatening cancer risk that EPA deems unacceptable).

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leave at rest the final, peer-reviewed value it issued in 2010 after completing the usual, scientific IRIS protocol.

EPA has already reconsidered this value once at Denka's request, and determined that it should stand, and there is no valid scientific reason for EPA to question or revisit the IRIS value now. In 2018, EPA denied Denka's request for correction (RfC), finding that the underlying review was consistent with EPA's Information Quality Guidelines.[15] Denka had 90 days to submit a request for reconsideration (RfR) thereafter, such that it was due by April 25, 2018. Instead, Denka submitted a request for a 90-day extension of this date, days before its opportunity to submit the RfR expired. EPA granted the extension, and Denka submitted its RfR on July 23, 2018. On July 19, 2018 (only days before the RfR was submitted) EPA staff met with officials from the Louisiana Department of Environmental Quality, Denka, and Ramboll (a consulting group hired by Denka) to discuss a newly developed physiologically based pharmacokinetic (PBPK) model by Ramboll that resulted in a cancer-risk estimate far less stringent than the IRIS assessment derived.[16] On July 24, 2018, Denka sent a letter to EPA suggesting that particular EPA staff (*i.e.*, Paul Schlosser) would be "go[ing] over the model," and stating that Denka was "pleased to hear that EPA intends to give high priority to the PBPK model evaluation and we look forward to receiving an updated timeline for the evaluation process."[17] During the meeting, it appears that Denka believes EPA agreed to review the draft model, suggest improvements and upon revision, and arrange for some kind of additional review of the model.

We are highly concerned that Denka's description of EPA's statements suggests that IRIS may be engaging in or considering a process that is out of step with its own IRIS protocol and guidelines, and that, if followed, would represent an erosion of the integrity of the science assessments EPA's research staff conducts and the science-based actions that communities rely on for protections. Furthermore, existing agency documentation suggests that the PBPK models are in need of "better methods or implementation, and the characterization of uncertainty and variability in PBPK models is not yet a sufficiently standard practice."[18] Consequently, such level of uncertainty and variability in PBPK modeling does not result in the ability to rely on such modeling as opposed to the sound science and robust weight of evidence provided in the available toxicological and epidemiological studies that IRIS relied upon for the 2010 chloroprene assessment.

Residents of LaPlace, LA face far too much toxic air pollution, and it has now been years since EPA first acknowledged that and began working to address this problem, after the 2011 National Air Toxics Assessment (NATA) showed cancer risks that are as high as 826-in-1 million for this community.[19] The most recent NATA, released in 2018 and utilizing data from 2014, found

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[15] EPA Response to RfC 17002, Jennifer Orme-Zavaleta, PhD, NCEA, to Robert Holden, Denka (January 25, 2018), https://www.epa.gov/sites/production/files/2018-01/documents/epa_repsonse_to_mr._holdren_jan_25_2018_complete.pdf.

[16] Summary of Meeting Action Items, Event Title: Chloroprene Request for Correction/Request for Reconsideration (July 19, 2018), https://cfpub.epa.gov/ncea/iris2/event_attachment.cfm?layout=none&attach_id=544; the model has not completed an independent peer-review process.

[17] Letter from Patrick A. Walsh, Denka, to John Vandenberg, PhD, NCEA (July 24, 2018), attached as Attachment 4.

[18] EPA, Uncertainty and Variability in Physiologically Based Pharmacokinetic Models: Key Issues and Case Studies, EPA/600/R-08/090 (Aug. 2008), http://ofmpub.epa.gov/eims/eimscomm.getfile?p_download_id=477286.

[19] EPA, EPA in Louisiana – LaPlace, Louisiana Background Information (2016), https://www.epa.gov/la/laplace-louisiana-background-information.

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cancer risks in this community are as high as 1505-in-1 million, driven primarily by chloroprene and ethylene oxide emissions.[20]

Based on EPA's most current data, the parishes of St. John the Baptist and St. Charles have the census tracts with the highest cancer risk in the United States. Residents here live in what is sometimes described as "Cancer Alley," a geographic area that represents one of the most polluted parts in the country, and is also their home, where they should be able to be safe and healthy in their daily lives. The 2010 chloroprene risk value provides a baseline value that demonstrates this community needs a greater level of protection for residents from chloroprene pollution. EPA should follow through with additional action to protect the community, as discussed in its 2016 Action Plan for LaPlace, Louisiana, not spend time weakening or questioning the robust science in the 2010 IRIS assessment.[21]

EPA should not evaluate or undertake yet another review of the IRIS value, under EPA's own policy, when the 2010 chloroprene risk value is based on the best available science. Instead, EPA must continue to use and apply the 2010 chloroprene risk value to applicable assessments and cannot lawfully ignore the value in regulatory and enforcement processes. Rather than spending time questioning this well-supported health risk value, EPA should instead focus on completing IRIS assessments that are long overdue for chemicals that do not have an IRIS evaluation based on the best available science.

