

STATE OF LOUISIANA

COURT OF APPEAL

FIRST CIRCUIT

2023 CA 0578

RISE ST. JAMES, LOUISIANA BUCKET BRIGADE, SIERRA CLUB,
CENTER FOR BIOLOGICAL DIVERSITY, HEALTHY GULF,
EARTHWORKS, AND NO WASTE LOUISIANA

VERSUS

LOUISIANA DEPARTMENT OF ENVIRONMENTAL QUALITY

JUDGMENT RENDERED: JAN 19 2024

Appealed from the Nineteenth Judicial District Court
Parish of East Baton Rouge • State of Louisiana
Docket Number 694,029 • Section 27

The Honorable Trudy M. White, Presiding Judge

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BEFORE: WELCH, THERIOT, HOLDRIDGE,¹ PENZATO, AND WOLFE, JJ.

¹ The Honorable Guy Holdridge, retired, is serving as judge *pro tempore* by special appointment of the Louisiana Supreme Court.

*Theriot, J. concurs
Wolfe J. dissents without reasons EW by JEW*

*JEW
AHP by JEW
GH*

WELCH, J.

The defendant, Louisiana Department of Environmental Quality (“DEQ”), and an intervenor, FG LA LLC (“Formosa”²), appeal a judgment of the district court, which reversed DEQ’s decision to issue fifteen permits to Formosa for a proposed chemical complex in St. James Parish, Louisiana, and further vacated those permits. For reasons that follow, we reverse the judgment of the district court, reinstate the permits, and render judgment dismissing the plaintiffs’ petition for judicial review.

I. BACKGROUND

A. Legal Background

In order to understand the issues involved in this complex environmental action, it is necessary to set forth a general foundation of the applicable legal precepts from which this matter arises.

1. Public Trust Doctrine

Louisiana Constitution article IX, §1 establishes the public trust doctrine, which mandates that “[t]he natural resources of the state, including air and water,” be “protected, conserved, and replenished insofar as possible and consistent with the health, safety, and welfare of the people,” and orders the legislature to “enact laws to implement this policy.” In furtherance of this mandate, the legislature created and established DEQ as the primary agency in Louisiana concerned with environmental protection and regulation. See La. R.S. 30:2011; **Matter of American Waste and Pollution Control, Co.**, 93-3163 (La. 9/15/94), 642 So.2d 1258, 1262. DEQ is vested with jurisdiction over matters affecting the regulation of the environment within this State, including, but not limited to, the regulation of air quality. La. R.S. 30:2011; see also La. R.S. 30:2051, *et seq.* DEQ also has authority delegated to it

² FG LA LLC is a subsidiary of Formosa Petrochemical Corporation. For ease of reference, we refer to FG LA LLC as Formosa.

from the United States Environmental Protection Agency (“EPA”) to enforce and implement certain federal environmental standards, including air emissions.

In accordance with the public trust doctrine, before granting approval of any proposed action affecting the environment, including permits, DEQ must “determine that adverse environmental impacts have been minimized or avoided as much as possible consistently with the public welfare.” **Save Ourselves, Inc. v. Louisiana Environmental Control Commission**, 452 So.2d 1152, 1157 (La. 1984). In making this determination, the Louisiana Supreme Court imposed a “rule of reasonableness,” noting that “the constitution does not establish environmental protection as an exclusive goal, but requires a balancing process in which environmental costs and benefits must be given full and careful consideration along with economic, social[,] and other factors.” *Id.* The supreme court also recognized that “[e]nvironmental amenities will often be in conflict with economic and social considerations[,]” and “[t]o consider the former along with the latter must involve a balancing process.” *Id.* The supreme court further recognized that “[i]n some instances environmental costs may outweigh economic and social benefits and in other instances they may not[,]” and that “[t]his leaves room for a responsible exercise of discretion and may not require particular substantive results in particular problematic instances.” *Id.*

Based on the **Save Ourselves** decision, this Court has held that DEQ’s written findings of fact and reasons for a decision must address whether: (1) the potential and real adverse environmental effects of the proposed project have been avoided to the maximum extent possible; (2) a cost-benefit analysis of the environmental impact costs balanced against the social and economic benefits of the project demonstrate that the latter outweighs the former; and (3) there are alternative projects or alternative sites or mitigating measures that would offer more protection to the environment than the proposed project without unduly curtailing non-

environmental benefits to the extent applicable. **In re Shintech, Inc.**, 2000-1984 (La. App. 1st Cir. 2/15/02), 814 So.2d 20, 25, writ denied, 2002-0742 (La. 5/10/02), 815 So.2d 845; **In re Rubicon, Inc.**, 95-0108 (La. App. 1st Cir. 2/14/96), 670 So.2d 475, 483. These inquiries are commonly referred to as the “IT requirements,” the “IT issues,” or “the IT questions,”³ which name is derived from IT Corporation, the holder of the hazardous waste disposal permit at issue in **Save Ourselves**.

In furtherance of the aforementioned rulings from this Court, La. R.S. 30:2018 was enacted, which requires applicants for new permits to submit an environmental assessment statement (“EAS”) to be utilized by DEQ in satisfaction of its public trustee requirements; the EAS consists of the applicant’s answers or responses to the IT issues. See La. R.S. 30:2018(A) and (B).

Also included within DEQ’s decision-making analysis under the public trust doctrine is consideration of the issue of environmental justice. See **Dow Chemical Co. Louisiana Operations Complex Cellulose and Light Hydrocarbons Plants, Part 70 Air Permit Major Modifications & Emission v. Reduction Credits**, 2003-2278 (La. App. 1st Cir. 9/17/04), 885 So.2d 5, 16, writ denied sub nom. **Dow Chemical Co. v. Reduction Credits**, 2004-3005 (La. 2/18/05), 896 So.2d 34 (“**Dow Chem. Co.**”) (finding that DEQ’s “analysis, which considered the background, public comment, public comment response summary, alternative sites, alternative projects, mitigating measures, avoidance of adverse environmental effects, cost/benefit analysis, social and economic benefits, and environmental justice/civil rights Title [VI] issues as mandated by the Louisiana Supreme Court” in **Save Ourselves** was sufficient to establish that DEQ complied with its constitutional mandate under the public trust doctrine); **North Baton Rouge Environmental Association v. Louisiana Department of Environmental Quality**, 2000-1878 (La.

³ Although the IT issues are generally set forth in the jurisprudence as a list of three issues, there are actually five inquiries, as the third IT issue has three separate, but related, inquiries within it.

App. 1st Cir. 11/14/01), 805 So.2d 255, 263-264, writ denied, 2002-0408 (La. 4/19/02), 813 So.2d 1086 (wherein this Court found that DEQ adequately responded to public comment regarding environmental justice concerns related to the location of a proposed plant near a minority community, declined to substitute its judgment for that of the DEQ, and opined that DEQ did not violate its constitutional duty to act as trustee of the environment). See also 40 C.F.R. Part 7.

Environmental justice is defined by the EPA as the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies.⁴ Fair treatment means no group of people should bear a disproportionate share of the negative environmental consequences resulting from industrial operations. Meaningful involvement means that people have an opportunity to participate in decisions about activities that may affect their environment and/or health, the public's contribution can influence the permitting authority's decision, community concerns will be considered in the decision-making process, and decisionmakers will seek out and facilitate the involvement of those potentially affected.⁵

2. Air Permits

The National Ambient Air Quality Standards (“NAAQS”) are health-based standards established by the EPA pursuant to the Clean Air Act, 42 U.S.C. §7401, *et seq.*, for pollutants considered harmful to public health. See 42 U.S.C. §§7408 and 7409(b). The Clean Air Act has established primary and secondary standards for NAAQS. See Id. The primary standards prescribe maximum acceptable

⁴ See <https://www.epa.gov/environmentaljustice>. This is also the definition utilized by DEQ in its environmental justice analysis in this case. Courts may take judicial notice of information from governmental websites. **Mendoza v. Mendoza**, 2017-0070 (La. App. 4th Cir. 6/6/18), 249 So.3d 67, 71, writ denied, 2018-1138 (La. 8/31/18), 251 So.3d 1083; see also La. C.E. art. 201(B).

⁵ See <https://www.epa.gov/environmentaljustice/learn-about-environmental-justice>.

concentrations of various pollutants in the outdoor air which, “allowing an adequate margin of safety, are requisite to protect the public health.” 42 U.S.C. §7409(b)(1). The secondary standards prescribe levels of air quality “requisite to protect the public welfare from any known or anticipated adverse effect[s].” 42 U.S.C. §7409(b)(2). The EPA has established NAAQS for six pollutants, referred to as “criteria pollutants,” which are: particulate matter (PM₁₀ and PM_{2.5}),⁶ sulfur dioxide (SO₂), nitrogen dioxide (NO₂), carbon monoxide (CO), ozone (O₃),⁷ and lead (Pb). 40 C.F.R. §§50.2, 50.4-50.13; see also 42 U.S.C. §§7408 and 7409(b)(1).⁸ These standards function as benchmarks for state implementation plans that each state develops, which contain emission limits and other control measures to enforce the NAAQS within the state. See 42 U.S.C. §§7407(a) and 7410. DEQ has developed and adopted the standards for the criteria pollutants. See LAC 33:III.701, *et seq.*

In areas that have attained NAAQS or that are unclassifiable,⁹ the Clean Air Act, through the Prevention of Significant Deterioration (“PSD”) program, requires major emitting facilities to obtain a permit “setting forth emission limitations” for a facility prior to construction. 42 U.S.C. §§7471 and 7475(a)(1). The PSD program requires any applicant for a PSD permit to demonstrate that new emissions from the

⁶ Particulate Matter is any airborne finely divided solid or liquid material with an aerodynamic diameter smaller than 100 micrometers. LAC 33:III.111. PM_{2.5} consists of particulate matter with an aerodynamic diameter less than or equal to 2.5 micrometers. PM₁₀ consists of particulate matter with an aerodynamic diameter less than or equal to 10 micrometers. See 40 C.F.R. §50.6 and 50.7.

⁷ Although the NAAQS is set for ozone, it is the emissions of volatile organic compounds (VOC) and nitrogen oxides (NO_x) that are regulated in place of ozone, as ozone is a pollutant formed in the atmosphere over time from emissions of VOC and NO_x.

⁸ At issue in this case are the NAAQS for NO₂ and PM_{2.5}. More specifically, the 1-hour standard for NO₂ and the 24-hour standard for PM_{2.5}.

⁹ An area that meets a NAAQS is classified as an “attainment area” for that standard, and an area that does not meet a NAAQS is classified as a “non-attainment area” for that standard. See 42 U.S.C. §7407(d)(1)(A)(i)-(ii). Alternatively, an area may be designated as “unclassifiable,” which means that the area cannot be classified on the basis of available information as meeting or not meeting the NAAQS. 42 U.S.C. §7407(d)(1)(A)(iii). Unclassifiable areas are generally treated as if they were attainment areas. See 42 U.S.C. §7471.

The area at issue in this case, St. James Parish, is classified as “unclassifiable/attainment” for several standards, including PM_{2.5} and NO₂.

proposed project “will not cause, or contribute to, air pollution in excess of any ... maximum allowable increase or maximum allowable concentration for any pollutant in any area to which this part applies ... [or] ... [NAAQS] in any air quality control region[.]” 42 U.S.C. §7475(a)(3)(A) and (B). The maximum allowable increase in concentration is a marginal level of increase above the defined baseline concentration; it is known as the “increment” (or the “PSD increment”) and, for the six criteria pollutants, is set forth in 42 U.S.C. §7473 and 40 C.F.R. §52.21(c).¹⁰ DEQ’s standards for the PSD program are set forth in LAC 33:III.509.

The PSD permitting process is primarily implemented at the state level, with states issuing preconstruction permits in accordance with their state implementation plans and federal minimum standards. **Sierra Club v. Environmental Protection Agency**, 955 F.3d 56, 59 (D.C. Cir. 2020), citing 42 U.S.C. §7410(a)(1)-(2), (1). However, 42 U.S.C. § 7475(e)(3)(D) authorizes the EPA to promulgate regulations regarding the ambient air quality analysis required under the permit application review. **Sierra Club**, 955 F.3d at 59; 42 U.S.C. §§7410(a)(1)-(2) and 7475(e)(3)(D). Pursuant to this power, EPA promulgated a regulation outlining a set of values—called “significance values”—for states to use in determining what level of emissions does “cause or contribute to” a violation under 42 U.S.C. §7475(a)(3). See 40 C.F.R. § 51.165(b)(2) and 52 Federal Register 24,672, 24,713 (July 1, 1987); **Sierra Club**, 955 F.3d at 59. These air quality concentration values have become known as “significant impact levels,” or “SILs,” when used as part of an air quality demonstration in a permit application. **Sierra Club**, 955 F.3d at 59.

The Clean Air Act also establishes an extensive list of compounds that are classified as “hazardous air pollutants,” which are pollutants that present or may present a threat of adverse human health effects or adverse environmental effects.

¹⁰ At issue in this case is the increment for PM_{2.5}. More specifically, the 24-hour increment.

See 42 U.S.C. §7412. The National Emission Standards for Hazardous Air Pollutants (“NESHAP”) are set forth in 40 C.F.R. Part 61 (NESHAP for specific hazardous air pollutants) and 63 (NESHAP for source categories). These standards have been adopted by DEQ. See LAC 33:III.5116 and 5122. In addition, DEQ has established unique ambient air standards (“AAS”) for numerous compounds, which are known as “toxic air pollutants.” See LAC 33:III.5101, 5103, 5109, and 5111. Toxic air pollutants include all of the chemical compounds that are hazardous air pollutants, as well as chemical compounds that are not federally regulated hazardous air pollutants. See LAC 33:III.5112. Thus, all hazardous air pollutants are toxic air pollutants, but not all toxic air pollutants are hazardous air pollutants.¹¹ See La. R.S. 30:2053(3)(b); 42 U.S.C. §7412.

Before construction of a major source of toxic air pollutants, the owner or operator shall obtain an air permit. LAC 33:III.5111. Any stationary source is considered a major source of toxic air pollutants if it emits or has the potential to emit, in the aggregate, ten tons per year or more of any toxic air pollutant listed in LAC 33:III.5112, Table 51.1, or twenty-five tons per year or more of any combination of toxic pollutants listed therein. LAC 33: III.5103.A. An owner or operator that emits or is permitted to emit a Class I or Class II toxic air pollutant at a rate greater than or equal to the minimum emission rate listed in that table shall control emissions of those specific toxic air pollutants to a degree that constitutes Maximum Achievable Control Technology (“MACT”)¹² as approved by DEQ. LAC 33:III.5109.A.1.

¹¹ At issue in this case is ethylene oxide (EO), which is both a hazardous air pollutant and a toxic air pollutant.

¹² MACT is the maximum degree of reduction in emissions that is deemed achievable for new sources in a category or subcategory and cannot be less stringent than the emission control that is achieved in practice by the best controlled similar source. 42 U.S.C. §7412(d)(3).

Under LAC 33:III.507, major sources, among other sources, of criteria pollutants, hazardous air pollutants, or both, must also obtain and operate in compliance with an operating permit, commonly referred to as a “Title V permit,” a “Part 70 permit” or a “Title V/Part 70 permit.” This reference is derived from Title V of the Clean Air Act and 40 C.F.R. Part 70. These same sources may also be subject to the preconstruction PSD permit.¹³ In Louisiana, both the Title V/Part 70 and PSD permitting programs are administered by DEQ, through its delegated authority from the EPA.¹⁴

A permit application for a Title V/Part 70 air operating permit must satisfy the requirements of the Part 70 Operating Permits Program set forth in LAC 33:III.507, and a permit application for a PSD permit must satisfy the requirements set forth in LAC 33:III.509. See also 40 C.F.R. §51.165. These initial permits serve to authorize construction and operation of a new facility. The Title V/Part 70 operating permits provide operational requirements and limitations, including emission limitations, which are enforceable by both EPA and DEQ. See LAC 33:III.507. Construction of a new major stationary source cannot begin until that new major stationary source subject to PSD permitting meets all of the requirements for the PSD permit. See LAC 33:III.509.A.3. These requirements include meeting applicable emission limitations and applying the best available control technology (“BACT”) for each regulated pollutant that it would have the potential to emit in significant amounts. LAC 33:III:509.J.

As previously set forth, the proposed facility or new major stationary source must also demonstrate that emissions from construction or operation of such facility

¹³ Sources subject to Title V/Part 70 permitting are found at LAC 33:III.507.A.1, and include any major source as defined in LAC 33:III.502, and sources subject to PSD permitting are found at LAC 33:III.509.B, under the definition of major stationary source.

¹⁴ See 60 Federal Register 47,296 (September 12, 1995); 81 Federal Register 46,606 (July 18, 2016); and 81 Federal Register 74,923 (October 28, 2016).

or proposed source will not “cause, or contribute to,” air pollution in violation of any NAAQS or an increment. LAC 33:III.509.K; see also 42 U.S.C. §7475(a)(3). Also, as previously set forth, pursuant to 40 C.F.R. §51.165(b)(2), a “major source ... will be considered to cause or contribute to a violation of a [NAAQS] when such source ... would, at a minimum, exceed the” SILs value. Conversely, if the major source’s maximum projected impact is below the corresponding SILs value, that may be a sufficient demonstration that the proposed source will not cause or contribute to a violation of NAAQS. See Sierra Club, 955 F.3d at 60, citing “Guidance on Significant Impact Levels for Ozone and Fine Particles in the Prevention of Significant Deterioration Permitting Program,” published by the EPA on April 17, 2018 (“SILs guidance document”).¹⁵

Next, to demonstrate that a proposed facility or major source will not cause or contribute to any NAAQS exceedance or increment, the application for a preconstruction PSD permit must contain an air quality impact analysis or “AQIA,” which is commonly referred to as “air quality modeling” or “air modeling,” of the area that the facility or new major source would affect for each pollutant that it would have a potential to emit above major stationary source threshold. LAC 33:III.509.L and M. The estimates of the ambient concentrations shall generally be based on the applicable air quality models, databases, and other requirements specified in Appendix W of 40 C.F.R. Part 51. LAC 33:III.509.L.

According to Paragraph 2.2 of Appendix W of 40 C.F.R. Part 51, estimates of the sources’ emissions are initially modeled and analyzed using simplified assumptions and conservative methods (*i.e.*, worst-case scenario) to determine whether the proposed construction will cause or contribute to ambient concentrations in excess of either the NAAQS or an increment. Only if the screening model

¹⁵ For the SILs guidance document, see https://www.epa.gov/sites/default/files/2018-04/documents/sils_policy_guidance_document_final_signed_4-17-18.pdf

indicates that the increase in concentration attributable to the source could cause or contribute to a violation of any NAAQS or increment, then the second level of more sophisticated, complex, and refined model should be applied. *Id.*; see also **Sierra Club**, 955 F.3d at 60, citing SILs guidance document (rather than requiring every PSD applicant to conduct a full cumulative impact analysis, if a preliminary analysis shows a proposed source's maximum impact will be below the corresponding SIL value, EPA is open to a finding by the state permitting authority that such an impact will not cause or contribute to a violation of the applicable NAAQS or increment; if a cumulative impact analysis is done and predicts a NAAQS violation, a source whose contribution to the violation is less than the SIL for a given pollutant may be considered not culpable for the violation).¹⁶

The PSD permit application from the owner or operator of a proposed source must also contain, among other things, specific information relative to the source, such as a description of the nature, location, design capacity, and typical operating schedule of the source, as provided in LAC 33:III.509.N, and additional impact analyses, such as impairment to visibility, soils, and vegetation and commercial, residential, industrial, and other growth associated with the source, as provided in LAC 33:III.509.O. In addition, there must be notice to the public and the opportunity for the public to participate through comments and a hearing, as provided in LAC 33:III.509.Q.

B. Factual Background and Procedural History

Formosa proposes to construct a large chemical manufacturing complex consisting of fourteen separate facilities (ten plants and four support facilities) on a tract of land known as the Mosaic-Gavilon site, which is located along the Mississippi River in St. James Parish, Louisiana, in an area just south of the Sunshine

¹⁶ For new sources that are major sources of toxic air pollutants pursuant to LAC 33:III.5101, *et seq.*, a similar air modeling analysis/air dispersion modeling report is used. LAC 33:III.5111.

Bridge.¹⁷ The proposed Formosa complex will be located in a predominantly industrial and agricultural area near the communities of Welcome and St. James and across the Mississippi River from the community of Union. Notably, 87.1% of the combined population of the communities of Welcome and St James identify as “Black or African American,” and the community of Union has a 64% minority population, 80% of whom identify as African American.¹⁸ The proposed Formosa complex facility will be a new major source of criteria pollutants, hazardous air pollutants, and toxic air pollutants and will be located in an attainment/unclassifiable area. It is, therefore, subject to the Title V/Part 70 permitting program and the preconstruction PSD permitting program.

In connection with the proposed construction of the facility, Formosa submitted applications to DEQ for fifteen total permits—fourteen Title V/Part 70 permits (one for each plant in the complex) and one PSD permit. In support of the permit applications, Formosa submitted all of the requisite and extensive information and documentation for the permits. Relevant to this appeal, the information and documentation included, but was not limited to, several air quality analysis reports detailing the results of approved air modeling efforts to determine whether the proposed facility’s air emissions would cause or contribute to an exceedance of the NAAQS, an increment, and/or the AAS for toxic air pollutants, and a detailed economic analysis of the proposed facility by Dr. James Richardson, an economics professor at Louisiana State University.

¹⁷ The proposed site location is in a predominantly industrial and agricultural area. The St. James Parish Council unanimously passed a resolution approving the proposed Formosa complex “UNDER THE ST. JAMES PARISH LAND USE ORDINANCE, WITH CONDITIONS.” In addition, in that unanimous resolution, the St. James Parish Council noted that the St. James Parish Planning Commission had approved Formosa’s request to build the complex under the St. James Parish Code of Ordinances and the St. James Parish Comprehensive Plan.

¹⁸ We acknowledge that these are unincorporated areas without boundaries, so we cannot accurately ascertain the percentage of residents, much less the percentage identifying as minority.

On May 28, 2019, DEQ issued a public notice on the permit applications to solicit public comments. DEQ also held a public hearing on July 9, 2019, and extended the deadline for public comments until August 12, 2019. DEQ also considered additional comments filed after that deadline. The majority of the comments focused on the harmful health and environmental impacts the proposed complex would have on the area.

On January 6, 2020,¹⁹ DEQ issued all fifteen permits.²⁰ In reaching its decision to issue the permits, DEQ issued an extensive 43-page Basis for Decision, explaining its rationale for issuing the permits. At the beginning of its Basis for Decision, DEQ found “that as part of the ‘IT Requirements,’ adverse environmental impacts have been minimized or avoided to the maximum extent possible,” citing **Save Ourselves**, and to make that determination, DEQ found that Formosa “has complied with all applicable federal and state statutes and regulations and has otherwise minimized or avoided environmental impacts to the maximum extent possible” and “has met the alternative sites, alternative projects, and mitigating measures requirements of” **Save Ourselves**. DEQ further stated that after determining “that adverse environmental effects had been minimized or avoided to the maximum extent possible, it balanced social and economic factors with environmental impacts.” Noting that, under **Save Ourselves**, the Louisiana Constitution “does not establish environmental protection as an exclusive goal, but requires a balancing process in which environmental costs and benefits must be

¹⁹ Prior to issuing the permits on January 6, 2020, and in accordance with LAC 33:III.533.B.2, DEQ submitted a copy of the proposed permits and its Statement of Basis to EPA on May 23, 2019. DEQ received no comments or objections from EPA at the end of the 45-day period set forth in LAC 33:III.533.C and D.