Community groups exposed to emissions from Denka and directly affected by EPA's actions respectfully request the opportunity to meet with EPA, to voice concerns regarding the process, and to receive information from EPA regarding the process.

Therefore, we respectfully request a meeting with you and any other appropriate EPA staff. Please contact Michelle Mabson at mmabson@earthjustice.org, (202) 667-4500 (ext. 5254), or Emma Cheuse at echeuse@earthjustice.org (ext. 5220) to arrange a meeting at your earliest convenience.

Sincerely,

Michelle Mabson, MPH, MSc
Staff Scientist
Emma Cheuse
Staff Attorney
Earthjustice
1625 Massachusetts Ave, NW, Suite 702
Washington, DC 20036
Office: 202-667-4500 ext. 5254 or 5220
mmabson@earthjustice.org
echeuse@earthjustice.org

Dorian Spence
Director of Special Litigation and Advocacy
Maryum Jordan
Counsel
Lawyers' Committee for Civil Rights
Under Law
1500 K Street NW

[20] EPA, 2014 National Air Toxics Assessment (2018), https://www.epa.gov/national-air-toxics-assessment/2014-nata-assessment-results; Sharon Lerner, *A Tale of Two Toxic Cities*, The Intercept (Feb. 24, 2019), https://theintercept.com/2019/02/24/epa-response-air-pollution-crisis-toxic-racial-divide/ at Table: 109 Air Pollution Hotspots.

[21] *See* EPA Action Plan (June 2016), https://www.epa.gov/sites/production/files/2016-06/documents/epa-laplace-action-plan.pdf.

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Suite 900
Washington, DC 20005
Office: 202-662-8355 or 202-662-8324
mjordan@lawyerscommittee.org
dspence@lawyerscommittee.org

Ex. (6), 7(C)

Cayce C. Peterson, Esq.
The Lambert Firm, PLC
701 Magazine St.
New Orleans, LA 70130
Office: 504-581-1750
Mobile: 985-518-8296
cpeterson@thelambertfirm.com

Marco Kaltofen, PhD, PE (Civil, MA)*
Associate Research Engineer
Nuclear Science and Engineering Program
Dept. of Physics
Worcester Polytechnic Institute

James Cavallaro
President
Ruhan Nagra
Executive Director
cavallaro@humanrightsnetwork.org
ruhan@humanrightsnetwork.org
(314) 435-2377 or (617) 669-8606
University Network for Human Rights
Middletown, CT 06457

Keeve E. Nachman, PhD, MHS*
Assistant Professor
Department of Environmental Health and Engineering
Johns Hopkins Bloomberg School of Public Health
615 North Wolfe Street, Room W-7007
Baltimore, MD 21205
knachman@jhu.edu
Phone: 410-502-7576

Wilma Subra
Chemist / Technical Director
Louisiana Environmental Action Network
(225) 928-1315

Cc:

Anne Idsal, Acting Assistant Administrator, EPA's Office of Air & Radiation
Jennifer Orme-Zavaleta, Principal Deputy Administrator for Science & Science Advisor, ORD
Vaughn Noga, Chief Information Officer
David Gray, Acting Regional Administrator, EPA Region 6
Kristina Thayer, ORD/NCEA IRIS Division Director
Tina Bahadori, ORD/NCEA Director
Bruce Rodan, Associate Director for Science, ORD
Matthew Tejada, Office of Environmental Justice

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* *Note: Academic affiliation provided for informational purposes only and does not imply institutional endorsement or approval*

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
1201 ELM STREET, SUITE 500
DALLAS, TEXAS 75270

Office of the Regional Administrator

April 5, 2021

Ex. (6), 7(C)
Concerned Citizens of St. John the Baptist Parish
Reserve, Louisiana 70084
Email: citizensofstjohnparish@gmail.com

Dear Ex. (6), 7(C)

The United States Environmental Protection Agency has received your letter sent via email dated February 28, 2021. In the letter, you stated that the Louisiana Department of Environmental Quality (LDEQ) and the Louisiana Department of Health (LDH) '… misused the EPA funds by conducting a project that is completely different—in purpose, scope, and methodology—from the one proposed to the EPA in the agencies' grant application.' Your letter also stated: '[t]he actual project does not fit within the EPA's "Improve Air Quality" objective, is not aligned with [Clean Air Act (CAA)] §105 criteria, and has nothing to do with preventing or controlling air pollution.'