²⁰ The fifteen permits are Prevention of Significant Deterioration permit PSD-LA-812 and Part 70 Operating Permit Nos. 3141-V0 (Ethylene 1 Plant); 3142-V0 (Ethylene Glycol 1 Plant); 3143-V0 (High Density Polyethylene 1 Plant); 3144-V0 (Linear Low Density Polyethylene Plant); 3145-V0 (Propylene Plant); 3146-V0 (Polypropylene Plant); 3147-V0 (Logistics Plant); 3148-V0 (Utility 1 Plant); 3149-V0 (Central Wastewater Treatment Plant); 3150-V0 (Ethylene 2 Plant); 3151-V0 (Ethylene Glycol 2 Plant); 3152-V0 (High Density Polyethylene 2 Plant); 3153-V0 (Low Density Polyethylene Plant); and 3154-V0 (Utility 2 Plant).

given full and careful consideration along with economic, social[,] and other factors,” DEQ found that “the social and economic benefits of the proposed project [would] greatly outweigh its adverse environmental impacts.”

DEQ’s Basis for Decision then set forth in detail its extensive findings of fact and analysis of the background information; the permitted emissions of both criteria pollutants and toxic air pollutants; the public comments; the IT issues of alternative sites, alternative projects, mitigating measures (including permit requirements, emission limits, ambient air monitoring, impacts to Class I federal areas, greenhouse gas emissions, and forested buffer), avoidance of adverse environmental effects, a cost/benefit analysis of the environmental impact costs balanced against the social and economic benefits; and environmental justice/civil rights Title VI issues, all as mandated by the Louisiana Supreme Court in **Save Ourselves**; and Formosa’s enforcement history. DEQ’s decision then concluded, after a careful review and evaluation of the administrative record, that the proposed permits minimized or avoided potential and real adverse environmental impacts to the maximum extent possible and that the social and economic benefits of the proposed complex outweighed its adverse environmental impacts.

Along with DEQ’s Basis for Decision, DEQ also issued and incorporated a 139-page Public Comments Response Summary in which DEQ responded to statements and comments by the public that it received via mail, email, and at the public hearing.

Following DEQ’s issuance of the fifteen permits to Formosa, the plaintiffs, RISE St. James, Louisiana Bucket Brigade, Sierra Club, Center for Biological Diversity, Healthy Gulf, Earthworks, and No Waste Louisiana,²¹ filed a petition for judicial review of the DEQ’s decision. In the plaintiffs’ petition for judicial review,

²¹ The plaintiffs are various environmental organizations.

they set forth numerous assignments of error, essentially claiming, among other things, that: (1) the PSD permit was in violation of the Clean Air Act because Formosa failed to demonstrate that the emissions from the proposed complex would not cause or contribute to air pollution in violation of the PM_{2.5} 24-hour NAAQS, the PM_{2.5} 24-hour increment, and the NO₂ 1-hour NAAQS due to modeled exceedances and further, that DEQ's use of SILs to dismiss Formosa's contributions to the NAAQS and increment exceedances was arbitrary and capricious; (2) DEQ's decision to issue the permits was in violation of the public trust doctrine and its analysis of the IT issues was arbitrary and capricious because DEQ failed to consider the impacts of NO₂ and PM_{2.5} emissions, the impacts of ethylene oxide emissions, the impacts of toxic air pollutants in combination with existing permitted emissions and greenhouse gases, and the adverse environmental public health costs in the cost-benefit analysis; and (3) DEQ's decision to issue the permits was in violation of the public trust doctrine because its analysis of environmental justice was arbitrary and capricious and failed to consider the disproportionate impact to nearby minority communities. Subsequently, Beverly Alexander, a resident of the community of St. James, and Formosa each filed petitions for intervention, which the district court granted.

On October 6, 2020, Ms. Alexander filed a "Motion for Judicial Notice of Adjudicative Facts and to Admit Proof of Procedural Irregularities." Therein, Ms. Alexander requested that the district court consider two attached pieces of evidence in ruling on the merits of the judicial review action: (1) certain "pollution and health risk data from the [EPA's] EJScreen^[22] public website"²³ that allegedly "tends to

²² Throughout the record and briefs herein, "EJScreen" is referred to as "EJScreen" and "EJSCREEN." For consistency, we utilize "EJScreen."

²³ EJScreen is an environmental justice mapping and screening tool developed by the EPA. It is based on nationally consistent data and an approach that combines environmental and demographic indicators in maps and reports. EJScreen users choose a geographic area or location,

prove that [DEQ's] ... environmental justice analysis failed to adequately assess environmental justice concerns[;]"and (2) a newly-obtained affidavit from Kimberly Terrell, Ph.D, Director of Community Outreach at the Tulane Law Clinic, who serves as a staff scientist, which Ms. Alexander claimed established that the "environmental justice analysis of trends in permitted emissions in St. James Parish was irregular, improper, and flawed." Ms. Alexander alleged that DEQ, in rendering its permitting decisions, relied on outdated EJScreen data, even though updated EJScreen data was readily available to DEQ prior to its permitting decision. Ms. Alexander further alleged that the updated EJScreen data presented a much different picture of the health risks borne by the nearby community of Welcome. Therefore, Ms. Alexander requested that the district court, in considering the petition for judicial review, "take judicial notice" of the EJScreen data and admit Dr. Terrell's affidavit as proof of a procedural irregularity in DEQ's environmental justice analysis.

On November 18, 2020, the district court heard argument on Ms. Alexander's motion. The administrative record from the DEQ was not offered into evidence at the hearing on the motion; rather, the only evidence offered was the two additional exhibits submitted by Ms. Alexander, which were outside of DEQ's administrative record. Following argument of counsel regarding the merits of Ms. Alexander's motion, the district court deferred ruling on the motion. The district court then remanded the matter to DEQ for a more thorough environmental justice analysis, which included additional evidence, *i.e.*, the updated EJScreen data, for reconsideration of its environmental justice analysis, and to allow for a second public comment period. An interlocutory judgment in accordance with the district court's ruling in this regard was signed on December 14, 2020.

then the tool provides the demographic and environmental information used in that area. See <https://www.epa.gov/ejscreen>.

In response to that interlocutory judgment, both DEQ and Formosa filed applications for supervisory writ with this Court. The writ applications were consolidated, and thereafter, this Court granted the supervisory writ, reversed the judgment of the district court, and remanded the matter to the district court for further proceedings. See Rise St. James, Louisiana Bucket Brigade, Sierra Club, Center for Biological Diversity, Healthy Gulf, Earth Works, and No Waste Louisiana v. Louisiana Department of Environmental Quality, 2021-0032 and 2021-0037 (La. App. 1st Cir. 3/15/21) (*unpublished writ action*), 2021 WL 961098. In doing so, this Court found “that the district court exceeded the statutory authority ... because, in addition to instructing DEQ to consider the additional evidence, the district court also ordered DEQ to provide ‘a more thorough environmental justice analysis,’ ‘publicly notice and receive public comment on pollution and health risks ... in its reconsideration of the environmental justice analysis,’ and ‘evaluate the facts and data received in the public comments ... in its reconsideration of the environmental justice analysis.’” *Id.*

On remand, Ms. Alexander then filed a “Supplemental and Amending Motion for Judicial Notice of Adjudicative Facts and to Admit Proof of Procedural Irregularities.” In this supplemental motion, Ms. Alexander removed her request to introduce the affidavit of Dr. Terrell, and she added a request that pursuant to La. R.S. 30:2050.21(E), the district court order that additional information be taken before DEQ, *i.e.*, the updated EJScreen data for the community of Welcome, and that DEQ then be ordered to file that information with the district court, along with any modifications DEQ may make in its findings and decision by reason of the updated information. The district court granted the motion as it pertained to La. R.S. 30:2050.21(E), but deferred ruling on the issues of judicial notice of adjudicative facts and to admit proof of procedural irregularities. An interlocutory judgment in accordance with the district court’s ruling was signed on June 8, 2021.

Pursuant to the June 8, 2021 interlocutory judgment, DEQ filed the updated EJSscreen data for the community of Welcome in the administrative record with the district court, along with its updated findings and updated responses to the original public comments after consideration of that new information. In addition, DEQ issued a Supplement to the Basis for Decision in regards to environmental justice/civil rights Title VI issues. Therein, DEQ determined that the updated data did not materially change the results of the impact of the proposed complex on human health and environment, and therefore, reaffirmed its determination that the social and economic benefits of the proposed project would greatly outweigh its adverse environmental impacts.

After all briefs on the matter were submitted, the district court heard oral argument on the petition for judicial review on March 14, 2022.²⁴ On September 8, 2022, the district court signed a judgment reversing DEQ's decision to issue all fifteen permits and further vacating said permits. On that same date, the district court issued extensive written reasons for judgment.²⁵ Both DEQ and Formosa have appealed the September 8, 2022 judgment.

²⁴ At the conclusion of the hearing, the district court ordered all of the parties to submit proposed written reasons for judgment and a proposed judgment in Microsoft Word format. It is undisputed that the district court subsequently adopted, almost verbatim, both the written reasons for judgment and the judgment submitted by the plaintiffs.

²⁵ In the district court's reasons for judgment, it determined that: (1) DEQ's decision to issue the PSD permit was in violation of the Clean Air Act and implementing regulations because the record showed that Formosa's emissions could cause or contribute to violations of NAAQS and increments; (2) DEQ's conclusion that Formosa's emissions of PM_{2.5} and NO₂, together with emissions of these pollutants from other sources would not allow for air quality impacts that could adversely affect human health or the environment was arbitrary and capricious; (3) DEQ's conclusion that Formosa's emissions of toxic air pollutants, together with those of other sources, would not allow for air quality impacts that could adversely affect human health or the environment was arbitrary and capricious; (4) DEQ's conclusion that the proposed permits had minimized or avoided potential and real adverse environmental impacts of Formosa's ethylene oxide emissions to the maximum extent possible was arbitrary and capricious and did not comply with DEQ's duty under the public trust doctrine; (5) DEQ's environmental justice analysis was arbitrary and capricious and did not comply with DEQ's duty under the public trust doctrine; (6) DEQ's failure to consider the effects of the project's emissions on the existing pollution in Welcome in its environmental justice analysis was arbitrary and capricious; (7) DEQ's finding that Welcome was not currently disproportionately affected by air pollution was arbitrary and capricious and not supported by a preponderance of the evidence; (8) DEQ's conclusion that there were no alternative sites for Formosa's proposed complex that would offer more protection to the environment than the proposed site without unduly curtailing non-environmental benefits was

II. ASSIGNMENTS OF ERROR

On appeal, DEQ challenges the district court's June 8, 2021 interlocutory judgment regarding the submission of the updated EJScreen data for the community of Welcome and the order to supplement its findings and decision after considering that information.²⁶ In addition, both DEQ and Formosa challenge the district court's September 8, 2022 final judgment, arguing that the district court erred in reversing DEQ's decision to issue the permits, in vacating the permits, and in remanding the matter to DEQ for further proceedings.

In challenging the district court's September 8, 2022 final judgment, DEQ and Formosa raise numerous assignments of error, which present two main issues for review: (1) whether DEQ's decision to issue the PSD permit was in violation of the Clean Air Act because of air modeling exceedances of NAAQS and increments for two criteria pollutants and whether DEQ's use of SILs to find that Formosa's proposed complex would not cause or contribute to those exceedances was arbitrary and capricious; and (2) whether DEQ's decision to issue the permits was in violation

arbitrary and capricious and did not comply with DEQ's duty under the public trust doctrine; (9) DEQ violated the public trust doctrine by failing to conduct a fair and rational balancing of environmental costs against the benefits of the proposed complex; and (10) DEQ violated La. R.S. 33:109.1 because it failed to consider how Formosa's complex would affect elements of St. James Parish's master land use plan.

We set forth the district court's reasons for judgment solely to elucidate the district court's thought process in reversing the decision of DEQ to issue the permits. However, those reasons for judgment are not binding on this court, as it is well-settled that appeals are taken from judgments, not reasons for judgment. *See Wooley v. Luksinger*, 2009-0571, 2009-0584, 2009-0585, 2009-0586 (La. 4/1/11), 61 So.3d 507, 572. This Court's job is to review judgments, not reasons for judgment. *See Id.* Furthermore, as detailed hereinbelow, when this Court reviews the judgment of the district court in cases such as this, no deference is owed to the findings or conclusions of the district court; rather, this Court reviews the findings and decision of the DEQ and not that of the district court. *See Save Our Hills v. Louisiana Department of Environmental Quality*, 2018-0100 (La. App. 1st Cir. 11/5/18), 266 So.3d 916, 927, writ denied, 2019-0057 (La. 3/18/19), 267 So.3d 87.

²⁶ Although interlocutory judgments are generally not appealable unless expressly provided for by law, when an unrestricted appeal is taken from a final judgment, such as the September 8, 2022 final judgment in this case, an appellant is entitled to seek review of all adverse interlocutory judgments prejudicial to him in addition to the review of the final judgment. *Judson v. Davis*, 2004-1699 (La. App. 1st Cir. 6/29/05), 916 So.2d 1106, 1112, writ denied, 2005-1998 (La. 2/10/06), 924 So.2d 167.

of the public trust doctrine because its analyses pursuant to **Save Ourselves** of the IT issues and environmental justice were arbitrary and capricious or without sufficient weight given to environmental protection.²⁷

III. STANDARD OF REVIEW

Louisiana Revised Statutes 30:2050.21 sets forth the procedure for judicial review of a final permit decision by DEQ. It provides that an aggrieved person may devolutively appeal a final permit action to the Nineteenth Judicial District Court. La. R.S. 30:2050.21(A). Further, any party aggrieved by a final judgment or interlocutory order or ruling of the Nineteenth Judicial District Court may appeal or seek review thereof to this Court. La. R.S. 30:2050.31.

The judicial review provisions of the Louisiana Administrative Procedure Act, La. R.S. 49:978.1(F) and (G), and its standard of review are applicable to such appeals. La. R.S. 30:2050.21(F). Judicial review is conducted by the court without a jury and is confined to the record. La. R.S. 49:978.1(F). The court may affirm the decision of the agency or remand the case for further proceedings. La. R.S. 49:978.1(G). The court may reverse or modify the decision if substantial rights of the appellant have been prejudiced because the administrative findings, inferences,

²⁷ As set forth in footnote 25, the district court determined that DEQ erroneously failed to consider how the permits and Formosa's complex would affect the St. James Parish land use plan in violation of La. R.S. 33:109.1, and on appeal, both DEQ and Formosa contend that the district court erred in this regard.

Although the plaintiffs made allegations regarding the adoption of the St. James Parish land use plan and the subsequent amendment of that land use plan so as to designate the area where the Formosa facility was to be constructed as "residential growth," the plaintiffs did not specifically set forth in their "ASSIGNMENT OF ERRORS" in their petition for judicial review that DEQ failed to consider the land use plan. Nonetheless, to the extent that any of the plaintiffs' allegations in its petition for judicial review raise the issue of whether DEQ erroneously failed to consider the land use plan in issuing the permits, we note that in DEQ's Basis for Decision, it specifically found that the proposed site is "located in an area specifically designated by St. James Parish for industrial development and is adjacent to other industrial properties." Further, the St. James Parish Council resolution approving the proposed Formosa complex under the St. James Parish land use ordinance was part of the administrative record and was likewise considered by DEQ in making its decision. See footnote 17. Thus, we conclude, without further discussion, that DEQ clearly considered how the permits and Formosa's complex would affect the St. James Parish land use plan in accordance with La. R.S. 33:109.1, and that the district court erred in determining otherwise.

conclusions, or decisions are: (1) in violation of constitutional or statutory provisions; (2) in excess of the statutory authority of the agency; (3) made upon unlawful procedure; (4) affected by other error of law; (5) arbitrary or capricious or characterized by abuse of discretion or clearly unwarranted exercise of discretion; or (6) not supported and sustainable by a preponderance of evidence as determined by the reviewing court. *Id.*

When reviewing the DEQ's decision, the district court functions as an appellate court. See **Save Our Hills v. Louisiana Department of Environmental Quality**, 2018-0100 (La. App. 1st Cir. 11/5/18), 266 So.3d 916, 927, writ denied, 2019-0057 (La. 3/18/19), 267 So.3d 87. When this Court reviews the judgment of the district court, no deference is owed to the factual findings or legal conclusions of the district court. *Id.* Thus, this Court reviews the findings and decision of the DEQ and not the decision of the district court. See *Id.*

With respect to the constitutional public trust doctrine, on review, this Court should not reverse a substantive decision of DEQ on its merits unless it can be shown that the decision was arbitrary or that DEQ clearly gave insufficient weight to environmental protection in balancing the costs and benefits of the proposed action. *Id.*, **In Re Shintech**, 814 So.2d at 26. If the decision was reached procedurally, without individualized consideration and balancing of environmental factors conducted fairly and in good faith, it is the Court's responsibility to reverse. **Save Our Hills**, 266 So.3d at 927, citing **Save Ourselves, Inc.**, 452 So.2d at 1159. The test for determining whether an action was arbitrary or capricious is whether the action was taken "without reason." **Save Our Hills**, 266 So.3d at 927. This test imposes a significant limitation on judicial review. *Id.* at 934.

Moreover, a reviewing court should afford considerable weight to DEQ's construction and interpretation of the statutory scheme that it is entrusted to administer, and deference must be awarded to its administrative interpretations. See

Dow Chem. Co., 885 So.2d at 9; **Matter of Recovery I, Inc.**, 93-0441 (La. App. 1st Cir. 4/8/94), 635 So.2d 690, 696, writ denied, 94-1232 (La. 7/1/94), 639 So.2d 1169.

This same standard must also be afforded to DEQ regarding the construction and interpretation of the rules and regulations under its authority and that it promulgates.

Matter of Recovery, 635 So.2d at 696. Thus, DEQ's interpretations should stand unless they are arbitrary, capricious, or manifestly contrary to its rules and regulations. *Id.*

IV. DISCUSSION

A. Updated EJScreen Data and the Supplementation of DEQ's Findings and Decision

As set forth above, in Ms. Alexander's "Supplemental and Amending Motion for Judicial Notice of Adjudicative Facts and to Admit Proof of Procedural Irregularities," she requested, in part, that the district court order that additional information be taken before DEQ, *i.e.*, the updated EJScreen data, and that it then be filed with the district court, along with any modifications DEQ may make in its findings and decision by reason of that information. The district court granted that part of the motion, and DEQ complied with the district courts' order, and supplemented its decision. DEQ contends that the district court's ruling in this regard was erroneous and that this Court should disregard the updated EJScreen data, as well as DEQ's supplemental decision addressing that information.

Louisiana Revised Statutes 30:2050.21(E)²⁸ provides:

If, before the date set for [judicial review] hearing, application is made to the court for leave to present additional information, and it is shown to the satisfaction of the court that the additional information is material and that there was good cause for failure to present it in the proceedings before [DEQ], the court may order that the additional information be taken before the [DEQ] upon conditions determined by the court. [DEQ] may modify its findings and decision by reason of the additional information and shall file that information and any modifications, new findings, or decisions with the reviewing court.

²⁸ See also La. R.S. 49:978.1(E).

Thus, under this statute, Ms. Alexander had to establish that: 1) the additional information, *i.e.* the updated EJScreen data, was material, and 2) there was good cause for failing to present it in the DEQ proceedings.²⁹ See In re Belle Co., L.L.C., 2000-0504 (La. App. 1st Cir. 6/27/01), 809 So.2d 225, 237 (providing that if the district court is satisfied that the additional evidence is material and that there was good cause for failing to present it at the proceedings before DEQ, remand is necessary to allow DEQ the opportunity to consider the evidence).

Furthermore, La. R.S. 30:2014.3(C) provides:

No evidence shall be admissible by any party to an administrative or judicial proceeding to review the secretary's decision on the application that was not submitted to the department prior to issuance of a final decision or made a part of the administrative record for the application, unless good cause is shown for the failure to submit it. No issues shall be raised by any party that were not submitted to the department prior to issuance of a final decision or made a part of the administrative record for the application unless good cause is shown for the failure to submit them. *Good cause includes the case where the party seeking to raise new issues or introduce new evidence shows that it could not reasonably have ascertained the issues or made the evidence available within the time established for public comment by the department, or that it could not have reasonably anticipated the relevance or materiality of the evidence or issues sought to be introduced.* (Emphasis added).

Ms. Alexander argued in her motion that the updated EJScreen data was “material because it tend[ed] to prove that [DEQ’s] procedure in conducting its environmental justice analysis failed to adequately assess environmental justice concerns, which [were] at issue in [the] judicial review.” She further argued that the updated EJScreen data was material because it showed “that [DEQ] relied in part on the outdated version of the EJScreen” data as justification for its permit decision in concluding “that ‘residents of the community closest to the Formosa complex [did] *not* bear a disproportionate share of the negative environmental consequences

²⁹ We recognize that under La. R.S. 30:2050.21(E), the application made to the court for leave to present additional information must be made before the date set for a hearing on the petition for judicial review. In this case, there is no dispute that Ms. Alexander’s request was made before the date set for the hearing.

resulting from industrial operations’ because that EJScreen [data] reflected that the cancer risk in [that] community ... was on par with state averages.” Ms. Alexander further argued that the 2019 EJScreen data “shows [that] rather than being on par with state averages for cancer risks,” the residents of the community closest to the proposed Formosa complex (Welcome) “suffer[] from cancer risks at the *eighty-sixth percentile*.”

In opposition to this motion, Formosa asserted that DEQ did not seek out and rely on the EJScreen data for its permitting decision; rather, it simply responded to the plaintiffs’ public comments (as it was required to do) in which the plaintiffs relied upon the EJScreen data to support their arguments. Further, Formosa noted that, as pointed out by the EPA’s own EJScreen guidance and DEQ’s decision, the EJScreen data, should not be used “(1) as a means to identify or label an area as an ‘[environmental justice] community’; (2) to quantify specific risk values for a selected area; (3) to measure cumulative impacts of multiple environmental factors; and or (4) as a basis for agency decision-making or making a determination regarding the existence or absence of [environmental justice] concerns.” Similarly, DEQ maintained that the EJScreen data was not a detailed risk analysis, but a screening tool that examines some, but not all, of the relevant issues related to environmental justice.

With regard to whether Ms. Alexander had good cause for failing to present the updated EJScreen data in the proceedings before DEQ, Ms. Alexander pointed out that the updated EJScreen data was not available to the public until November 2019, after the public hearing and the close of the public comment period, but prior to DEQ’s decision to issue the fifteen permits on January 6, 2020. Ms. Alexander also explained that she could not have known that DEQ would rely on outdated EJScreen data until after DEQ issued its final permit decision on January 6, 2020, wherein it detailed its reliance on such outdated data in its decision.

Both Formosa and DEQ claimed that Ms. Alexander’s arguments concerning good cause were without merit, noting that DEQ continued to receive and respond to substantive public comments well after the close of the public comment period, but before its decision to issue the permits, and that Ms. Alexander could have submitted the updated EJScreen data to DEQ after the close of the public comment period and DEQ would have responded to that information.

In granting Ms. Alexander’s motion, the district court specifically found that the information contained in the 2019 EJScreen data was material and that Ms. Alexander had good cause for not presenting that information in the proceedings before DEQ. Considering the district court’s vast discretion in deciding whether a matter should be remanded to an agency to consider additional information, we cannot say that the district court abused its discretion in determining that the updated EJScreen data was material and that Ms. Alexander had good cause for not presenting it in the proceedings before the DEQ. Therefore, the district court was required to remand the matter to DEQ to afford it an opportunity to consider the information contained in the 2019 EJScreen data. See In re Belle, 809 So.2d at 237.

A review of DEQ’s decision herein—both its Basis for Decision and Public Comments Response Summary—indicates that DEQ *did not rely on any EJScreen data in making its permit decision* due to the limitations on that information set out by the EPA. However, DEQ did set forth in its Basis for Decision that the “[EJScreen] data shows that residents of the community closest to the [proposed Formosa] [c]omplex do *not* bear a disproportionate share of the negative environmental consequences resulting from industrial operations” and that “EPA’s own [EJScreen] data shows that the environmental indicators of Particulate Matter, Ozone, [National Air Toxics Assessment (“NATA”)] Air Toxics Cancer Risk, and NATA Respiratory Hazard Index are comparable with or less than state averages.” Given DEQ’s limited use or reference to the EJScreen data in its Basis for Decision,

as well as Ms. Alexander's contention that the data in that regard had changed, we cannot say that the district court abused its vast discretion in granting Ms. Alexander's motion, remanding the matter to DEQ for the purpose of taking the updated EJScreen data for the community of Welcome, ordering the supplementation of the administrative record with that information, and filing that information, along with any modifications, new findings, or decision by DEQ, with the district court.