The EPA takes allegations of misuse of federal funds seriously. The EPA has completed its review of this matter. The EPA found that the work done is within the scope of work provided by the state and the activities align with the requirements of the CAA §105 criteria. While considerable work was done by Louisiana State University (LSU) New Orleans School of Public Health for the LDH to collect information for the Tumor Registry study, the overall project is not complete and additional work is underway by the LDH in cooperation with the LDEQ. Please review the enclosure for discussion of your concerns with respect to the grant requirements.

The EPA appreciates Ex. (6), 7(C) and your efforts to provide supporting information. Thank you for your continued interest in addressing air quality in the St. John the Baptist Parish area. If you would like to discuss our responses, please contact me at 214-665-2100, or Ms. Gloria Vaughn at 214-665-7535.

Sincerely,

David W. Gray
Acting Regional Administrator

Enclosure

cc: Mark Cooper, Officer of the Governor (Mark.Cooper@la.gov)
Matthew Block, Office of the Governor (Matthew.Block@la.gov)

cc cont.:

Dr. Chuck Carr Brown, Louisiana Department of Environmental Quality (Chuck.Brown@la.gov)
Courtney Burdette, Louisiana Department of Environmental Quality (Courtney.Burdette@la.gov)
Joseph Kanter, Louisiana Department of Health (Joseph.Kanter@la.gov)
Stephen Russo, Louisiana Department of Health (Stephen.Russo@la.gov)

Enclosure

Concern 1: The Louisiana Department of Environmental Quality (LDEQ) and the Louisiana Department of Health (LDH) '… *misused EPA funds by conducting a project that is completely different—in purpose, scope, and methodology—from the one proposed to EPA in the agencies' grant application.*'

The multipurpose grants issued to the LDEQ and the LDH contain two interrelated tasks to be completed:

(1) to determine if there are higher instances of cancer in the community due to toxic chemical emissions by the [Denka Performance Elastomer, LLC (Denka)] Plant
(2) to determine if there has been under-reporting of these cases of cancer in the Louisiana Tumor Registry

The EPA discussed the progress of the work with the LDEQ and the LDH staff on March 5, 2021. During that conversation, EPA learned that the project is not completed. There are two tasks that are to be accomplished: a study to ensure that the types and numbers of cancers in the Louisiana Tumor Registry database are complete for the area to serve as a baseline, and an evaluation and analysis of that database specific to the 1.5-km radius and 2.5-km radius around Denka to determine if there are higher instances of cancer in the community and if the observed cancers are attributable to Denka.

In cooperation with the LDH, the Louisiana State University (LSU) New Orleans School of Public Health conducted the Cancer Reporting in St. John Parish (CRISP) project between January 2020 and January 2021. The main objective of the project was to detect reportable cancer cases in the survey area around the Denka facility for the 2009 to 2018 timeframe that were missing from the Louisiana Tumor Registry data. Residents within a 2.5-kilometer radius around Denka were approached to participate in the survey. In addition to cancer cases, residents were also able to report any health conditions/community concerns about living near the Denka facility.

The CRISP study found no missing, reportable cancers that were not part of Louisiana Tumor Registry data. All of the identified reportable cancer cases found in the study had been counted by the LA Tumor Registry. This study completes the second task listed above.

In discussions with the LDEQ and the LDH on March 5, 2021, EPA also learned that they are beginning the evaluation and analysis task of the grants, and the activities in support of task 1 of the work plan are continuing as the scope of work in the grant work plans is completed.

Concern 2: '*The actual project does not fit within EPA's "Improve Air Quality" objective, is not aligned with [Clean Air Act (CAA)] §105 criteria, and has nothing to do with preventing or controlling air pollution.*'

The EPA, prior to awarding the grant, reviewed the proposed tasks for the work and negotiated with the LDEQ and the LDH to ensure that the CAA §105 criteria were met. Collection, evaluation, and analysis of data associated with risk from air toxics emissions are allowable activities under the CAA. (See 42 U.S.C. §7405(a)(1)(A))

Concern 3: '*We find it extremely concerning that over $300,000 of EPA funding was spent mostly on salaries for Tumor Registry staff to conduct a project that was neither responsive to the needs of the community nor consistent with the project that the LDEQ and the LDH proposed to the EPA to secure funds.*'

The EPA cannot confirm the statement '*that over $300,000 of EPA funding was spent mostly on salaries for Tumor Registry staff*', as those costs have not been presented to the EPA. The project is not complete and the funds have not been fully expended. The EPA has not authorized payment for this amount.

The EPA, the LDEQ and the LDH believe that the tasks in the workplan will provide information that these government agencies believe will be useful to the community.

Finally, the EPA found that the project is '*consistent with the project that the LDEQ and the LDH proposed to the EPA to secure funds*', with respect to the task that is completed – namely the study conducted by LSU to detect reportable cancer cases in the survey area around the Denka facility for the 2009 to 2018 timeframe that were missing from the Louisiana Tumor Registry data.