B. Whether DEQ's Decision to Issue the PSD Permit Violated the Clean Air Act

The plaintiffs and Ms. Alexander contend that DEQ's decision to issue the PSD permit was in violation of the Clean Air Act because Formosa failed to demonstrate that the emissions from the proposed complex would not cause or contribute to air pollution in violation of the NAAQS or an increment, as there were modeled exceedances of the NAAQS for two criteria pollutants and further, that DEQ's use of SILs to find that Formosa was not responsible for those contributions was arbitrary and capricious.

As previously detailed, under the Clean Air Act and DEQ's implementing regulations of the PSD program, in order to obtain a PSD permit, a proposed facility (or applicant for a PSD permit) must demonstrate, among other things, that new emissions from the proposed project "will not cause or contribute" to air pollution in excess of any NAAQS or increment. 42 U.S.C. §7475(a)(3); LAC 33:III.509.K. To determine whether this standard has been met, DEQ requires that a permit application contain an analysis of the ambient air based on EPA's air modeling requirements, which analysis shall be based on the applicable air quality models, databases, and other requirements specified in Appendix W of 40 C.F.R. Part 51. LAC 33:III.509.L and M.

In accordance with these provisions, Formosa conducted extensive air modeling; it performed a preliminary impact analysis, a full impact analysis, and

detailed refined modeling. In Formosa's preliminary impact analysis, it modeled its own emissions and compared them to the relevant SILs; for pollutants above their respective SILs, Formosa then conducted a full-impact analysis to predict the ambient concentrations for comparison to the NAAQS. As part of the full impact analysis, Formosa modeled its own emissions, as well as emissions from off-property sources within the area and added ambient background concentrations. Based on the full impact analysis, there were predicted exceedances of the NAAQS at off-site receptor locations for two pollutants: PM_{2.5} (24-hour standard) and NO₂ (1-hour standard). To further analyze these two pollutants, Formosa conducted detailed, refined modeling.

The detailed, refined modeling was done for all receptors that had a predicted exceedance of the NAAQS, and in each case, the results of the modeling demonstrated that the predicted impacts from the emissions attributable to Formosa were below the respective SIL at each receptor. Because the predicted concentration at each such receptor was less than the relevant SIL, Formosa demonstrated that its emissions would not "cause or contribute to" an exceedance of the NAAQS or increment at any off-site receptor.

In DEQ's Basis for Decision, it noted that the "[m]odeling results indicate that PM_{2.5} and NO₂ concentrations *may* exceed the 24-hour PM_{2.5} and 1-hour NO₂ NAAQS." DEQ further noted that "[c]onsistent with 40 C.F.R. [§]51.165(b)(2), a major source shall not be considered to cause or contribute to a violation of a NAAQS unless such source would, at a minimum, exceed a significance level (*i.e.* a SIL) at a locality that does not or would not meet the applicable standard." See also SILs guidance document. DEQ further noted that Formosa's maximum contribution to any modeled exceedance of the PM_{2.5} NAAQS was 0.89 µg/m³, which was below the SIL of 1.2 µg/m³, and its maximum contribution to any modeled exceedance of the NO₂ NAAQS would be 6.35 µg/m³, which was below

the SIL of 7.5 $\mu\text{g}/\text{m}^3$. These conclusions are supported by the administrative record. Thus, DEQ concluded that Formosa “will not ‘cause or contribute’ to a violation of the 24-hour $\text{PM}_{2.5}$ or 1-hour NO_2 NAAQS.”

Further, with regard to the modeled exceedances, in DEQ’s Basis for Decision, DEQ recognized that the maximum modeled concentrations of $\text{PM}_{2.5}$ and NO_2 exceeded their respective 24-hour and 1-hour NAAQS. However, DEQ pointed out that this did “not necessarily mean that there are or will be actual exceedances of these standards” and that “[t]o derive maximum ground level concentrations for the 24-hour and 1-hour standards, [Formosa] modeled the maximum permitted hourly rate of all sources within the modeling domain.” Thus, DEQ recognized that the modeling “results effectively assume worst-case emissions from multiple industrial facilities will coincide with worst-case meteorological conditions, a circumstance that is improbable at best and, given the number of sources modeled, likely never to occur.” DEQ then noted that nevertheless, given those “extremely conservative inputs,” receptors for the modeled exceedances were not located on residential property, property that was generally accessible to the public, or any other location where long-term exposure to emissions could reasonably be anticipated.” Thus, DEQ determined that “the health of those living in the vicinity of the [Formosa] [c]omplex [would] not be adversely impacted,” that “the modeled exceedances exist[ed] irrespective of the [proposed Formosa] [c]omplex,” and that [the proposed Formosa] [c]omplex’s contributions to these exceedances will be insignificant.”

In further justification on this issue, DEQ referred to its Public Comments Response Summary, response to comment number 1. Therein, DEQ again noted that consistent with 40 C.F.R. §51.165(b)(2), a major source shall not be considered to cause or contribute to a violation of a NAAQS unless such source would, at a minimum, exceed a SIL at a locality that does not or would not meet the applicable

standard. DEQ explained that it used the SIL values recommended by EPA in implementing its PSD program. LAC 33:III.509. For PM_{2.5}, these values are 0.2 µg/m³ for the annual standard and 1.2 µg/m³ for the 24-hour standard.³⁰ For NO₂, these values are 1.0 µg/m³ for the annual standard and 7.5 µg/m³ for the 1-hour.³¹

DEQ recognized that the maximum modeled concentrations of NO₂ and PM_{2.5} exceeded their respective 1-hour and 24-hour NAAQS (and the 24-hour PM_{2.5} increment). However, it also noted that the modeling predicted that Formosa's maximum contribution to the modeled exceedance of the 24-hour PM_{2.5} NAAQS would be 0.89 µg/m³ (including secondary formation), which was below the SIL of 1.2 µg/m³; the 24-hour PM_{2.5} increment would be 0.67 µg/m³, which was below the SIL of 1.2 µg/m³; and the 1-hour NO₂ NAAQS would be 6.35 µg/m³, which was below the SIL of 7.5 µg/m³. Thus, DEQ concluded that Formosa would not "cause or contribute" to a violation of the 24-hour PM_{2.5} NAAQS, the 1-hour NO₂ NAAQS, or the 24-hour PM_{2.5} increment.

The plaintiffs and Ms. Alexander claim that the mere existence of a modeled exceedance violates the Clean Air Act, pointing to the results of the full-impact analysis in which there were predicted exceedances of the NAAQS for PM_{2.5} and NO₂. However, based on our review of the law and implementing regulations, we disagree. The existence of a predicted modeled exceedance is merely one step in the modeling process. If an exceedance is predicted by the model, additional analysis is required, and the applicant must determine the proposed project's contribution to the potential exceedance, as set forth in the applicable air quality modeling procedures. Formosa did so by performing the detailed refined modeling discussed above,

³⁰ See SILs guidance document; 40 C.F.R. §51.165(b)(2).

³¹ See 40 C.F.R. §51.165(b)(2); <https://www.epa.gov/sites/production/files/2015-07/documents/appwno2.pdf>.

thereby demonstrating that the modeled exceedances were not caused by Formosa, but rather, “are caused by off property sources.”

The plaintiffs and Ms. Alexander also claim that DEQ’s use of SILs to determine that Formosa did not “cause or contribute” to the NAAQS or increment exceedance is arbitrary and capricious and violates the Clean Air Act. However, we find DEQ’s use of SILs in the PSD program is supported by its interpretation of the Clean Air Act itself, case law interpreting the Clean Air Act, and the regulations and guidance promulgated or issued by the EPA pursuant to the Clean Air Act. Thus, DEQ had a reasonable basis for incorporating the use of SILs in its PSD program, and its use of SILs is neither erroneous nor arbitrary and capricious.

The Clean Air Act specifically provides that, with respect to the PSD program, “each applicable [state] implementation plan shall contain emission limitations and such other measures as may be necessary ... to prevent **significant** deterioration of air quality” in attainment areas. 42 U.S.C. §7471 (emphasis added). Furthermore, courts have recognized that the PSD program of the Clean Air Act “by its title and by its terms, is designed to prevent **significant** deterioration of air quality.” **Alabama Power Company v. Costle**, 636 F.2d 323, 361 (D.C. Cir. 1979) (emphasis added).

Further, the concepts of significant, significance levels, and SILs are specifically incorporated by regulation into the PSD program. Pursuant to 40 C.F.R. §51.165(b)(2), a “major source ... will be considered to cause or contribute to a violation of a [NAAQS] when such source ... would, at a minimum, exceed the following **significance levels**” set out in the included table. (Emphasis added). Both PM_{2.5} and NO₂ are included in that table. Thus, by federally promulgated regulation, the EPA has determined that SILs are an integral part of the demonstration as to whether a source will cause or contribute to a predicted modeled exceedance.

Furthermore, the EPA has also stated that its “longstanding policy” is to allow the use of SILs “to determine whether a ... source will cause or contribute to a violation of the [NAAQS] or PSD increments.”³² In addition, as noted by DEQ in its Public Comment Response Summary, response to comment number 1, the EPA has issued several guidance memoranda confirming its longstanding policy that SILs may be used as a method to demonstrate whether a proposed project causes or contributes to a predicted modeled exceedance. In one document, entitled “Legal Memorandum: Application of Significant Impact Levels in the Air Quality Demonstration for Prevention of Significant Deterioration Permitting under the Clean Air Act,”³³ it states that “a permitting authority is not required to conclude that any level of ambient impact from a source located in an attainment area automatically ‘causes or contributes’ to a violation.” It further concludes that “[w]here SIL values developed by EPA are used to show that a source does not cause or contribute to a violation, [the] permit-specific record can incorporate the information and technical analysis provided by the EPA to show that a source with a projected impact below the relevant SIL value will not cause or contribute to a violation of the NAAQS or PSD increment.” Further, the SILs guidance document provides a straightforward explanation for EPA’s use of SILs values:

Where a cumulative impact analysis predicts a NAAQS violation, the permitting authority may further evaluate whether the proposed source will cause or contribute to the violation by comparing the proposed source’s modeled contribution to that violation to the corresponding SIL value. If the modeled impact is below the recommended SIL value at the violating receptor during the violation, the EPA believes this will be sufficient in most cases for a permitting authority to conclude that the source does not cause or contribute to (is not culpable for) the predicted violation. This demonstration would, thus, allow the permit to be issued if all other PSD requirements are satisfied.

* * *

³² <https://www.epa.gov/sites/production/files/2015-07/documents/levels.pdf>

³³ https://www.epa.gov/sites/default/files/2018-04/documents/legal_memorandum_final_4-17-18.pdf

[T]he PSD increment SILs recommended above may be used to determine if the proposed source will cause or contribute to that exceedance. If the cumulative impact analysis shows an annual average PM_{2.5} PSD increment exceedance or a 24-hour PSD increment exceedance at a location, the comparison of the proposed source's impact at that location during the exceedance to the corresponding SIL value may be used to determine whether the proposed source will cause or contribute to the exceedance(s) at that receptor. If the modeled impact is below the SILs for the relevant pollutant, then the permitting authority may conclude that the source does not cause or contribute to a violation of the PSD increment for that pollutant.

Notably, DEQ specifically incorporated these legal memoranda from EPA into the administrative/permit record as justification for the use of EPA's recommended SILS in its PSD program.

The EPA and thus, the DEQ, have consistently interpreted the phrase "cause or contribute" to incorporate the use of SILs. As previously set forth, a reviewing court should afford considerable weight to DEQ's construction and interpretation of the statutory scheme that it was entrusted to administer, and deference must be awarded to its administrative interpretations; this same standard must also be afforded to DEQ regarding the construction and interpretation of the rules and regulations under its authority and that it promulgates. See Dow Chem. Co., 885 So.2d at 9; **Matter of Recovery**, 635 So.2d at 696. Given the considerable weight afforded to DEQ in its interpretation of "cause or contribute" to include the use of SILs, we cannot say that DEQ's decision to issue the permits was in violation of the Clean Air Act or that its use of SILs to determine that Formosa would not violate a NAAQS or increment or "cause or contribute to" any modeled exceedance was arbitrary and capricious.

C. Whether DEQ's Decision to Issue the Permits Violated the Public Trust Doctrine

1. DEQ's Analysis of the IT Issues

a. Whether There Are Alternative Projects Or Alternative Sites Or Mitigating Measures That Would Offer More Protection To the Environment Than The Proposed Project Without Unduly Curtailing Non-Environmental Benefits To The Extent Applicable

In its Basis for Decision, DEQ noted that the issues of whether there were alternative sites, alternative projects, and mitigating measures were closely interrelated and overlapped, and although it separately addressed each issue, because of this interrelationship, it adopted any and all of its findings on all three issues under each specific issue addressed. In addition, DEQ also noted that the issue of avoidance of adverse environmental effects was also interrelated to those issues and had been considered in relation to those facts.

i. Alternative Sites

In the alternative sites analysis, DEQ noted that Formosa had identified a number of undeveloped properties potentially suitable for its proposed complex, and that it considered the following environmental and logistical factors relevant to its site selection process: attainment status with respect to criteria pollutants; access to an adequate dock on the Mississippi River or a location suitable for the construction of a new dock; access to rail transportation; access or proximity to ethylene, ethane, and natural gas pipelines; access to 230-kilovolt electrical transmission lines; the amount of jurisdictional wetlands or waters on the property; the amount and location of land on the property within the 100-year floodplain; proximity of the property to residences; and amount of acreage available, with 800 acres being the minimum necessary.

Initially, Formosa identified six properties as meriting consideration for the facility, and it ultimately selected what it referred to as the “Zeringue/St. Emma site.” However, that site had to be eliminated because there was no dock and the New Orleans-Baton Rouge Steamship Pilots Association would not approve construction of a dock due to its location by a bend in the river that would make negotiating the bend unacceptably dangerous.

After this site was dismissed, Formosa identified additional prospective sites for the proposed complex from the remaining properties, as well as eight newly identified properties. These properties were located in Ascension Parish, St. James Parish, and St. John the Baptist Parish. To evaluate these thirteen sites, a two-tiered process was utilized, with the sole consideration being the attainment status of the parish. At the time, Ascension Parish was anticipated to be designated as “nonattainment” with respect to the 8-hour NAAQS for ozone based on the recommendation of DEQ; thus, Formosa eliminated the five properties in Ascension Parish, because the requirement to offset NO_x and VOC emissions under the nonattainment new source review provisions would have effectively precluded construction of the complex. See LAC 33:III.504.

With regard to the remaining eight properties, six were noted to have residents in very close proximity and three of the properties were noted to be small and/or narrow, making an expansive facility difficult. Two sites—Winchester/Acadia and Minnie—were then identified as having more positive and fewer negative characteristics. As a result, the Winchester/Acadia site, with as much of Minnie as could be obtained, was identified as the location that best met its criteria. These properties became known as the Mosaic-Gavilon site, which is where Formosa proposes to build the complex.

DEQ pointed out that this site was located in an attainment area with respect to all NAAQS; provided riverfront access for the construction of a dock that would not obstruct navigation; was traversed by Union Pacific Railroad, 230-kilovolt electrical transmission lines, and ethane and natural gas pipelines; contained a minimal amount of jurisdictional wetlands or waters on the portion of the property on which the facility would be constructed; was mostly located outside of the 100-year floodplain; was over a mile from the nearest community on the west side of the river and more than 0.5 miles from the nearest residence on the east side of the river,

and further that this site had the lowest population density within one mile of each prospective location; was sufficiently sized to allow for at least a 300-foot buffer between process equipment and the property boundary; and was located in an area specifically designated by St. James Parish for industrial development and was adjacent to other industrial properties.

DEQ also noted that, although the Mosaic-Gavilon site had never been the location of an industrial facility, there had been ongoing activities (sugar cane productions and oil and gas production) that resulted in several areas with low levels of contamination. After environmental sampling and analyses of these locations by Formosa, DEQ concluded that the low levels of contamination did not pose a risk to human health or the environment. Thus, based on all of this information, DEQ found that there were no alternative sites that would offer more protection to the environment than the proposed site without unduly curtailing non-environmental benefits.

The plaintiffs and Ms. Alexander maintain that DEQ's analysis of alternative sites was arbitrary and capricious because of the elimination of the five locations in Ascension Parish. We disagree. As noted by DEQ in its Basis for Decision, Ascension Parish was anticipated to be classified in nonattainment status, based on DEQ's recommendation, during site selection. In order to construct a facility in a nonattainment area, Formosa, as a major stationary source, would have had to purchase emission reduction credits. See LAC 33:III.504; LAC 33:III.Chapter 6. As the requisite number of emission reduction credits were not available, construction of the complex would have been effectively precluded. Thus, DEQ had a reason, supported by the administrative record, to find that the five sites in Ascension Parish were not feasible alternative sites for the proposed Formosa complex, and we further, we cannot say that DEQ's analysis of whether there were

alternative sites that would offer more protection to the environment than the proposed project was arbitrary and capricious.

ii. Alternative Projects

Next, with regard to alternative projects, DEQ's analysis of this issue was not challenged by the plaintiffs or by Ms. Alexander. However, as this issue must be addressed by DEQ in a complete and thorough analysis of the IT issues, we note that DEQ concluded that the project, as proposed, offered more protection to the environment than any other possible alternatives without unduly curtailing non-environmental benefits and recognized that selection of the most environmentally sound projects usually also serves as a mitigating measure because the two considerations overlap. DEQ also noted that the proposed complex would utilize state-of-the-art technology; be constructed to meet the latest, and therefore most protective technological standards; and employ advanced emissions abatement technology and monitoring equipment to ensure emissions were compliant with permitted limits.

DEQ also stated that it considered the "no build" alternative and an alternative that entailed approval of less capacity. However, DEQ concluded that because it had determined that the proposed permits minimized or avoided potential and real adverse environmental impacts to the maximum extent possible and that the social and economic benefits of the proposed Formosa complex outweighed its adverse environmental impacts, those two alternatives would only serve to eliminate or minimize the social and economic benefits stemming from the proposed project. Thus, those alternatives were discounted. From our review of the administrative record and DEQ's Basis for Decision, DEQ's analysis of whether there were alternative projects that would offer more protection to the environment than the proposed project was not arbitrary and capricious.

iii. Mitigating Measures

With regard to DEQ's analysis of mitigating measures, DEQ noted that the Title V/Part 70 operating permits required that Formosa meet or exceed the requirements of all applicable federal emission standards promulgated pursuant to the Clean Air Act and the state emission standards promulgated pursuant to the Louisiana Environmental Quality Act. DEQ further noted that Formosa would be subject to a host of comprehensive emission standards and performance testing, monitoring, recordkeeping, and reporting requirements covering every facet of its operations. DEQ explained that these provisions mandate that hazardous air pollutants be controlled using MACT and then set forth a list of the federal regulations that would be applicable to the complex. DEQ further explained that because the facility would be a major stationary source under the PSD program, emissions of PM₁₀, PM_{2.5}, SO₂, NO_x, CO, VOC and greenhouse gases must be controlled by BACT, which establish additional standards and control requirements, and further, listed specific, additional testing and monitoring provisions being imposed on Formosa by DEQ in order to assure compliance with the terms and conditions of the permits.

As to emission limits and as previously discussed, DEQ found that the emission limits set forth for the criteria pollutants and the toxic air pollutants from the Formosa complex would not cause or contribute to a violation of a NAAQS or AAS under the air modeling performed; therefore, "the permits [did] not allow for air quality impacts that could adversely affect human health or the environment." Also, as previously discussed, DEQ addressed the modeled exceedances, noting that those modeled exceedances exist irrespective of the complex and that Formosa's contribution to those exceedances would be insignificant.

Next, although the permitted emission limit for ethylene oxide³⁴ (annual) of 0.41 $\mu\text{g}/\text{m}^3$, was below the AAS of 1.00 $\mu\text{g}/\text{m}^3$, DEQ specifically addressed the impacts of Formosa's ethylene oxide emissions. In doing so, DEQ noted that the EPA's 2014 NATA posits that ethylene oxide significantly contributes to *potential* elevated risks for some types of cancers, including cancers of the white blood cells (such as non-Hodgkin's lymphoma, myeloma, and lymphocytic leukemia) and breast cancer in females and that the concentration of ethylene oxide associated with a 1-in-10,000 cancer risk for a lifetime of continuous exposure was 0.02 $\mu\text{g}/\text{m}^3$. However, DEQ found that recent data published from the Louisiana Tumor Registry did not support that supposition, and after reviewing the data for the census tracts in which the largest emitters of ethylene oxide in the state were located, there was no evidence that cancer rates in those census tracts were elevated as a consequence of exposure to ethylene oxide emissions, and that the average rates for all cancers combined and for breast cancer in those areas were *below* state averages. DEQ also explained that research conducted by other entities, including the Texas Commission on Environmental Quality ("TCEQ"), demonstrated that the EPA's risk assessment for ethylene oxide significantly over-predicted the number of cancers that were observed in a study used to derive the 0.02 $\mu\text{g}/\text{m}^3$ value, and TCEQ, after evaluating the same data, recommended the use of 7 $\mu\text{g}/\text{m}^3$, which corresponded to a 1-in-100,000 (not 1-in-10,000) cancer risk, as a protective ambient air threshold for permitting purposes.

Nevertheless, DEQ found that the residential areas to the east and northeast of the complex were "well beyond the 0.02 $\mu\text{g}/\text{m}^3$ isopleth (red line) [and] [t]hus, even if one were to conservatively employ the 0.02 $\mu\text{g}/\text{m}^3$ as a protective standard, [those] areas would not be adversely impacted." Furthermore, DEQ explained that

³⁴ As previously noted, ethylene oxide is a toxic air pollutant.

notwithstanding the protections already provided by the Title V/Part 70 permits and that the two ethylene glycol plants in the complex would be subject to one of the most stringent federal leak detection and repair programs promulgated to date by the EPA, it established specific, more stringent requirements for the components in ethylene oxide service and was requiring Formosa to continuously monitor ambient concentrations of ethylene oxide.

With regard to ambient air monitoring, DEQ was requiring Formosa to conduct air quality monitoring along its eastern property boundary and a section of its northeastern property boundary for three toxic air pollutants—1,3 butadiene, vinyl acetate, and ethylene oxide—and to install a sufficient number of monitors to provide data on air emissions potentially impacting the surrounding community.

In its mitigating measures analysis, DEQ also addressed greenhouse gas emissions and found the following to be relevant: (1) the permits require BACT for greenhouse gas emissions from the Formosa complex, which requires Formosa to minimize such emissions by employing design features that maximize efficiency, by employing proper combustion techniques to minimize fuel use, and by using no carbon fuel where available; (2) there is no current methodology or guidance to determine how a specific industrial facility's incremental contribution of greenhouse gases would translate into physical effects on the global environment; (3) exposure to greenhouse gases does not adversely affect human health; (4) unlike most traditional air pollutants, greenhouse gases become well mixed throughout the global atmosphere such that the long-term distribution of greenhouse gases is not dependent on local emission sources—rather it tends to be uniform around the world—and as a result of this global mixing, greenhouse gases emitted anywhere in the world affect climate everywhere in the world;³⁵ and (5) the Formosa complex will employ state-

³⁵ DEQ further noted that it was for this reason the “no build” alternative (in the alternative projects analysis) fails, because construction of the Formosa complex in St. James Parish would, in effect, have no more impact on Louisiana relative to greenhouse gases than if the facility was constructed

of-the-art technology that will ostensibly result in less consumption of natural gas per unit of product produced than existing facilities that manufacture the same chemicals that the Formosa complex will manufacture, and thus, should any product produced at the Formosa complex displace its production elsewhere, net greenhouse gas emissions may actually decrease.³⁶

Based on all of these considerations, DEQ concluded that there were no mitigating measures that would offer more protection to the environment than the facility as proposed, without unduly curtailing non-environmental benefits.

With regard to the emissions of PM_{2.5} and NO₂, ethylene oxide, toxic air pollutants, and greenhouse gases in combination with existing permitted emissions for the area, the plaintiffs and Ms. Alexander contend that DEQ's decision to issue the permits was in violation of its public trust duty and its analysis of the IT issues relating to those emissions was arbitrary and capricious because it failed to consider the impacts of those emissions. Although DEQ addressed those emissions in its analysis of mitigating measures, it specifically incorporated its discussion of air emissions in its analysis of avoidance of environmental effects. Because the issues raised by the plaintiffs and Ms. Alexander with regard to those emissions are more appropriately addressed in the analysis of avoidance of adverse environmental effects, we address them below.

b. Whether The Potential And Real Adverse Environmental Effects of the Proposed Project Have Been Avoided to the Maximum Extent Possible

elsewhere, but it would provide the social and economic benefits addressed in DEQ's cost-benefit analysis.

³⁶ In its mitigating measures analysis, DEQ also addressed impacts to Class I areas, which include national parks and other areas of special national and cultural significance, and determined that the Formosa complex would not cause or contribute to an exceedance of any Class I PSD increment or cause an unacceptable degradation of any applicable air quality related value. DEQ also addressed the establishment of a forested buffer along the eastern boundary of the complex to mitigate the visual impacts on residential areas, notwithstanding that the complex will be located over a mile from the nearest community on the west side of the Mississippi River.

In determining whether the potential and real adverse environmental impacts of pollutant emissions from the Formosa complex were minimized to the maximum extent possible, DEQ specifically addressed: wastewater, including during construction, during operations, spills, and discharge of plastic pellets; groundwater; waste; process safety, including chemical accident prevention provisions, process safety management, defensive emergency protective measures, and evacuation routes; wetlands; traffic; noise; cultural resources; and endangered species.

With regard to air emissions, DEQ adopted its discussion set forth in mitigating measures. The plaintiffs and Ms. Alexander contend that DEQ's decision to issue the permits was in violation of the public trust doctrine and its analysis of the IT issues was arbitrary and capricious because DEQ failed to consider the impacts of NO₂ and PM_{2.5} emissions, the impacts of ethylene oxide emissions, the combined impacts of toxic air pollutants, and the impacts of greenhouse gases. We disagree.

As to the emission of NO₂ and PM_{2.5} and as discussed above, DEQ properly considered those emissions in relation to the Clean Air Act and found that Formosa's emissions did not cause or contribute to the modeled exceedances, did not cause or contribute to a NAAQS exceedance or violation, and that the emissions did "not allow for air quality impacts that could adversely affect human health or the environment." The standards set forth in the Clean Air Act, including the NAAQS, are national standards that are designed to be protective of public health and the environment. See 42 U.S.C. §7409(b). DEQ's reliance on those federal standards in considering the emissions of NO₂ and PM_{2.5} is not arbitrary and capricious and does not violate DEQ's duty under the public trust doctrine.

With regard to ethylene oxide emissions, DEQ specifically considered the impact of those emissions and determined that the surrounding communities "would not be adversely effected" by Formosa's ethylene oxide emissions. This

determination was based on several findings. First, the applicable AAS, which is a risk-based regulatory standard established to be protective of human health, of 1.0 $\mu\text{g}/\text{m}^3$ will not be exceeded at any off-site location. See LAC 33:III.5112, Table 51.2. This fact alone provided a reason for DEQ's decision in this regard. Further, even assuming that the ethylene oxide cancer risk threshold of .02 $\mu\text{g}/\text{m}^3$ was the appropriate standard to consider under the public trust doctrine, the residential communities are located beyond the areas where the ethylene oxide levels up to this threshold are expected. As additional support and reasons for concluding that the ethylene oxide emissions from the Formosa complex would not adversely impact human health or the environment, DEQ relied on data from the Louisiana Tumor Registry regarding actual cancer incidence data for the census blocks where historical ethylene oxide emitters are located. In doing so, DEQ found that average cancer rates for all cancers combined and for breast cancer in these areas were below state averages. DEQ's reliance on the data from the Louisiana Tumor Registry, which is collected and published in accordance with state law, is not arbitrary and capricious or an abuse of discretion. See La. R.S. 40:1105.1, *et seq.*

Further, as to the amount of ethylene oxide emissions, DEQ determined that Formosa avoided ethylene oxide emissions to the maximum extent possible consistent with the public welfare. DEQ imposed MACT, and even though Formosa would be "subject to the most stringent federal ... programs," DEQ established even more stringent requirements for components in ethylene oxide service. DEQ also required Formosa to monitor ethylene oxide at the property boundaries. Thus, we cannot say that DEQ's consideration of ethylene oxide emissions violated the public trust doctrine or that its analysis of these emissions under the IT issues was arbitrary and capricious.

We also find that DEQ gave proper consideration to toxic air pollutants. Although the plaintiffs and Ms. Alexander claim that DEQ failed in its public trust

duty by not requiring Formosa to model the cumulative or combined impact of all of its toxic air pollutants, there is no such requirement in DEQ's modeling protocol. In fact, this Court previously rejected an identical argument in this regard in **In Re Louisiana Dept. of Environmental Quality Permitting Decision: Regarding State (Synthetic Minor Source) Permit No. 2560-00292-00 to Petroplex International, L.L.C.**, 2010-1194 (La. App. 1st Cir. 3/25/11), 2011 WL 1225871, *7 (unpublished) ("**In re Petroplex**"). In that case, it was argued that the permit applicant and DEQ "improperly failed to address the cumulative effects of air emissions from the proposed ... facility and releases from other surrounding industrial facilities." *Id.* The air modeling therein was based on a protocol previously approved by DEQ, and based on the air modeling results, it was determined that the proposed facility's results were lower than Louisiana's AAS for each pollutant. *Id.* Consequently, because of those results, "further modeling, including that which would have addressed the cumulative impact of the proposed emissions along with those released by other facilities operating in the area, was not required." *Id.*

In this case, there is no dispute that Formosa conducted air modeling regarding toxic air pollutants in accordance with DEQ's air modeling procedures set forth in the modeling protocol submitted and approved by DEQ. Like the proposed facility in **In Re Petroplex**, Formosa's air modeling results showed that AAS for toxic air pollutants would not be exceeded. Consequently, no additional modeling was required. Thus, we cannot say that DEQ's decision not to require Formosa to model the cumulative or combined impact of all of its toxic air pollutants was arbitrary and capricious or in violation of its duty under the public trust doctrine.

With regard to greenhouse gas emissions, DEQ's Basis for Decision reflects that it considered those emissions, as well as their impact on the environment. The DEQ permits required BACT on those emissions in the PSD permit, as well as

maximum allowable emission rates. DEQ minimized Formosa's greenhouse gas emissions to the maximum extent possible, and DEQ's determination in this regard was not arbitrary and capricious or an abuse of discretion.

c. Whether a Cost-Benefit Analysis of the Environmental Impacts Costs Balanced Against the Social and Economic Benefits of the Project Demonstrate that the Latter Outweighs the Former

In its cost-benefit balancing analysis, DEQ noted that, under **Save Ourselves**, 452 So.2d at 1157, the Louisiana Constitution requires balancing—not protection of the environment as an exclusive goal—and found that the social and economic benefits of the proposed project outweighed its potential environmental impacts. DEQ then noted, in the subsection entitled “**A. Environmental Impact Costs**” that the impacts to air quality and other media were previously discussed “in Sections VI [mitigating measures] and VII [avoidance of adverse environmental effects] above” and that those impacts had been avoided to the maximum extent possible without unduly curtailing non-environmental benefits. DEQ then addressed the numerous social and economic benefits of the proposed project. With regard to social benefits, DEQ noted the establishment of the FG Workforce Academy to provide potential job applicants with training and skills required to gain employment at the complex; transportation improvements; health screening; community improvements, including beautification of the nearby public park; and education grants. With regard to economic benefits, DEQ noted the creation of over 1,200 permanent jobs and 8,000 temporary construction-related jobs, as well as the direct economic benefits, including capital expenditures associated with the construction, revenue from the complex's operations, as well as federal, state, and local tax benefits. Accordingly, DEQ concluded that the social and economic benefits outweighed the environmental impact costs.

The plaintiffs and Ms. Alexander contend that DEQ's analysis in this regard was arbitrary and capricious and did not comply with its public trust duty because it

failed to consider the environmental impacts associated with the permitted emissions in the cost-benefit analysis. However, a review of DEQ's Basis for Decision belies this contention. As set forth above, in DEQ's Basis for Decision, it found that the social and economic benefits would outweigh the potential adverse environmental impacts, and further in the subsection entitled "**Environmental Impact Costs**" noted that impacts to air quality and other media had been discussed "in Sections VI [mitigating measures] and VII [avoidance of adverse environmental effects] above." Thus, DEQ clearly incorporated its discussion of environmental impacts from mitigating measures and avoidance of adverse environmental effects into its analysis and balancing of the costs versus benefits. DEQ then identified the specific social and economic benefits and concluded that those benefits outweighed the environmental impact costs.

As set forth in **Save Ourselves**, 452 So.2d at 1157, DEQ has a "latitude of discretion" regarding this balancing process in which "environmental costs may outweigh economic and social benefits and in other instances they may not" and that this "leaves room for a responsible exercise of discretion and may not require particular substantive results in particular problematic instances." DEQ is entitled to considerable deference in its conclusion that the social and economic benefits outweigh the environmental impact costs, and we cannot say that its analysis or conclusion in this regard was arbitrary and capricious or otherwise characterized by an abuse of discretion.

2. Environmental Justice

Lastly, the plaintiffs and Ms. Alexander claim that DEQ's decision to issue the permits to Formosa was a violation of its duty under the public trust doctrine because its environmental justice analysis was arbitrary and capricious. Specifically, they claim that DEQ failed to consider the purported disproportionate impact its

decision would have on surrounding “communities of color,” and failed to appropriately consider the EJScreen data.

In response, both DEQ and Formosa argue that there is no constitutional provision, statute, regulation, or policy mandating that DEQ conduct an environmental justice analysis in conjunction with its permitting decisions. However, we find the directives from the Louisiana Supreme Court in **Save Ourselves**, 452 So.2d at 1157, which require consideration of “economic, “social[,] and other factors,” broad enough to include an analysis of environmental justice, as defined by the EPA. See Dow Chem. Co., 885 So.2d at 15 (DEQ’s “thorough analysis, which considered [among other things] ... environmental justice/civil rights Title [VI] issues as mandated by the Louisiana Supreme Court in **Save Ourselves**” was sufficient to establish that DEQ complied with its constitutional mandate under the public trust doctrine); and **North Baton Rouge Environmental Association**, 805 So.2d at 263 (DEQ adequately responded to public comment regarding environmental justice concerns and did not violate its constitutional duty to act as trustee of the environment). See also 40 C.F.R. Part 7.

Despite DEQ’s arguments as to the necessity of an environmental justice analysis, it nonetheless specifically addressed and conducted an analysis of the environmental justice/civil rights Title VI issues raised by the proposed Formosa complex in its Basis for Decision and in the Supplement to the Basis for Decision. It also addressed environmental justice issues in its Public Comments Response Summary. Importantly, and as previously discussed, prior to addressing environmental justice/civil rights Title VI issues, DEQ made a specific finding that “emissions from the [proposed Formosa] [c]omplex will not cause or contribute to a violation of a NAAQS or AAS [;] ... [t]herefore, the permits do not allow for air quality impacts that could adversely affect human health or the environment.”

DEQ began its environmental justice/civil rights Title VI analysis by setting forth the EPA's definition of environmental justice (previously set forth) as "the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies" with "[f]air treatment" meaning that "no group of people should bear a disproportionate share of the negative environmental consequences resulting from industrial operations."

DEQ then addressed how the EPA has previously handled environmental justice issues. DEQ noted that for many years, the EPA took the position that air quality meeting the NAAQS were presumptively protective and that emissions of a pollutant meeting the NAAQS should not be viewed as "adverse" under Title VI of the Civil Rights Act. DEQ noted that, under this analysis and EPA's regulations, "to be actionable under Title VI, an impact must be both 'adverse' and 'disparate,'" and that if "EPA ha[d] determined that there [was] no 'adverse' impact for anyone living in the vicinity of a facility, it [was] unnecessary to reach the question of whether the impacts [were] 'disparate.'" DEQ then noted while that EPA's current approach to environmental justice/civil rights Title VI issues had "eliminate[d] application of the rebuttable presumption," the determination of whether there were "adverse" impacts was "still intrinsically linked to whether a given area is compliant with the NAAQS."

DEQ then specifically addressed and considered the EJScreen data. First DEQ explained that the EPA cautions that EJScreen "should *not* be used" "as a means to identify or label an area as an '[environmental justice] community,'" "to quantify specific risk values for a selected area," "to measure cumulative impacts of multiple environmental factors," or "as a basis for agency decision-making or making a determination regarding the existence or absence of [environmental justice] concerns." DEQ also explained that according to EPA, the "screening-level

results” of EJScreen “do not, by themselves, determine the existence or absence of environmental justice concerns in a given location,” “do not provide a risk assessment,” and “have other significant limitations.” DEQ then found that in this case, the EJScreen data “shows that residents of the community closest to the [proposed Formosa complex] do *not* bear a disproportionate share of the negative environmental consequences resulting from industrial operations” and that “the environmental indicators of Particulate Matter, Ozone, NATA Air Toxics Cancer Risk, and NATA Respiratory Hazard Index [were] comparable with or *less* than state averages.”

DEQ also evaluated whether the net effect of individual permitting decisions had, over time, increased the burden on the residents of St. James Parish and examined the emissions trends over the recent timeframe. In doing so DEQ found that the results had shown dramatic declines in actual emissions of criteria pollutants and toxic air pollutants, as well as declines in permitted emissions of criteria pollutants. DEQ also noted that the construction of the complex would not create a “fenceline community,” as the population density within one mile of Formosa’s property boundary was only ten people per square mile per the EJScreen data, and in fact, as the EJScreen reports the population within a one-mile radius from the center of the proposed facility to be zero.

DEQ then concluded that its analyses conducted in support of the proposed permits had shown that Formosa would meet the primary and secondary NAAQS for criteria pollutants and the Louisiana AAS for toxic air pollutants and that there were no “hot spots” over non-industrial properties that were in violation of these standards; that EPA’s own EJScreen data showed that the environmental indicators of Particulate Matter, Ozone, NATA Air Toxics Cancer Risk, and NATA Respiratory Hazard Index were comparable with or less than state averages; that actual emissions of both criteria pollutants and toxic air pollutants had decreased

dramatically over time; and that permitted emissions from major sources located near the proposed Formosa complex have also declined significantly. DEQ also noted that it provided an opportunity for all parties to be meaningfully involved in the permits process, provided a lengthy comment period and a public hearing on the proposed permits, and, as evidenced by its Public Comments Response Summary, it carefully considered the community's concerns in the decision-making process.

In addition to these determinations, DEQ specifically considered and addressed environmental justice, cancer rates in the surrounding communities, and how it affected Black and minority members in its Public Comment Response Summary—more specifically, in its responses to comments 85, 86, 87, and 126. For instance, in response to comment number 86, DEQ explained in detail that:

... data from the Louisiana Tumor Registry shows that in the so-called "Industrial Corridor," which includes the parishes of Ascension, East Baton Rouge, Iberville, St. Charles, St. James, St. John the Baptist, and West Baton Rouge, the incidence rates for all cancers combined for [W]hite women are significantly lower than the statewide rate, and the rates for all cancers combined for [W]hite men, [B]lack men, and [B]lack women do not differ significantly from Louisiana rates. Death rates for all cancers combined in the Industrial Corridor are significantly lower than those elsewhere in Louisiana among [W]hites; [B]lacks experience the same mortality rates as their counterparts statewide. [Footnote omitted]

Despite the Louisiana Tumor Registry's findings ...[it is alleged] that cancer incidence rates in St. James Parish are "significantly higher than in [the] rest of Louisiana." That is simply not the case. In fact, the cancer rates in St. James Parish were not even the highest *in* the Industrial Corridor for [B]lack men or [B]lack women, and another study even represents the cumulative cancer risk for all air toxics in the parish as "low." [Footnote omitted.]

In St. James Parish, the incidence rates for the ten most commonly diagnosed cancers in Louisiana were slightly higher (8 percent) than Louisiana averages for [B]lack women ... but markedly *lower* for [B]lack men. ... Notably, these rates were below those observed in 19 other parishes for [B]lack women and in 45 other parishes for [B]lack men, including parishes with little to no industrial activity....

In DEQ's Supplement to its Basis for Decision, wherein DEQ addressed the updated EJScreen data, DEQ noted that for the community of Welcome, "the

environmental indicators of Particulate Matter, Ozone, and NATA Respiratory Hazard Index *decreased* and remain virtually equivalent to or less than state averages.” However, it recognized that the NATA Cancer Risk for the area had increased. Further, DEQ found that “[w]hile this risk value did increase relative to the state average, this change [did] not represent a statistically significant increase in the overall cancer risk to those living in the vicinity of the [proposed Formosa] [c]omplex” because even with the increased cancer rate, “it would take a population essentially equivalent to that of St. James and St. John the Baptist Parishes combined for the increase to result in one additional case of cancer.”

DEQ also noted that the NATA Cancer Risk value “overestimates actual cancer risk” for two primary reasons. First, “EPA’s assumed exposure scenario does not reflect ‘real world’ conditions” in that it assumed continuous, 24-hours- per-day exposure to the specific concentration over 70 years, which DEQ stated was “simply not realistic.” Second, “reported emissions for chloroprene and ethylene oxide”—the compounds identified as “contributing ‘to most of the risk’[—] ... have declined significantly since 2014.” Thus, DEQ concluded that:

...the 2014 NATA [(the updated EJScreen)] data does not materially change the results of the impact of the [proposed Formosa] [c]omplex on human health and environment. The NATA Cancer Risk value is based on date emissions inventory which fails to account for the recent and substantial reductions in emissions of the compounds which EPA asserts contribute “to most of the risk” and grossly overestimates public exposure to all carcinogenic pollutants.

For these reasons, [DEQ] reaffirms that the social and economic benefits of the proposed project will greatly outweigh its adverse environmental impacts.

Based on our review of DEQ’s Basis for Decision, Supplement to the Basis for Decision, Public Comments Response Summary, and the administrative record, we cannot say that DEQ’s decision was in violation of its public trust duty or that its environmental justice analysis was arbitrary and capricious or otherwise without reason. DEQ specifically conducted an environmental justice analysis, and in doing

so, found that the permits did not allow for air quality impacts that could adversely affect human health and the environment and that those living in the vicinity of the proposed Formosa complex would not be adversely impacted. There is ample documentation in the administrative record to support DEQ's conclusion in this regard, as well as its determinations that Formosa will not cause or contribute to any NAAQS violations or increment exceedances or any exceedances of any AAS for toxic air pollutants at any off-site location and that the level of ethylene oxide above the cancer risk threshold did not extend into any residential community. Thus, DEQ's determination that there were no "adverse impacts" made it unnecessary to reach the issue of "disparate impact."

Nevertheless, even though DEQ determined there was no "adverse impact," DEQ specifically considered the impact of emissions on the nearby Black and minority communities, specifically noting that the overall emissions had significantly declined and that cancer rates were not significantly different based on data from the Louisiana Tumor Registry. Furthermore, as explained in DEQ's alternative sites analysis, Formosa sought property as remote and as far away from all people as possible, regardless of race. In granting the permits, DEQ reviewed and considered all of this information, finding that the site was at least a mile from residential communities and that the population density was low. The fact that the proposed facility is situated near a minority community alone is insufficient to establish a disproportionate effect on a minority community. See North Baton Rouge Environmental Association, 805 So.2d at 263. Thus, even if there was evidence of an "adverse impact," there was no evidence of a "disparate impact."

While the plaintiffs and Ms. Alexander submit that the EJScreen data establishes that there is a "disparate impact" or a disproportionate effect on a minority community, the DEQ—based on specific directives from the EPA—has determined that the EJScreen information remains unsuitable for the use to which

the plaintiffs and Ms. Alexander are trying to use it: to quantify specific risk values for a selected area and as a basis for agency decision-making regarding the existence or absence of environmental justice concerns. Thus, we find that DEQ had a legitimate basis, a valid and supported reason, and was well within its vast discretion to reject and/or not rely on the EJScreen data, even with the updated NATA risk factor.

DEQ thoroughly considered all of the information presented to it on the issue of environmental justice and concluded that the communities closest to the proposed Formosa complex would *not* bear a disproportionate share of the negative environmental consequences resulting from industrial operations, and thus, there were no environmental justice concerns with regard to its decision to grant Formosa the fifteen permits. Thus, we cannot say that DEQ's decision to issue the permits was in violation of its public trust duty or that its analysis of environmental justice was arbitrary and capricious.

V. CONCLUSION

In sum, we find that the district court did not abuse its vast discretion in granting Ms. Alexander's motion wherein she sought a remand to DEQ for the purpose of taking the updated EJScreen data for the community of Welcome, ordering the supplementation of the administrative record with that information, and filing that information, along with any modifications, new findings, or decision by DEQ, with the district court.

We also find that DEQ's decision to grant Formosa the fifteen permits was not in violation of any constitutional or statutory law and was not arbitrary or capricious or characterized by abuse of discretion or unwarranted exercise of discretion. In granting the permits, DEQ complied with the Clean Air Act. DEQ also complied with its constitutional duty under the public trust doctrine by documenting a thorough analysis in which it considered the background, public

comments, alternative sites, alternative projects, mitigating measures, avoidance of adverse environmental effects, cost-benefit analysis, social and economic benefits, and environmental justice/civil rights Title VI issues as mandated by the Louisiana Supreme Court in **Save Ourselves**. In doing so, DEQ did not reach its decision “procedurally, without individualized consideration and balancing of environmental factors.” **Save Ourselves**, 452 So.2d at 1159. Instead, DEQ performed the required balancing and reached a substantive outcome that was supported by the facts in the administrative record. Although the substantive results and outcome of this balancing process may not be the plaintiffs’ and Ms. Alexander’s preferred outcome, we find that DEQ reasonably exercised its discretion to determine the substantive results of this balancing process.

We also find that DEQ’s analyses of the IT issues were not arbitrary and capricious, the balance of costs and benefits that was struck was not arbitrary, and sufficient weight was given to environmental protection. DEQ reasonably and within its vast discretion determined that any adverse environmental impacts were avoided and/or minimized as much as possible consistent with the public welfare. Because the district court improperly concluded otherwise as to all of these issues, its September 8, 2022 judgment must be reversed.

VI. DECREE

For all of the above and foregoing reasons, we reverse the district court’s September 8, 2022 judgment in its entirety; we reinstate Prevention of Significant Deterioration Permit PSD-LA-812 and Part 70 Operating Permit Nos. 3141-V0, 3142-V0, 3143-V0, 3144-V0, 3145-V0, 3146-V0, 3147-V0, 3148-V0, 3149-V0, 3150-V0, 3151-V0, 3152-V0, 3153-V0, and 3154-V0, which were issued by the Louisiana Department of Environmental Quality to FG LA LLC; and we render judgment dismissing the petition for judicial review filed by the plaintiffs, RISE St.

James, Louisiana Bucket Brigade, Sierra Club, Center for Biological Diversity, Healthy Gulf, Earthworks, and No Waste Louisiana.

All costs of this appeal are assessed to the plaintiffs/appellees, RISE St. James, Louisiana Bucket Brigade, Sierra Club, Center for Biological Diversity, Healthy Gulf, Earthworks, and No Waste Louisiana.

JUDGMENT REVERSED; PERMITS REINSTATED; JUDGMENT RENDERED.